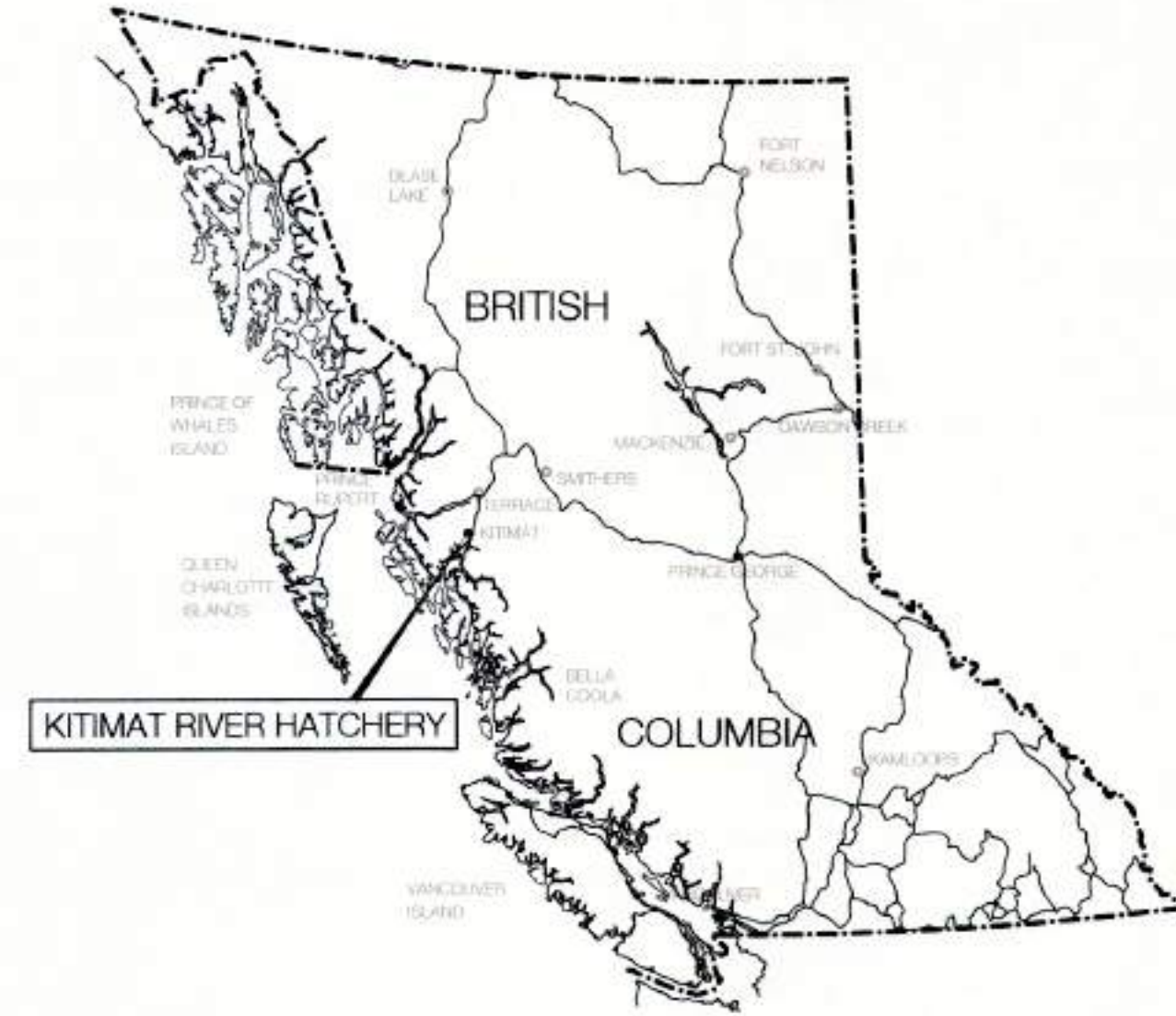




KITIMAT RIVER HATCHERY VALVE REPLACEMENT

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)

GEOTECHNICAL

- G1 SITE PLAN
- G2 SECTIONS

NOTE: DFO REFERENCE RECORD DRAWINGS INCLUDED UNDER SEPARATE COVER



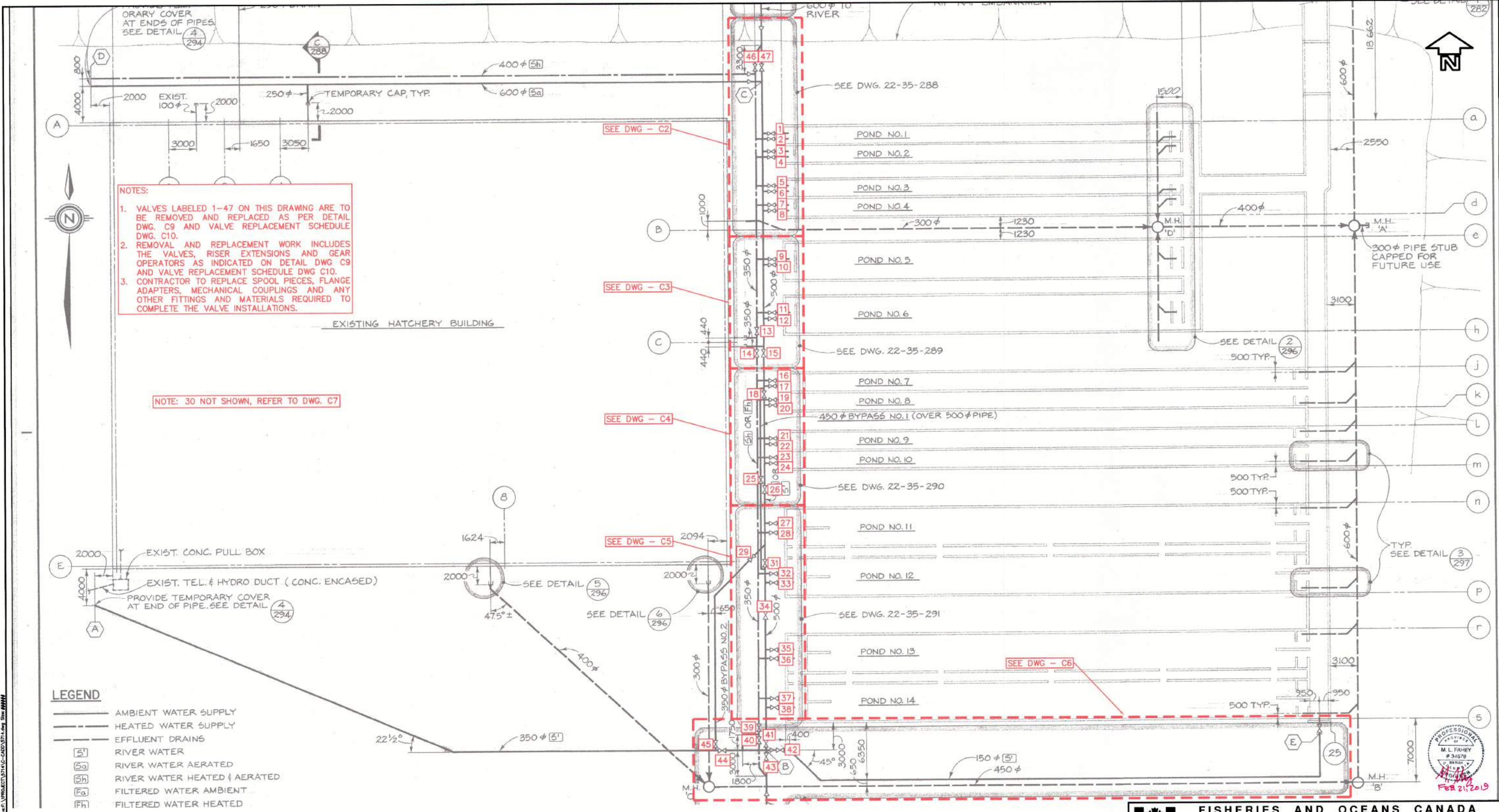
MARCH 13, 2019

DNA

David Nairne & Associates Ltd

5714

ISSUED FOR TENDER
FEBRUARY 21, 2019



NOTES:

1. VALVES LABELED 1-47 ON THIS DRAWING ARE TO BE REMOVED AND REPLACED AS PER DETAIL DWG. C9 AND VALVE REPLACEMENT SCHEDULE DWG. C10.
2. REMOVAL AND REPLACEMENT WORK INCLUDES THE VALVES, RISER EXTENSIONS AND GEAR OPERATORS AS INDICATED ON DETAIL DWG C9 AND VALVE REPLACEMENT SCHEDULE DWG C10.
3. CONTRACTOR TO REPLACE SPOOL PIECES, FLANGE ADAPTERS, MECHANICAL COUPLINGS AND ANY OTHER FITTINGS AND MATERIALS REQUIRED TO COMPLETE THE VALVE INSTALLATIONS.

NOTE: 30 NOT SHOWN, REFER TO DWG. C7

LEGEND

- AMBIENT WATER SUPPLY
- - - HEATED WATER SUPPLY
- - - EFFLUENT DRAINS
- (S) RIVER WATER
- (Sa) RIVER WATER AERATED
- (Sh) RIVER WATER HEATED & AERATED
- (Fa) FILTERED WATER AMBIENT
- (Fh) FILTERED WATER HEATED

1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-286 (MAY, 1982 - CONTRACT NO. 6)

NOTES

NO.	DATE	REVISIONS
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

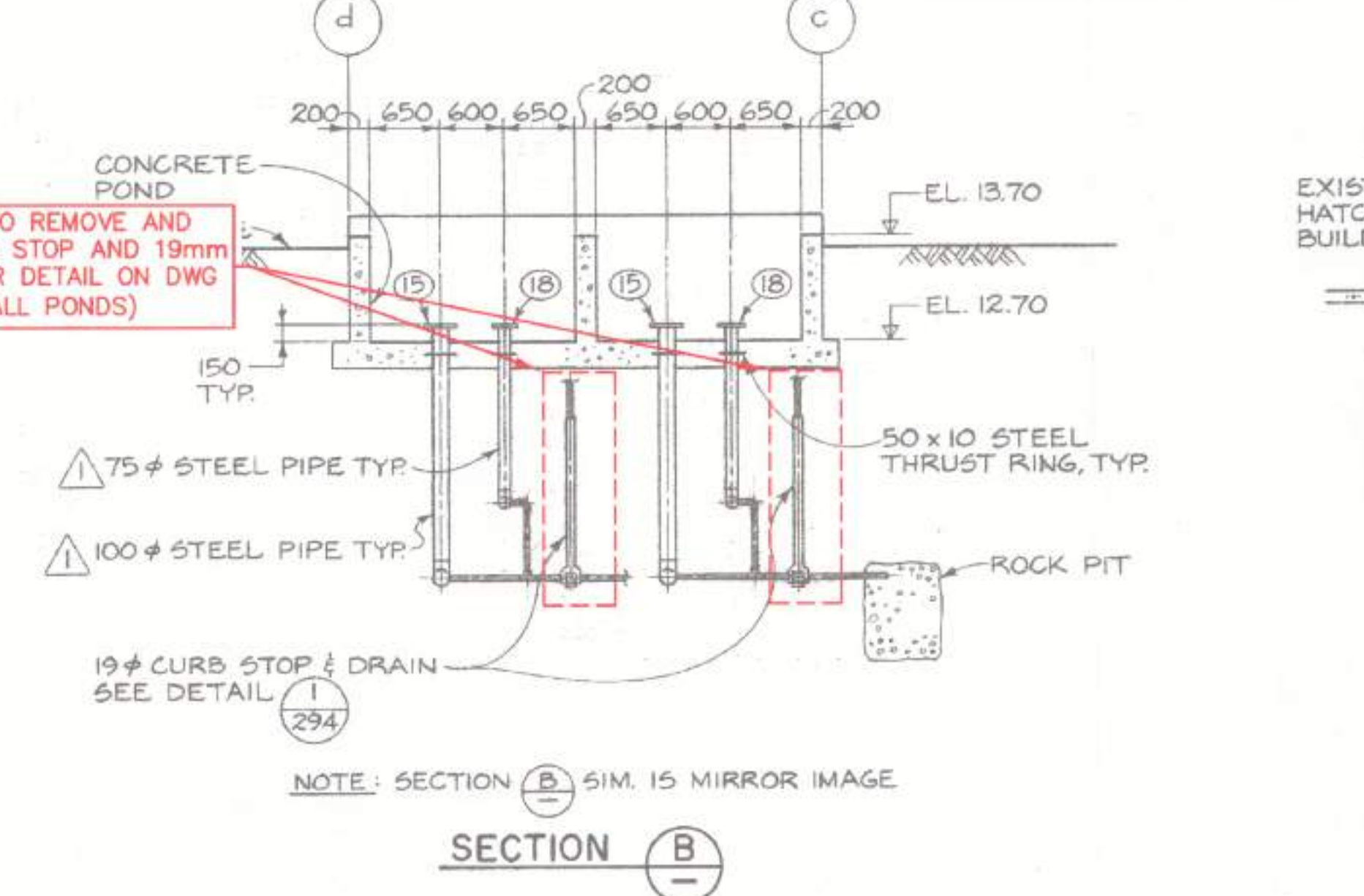
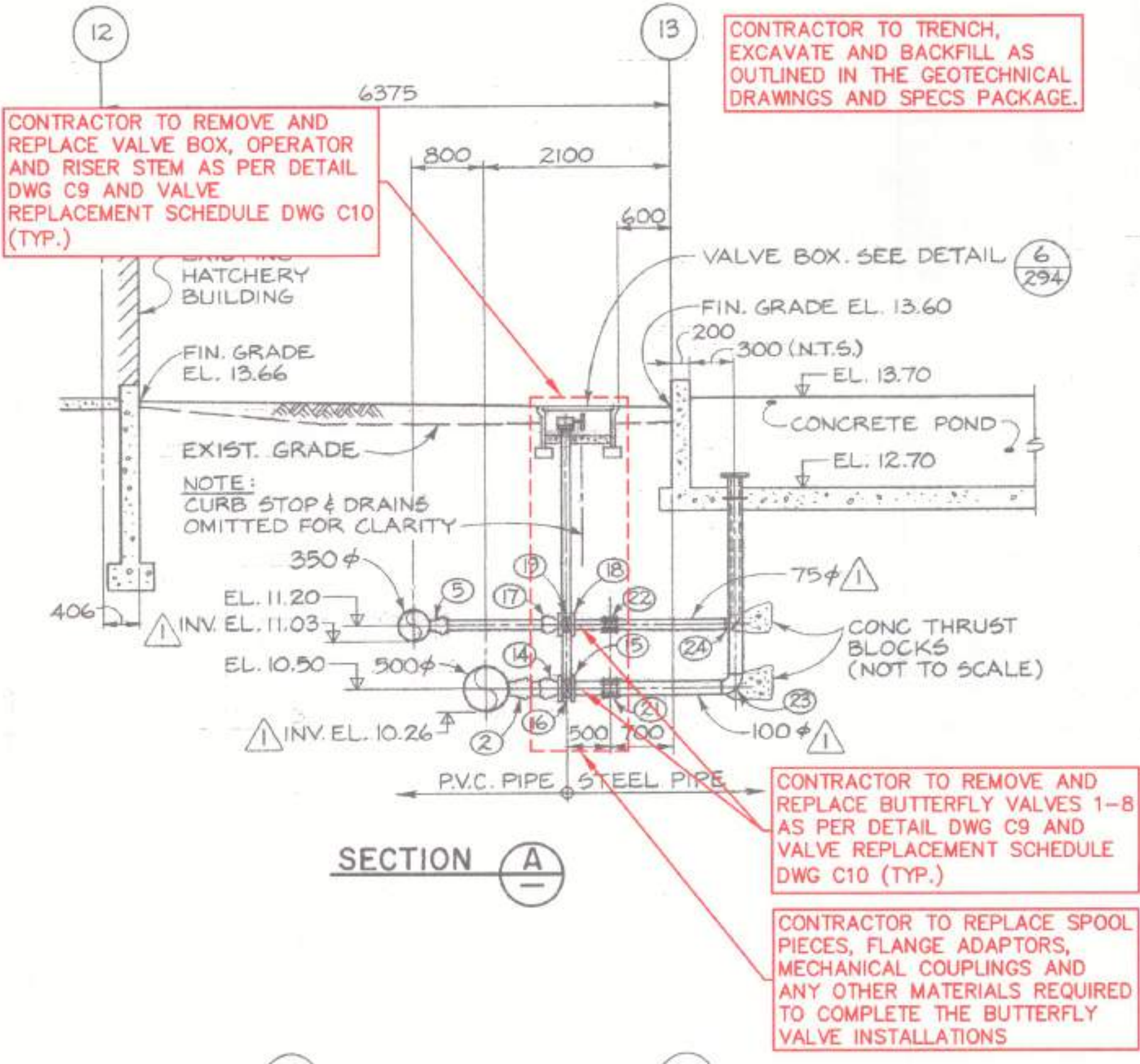
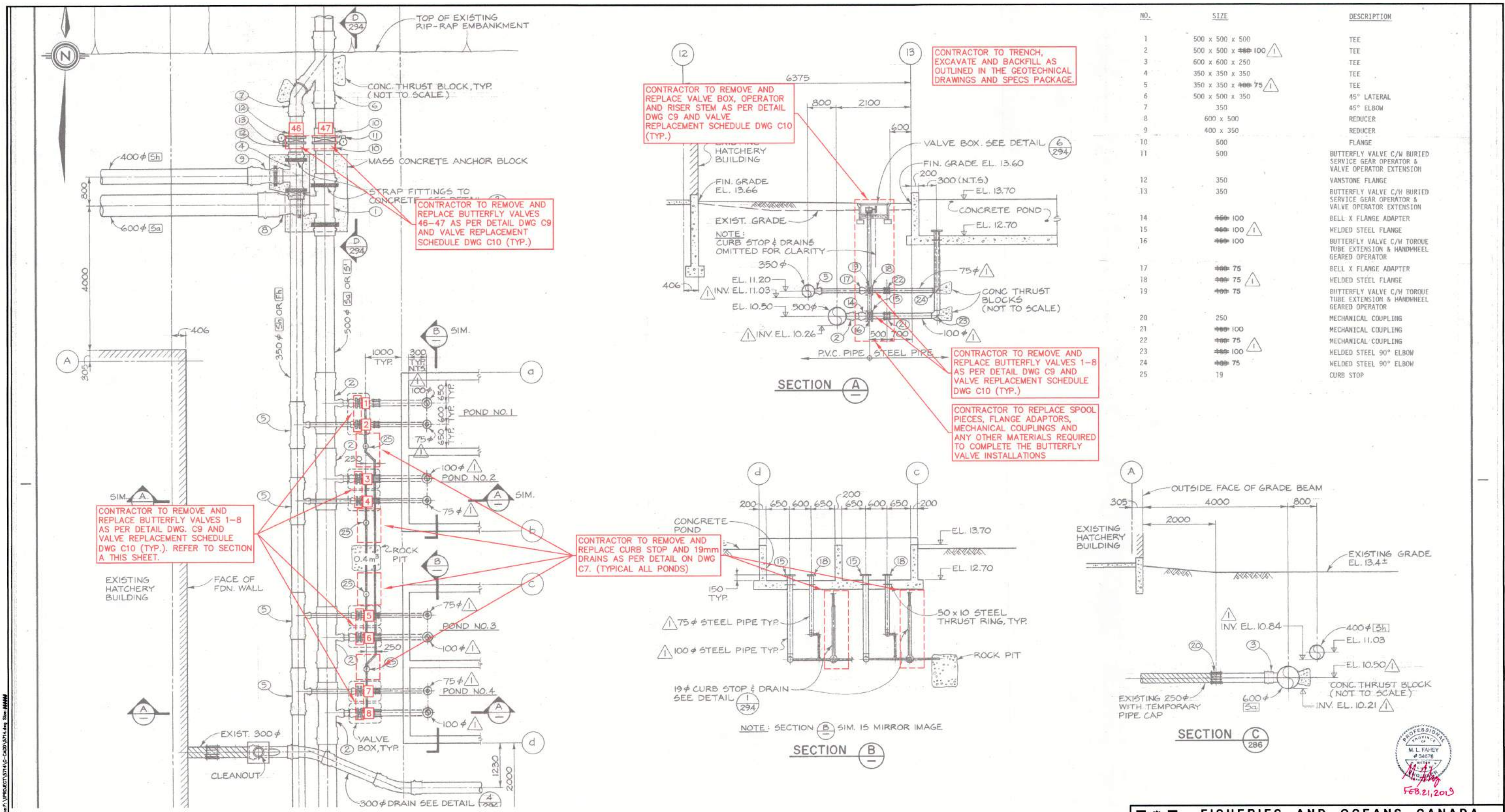
FISHERIES AND OCEANS CANADA
REAL PROPERTY AND TECHNICAL SUPPORT

**KITIMAT RIVER HATCHERY
VALVE REPLACEMENT
SITE PLAN
DFO REF DWG: 22-35-286**

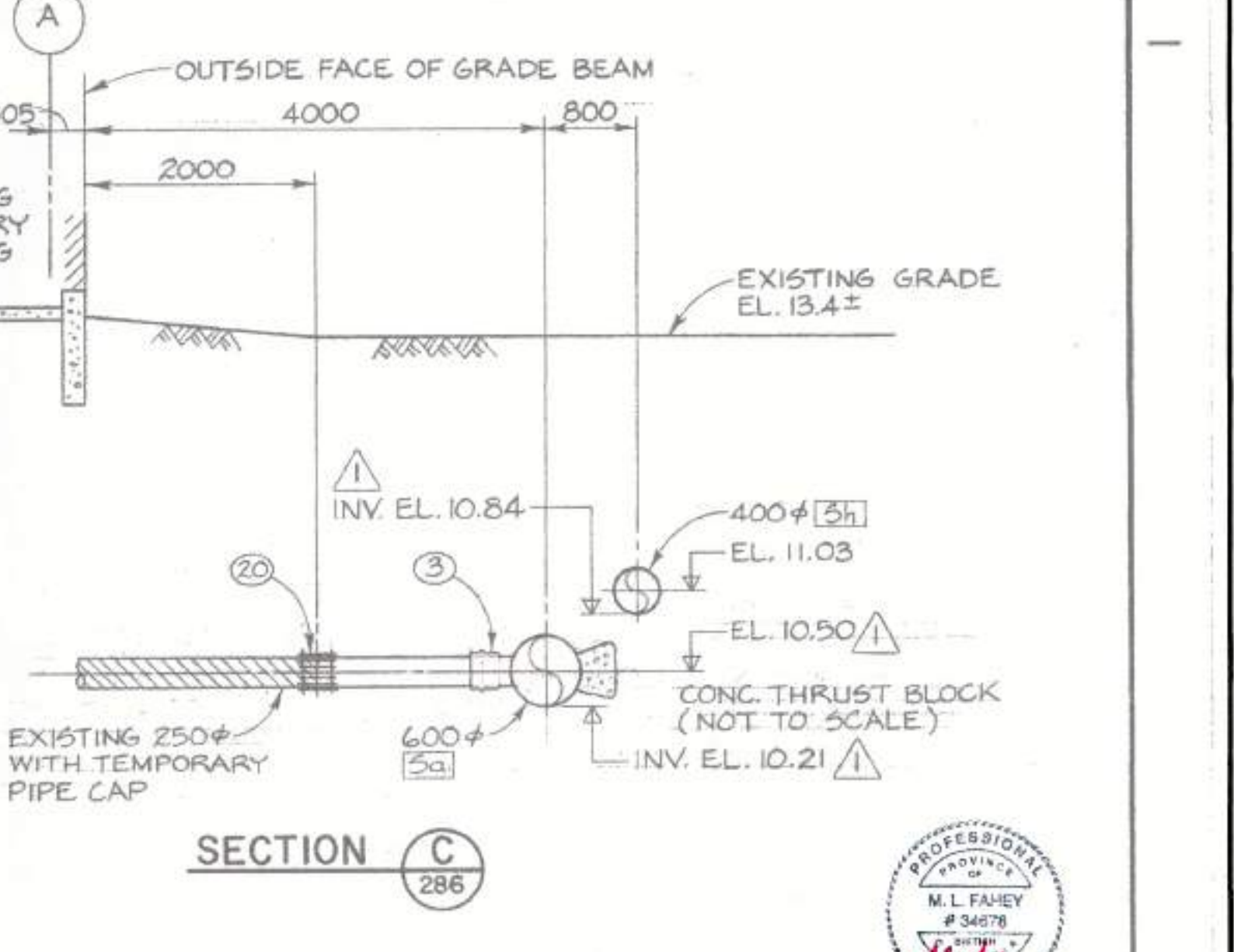
SCALE	1:200
DATE	2018-NOV-01
DRAWING NUMBER	C1
REVISION	3



Plotted by: Dan Southwell Plot date: 21-Feb-19 Plot filename: \\PROJECT\KITAC-2000\0714.dwg Size: 4444



NO.	SIZE	DESCRIPTION
1	500 x 500 x 500	TEE
2	500 x 500 x 400 100	TEE
3	600 x 600 x 250	TEE
4	350 x 350 x 350	TEE
5	350 x 350 x 400 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	400 100	BELL X FLANGE ADAPTER
15	400 100	WELDED STEEL FLANGE
16	400 100	BUTTERFLY VALVE C/W TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
17	400 75	BELL X FLANGE ADAPTER
18	400 75	WELDED STEEL FLANGE
19	400 75	BUTTERFLY VALVE C/W TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
20	250	MECHANICAL COUPLING
21	400 100	MECHANICAL COUPLING
22	400 75	MECHANICAL COUPLING
23	400 100	WELDED STEEL 90° ELBOW
24	400 75	WELDED STEEL 90° ELBOW
25	19	CURB STOP



PROFESSIONAL
 REGISTERED
 M.L. FAHEY
 #34578
 FEB 21, 2019

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

NOTES

NO.	DATE	REVISIONS
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 1, 2, 3, 4
 DFO REF DWG: 22-35-288

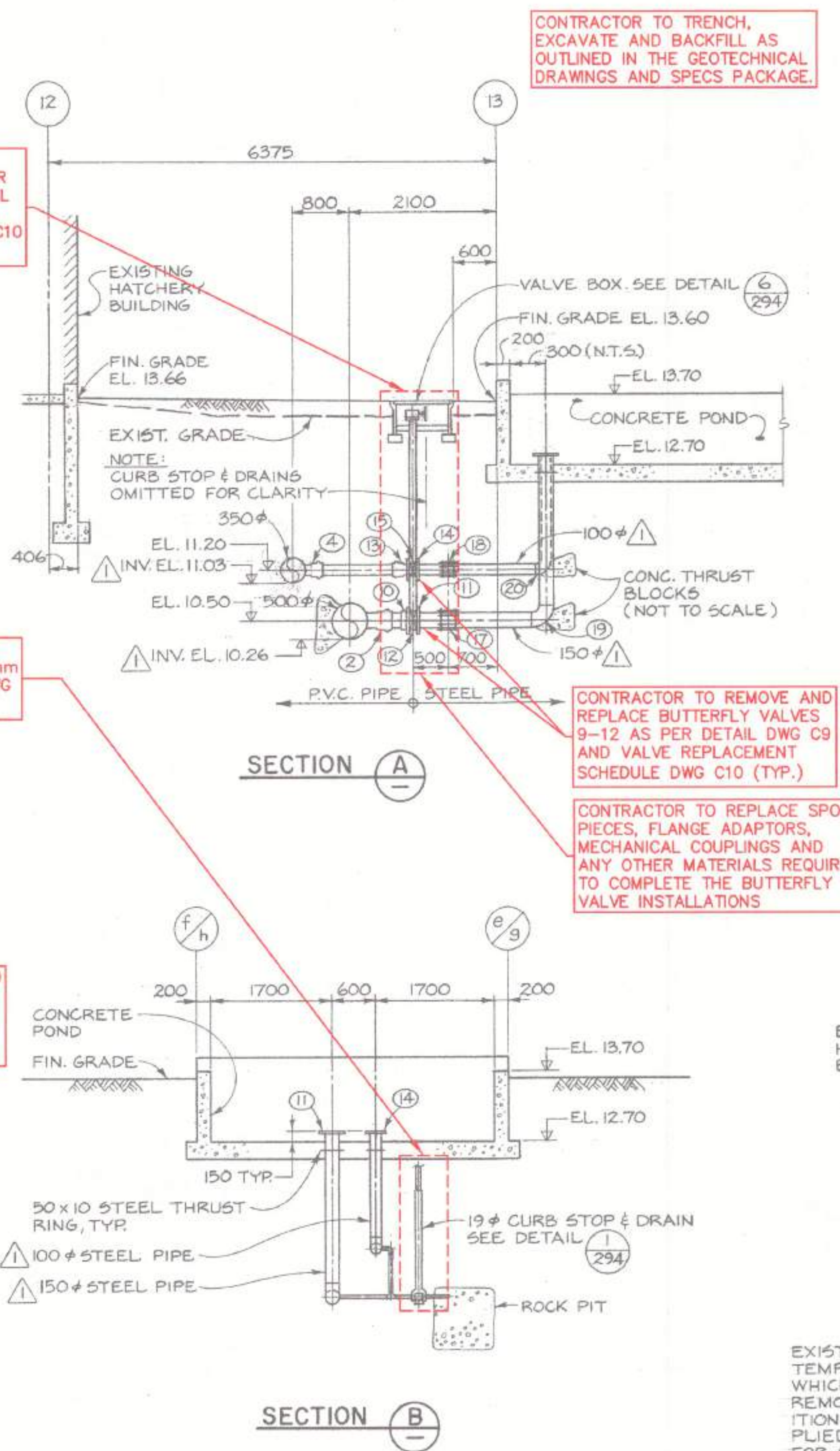
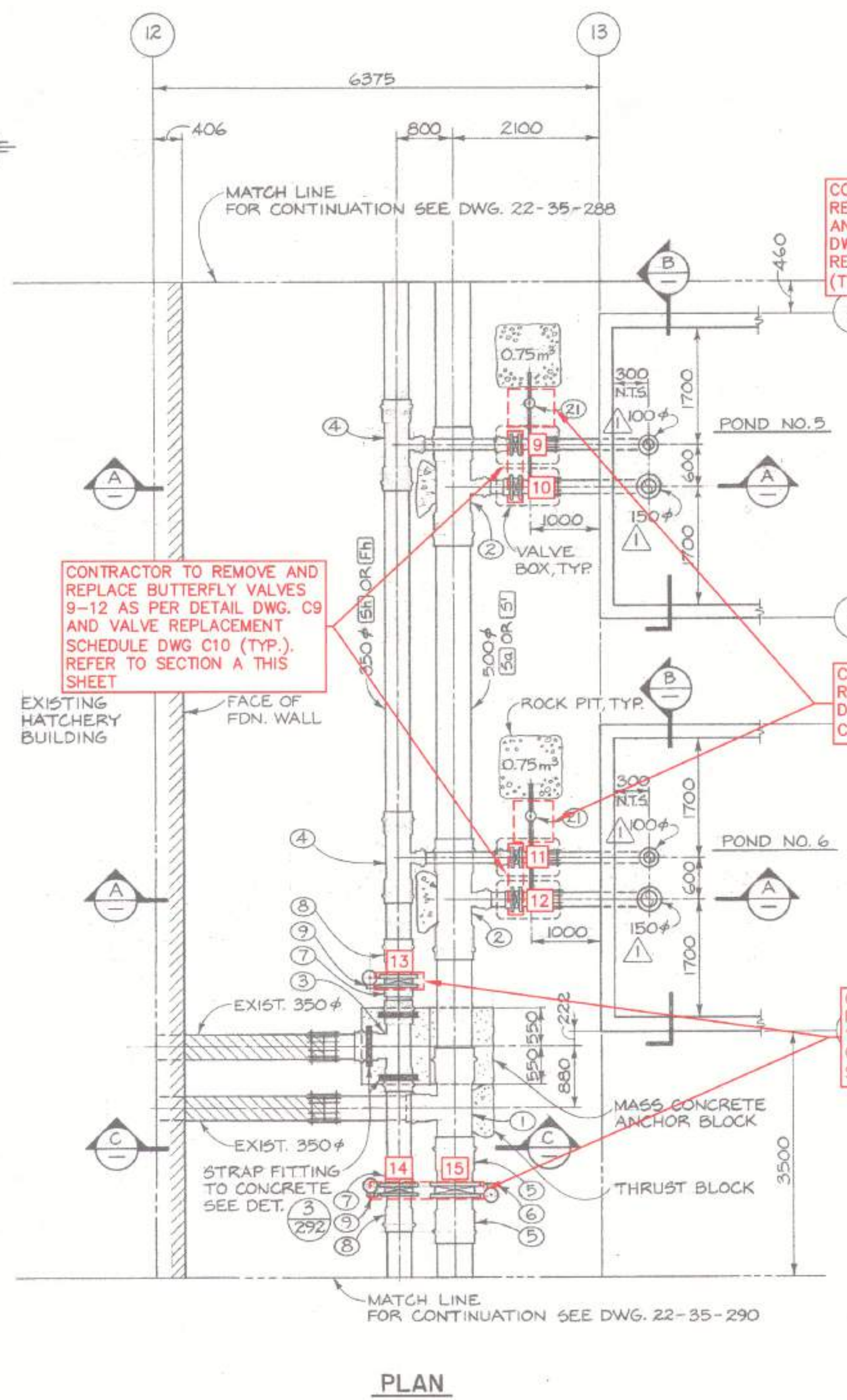
SCALE
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DATE
 2018-NOV-01

DRAWING NUMBER
C2

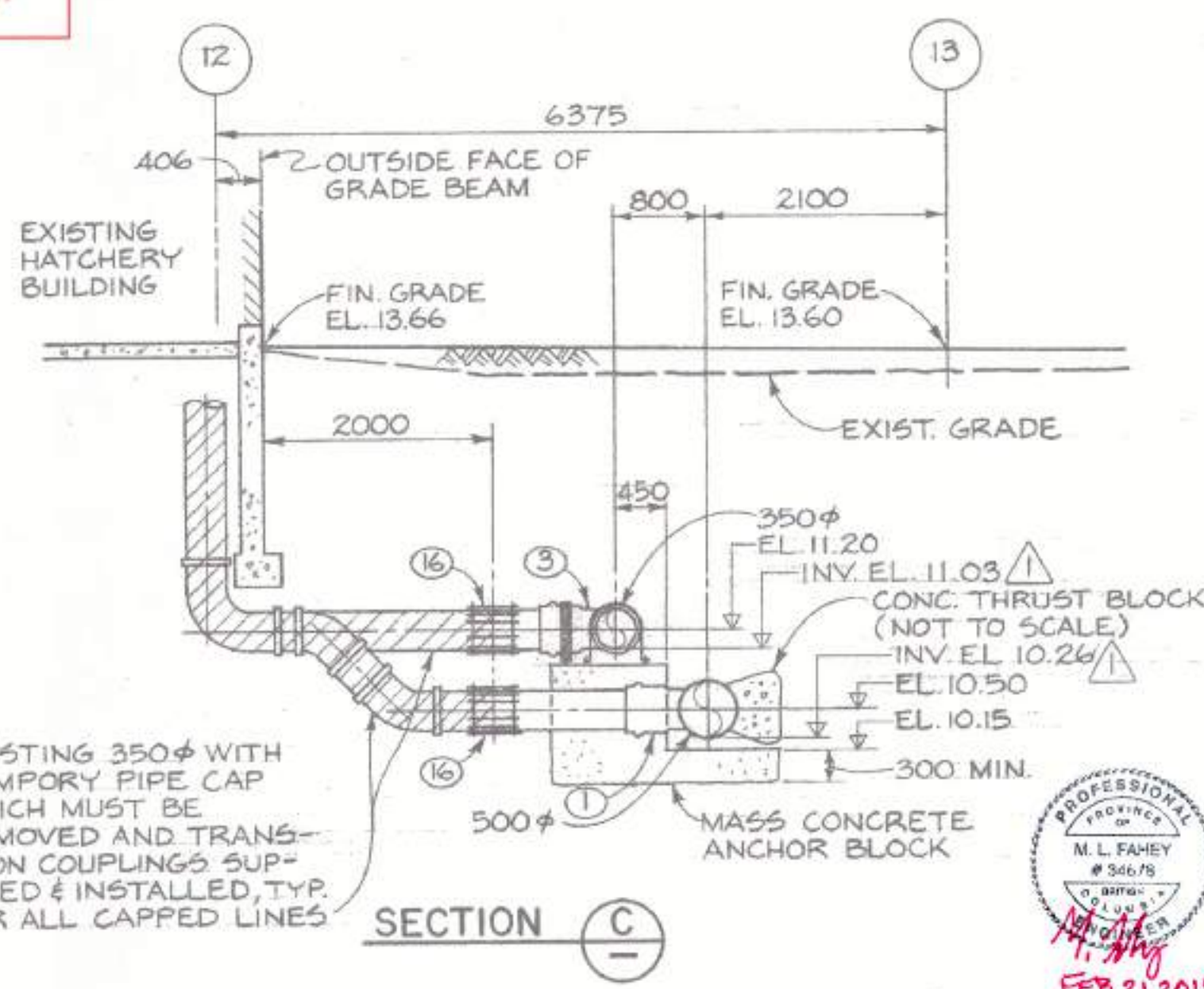
REVISION
 3

Printed by: Des. Software Plot date: 21-Feb-19 Plot: (Resource) \Products\371\A-C-000\371.dwg Sheet #000



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

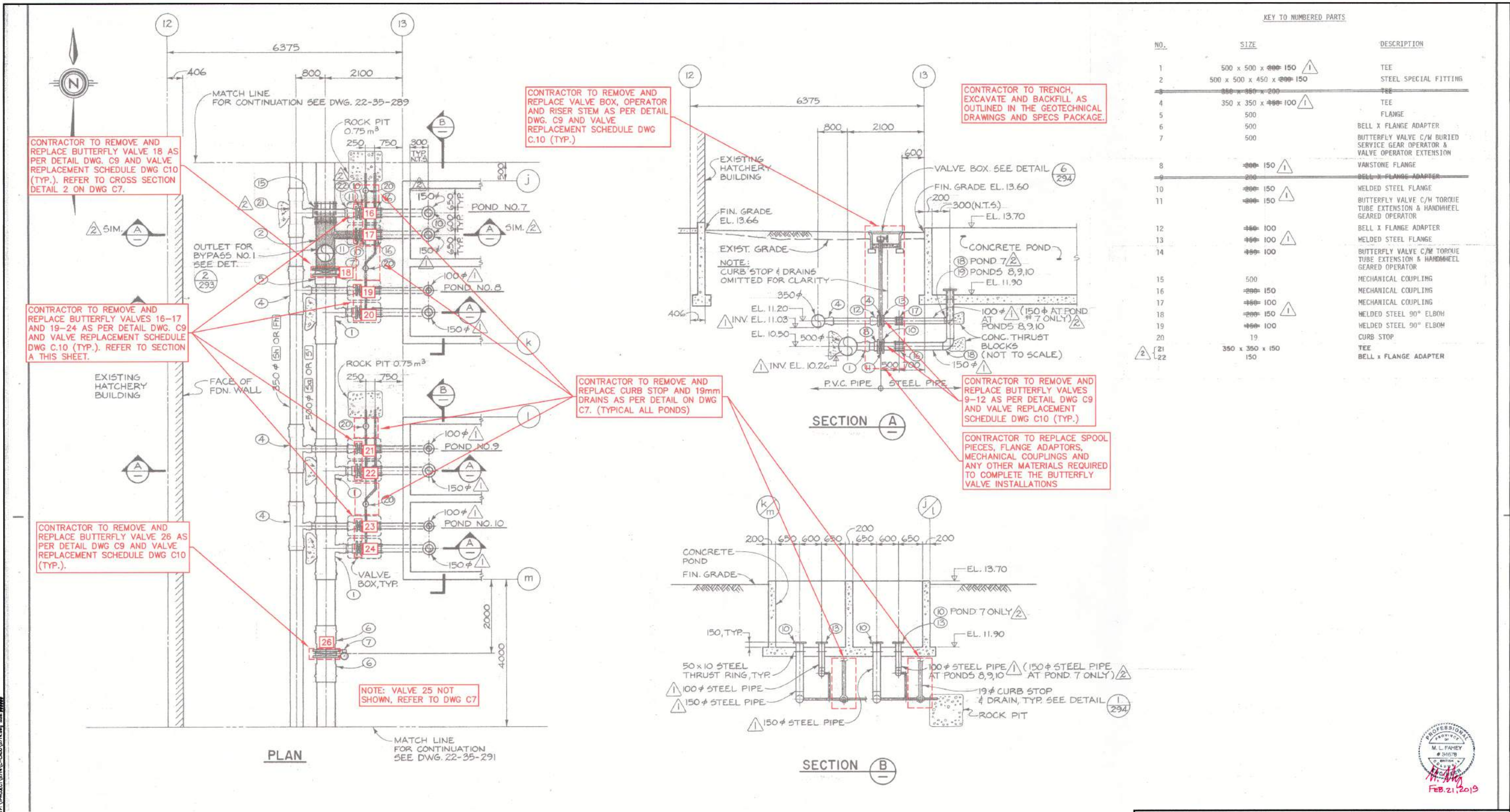
NO.	DATE	REVISIONS
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

DESIGNED	
DRAWN	
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
3



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	300 x 300 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	300 x 150	VANSTONE FLANGE
9	300	BELL X FLANGE ADAPTER
10	300 x 150	WELDED STEEL FLANGE
11	300 x 150	BUTTERFLY VALVE C/M TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
12	300 x 100	BELL X FLANGE ADAPTER
13	300 x 100	WELDED STEEL FLANGE
14	300 x 100	BUTTERFLY VALVE C/M TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
15	500	MECHANICAL COUPLING
16	300 x 150	MECHANICAL COUPLING
17	300 x 100	MECHANICAL COUPLING
18	300 x 150	WELDED STEEL 90° ELBOW
19	300 x 100	WELDED STEEL 90° ELBOW
20	19	CURB STOP
21	350 x 350 x 150	TEE
22	150	BELL X FLANGE ADAPTER

PROFESSIONAL
 M. L. FAHEY
 # 54678
 FEB. 21, 2019

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

NO.	DATE	REVISIONS
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	
NEC	
CHECKED	
MF	
RECOMMENDED	
APPROVED	
APPROVED	

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**

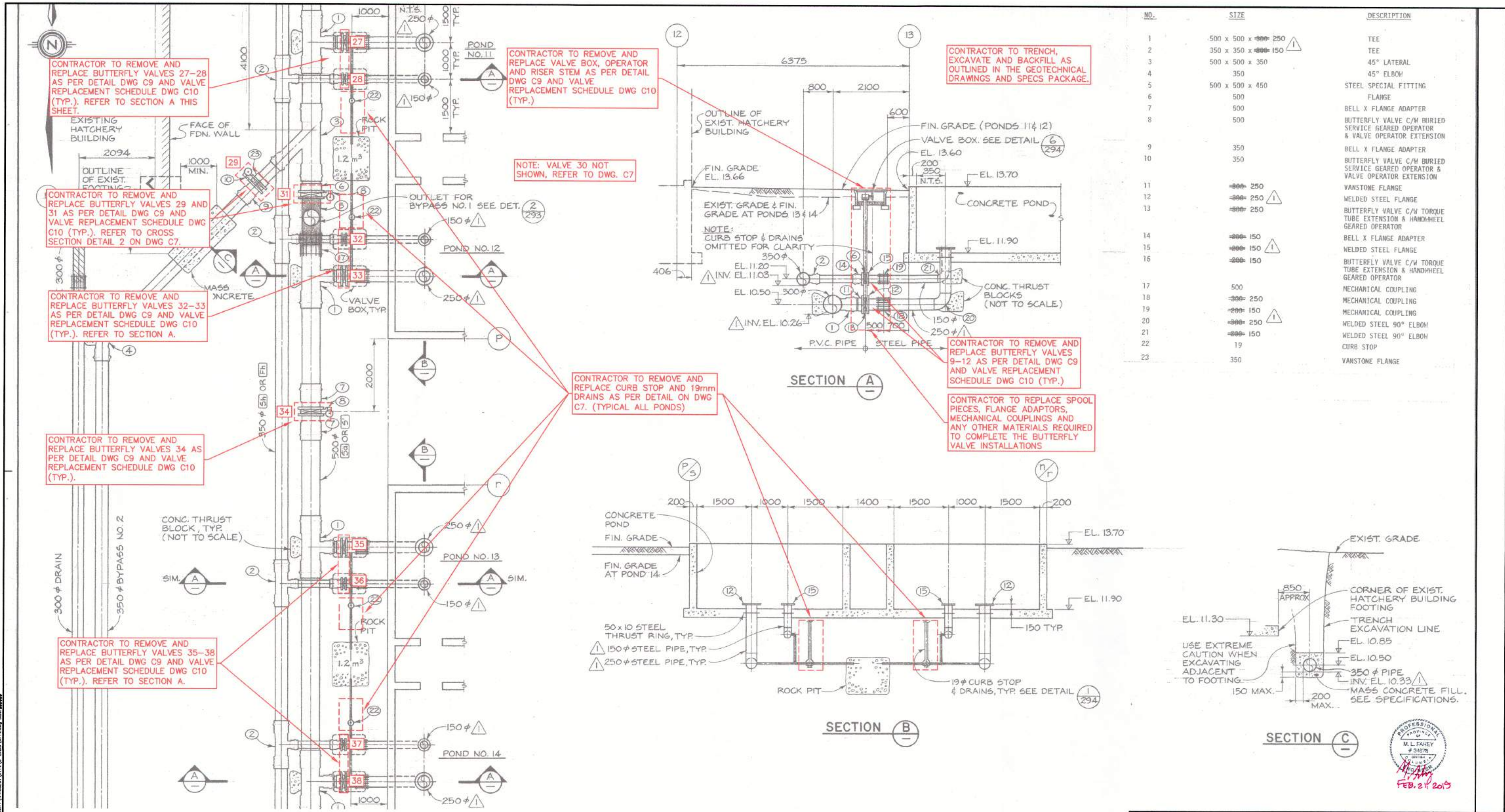
SCALE
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DATE
2018-NOV-01

