

The Government of the Province of British Columbia  
 Department of Lands, Forests and Water Resources  
 Water Resources Service

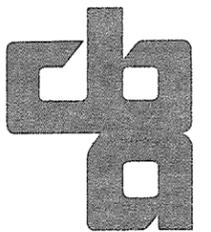
**DRAWING LIST**

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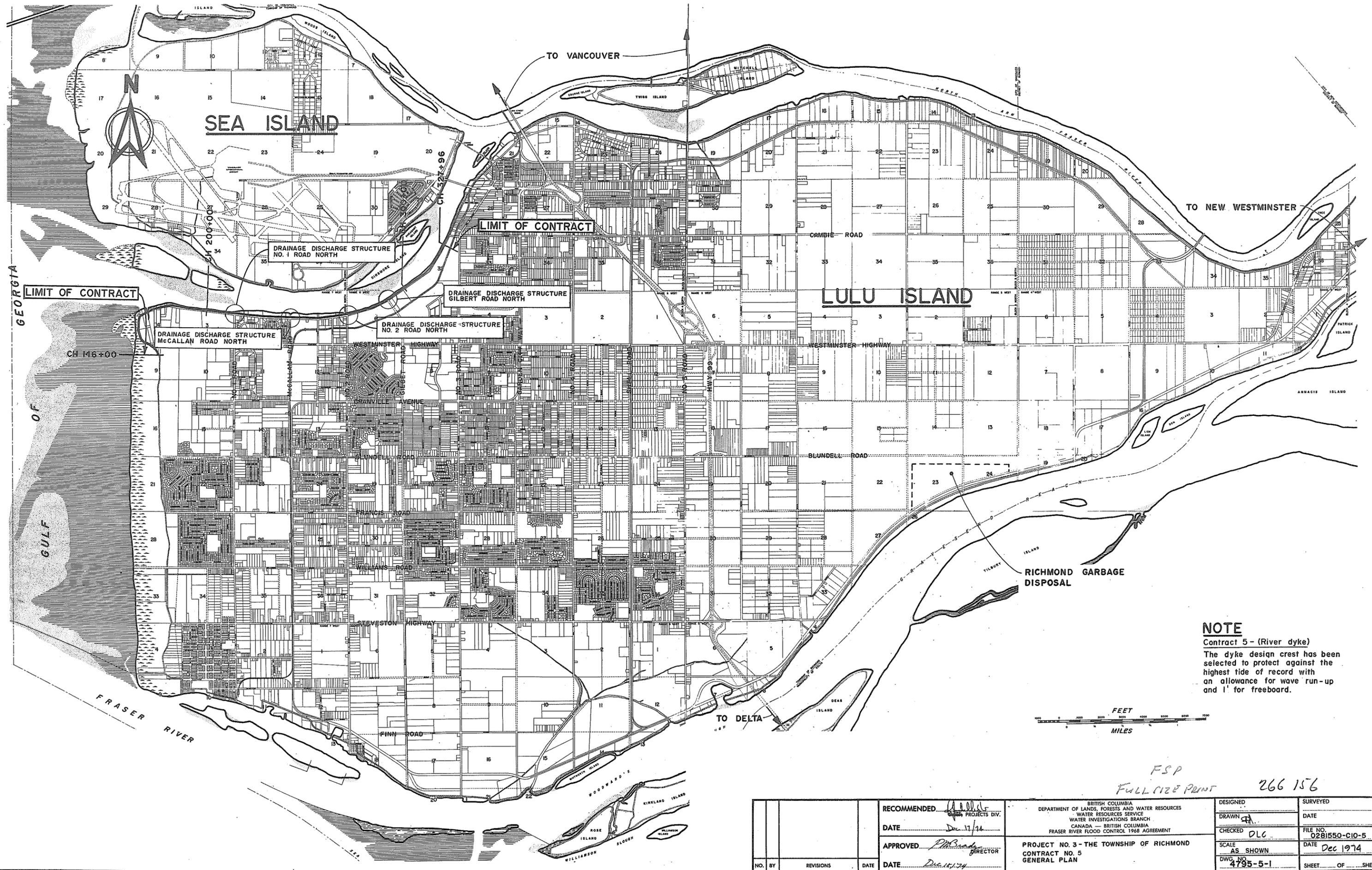
**REFERENCE DRAWINGS**

Canada - British Columbia  
 Fraser River Flood Control 1968 Agreement  
 Project No. 3 The Township of Richmond  
 Contract No. 5  
 North Dyke Improvements  
 Westminster Highway to Cambie Road



**CBA ENGINEERING LTD**  
 Consulting Engineers  
 Vancouver, Canada

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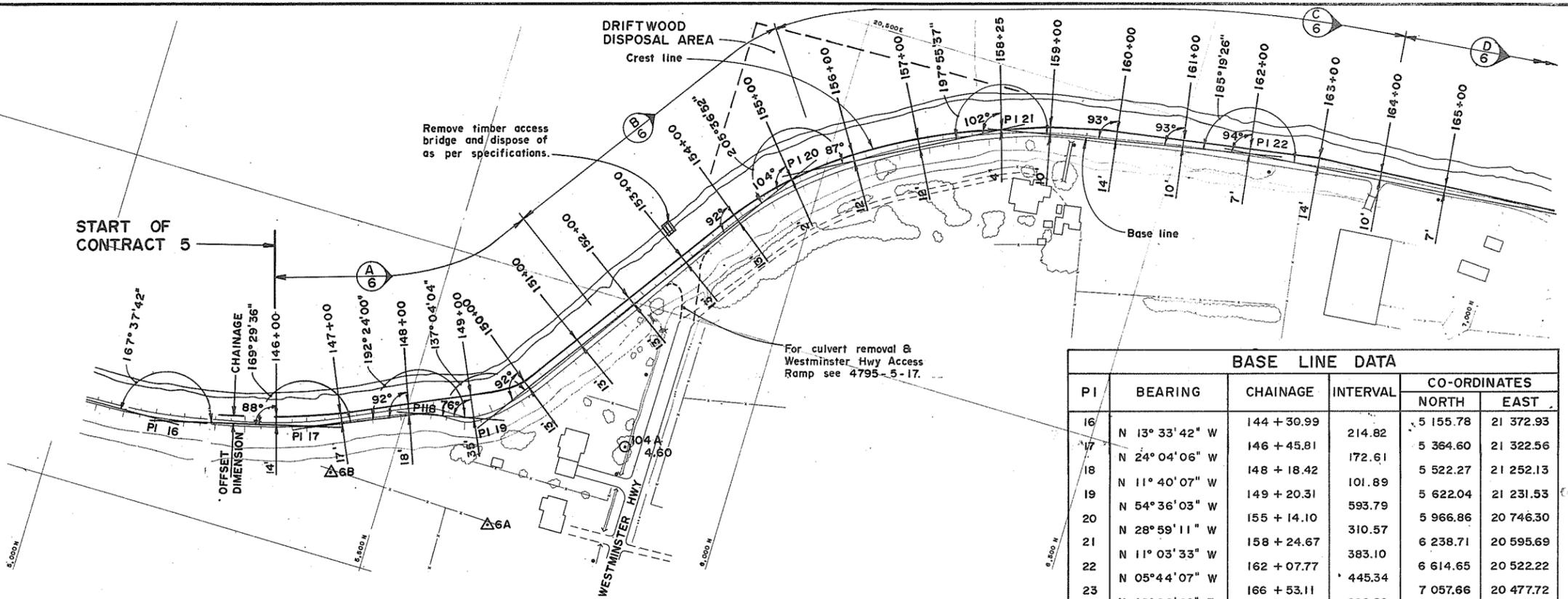
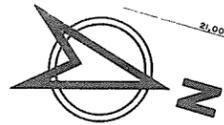


**NOTE**  
 Contract 5 - (River dyke)  
 The dyke design crest has been selected to protect against the highest tide of record with an allowance for wave run-up and 1' for freeboard.



FSP  
 Full size print 266 156

NO. BY	REVISIONS	DATE	RECOMMENDED <i>John</i> CHIEF PROJECTS DIV.	BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT	DESIGNED	SURVEYED
			DATE <i>Dec 11/74</i>		DRAWN <i>DLG</i>	DATE
			APPROVED <i>P.M. Br...</i> DIRECTOR		CHECKED <i>DLG</i>	FILE NO. <i>0281550-C10-5</i>
			DATE <i>Dec 11/74</i>		SCALE <i>AS SHOWN</i>	DATE <i>Dec 1974</i>
			PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 GENERAL PLAN	DWG. NO. <i>4795-5-1</i>	SHEET <i>...</i> OF <i>...</i> SHEETS	



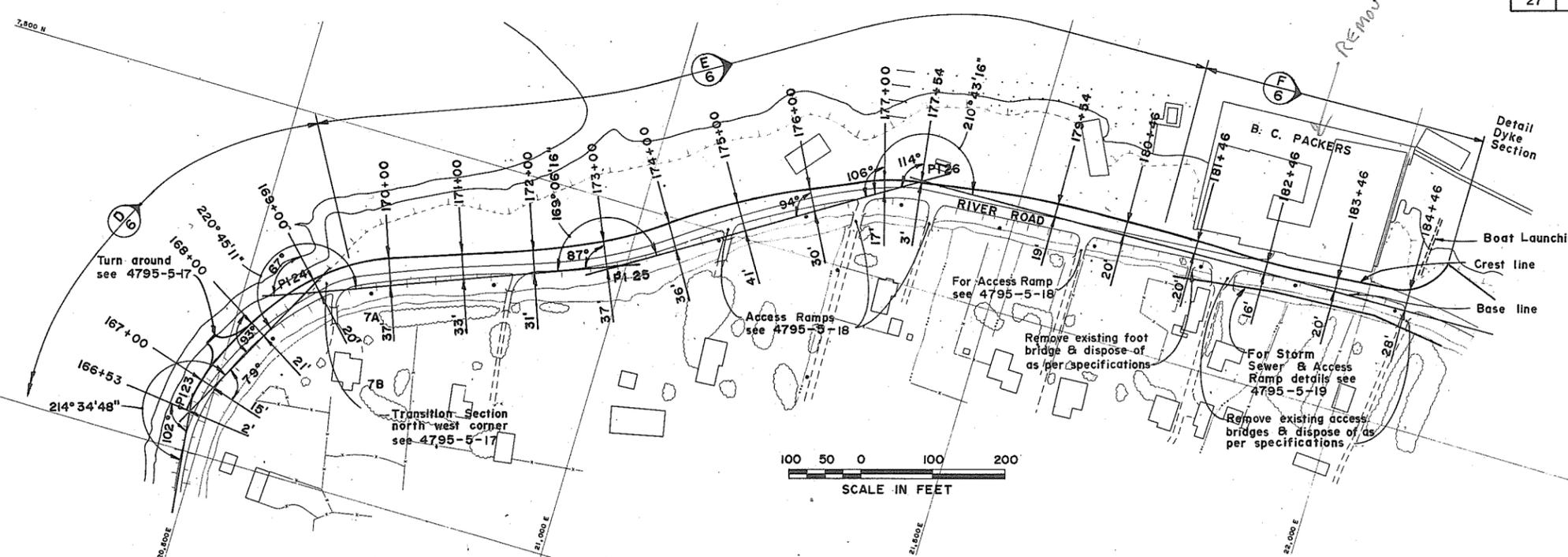
BASE LINE DATA					
PI	BEARING	CHAINAGE	INTERVAL	CO-ORDINATES	
				NORTH	EAST
16	N 13° 33' 42" W	144 + 30.99	214.82	5 155.78	21 372.93
17	N 24° 04' 06" W	146 + 45.81	172.61	5 364.60	21 322.56
18	N 11° 40' 07" W	148 + 18.42	101.89	5 522.27	21 252.13
19	N 54° 36' 03" W	149 + 20.31	593.79	5 622.04	21 231.53
20	N 28° 59' 11" W	155 + 14.10	310.57	5 966.86	20 746.30
21	N 11° 03' 33" W	158 + 24.67	383.10	6 238.71	20 595.69
22	N 05° 44' 07" W	162 + 07.77	445.34	6 614.65	20 522.22
23	N 28° 08' 26" E	166 + 53.11	226.29	7 057.66	20 477.72
24	N 68° 53' 37" E	168 + 79.40	424.66	7 257.37	20 584.53
25	N 57° 59' 53" E	173 + 04.06	449.97	7 410.23	20 980.56
26	N 88° 43' 09" E	177 + 54.03	870.29	7 648.67	21 362.12
27		186 + 24.32		7 668.11	22 231.66

SURVEY MONUMENTS			
MON	TYPE	CO-ORDINATES	
		NORTH	EAST
5A	PIPE IN CONCRETE	4 220.01	21 453.35
5B	DITTO	4 217.31	21 778.88
6A	DO	5 668.96	21 384.73
6B	DO	5 419.63	21 375.31
7A	DO	7 243.47	20 677.25
7B	DO	7 156.48	20 690.60

**NOTE:**  
For descriptive location of monuments & bench marks see specifications.

**NOTES**  
For Notes & Legend see 4795-5-3

△5B



FIP 266157



**C. B. A. ENGINEERING LTD.** CONSULTING ENGINEERS VANCOUVER, B.C., CANADA

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA  
DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE

CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT No. 3 THE TOWNSHIP OF RICHMOND

CONTRACT - NO 5  
ALIGNMENT LINE  
CH 146 + 00 TO 184 + 00

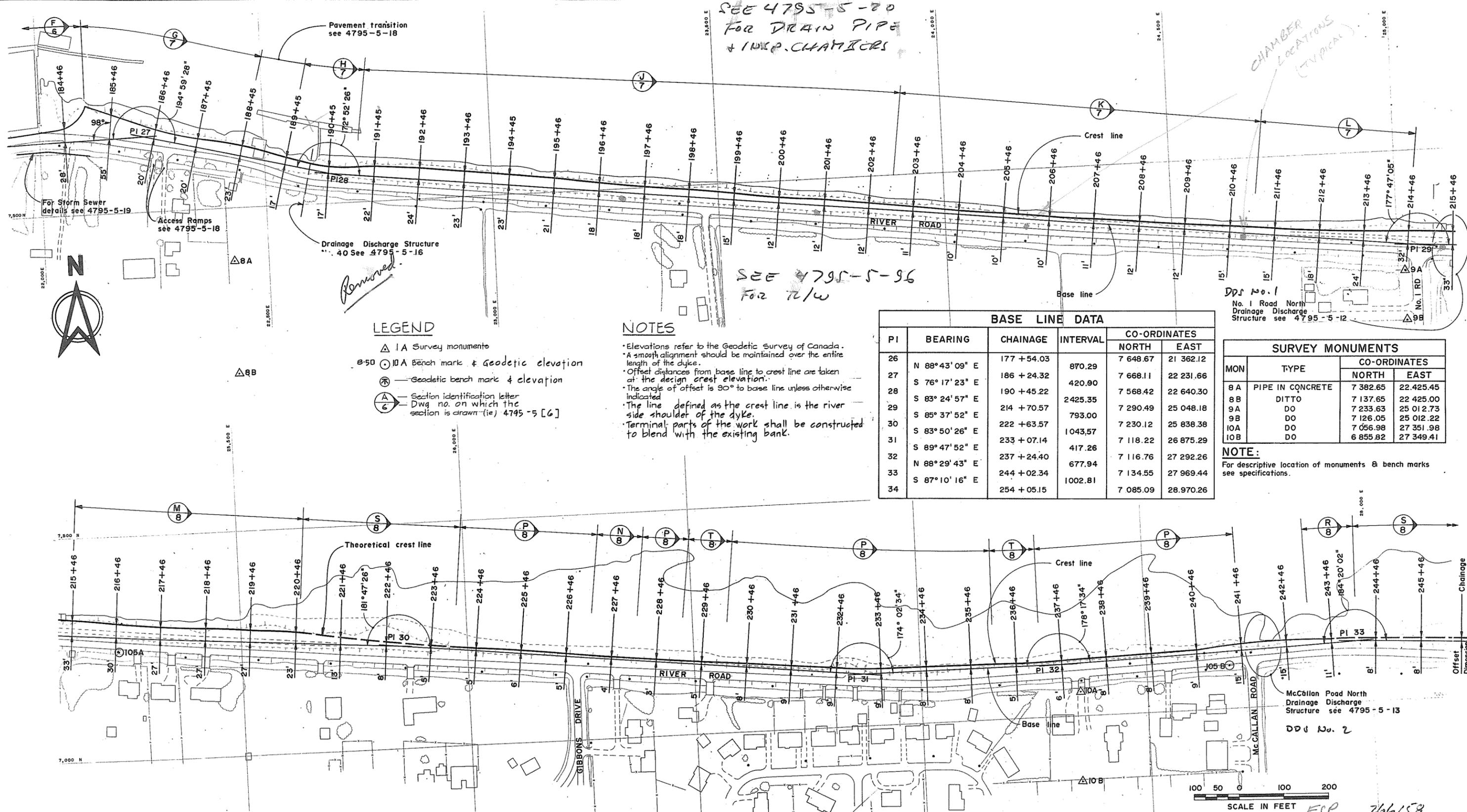
RECOMMENDED: [Signature] ELEC, MECH, STR, DES, DR, CH, SCALE: As shown, ORG ISSUE: Dec 1974

DATE: Dec 1974

FILE NO: 0281550-C10-5 DWG NO. 4795-5-2 A

NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED

DWG NO.	TITLE



**LEGEND**

- △ 1A Survey monuments
- ⊙ 10A Bench mark & geodetic elevation
- ⊕ Geodetic bench mark & elevation
- Ⓐ Section identification letter  
Dwg. no. on which the section is drawn (ie) 4795-5 [6]

**NOTES**

- Elevations refer to the Geodetic Survey of Canada.
- A smooth alignment should be maintained over the entire length of the dyke.
- Offset distances from base line to crest line are taken at the design crest elevation.
- The angle of offset is 90° to base line unless otherwise indicated.
- The line defined as the crest line is the river side shoulder of the dyke.
- Terminal parts of the work shall be constructed to blend with the existing bank.

BASE LINE DATA					
PI	BEARING	CHAINAGE	INTERVAL	CO-ORDINATES	
				NORTH	EAST
26	N 88° 43' 09" E	177 + 54.03	870.29	7 648.67	21 362.12
27	S 76° 17' 23" E	186 + 24.32	420.90	7 668.11	22 231.66
28	S 83° 24' 57" E	190 + 45.22	2425.35	7 568.42	22 640.30
29	S 85° 37' 52" E	214 + 70.57	793.00	7 290.49	25 048.18
30	S 83° 50' 26" E	222 + 63.57	1043.57	7 230.12	25 838.38
31	S 89° 47' 52" E	233 + 07.14	417.26	7 118.22	26 875.29
32	N 88° 29' 43" E	237 + 24.40	677.94	7 116.76	27 292.26
33	S 87° 10' 16" E	244 + 02.34	1002.81	7 134.55	27 969.44
34		254 + 05.15		7 085.09	28 970.26

SURVEY MONUMENTS			
MON	TYPE	CO-ORDINATES	
		NORTH	EAST
8A	PIPE IN CONCRETE	7 382.65	22 425.45
8B	DITTO	7 137.65	22 425.00
9A	DO	7 233.63	25 012.73
9B	DO	7 126.05	25 012.22
10A	DO	7 056.98	27 351.98
10B	DO	6 855.82	27 349.41

**NOTE:**  
For descriptive location of monuments & bench marks see specifications.

DWG NO.	TITLE
	REFERENCES



NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED

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DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES  
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CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT No. 3 THE TOWNSHIP OF RICHMOND

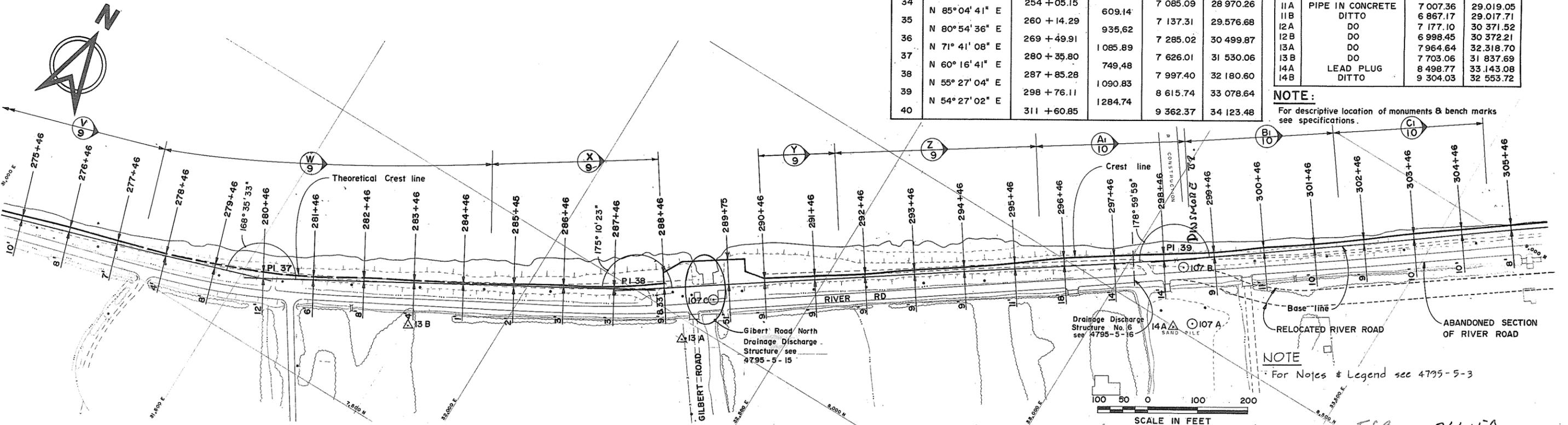
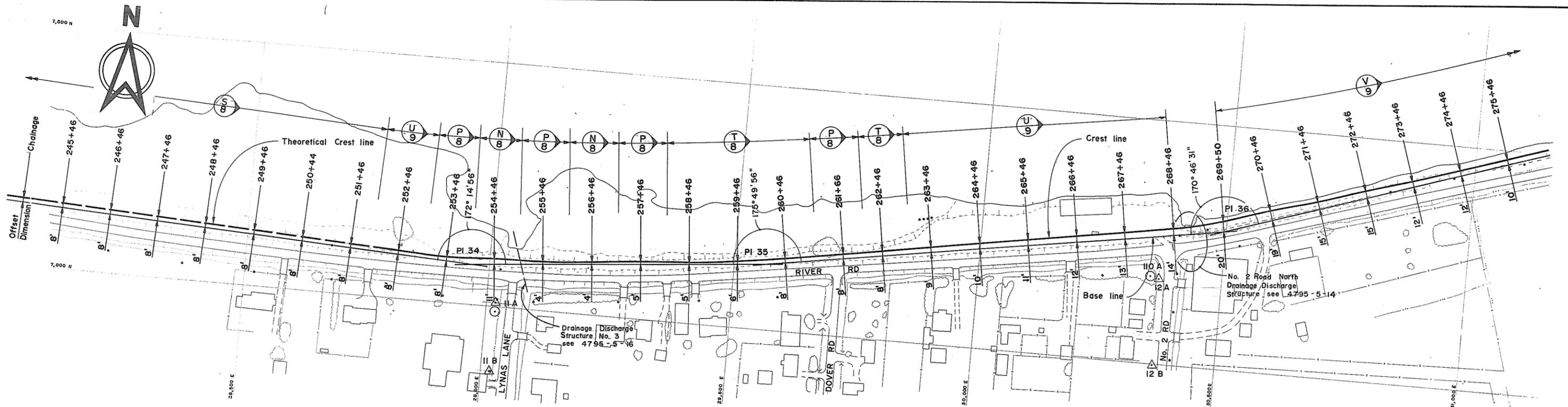
CONTRACT NO. 5  
ALIGNMENT PLAN  
CH 184+00 TO 245+46

RECOMMENDED: [Signature]  
DATE: Dec 11/74

APPROVED: [Signature]  
DATE: Dec 11/74

SCALE: AS SHOWN  
ORIG ISSUE: Dec 1974

FILE NO. 0281550 - C10 - 5  
DWG NO. 4795 - 5 - 3 A  
REV



BASE LINE DATA					
PI	BEARING	CHAINAGE	INTERVAL	CO-ORDINATES	
				NORTH	EAST
34	N 85° 04' 41" E	254 + 05.15	609.14	7 085.09	28 970.26
35	N 80° 54' 36" E	260 + 14.29	935.62	7 137.31	29 576.68
36	N 71° 41' 08" E	269 + 49.91	1 085.89	7 285.02	30 499.87
37	N 60° 16' 41" E	280 + 35.80	749.48	7 626.01	31 530.06
38	N 55° 27' 04" E	287 + 85.28	1 090.83	7 997.40	32 180.60
39	N 54° 27' 02" E	298 + 76.11	1 284.74	8 615.74	33 078.64
40		311 + 60.85		9 362.37	34 123.48

SURVEY MONUMENTS			
MON	TYPE	CO-ORDINATES	
		NORTH	EAST
11A	PIPE IN CONCRETE	7 007.36	29 019.05
11B	DITTO	6 867.17	29 017.71
12A	DO	7 177.10	30 371.52
12B	DO	6 998.45	30 372.21
13A	DO	7 964.64	32 318.70
13B	DO	7 703.06	31 837.69
14A	LEAD PLUG	8 498.77	33 143.08
14B	DITTO	9 304.03	32 553.72

**NOTE:**  
For descriptive location of monuments & bench marks see specifications.

**NOTE:**  
For Notes & Legend see 4795-5-3



**C. B. A. ENGINEERING LTD.** CONSULTING ENGINEERS VANCOUVER, B.C., CANADA

RECOMMENDED: [Signature] PROJECTS DIV.

DATE: Dec 11/74

APPROVED: [Signature] DIRECTOR

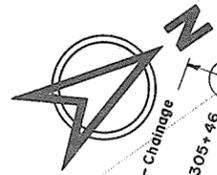
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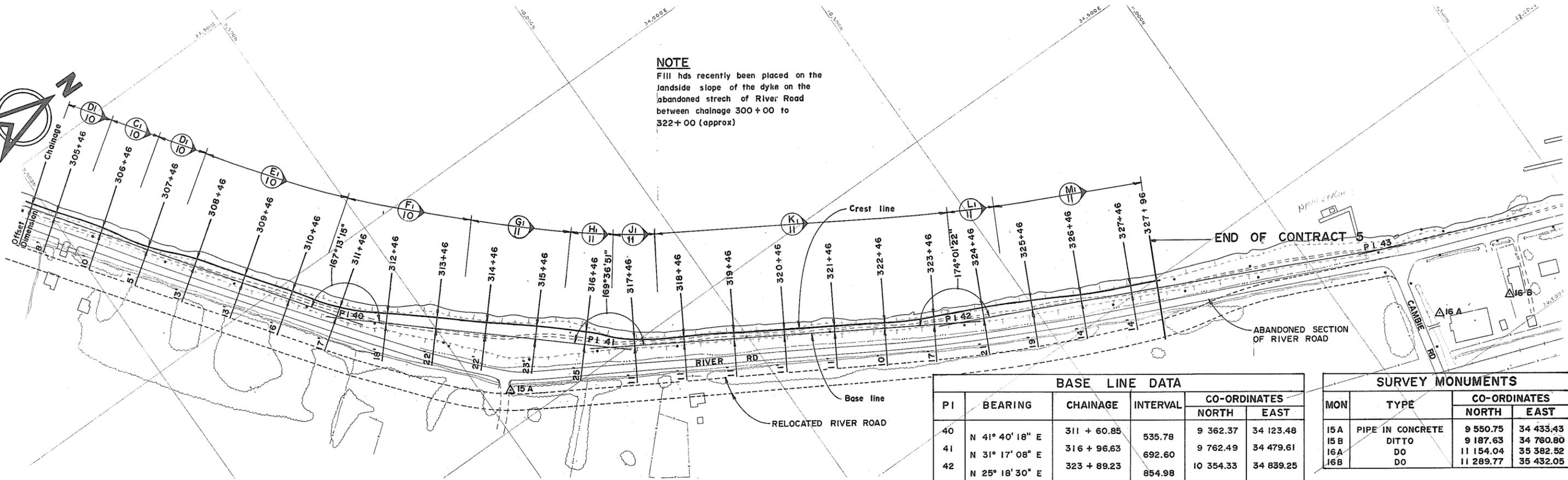
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NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED

DWG NO.	TITLE
	REFERENCES



**NOTE**  
 Fill hds recently been placed on the  
 landside slope of the dyke on the  
 abandoned stretch of River Road  
 between chainage 300+00 to  
 322+00 (approx)



BASE LINE DATA					
P I	BEARING	CHAINAGE	INTERVAL	CO-ORDINATES	
				NORTH	EAST
40	N 41° 40' 18" E	311 + 60.85	535.78	9 362.37	34 123.48
41	N 31° 17' 08" E	316 + 96.63	692.60	9 762.49	34 479.61
42	N 25° 18' 30" E	323 + 89.23	854.98	10 354.33	34 839.25
43		332 + 44.21			

SURVEY MONUMENTS			
MON	TYPE	CO-ORDINATES	
		NORTH	EAST
15 A	PIPE IN CONCRETE	9 550.75	34 433.43
15 B	DITTO	9 187.63	34 760.80
16 A	DO	11 154.04	35 382.52
16 B	DO	11 289.77	35 432.05

**NOTE**  
 For descriptive location of monuments & bench marks  
 see specifications.

**NOTES**  
 For Notes & Legend see 4795-5-3  
 FSP 266160



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 DATE: Dec 17/74  
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 DATE: Dec 17/74

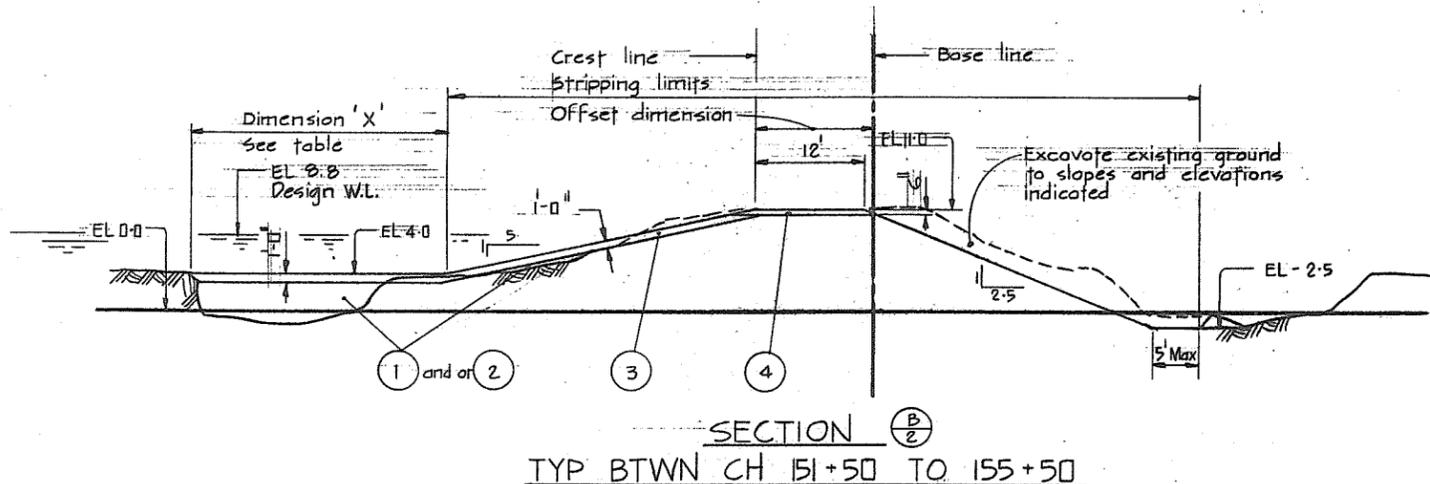
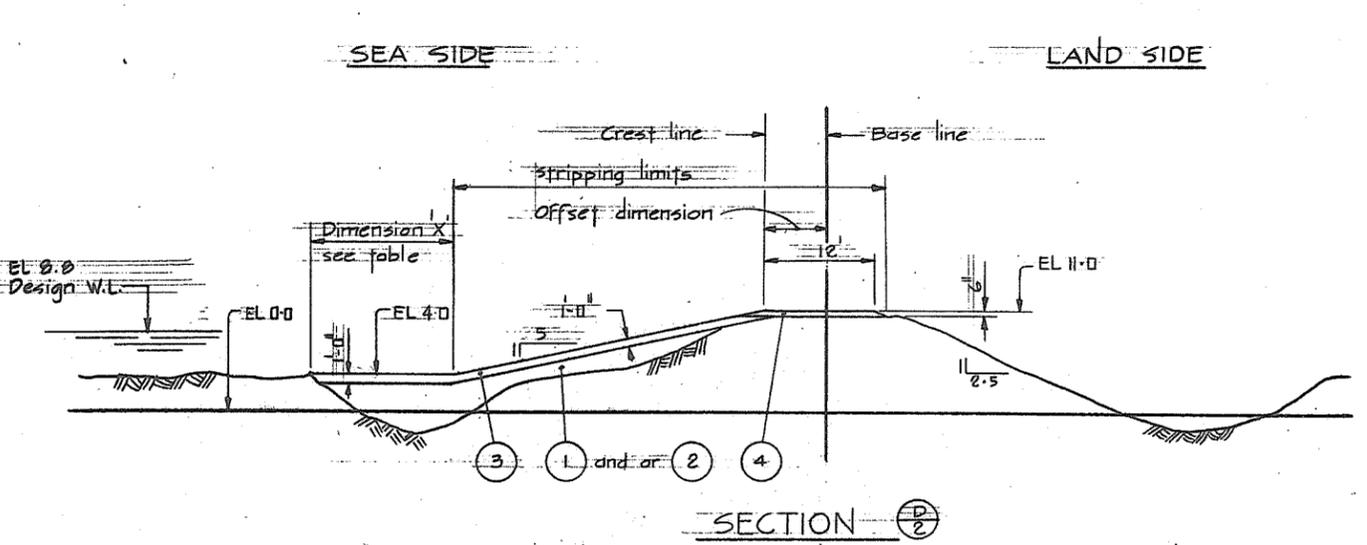
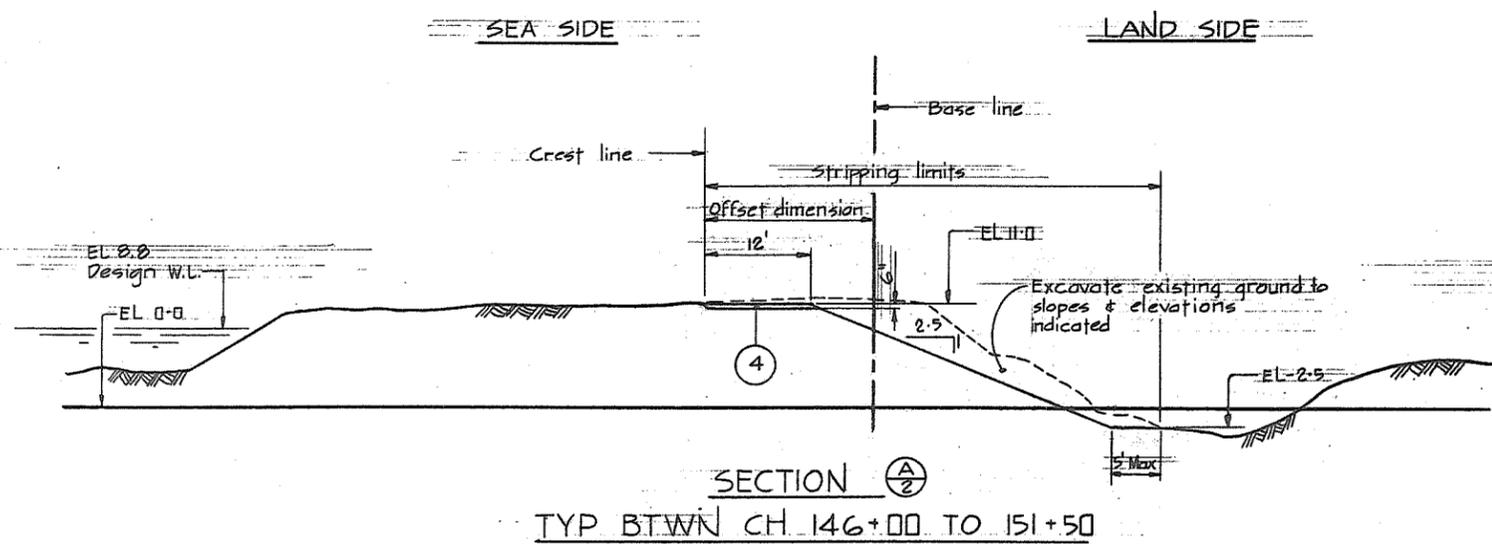
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 CH: DLG  
 SCALE: As shown  
 ORIG ISSUE: Dec 1974

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA  
 DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT No. 3 THE TOWNSHIP OF RICHMOND

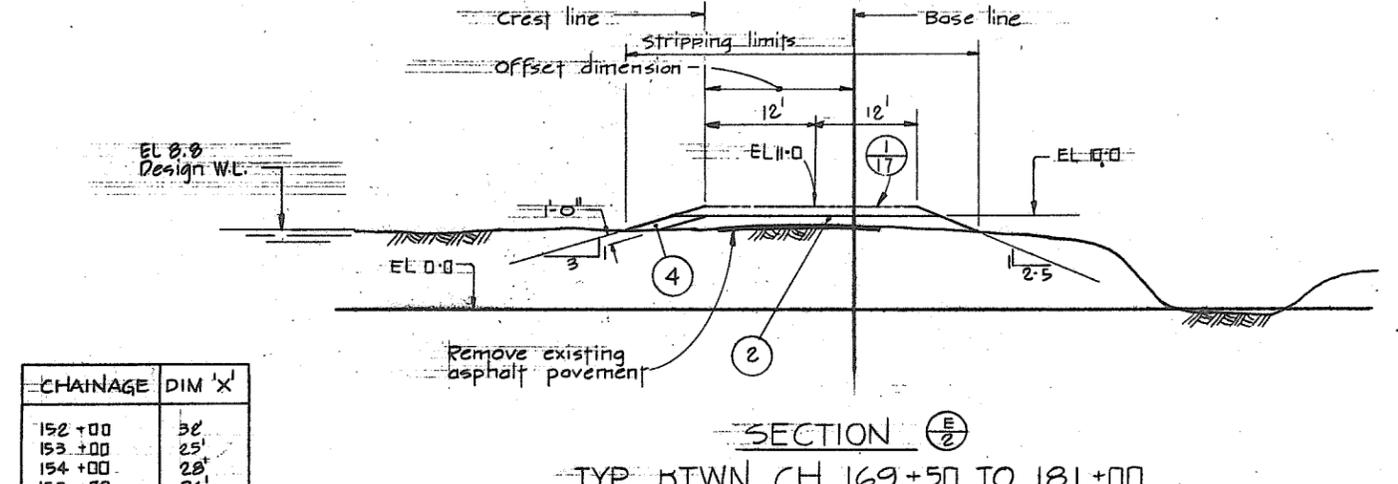
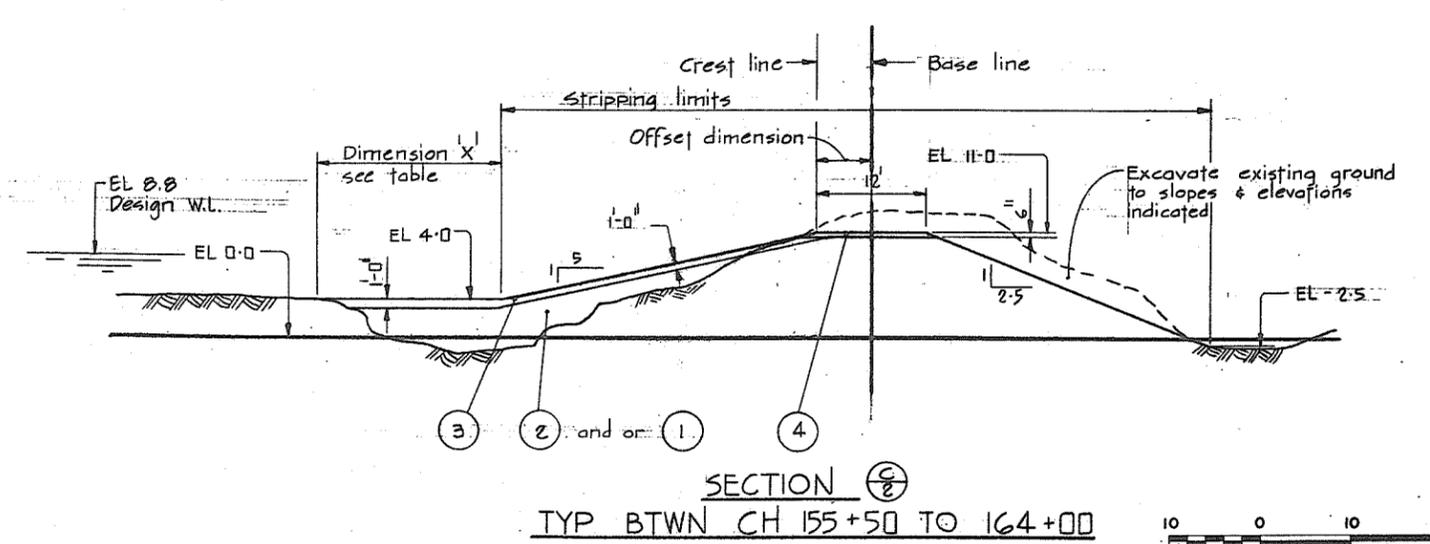
CONTRACT NO. 5  
 ALIGNMENT PLAN  
 CH 305 + 46 TO 327 + 96

FILE NO. 0281550-C10-5 DWG NO. 4795-5-5 A REV

DWG NO.	TITLE	NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED
	REFERENCES												



CHAINAGE	DIM 'X'
152+00	32'
153+00	25'
154+00	28'
155+00	36'
156+00	28'
157+00	28'
158+25	26'
159+00	27'
160+00	13'
161+00	16'
162+00	18'
163+00	12'
164+00	11'
165+00	15'
166+53	20'
167+00	29'
168+00	23'



**NOTES**  
For notes and legend see 4795-5-7

**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

10 0 10 20  
SCALE IN FEET

RECOMMENDED *[Signature]*  
CHIEF, PROJECTS DIV.

DATE *Dec 17/71*

APPROVED *[Signature]*  
DIRECTOR

DATE *Dec 18/71*

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT.

PROJECT NO. 3 THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
TYPICAL DYKE SECTIONS

DESIGNED *DLG/EMH*

DRAWN *SP*

CHECKED *DLG*

SCALE AS SHOWN

DWG. NO. 4795-5-6

SURVEYED *ES*

DATE *1969-70*

FILE NO. 0281550-CO-5

DATE *Dec 1971*

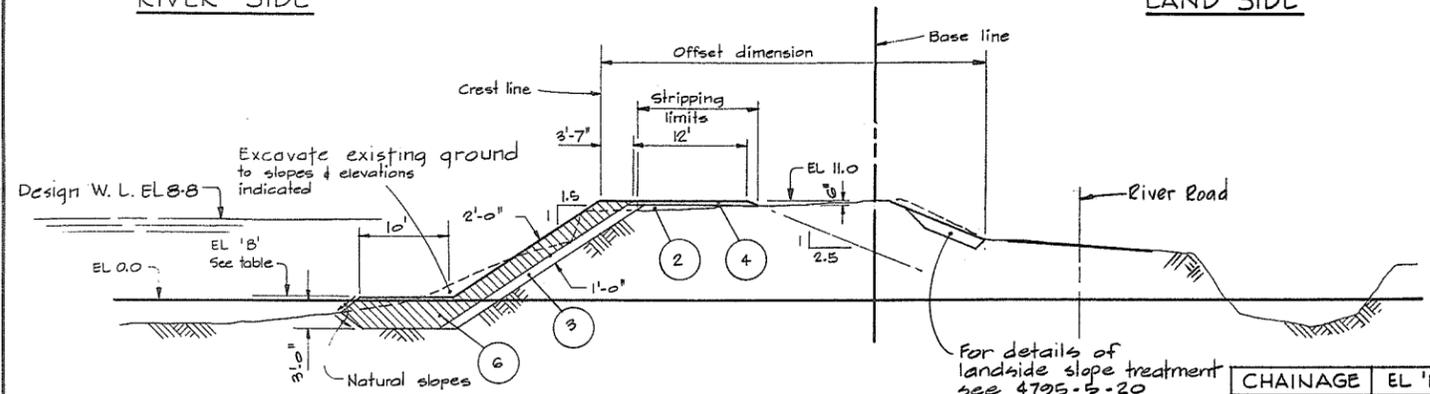
SHEET 1 OF 6 SHEETS

266 161



RIVER SIDE

LAND SIDE



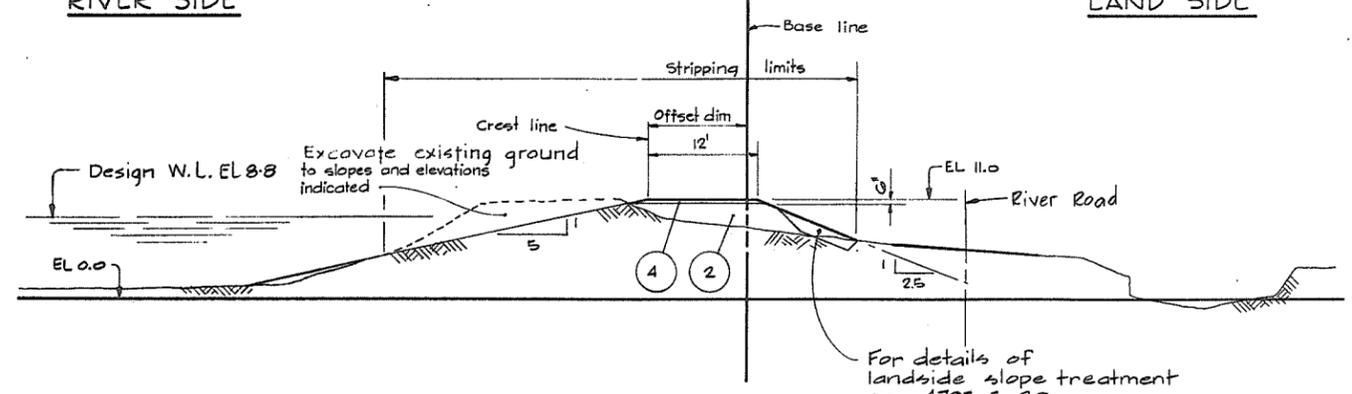
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 BANK PROTECTION - NEW WORK  
 TYP BTWN CH 215+46 TO 220+50

CHAINAGE	EL 'B'
216+46	0.0
217+46	+0.5
218+46	+1.5
219+46	+3.0
220+46	+5.0

For details of landside slope treatment see 4795-5-20

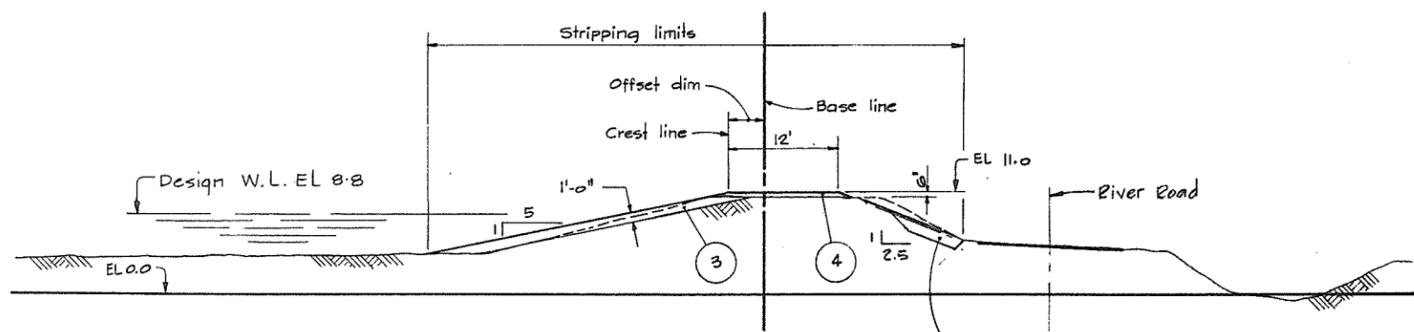
RIVER SIDE

LAND SIDE



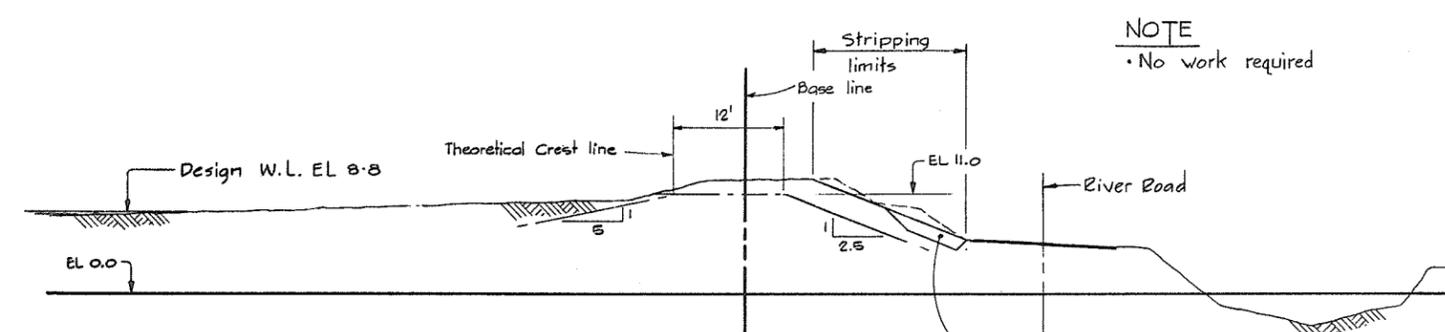
SECTION  $\frac{R}{3}$   
 TYP BTWN CH 242+96 TO 243+96

For details of landside slope treatment see 4795-5-20



SECTION  $\frac{N}{3}$   $\frac{N}{4}$   
 TYP BTWN CH 226+96 TO 227+96  
 CH 253+96 TO 254+96  
 CH 255+96 TO 256+96

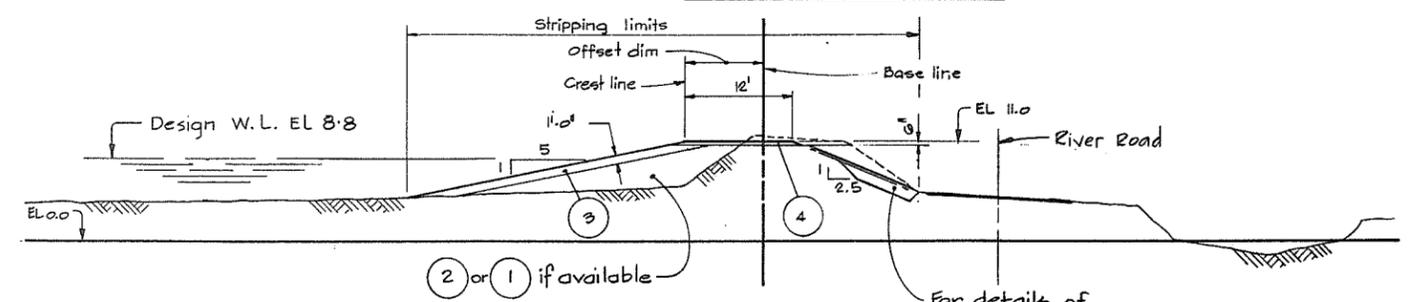
For details of landside slope treatment see 4795-5-20



SECTION  $\frac{S}{3}$   $\frac{S}{4}$   
 TYP BTWN CH 220+96 TO 223+96  
 CH 243+96 TO 251+96

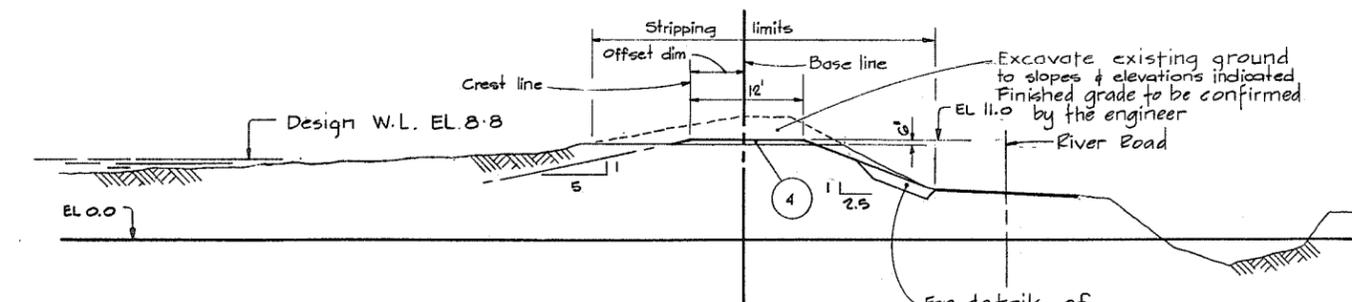
For details of landside slope treatment see 4795-5-20

NOTE  
 • No work required



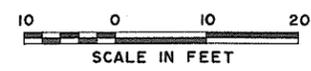
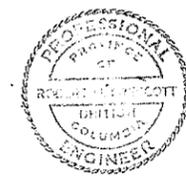
SECTION  $\frac{P}{3}$   $\frac{P}{4}$   
 TYP BTWN CH 223+96 TO 226+96 , BTWN CH 227+96 TO 228+96  
 CH 229+96 TO 235+96 , CH 236+96 TO 241+46  
 CH 252+96 TO 253+96 , CH 254+96 TO 255+96  
 CH 256+96 TO 257+96 , CH 260+96 TO 261+96

For details of landside slope treatment see 4795-5-20



SECTION  $\frac{T}{3}$   $\frac{T}{4}$   
 TYP BTWN CH 228+96 TO 229+96 , BTWN CH 235+96 TO 236+96  
 CH 257+96 TO 260+96 , CH 261+96 TO 262+96

For details of landside slope treatment see 4795-5-20



FSP

NOTES  
 • For Notes, Material Legend, & Legend see 4795-5-7  
 266 163

DWG NO.	TITLE	NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED
	REFERENCES												

**C. B. A. ENGINEERING LTD.** CONSULTING ENGINEERS VANCOUVER, B.C., CANADA

RECOMMENDED: [Signature] PROJECTS DIV.

DATE: Dec 17/74

APPROVED: [Signature] DIRECTOR

DATE: Dec 18/74

ELEC	HYD
MECH	SOILS
STR	

DES: PLC, EMM, DR: SH, CH: PLC

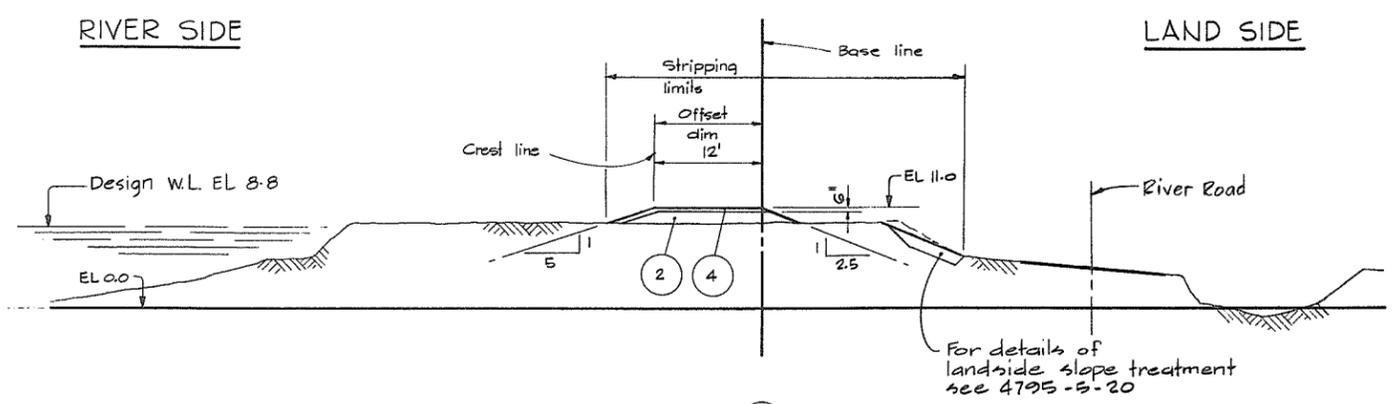
SCALE: As shown

ORIG ISSUE: Dec 1974

FILE NO. 0281550 - C10 - 5

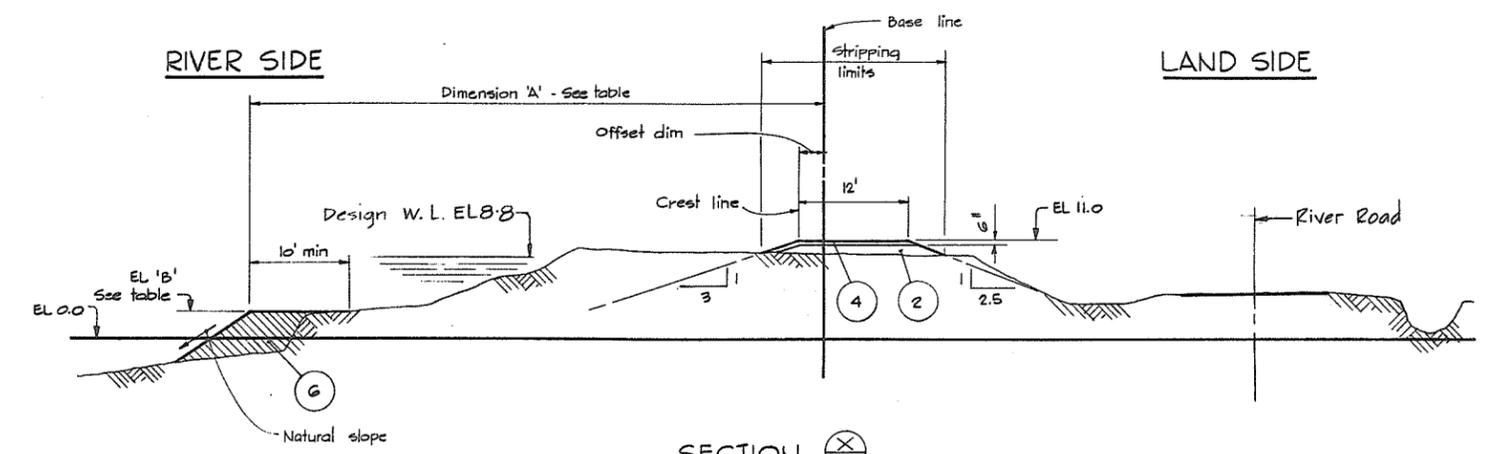
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REV

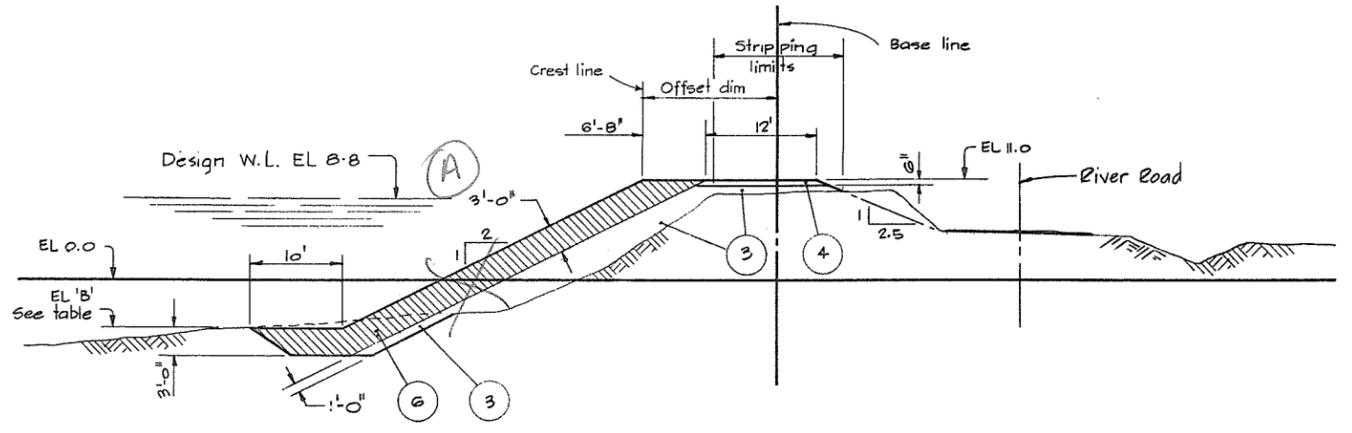


SECTION  $\frac{U}{4}$   
 TYP BTWN CH 251+96 TO 252+96  
 CH 262+96 TO 268+46

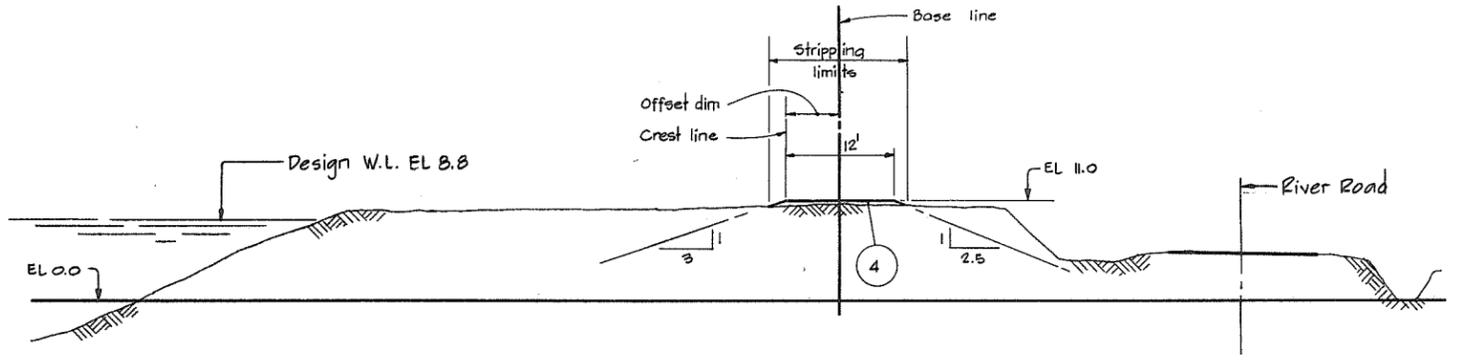
For details of  
 landside slope treatment  
 see 4795-5-20



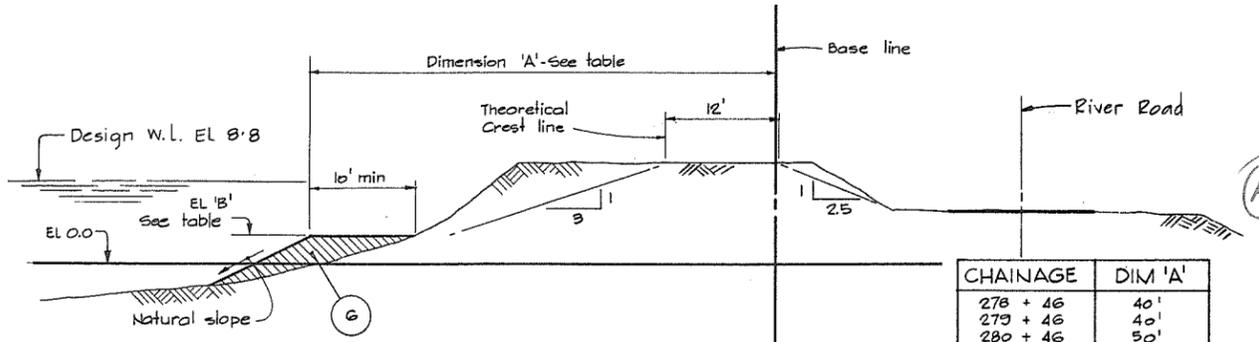
SECTION  $\frac{X}{4}$   
 TYP BTWN CH 284+96 TO 288+46



SECTION  $\frac{Y}{4}$   
 TYP BTWN CH 269+50 TO 277+96



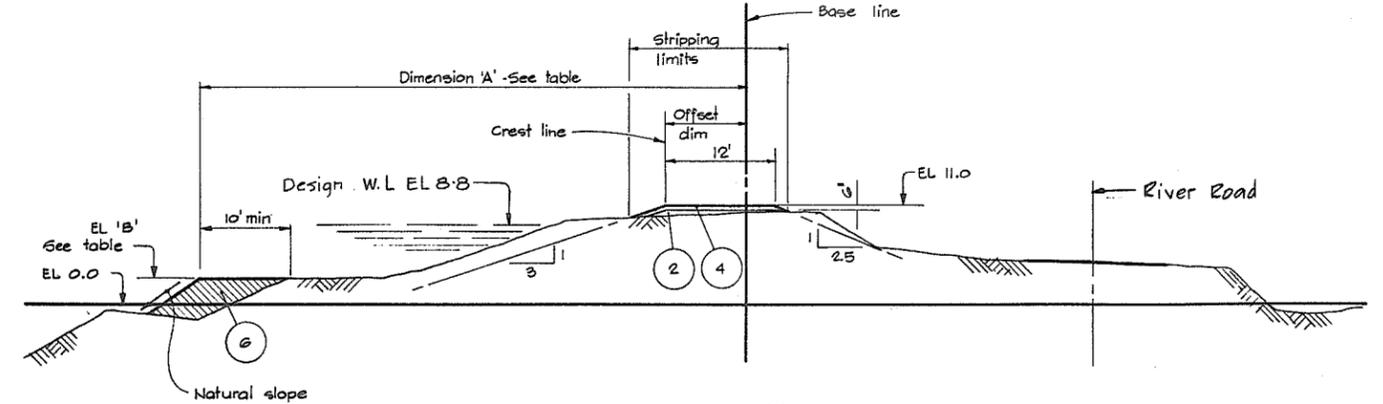
SECTION  $\frac{Z}{4}$   
 TYP BTWN CH 290+46 TO 291+96



SECTION  $\frac{W}{4}$   
 TYP BTWN CH 277+96 TO 284+96

CHAINAGE	DIM 'A'
278 + 46	40'
279 + 46	40'
280 + 46	50'
281 + 46	48'
282 + 46	50'
283 + 46	49'
284 + 46	50'
285 + 46	49'
286 + 46	62'
287 + 46	62'
288 + 46	67'
292 + 46	56'
293 + 46	60'
294 + 46	55'
295 + 46	55'

CHAINAGE	EL 'B'
269 + 50	- 3.0'
270 + 46	- 1.5'
271 + 46	- 2.5'
272 + 46	- 5.0'
273 + 46	- 5.5'
274 + 46	- 5.0'
275 + 46	- 4.0'
276 + 46	- 4.0'
277 + 46	- 2.5'
278 + 46	+ 2.0'
279 + 46	+ 2.0'
280 + 46	+ 3.0'
281 + 46	+ 3.0'
282 + 46	+ 3.0'
283 + 46	+ 3.0'
284 + 46	+ 3.0'
285 + 46	+ 3.0'
286 + 46	+ 3.0'
287 + 46	+ 4.0'
288 + 46	+ 4.0'
292 + 46	+ 4.0'
293 + 46	+ 4.0'
294 + 46	+ 3.0'
295 + 46	+ 3.0'



SECTION  $\frac{Z}{4}$   
 TYP BTWN CH 291+96 TO 295+96



NOTES  
 For Notes, Material Legend & Legend see 4795-5-7

266 164

DWG NO.	TITLE	NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED
	REFERENCES												

**C. B. A. ENGINEERING LTD.** CONSULTING ENGINEERS VANCOUVER, B.C., CANADA

RECOMMENDED: *[Signature]* ELEC HYD  
 MECH SOILS  
 DATE: Dec 11/74 STR

APPROVED: *[Signature]* DES OR CH  
 SCALE: As shown

DATE: Dec 11/74 ORIGIN ISSUE: Dec 1974

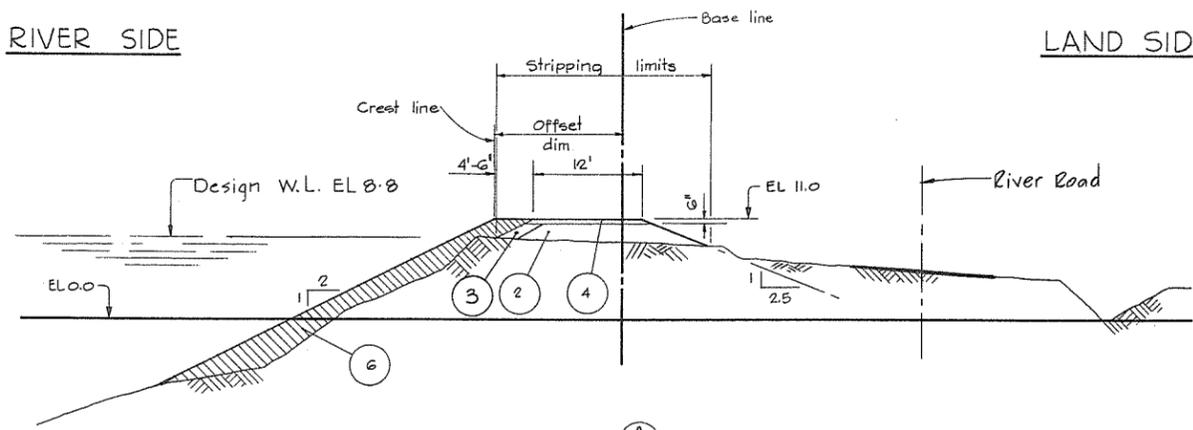
THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA  
 DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT No. 3 THE TOWNSHIP OF RICHMOND

CONTRACT NO. 5  
 TYPICAL DYKE SECTIONS  
 SH 4 OF 6

FILE NO. 02B1550 - C10-5 DWG NO. 4795-5-9 A REV

RIVER SIDE

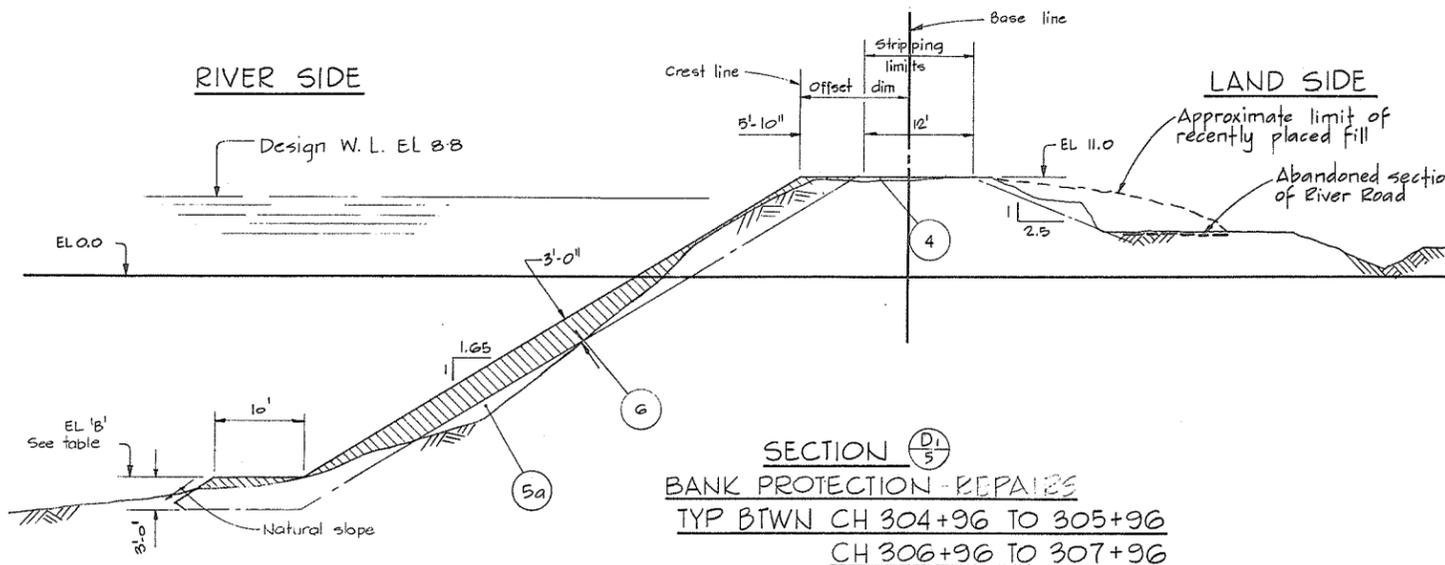
LAND SIDE



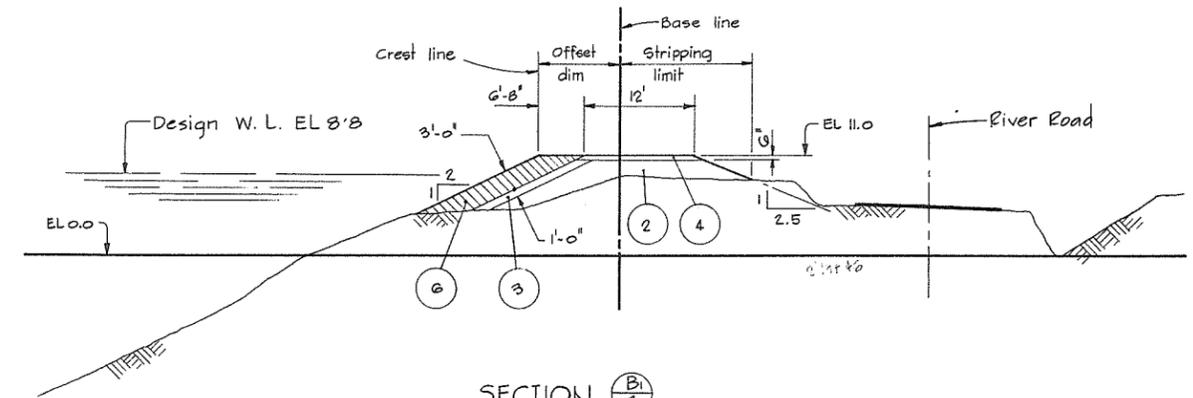
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TYP BTWN CH 295+96 TO 298+96

RIVER SIDE

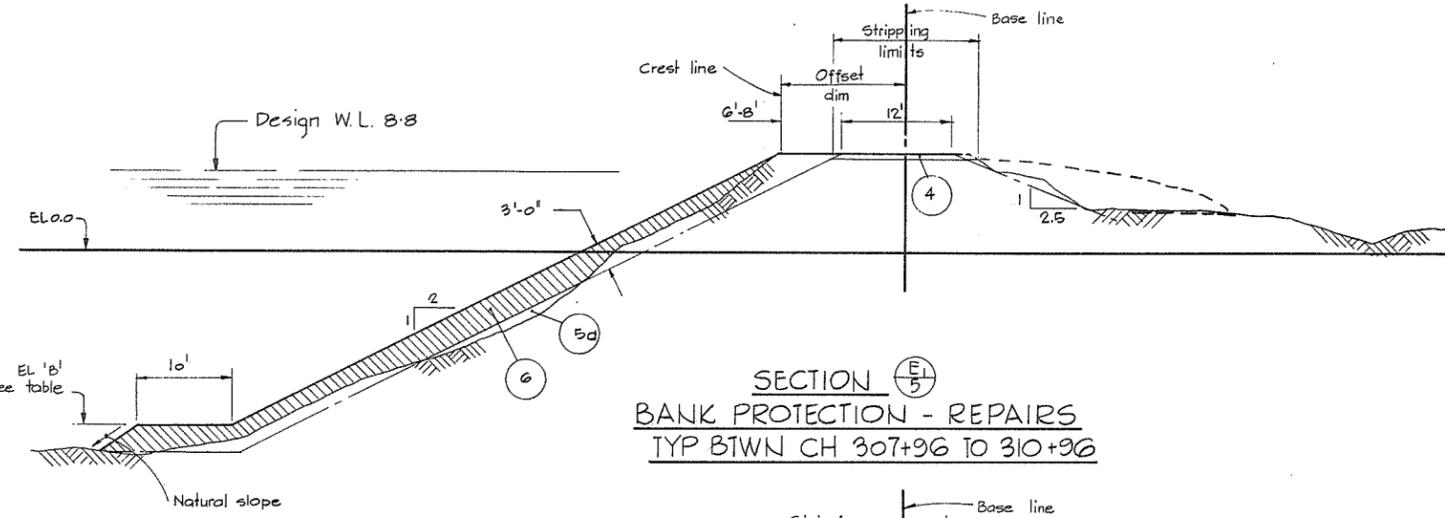
LAND SIDE



SECTION  $\frac{D1}{5}$   
BANK PROTECTION - REPAIRS  
TYP BTWN CH 304+96 TO 305+96  
CH 306+96 TO 307+96

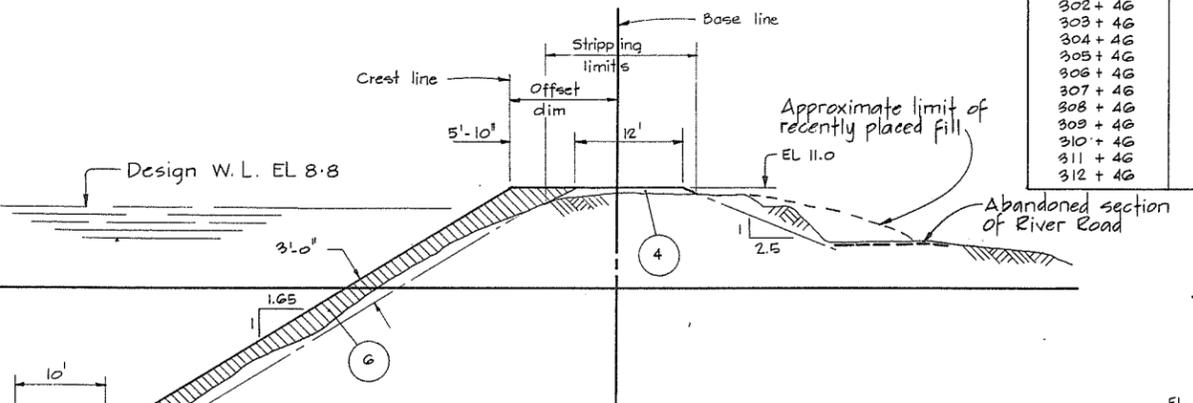


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TYP BTWN CH 298+96 TO 302+00

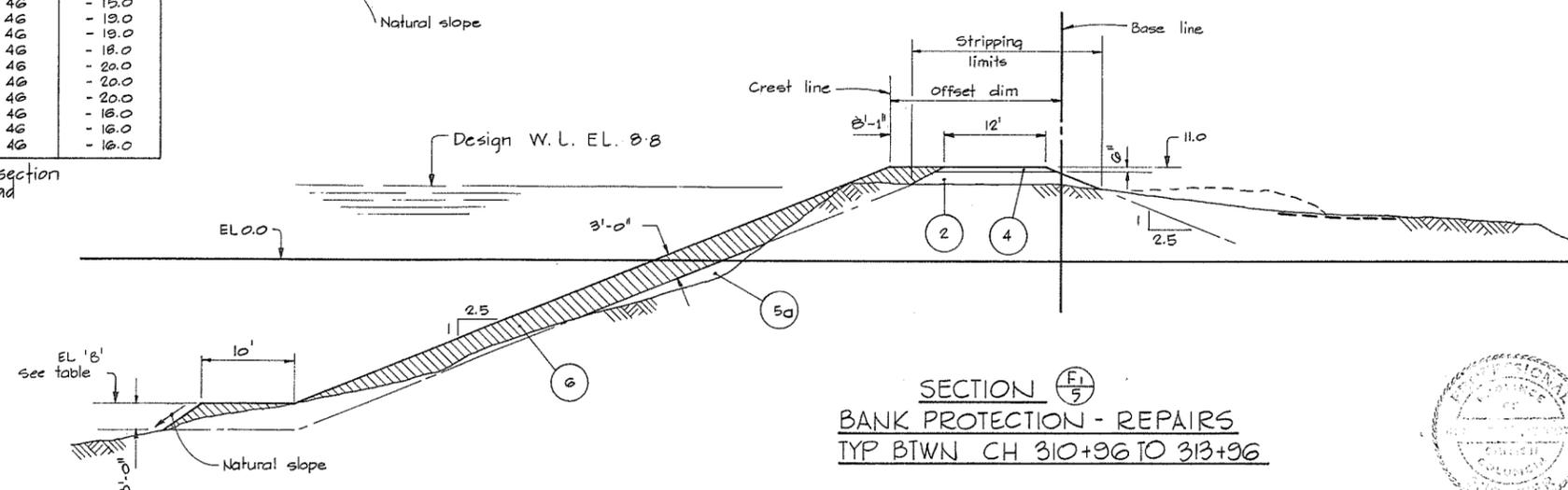


SECTION  $\frac{E1}{5}$   
BANK PROTECTION - REPAIRS  
TYP BTWN CH 307+96 TO 310+96

CHAINAGE	EL 'B'
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303+46	-15.0
304+46	-13.0
305+46	-19.0
306+46	-18.0
307+46	-20.0
308+46	-20.0
309+46	-20.0
310+46	-16.0
311+46	-16.0
312+46	-16.0



SECTION  $\frac{C1}{4}$   $\frac{C2}{5}$   
BANK PROTECTION - REPAIRS  
TYP BTWN CH 302+00 TO 304+96  
CH 305+96 TO 306+96



SECTION  $\frac{F1}{5}$   
BANK PROTECTION - REPAIRS  
TYP BTWN CH 310+96 TO 313+96



NOTES  
• For Notes, Material Legend & Legend see 4795-5-7



DWG NO.		TITLE		NO.		DESCRIPTION		BY		CH		APPD		ISSUED		NO.		DESCRIPTION		BY		CH		APPD		ISSUED		DATE		SCALE		ORIG ISSUE		FILE NO.		DWG NO.		REV	
		REFERENCES																																					

**C. B. A. ENGINEERING LTD.** CONSULTING ENGINEERS VANCOUVER, B.C., CANADA

RECOMMENDED: [Signature]  
DATE: Dec 17/74

APPROVED: [Signature]  
DATE: Dec 16/74

ELEC HYD  
MECH SOILS  
STR

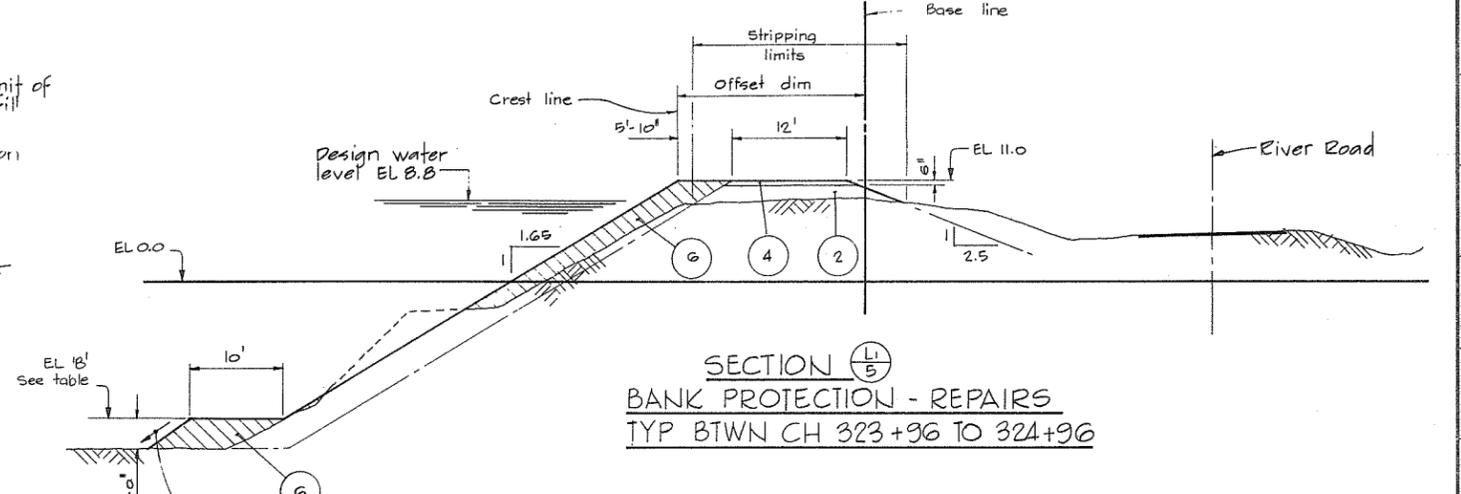
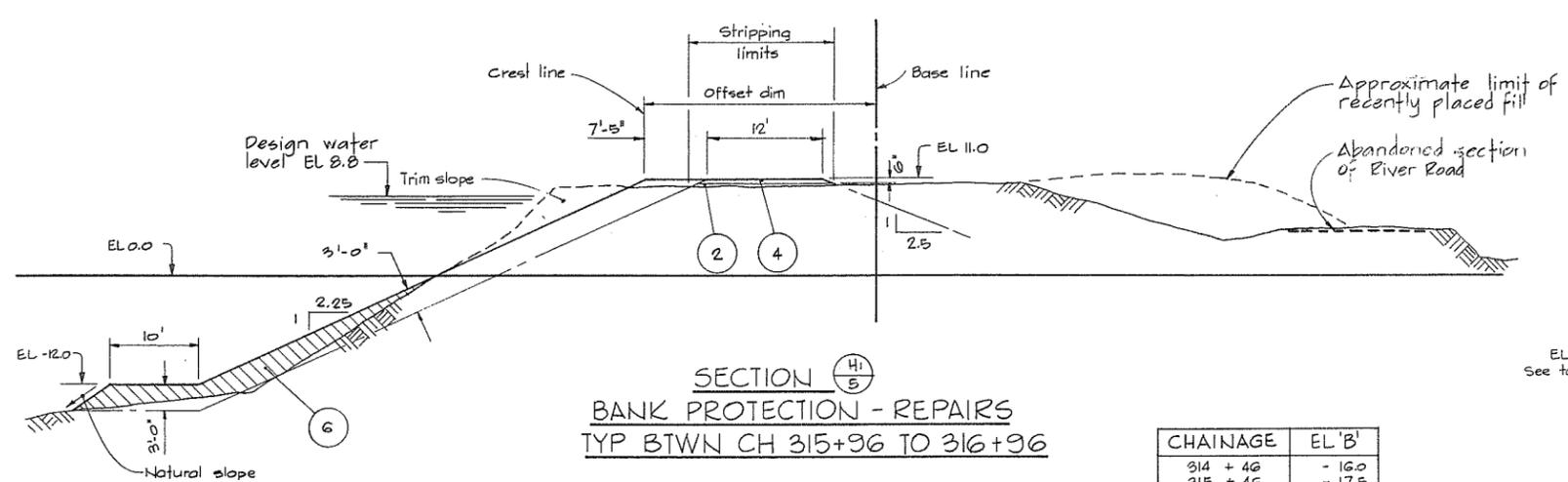
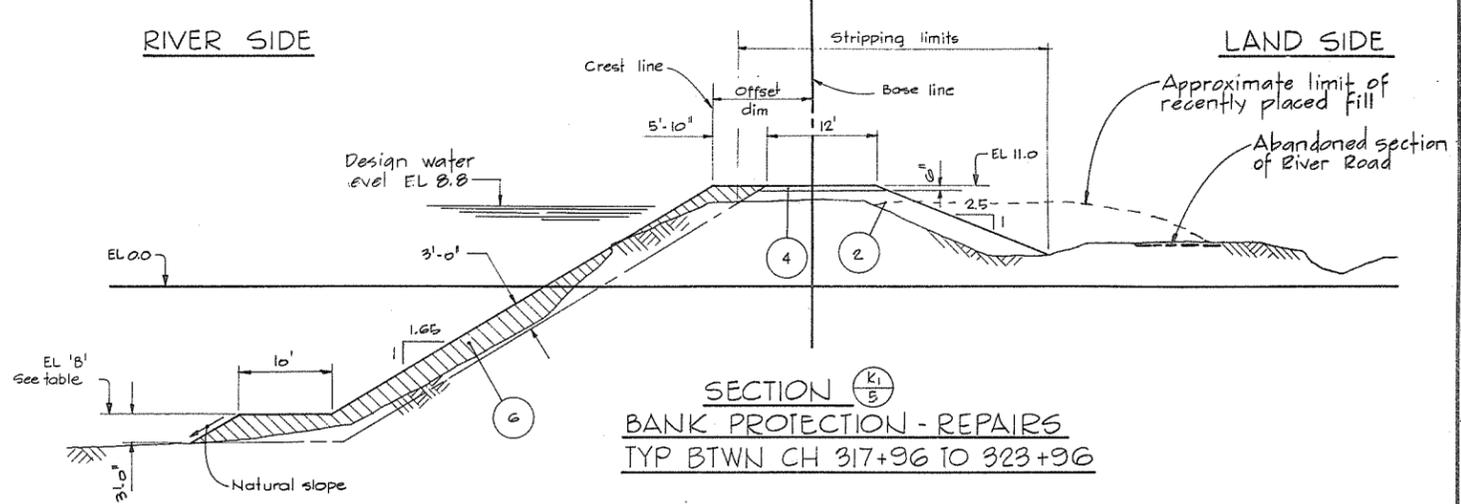
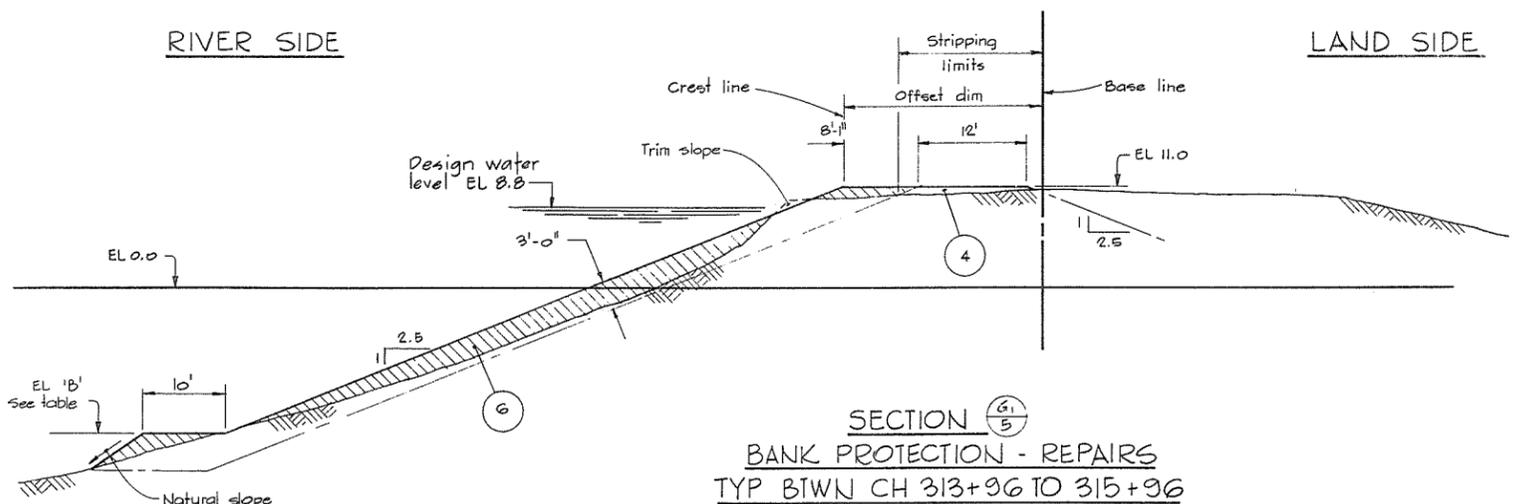
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SCALE: As shown  
ORIG ISSUE: Dec 1974

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA  
DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT No. 3 THE TOWNSHIP OF RICHMOND

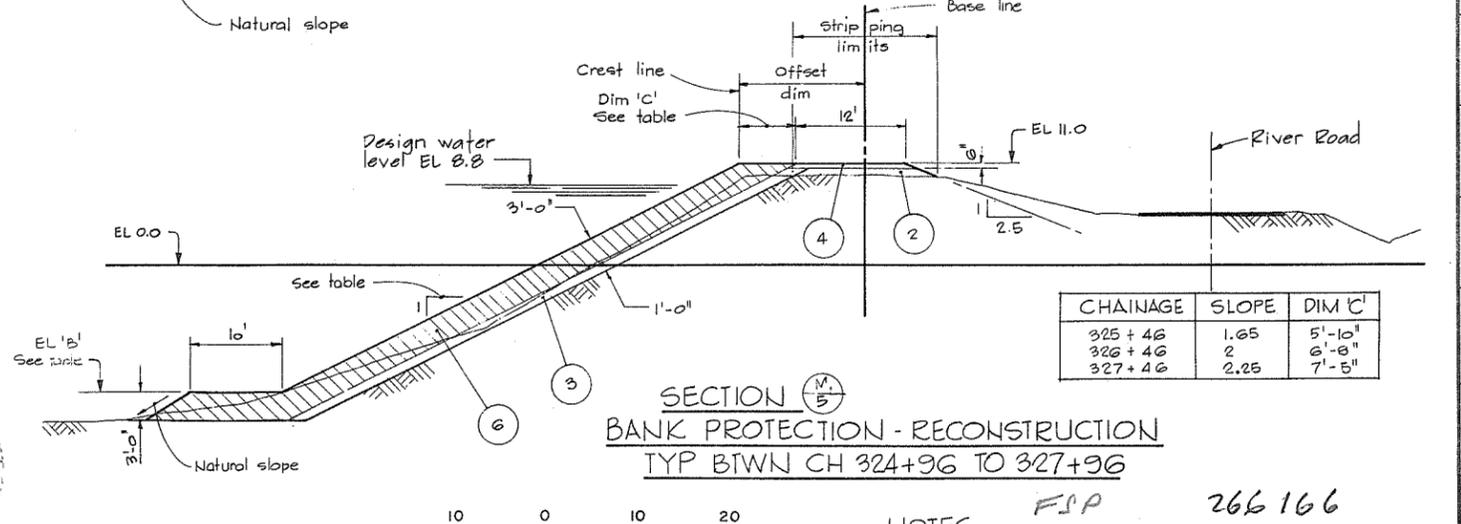
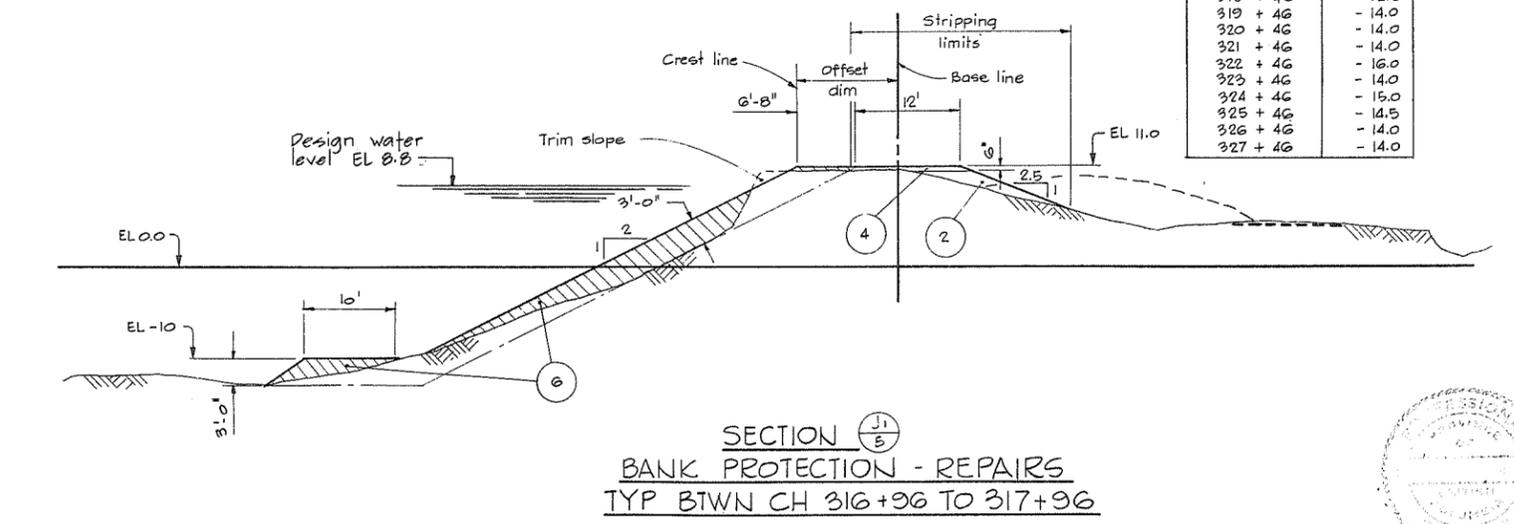
CONTRACT NO. 5  
TYPICAL DYKE SECTIONS  
SH 5 OF 6