DRAWING NUMBER
C4

REVISION
 3

Plotted by: Dan Southwood Plot date: 21-Feb-19 Path: \\mms\p\22-35-290\22-35-290-DWG\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° ELBOW
5	500 x 500 x 450	STEEL SPECIAL FITTING
6	500	FLANGE
7	500	BELL X FLANGE ADAPTER
8	500	BUTTERFLY VALVE C/M BURIED SERVICE GEARED OPERATOR & VALVE OPERATOR EXTENSION
9	350	BELL X FLANGE ADAPTER
10	350	BUTTERFLY VALVE C/M BURIED SERVICE GEARED OPERATOR & VALVE OPERATOR EXTENSION
11	250	VANSTONE FLANGE
12	250	WELDED STEEL FLANGE
13	250	BUTTERFLY VALVE C/M TORQUE TUBE EXTENSION & HANDHEEL GEARED OPERATOR
14	150	BELL X FLANGE ADAPTER
15	150	WELDED STEEL FLANGE
16	150	BUTTERFLY VALVE C/M TORQUE TUBE EXTENSION & HANDHEEL GEARED OPERATOR
17	500	MECHANICAL COUPLING
18	250	MECHANICAL COUPLING
19	150	MECHANICAL COUPLING
20	250	WELDED STEEL 90° ELBOW
21	150	WELDED STEEL 90° ELBOW
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
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	
NEC	
CHECKED	
MF	
RECOMMENDED	
APPROVED	
APPROVED	

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

SCALE
1:200
DATE
2018-NOV-01
DRAWING NUMBER
C5
REVISION
3

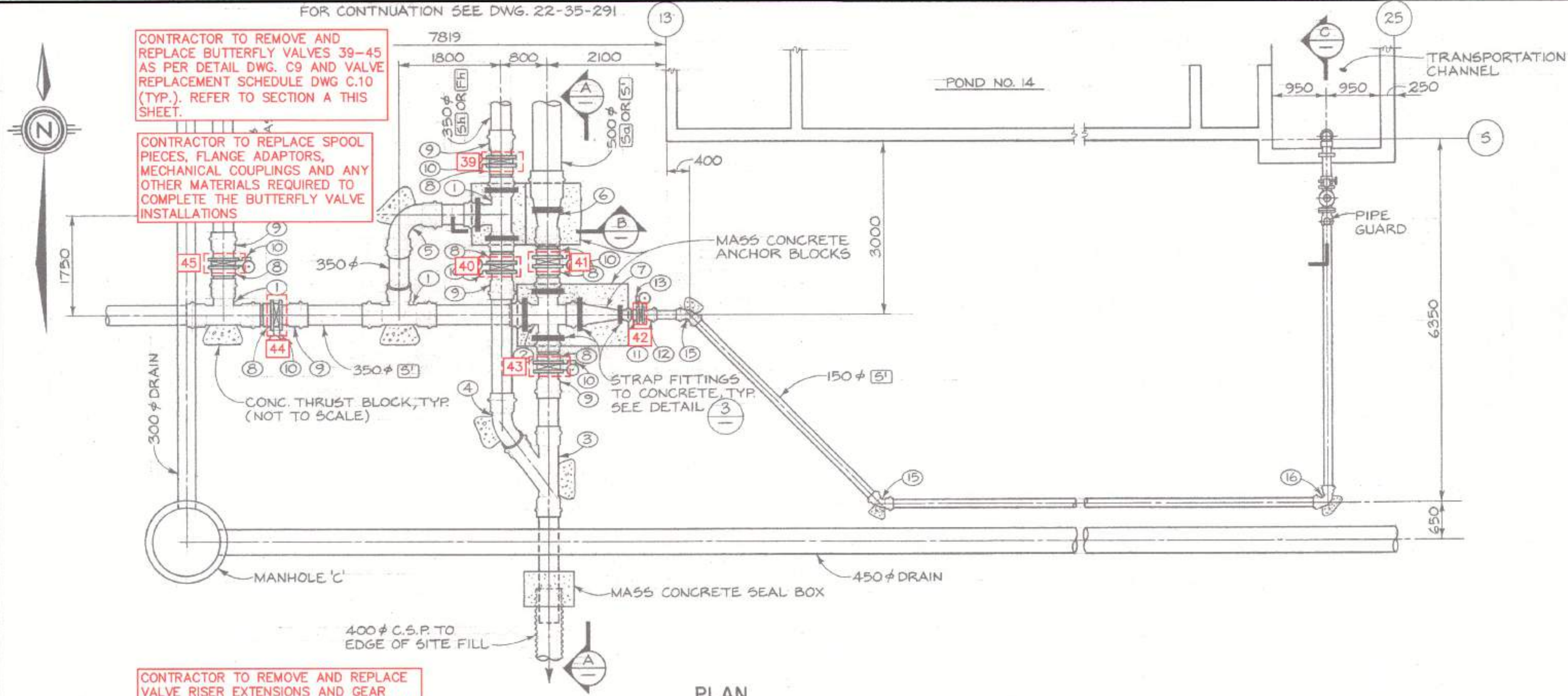
REGISTERED PROFESSIONAL ENGINEER
M.L. FAHEY
#34678
FEB. 24 2019

FOR CONTINUATION SEE DWG. 22-35-291

CONTRACTOR TO REMOVE AND REPLACE BUTTERFLY VALVES 39-45 AS PER DETAIL DWG. C9 AND VALVE REPLACEMENT SCHEDULE DWG C.10 (TYP.). REFER TO SECTION A THIS SHEET.

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

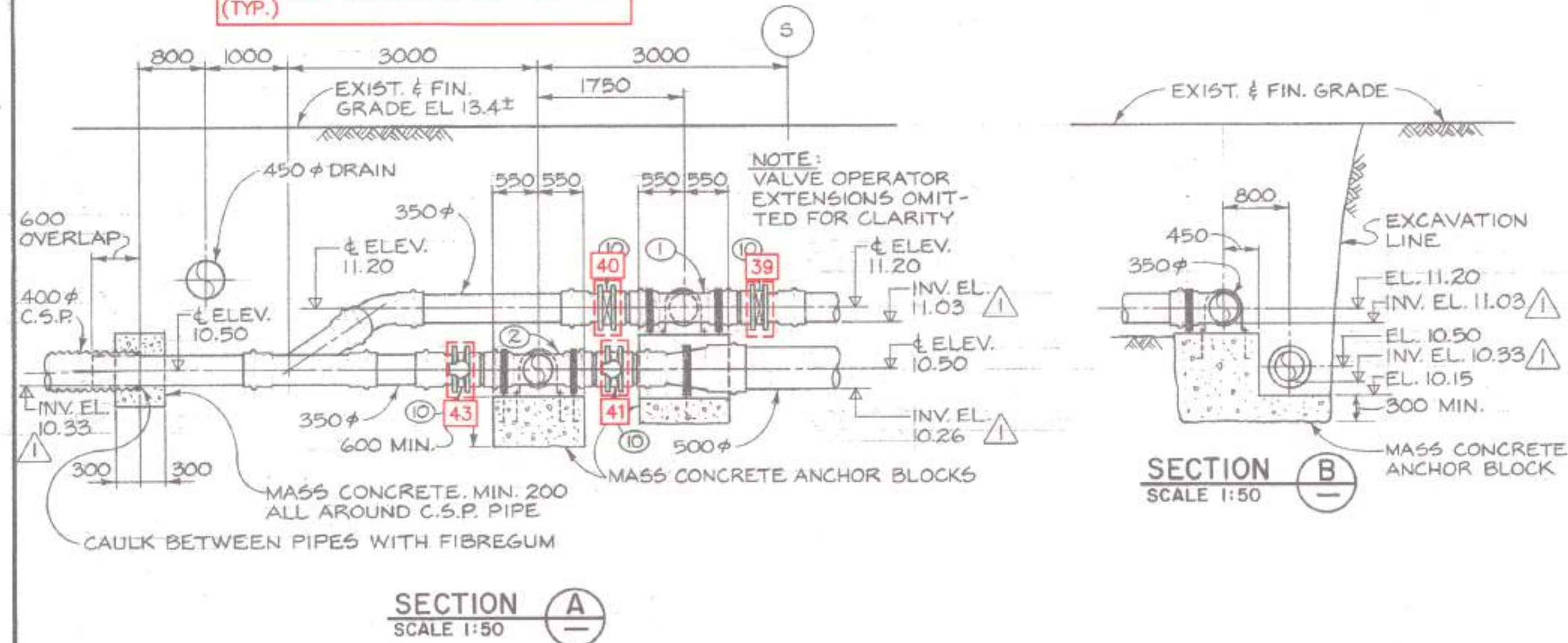
CONTRACTOR TO REMOVE AND REPLACE VALVE RISER EXTENSIONS AND GEAR OPERATORS AS PER DETAIL DWG C9 AND VALVE REPLACEMENT SCHEDULE DWG C10 (TYP.)



KEY TO NUMBERED PARTS

NO.	SIZE	DESCRIPTION
1	350 x 350 x 350	TEE
2	350 x 350 x 350 x 350	CROSS
3	350 x 350 x 350	45° LATERAL
4	350	45° ELBOW
5	350	90° ELBOW
6	500 x 350	REDUCER
7	350 x 150	REDUCER
8	350	VANSTONE FLANGE
9	350	BELL X FLANGE ADAPTER
10	350	BUTTERFLY VALVE C/W BURIED SERVICE GEARED OPERATOR & VALVE OPERATOR EXTENSION
11	150	VANSTONE FLANGE
12	150	BELL X FLANGE ADAPTER
13	150	BUTTERFLY VALVE C/W BURIED SERVICE GEARED OPERATOR & VALVE OPERATOR EXTENSION
14	150	BUTTERFLY VALVE C/W HANDWHEEL GEARED OPERATOR
15	150	45° ELBOW
16	150	90° ELBOW
17	150	HYDRANT BASE
18	150	C.I. PIPE SPOOL (FLANGE X FLANGE)
19	150 x 150 x 150	C.I. TEE (FLANGED)
20	150	HYDRANT OPERATING SPINDLE
21	150	90° ELBOW (SOLVENT WELD)

PLAN SCALE 1:50



SECTION A SCALE 1:50

SECTION B SCALE 1:50



FISHERIES AND OCEANS CANADA
REAL PROPERTY AND TECHNICAL SUPPORT

**KITIMAT RIVER HATCHERY
VALVE REPLACEMENT
TRANSPORTATION CHANNEL
DFO REF DWG: 22-35-292**

SCALE: 1:50
DATE: 2018-NOV-01
DRAWING NUMBER: C6
REVISION: 3

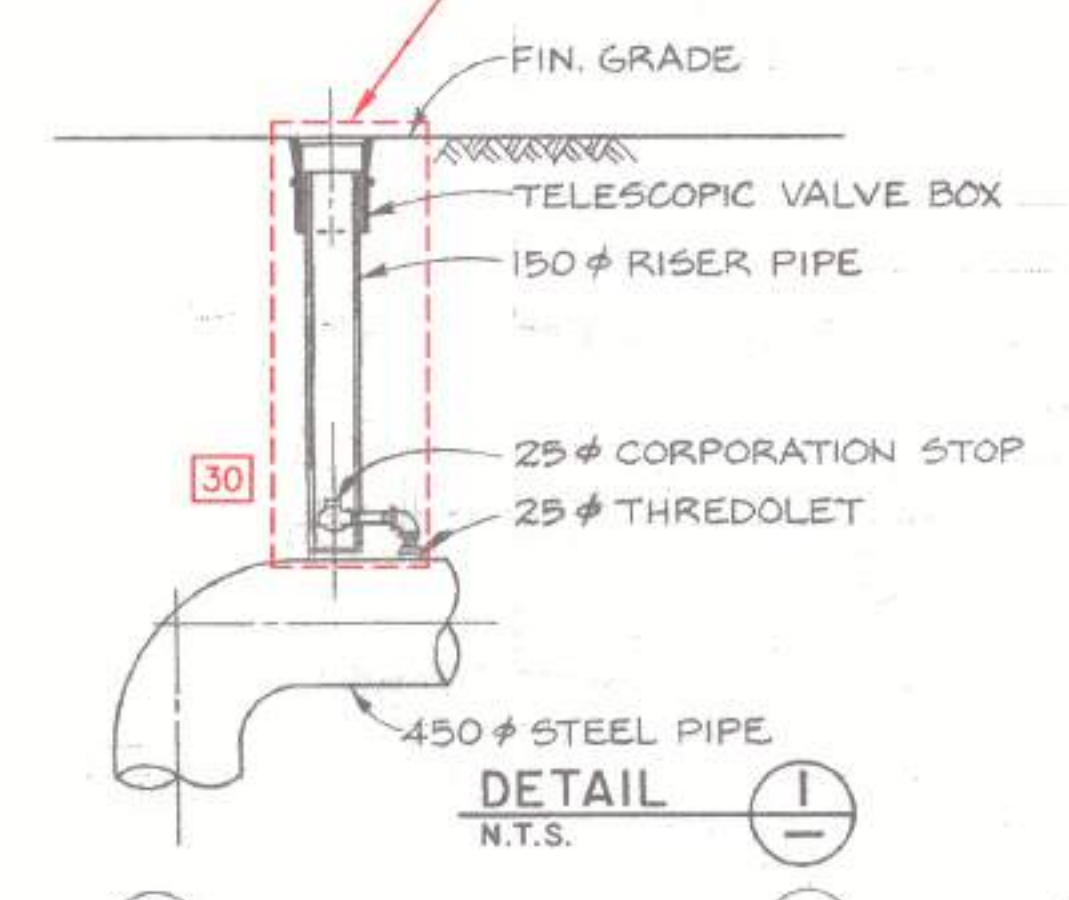
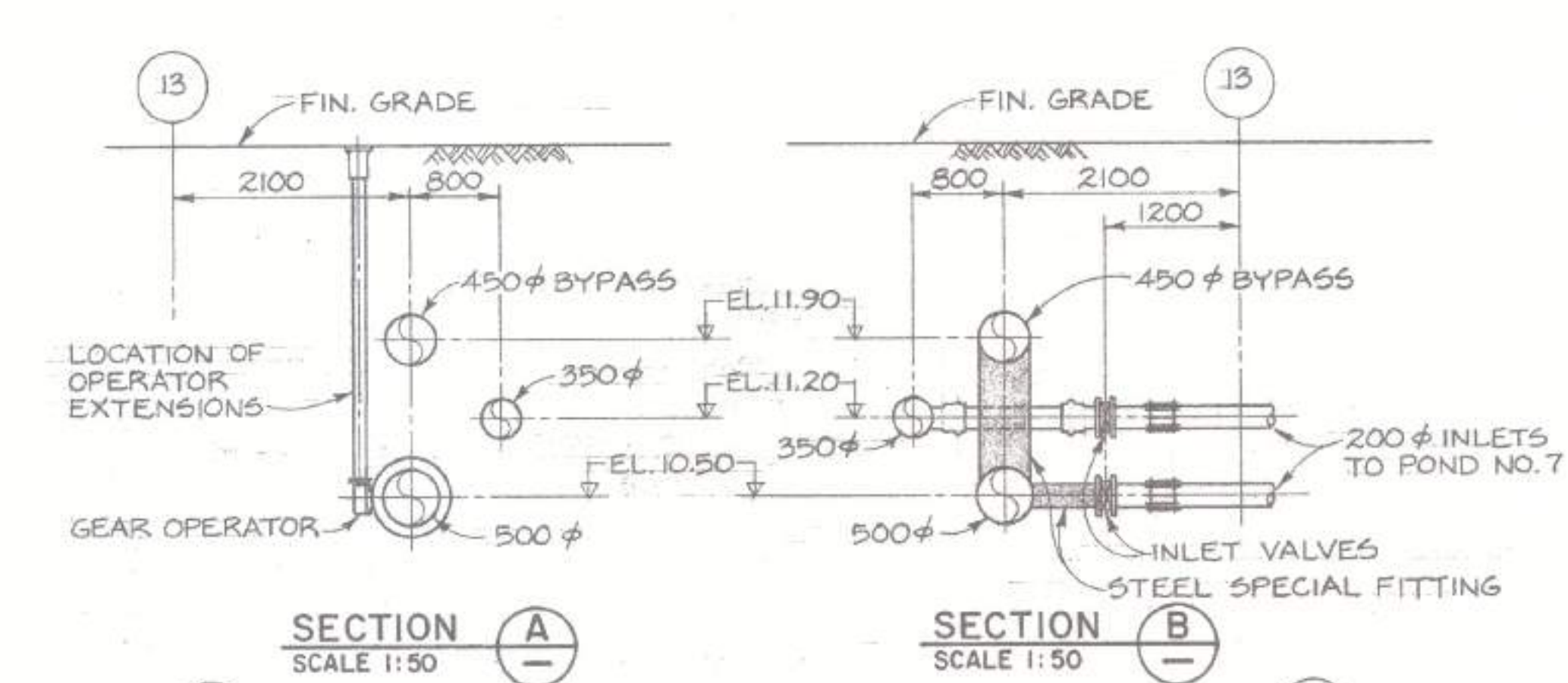
1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-292 (MAY, 1982 - CONTRACT NO. 6)

NO.	DATE	REVISIONS
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

Printed by: Des. Sutherland, Proj. date: 21-Feb-19, Pub. Date: 21-Feb-19, Proj. Name: F:\PROJECTS\2018\22-35-292\Drawings\22-35-292.dwg, Sheet: 00000

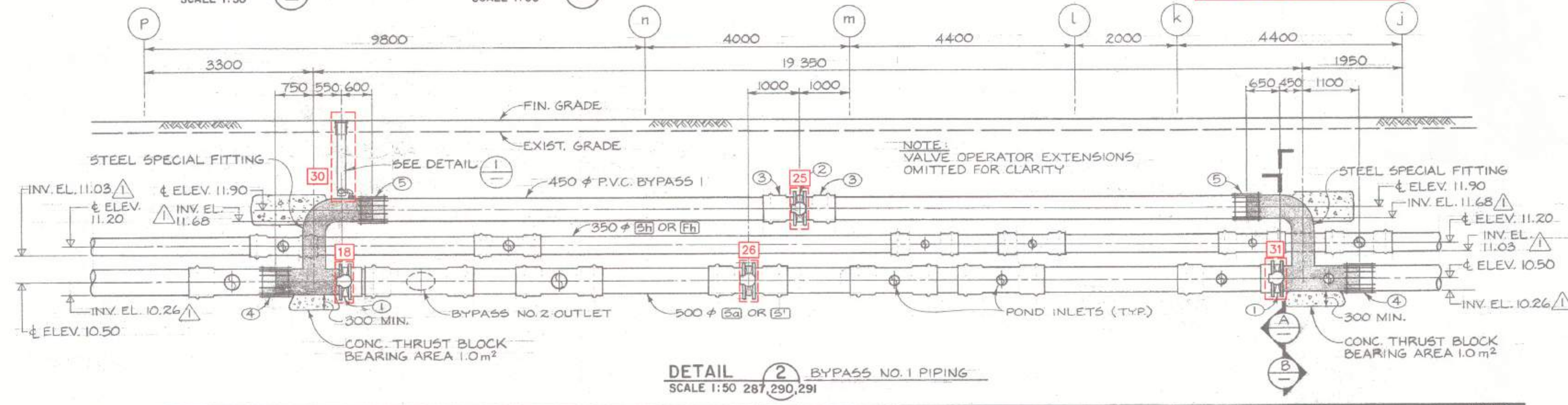
TYPICAL TRENCH SECTIONS
N.T.S.



CONTRACTOR TO REMOVE AND REPLACE 25mm CORPORATION STOP (VALVE 30), 150mm RISER PIPE AND VALVE BOX. RISER PIPE TO BE 150mm PVC SDR 35, VALVE BOX TO BE CAST IRON FLOOR BOX TO MATCH DETAIL ON DWG C9.

CONTRACTOR TO REMOVE AND REPLACE BUTTERFLY VALVES 18, 25, 26 AND 31 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



KEY TO NUMBERED PARTS - BYPASS NO. 1

- ① 500 φ BUTTERFLY VALVE w/ BURIED SERVICE GEAR OPERATOR & VALVE OPERATOR EXTENSION
- ② 450 φ BUTTERFLY VALVE w/ BURIED SERVICE GEAR OPERATOR & VALVE OPERATOR EXTENSION
- ③ 450 φ BELL x FLANGE ADAPTER
- ④ 500 φ MECHANICAL COUPLING
- ⑤ 450 φ MECHANICAL COUPLING



FISHERIES AND OCEANS CANADA
REAL PROPERTY AND TECHNICAL SUPPORT

KITIMAT RIVER HATCHERY
VALVE REPLACEMENT
WATER SUPPLY PIPING
DFO REF DWG: 22-35-293

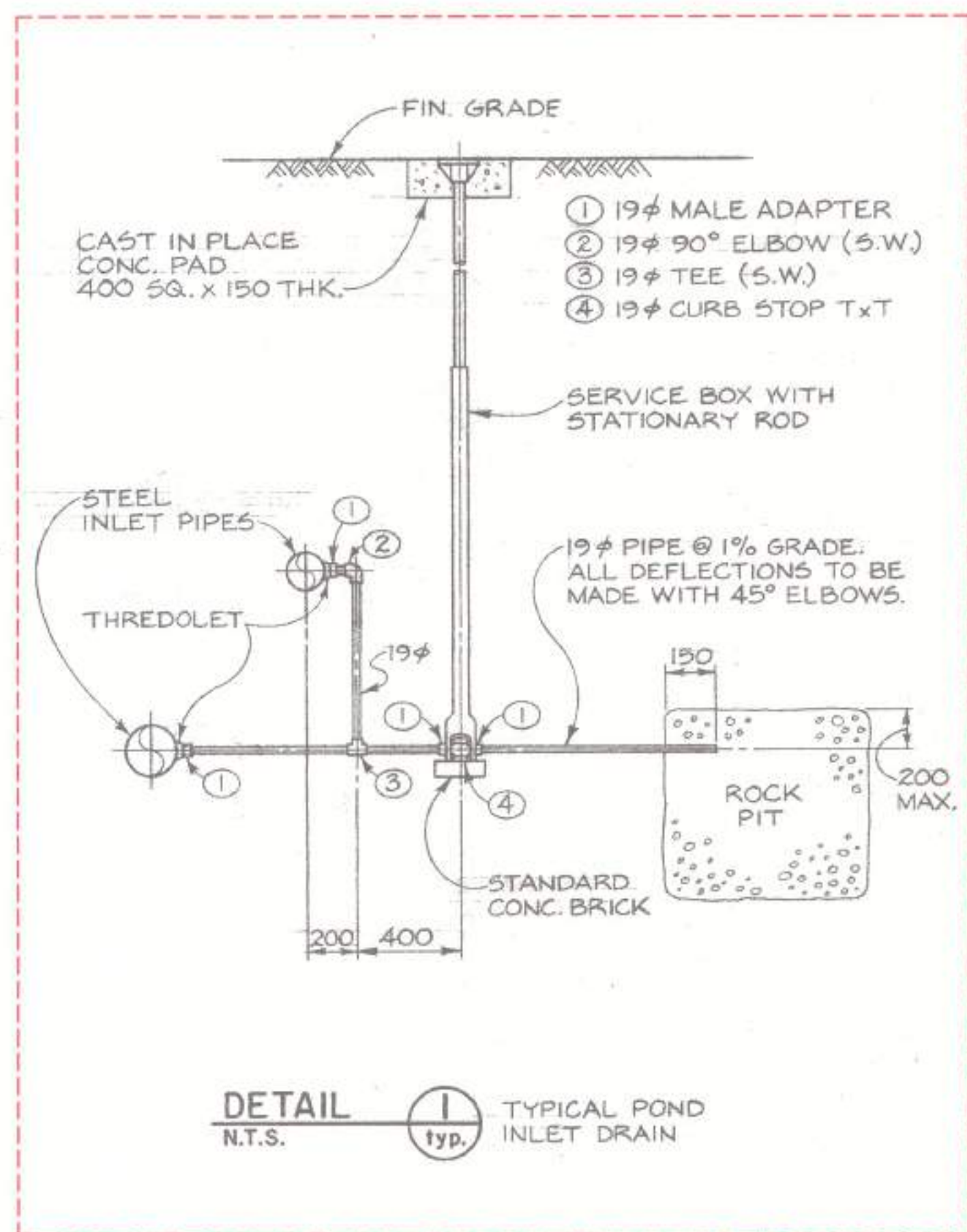
SCALE: 1:200
DATE: 2018-NOV-01
DRAWING NUMBER: C7
REVISION: 3

1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-293 (MAY, 1982 - CONTRACT NO. 6)

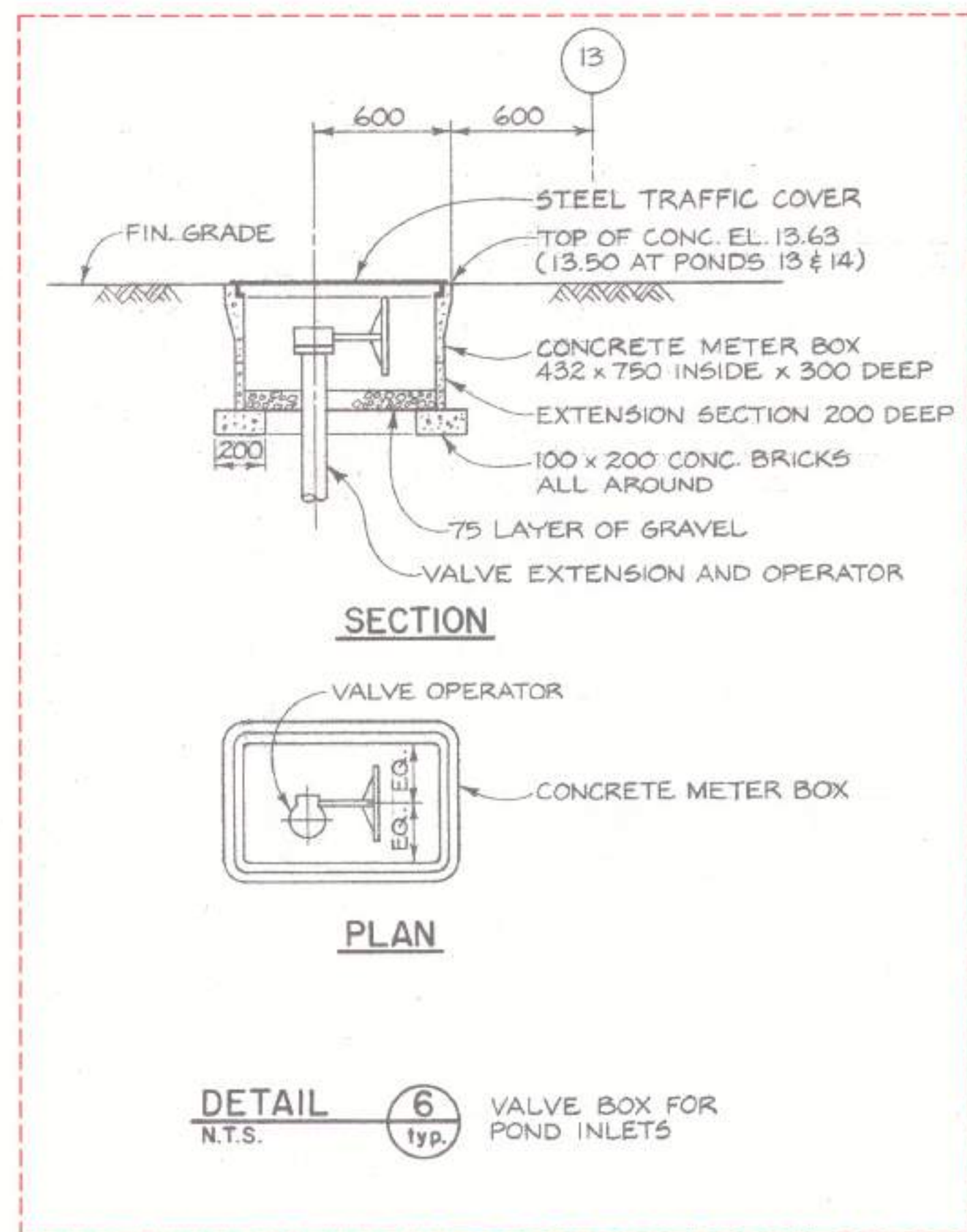
NO.	DATE	REVISIONS
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

NOTES

Printed by: Don Southwell Plot date: 21-Feb-19 Plot: M:\Projects\2018-02\22-35-293\Drawings\22-35-293.dwg



CONTRACTOR TO REMOVE AND REPLACE CURB STOP, SERVICE BOX WITH STATIONARY ROD, DRAIN PIPE AND CONCRETE PAD. STATIONARY ROD TO BE 14mm CAST IRON.



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.



Printed by: Don Southwell Plot date: 21-Feb-19 Path: \\msn\Users\m\Documents\PROJECTS\KITAC-CAD\22-35-294.dwg Size: #MM#

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

NOTES

NO.	DATE	REVISIONS
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
REFERENCE DETAILS
DFO REF DWG: 22-35-294

SCALE: AS SHOWN
DATE: 2018-NOV-01
DRAWING NUMBER: **C8**
REVISION: 3

Valve	Location	Pond #	Diameter (mm)	Diameter (inch)	Depth to Invert (m)	Work Required	Replacement Riser and Gear Operator Type (see DWG. C9)	Notes
1	Pond	1	100	4	3.4	Remove and Replace Valve, Riser and Operator	2	
2	Pond	1	75	3	2.6	Remove and Replace Valve, Riser and Operator	2	
3	Pond	2	100	4	3.4	Remove and Replace Valve, Riser and Operator	2	
4	Pond	2	75	3	2.6	Remove and Replace Valve, Riser and Operator	2	
5	Pond	3	75	3	2.6	Remove and Replace Valve, Riser and Operator	2	
6	Pond	3	100	4	3.4	Remove and Replace Valve, Riser and Operator	2	
7	Pond	4	75	3	2.6	Remove and Replace Valve, Riser and Operator	2	
8	Pond	4	100	4	3.4	Remove and Replace Valve, Riser and Operator	2	
9	Pond	5	100	4	2.6	Remove and Replace Valve, Riser and Operator	2	
10	Pond	5	150	6	3.4	Remove and Replace Valve, Riser and Operator	2	
11	Pond	6	100	4	2.6	Remove and Replace Valve, Riser and Operator	2	
12	Pond	6	150	6	3.4	Remove and Replace Valve, Riser and Operator	2	
13	Mainline		350	14	2.6	Remove and Replace Valve, Riser and Operator	1	
14	Mainline		350	14	2.6	Remove and Replace Valve, Riser and Operator	1	
15	Mainline		500	20	3.4	Remove and Replace Valve, Riser and Operator	1	
16	Pond	7	150	6	2.6	Remove and Replace Valve, Riser and Operator	2	
17	Pond	7	150	6	3.4	Remove and Replace Valve, Riser and Operator	2	
18	Mainline		500	20	3.4	Remove and Replace Valve, Riser and Operator	1	
19	Pond	8	100	4	2.6	Remove and Replace Valve, Riser and Operator	2	
20	Pond	8	150	6	3.4	Remove and Replace Valve, Riser and Operator	2	
21	Pond	9	100	4	2.6	Remove and Replace Valve, Riser and Operator	2	
22	Pond	9	150	6	3.4	Remove and Replace Valve, Riser and Operator	2	
23	Pond	10	100	4	2.6	Remove and Replace Valve, Riser and Operator	2	
24	Pond	10	150	6	3.4	Remove and Replace Valve, Riser and Operator	2	
25	Bypass No 1		450	18	2	Remove and Replace Valve, Riser and Operator	1	
26	Mainline		500	20	3.4	Remove and Replace Valve, Riser and Operator	1	
27	Pond	11	250	10	3.4	Remove and Replace Valve, Riser and Operator	2	
28	Pond	11	150	6	2.6	Remove and Replace Valve, Riser and Operator	2	
29	Bypass No 2		350	14	3.4	Remove and Replace Valve, Riser and Operator	1	
30	Air Relief Valve		25	1	2	Remove and Replace Valve, Riser and Operator	N/A	25mm Corp stop and thredolet into steel pipe fitting - Air Relief Valve
31	Mainline		500	20	3.4	Remove and Replace Valve, Riser and Operator	1	
32	Pond	12	150	6	2.6	Remove and Replace Valve, Riser and Operator	2	
33	Pond	12	250	10	3.4	Remove and Replace Valve, Riser and Operator	2	
34	Mainline		500	20	3.4	Remove and Replace Valve, Riser and Operator	1	
35	Pond	13	250	10	3.4	Remove and Replace Valve, Riser and Operator	2	
36	Pond	13	150	6	2.6	Remove and Replace Valve, Riser and Operator	2	
37	Pond	14	150	6	2.6	Remove and Replace Valve, Riser and Operator	2	
38	Pond	14	250	10	3.4	Remove and Replace Valve, Riser and Operator	2	
39	Mainline		350	14	2.4	Remove and Replace Valve, Riser and Operator	1	
40	Mainline		350	14	2.4	Remove and Replace Valve, Riser and Operator	1	
41	Mainline		350	14	3.1	Remove and Replace Valve, Riser and Operator	1	
42	Mainline		150	6	3.1	Remove and Replace Valve, Riser and Operator	1	
43	Mainline		350	14	3.1	Remove and Replace Valve, Riser and Operator	1	
44	Mainline		350	14	3.1	Remove and Replace Valve, Riser and Operator	1	
45	Bypass No 2		350	14	3.1	Remove and Replace Valve, Riser and Operator	1	
46	Mainline		350	14	2.6	Remove and Replace Valve, Riser and Operator	1	
47	Mainline		500	20	3.4	Remove and Replace Valve, Riser and Operator	1	



Printed by: Des. Southwest Plot Date: 21-Feb-19 Path: \\msnms01\Projects\311\AC-CAD\311\DWG_Sheet_0000.dwg

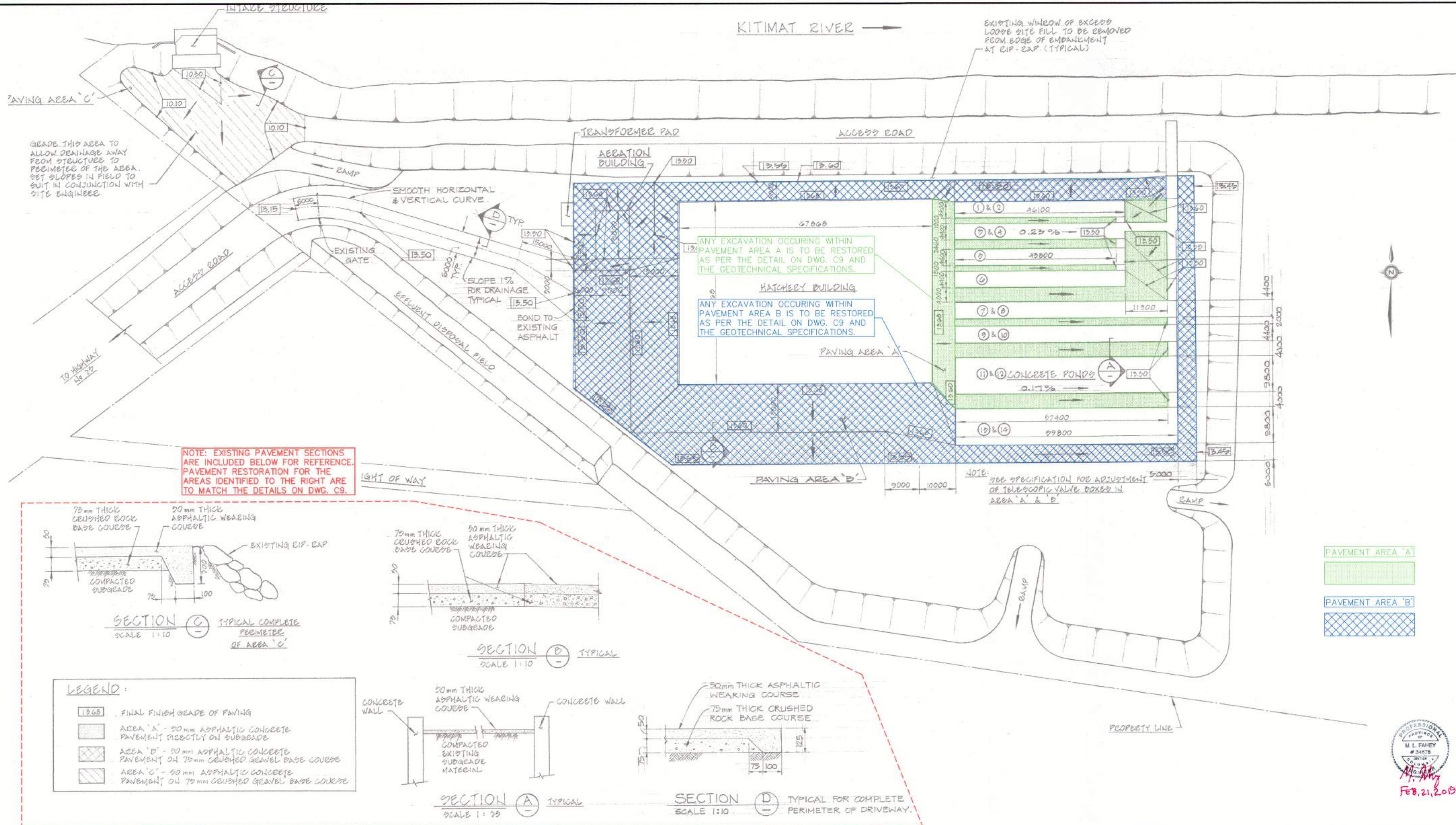
FISHERIES AND OCEANS CANADA REAL PROPERTY AND TECHNICAL SUPPORT		SCALE NTS
KITIMAT RIVER HATCHERY VALVE REPLACEMENT SCHEDULE OF MATERIALS		DATE 2018-NOV-01
		DRAWING NUMBER C10
		REVISION 3

NO.	DATE	REVISIONS
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

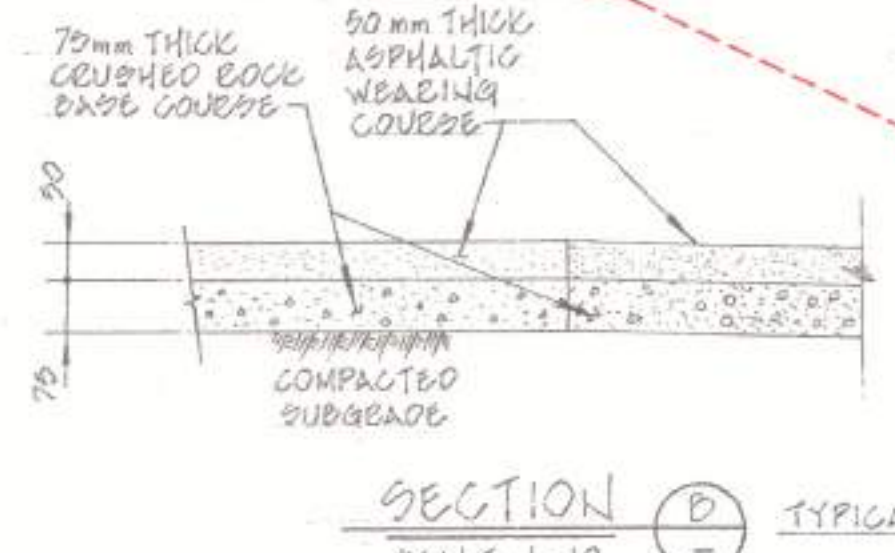
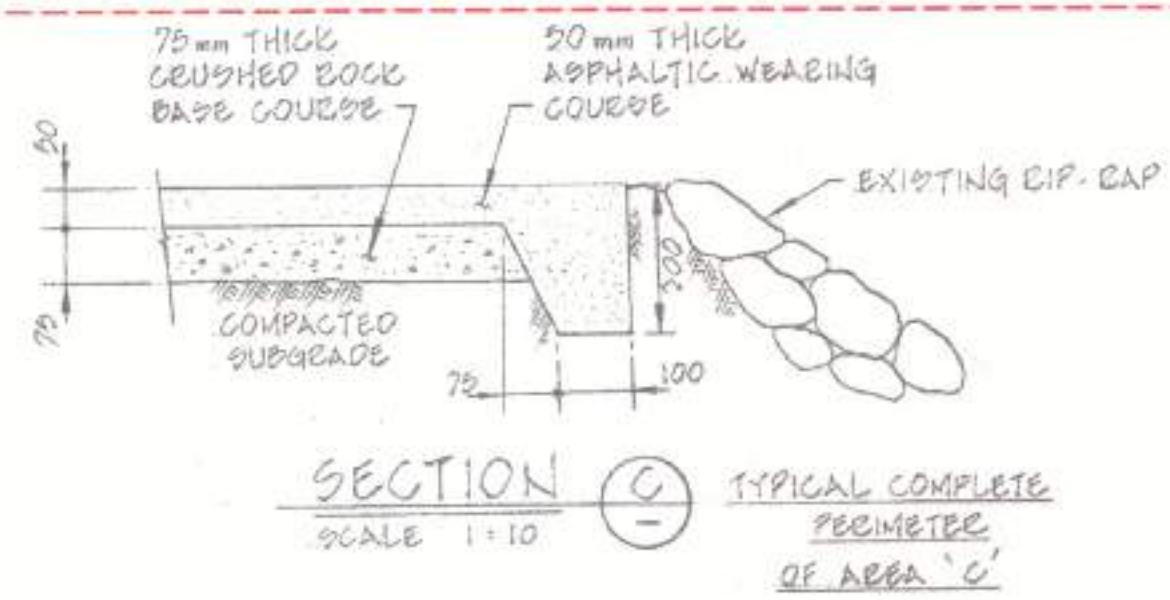
NOTES

KITMAT RIVER

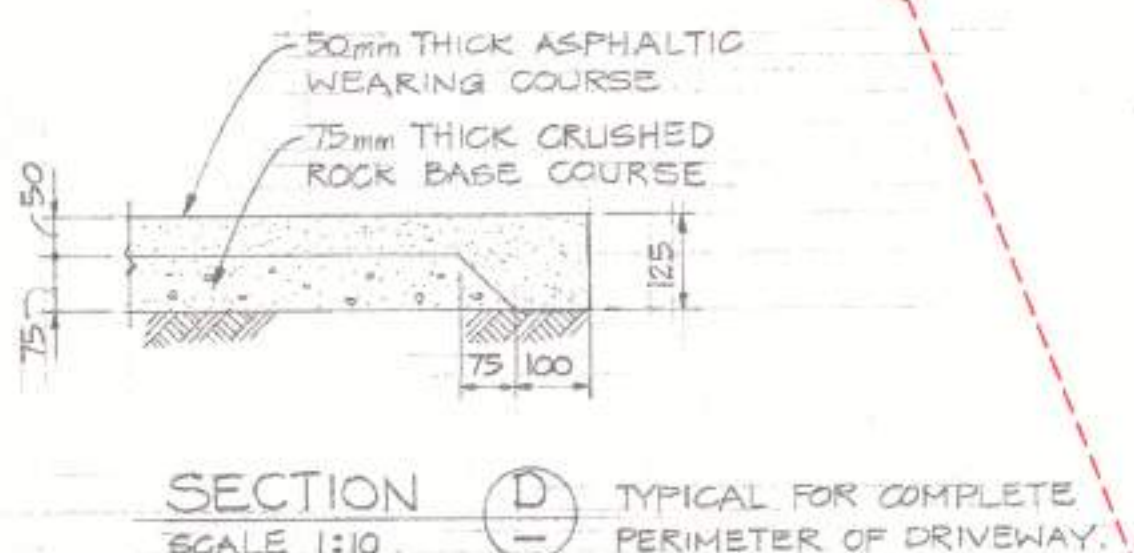
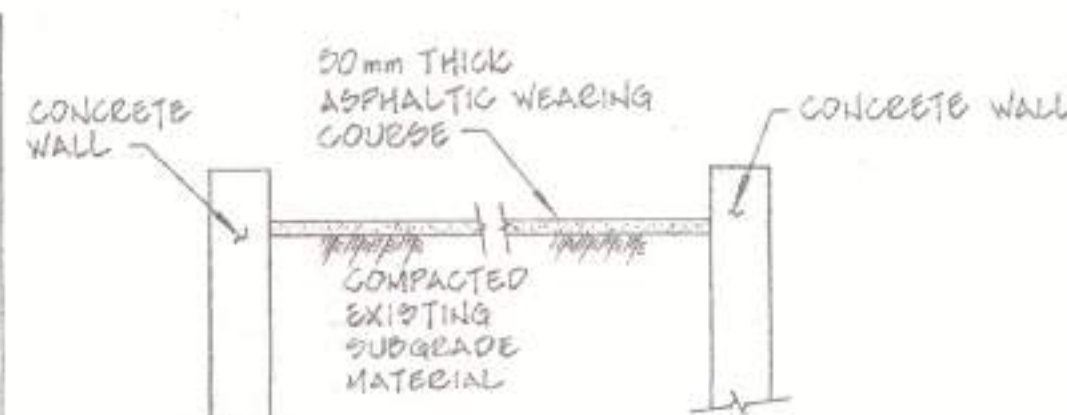
EXISTING WINDOW OF EXCESS
LOOSE SITE FILL TO BE REMOVED
FROM EDGE OF EMBANKMENT
AT CIP-CAP. (TYPICAL)



NOTE: EXISTING PAVEMENT SECTIONS
ARE INCLUDED BELOW FOR REFERENCE.
PAVEMENT RESTORATION FOR THE
AREAS IDENTIFIED TO THE RIGHT ARE
TO MATCH THE DETAILS ON DWG. C9.