266 165

FILE NO. 0281550 - C10-5 DWG NO. 4795-5-10



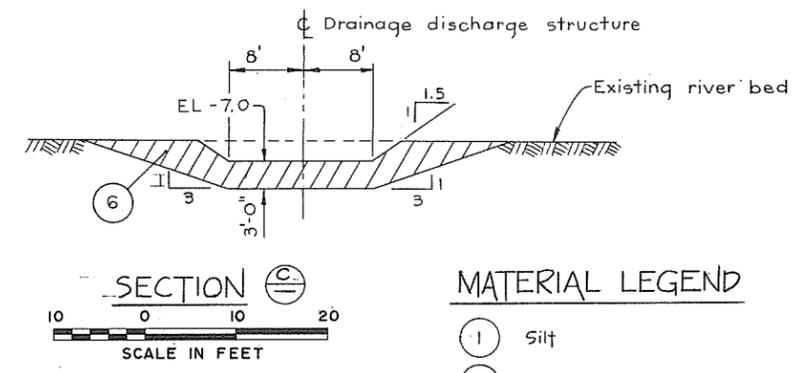
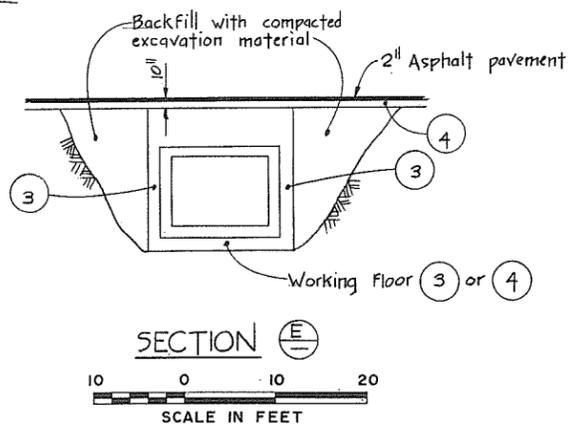
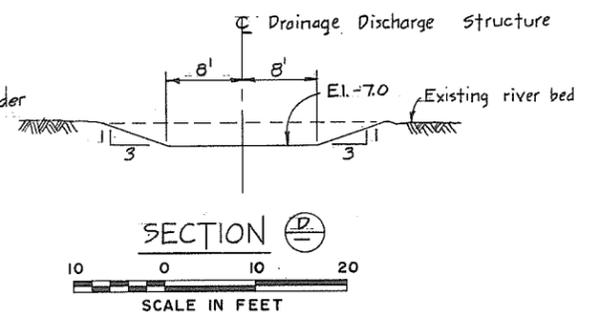
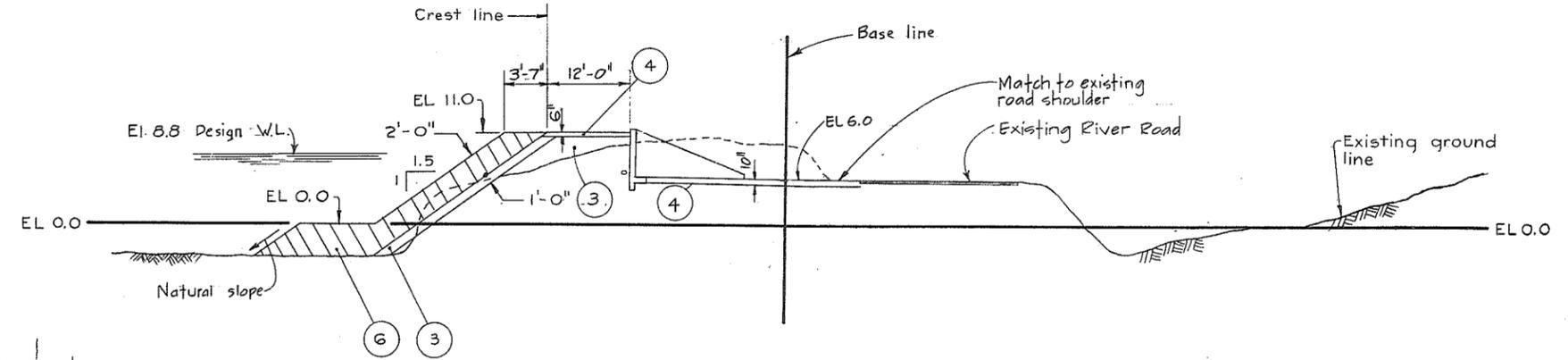
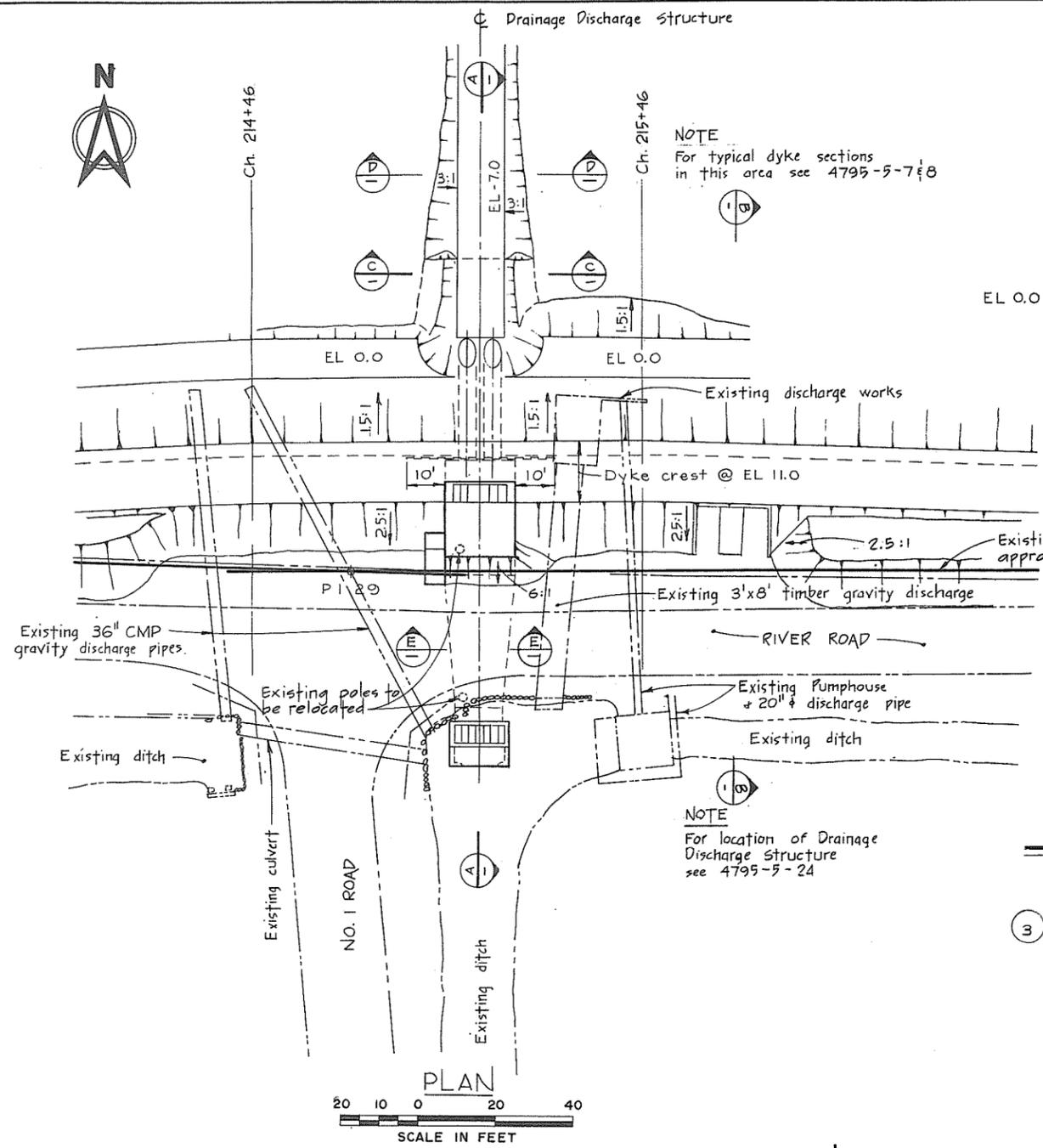
CHAINAGE	EL 'B'
314 + 46	- 16.0
315 + 46	- 17.5
318 + 46	- 12.5
319 + 46	- 14.0
320 + 46	- 14.0
321 + 46	- 14.0
322 + 46	- 16.0
323 + 46	- 14.0
324 + 46	- 15.0
325 + 46	- 14.5
326 + 46	- 14.0
327 + 46	- 14.0



NOTES  
 FSP 266 166  
 For Notes, Material Legend & Legend see 4795-5-7



C. B. A. ENGINEERING LTD. CONSULTING ENGINEERS VANCOUVER, B.C., CANADA									
THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE									
CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT PROJECT No. 3 THE TOWNSHIP OF RICHMOND									
CONTRACT NO. 5 TYPICAL DYKE SECTIONS SH 6 OF 6									
NO. DESCRIPTION BY CH APPD ISSUED					NO. DESCRIPTION BY CH APPD ISSUED				
REFERENCES					REVISIONS				
DWC NO.					DATE Dec 15/74				
TITLE					SCALE As shown				
REV					ORIG ISSUE Dec 1974				
FILE NO. 02B1550 - C10 - 5					DWG NO. 4795 - 5 - 11				



**MATERIAL LEGEND**

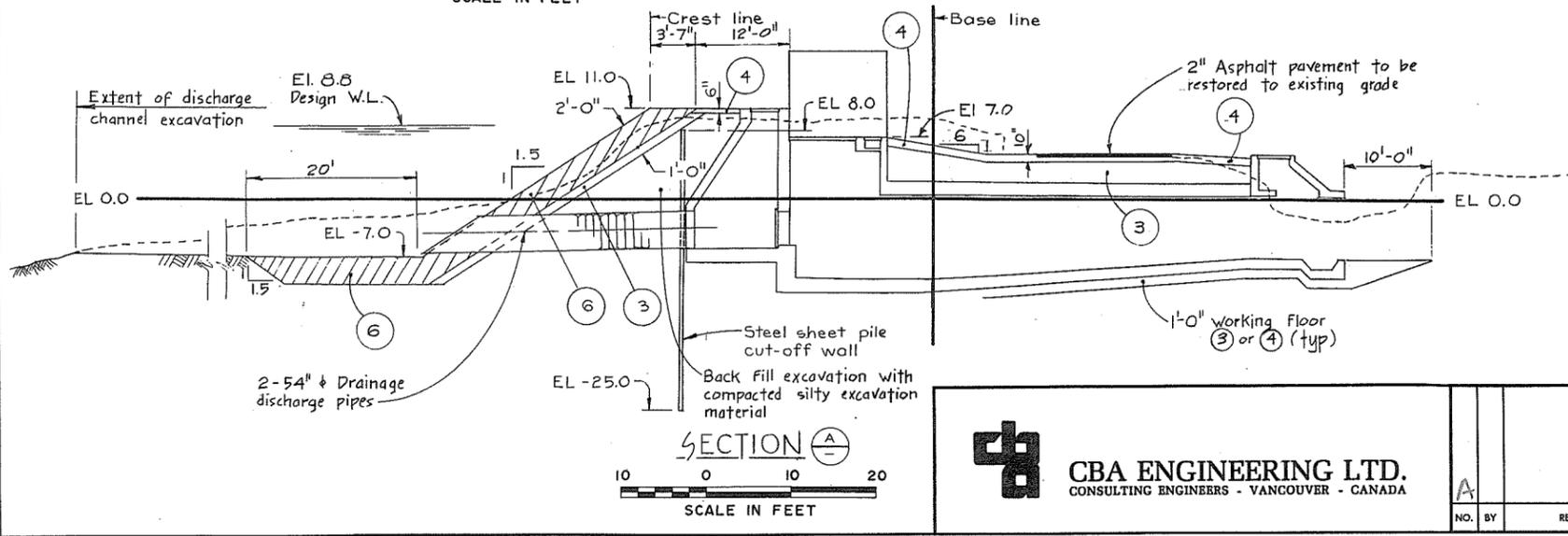
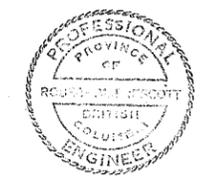
- ① Silt
- ② Sand
- ③ Sand, gravel, cobbles
- ④ Crushed gravel
- ⑤ 5b Light rip-rap
- ⑥ Rip-rap

**LEGEND**

- Existing ground surface (section)
- Existing ground & structures (plan)
- Section identification letter
- Drawing No. on which the section is drawn (ie) 4795-5-7
- Detail identification number
- Drawing No. on which the detail is drawn (ie) 4795-5-7

**NOTES**

- Elevations refer to the Geodetic Survey of Canada
- For offset dimensions see appropriate chainage on Alignment Plans
- Offset distances from base line to crest line are taken at EL 11.0



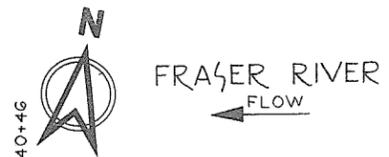
**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED *[Signature]*  
DATE *Dec 17/74*  
APPROVED *[Signature]* DIRECTOR  
DATE *Dec 17/74*

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NO. 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
DETAILS OF EARTH WORKS

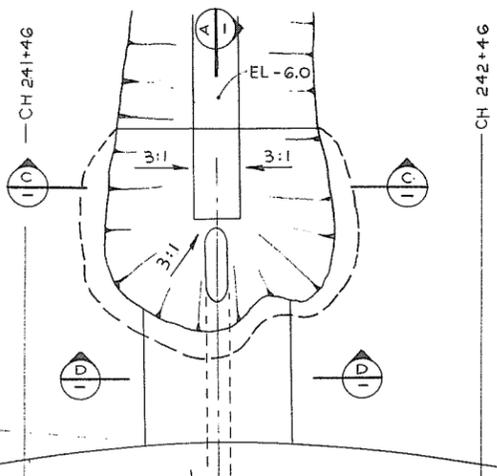
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DRAWN <i>[Signature]</i>	DATE <i>1969-70</i>
CHECKED <i>PLC</i>	FILE NO. <i>0281550-C10-5</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec 1974</i>
DWG. NO. <i>4795-5-12 A</i>	SHEET <i>OF</i> SHEETS

266 167

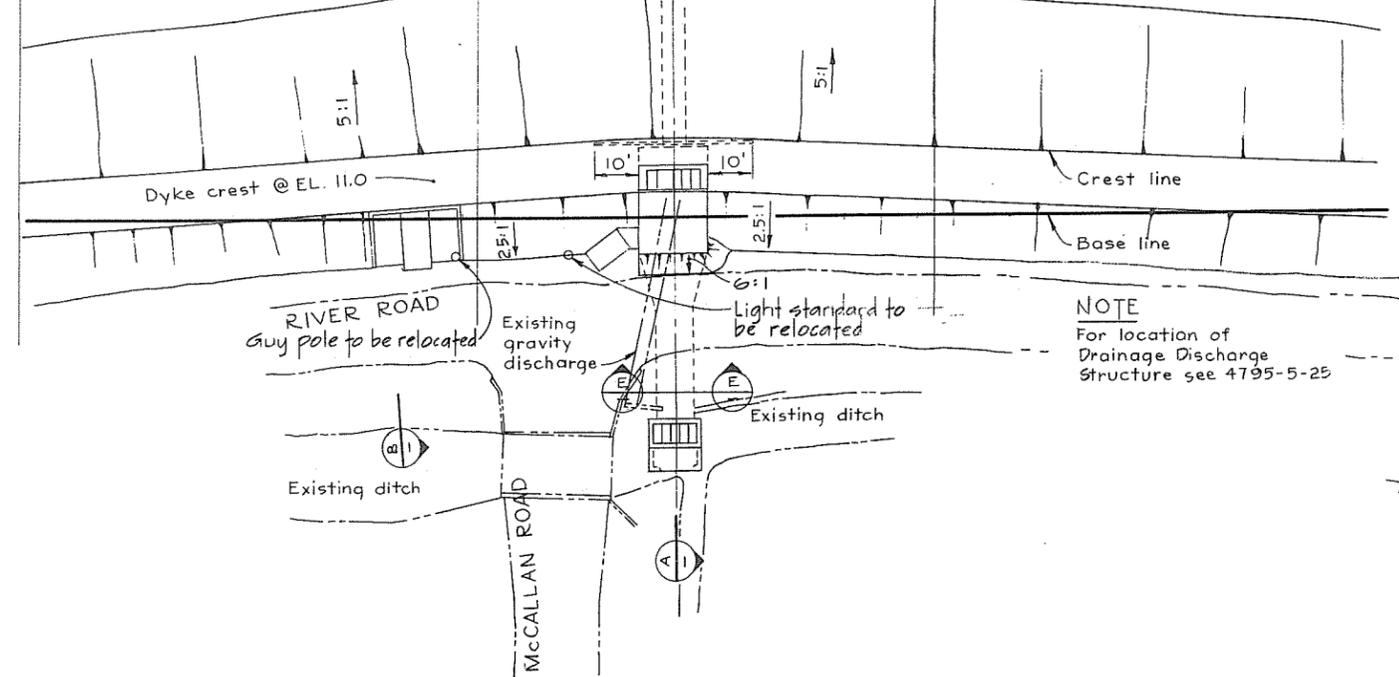


CH 240+46

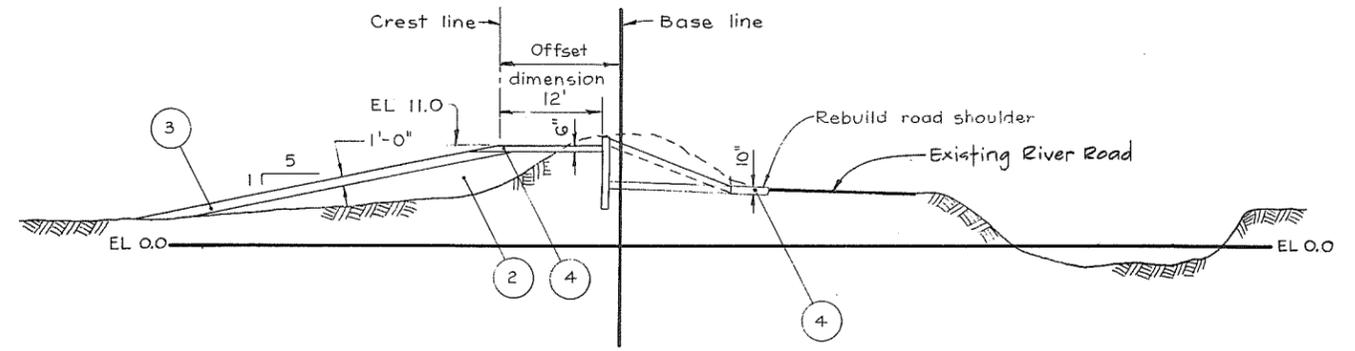
Drainage Discharge Structure



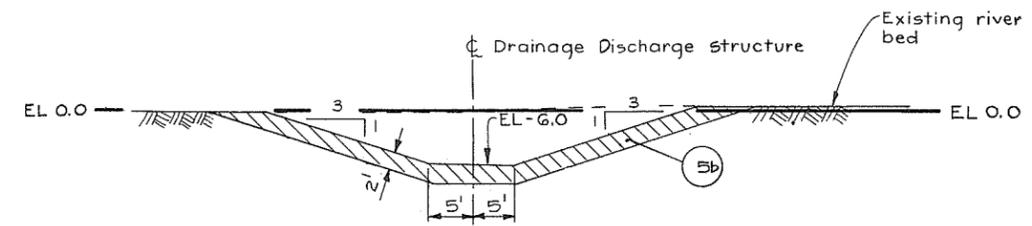
NOTE  
For typical dyke section in this area see 4795-5-8



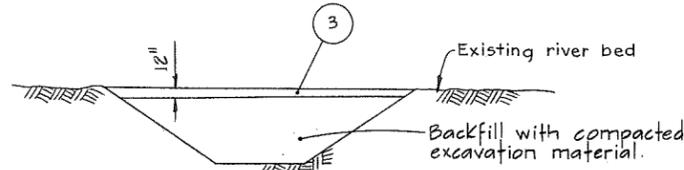
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SCALE IN FEET



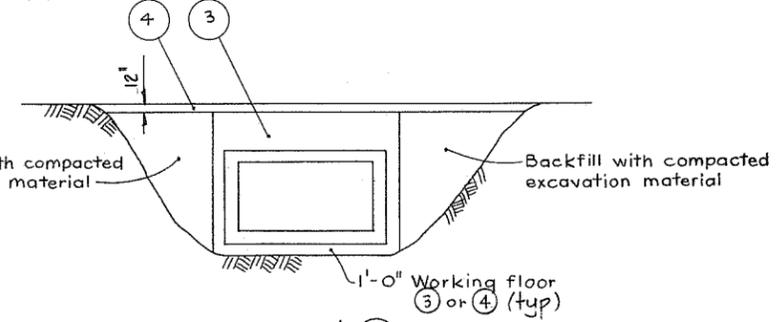
SECTION B  
SCALE IN FEET



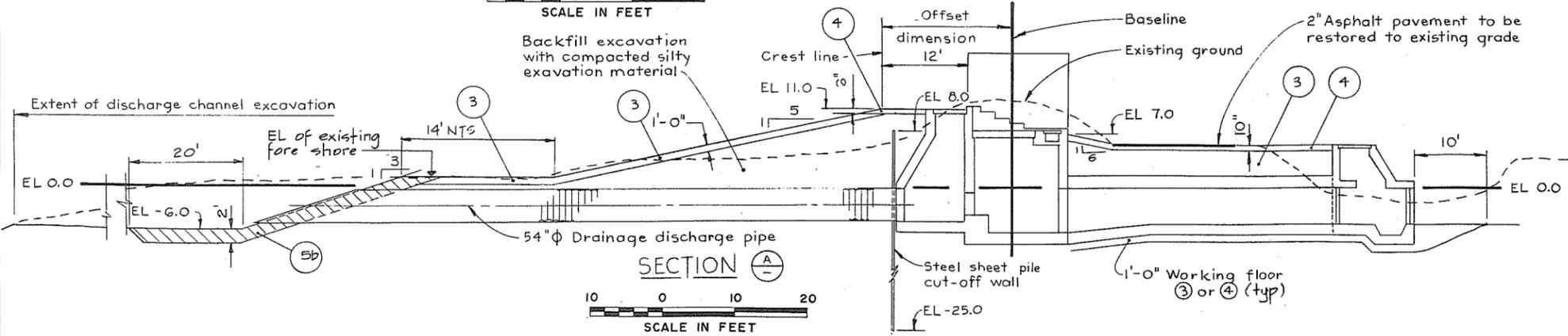
SECTION C  
SCALE IN FEET



SECTION D



SECTION E  
SCALE IN FEET



SECTION A  
SCALE IN FEET

NOTES  
For Notes, Material Legend, and Legend see 4795-5-12



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED: *[Signature]*  
DATE: Dec 17/74  
APPROVED: *[Signature]*  
DATE: Dec 17/74

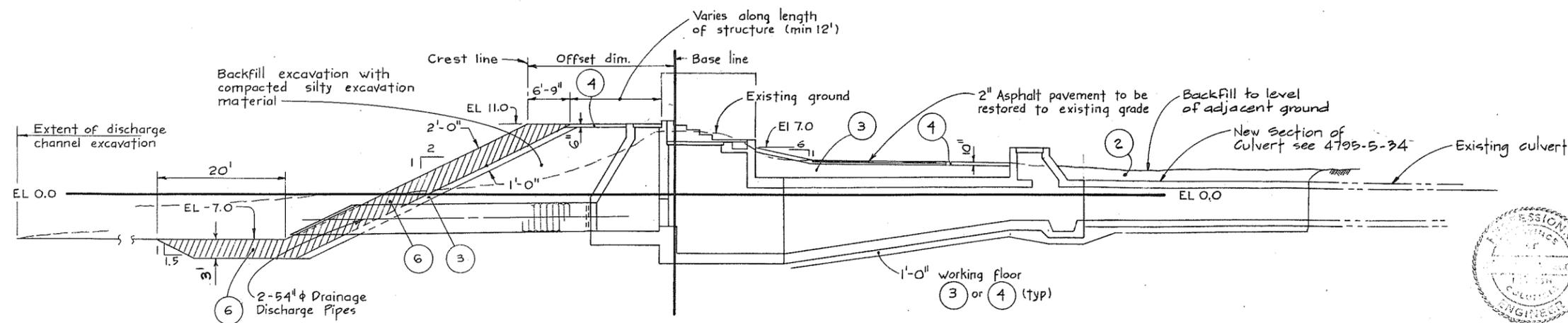
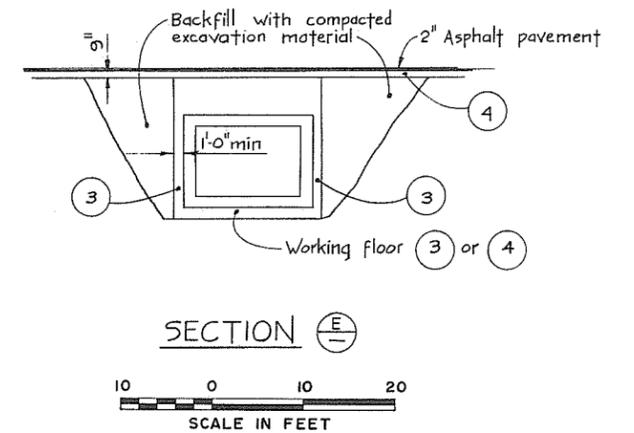
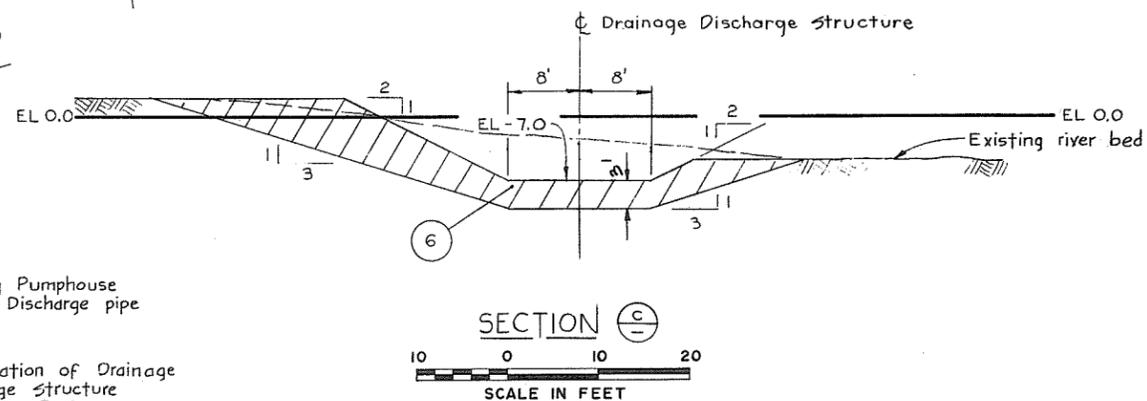
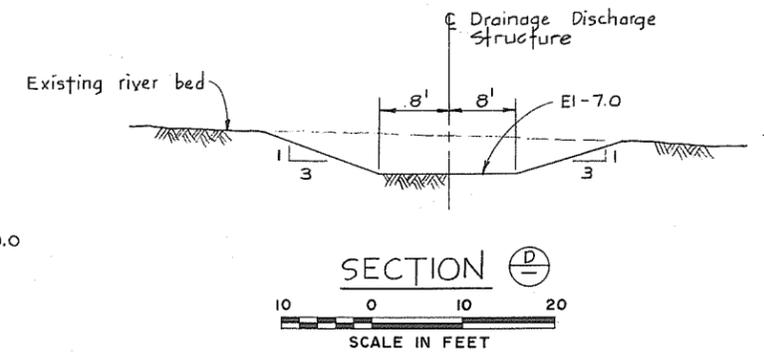
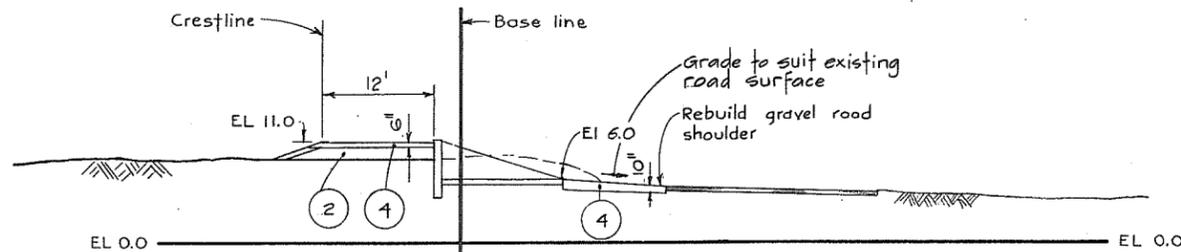
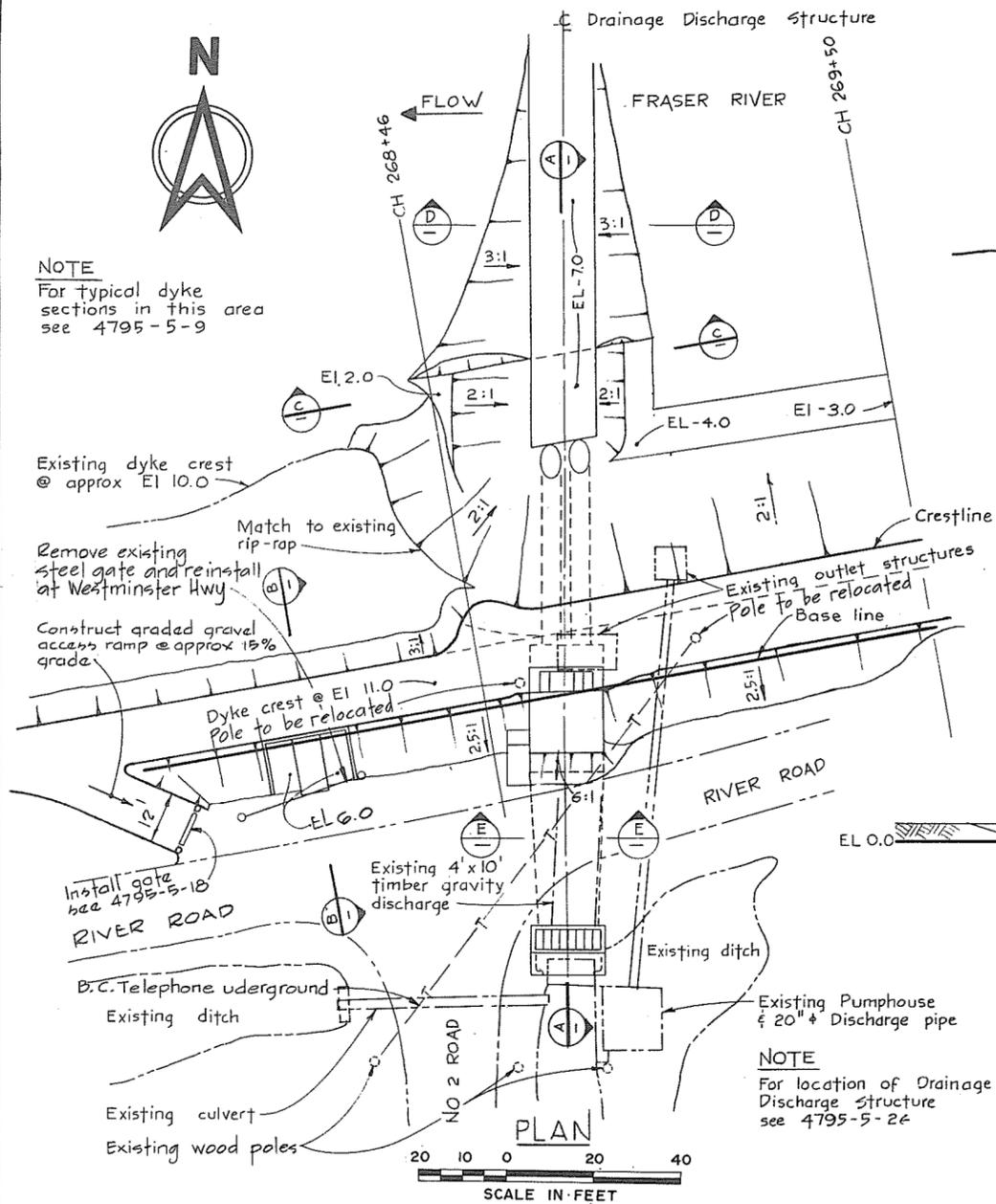
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
MCCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
DETAILS OF EARTH WORKS

DESIGNED: <i>[Signature]</i>	SURVEYED: <i>[Signature]</i>
DRAWN: <i>[Signature]</i>	DATE: 1969-70
CHECKED: <i>[Signature]</i>	FILE NO.: 0281550-C10-5
SCALE: AS SHOWN	DATE: Dec 1974
DWG. NO.: 4795-5-13	SHEET: OF SHEETS

FSP 266 168



NOTE  
For typical dyke sections in this area see 4795-5-9



NOTES

For Notes, Material Legend & Legend see 4795-5-12



FSP

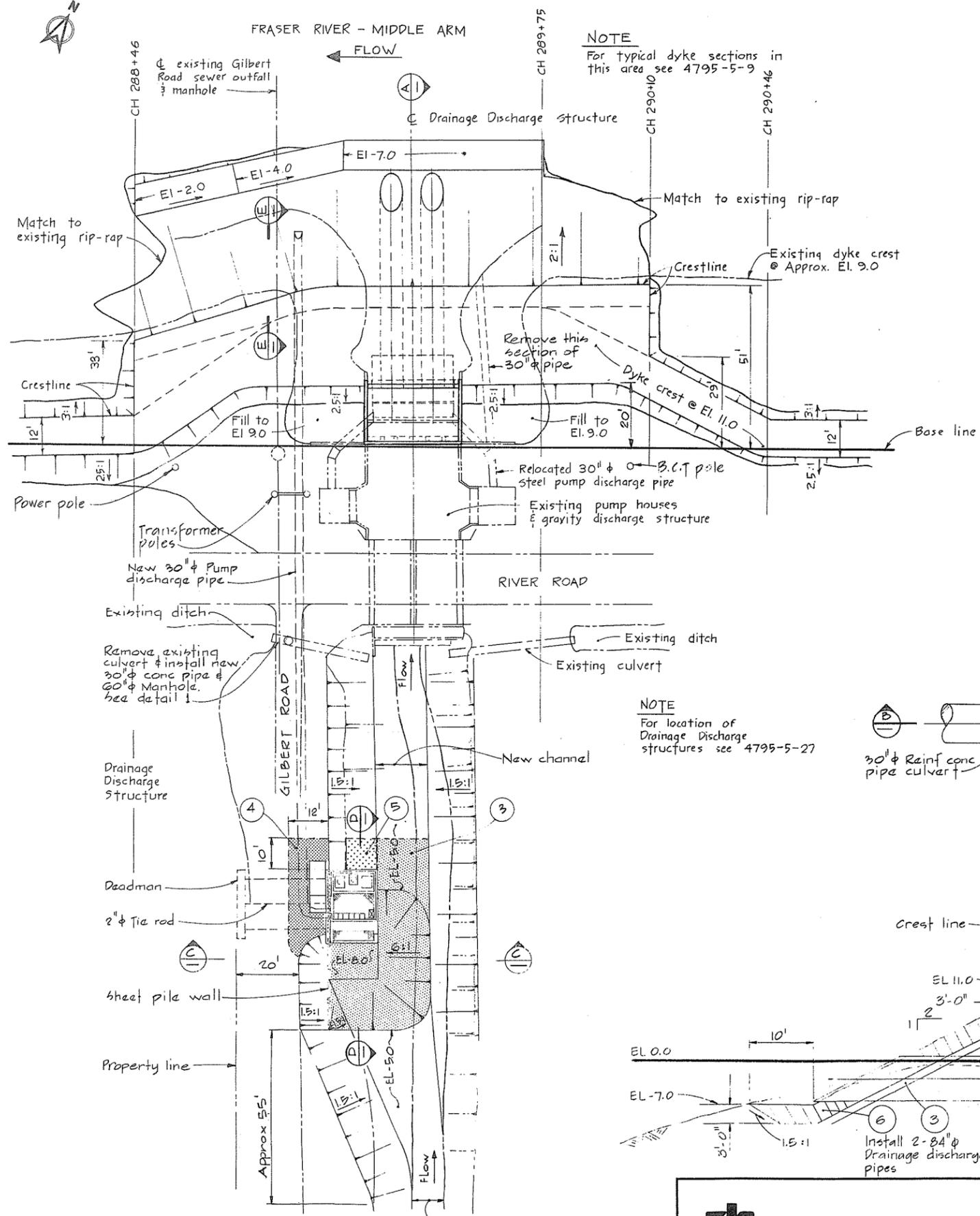
266 169

**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED  
DATE  
APPROVED  
DATE

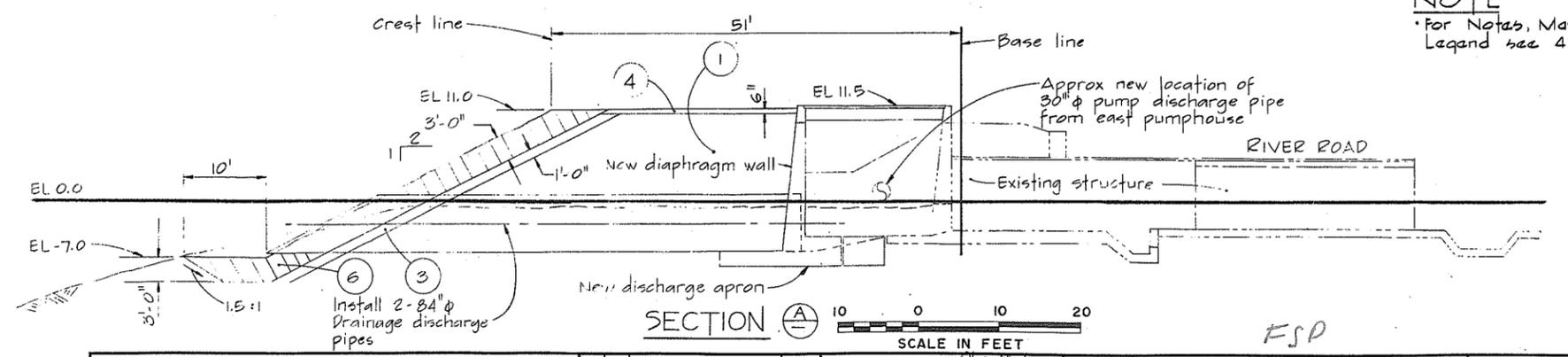
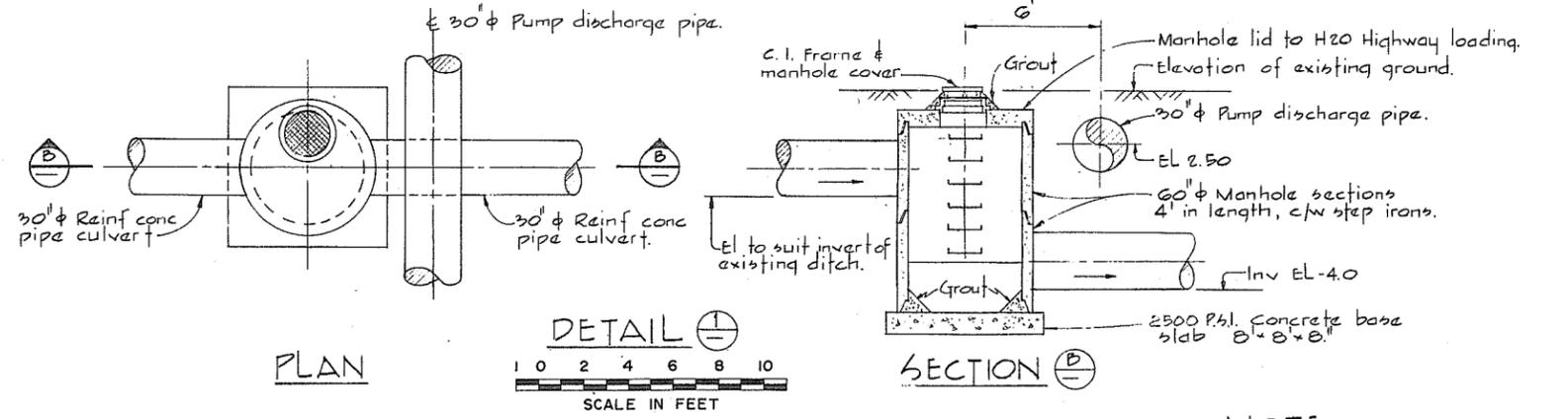
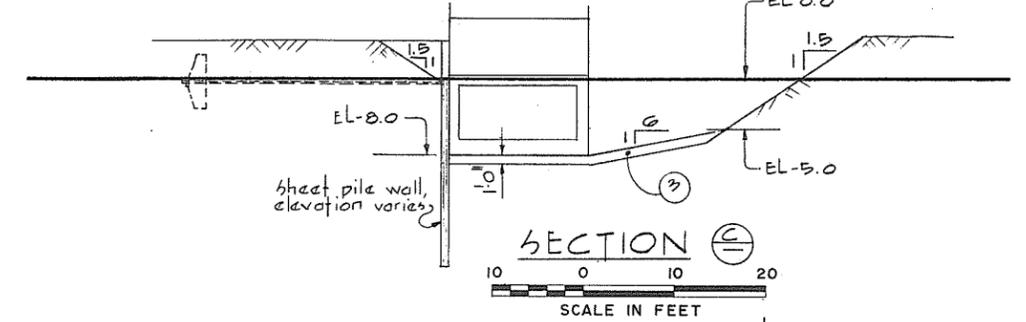
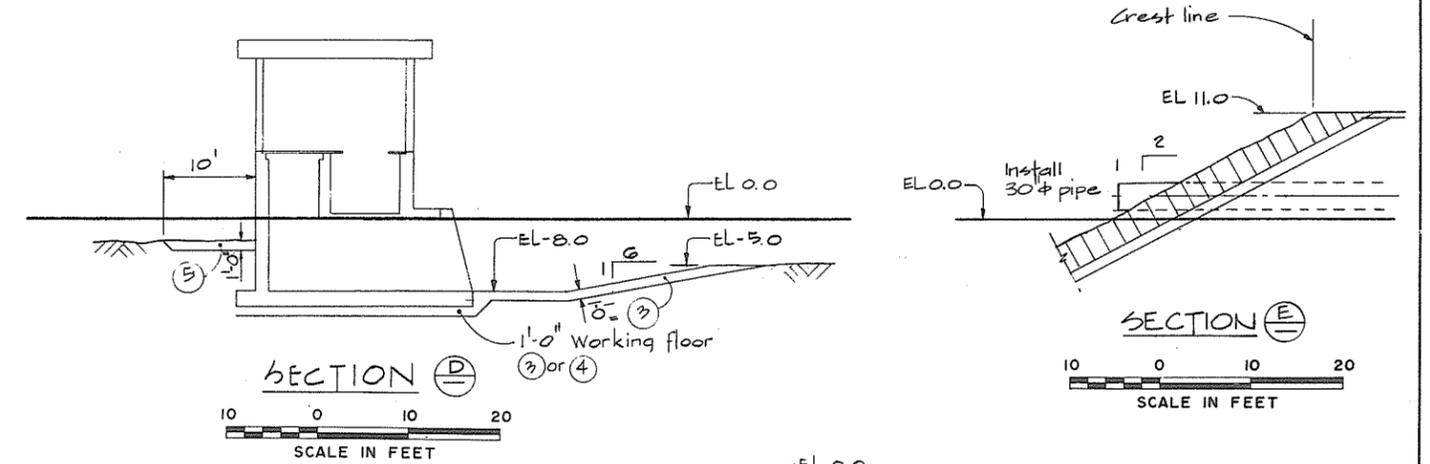
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
No. 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
DETAILS OF EARTHWORKS

DESIGNED	PLC & EMH	SURVEYED	ES
DRAWN	JA	DATE	1969-70
CHECKED	DLG	FILE NO.	0281550-C10-5
SCALE	AS SHOWN	DATE	Dec 1974
DWG. NO.	4795-5-14	SHEET	OF SHEETS



**NOTE**  
For typical dyke sections in this area see 4795-5-9

**NOTE**  
For location of Drainage Discharge structures see 4795-5-27



**NOTE**  
For Notes, Material Legend & Legend see 4795-5-12

0 10 0 20 40  
SCALE IN FEET

**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES	DESIGNED	PLC & EMH	SURVEYED	ES
DATE	PROJECTS DIV.	DRAWN	ydb	DATE	1969-70
APPROVED	FRASER RIVER FLOOD CONTROL 1968 AGREEMENT	CHECKED	PLC	FILE NO.	0281550-C10-5
DATE	PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND	SCALE	AS SHOWN	DATE	Dec 1974
	CONTRACT NO. 5 GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE	DWG. NO.	4795-5-15 A	SHEET	OF SHEETS

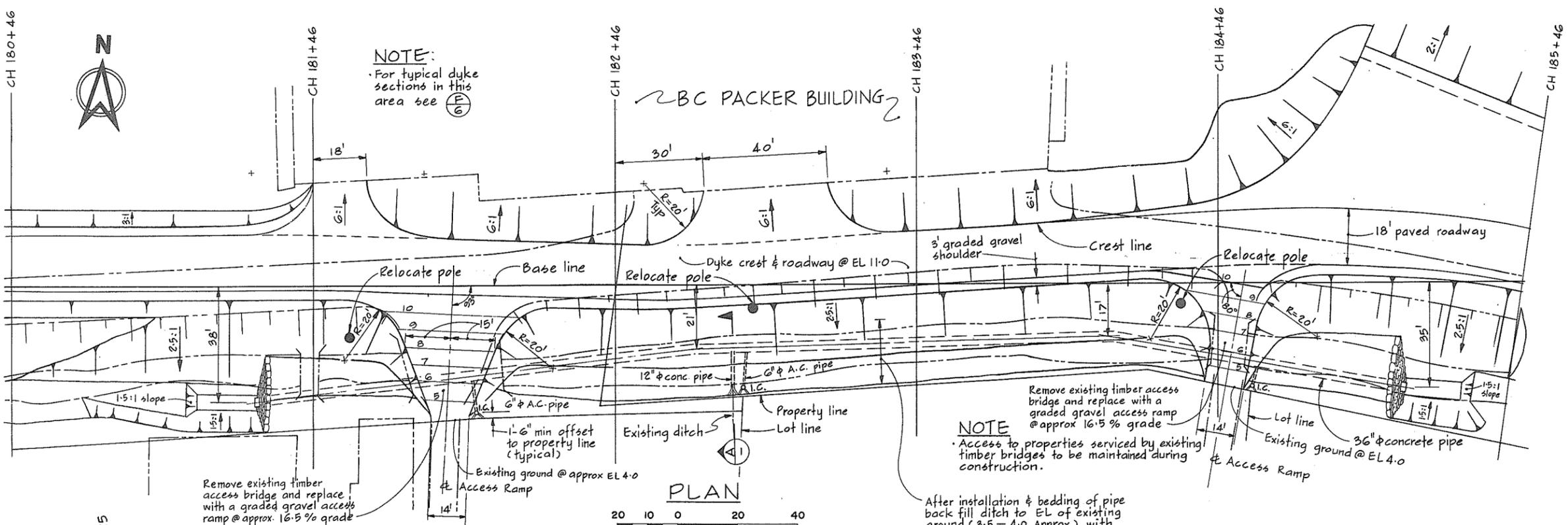


FSP  
266 170



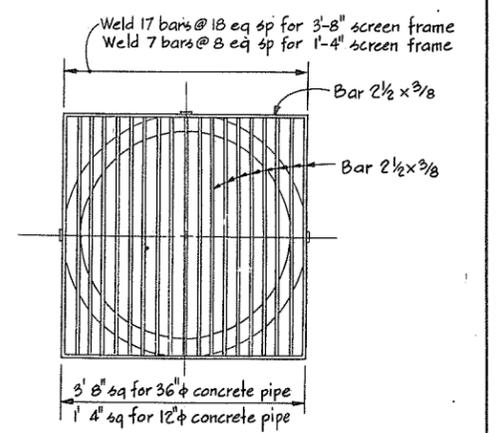
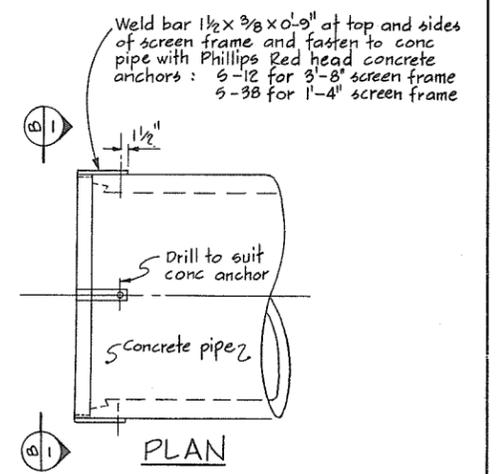




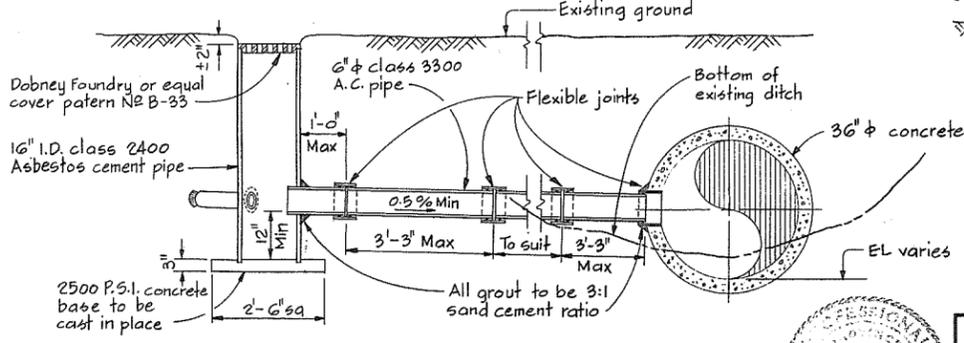
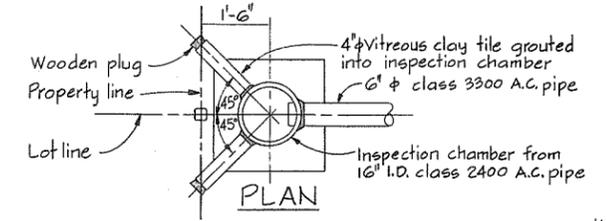
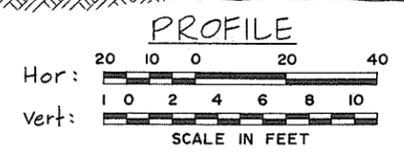
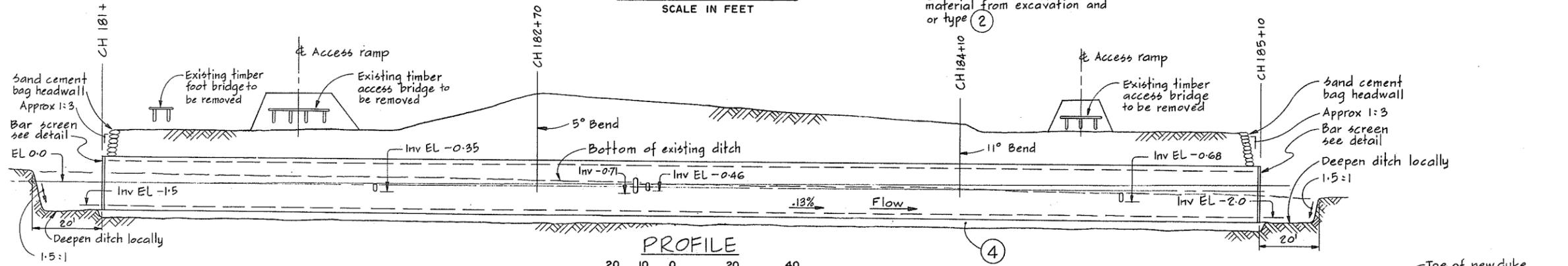


**NOTE:**  
For typical dyke sections in this area see (P.6)

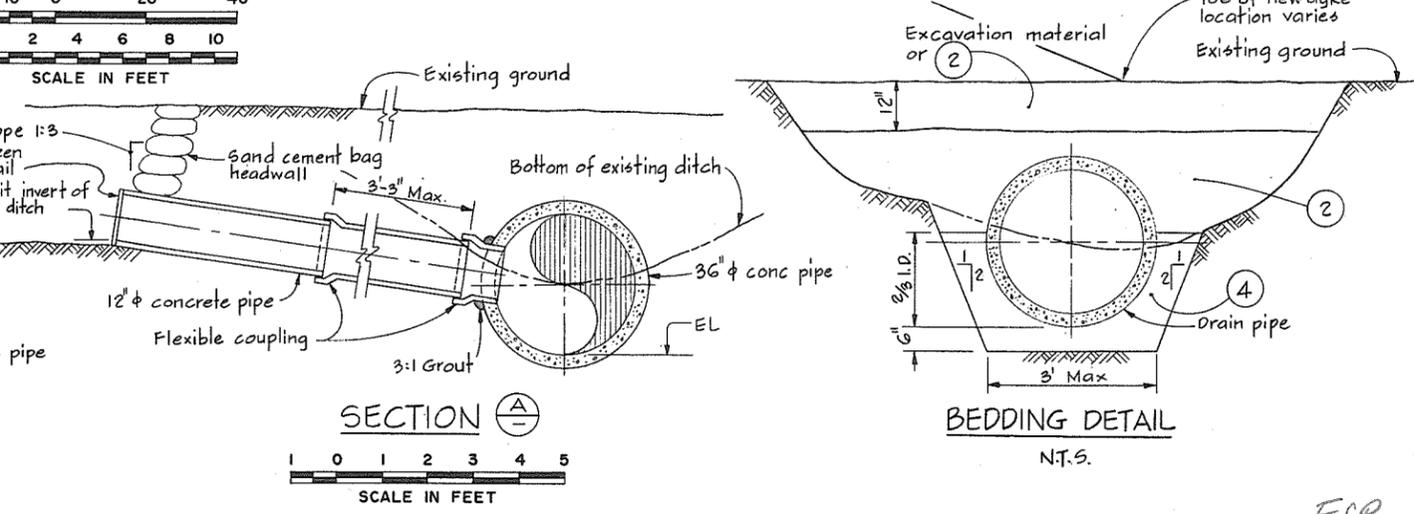
**NOTE:**  
Remove existing timber access bridge and replace with a graded gravel access ramp @ approx 16.5% grade.  
Access to properties serviced by existing timber bridges to be maintained during construction.



**B-B BAR SCREEN**  
2 - REQ'D FOR 36" REINFC CONC PIPE  
1 - REQ'D FOR 12" NON-REINFC CONC PIPE  
SCALE IN FEET



**TYPE I INSPECTION CHAMBER**  
SCALE IN FEET



**NOTES**  
For Materials Legend & Legend see 4795-5-18  
Elevations refer to the Geodetic Survey of Canada



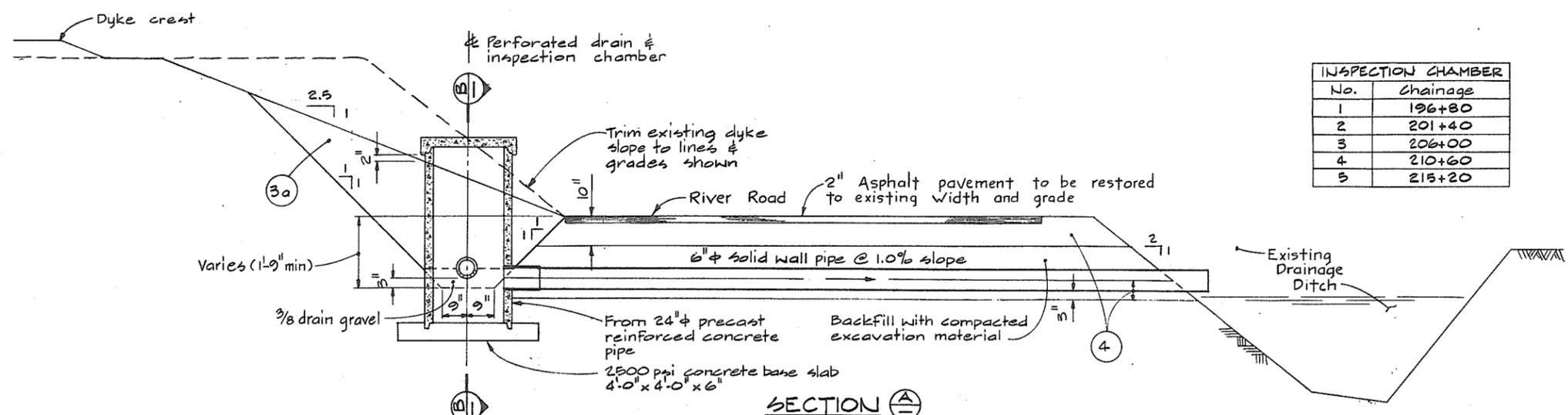
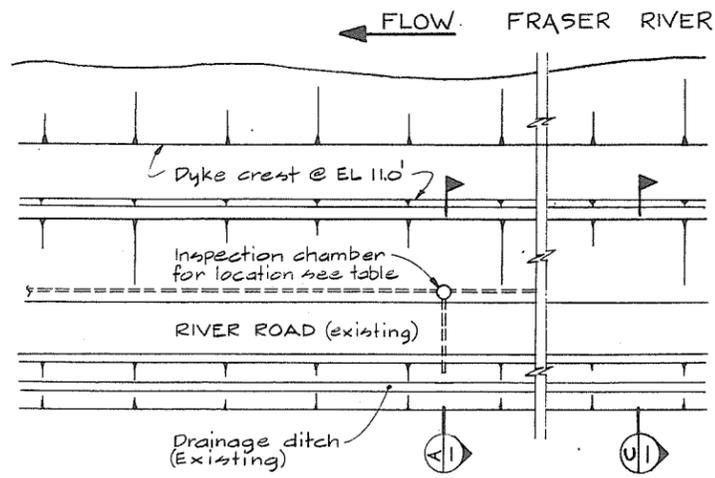
**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED  
DATE: Dec 17/74  
APPROVED: [Signature]  
DATE: Dec 17/74

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
STORM SEWER DETAILS

DESIGNED: DLC  
DRAWN: JL  
CHECKED: DLC  
SCALE: As shown  
DWG. NO: 4795-5-19  
SURVEYED: E.S.  
DATE: 1969-70  
FILE NO: 02B1550-C10-5  
DATE: Dec 1974  
SHEET: OF SHEETS

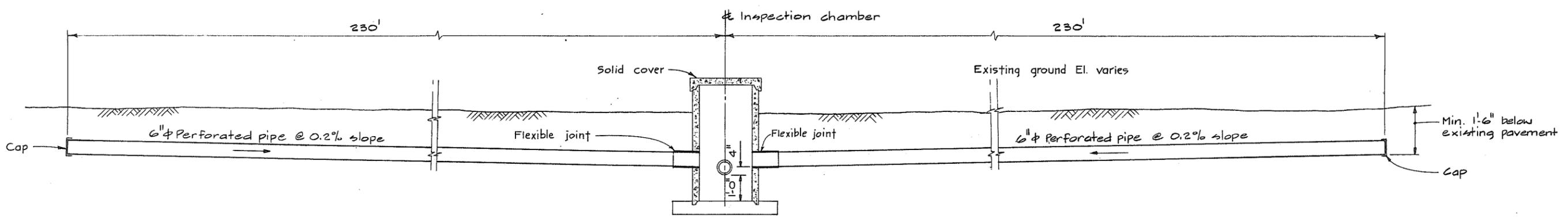
FSP 266 174



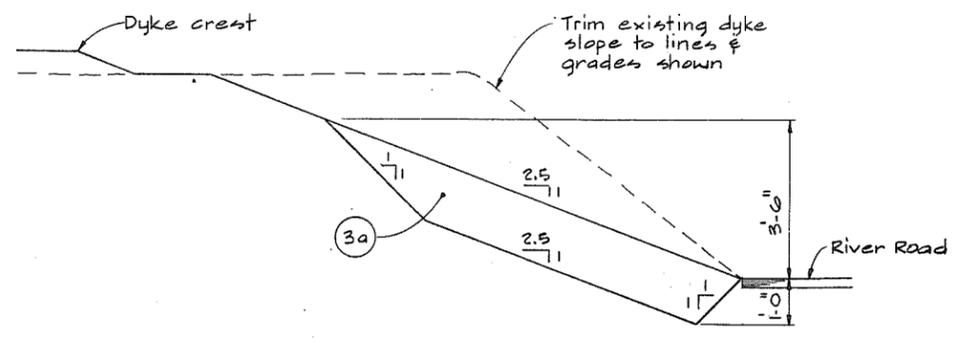
SECTION A  
TYPICAL TYPE 2 INSPECTION CHAMBER, CROSS-DRAIN AND LANDSIDE TREATMENT BTWN CH 194+50 TO CH 217+50



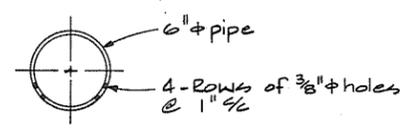
INSPECTION CHAMBER	
No.	Chainage
1	196+80
2	201+40
3	206+00
4	210+60
5	215+20



SECTION B  
SCALE IN FEET: 2 1 0 2 4



SECTION C  
LANDSIDE TREATMENT BTWN CH 217+50 TO CH 268+50



PERFORATED PIPE DETAIL  
NTS

NOTES  
 • For Notes, Material Legend & Legend see 4795-5-1B  
 • For pipe materials and installation see detail specifications.

FSP 266 175

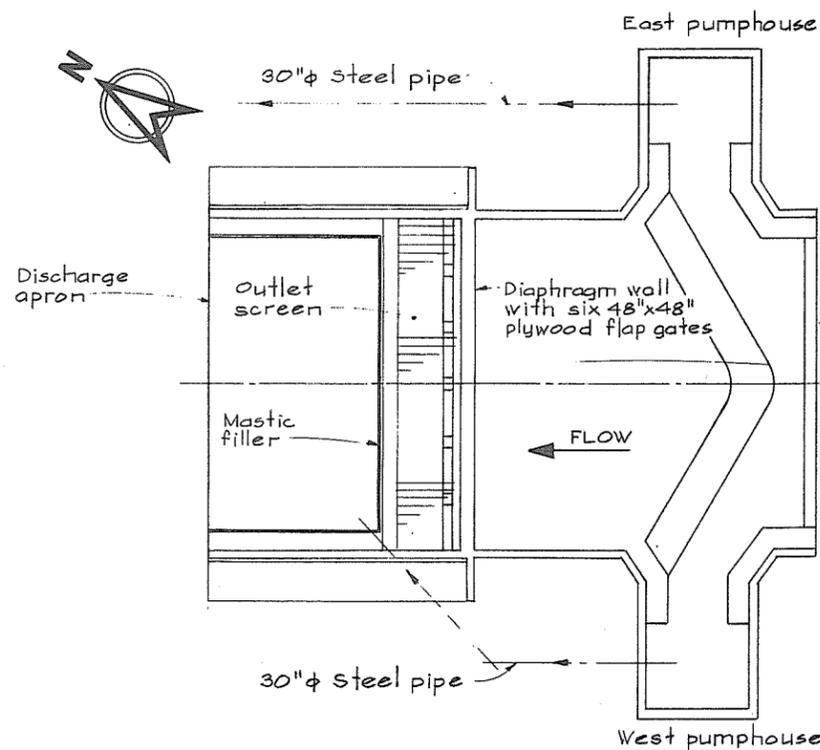


**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	DATE	APPROVED	DATE
<i>[Signature]</i>	Dec 17/74	<i>[Signature]</i>	Dec 17/74

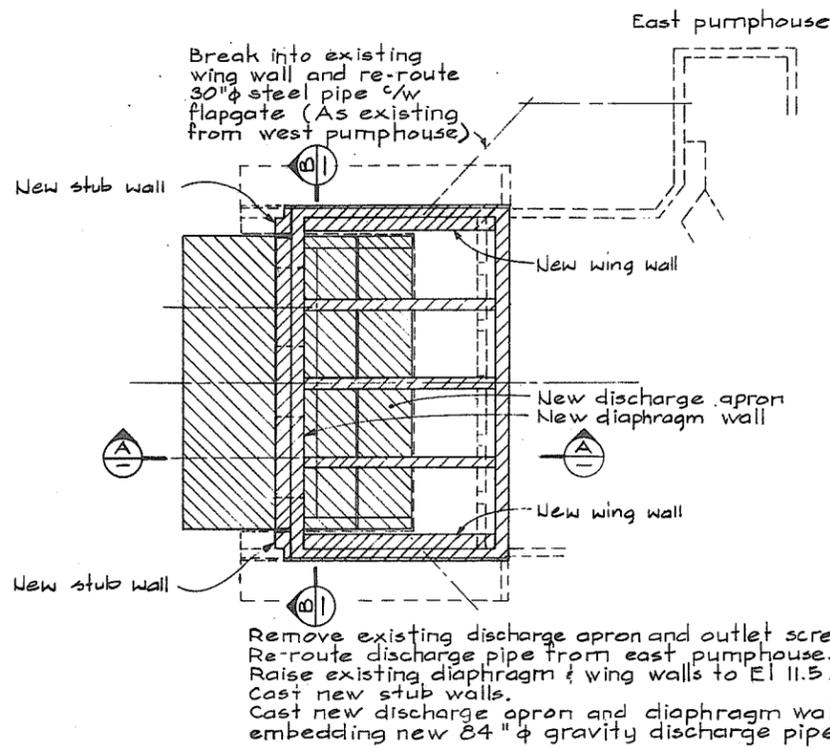
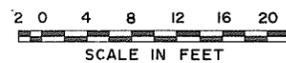
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
DETAILS OF SEEPAGE DRAINS

DESIGNED	EMH	SURVEYED	ES
DRAWN	ydb/AR	DATE	1969-70
CHECKED	DLC	FILE NO.	0281550-C10-5
SCALE	AS SHOWN	DATE	Dec 1974
DWG. NO.	4795-5-20	SHEET	OF SHEETS



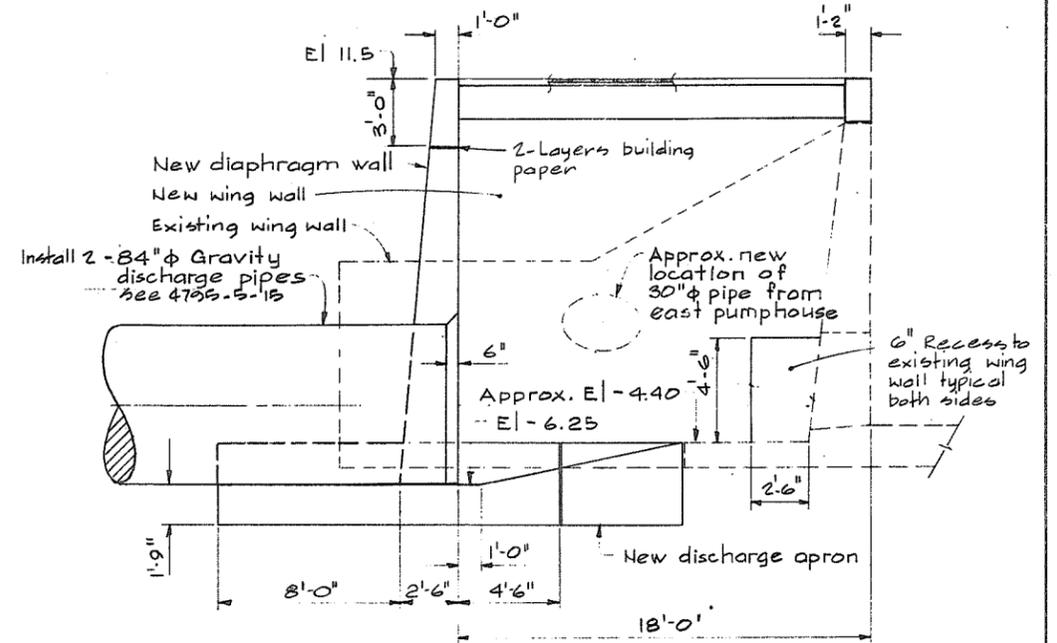
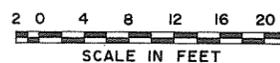
**NOTE**  
 Except for the discharge apron, the structure is supported on timber piles.

**EXISTING CONDITIONS**

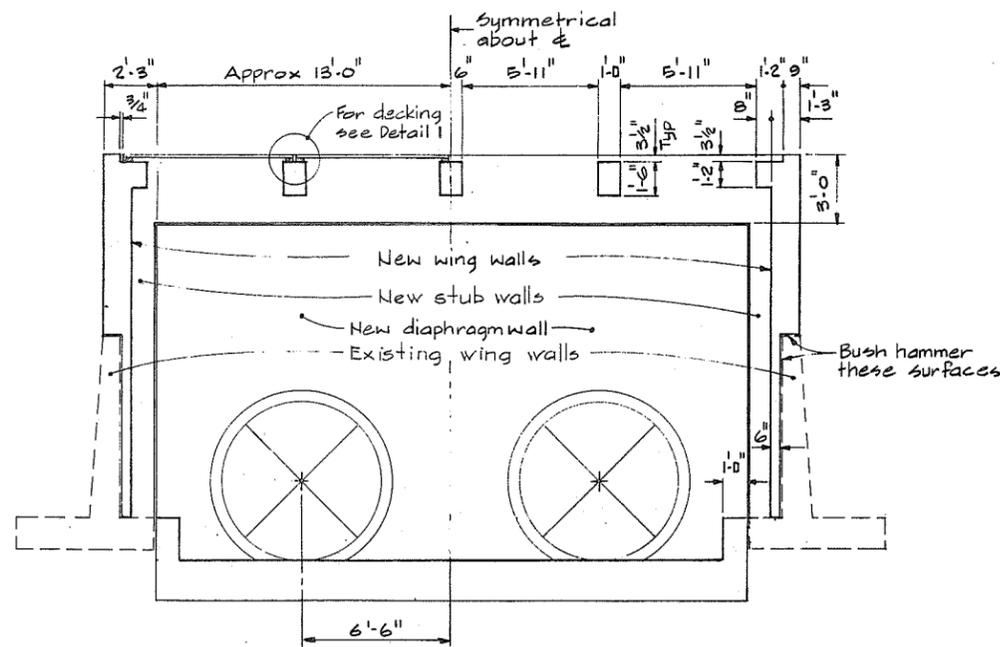


Remove existing discharge apron and outlet screen. Re-route discharge pipe from east pumphouse. Raise existing diaphragm & wing walls to El 11.5. Cast new stub walls. Cast new discharge apron and diaphragm wall, embedding new 84" diameter gravity discharge pipes.

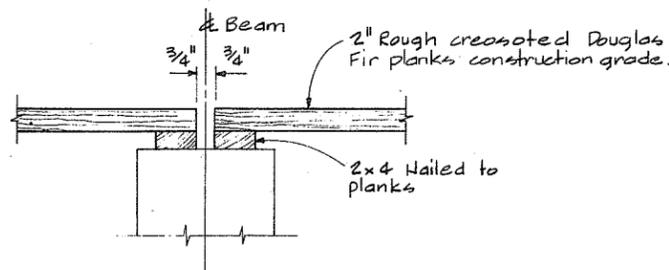
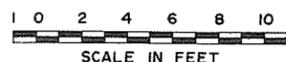
**MODIFICATIONS**



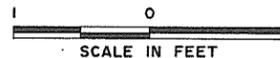
**SECTION A-A**



**SECTION B-B**

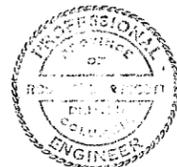


**DETAIL 1-1**



**NOTES**

For General Notes see 4975-5-28



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

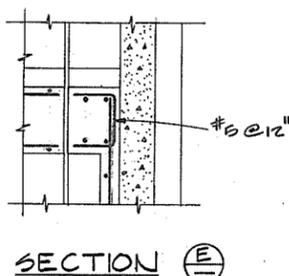
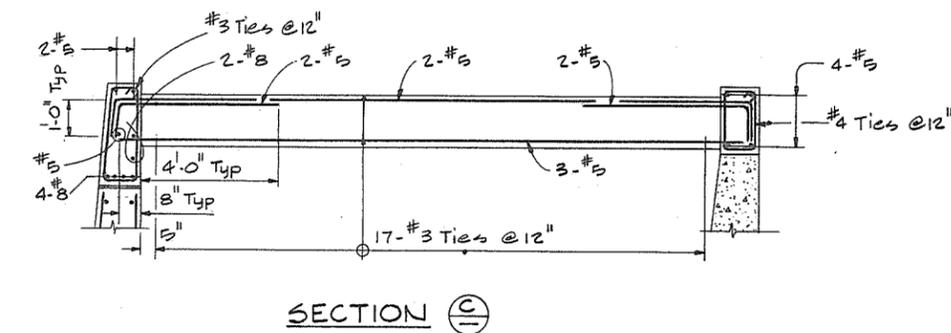
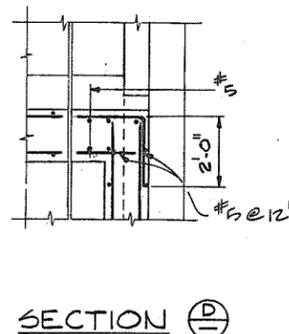
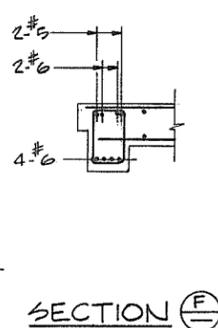
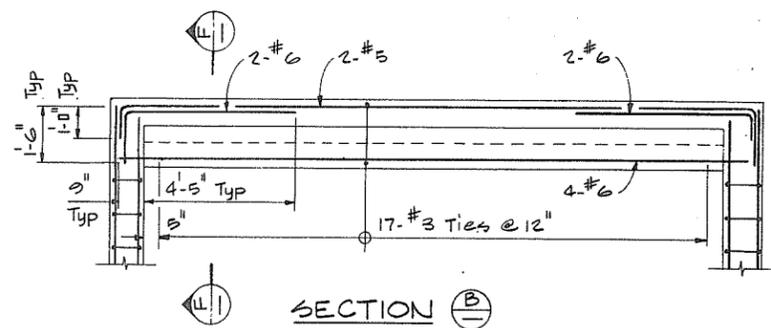
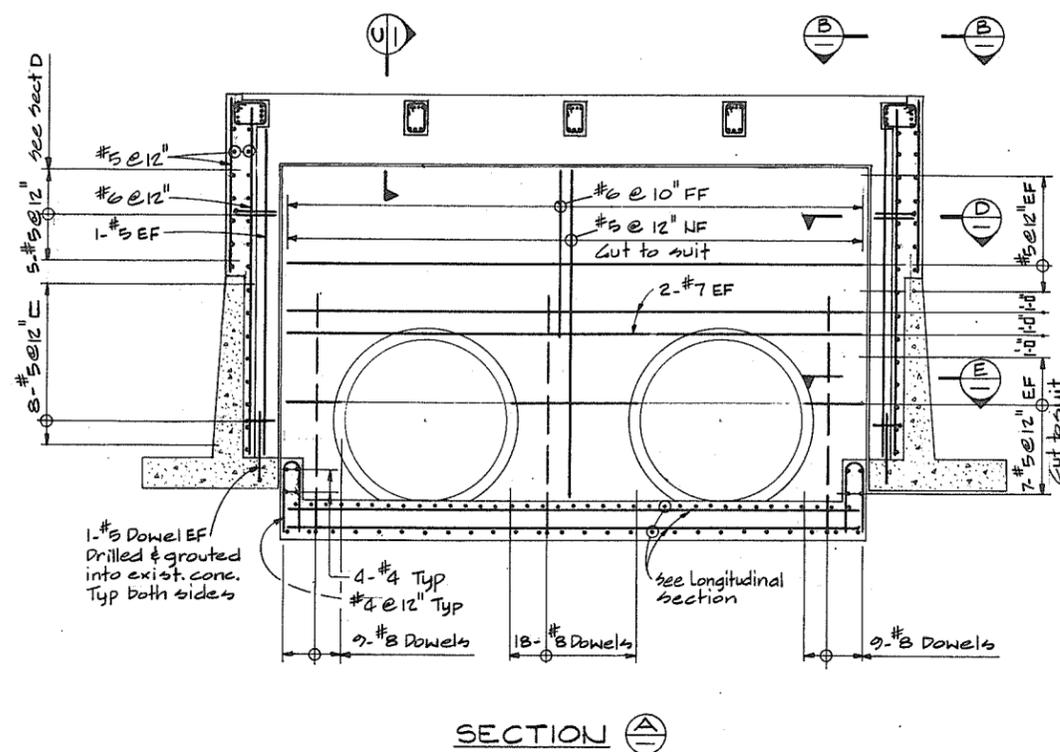
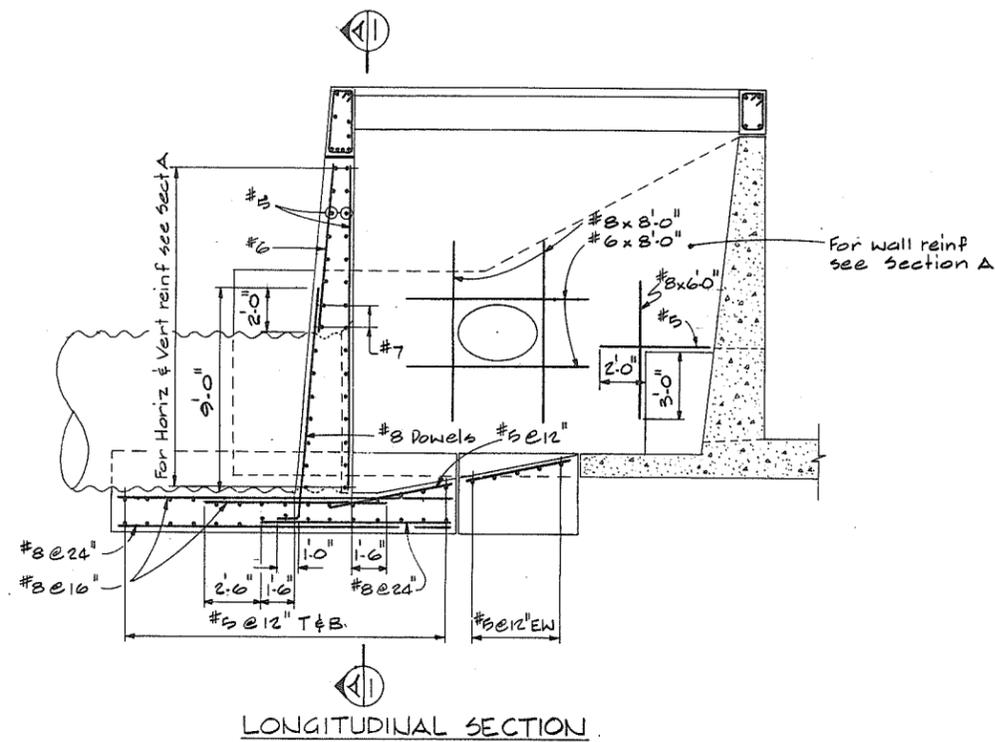
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DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 17/74

BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 GILBERT ROAD NORTH GRAVITY DISCHARGE  
 MODIFICATIONS - CONCRETE OUTLINE

DESIGNED KM	SURVEYED
DRAWN HJ/OR	DATE
CHECKED KM	FILE NO. 0281550-C10-5
SCALE As shown	DATE Dec 1974
DWG. NO. 4795-5-21	SHEET OF SHEETS

No print (NP)

266 176



NOTES  
 • For General Notes see 4795-5-28



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED <i>R. J. O'Leary</i>	CHIEF PROJECTS DIV.
DATE <i>Dec 17/74</i>	
APPROVED <i>R. MacCott</i>	DIRECTOR
DATE <i>Dec 17/74</i>	

BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

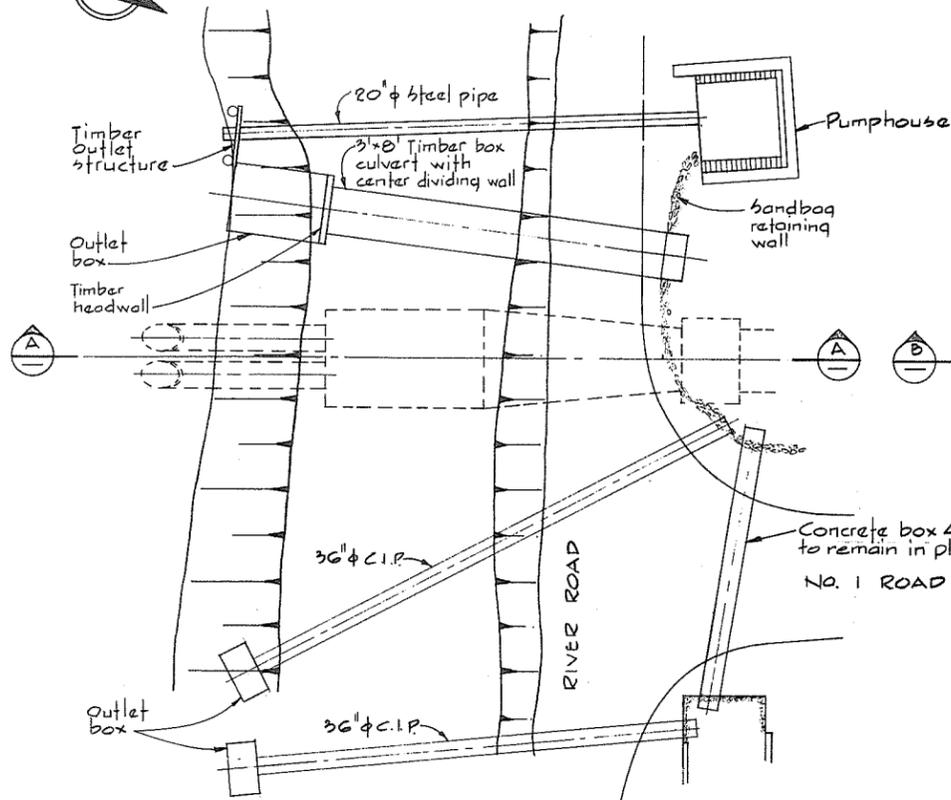
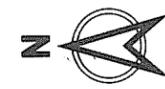
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND

CONTRACT NO. 5  
 GILBERT ROAD NORTH GRAVITY DISCHARGE  
 MODIFICATIONS - REINFORCING

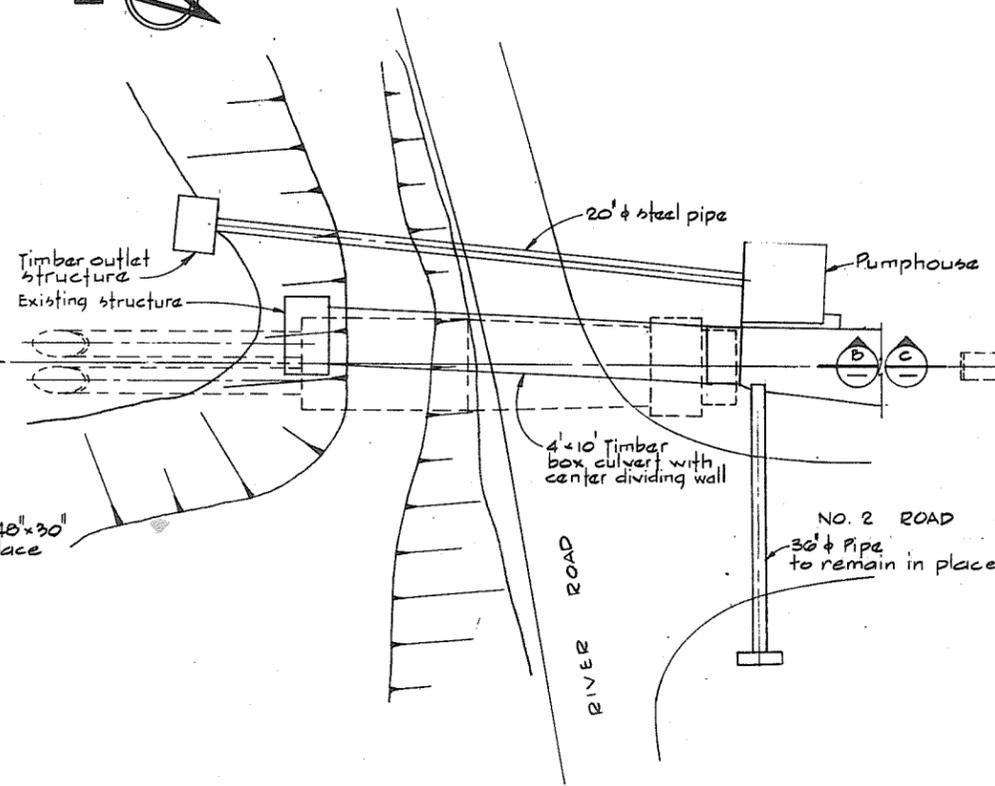
DESIGNED KM	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED KM	FILE NO. 0281550-C10-5
SCALE <i>As shown</i>	DATE <i>Dec 1974</i>
DWG. NO. 4795-5-22	SHEET ... OF ... SHEETS

N.P.

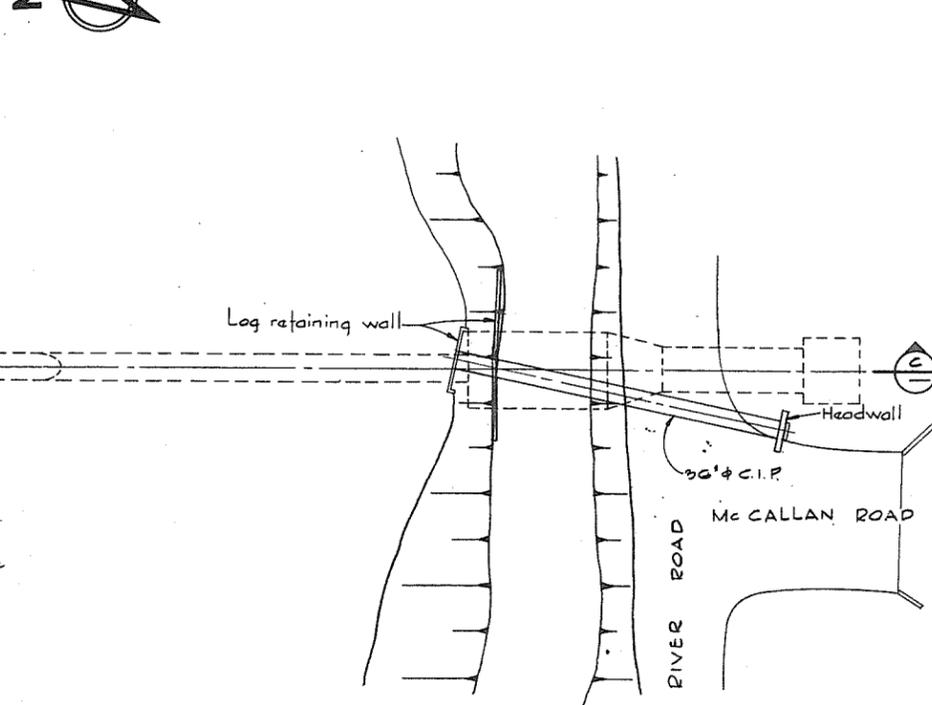
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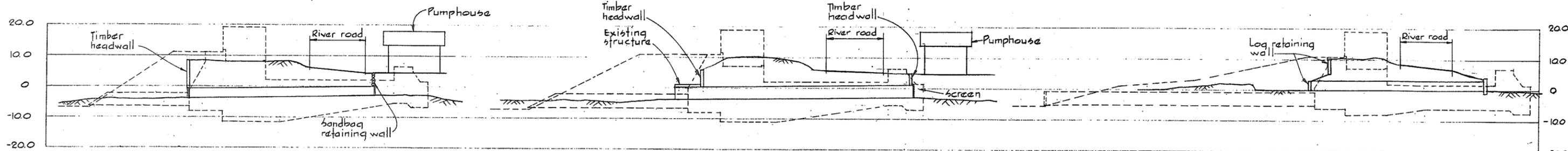
PLAN  
NO. 1 ROAD NORTH



PLAN  
NO. 2 ROAD NORTH



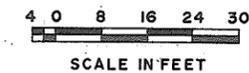
PLAN  
McCALLAN ROAD



SECTION A

SECTION B

SECTION C



**LEGEND**  
 Existing works shown thus, ———  
 Proposed new works shown thus, - - - -

**NOTES**  
 For Gilbert Road North drainage structure see 4795-5-15 & 21.  
 Refer to specifications for maintenance of existing drainage discharge facilities during construction.



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

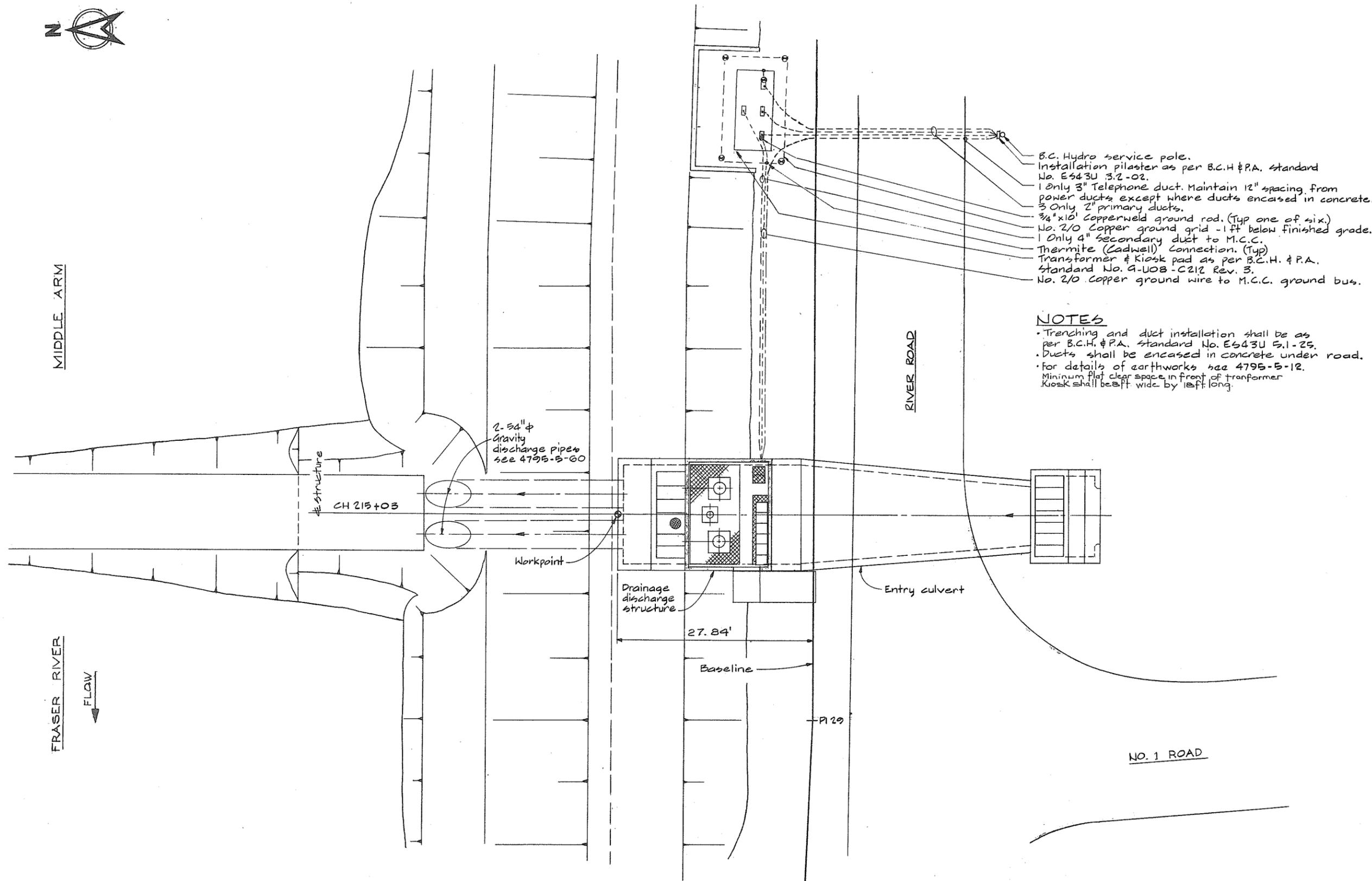
NO.	BY	REVISIONS	DATE

RECOMMENDED *R. Waller*  
 WATER RESOURCES DIV.  
 DATE *Dec 17/74*  
 APPROVED *P. B. Brady*  
 DIRECTOR  
 DATE *Dec 18/74*

BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 EXISTING DRAINAGE DISCHARGE STRUCTURES  
 WORKS TO BE REMOVED

DESIGNED	SURVEYED
DRAWN H.W.	DATE
CHECKED EMH	FILE NO. 0281550-C10-5
SCALE As shown	DATE Dec 1974
DWG. NO. 4795-5-23	SHEET OF SHEETS

N.P.  
 266 178



- B.C. Hydro service pole.
- Installation pilaster as per B.C.H. & P.A. standard No. E643U 3.2-02.
- 1 Only 3" Telephone duct. Maintain 12" spacing from power ducts except where ducts encased in concrete.
- 3 Only 2" primary ducts.
- 3/4" x 16' Copperweld ground rod. (Typ one of six.)
- No. 2/0 Copper ground grid - 1 ft below finished grade.
- 1 Only 4" secondary duct to M.C.C.
- Thermite (Cadwell) connection. (Typ)
- Transformer & Kiosk pad as per B.C.H. & P.A. standard No. G-U08-C212 Rev. 3.
- No. 2/0 Copper ground wire to M.C.C. ground bus.

**NOTES**

- Trenching and duct installation shall be as per B.C.H. & P.A. standard No. E643U 5.1-25.
- Ducts shall be encased in concrete under road.
- For details of earthworks see 4795-5-12.
- Minimum flat clear space in front of transformer kiosk shall be 8 ft wide by 12 ft long.

2.54" φ Gravity discharge pipes see 4795-5-60

CH 215+03

Workpoint

Drainage discharge structure

27.84'

Baseline

P129

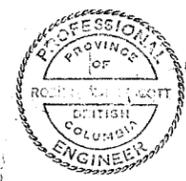
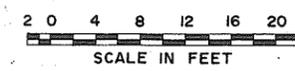
Entry culvert

NO. 1 ROAD

MIDDLE ARM

FRASER RIVER

FLOW



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
A			

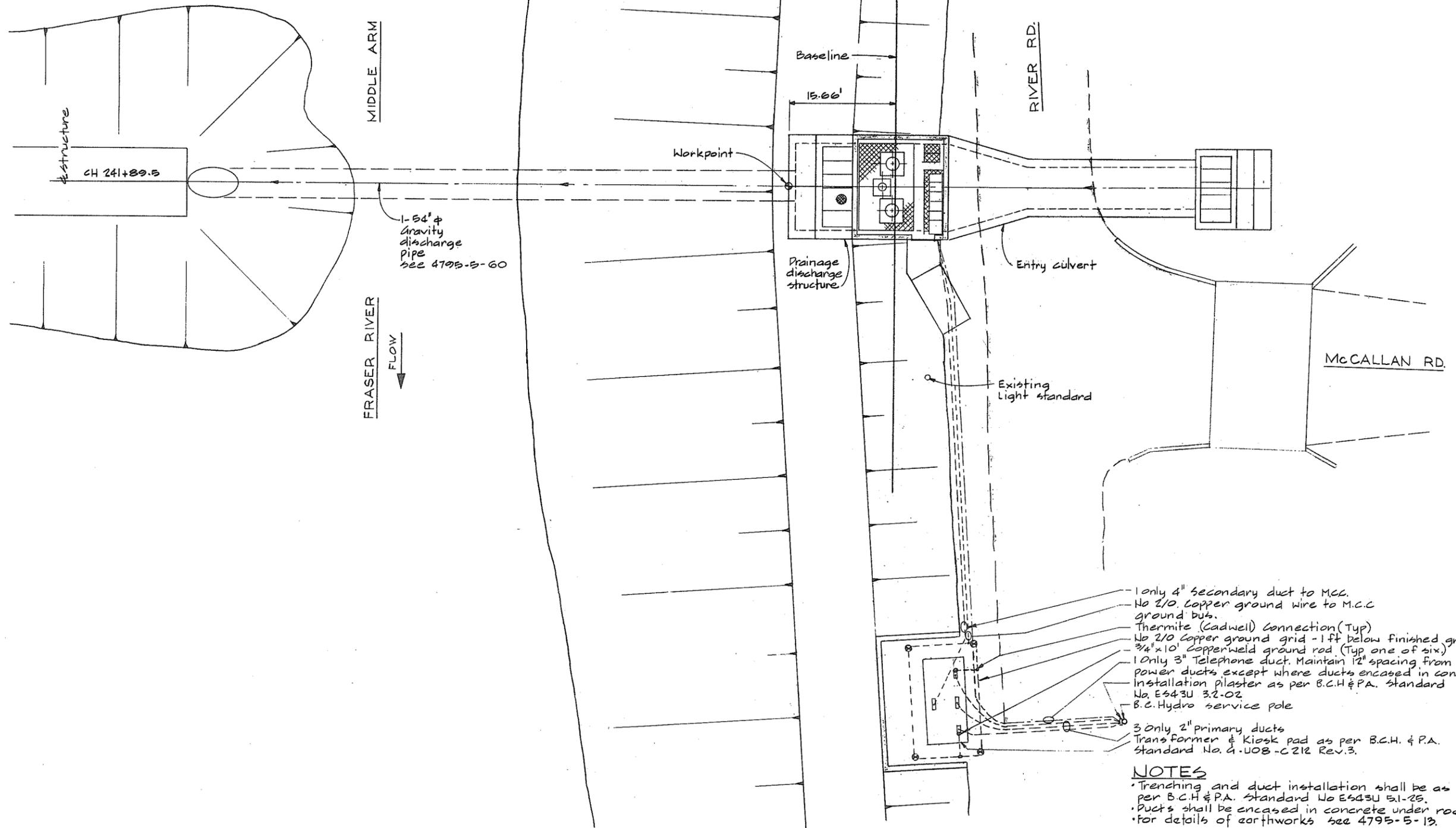
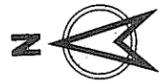
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DATE: Dec 17/74  
APPROVED: *[Signature]* DIRECTOR  
DATE: Dec 17/74

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
LAYOUT AND POWER SUPPLY

DESIGNED: PMP	SURVEYED:
DRAWN: AR	DATE:
CHECKED: RMP	FILE NO. 0281550-C10-5
SCALE: As shown	DATE: Dec 1974
DWG. NO. 4795-5-24	SHEET OF SHEETS

FSP

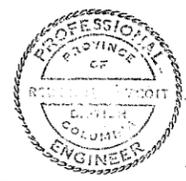
266179



- 1 only 4" secondary duct to M.C.C.
- No 2/0 Copper ground wire to M.C.C. ground bus.
- Thermitite (Cadwell) connection (Typ)
- No 2/0 Copper ground grid - 1 ft below finished grade
- 3/4" x 10' Copperweld ground rod (Typ one of six)
- 1 Only 3" Telephone duct. Maintain 12" spacing from power ducts except where ducts encased in concrete.
- Installation pilaster as per B.C.H. & P.A. standard No. E543U 3.2-02
- B.C. Hydro service pole
- 3 Only 2" primary ducts
- Transformer & Kiosk pad as per B.C.H. & P.A. standard No. 4-U08-C212 Rev.3.

**NOTES**

- Trenching and duct installation shall be as per B.C.H. & P.A. standard No E543U 5.1-25.
- Ducts shall be encased in concrete under road.
- For details of earthworks see 4795-5-13.



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	<i>[Signature]</i>
DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 17/74

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
MCCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
LAYOUT AND POWER SUPPLY

DESIGNED RMP	SURVEYED
DRAWN AR	DATE
CHECKED RMP	FILE NO. 0281550-C10-5
SCALE As shown	DATE Dec 1974
DWG. NO. 4795-5-25	SHEET _____ OF _____ SHEETS

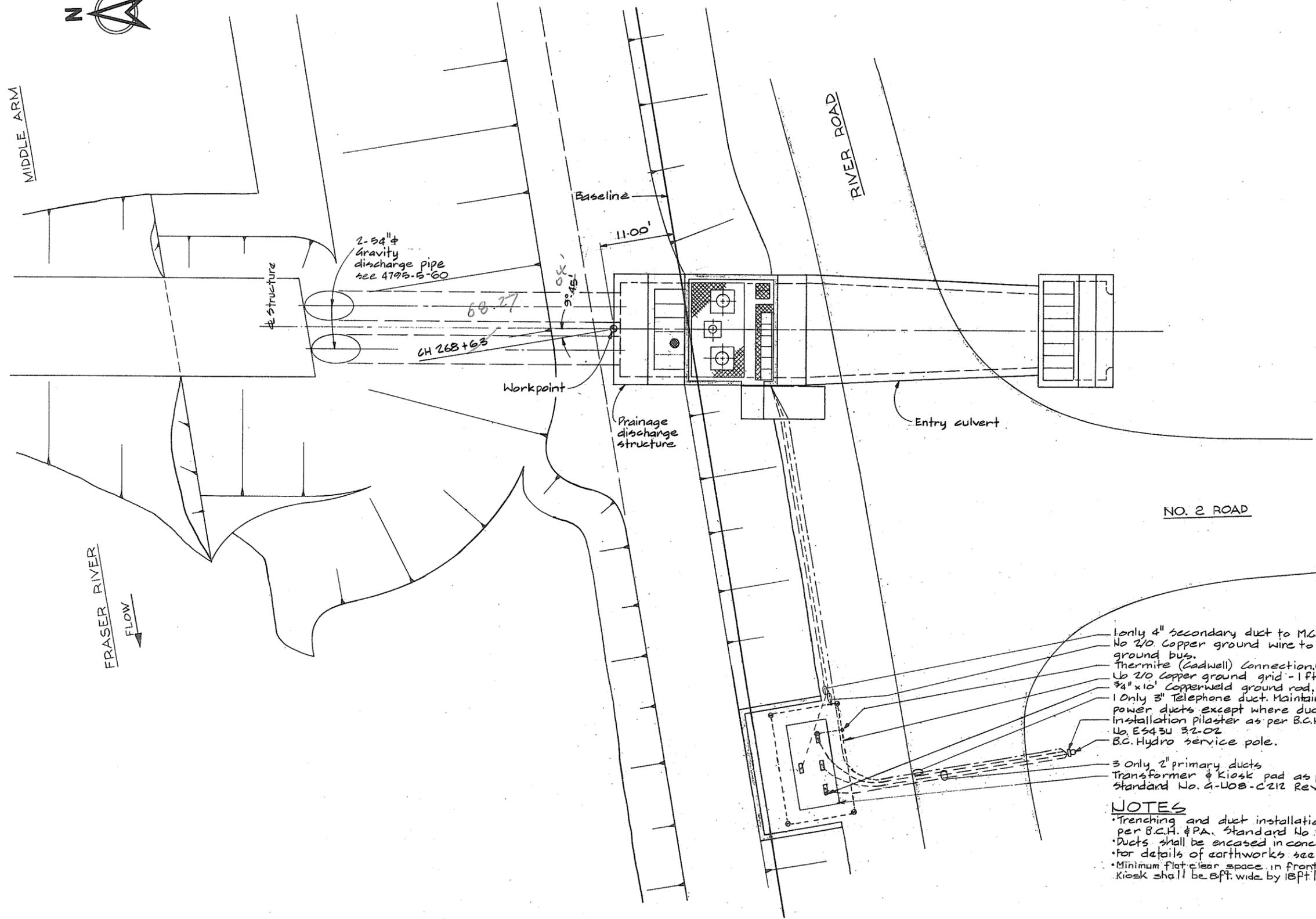
FSP 266180



MIDDLE ARM

RIVER ROAD

FRASER RIVER  
FLOW

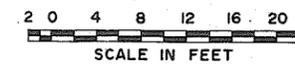


NO. 2 ROAD

- 1 Only 4" secondary duct to M.C.C.
- No 2/0 Copper ground wire to M.C.C. ground bus.
- Thermite (Cadwell) Connection (Typ)
- No 2/0 Copper ground grid - 1 ft below finished grade.
- 3/4" x 10' Copperweld ground rod, (Typ one of six)
- 1 Only 3" Telephone duct. Maintain 12" spacing from power ducts except where ducts encased in concrete.
- Installation Pilaster as per B.C.H. & P.A. Standard No. ES43U 3-2-02
- B.C. Hydro service pole.
- 3 Only 2" primary ducts
- Transformer & Kiosk pad as per B.C.H. & P.A. Standard No. 4-UOB-C212 Rev. 3

**NOTES**

- Trenching and duct installation shall be as per B.C.H. & P.A. Standard No. ES43U 5.1-25.
- Ducts shall be encased in concrete under road.
- For details of earthworks see 4795-5-14.
- Minimum flat clear space in front of transformer kiosk shall be 8ft wide by 18ft long

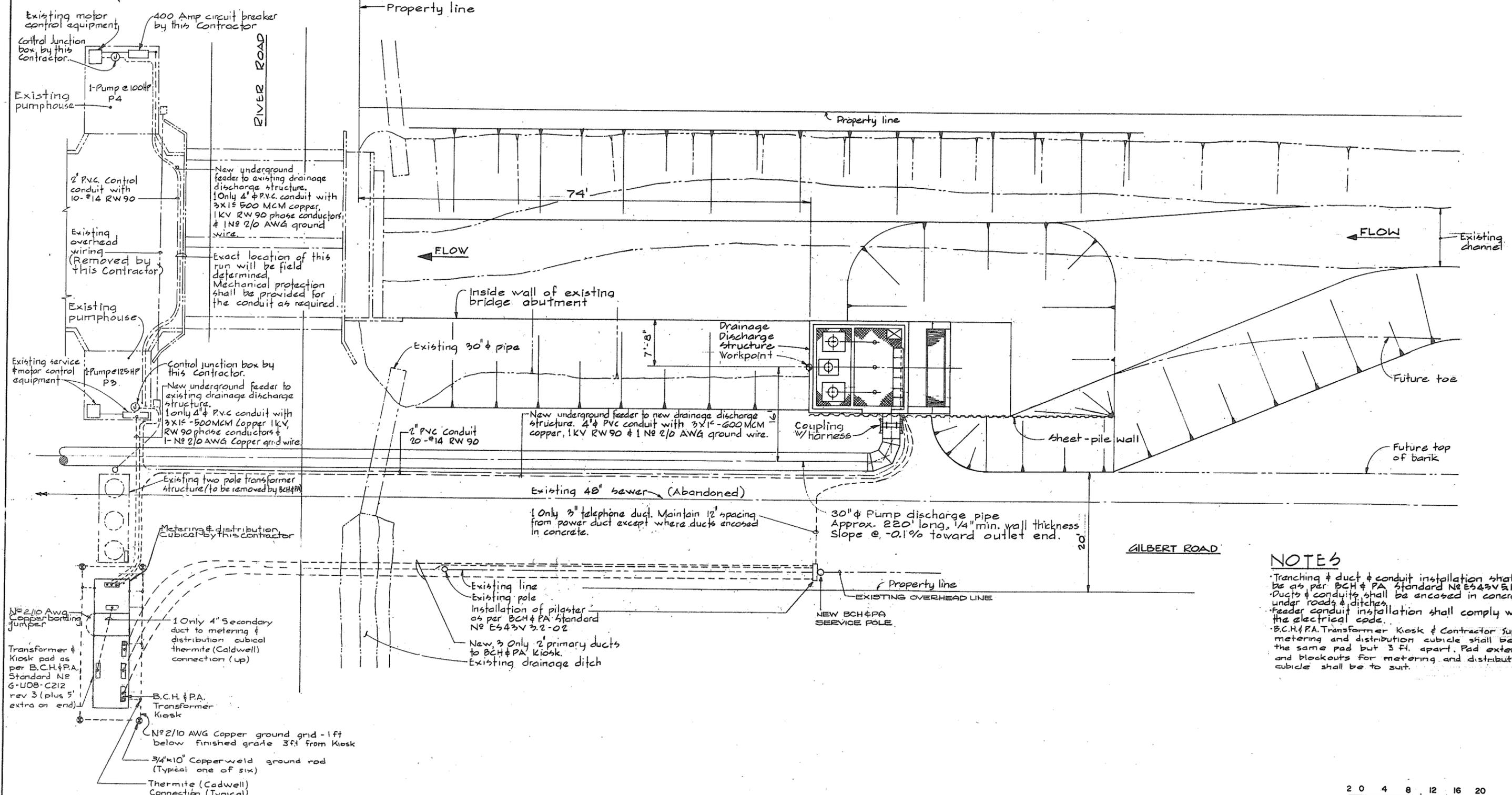


**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO. BY	REVISIONS	DATE	RECOMMENDED <i>[Signature]</i>	BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 NUMBER 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE LAYOUT AND POWER SUPPLY	DESIGNED RMP	SURVEYED
			DATE <i>Dec 17/74</i>		DRAWN <i>AR</i>	DATE
			APPROVED <i>[Signature]</i>		CHECKED RMP	FILE NO. 0281550-C10-5
			DATE <i>Dec 17/74</i>		SCALE <i>As shown</i>	DATE <i>Dec 1974</i>
			DIRECTOR	DWG. NO. 4795-5-26	SHEET OF SHEETS	

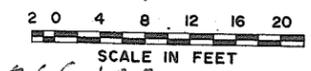
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**NOTES**

- Tranching & duct & conduit installation shall be as per BCH & PA Standard No E543V 5.1-2B
- Ducts & conduits shall be encased in concrete under roads & ditches
- Feeder conduit installation shall comply with the electrical code.
- BCH & PA Transformer, Kiosk & Contractor supplied metering and distribution cubicle shall be on the same pad but 3 ft. apart. Pad extension and blockouts for metering and distribution cubicle shall be to suit.

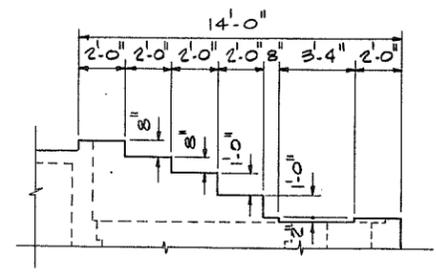
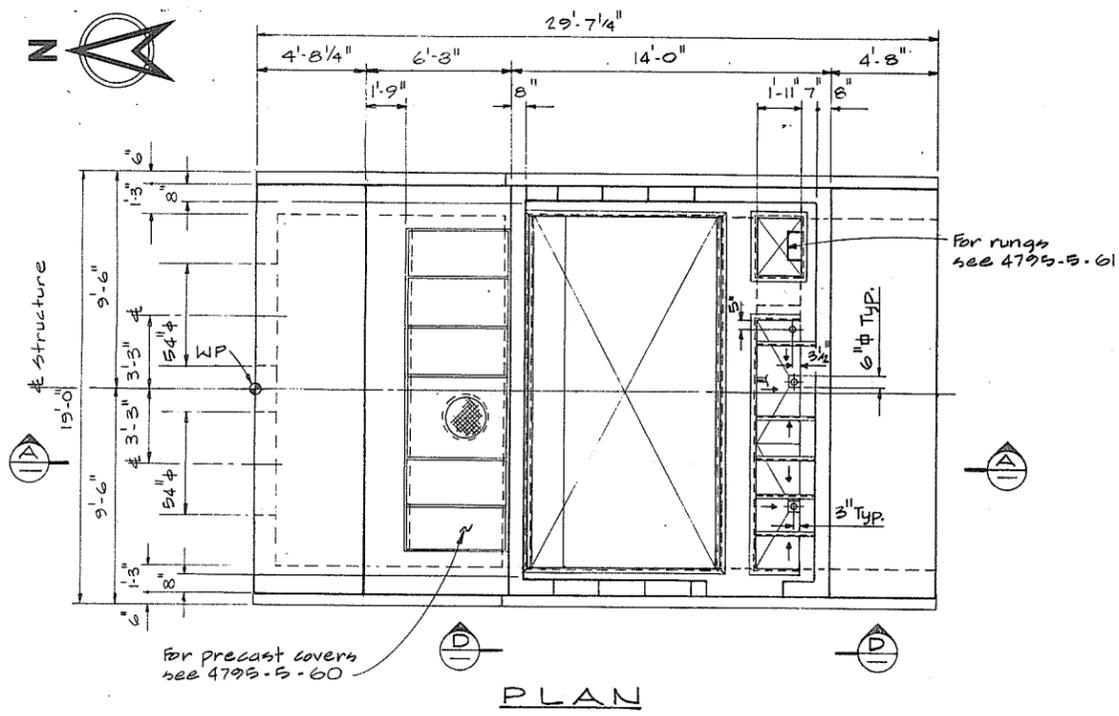


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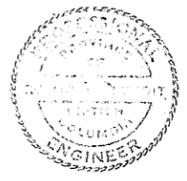
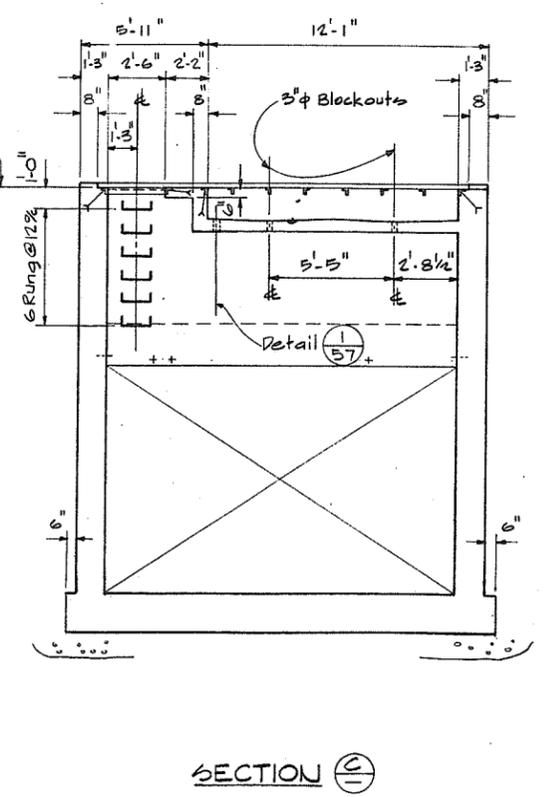
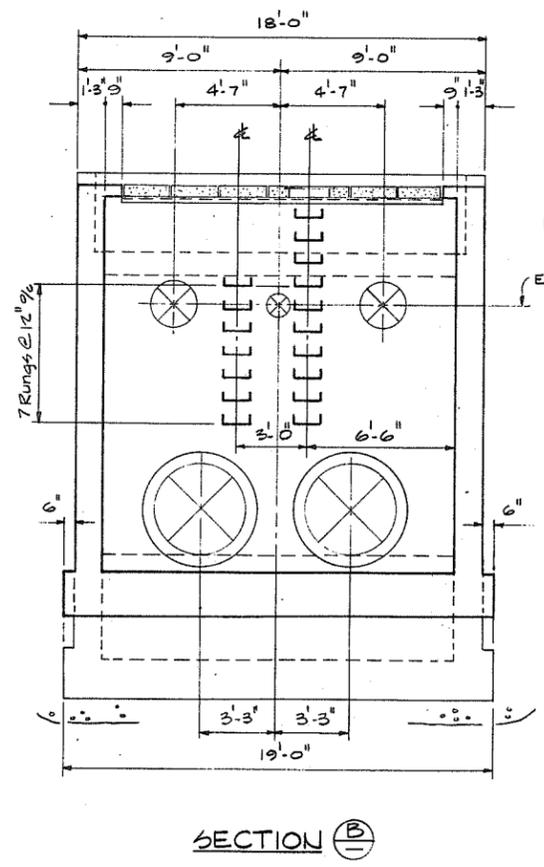
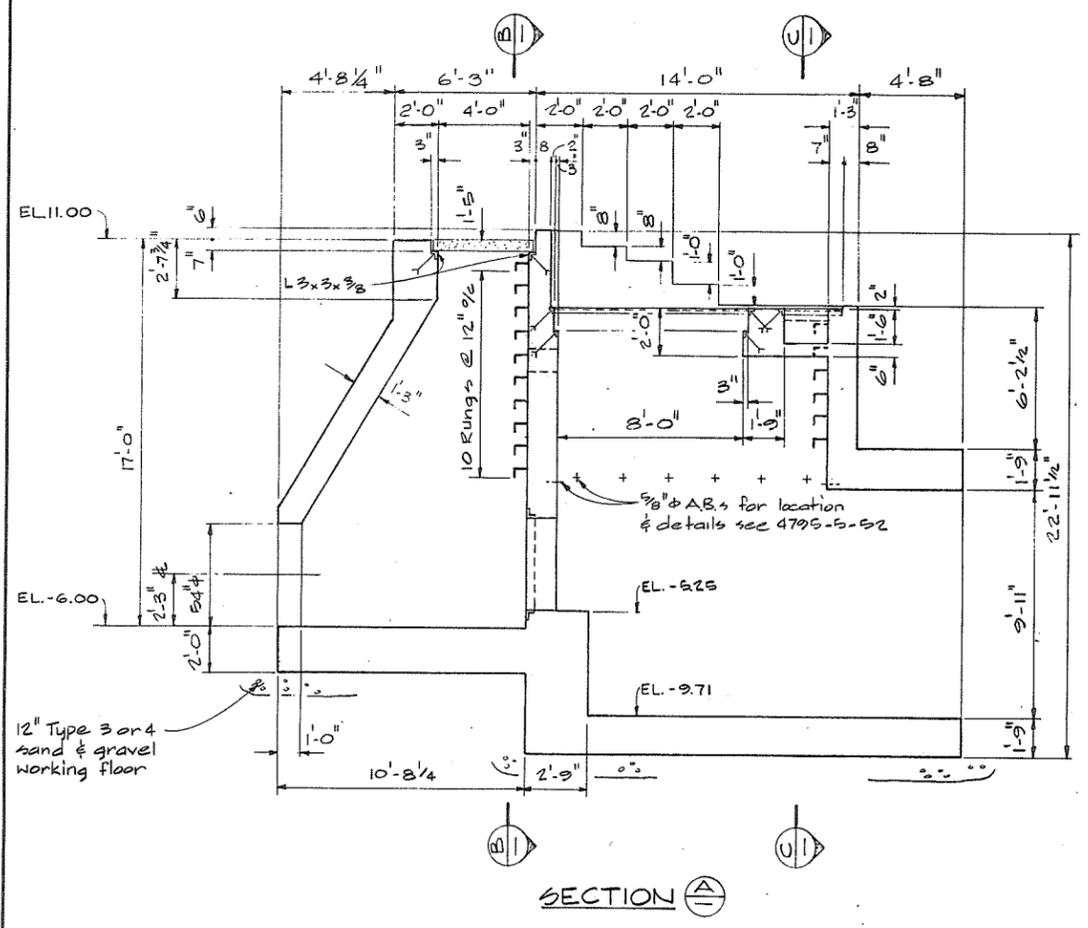


**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	<i>[Signature]</i>	BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1948 AGREEMENT	DESIGNED RMP	SURVEYED
DATE	Dec 17/74	PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND	DRAWN AR	DATE
APPROVED	<i>[Signature]</i>	CONTRACT NO. 5	CHECKED RMP	FILE NO. 0261550-C10-5
DATE	Dec 17/74	GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE LAYOUT AND POWER SUPPLY	SCALE As shown	DATE Dec 1974
NO. BY	REVISIONS	DATE	DWG. NO. 4795-5-27	SHEET OF SHEETS



- GENERAL NOTES - STRUCTURAL**
- Design is in accordance with CSA A23.3-1970, Code for the Design of Plain or Reinforced Concrete Structures.
  - Construction shall be in accordance with ACI 301-72, specifications for structural concrete for Buildings.
  - Specified strength of concrete f'c 4000 psi.
  - Reinforcing steel shall be deformed bars conforming to CSA G30.12-1972, Grade 40.
  - Cover over reinforcing steel to be 2" to all faces except 3" for the underside of the footings.
  - Reinforcing to be of lengths indicated with construction joints as shown unless otherwise approved by the Engineer.
  - CONCRETE FINISHES:-
    - Floors & base slabs - steel trowel
    - Exposed horizontal surfaces - broom
    - Interior, exterior exposed walls & beams - rubbed.
    - see specs for details.
  - CHAMFERS - 3/4 x 3/4 for all exposed corners.
  - For sizes of embedded steel not called up, see 4795-5-52



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	<i>[Signature]</i>
DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 17/74

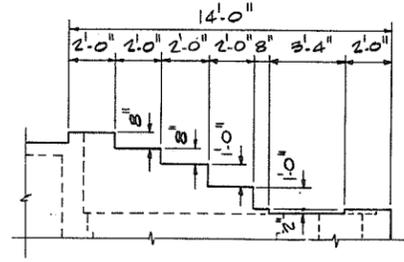
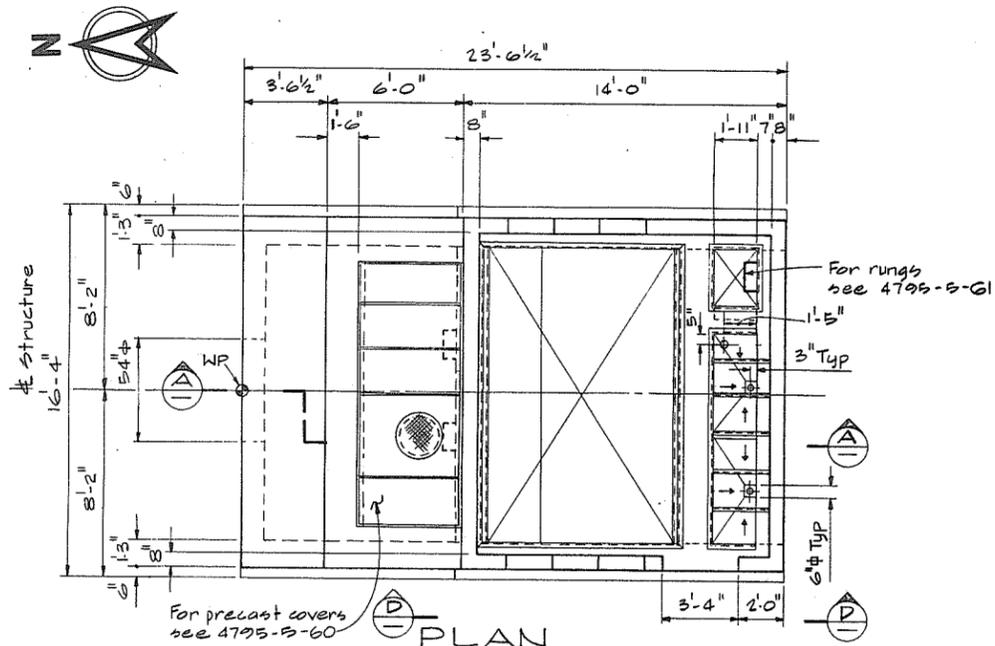
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND

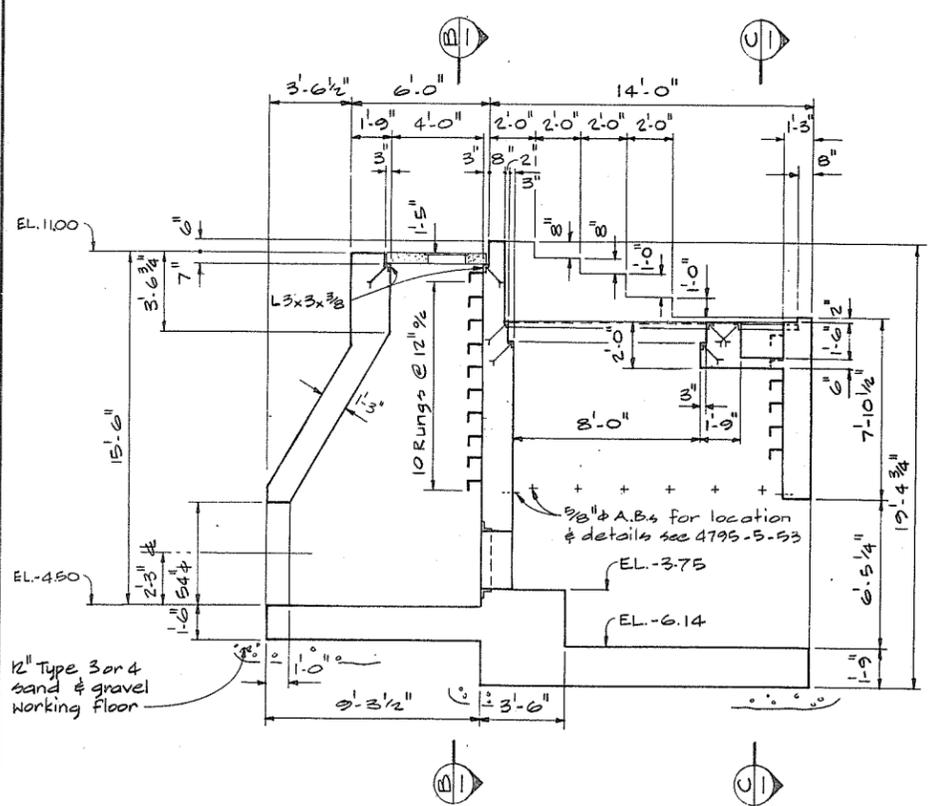
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NUMBER 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
CONCRETE OUTLINE

DESIGNED	GA	SURVEYED	
DRAWN	AR	DATE	
CHECKED	HS	FILE NO.	0281550-C10-5
SCALE	As shown	DATE	Dec 1974
DWG. NO.	4795-5-28	SHEET	OF SHEETS

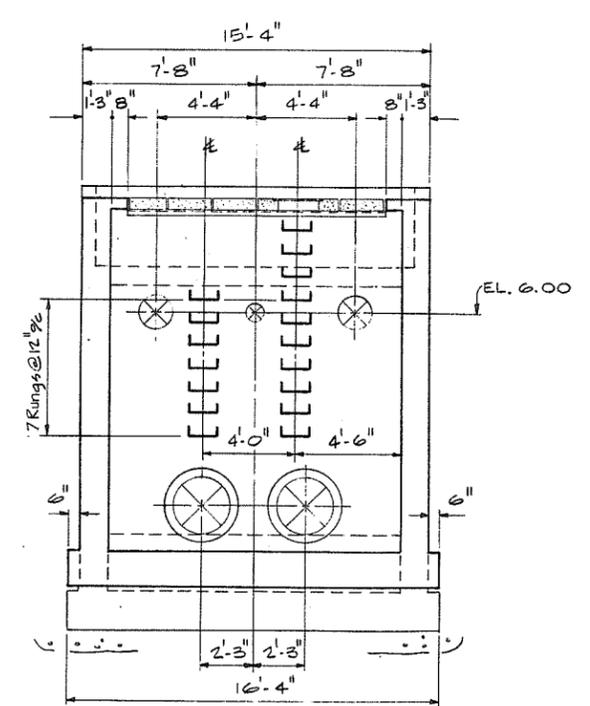
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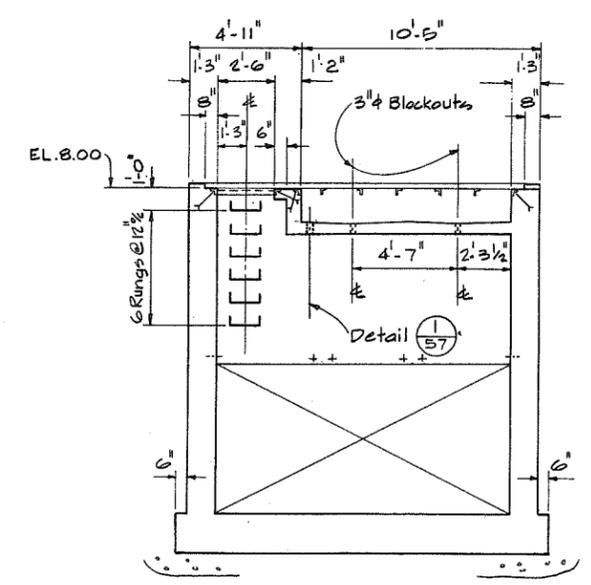
VIEW D



SECTION A



SECTION B



SECTION C

**GENERAL NOTES - STRUCTURAL**

- Design is in accordance with CSA A23.3-1970, Code for the Design of Plain or Reinforced Concrete Structures.
- Construction shall be in accordance with ACI 301-72, Specifications for Structural Concrete for Buildings.
- Specified strength of concrete  $f'_c = 4000$  psi.
- Reinforcing steel shall be deformed bars conforming to CSA G30.12-1972, Grade 40.
- Cover over reinforcing steel to be 2" to all faces except 3" for the underside of footings.
- Reinforcing steel to be of lengths indicated with construction joints as shown unless otherwise approved by the Engineer.
- CONCRETE FINISHES:-  
 Floors & base slabs - steel trowel  
 Exposed horizontal surfaces - broom  
 Interior, exterior exposed walls & beams - rubbed  
 see specs for details.
- CHAMFERS -  $3/4 \times 3/4$  for all exposed corners.
- For sizes of embedded angles not called up see 4795-5-53



SCALE IN FEET 266184



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED	<i>[Signature]</i>
DATE	Dec 17/74
APPROVED	<i>[Signature]</i> DIRECTOR
DATE	Dec 17/74

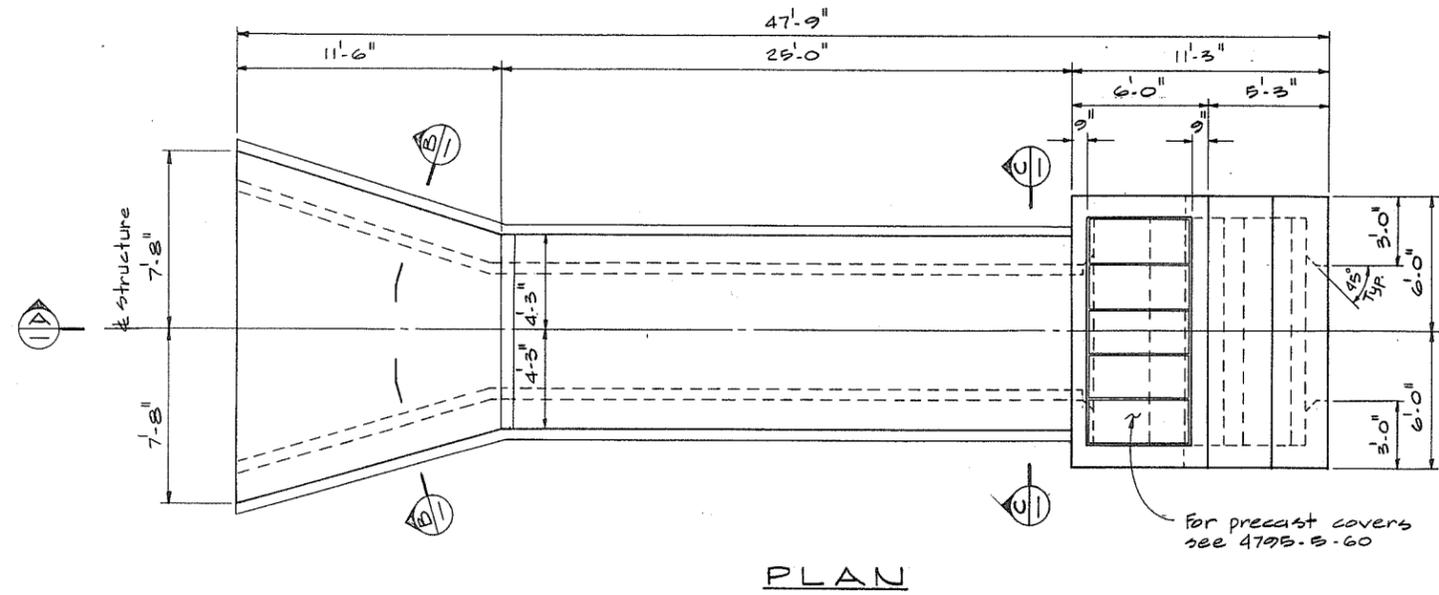
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DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
MCCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
CONCRETE OUTLINE

DESIGNED	GA	SURVEYED	
DRAWN	AR	DATE	
CHECKED	HS	FILE NO.	0281550-C10-5
SCALE	As shown	DATE	Dec 1974
DWG. NO.	4795-5-29	SHEET	

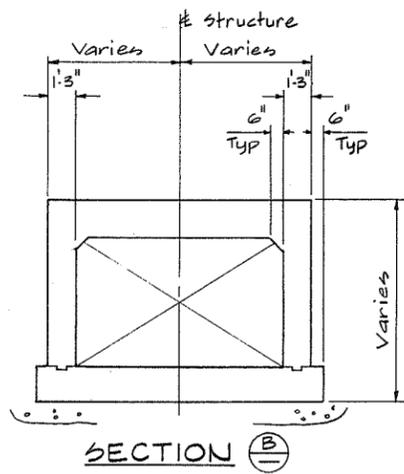




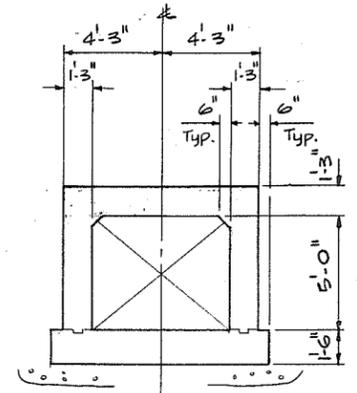




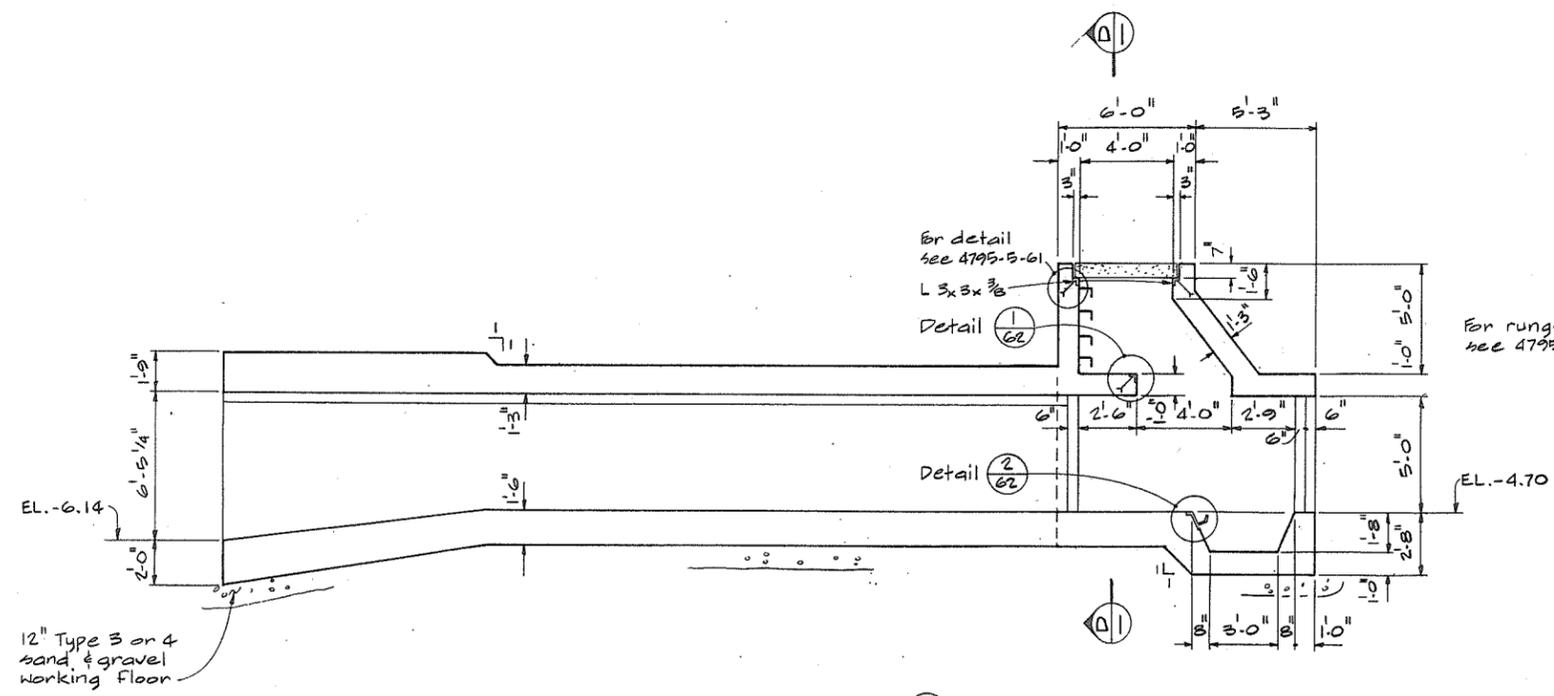
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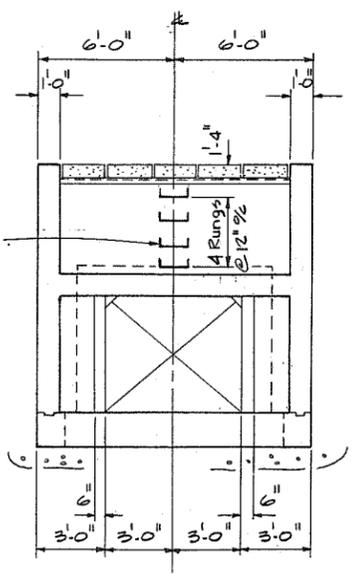
SECTION B



SECTION C



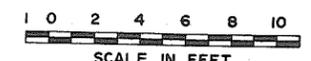
SECTION A



SECTION D

NOTES  
For General Notes see 4795-B-29

12" Type 3 or 4 sand & gravel working floor

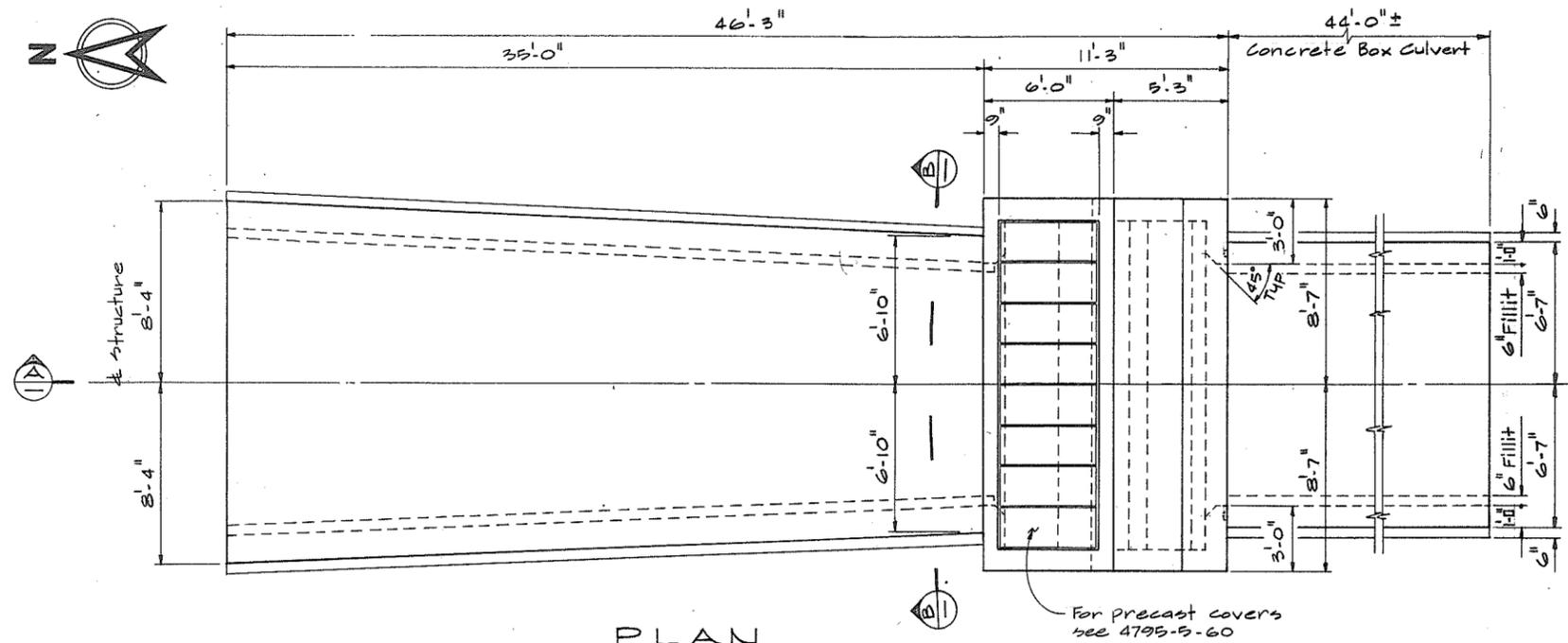


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266138

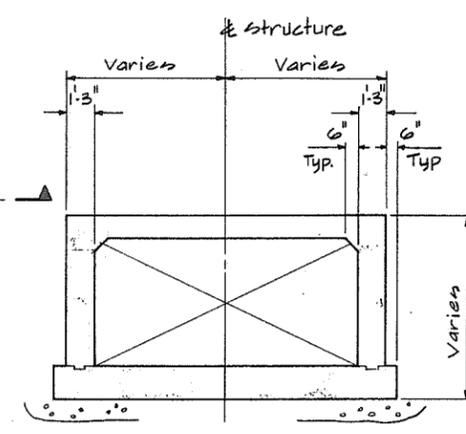


**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

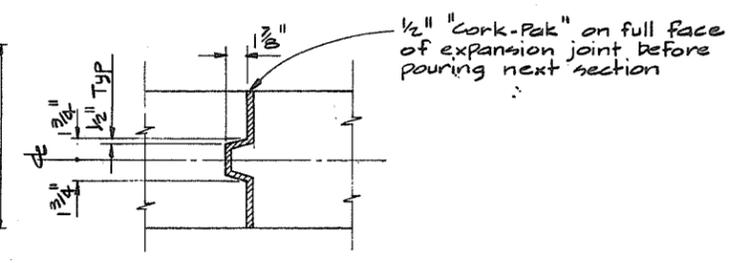
NO. BY	REVISIONS	DATE	RECOMMENDED	BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 McCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE ENTRY CULVERT CONCRETE OUTLINE	DESIGNED	SURVEYED
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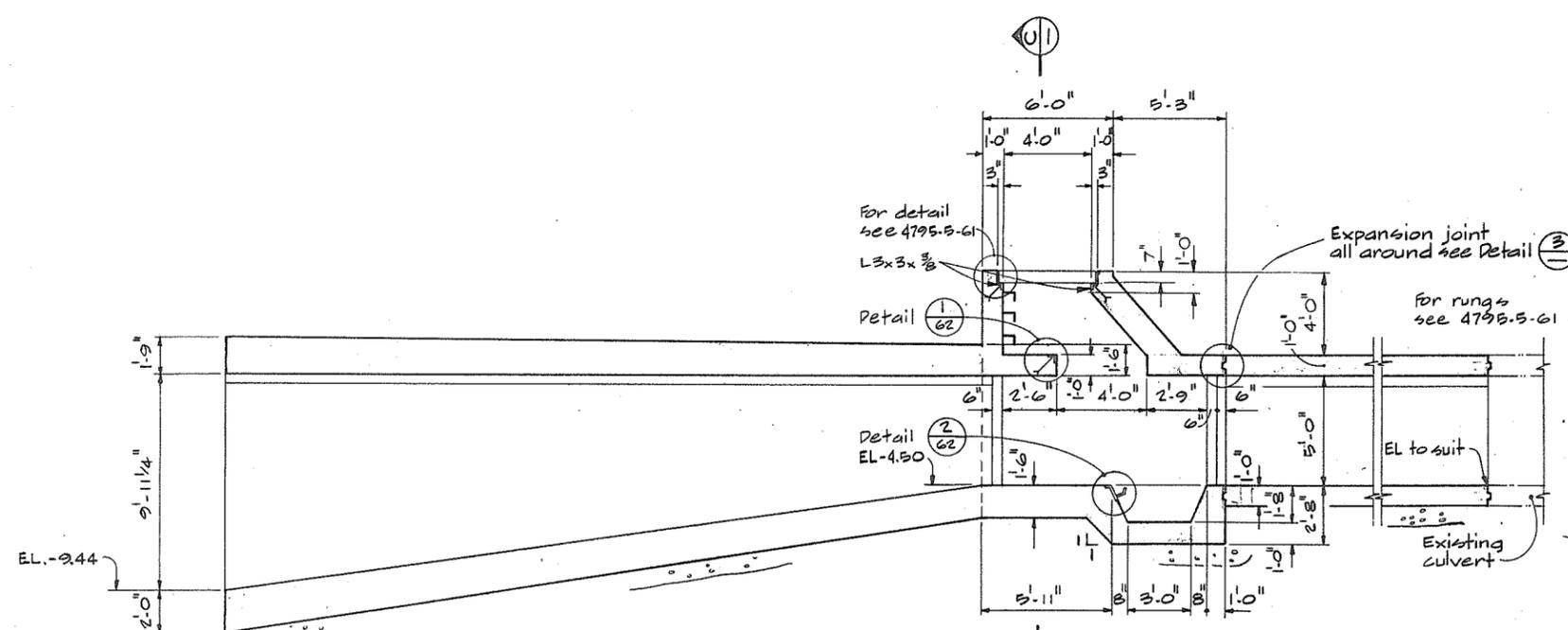
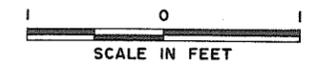
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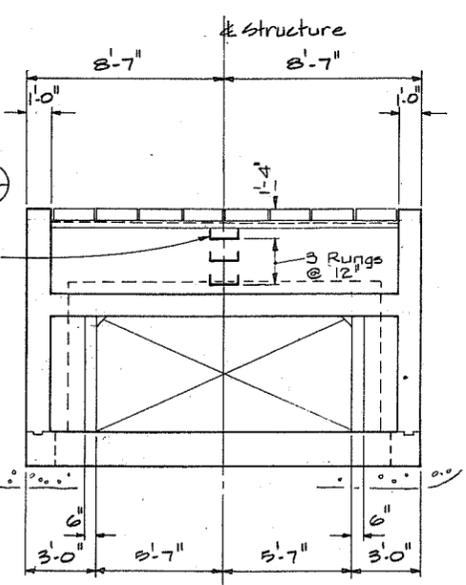
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DETAIL C

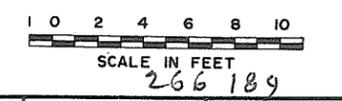


SECTION A



SECTION C

NOTES  
 • For General Notes see 4795-5-30



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

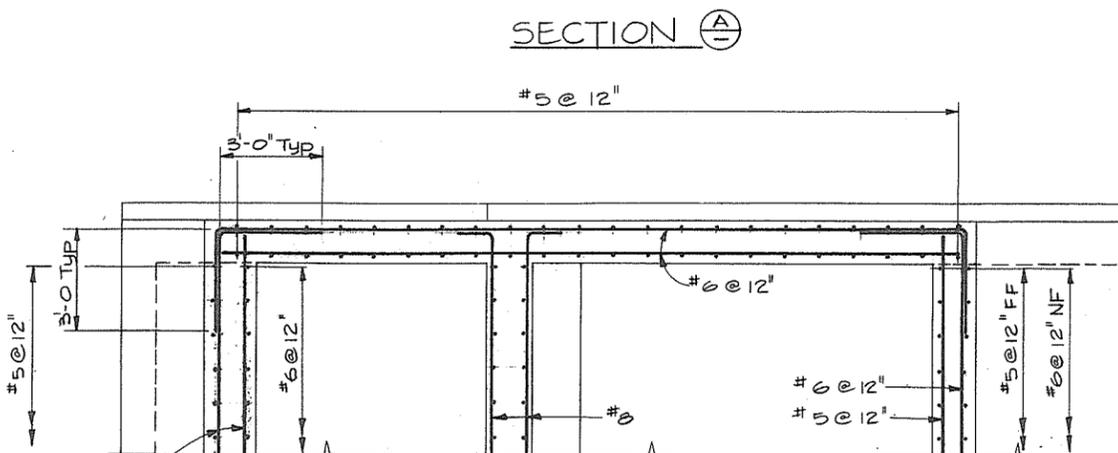
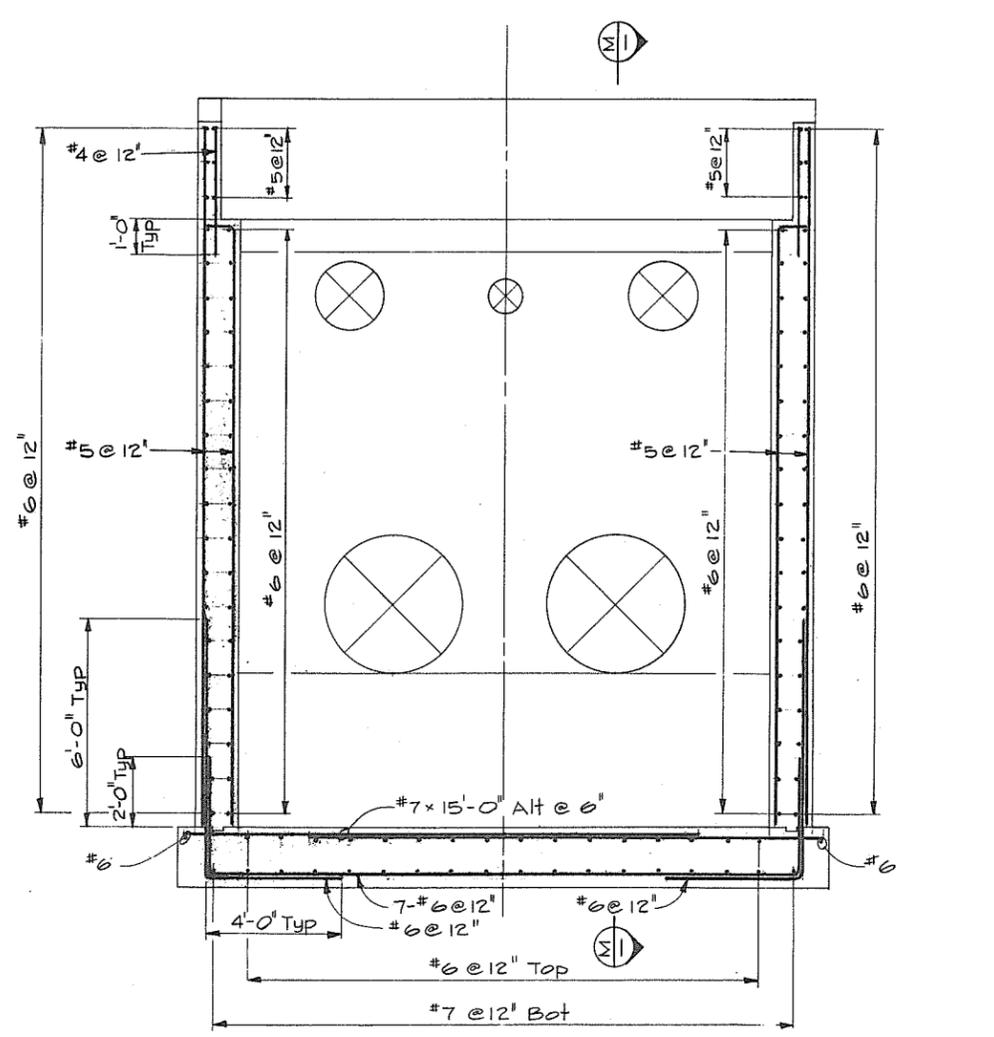
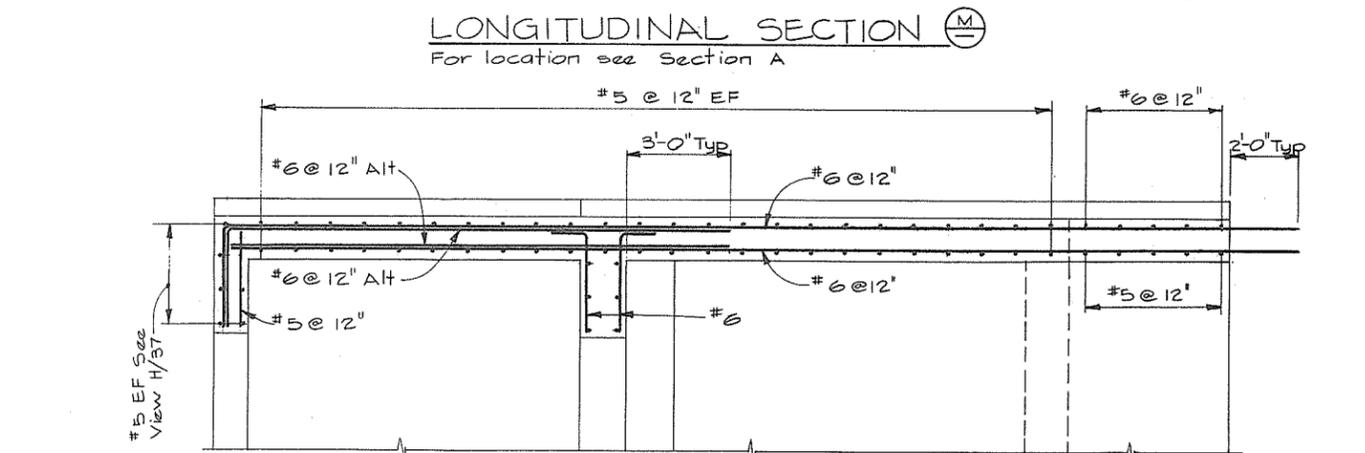
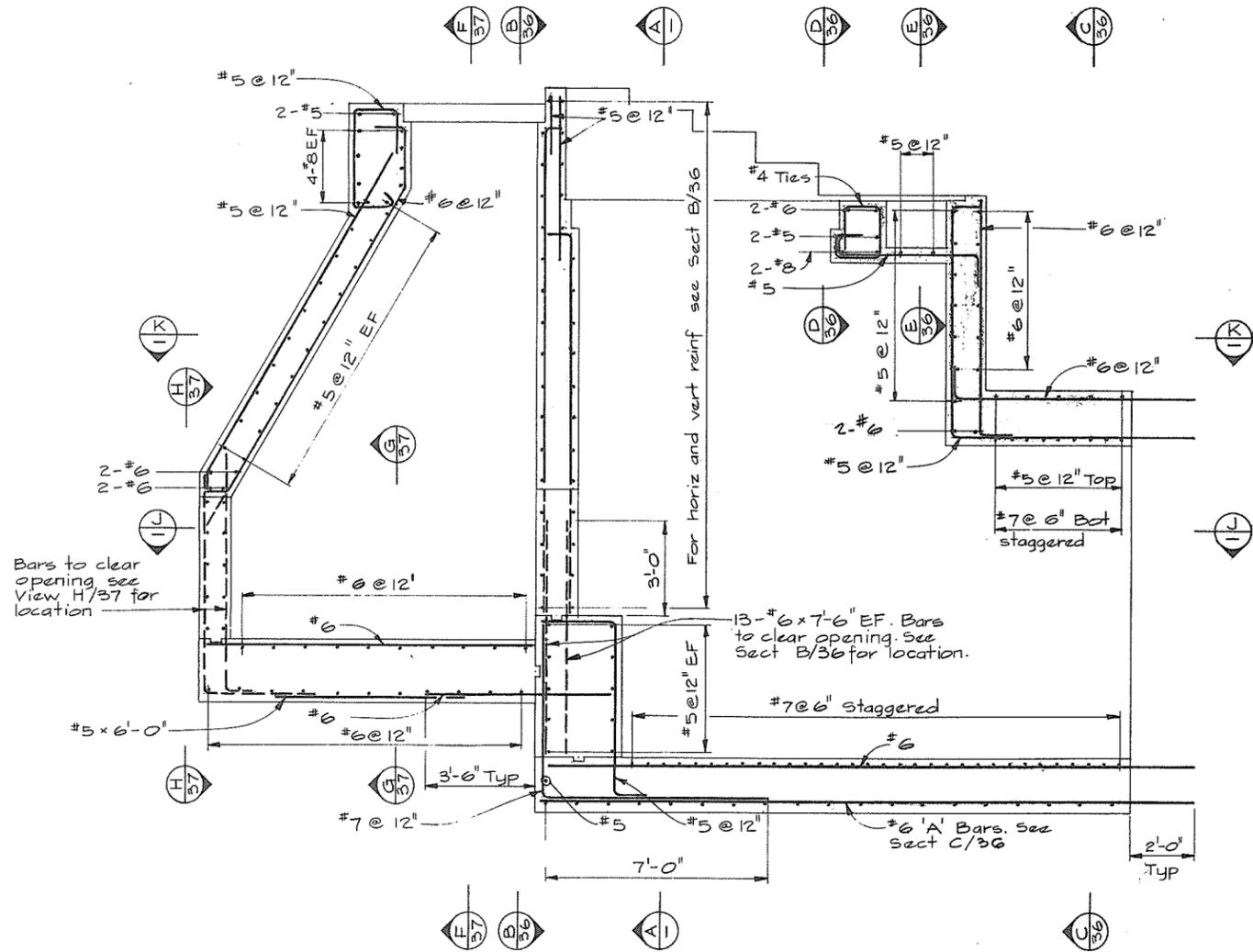
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 PROJECTS DIV.  
 DATE *Dec 17/74*

APPROVED *[Signature]*  
 DIRECTOR  
 DATE *Dec 17/74*

BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 NUMBER 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ENTRY CULVERT CONCRETE OUTLINE

DESIGNED <i>GA</i>	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED <i>HS</i>	FILE NO. 0281550-C10-5
SCALE <i>As shown</i>	DATE <i>Dec 1974</i>
DWG. NO. 4795-5-34	SHEET <i>1</i> OF <i>1</i> SHEETS

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NOTES  
For General Notes see 4795-5-28



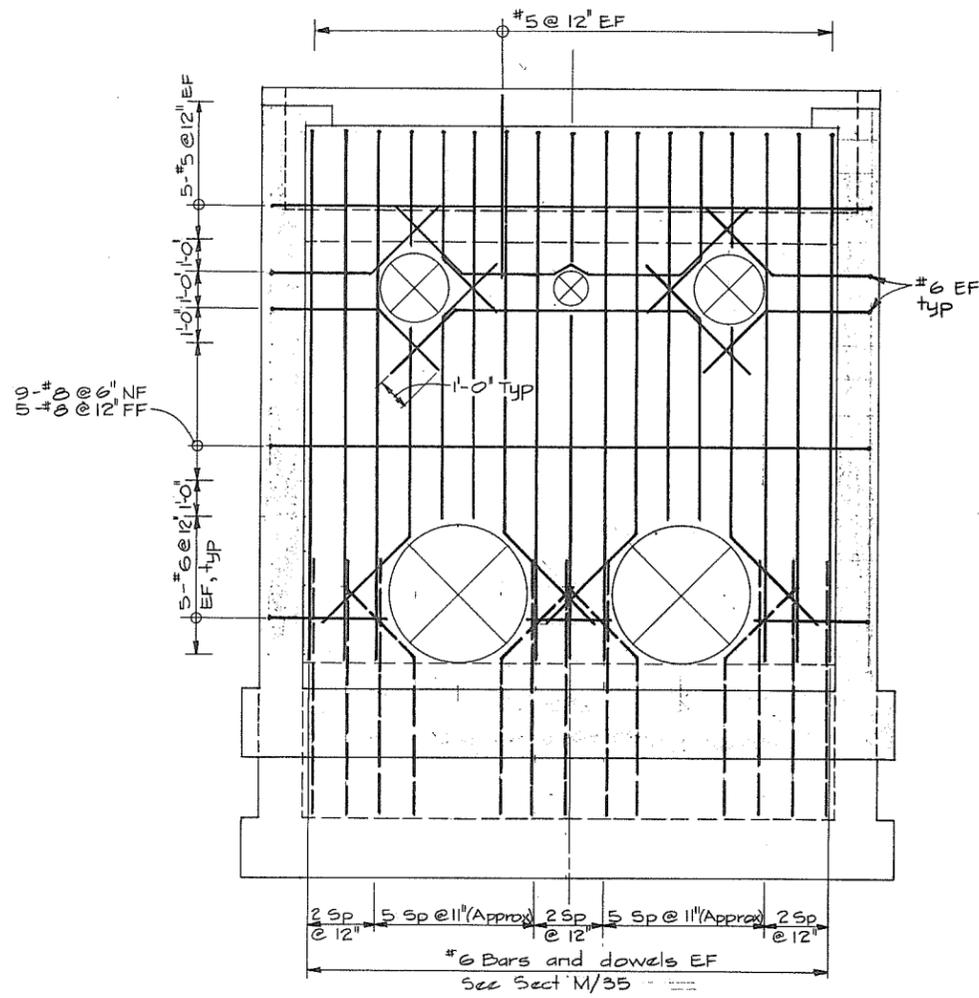
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CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	DATE	APPROVED	DATE
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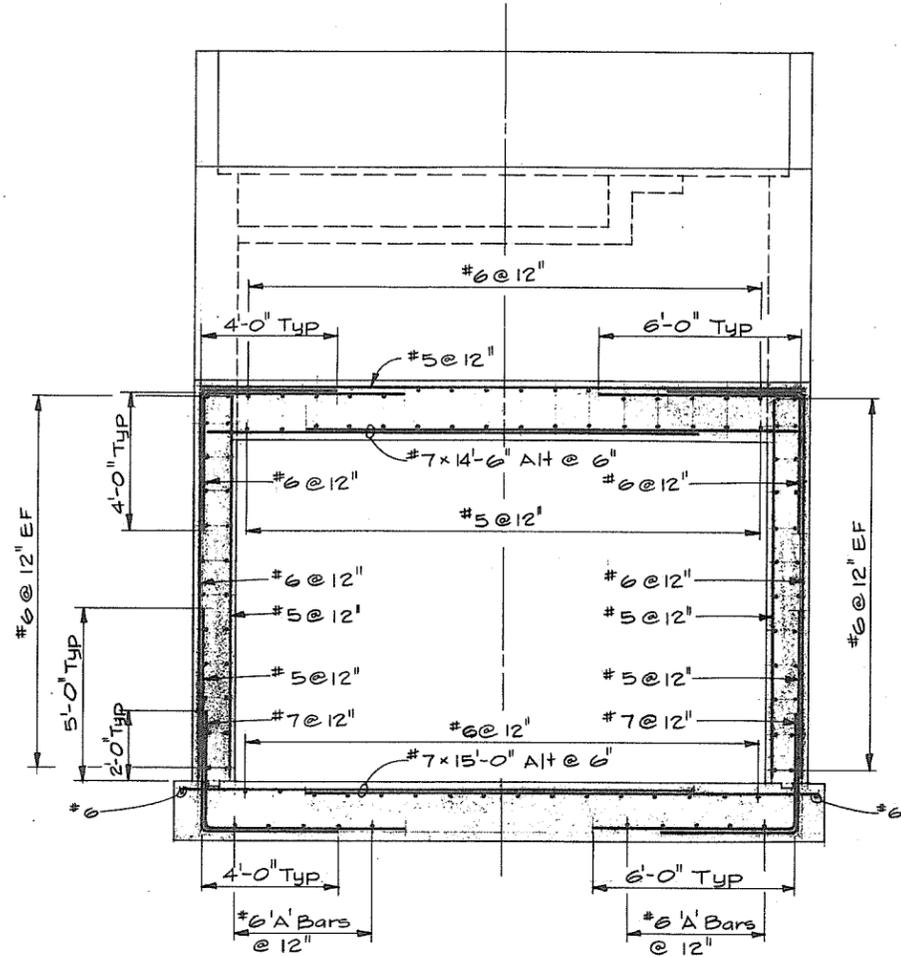
BRITISH COLUMBIA  
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WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE REINFORCING

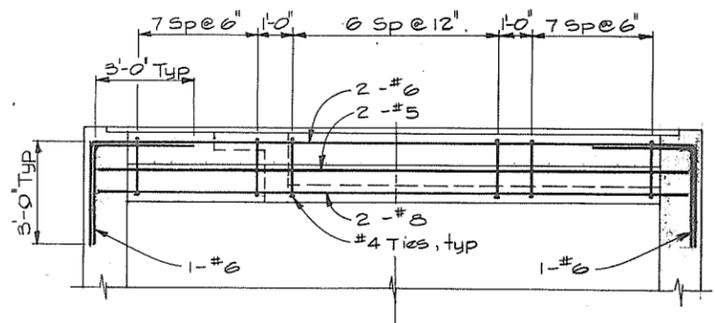
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DWG. NO.	SHEET
4795-5-35	1 OF 2 SHEETS



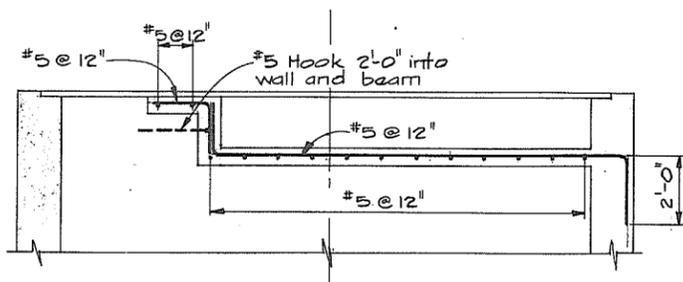
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35



SECTION C  
35

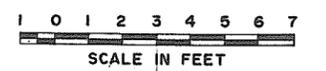


SECTION D  
35



SECTION E  
35

**NOTES**  
For General Notes see 4795-5-28



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

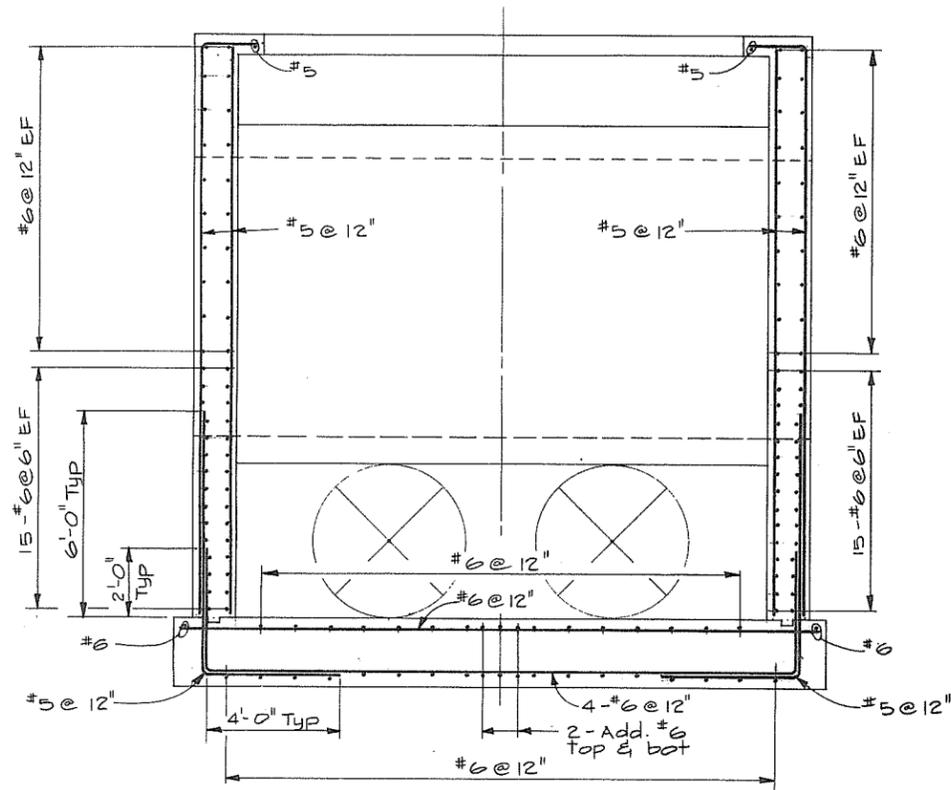
RECOMMENDED: *D. Hall*  
DATE: *Dec 17/74*  
APPROVED: *D. Hall*  
DATE: *Dec 17/74*

DESIGNED: <i>GCW</i>	SURVEYED:
DRAWN: <i>DEL</i>	DATE:
CHECKED: <i>AAW</i>	FILE NO.:
SCALE: <i>As shown</i>	DATE: <i>Dec 1974</i>
DWG. NO. <i>4795-5-36</i>	SHEET <i>2</i> OF <i>3</i> SHEETS

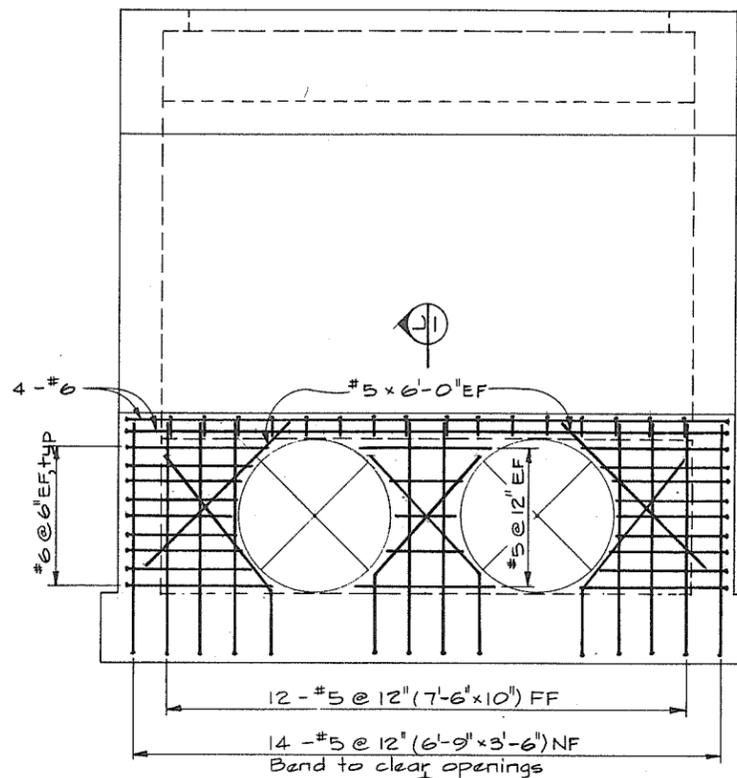
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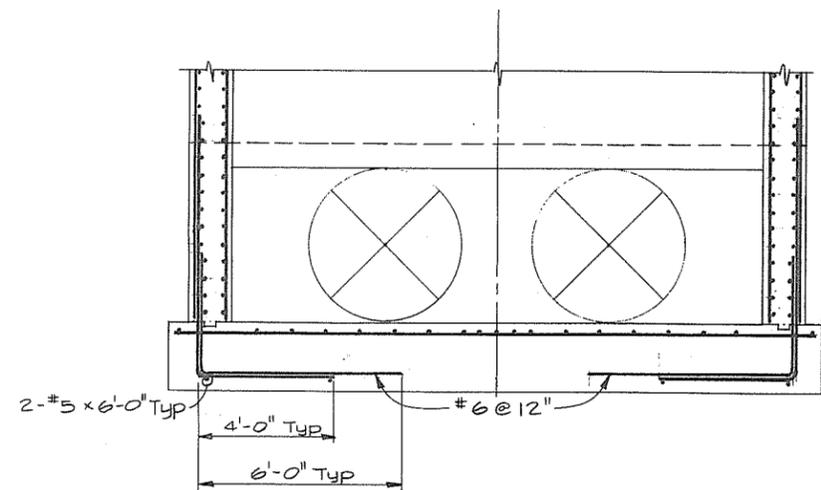
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
REINFORCING



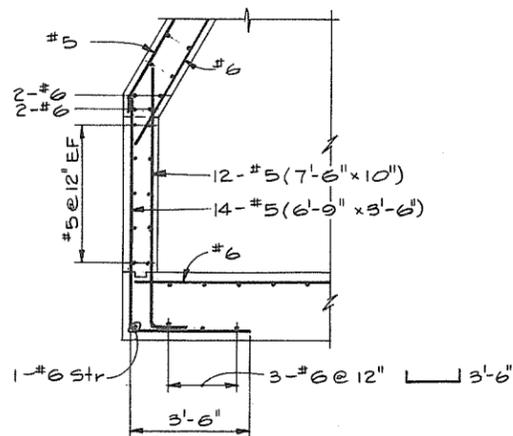
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VIEW  $\textcircled{H}$

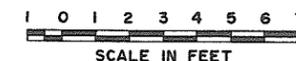


SECTION  $\textcircled{G}$  SIMILAR TO SECT F EXCEPT AS NOTED



SECTION  $\textcircled{L}$

NOTES  
 • For General Notes see 4795-5-28



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO. BY REVISIONS DATE

RECOMMENDED: *[Signature]*  
 DATE: Dec 17/74  
 APPROVED: *[Signature]*  
 DATE: Dec 17/74

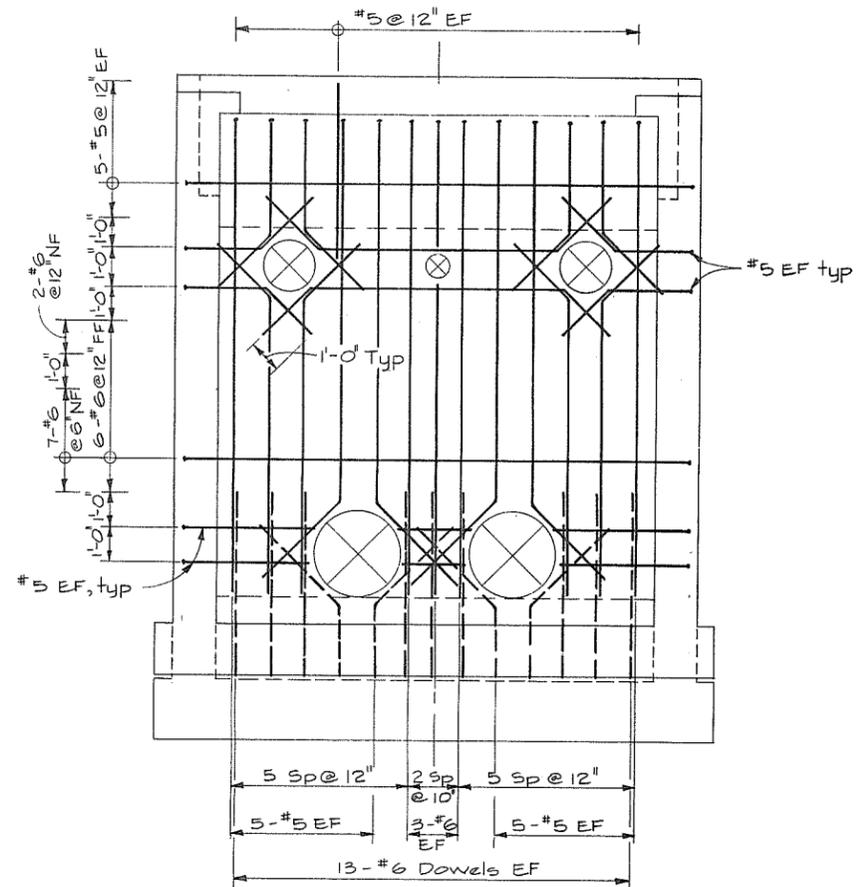
BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 NUMBER 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 REINFORCING

DESIGNED: gcw  
 DRAWN: *[Signature]*  
 CHECKED: AAW  
 SCALE: As shown  
 DWG. NO.: 4795-5-37

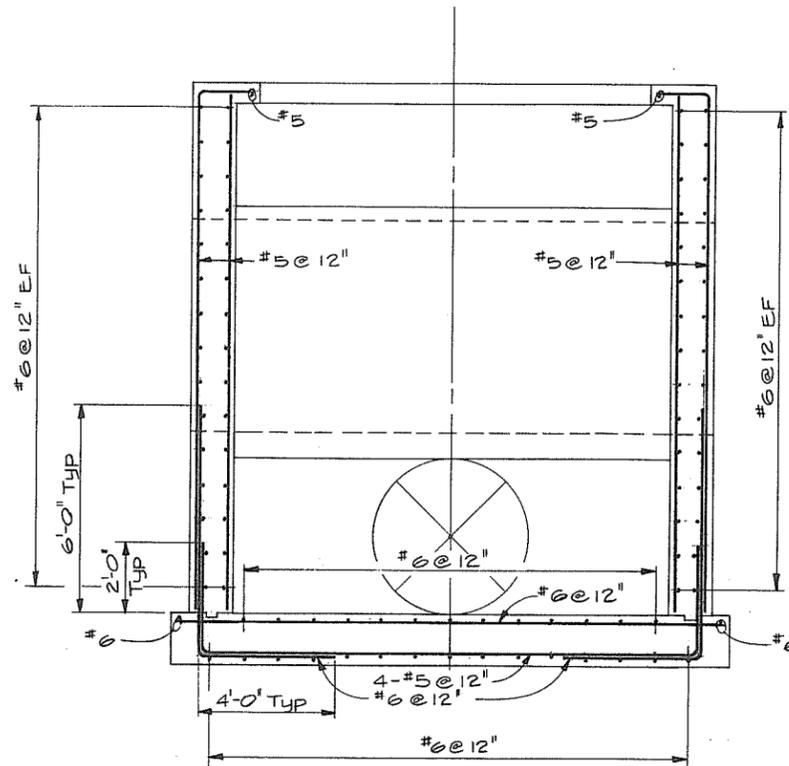
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 DATE: \_\_\_\_\_  
 FILE NO.: 0281550-C10-5  
 DATE: Dec 1974  
 SHEET 3 OF 3 SHEETS

N.P. 266 192

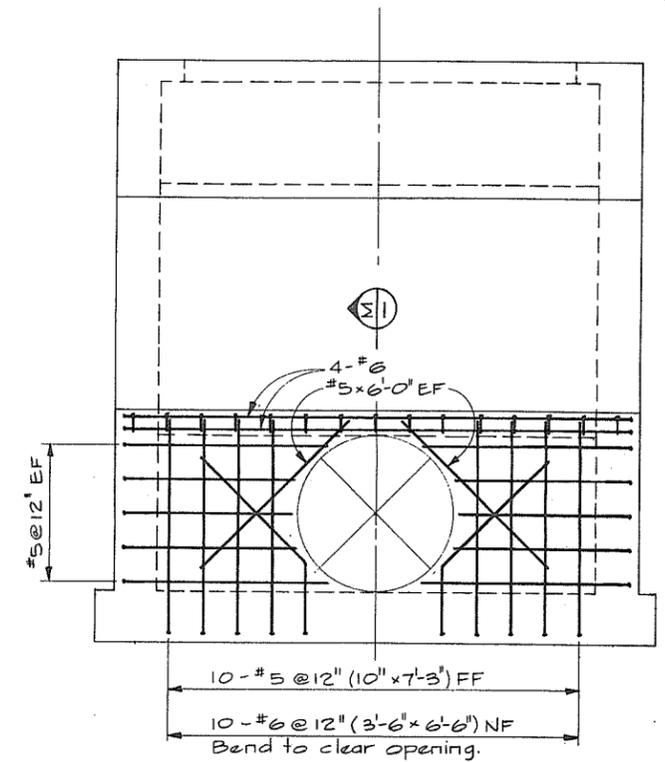




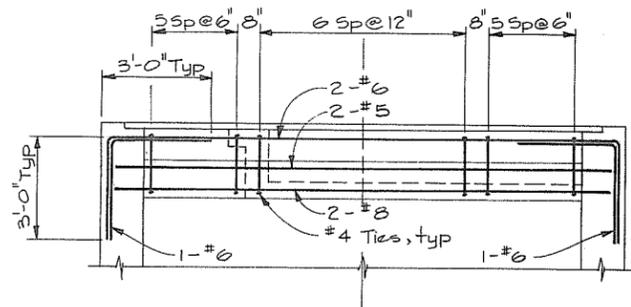
SECTION C-38



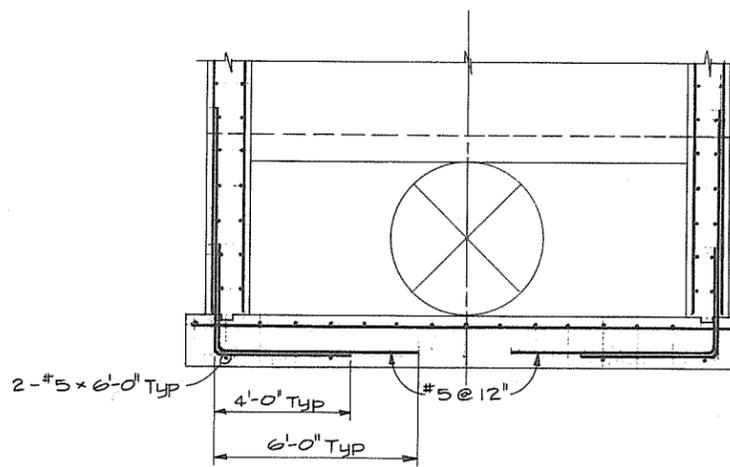
SECTION F-38



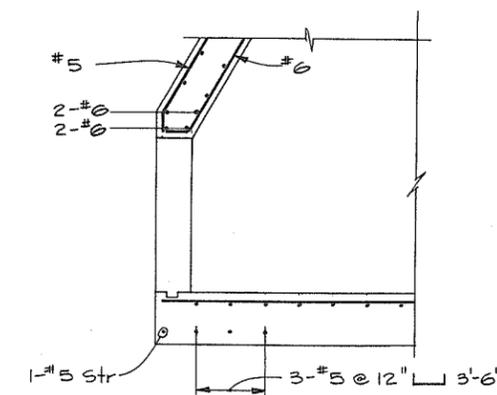
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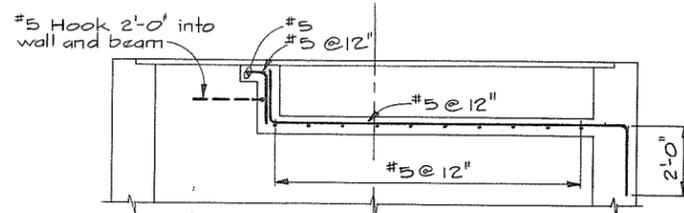
SECTION D-38



SECTION G-38 SIMILAR TO SECT EXCEPT AS NOTED



SECTION M-38



SECTION E-38

NOTES  
 For General Notes see 4795-5-29



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

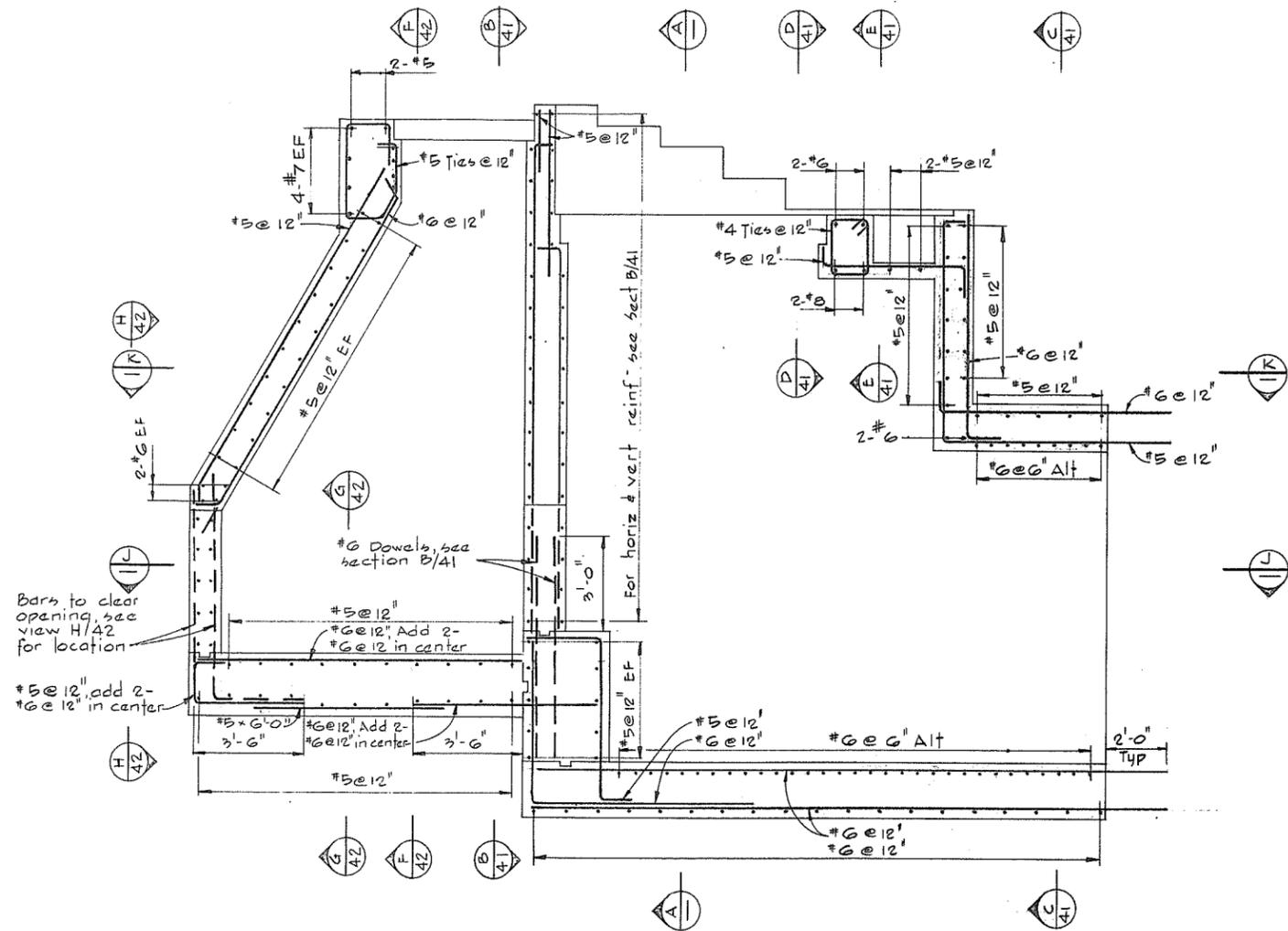
NO.	BY	REVISIONS	DATE

RECOMMENDED: *J. D. O. S.*  
 DATE: *Dec 17/74*  
 APPROVED: *P. M. Smith*  
 DIRECTOR  
 DATE: *Dec 17/74*

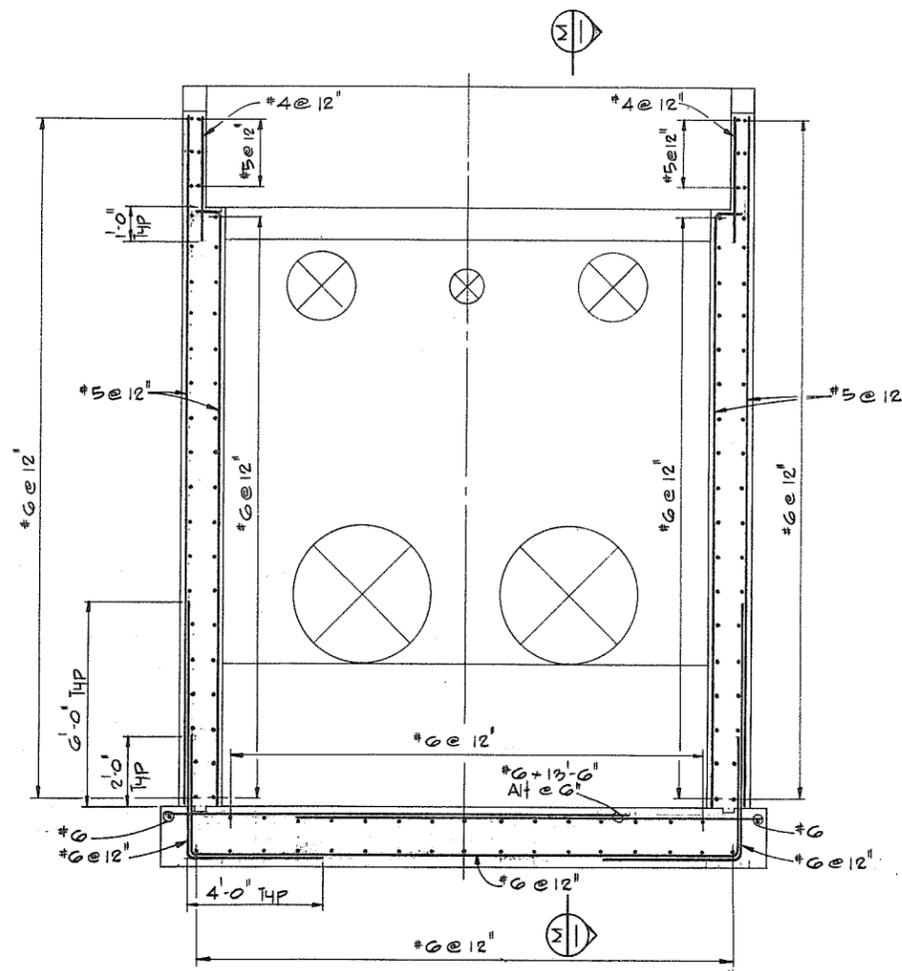
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SCALE: <i>As shown</i>	DATE: <i>Dec 1974</i>
DWG. NO. <i>4795-5-39</i>	SHEET <i>2</i> OF <i>2</i> SHEETS

N.P. 266194

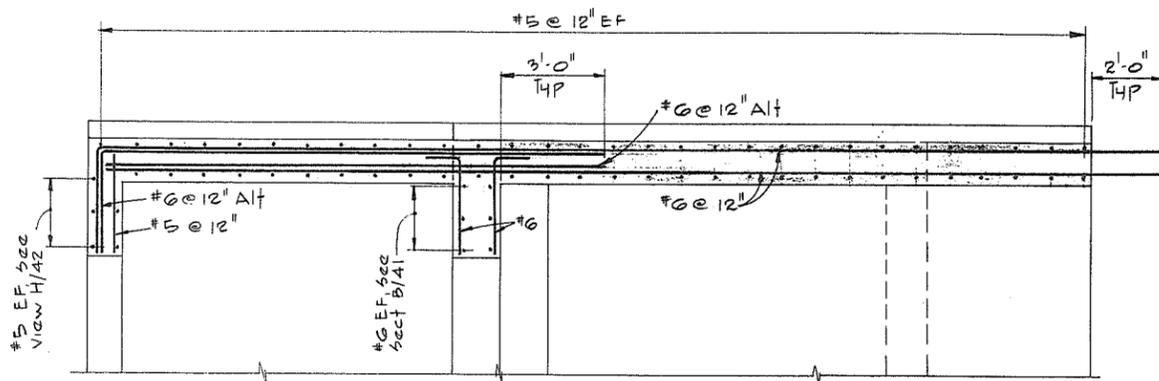
BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA — BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT NO. 3 THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 McCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 REINFORCING