- LEGEND:**
- 13.65 FINAL FINISH GRADE OF PAVING
 - AREA 'A' - 20mm ASPHALTIC CONCRETE PAVEMENT DIRECTLY ON SUBGRADE
 - AREA 'B' - 20mm ASPHALTIC CONCRETE PAVEMENT ON 75mm CRUSHED GRAVEL BASE COURSE
 - AREA 'C' - 20mm ASPHALTIC CONCRETE PAVEMENT ON 75mm CRUSHED GRAVEL BASE COURSE



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

NOTES

NO.	DATE	REVISIONS
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

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

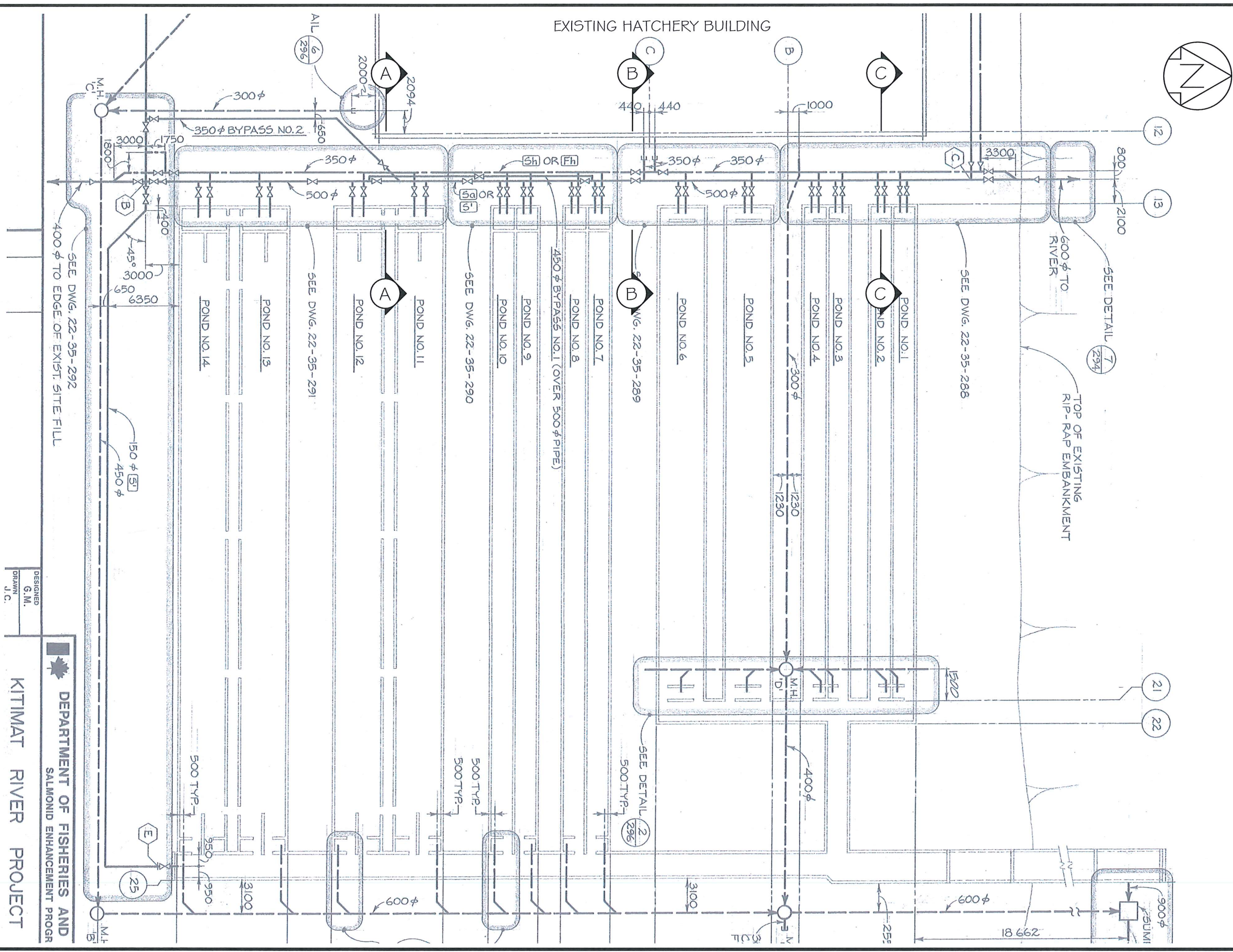
SCALE
1:500

DATE
2018-NOV-01

DRAWING NUMBER
C11

REVISION
3

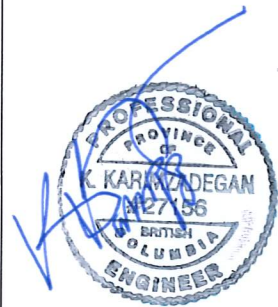
12-Mar-19, 9:57:33 AM, Bronson, N:\2018 Projects\118-4459 Kitimat River Hatchery Drawings\118-4459 Temporary Excavation Sloped w Cages R1 IFT.dwg



DESIGNED
G.M.
DRAWN
J.C.

DEPARTMENT OF FISHERIES AND SALMONID ENHANCEMENT PROGRAM
KITIMAT RIVER PROJECT

REFERENCE DRAWINGS
Department of Fisheries and Oceans (DFO), Kitimat River Project
Contract No.6, Drawings: 22-35-286 to 22-35-293,
Contract No.3, Drawings: 22-35-156 to 22-35-159.



March 21, 2019

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1	12Mar/19	Issued for Tender
NO	DATE	REVISION



Department of Fisheries and Oceans Canada
200-401 Burrard Street
Vancouver, BC

VALVES REPLACEMENT
Kitimat River Hatchery
Kitimat, BC

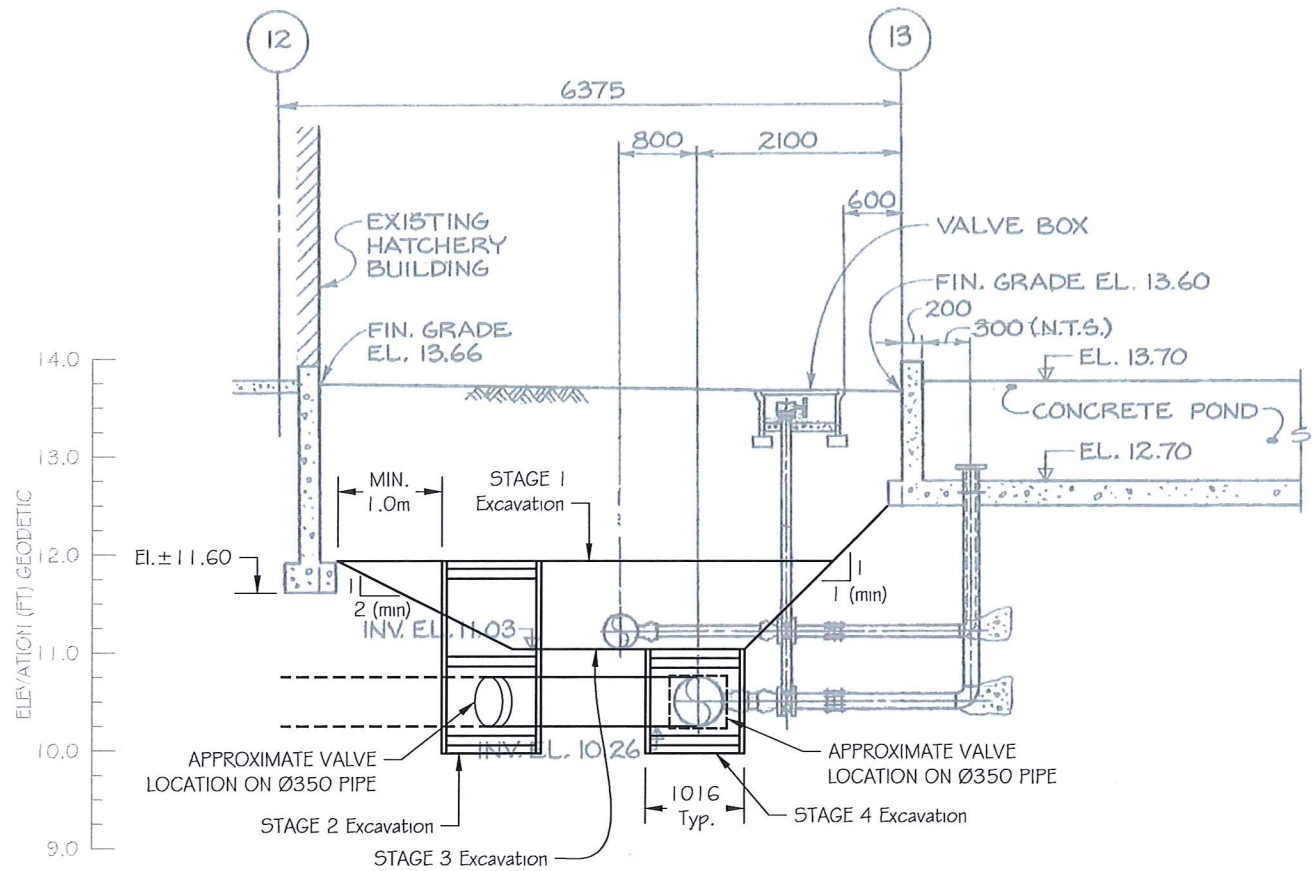
Temporary Excavation
SITE PLAN

SCALE	NTS	DATE	NOV/2018
DESIGN	AC	DRAWN	BB
FIGURE		CHECKED	KK

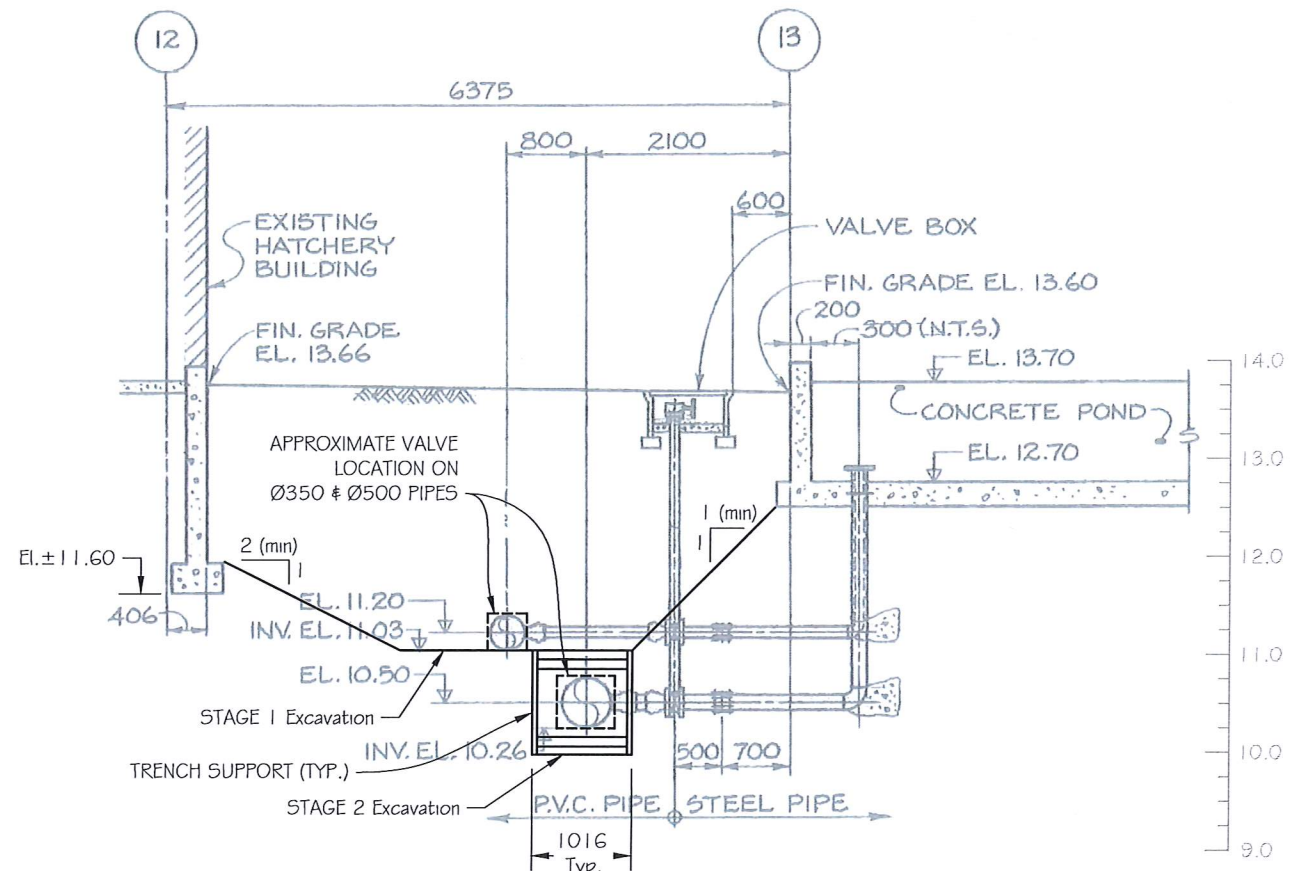
G1 OF 2

FILE NUMBER
118-4459

12-Mar-19, 9:57:33 AM, Bronson, N:\2018 Projects\118-4459 Kitimat River Hatchery\Drawings\118-4459 Temporary Excavation Sloped w Cages R1 IFT.dwg



Section A-A
Scale: 1 : 75



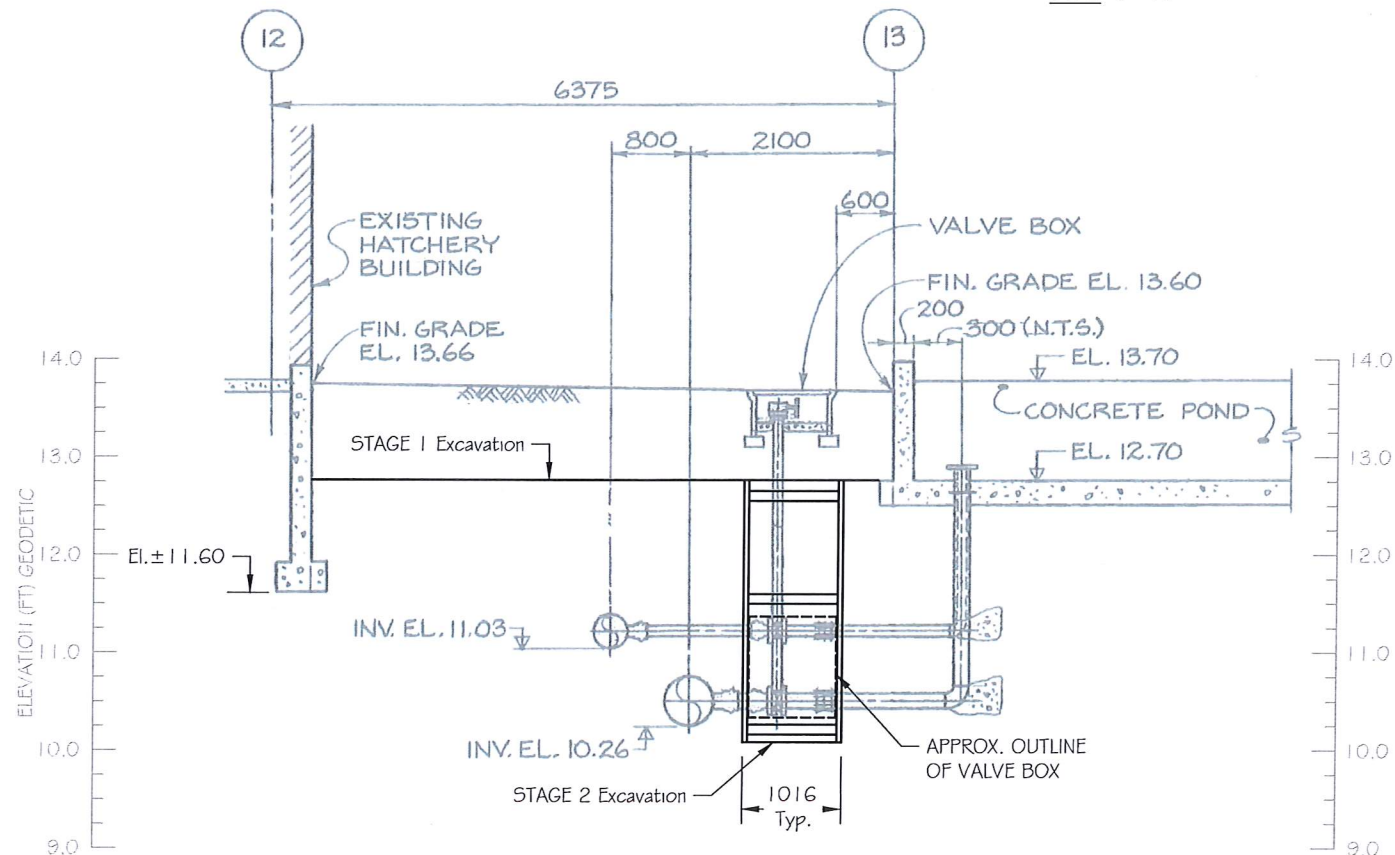
Section B-B
Scale: 1 : 75

NOTES:

- CONTRACTOR TO CONFIRM FOOTING ELEVATION OF EXISTING HATCHERY BUILDING PRIOR TO EXCAVATION.
- DETAILS OF TRENCH SUPPORT MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER.
- CONTRACTOR TO CONFIRM UTILITY OFFSETS AND DEPTHS PRIOR TO EXCAVATION (REFER TO REFERENCE DRAWINGS).

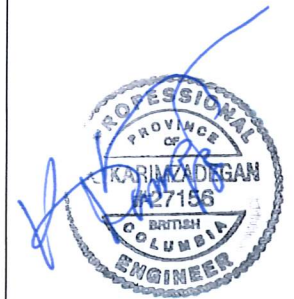
EXCAVATION SEQUENCE:

1. EXCAVATE TO STAGE 1 MAINTAINING MINIMUM EXCAVATION SLOPES. THE EXTENT OF EXCAVATION OF THIS STAGE TO BE DETERMINED ON SITE,
2. REPLACE VALVE AT STAGE 1 EXCAVATION DEPTH,
3. ADVANCE TRENCH EXCAVATION AND INSTALL TRENCH SUPPORT SYSTEM,
4. REPLACE VALVE AT TRENCH ELEVATION,
5. BACKFILL TRENCH EXCAVATION IN ACCORDANCE WITH GEOTECHNICAL RECOMMENDATIONS (SEE SPECIFICATIONS). REMOVE TRENCH SUPPORT AS BACKFILL INSTALLATION PROCEEDS.
6. REPEAT STEPS 3 TO 5 AS REQUIRED.
5. BACKFILL EXCAVATION IN ACCORDANCE WITH GEOTECHNICAL RECOMMENDATIONS (SEE SPECIFICATIONS).



Section C-C
Scale: 1 : 75

REFERENCE DRAWINGS
Department of Fisheries and Oceans (DFO), Kitimat River Project
Contract No.6, Drawings: 22-35-286 to 22-35-293.
Contract No.3, Drawings: 22-35-156 to 22-35-159.



March 21, 2019

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1	12Mar/19	Issued for Tender
NO	DATE	REVISION



Department of Fisheries and Oceans Canada
200-401 Burrard Street
Vancouver, BC

VALVES REPLACEMENT
Kitimat River Hatchery
Kitimat, BC

Temporary Excavation
SECTIONS

SCALE	AS SHOWN	DATE	NOV/2018
DESIGN	AC	DRAWN	BB
		CHECKED	KK

FIGURE
G2 OF 2

FILE NUMBER
118-4459



KITIMAT RIVER HATCHERY VALVE REPLACEMENT

283 HAISLA BLVD
KITIMAT, B.C.

REFERENCE RECORD DRAWINGS

DFO KITIMAT RIVER

DWG No.	DRAWING TITLE
22-35-5	UPDATED SITE PLAN

DFO KITIMAT RIVER PROJECT, CONTRACT NO 1

DWG No.	DRAWING TITLE
22-35-2	SITE PREPARATION SITE AND ACCESS ROAD PLAN
22-35-3	SITE PREPARATION SITE AND ACCESS ROAD FILL PROFILES AND SECTION

DFO KITIMAT RIVER PROJECT, CONTRACT NO 10

DWG No.	DRAWING TITLE
22-35-420	HATCHERY SITE PAVING PAVEMENT LAYOUT PLAN

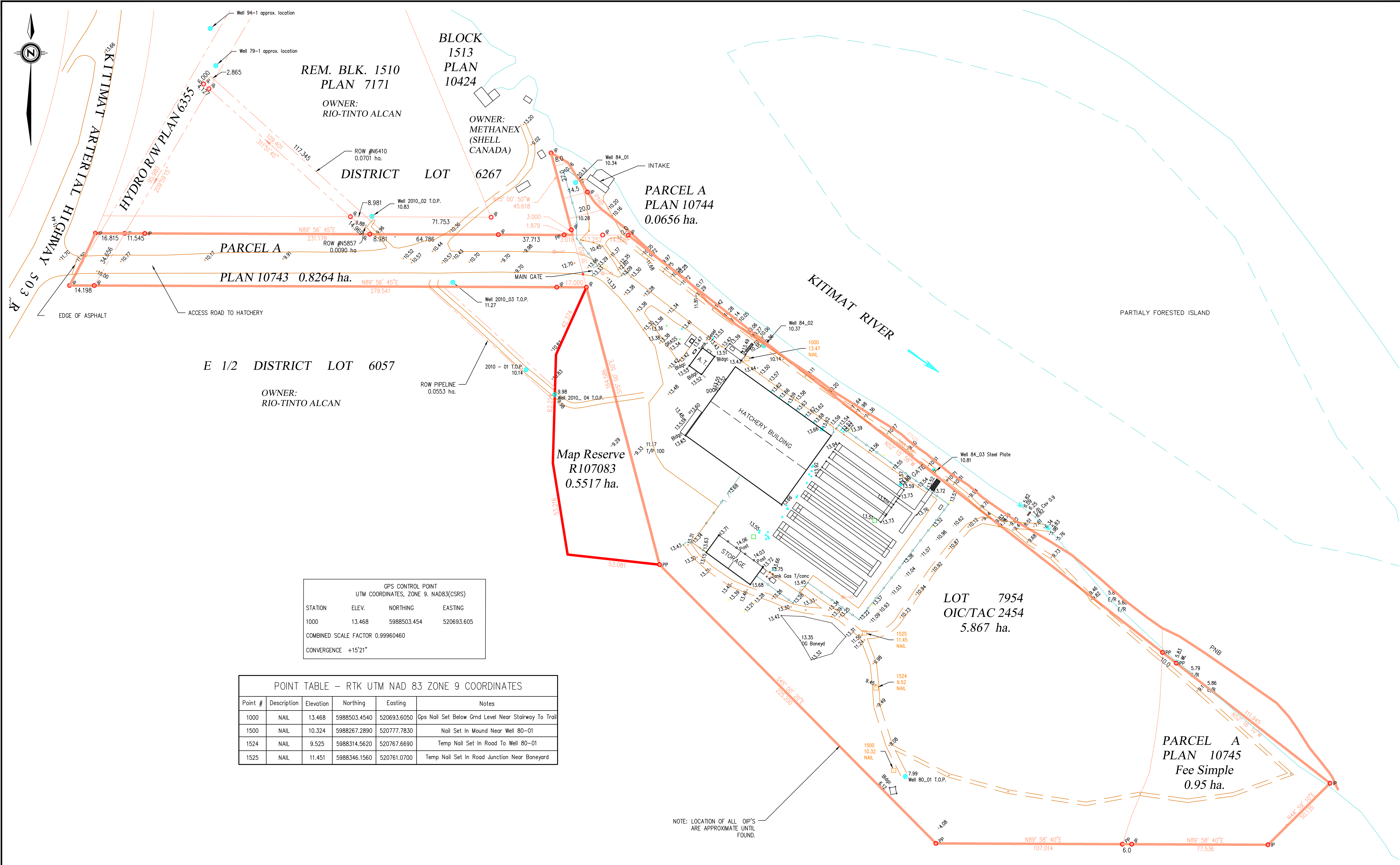
DFO KITIMAT RIVER PROJECT, CONTRACT NO 6

DWG No.	DRAWING TITLE
22-35-272	PONDS 1, 2, 3, 4 CONCRETE OUTLINE
22-35-273	PONDS 5, 6 CONCRETE OUTLINE
22-35-274	TRANSPORTATION PIPE LOCATION & LAYOUT DETAIL
22-35-286	BURIED PIPELINES GENERAL LAYOUT
22-35-287	WATER SUPPLY PIPING PROFILES
22-35-288	PONDS 1, 2, 3, 4 WATER SUPPLY DETAIL
22-35-289	PONDS 5 & 6 WATER SUPPLY DETAILS
22-35-290	PONDS 7, 8, 9, 10 WATER SUPPLY DETAILS
22-35-291	PONDS 11, 12, 13, 14 WATER SUPPLY DETAILS
22-35-292	TRANSPORTATION CHANNEL WATER SUPPLY DETAILS
22-35-293	WATER SUPPLY PIPING MISCELLANEOUS DETAILS
22-35-294	WATER SUPPLY PIPING MISCELLANEOUS DETAILS
22-35-295	DRAINAGE PIPING PROFILES
22-35-296	DRAINAGE PIPING DETAIL PLAN & SECTIONS
22-35-297	DRAINAGE PIPING DETAIL PLAN & SECTIONS
22-35-298	CHANNEL LIGHTING, GROUNDING AND ALARM LAYOUTS
22-35-299	SECTIONS, DETAILS AND SCHEMATICS

Path: filename: U:\My Documents\My Data\2013\Fisc\Kitimat River\Site Plan.dwg

Size: ISO Expand A1 (841.00 X 594.00 MM)

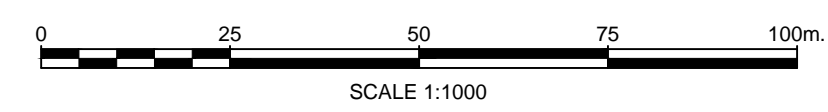
Plotted: 2/18/2011 8:08 AM Plotted by: Hill, Norman



GPS CONTROL POINT			
UTM COORDINATES, ZONE 9, NAD83(CSRS)			
STATION	ELEV.	NORTHING	EASTING
1000	13.468	5988503.454	520693.605
COMBINED SCALE FACTOR 0.99960460			
CONVERGENCE +15'21"			

POINT TABLE - RTK UTM NAD 83 ZONE 9 COORDINATES					
Point #	Description	Elevation	Northing	Easting	Notes
1000	NAIL	13.468	5988503.4540	520693.6050	Gps Nail Set Below Grnd Level Near Stairway To Trail
1500	NAIL	10.324	5988267.2890	520777.7830	Nail Set In Mound Near Well 80-01
1524	NAIL	9.525	5988314.5620	520767.6690	Temp Nail Set In Road To Well 80-01
1525	NAIL	11.451	5988346.1560	520761.0700	Temp Nail Set In Road Junction Near Boneyard

NOTE: LOCATION OF ALL OIP'S ARE APPROXIMATE UNTIL FOUND.



FISHERIES AND OCEANS CANADA
REAL PROPERTY AND SAFETY AND SECURITY

KITIMAT RIVER HATCHERY
UPDATED SITE PLAN

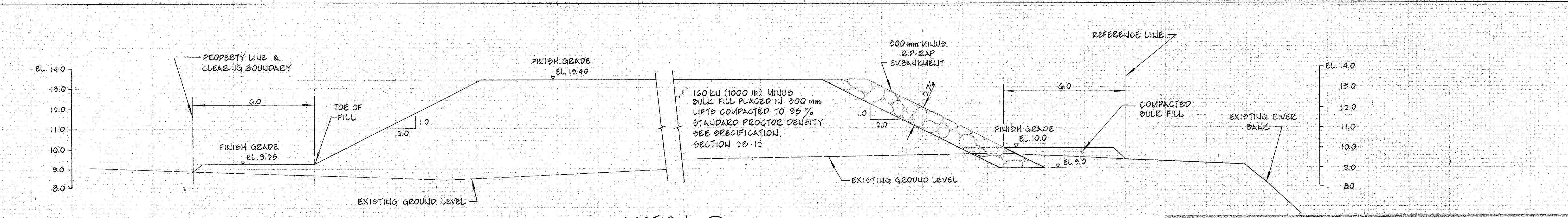
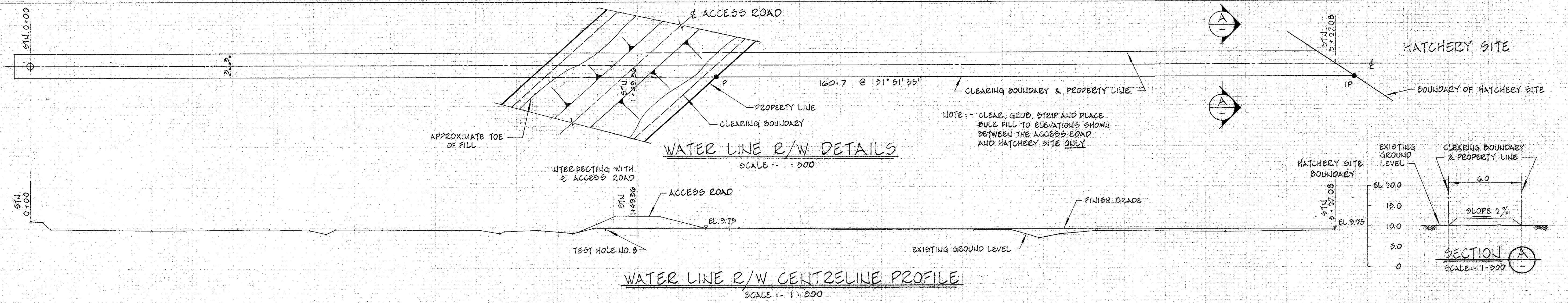
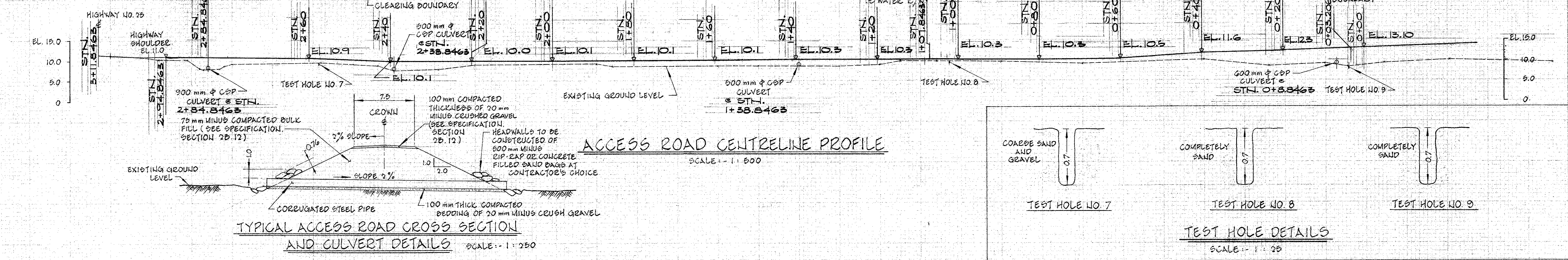
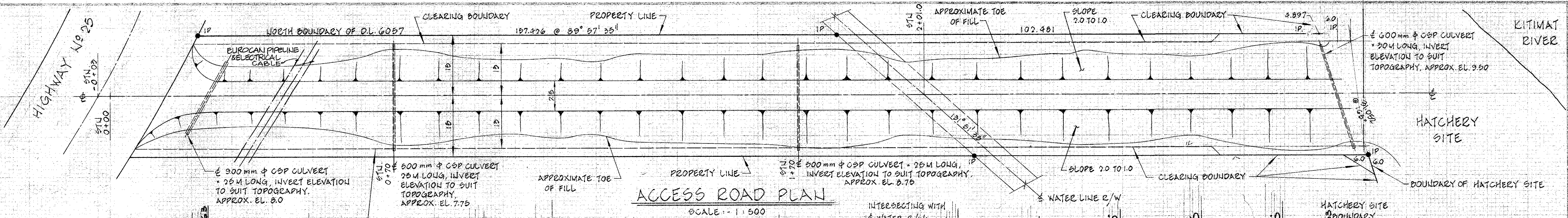
SCALE	1:1000
START DATE	02/08/2013
DRAWING NUMBER	22-35-5
	2

DWG. NO.	DRAWING REFERENCES
1. Plan 10743	REFERENCE PLAN OF PART OF DISTRICT LOT 6057, RANGE 5, COAST DISTRICT, APRIL 26, 1983, A.S. DOZZI, B.C.L.S.
2. Plan 10744	REFERENCE PLAN OF PART OF BLOCK 1510, DISTRICT LOT 6267, RANGE 5, COAST DISTRICT, APRIL 26, 1983, A.S. DOZZI
3. Plan 10745	REFERENCE PLAN OF PART OF DISTRICT LOT 6020, RANGE 5, COAST DISTRICT, APRIL 26, 1983, A.S. DOZZI
4. Plan 10921	STATUTORY RIGHT OF WAY THROUGH BLOCK 1500, DISTRICT LOTS 6050, 6053, 6054 AND 6057, PLAN 5744, THE EAST 1/2 OF DISTRICT LOT 6057, CLOSED ROAD (D.F. 19860) DISTRICT LOT 6057, PLAN 6637, BLOCK 1510, DISTRICT LOT 6267, PLAN 7171 AND BLOCK 1513, DISTRICT LOT 6267, PLAN 10424, ALL OF RANGE 5, COAST DISTRICT, EXCERPT, APRIL 27, 1983, ASD

NOTES	
1.	ALL DISTANCES ARE METRIC UNLESS OTHERWISE INDICATED.
2.	HORIZONTAL AND VERTICAL CONTROL BASED ON RTK GPS SURVEY. COORDINATES ARE UTM NAD83 ZONE 9.
3.	SURVEYED BY N. HILL ON JUNE 18TH, 2013 AND AUG. 08, 2013.
4.	TRUE GRID NORTH IS SHOWN HERE. ASTRONOMIC NORTH BEARINGS ARE SHOWN WITH LEGAL LOT LINE DISTANCES REDRAWN FROM REFERENCE PLANS.

NO.	DATE	REVISIONS
1.	30/09/2013	WELL 94-1 (N USE) AND WELL 79-1 (NOT IN USE) SHOWN IN APPROXIMATE LOCATION FROM KITIMAT WELL DRILLING EXPLORATION DRILLING TENDER DOCUMENT, FEB. 2010.
2.	02/10/2013	STATUTORY ROW UPDATED, PROPERTY OWNERS LABELED.