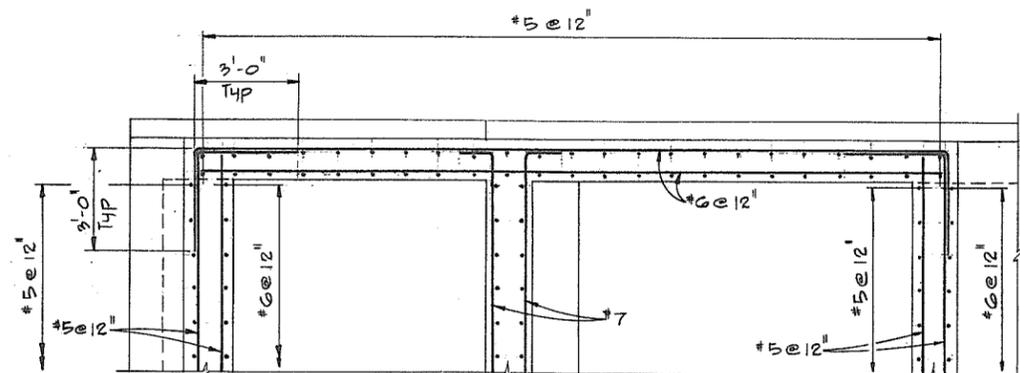
LONGITUDINAL SECTION M  
For location see section A



SECTION A



SECTION J



SECTION K

NOTES  
For General Notes see 4795-5-30



N.P. 266195

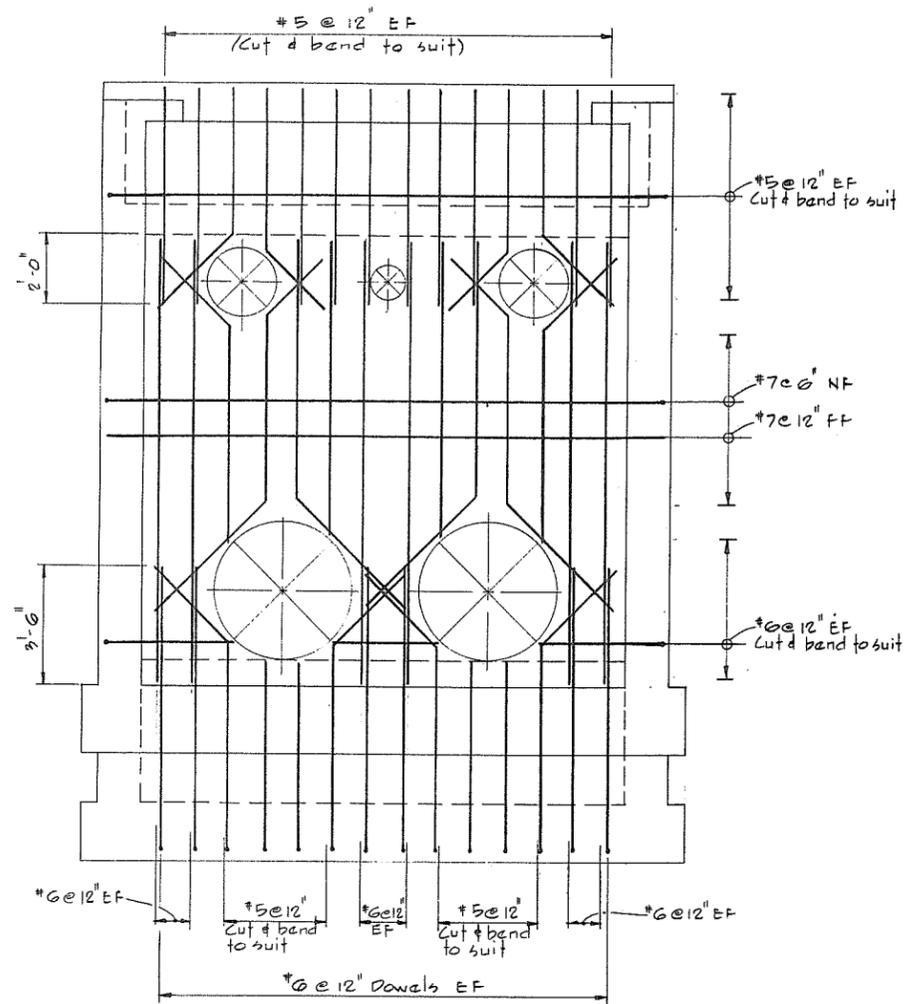


**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

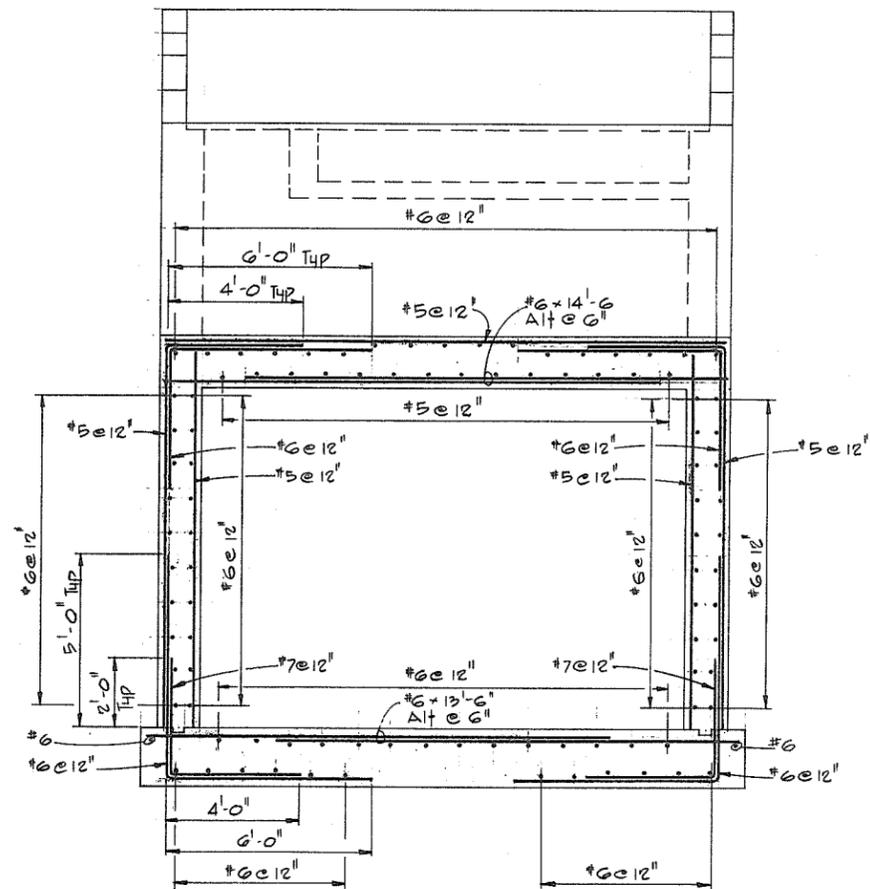
RECOMMENDED	<i>[Signature]</i>
DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Durphy

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA — BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
REINFORCING

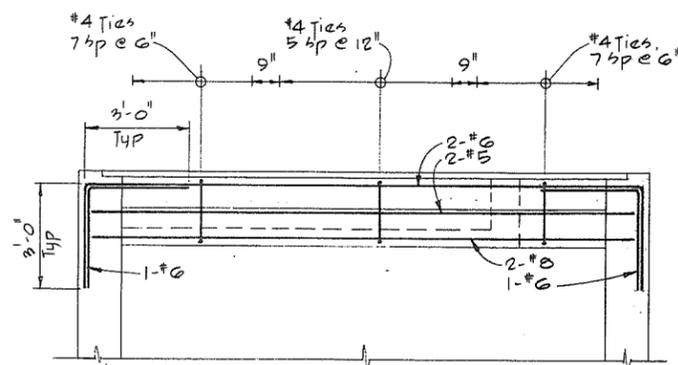
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DRAWN	H.W.	DATE	
CHECKED	AAW	FILE NO.	0281550-C10-5
SCALE	As shown	DATE	Dec 1974
DWG. NO.	4795-5-40	SHEET	1 OF 3 SHEETS



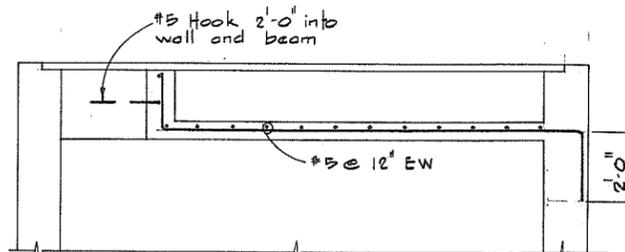
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SECTION  $\frac{C}{40}$

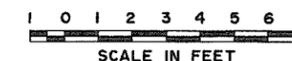


SECTION  $\frac{D}{40}$



SECTION  $\frac{E}{40}$

NOTE 6  
for General Notes see 4795-5-30



N.P. 266196



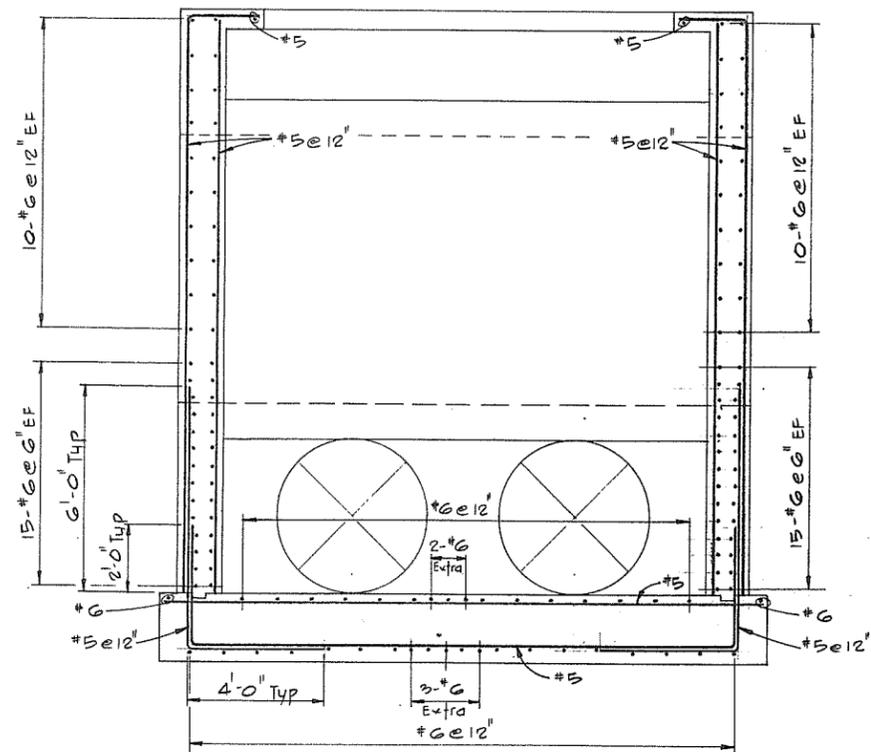
**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

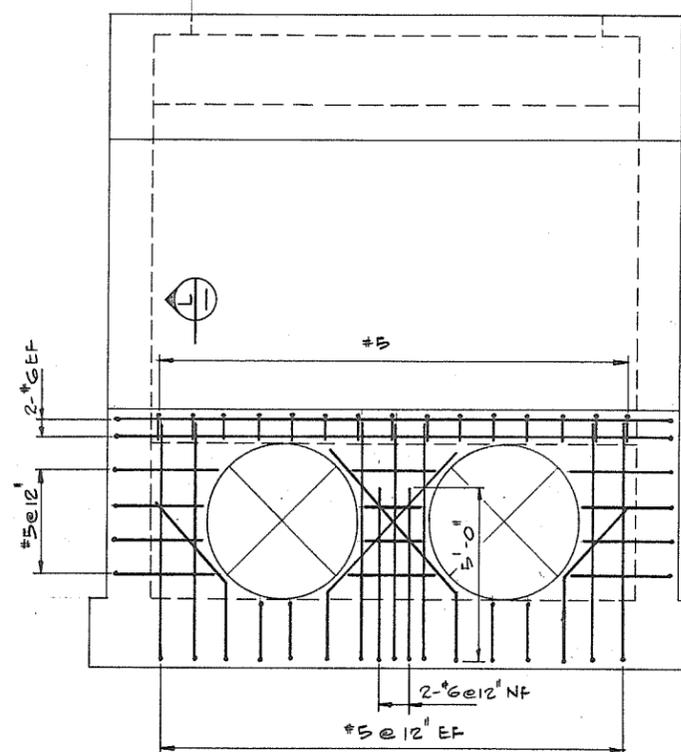
RECOMMENDED *[Signature]*  
DATE *Dec 17/74*  
APPROVED *[Signature]* DIRECTOR  
DATE *Dec 17/74*

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA — BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
REINFORCING

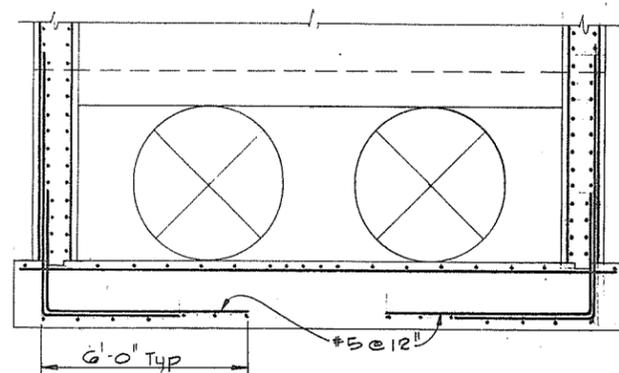
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DRAWN <i>H.W.</i>	DATE
CHECKED <i>AAW</i>	FILE NO. 0281550-C10-5
SCALE <i>As shown</i>	DATE <i>Dec 1974</i>
DWG. NO. 4795-5-41	SHEET 2 OF 3 SHEETS



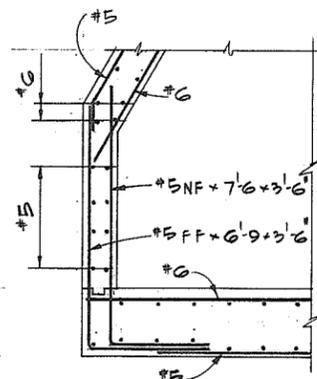
SECTION  $\frac{F}{40}$



VIEW  $\frac{H}{40}$



SECTION  $\frac{G}{40}$   
 SIMILAR TO SECTION  $\frac{F}{40}$   
 EXCEPT AS SHOWN



SECTION  $\frac{L}{40}$

NOTES  
 for General Notes see 4795-5-30



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO. BY REVISIONS DATE

RECOMMENDED *[Signature]*  
 PROJECTS DIV.  
 DATE *Dec 17/74*  
 APPROVED *[Signature]*  
 DIRECTOR  
 DATE *Dec 18, 74*

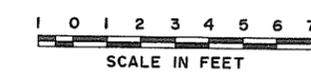
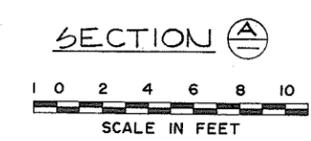
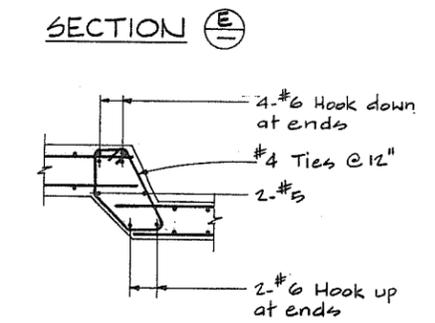
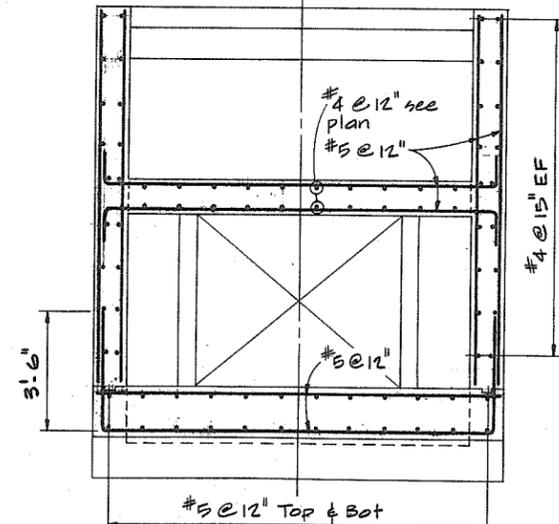
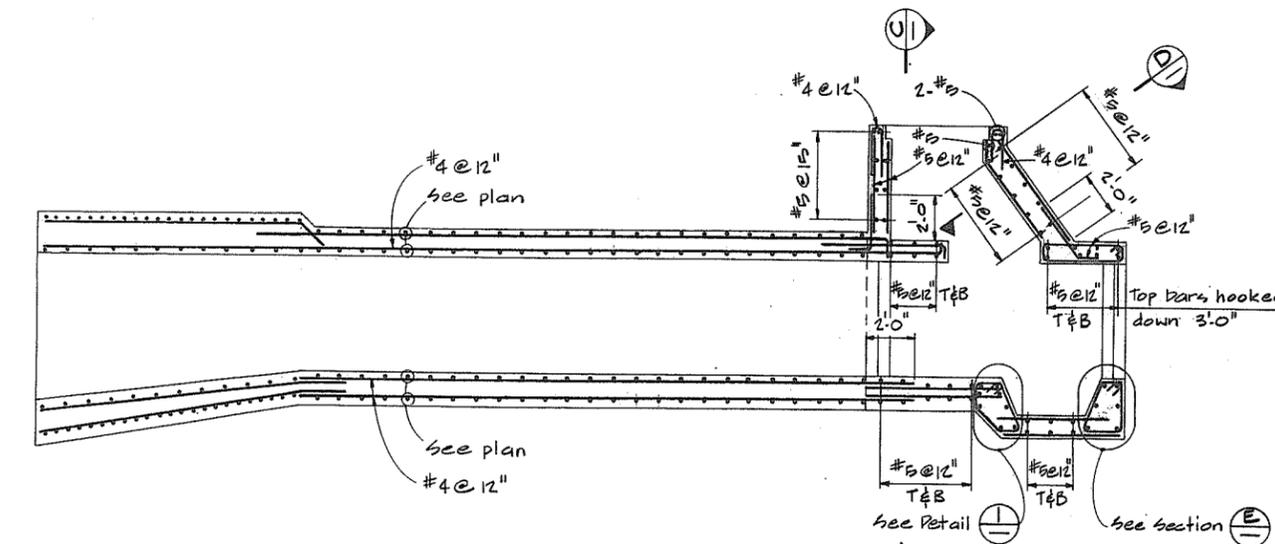
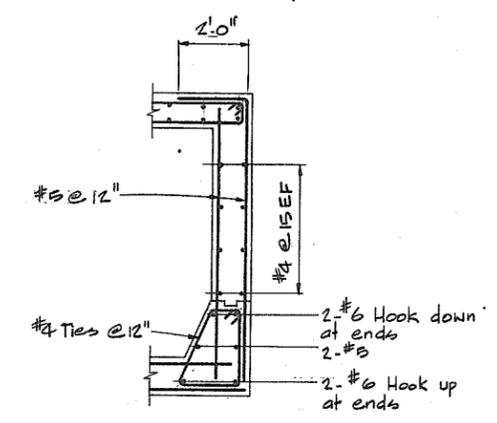
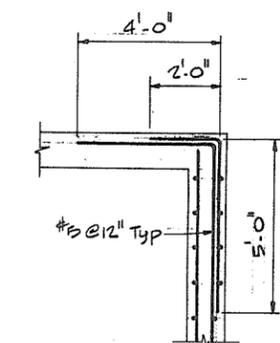
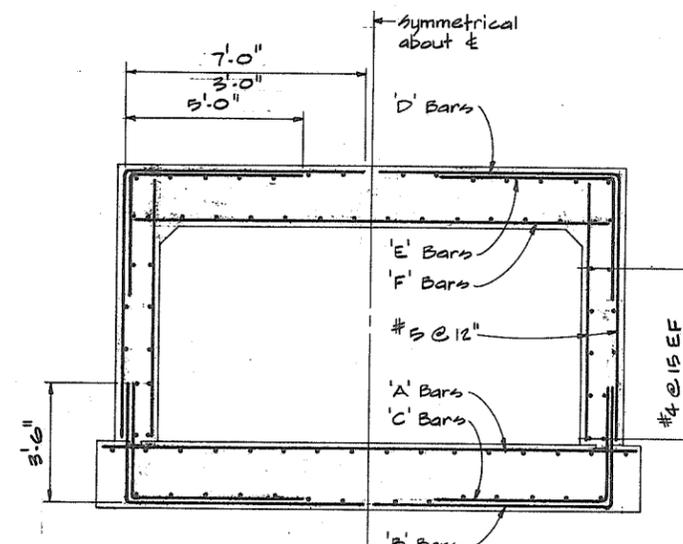
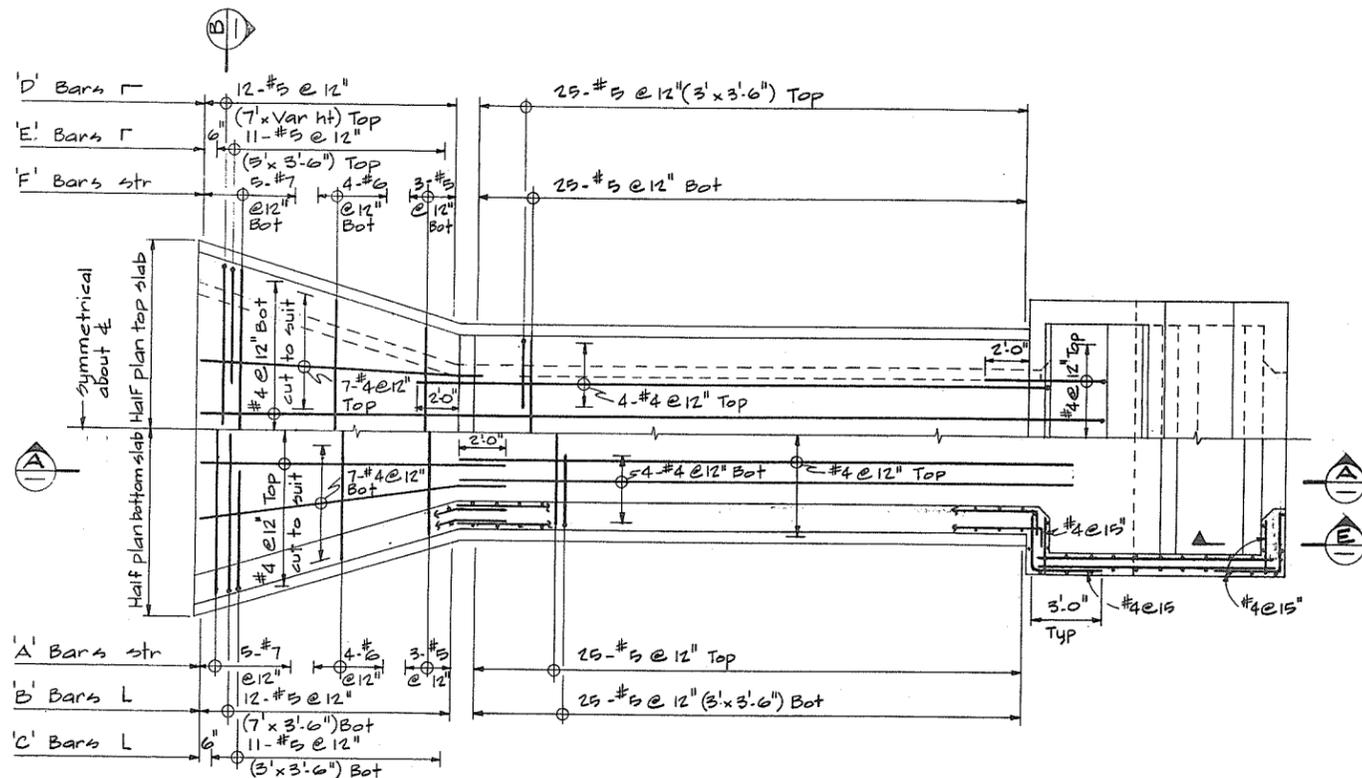
BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 NUMBER 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 REINFORCING

DESIGNED *acw*  
 DRAWN *H.W.*  
 CHECKED *AAW*  
 SCALE *As shown*  
 DWG. NO. **4795-5-42**  
 SURVEYED  
 DATE  
 FILE NO. **0281550-C10-5**  
 DATE **Dec 1974**  
 SHEET **3** OF **3** SHEETS

N.P. 266197







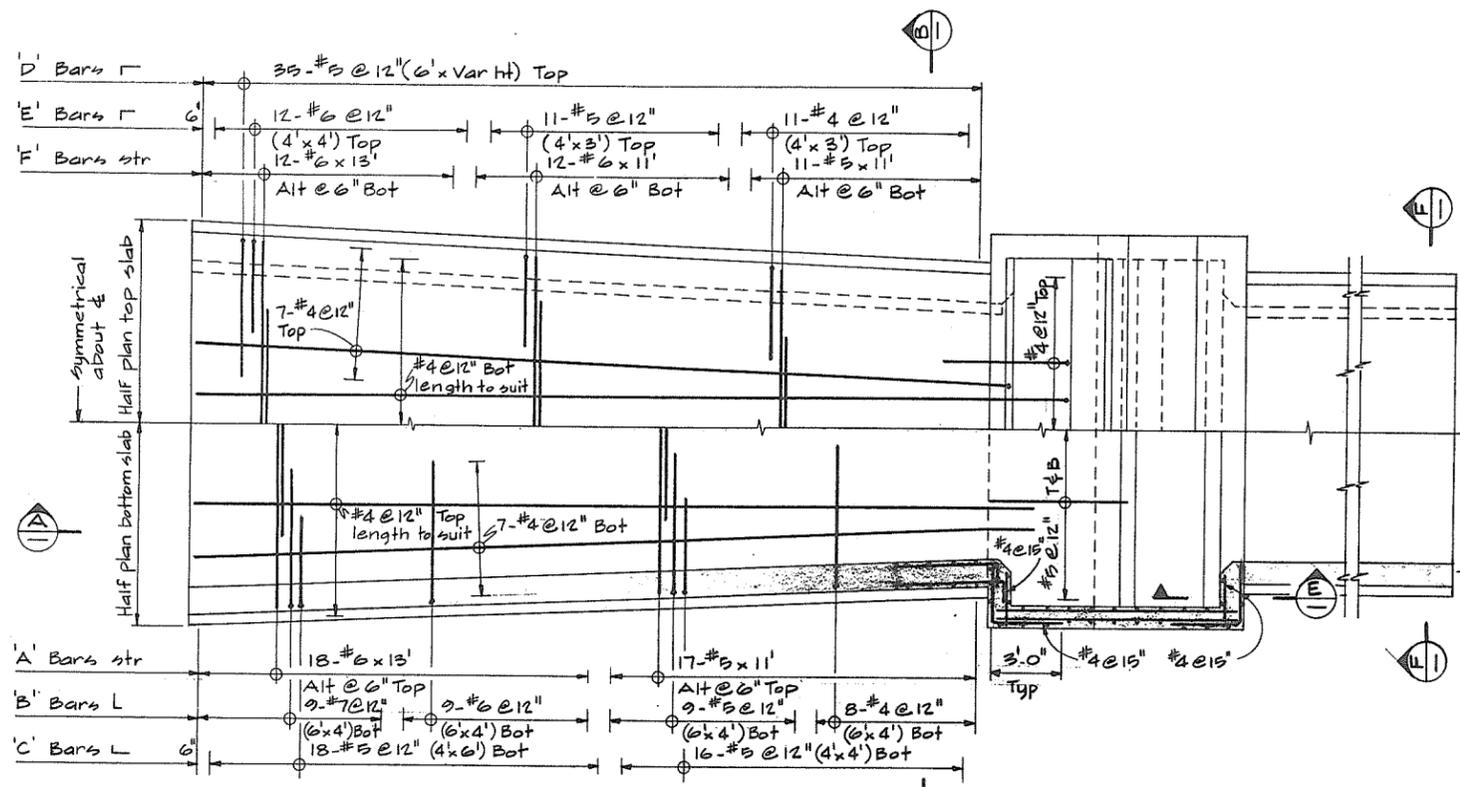
**NOTES**  
For General Notes see 4795-5-29



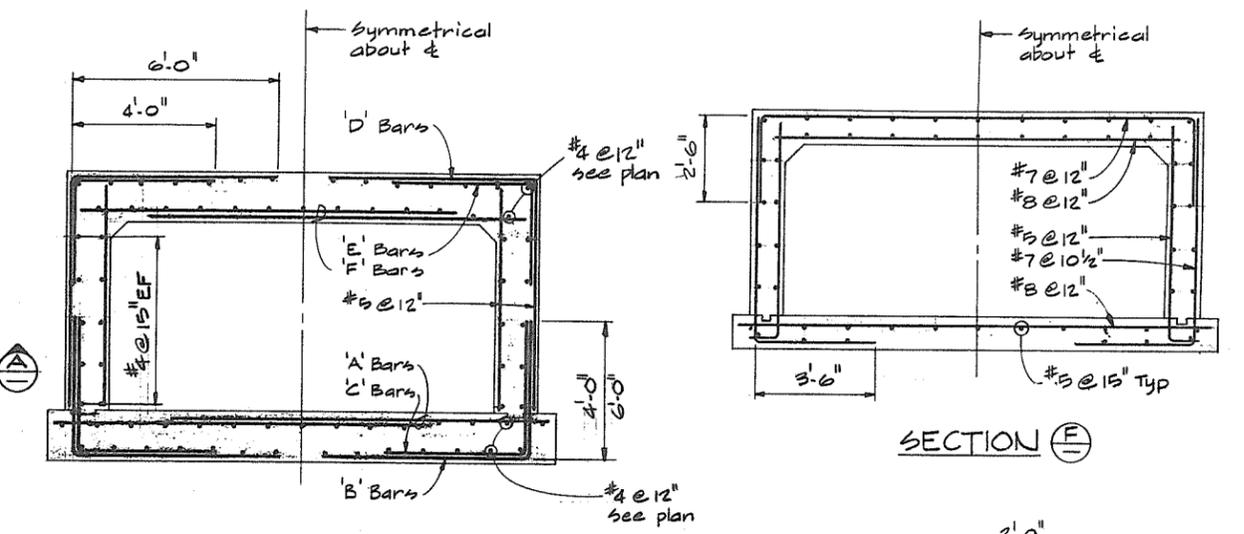
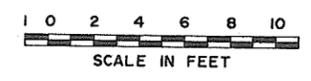
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**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	DATE	APPROVED	DATE	DESIGNED	SURVEYED
PROJECTS DIV.	Dec 17 74	DIRECTOR	Dec 17 74	ACW	DATE
BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 McCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE ENTRY CULVERT REINFORCING				CHECKED	FILE NO.
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				SCALE	DATE
				As shown	Dec 1974
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				4795-5-45	

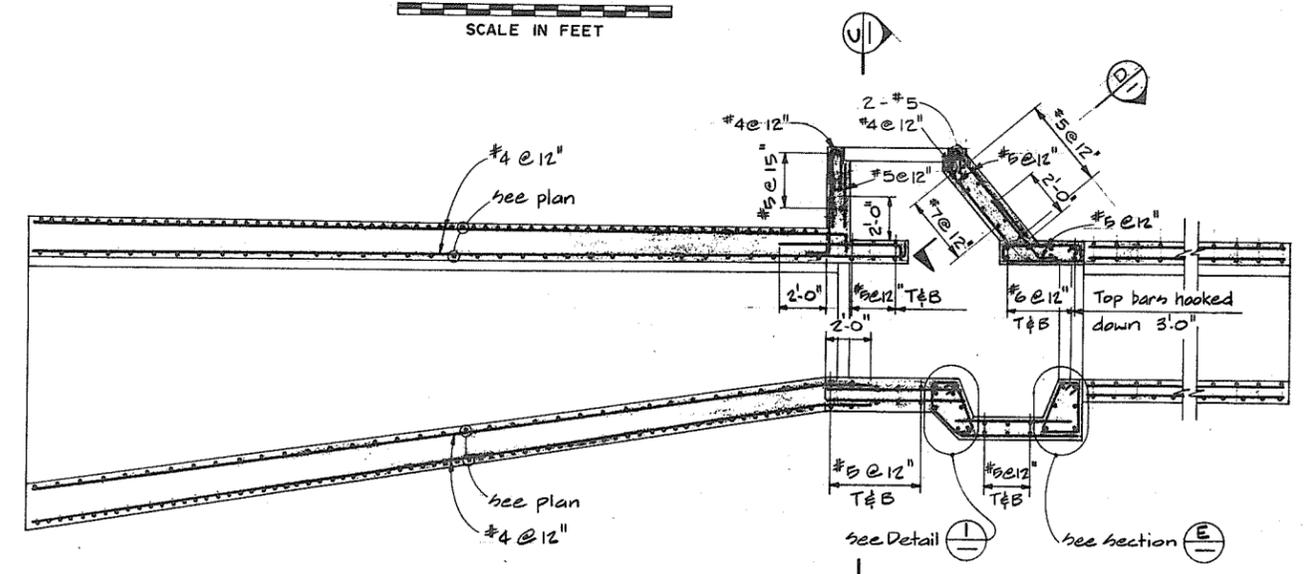
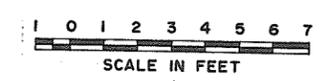


PLAN

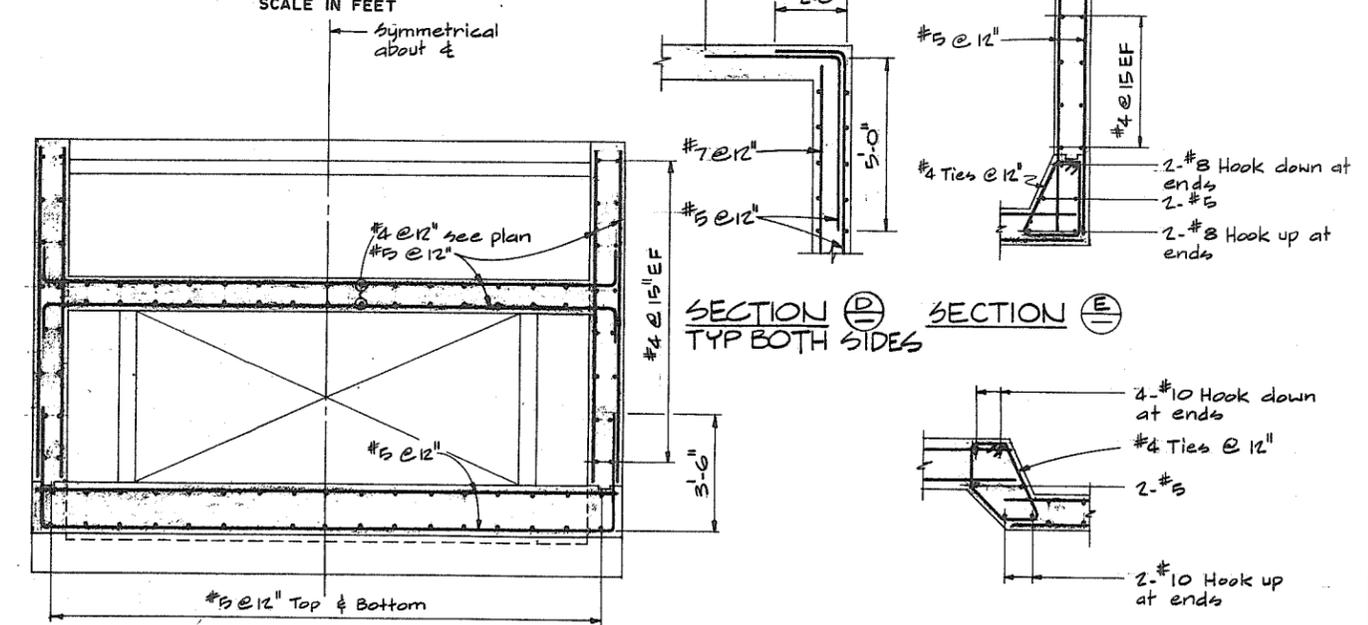
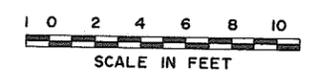


SECTION B

SECTION E



SECTION A

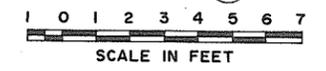


SECTION C

SECTION D



DETAIL 1



NOTES  
 For General Notes see 4795-5-30

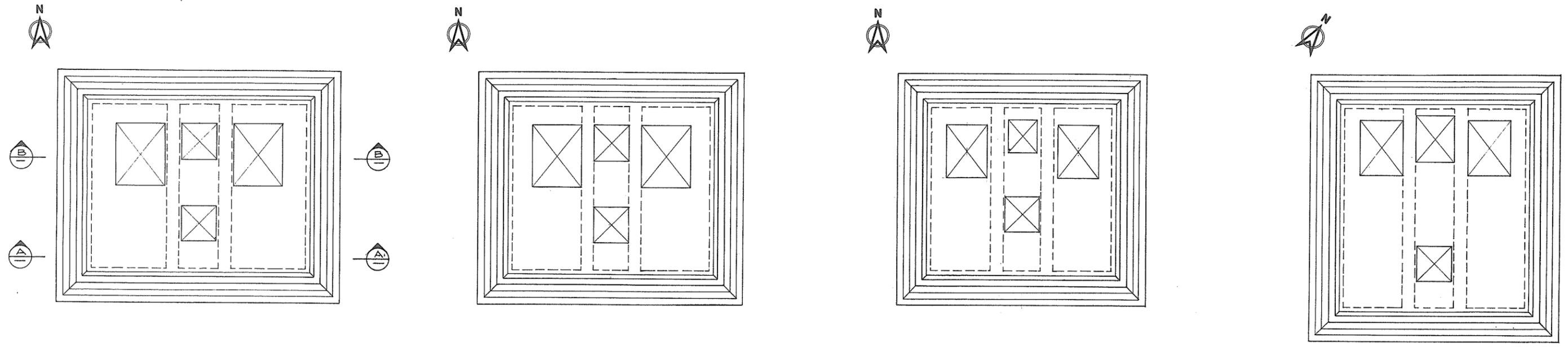


**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED *[Signature]*  
 DATE *Dec 17/76*  
 APPROVED *[Signature]*  
 DIRECTOR  
 DATE *Dec 17/76*

DESIGNED <i>GCW</i>	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED <i>AAW</i>	FILE NO. <i>0281550-C10-5</i>
SCALE <i>As shown</i>	DATE <i>Dec 1974</i>
DWG. NO. <i>4795-5-46</i>	SHEET <i>266 201</i> OF <i>266 201</i> SHEETS

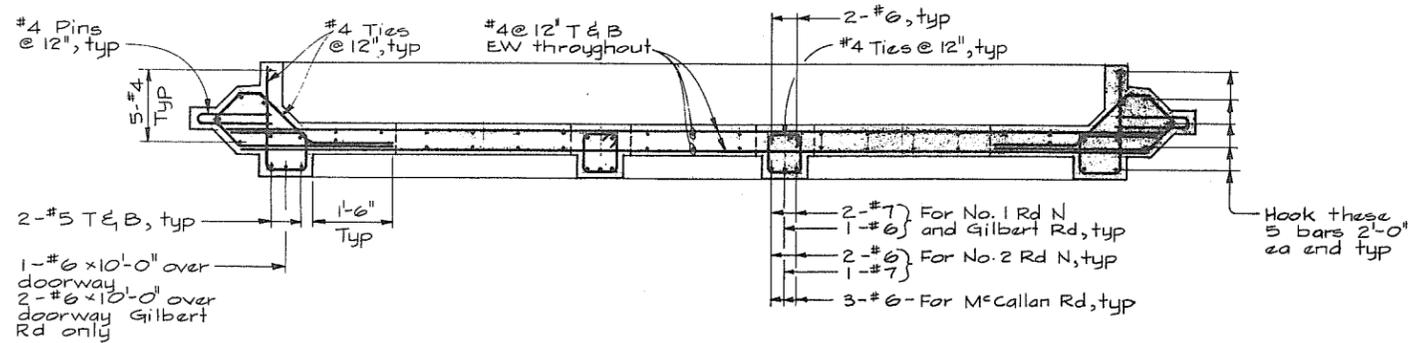
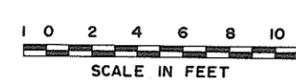
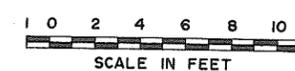
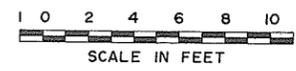


PLAN - NUMBER 1 RD N

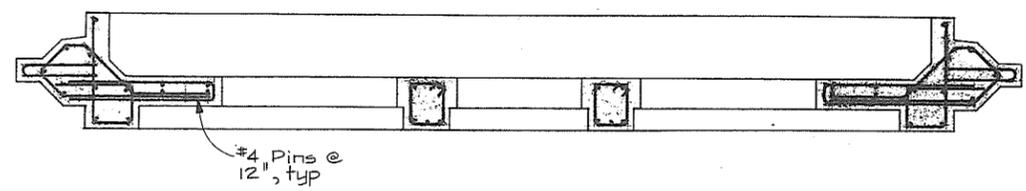
PLAN - NUMBER 2 RD N

PLAN - McCALLAN RD

PLAN - GILBERT RD



SECTION A NO. 1 RD N SHOWN NO. 2 RD N, McCALLAN RD AND GILBERT RD SIMILAR



SECTION B SIMILAR TO SECTION A EXCEPT AS SHOWN

NOTE:  
Cut bars as req'd  
to suit openings

NOTES  
For General Notes see 4795-5-28



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED *[Signature]*  
DATE *Dec 17/74*

APPROVED *[Signature]*  
DATE *Dec 17/74*

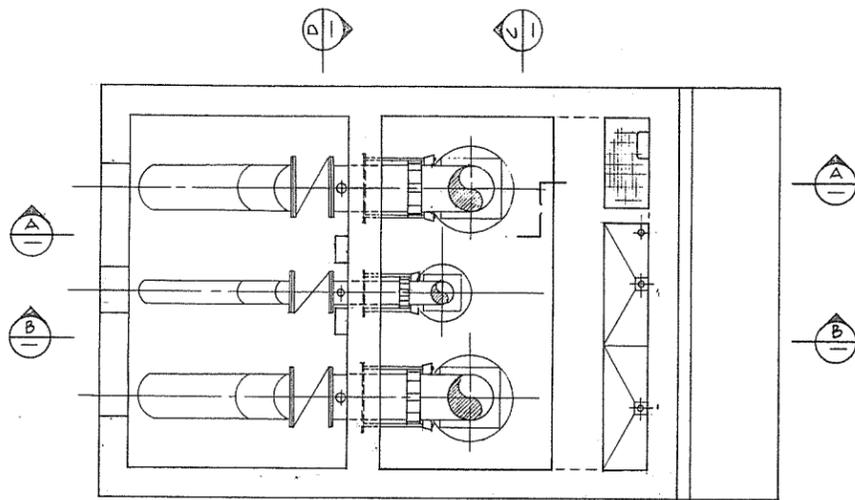
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
DRAINAGE DISCHARGE STRUCTURES  
ROOF REINFORCING

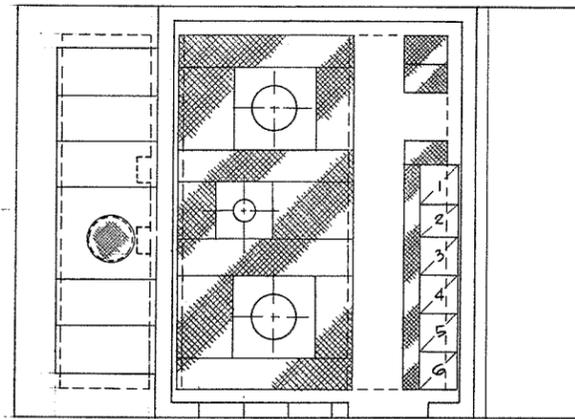
DESIGNED <i>G.C.W.</i>	SURVEYED
DRAWN <i>del</i>	DATE
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SCALE <i>As shown</i>	DATE <i>Dec 1974</i>
DWG. NO. <i>4795-5-47</i>	SHEET <i>1</i> OF <i>1</i> SHEETS

N.P.

266 202



PLAN AT EL 7.0



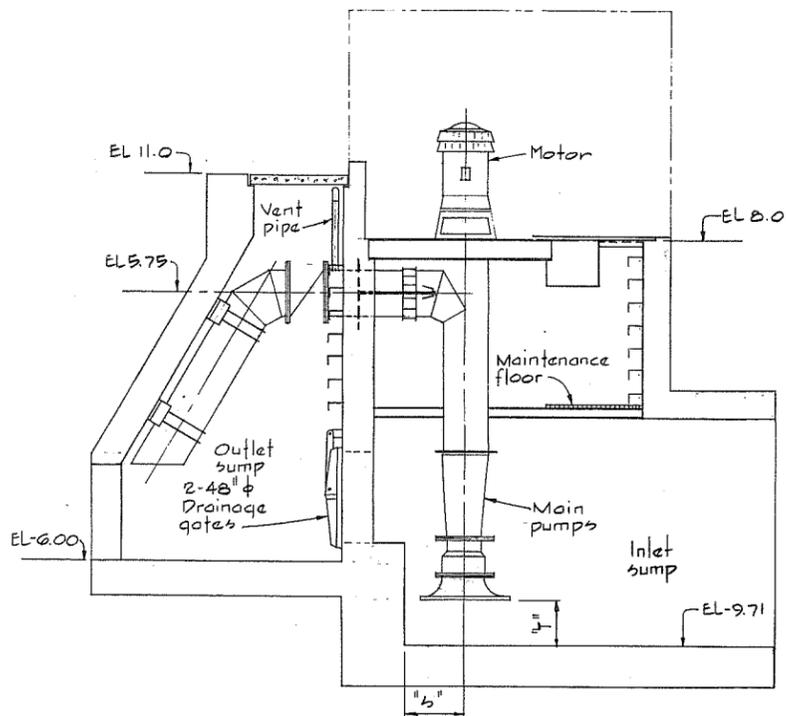
PLAN AT EL 18.0

**GENERAL NOTES-MECHANICAL**

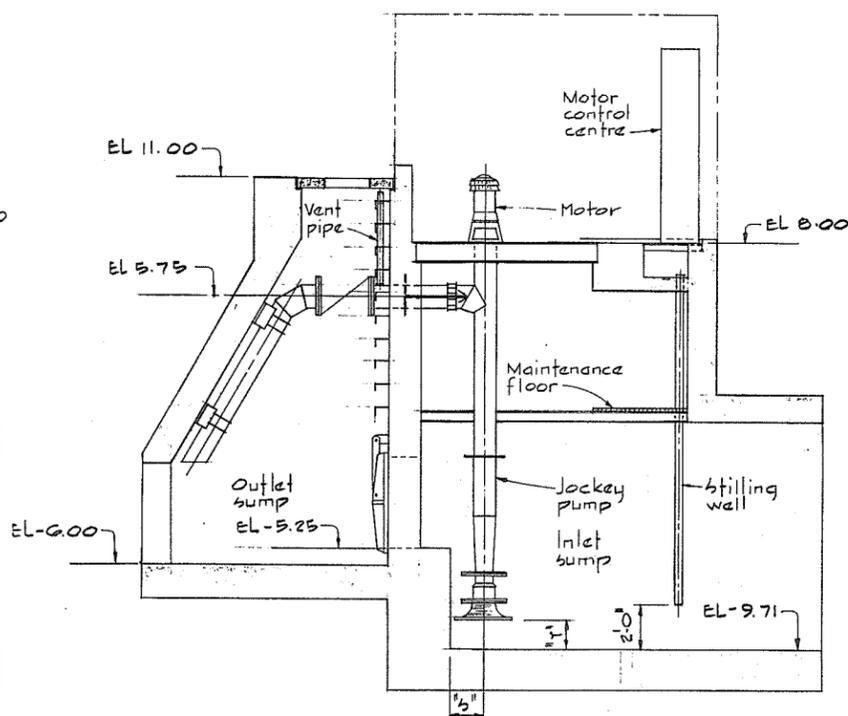
- Building superstructure subject of revision.
- For final design see Civil & Structural Contract drawings.
- Roof hatches are designed to allow withdrawal of pump columns and elbows with approx. 1' minimum clearance all around.
- Dimensions "S" & "T" should be supplied by the Contractor for each particular pump.
- "S" will determine location of each pump center line, "T" will determine required pump column length.
- All clearances will be verified on receipt of drainage pump external dimensions.

**NOTE 5**

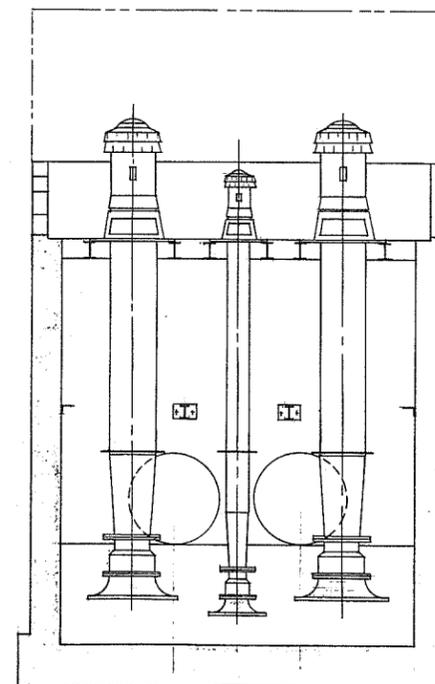
- For main pump discharge piping details see 4795-5-56
- For jockey pump discharge piping details see 4795-5-56
- For stilling well details see 4795-5-57
- For vent pipe details see 4795-5-56



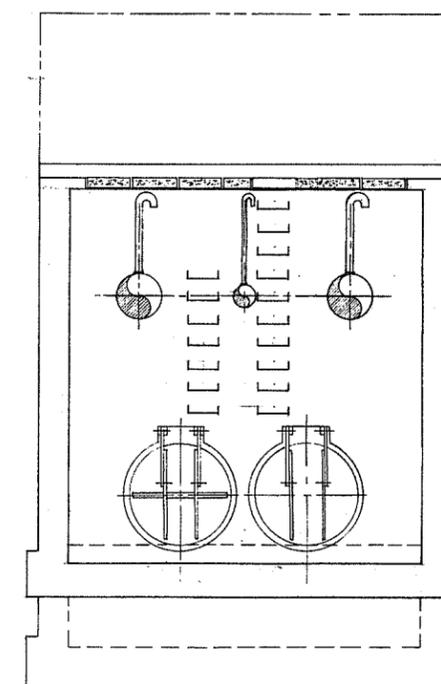
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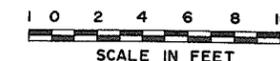
SECTION B-B



SECTION C-C



SECTION D-D



N.P. 266 203



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	<i>[Signature]</i>
DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 17/74

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ARRANGEMENT OF MECHANICAL AND ELECTRICAL EQUIPMENT

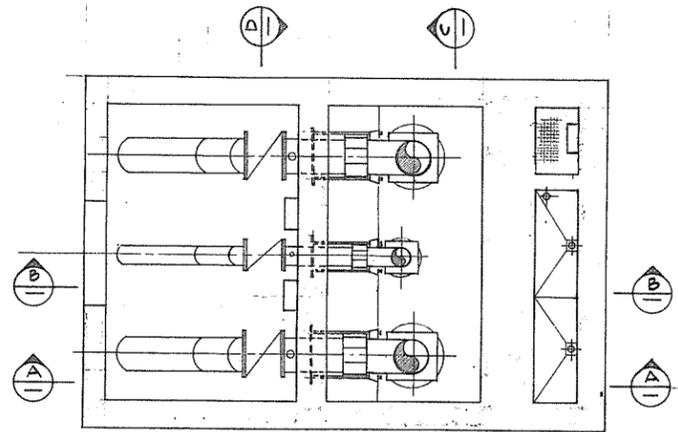
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**GENERAL NOTES-MECHANICAL**

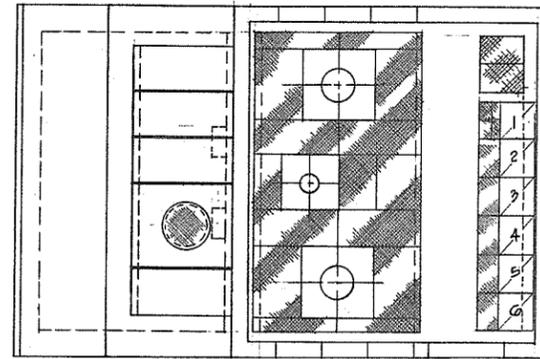
- Building superstructure subject to revision.
- For final design see Civil and Structural Contract drawings.
- Roof hatches are designed to allow withdrawal of pump columns and elbows with approx 1" minimum clearance all around.
- Dimensions 1/2" & 1" should be supplied by the contractor for each particular pump.
- 3" will determine location of each pump center line. 1" will determine required pump column length.
- All clearances will be verified on receipt of drainage pump external dimensions.

**NOTES**

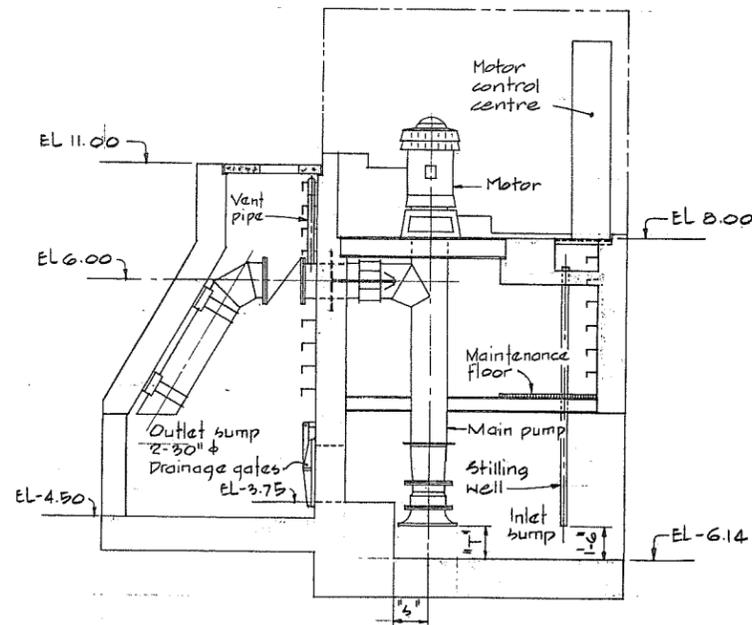
- For main pump discharge piping details see 4795-5-56
- For jockey pump discharge piping details see 4795-5-56
- For stilling well details see 4795-5-57
- For vent pipe details see 4795-5-56



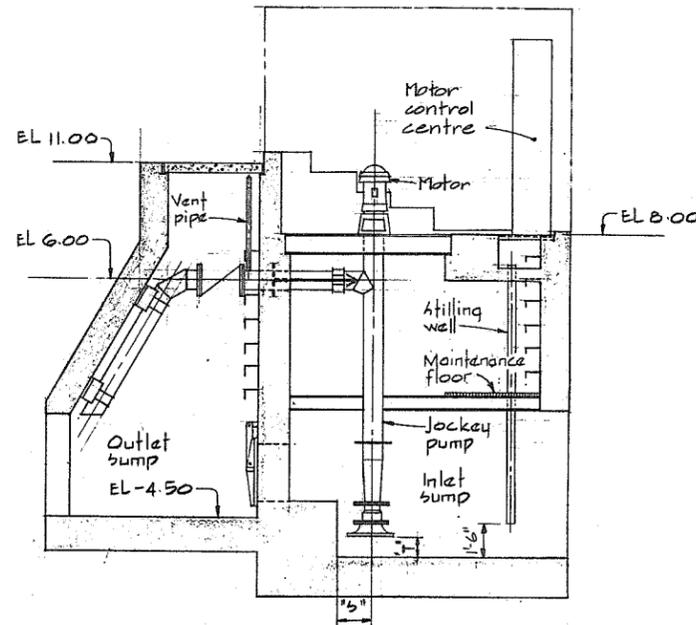
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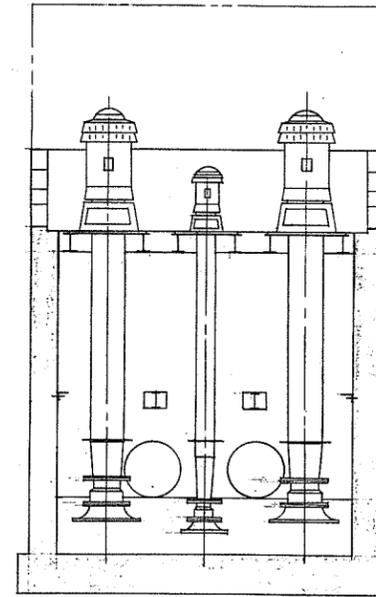
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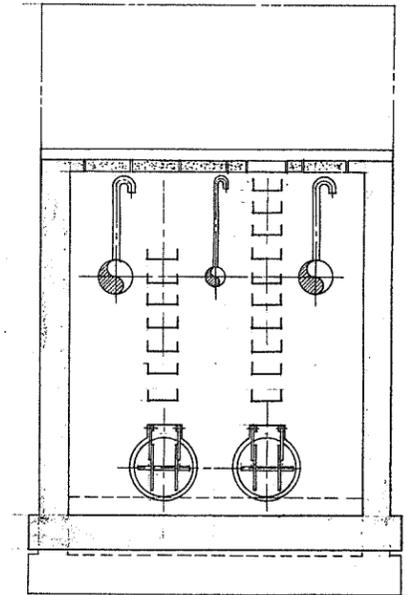
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D



N.P. 266204



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

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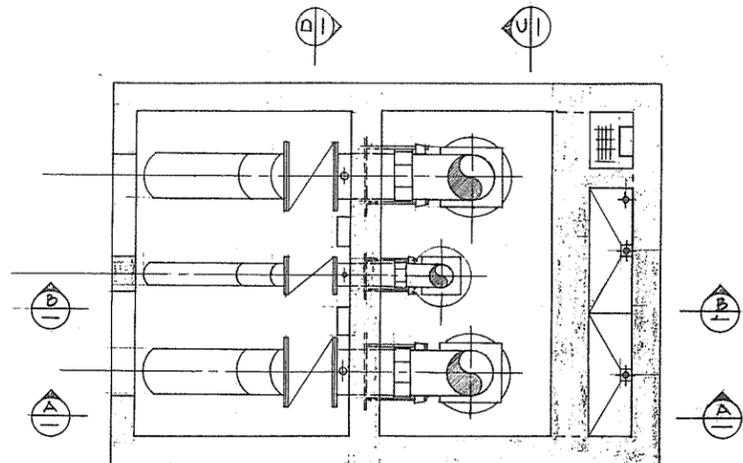
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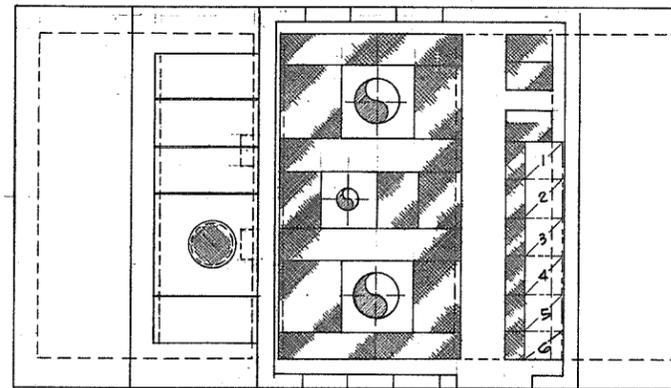
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
McCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ARRANGEMENT OF MECHANICAL AND ELECTRICAL EQUIPMENT

**GENERAL NOTES - MECHANICAL**

- Building superstructure subject to revision.
- For final design see civil and structural contract drawings.
- Roof hatches are designed to allow withdrawal of pump columns and elbows with approx. 1' minimum clearance all around.
- Dimensions "S" & "T" should be supplied by the contractor for each particular pump.
- "S" will determine location of each pump center line. "T" will determine required pump column length.
- All clearances will be verified on receipt of drainage pump external dimensions.



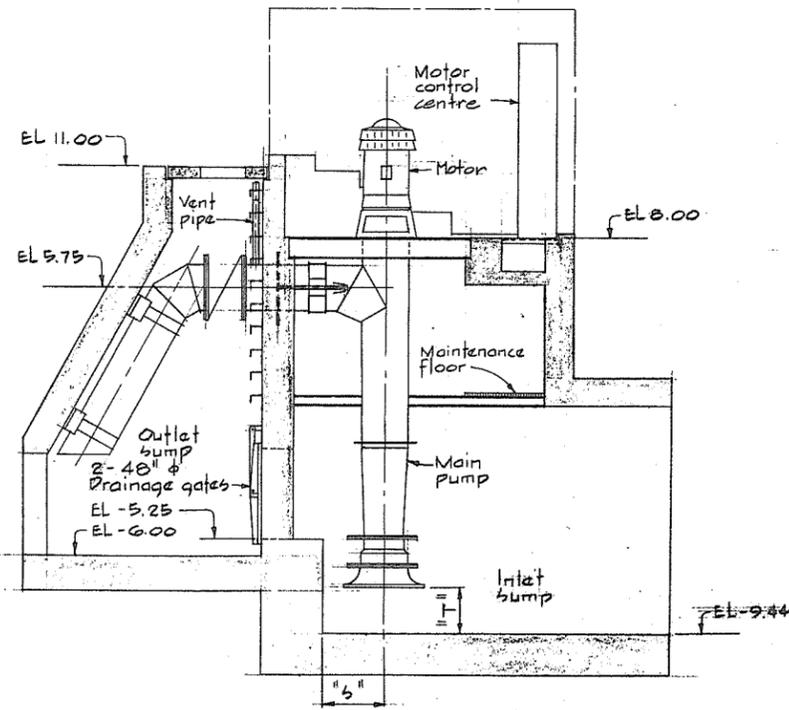
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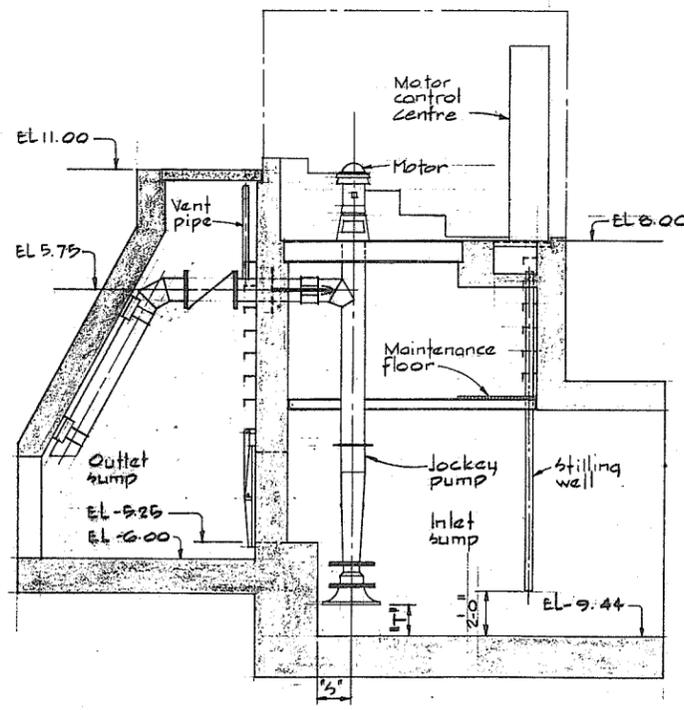
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**NOTES**

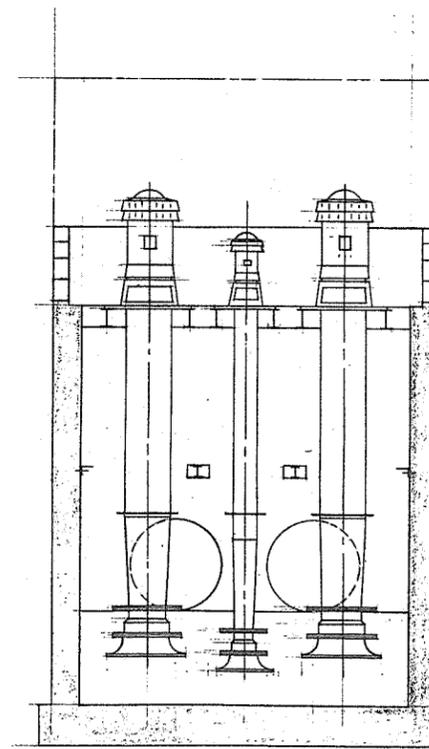
- For main pump discharge piping details see 4795-5-56
- For jockey pump discharge piping details see 4795-5-56
- For stilling well details see 4795-5-57
- For vent pipe details see 4795-5-56



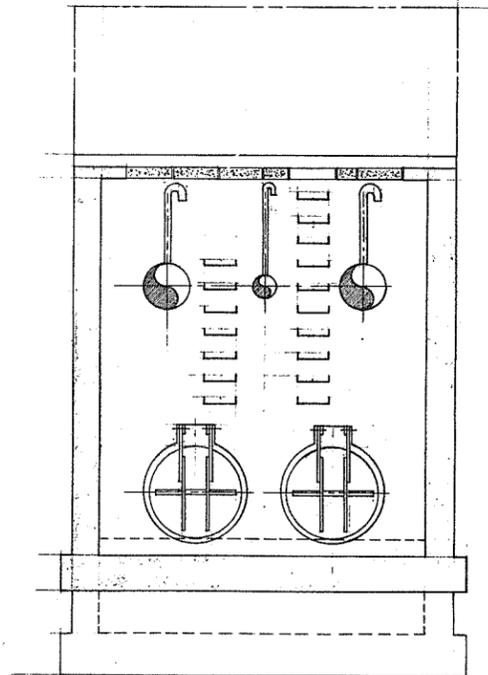
SECTION A-A



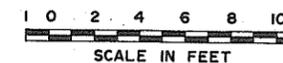
SECTION B-B



SECTION C-C



SECTION D-D



N.P. 266205



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NO.	BY	REVISIONS	DATE
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APPROVED	<i>[Signature]</i>
DATE	Dec 18/74

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DRAWN	H.W.	DATE	
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SCALE	As shown	DATE	Dec 1974
DWG. NO.	4795-5-50	SHEET	OF SHEETS

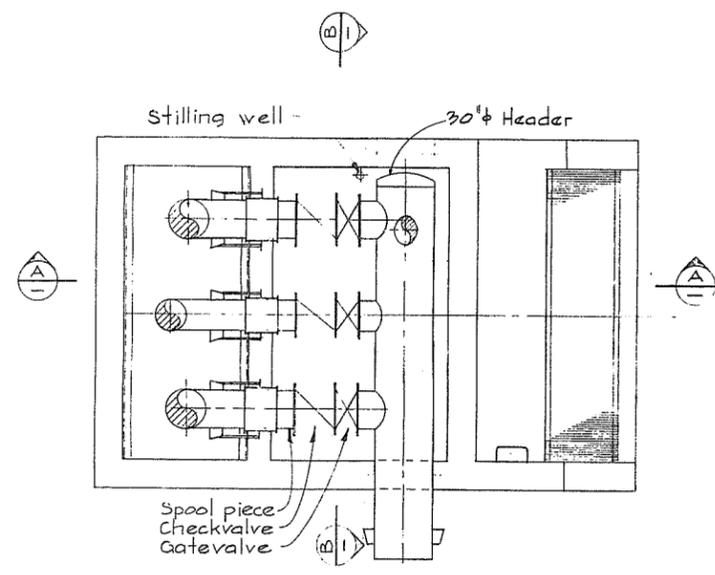
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ARRANGEMENT OF MECHANICAL AND ELECTRICAL EQUIPMENT

**GENERAL NOTES - MECHANICAL**

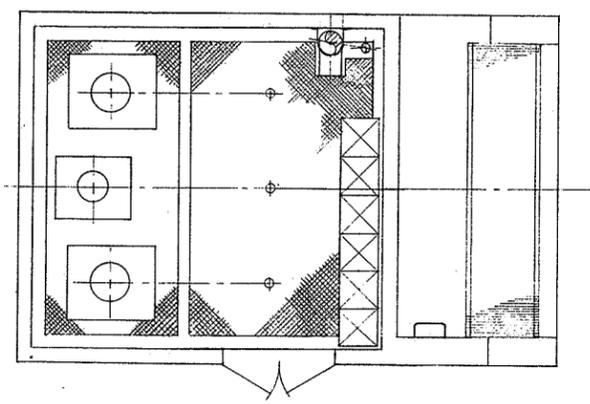
Building superstructure subject to revision for final design see Civil and Structural Contract drawings  
 Roof hatches are designed to allow withdrawal of pump columns and elbows with approx. 1" Min. clearance all around. Dimensions "S" & "T" should be supplied by the Contractor for each particular pump. "S" will determine location of each pump center line & "T" will determine required pump column length. All clearances will be verified on receipt of drainage pump external dimensions.

**NOTES**

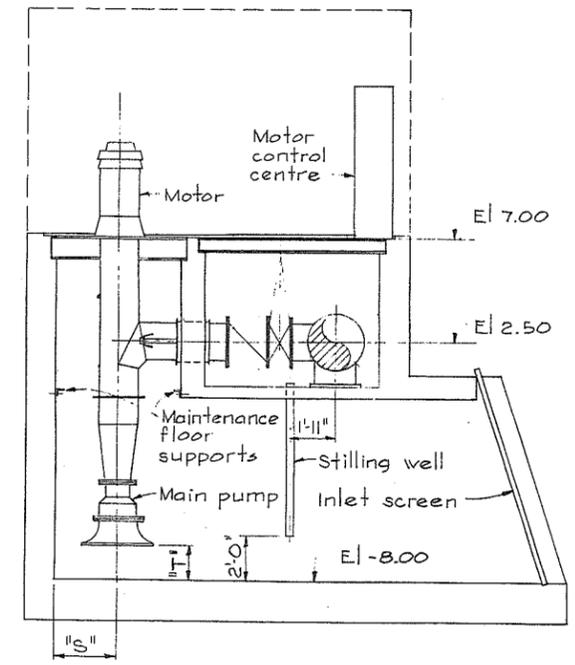
- For main pump discharge piping details see 4795-5-58
- For lockey pump discharge piping see 4795-5-58
- For stilling well details see 4795-5-59
- For vent pipe details see 4795-5-59



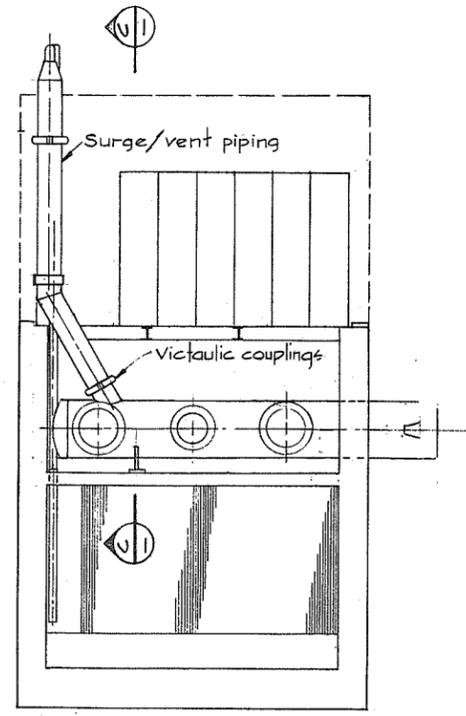
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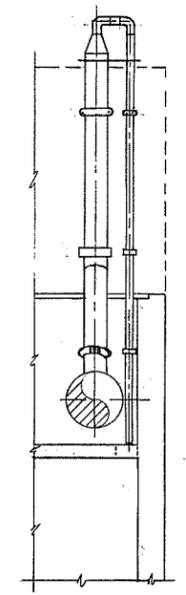
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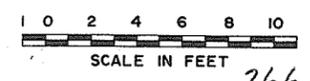
SECTION A-A



SECTION B-B



SECTION C-C



N.P. 266206



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

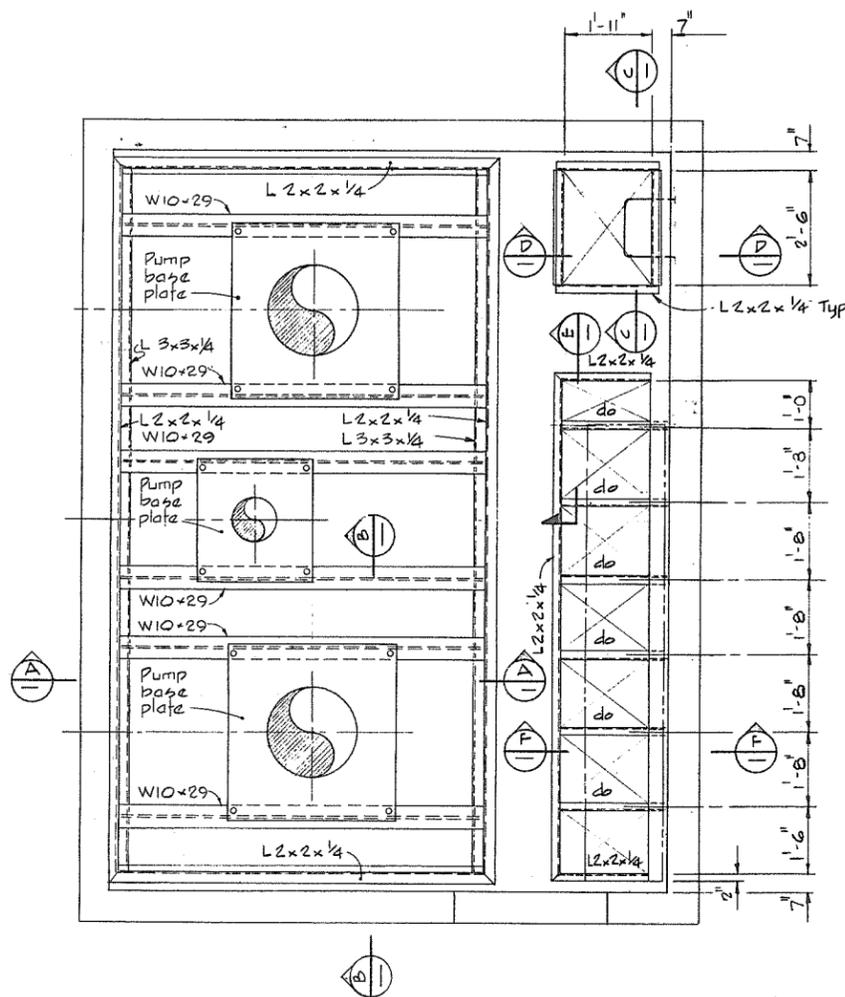
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APPROVED *[Signature]*  
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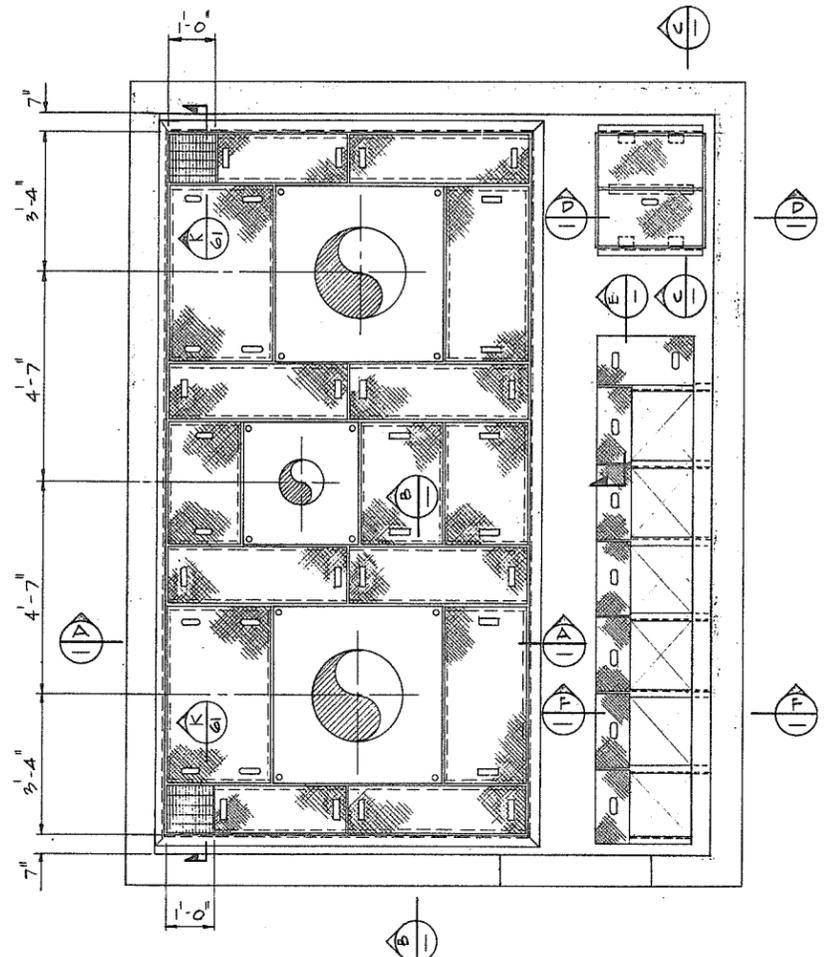
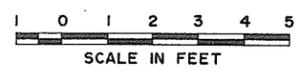
BRITISH COLUMBIA  
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 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ARRANGEMENT OF MECHANICAL AND ELECTRICAL EQUIPMENT

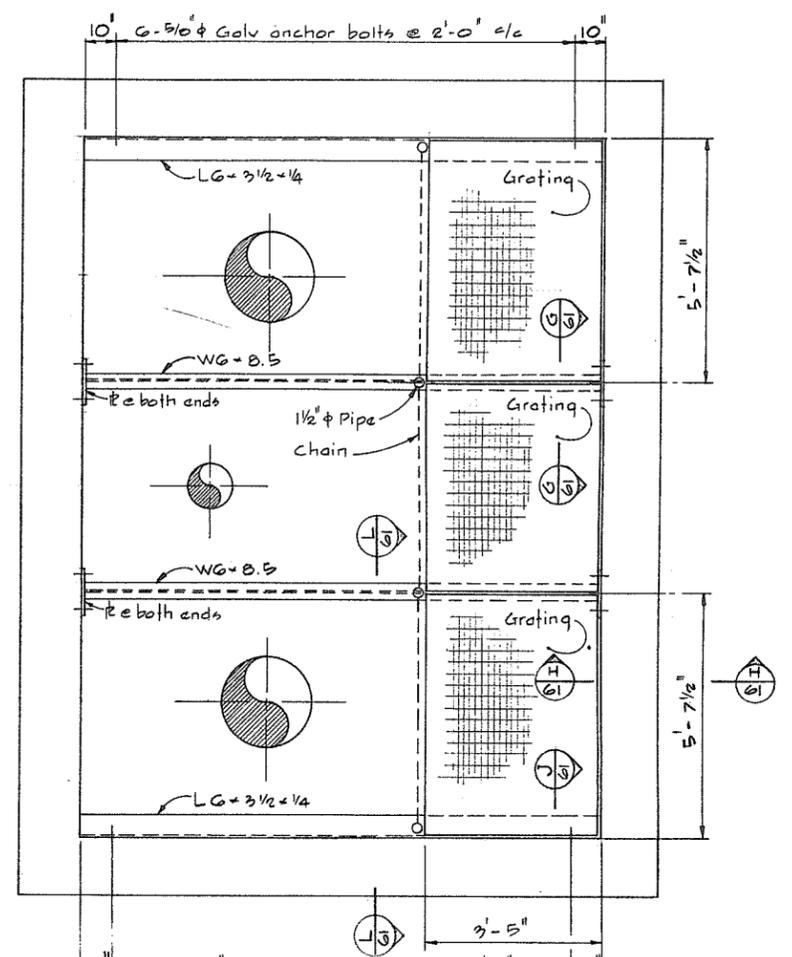
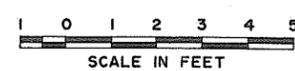
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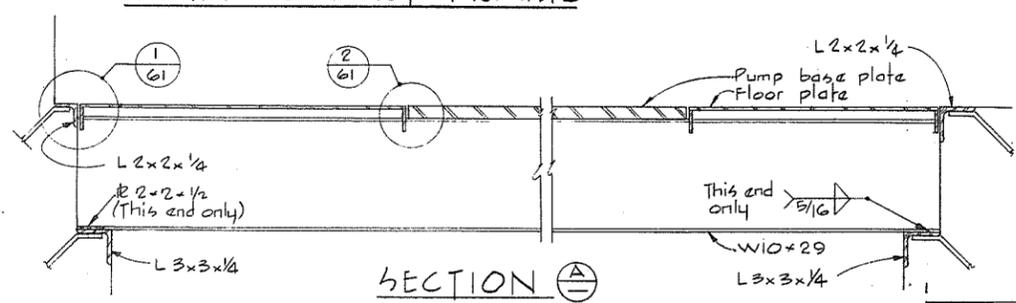
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MAIN SUPPORT FRAME



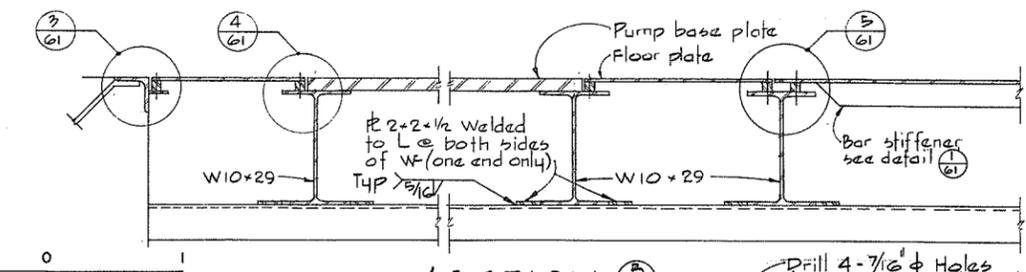
PLAN  
FLOOR PLATES



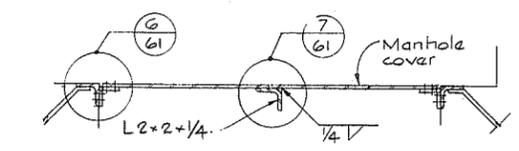
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MAINTENANCE FLOOR



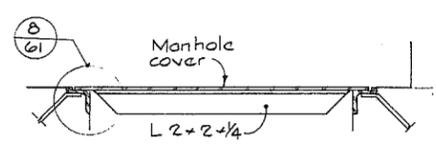
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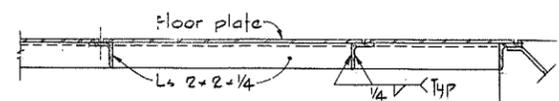
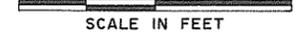
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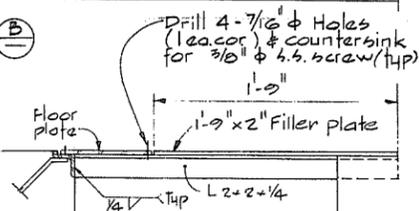
SECTION C



SECTION D



SECTION E



SECTION F

NOTES

- For General Notes see 4795-5-48
- Pump base plates and cross support beams are to be located and sized by the contractor to suit the type and model of pump being supplied.
- Minimum dimensions pertain as shown, elsewhere all dimensions must be checked for clearances and clearly noted on shop drawings.
- Checker plate sections showing 1, 2 or 4 hand holds - thus to be removable. They are to be provided with holding screws as shown on detail (35)



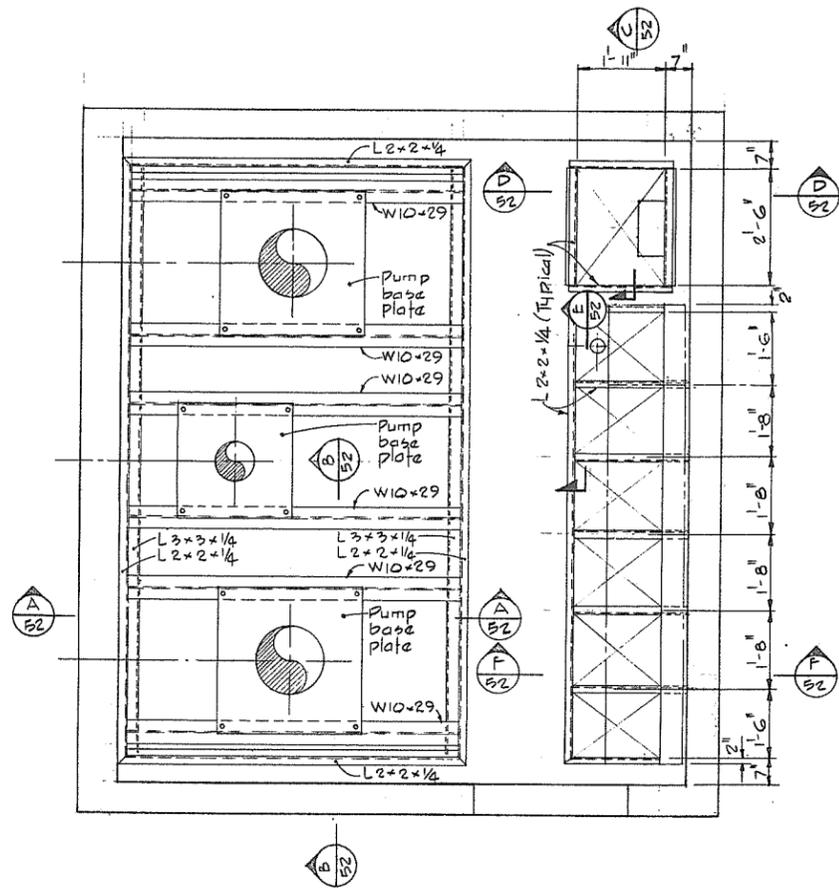
**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS VANCOUVER - CANADA

RECOMMENDED	<i>[Signature]</i>
DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 17/74

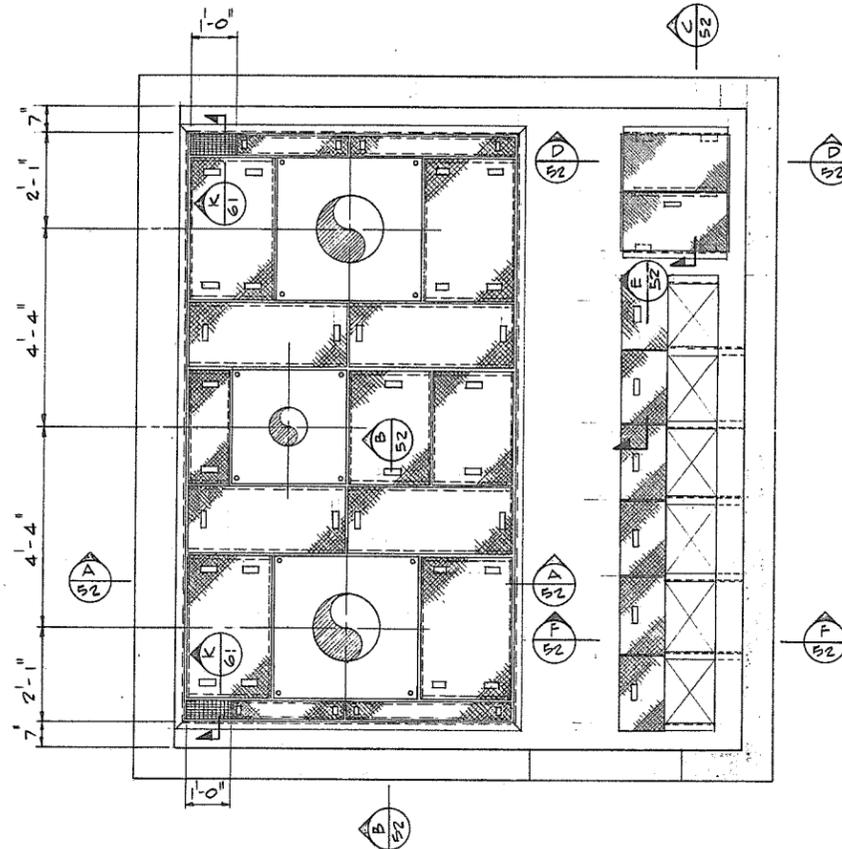
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
PUMP SUPPORT AND FLOOR PLATING

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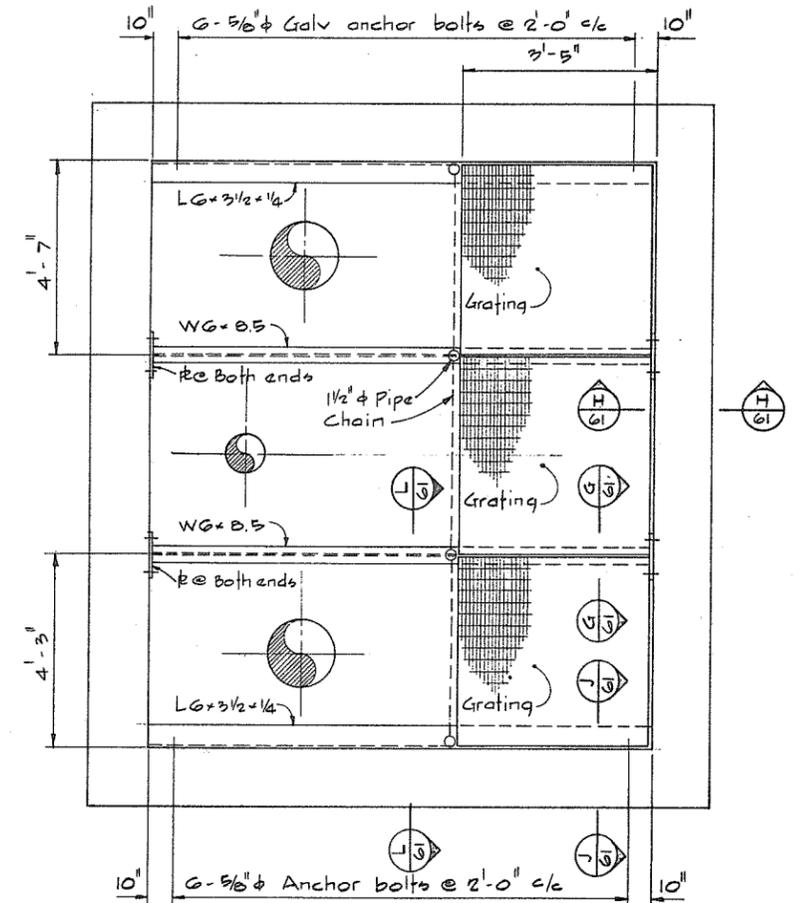
N.P. 266 207



PLAN  
MAIN SUPPORT FRAME



PLAN  
FLOOR PLATES



PLAN  
MAINTENANCE FLOOR

NOTES  
For General Notes see 4795-5-49



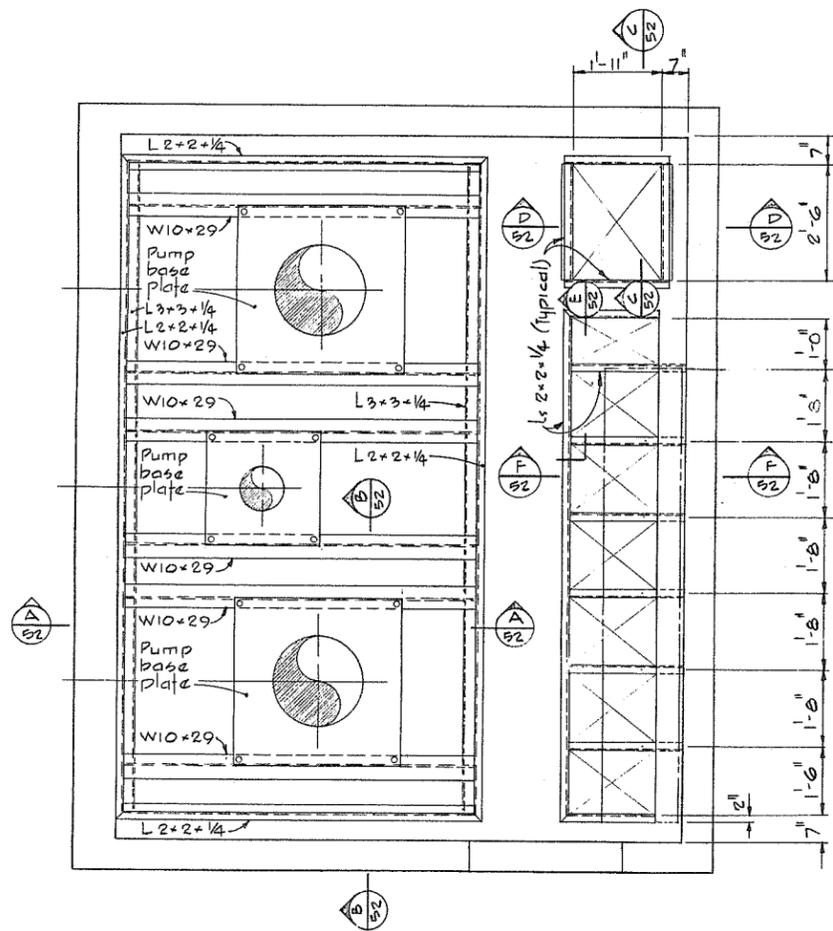
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CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
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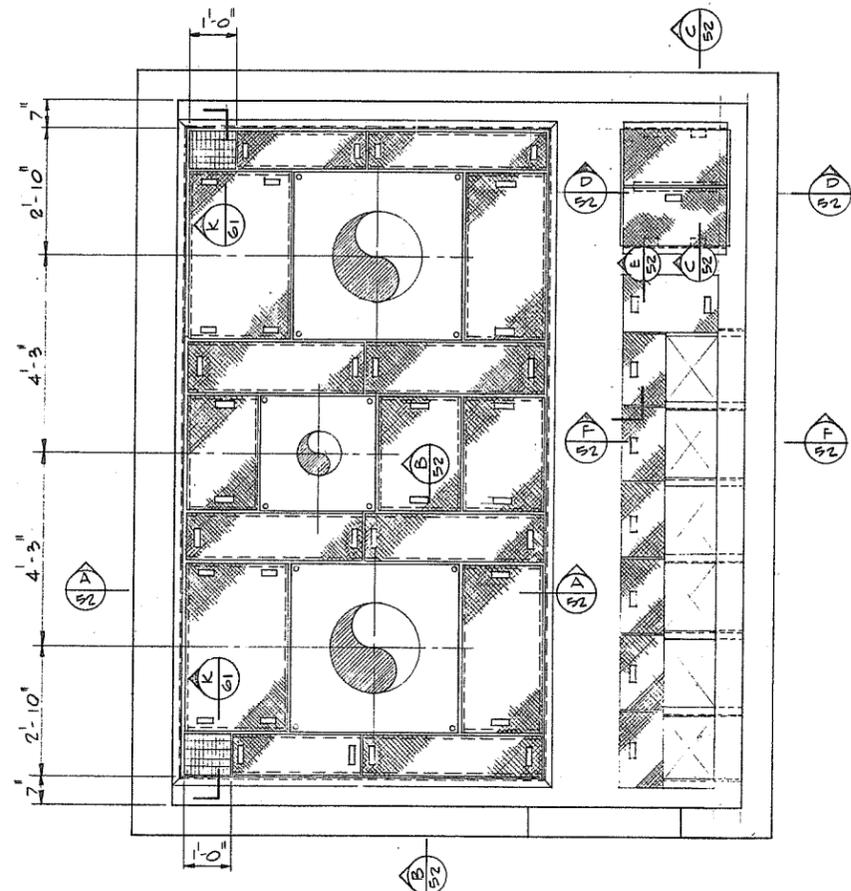
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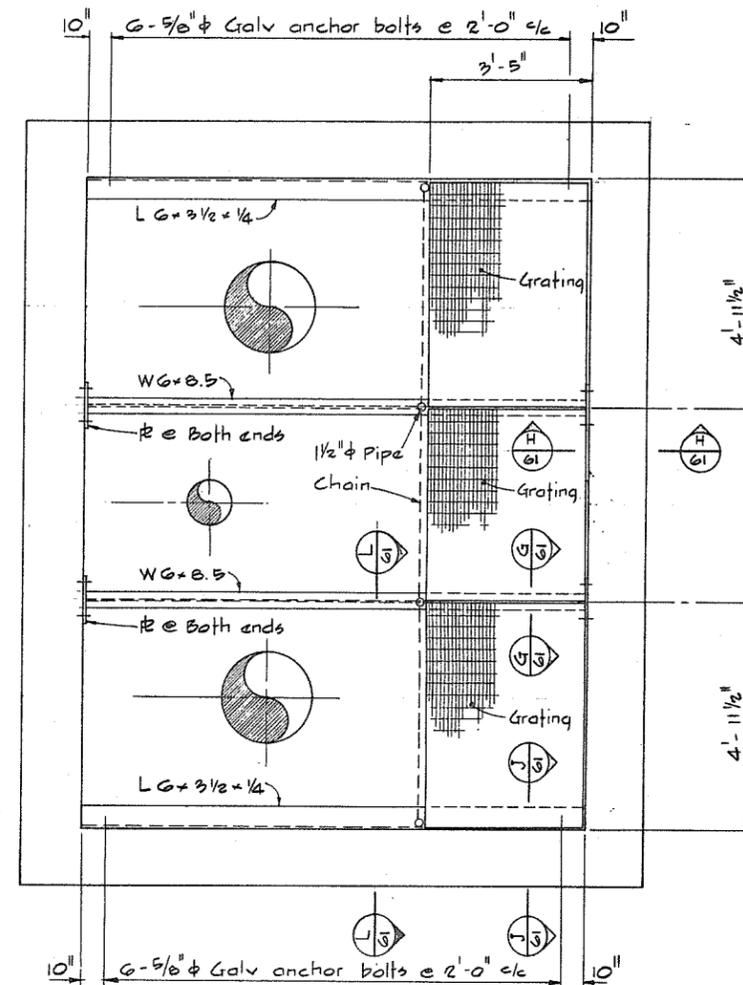
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DATE	<i>Dec 12/74</i>	PROJECT NO. 3 — THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 McCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE PUMP SUPPORT AND FLOOR PLATING	DRAWN <i>H.W.</i>	DATE
APPROVED	<i>[Signature]</i>		CHECKED <i>HS</i>	FILE NO. <i>0281550-C10-5</i>
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			DWG. NO. <b>4795-5-53</b>	SHEET <i>1</i> OF <i>1</i> SHEETS



PLAN  
MAIN SUPPORT FRAME



PLAN  
FLOOR PLATES



PLAN  
MAINTENANCE FLOOR

NOTES

- For General Notes see 4795-5-50
- For Notes see 4795-5-50



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
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DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 18/74

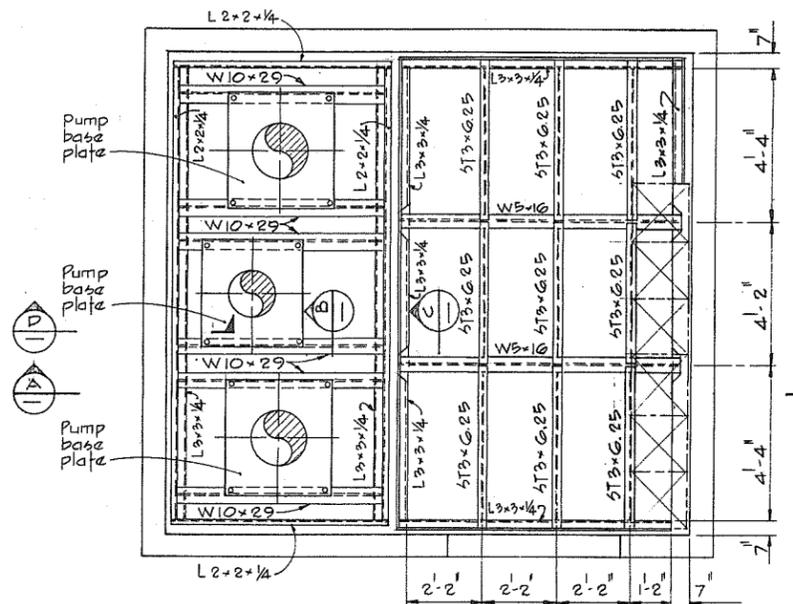
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DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
PUMP SUPPORT AND FLOOR PLATING

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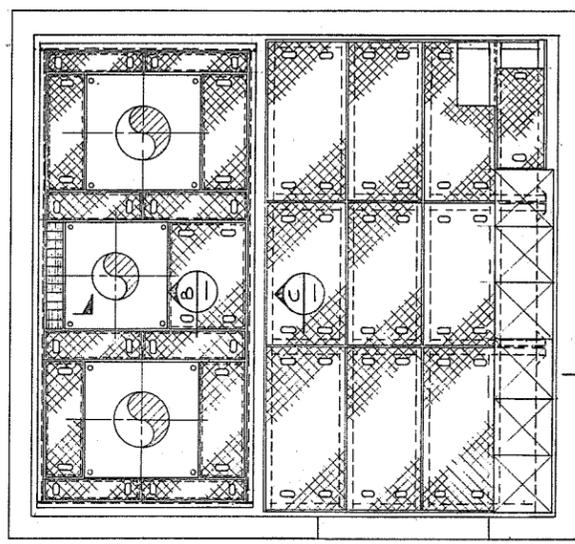
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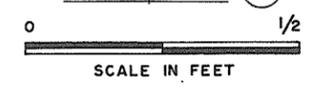
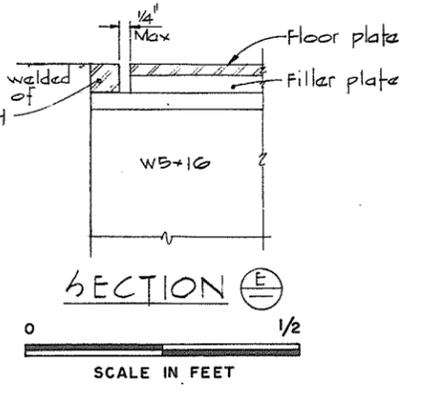
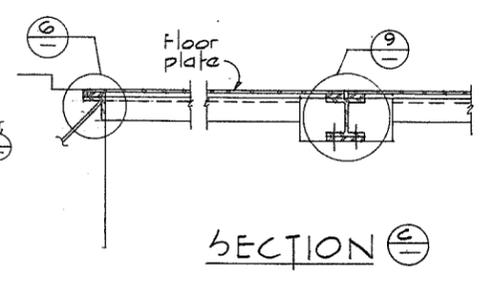
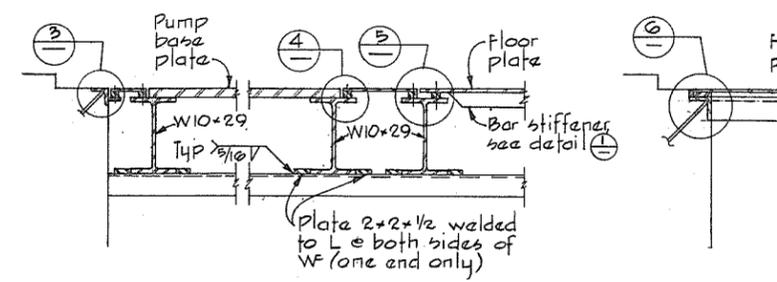
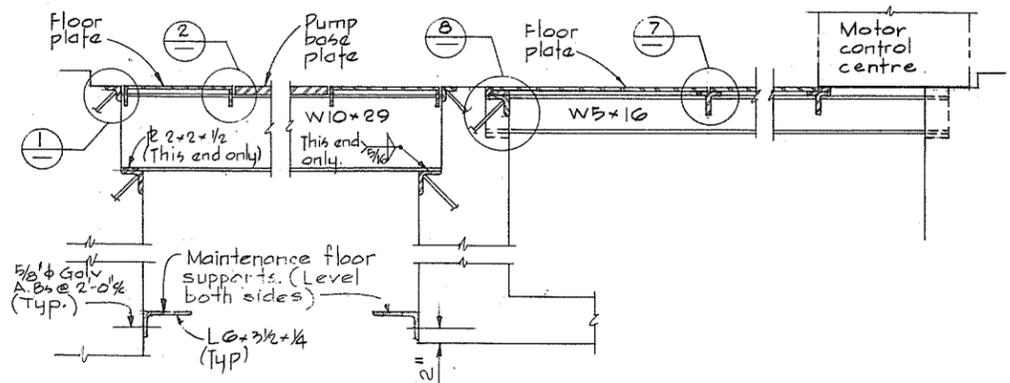
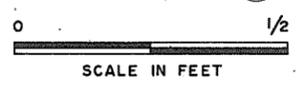
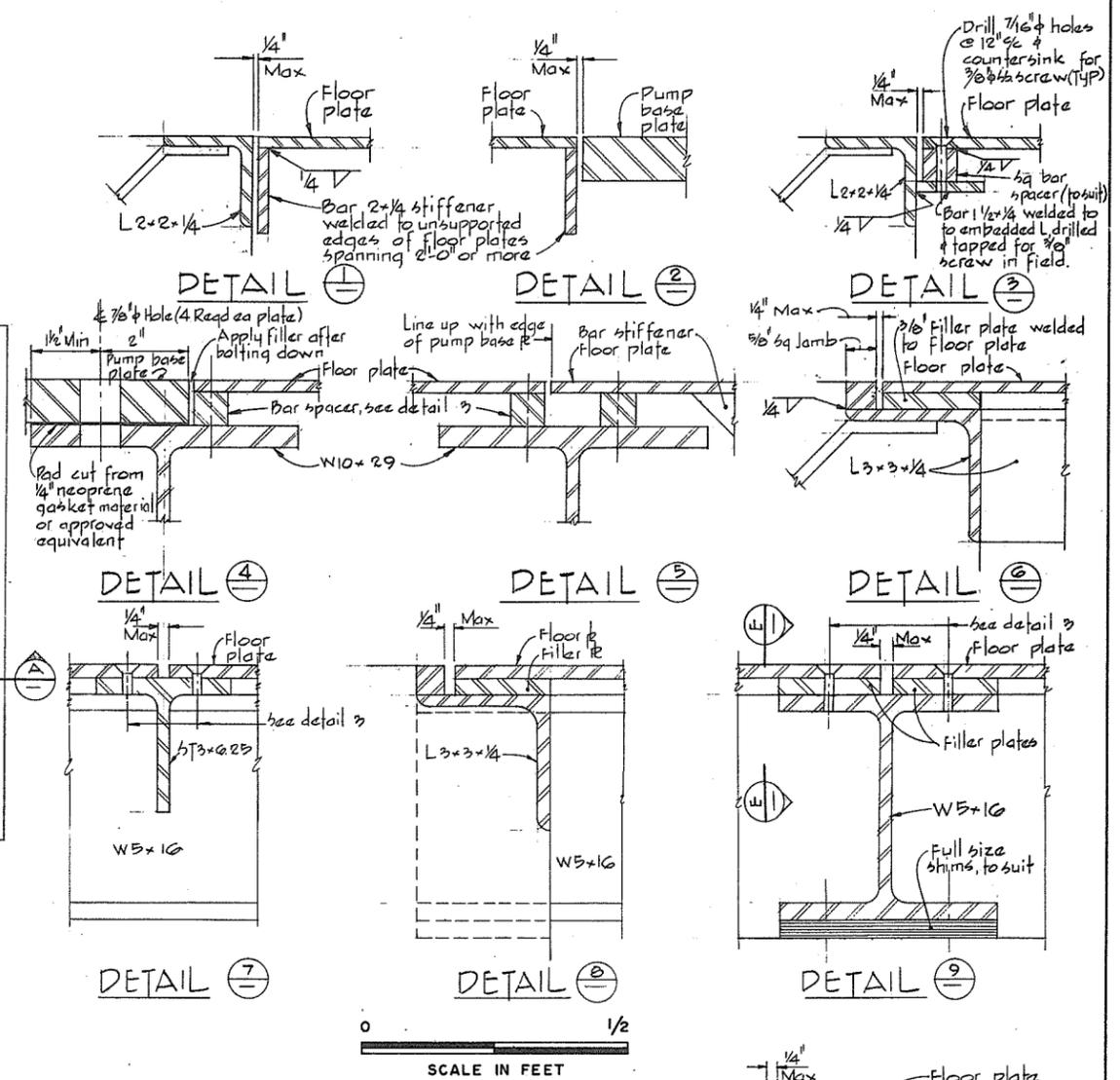




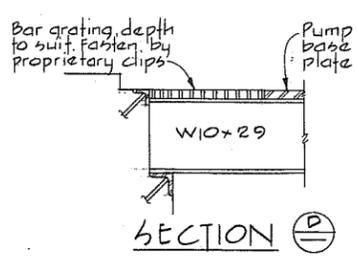
PLAN  
MAIN SUPPORT FRAME



PLAN  
FLOOR PLATES



NOTES  
for General Notes see 4795-B-51



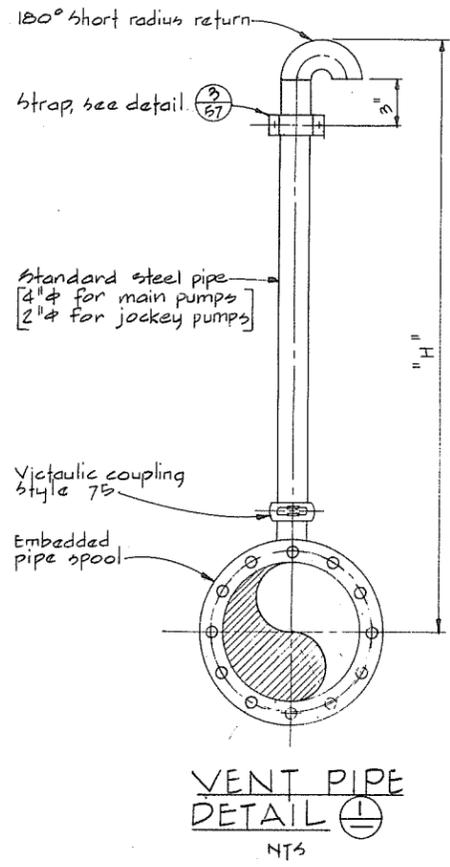
**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	<i>[Signature]</i>
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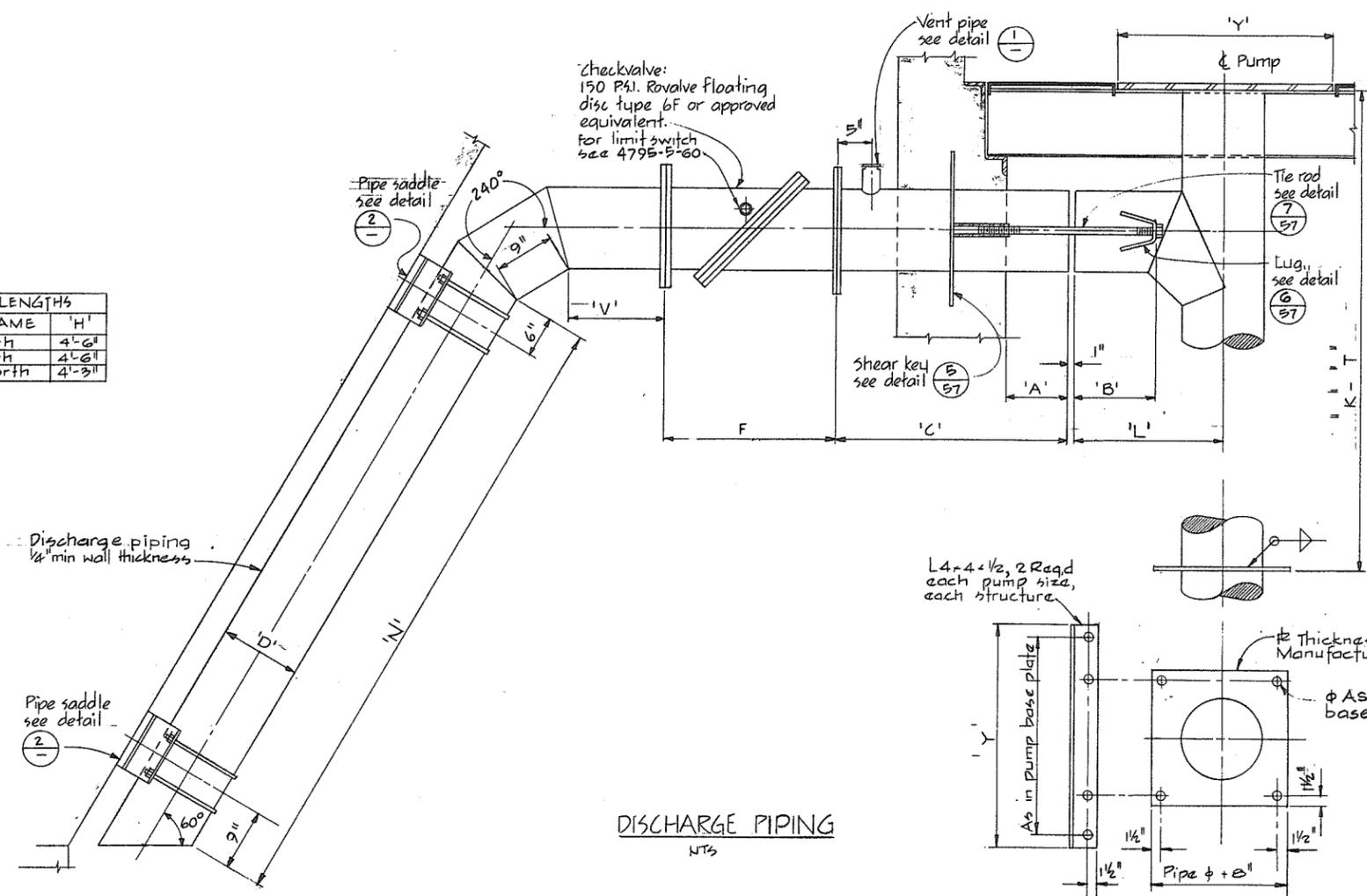
BRITISH COLUMBIA  
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WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
PUMP SUPPORT AND FLOOR PLATING

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N.P. 266210



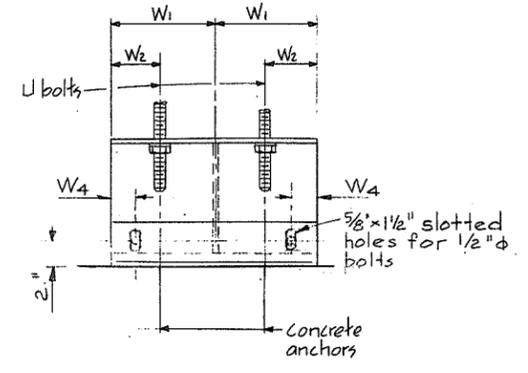
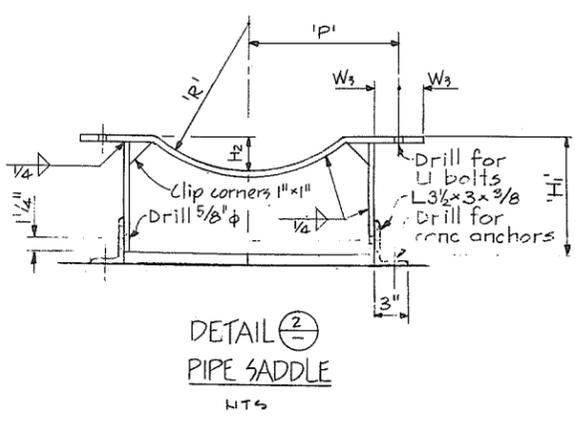
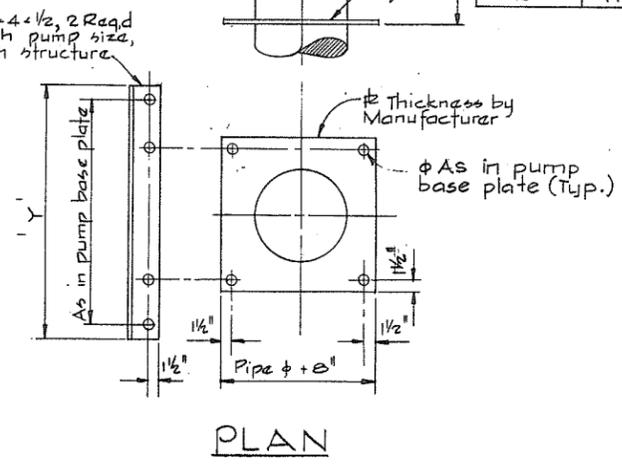
VENT PIPE LENGTHS	
STRUCTURE NAME	'H'
No. 1 Road-North	4'-6"
No. 2 Road-North	4'-6"
McCallan Rd-North	4'-3"



structure names	Main discharge pump							
	D	L	N	V	C	B	A	F
No. 1 Road-North	24"	5'-2"	6'-9 3/8"	3"	3'-3"	1'-2"	1'-2"	2'-0"
No. 2 Road-North	24"	5'-2"	6'-9 3/8"	3"	3'-3"	1'-2"	1'-2"	2'-0"
McCallan Rd-North	18"	5'-11"	5'-7 1/2"	3"	3'-3"	1'-0"	1'-2"	1'-9"

structure names	Jockey discharge pump							
	D	L	N	V	C	B	A	F
No. 1 Road-North	12"	5'-2"	7'-3 7/8"	1 1/4"	3'-3"	1'-0"	1'-2"	2'-1 1/2"
No. 2 Road-North	12"	5'-2"	7'-3 7/8"	1 1/4"	3'-3"	1'-0"	1'-2"	2'-1 1/2"
McCallan Rd-North	10"	5'-11"	5'-11 3/4"	3/2"	3'-3"	0'-11"	1'-2"	1'-9 3/4"

Dimension	No. 1 Rd North	No. 2 Rd North	McCallan Rd-North
'K'	11'-6"	11'-6"	7'-0"



PIPE SADDLE DIMENSIONS											
Nom Size	U Bolts	Concrete Anchors *	Plate thickness	H1	H2	W1	W2	W3	W4	F	
24"	1 1/2"	5/8" φ	3/8"	1'-0"	6 3/4"	4"	6"	3"	1 1/2"	1 1/2"	1'-0 1/2"
18"	1 1/2"	5/8" φ	3/8"	9"	4 3/4"	2"	6"	3"	1 1/2"	1 1/2"	9 1/2"
12"	1 1/2"	1/2" φ	1/4"	6 3/8"	4 5/8"	1 3/8"	5"	2 1/2"	1"	1 1/4"	6 5/8"
10"	1 1/2"	1/2" φ	1/4"	5 3/8"	3 3/4"	1"	5"	2 1/2"	1"	1 1/4"	5 5/8"

\*Concrete anchors shall be Philips "Red Head" selfdrilling anchors or approved equal, with hot dip galv. bolts.

NOTES  
for General Notes see 4795-5-48  
for Notes see 4795-5-48

N.P.

266 211

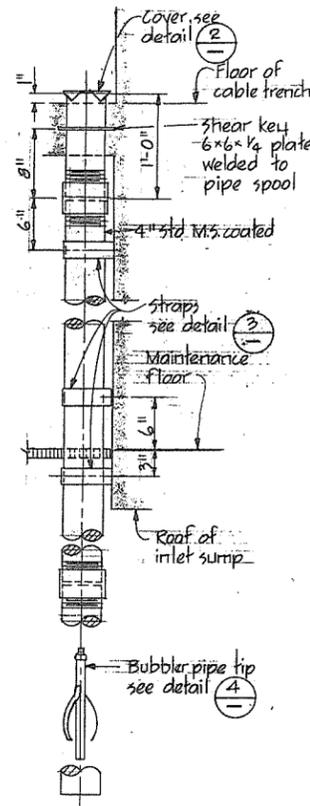


**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

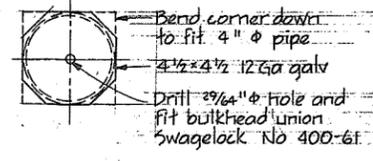
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DATE	Dec 17/68
APPROVED	<i>[Signature]</i>
DATE	Dec 17/68

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 1 RD NORTH, NUMBER 2 RD NORTH, MCCALLAN RD NORTH  
DRAINAGE DISCHARGE STRUCTURES-DISCHARGE PIPING DETAILS

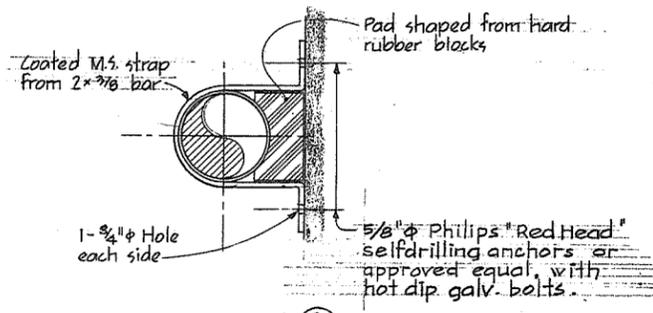
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DRAWN	S	DATE	
CHECKED	HS	FILE NO.	0281550-C10-5
SCALE	As shown	DATE	Dec 1974
DWG. NO.	4795-5-56	SHEET	OF SHEETS



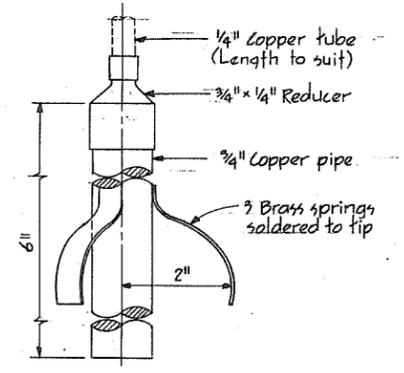
STILLING WELL  
DETAIL 1  
NTS



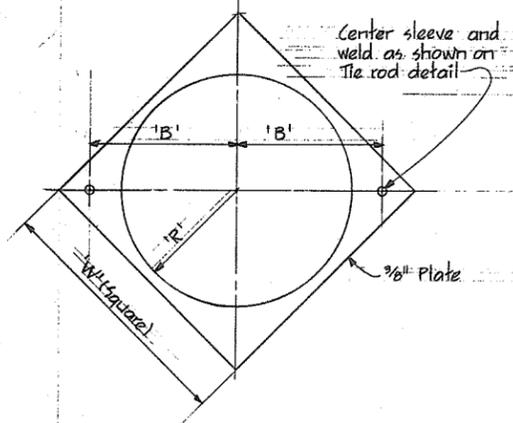
DETAIL 2  
NTS



DETAIL 3  
NTS



DETAIL 4  
NTS



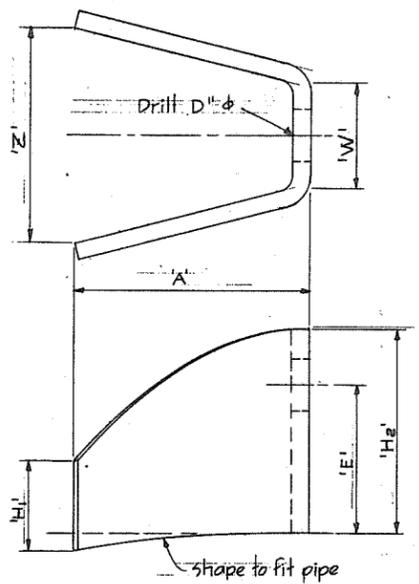
SHEAR KEY  
DETAIL 5  
NTS

SHEAR KEY & TIE ROD DIMENSIONS

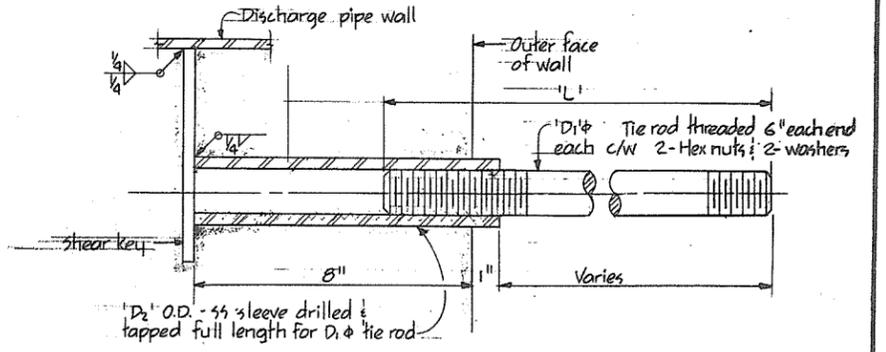
Nominal pipe phi	B	R	W	L	D <sub>1</sub>	D <sub>2</sub>
24"	1-3/8"	1-0"	2-3"	3-0"	1/4"	1 3/4"
18"	1-0 3/8"	0-9"	1-10"	2-10"	1/4"	1 3/4"
12"	9/8"	6 3/8"	1-6 3/8"	2-10"	3/8"	1 1/4"
10"	8 1/2"	5 3/8"	1-5"	2-9"	3/8"	1 1/4"

LUGS

Nominal pipe phi size	A	D phi	E	H <sub>e</sub>	H <sub>t</sub>	W	Z	
24"	1/2"	6 3/4"	1 3/8"	3 3/4"	5"	2 1/2"	2 3/16"	6 1/16"
18"	1/2"	6 3/4"	1 3/8"	3 3/4"	5"	2 1/2"	2 3/16"	6 1/16"
12"	3/8"	3 3/4"	7/8"	3 3/8"	4 1/8"	2"	1 1/16"	3 1/2"
10"	3/8"	3 3/4"	7/8"	3 3/8"	4 1/8"	2"	1 1/16"	3 1/2"



LUG  
DETAIL 6  
NTS



TIE ROD  
DETAIL 7  
NTS

NOTES  
For General Notes see 4795-B-4B  
For Notes see 4795-B-4B



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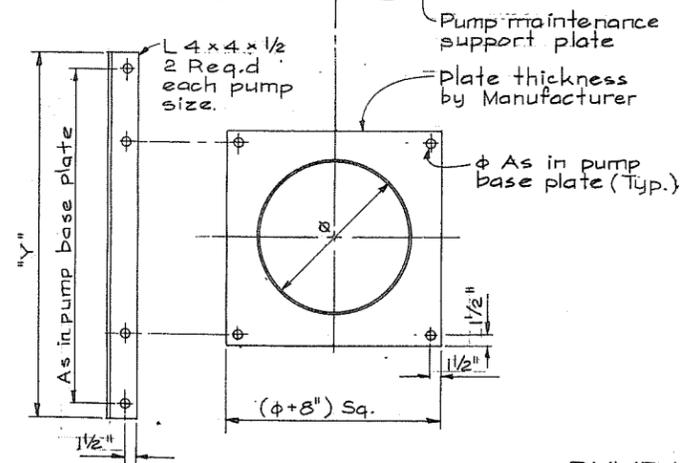
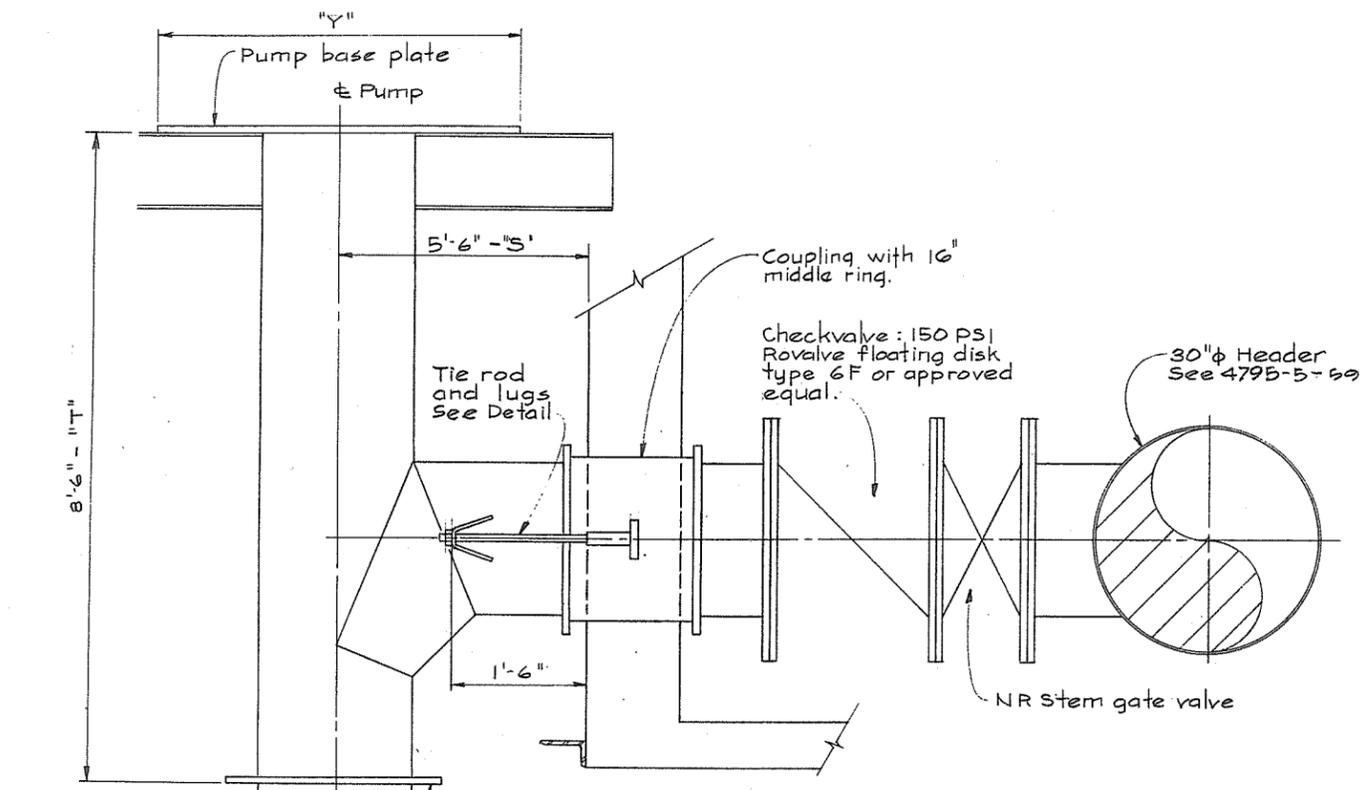
NO.	BY	REVISIONS	DATE

RECOMMENDED *[Signature]*  
DATE *Dec 17/74*  
APPROVED *[Signature]* DIRECTOR  
DATE *Dec 17/74*

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DRAWN <i>G</i>	DATE
CHECKED <i>HS</i>	FILE NO. <i>0281550-C10-3</i>
SCALE <i>As shown</i>	DATE <i>Dec 1974</i>
DWG. NO. <i>4795-5-57</i>	SHEET <i>   </i> OF <i>   </i> SHEETS

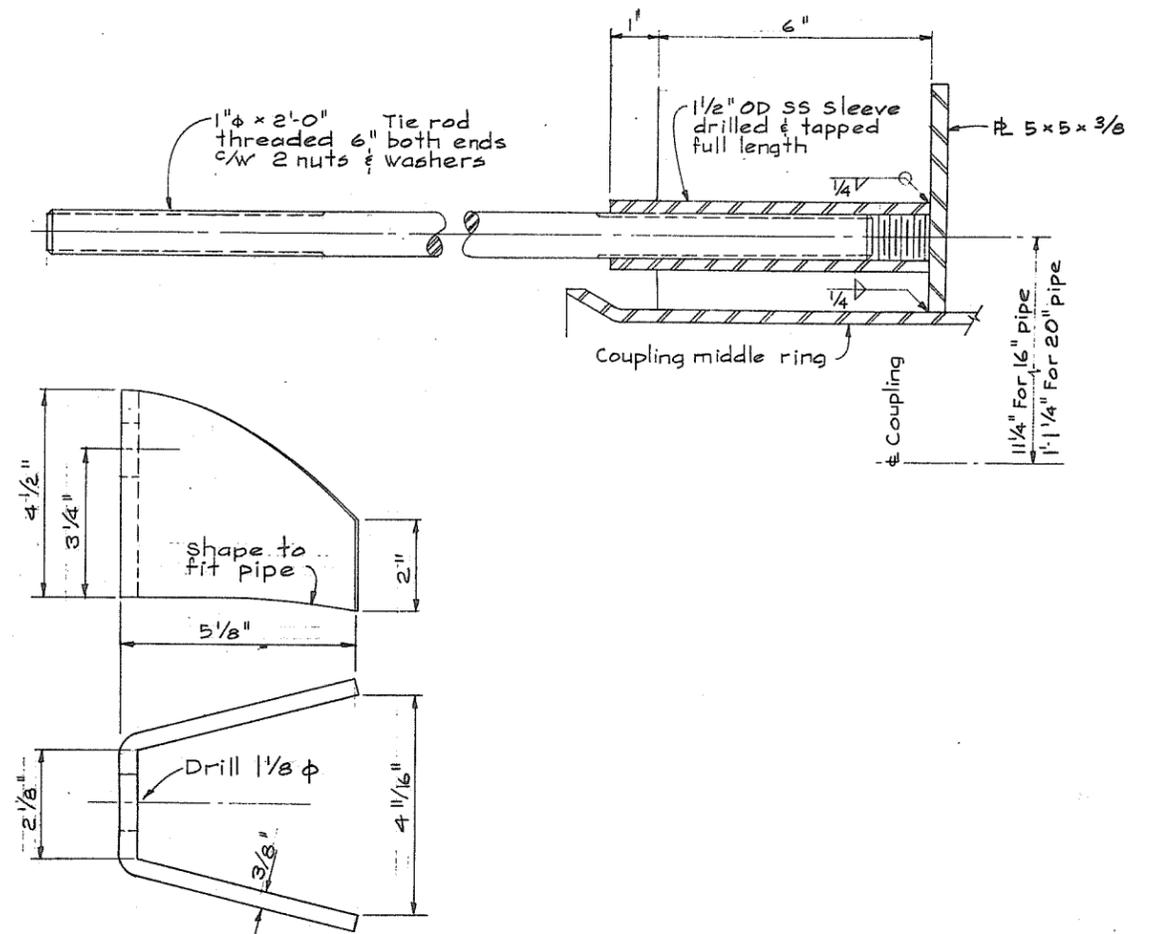
N.P.

266 212



PUMP DISCHARGE PIPING

NTS



TIE ROD AND LUGS

NTS



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CONSULTING ENGINEERS - VANCOUVER - CANADA

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RECOMMENDED *[Signature]*  
DATE *Dec 17/74*

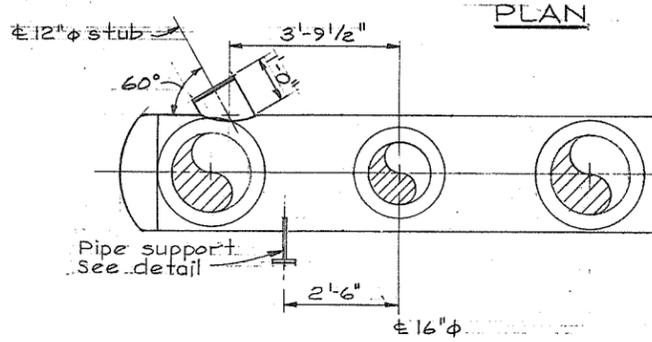
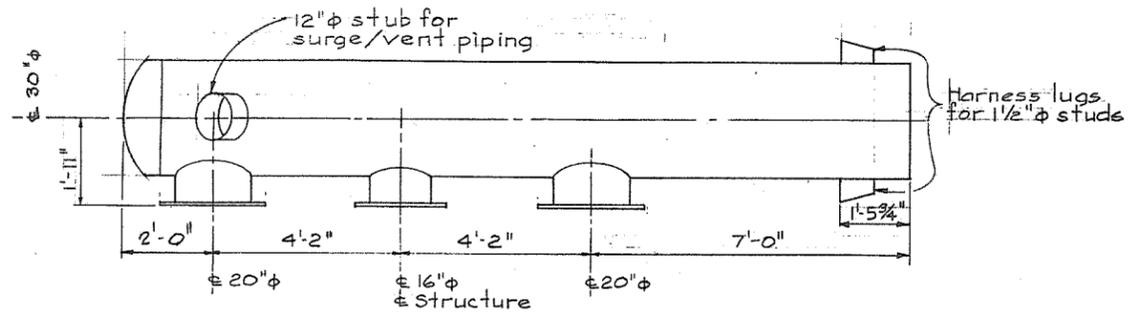
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DATE *Dec 17/74*

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
DISCHARGE PIPING DETAILS

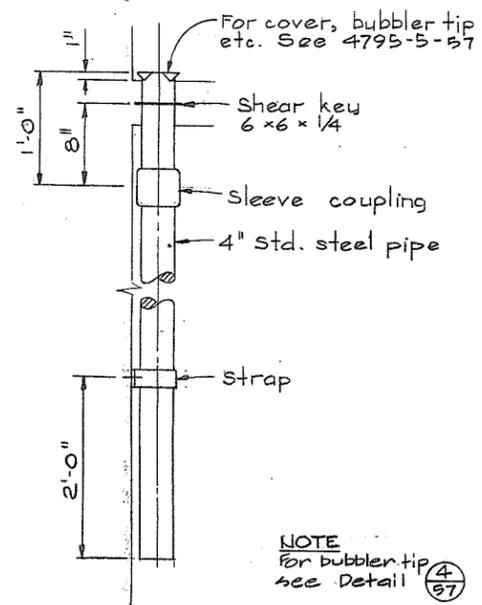
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SCALE As shown	DATE Dec 1974
DWG. NO. 4795-5-58	SHEET 1 OF 2 SHEETS

N.P. 266 213

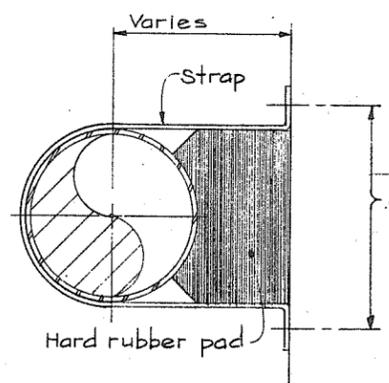


**NOTES**  
 30" Pipe and cap shall have 3/8" wall min., all other pipe shall have 1/4" wall min.  
 Flanges shall be as ASA B 16.1 but 1/16" raised face and bolts to AWWA C 207 class B.  
 12" stub shall be grooved for Victaulic coupling.

**30" φ HEADER**  
 SCALE IN FEET



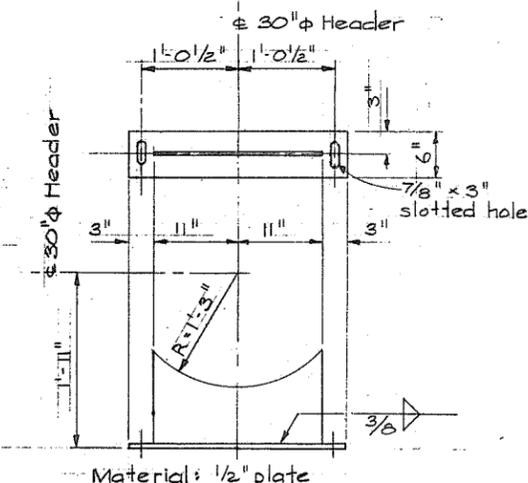
**STILLING WELL**  
 NTS



**STRAP FOR 4" & 12" PIPE**  
 NTS

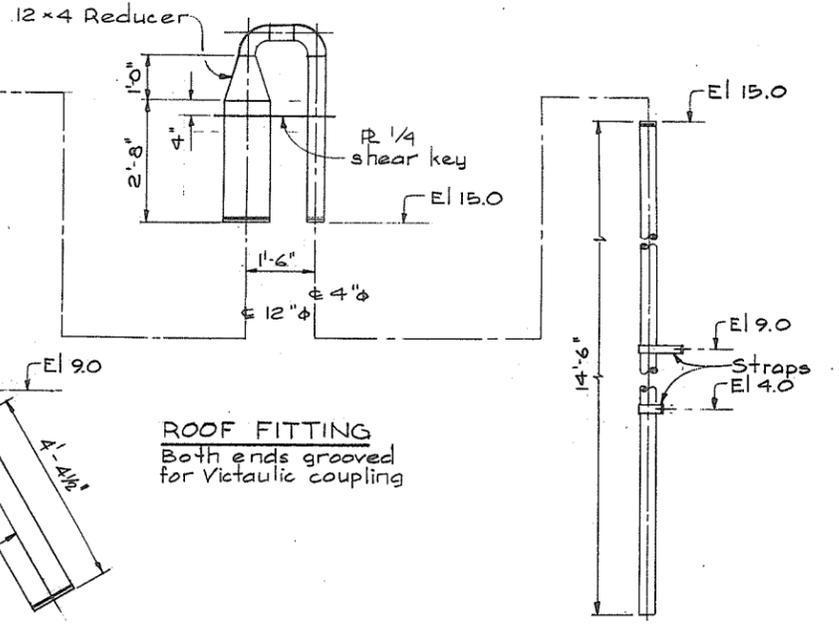
Philips "Red Head" selfdrilling anchors or approved equal, with hot dip galv. bolts.  
 1/2" φ for 4" pipe,  
 5/8" φ for 12" pipe.

Strap shall be 1/4 Bar, 2" wide for 4" pipe, 4" wide for 12" pipe. Width of hard rubber pad same as strap.



**PIPE SUPPORT FOR 30" φ HEADER**  
 NTS

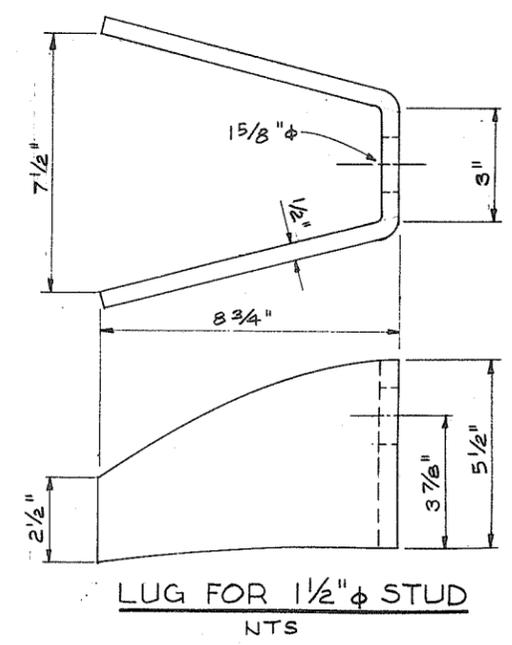
12" φ PIPE  
 1/4" wall, both ends grooved for Victaulic coupling



**ROOF FITTING**  
 Both ends grooved for Victaulic coupling

4" φ PIPE  
 Std. steel pipe; one end grooved for Victaulic coupling

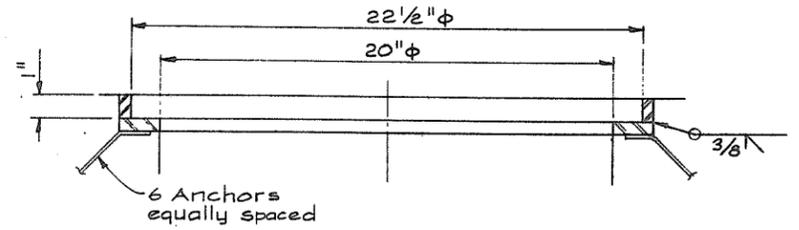
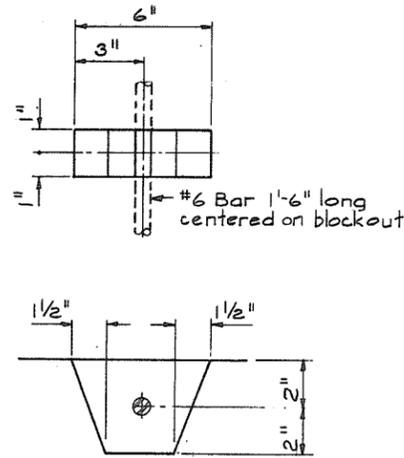
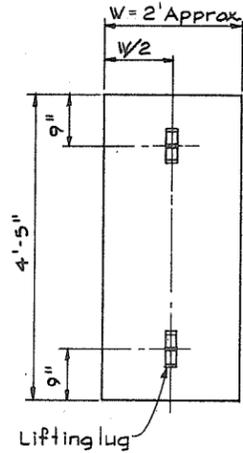
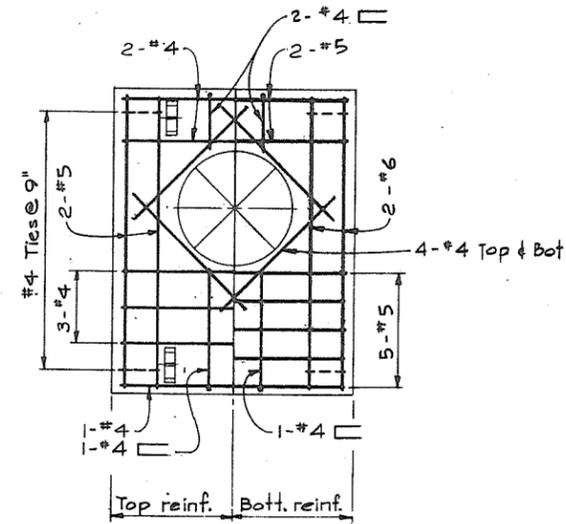
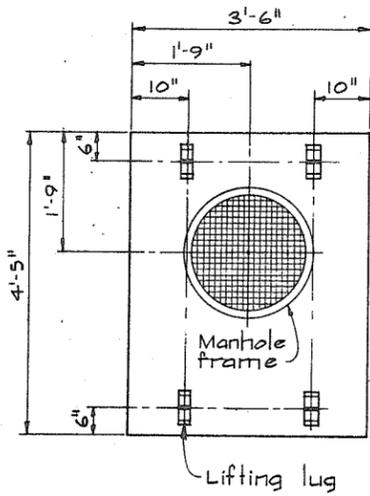
**SURGE/VENT PIPING**  
 SCALE IN FEET



**LUG FOR 1 1/2" φ STUD**  
 NTS



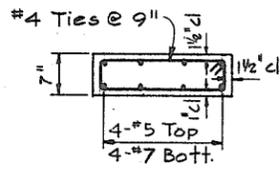
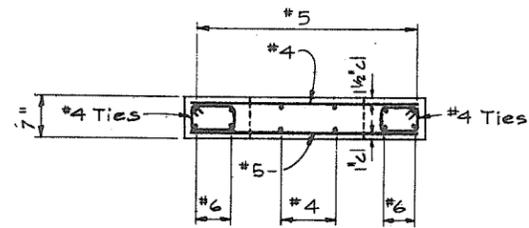
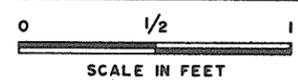
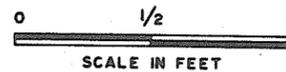
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	PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE DISCHARGE PIPING DETAILS		N.P. 266 214				



Frame fabricated from 1/2" M.S. plate. For cover use Mainland Foundry or equal Pattern No. 3R-12A with "RICHMOND STORM SEWER" cast on cover in raised letters.

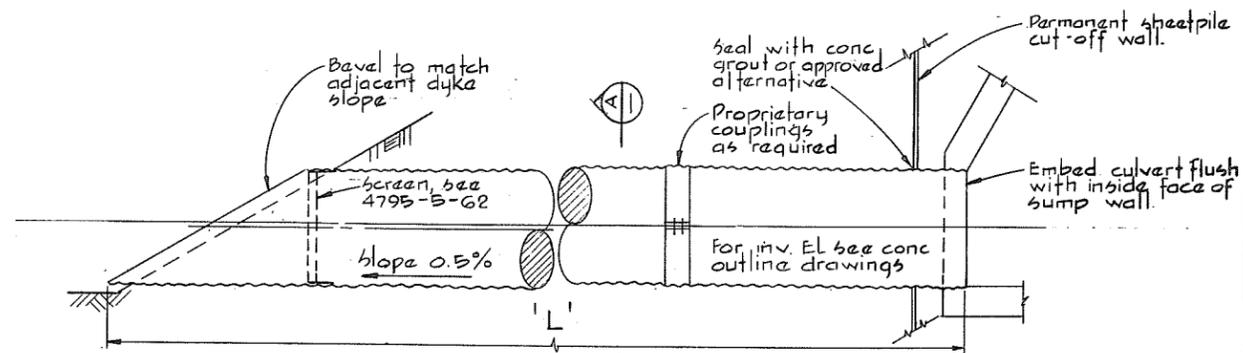
LIFTING LUG

MANHOLE FRAME



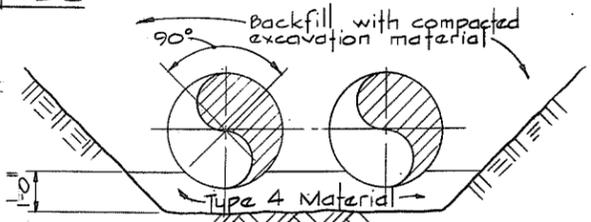
PRECAST COVER W/MANHOLE

PRECAST COVER



PROFILE

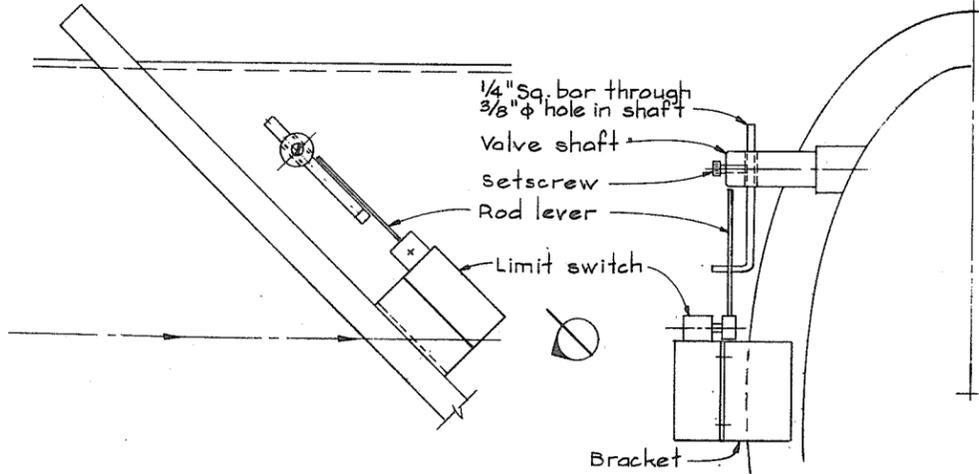
LOCATION	NO REQ'D & DIA	H-B GA	LENGTH
No. 1 Rd-North	2-34" φ	10	32'-0"
No. 2 Rd-North	2-34" φ	10	45'-6"
Mc Callan Rd-N	1-34" φ	10	86'-6"
Gilbert Rd-N	2-34" φ	10	62'-0"



SECTION A

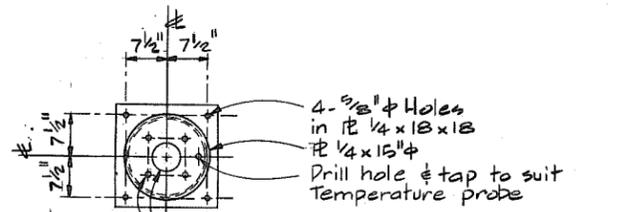
GRAVITY DISCHARGE PIPES

Not to scale

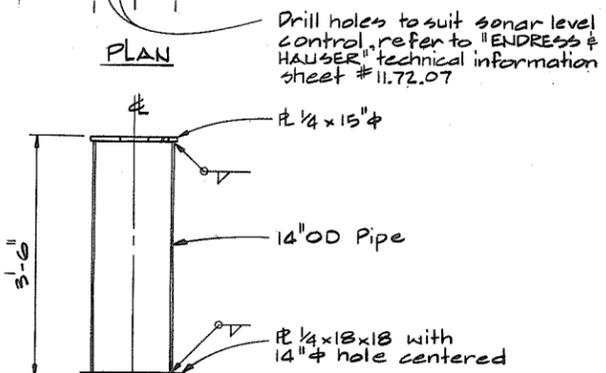


CHECK VALVE LIMIT SWITCH - GEN. ARR.

NTS



PLAN



SECTION

SONAR LEVEL DETECTOR MOUNT

7-REQD



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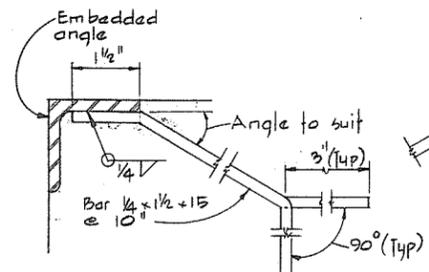
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DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 17/74

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
DRAINAGE DISCHARGE STRUCTURES  
MISCELLANEOUS DETAILS

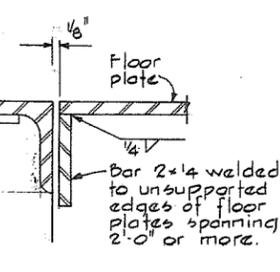
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SCALE	As shown	DATE	Dec 1974
DWG. NO.	4795-5-60	SHEET	1 OF 2 SHEETS

N.P.

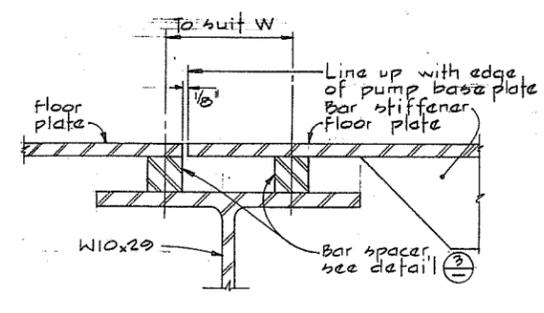
266 215



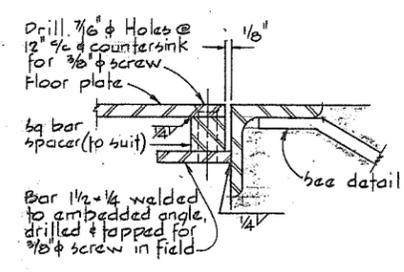
TYPICAL DETAIL  
EMBEDMENT ANCHOR



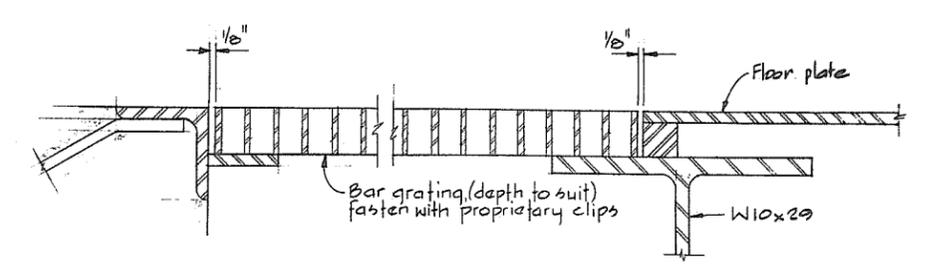
DETAIL 1



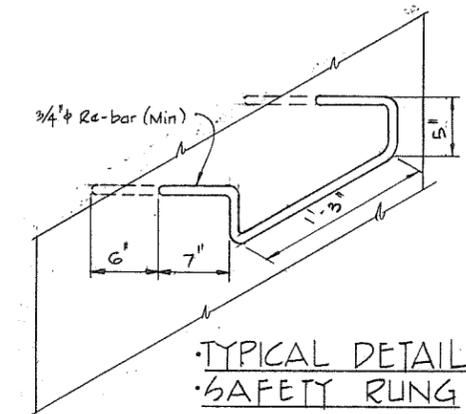
DETAIL 2  
MAIN FLOOR  
FLOOR PLATES



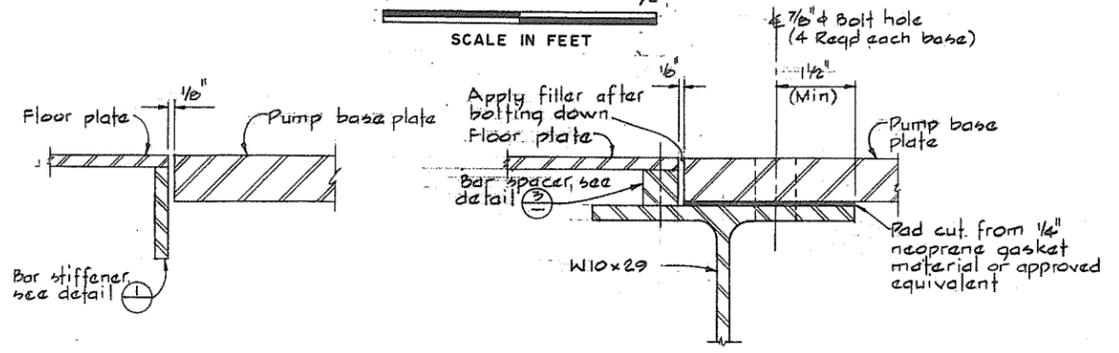
DETAIL 3  
OPPOSITE HAND



SECTION K

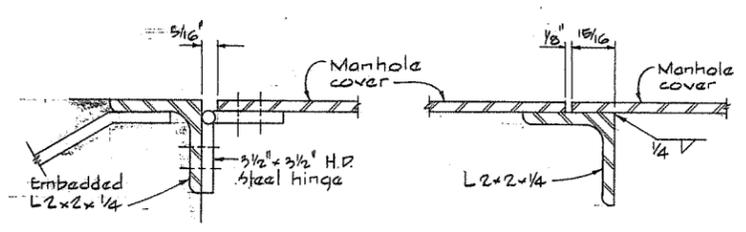


TYPICAL DETAIL  
SAFETY RUNG



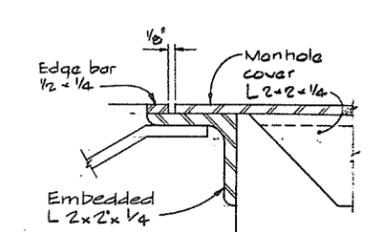
DETAIL 4

MAIN FLOOR  
PUMP BASE

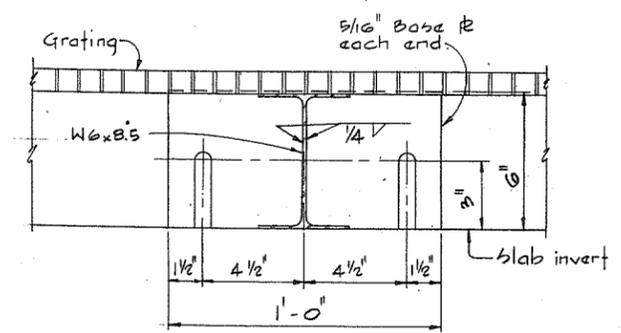


DETAIL 5

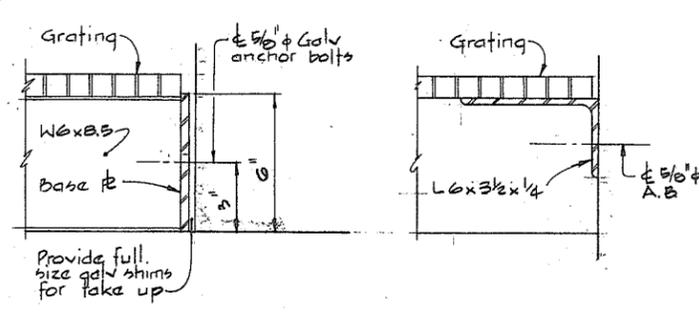
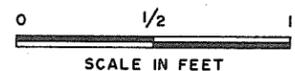
DETAIL 7  
MANHOLE DETAILS



DETAIL 6

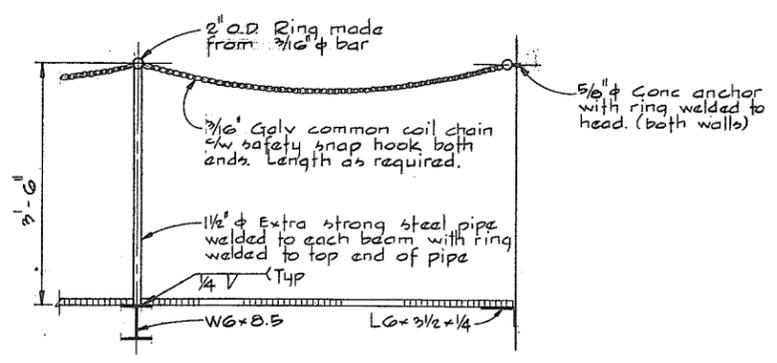


SECTION G



SECTION H

SECTION J  
MAINTENANCE FLOOR



SECTION L



NOTES:  
For General Notes see 4795-5-48  
For Notes see 4795-5-48



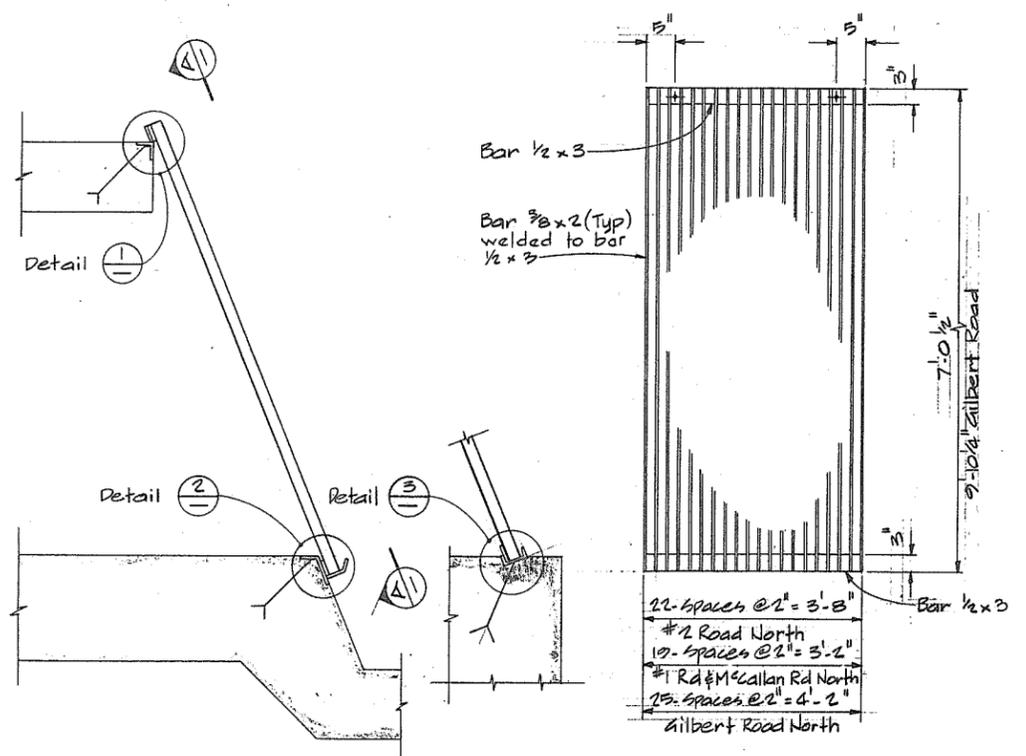
**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	<i>[Signature]</i>
DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 18/74

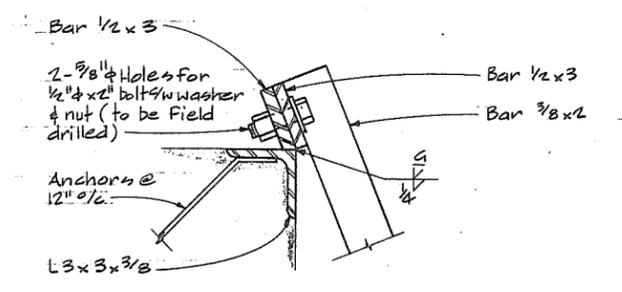
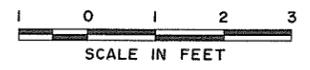
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DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
DRAINAGE DISCHARGE STRUCTURES  
MISCELLANEOUS DETAILS

DESIGNED	GA	SURVEYED	
DRAWN	H.W.	DATE	
CHECKED	HS	FILE NO.	0281550-C10-5
SCALE	As shown	DATE	Dec 1974
DWG. NO.	4795-5-61	SHEET	2 OF 2 SHEETS

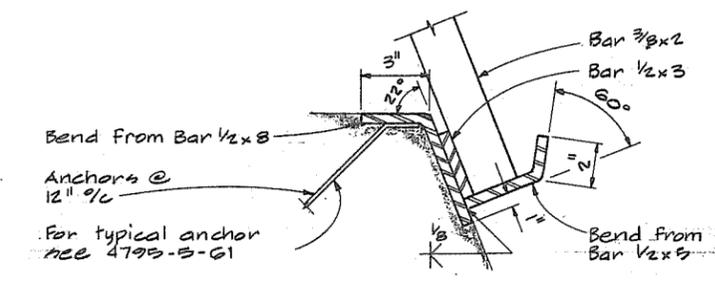
N.P. 266 216



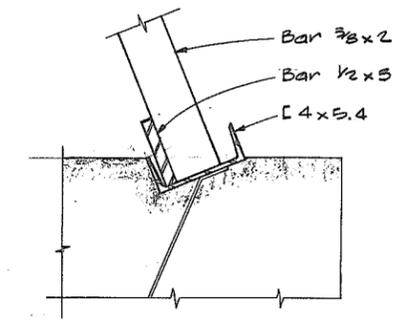
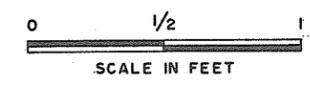
**ENTRY SCREEN**  
#1 ROAD NORTH ENTRY CULVERT  
#2 ROAD NORTH ENTRY CULVERT  
McCALLAN ROAD ENTRY CULVERT  
GILBERT ROAD NORTH DISCHARGE STRUCTURE



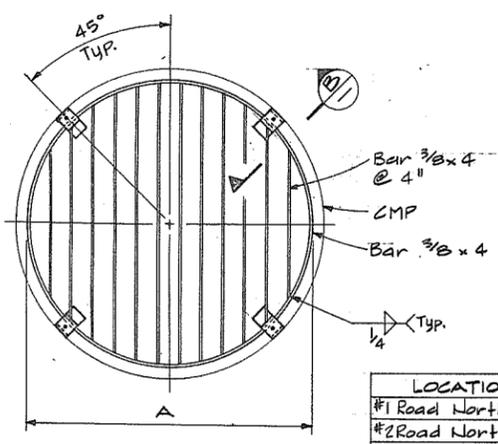
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**DETAIL 2**

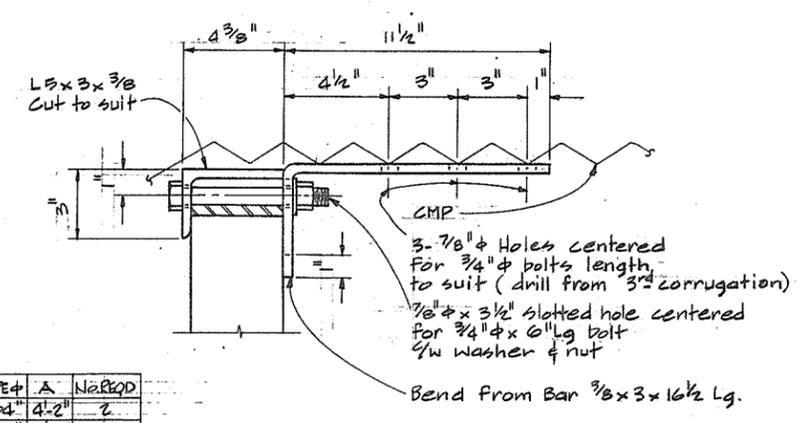


**DETAIL 3**  
GILBERT ROAD NORTH

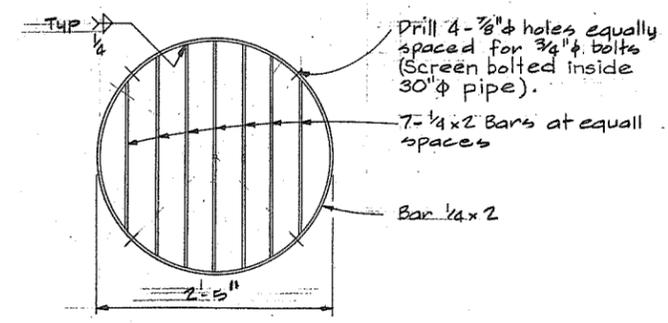
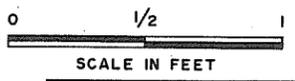


**OUTLET SCREEN**  
NTS

LOCATION	PIPE $\phi$	A	No. REQD
#1 Road North	54"	4'-2"	2
#2 Road North	54"	4'-2"	2
McCallan Road	54"	4'-2"	1
Gilbert Road	84"	6'-8"	2



**SECTION B**  
4-REQD PER SCREEN



**OUTLET SCREEN**  
1-REQD @ GILBERT ROAD NORTH  
NTS



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED *[Signature]*  
PROJECTS DIV.  
DATE *Dec 17/74*  
APPROVED *[Signature]*  
DIRECTOR  
DATE *Dec 17/74*

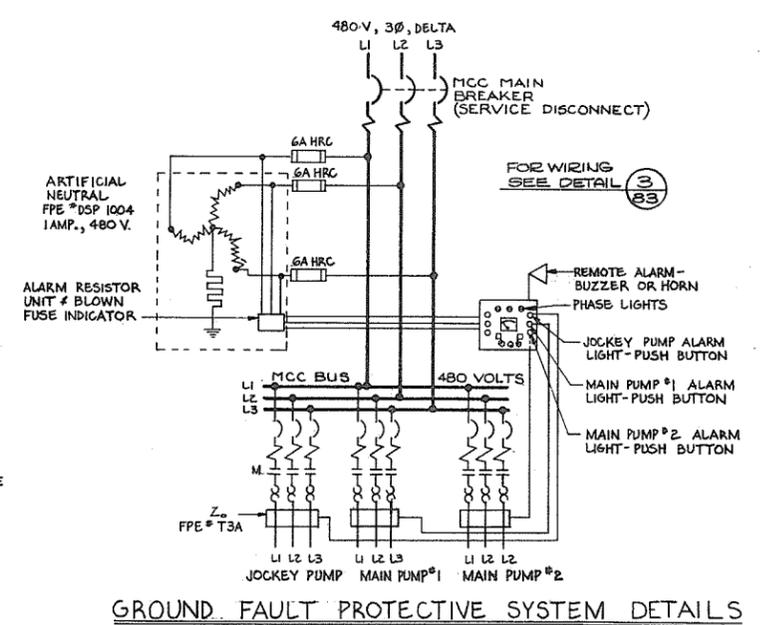
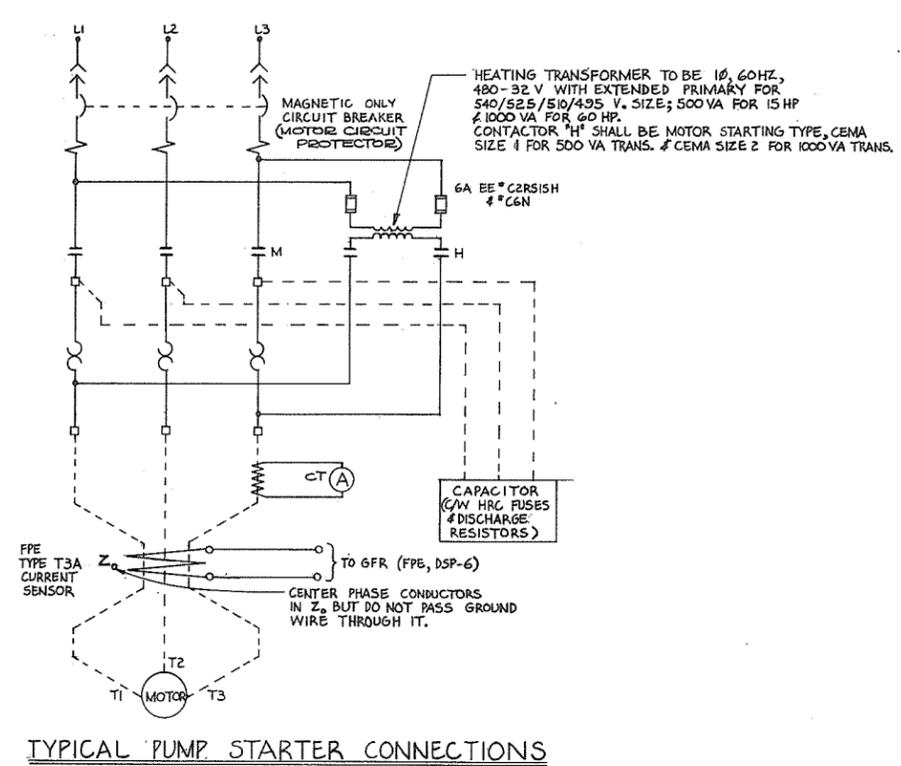
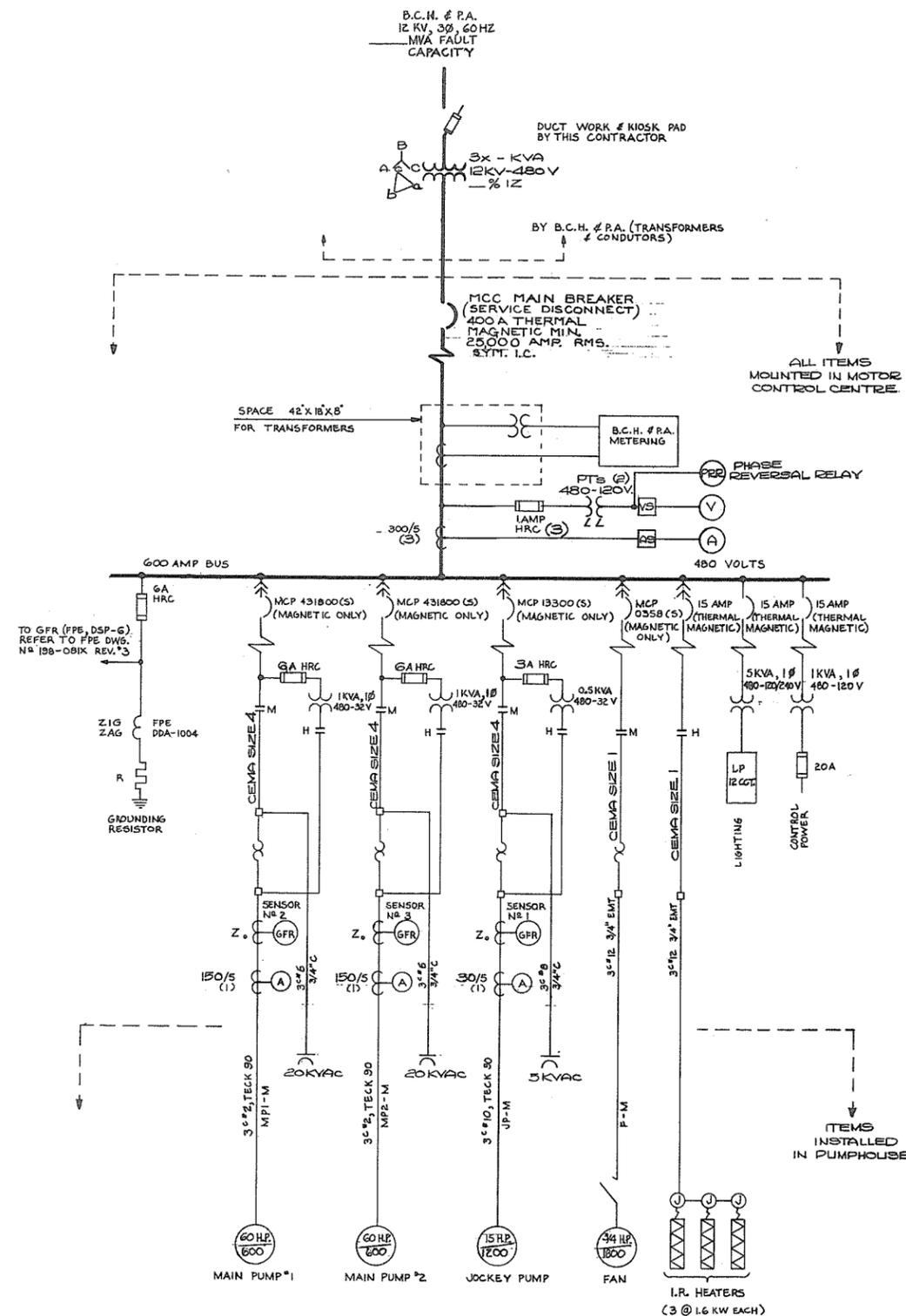
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
DRAINAGE DISCHARGE STRUCTURES  
MISCELLANEOUS SCREENS

DESIGNED	H5	SURVEYED
DRAWN	AR	DATE
CHECKED	H5	FILE NO.
SCALE	As shown	DATE
DWG. NO.	4795-5-62	SHEET

N.P. 266 217

**GENERAL NOTES**

1. THE ENTIRE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE CANADIAN ELECTRICAL CODE PART I (11TH EDITION) AND/OR THE ELECTRICAL ENERGY INSPECTION ACT OF BRITISH COLUMBIA AS ENFORCED BY THE DEPARTMENT OF PUBLIC WORKS, ELECTRICAL ENERGY INSPECTION BRANCH AND ALL REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION.
2. ALL ELECTRICAL EQUIPMENT AND MATERIAL SHALL BE NEW AND CSA APPROVED WHERE STANDARDS HAVE BEEN ESTABLISHED BY THE AGENCY.
3. THE ENTIRE INSTALLATION SHALL COMPLY WITH THE SPECIFICATION FOR PROJECT 3 CONTRACT 5. THE CONTRACTOR SHALL REFER TO THIS SPECIFICATION FOR DETAILED INSTALLATION INSTRUCTIONS AND MATERIAL SUPPLY.
4. FOR LEGEND REFER TO DWG. NO. 4795-5-72
5. LOCATION OF BLOCKOUTS IN CONCRETE AND PLACING OF EMBEDDED CONDUIT AND SLEEVES SHALL BE CO-ORDINATED WITH THE OTHER TRADES.
6. FOR BUILDING DETAILS REFER TO ARCHITECTURAL DWGS. NO. 4795-5-84 TO 4795-5-91.
7. FOR SERVICE DETAILS AND SITE PLAN REFER TO DWG. NO. 4795-5-24.



PREPARED BY:  
**M.A. THOMAS & ASSOCIATES LTD.**  
CONSULTING ENGINEERS  
VANCOUVER, B.C. — CANADA.

REFERENCE: 1067

**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED: *[Signature]*  
PROJECTS DIV.

DATE: Dec 17/74

APPROVED: *[Signature]*  
DIRECTOR

DATE: Dec 14/74

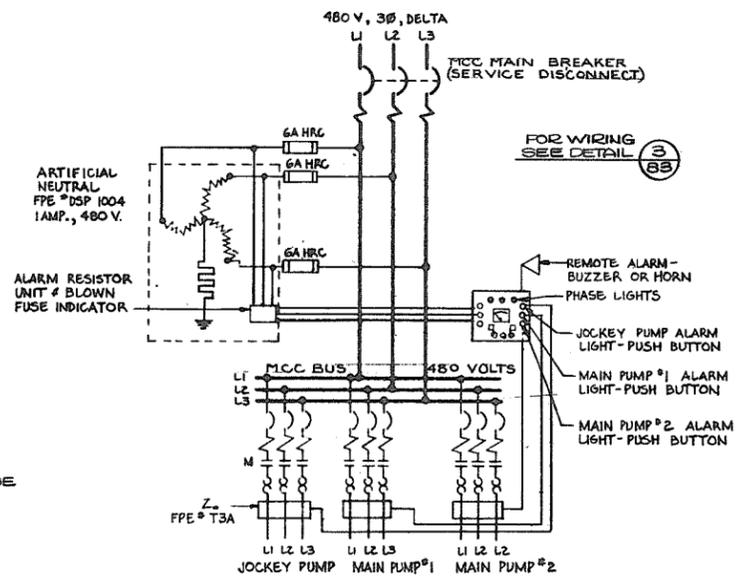
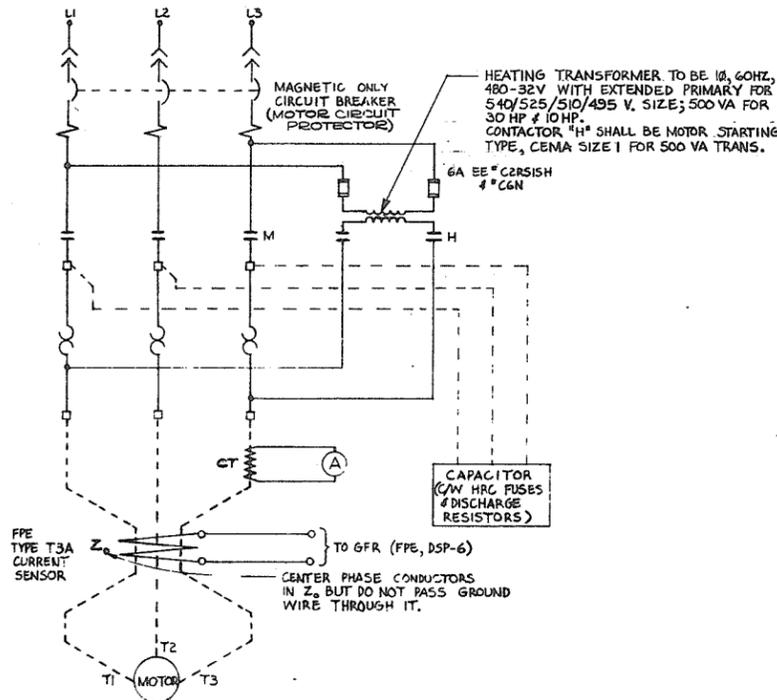
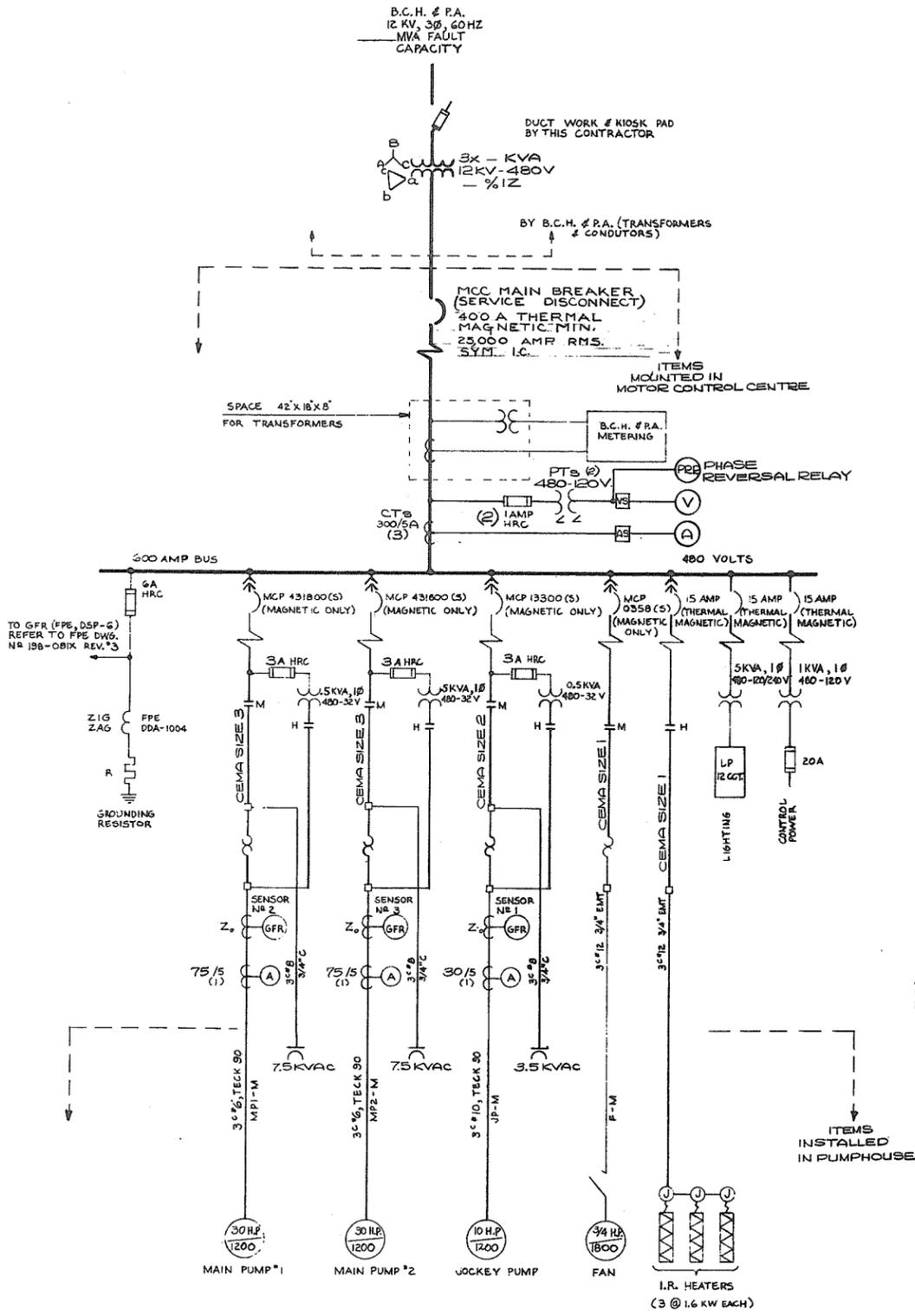
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA — BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 — THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NO. 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ONE LINE ELECTRICAL DIAGRAM

DESIGNED: NB	SURVEYED:
DRAWN: TW/FH	DATE:
CHECKED: MNB	FILE NO. 0281550-C10-5
SCALE: NONE	DATE: DEC. 1974
DWG. NO. 4795-5-63	SHEET OF SHEETS

N.P. 266 218

**NOTES:**  
 1) FOR GENERAL NOTES REFER TO DWG. NO. 4795-5-63  
 2) FOR SERVICE DETAILS AND SITE PLAN REFER TO DWG. NO. 4795-5-25.



ONE LINE DIAGRAM

GROUND FAULT PROTECTIVE SYSTEM DETAILS

N.P.

266 219



PREPARED BY:  
**M.A. THOMAS & ASSOCIATES LTD.**  
 CONSULTING ENGINEERS  
 VANCOUVER, B.C. - CANADA.



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED: *[Signature]*  
 DATE: Dec 17/74  
 APPROVED: *[Signature]*  
 DATE: Dec 18/74

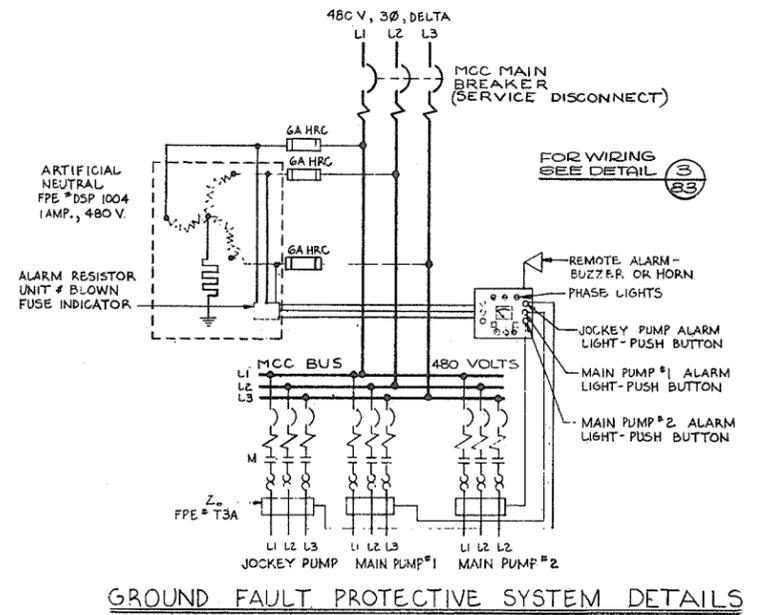
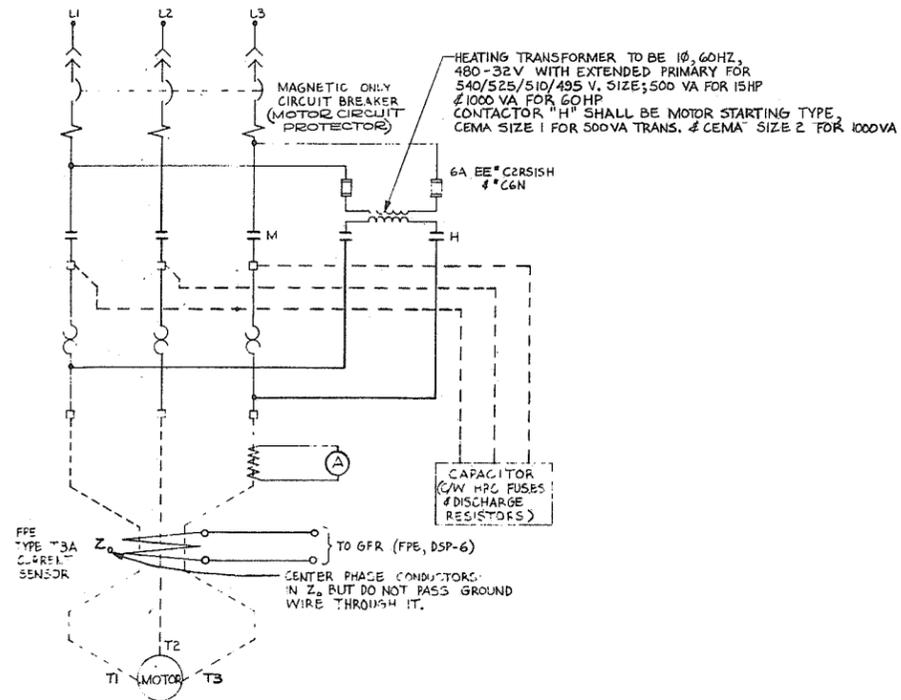
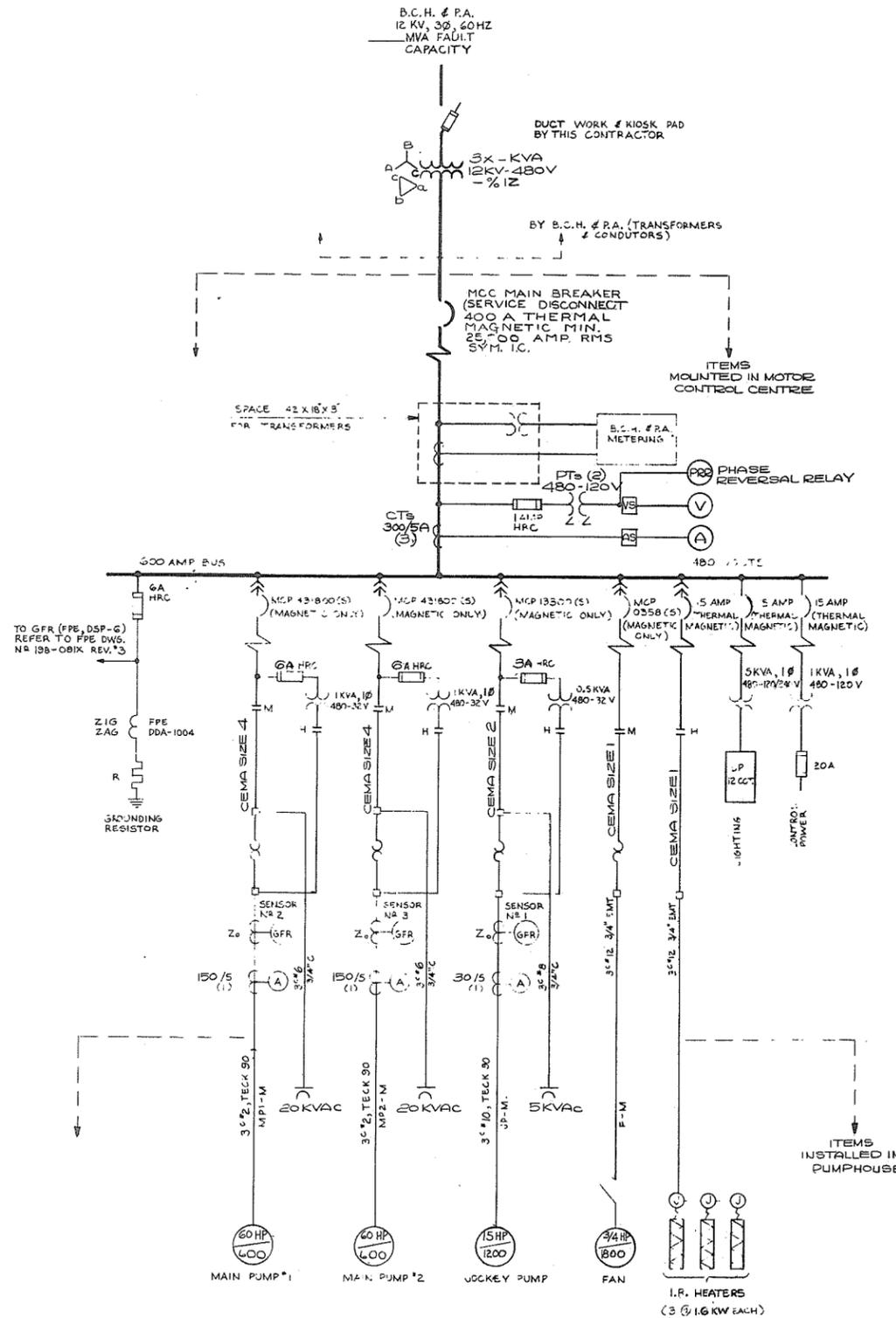
BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 McCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ONE LINE ELECTRICAL DIAGRAM

DESIGNED	NB	SURVEYED
DRAWN	TW/FH	DATE
CHECKED	MNB	FILE NO. 0281550-C10-5
SCALE	NONE	DATE DEC. 1974
DWG. NO.	4795-5-64	SHEET OF SHEETS

**NOTES:**

- 1) FOR GENERAL NOTES REFER TO DWG. NO. 4795-5-63
- 2) FOR SERVICE DETAILS AND SITE PLAN REFER TO DWG. NO. 4795-5-26.