DESIGNED
DRAWN
Norm Hill
CHECKED
RECOMMENDED
APPROVED



DEPARTMENT OF FISHERIES AND OCEANS
SALMONID ENHANCEMENT PROGRAM

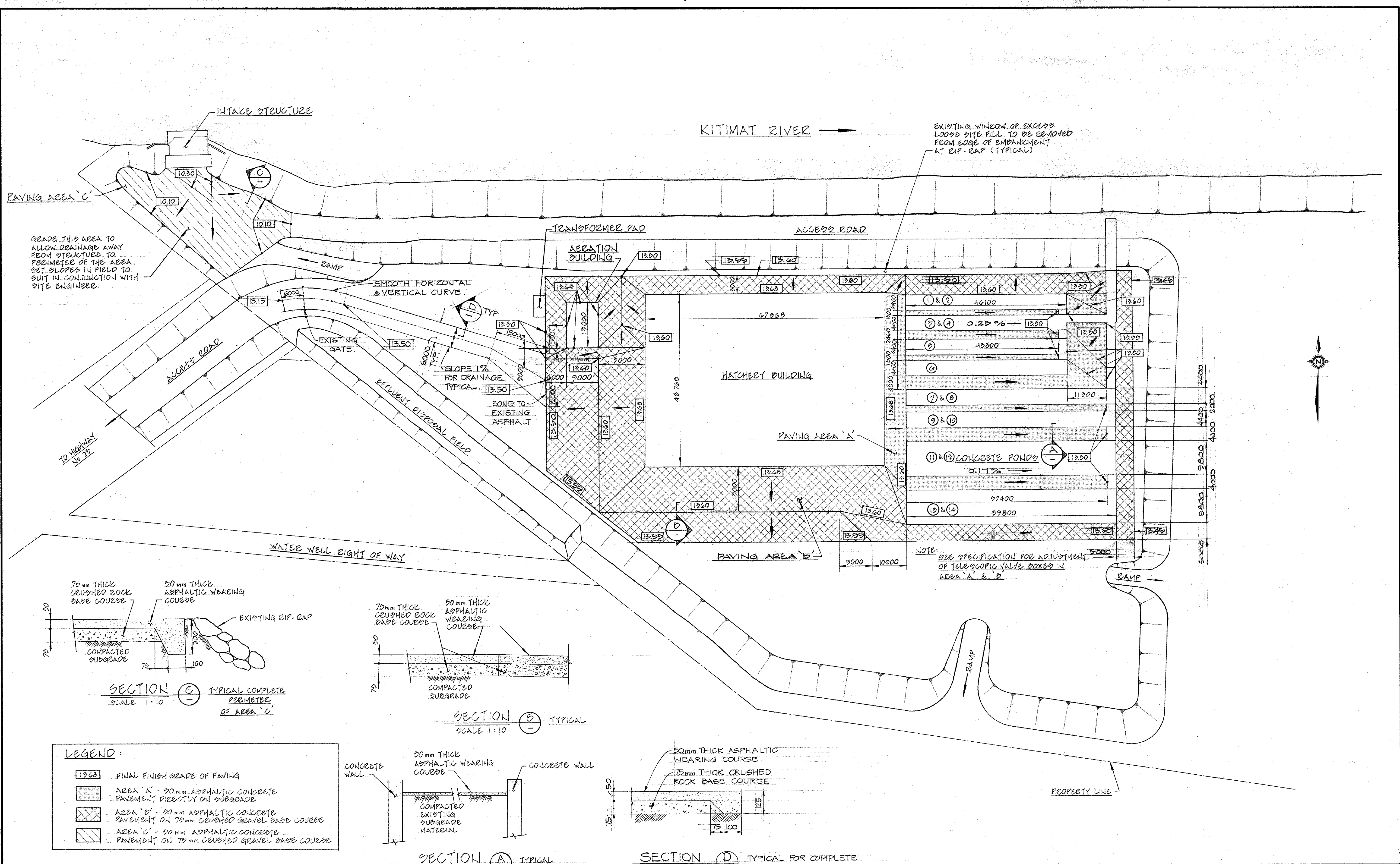
KITIMAT RIVER PROJECT
CONTRACT N° 1
SITE PREPARATION
SITE AND ACCESS ROAD
FILL PROFILES AND SECTIONS

DESIGNED: G.M. & K.S.
DRAWN: KEN SUN
CHECKED: G. MORRIS
RECOMMENDED: [Signature]
APPROVED: [Signature]

SCALE: AS SHOWN
DATE: JULY, 1980
DRAWING NUMBER: 22-35-3
REVISION:

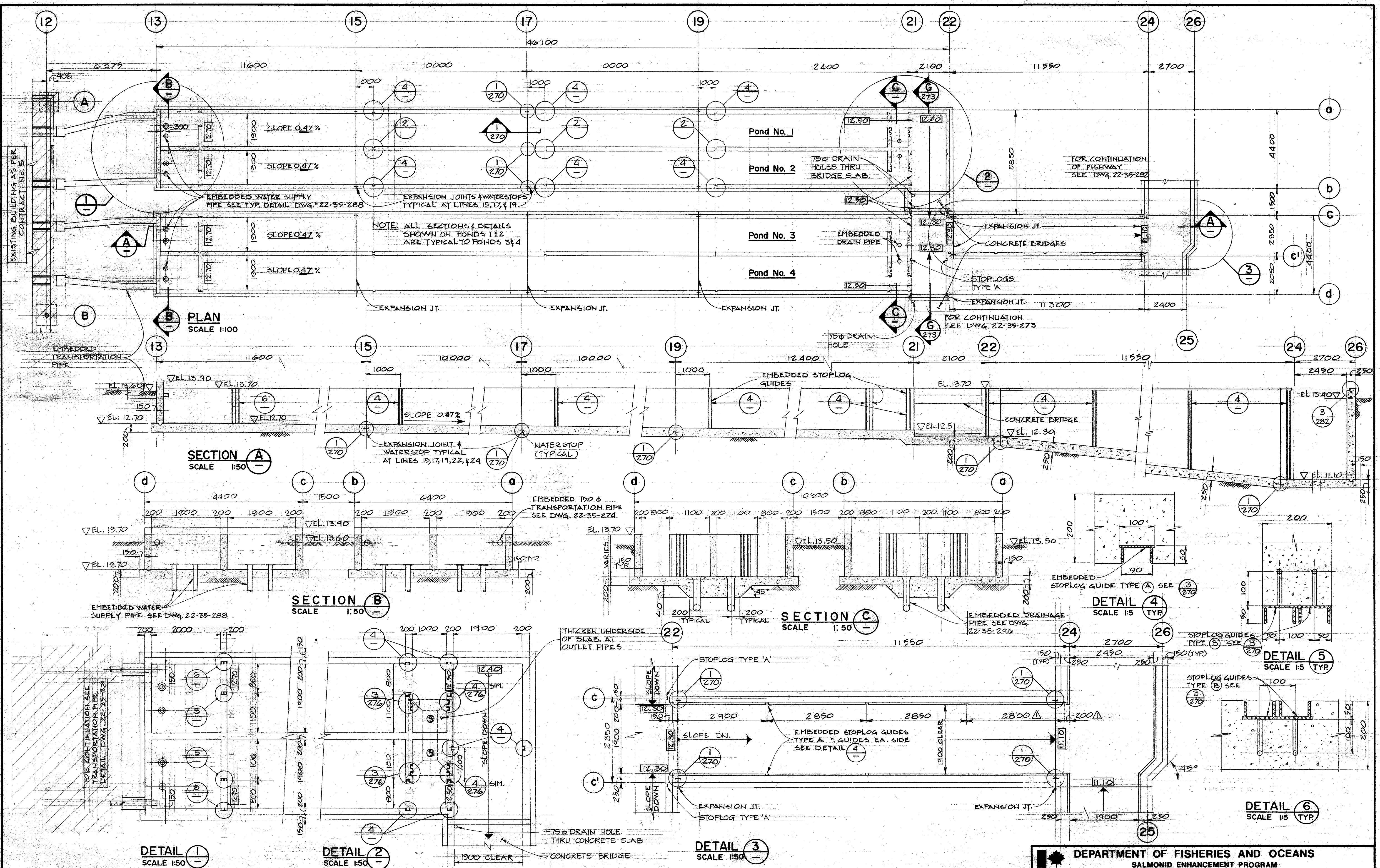
NO.	DATE	REVISIONS

DWG. NO. REFERENCE DRAWINGS NOTES



<p>1. PAVING AREAS 'A', 'B' & 'C' REFERENCED FOR SPECIFICATION PURPOSES (SEE SPECIFICATION DOCUMENTS).</p>		<p>DESIGNED I.R./G.M. DRAWN K.SUN CHECKED 12.6.11 RECOMMENDED APPROVED</p>		<p>DEPARTMENT OF FISHERIES AND OCEANS SALMONID ENHANCEMENT PROGRAM</p> <p>KITIMAT RIVER PROJECT CONTRACT N° 10 HATCHERY SITE PAVING PAVEMENT LAYOUT PLAN</p>		<p>SCALE 1:500</p> <p>DATE SEPT. 1983</p> <p>DRAWING NUMBER 22-35-420</p> <p>REVISION</p>
DWG. NO.	REFERENCE DRAWINGS	NO.	DATE	REVISIONS		

ECL 02841-0-02



1. PLUMBING DETAILS OMITTED IN THIS DRAWING FOR CLARITY.

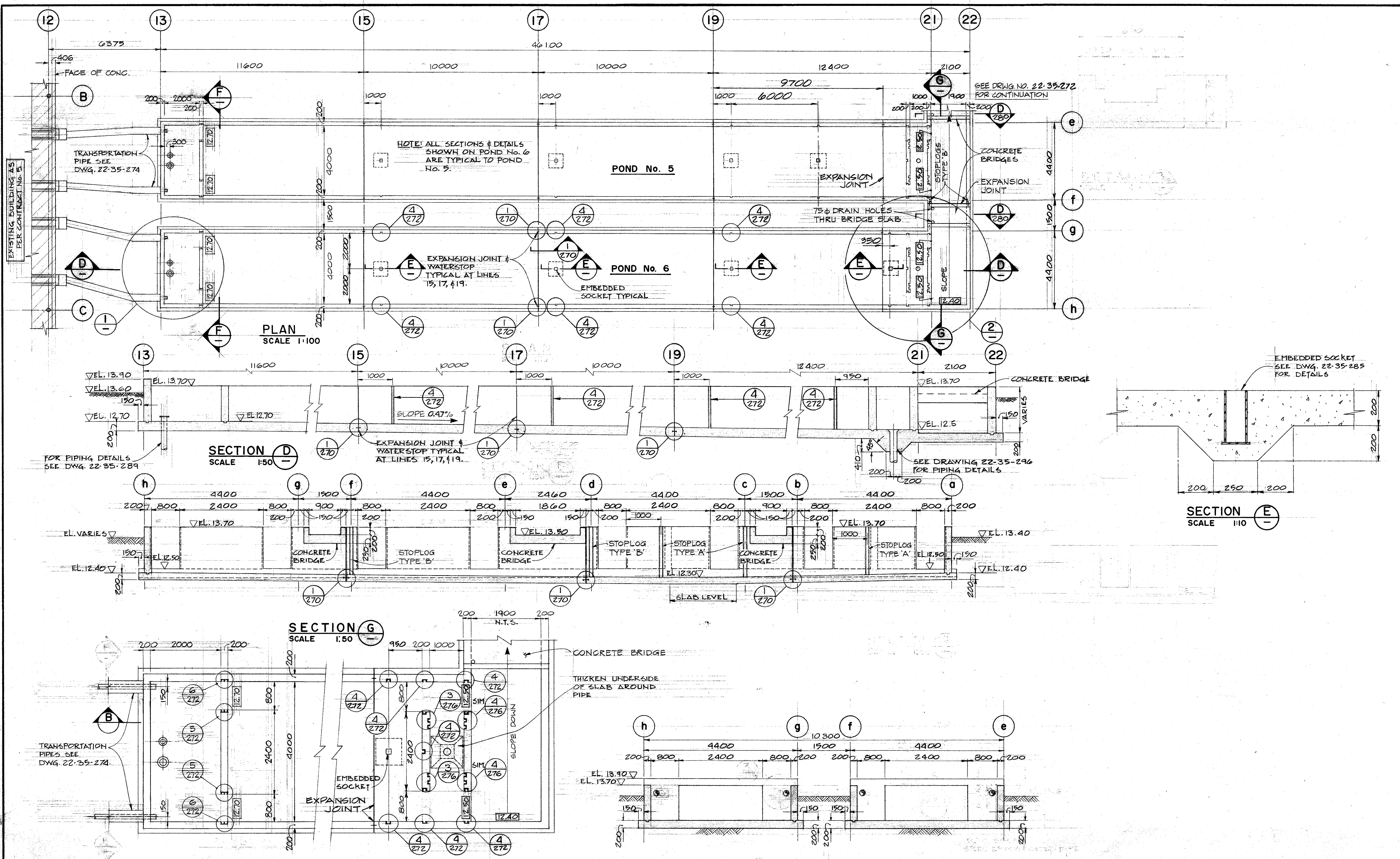
DESIGNED G.A. K.S.
 DRAWN D.C.S. M.M.C.
 CHECKED [Signature]
 RECOMMENDED [Signature]
 APPROVED [Signature]

DEPARTMENT OF FISHERIES AND OCEANS
 SALMONID ENHANCEMENT PROGRAM

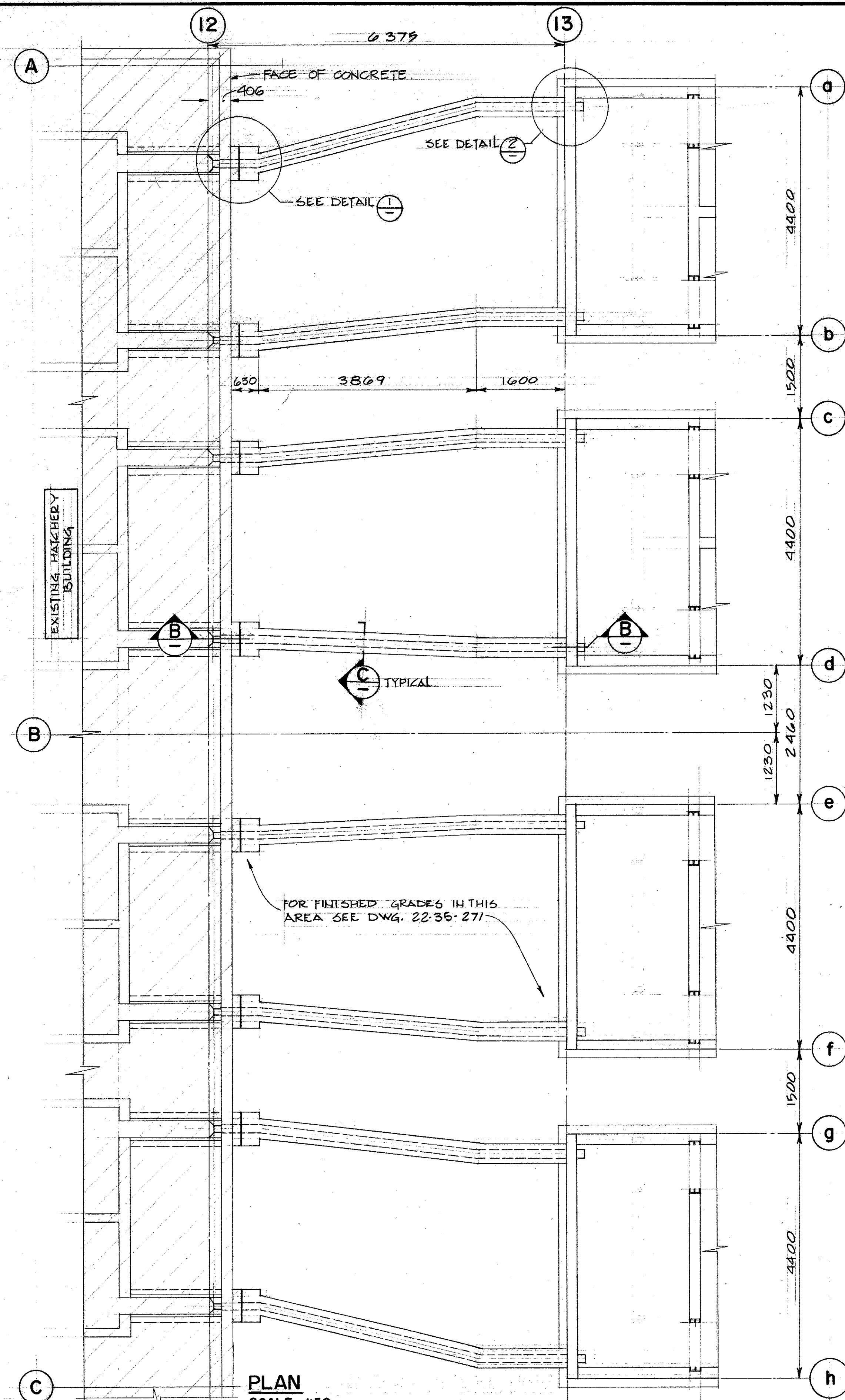
KITIMAT RIVER PROJECT
 CONTRACT No. 6
 PONDS 1,2,3,4
 CONCRETE OUTLINE

SCALE AS NOTED
DATE MAY, 1982
DRAWING NUMBER 22-35-272
REVISION 1

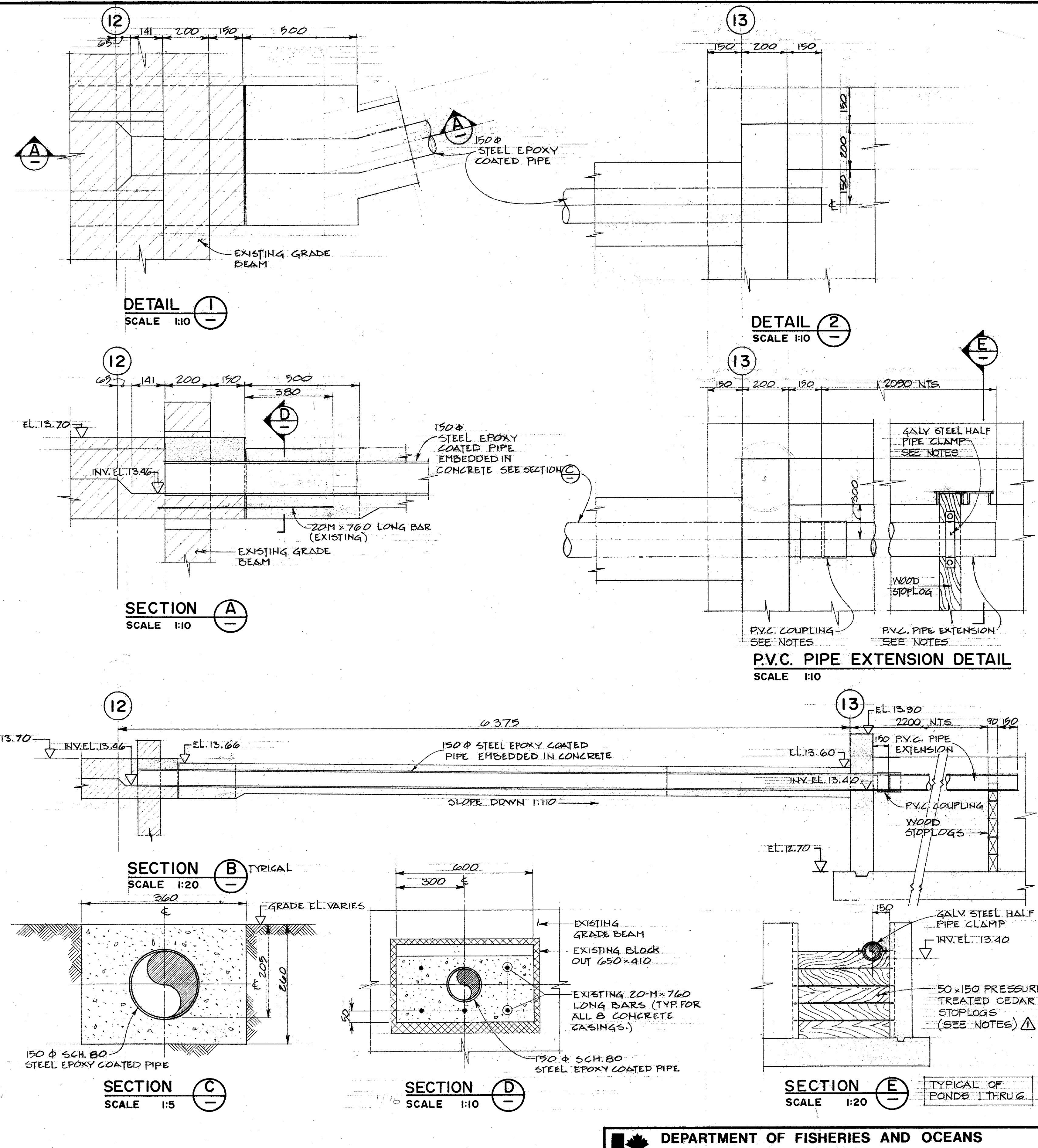
DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS
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DWG. NO. REFERENCE DRAWINGS		NOTES		DESIGNED T.S./G.M. DRAWN D.C.S./M.M.C. CHECKED APPROVED RECOMMENDED		DEPARTMENT OF FISHERIES AND OCEANS SALMONID ENHANCEMENT PROGRAM		SCALE AS SHOWN DATE MAY, 1982 DRAWING NUMBER 22-35-273 REVISION 1	
				MAR 85 AS BUILT		KITIMAT RIVER PROJECT CONTRACT No. 6 PONDS 5 & 6 CONCRETE OUTLINE			
				NO. DATE REVISIONS					



PLAN
SCALE 1:50



DETAIL 1
SCALE 1:10

DETAIL 2
SCALE 1:10

SECTION A
SCALE 1:10

P.V.C. PIPE EXTENSION DETAIL
SCALE 1:10

SECTION B TYPICAL
SCALE 1:20

SECTION C
SCALE 1:5

SECTION D
SCALE 1:10

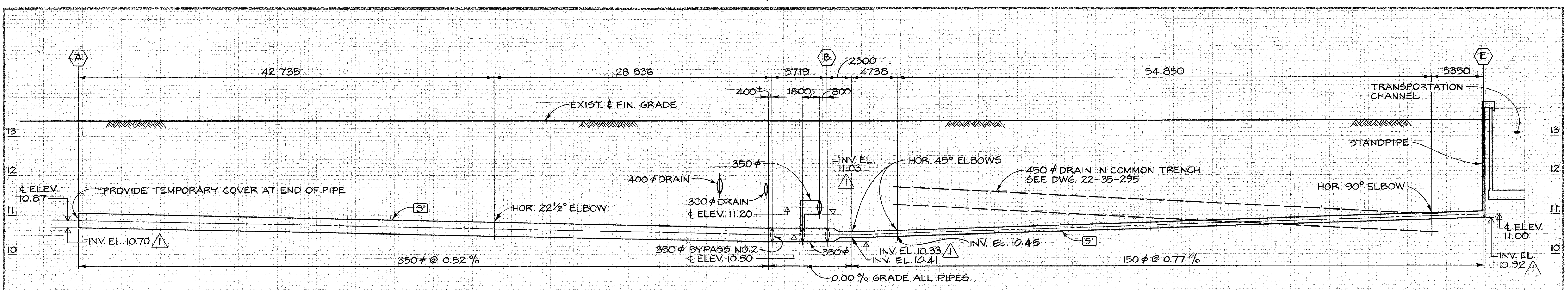
SECTION E
SCALE 1:20

DWG. NO.	REFERENCE DRAWINGS
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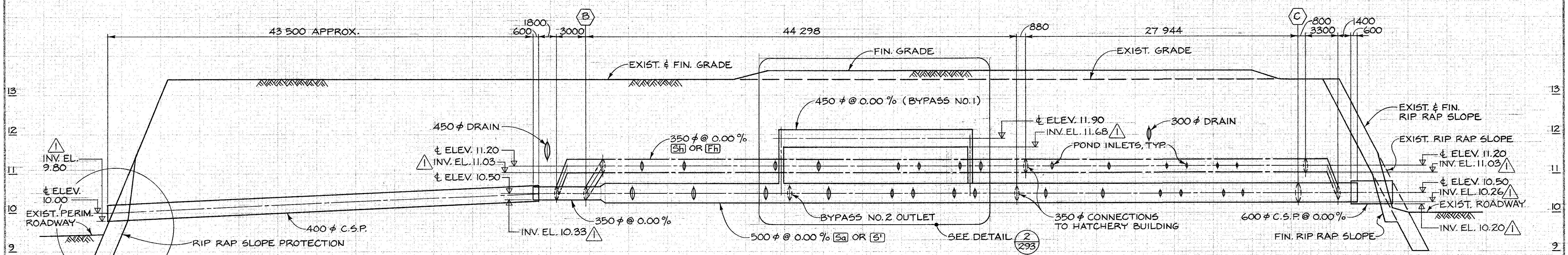
NOTES	<p>ALL P.V.C. COUPLING & PIPE EXTENSION, GALV. STEEL HALF PIPE CLAMPS ARE ALL SUPPLIED BY DEPT. AND INSTALLED BY CONTRACTOR.</p> <p>WOOD STOPLOGS TO BE SUPPLIED & INSTALLED BY CONTRACTOR.</p>
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NO.	DATE	REVISIONS
	JUNE 16, 1982	STOP LOGS TO BE SUPPLIED & INSTALLED BY CONTRACTOR. NOTES REVISED.

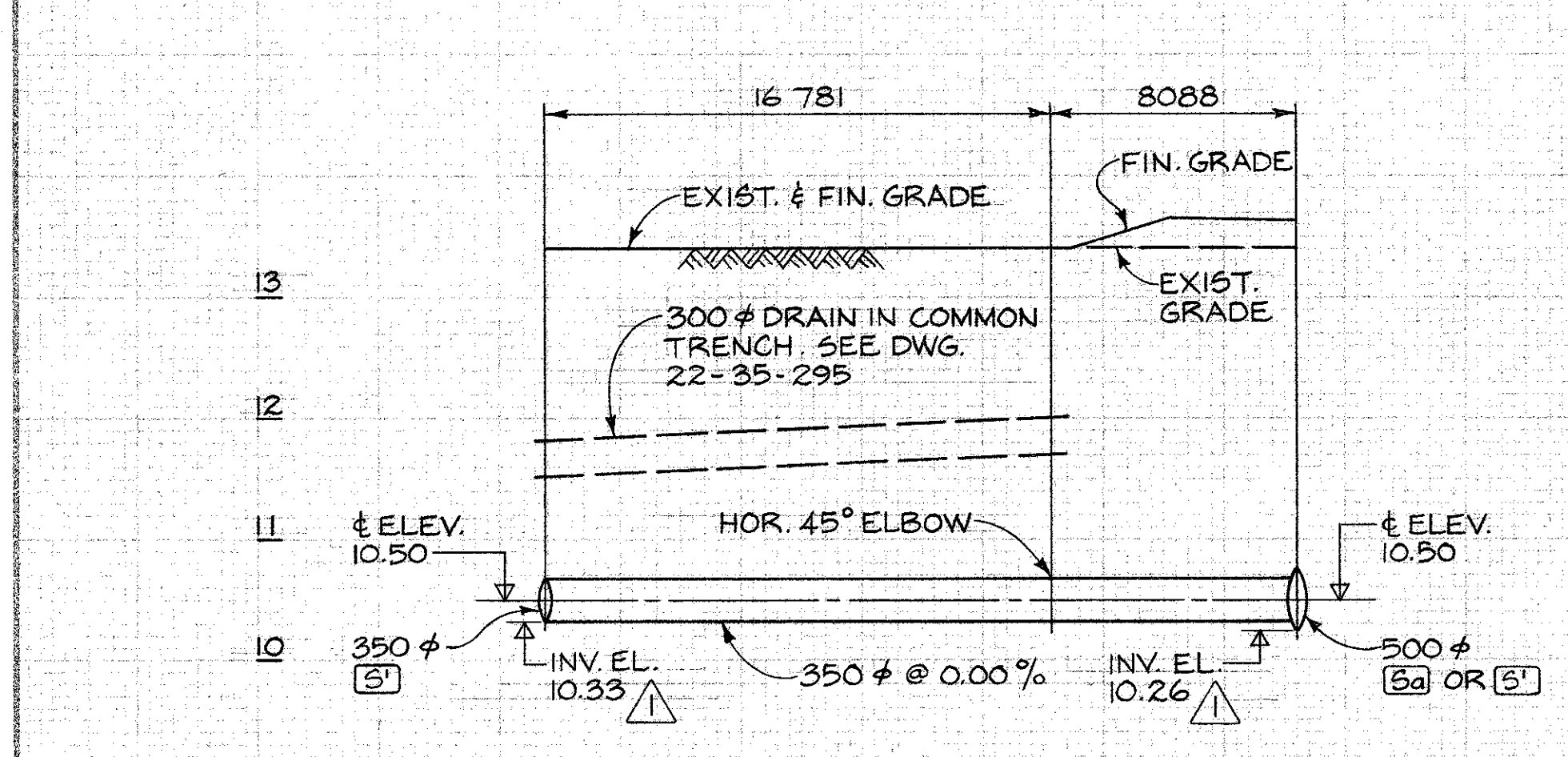
<p>DEPARTMENT OF FISHERIES AND OCEANS SALMONID ENHANCEMENT PROGRAM</p>	
<p>KITMAT RIVER PROJECT CONTRACT NO 6 TRANSPORTATION PIPE LOCATION & LAYOUT DETAIL</p>	
DESIGNED I.R.	SCALE AS SHOWN
DRAWN M.M.C.	DATE MAY, 1982
CHECKED M.A.	DRAWING NUMBER 22-35-274
RECOMMENDED M.M.C.	REVISION 1
APPROVED M.M.C.	
APPROVED M.M.C.	



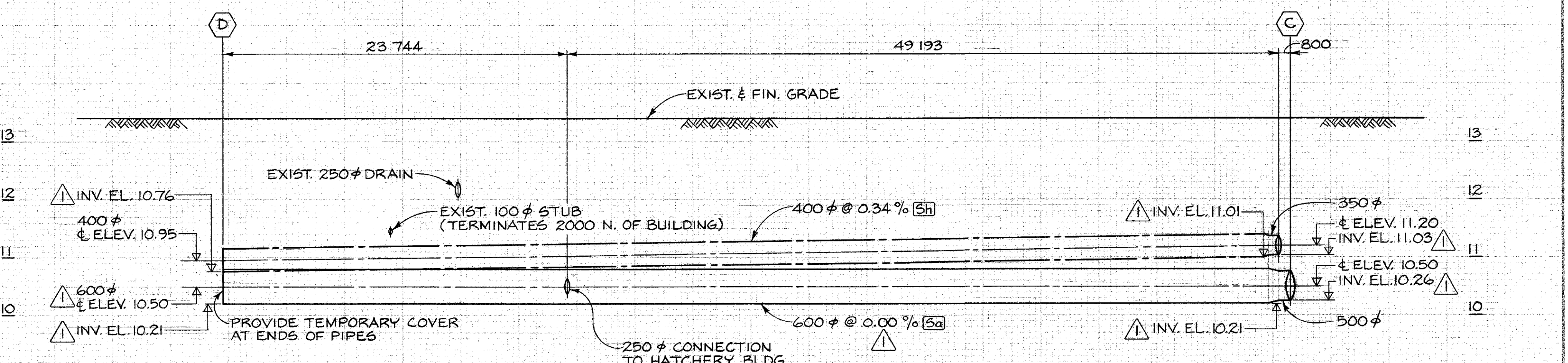
PROFILE A-B-E



PROFILE B-C

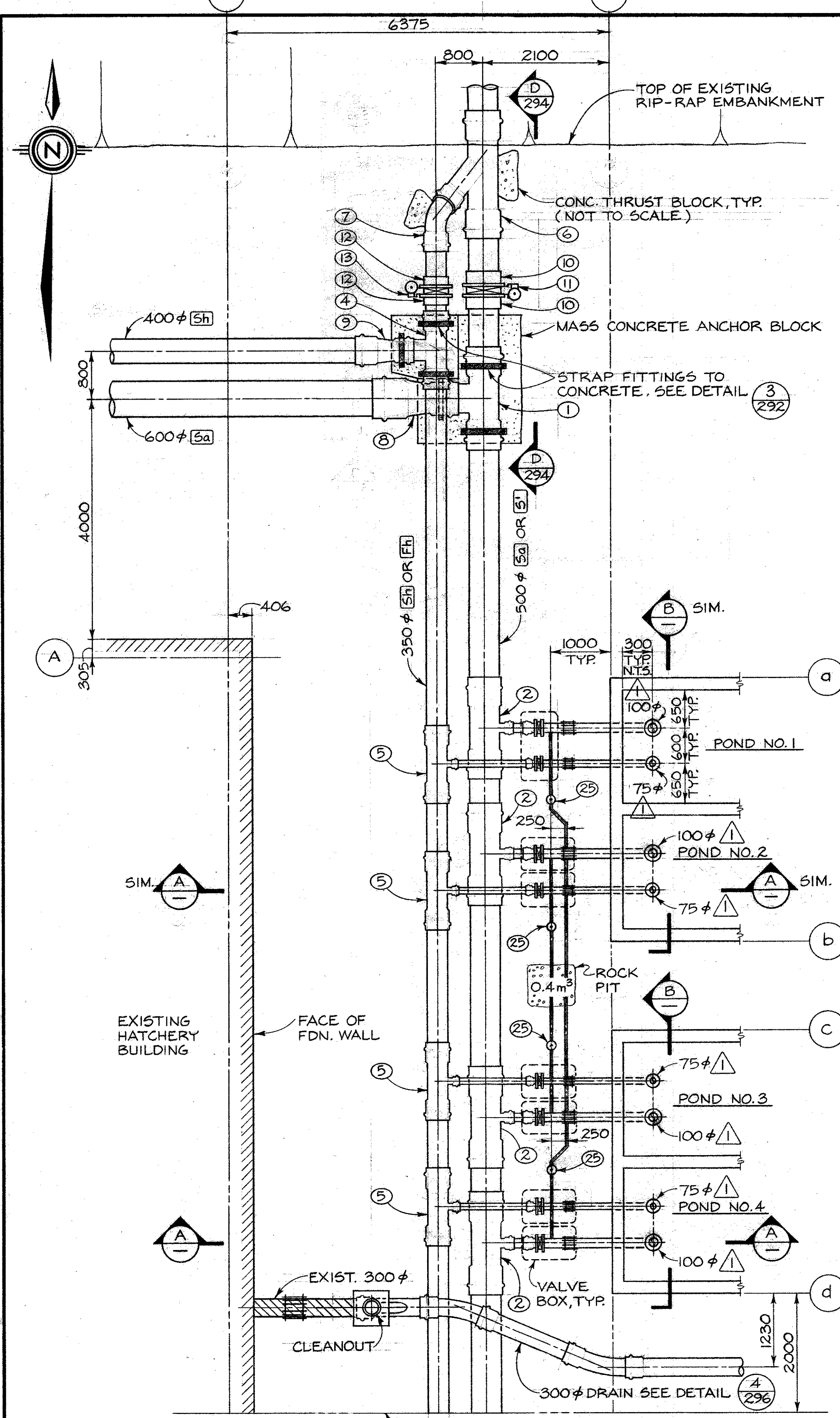


BYPASS NO 2 PROFILE



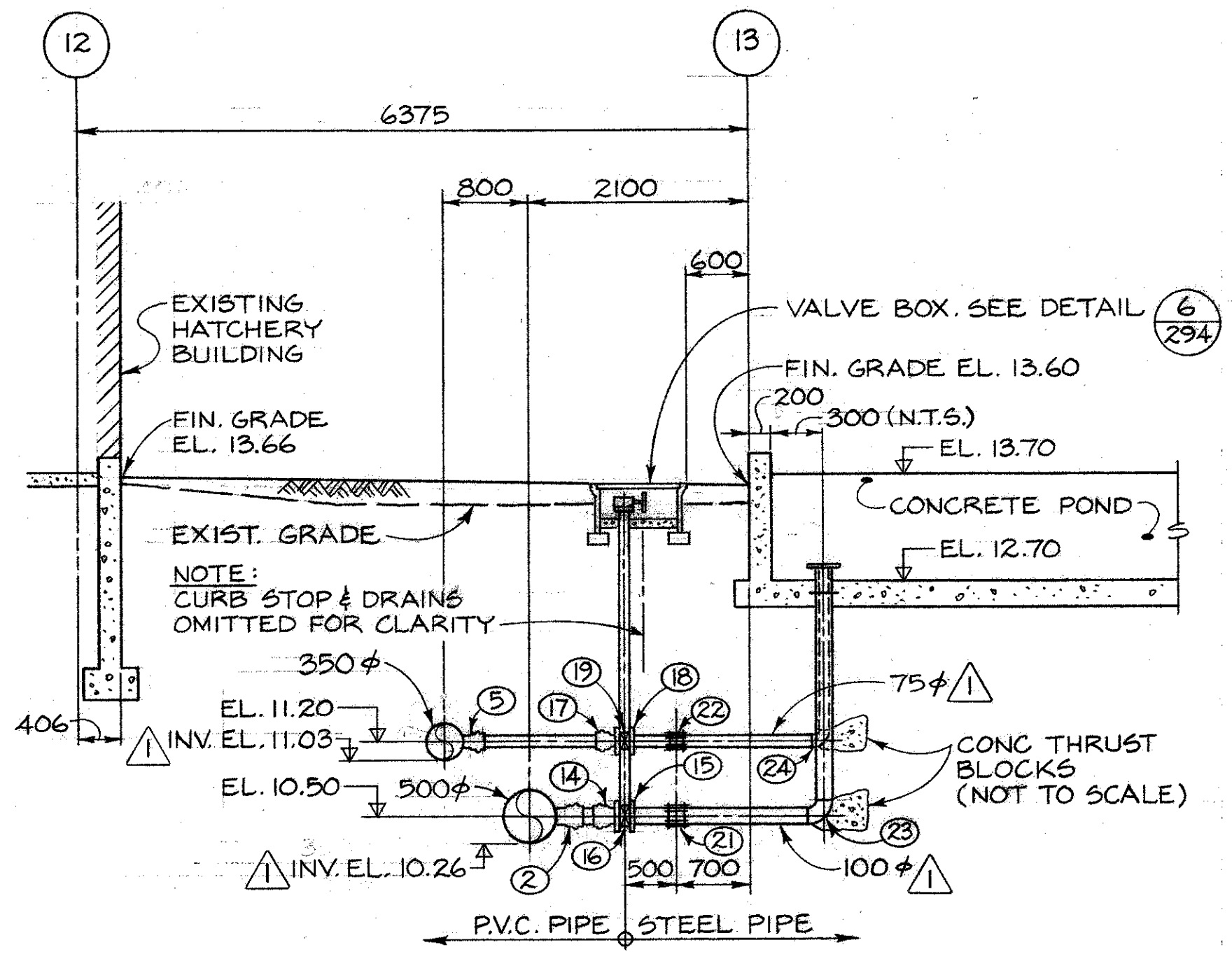
PROFILE C-D

DWG. NO. REFERENCE DRAWINGS		NOTES		32104/10 MAR. 85	32104/10 MAR. 85	DESIGNED G.M. / J.C. DRAWN J.C. CHECKED J.W. / E. REVISIONS APPROVED <i>[Signature]</i>	DEPARTMENT OF FISHERIES AND OCEANS SALMONID ENHANCEMENT PROGRAM KITIMAT RIVER PROJECT CONTRACT NO 6 WATER SUPPLY PIPING PROFILES	SCALE 1:200 HOR. 1:50 VERT. DATE MAY, 1982 DRAWING NUMBER 22-35-287 REVISION 2
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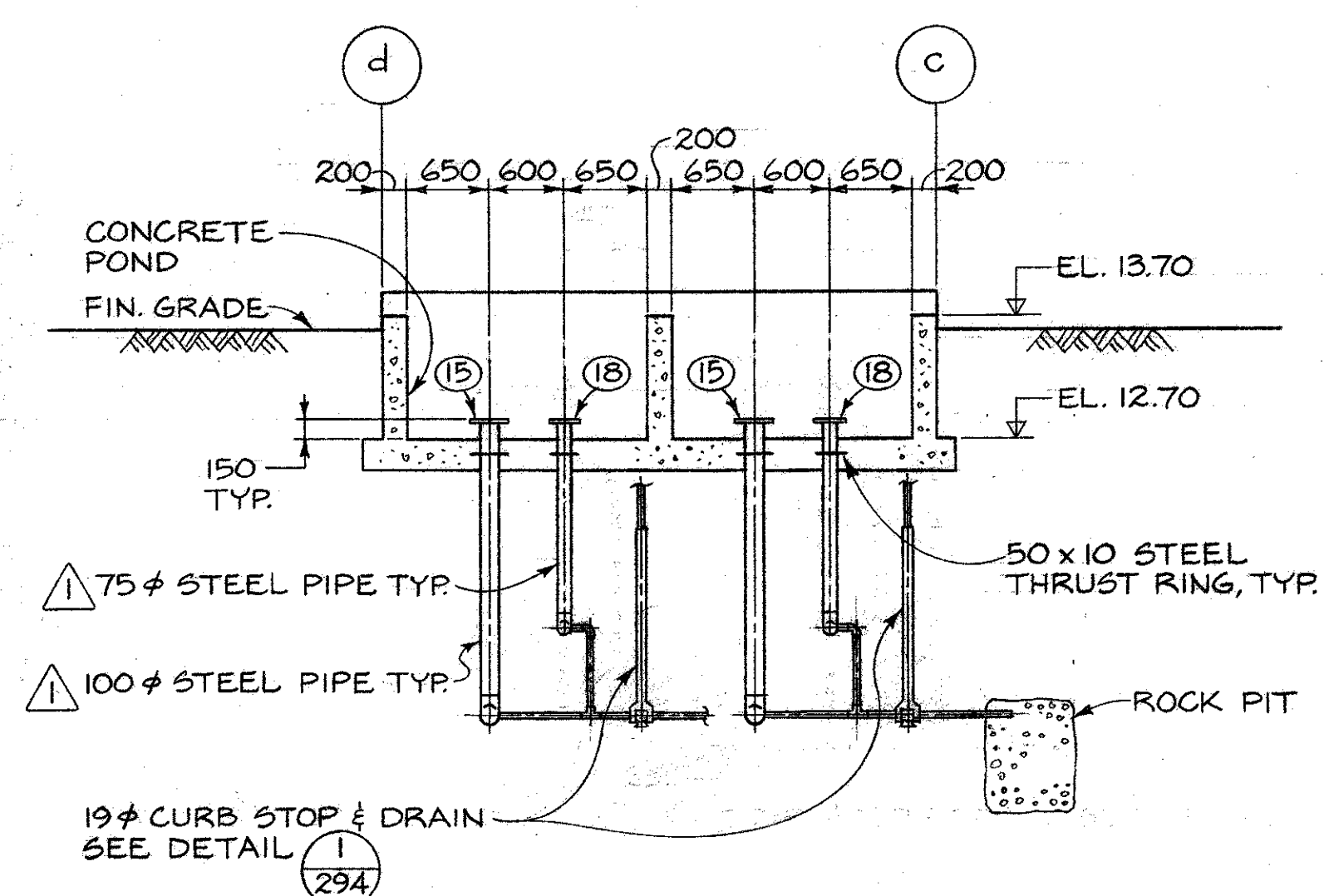


PLAN

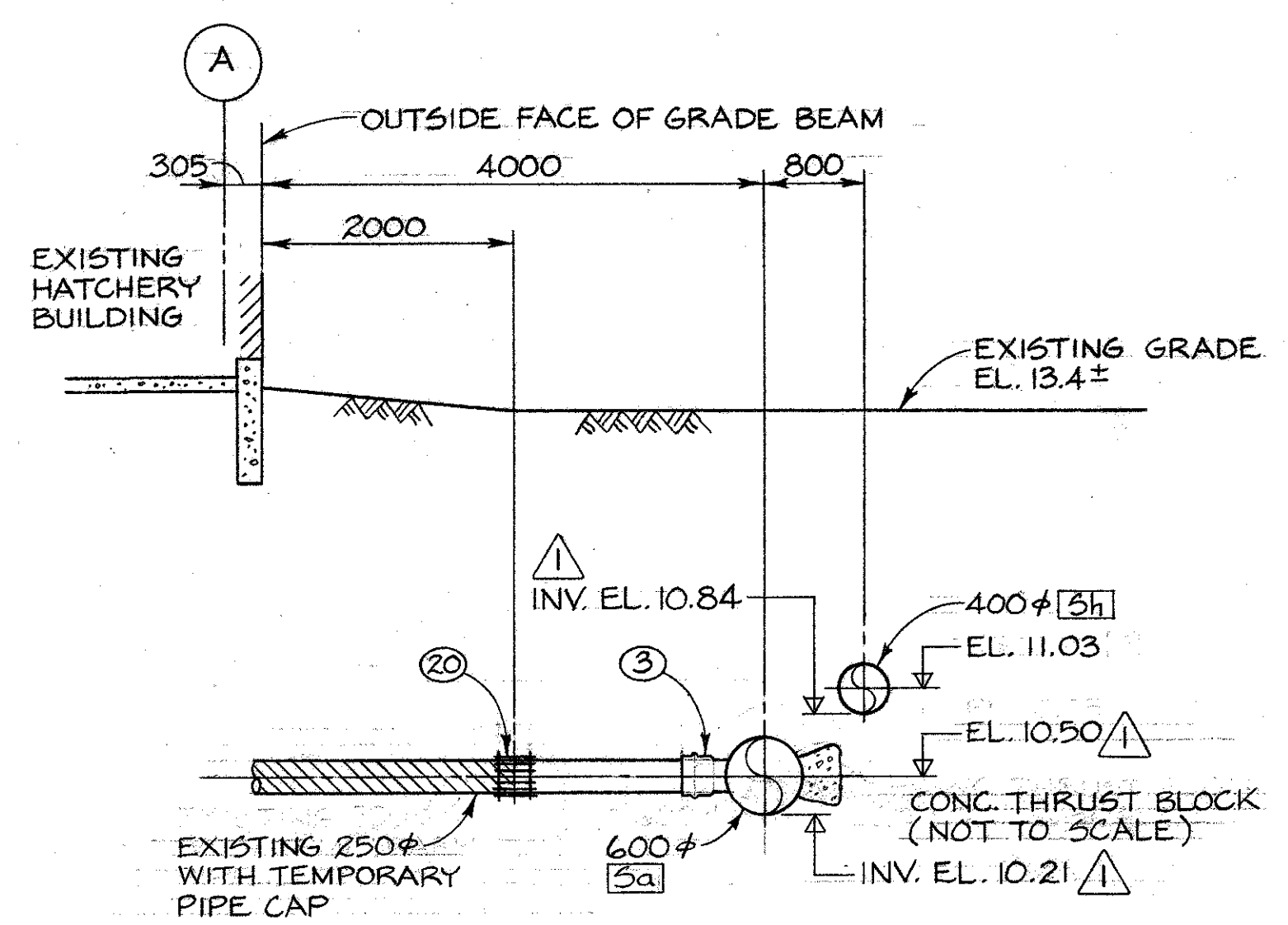
MATCH LINE FOR CONTINUATION SEE DWG. 22-35-289



SECTION A



SECTION B



SECTION C

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

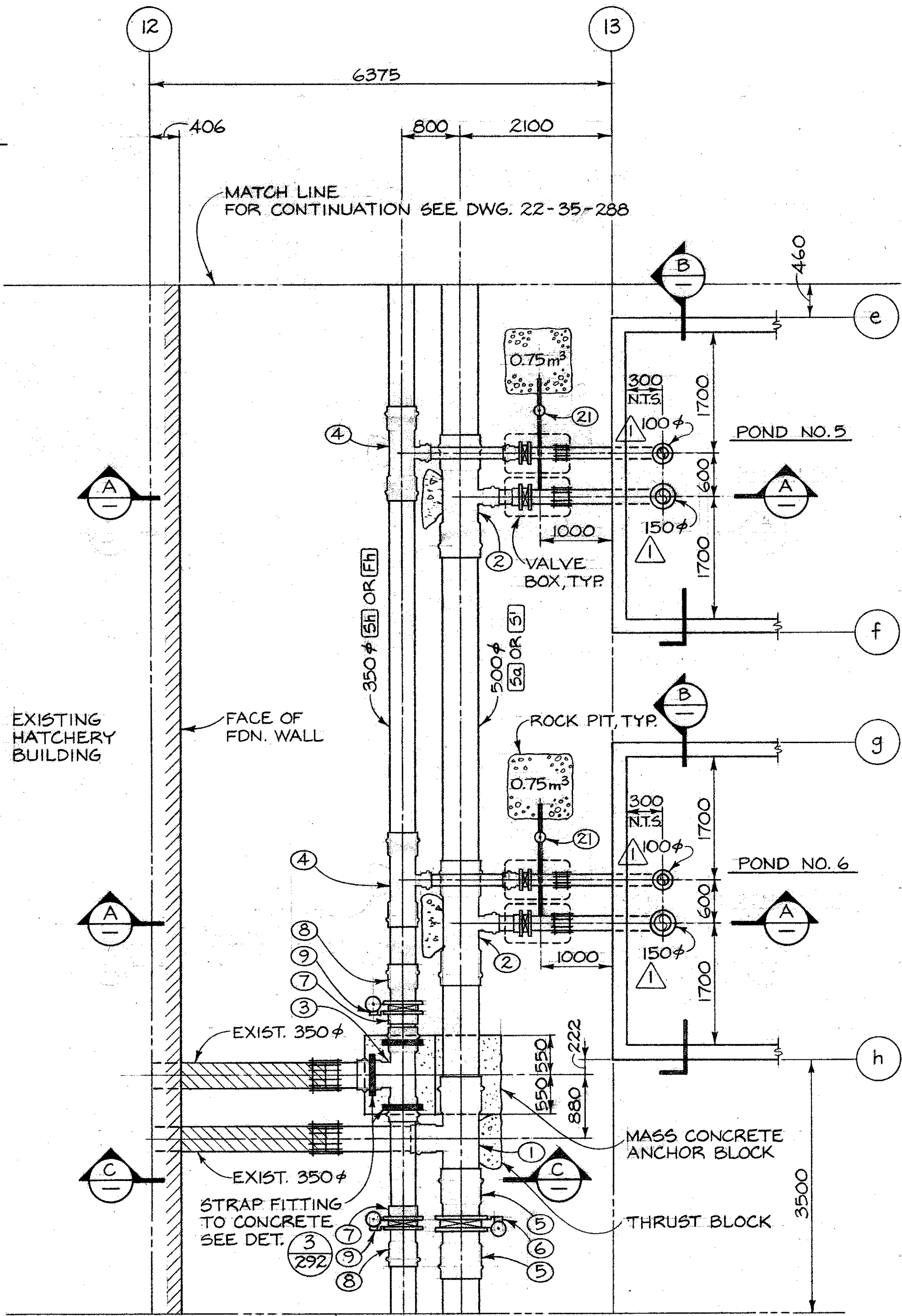
DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS
			1	82/04/18	LATERAL PIPES AND FITTINGS TO PONDS REDUCED IN DIAMETER. ADDED INVERT ELEVATIONS. GRADE CHANGE ON 600φ 5a
			2	MAR 85	AS BUILT