ONE LINE DIAGRAM

TYPICAL PUMP STARTER CONNECTIONS

GROUND FAULT PROTECTIVE SYSTEM DETAILS

N.P. 266 220

11/27/74  
MNB

PREPARED BY:  
**M.A. THOMAS & ASSOCIATES LTD.**  
CONSULTING ENGINEERS  
VANCOUVER, B.C. CANADA.

REFERENCE: 1067

**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

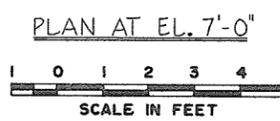
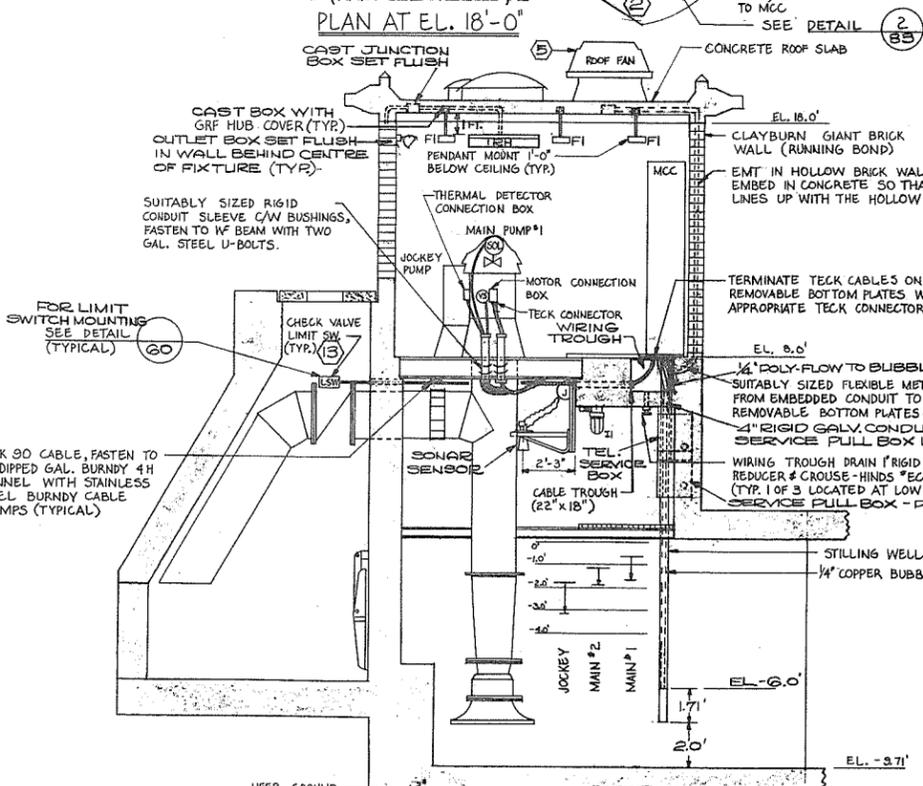
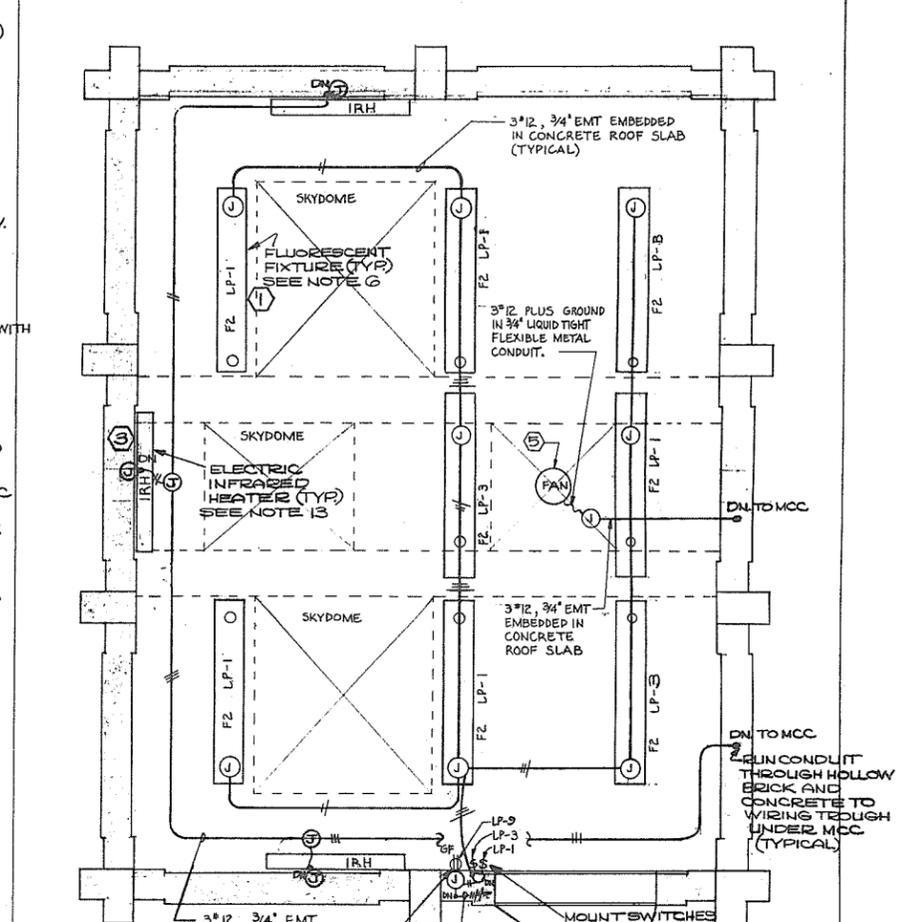
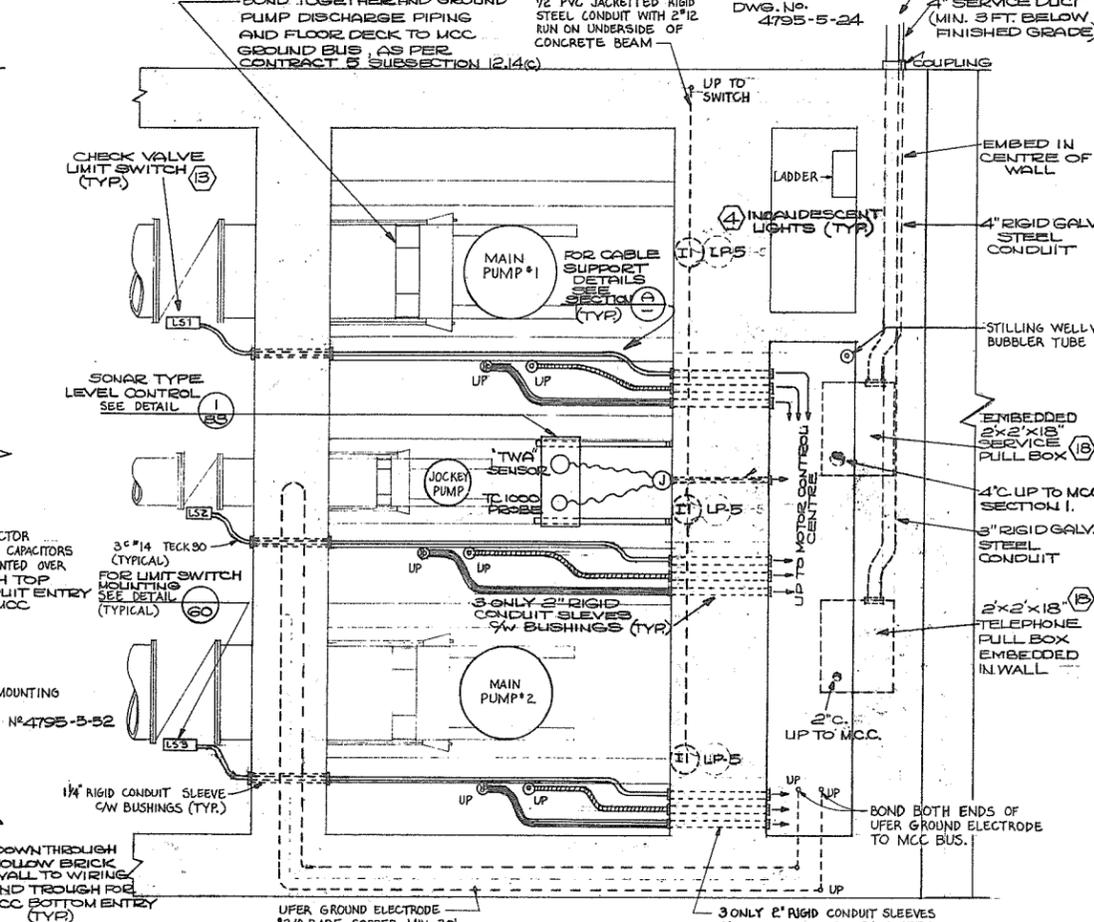
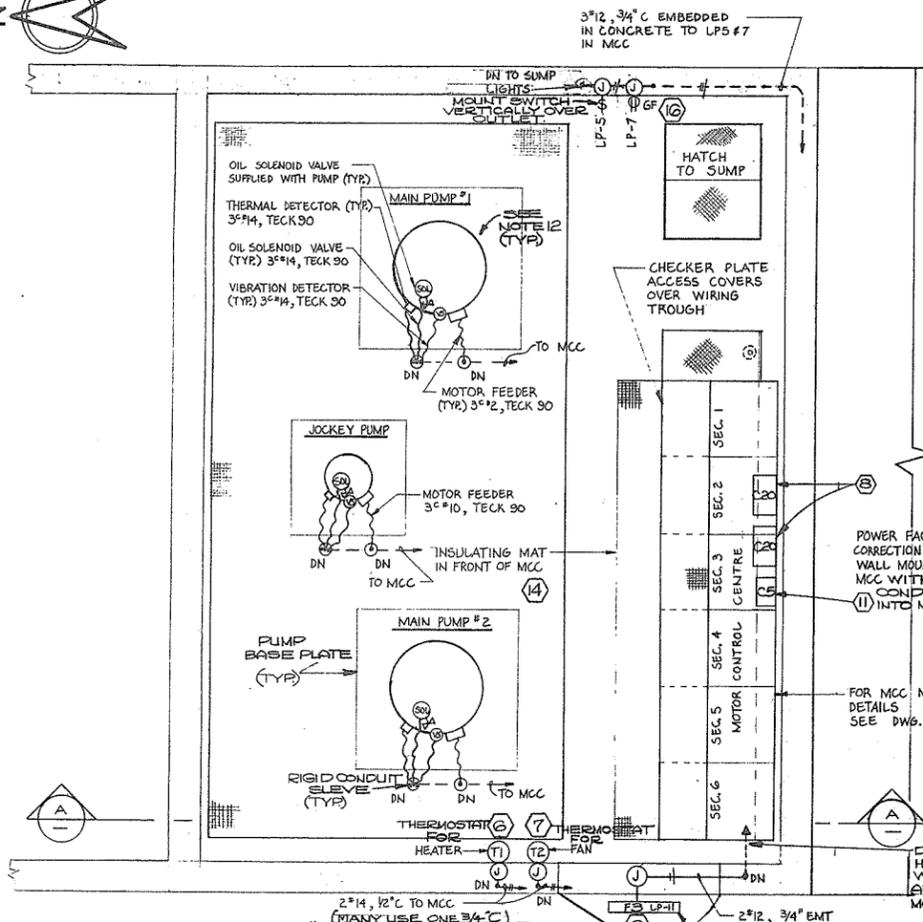
RECOMMENDED	<i>[Signature]</i> CHIEF, PROJECTS DIV.
DATE	Dec 11/74
APPROVED	<i>[Signature]</i> DIRECTOR
DATE	Dec 15/74

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA — BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 — THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NO. 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ONE LINE ELECTRICAL DIAGRAM

DESIGNED	NB	SURVEYED	
DRAWN	TW/EH	DATE	
CHECKED	MNB	FILE NO.	0281550-C10-5
SCALE	NONE	DATE	DEC. 1974
DWG. NO.	4795-5-65	SHEET	OF SHEETS





SINGLE PHASE, 3 WIRE, S.N., 120/240 VOLTS

LOAD (WATTS)	DESCRIPTION	QTY. NR.	S.N.	QTY. NR.	DESCRIPTION	LOAD (WATTS)
500	INTERIOR FLUORESCENT LIGHTS	1	ISA	1	SPARE BKR.	
300	INTERIOR FLUORESCENT LIGHTS	3	ISA	4	SPARE BKR.	
600	SUMP LIGHTS	5	ISA	6	SPARE BKR.	
500	RECEPTACLE ON EAST WALL	7	ISA	8	SPARE BKR.	
500	RECEPTACLE AT DDDR	9	ISA	10	SPARE BKR.	
75	EXTERIOR FLUORESCENT LIGHT	11	ISA	12	SPARE BKR.	

MOTOR CONTROL CENTRE LIGHTING PANEL "LP"

	START	STOP	LOW LEVEL LOCKOUT	HIGH LEVEL ALARM
JOCKEY PUMP :	-1.80'	-3.05'	-3.55'	
MAIN PUMP #2 :	-1.15'	-1.85'	-2.35'	0.0'
MAIN PUMP #1 :	-0.60'	-1.60'		

PUMP OPERATING LEVELS

NOTES

- FOR SITE PLAN SEE DWG. NO. 4795-5-24. FOR CONCRETE OUTLINE SEE DWG. NO. 4795-5-28. FOR ARCHITECTURAL DETAILS SEE DWG. NO. 4795-5-84. FOR ROOF PLAN SEE DWG. NO. 4795-5-47&84. FOR FLOOR DETAILS SEE DWG. NO. 4795-5-52.
- FOR GENERAL NOTES REFER TO DWG. NO. 4795-5-63
- FOR LEGEND REFER TO DWG. NO. 4795-5-72
- FOR KEY TO MATERIAL ITEMS REFER TO DWG. NO. 4795-5-83
- FOR SERVICE DETAILS REFER TO "SITE PLAN" DWG. NO. 4795-5-24
- LIGHT FIXTURES SHALL BE MOUNTED ON STEM HANGERS.
- ALL WIRING SHALL BE CONCEALED AND ALL BOXES SET FLUSH EXCEPT IN PUMPHOUSE SUMP.
- ALL CONDUITS SHALL HAVE ONE INSULATED, GREEN, GROUND WIRE IN ADDITION TO THE CONDUCTORS SHOWN.
- ALL CABLES AND CONDUITS SHALL ENTER THE MCC FROM THE BOTTOM.
- FOR DETAILED WIRING INSTRUCTIONS REFER TO CONTRACT 5 SPECIFICATIONS.
- EMT SHALL BE USED IN DRY LOCATIONS ONLY AND SHALL BE OF STEEL.
- PUMPS, PUMP MOTORS, VIBRATION SENSORS AND OIL SOLENOID VALVES WILL BE SUPPLIED BY OTHERS BUT INSTALLED AND CONNECTED BY THIS CONTRACTOR.
- INSTALL AND ADJUST INFRARED HEATERS SO THAT HEAT OUTPUT IS AIMED DOWNWARDS AND IS NOT DIRECTED TOWARDS LIGHTING FIXTURES OR OTHER EQUIPMENT THAT MAY BE DAMAGED BY HIGH TEMPERATURES.

N.P. 266222

PREPARED BY:  
M.A. THOMAS & ASSOCIATES LTD.  
CONSULTING ENGINEERS  
VANCOUVER, B.C. - CANADA.



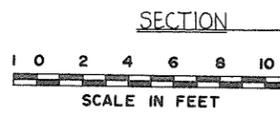
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DATE  
APPROVED  
DATE

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NO. 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ELECTRICAL LAYOUT

DESIGNED  
DRAWN  
CHECKED  
SCALE  
DATE  
DWG. NO.

SURVEYED  
DATE  
FILE NO.  
DATE  
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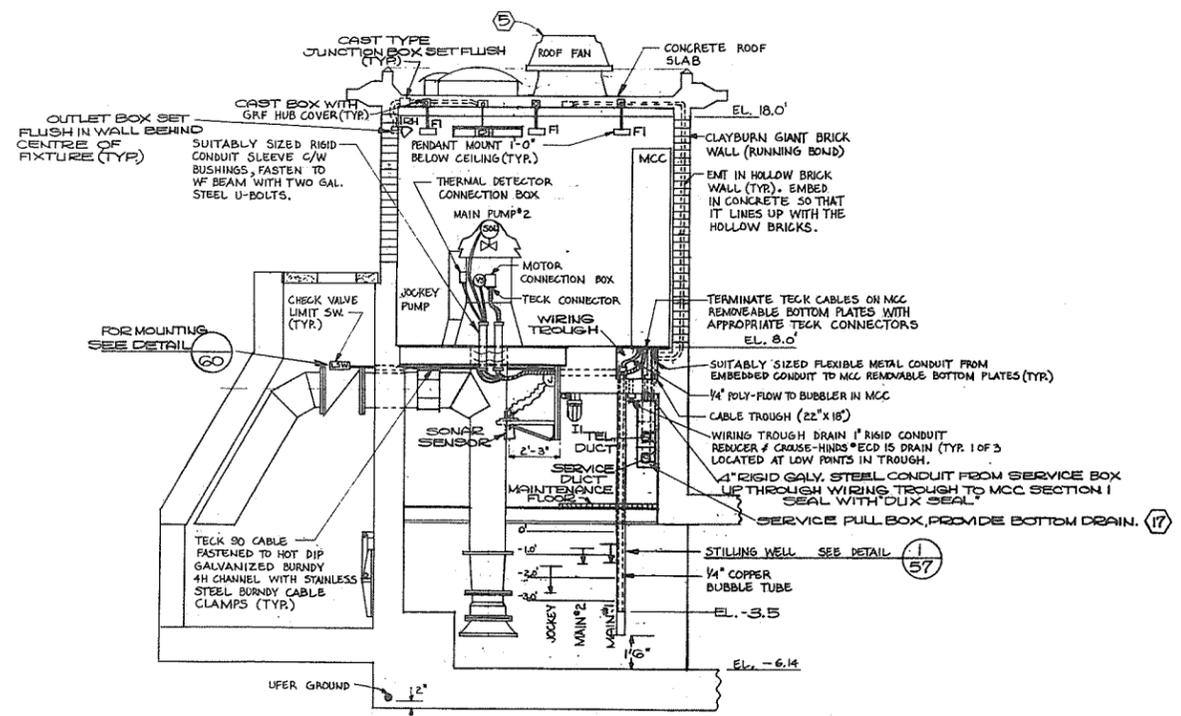
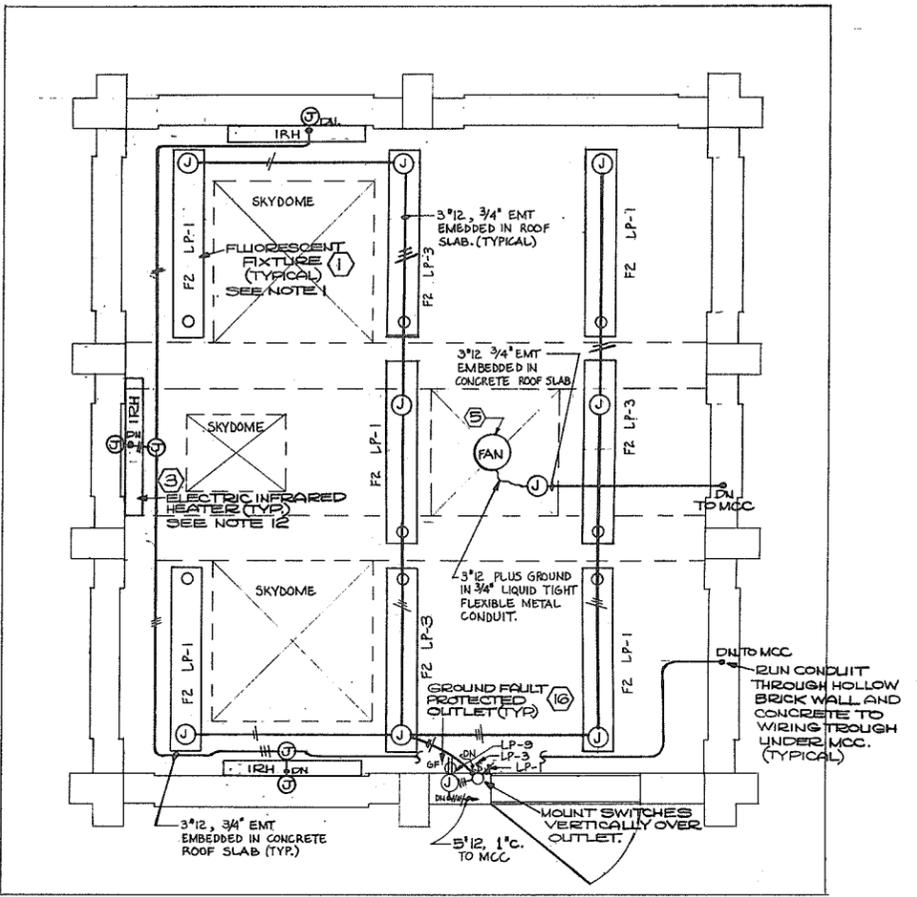
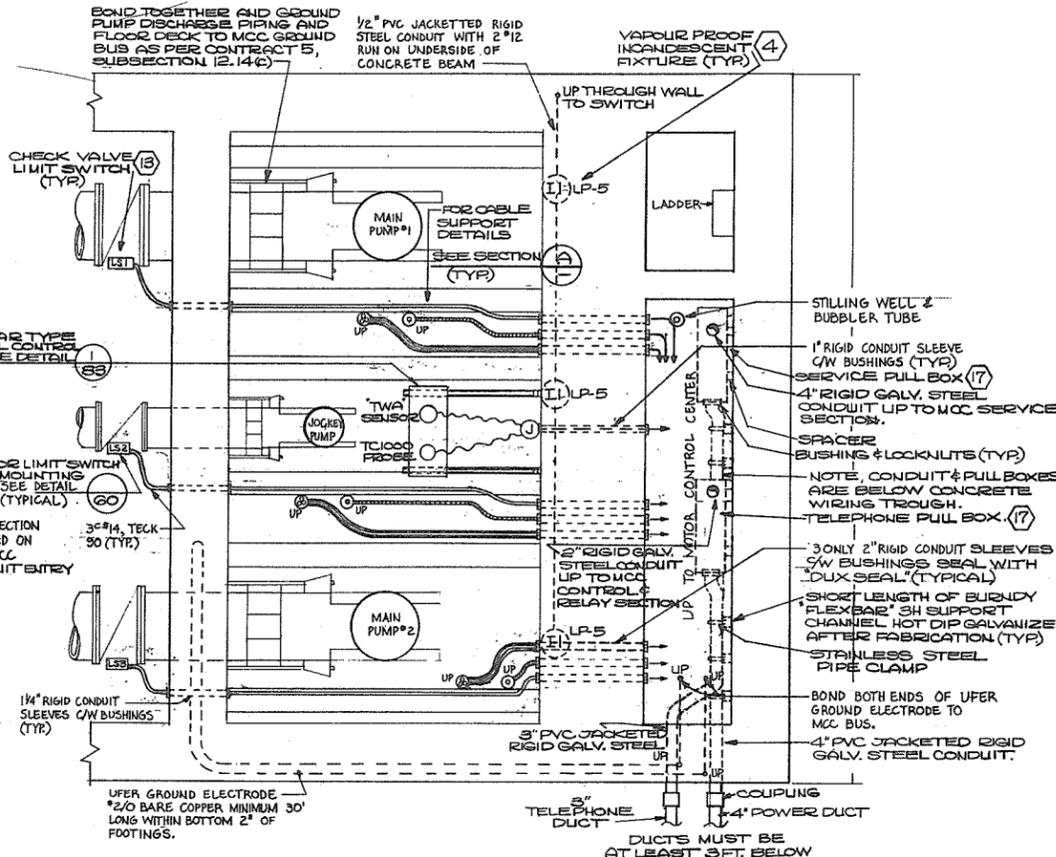
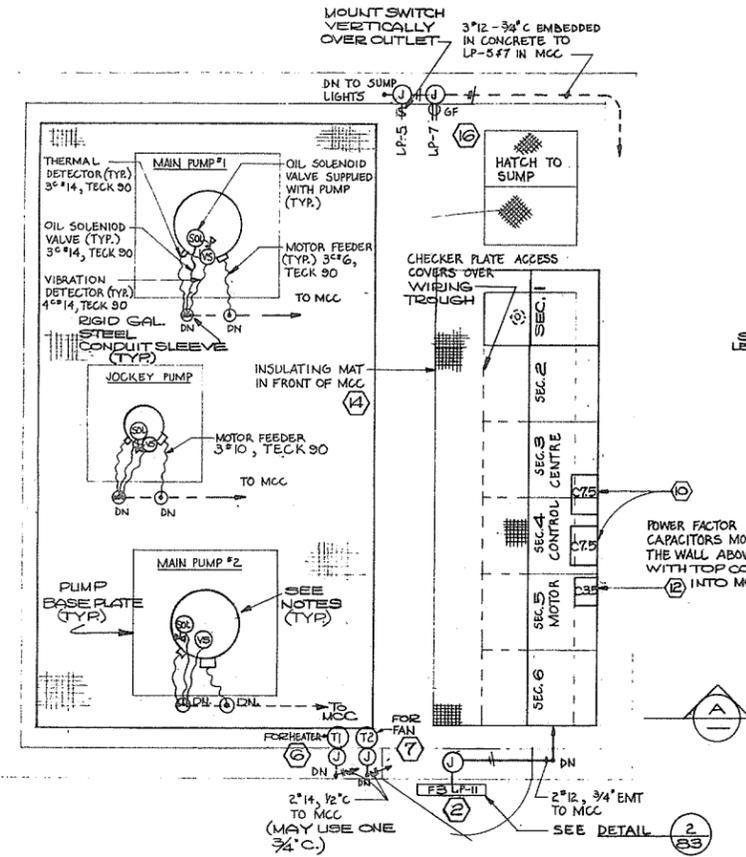
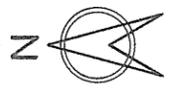
REFERENCE: 1067

NO. BY REVISIONS DATE

DATE

DATE

DATE



SINGLE PHASE, 3 WIRE, S.N., 120/240 VOLTS

LOAD (WATTS)	DESCRIPTION	CYCLE NR	S.N.	CYCLE NR	DESCRIPTION	LOAD (WATTS)
500	INTERIOR FLUORESCENT LIGHTS	1	1SA	2SA	SPARE BKR.	
200	INTERIOR FLUORESCENT LIGHTS	3	1SA	4SA	SPARE BKR.	
600	SUMP LIGHTS	5	1SA	6SA	SPARE BKR.	
500	RECEPTACLE ON EAST WALL	7	1SA	8SA	SPARE BKR.	
500	RECEPTACLE AT DOOR	9	1SA	10SA	SPARE BKR.	
75	EXTERIOR FLUORESCENT LIGHT	11	1SA	12SA	SPARE BKR.	

MOTOR CONTROL CENTRE LIGHTING PANEL 'LP'

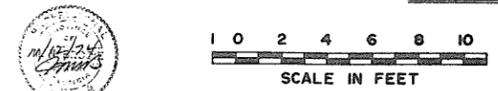
	START	STOP	LOW LEVEL KNOCKOUT	HIGH LEVEL ALARM
JOCKEY PUMP :	-1.50'	-2.75'	-3.25'	} 0.0'
MAIN PUMP #2 :	-0.85'	-1.35'		
MAIN PUMP #1 :	-0.55'	-1.25'		

PUMP OPERATING LEVELS

**NOTES:**

- FOR GENERAL NOTES REFER TO DWG. NO. 4795-5-63
- FOR LEGEND REFER TO DWG. NO. 4795-5-74
- FOR KEY TO MATERIAL ITEMS REFER TO DWG. NO. 4795-5-83
- FOR SERVICE DETAILS REFER TO "SITE PLAN" DWG. NO. 4795-5-25
- PUMP MOTORS COMPLETE WITH OIL SOLENIODS AND VIBRATION SENSORS WILL BE SUPPLIED BY OTHERS.
- ALL WIRING SHALL BE CONCEALED AND ALL BOXES SET FLUSH EXCEPT IN PUMPHOUSE SUMP.
- ALL CONDUITS SHALL HAVE ONE INSULATED, GREEN, GROUND WIRE IN ADDITION TO THE CONDUCTORS SHOWN.
- ALL CABLES AND CONDUITS SHALL ENTER THE MCC FROM THE BOTTOM.
- FOR DETAILED WIRING INSTRUCTIONS REFER TO CONTRACT 5 SPECIFICATIONS
- EMT SHALL BE USED IN DRY LOCATIONS ONLY AND SHALL BE OF STEEL.
- PUMPS, PUMP MOTORS, VIBRATION SENSORS AND OIL SOLENIOD VALVES WILL BE SUPPLIED BY OTHERS BUT INSTALLED AND CONNECTED BY THIS CONTRACTOR.
- INSTALL AND ADJUST INFRARED HEATERS SO THAT HEAT OUTPUT IS AIMED DOWNWARDS AND IS NOT DIRECTED TOWARDS LIGHTING FIXTURES OR OTHER EQUIPMENT THAT MAY BE DAMAGED BY HIGH TEMPERATURES.
- FOR SITE PLAN SEE DWG. NO. 4795-5-25. FOR CONCRETE OUTLINE SEE DWG. NO. 4795-5-29. FOR ARCHITECTURAL DETAILS SEE DWG. NO. 4795-5-86. FOR ROOF PLANS SEE DWG. NO. 4795-5-47. FOR FLOOR DETAILS SEE DWG. NO. 4795-5-53.

N.P. 266 223



PREPARED BY:  
**M. A. THOMAS & ASSOCIATES LTD.**  
 CONSULTING ENGINEERS  
 VANCOUVER, B.C. CANADA.

**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED  
 DATE: Dec 17/74  
 APPROVED: [Signature]  
 DATE: Dec 17/74

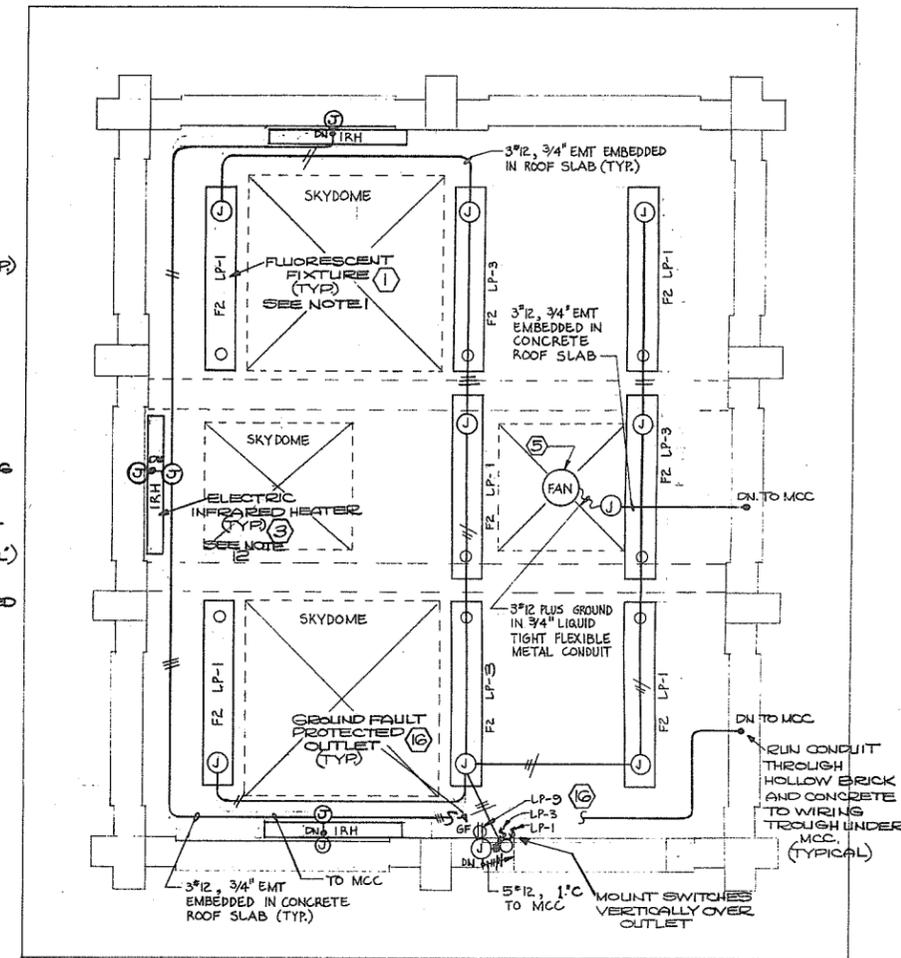
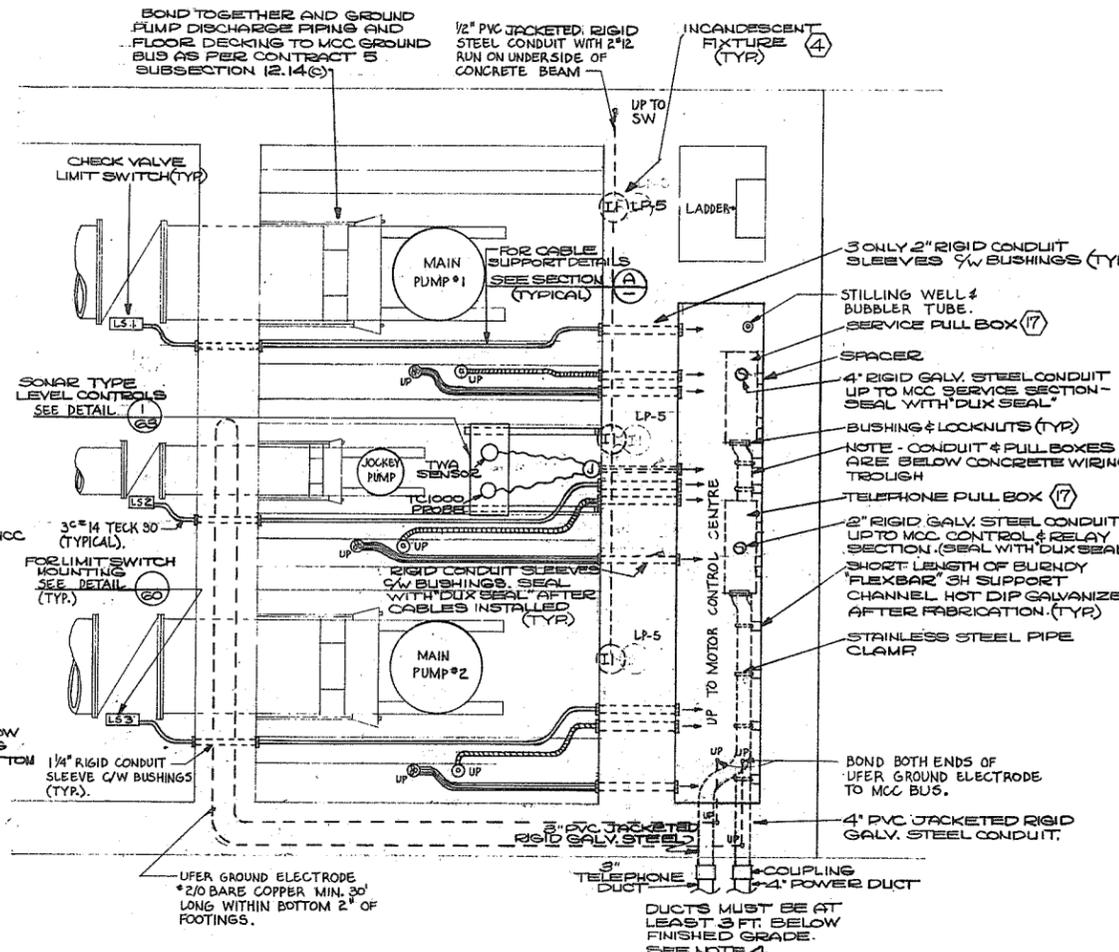
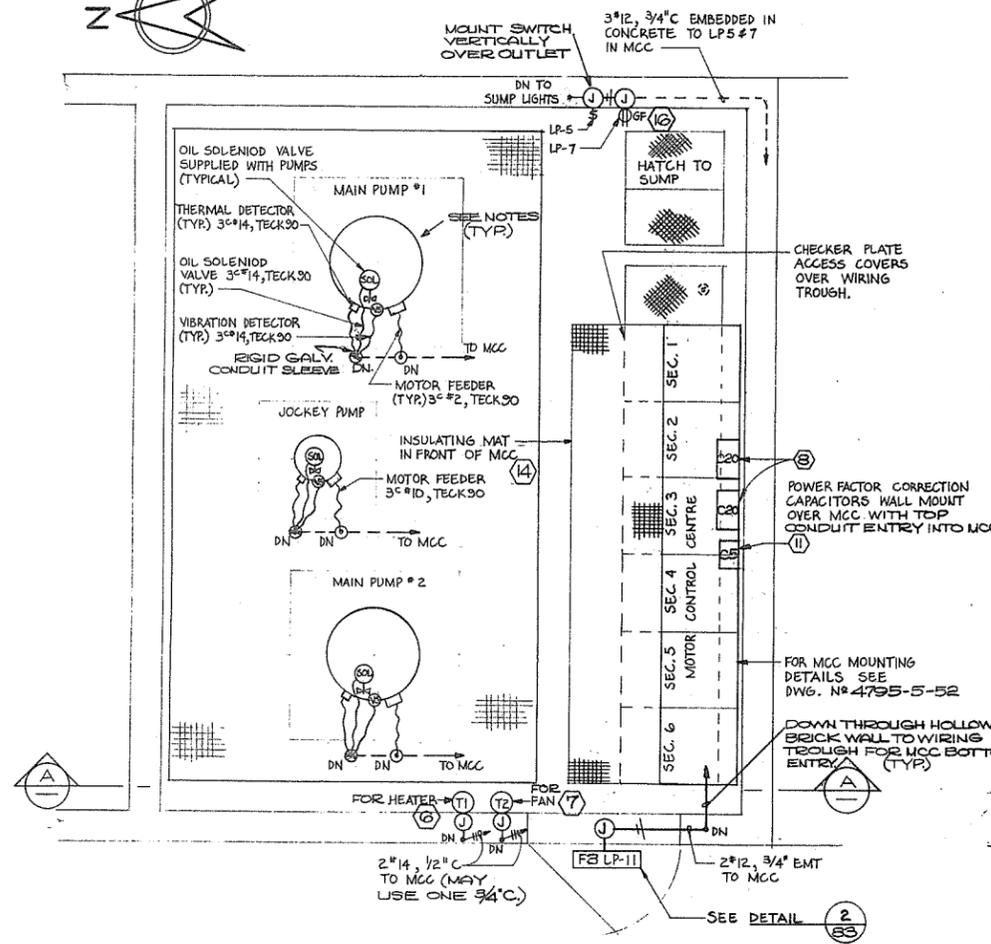
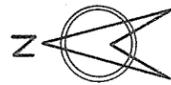
BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 McALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ELECTRICAL LAYOUT

DESIGNED: J.B.  
 DRAWN: TW/FH  
 CHECKED: MNB/NB  
 SCALE: AS SHOWN  
 DWG. NO.: 4795-5-68

SURVEYED: [Blank]  
 DATE: [Blank]  
 FILE NO.: 0281550-C10-5  
 DATE: DEC. 1974  
 SHEET: \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

REFERENCE: 1067

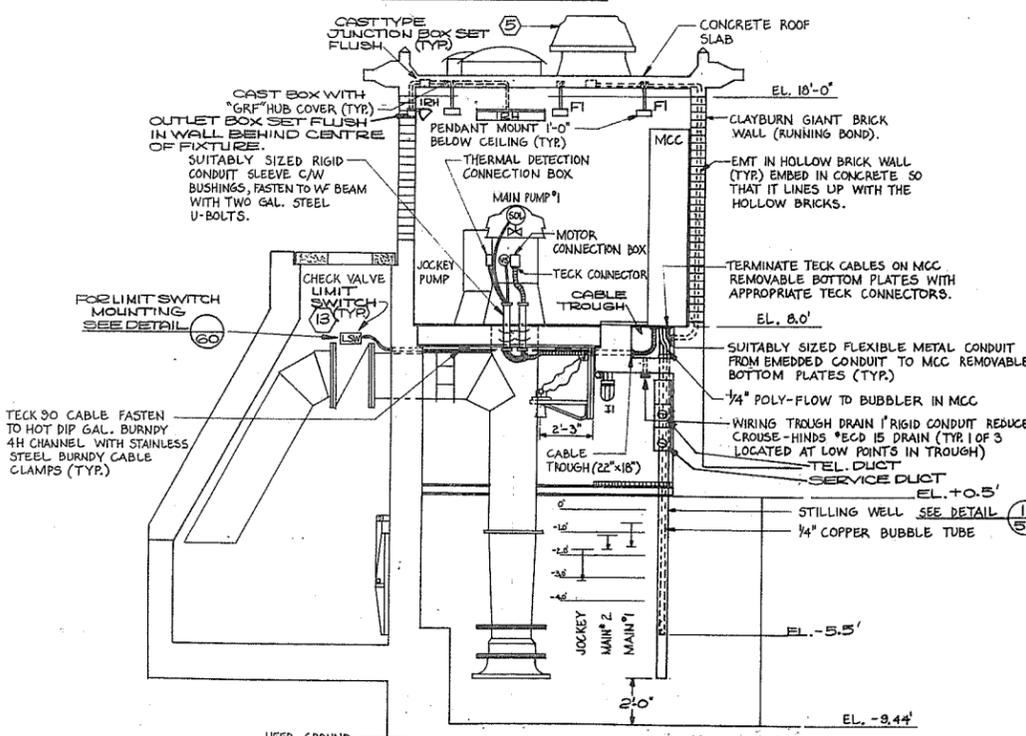
NO. BY REVISIONS DATE



PLAN AT EL. 18'-0"

PLAN AT EL. 7'-0"

PLAN AT EL. 20'-0"



SINGLE PHASE, 3 WIRE, S.N. 120/240 VOLTS							
LOAD (WATTS)	DESCRIPTION	CTT. NO.	S.N.		CTT. NO.	DESCRIPTION	LOAD (WATTS)
500	INTERIOR FLUORESCENT LIGHTS	1	15A	15A	2	SPARE BKR.	
500	INTERIOR FLUORESCENT LIGHTS	3	15A	15A	4	SPARE BKR.	
600	SUMP LIGHTS	5	15A	15A	6	SPARE BKR.	
500	RECEPTACLE ON WALL	7	15A	15A	8	SPARE BKR.	
500	RECEPTACLE AT DOOR	9	15A	15A	10	SPARE BKR.	
75	EXTERIOR FLUORESCENT LIGHT	11	15A	15A	12	SPARE BKR.	

MOTOR CONTROL CENTRE LIGHTING PANEL "LP"

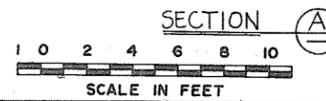
	START	STOP	LOW LEVEL LOCKOUT	HIGH LEVEL ALARM
JOCKEY PUMP :	-1.80'	-3.05'	-3.55'	} 0.0'
MAIN PUMP #2 :	-1.05'	-1.80'		
MAIN PUMP #1 :	-0.60'	-1.60'	-2.30'	

PUMP OPERATING LEVELS

NOTES:

- FOR GENERAL NOTES REFER TO DWG. NO. 4795-5-63
- FOR LEGEND REFER TO DWG. NO. 4795-5-76
- FOR KEY TO MATERIAL ITEMS REFER TO DWG. NO. 4795-5-83
- FOR SERVICE DETAILS REFER TO "SITE PLAN" DWG. NO. 4795-5-28
- PUMP MOTORS COMPLETE WITH OIL SOLENOIDS AND VIBRATION SENSORS WILL BE SUPPLIED BY OTHERS.
- ALL WIRING SHALL BE CONCEALED AND ALL BOXES SET FLUSH EXCEPT IN PUMPHOUSE SUMP.
- ALL CONDUITS SHALL HAVE ONE INSULATED, GREEN, GROUND WIRE IN ADDITION TO THE CONDUCTORS SHOWN.
- ALL CABLES AND CONDUITS SHALL ENTER THE MCC FROM THE BOTTOM.
- FOR DETAILED WIRING INSTRUCTIONS REFER TO CONTRACT 5 SPECIFICATIONS.
- EMT SHALL BE USED IN DRY LOCATIONS ONLY AND SHALL BE OF STEEL.
- PUMPS, PUMP MOTORS, VIBRATION SENSORS AND OIL SOLENOID VALVES WILL BE SUPPLIED BY OTHERS BUT INSTALLED AND CONNECTED BY THIS CONTRACTOR.
- INSTALL AND ADJUST INFRARED HEATERS AS PER NOTE 12 ON DWG. NO. 4795-5-67.
- FOR SITE PLAN SEE DWG. NO. 4795-5-28. FOR CONCRETE OUTLINE SEE DWG. NO. 4795-5-30. FOR ARCHITECTURAL DETAILS SEE DWG. NO. 4795-5-87. FOR ROOF PLANS SEE DWG. NO. 4795-5-47. FOR FLOOR DETAILS SEE DWG. NO. 4795-5-54.

N.P. 266 224



PREPARED BY:  
**M.A. THOMAS & ASSOCIATES LTD.**  
 CONSULTING ENGINEERS  
 VANCOUVER, B.C. CANADA.  
 REFERENCE: 1067



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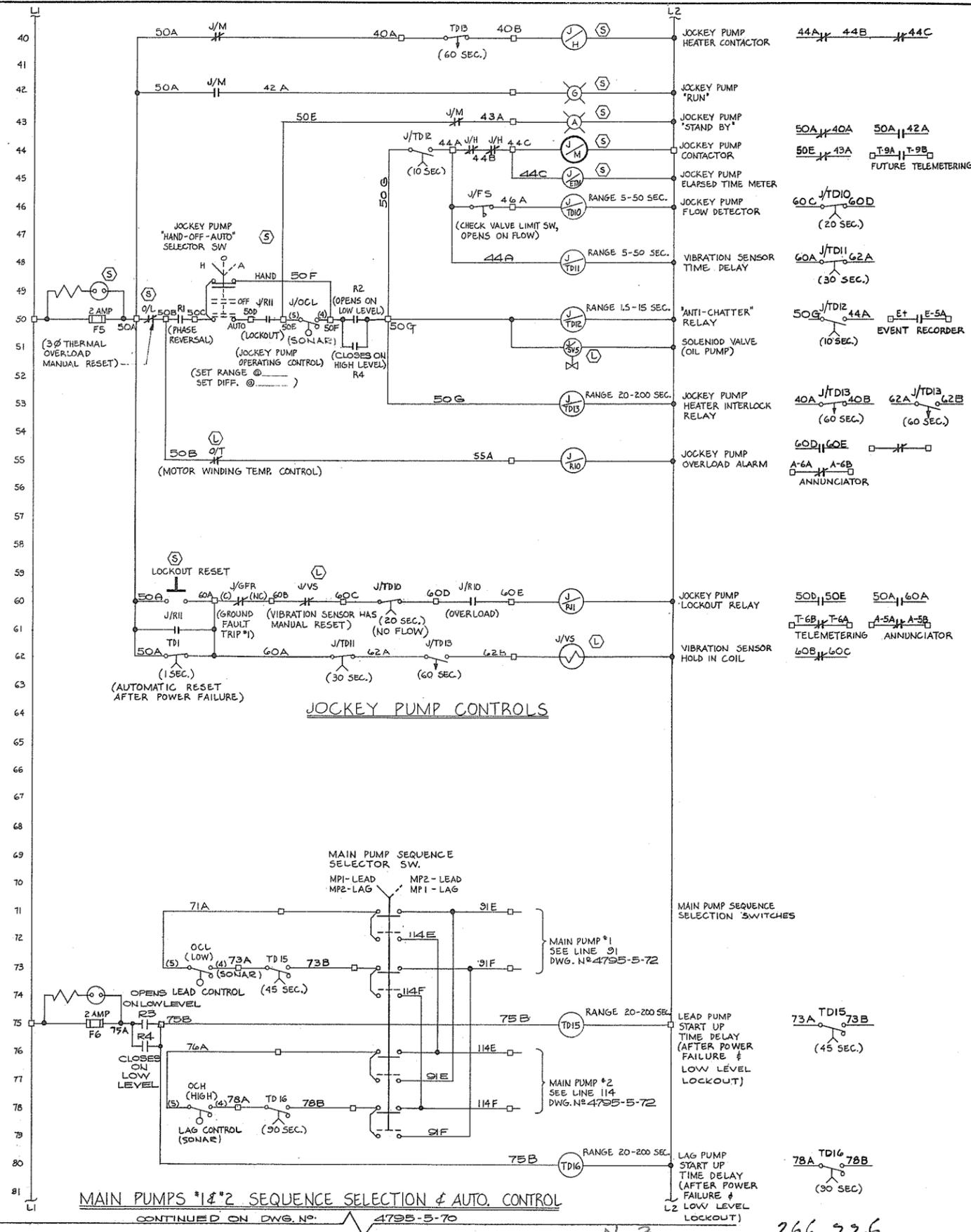
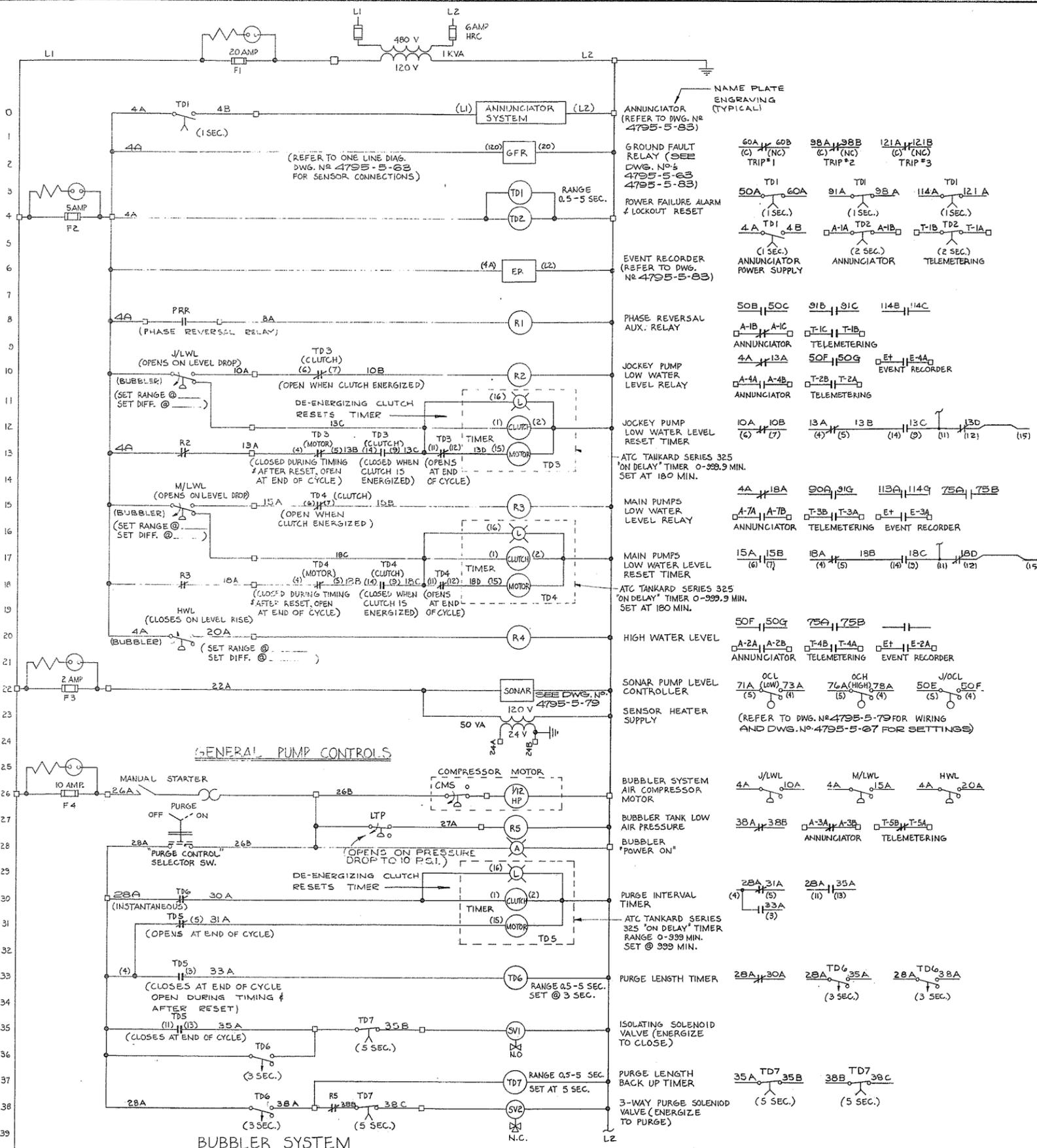
NO.	BY	REVISIONS	DATE

RECOMMENDED: *[Signature]*  
 DATE: Dec 17/74  
 APPROVED: *[Signature]*  
 DATE: Dec 17/74

BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT NO. 5 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 NO. 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ELECTRICAL LAYOUT

DESIGNED	SURVEYED
MB	
DRAWN: TW/WH	DATE:
CHECKED: MNE/MB	FILE NO: 0281550-C10-5
SCALE: AS SHOWN	DATE: DEC. 1974
DWG. NO: 4795-5-69	SHEET:



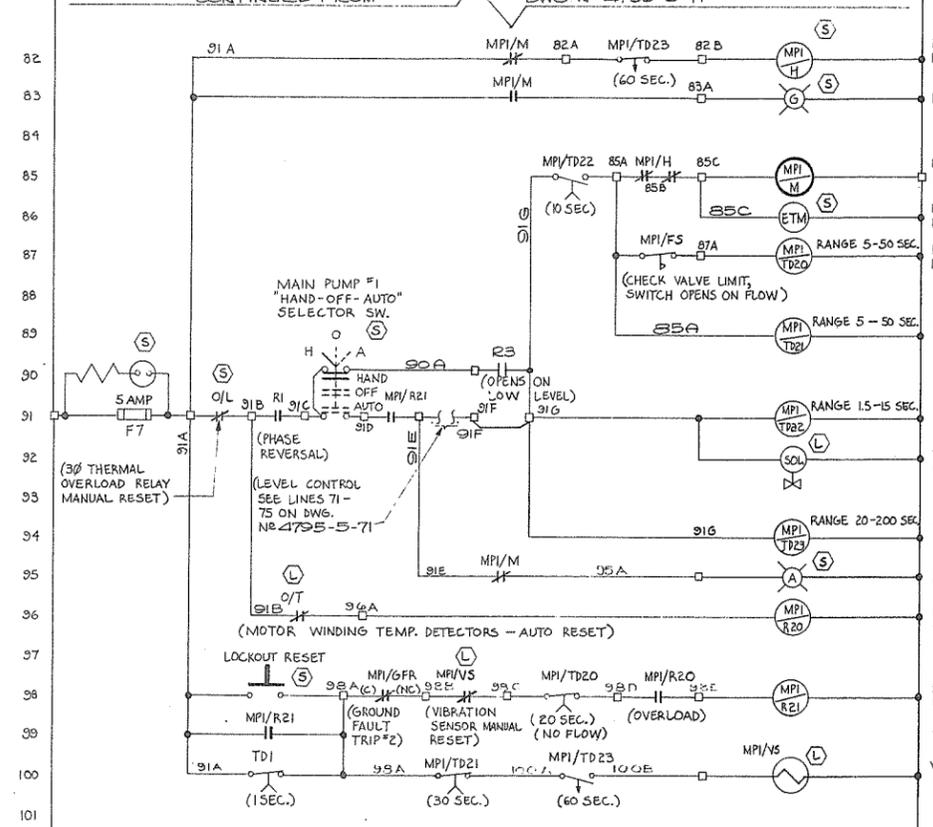


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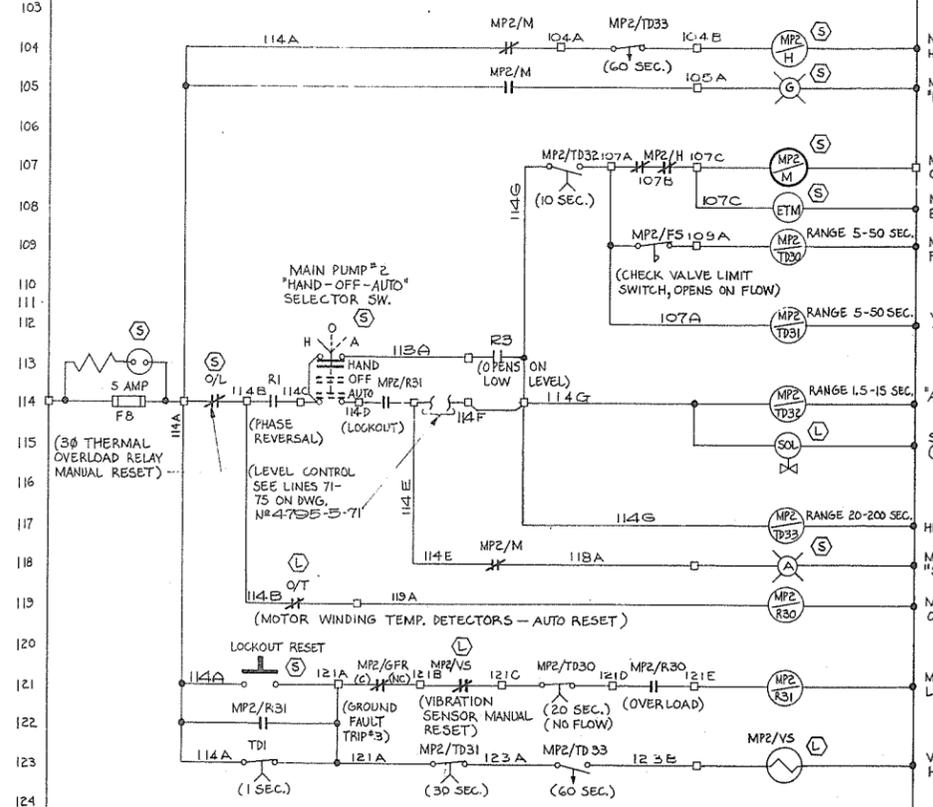
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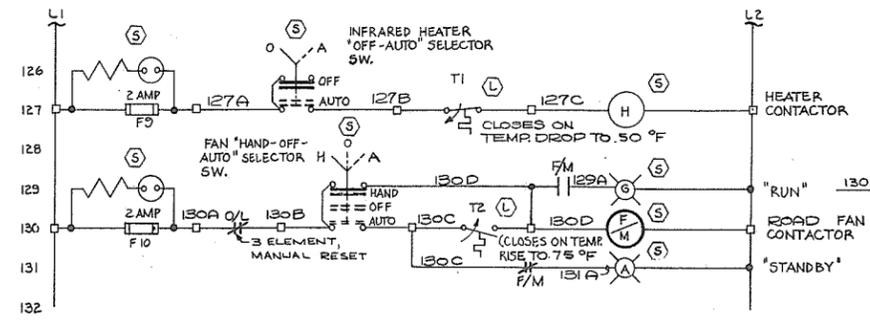
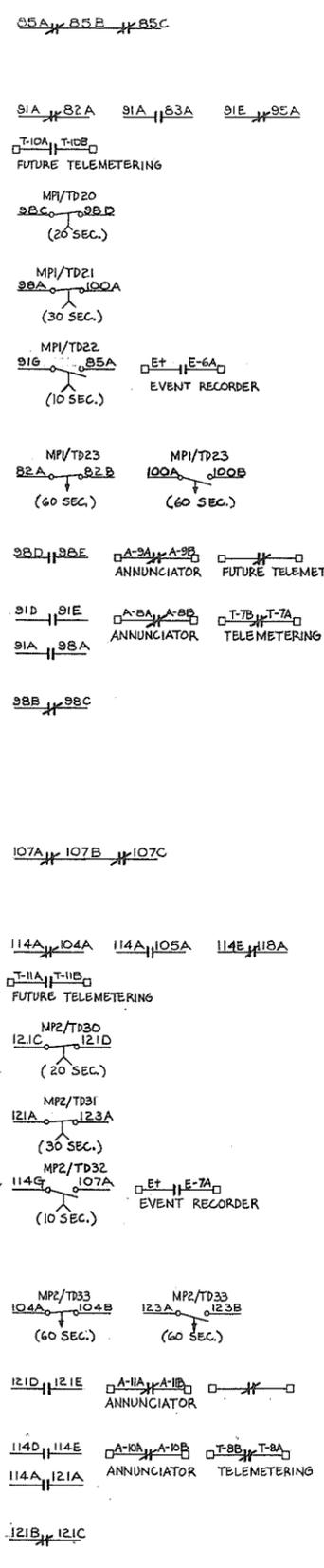
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PROJECTS DIV.	Dec 17/74	DIRECTOR	Dec 17/74
BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA — BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT			
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 NO. 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE ELECTRICAL SCHEMATIC DIAGRAM			
DESIGNED	DATE	CHECKED	DATE
MNB		MNB/NB	FILE NO. 0281550-C10-5
DRAWN		SCALE	DATE DEC. 1974
		NONE	DWG. NO. 4795-5-71
			SHEET 1 OF 2 SHEETS



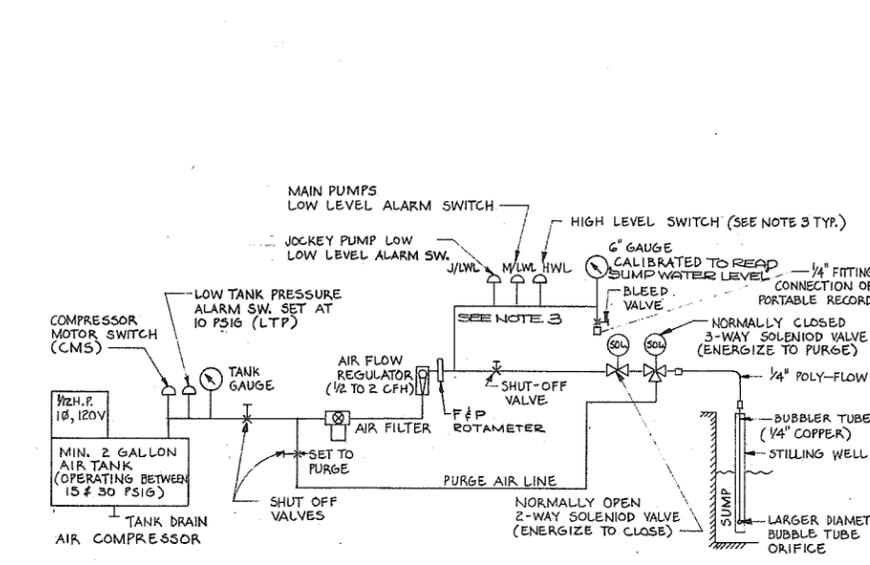
MAIN PUMP NO 1 CONTROLS



MAIN PUMP NO 2 CONTROLS



HEATER & FAN



BUBBLER LEVEL CONTROL SYSTEM - PIPING

- NOTES:
- FOR GENERAL NOTES SEE DWG. NO. 4795-5-63
  - EACH RELAY, TIMER, PILOT LIGHT, SELECTOR SWITCH, ETC. SHALL HAVE AN IDENTIFYING SCREW HELD LAMACOID (BLACK/WHITE) NAMEPLATE OR STANDARD PILOT DEVICE LEGEND PLATE AS APPLICABLE. IT SHALL BEAR THE APPROPRIATE INSCRIPTION AS SHOWN ON THE SCHEMATIC DIAGRAMS.
  - BUBBLER SYSTEM LEVEL CONTROL & ALARM SWITCHES SHALL BE DIAPHRAGM OPERATED, ADJUSTABLE RANGE (0-120" W), ADJUSTABLE DIFFERENTIAL, MINIMUM 1% ACCURACY (OF OPERATING RANGE), WITH SNAP ACTING S.P.D.T. SWITCH, AS MANUFACTURED BY SIRCO CONTROLS LTD. OR APPROVED EQUIVALENT.
  - FOR ANNUNCIATOR AND EVENT RECORDER CONNECTIONS SEE DETAILS 4-4-5 DWG. NO. 4795-5-83

- LEGEND
- (L) INDICATES DEVICE MOUNTED 'LOCAL' TO EQUIPMENT.
  - (S) INDICATES DEVICE MOUNTED IN APPROPRIATE MCC STARTER CUBICLE (OR ON DOOR).
  - ITEMS NOT MARKED ARE IN GENERAL IN THE MCC RELAY/INSTRUMENT SECTION (OR MOUNTED ON ITS DOORS).
  - INDICATES WIRE TERMINATES ON A TERMINAL BLOCK (IN THE MCC STARTER CUBICLES AND/OR RELAY/INSTRUMENT SECTION).
  - WIRES JOINED
  - WIRES NOT JOINED
  - ⊞ FUSE WITH 'FUSE BLOWN' INDICATOR LIGHT
  - (G) PILOT LIGHT (LETTER INDICATES COLOUR)
  - (SOL) SOLENIOD VALVE
  - (TD) TIME DELAY RELAY
  - NORMALLY OPEN, TIME DELAY CLOSSES ON RELAY ENERGIZATION
  - NORMALLY CLOSED, TIME DELAY OPENS ON RELAY ENERGIZATION
  - NORMALLY OPEN, TIME DELAY OPENS ON RELAY DE-ENERGIZATION
  - NORMALLY CLOSED, TIME DELAY CLOSSES ON RELAY DE-ENERGIZATION
  - (K) CONTROL RELAY
  - NORMALLY OPEN CONTACTS
  - NORMALLY CLOSED CONTACTS
  - (M) MOTOR STARTER CONTACTOR
  - THERMAL OVERLOAD ELEMENT
  - THERMAL OVERLOAD CONTACT (THREE PHASE)
  - (VS) VIBRATION SENSOR (MANUAL RESET) ROBERTSHAW CAT. # 366-A-8.
  - VIBRATION SENSOR CONTACT (NORMALLY CLOSED)
  - (H) MOTOR WINDING HEATER CONTACTOR
  - THERMOSTAT (CLOSSES ON TEMP. RISE)
  - THERMOSTAT (OPENS ON TEMP. RISE)
  - LIQUID LEVEL CONTROLLER SWITCH (CLOSSES ON LIQUID RISE)
  - FLOW SWITCH (CLOSSES ON FLOW)
  - PRESSURE SWITCH (CLOSSES ON PRESSURE RISE)
  - STOP PUSH BUTTON (NORMALLY CLOSED)
  - START PUSH BUTTON (NORMALLY OPEN)
  - SELECTOR SWITCH (DOTTED LINES INDICATE ALTERNATE POSITIONS)

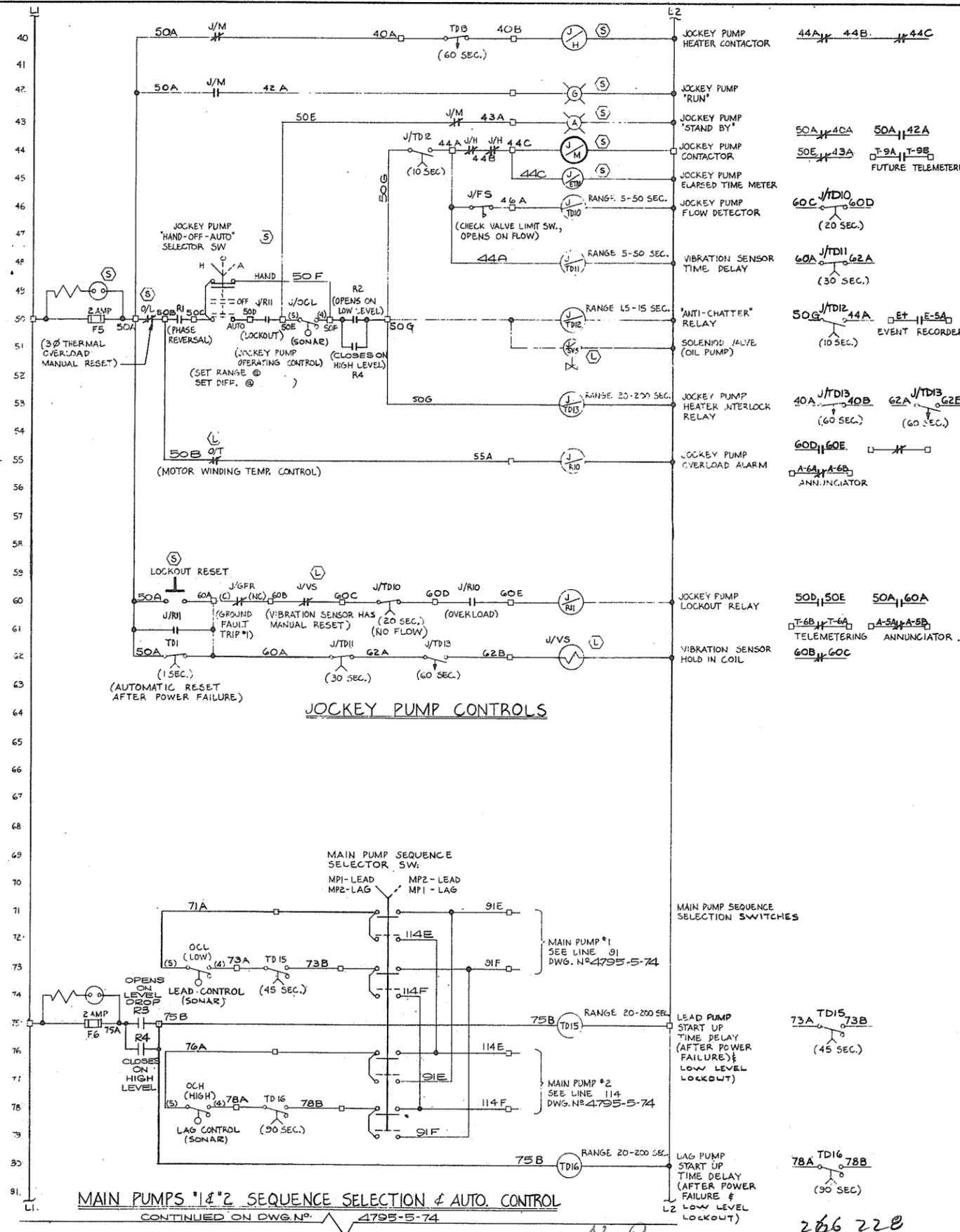
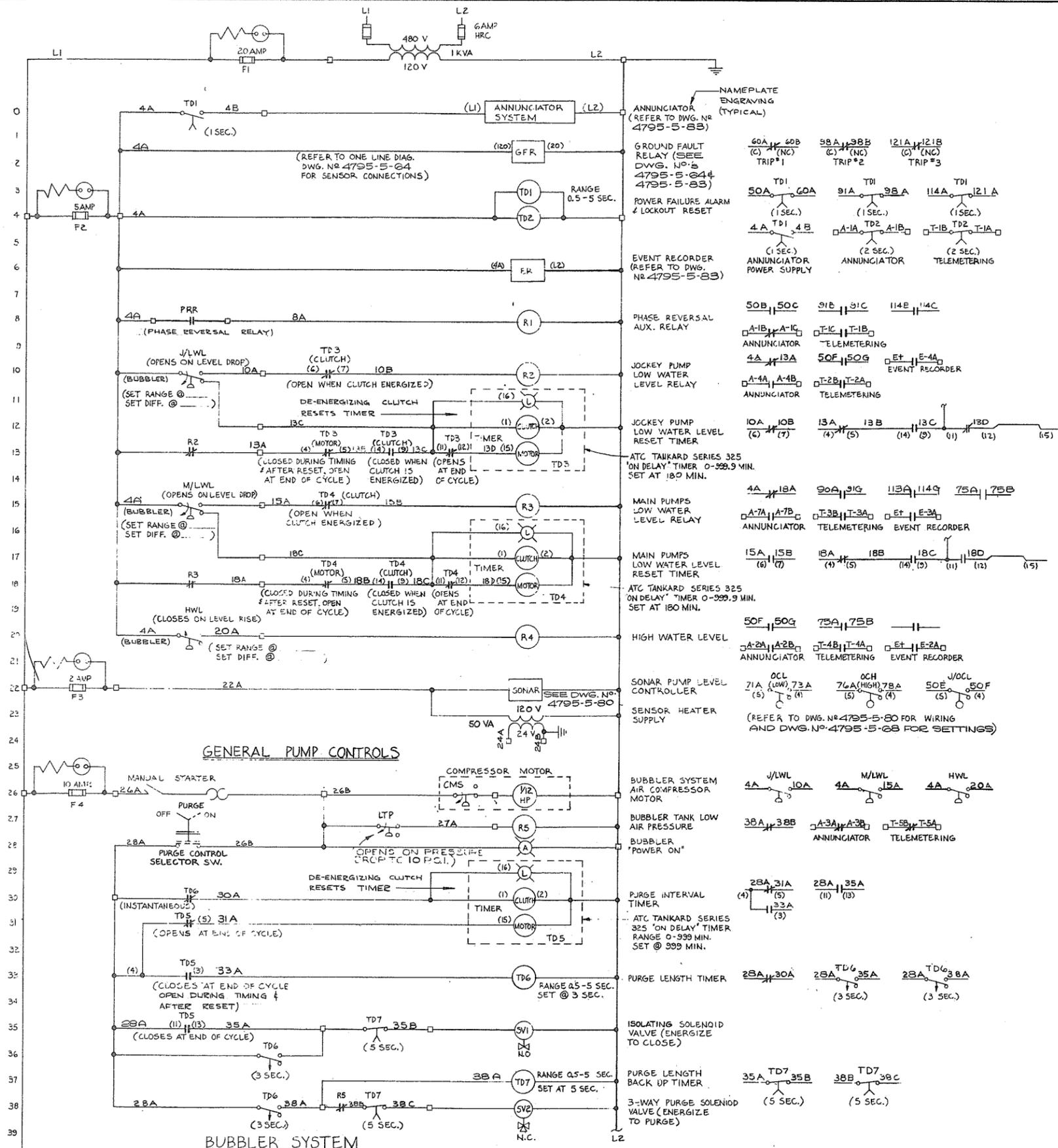
PREPARED BY:  
**M.A. THOMAS & ASSOCIATES LTD.**  
 CONSULTING ENGINEERS  
 VANCOUVER, B.C. — CANADA.

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NO.	BY	REVISIONS	DATE

RECOMMENDED	DESIGNED	SURVEYED
DATE	DATE	DATE
APPROVED	CHECKED	FILE NO.
DATE	SCALE	DATE
	DWG. NO.	SHEET 2 OF 2 SHEETS

N.P. 286 227



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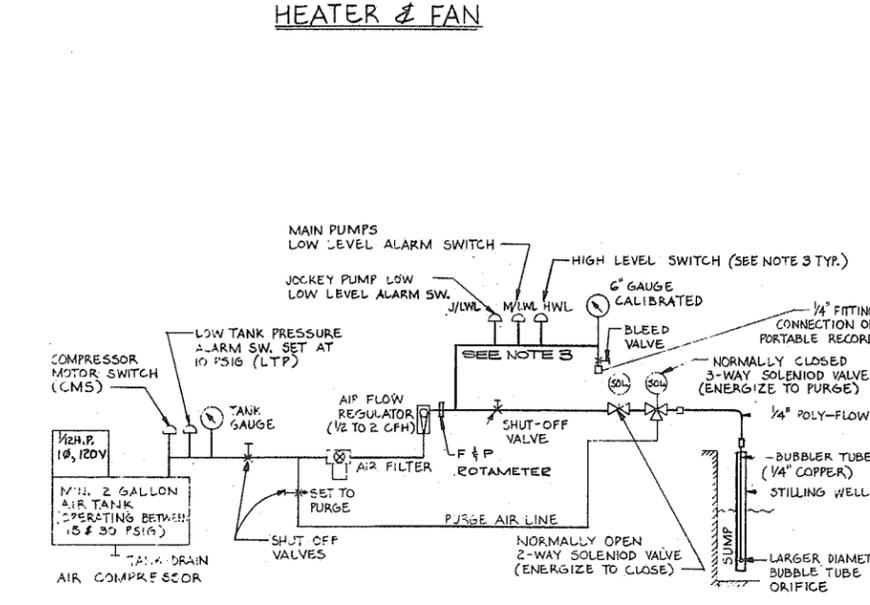
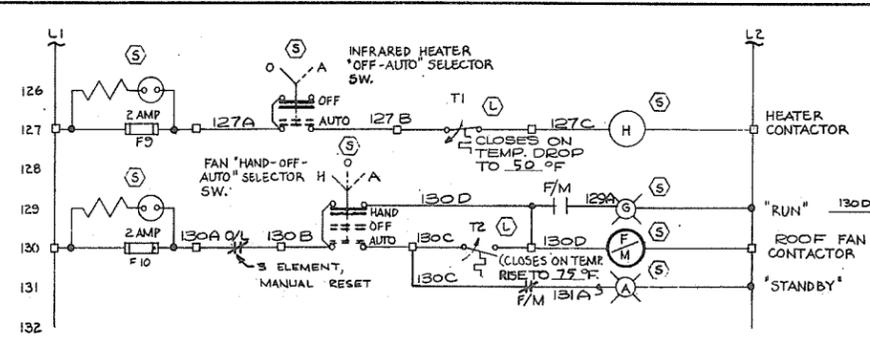
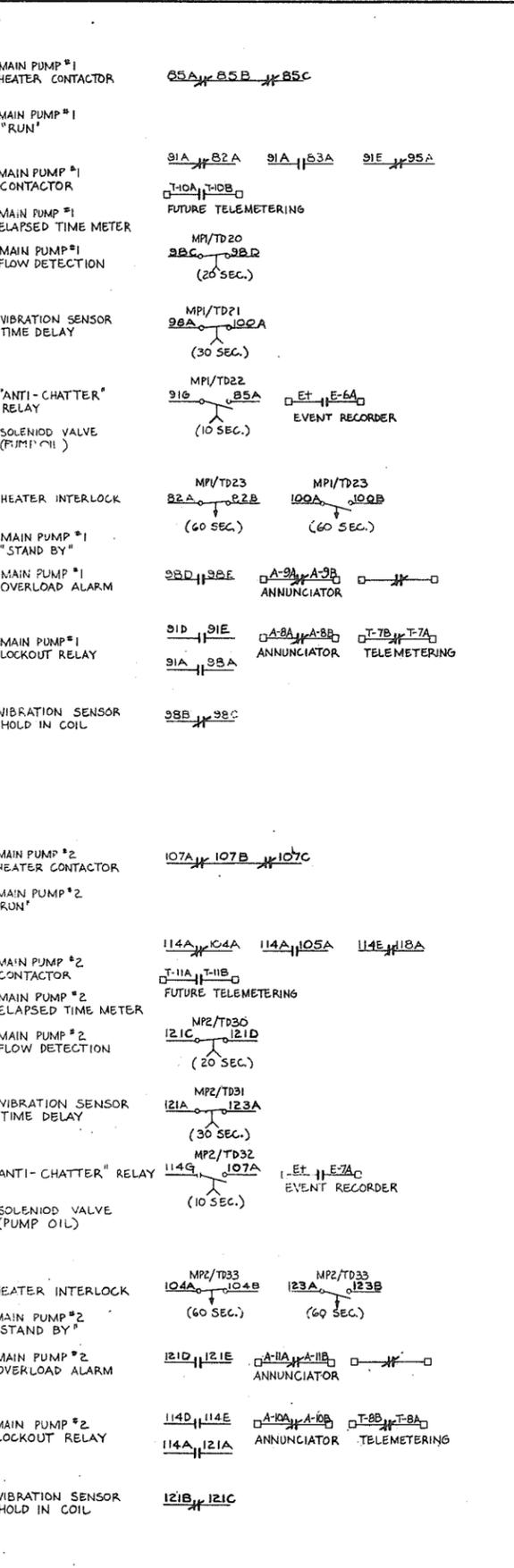
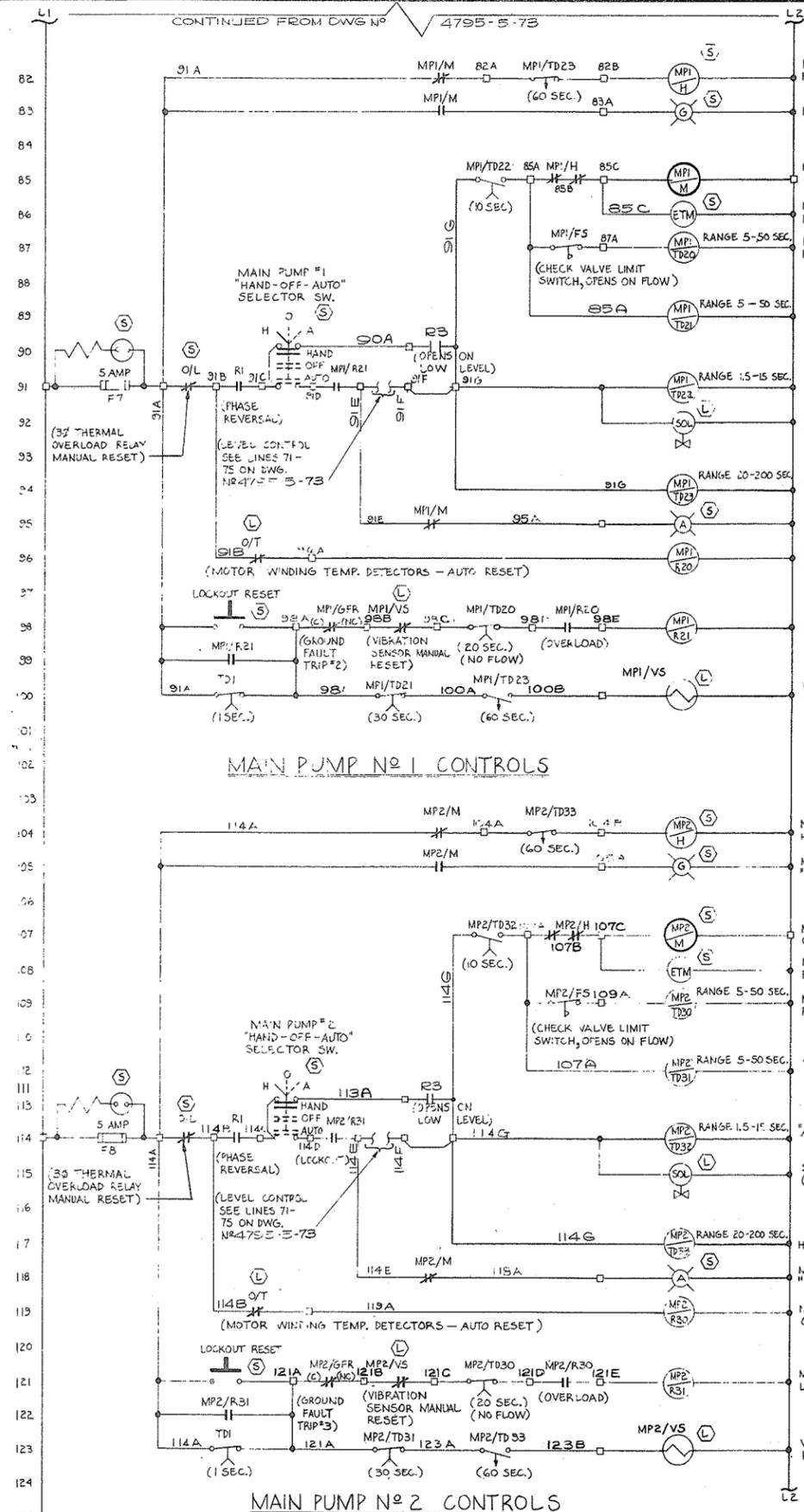
NO.	BY	REVISIONS	DATE

RECOMMENDED: *[Signature]*  
 DATE: Dec 17/74  
 APPROVED: *[Signature]*  
 DATE: Dec 17/74

BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA — BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 — THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 McCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ELECTRICAL SCHEMATIC DIAGRAM

DESIGNED	SURVEYED
N.B.	
DRAWN: TW	DATE:
CHECKED: MNB/NB	FILE NO.: 0281550-C10-5
SCALE: NONE	DATE: DEC. 1974
DWG. NO.: 4795-5-73	SHEET: 1 OF 2 SHEETS

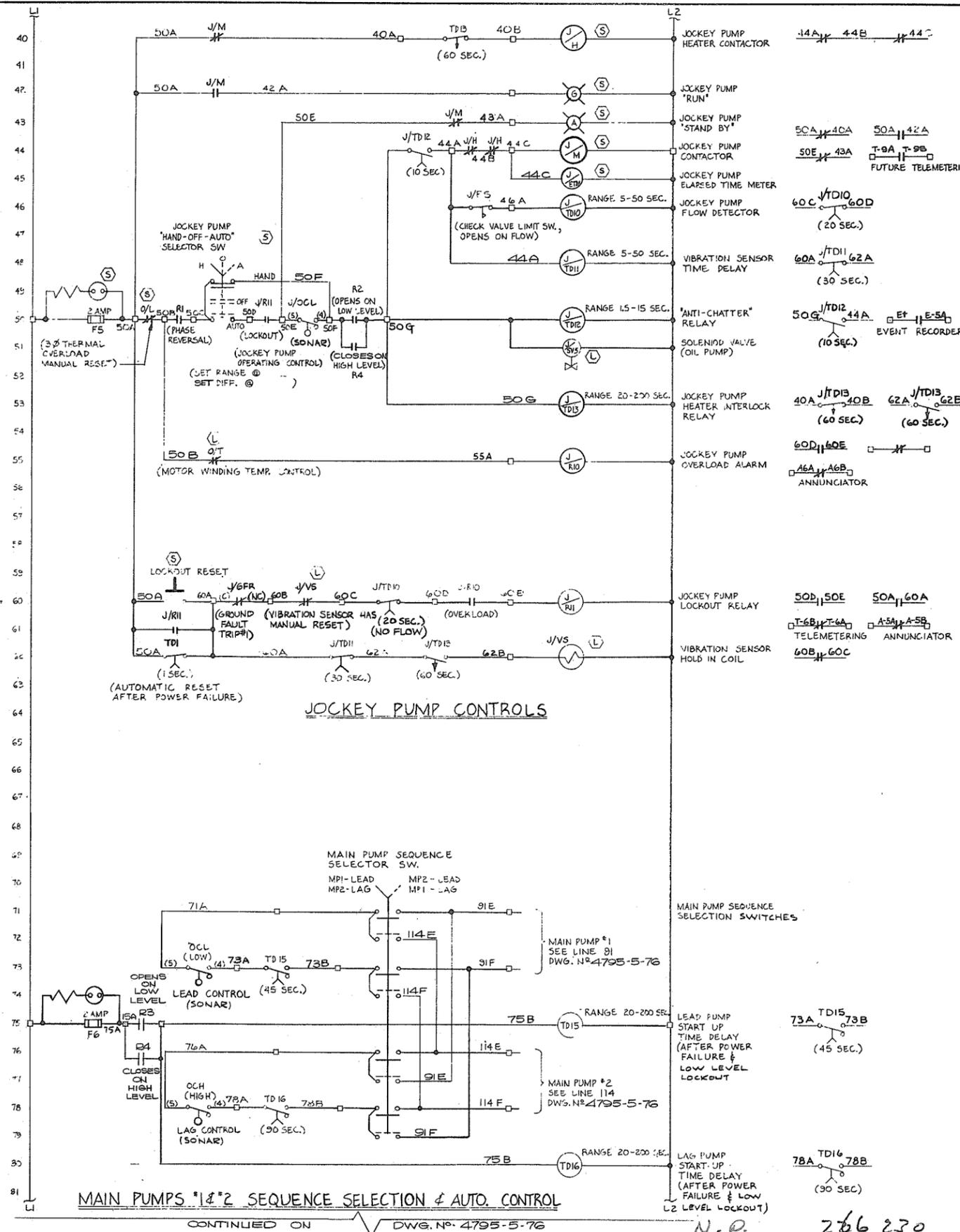
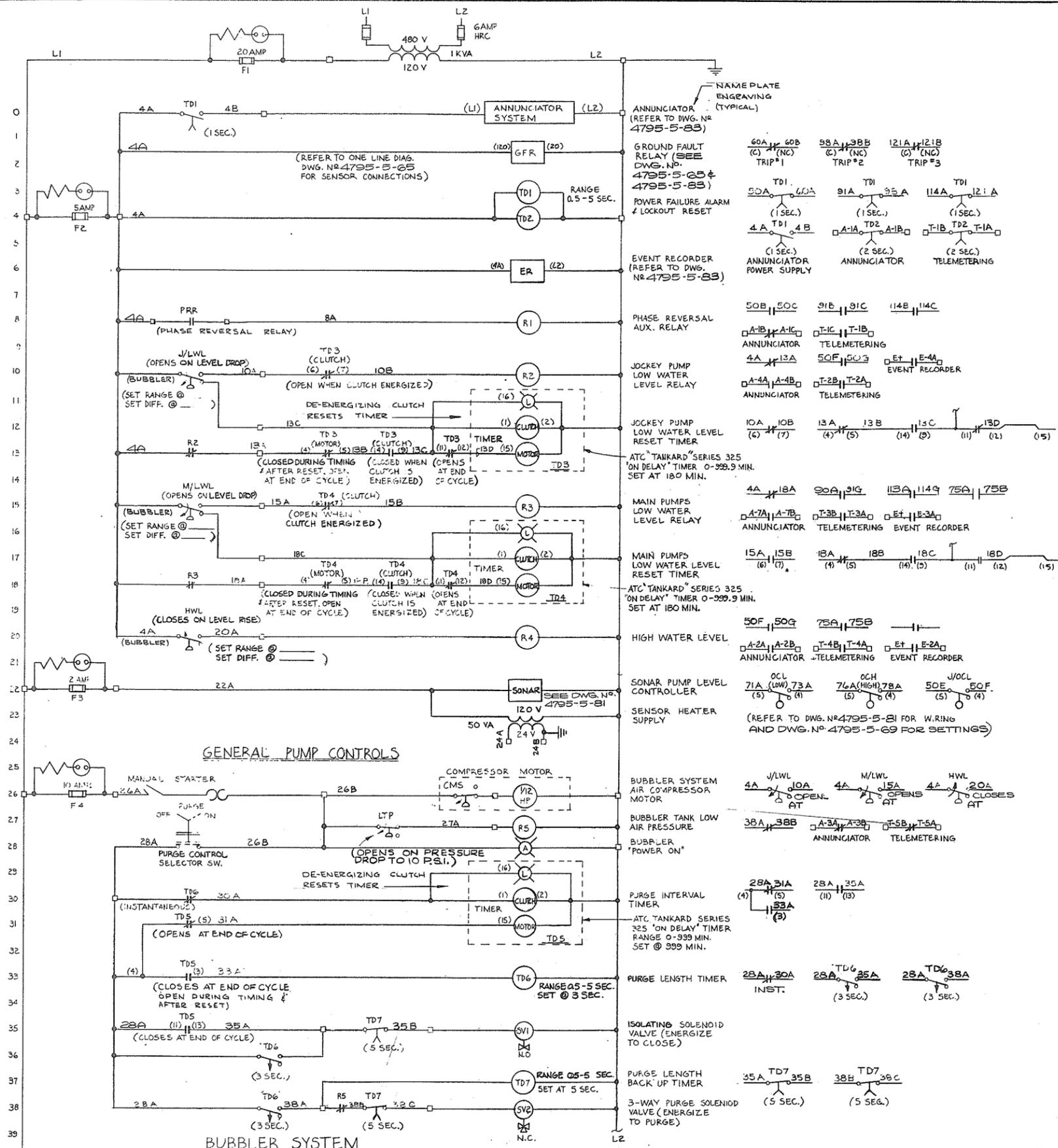


**NOTES:**

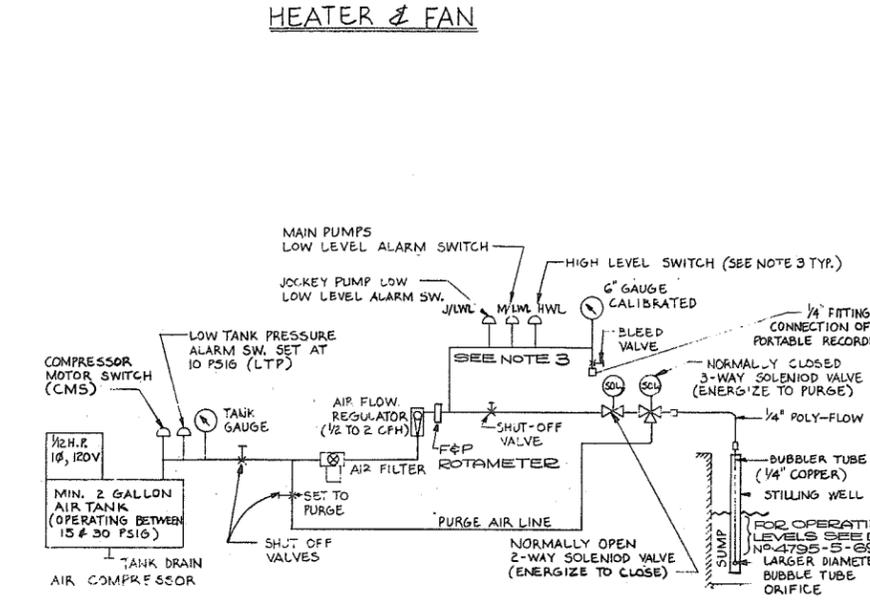
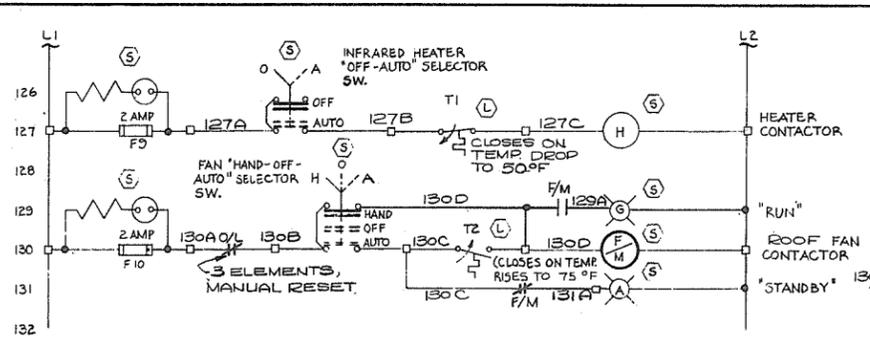
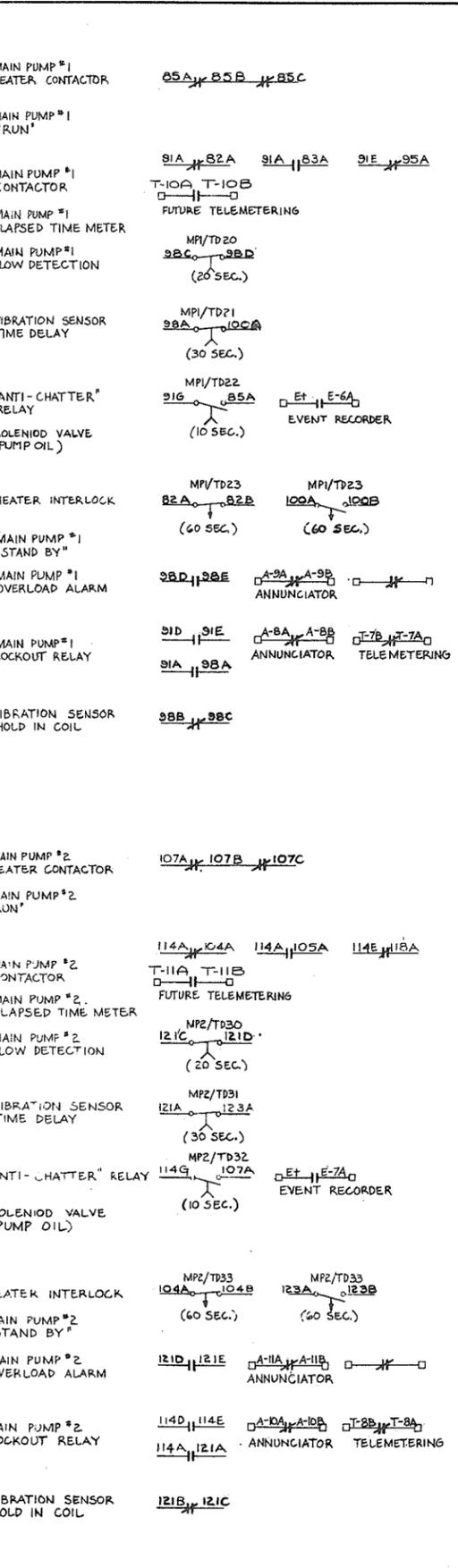
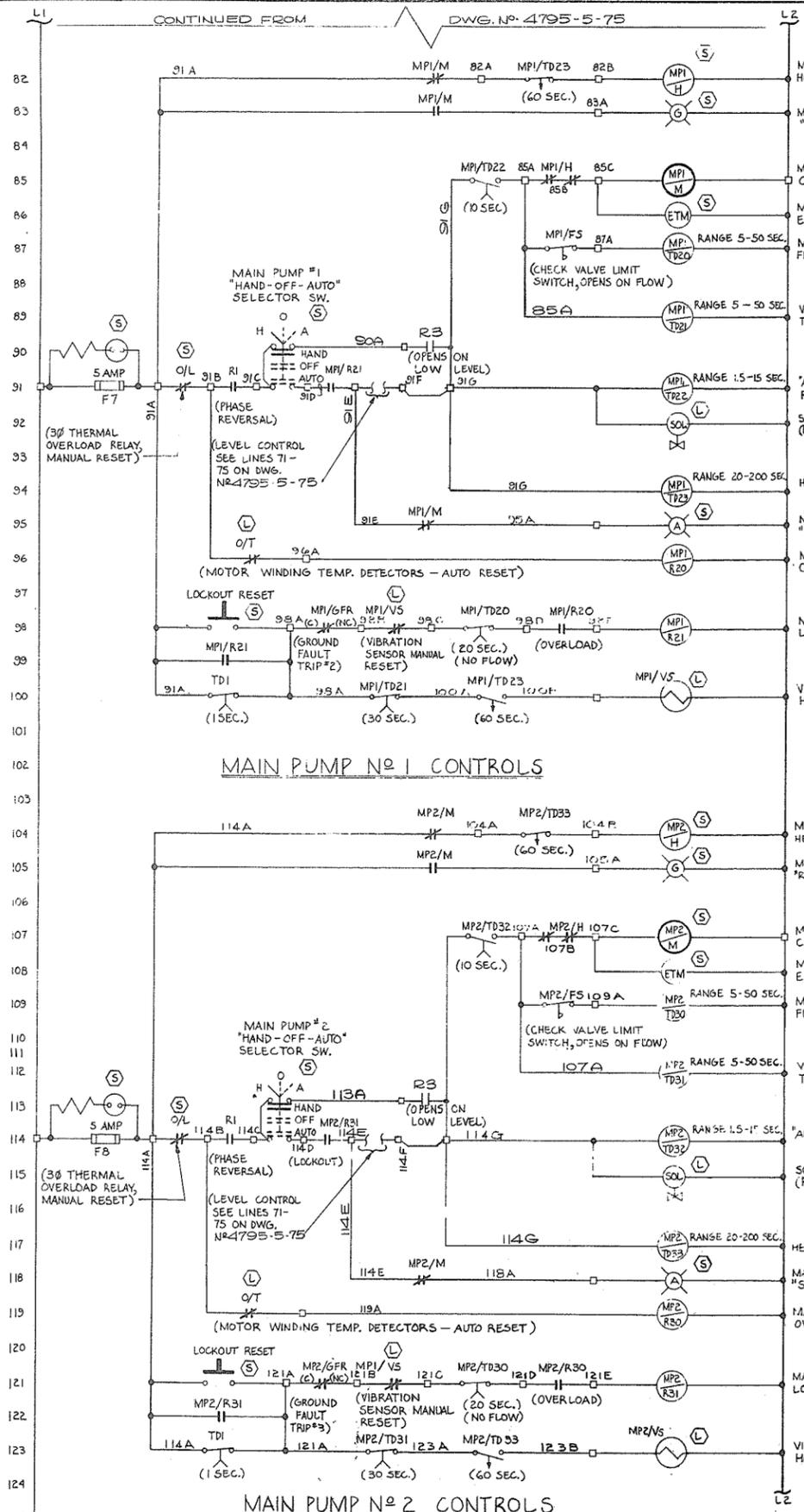
- FOR GENERAL NOTES SEE DWG. NO. 4795-5-63.
- EACH RELAY, TIMER, PILOT LIGHT, SELECTOR SWITCH, ETC. SHALL HAVE AN IDENTIFYING SCREW HELD LAMAGOID (BLACK/WHITE) NAMEPLATE OR STANDARD PILOT DEVICE LEGEND PLATE AS APPLICABLE. IT SHALL BEAR THE APPROPRIATE INSCRIPTION AS SHOWN ON THE SCHEMATIC DIAGRAMS.
- BUBBLER SYSTEM LEVEL CONTROL & ALARM SWITCHES SHALL BE DIAPHRAGM OPERATED, ADJUSTABLE RANGE (0-120" W.C.) ADJUSTABLE DIFFERENTIAL, MINIMUM 1% ACCURACY (OF OPERATING RANGE), WITH SNAP ACTING S.P.D.T. SWITCH, AS MANUFACTURED BY SISCO CONTROLS LTD., OR APPROVED EQUIVALENT.
- FOR ANNUNCIATOR AND EVENT RECORDER CONNECTIONS SEE DETAILS 4&5 DWG. NO. 4795-5-63.

- LEGEND**
- (L) INDICATES DEVICE MOUNTED 'LOCAL' TO EQUIPMENT.
  - (S) INDICATES DEVICE MOUNTED IN APPROPRIATE MCC STARTER CUBICLE (OR ON DOOR).
  - ITEMS NOT MARKED ARE IN GENERAL IN THE MCC RELAY/INSTRUMENT SECTION (OR MOUNTED ON ITS DOORS).
  - INDICATES WIRE TERMINATES ON A TERMINAL BLOCK (IN THE MCC STARTER CUBICLES AND/OR RELAY/INSTRUMENT SECTION).
  - WIRES JOINED
  - WIRES NOT JOINED
  - FUSE WITH 'FUSE BLOWN' INDICATOR LIGHT
  - (S) PILOT LIGHT (LETTER INDICATES COLOUR)
  - (SOL) SOLENIOD VALVE
  - (TD) TIME DELAY RELAY
  - NORMALLY OPEN, TIME DELAY CLOSURES ON RELAY ENERGIZATION
  - NORMALLY CLOSED, TIME DELAY OPENS ON RELAY ENERGIZATION
  - NORMALLY OPEN, TIME DELAY OPENS ON RELAY DE-ENERGIZATION
  - NORMALLY CLOSED, TIME DELAY CLOSURES ON RELAY DE-ENERGIZATION
  - (CR) CONTROL RELAY
  - NORMALLY OPEN CONTACTS
  - NORMALLY CLOSED CONTACTS
  - (M) MOTOR STARTER CONTACTOR
  - THERMAL OVERLOAD ELEMENT
  - THERMAL OVERLOAD CONTACT (THREE PHASE)
  - (VS) VIBRATION SENSOR (MANUAL RESET) ROBERTSHAW CAT. # 366-A-B.
  - VIBRATION SENSOR CONTACT (NORMALLY CLOSED)
  - (H) MOTOR WINDING HEATER CONTACTOR
  - THERMOSTAT (CLOSES ON TEMP. RISE)
  - THERMOSTAT (OPENS ON TEMP. RISE)
  - LIQUID LEVEL CONTROLLER SWITCH (CLOSES ON LIQUID RISE)
  - FLOW SWITCH (CLOSES ON FLOW)
  - PRESSURE SWITCH (CLOSES ON PRESSURE RISE)
  - STOP PUSH BUTTON (NORMALLY CLOSED)
  - START PUSH BUTTON (NORMALLY OPEN)
  - SELECTOR SWITCH (DOTTED LINES INDICATE ALTERNATE POSITIONS)

PREPARED BY: <b>M.A. THOMAS &amp; ASSOCIATES LTD.</b> CONSULTING ENGINEERS VANCOUVER, B.C. — CANADA.		<b>CBA ENGINEERING LTD.</b> CONSULTING ENGINEERS - VANCOUVER - CANADA		RECOMMENDED: <i>[Signature]</i> DATE: Dec 17/74	DESIGNED: NB DRAWN: TW CHECKED: MNB/NB SCALE: NONE DWG. NO.: 4795-5-74	SURVEYED: DATE: FILE NO.: 0281550-C10-5 DATE: DEC. 1974 SHEET 2 OF 2 SHEETS
REFERENCE: 1067		PROJECT NO. 3 — THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 McALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE ELECTRICAL SCHEMATIC DIAGRAM		APPROVED: <i>[Signature]</i> DIRECTOR DATE: Dec 17/74	BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA — BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT	



PREPARED BY: <b>M.A. THOMAS &amp; ASSOCIATES LTD.</b> CONSULTING ENGINEERS VANCOUVER, B.C. - CANADA.		<b>CBA ENGINEERING LTD.</b> CONSULTING ENGINEERS - VANCOUVER - CANADA.	RECOMMENDED: <i>[Signature]</i> DATE: <i>Dec 17/74</i>	BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT	DESIGNED: <i>[Signature]</i> NB	SURVEYED: <i>[Signature]</i> DATE:
REFERENCE: 1067			APPROVED: <i>[Signature]</i> DIRECTOR		PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 NO. 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE ELECTRICAL SCHEMATIC DIAGRAM	CHECKED: <i>[Signature]</i> MNB/NB
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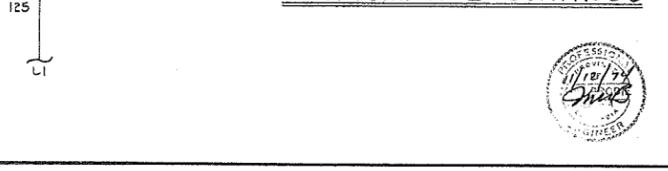


**NOTES:**

- FOR GENERAL NOTES SEE DWG. NO. 4795-5-63
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- BUBBLER SYSTEM LEVEL CONTROL & ALARM SWITCHES SHALL BE DIAPHRAGM OPERATED, ADJUSTABLE RANGE (0-20"WC) ADJUSTABLE DIFFERENTIAL, MINIMUM 1% ACCURACY (OF OPERATING RANGE), WITH SNAP ACTING S.P.D.T. SWITCH, AS MANUFACTURED BY SIRCO CONTROLS LTD., OR APPROVED EQUIVALENT.
- FOR ANNUNCIATION AND EVENT RECORDER CONNECTIONS SEE DETAILS 4&5 DWG. NO. 4795-5-83.

**LEGEND**

- (L) INDICATES DEVICE MOUNTED 'LOCAL' TO EQUIPMENT.
- (S) INDICATES DEVICE MOUNTED IN APPROPRIATE MCC STARTER CUBICLE (OR ON DOOR).
- ITEMS NOT MARKED ARE IN GENERAL IN THE MCC RELAY/INSTRUMENT SECTION (OR MOUNTED ON ITS DOORS).
- INDICATES WIRE TERMINATES ON A TERMINAL BLOCK (IN THE MCC STARTER CUBICLES AND/OR RELAY/INSTRUMENT SECTION).
- WIRES JOINED
- WIRES NOT JOINED
- FUSE WITH 'FUSE BLOWN' INDICATOR LIGHT
- (G) PILOT LIGHT (LETTER INDICATES COLOUR)
- (SOL) SOLENIOD VALVE
- (TD) TIME DELAY RELAY
- NORMALLY OPEN, TIME DELAY CLOSURES ON RELAY ENERGIZATION
- NORMALLY CLOSED, TIME DELAY OPENS ON RELAY ENERGIZATION
- NORMALLY OPEN, TIME DELAY OPENS ON RELAY DE-ENERGIZATION
- NORMALLY CLOSED, TIME DELAY CLOSURES ON RELAY DE-ENERGIZATION
- (R) CONTROL RELAY
- NORMALLY OPEN CONTACTS
- NORMALLY CLOSED CONTACTS
- (M) MOTOR STARTER CONTACTOR
- THERMAL OVERLOAD ELEMENT
- THERMAL OVERLOAD CONTACT (THREE PHASE)
- (VS) VIBRATION SENSOR (MANUAL RESET) ROBERTSHAW CAT. # 360-A-8.
- VIBRATION SENSOR CONTACT (NORMALLY CLOSED)
- (H) MOTOR WINDING HEATER CONTACTOR
- THERMOSTAT (CLOSES ON TEMP. RISE)
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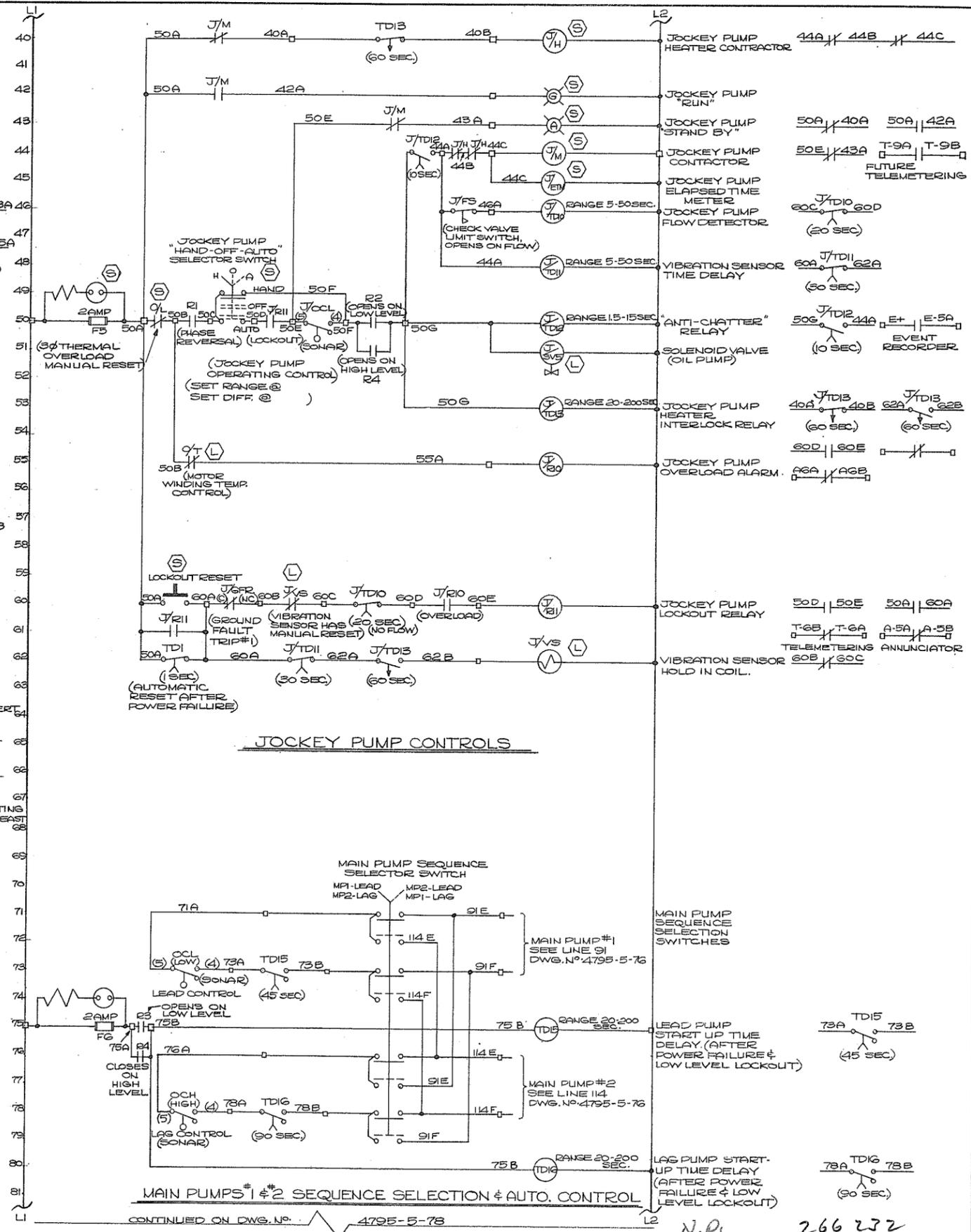
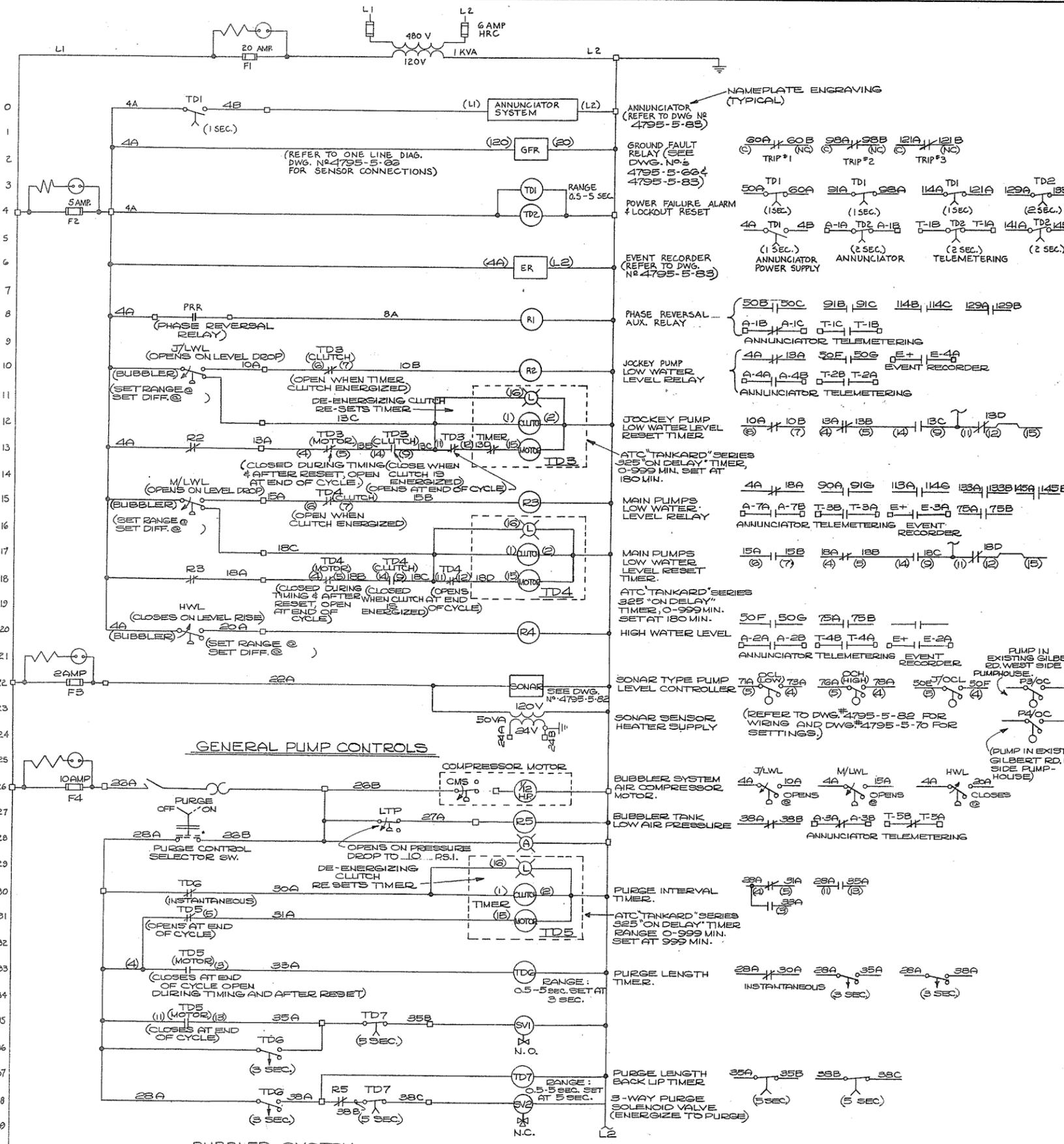


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 VANCOUVER, B.C. — CANADA.

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 CONSULTING ENGINEERS - VANCOUVER - CANADA

REFERENCE: 1067

NO.	BY	REVISIONS	DATE	RECOMMENDED	DATE	DESIGNED	SURVEYED
				DATE	Dec 17/74	BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA — BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT	
				APPROVED	[Signature]	PROJECT NO. 3 — THE TOWNSHIP OF RICHMOND	
				DATE	Dec 17/74	CONTRACT NO. 5 NO. 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE ELECTRICAL SCHEMATIC DIAGRAM	
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						CHECKED	MNB/NE
						SCALE	NONE
						DWG. NO.	4795-5-76
						FILE NO.	0281550-C10-5
						DATE	DEC. 1974
						SHEET	2 OF 2 SHEETS



BUBBLER SYSTEM

JOCKEY PUMP CONTROLS

MAIN PUMPS #1 & #2 SEQUENCE SELECTION & AUTO. CONTROL



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 VANCOUVER, B.C. — CANADA.

REFERENCE: 1067

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 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED: *[Signature]*  
 DATE: *Dec 17/74*

APPROVED: *[Signature]*  
 DIRECTOR

DATE: *Dec 17/74*

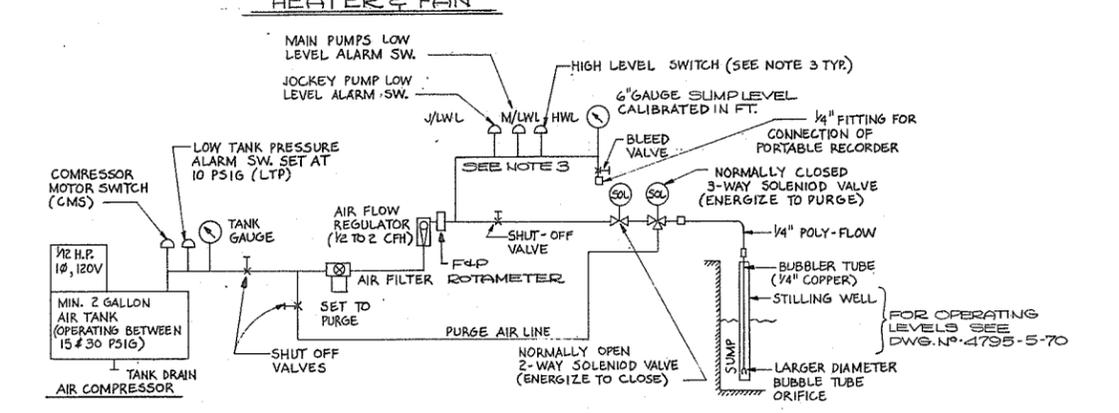
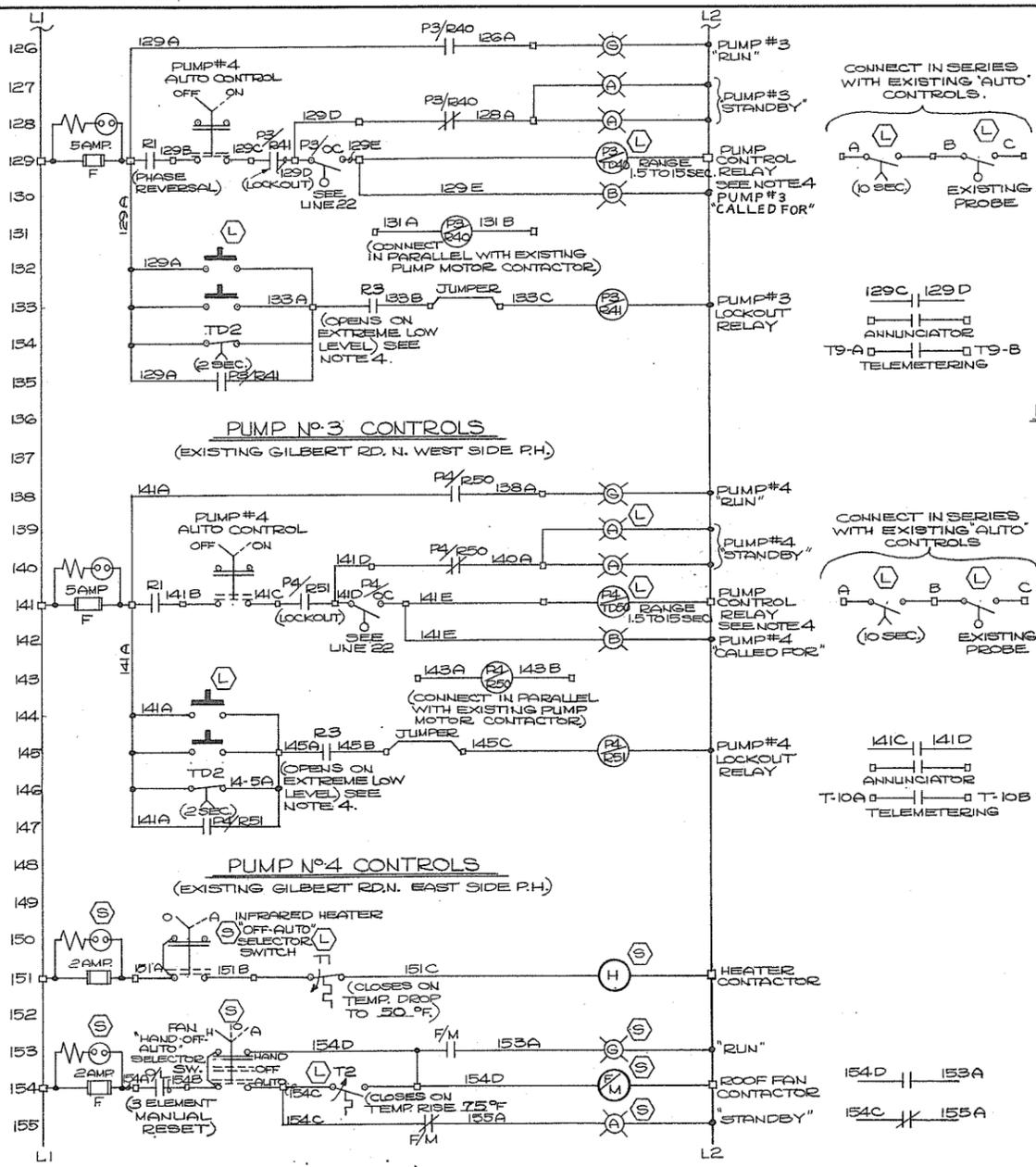
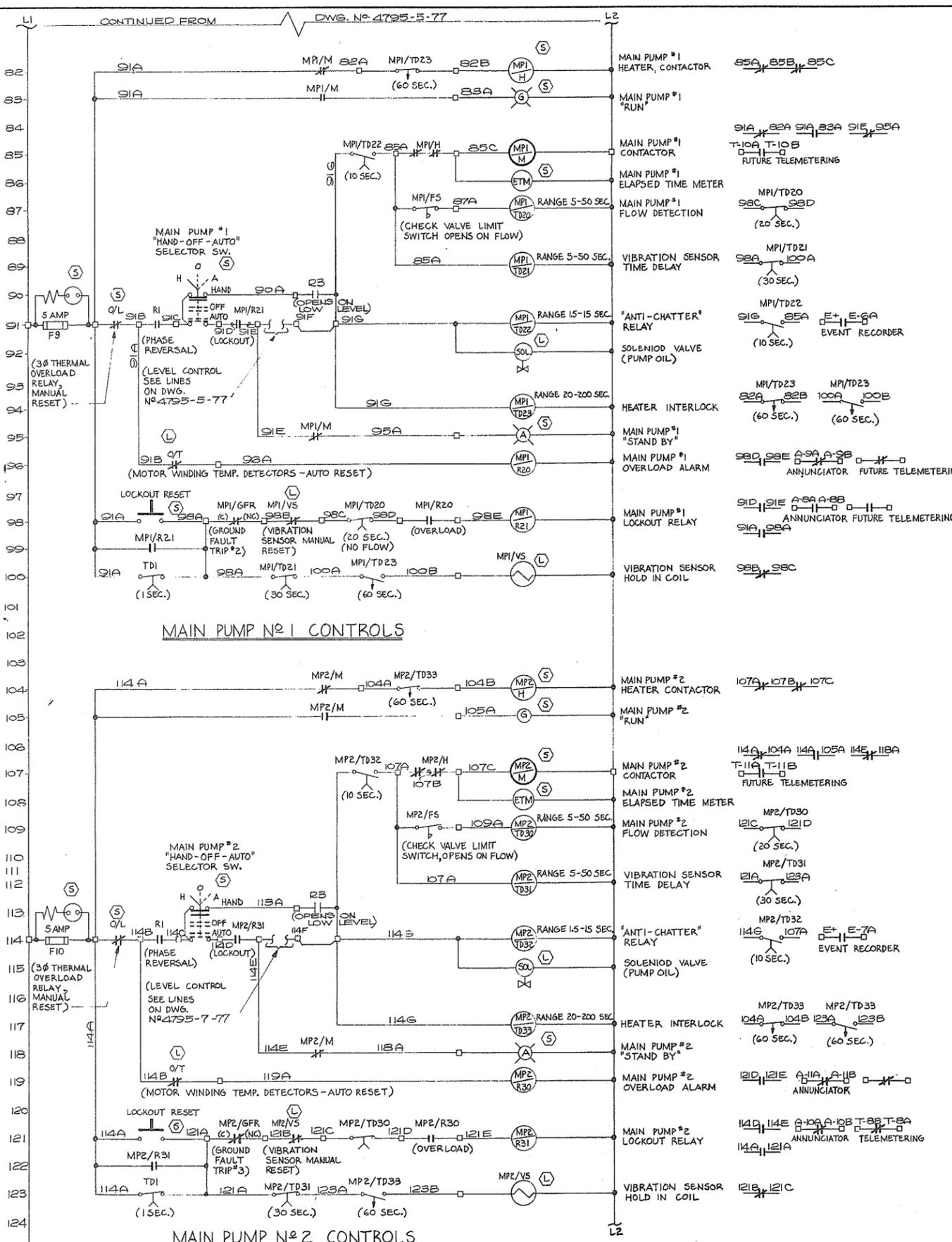
BRITISH COLUMBIA  
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 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA — BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 — THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ELECTRICAL SCHEMATIC DIAGRAM

DESIGNED: *[Signature]*  
 DRAWN: *TW/EH*  
 CHECKED: *MNE/NE*  
 SCALE: NONE  
 DWG. NO.: 4795-5-77

SURVEYED: *[Signature]*  
 DATE: *DEC. 1974*  
 FILE NO.: 0281550-C10-5  
 SHEET 1 OF 2 SHEETS

N.P. 266 272



- NOTES**
- FOR GENERAL NOTES SEE DRAWING NO. 4795-5-63.
  - EACH RELAY, TIMER, PILOT LIGHT, SELECTOR SWITCH, ETC. SHALL HAVE AN IDENTIFYING SCREW HEAD LABEL (BLACK/WHITE) IMMEDIATE OR STANDARD PILOT DEVICE LEGEND PLATE AS APPLICABLE. IT SHALL BEAR THE APPROPRIATE DISCRIMINATION AS SHOWN ON THE SCHEMATIC DIAGRAMS.
  - THE BUBBLER SYSTEM LEVEL CONTROL AND ALARM SWITCHES SHALL BE DIAPHRAGM OPERATED, ADJUSTABLE RANGE (APPROX. 0-120" WC), ADJUSTABLE DIFFERENTIAL, MINIMUM 10% ACCURACY (OF OPERATING RANGE), WITH SNAP ACTING S.P.D.T. SWITCH AS MANUFACTURED BY SIRCO CONTROLS LTD., OR APPROVED EQUIVALENT.
  - PUMPS P3 AND P4 ARE EXISTING PUMPS LOCATED IN EXISTING GILBERT RD. NORTH, WEST AND EAST SIDE PUMPHOUSES. TIME DELAY RELAYS P3/TD40 AND P3/TD50 SHALL BE MOUNTED IN THE EXISTING (REDUCED VOLTAGE) MOTOR STARTERS WITH A CONTACT WIRED TO THE EXISTING "HAND-OFF-AUTO" SELECTOR SWITCH SUCH THAT WHEN IN THE "AUTO" POSITION EACH PUMP WILL BE CONTROLLED FROM THE NEW GILBERT RD. NORTH PUMPHOUSE.
  - FOR ANNUNCIATOR AND EVENT RECORDER WIRING SEE DETAILS 445, DWG. NO. 4795-5-83.

- LEGEND**
- INDICATES DEVICE MOUNTED "LOCAL" TO EQUIPMENT.
  - INDICATES DEVICE MOUNTED IN APPROPRIATE MCC STARTER CUBICLE (OR ON DOOR). ITEMS NOT MARKED ARE IN GENERAL IN THE MCC RELAY/INSTRUMENT SECTION (OR MOUNTED ON ITS DOORS).
  - INDICATES WIRE TERMINATES ON A TERMINAL BLOCK (IN THE MCC STARTER CUBICLES AND/OR RELAY/INSTRUMENT SECTION)
  - WIRES JOINED
  - WIRES NOT JOINED
  - FUSE WITH "FUSE BLOWN" INDICATOR LIGHT.
  - PILOT LIGHT (LETTER INDICATES COLOUR)
  - SOLENOID VALVE
  - TIME DELAY RELAY
  - NORMALLY OPEN, TIME DELAY CLOSING ON RELAY ENERGIZATION.
  - NORMALLY CLOSED, TIME DELAY OPENING ON RELAY ENERGIZATION.
  - NORMALLY OPEN, TIME DELAY OPENING ON RELAY DE-ENERGIZATION.
  - NORMALLY CLOSED, TIME DELAY CLOSING ON RELAY DE-ENERGIZATION.
  - CONTROL RELAY
  - NORMALLY OPEN CONTACTS
  - NORMALLY CLOSED CONTACTS
  - MOTOR STARTER CONTACTOR
  - THERMAL OVERLOAD CONTACT (3 PHASE)
  - VIBRATION SENSOR (MANUAL RESET) ROBERTSHAW CAT. NO. 322-A-B
  - VIBRATION SENSOR CONTACT (NORMALLY CLOSED)
  - MOTOR WINDING HEATER CONTACTOR
  - THERMOSTAT (CLOSES ON TEMP. RISE)
  - THERMOSTAT (OPENS ON TEMP. RISE)
  - LIQUID LEVEL CONTROLLER SWITCH (CLOSES ON LIQUID RISE)
  - FLOW SWITCH (CLOSES ON FLOW)
  - PRESSURE SWITCH (CLOSES ON PRESSURE RISE)
  - STOP PUSH BUTTON (NORMALLY CLOSED)
  - START PUSH BUTTON (NORMALLY OPEN)
  - SELECTOR SWITCH (DOTTED LINES INDICATE ALTERNATE POSITIONS)

PREPARED BY:  
**M.A. THOMAS & ASSOCIATES LTD.**  
 CONSULTING ENGINEERS  
 VANCOUVER, B.C. - CANADA.

**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	<i>[Signature]</i>
DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 17/74

BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ELECTRICAL SCHEMATIC DIAGRAM

DESIGNED	NB	SURVEYED	
DRAWN	TW/EH	DATE	
CHECKED	MNS/NB	FILE NO.	0281550-C10-5
SCALE	NONE	DATE	DEC. 1974
DWG. NO.	4795-5-78	SHEET	2 OF 2 SHEETS

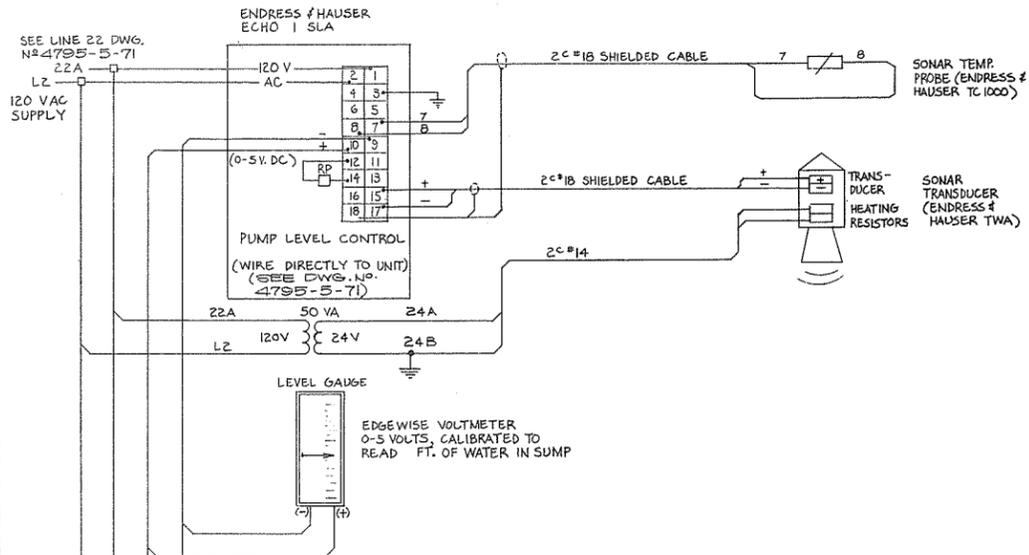
REFERENCE: 1067

NO.	BY	REVISIONS	DATE

N.P.  
 266 233

MCC INSTRUMENT AND RELAY SECTION

FIELD (LOCAL) WIRING



JOCKEY PUMP

JOCKEY PUMP, TWO POINT LIMIT CONTROLLER (ENDRESS & HAUSER HTA 122). SEE LINE NO 50 ON DWG. NO. 4795-5-71

LEAD PUMP

LEAD PUMP, TWO POINT LIMIT CONTROLLER (ENDRESS & HAUSER HTA 122). SEE LINE NO 73 ON DWG. NO. 4795-5-71

LAG PUMP

LAG PUMP, TWO POINT LIMIT CONTROLLER (ENDRESS & HAUSER HTA 122). SEE LINE NO 78 ON DWG. NO. 4795-5-71

SONAR TYPE LEVEL CONTROL

MCC INTERNAL WIRING

(SHALL BE SHOWN ON MCC MANUFACTURER'S SHOP DRAWINGS)

MCC TERMINALS

MCC CUBICLE #

LI
4A
4A
4B
8A
10A
13C
15A
18A
18C
20A
22A
SPARE
SPARE
L2
L2

MCC CUBICLE #

LI
26A
26B
27A
28A
28A
SPARE
35A
35B
38A
38C
SPARE
SPARE
L2
L2

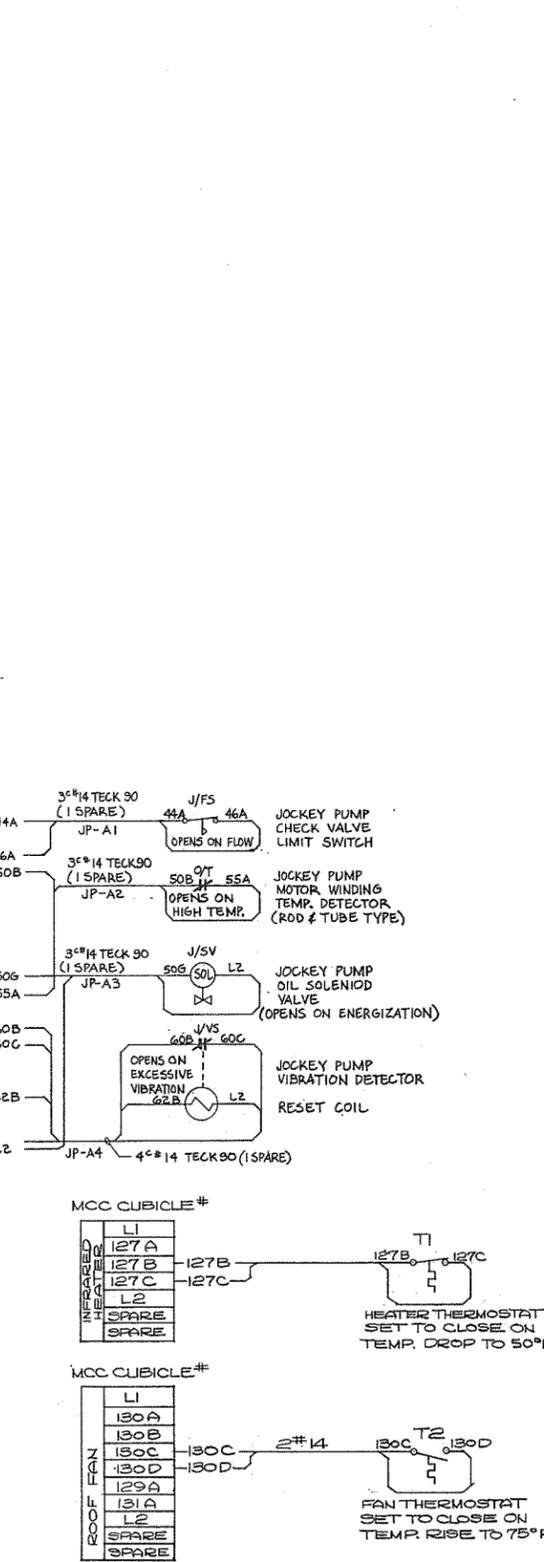
MCC CUBICLE #

LI
50A
50A
40A
40B
42A
43A
44A
44C
46A
50B
50C
SPARE
50D
50E
50F
55A
60A
60B
60C
60D
60E
62B
SPARE
SPARE
L2
L2

MCC CUBICLE #

LI
75A
75B
71A
73A
73B
76A
78A
78B
SPARE
L2
91E
91F
114E
114F
SPARE

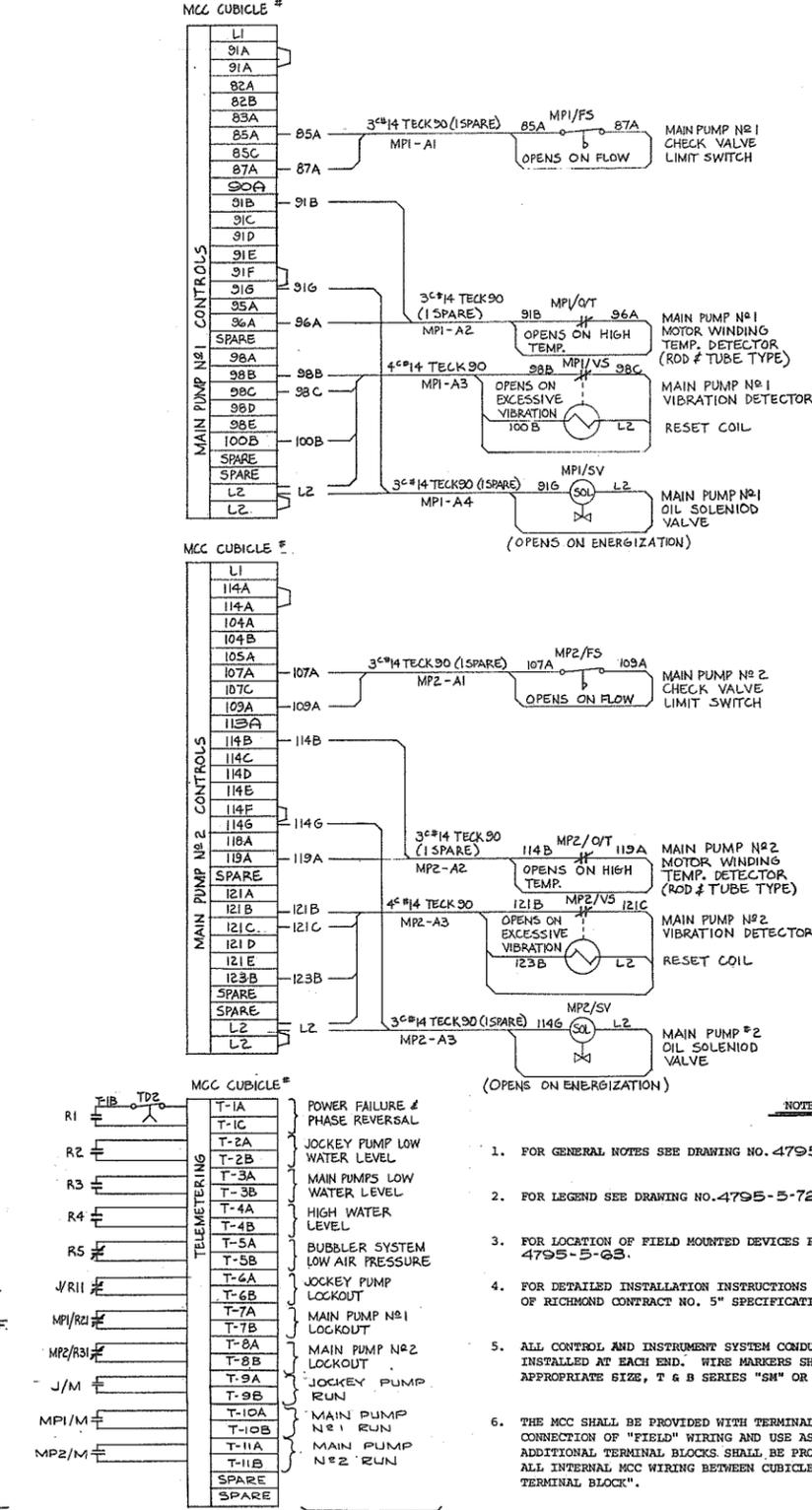
FIELD (LOCAL) WIRING



MCC INTERNAL WIRING

MCC TERMINALS

FIELD (LOCAL) WIRING



NOTES

- FOR GENERAL NOTES SEE DRAWING NO. 4795-5-63.
- FOR LEGEND SEE DRAWING NO. 4795-5-72.
- FOR LOCATION OF FIELD MOUNTED DEVICES REFER TO LAYOUT DRAWING NO. 4795-5-63.
- FOR DETAILED INSTALLATION INSTRUCTIONS REFER TO "PROJECT NO. 3, TOWNSHIP OF RICHMOND CONTRACT NO. 5" SPECIFICATION.
- ALL CONTROL AND INSTRUMENT SYSTEM CONDUCTORS SHALL HAVE WIRE MARKERS INSTALLED AT EACH END. WIRE MARKERS SHALL BE TUBULAR PLASTIC TYPE OF APPROPRIATE SIZE, T & B SERIES "SM" OR APPROVED EQUIVALENT.
- THE MCC SHALL BE PROVIDED WITH TERMINAL BLOCKS AS SHOWN FOR THE CONNECTION OF "FIELD" WIRING AND USE AS MAINTENANCE TEST POINTS, ETC. ADDITIONAL TERMINAL BLOCKS SHALL BE PROVIDED AS REQUIRED TO ENSURE ALL INTERNAL MCC WIRING BETWEEN CUBICLES IS FROM "TERMINAL BLOCK TO TERMINAL BLOCK".
- PUMP SOLENOID VALVES AND VIBRATION DETECTORS WILL BE SUPPLIED WITH THE PUMPS.
- FOR SCHEMATIC DIAGRAM SEE DWG. NO. 4795-5-71.
- ALL TERMINAL BLOCKS SHALL BE NEATLY MARKED WITH THE APPROPRIATE WIRE NUMBERS AS SHOWN. IN ADDITION EACH TERMINAL BLOCK SECTION SHALL HAVE AN IDENTIFYING LAMACOID NAMEPLATE.



PREPARED BY:  
**M.A. THOMAS & ASSOCIATES LTD.**  
 CONSULTING ENGINEERS  
 VANCOUVER, B.C. CANADA.



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED: *[Signature]*  
 DATE: Dec 17/74  
 APPROVED: *[Signature]*  
 DATE: Dec 17/74

BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 NO. 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ELECTRICAL WIRING DIAGRAM

DESIGNED	NB	SURVEYED	
DRAWN	TW/FH	DATE	
CHECKED	MJB/NB	FILE NO.	0281550-C10-5
SCALE	NONE	DATE	DEC. 1974
DWG. NO.	4795-5-79	SHEET	

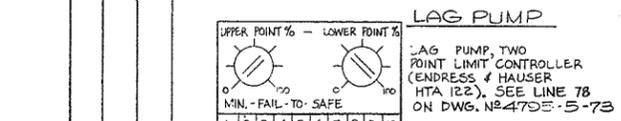
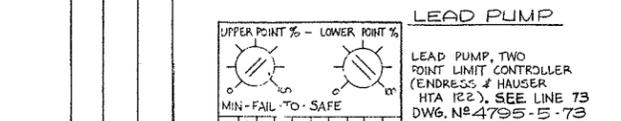
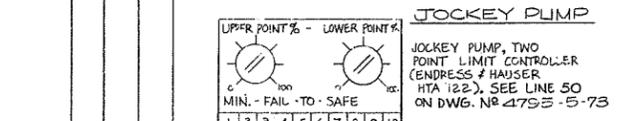
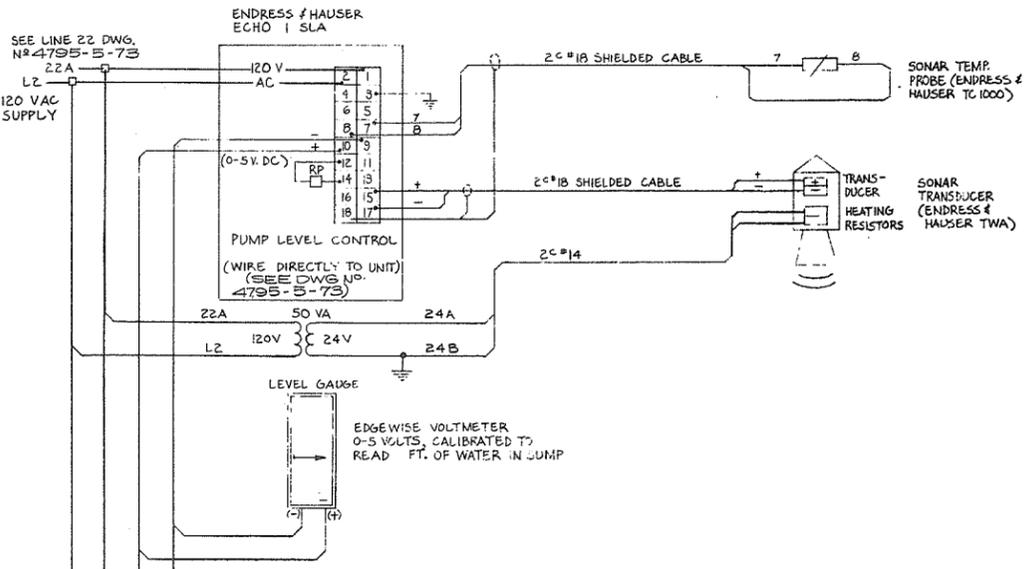
MCC INSTRUMENT AND RELAY SECTION

FIELD (LOCAL) WIRING

MCC INTERNAL WIRING  
MCC TERMINALS

FIELD (LOCAL) WIRING

MCC INTERNAL WIRING  
MCC TERMINALS  
FIELD (LOCAL) WIRING



SONAR TYPE LEVEL CONTROL

(SHALL BE SHOWN ON MCC MANUFACTURERS SHOP DRAWINGS)

MCC CUBICLE #

LI
4A
4A
4B
SPARE
8A
10A
13A
13C
15A
18A
18C
20A
22A
SPARE
SPARE
L2
L2

MCC CUBICLE #

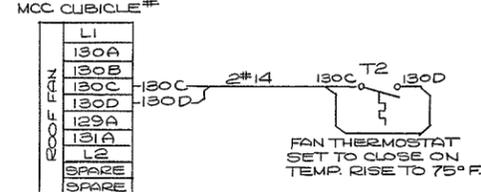
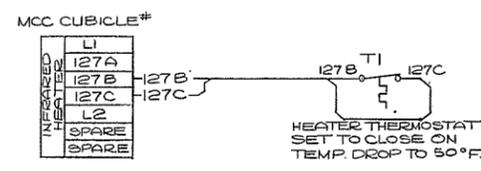
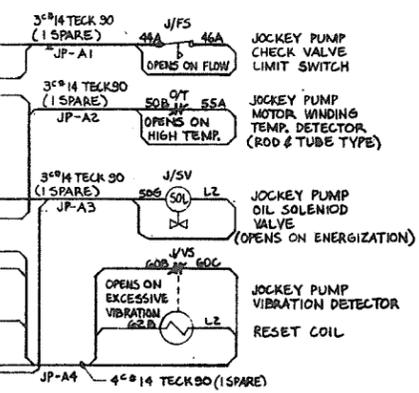
LI
26A
26B
27A
28A
28A
SPARE
35A
35B
38A
38C
SPARE
SPARE
L2
L2

MCC CUBICLE #

LI
50A
50A
40A
40B
42A
43A
44A
44C
46A
50B
50C
SPARE
50D
50E
50F
55A
60A
60B
60C
60D
60E
62B
SPARE
SPARE
L2
L2

MCC CUBICLE #

LI
15A
75B
71A
73A
73B
76A
78A
78B
SPARE
L2
91E
91F
114E
114F
SPARE



MCC CUBICLE #

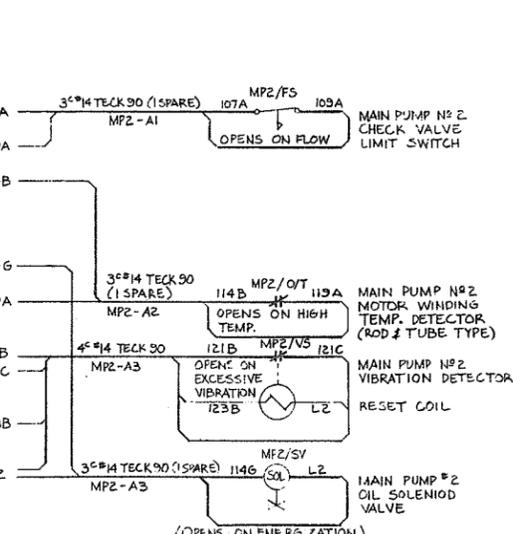
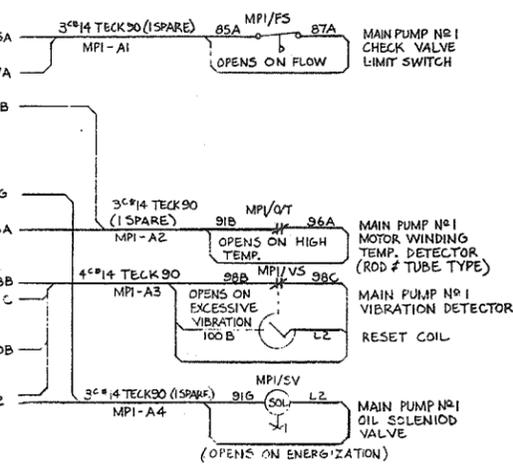
LI
91A
91A
82A
82B
83A
85A
85C
87A
90A
91B
91C
91D
91E
91F
91G
96A
96A
98A
98B
98C
98D
98E
100B
SPARE
SPARE
L2
L2

MCC CUBICLE #

LI
114A
114A
104A
104B
105A
107A
107C
109A
113A
114B
114C
114D
114E
114F
114G
119A
121A
121B
121C
121D
121E
123B
SPARE
SPARE
L2
L2

TELEMETERING

R1	T-1A
R2	T-1C
R3	T-2A
R4	T-2B
R5	T-3A
J/R1	T-3B
MP1/R1	T-4A
MP1/R2	T-4B
J/M	T-5A
MP1/M	T-5B
MP2/M	T-6A
	T-6B
	T-7A
	T-7B
	T-8A
	T-8B
	T-9A
	T-9B
	T-10A
	T-10B
	T-11A
	T-11B
	SPARE
	SPARE



- NOTES
- FOR GENERAL NOTES SEE DRAWING NO. 4795-5-63.
  - FOR LEGEND SEE DRAWING NO. 4795-5-74.
  - FOR LOCATION OF FIELD MOUNTED DEVICES REFER TO LAYOUT DRAWING NO. 4795-5-64.
  - FOR DETAILED INSTALLATION INSTRUCTIONS REFER TO "PROJECT NO. 3, TOWNSHIP OF RICHMOND CONTRACT NO. 5" SPECIFICATION.
  - ALL CONTROL AND INSTRUMENT SYSTEM CONDUCTORS SHALL HAVE WIRE MARKERS INSTALLED AT EACH END. WIRE MARKERS SHALL BE TUBULAR PLASTIC TYPE OF APPROPRIATE SIZE, T & B SERIES "SM" OR APPROVED EQUIVALENT.
  - THE MCC SHALL BE PROVIDED WITH TERMINAL BLOCKS AS SHOWN FOR THE CONNECTION OF "FIELD" WIRING AND USE AS MAINTENANCE TEST POINTS, ETC. ADDITIONAL TERMINAL BLOCKS SHALL BE PROVIDED AS REQUIRED TO ENSURE ALL INTERNAL MCC WIRING BETWEEN CUBICLES IS FROM "TERMINAL BLOCK TO TERMINAL BLOCK".
  - PUMP SOLENOID VALVES AND VIBRATION DETECTORS WILL BE SUPPLIED WITH THE PUMPS.
  - FOR SCHEMATIC DIAGRAM SEE DWG. NO. 4795-5-73.
  - ALL TERMINAL BLOCKS SHALL BE NEATLY MARKED WITH THE APPROPRIATE WIRE NUMBERS AS SHOWN. IN ADDITION EACH TERMINAL BLOCK SECTION SHALL HAVE AN IDENTIFYING LAMACOID NAMEPLATE.

N.P. 266 235



PREPARED BY:  
**M.A. THOMAS & ASSOCIATES LTD.**  
CONSULTING ENGINEERS  
VANCOUVER, B.C. - CANADA.



**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

RECOMMENDED	
DATE	Dec 17/74
APPROVED	
DATE	Dec 18/74

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
McCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ELECTRICAL WIRING DIAGRAM

DESIGNED	NB	SURVEYED	
DRAWN	TW/FH	DATE	
CHECKED	MNB/NB	FILE NO.	0281550-C10-5
SCALE	NONE	DATE	DEC. 1974
DWG. NO.	4795-5-80	SHEET	



MCC INSTRUMENT AND RELAY SECTION

FIELD (LOCAL) WIRING

MCC INTERNAL WIRING

MCC TERMINALS

FIELD (LOCAL) WIRING

MCC INTERNAL WIRING

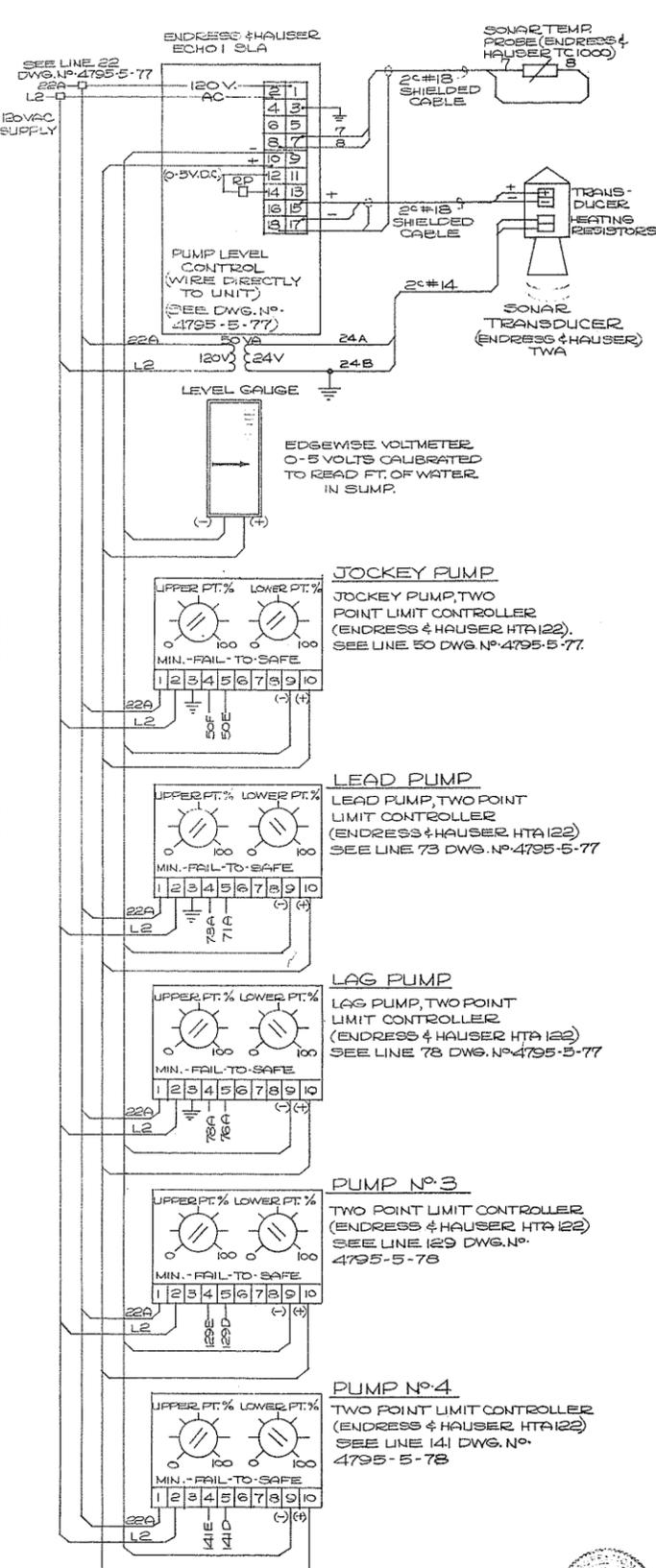
MCC TERMINALS

FIELD (FROM NEW TO EXISTING PUMPHOUSES) WIRING

MCC INTERNAL WIRING

MCC TERMINALS

FIELD WIRING (FROM NEW TO EXISTING PUMPHOUSES)



MCC CUBICLE#	GENERAL PUMP CONTROLS
L1	
4A	
4B	
SPARE	
8A	
10A	
13A	
13C	
15A	
18A	
18C	
20A	
22A	
SPARE	
SPARE	
L2	

MCC CUBICLE#	BUBBLER SYSTEM
L1	
26A	
26B	
27A	
28A	
28B	
SPARE	
35A	
35B	
35A	
38C	
SPARE	
SPARE	
L2	

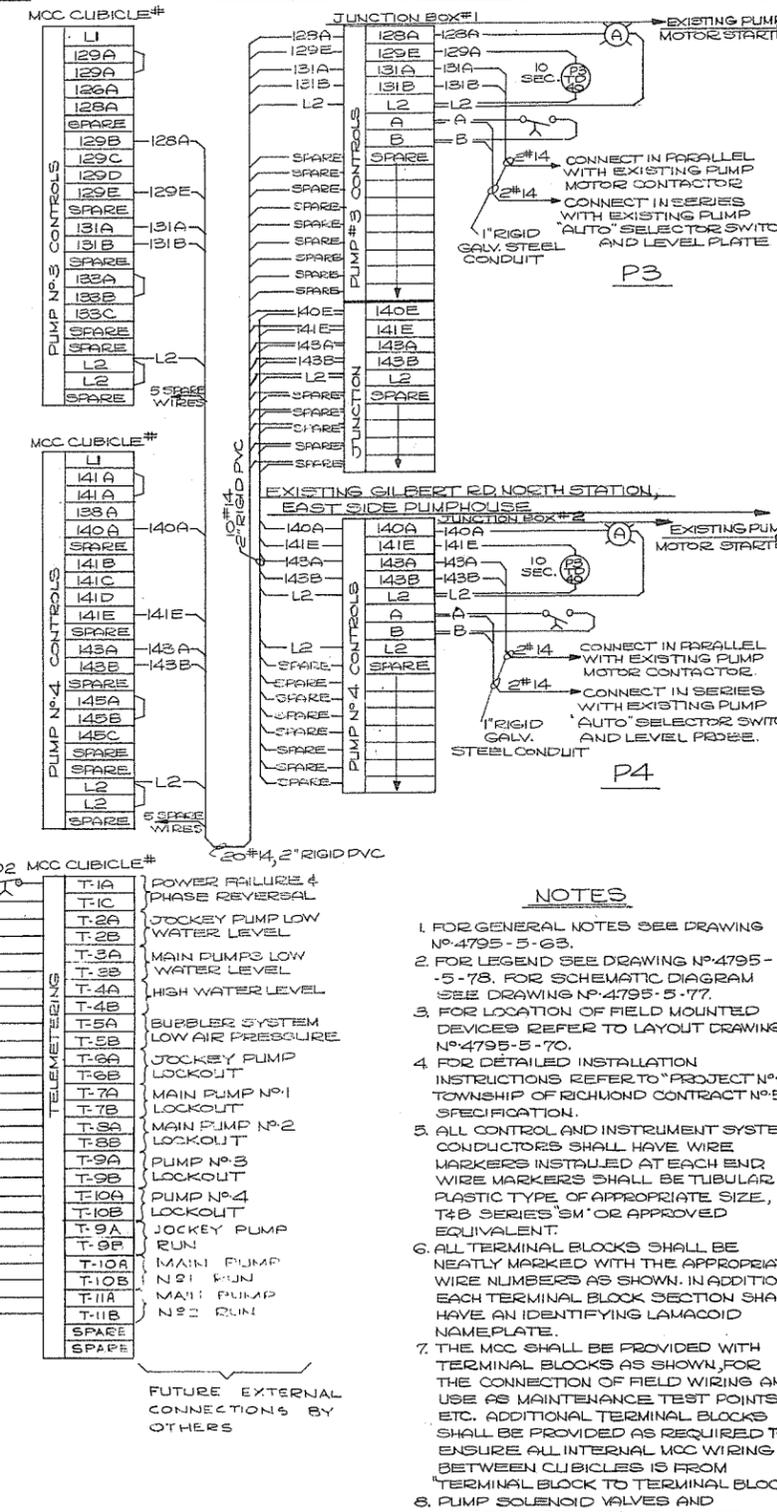
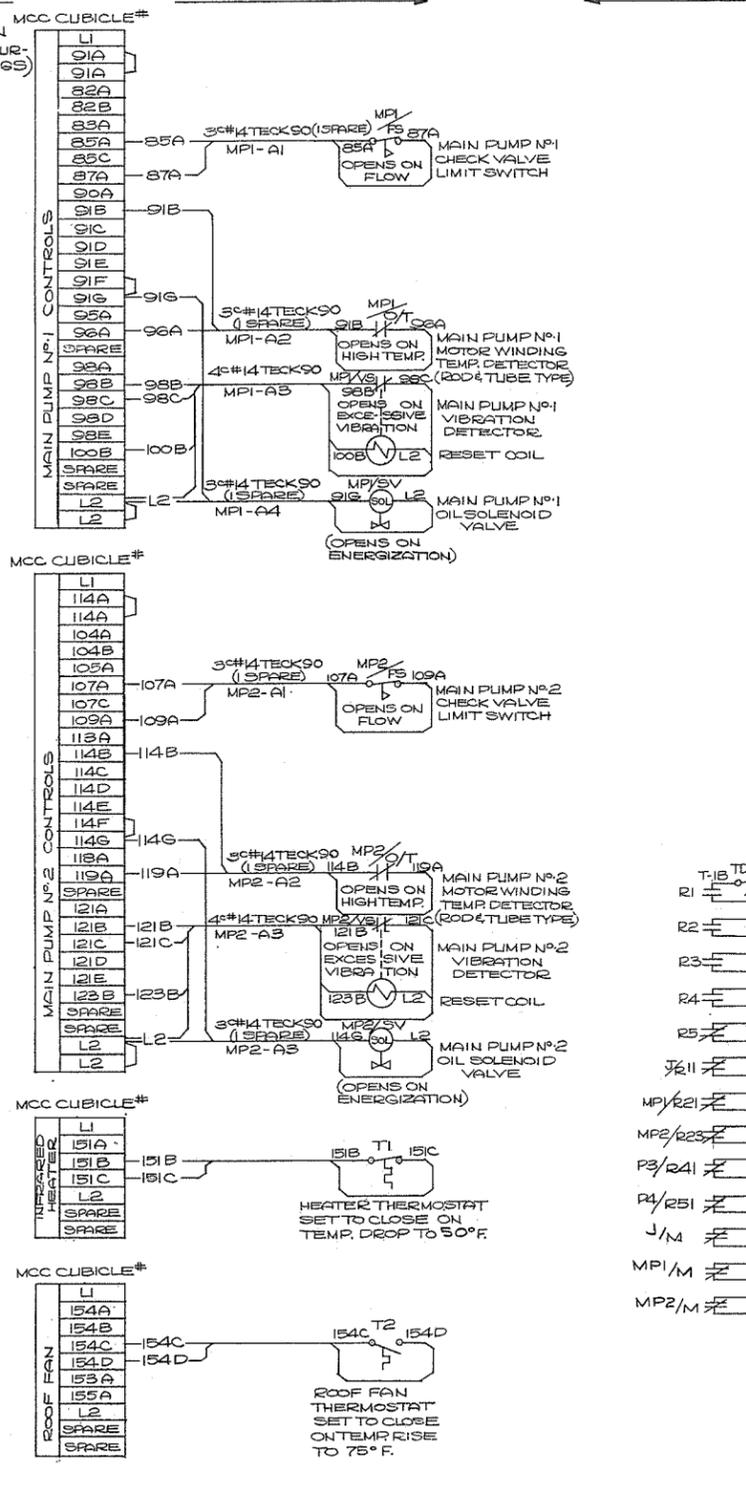
  

MCC CUBICLE#	JOCKEY PUMP CONTROLS
L1	
50A	
40A	
40B	
42A	
43A	
44A	
44C	
46A	
50B	
SPARE	
50D	
50E	
50F	
50G	
55A	
60A	
60B	
60C	
60D	
60E	
62B	
SPARE	
SPARE	
L2	

MCC CUBICLE#	JOCKEY PUMP SEQUENCE SELECTION
L1	
75A	
75B	
71A	
73A	
73B	
78A	
78B	
SPARE	
L2	
91E	
91F	
114E	
114F	
SPARE	

(SHALL BE SHOWN ON MCC MANUFACTURER'S SHOP DRAWINGS)



- NOTES**
- FOR GENERAL NOTES SEE DRAWING NO. 4795-5-63.
  - FOR LEGEND SEE DRAWING NO. 4795-5-78. FOR SCHEMATIC DIAGRAM SEE DRAWING NO. 4795-5-77.
  - FOR LOCATION OF FIELD MOUNTED DEVICES REFER TO LAYOUT DRAWING NO. 4795-5-70.
  - FOR DETAILED INSTALLATION INSTRUCTIONS REFER TO PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 5 SPECIFICATION.
  - ALL CONTROL AND INSTRUMENT SYSTEM CONDUCTORS SHALL HAVE WIRE MARKERS INSTALLED AT EACH END. WIRE MARKERS SHALL BE TUBULAR PLASTIC TYPE OF APPROPRIATE SIZE, T&B SERIES 'SM' OR APPROVED EQUIVALENT.
  - ALL TERMINAL BLOCKS SHALL BE NEATLY MARKED WITH THE APPROPRIATE WIRE NUMBERS AS SHOWN. IN ADDITION EACH TERMINAL BLOCK SECTION SHALL HAVE AN IDENTIFYING LAMACOID NAMEPLATE.
  - THE MCC SHALL BE PROVIDED WITH TERMINAL BLOCKS AS SHOWN FOR THE CONNECTION OF FIELD WIRING AND USE AS MAINTENANCE TEST POINTS, ETC. ADDITIONAL TERMINAL BLOCKS SHALL BE PROVIDED AS REQUIRED TO ENSURE ALL INTERNAL MCC WIRING BETWEEN CUBICLES IS FROM TERMINAL BLOCK TO TERMINAL BLOCK.
  - PUMP SOLENOID VALVES AND VIBRATION DETECTORS WILL BE SUPPLIED WITH THE PUMPS.

SONAR TYPE LEVEL CONTROL



PREPARED BY:  
**M.A. THOMAS & ASSOCIATES LTD.**  
 CONSULTING ENGINEERS  
 VANCOUVER, B.C. - CANADA.



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

REFERENCE: 1067

NO.	BY	REVISIONS	DATE

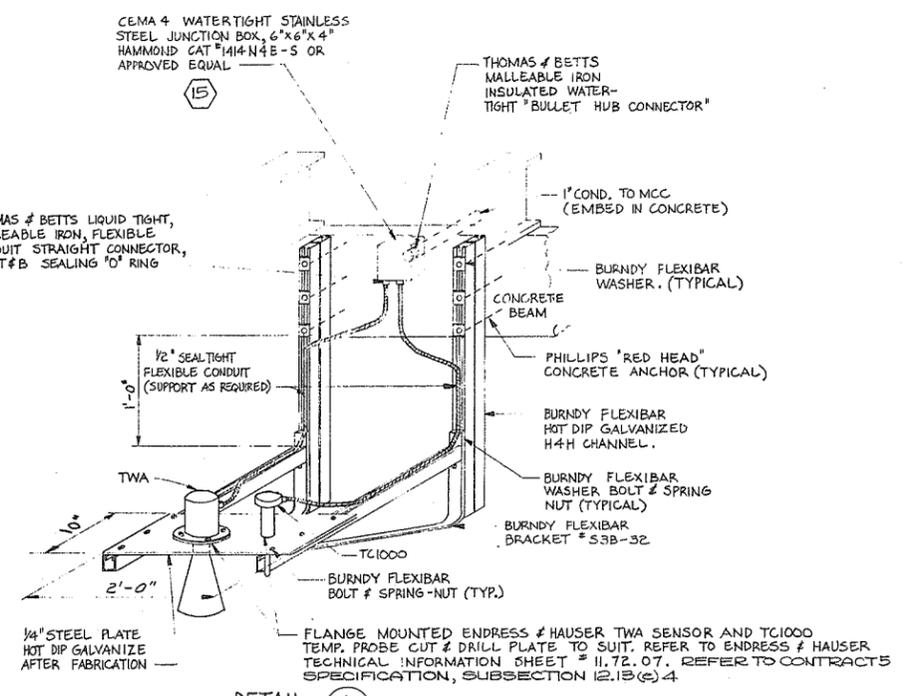
RECOMMENDED DATE APPROVED DATE	BRITISH COLUMBIA LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE ELECTRICAL WIRING DIAGRAM	DESIGNED DRAWN CHECKED SCALE DWG. NO.	SURVEYED DATE FILE NO. DATE SHEET OF SHEETS
Dec 17/76 Dec 22/76		NB FH NE/MNB NONE 4795-5-82	  0291550-C10-5 DEC. 1974 OF   SHEETS

- NOTE: (1) THE NUMBER OF EACH ITEM REQUIRED IS AS SHOWN ON THE DRAWINGS.  
 (2) THIS IS NOT A COMPLETE MATERIAL LIST, REFER TO DRAWINGS AND SPECIFICATIONS.
- | SYMBOL | ITEM | DESCRIPTION   |
|--------|------|---|
| F1     | 1    | FLUORESCENT LIGHTING FIXTURES HAVING 2-4' T12, 60 WATT, HIGH OUTPUT, COOL WHITE, LOW TEMPERATURE LAMPS AND BALLAST, FOR 120 VOLT OPERATION. THE FIXTURE SHALL BE SEALED IN ACCORDANCE WITH CSA "ENCLOSED AND GASKETTED" REQUIREMENTS AND SHALL HAVE A BAKED ENAMEL FINISH AND ACRYLIC LENS, COMPLETE WITH ALL ACCESSORIES FOR PENDANT MOUNTING.   |
| F3     | 2    | WEATHERPROOF WALL MOUNTED LIGHT FOR INSTALLATION OVER PUMPHOUSE DOORS. APPROX. 36" LONG, 5" HIGH AND 4 TO 6" DEEP TOTALLY ENCLOSED AND GASKETED FABRICATE OF 0.04" ALUMINUM - COLOUR DURACRON FINISH, WHITE POLYCARBONATE LENS 2X30 W FLUORESCENT, RAPID START, COOL WHITE, 0° HPP BALLAST WITH INTEGRAL PHOTOCCELL (HIDDEN WITHIN HOUSING) PACIFIC PHOTON PRODUCTS, PORT COQUITLAM, B. C. SERIES J - 10228 OR APPROVED EQUIVALENT. SEE DETAIL 2, BELOW.  |
| IRH    | 3    | INFRARED QUARTZ LAMP ELECTRIC RADIANT HEATERS, HAVING 45° ENERGY SPREAD, 2.5 KW, 480 VOLTS, COMPLETE WITH ADJUSTABLE MOUNTING BRACKETS, LAMP, AND ALL NECESSARY ACCESSORIES. CANADIAN GENERAL ELECTRIC "COMFORT RAY" OHK SERIES, CAT. #OKH-3414. C/W 600 VOLT LAMPS (FOR APPROX. 1.6 KW OUTPUT @ 480 VOLTS).  |
| I1     | 4    | VAPOURTIGHT ENCLOSED AND GASKETED INCANDESCENT LIGHTING FIXTURE COMPLETE WITH GUARD, GLOBE, SOCKET AND OUTLET BOX (1/2" HUBS) CROUSE-HINDS CAT. #VXHBFL2GF, OR APPROVED EQUIVALENT C/W 200 WATT LAMP.   |
| FAN    | 5    | ROOF MOUNTED AIR SUPPLY FAN TO DELIVERY APPROXIMATELY 3000 CFM AT 1/2" S.P. UNIT SHALL BE LOW PROFILE DESIGN, COLOURED GREY COMPLETE WITH LOWER FAN GUARD, INSECT SCREEN, MOTOR DISCONNECT SWITCH, 3/4 H.P., 3 PHASE, 460 VOLT, TOTALLY ENCLOSED, STANDARD CEMA FRAME, SEALED BALL BEARING MOTOR. NOTE, SPECIFIED MOTOR IS NOT STANDARD WITH BELOW LISTED FAN.<br>JENN-AIR (GENERAL EQUIPMENT LTD.) "MODUVENT" ROOF SUPPLY FAN MODEL NO. 243-15BS OR APPROVED EQUIVALENT C/W PREFABRICATED CURB CAT. #402 GC. FAN COLOUR SHALL BE "STANDARD" BLUE GREY. |
| T1     | 6    | THERMOSTAT, RANGE 35 TO 100°F, 2° FIXED DIFFERENTIAL, SPDT CONTACTS, HONEYWELL "AIRSWITCH CONTROLLER" CAT. #T631C1053 OR APPROVED EQUIVALENT.   |
| T2     | 7    | AS PER ITEM 6 ABOVE.  |
| C20    | 8    | POWER FACTOR CORRECTION CAPACITOR, 20 KVAC, 480 VOLTS, 3 PHASE ASKAREL FILLED FOR THE USE ON AN UNGROUNDED DELTA SYSTEM. UNIT SHALL BE COMPLETE WITH, INDICATING TYPE HRC FUSES, DISCHARGE RESISTORS, TERMINAL CLAMPS, WALL MOUNTING FRAME AND BRACKET AND SHALL BE COMPLETELY ENCLOSED (WEATHERPROOF). UNIT SHALL BE PAINTED GINGER BROWN TO MATCH THE MCC.  |
| C10    | 9    | AS PER ITEM 8 ABOVE EXCEPT 10 KVAC.   |
| C7.5   | 10   | AS PER ITEM 8 ABOVE EXCEPT 7.5 KVAC.  |
| C5     | 11   | AS PER ITEM 8 ABOVE EXCEPT 5 KVAC.  |
| C3.5   | 12   | AS PER ITEM 8 ABOVE EXCEPT 3.5 KVAC.  |
| LS     | 13   | LIMIT SWITCH COMPLETE WITH OPERATING ARM AND MOUNTING BRACKET (FOR PUMP CHECK VALVES). LIMIT SWITCH SHALL BE CEMA TYPE 4 "WATERTIGHT", SPRING RETURN TO CENTRE, LEVER OPERATED, SUITABLE FOR CLOCKWISE OR COUNTER-CLOCKWISE OPERATION.<br>ALLEN-BRADLEY "BULLETIN" 802X" CAT. #802X-A4, OR APPROVED EQUIVALENT, COMPLETE WITH SUITABLE LENGTH, ADJUSTABLE, HEAVY DUTY ROLLER TYPE OPERATING LEVER.  |
|        | 14   | INSULATING MAT FOR PLACEMENT IN FRONT OF THE MCC. THE MAT SHALL BE 2 FT. WIDE BY 10 FT. LONG. IT SHALL BE COLOURED GREY. THE MAT SHALL BE "HERON RIB VINYLE DUCTBOARD" (E. B. PEERLESS LTD.), OR APPROVED EQUIVALENT.   |
|        | 15   | CEMA 4 STAINLESS STEEL JUNCTION BOX 6"x6"x4" HAMMOND CAT. N°1414 N4E-S, OR APPROVED EQUIVALENT.   |
|        | 16   | DUPLEX RECEPTACLE OF THE INTEGRAL GROUND FAULT PROTECTED TYPE, PASO & SEYMOUR CAT. N°1591 WITH CAT. N°98061 STAINLESS STEEL WALLPLATE (BRETTLELL ELECTRIC LTD) OR APPROVED EQUIVALENT.  |
|        | 17   | PULL BOX, MINIMUM 24"x24"x8" RATED CEMA 4 WATERTIGHT, OF HOT DIPPED GALVANIZED STEEL WITH EQUIPMENT BACKPLATE AND SCREW HELD FRONT COVER HAVING PROVISION FOR "SEALING" BY THE UTILITY.   |
|        | 18   | AS PER ITEM 17 ABOVE EXCEPT MIN. 24"x24"x18" DEEP AND FABRICATED OF STAINLESS STEEL.  |

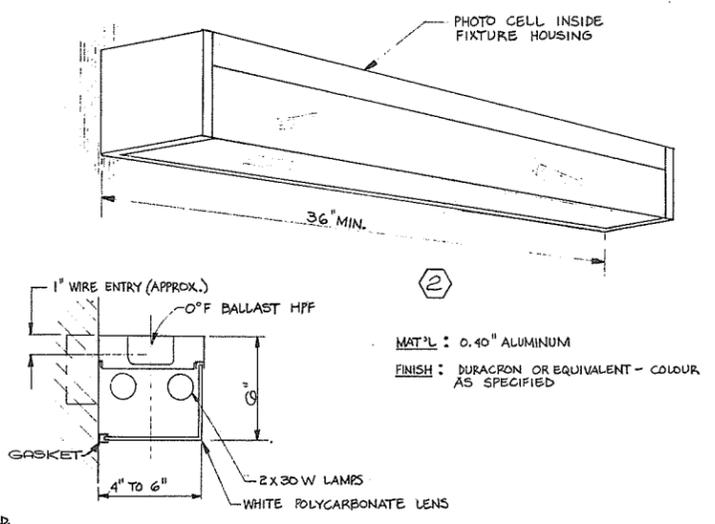
NOTES

1. FOR GENERAL NOTES REFER TO DWG. N° 4795-5-63  
 2. FOR LEGEND REFER TO DWG. N° 4795-5-72

N.P. 266 238

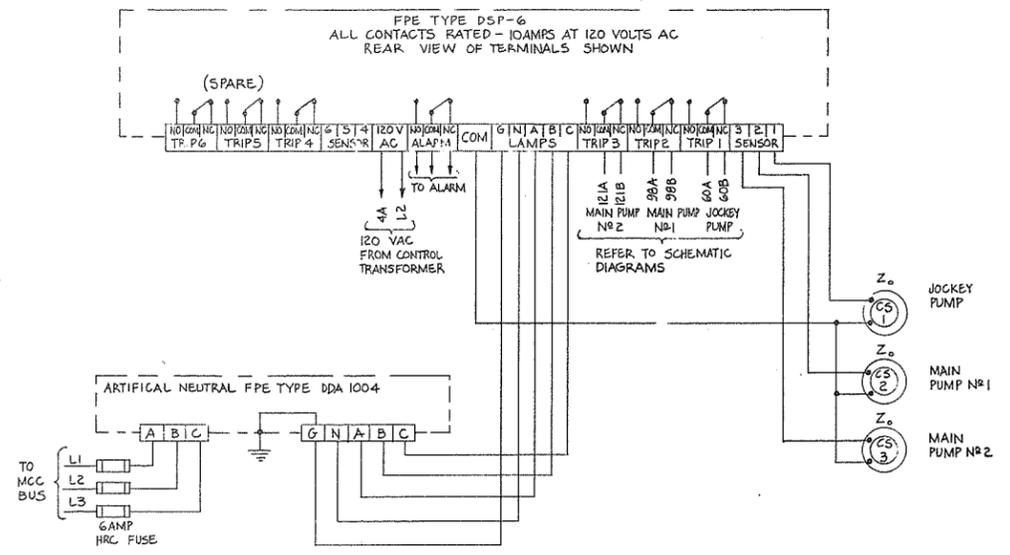


DETAIL 1  
 N.T.S.  
 SONAR TRANSDUCER & TEMPERATURE PROBE MOUNTING  
 REFER TO CONTRACT 5 SUBSECTION 12.13 (c) 4



NOTE: FIXTURE IS TOTALLY ENCLOSED AND GASKETED FOR OUTDOOR USE

DETAIL 2  
 EXTERIOR FLUORESCENT LIGHT 'F3'



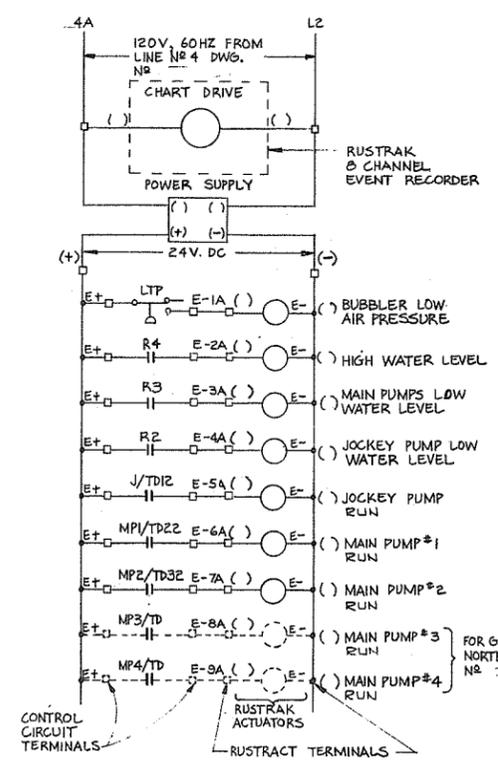
DETAIL 3  
 ARTIFICIAL NEUTRAL & GROUND FAULT DETECTOR WIRING

ANNUNCIATOR UNIT	ALARM CONTACTS	ANNUNCIATOR FUNCTION
1-1	FC A-1A TD2 A-1B RI A-1C SA	POWER FAILURE
1-2	FC A-2A R4 A-2B SB	HIGH WATER LEVEL
1-3	FC A-3A R5 A-3B SC	BUBBLER LOW AIR PRESSURE
2-1	FC A-4A R2 A-4B SA	LOW WATER LEVEL JOCKEY PUMP
2-2	FC A-5A J/R11 A-5B SB	JOCKEY PUMP LOCKOUT
2-3	FC A-6A J/R10 A-6B SC	JOCKEY PUMP OVERLOAD
3-1	FC A-7A R3 A-7B SA	LOW WATER LEVEL MAIN PUMPS
3-2	FC A-8A MPI/R21 A-8B SB	MAIN PUMP N°1 LOCKOUT
3-3	FC A-9A MPI/R20 A-9B SC	MAIN PUMP N°1 OVERLOAD
4-1	FC	FLASHER MODULE
4-2	FC A-10A MP2/R31 A-10B SB	MAIN PUMP N°2 LOCKOUT
4-3	FC A-11A MP2/R30 A-11B SC	MAIN PUMP N°2 OVERLOAD
5-1	FC A-12A P3/R41 A-12B SA	PUMP N°3 LOCKOUT
5-2	FC A-13A P4/R51 A-13B SB	PUMP N°4 LOCKOUT
5-3	FC A-14A A-14B SC	SPARE

GILBERT RD. ONLY

CONTROL CIRCUIT TERMINALS  
 ANNUNCIATOR TERMINALS (TYP)

ANNUNCIATOR  
 TYPICAL CONNECTIONS  
 DETAIL 4



EVENT RECORDERS  
 TYPICAL CONNECTIONS  
 DETAIL 5

PREPARED BY:  
**M.A. THOMAS & ASSOCIATES LTD.**  
 CONSULTING ENGINEERS  
 VANCOUVER, B.C. - CANADA.

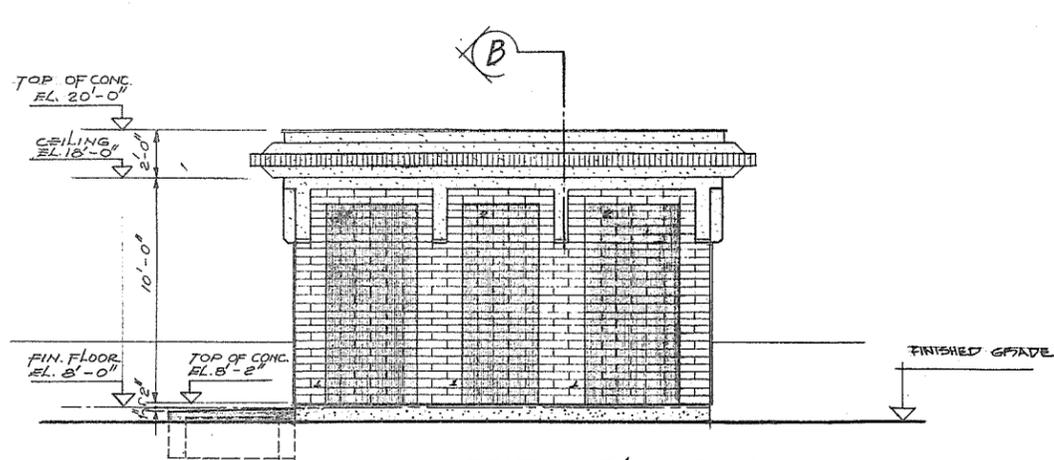
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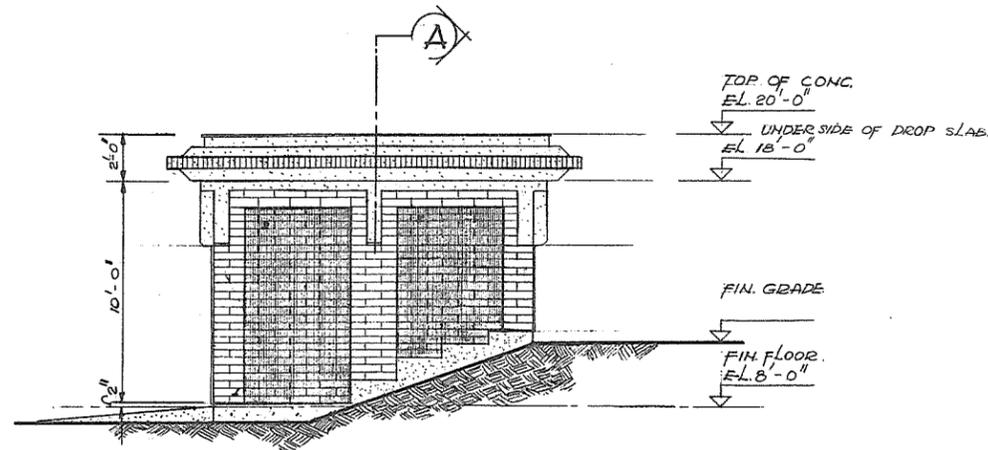
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 DATE: Dec 17/72  
 APPROVED: *[Signature]*  
 DIRECTOR  
 DATE: *[Signature]*

DESIGNED	DATE	SURVEYED	DATE
NB			
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CHECKED	N.B.	DATE	DEC. 1974
SCALE	NONE	DWG. NO.	4795-5-83
		SHEET	OF SHEETS

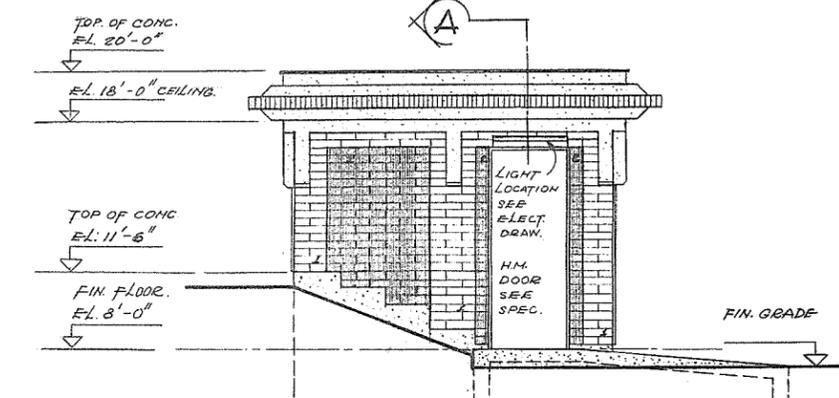
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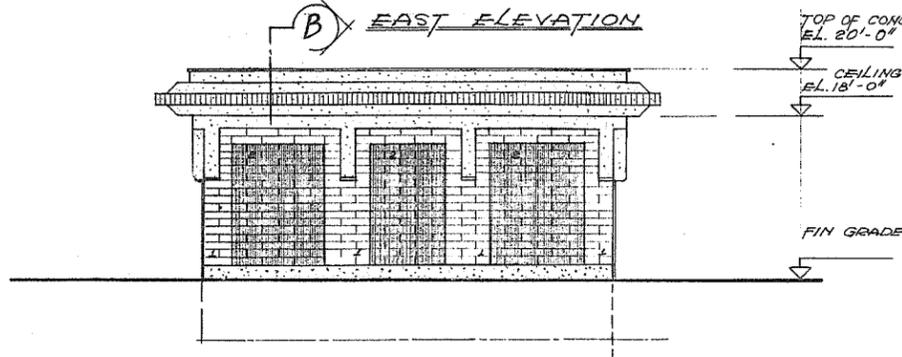
SOUTH ELEVATION



EAST ELEVATION



WEST ELEVATION



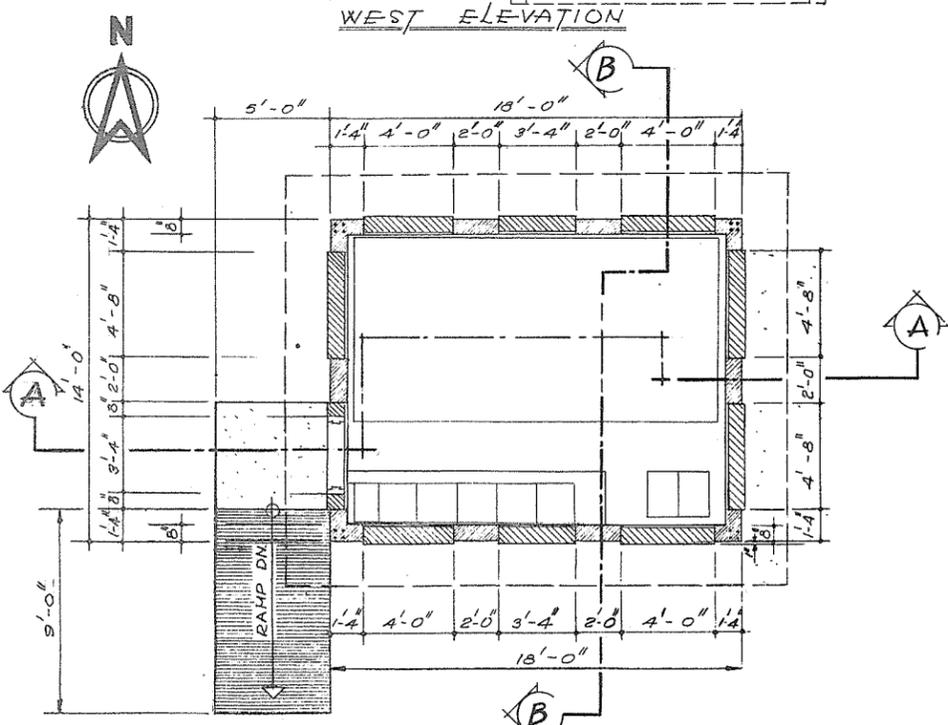
NORTH ELEVATION

**LEGEND**

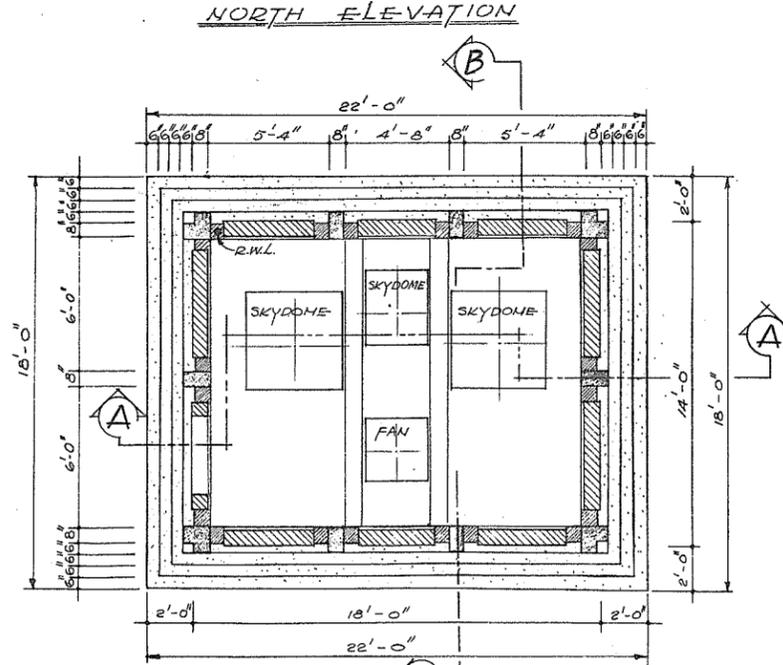
GIANT BRICK, WESTERN BUFF COLOR.