DEPARTMENT OF FISHERIES AND OCEANS
SALMONID ENHANCEMENT PROGRAM

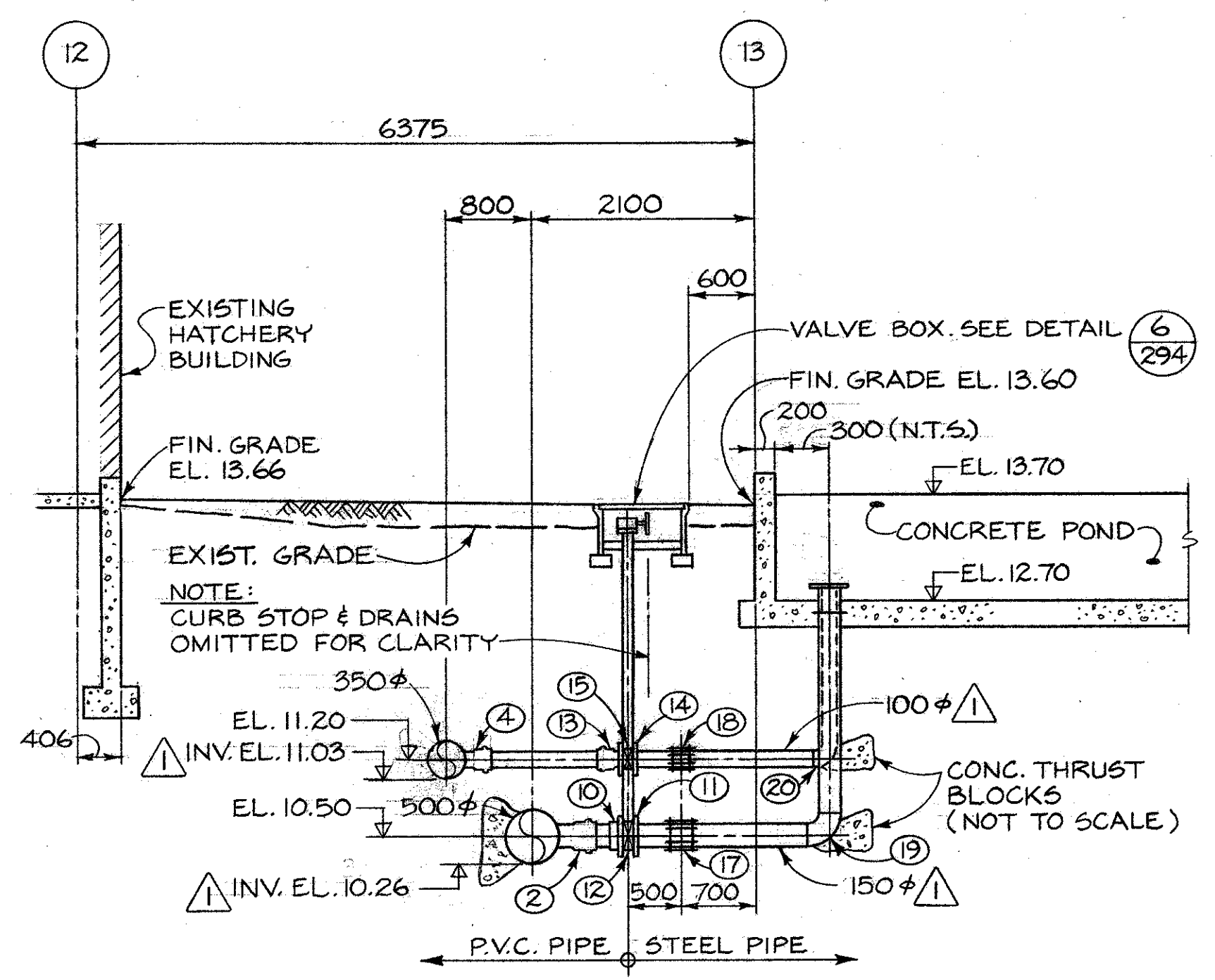
KITIMAT RIVER PROJECT
CONTRACT No 6
PONDS 1,2,3,4
WATER SUPPLY DETAILS

DESIGNED G.M. / J.C.
DRAWN J.C.
CHECKED J.E.W./R.
RECOMMENDED [Signature]
APPROVED [Signature]

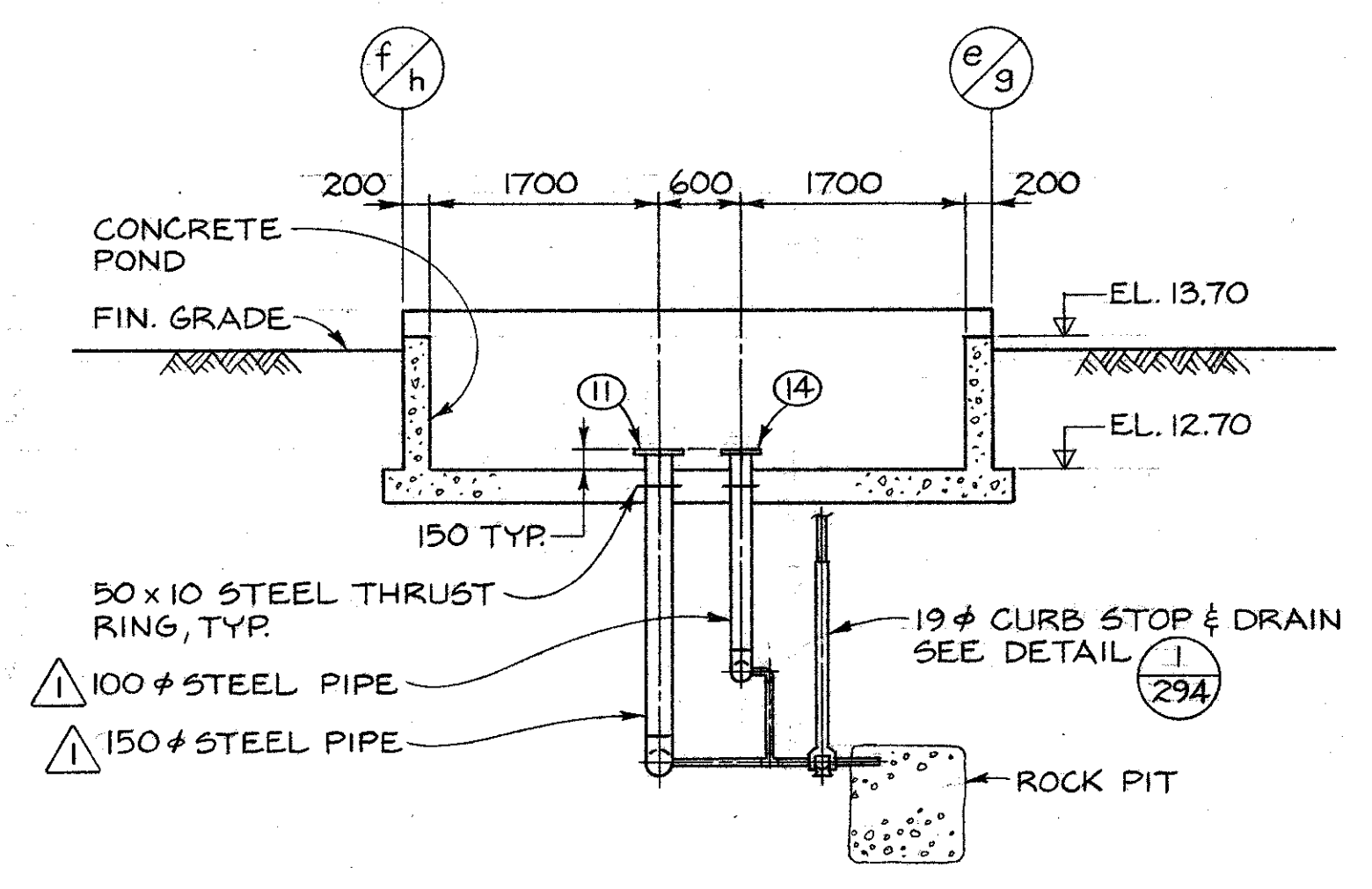
SCALE 1:50
DATE MAY, 1982
DRAWING NUMBER 22-35-288
REVISION 2



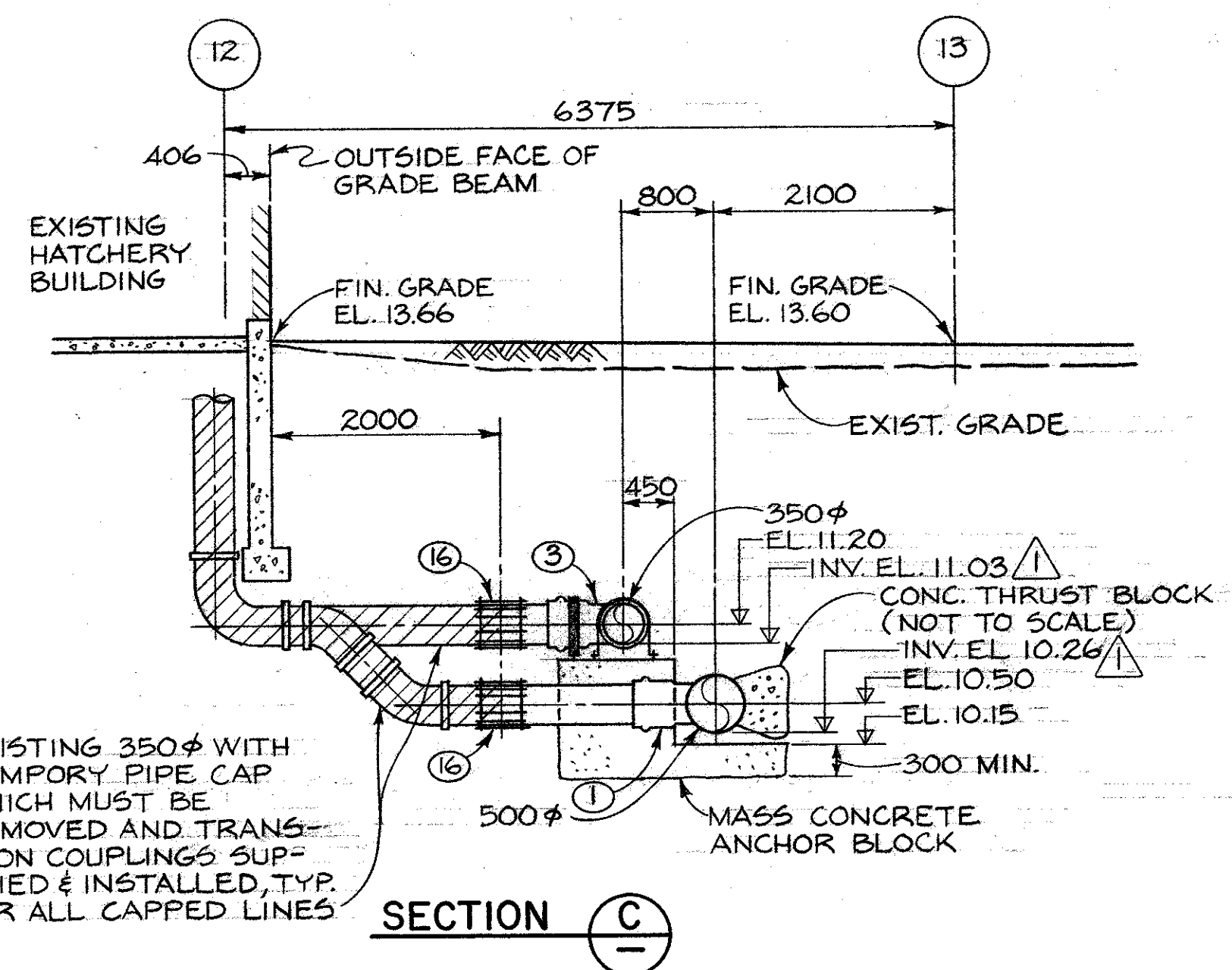
PLAN



SECTION A



SECTION B



SECTION C

KEY TO NUMBERED PARTS

NO.	SIZE	DESCRIPTION
1	500 x 500 x 350	TEE
2	500 x 500 x 200 150	TEE
3	350 x 350 x 350	TEE
4	350 x 350 x 200 100	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	200 150	VANSTONE FLANGE
11	200 150	WELDED STEEL FLANGE
12	200 150	BUTTERFLY VALVE C/W TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
13	200 100	BELL X FLANGE ADAPTER
14	200 100	WELDED STEEL FLANGE
15	200 100	BUTTERFLY VALVE C/W TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
16	350	MECHANICAL COUPLING
17	200 150	MECHANICAL COUPLING
18	200 100	MECHANICAL COUPLING
19	200 150	WELDED STEEL 90° ELBOW
20	200 100	WELDED STEEL 90° ELBOW
21	19	CURB STOP

DWG. NO.	REFERENCE DRAWINGS

NO.	DATE	REVISIONS

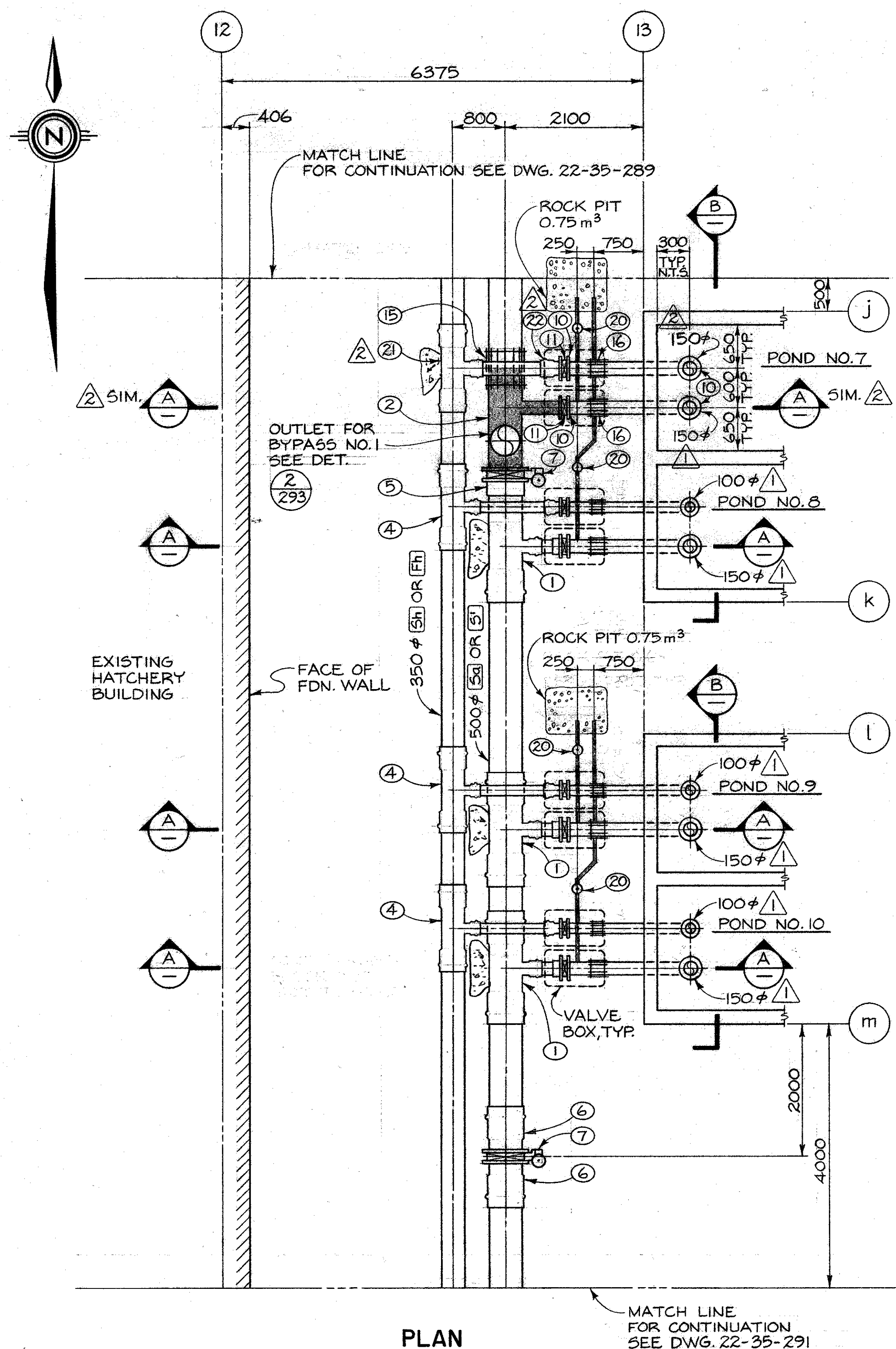
DESIGNED G.M. / J.C.
 DRAWN J.C.
 CHECKED J.W. / 12.
 RECOMMENDED [Signature]
 APPROVED [Signature]

8.2/10/18
 LATERAL PIPES AND FITTINGS TO PONDS REDUCED IN DIAMETER. ADDED INVERT ELEVATIONS.

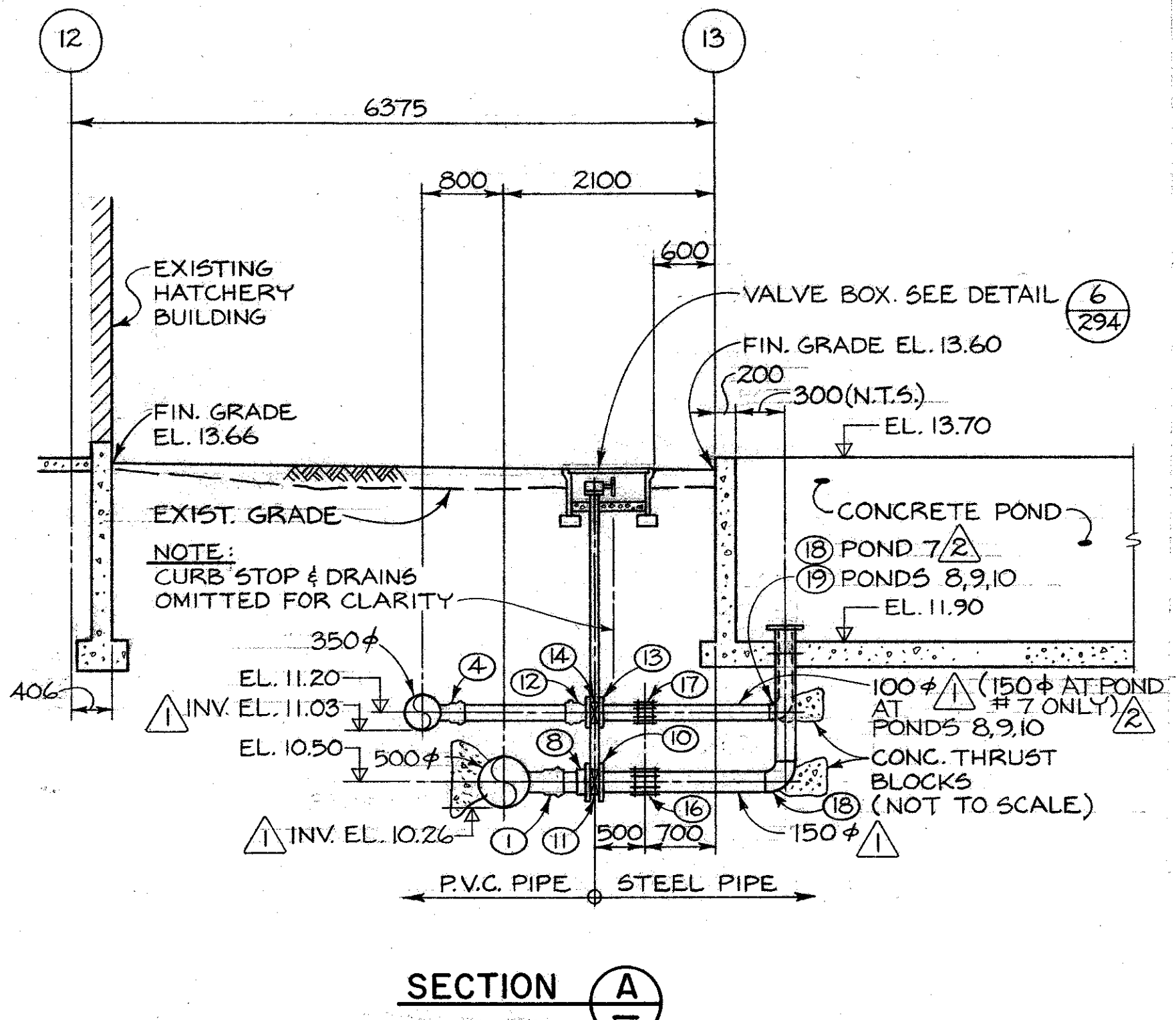
DEPARTMENT OF FISHERIES AND OCEANS
 SALMONID ENHANCEMENT PROGRAM

KITIMAT RIVER PROJECT
 CONTRACT N° 6
 PONDS 5 & 6
 WATER SUPPLY DETAILS

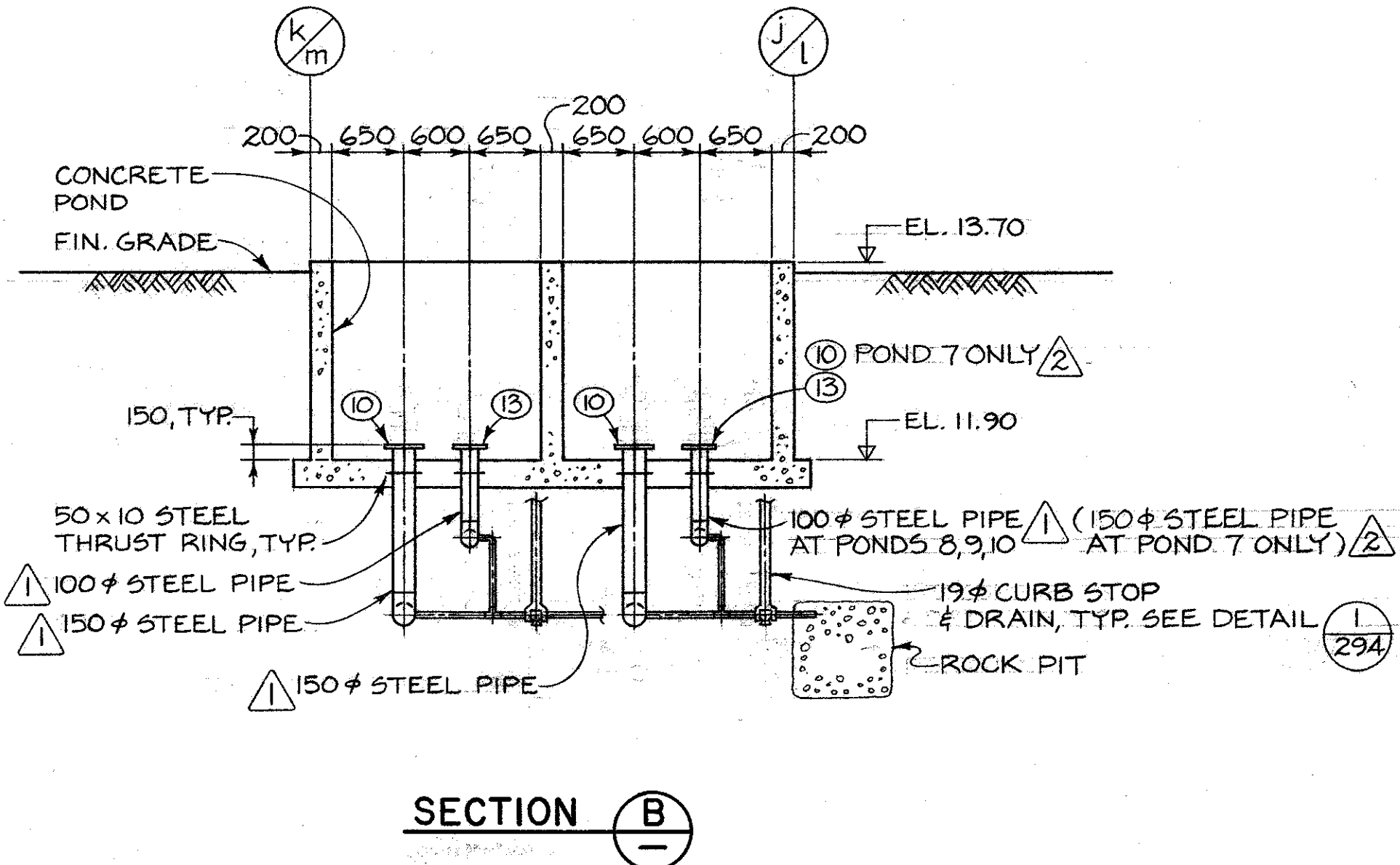
SCALE 1:50
 DATE MAY, 1982
 DRAWING NUMBER 22-35-289
 REVISION 1



PLAN



SECTION A-A



SECTION B-B

KEY TO NUMBERED PARTS

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

1. BYPASS NO.1 OMITTED FROM PLAN FOR PURPOSES OF CLARITY. FOR BYPASS NO.1 PIPING DETAILS SEE DETAIL # 2, DWG. 293.

NO.	DATE	REVISIONS
1	82/04/16	LATERAL PIPES AND FITTINGS TO PONDS REDUCED IN DIAMETER. FITTING #3 & 9 DELETED. ADDED INVERT ELEVATIONS.
2	82/09/10	100φ LATERAL PIPE & FITTINGS IN POND 7 ONLY INCREASED IN SIZE TO 150φ - FITTING NOS. 21 & 22 ADDED. PLAN, SECTIONS A & B REVISED.

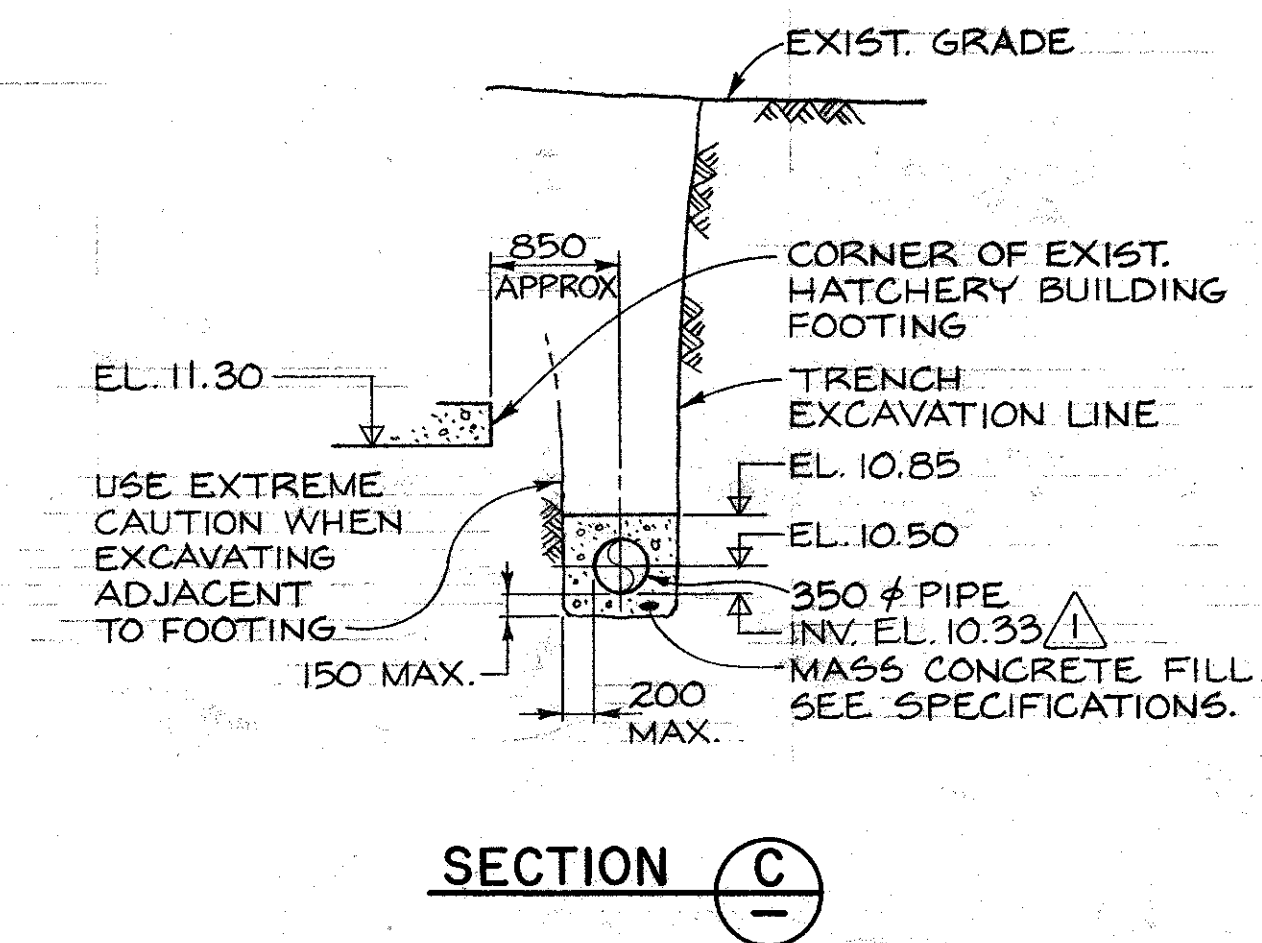
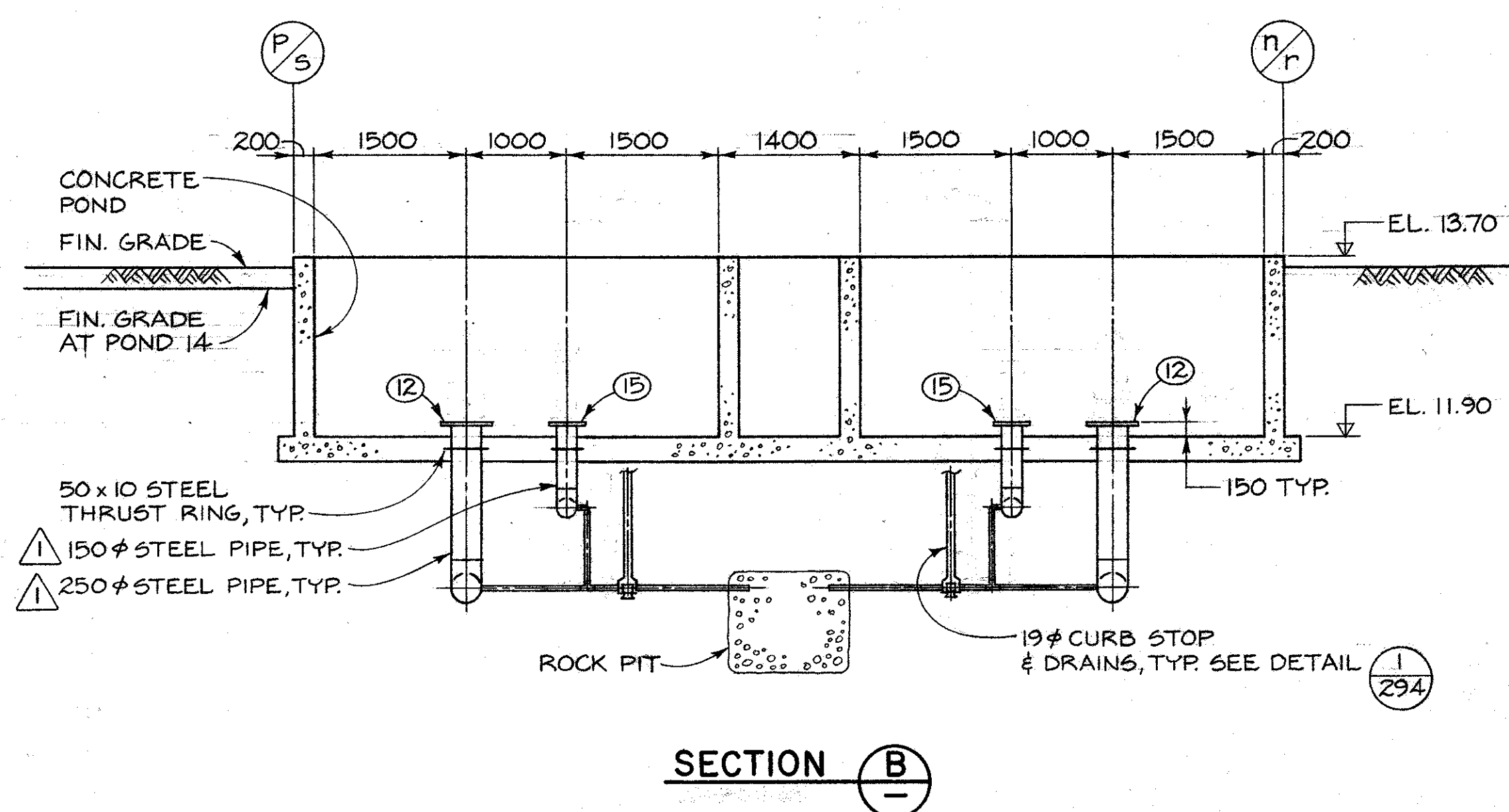
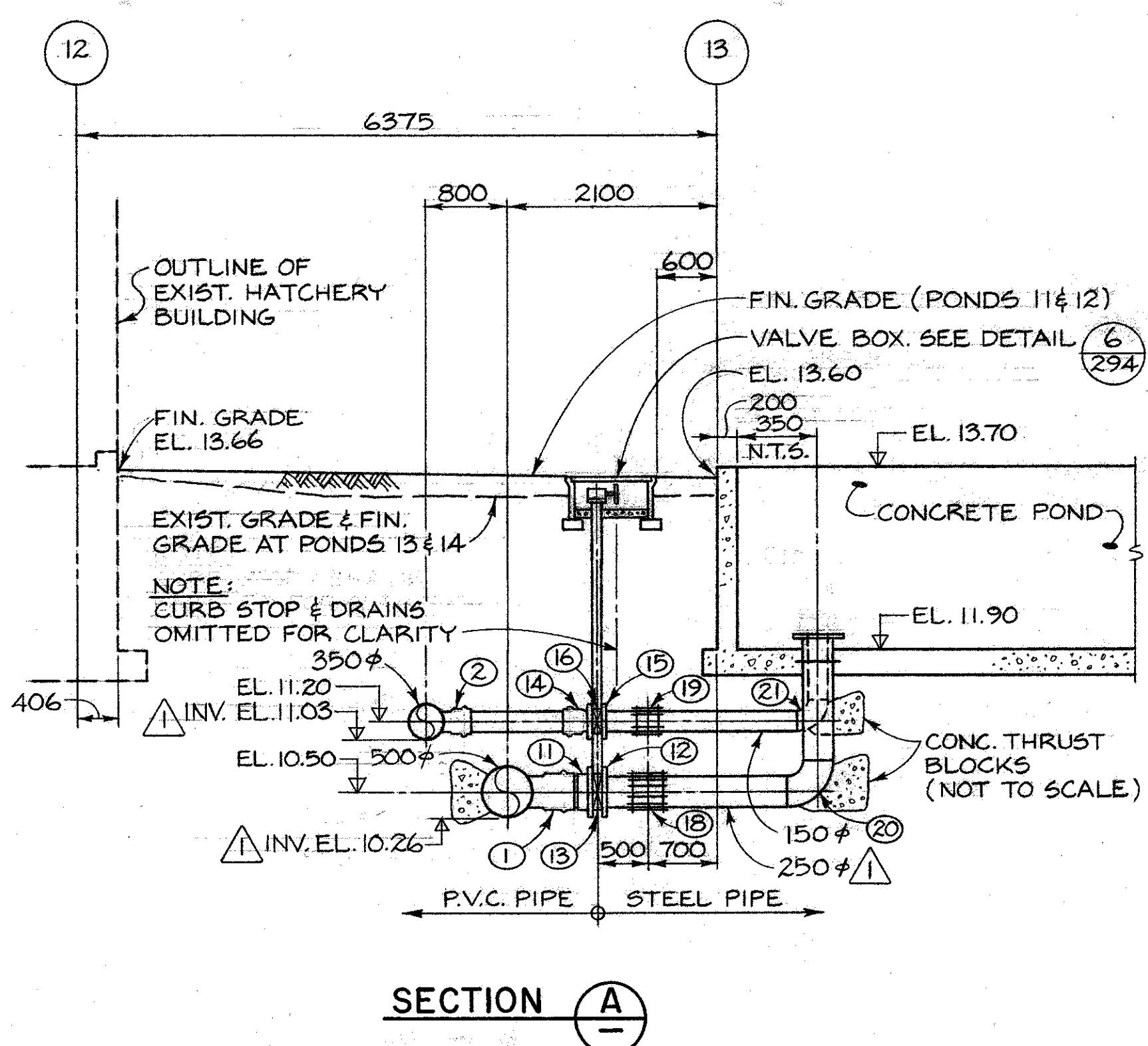
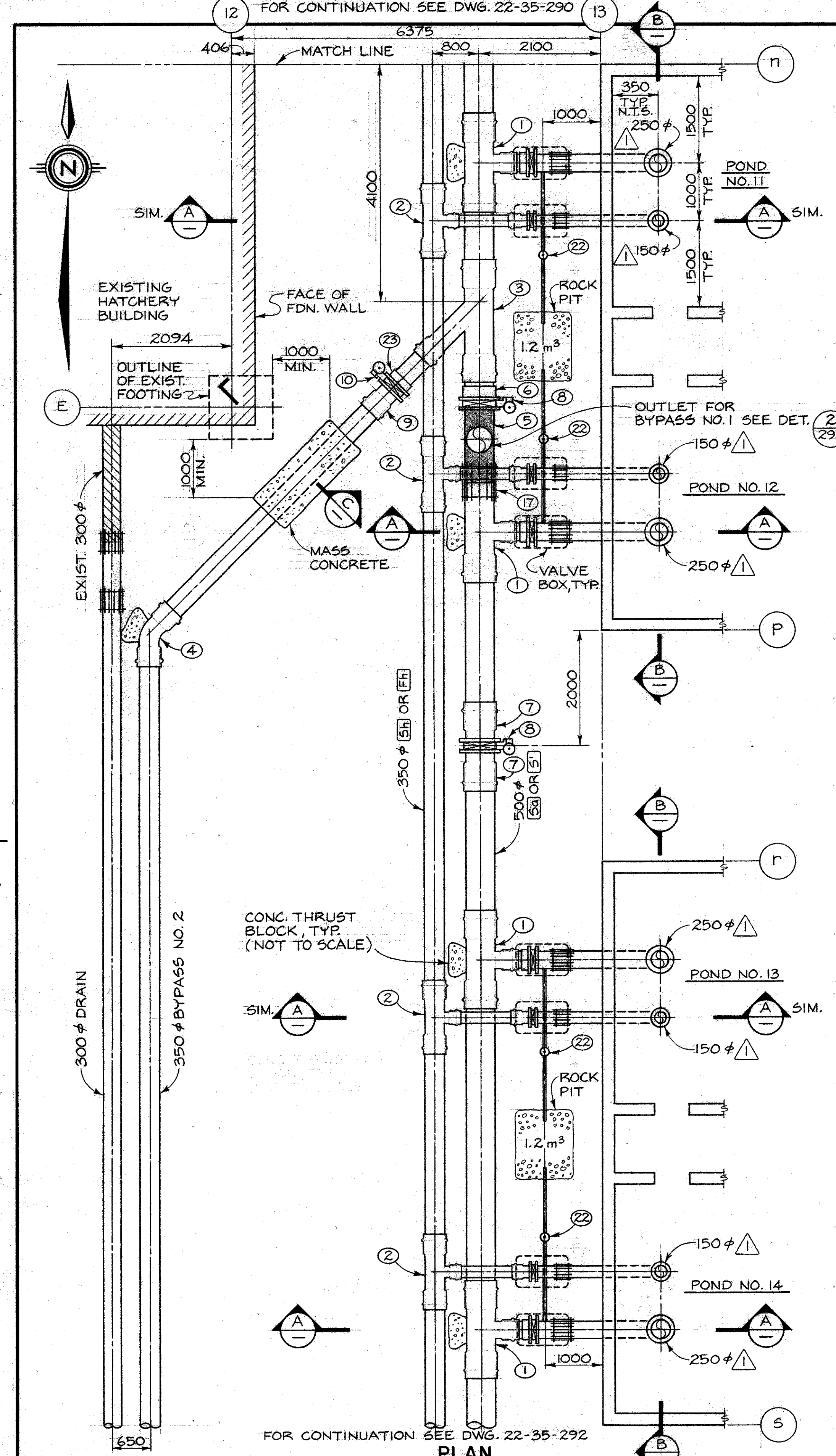
DESIGNED G.M. / J.C.
DRAWN J.C.
CHECKED JAS/12.
RECOMMENDED JAS/12.
APPROVED [Signature]
DATE [Signature]

DEPARTMENT OF FISHERIES AND OCEANS
SALMONID ENHANCEMENT PROGRAM

KITIMAT RIVER PROJECT
CONTRACT N° 6
PONDS 7, 8, 9, 10
WATER SUPPLY DETAILS

SCALE	1:150
DATE	MAY, 1982
DRAWING NUMBER	22-35-290
REVISION	2

SCL 67841-050

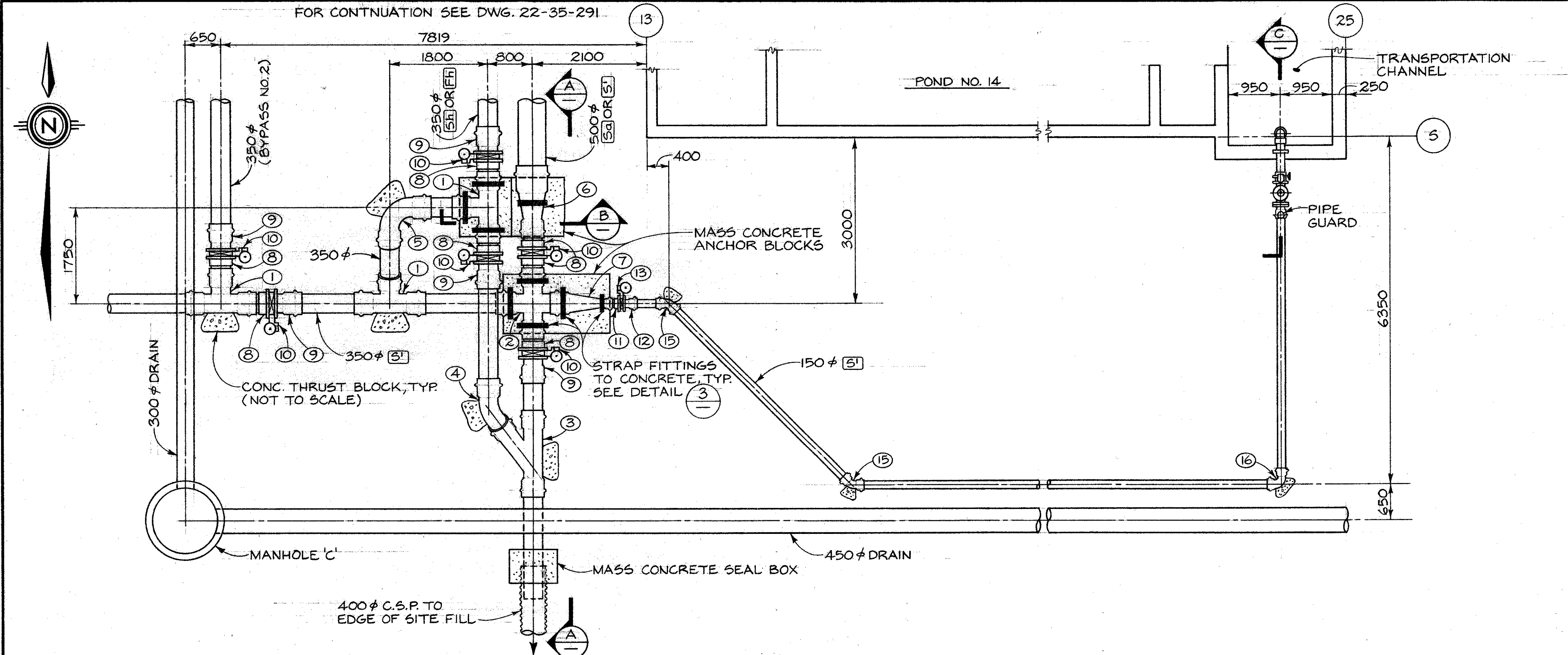


KEY TO NUMBERED PARTS

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° ELBOW
5	500 x 500 x 450	STEEL SPECIAL FITTING
6	500	FLANGE
7	500	BELL X FLANGE ADAPTER
8	500	BUTTERFLY VALVE C/M BURIED SERVICE GEARED OPERATOR & VALVE OPERATOR EXTENSION
9	350	BELL X FLANGE ADAPTER
10	350	BUTTERFLY VALVE C/M BURIED SERVICE GEARED OPERATOR & VALVE OPERATOR EXTENSION
11	250	VANSTONE FLANGE
12	250	WELDED STEEL FLANGE
13	250	BUTTERFLY VALVE C/M TORQUE TUBE EXTENSION & HANDHEEL GEARED OPERATOR
14	150	BELL X FLANGE ADAPTER
15	150	WELDED STEEL FLANGE
16	150	BUTTERFLY VALVE C/M TORQUE TUBE EXTENSION & HANDHEEL GEARED OPERATOR
17	500	MECHANICAL COUPLING
18	250	MECHANICAL COUPLING
19	150	MECHANICAL COUPLING
20	250	WELDED STEEL 90° ELBOW
21	150	WELDED STEEL 90° ELBOW
22	19	CURB STOP
23	350	VANSTONE FLANGE