GIANT BRICK CHESTNUT COLOR

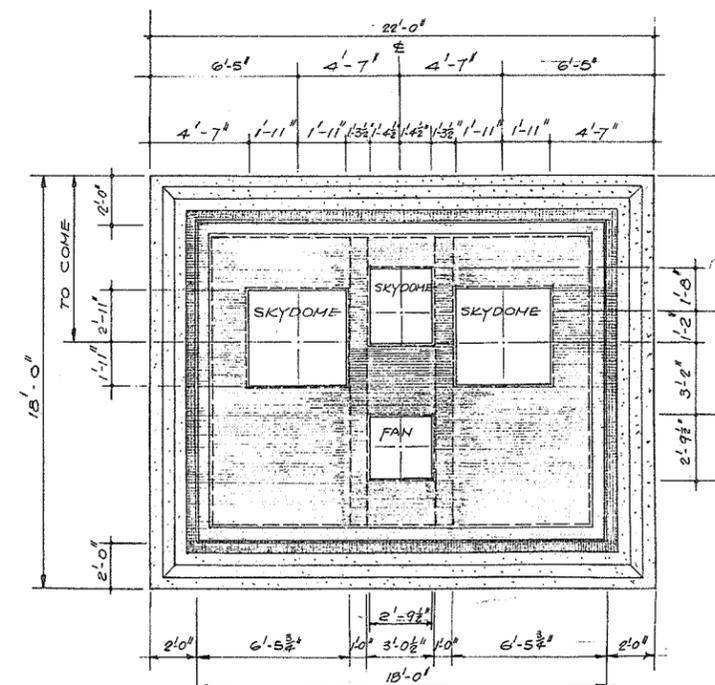
**NOTE:**  
ALL BRICK SHALL BE GIANT CLAY TYPE MANUFACTURED BY CANADIAN REFRACTORIES DIVISION - DRESSER INDUSTRIES LIMITED OR EQ.



FLOOR PLAN



REFLECTED CEILING PLAN



ROOF PLAN



N.P. 266 239

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LAND DESIGN

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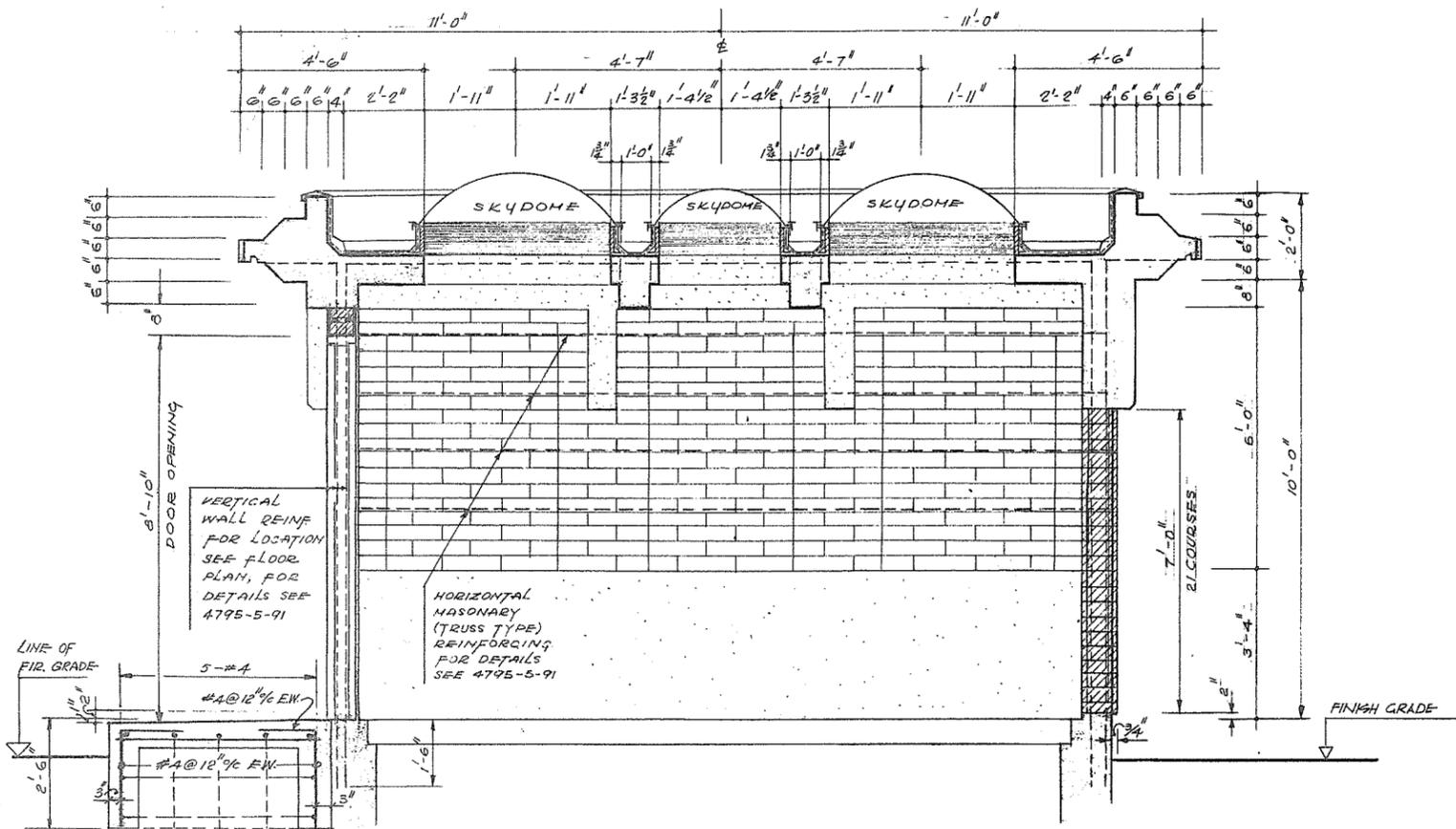
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CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	<i>[Signature]</i>
DATE	Dec 17 74
APPROVED	<i>[Signature]</i>
DATE	Dec 17 74

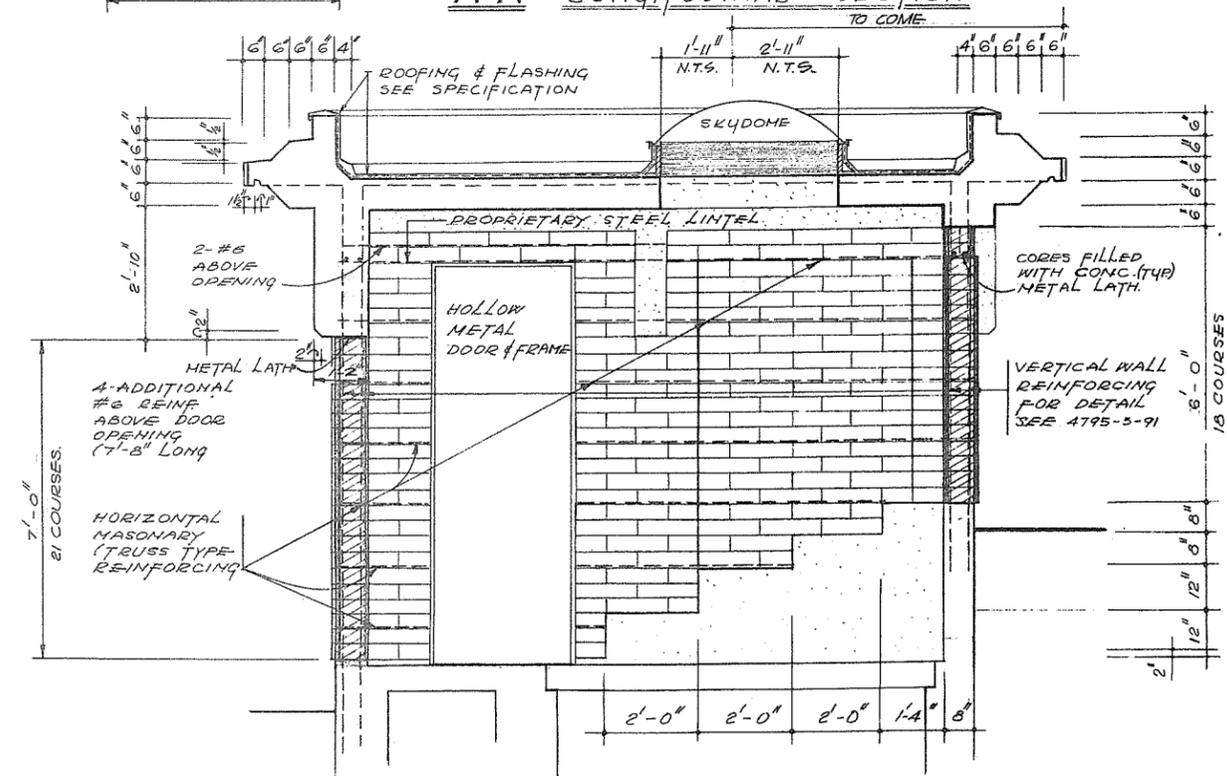
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 1, ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ARCHITECTURAL DETAILS

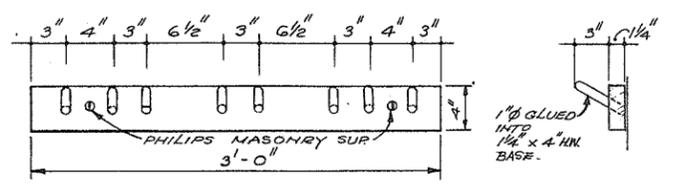
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SCALE	As shown	DATE	Dec 1974
DWG. NO.	4795-5-84	SHEET	1 OF 2 SHEETS



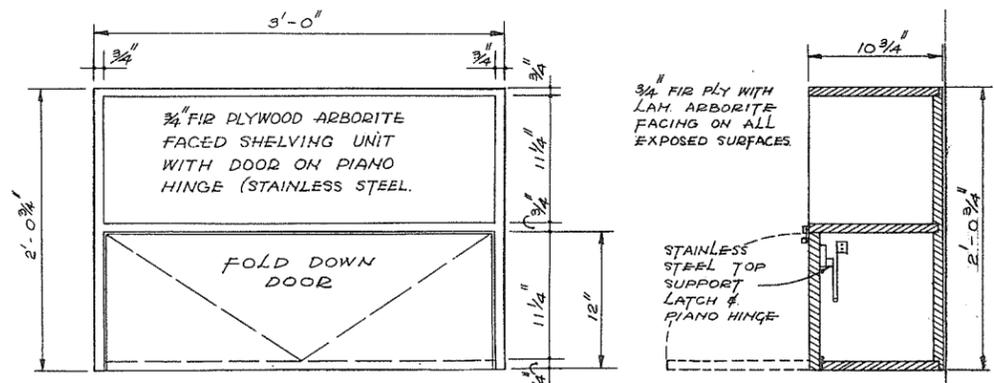
**A-A LONGITUDINAL SECTION**



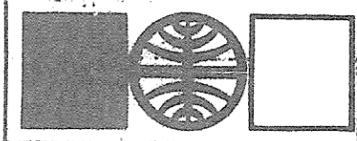
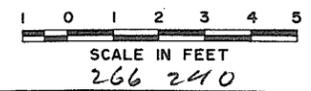
**B-B CROSS SECTION**



**ELEVATION SECTION**  
 TOOL & COAT HOOK OUT OF OAK WOOD  
 (M) HOOK UNIT DETAILS



**ELEVATION SECTION**  
 ALL EXPOSED SURFACE SHALL BE LAMINATED ARBORITE COVERED (COLOR # 822)  
 (N) SHELVING DETAILS



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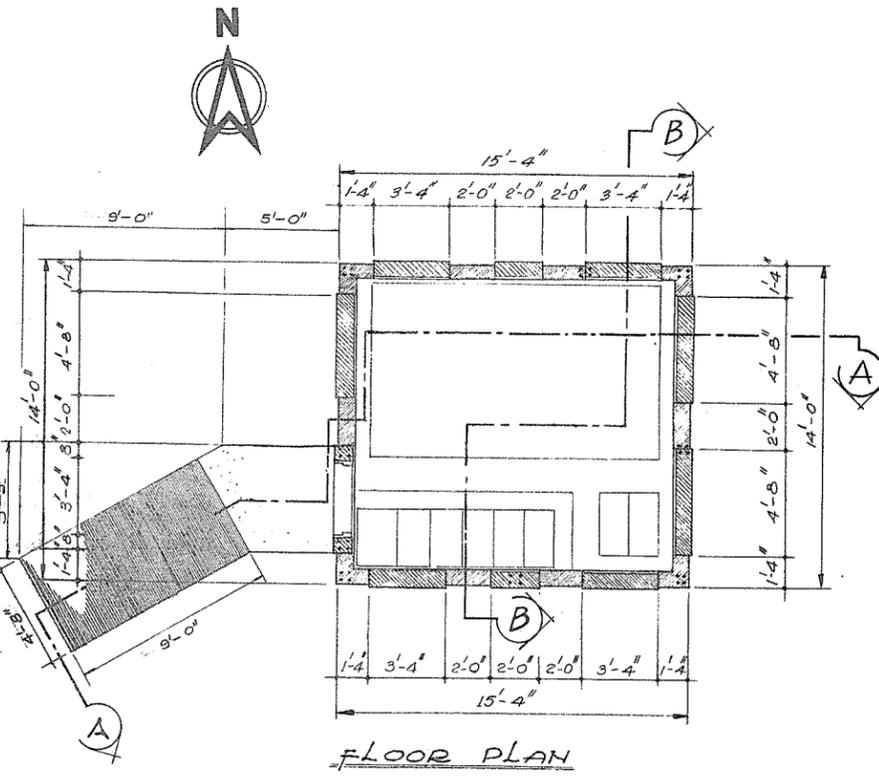
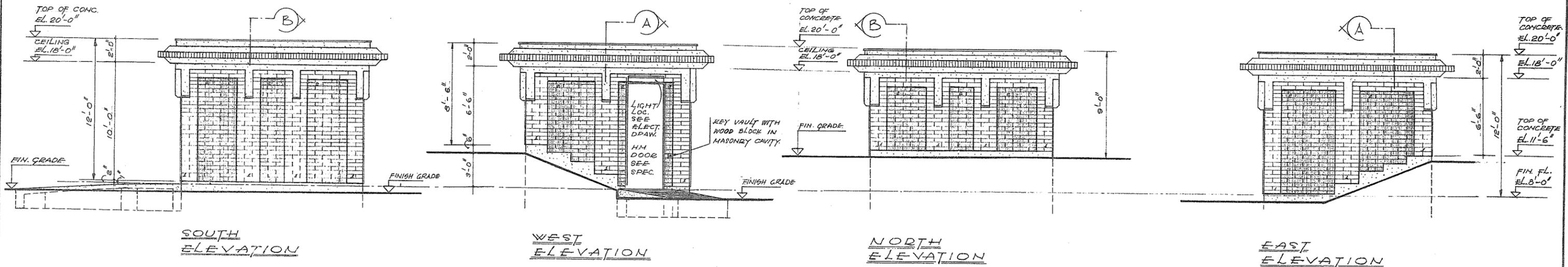
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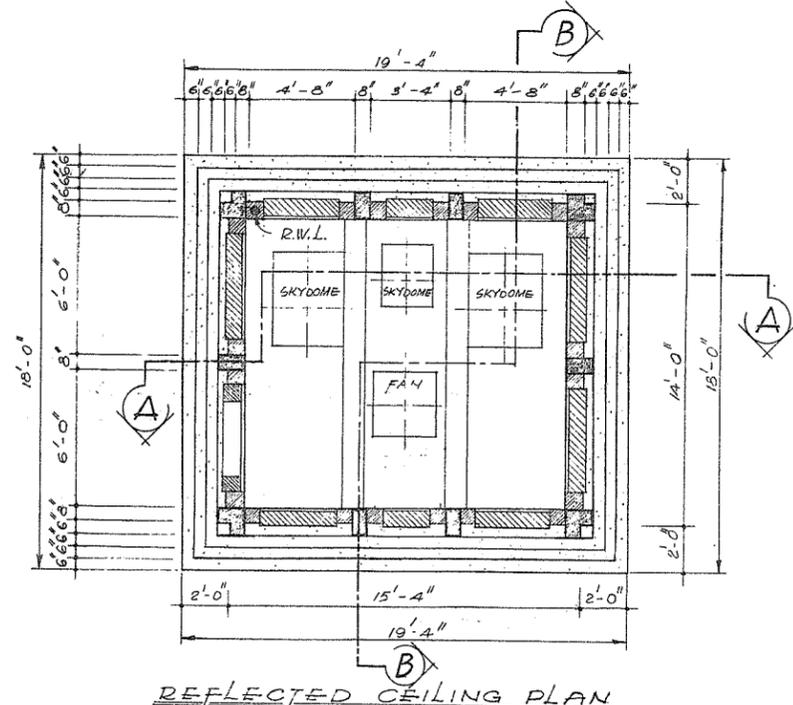
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 APPROVED *[Signature]* DIRECTOR  
 DATE *Dec 17/84*

BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
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 CANADA - BRITISH COLUMBIA  
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 PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 NUMBER 1 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ARCHITECTURAL DETAILS

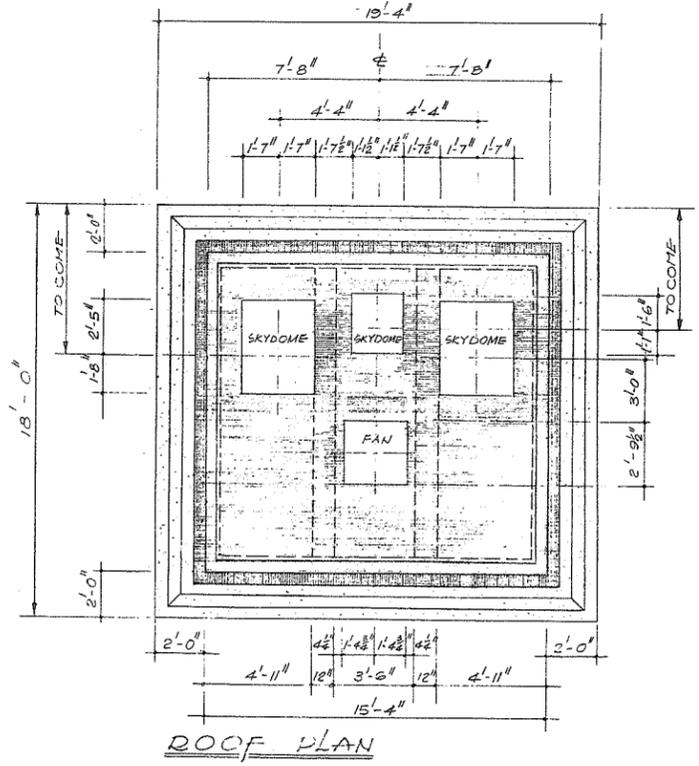
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SCALE <i>As shown</i>	DATE <i>Dec 1984</i>
DWG. NO. 4795-5-85	SHEET 2 OF 2 SHEETS



FLOOR PLAN



REFLECTED CEILING PLAN



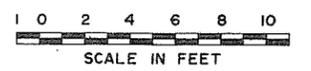
ROOF PLAN

**LEGEND**

1 GIANT BRICK WESTERN BUFF COLOR.

2 GIANT BRICK CHESTNUT COLOR.

**NOTE:** ALL BRICK SHALL BE GIANT CLAY TYPE MANUFACTURED BY CANADIAN REFRACTORIES DIVISION - DRESSER INDUSTRIES LTD. OR EQ.



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 DATE: Dec 17/76

APPROVED: [Signature] DIRECTOR

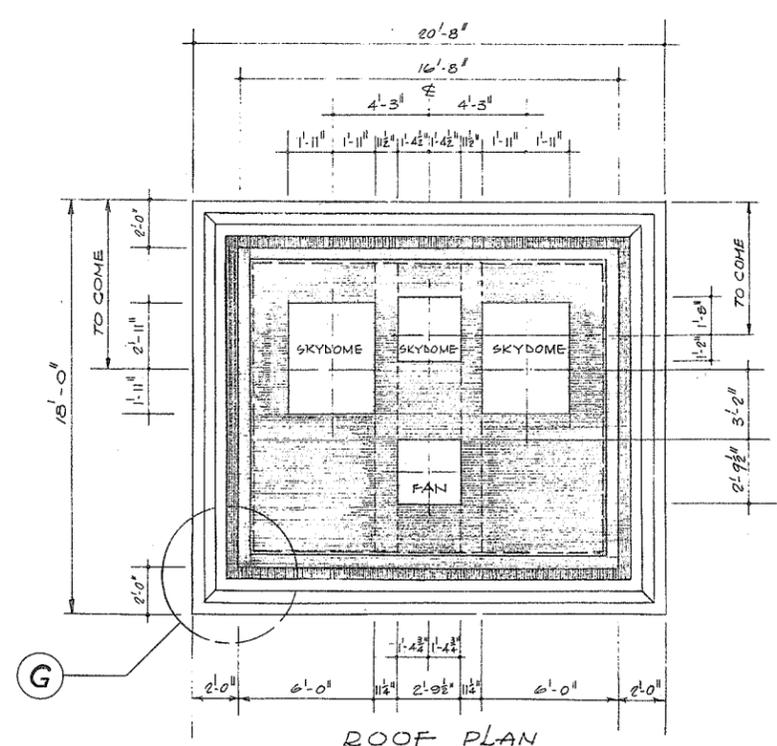
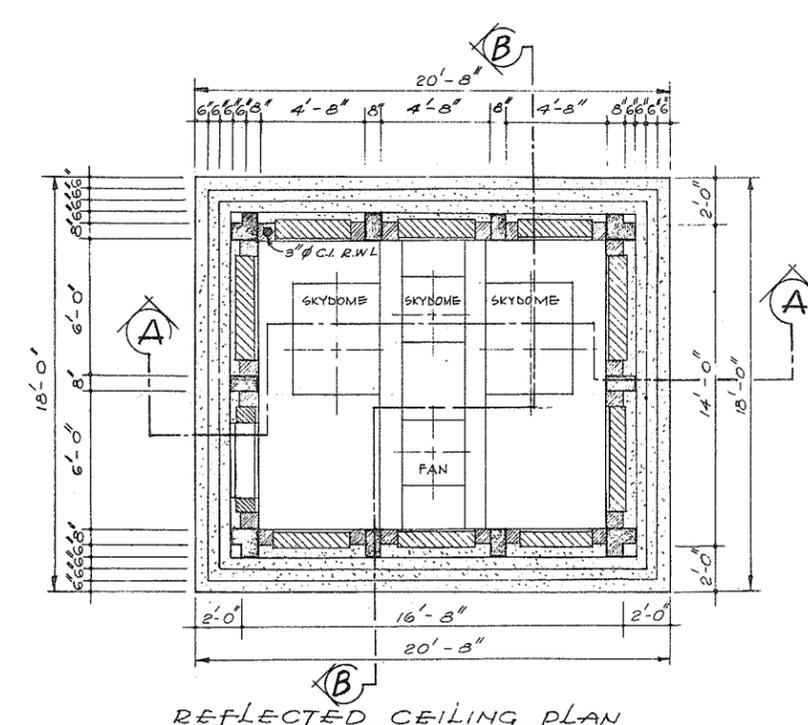
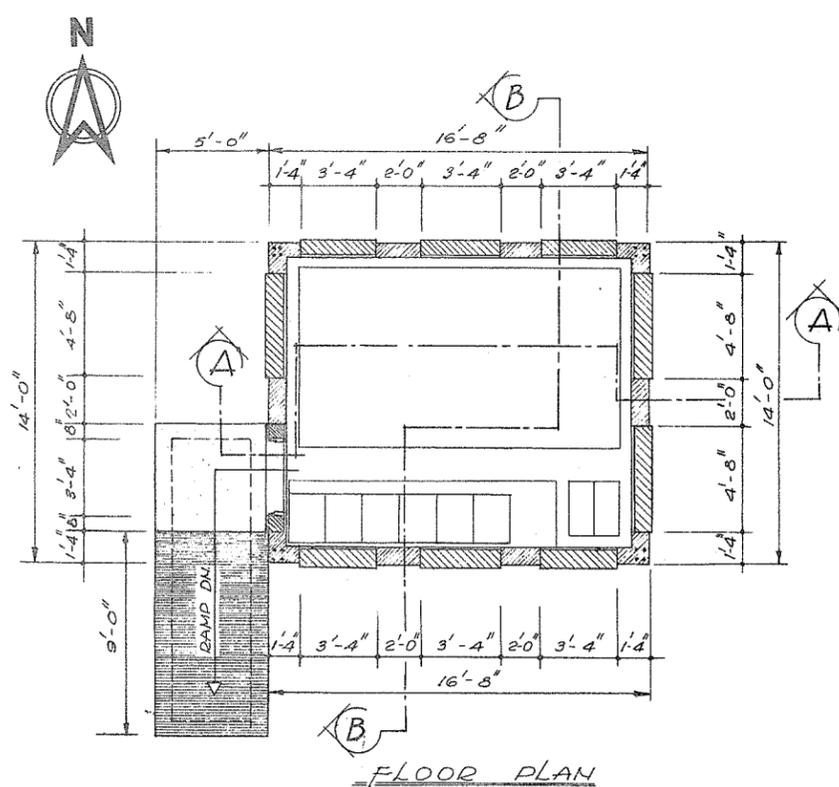
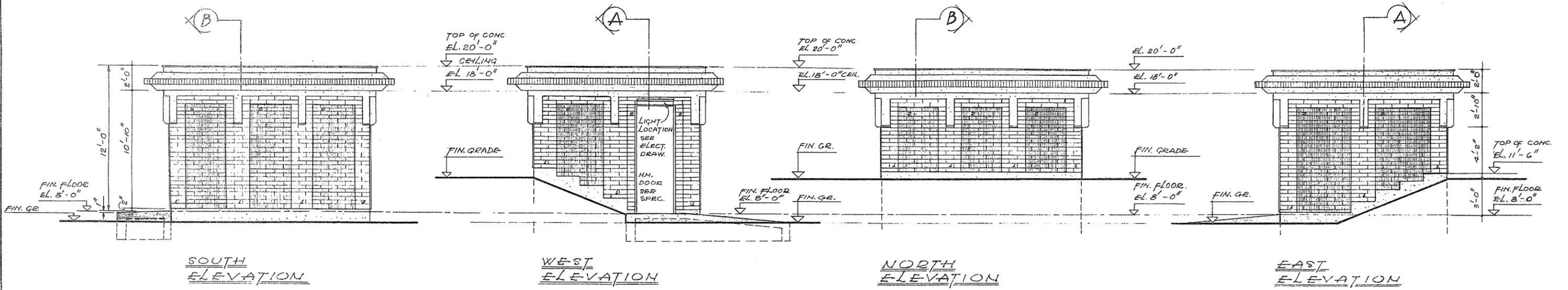
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BRITISH COLUMBIA  
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 WATER RESOURCES SERVICE  
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 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 MCCALLAN ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
 ARCHITECTURAL DETAILS

DESIGNED KK	SURVEYED
DRAWN CW	DATE
CHECKED KK	FILE NO. 0281550-C10-5
SCALE As shown	DATE Dec 1974
DWG. NO. 4795-5-86	SHEET OF SHEETS

N.P. 266 241



**LEGEND**

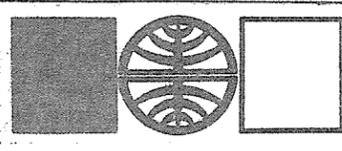
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[Symbol] GIANT BRICK CHESTNUT COLOR

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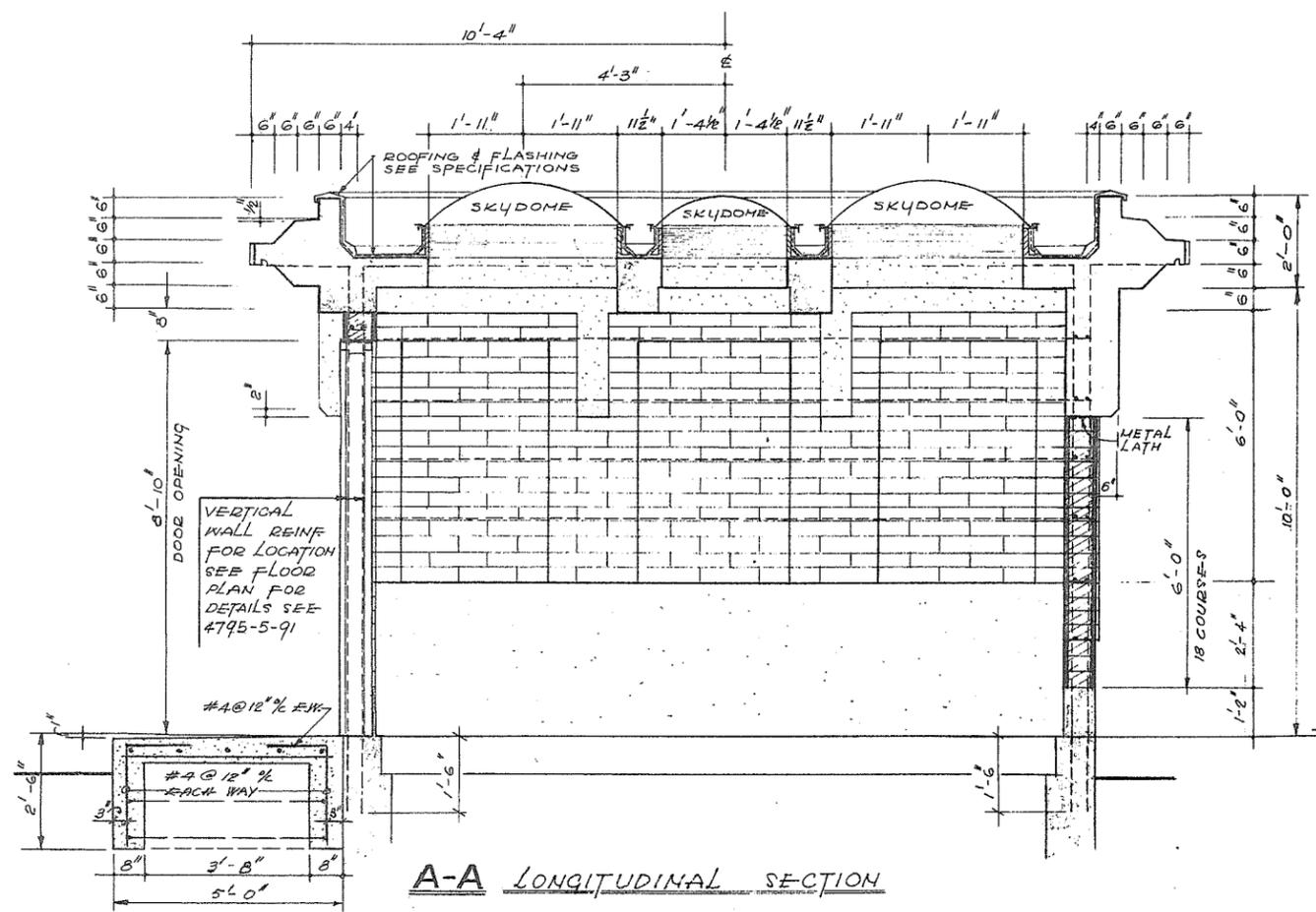
NO.	BY	REVISIONS	DATE
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RECOMMENDED  
DATE  
APPROVED  
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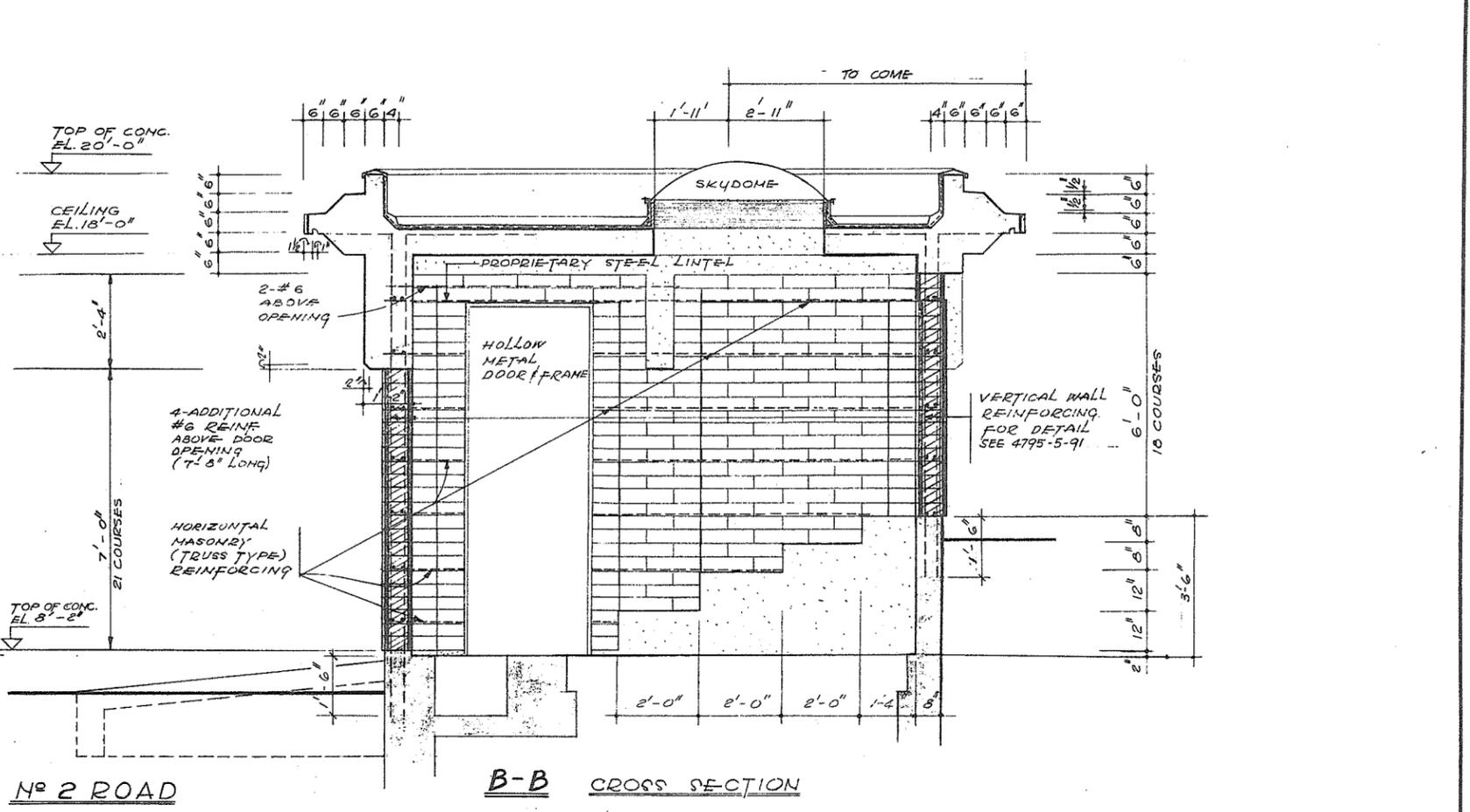
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WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
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PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
NUMBER 2 ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ARCHITECTURAL DETAILS

DESIGNED	KK	SURVEYED	
DRAWN	GJ	DATE	
CHECKED	KK	FILE NO.	0281550-C10-5
SCALE	As shown	DATE	Dec 1974
DWG. NO.	4795-5-87	SHEET	OF SHEETS

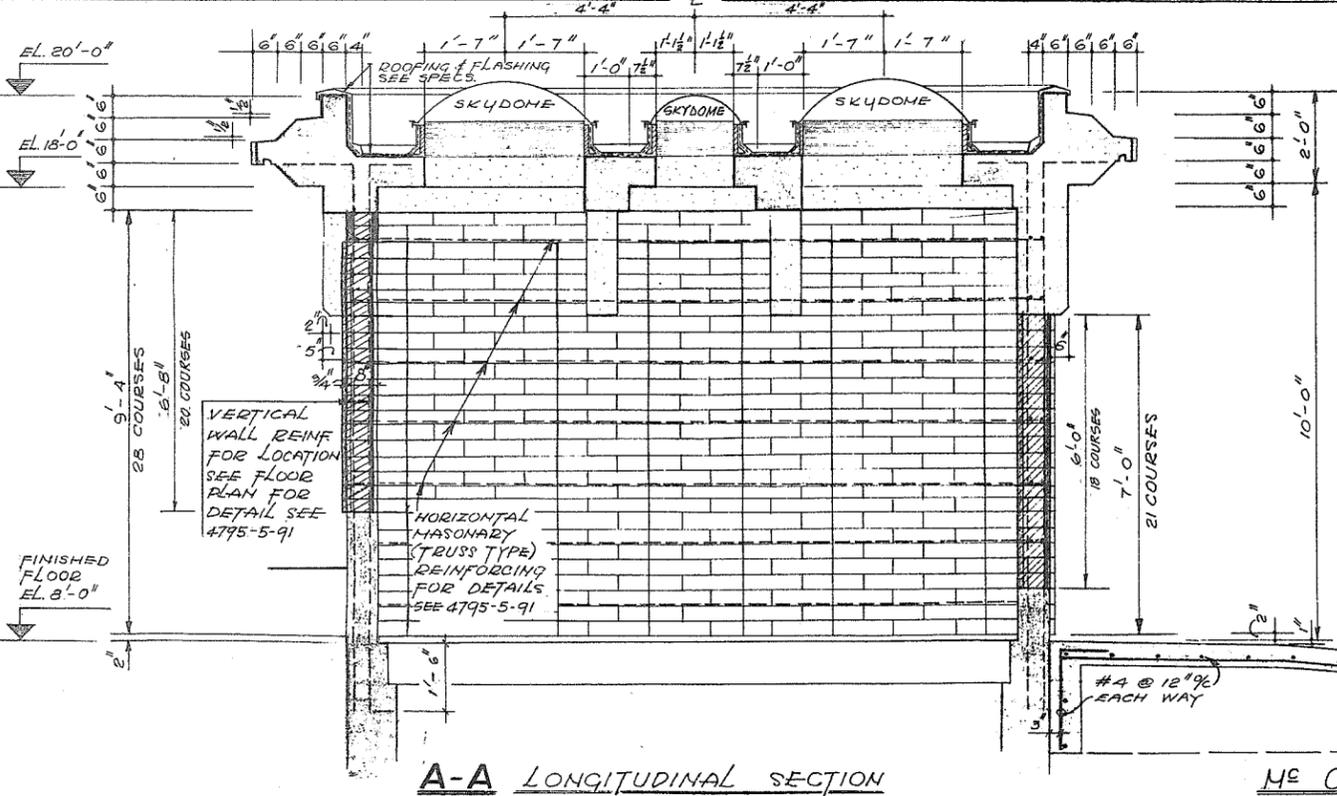


**A-A LONGITUDINAL SECTION**

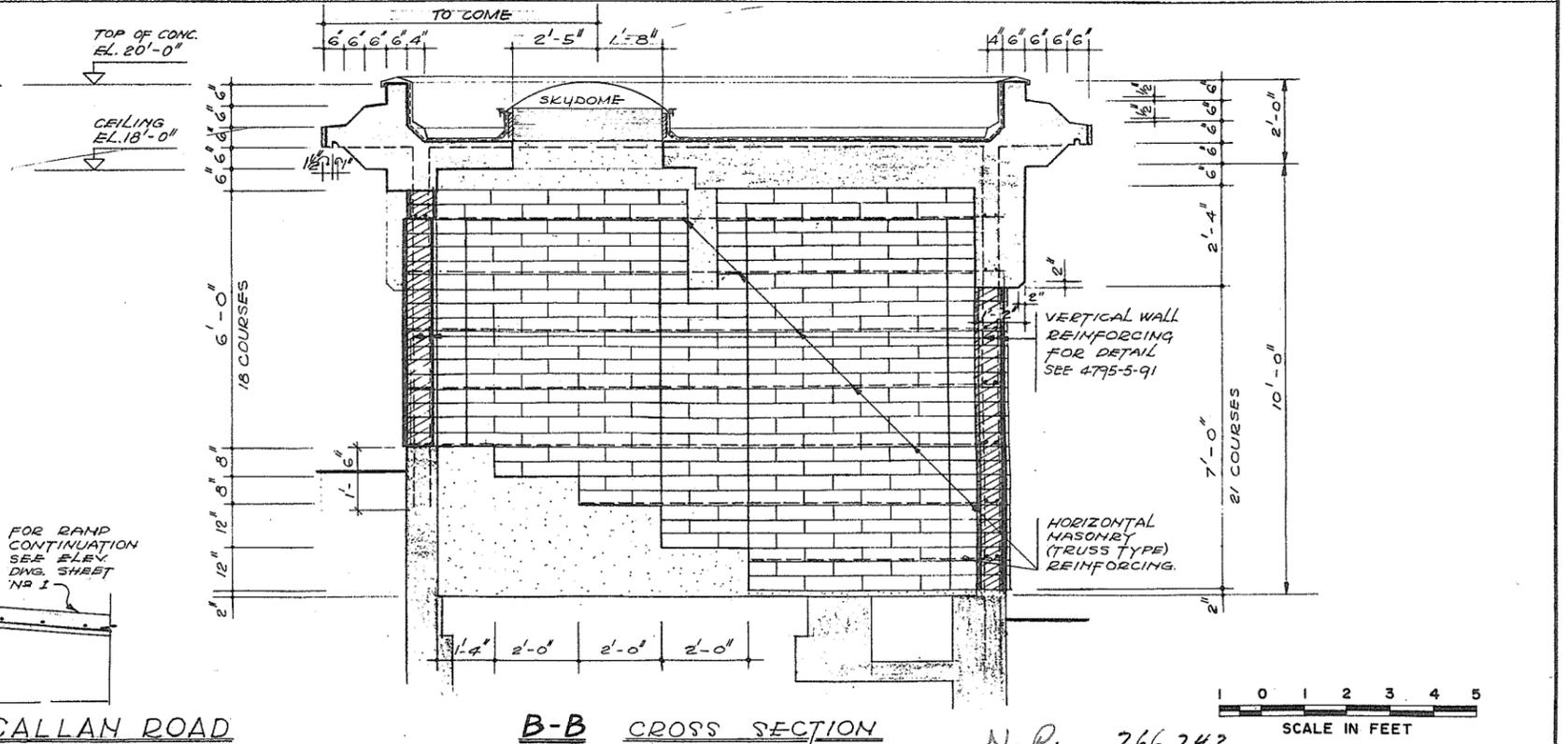


**B-B CROSS SECTION**

**NO 2 ROAD**

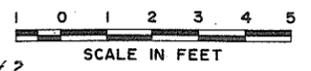


**A-A LONGITUDINAL SECTION**

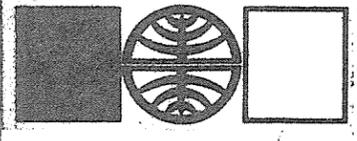


**B-B CROSS SECTION**

**Mc CALLAN ROAD**



N.P. 266 243



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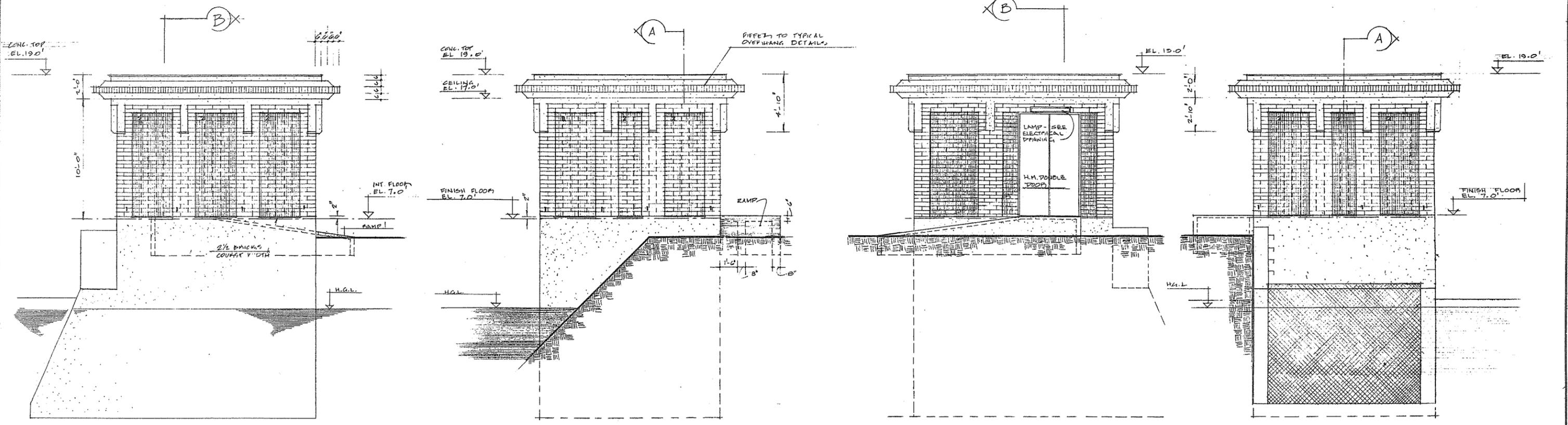
**CBA ENGINEERING LTD.**  
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NO.	BY	REVISIONS	DATE

RECOMMENDED *[Signature]*  
 PROJECTS DIV.  
 DATE *Dec 17/74*  
 APPROVED *[Signature]*  
 DIRECTOR  
 DATE *Dec 18/74*

BRITISH COLUMBIA  
 DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE  
 WATER INVESTIGATIONS BRANCH  
 CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
 CONTRACT NO. 5  
 NUMBER 2 ROAD NORTH AND McCALLAN ROAD/NORTH  
 DRAINAGE DISCHARGE STRUCTURES - ARCHITECTURAL DETAILS

DESIGNED <b>KK</b>	SURVEYED
DRAWN <b>GV</b>	DATE
CHECKED <b>KK</b>	FILE NO. <b>0281550-C10-5</b>
SCALE <b>As shown</b>	DATE <b>Dec 1974</b>
DWG. NO. <b>4795-5-88</b>	SHEET <b>  </b> OF <b>  </b> SHEETS

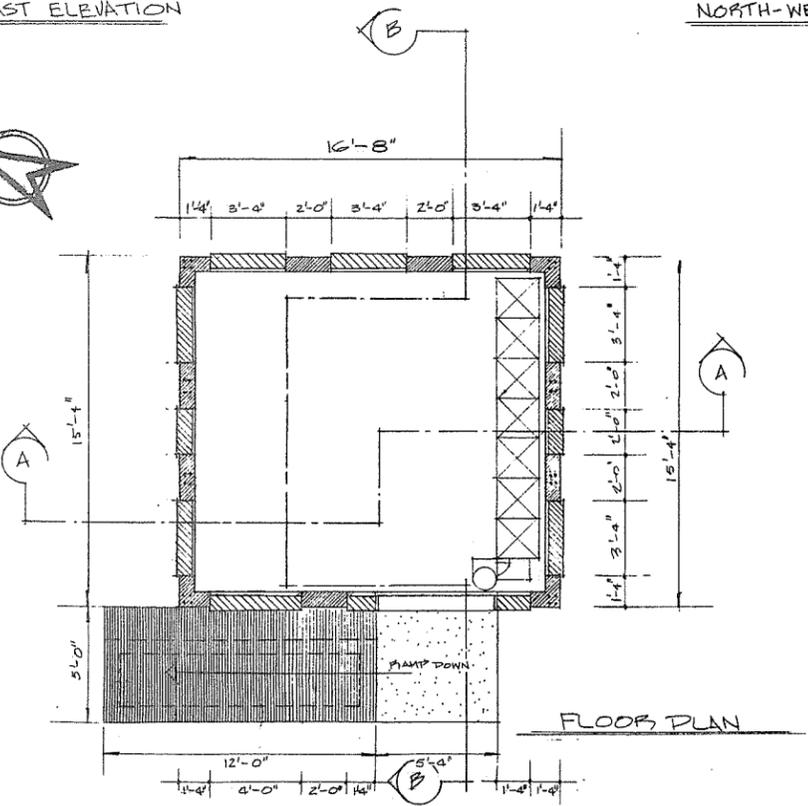
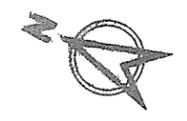


NORTH-EAST ELEVATION

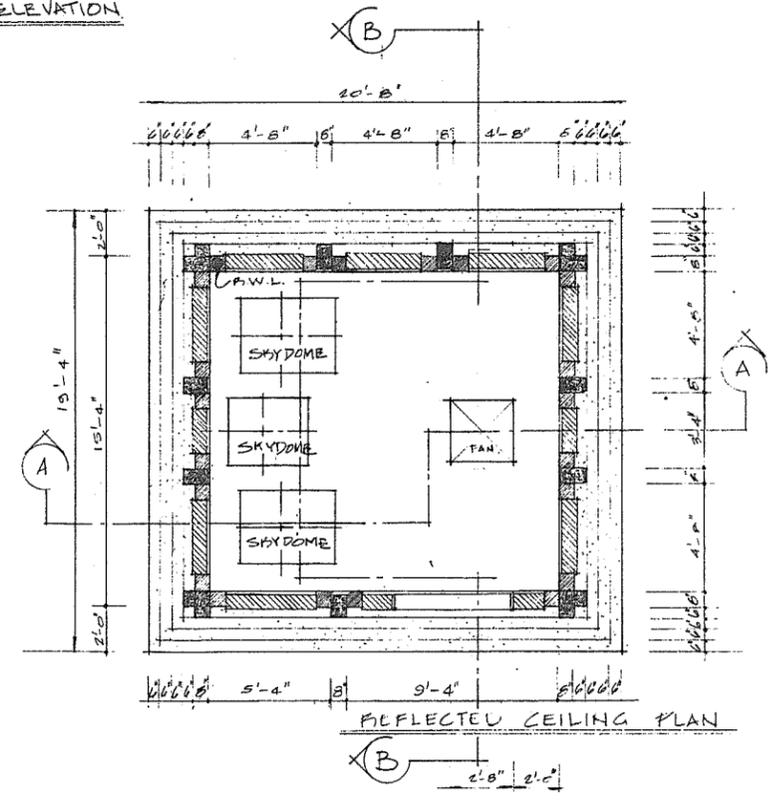
NORTH-WEST ELEVATION

SOUTH-WEST ELEVATION

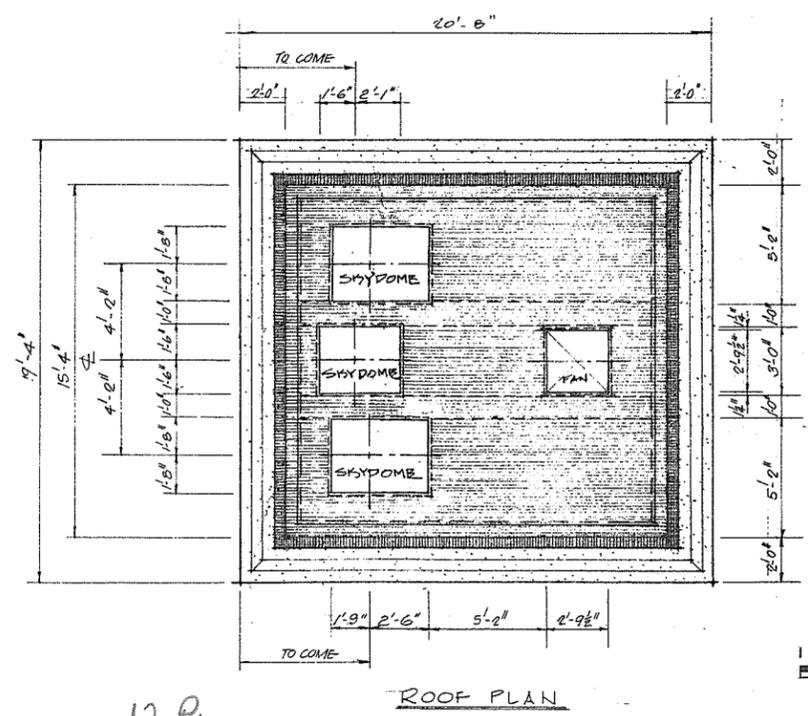
SOUTH-EAST ELEVATION



FLOOR PLAN

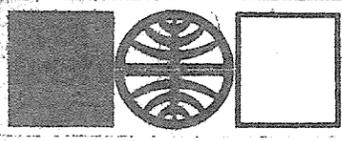
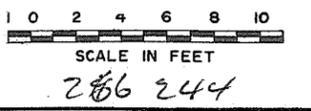


REFLECTED CEILING PLAN



ROOF PLAN

LEGEND	
1	GIANT BRICK WESTERN BUFF COLOUR
2	GIANT BRICK CHESTNUT COLOUR
NOTE: ALL BRICK SHALL BE GIANT CLAY TYPE MANUFACTURED BY CANADIAN REFRACTORIES DIVISION - DEBESSY INDUSTRIES LTD. OR EQ.	



Prepared by:  
**TATTERSFIELD/KOVACS/GIBBON**  
**ASSOCIATES LTD.**  
LAND DESIGN

201 - 1008 HOMER STREET  
VANCOUVER 3, B.C.  
(604) 686-6484



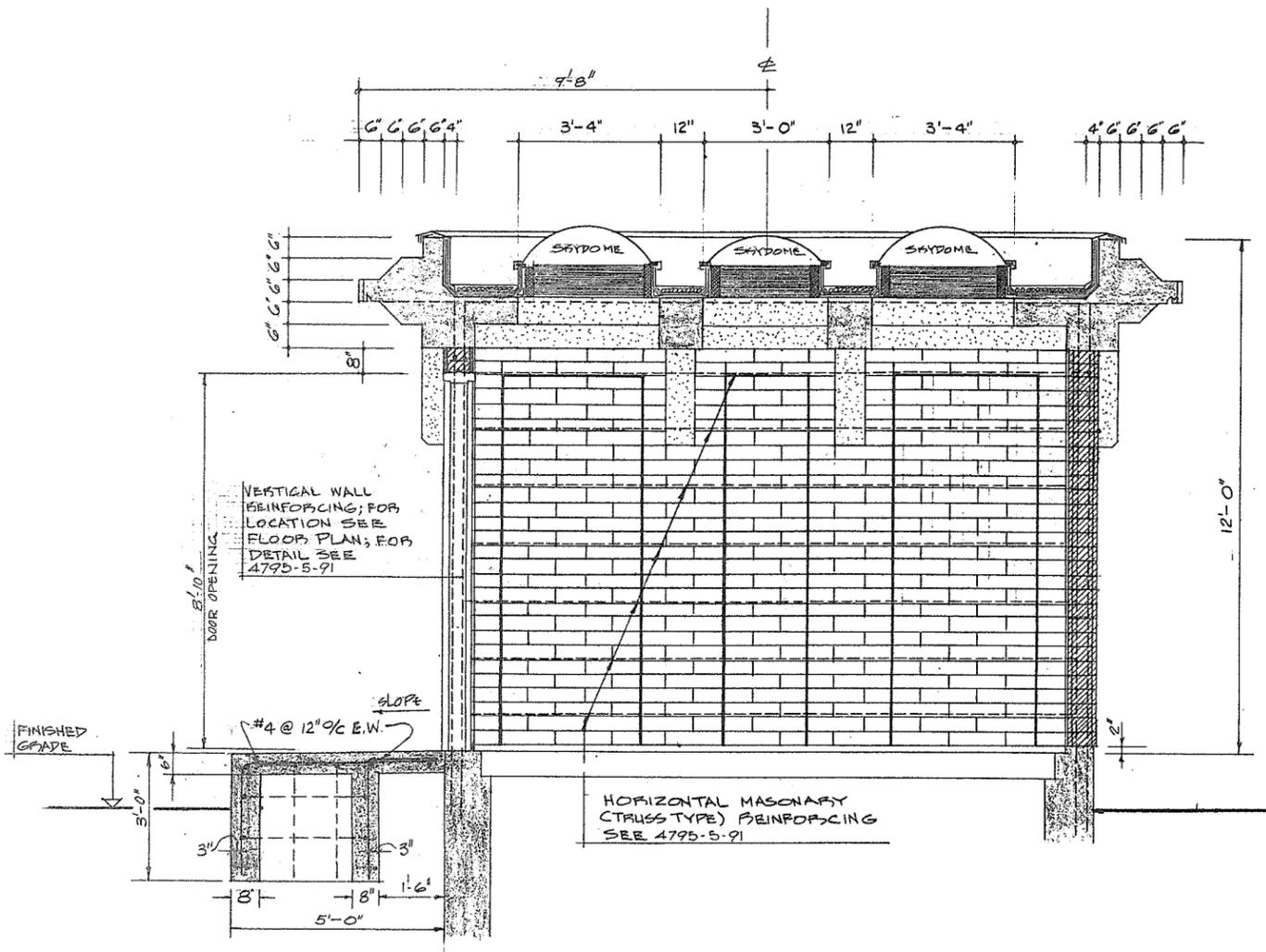
**CBA ENGINEERING LTD.**  
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
	BA		

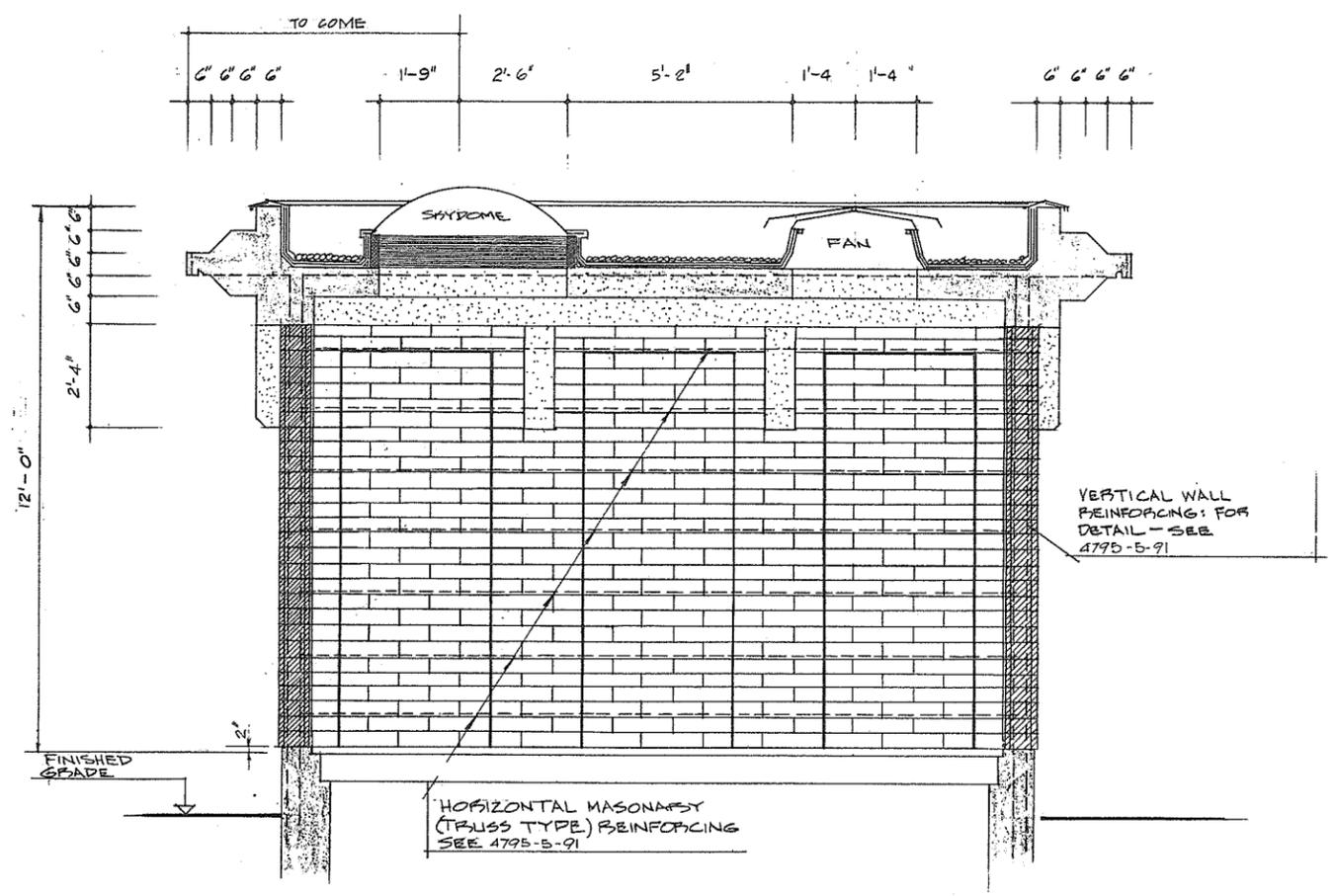
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DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 17/74

BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ARCHITECTURAL DETAILS

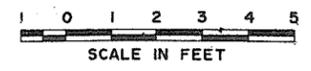
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DRAWN	T. ARNETT	DATE	
CHECKED	KK	FILE NO.	0281550-C10-5
SCALE	As shown	DATE	Dec 1974
DWG. NO.	4795-5-89	SHEET	1 OF 2 SHEETS



CROSS-SECTION B-B



LONGITUDINAL SECTION A-A



N.P. 266 245



PREPARED BY:  
**TATTERSFELD/KOVACS/GIBBON**  
**ASSOCIATES LTD.**  
LAND DESIGN

201 - 1008 HOMER STREET  
VANCOUVER 3, B.C.  
(604) 685-6484



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CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
A			

RECOMMENDED	<i>[Signature]</i>
DATE	Dec 17/74
APPROVED	<i>[Signature]</i>
DATE	Dec 17/74

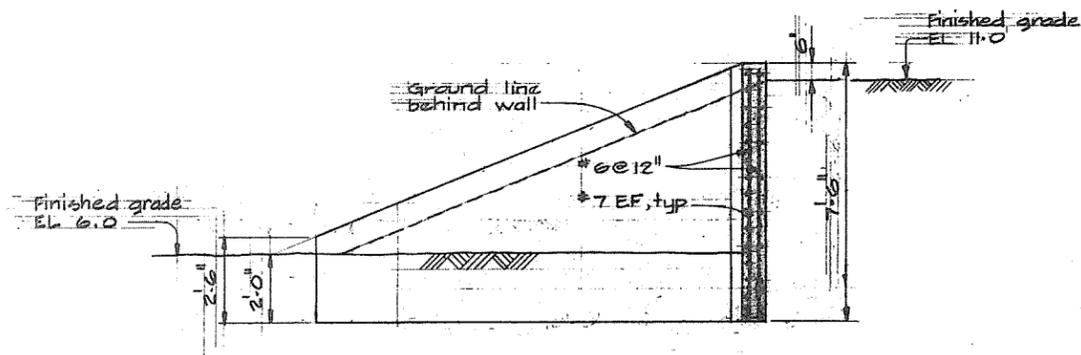
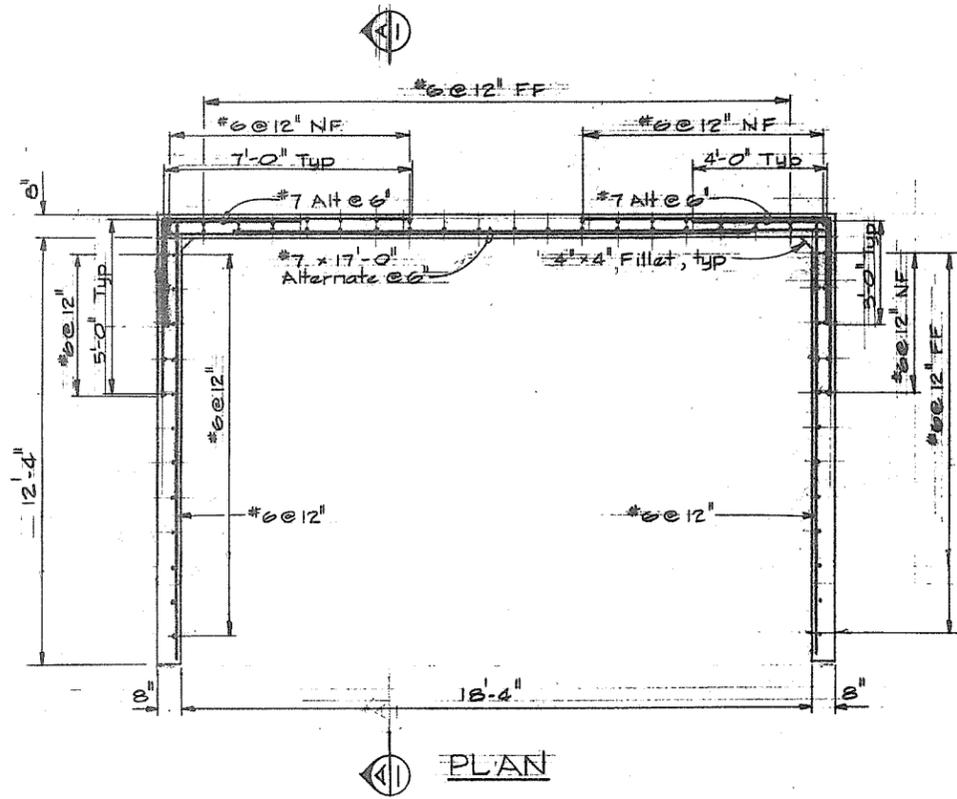
BRITISH COLUMBIA  
DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
WATER INVESTIGATIONS BRANCH  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND  
CONTRACT NO. 5  
GILBERT ROAD NORTH DRAINAGE DISCHARGE STRUCTURE  
ARCHITECTURAL DETAILS

DESIGNED	KK	SURVEYED	
DRAWN	G.W.	DATE	
CHECKED	KK	FILE NO.	
SCALE	AS SHOWN	DATE	Dec 1974
DWG. NO.	4795-5-90	SHEET	2 OF 2 SHEETS



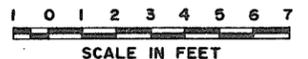




SECTION A-A

TRANSFORMER PAD RETAINING WALL 3 REQ'D

NOTES:  
 For General Notes see 4795-5-28.

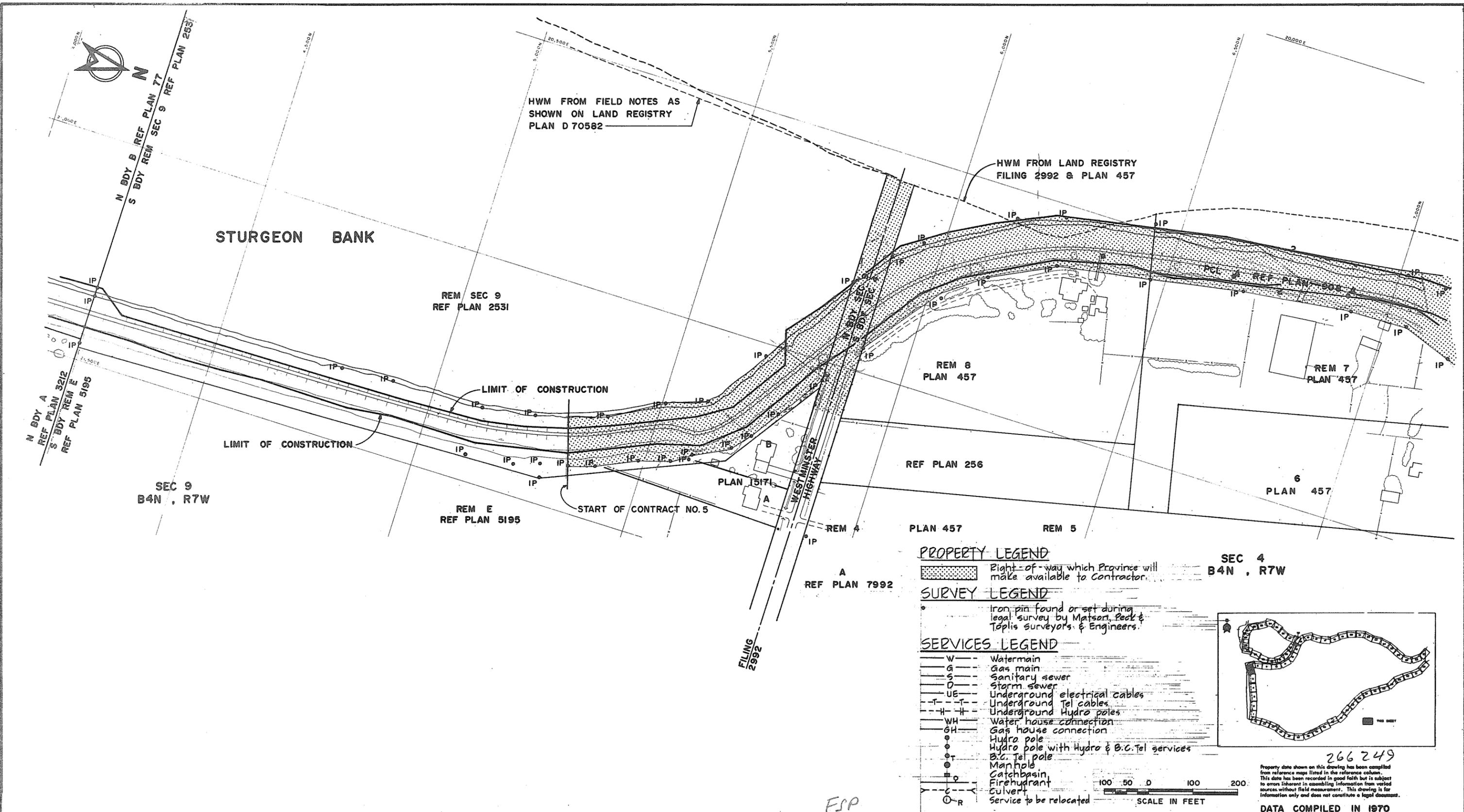


N.P. 266 248



**CBA ENGINEERING LTD.**  
 CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	DATE	APPROVED	DATE	DESIGNED	SURVEYED
GCW	Dec 17/74	Director	Dec 17/74	GCW	
BRITISH COLUMBIA DEPARTMENT OF LANDS, FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT PROJECT NO. 3 - THE TOWNSHIP OF RICHMOND CONTRACT NO. 5 NO. 1, NO. 2 & McCALLAN RD. N. DRAINAGE DISCHARGE STRUCTURES TRANSFORMER PAD RETAINING WALLS				DRAWN	FILE NO.
				DEL	02B1550-C10-5
				CHECKED	DATE
				GCW	DEC 1974
				SCALE	DWG. NO.
				As shown	4795-5-93
				SHEET	OF SHEETS
				1	7



**PROPERTY LEGEND**

Right-of-way which Province will make available to Contractor.

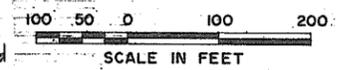
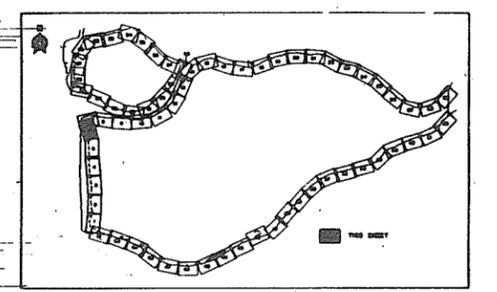
**SURVEY LEGEND**

Iron pin found or set during legal survey by Matsari, Peck & Toplis surveyors & Engineers.

**SERVICES LEGEND**

- W - Watermain
- G - Gas main
- S - Sanitary sewer
- D - Storm sewer
- UE - Underground electrical cables
- T - Underground Tel cables
- H - Underground Hydro poles
- WH - Water house connection
- GH - Gas house connection
- Hydro pole
- Hydro pole with Hydro & B.C. Tel services
- B.C. Tel pole
- Manhole
- Catchbasin
- Firehydrant
- Culvert
- Service to be relocated

SEC 4  
B4N . R7W



Property data shown on this drawing has been compiled from reference maps listed in the reference column. This data has been recorded in good faith but is subject to errors inherent in assembling information from varied sources without field measurement. This drawing is for information only and does not constitute a legal document.

DATA COMPILED IN 1970

325-D-1000 Sheet Index	
DWG NO.	TITLE
REFERENCES	

NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED
REVISIONS											

**C. B. A. ENGINEERING LTD.** CONSULTING ENGINEERS VANCOUVER, B.C., CANADA

RECOMMENDED <i>[Signature]</i>	ELEC	HYD
DATE <i>Dec 17/74</i>	MECH	SOILS
APPROVED <i>[Signature]</i>	STR	
DATE <i>Dec 17/74</i>	DES	DR WN CH DLG
	SCALE	As shown
	ORIG ISSUE	Dec 1974

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA  
DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT No. 3 THE TOWNSHIP OF RICHMOND

CONTRACT 5  
PLAN SHOWING LOCATION OF  
EXISTING SURVEY MARKER & UTILITIES  
SHEET 1 OF 7

FILE NO. 0281550-C10-5      4795-5-94





MIDDLE ARM FRASER RIVER

HARBOUR HEAD LINE

LIMIT OF CONSTRUCTION

HWM FROM LAND REGISTRY PLANS

0.54 ACRES

LIMIT OF CONSTRUCTION

RIVER ROAD

8999 7

L 5686

REF PLAN 4638

PLAN 8319

REM A  
REF PLAN  
3891

C  
REF PLAN  
10219

PLAN 10020

C  
PLAN 3834

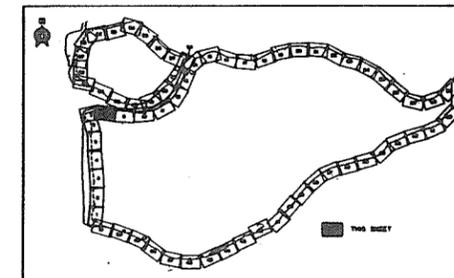
SEC 4  
B4N, R7W

E BDY SEC 4  
W BDY SEC 3

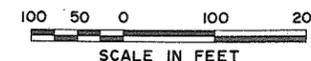
SEC 3  
B4N, R7W

W L. ROAD  
E BDY SEC 3  
W BDY SEC 2

NOTES  
For legends see 4795-5-94



266251



Property data shown on this drawing has been compiled from reference maps listed in the reference column. This data has been recorded in good faith but is subject to errors inherent in assembling information from varied sources without field measurement. This drawing is for information only and does not constitute a legal document.

DATA COMPILED IN 1970

325-D-1000  
Sheet index.  
North Fraser Harbour  
Commission Harbour Head  
Line Plan - sheet 21 & 22

C. B. A. ENGINEERING LTD. CONSULTING ENGINEERS VANCOUVER, B.C., CANADA

RECOMMENDED: *[Signature]*  
DATE: *Dec 1/74*

APPROVED: *[Signature]*  
DATE: *Dec 1/74*

ELEC \_\_\_\_\_ HYD \_\_\_\_\_  
MECH \_\_\_\_\_ SOILS \_\_\_\_\_  
STR \_\_\_\_\_

DES \_\_\_\_\_ DR WN CH DLC  
SCALE: As shown  
ORIG ISSUE: Dec 1974

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA  
DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT No. 3 THE TOWNSHIP OF RICHMOND

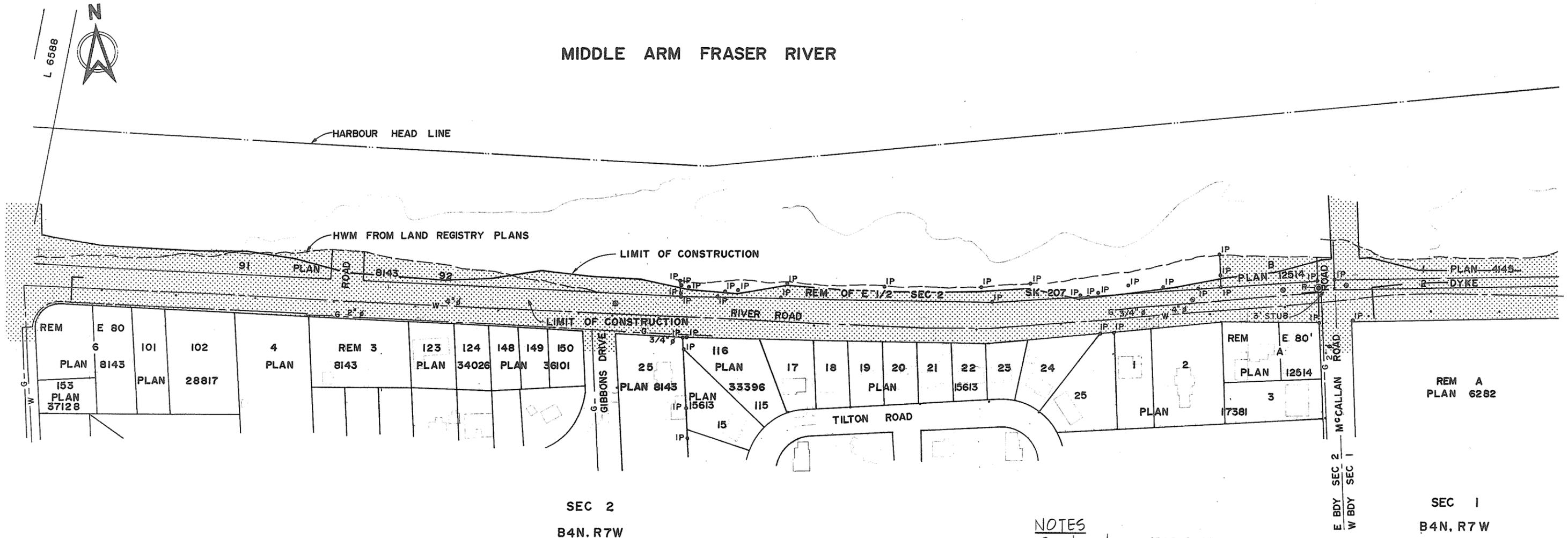
CONTRACT 5  
PLAN SHOWING LOCATION OF  
EXISTING SURVEY MARKERS & UTILITIES  
SHEET 3 OF 7

FILE NO. 0281550-C10-5 C.B.A. DWG NO. 4795-5-96 REV

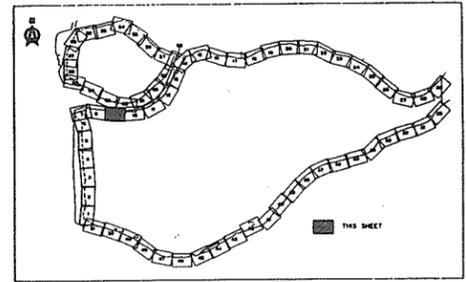
DWG NO.	TITLE
325-D-1000	Sheet index. North Fraser Harbour Commission Harbour Head Line Plan - sheet 21 & 22

NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED
REVISIONS											

# MIDDLE ARM FRASER RIVER



**NOTES**  
For legends see 4795-5-94



266252  
Property data shown on this drawing has been compiled from reference maps listed in the reference column. This data has been recorded in good faith but is subject to errors inherent in assembling information from varied sources without field measurement. This drawing is for information only and does not constitute a legal document.  
**DATA COMPILED IN 1970**

325-D-1000  
• Sheet index  
• North Fraser Harbour Commission  
Harbour Head Line Plan - Sheet 21  
• Municipality of Richmond 1"=200'  
Section Property Maps  
- Section 1 B4N R7W  
- Section 2 B4N R7W

DWG NO. TITLE  
**REFERENCES**

NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED
<b>REVISIONS</b>											

**C. B. A. ENGINEERING LTD.** CONSULTING ENGINEERS VANCOUVER, B.C., CANADA

RECOMMENDED <i>[Signature]</i>	ELEC	HYD
DATE <i>Dec 17/74</i>	MECH	SOILS
APPROVED <i>[Signature]</i>	STR	
DATE <i>Dec 17/74</i>	DES	DR WN CH DLC
	SCALE	As shown
	ORIG ISSUE	Dec 1974

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA  
DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES  
WATER RESOURCES SERVICE  
CANADA - BRITISH COLUMBIA  
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
PROJECT No. 3 THE TOWNSHIP OF RICHMOND

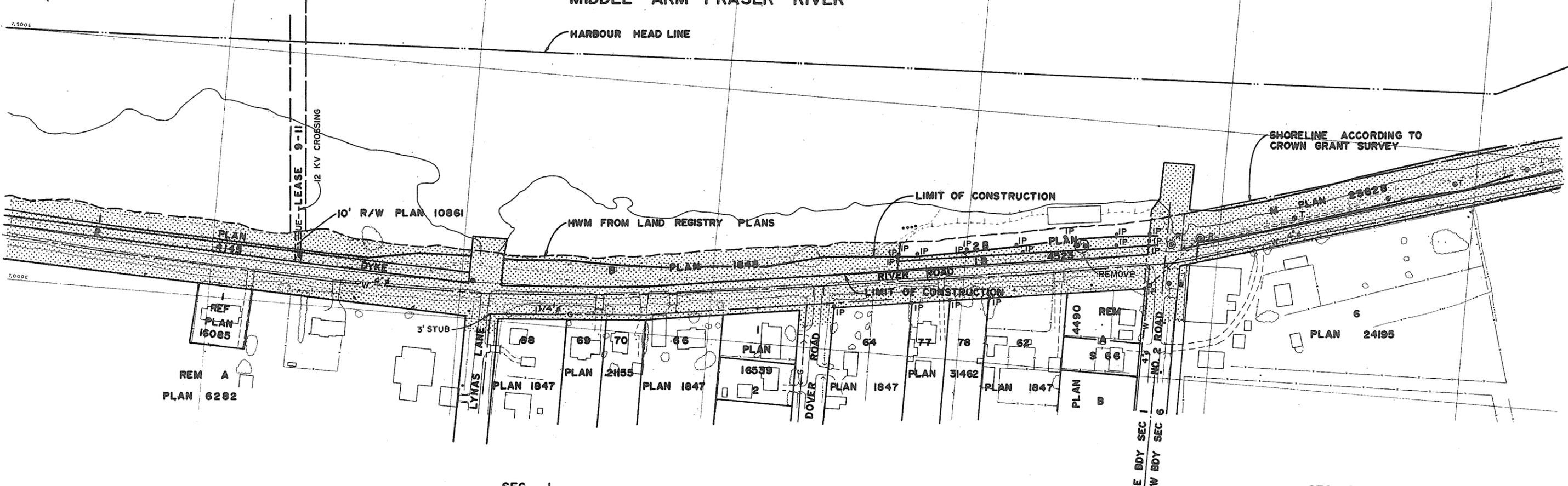
CONTRACT 5  
PLAN SHOWING LOCATION OF  
EXISTING SURVEY MARKERS & UTILITIES  
SHEET 4 OF 7

FILE NO. 0281550 - C10-5  
C.B.A. DWG NO. 4795-5-97  
REV



# MIDDLE ARM FRASER RIVER

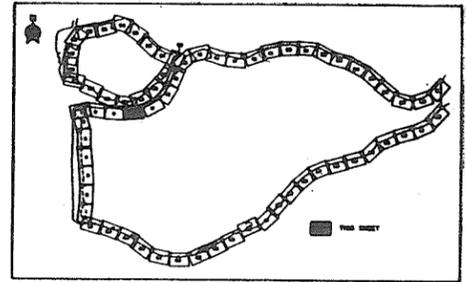
HARBOUR HEAD LINE



SEC 1  
B4N, R7W

SEC 6  
B4N, R6W

NOTES  
For legend see 4795-5-94



266253



Property data shown on this drawing has been compiled from reference maps listed in the reference column. This data has been recorded in good faith but is subject to errors inherent in assembling information from varied sources without field measurement. This drawing is for information only and does not constitute a legal document.

DATA COMPILED IN 1970

Sheet index  
North Fraser Harbour Commission  
Harbour Head Line Plan Sheet 20  
Municipality of Richmond 1"=200'  
Section Property Maps  
Section I B4N R7W  
Section G B4N R6W

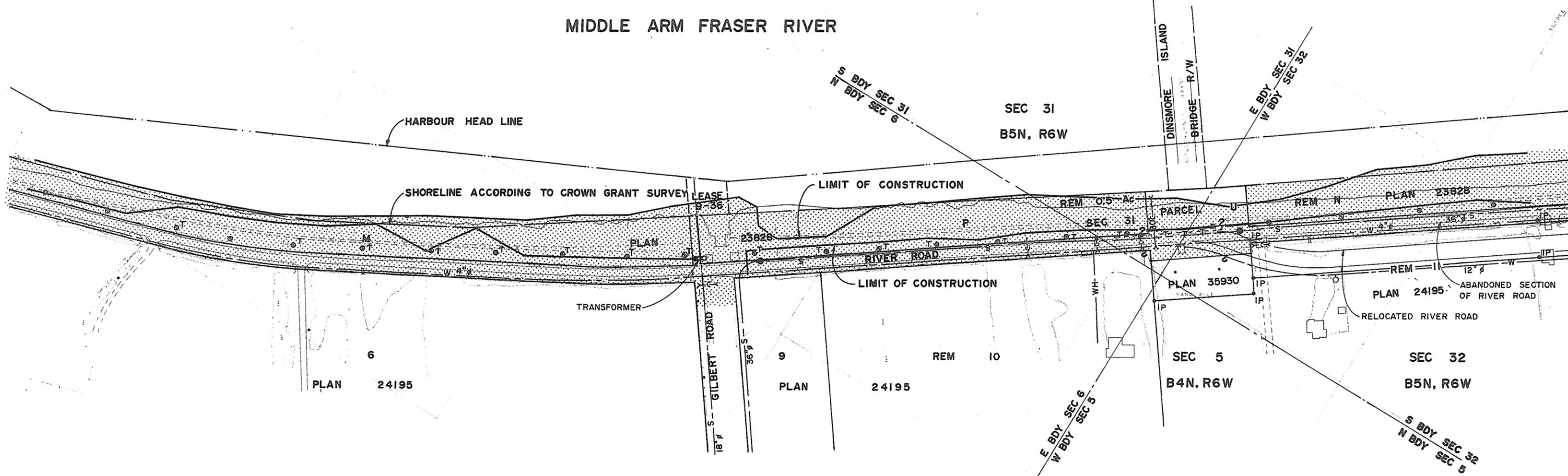
**C. B. A. ENGINEERING LTD.** CONSULTING ENGINEERS VANCOUVER, B.C., CANADA

RECOMMENDED <i>[Signature]</i> DATE <u>Dec 17/74</u>	ELC MECH STR	HYD SOILS	THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES WATER RESOURCES SERVICE CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT PROJECT No. 3 THE TOWNSHIP OF RICHMOND
APPROVED <i>[Signature]</i> DATE <u>Dec 17/74</u>	DES SCALE ORIG ISSUE	DR WN CH DLC As shown Dec 1974	
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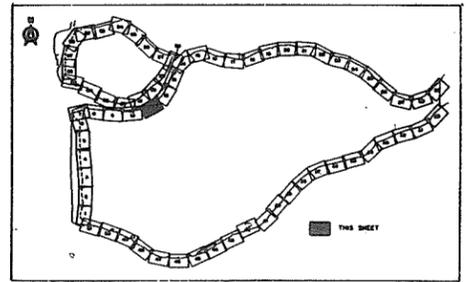
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REVISIONS											



# MIDDLE ARM FRASER RIVER



**NOTES**  
 For legends see 4795-5-94



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325-D-1000

- Sheet Index
- North Fraser Harbour Commission
- Harbour Head Line Plan - Sh. 19 & 20
- Municipality of Richmond T. 200'
- Section Property Maps
- Section 5 B4N R6W
- Section 6 B4N R6W
- Section 31 B5N R6W
- Section 32 B5N R6W
- Department of Transport (Real Estate Branch) Plan No. BC 744

DWG NO.	TITLE
325-D-1000	REFERENCES

NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED
REVISIONS						REVISIONS					

**C. B. A. ENGINEERING LTD.** CONSULTING ENGINEERS VANCOUVER, B.C., CANADA

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA  
 DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES  
 WATER RESOURCES SERVICE

CANADA - BRITISH COLUMBIA  
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT  
 PROJECT No. 3 THE TOWNSHIP OF RICHMOND

CONTRACT 5  
 PLAN SHOWING LOCATION OF  
 EXISTING SURVEY MARKERS & UTILITIES  
 SHEET 6 OF 7

RECOMMENDED: [Signature] PROJECTS DIV.  
 DATE: Dec 17/74

APPROVED: [Signature] DIRECTOR

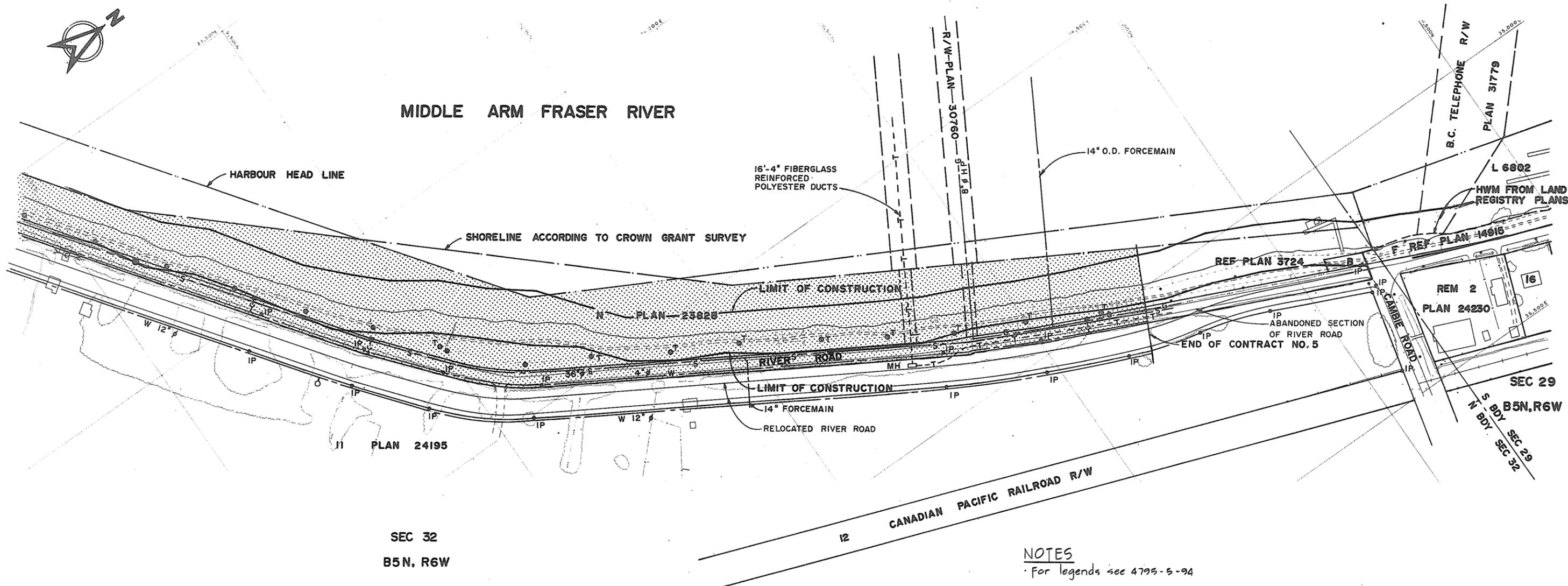
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ORIG ISSUE	Dec 1974

FILE NO. 0281550 - C10 - 5  
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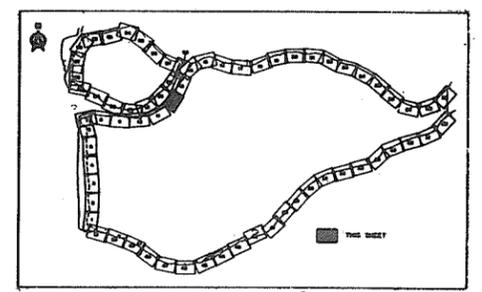
# MIDDLE ARM FRASER RIVER



SEC 32  
B5N. R6W

12 CANADIAN PACIFIC RAILROAD R/W

NOTES  
For legends see 4795-5-94



266 255

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DATA COMPILED IN 1970

325-D-1000  
 • Sheet Index  
 • North Fraser Harbour Commission Harbour Head Line Plan Sh 19  
 • Municipality of Richmond 1:2000 Section Property Maps  
 • Section 29 B5N R6W  
 • Section 32 B5N R6W

DWG NO. TITLE

NO.	DESCRIPTION	BY	CH	APPD	ISSUED	NO.	DESCRIPTION	BY	CH	APPD	ISSUED
REVISIONS						REVISIONS					

<b>C. B. A. ENGINEERING LTD.</b>		CONSULTING ENGINEERS		VANCOUVER, B.C., CANADA	
RECOMMENDED <i>[Signature]</i>		ELEC	HYD	THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA	
DATE <i>Dec 17/74</i>		MECH	SOILS	DEPARTMENT OF LANDS FORESTS AND WATER RESOURCES	
APPROVED <i>[Signature]</i>		STR		WATER RESOURCES SERVICE	
DATE <i>Dec 17/74</i>		DES	DR WN CH DLC	CANADA-BRITISH COLUMBIA	
		SCALE	As shown	FRASER RIVER FLOOD CONTROL 1968 AGREEMENT	
		ORIG ISSUE	Dec 1974	PROJECT No. 3 THE TOWNSHIP OF RICHMOND	
				CONTRACT 5	
				PLAN SHOWING LOCATION OF	
				EXISTING SURVEY MARKERS & UTILITIES	
				SHEET 7 OF 7	
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