DWG. NO.	REFERENCE DRAWINGS	NOTES 1. BYPASS NO. 1 OMITTED FROM PLAN FOR PURPOSES OF CLARITY. FOR BYPASS NO. 1 PIPING DETAILS SEE DETAIL # 2, DWG. 293	NO.	DATE	REVISIONS	DESIGNED G.M./J.C. DRAWN J.C. CHECKED JCS/112 RECOMMENDED M. Morris APPROVED M. Morris	DEPARTMENT OF FISHERIES AND OCEANS SALMONID ENHANCEMENT PROGRAM KITIMAT RIVER PROJECT CONTRACT N° 6 PONDS 11, 12, 13, 14 WATER SUPPLY DETAILS	SCALE 1:50 DATE MAY, 1982 DRAWING NUMBER 22-35-291 REVISION 1
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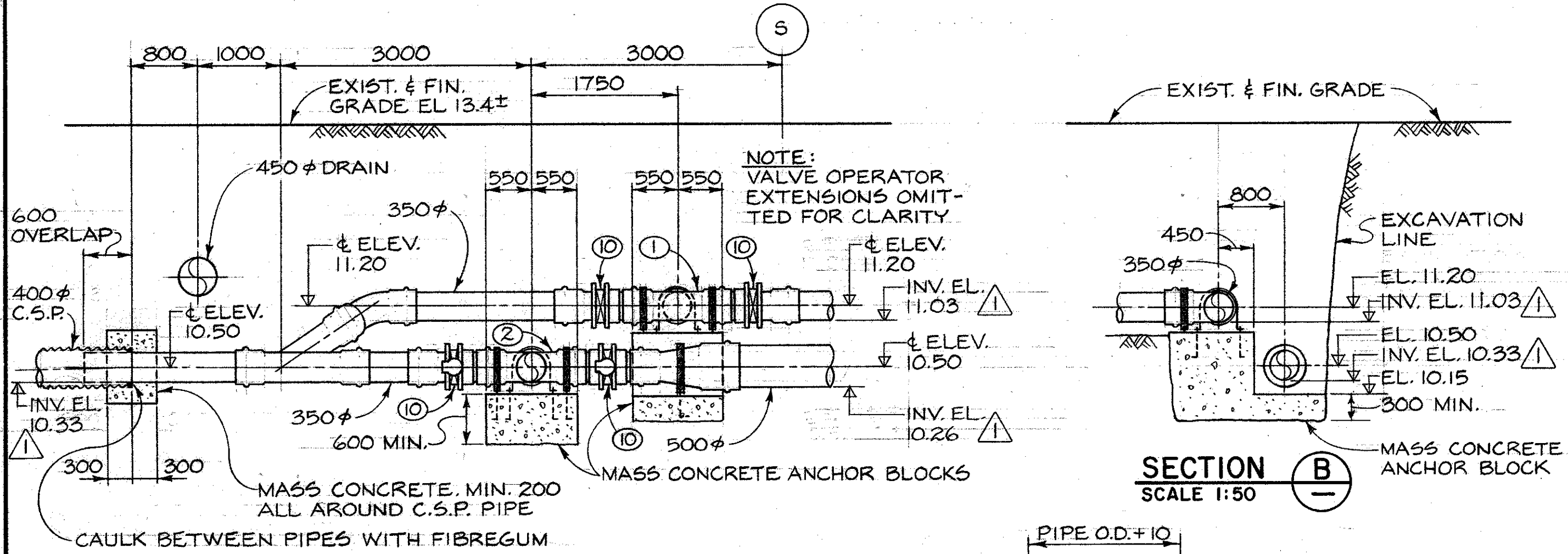
FOR CONTINUATION SEE DWG. 22-35-291



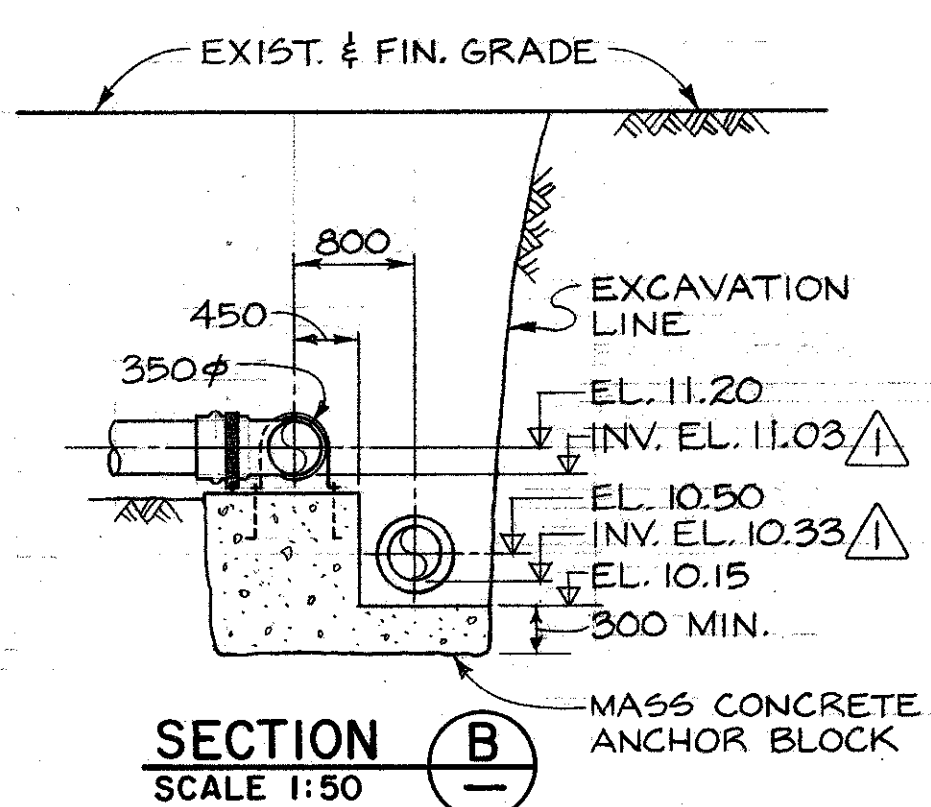
PLAN
SCALE 1:50

KEY TO NUMBERED PARTS

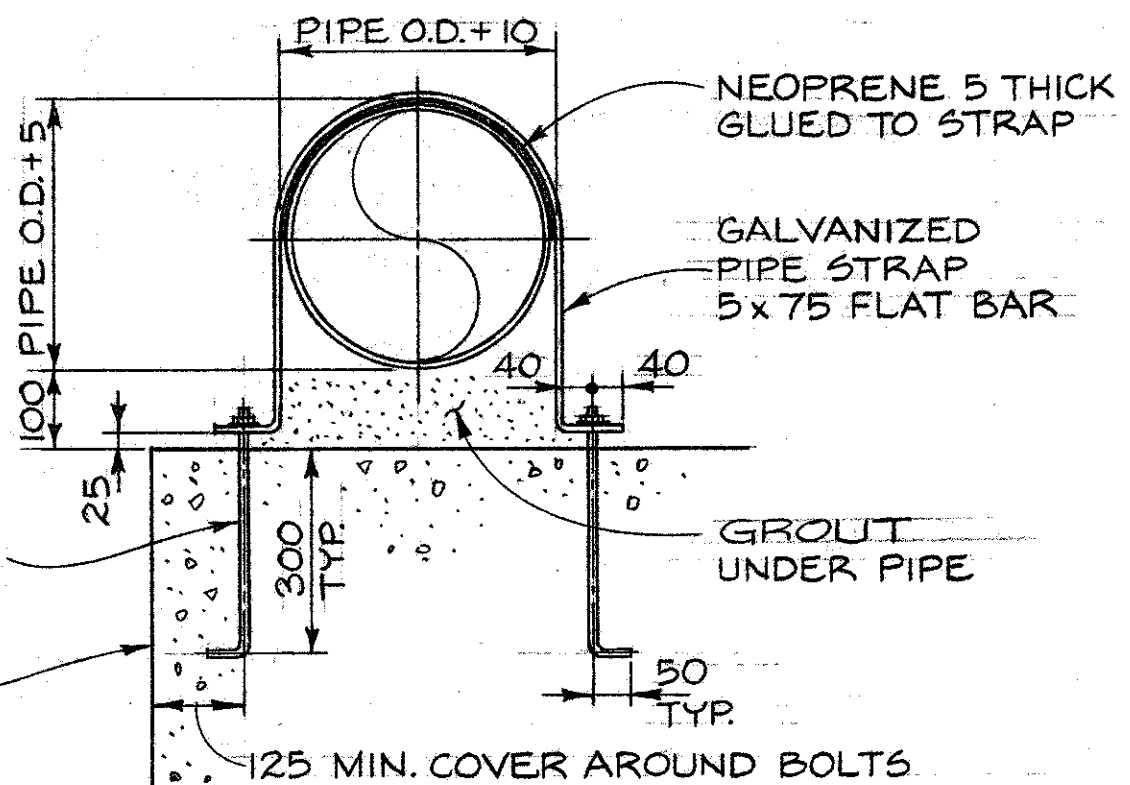
NO.	SIZE	DESCRIPTION
1	350 x 350 x 350	TEE
2	350 x 350 x 350 x 350	CROSS
3	350 x 350 x 350	45° LATERAL
4	350	45° ELBOW
5	350	90° ELBOW
6	500 x 350	REDUCER
7	350 x 150	REDUCER
8	350	VANSTONE FLANGE
9	350	BELL X FLANGE ADAPTER
10	350	BUTTERFLY VALVE C/W BURIED SERVICE GEARED OPERATOR & VALVE OPERATOR EXTENSION
11	150	VANSTONE FLANGE
12	150	BELL X FLANGE ADAPTER
13	150	BUTTERFLY VALVE C/W BURIED SERVICE GEARED OPERATOR & VALVE OPERATOR EXTENSION
14	150	BUTTERFLY VALVE C/W HANDWHEEL GEARED OPERATOR
15	150	45° ELBOW
16	150	90° ELBOW
17	150	HYDRANT BASE
18	150	C.I. PIPE SPOOL (FLANGE X FLANGE)
19	150 x 150 x 150	C.I. TEE (FLANGED)
20	150	HYDRANT OPERATING SPINDLE
21	150	90° ELBOW (SOLVENT WELD)



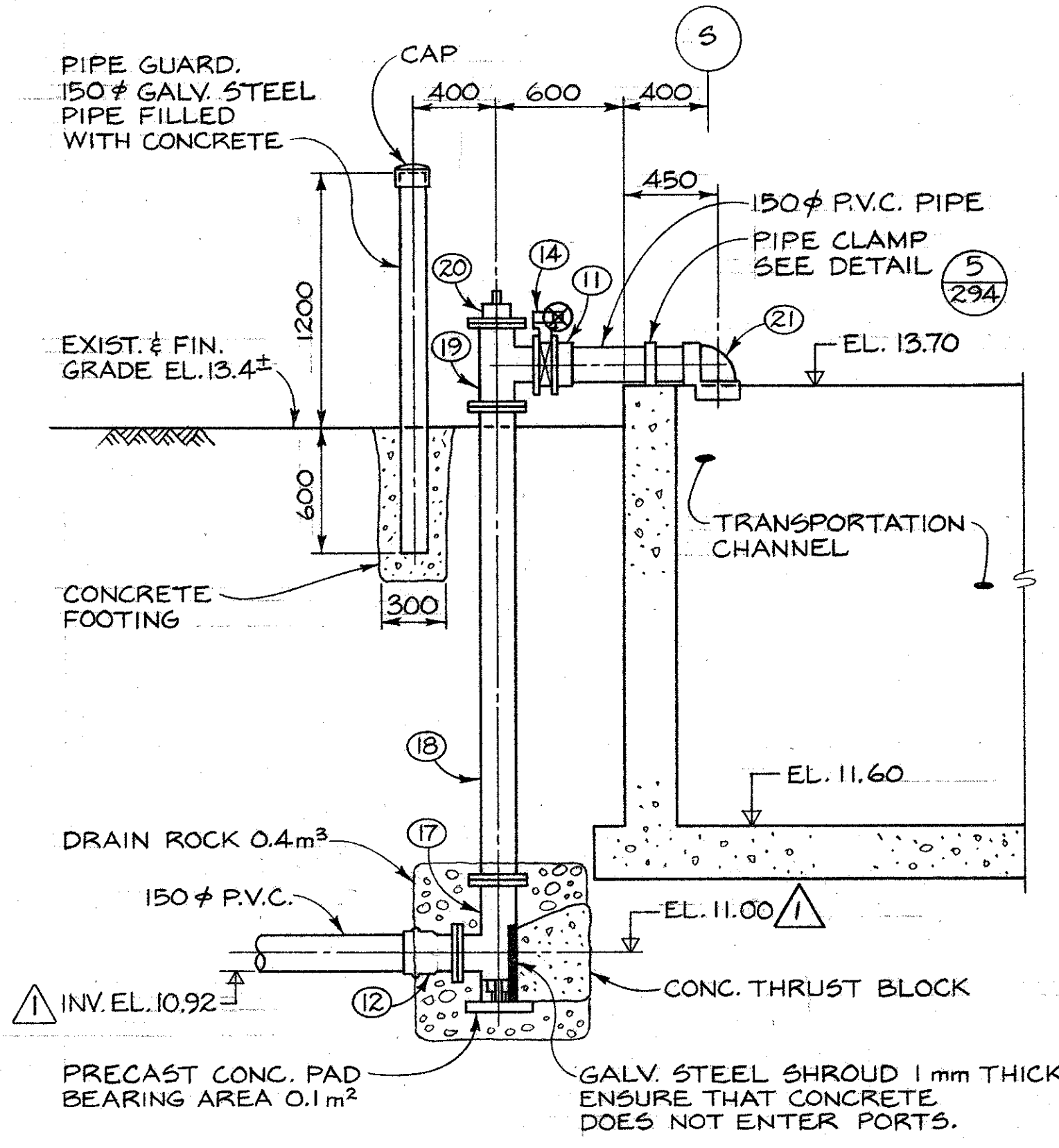
SECTION A
SCALE 1:50



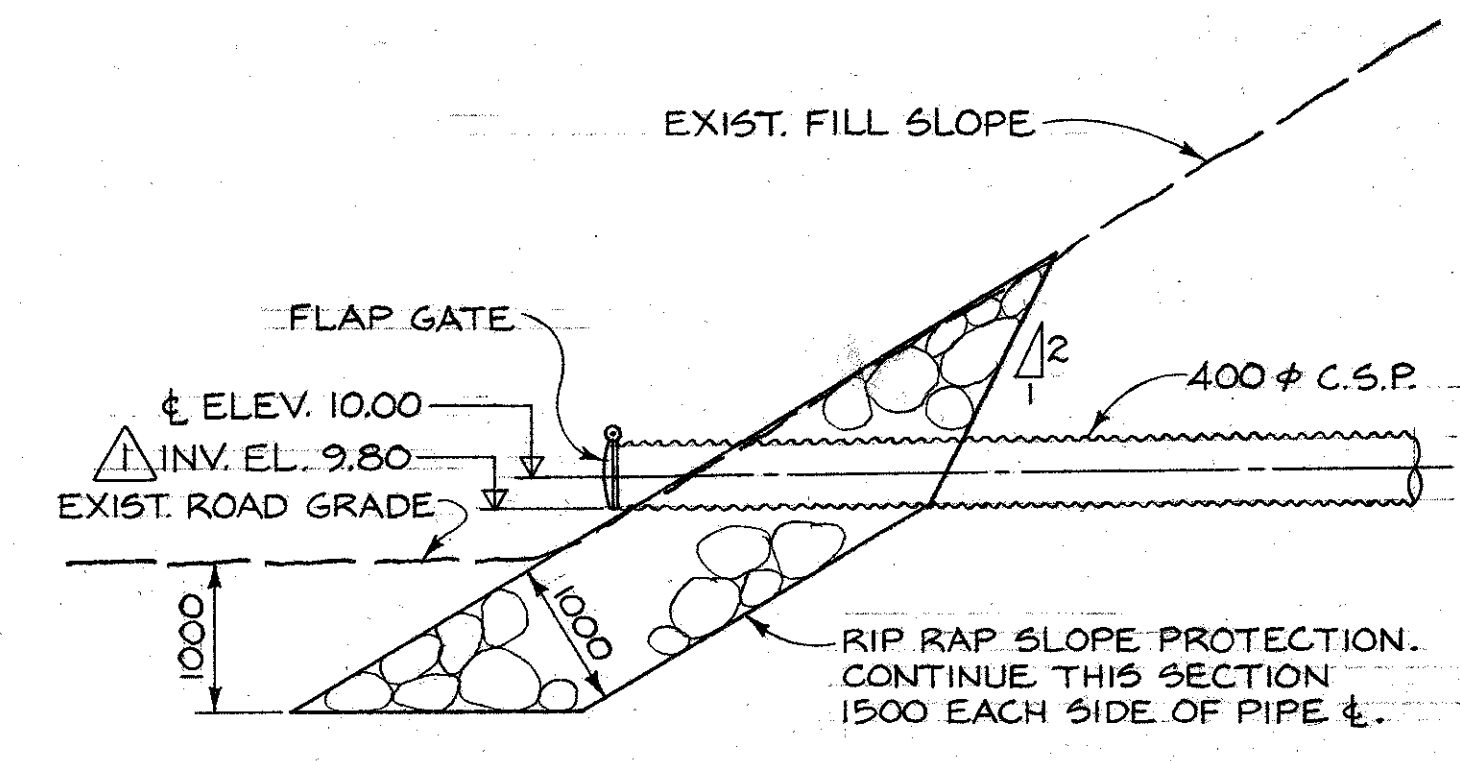
SECTION B
SCALE 1:50



DETAIL 3
N.T.S. PIPE STRAP



SECTION C
SCALE 1:25



DETAIL 1
SCALE 1:50

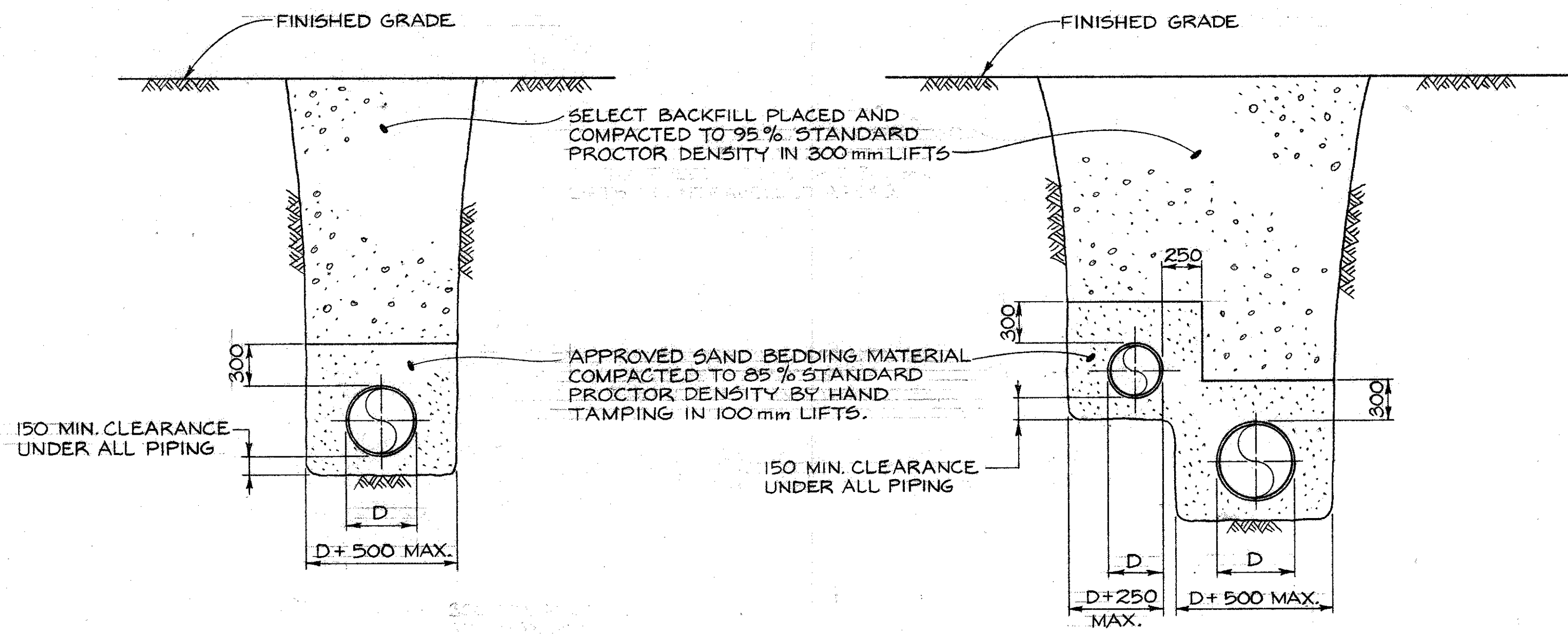
DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS
			1	22/04/18	INVERT ELEVATIONS ADDED. & ELEVATION REVISED.
			2	MAR. 85	AS BUILT.

DEPARTMENT OF FISHERIES AND OCEANS
SALMONID ENHANCEMENT PROGRAM

KITIMAT RIVER PROJECT
CONTRACT N° 6
TRANSPORTATION CHANNEL
WATER SUPPLY DETAILS

SCALE AS SHOWN
DATE MAY, 1982
DRAWING NUMBER 22-35-292
REVISION 2

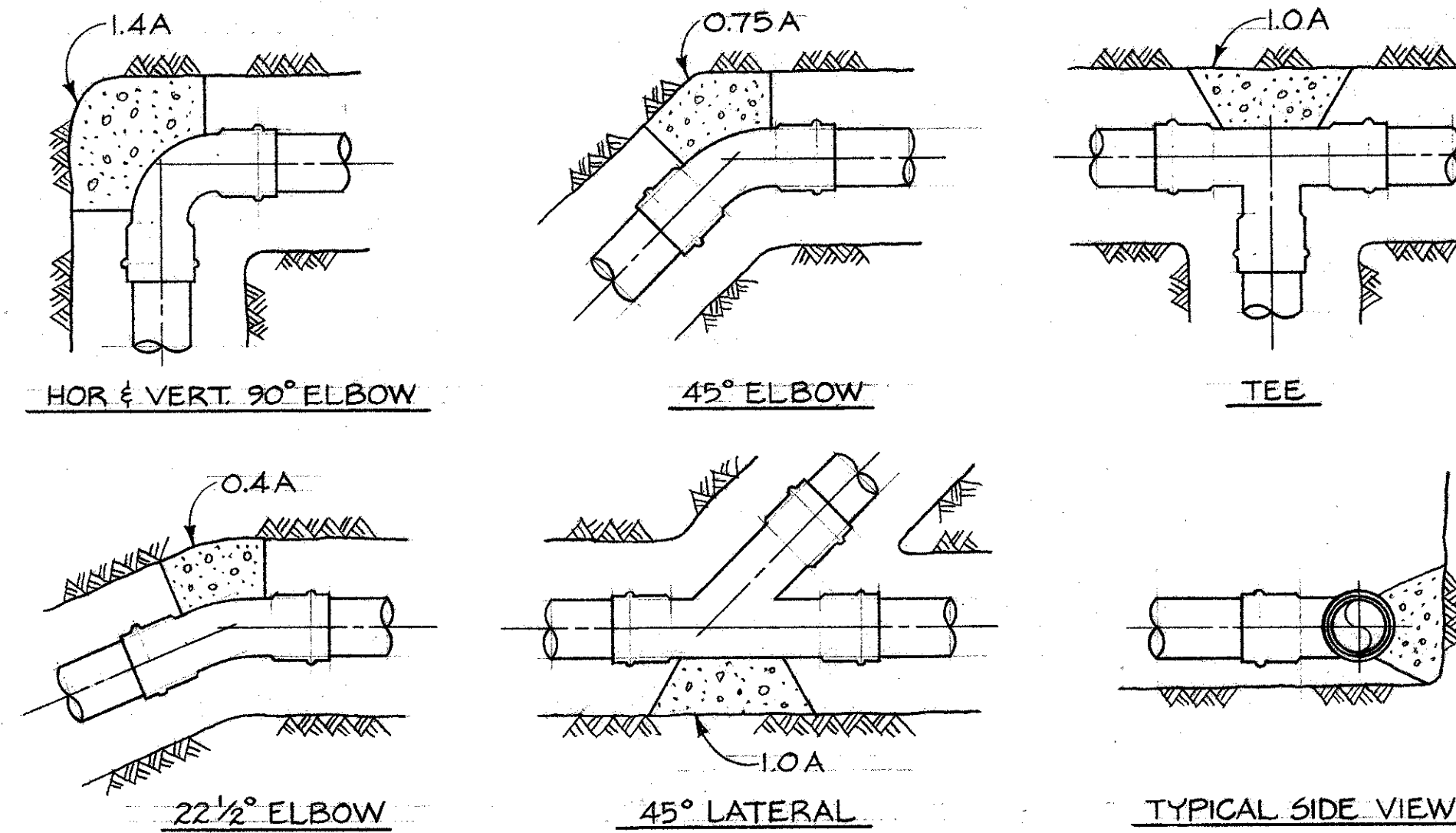
SCL 67841-010



SINGLE PIPE TRENCH

DOUBLE PIPE TRENCH

TYPICAL TRENCH SECTIONS
N.T.S.

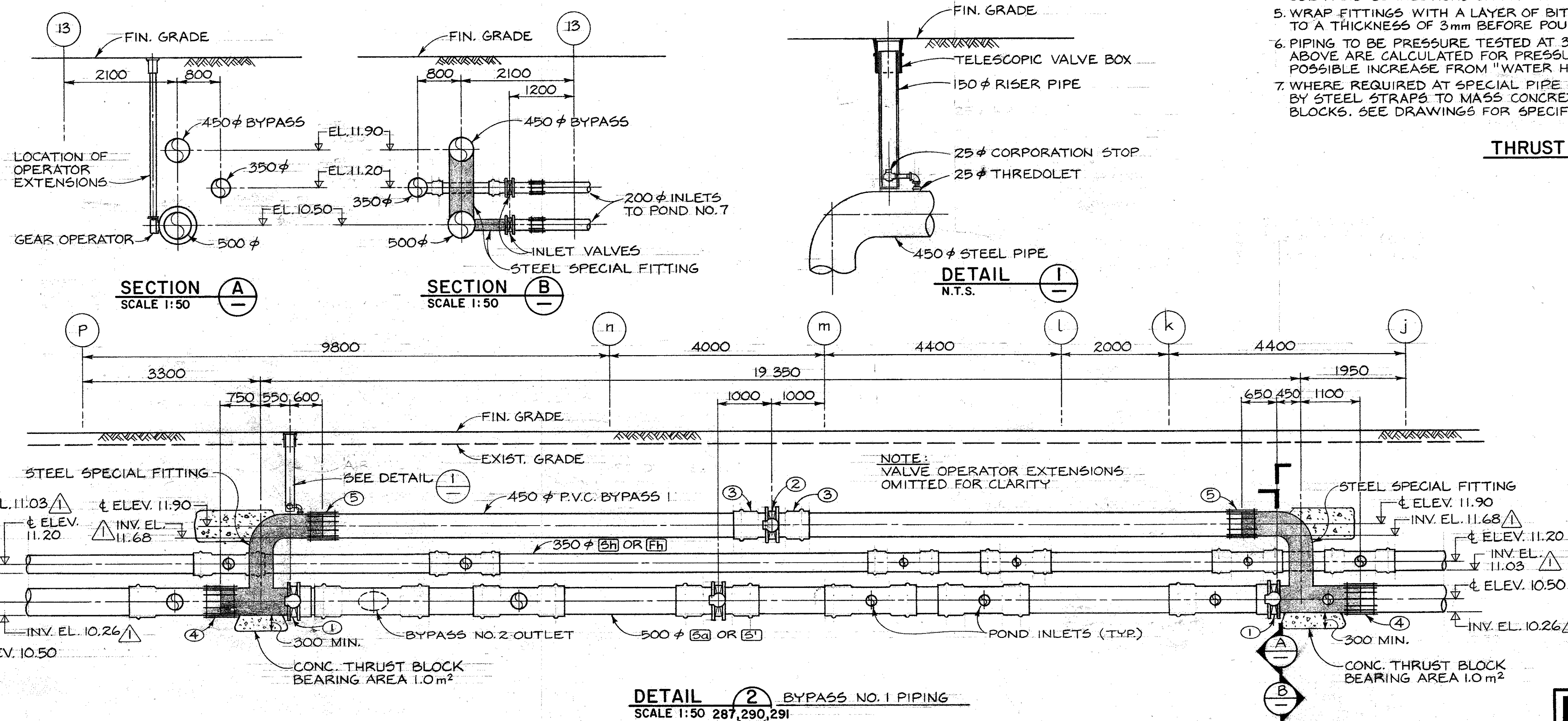


MINIMUM THRUST BLOCK BEARING AREAS "A" IN m ² FOR UNRESTRAINED FITTINGS								
PIPE SIZE (mm)	100	150	200	250	300	350	500	
BEARING AREA "A"	0.05	0.10	0.18	0.28	0.39	0.48	0.97	
TEST PRESSURE 345 kPa (50 P.S.I.)								

NOTES

- ALL THRUST BLOCKS SHALL BE SIZED ACCORDING TO THE ABOVE TABLE, EXCEPT WHERE SIZES ARE INDICATED ON THE DRAWINGS.
- BLOCKING IS REQUIRED FOR ALL FITTINGS WHERE CONNECTIONS ARE NOT RIGID.
- KEEP BLOCKING CLEAR OF BELLS.
- THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED SOIL. IF THIS IS NOT POSSIBLE, USE RIGID CONNECTIONS OR PROVIDE SPECIAL DESIGNS FOR BLOCKING.
- WRAP FITTINGS WITH A LAYER OF BITUMENIZED PAPER OR POLYETHYLENE FILM TO A THICKNESS OF 3mm BEFORE POURING CONCRETE.
- PIPING TO BE PRESSURE TESTED AT 345 kPa (50 P.S.I.) HOWEVER, AREAS SHOWN ABOVE ARE CALCULATED FOR PRESSURES HIGHER THAN THIS TO ALLOW FOR POSSIBLE INCREASE FROM "WATER HAMMER."
- WHERE REQUIRED AT SPECIAL PIPE CONNECTIONS, FITTINGS SHALL BE ANCHORED BY STEEL STRAPS TO MASS CONCRETE ANCHOR BLOCKS IN LIEU OF THRUST BLOCKS. SEE DRAWINGS FOR SPECIFIC LOCATIONS AND DETAILS.

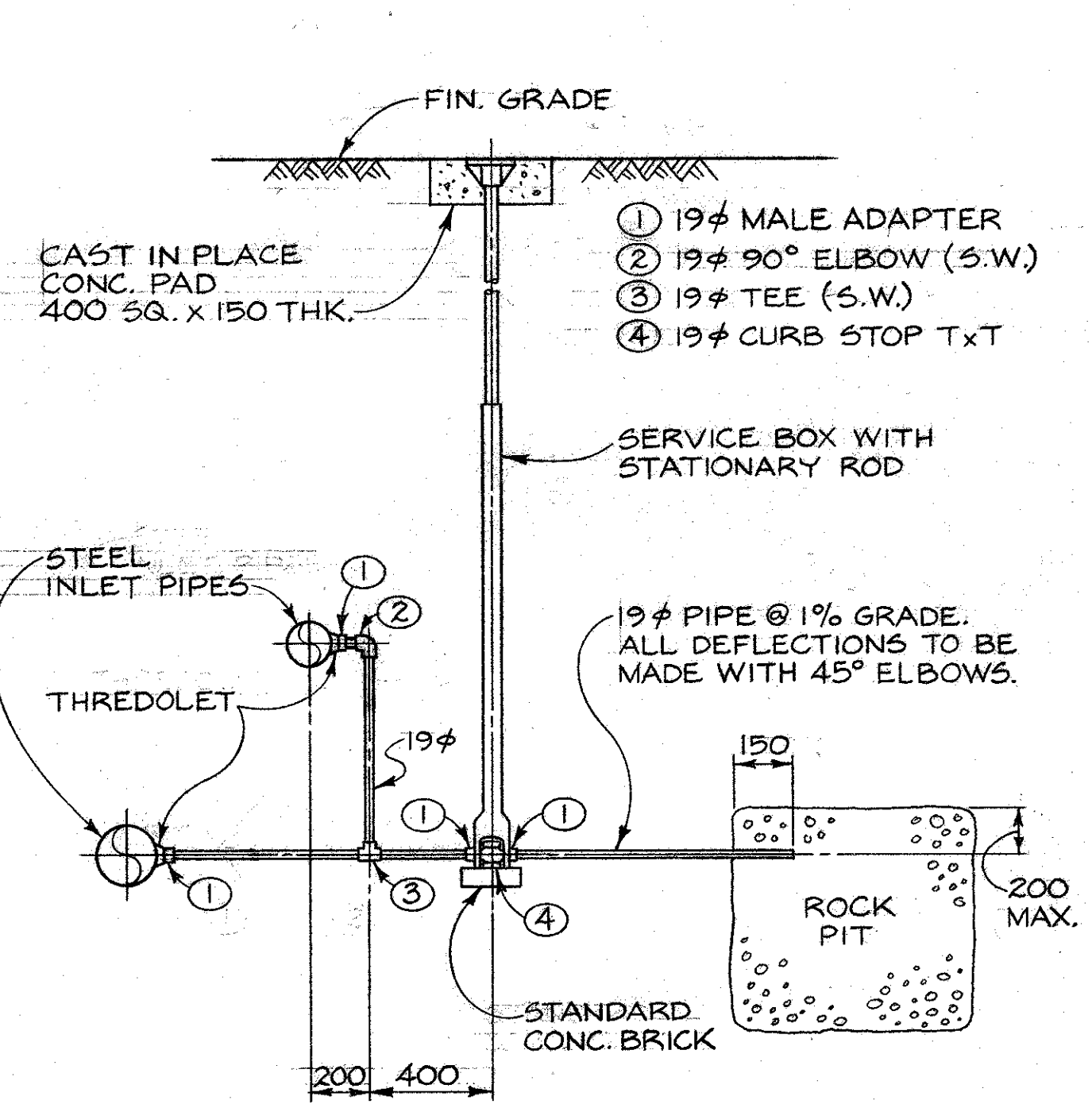
THRUST BLOCK DETAILS



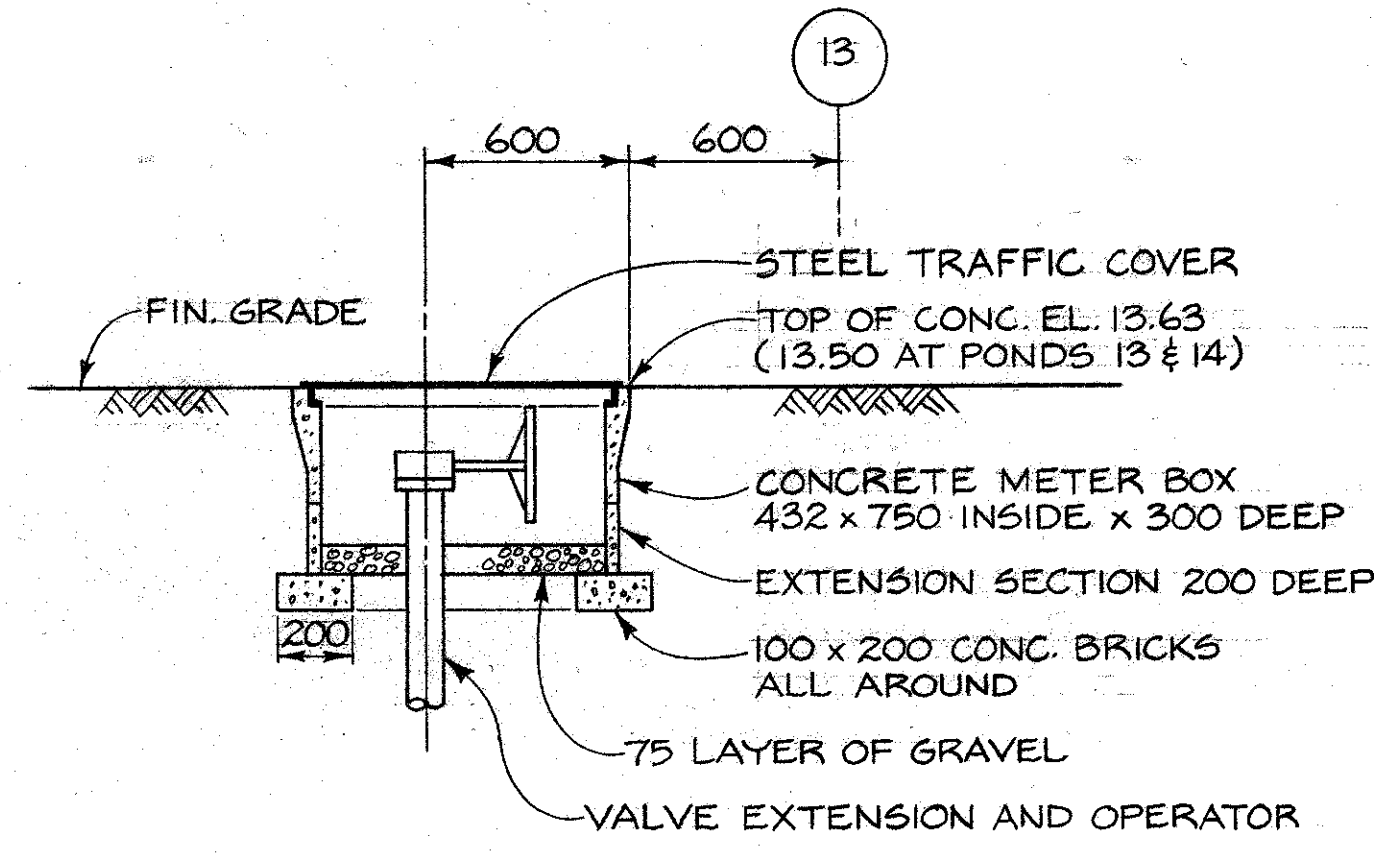
KEY TO NUMBERED PARTS - BYPASS NO. 1

- 500 φ BUTTERFLY VALVE w/ BURIED SERVICE GEAR OPERATOR & VALVE OPERATOR EXTENSION
- 450 φ BUTTERFLY VALVE w/ BURIED SERVICE GEAR OPERATOR & VALVE OPERATOR EXTENSION
- 450 φ BELL x FLANGE ADAPTER
- 500 φ MECHANICAL COUPLING
- 450 φ MECHANICAL COUPLING

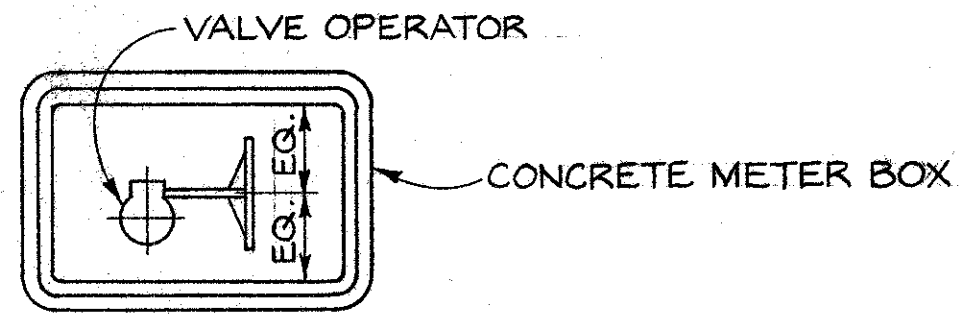
<p>DESIGNED G.M./J.C.</p> <p>DRAWN J.C.</p> <p>CHECKED STW/12.</p> <p>RECOMMENDED [Signature]</p> <p>APPROVED [Signature]</p>		<p>DEPARTMENT OF FISHERIES AND OCEANS</p> <p>SALMONID ENHANCEMENT PROGRAM</p>						
<p>82/06/18 INVERT ELEVATIONS ADDED.</p> <p>MAR. 85 AS BUILT</p>		<p>KITIMAT RIVER PROJECT</p> <p>CONTRACT No 6</p> <p>WATER SUPPLY PIPING</p> <p>MISCELLANEOUS DETAILS</p>						
DWG. NO.	REFERENCE DRAWINGS	NO.	DATE	REVISIONS	SCALE AS SHOWN	DATE MAY, 1982	DRAWING NUMBER 22-35-293	REVISION 2



DETAIL 1
N.T.S. **typ.** TYPICAL POND INLET DRAIN

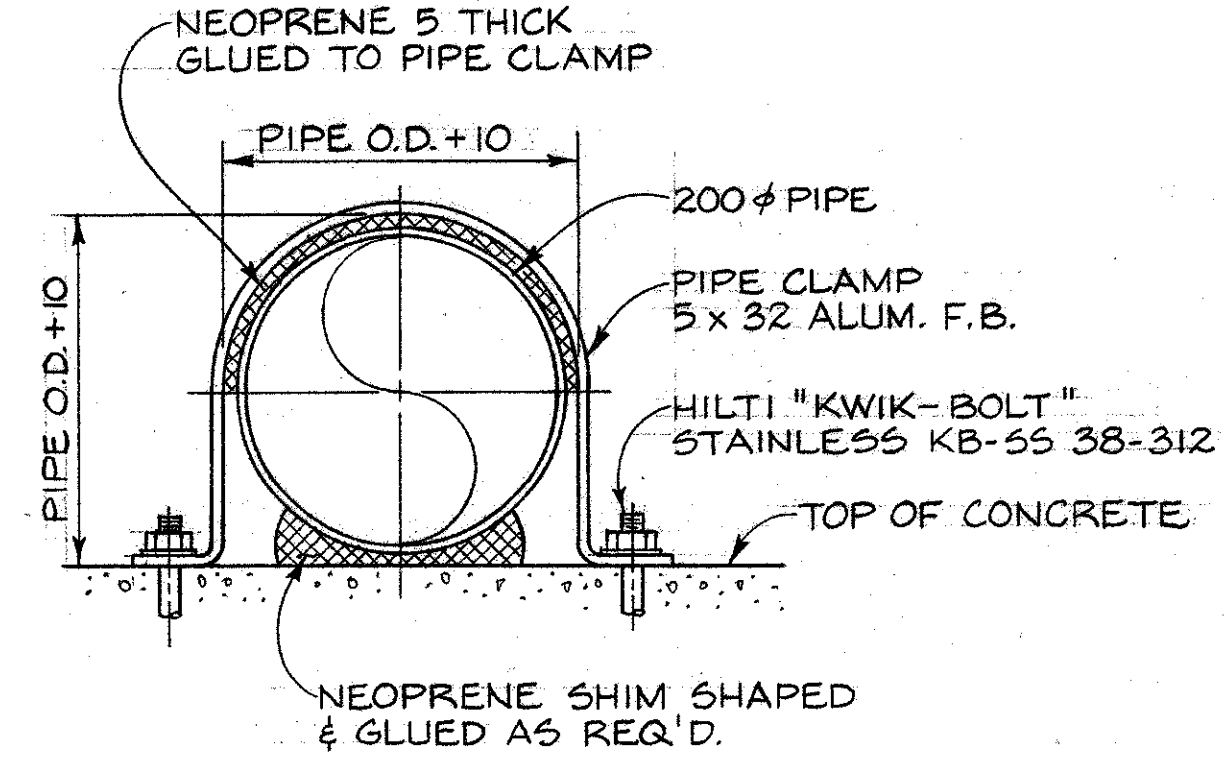


SECTION 13

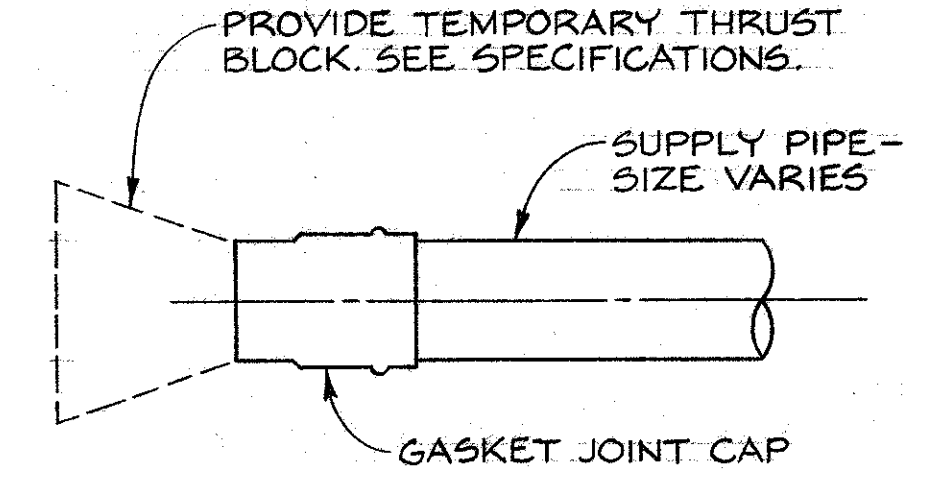


PLAN

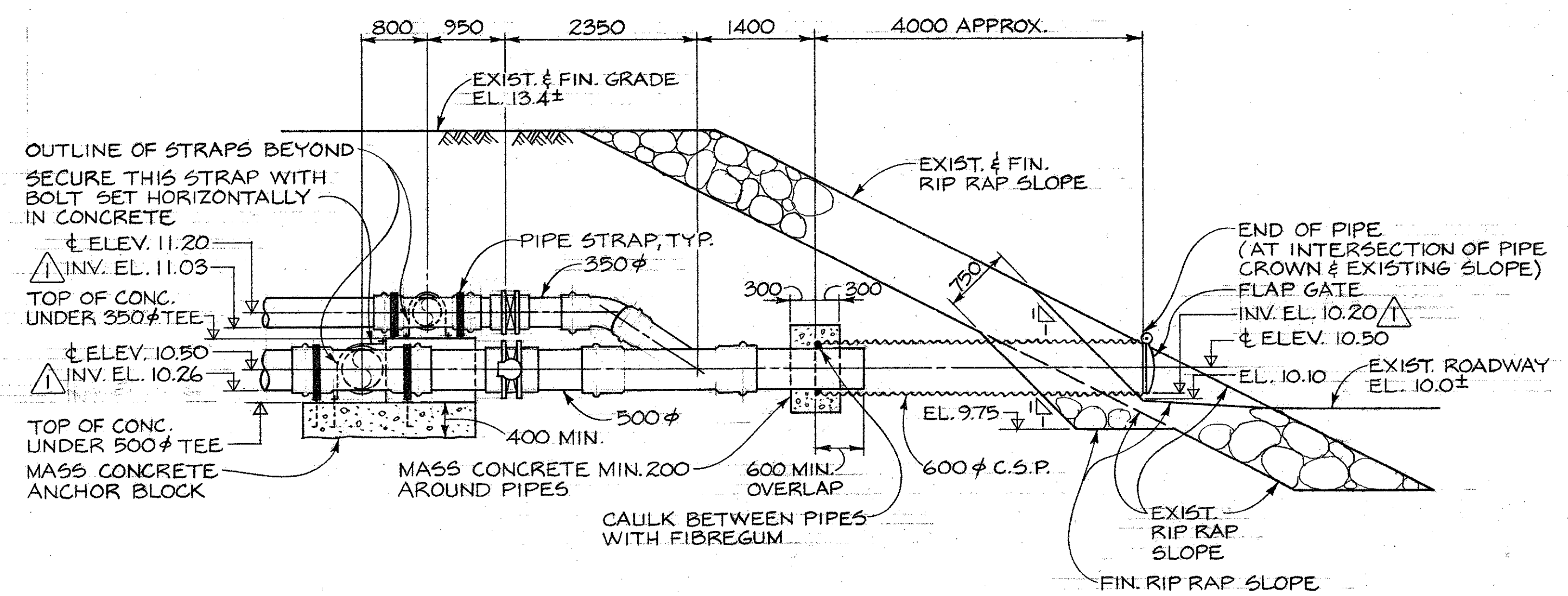
DETAIL 6
N.T.S. **typ.** VALVE BOX FOR POND INLETS



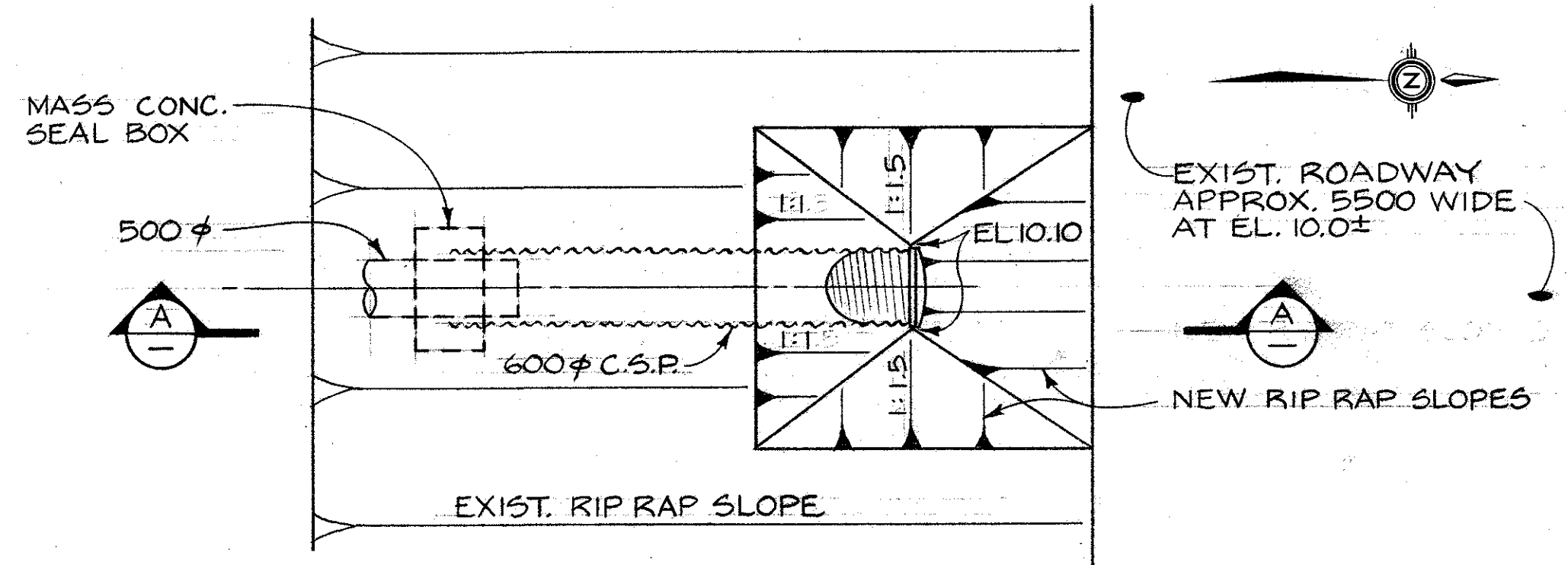
DETAIL 5
N.T.S. **292** PIPE CLAMP



DETAIL 4
N.T.S. **286** TEMPORARY PIPE CAP



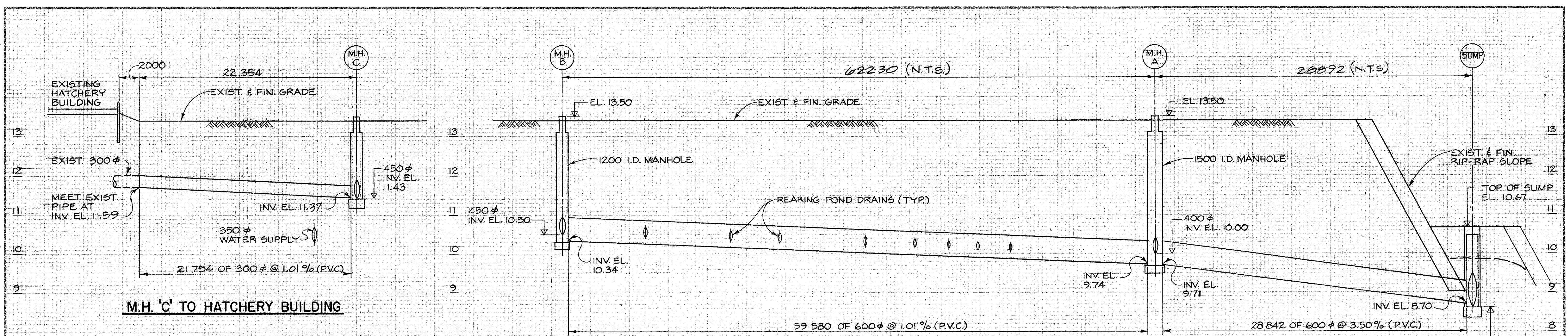
SECTION A-D
SCALE 1:50 **288**



DETAIL 7
SCALE 1:50 **286** PLAN

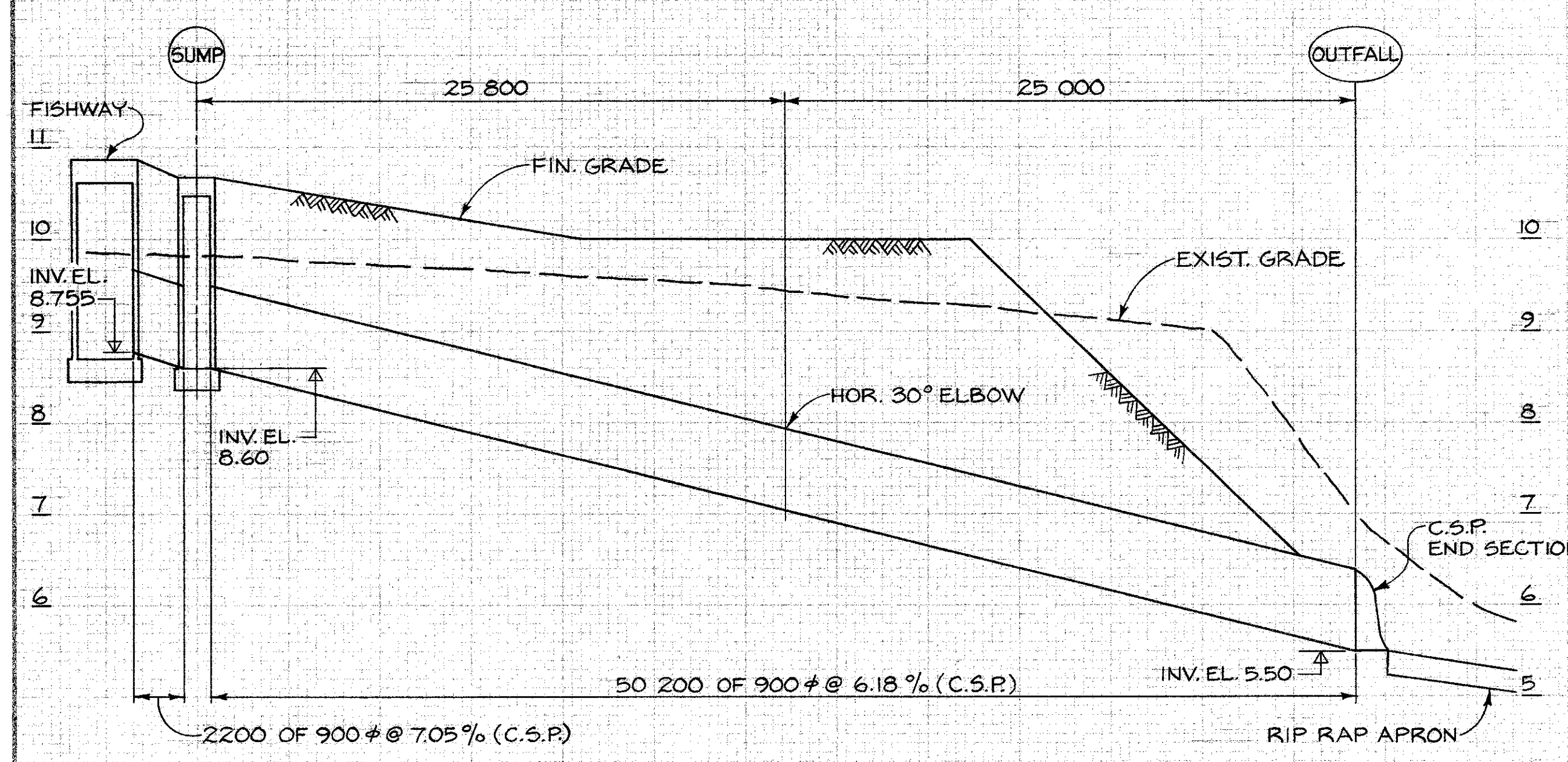
DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS	DESIGNED G.M. / J.C. DRAWN J.C. CHECKED Jew / ic RECOMMENDED C. Morris APPROVED 	DEPARTMENT OF FISHERIES AND OCEANS SALMONID ENHANCEMENT PROGRAM KITIMAT RIVER PROJECT CONTRACT N° 6 WATER SUPPLY PIPING MISCELLANEOUS DETAILS	SCALE
								AS SHOWN
								DATE
								MAY, 1982
								DRAWING NUMBER
								22-35-294
								REVISION
								1

BCL 67841-D.F.G.

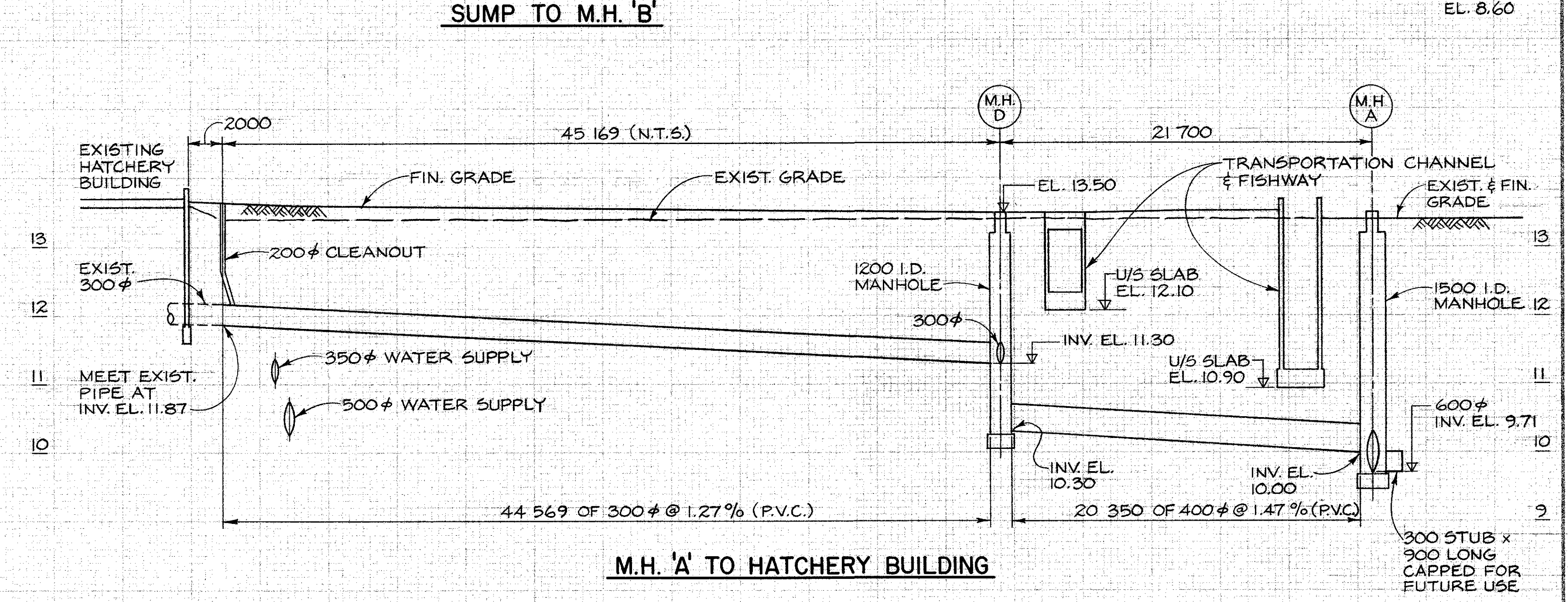


M.H. 'C' TO HATCHERY BUILDING

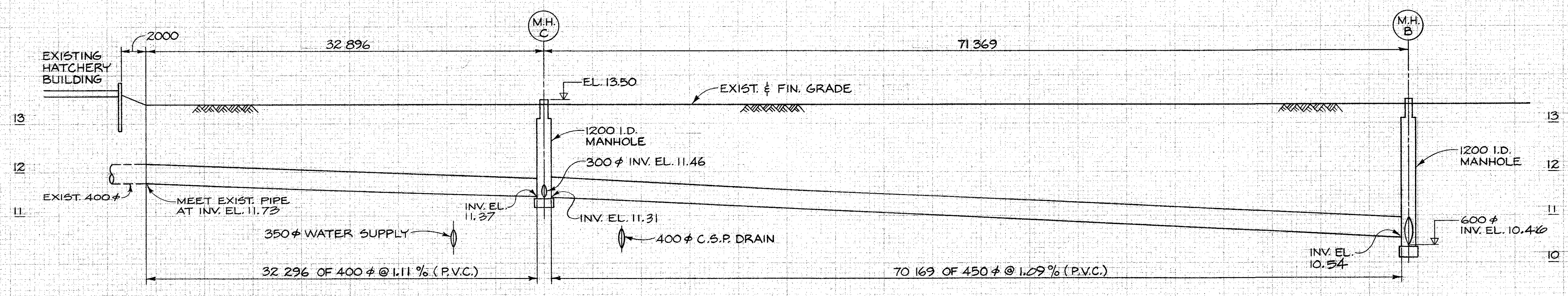
SUMP TO M.H. 'B'



FISHWAY TO OUTFALL

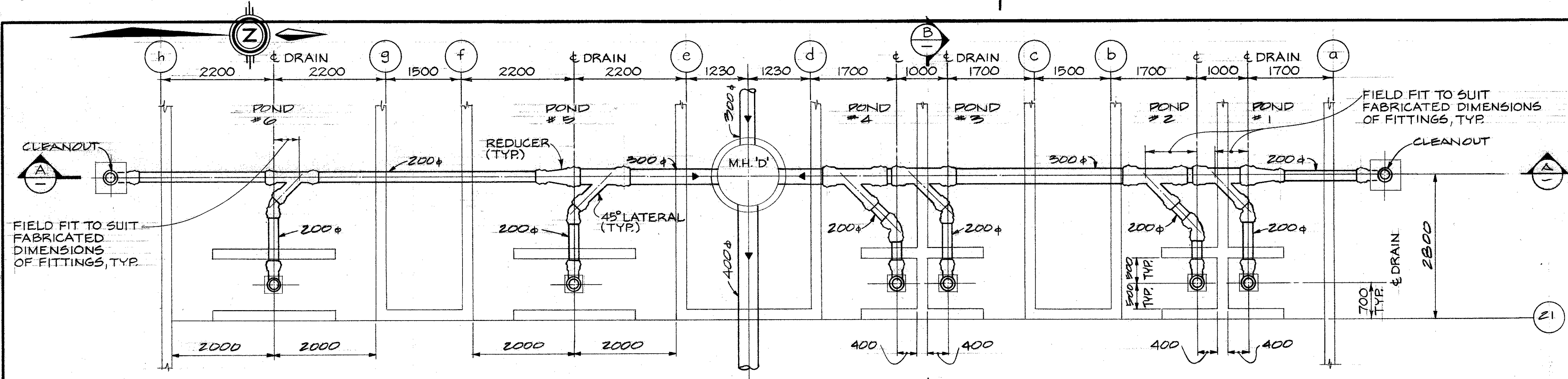


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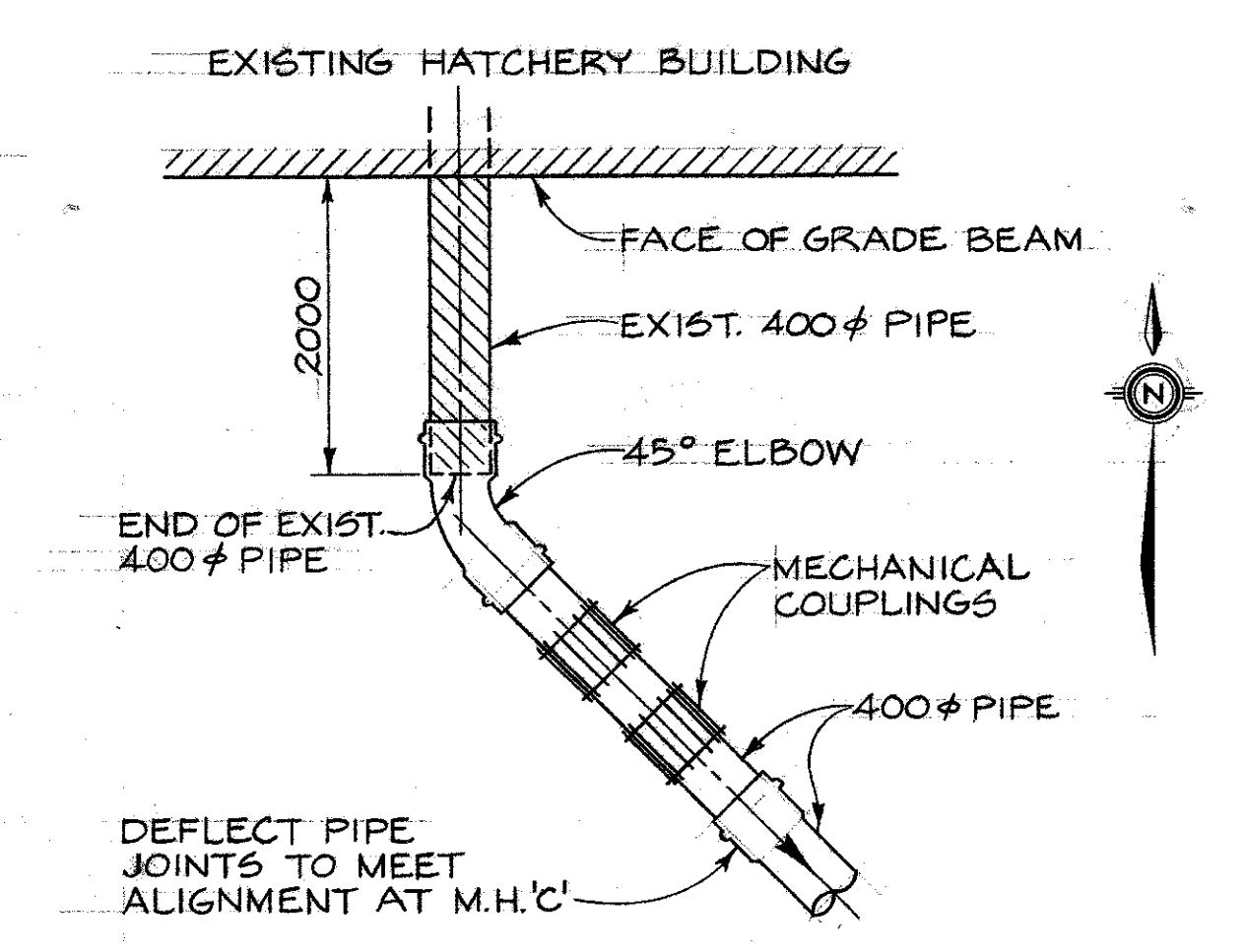


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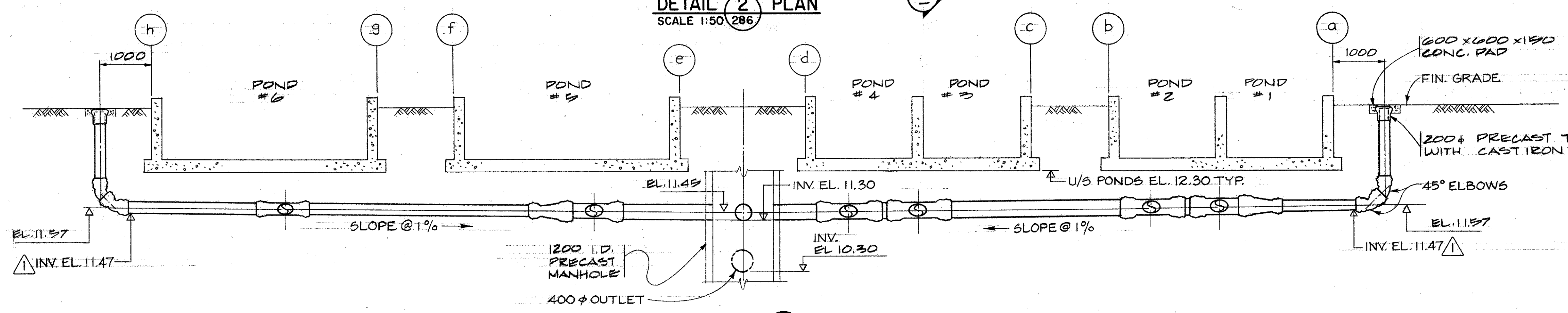
DEPARTMENT OF FISHERIES AND OCEANS SALMONID ENHANCEMENT PROGRAM					
KITIMAT RIVER PROJECT CONTRACT N° 6 DRAINAGE PIPING PROFILES			SCALE 1:200 HOR. 1:50 VERT. DATE MAY, 1982 DRAWING NUMBER 22-35-295 REVISION		
DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS



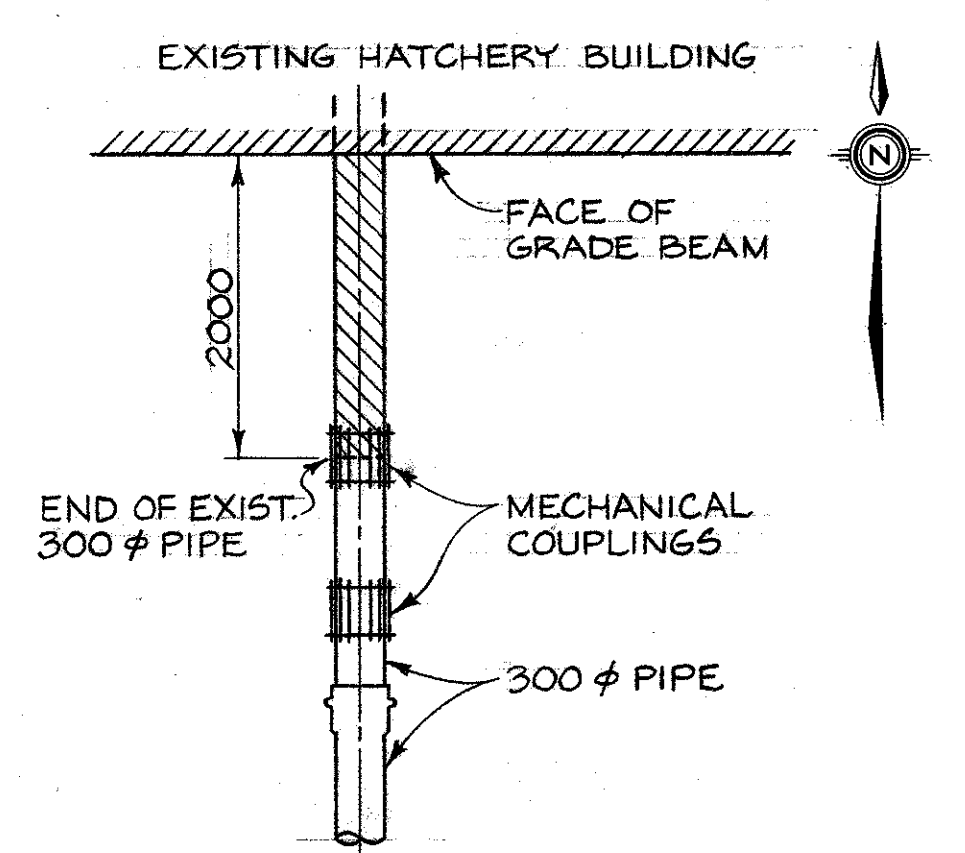
DETAIL 2 PLAN
SCALE 1:50 286



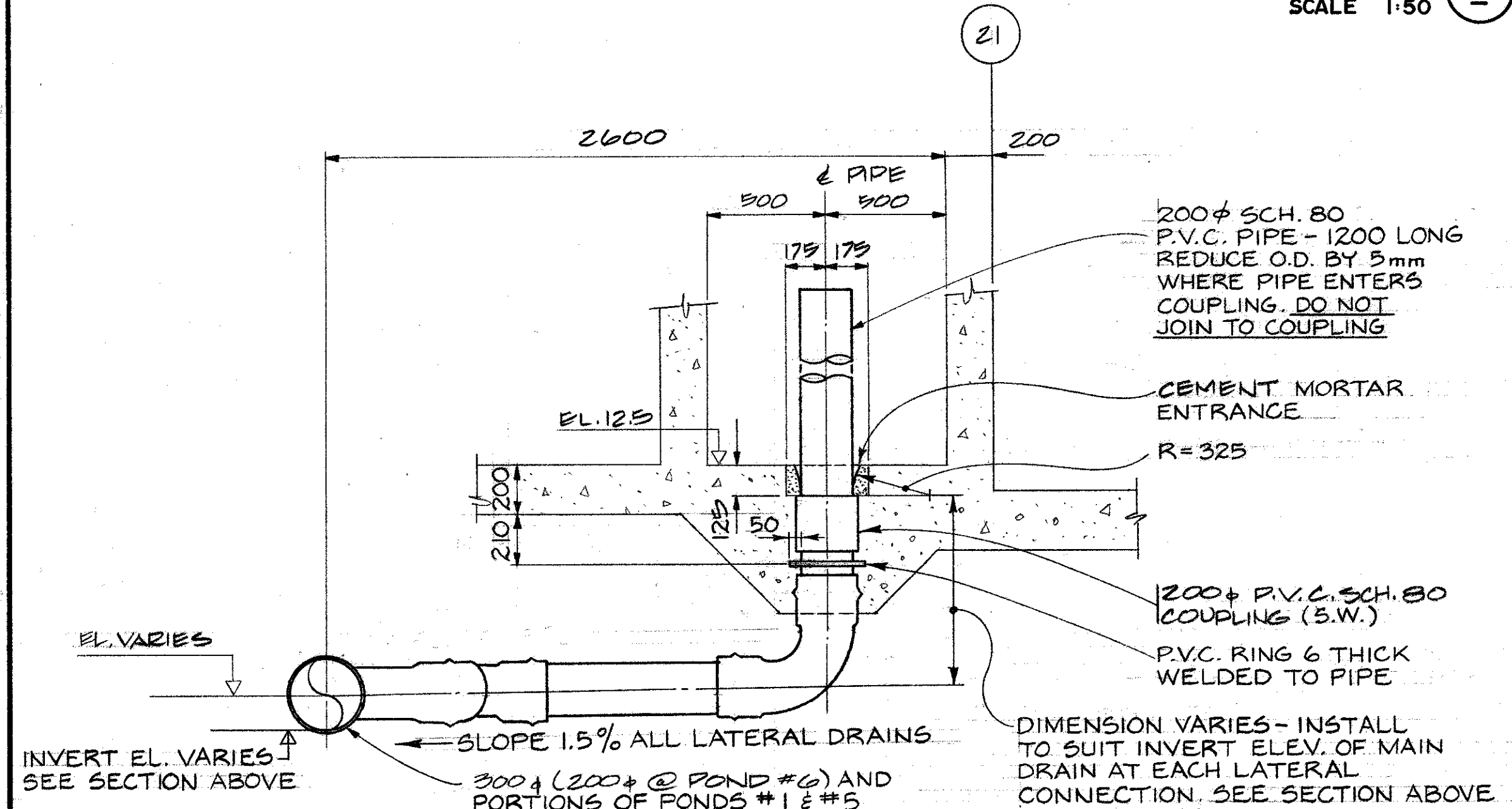
DETAIL 5 PLAN
N.T.S.



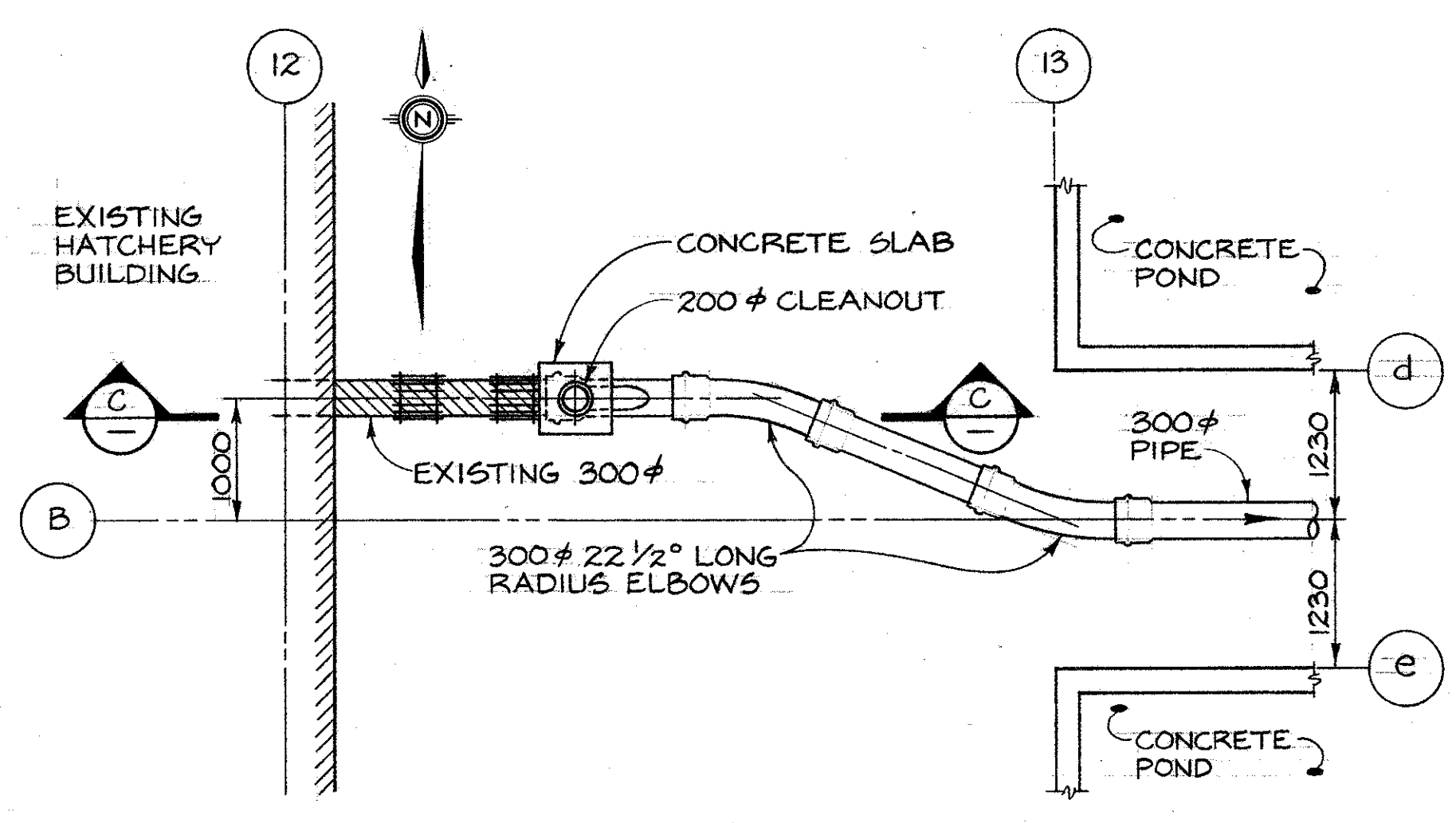
SECTION A
SCALE 1:50



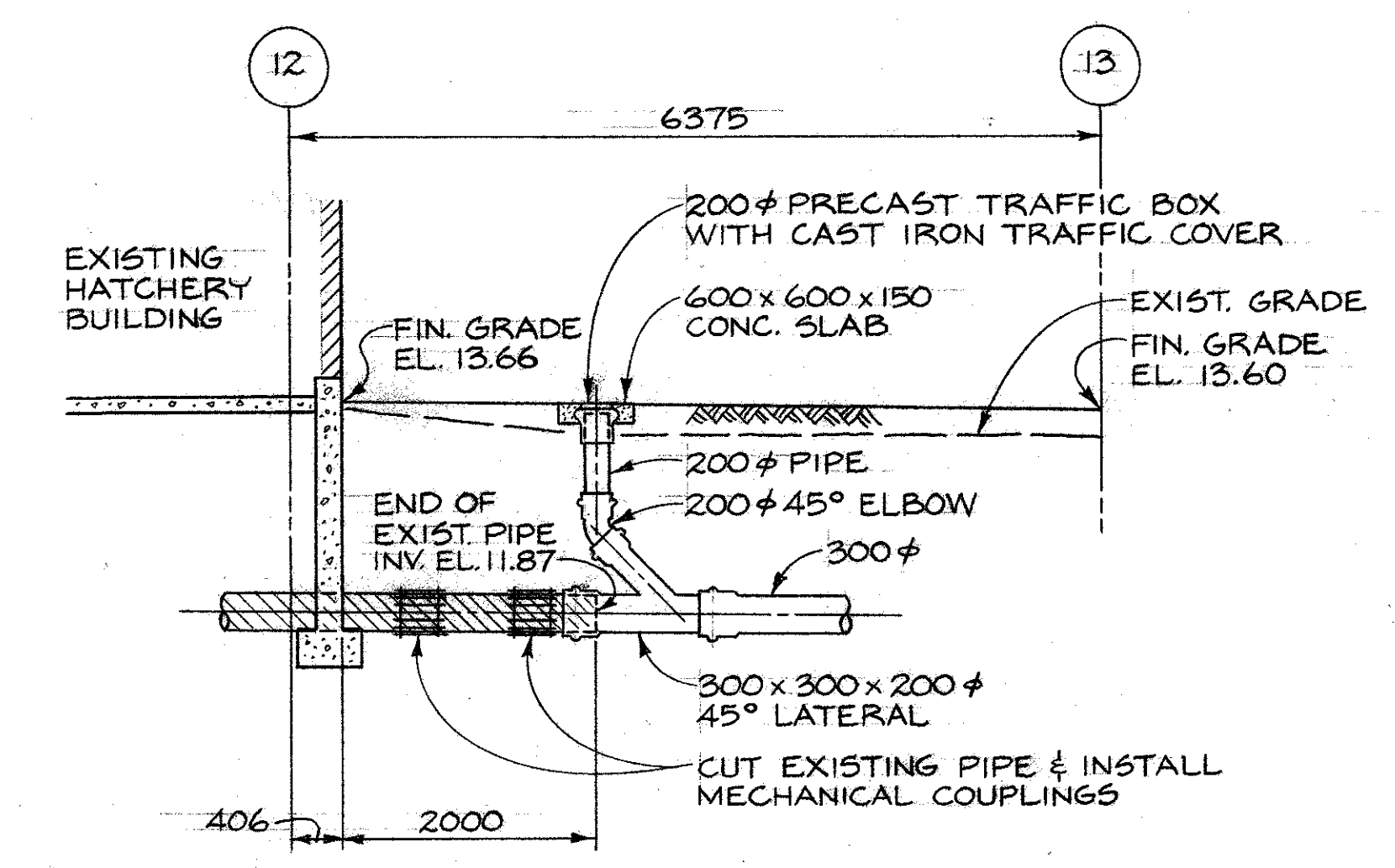
DETAIL 6 PLAN
N.T.S.



TYPICAL DRAIN - PONDS 1-6
SECTION B
SCALE 1:20

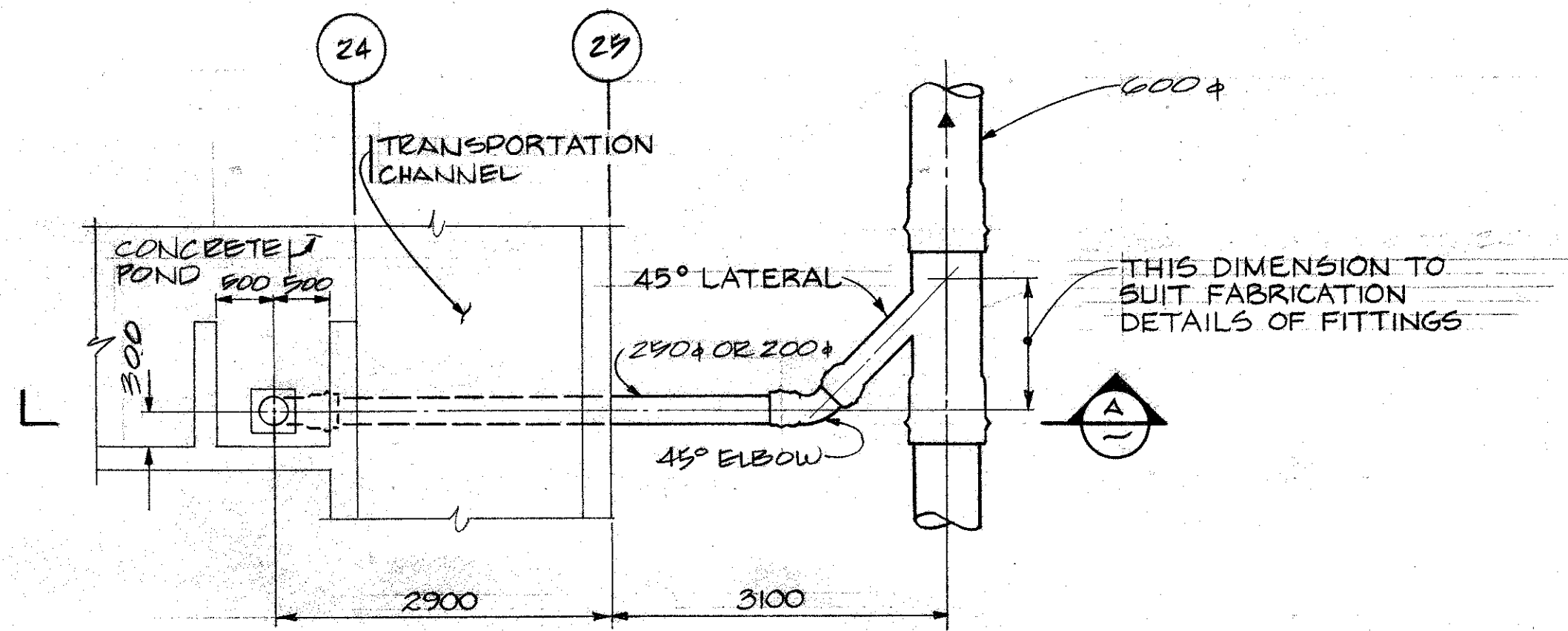
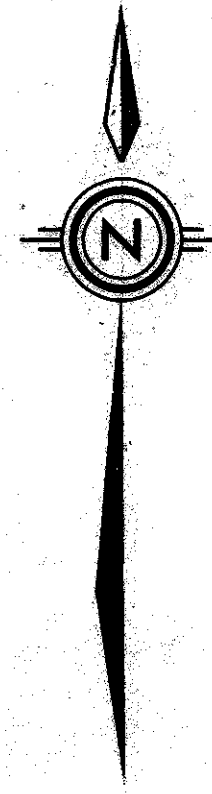


DETAIL 4 PLAN
SCALE 1:50 288

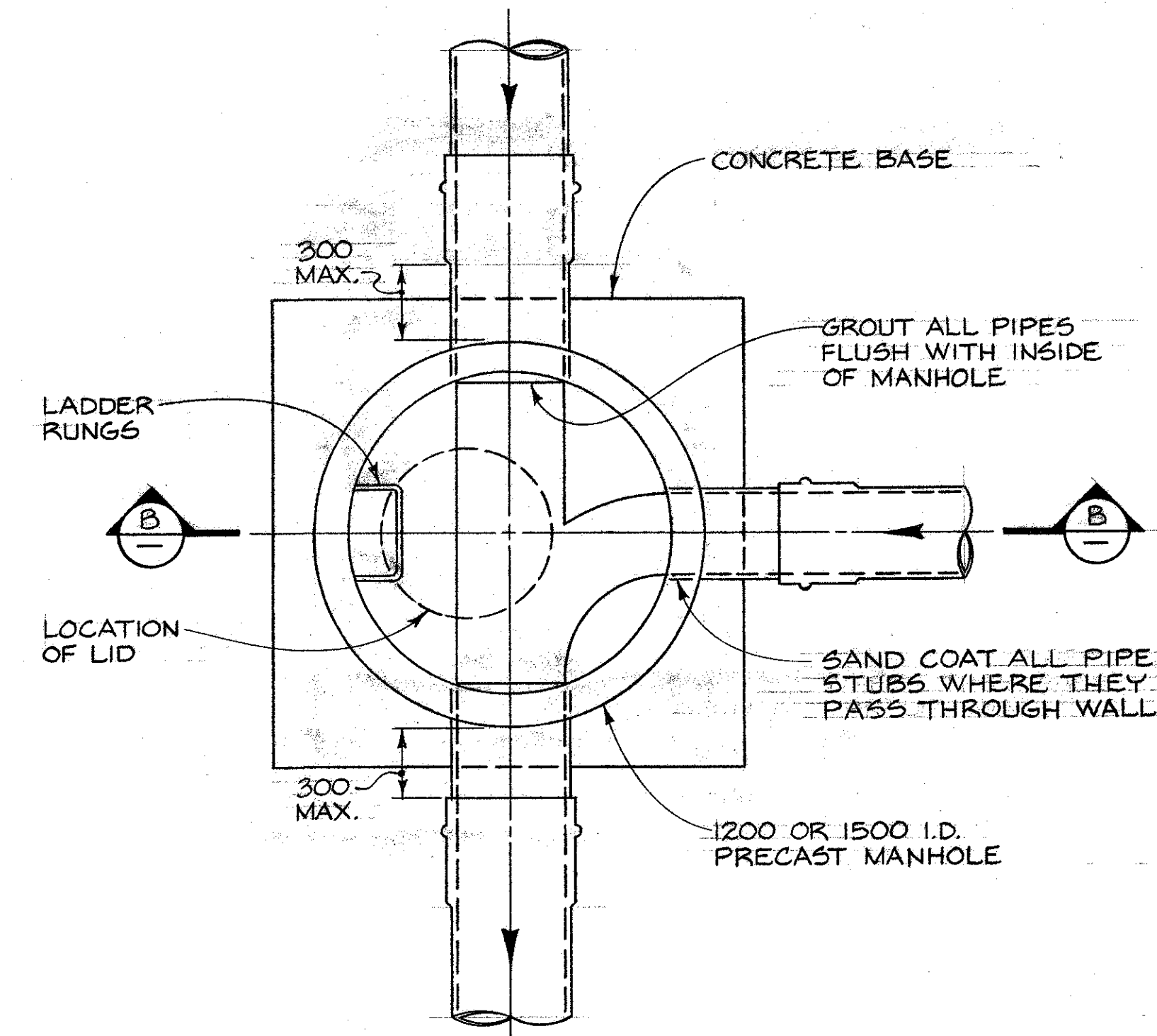


SECTION C
SCALE 1:50

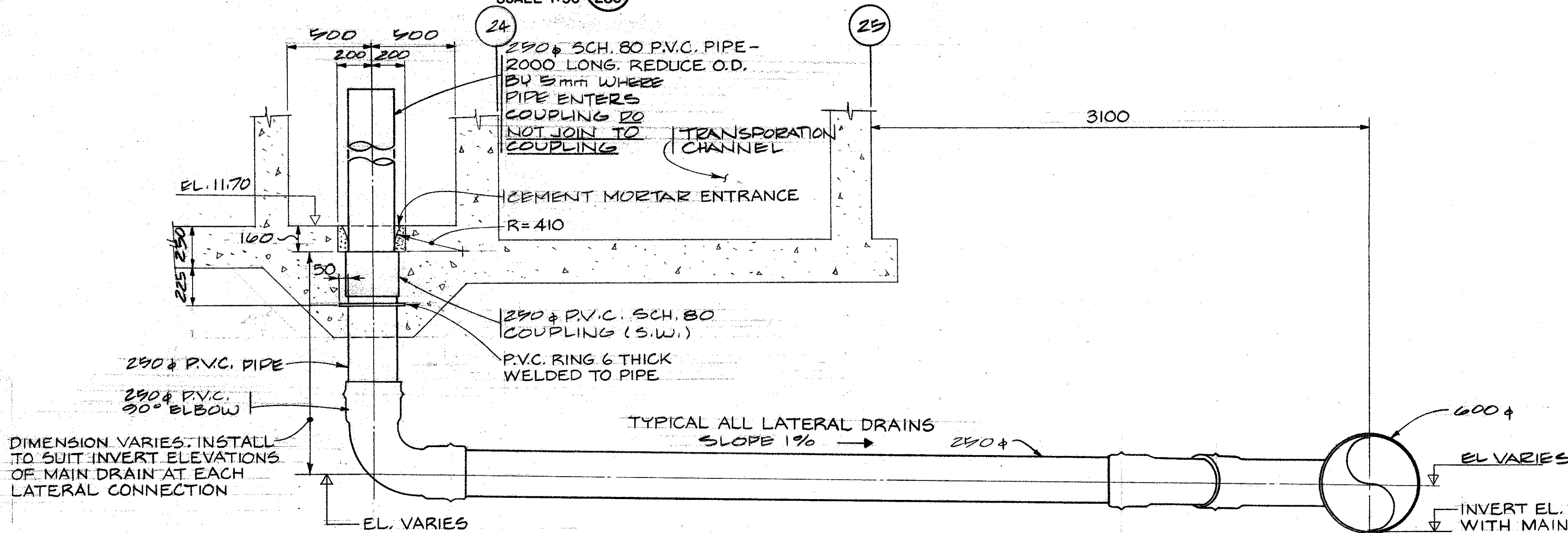
<p>DESIGNED 12. J.C. DRAWN W.K. J.C. CHECKED JWS/12 RECOMMENDED [Signature] APPROVED [Signature]</p>		<p>82/06/18 INVERT ELEVATIONS ADDED.</p>		<p>DEPARTMENT OF FISHERIES AND OCEANS SALMONID ENHANCEMENT PROGRAM</p>	
<p>DWG. NO.</p>		<p>REFERENCE DRAWINGS</p>		<p>NO. DATE REVISIONS</p>	
<p>NOTES</p>		<p>INVERT ELEVATIONS ADDED.</p>		<p>KITIMAT RIVER PROJECT CONTRACT N° 6 DRAINAGE PIPING DETAIL PLAN & SECTIONS</p>	
<p>SCALE 1:50</p>		<p>SCALE 1:20</p>		<p>SCALE AS SHOWN DATE MAY, 1982 DRAWING NUMBER 22-35-296 REVISION 1</p>	



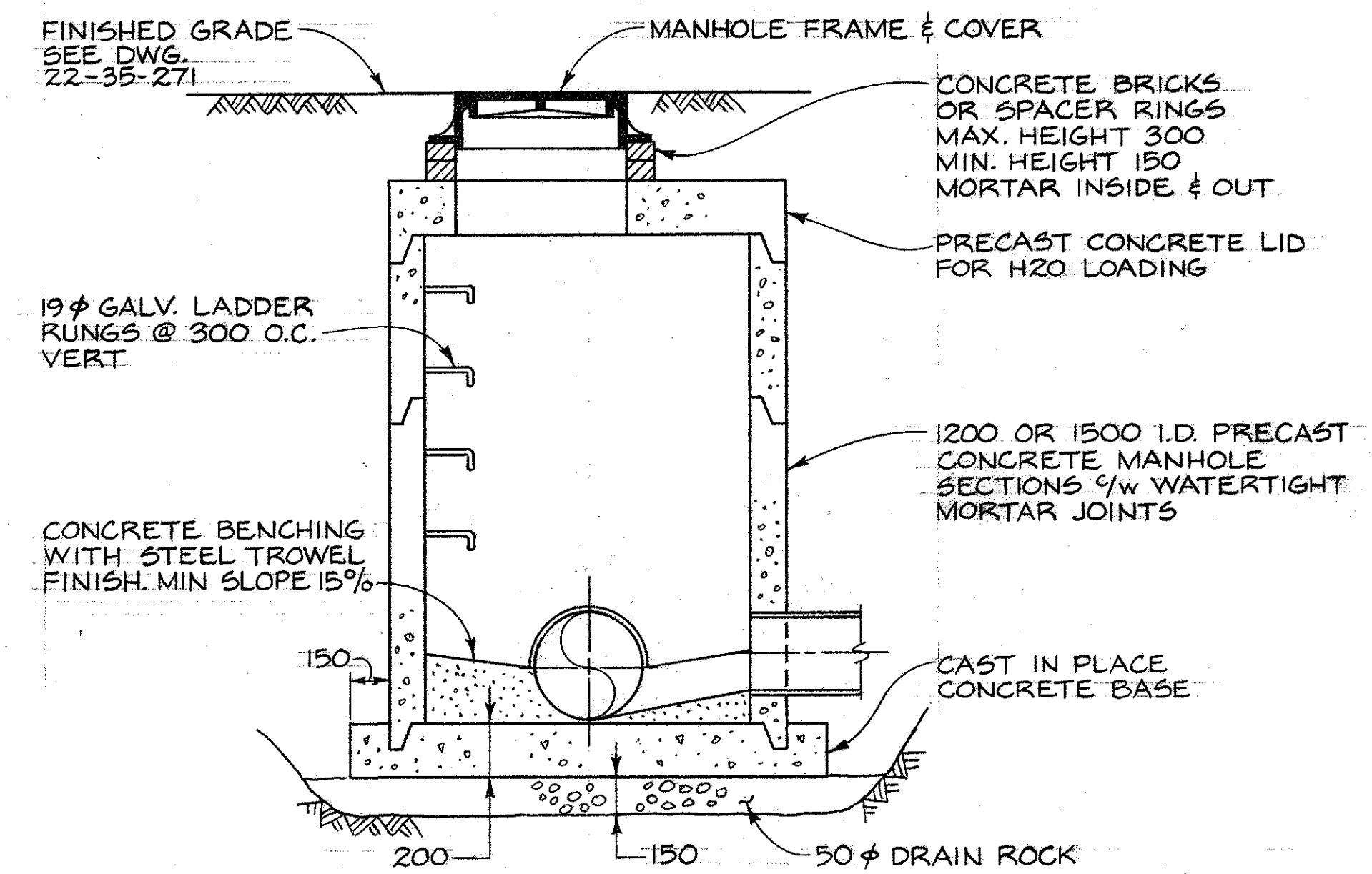
DETAIL 3 PLAN (TYPICAL)
SCALE 1:50



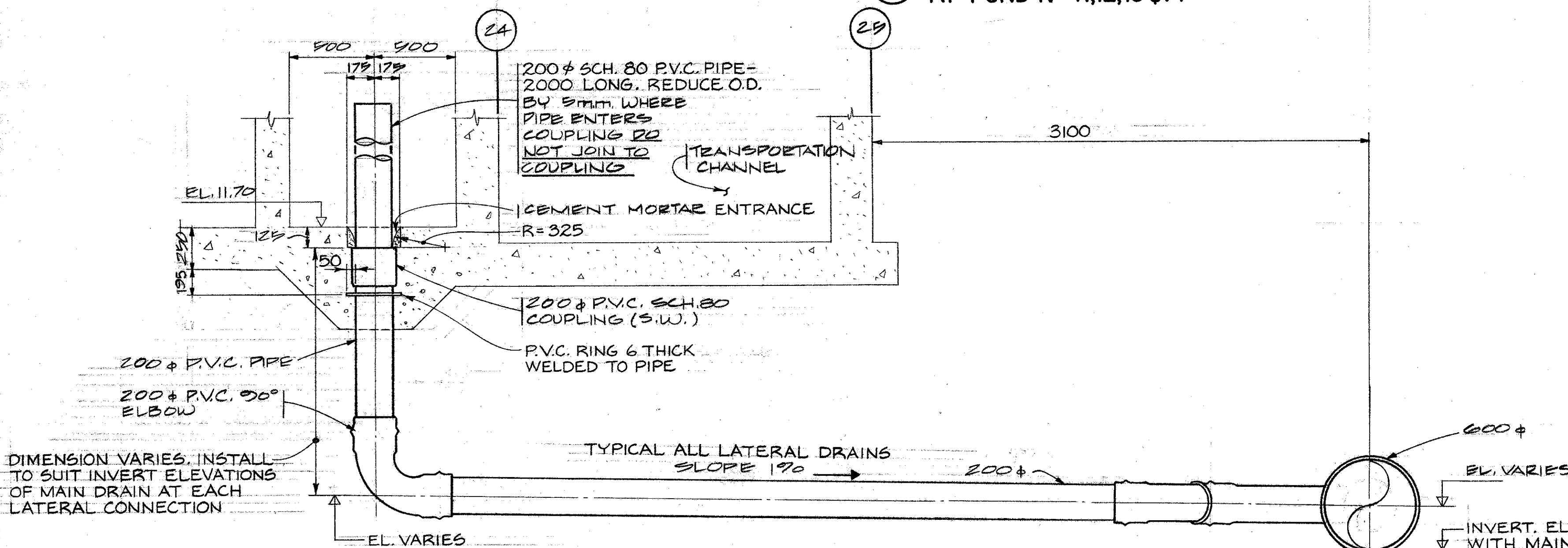
PLAN
N.T.S.



SECTION A DRAIN OUTLET
SCALE 1:20 AT POND N° 11,12,13 & 14



SECTION B
N.T.S.



SECTION A DRAIN OUTLET
SCALE 1:20 AT POND N° 7,8,9 & 10

TYPICAL MANHOLE DETAIL

DEPARTMENT OF FISHERIES AND OCEANS
SALMONID ENHANCEMENT PROGRAM

DESIGNED
DRAWN
CHECKED
RECOMMENDED
APPROVED

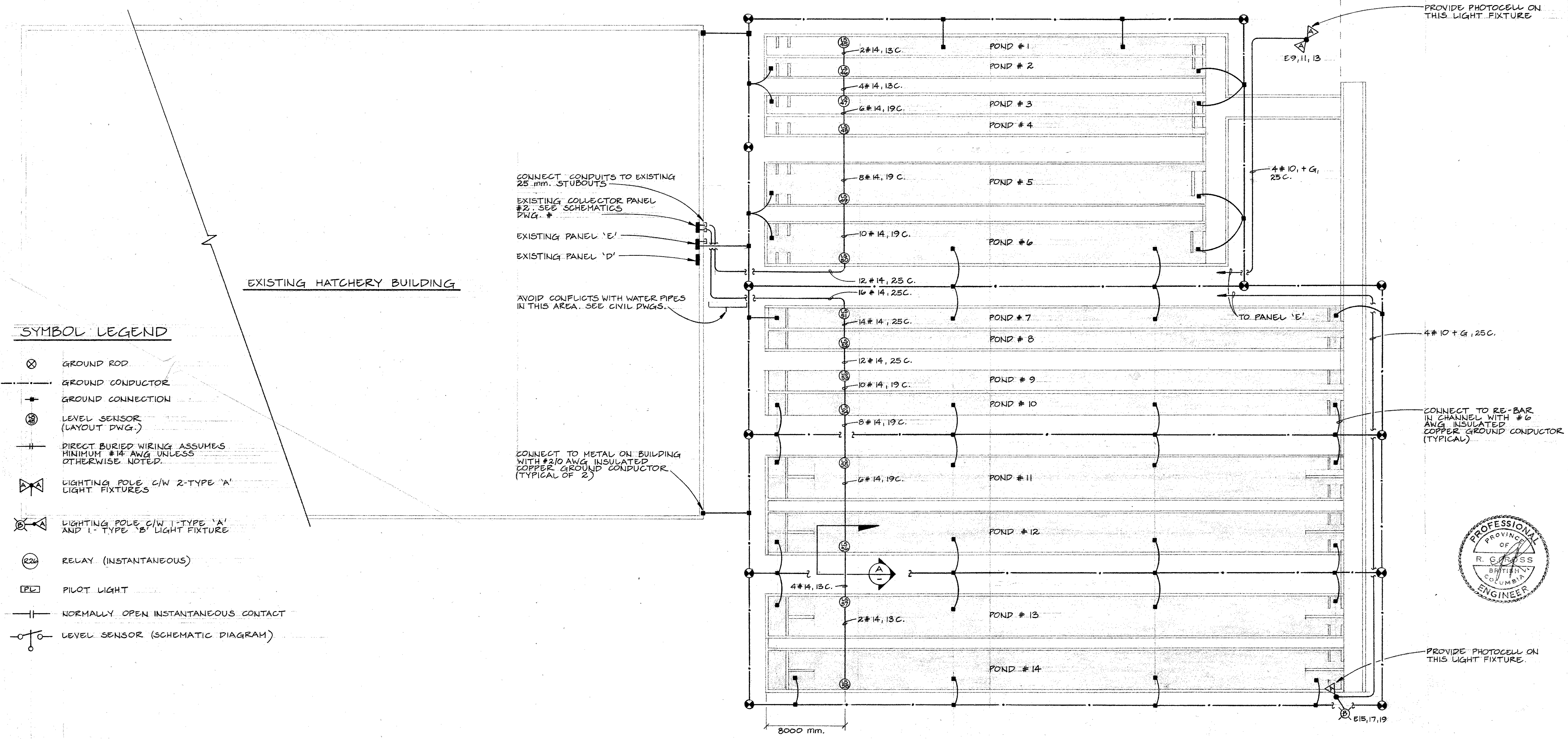
KITIMAT RIVER PROJECT
CONTRACT N° 6
DRAINAGE PIPING
DETAIL PLAN & SECTIONS

SCALE
AS SHOWN
DATE
MAY, 1982
DRAWING NUMBER
22-35-297
REVISION

BCL 67841 D.F.O.

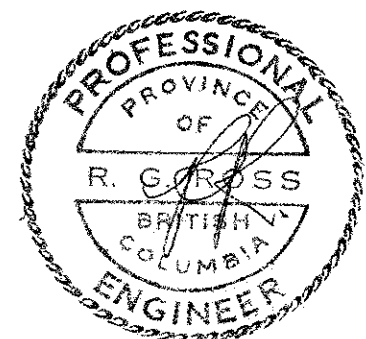
DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS

KITIMAT RIVER



SYMBOL LEGEND

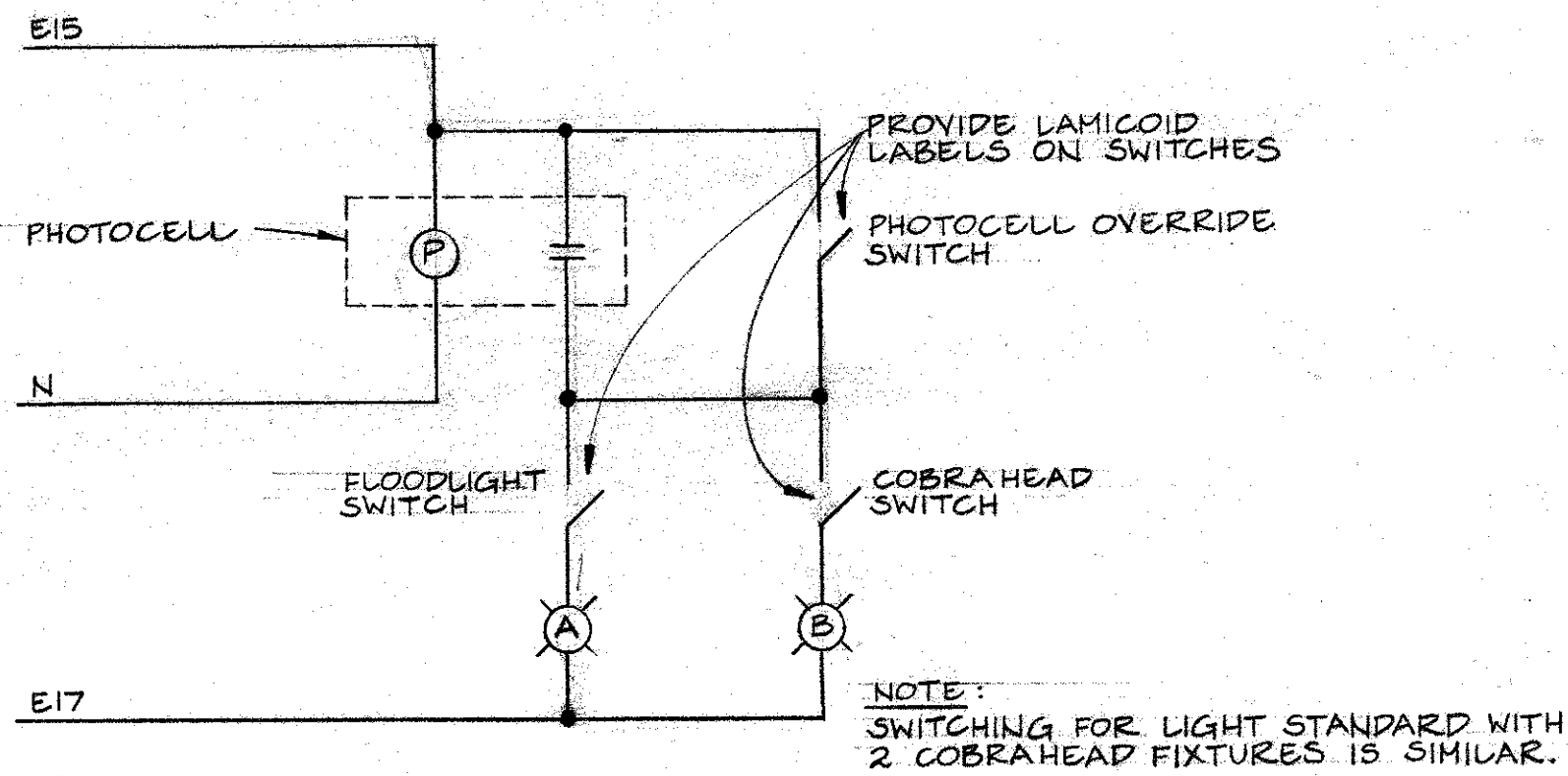
- ⊗ GROUND ROD
- GROUND CONDUCTOR
- GROUND CONNECTION
- ⊕ LEVEL SENSOR (LAYOUT DWG.)
- DIRECT BURIED WIRING ASSUMES MINIMUM #14 AWG UNLESS OTHERWISE NOTED.
- ⊕ LIGHTING POLE C/W 2-TYPE 'A' LIGHT FIXTURES
- ⊕ LIGHTING POLE C/W 1-TYPE 'A' AND 1-TYPE 'B' LIGHT FIXTURE
- ⊕ RELAY (INSTANTANEOUS)
- ⊕ PILOT LIGHT
- NORMALLY OPEN INSTANTANEOUS CONTACT
- ⊕ LEVEL SENSOR (SCHEMATIC DIAGRAM)



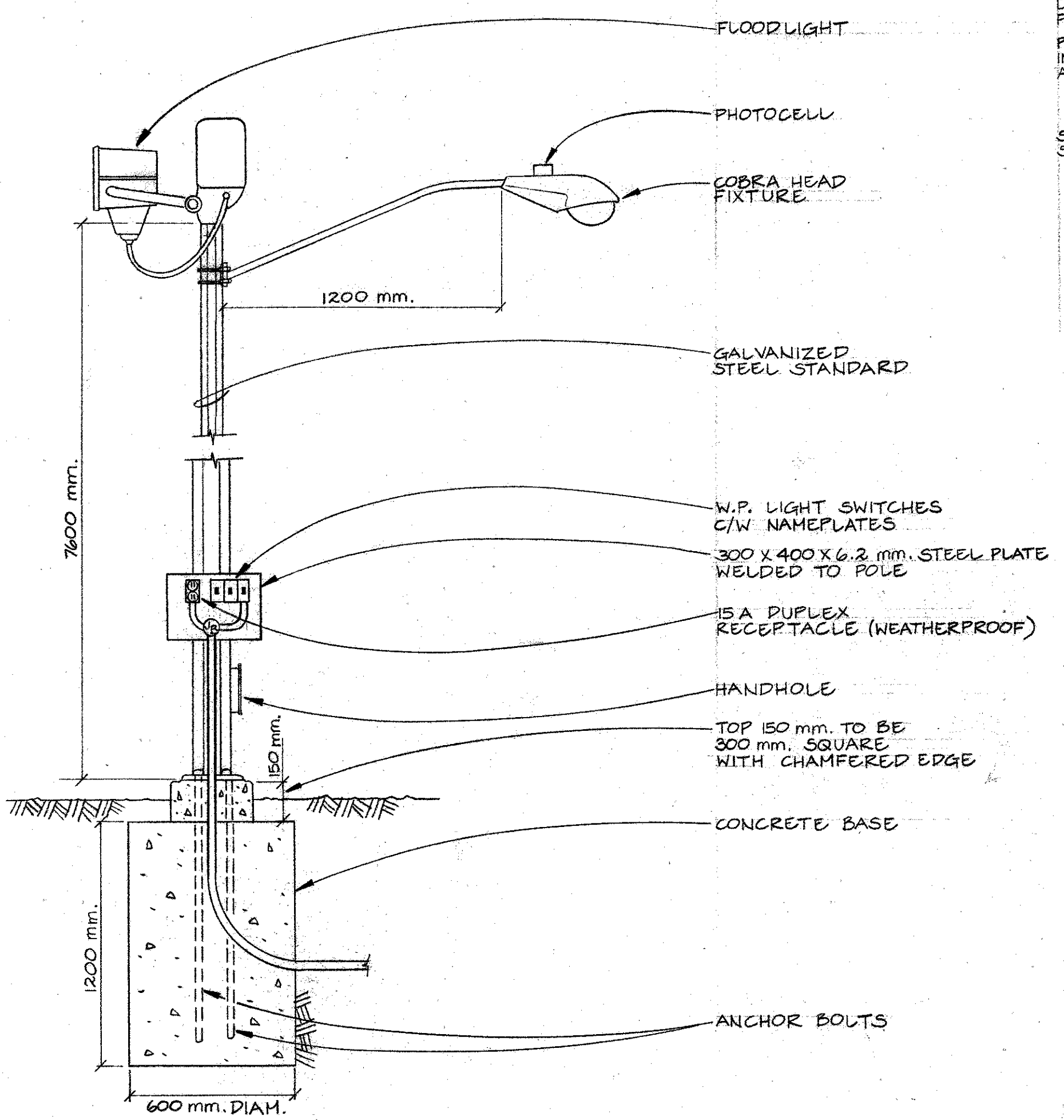
DEPARTMENT OF FISHERIES AND OCEANS SALMONID ENHANCEMENT PROGRAM		SCALE 1: 200
KITIMAT RIVER PROJECT CONTRACT NO 6 CHANNEL LIGHTING, GROUNDING AND ALARM LAYOUTS		DATE APRIL '82
DESIGNED: MJS DRAWN: AJP CHECKED: RGR RECOMMENDED: <i>RGR</i> APPROVED: <i>[Signature]</i> APPROVED: <i>[Signature]</i>		DRAWING NUMBER 22-35-298
DWG. NO.	REFERENCE DRAWINGS	REVISION

NO.	DATE	REVISIONS

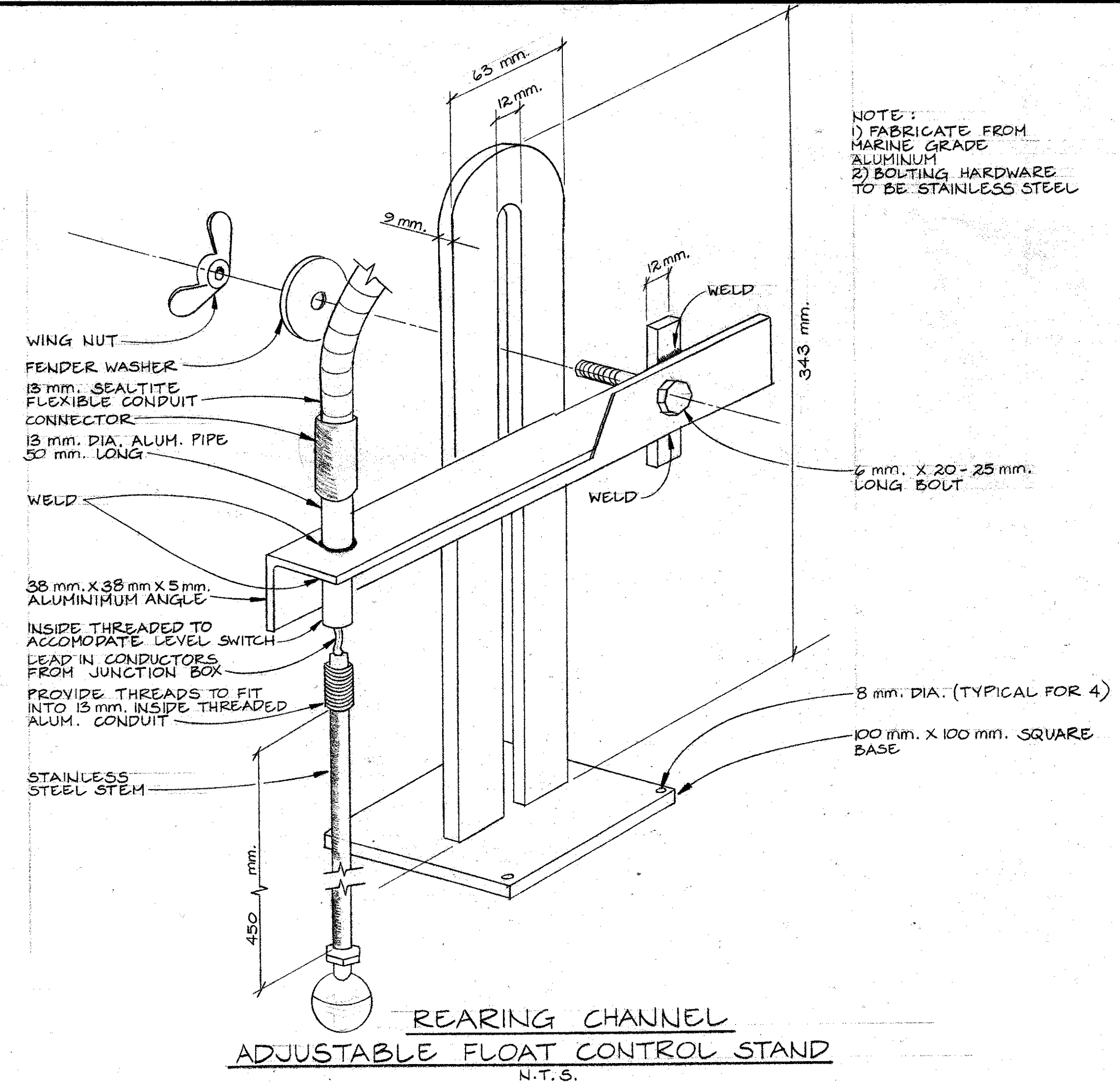
ECL/FISH/AL O&O



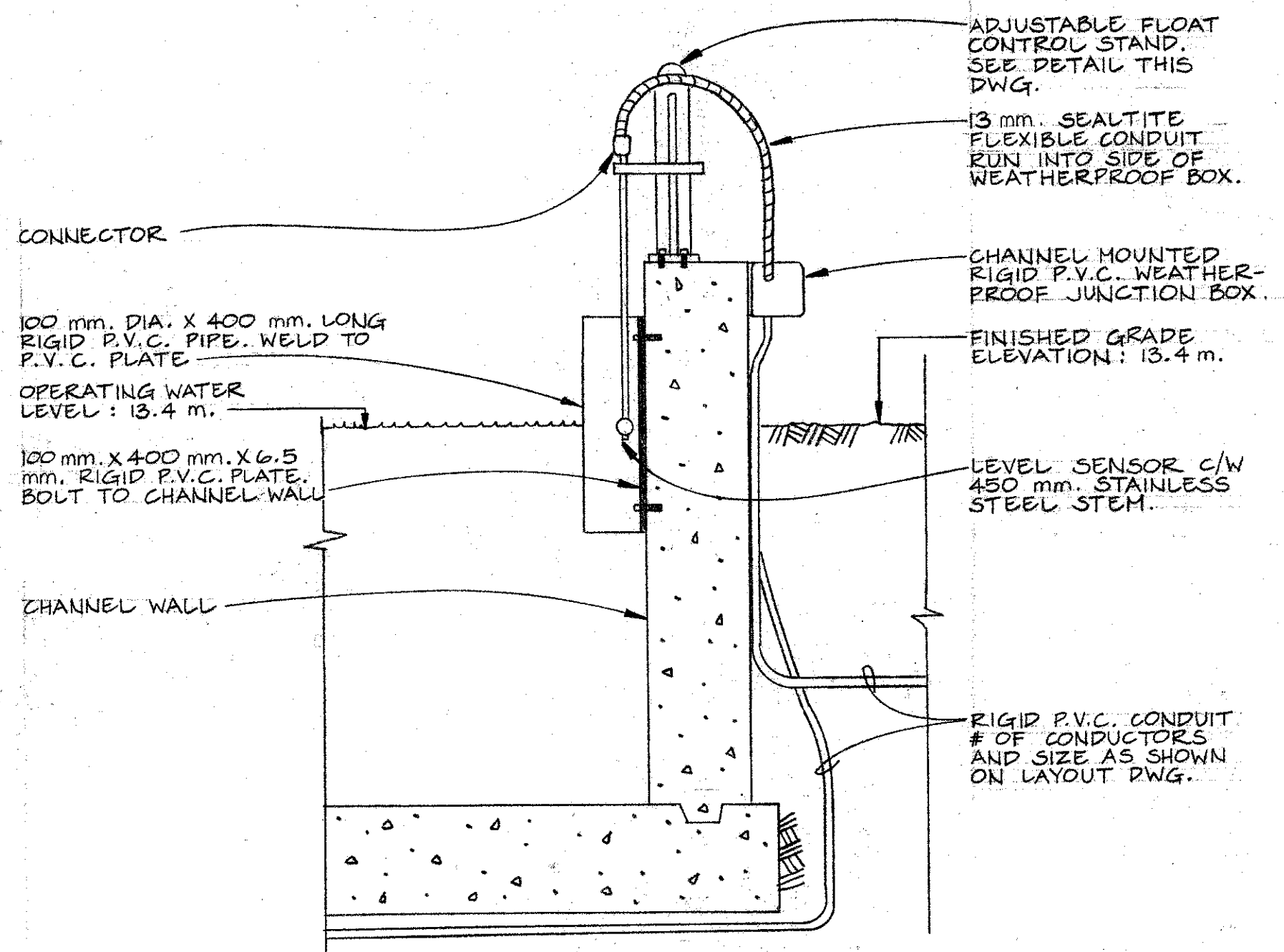
LIGHTING CONTROL SCHEMATIC
N.T.S.



FLOODLIGHT, COBRA HEAD AND RECEPTACLE POLE MOUNTING DETAILS
N.T.S.

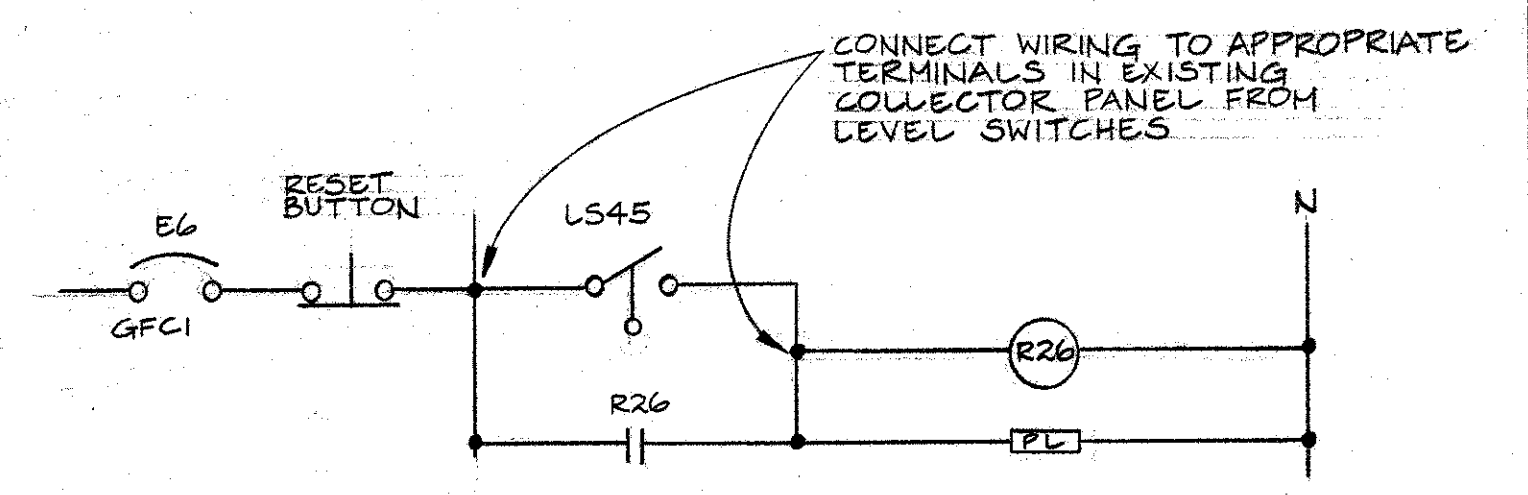
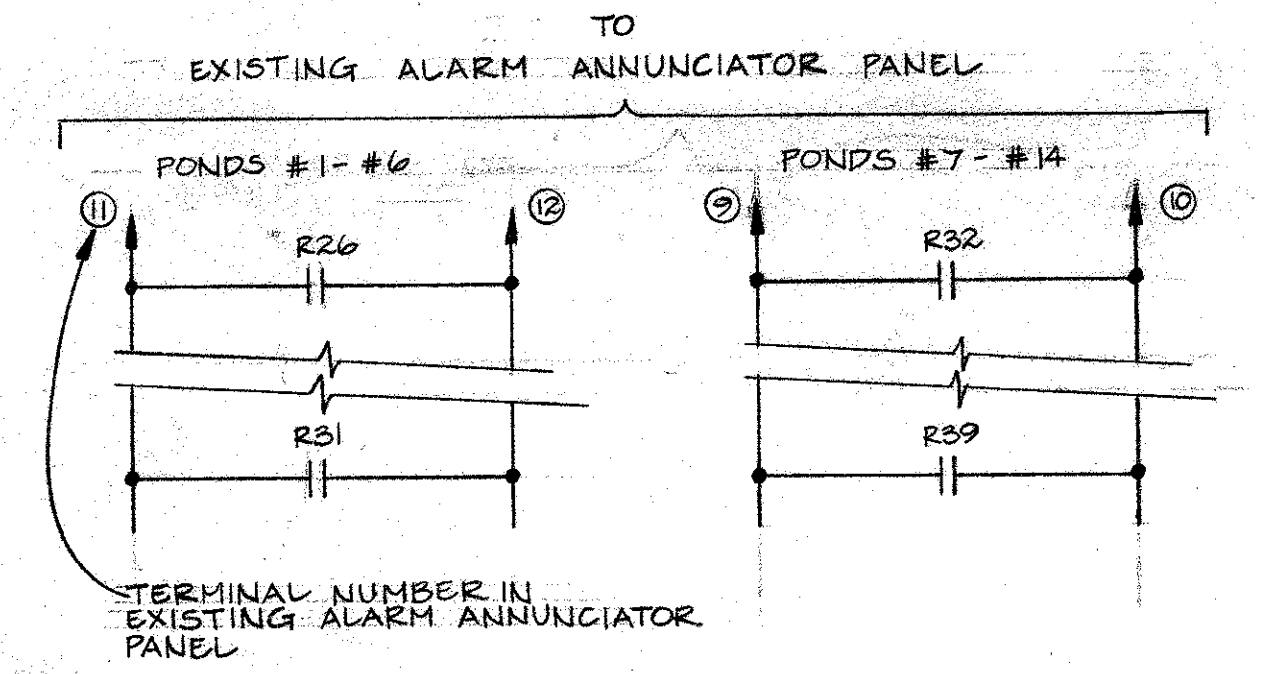


REARING CHANNEL ADJUSTABLE FLOAT CONTROL STAND
N.T.S.



SECTION A-A
SCALE 1:10

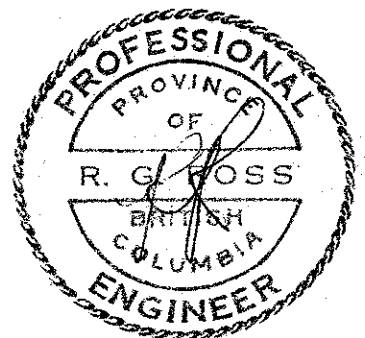
NOTE:
1) FABRICATE FROM MARINE GRADE ALUMINUM
2) BOLTING HARDWARE TO BE STAINLESS STEEL



NOTE:
REMAINING LEVEL SWITCH ALARM SCHEMATICS ARE SIMILAR. R27-R39 ARE USED FOR RELAY NOS. AND LS46-LS58 ARE USED FOR LEVEL SWITCH NOS.

EXISTING COLLECTOR PANEL #2
N.T.S.

NOTE:
1) ALL WIRING IN COLLECTOR #2, AND TO ALARM ANNUNCIATOR PANEL HAS BEEN COMPLETED UNDER PREVIOUS CONTRACT. PROVIDE WIRING FROM LEVEL SWITCHES TO COLLECTOR PANEL. CONNECT AND TEST.



100 A. MAIN BUS		PANEL E				120/208 V 3Ø 4W	
		EXISTING				24 CIRCUIT	
EXISTING CIRCUITS		15ASP	1	2	15ASP	EXISTING CIRCUITS	
			3	4			
			5	6			
			7	8			
NORTH CHANNEL LIGHTS	1000	15ADP	9	10			
			11	12			
POLE MOUNTED REC.	1200	15AGFCI	13	14			
SOUTH CHANNEL LIGHTS	1000	15ADP	15	16			
			17	18			
POLE MOUNTED REC.	1200	15AGFCI	19	20			
			21	22			
			23	24			

NEW CCTS.

DEPARTMENT OF FISHERIES AND OCEANS
SALMONID ENHANCEMENT PROGRAM

KITIMAT RIVER PROJECT
CONTRACT NO 6
SECTIONS, DETAILS AND SCHEMATICS

SCALE 1:200
DATE APRIL '82
DRAWING NUMBER 22-35-299
REVISION

DESIGNED MJS
DRAWN AJP
CHECKED RGR
RECOMMENDED [Signature]
APPROVED [Signature]
APPROVED [Signature]

BCI 07841-DEO

DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS