

The Government of the Province of British Columbia
 Ministry of the Environment
 Water Investigations Branch

Canada - British Columbia
 Fraser River Flood Control 1968 Agreement

Project No. 3 The Township of Richmond

Contract No. 18A

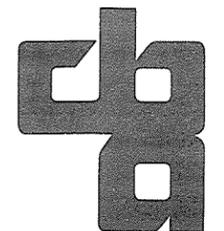
Drainage Discharge Structures

Nos. 13, 22 and 35A

DRAWING LIST

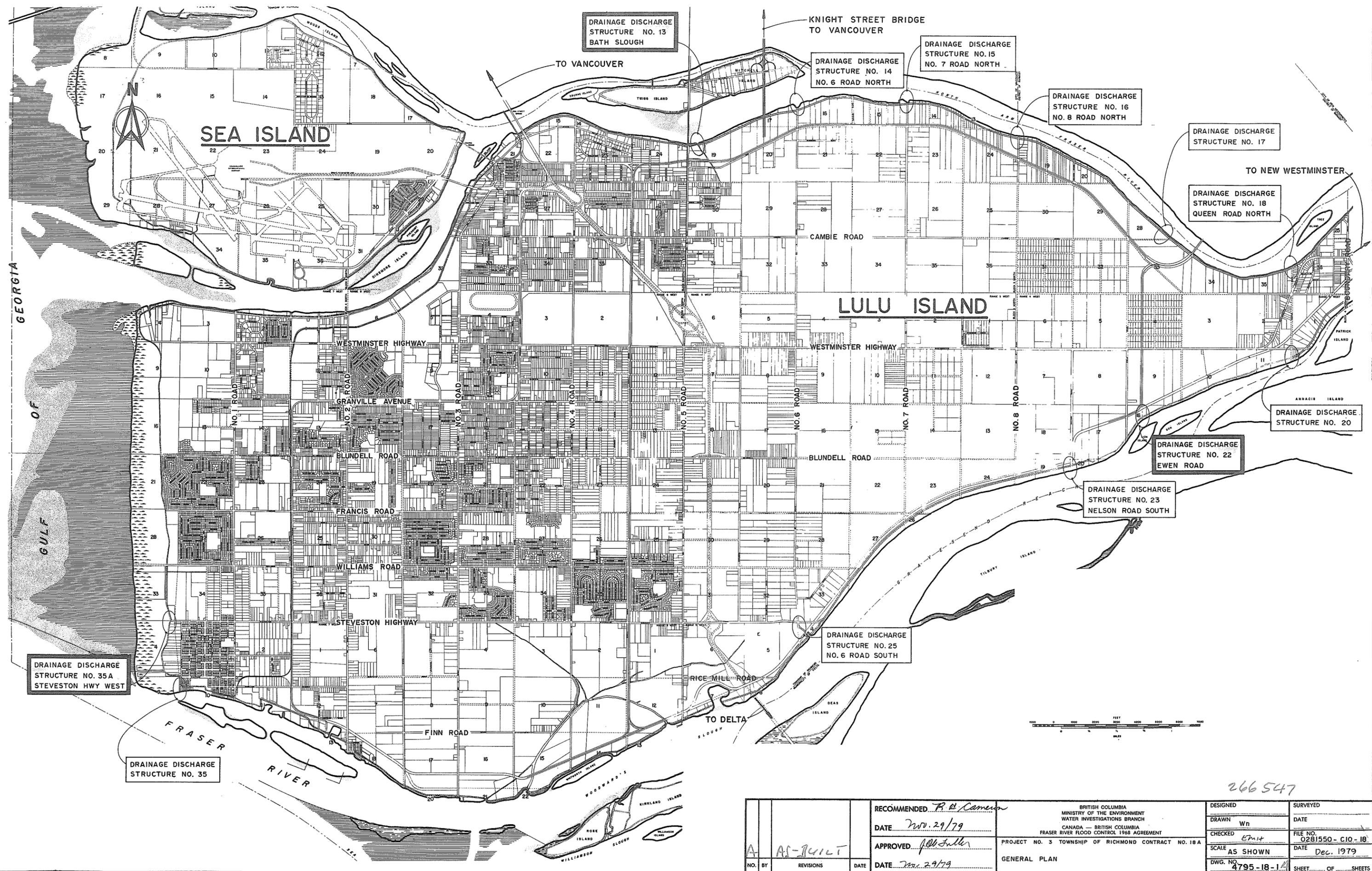
CONTRACT DRAWINGS

4795-18-1	GENERAL PLAN	4795-18-62	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 ELECTRICAL SCHEMATIC DIAGRAMS SHEET 1 OF 3	4795-18-103	ELECTRICAL INSTALLATION DETAILS SHEET 1 OF 2
4795-18-2	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 PLAN SHOWING EXISTING DRAINAGE STRUCTURES TO BE REMOVED, PRELOAD FILL AND UTILITIES	4795-18-63	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 ELECTRICAL SCHEMATIC DIAGRAMS SHEET 2 OF 3	4795-18-104	ELECTRICAL INSTALLATION DETAILS SHEET 2 OF 2
4795-18-3	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 GENERAL ARRANGEMENT PLAN SHOWING POWER SUPPLY AND PROPERTY REQUIREMENTS	4795-18-64	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 ELECTRICAL SCHEMATIC DIAGRAMS SHEET 3 OF 3	4795-18-105	MISCELLANEOUS ARCHITECTURAL DETAILS
4795-18-4	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 GENERAL ARRANGEMENT SECTIONS	4795-18-65	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 ELECTRICAL WIRING DIAGRAMS SHEET 1 OF 3	4795-18-106	PUMP SUPPORT, FLOOR PLATING AND MAINTENANCE FLOOR DETAILS
4795-18-5	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 DETAILS OF EARTHWORKS	4795-18-66	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 ELECTRICAL WIRING DIAGRAMS SHEET 2 OF 3	4795-18-108	PUMP DISCHARGE PIPING DETAILS SHEET 1 OF 2
4795-18-6	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 MAIN STRUCTURE - CONCRETE OUTLINE SHEET 1 OF 2	4795-18-67	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 ELECTRICAL WIRING DIAGRAMS SHEET 3 OF 3	4795-18-109	PUMP DISCHARGE PIPING DETAILS SHEET 2 OF 2
4795-18-7	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 MAIN STRUCTURE - CONCRETE OUTLINE SHEET 2 OF 2	4795-18-87	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A GENERAL ARRANGEMENT PLAN SHOWING POWER SUPPLY AND PROPERTY REQUIREMENTS	4795-18-110	MISCELLANEOUS MECHANICAL DETAILS
4795-18-8	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 MAIN STRUCTURE REINFORCING SHEET 1 OF 4	4795-18-88	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A GENERAL ARRANGEMENT SECTIONS	4795-18-111	ENTRY SCREEN DETAILS
4795-18-9	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 MAIN STRUCTURE REINFORCING SHEET 2 OF 4	4795-18-89	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A DETAILS OF EARTHWORKS	4795-18-112	DISCHARGE SCREEN DETAILS
4795-18-10	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 MAIN STRUCTURE REINFORCING SHEET 3 OF 4	4795-18-90	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A MAIN STRUCTURE - CONCRETE OUTLINE	4795-18-113	ROOF CONCRETE OUTLINE AND REINFORCING
4795-18-11	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 MAIN STRUCTURE REINFORCING SHEET 4 OF 4	4795-18-91	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A MAIN STRUCTURE REINFORCING	4795-18-114	MISCELLANEOUS CONCRETE DETAILS
4795-18-12	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 DISCHARGE CULVERT CONCRETE OUTLINE AND REINFORCING	4795-18-92	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A PUMP DISCHARGE OUTLET BOX CONCRETE OUTLINE AND REINFORCING	4795-18-115	MISCELLANEOUS STEEL DETAILS SHEET 1 OF 2
4795-18-50	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 GENERAL ARRANGEMENT PLAN SHOWING POWER SUPPLY AND PROPERTY REQUIREMENTS	4795-18-93	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A ELECTRICAL ONE LINE DIAGRAM	4795-18-116	MISCELLANEOUS STEEL DETAILS SHEET 2 OF 2
4795-18-51	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 GENERAL ARRANGEMENT SECTIONS	4795-18-94	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A ELECTRICAL EQUIPMENT KIOSK SHEET 1 OF 2	4795-18-117	MISCELLANEOUS EARTHWORKS DETAILS
4795-18-52	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 DETAILS OF EARTHWORKS	4795-18-95	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A ELECTRICAL EQUIPMENT KIOSK SHEET 2 OF 2	4795-18-118	INSTALLATION DETAILS OF CSP DRAINAGE DISCHARGE PIPES
4795-18-53	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 MAIN STRUCTURE - CONCRETE OUTLINE	4795-18-98	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A ELECTRICAL SCHEMATIC DIAGRAMS SHEET 1 OF 2	4795-18-120	BATH SLOUGH - DRAINAGE DISCHARGE STRUCTURE NO. 13 RELOCATION OF EXISTING PUMPHOUSE FACILITY
4795-18-54	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 MAIN STRUCTURE REINFORCING SHEET 1 OF 2	4795-18-99	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A ELECTRICAL SCHEMATIC DIAGRAMS SHEET 2 OF 2	4795-18-121	COMBUSTIBLE GAS DETECTOR INSTALLATION IN EXISTING DRAINAGE DISCHARGE STRUCTURES
4795-18-55	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 MAIN STRUCTURE REINFORCING SHEET 2 OF 2	4795-18-100	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A ELECTRICAL WIRING DIAGRAMS SHEET 1 OF 2		
4795-18-56	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 ARCHITECTURAL DETAILS	4795-18-101	STEVESTON HIGHWAY WEST - DRAINAGE DISCHARGE STRUCTURE NO. 35A ELECTRICAL WIRING DIAGRAMS SHEET 2 OF 2		
4795-18-57	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 ELECTRICAL ONE LINE DIAGRAM	4795-18-102	EMBEDDED ELECTRICAL CONDUIT DRAINAGE DISCHARGE STRUCTURES 13, 14, 15, 18 AND 25		
4795-18-58	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 ELECTRICAL LAYOUTS SHEET 1 OF 2				
4795-18-59	EVEN ROAD - DRAINAGE DISCHARGE STRUCTURE NO. 22 ELECTRICAL LAYOUTS SHEET 2 OF 2				



CBA ENGINEERING LTD

Consulting Engineers
 Vancouver, Canada



DRAINAGE DISCHARGE
STRUCTURE NO. 13
BATH SLOUGH

KNIGHT STREET BRIDGE
TO VANCOUVER

DRAINAGE DISCHARGE
STRUCTURE NO. 14
NO. 6 ROAD NORTH

DRAINAGE DISCHARGE
STRUCTURE NO. 15
NO. 7 ROAD NORTH

DRAINAGE DISCHARGE
STRUCTURE NO. 16
NO. 8 ROAD NORTH

DRAINAGE DISCHARGE
STRUCTURE NO. 17

DRAINAGE DISCHARGE
STRUCTURE NO. 18
QUEEN ROAD NORTH

DRAINAGE DISCHARGE
STRUCTURE NO. 20

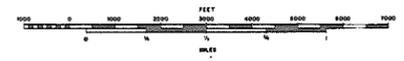
DRAINAGE DISCHARGE
STRUCTURE NO. 22
EWEN ROAD

DRAINAGE DISCHARGE
STRUCTURE NO. 23
NELSON ROAD SOUTH

DRAINAGE DISCHARGE
STRUCTURE NO. 25
NO. 6 ROAD SOUTH

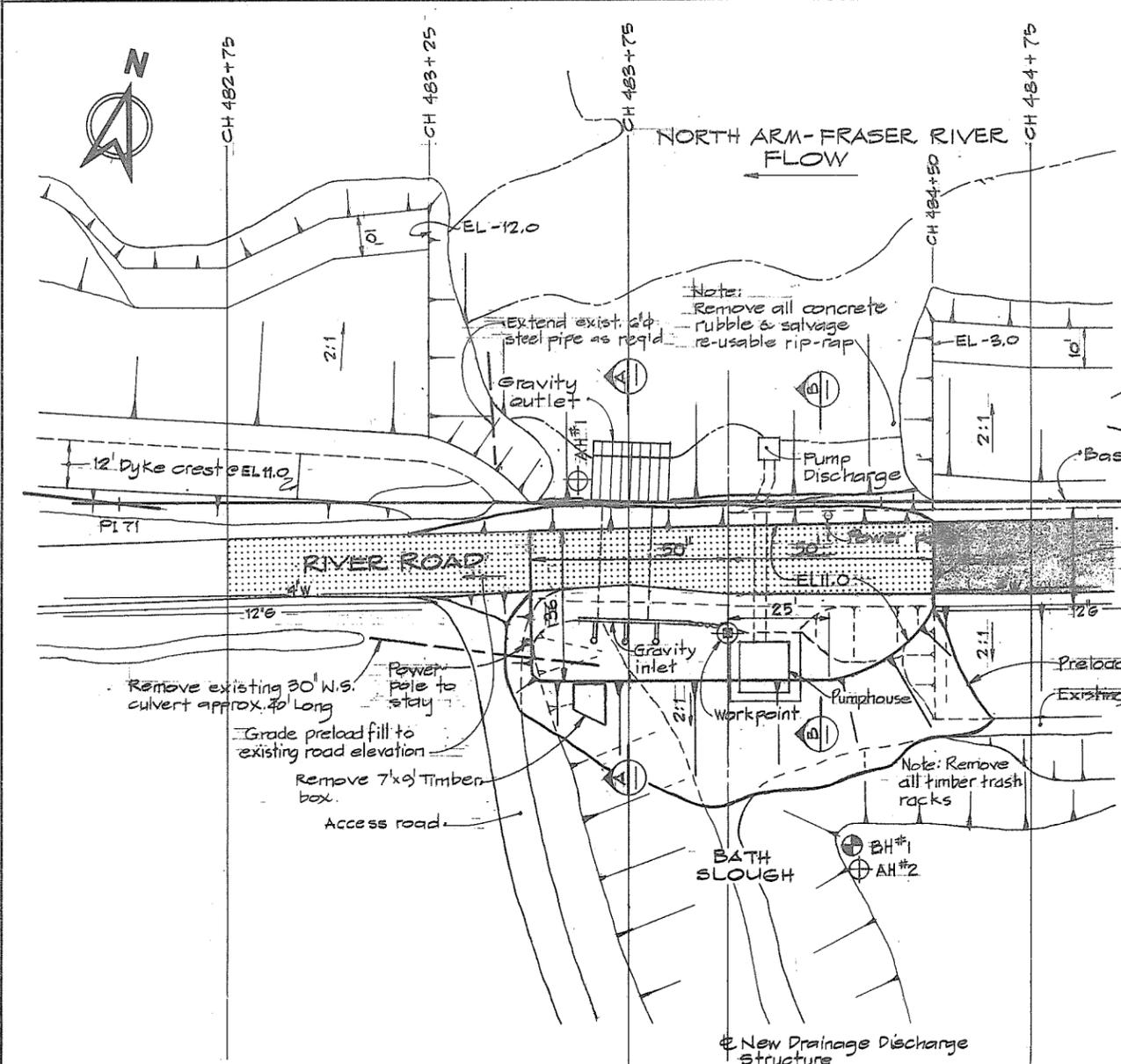
DRAINAGE DISCHARGE
STRUCTURE NO. 35A
STEVESTON HWY WEST

DRAINAGE DISCHARGE
STRUCTURE NO. 35

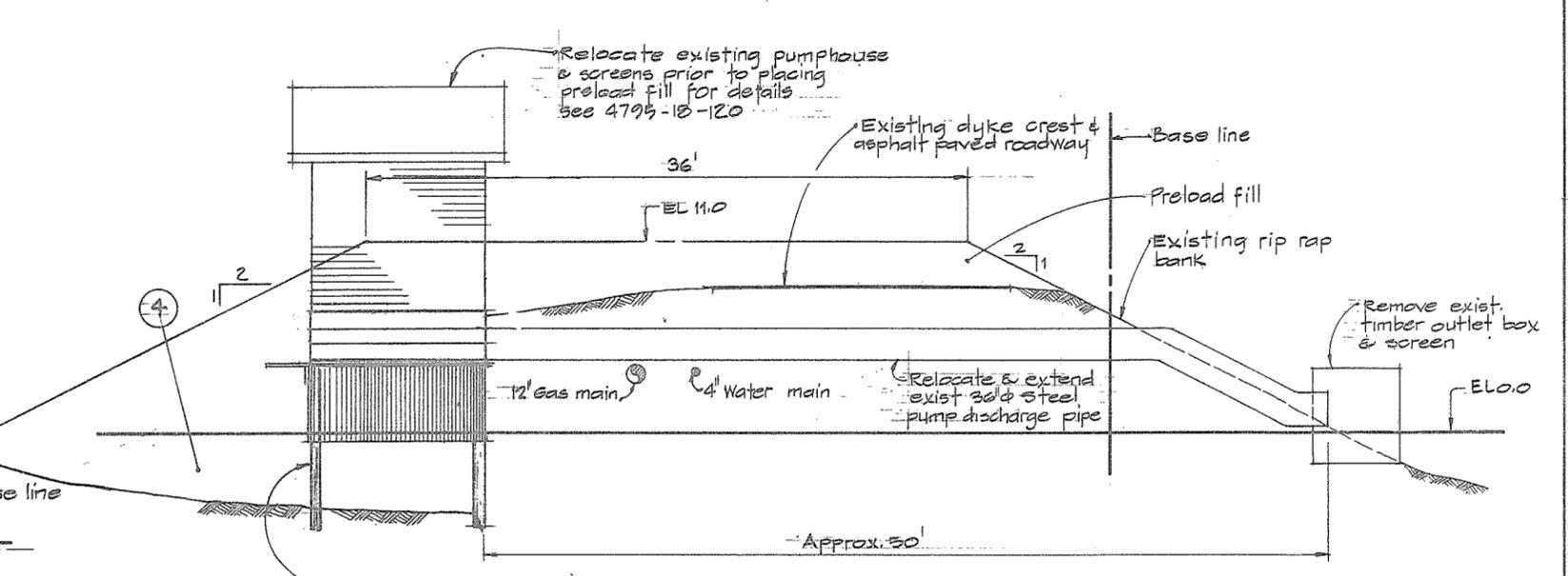


266 547

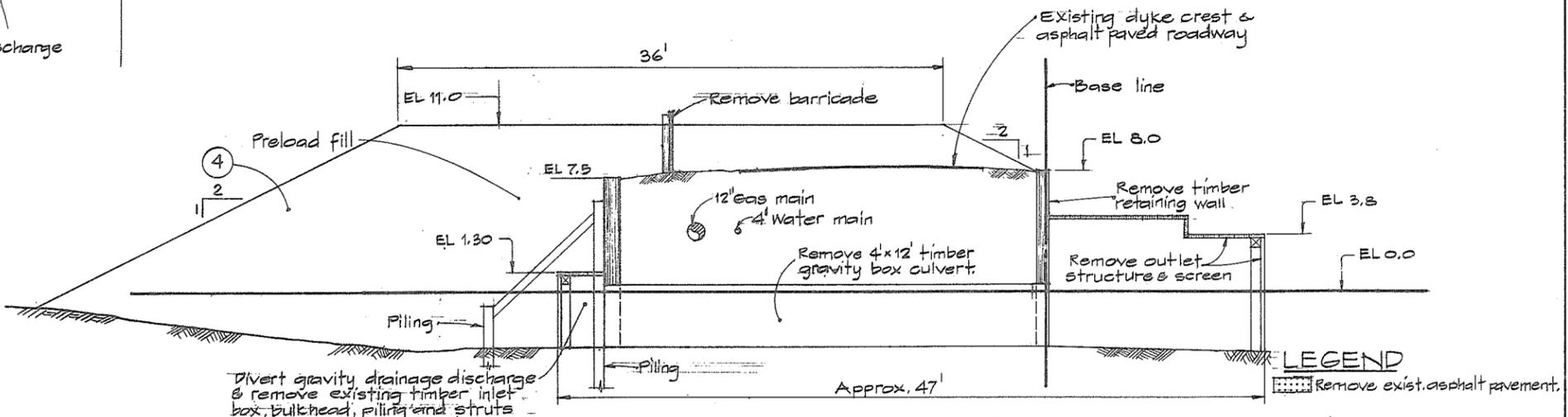
NO. BY A AS-BUILT	RECOMMENDED <i>R. A. Cameron</i>	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA — BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT	DESIGNED	SURVEYED
	DATE <i>Nov. 29/79</i>	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A	DRAWN <i>Wn</i>	DATE
	APPROVED <i>J. G. Fuller</i>	GENERAL PLAN	CHECKED <i>EMH</i>	FILE NO. <i>0281550 - C10 - 18</i>
	DATE <i>Nov. 29/79</i>		SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
			DWG. NO. <i>4795-18-1</i>	SHEET <i>1</i> OF <i>1</i> SHEETS



PLAN
SCALE IN FEET
0 20 40



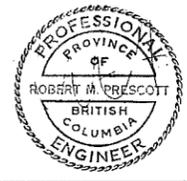
SECTION B
SCALE IN FEET
5 0 5 10



SECTION A
SCALE IN FEET
5 0 5 10

LEGEND
[Pattern] Remove exist. asphalt pavement.

NOTES
• All elevations refer to the Geodetic Survey of Canada.
• For location of workpoint see dwg. 4795-18-3



CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

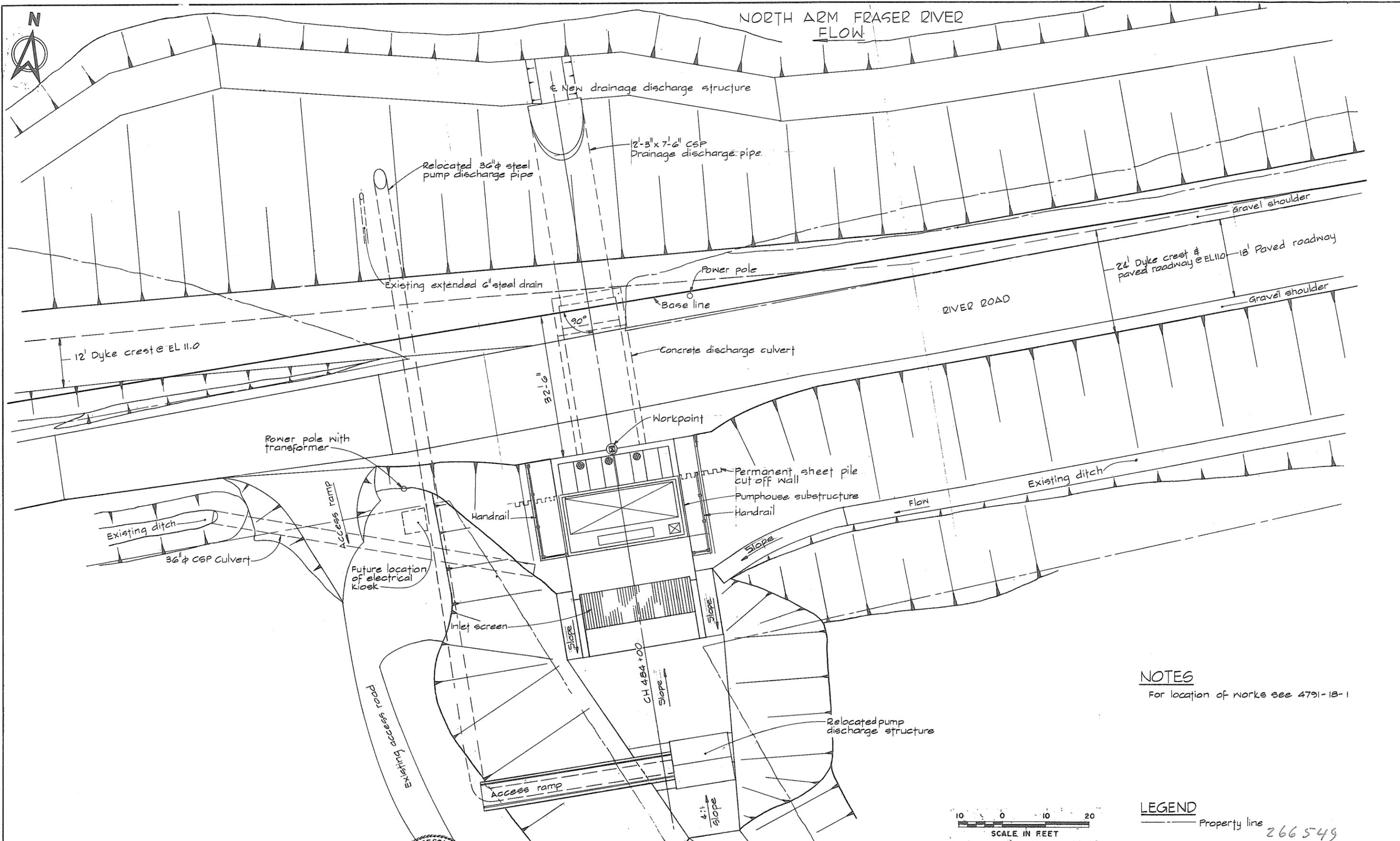
RECOMMENDED	<i>P. L. Conner</i>	PROJECT MANAGER
DATE	Nov. 29/79	
APPROVED	<i>[Signature]</i>	DIRECTOR
DATE	Nov 29/79	

BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
BATH SLOUGH - DRAINAGE DISCHARGE STRUCT NO. 13
PLAN SHOWING EXISTING DRAINAGE STRUCTURES TO BE REMOVED, PRELOAD FILL AND UTILITIES

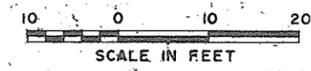
DESIGNED	SURVEYED
DRAWN <i>L. Grave</i>	DATE
CHECKED <i>EmH</i>	FILE NO. 0281550-C10-18
SCALE AS SHOWN	DATE Dec. 1979
DWG. NO. 4795-18-2	SHEET OF SHEETS

266548



NOTES
For location of works see 4791-18-1

LEGEND
Property line 266549



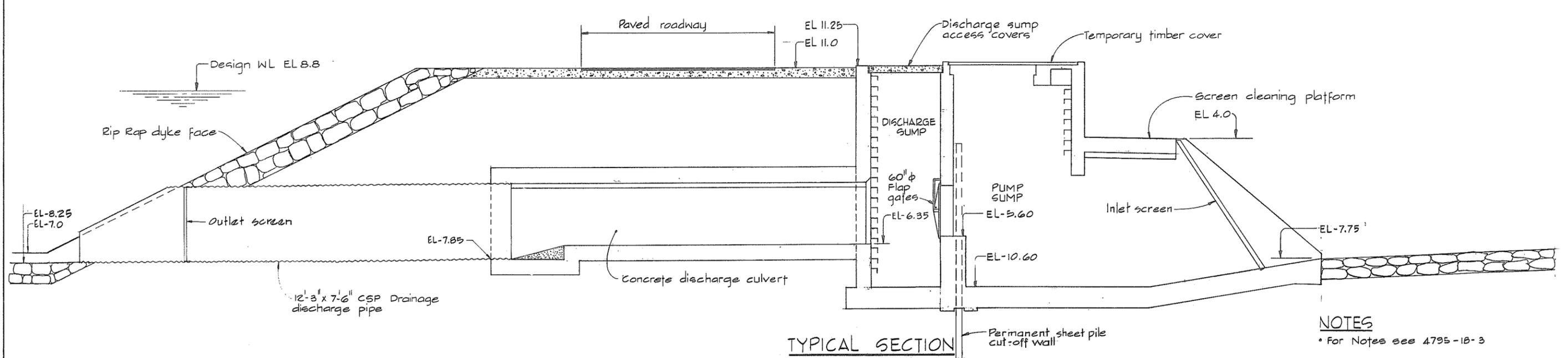
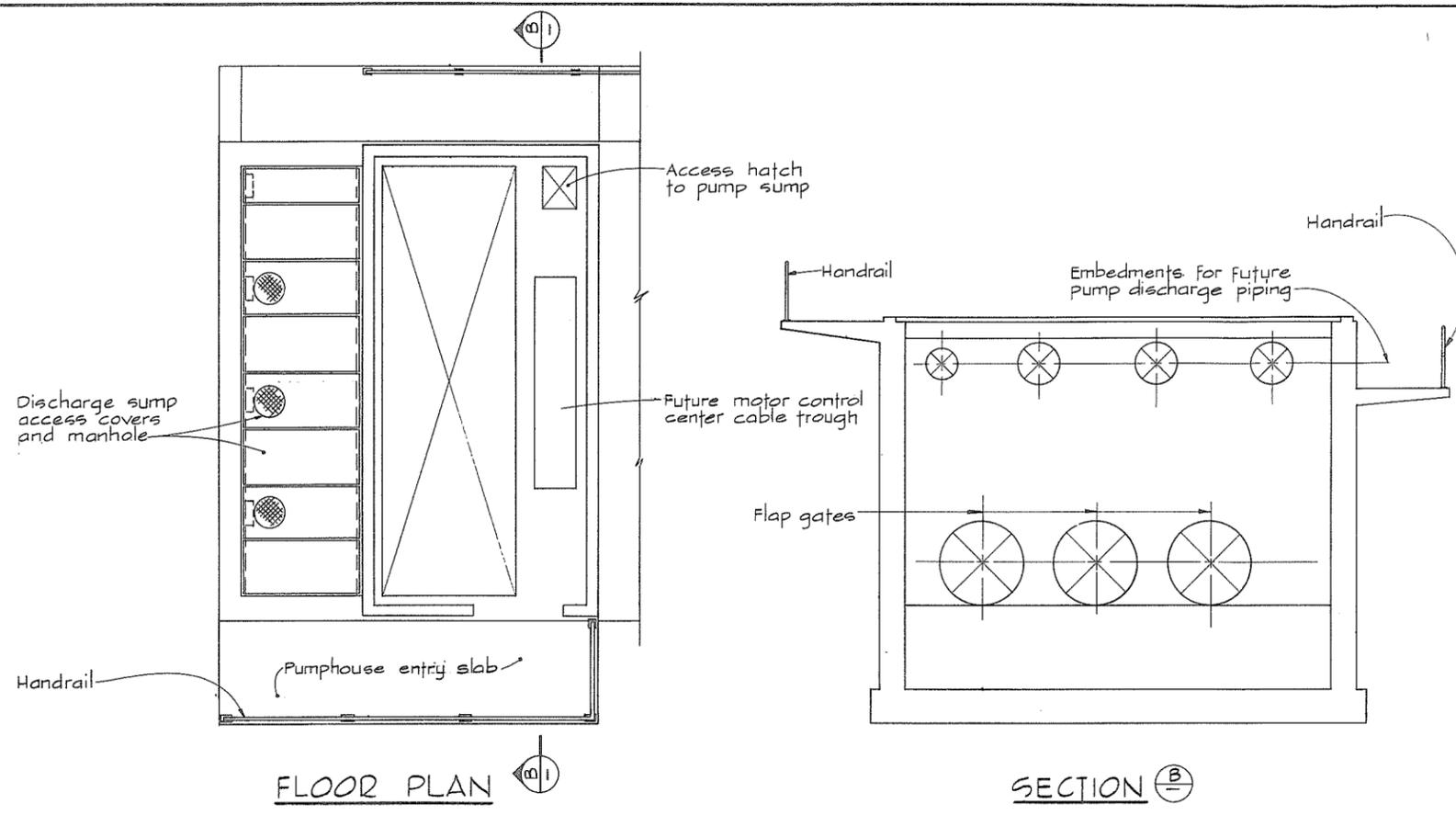
CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
		A/D	

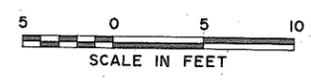
RECOMMENDED *R. A. Jensen*
PROJECT MANAGER
DATE *Nov. 29/79*
APPROVED *[Signature]*
DIRECTOR
DATE *Nov 29/79*

BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
BATH SLOUGH - DRAINAGE DISCHARGE STRUCT NO. 13
GENERAL ARRANGEMENT PLAN SHOWING POWER SUPPLY
AND PROPERTY REQUIREMENTS

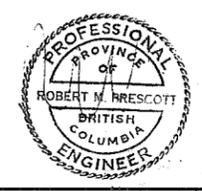
DESIGNED	SURVEYED
DRAWN SP	DATE
CHECKED DLC	FILE NO. 0281550-C10-18
SCALE AS SHOWN	DATE Dec. 1979
DWG. NO. 4795-18-3 R	SHEET OF SHEETS



NOTES
 • For Notes see 4795-18-3

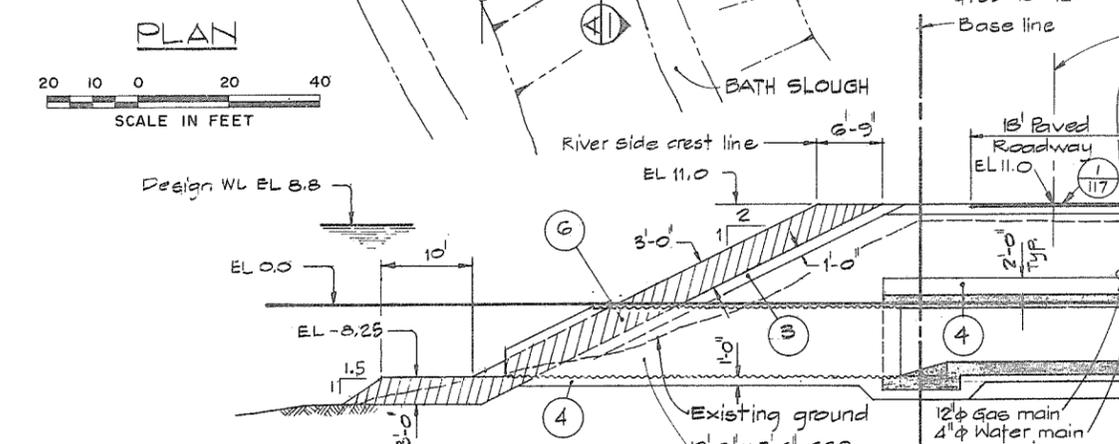
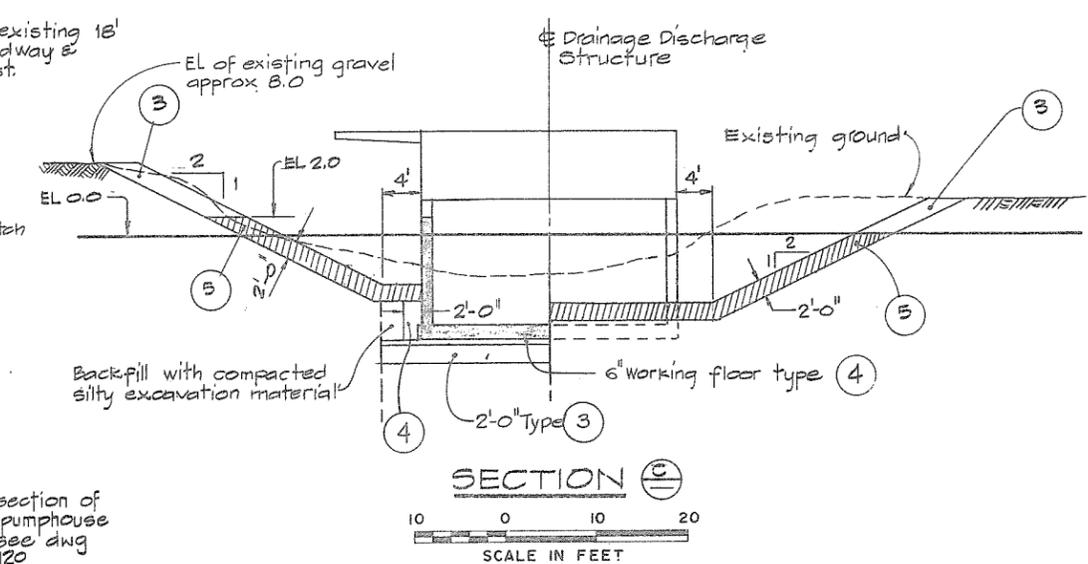
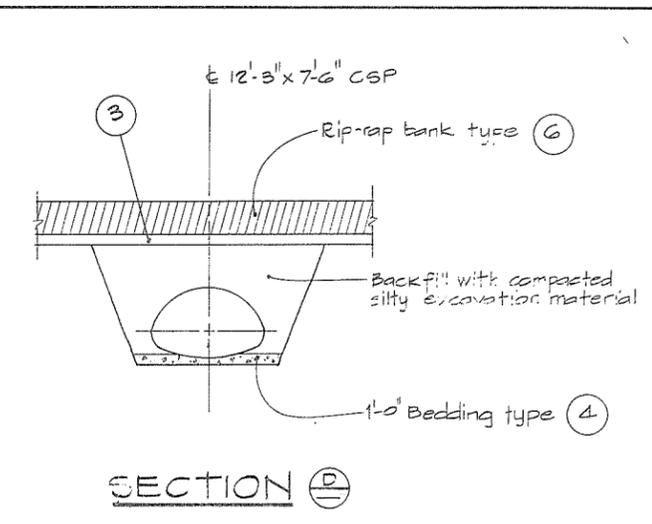
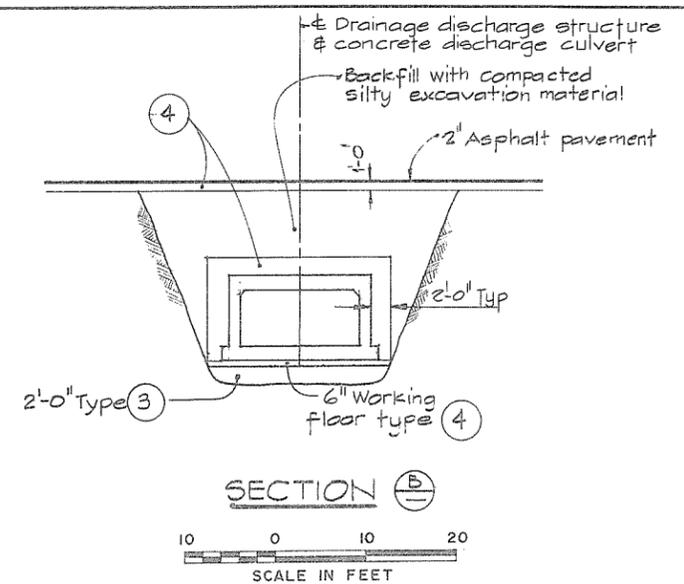
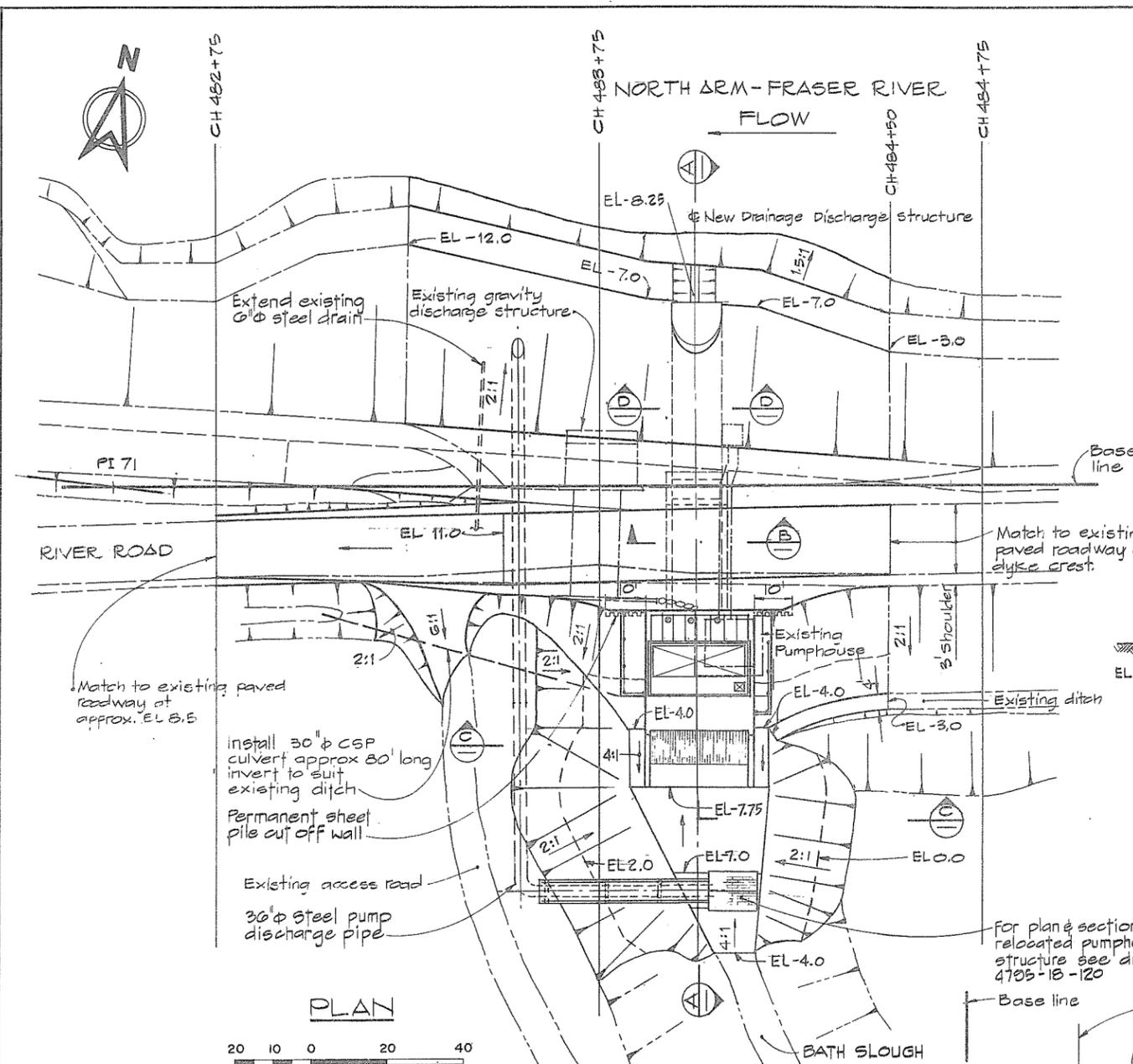


266 550



CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE	RECOMMENDED <i>B.H. Cameron</i>	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT	DESIGNED	SURVEYED
				DATE <i>Nov. 29/79</i>		PROJECT MANAGER	DRAWN <i>SP</i>
				APPROVED <i>W. Stiller</i>	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A BATH SLOUGH - DRAINAGE DISCHARGE STRUCT. NO. 13 GENERAL ARRANGEMENT SECTIONS	CHECKED <i>DLC</i>	FILE NO. <i>0281550-C10-18</i>
				DATE <i>Nov 29/79</i>		DIRECTOR	SCALE <i>AS SHOWN</i>
						DWG. NO. <i>4795-18-4</i>	SHEET <i>5</i> OF <i>5</i> SHEETS



- MATERIAL LEGEND**
- 1 Silt-clay
 - 2 Sand
 - 3 Sand, gravel, cobbles
 - 4 Crushed gravel
 - 5 Light rip-rap
 - 6 Rip-rap
- LEGEND**
- Existing ground surface (section).
 - Existing ground & structures (Plan).
 - R Section identification letter.
 - 18 Drawing No. on which the section is drawn (ie 4795-18-118).
 - 3 Detail identification number.
 - 12 Drawing No. on which the detail is drawn (ie 4795-18-118).

- NOTES**
- Elevations refer to the Geodetic Survey of Canada.
 - A smooth alignment shall be maintained over the entire length of the dyke.
 - Offset distances from base line to crest lines are taken at the design crest elevation.
 - The angle of offset is 90° to base line, unless otherwise indicated.
 - Terminal parts of the work shall be constructed to blend with the existing ground.

OFFSET DIMENSIONS FROM BASE LINE			
Chainage	Land side crest	River side pavement edge	River side crest
483+25	Existing	8.33	16
483+50	31.5	7.67	14
483+75	32	7.00	12
484+00	33	6.33	10
484+25	31	5.67	8
484+50	26	5.0	6



CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

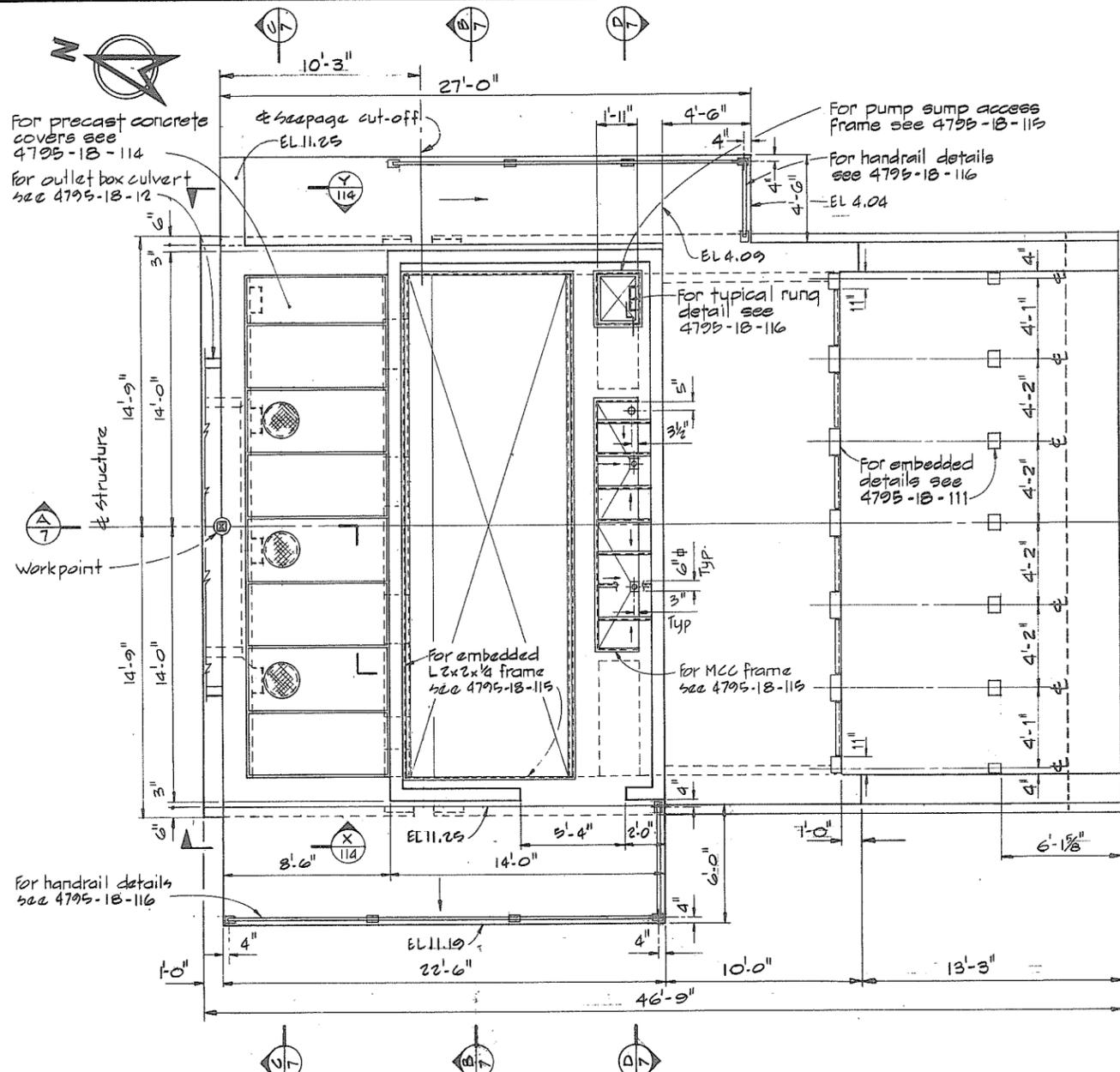
RECOMMENDED	R. A. Cameron	PROJECT MANAGER
DATE	Nov. 29/79	
APPROVED	G. B. Tuller	DIRECTOR
DATE	Nov. 29/79	

BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
BATH SLOUGH - DRAINAGE DISCHARGE STRUCT NO. 13
DETAILS OF EARTHWORKS

DESIGNED	L. Grave	SURVEYED	
DRAWN	L. Grave	DATE	
CHECKED	EMH	FILE NO.	0281550-C10-18
SCALE	AS SHOWN	DATE	Dec. 1979
DWG. NO.	4795-18-5	SHEET	OF SHEETS

266 551



For precast concrete covers see 4795-18-114
 For outlet box culvert see 4795-18-12

For pump sump access frame see 4795-18-115

For handrail details see 4795-18-116

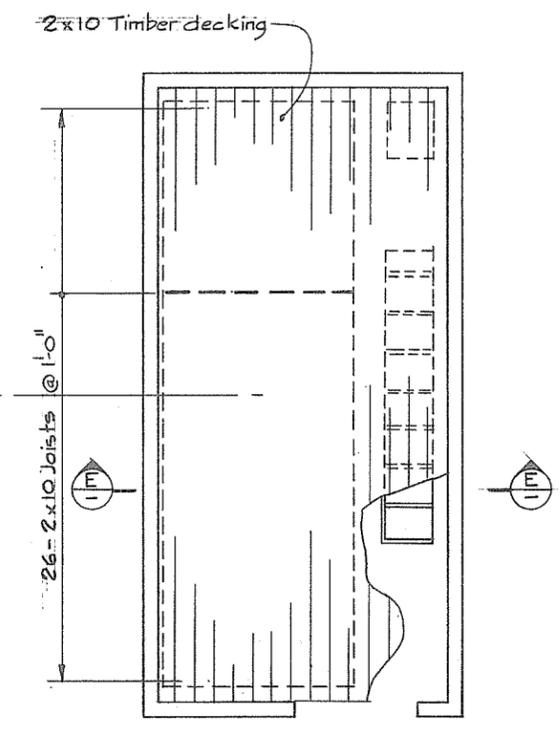
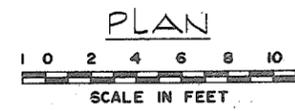
For typical rung detail see 4795-18-116

For embedded details see 4795-18-111

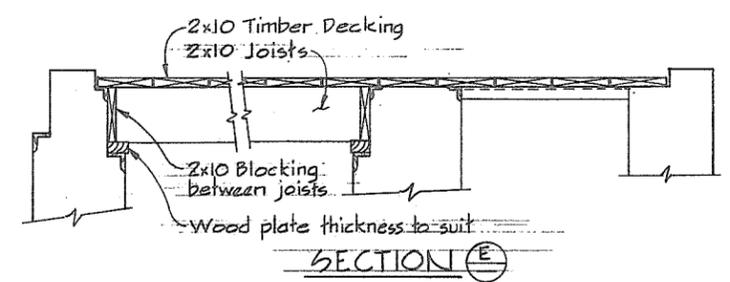
For embedded Lx2x1/2 frame see 4795-18-115

For MCC frame see 4795-18-115

For handrail details see 4795-18-116



PLAN
 TEMPORARY-TIMBER COVER



SECTION E

GENERAL NOTES - STRUCTURAL

- Design is in accordance with CSA A23.3-1973, Code for the Design of Plain or Reinforced Concrete Structures
- Construction shall be in accordance with CSA A23.1-1973, 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 60
- 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 and base slabs - steel trowel
 - Exposed horizontal surfaces - broom
 - Interior, exterior exposed walls and beams - rubbed
 - See specs for details
- CHAMFER - $\frac{3}{4} \times \frac{3}{4}$ for all exposed corners

NOTES

- Install upper ground electrode, and leave both ends in MCC trough for future connection
- For location of embedded electrical conduit see 4795-18-102
- For location of workpoint see 4795-18-3.



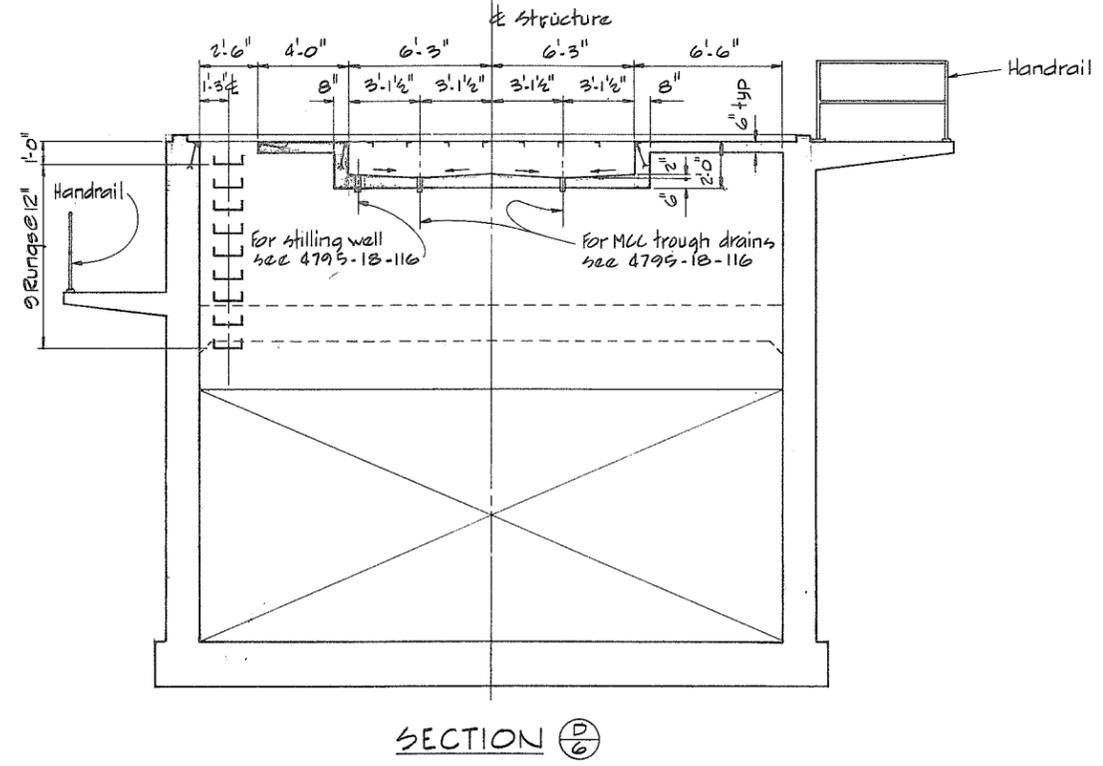
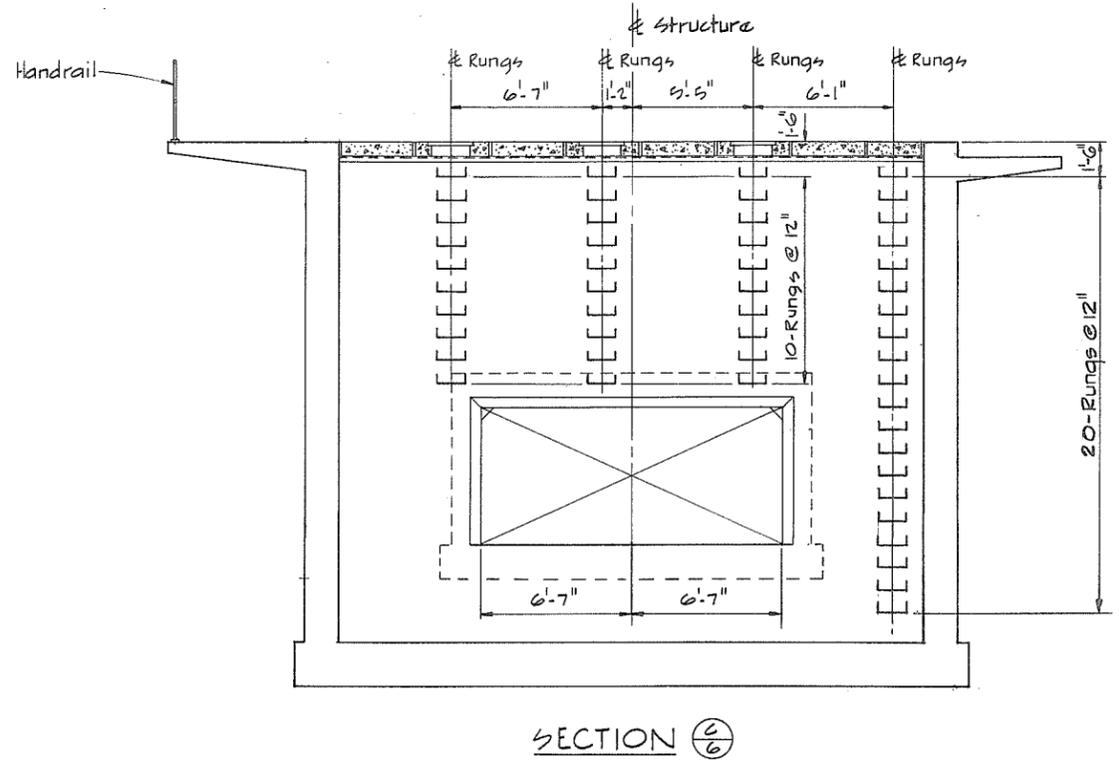
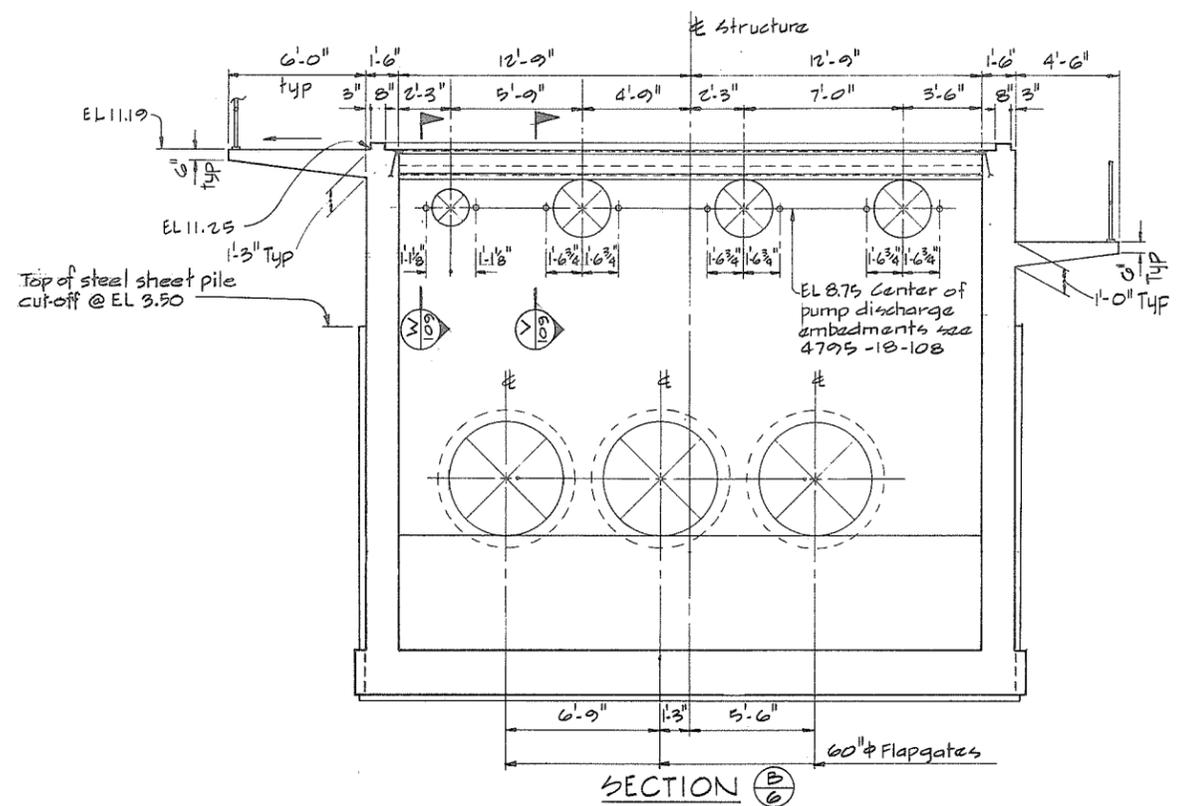
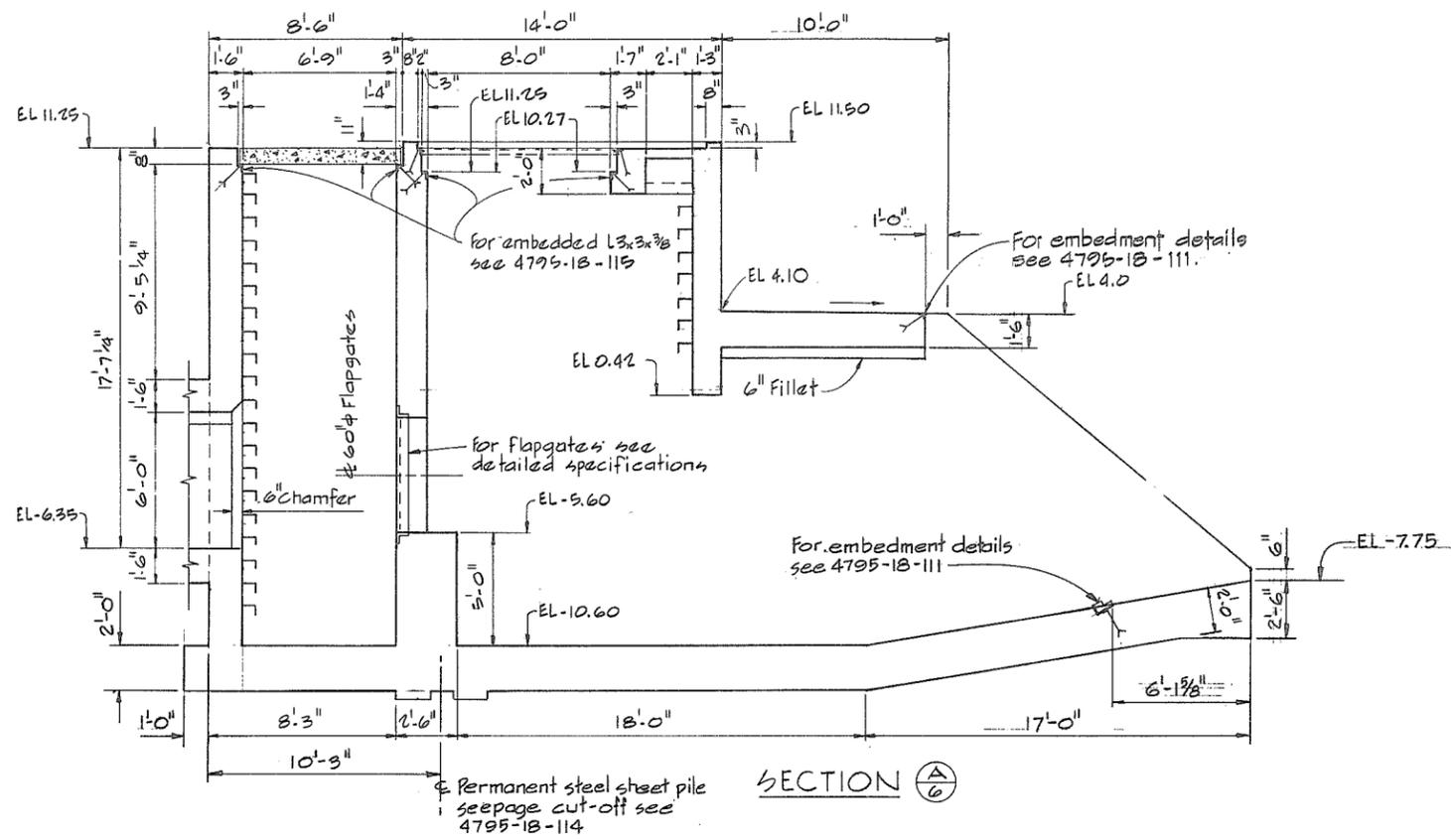
CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

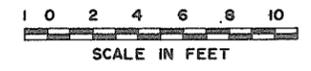
RECOMMENDED: *P.R. Comen*
 PROJECT MANAGER
 DATE: *Nov. 29/79*
 APPROVED: *[Signature]*
 for DIRECTOR
 DATE: *Nov 29/79*

DESIGNED	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED <i>GCW/TP</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-6</i>	SHEET <i>1</i> OF <i>2</i> SHEETS

N.P. 266552



NOTES
For General Notes see 4795-18-6



266 553

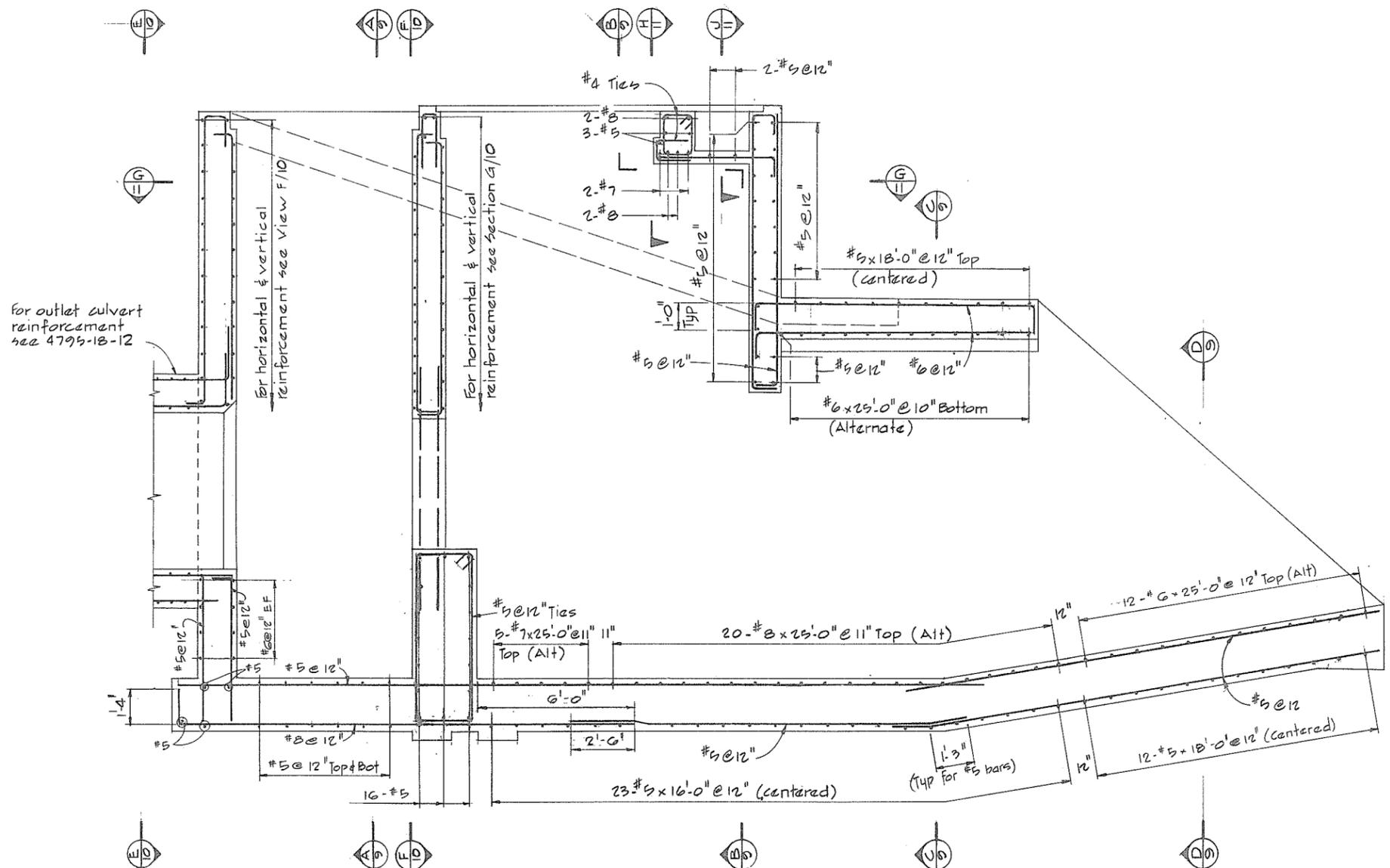


CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED *R. S. Connors*
PROJECT MANAGER
DATE *Nov. 29/79*
APPROVED *[Signature]*
DIRECTOR
DATE *Nov. 29/79*

BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
BATH SLOUGH - DRAINAGE DISCHARGE STRUCT NO. 13
MAIN STRUCTURE - CONCRETE OUTLINE

DESIGNED	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED <i>GCW/TP</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-7</i>	SHEET <i>2</i> OF <i>2</i> SHEETS



for outlet culvert reinforcement see 4795-18-12

for horizontal & vertical reinforcement see View F/10

for horizontal & vertical reinforcement see section G/10

LONGITUDINAL SECTION



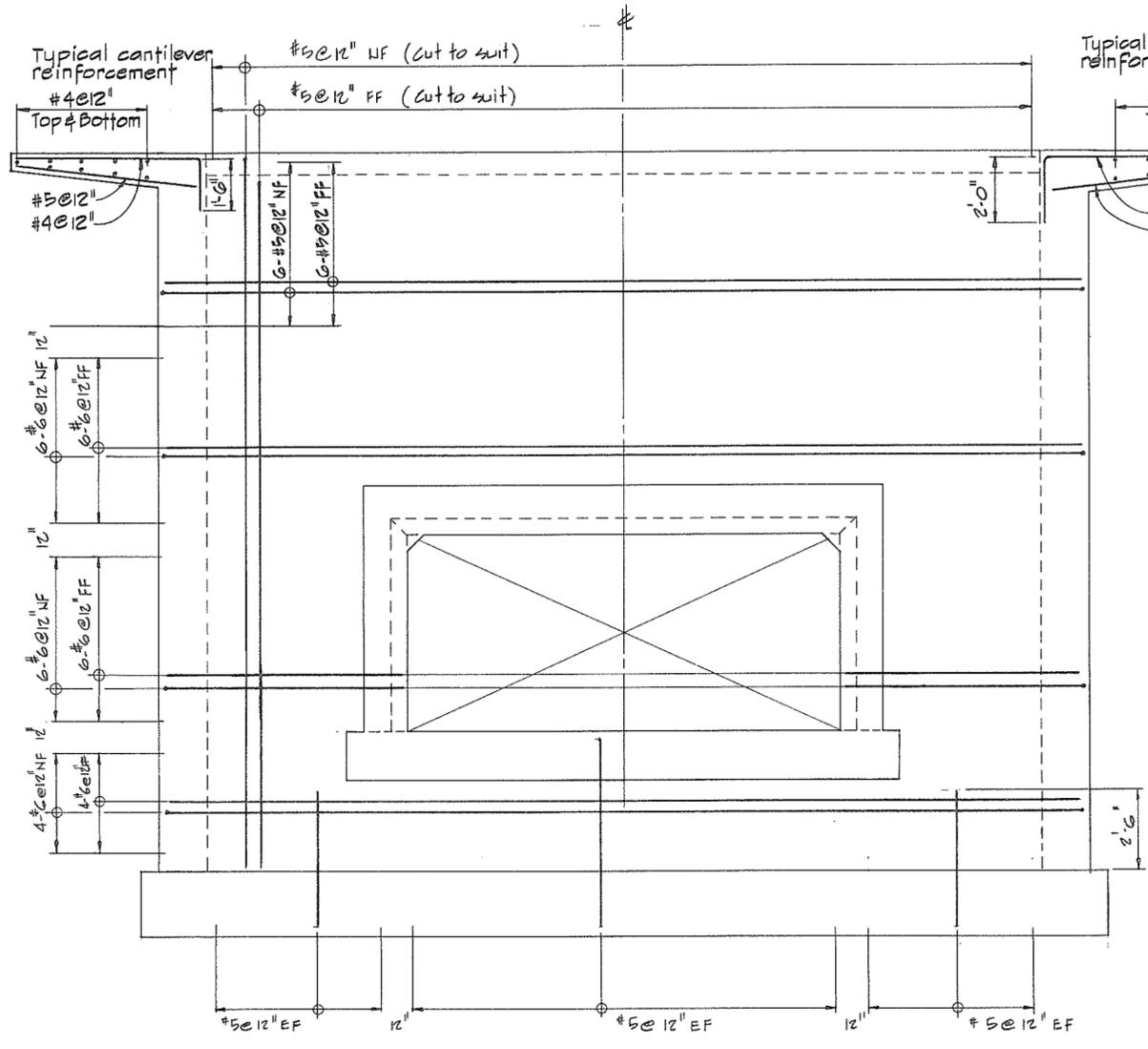
NOTES
For General Notes see 4795-18-6.

266 554

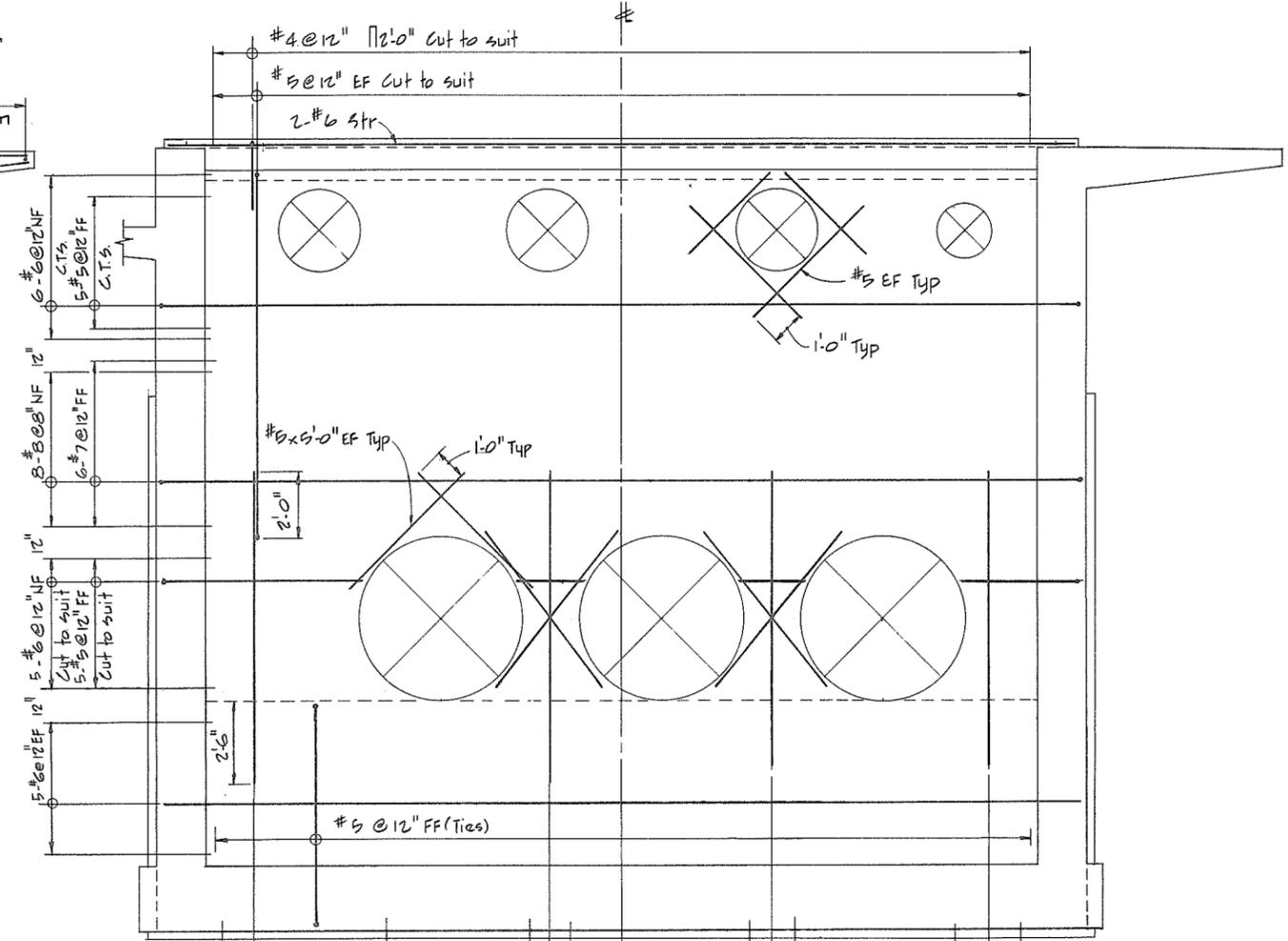
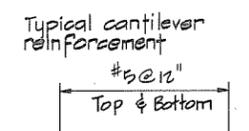


CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED <i>B. A. Cameron</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT	DESIGNED	SURVEYED
DATE <i>Nov. 29 / 79</i>	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A BATH SLOUGH - DRAINAGE DISCHARGE STRUCT NO. 13	DRAWN <i>AR</i>	DATE
APPROVED <i>[Signature]</i> DIRECTOR	MAIN STRUCTURE REINFORCING	CHECKED <i>GCW/TP</i>	FILE NO. <i>0281550 - C10 - 18</i>
DATE <i>Nov 29 / 79</i>		SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
		DWG. NO. <i>4795-18-8</i>	SHEET <i>1</i> OF <i>4</i> SHEETS

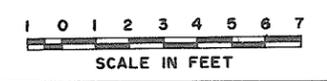


VIEW $\frac{E}{B}$



SECTION $\frac{F}{B}$

NOTES
 • For General Notes see 4795-18-6



266 556



CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

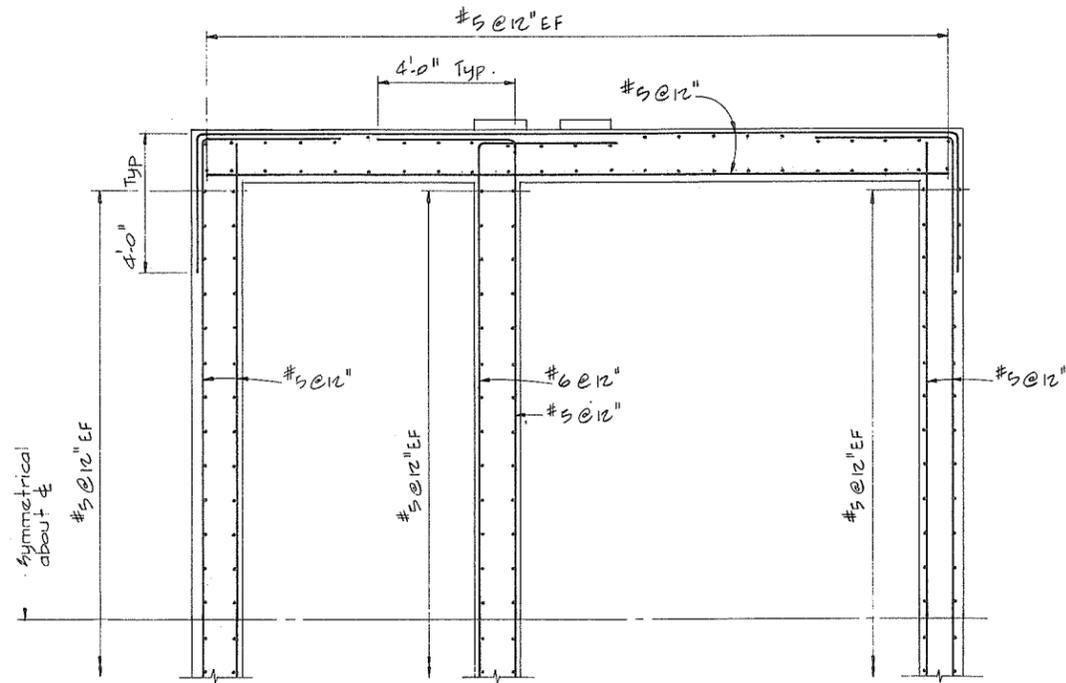
NO.	BY	REVISIONS	DATE
		A, IR	

RECOMMENDED *R. & Cameron*
 PROJECT MANAGER
 DATE Nov. 29/79
 APPROVED *John Fuller*
 DIRECTOR
 DATE Nov. 29/79

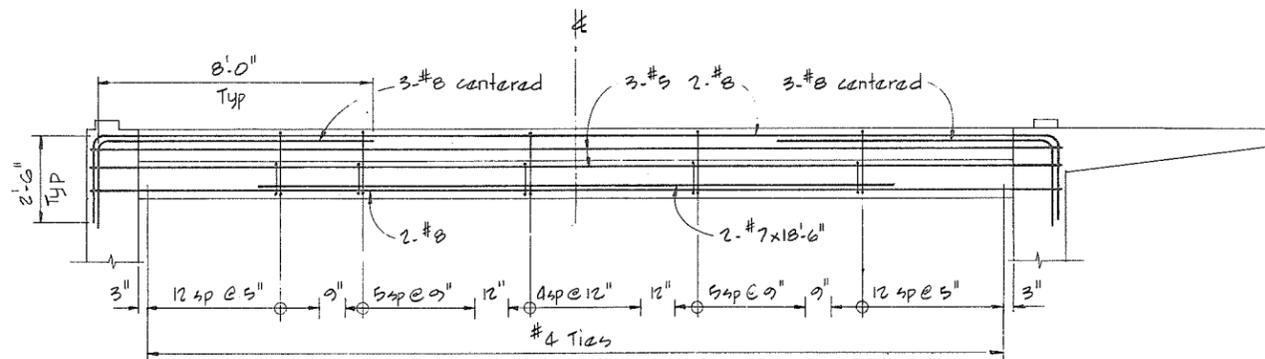
BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
 PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18 A
 BATH SLOUGH - DRAINAGE DISCHARGE STRUCT NO. 13
 MAIN STRUCTURE REINFORCING

DESIGNED	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED <i>GCW/TP</i>	FILE NO. 0281550-C10-18
SCALE AS SHOWN	DATE Dec. 1979
DWG. NO. 4795-18-10 A	SHEET 3 OF 4 SHEETS

NOTE
Ramp not shown
for clarity

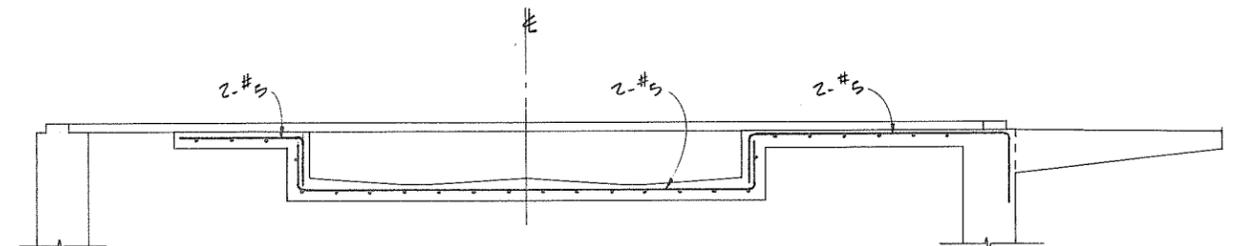


SECTION (G)



SECTION (H)

NOTE
• For bar location see longitudinal section
• Wall reinforcing not shown for clarity

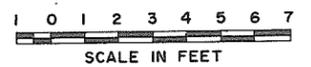


SECTION (J)

NOTE
• All Bars #5 @ 12"
• Bars hooked down 10" into walls
• Wall reinforcing not shown for clarity

NOTES

• For General Notes see 4795-18-G



266557



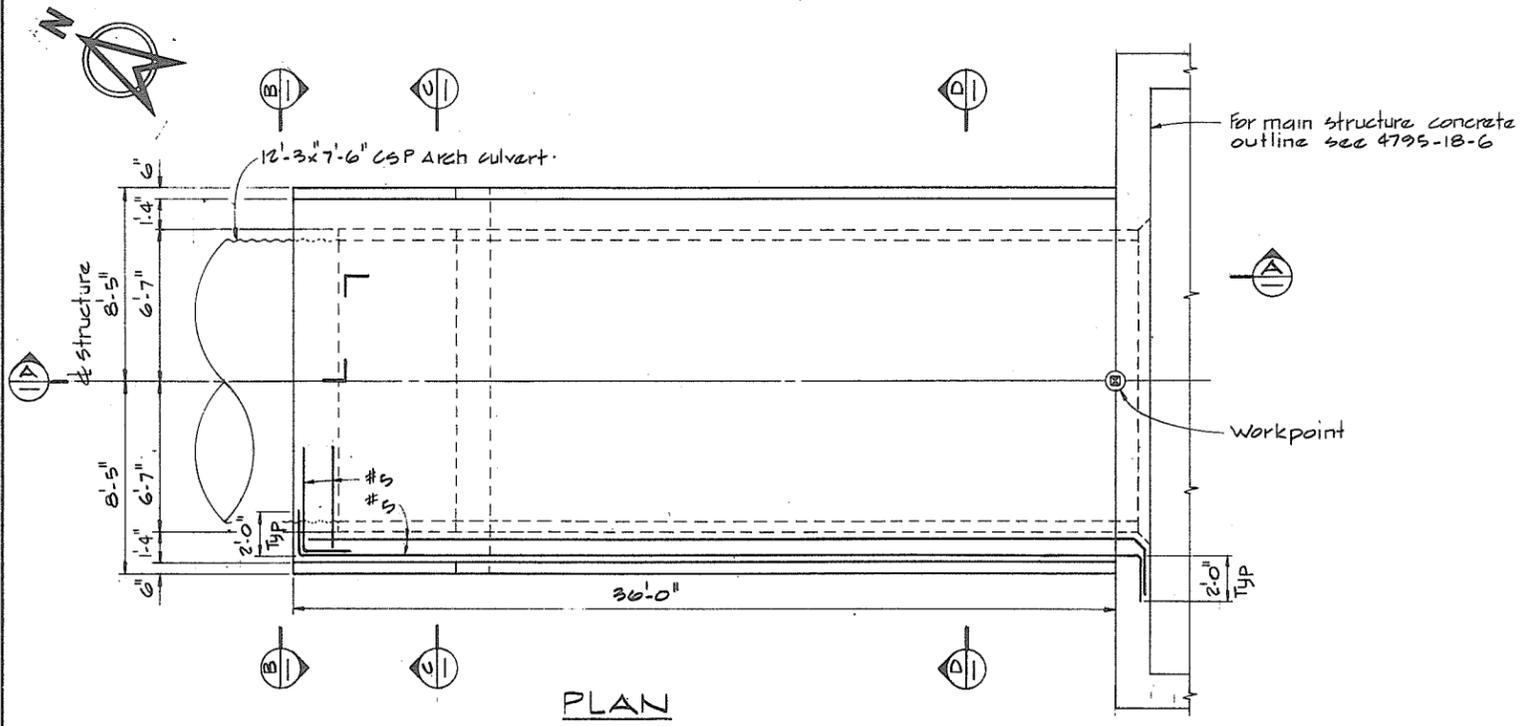
CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
A		A/R	

RECOMMENDED *R. H. Cameron*
PROJECT MANAGER
DATE *Nov. 29/79*
APPROVED *J. M. Fuller*
for DIRECTOR
DATE *Nov. 29/79*

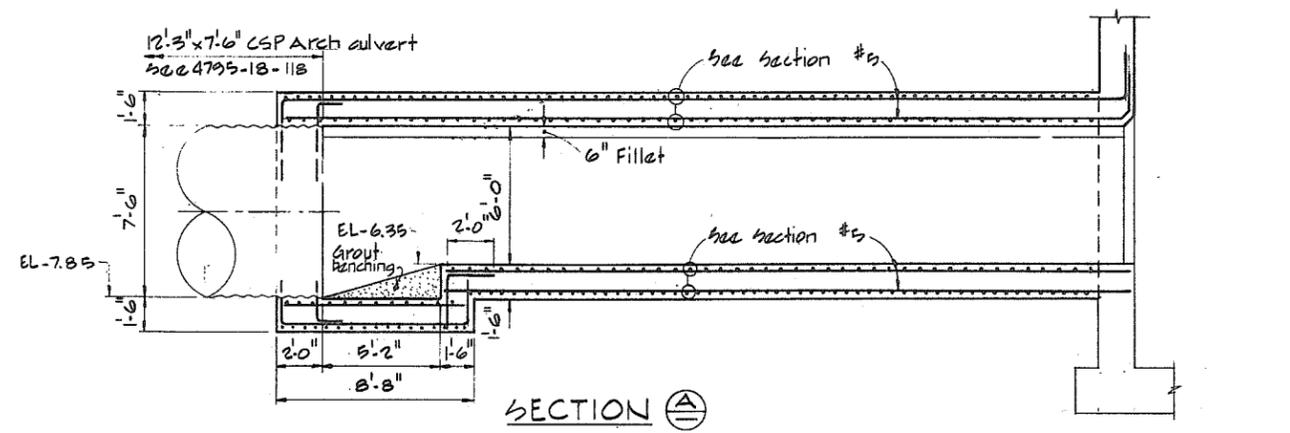
BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
PROJECT NO. 3 TOWNSHIP OF RICHMOND - CONTRACT NO. 18A
BATH SLOUGH - DRAINAGE DISCHARGE STRUCT NO. 13
MAIN STRUCTURE REINFORCING

DESIGNED	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED <i>GCW/TP</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-11 A</i>	SHEET <i>4</i> OF <i>4</i> SHEETS

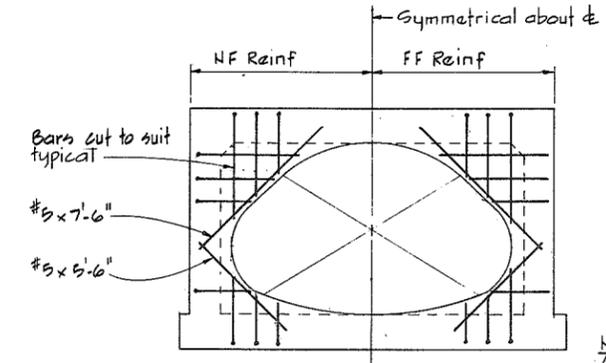


PLAN

NOTE
Vertical wall reinf
not shown for clarity

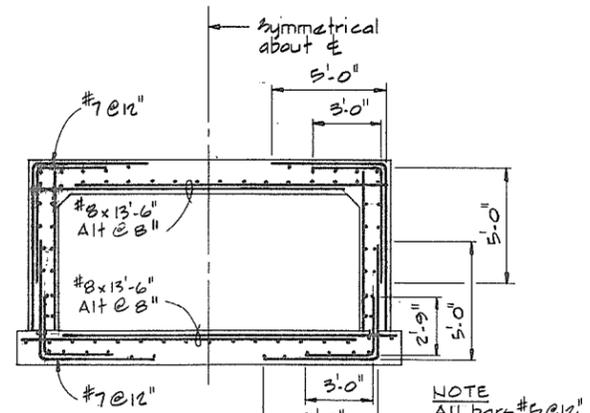


SECTION A



VIEW B

NOTE
All Bars #5 @ 12"
unless noted
otherwise
culvert wall reinf
not shown for clarity

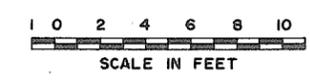


SECTION D SHOWN

SECTION C SIMILAR

NOTE
All Bars #5 @ 12"
unless noted
otherwise

NOTES
For General Notes see 4795-18-6



266558

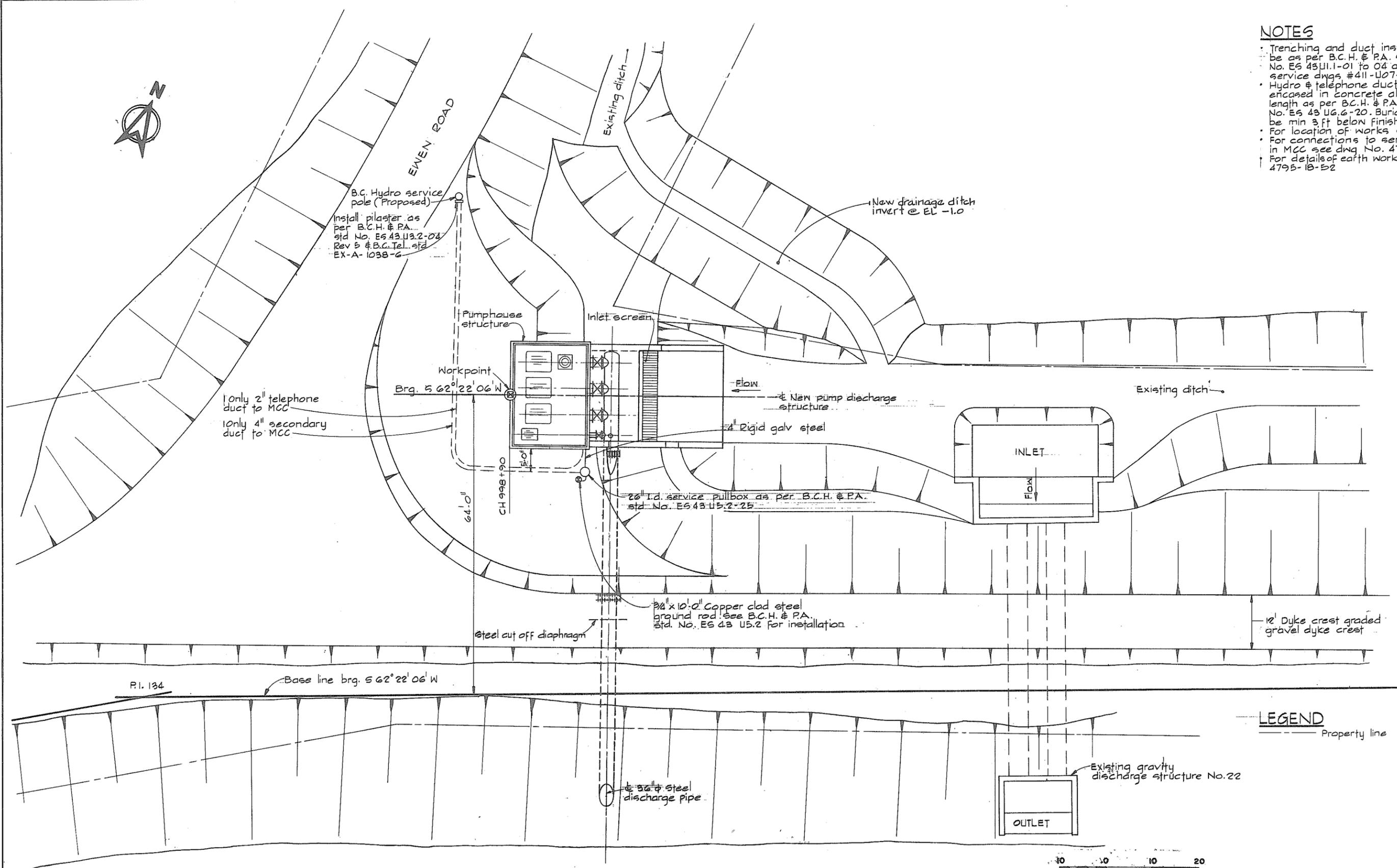


NO.	BY	REVISIONS	DATE	RECOMMENDED <i>R. M. Prescott</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT	DESIGNED	SURVEYED
				DATE <i>Nov. 29/79</i>		DRAWN <i>AR</i>	DATE
A				APPROVED <i>[Signature]</i> DIRECTOR	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A BATH SLOUGH - DRAINAGE DISCHARGE STRUCT. NO. 13 DISCHARGE CULVERT CONCRETE OUTLINE AND REINFORCING	CHECKED <i>GCW/TP</i>	FILE NO. <i>0281550-C10-18</i>
				DATE <i>Nov 29/79</i>		SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
						DWG. NO. <i>4795-18-12A</i>	SHEET..... OF .. SHEETS

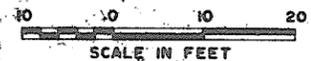


NOTES

- Trenching and duct installation shall be as per B.C.H. & P.A. standards No. ES 43 U1.1-01 to 04 and B.C.H. U/A service dwgs #411-U07-B1058
- Hydro & telephone ducts shall be encased in concrete along their entire length as per B.C.H. & P.A. standard No. ES 43 UG.6-20. Burial depth shall be min 3 ft below finished grade
- For location of works see 4795-18-1
- For connections to service switch in MCC see dwg No. 4795-18-58
- For details of earth work see 4795-18-52



LEGEND
 --- Property line



266 559

FRASER RIVER - ANNACIS CHANNEL
 FLOW



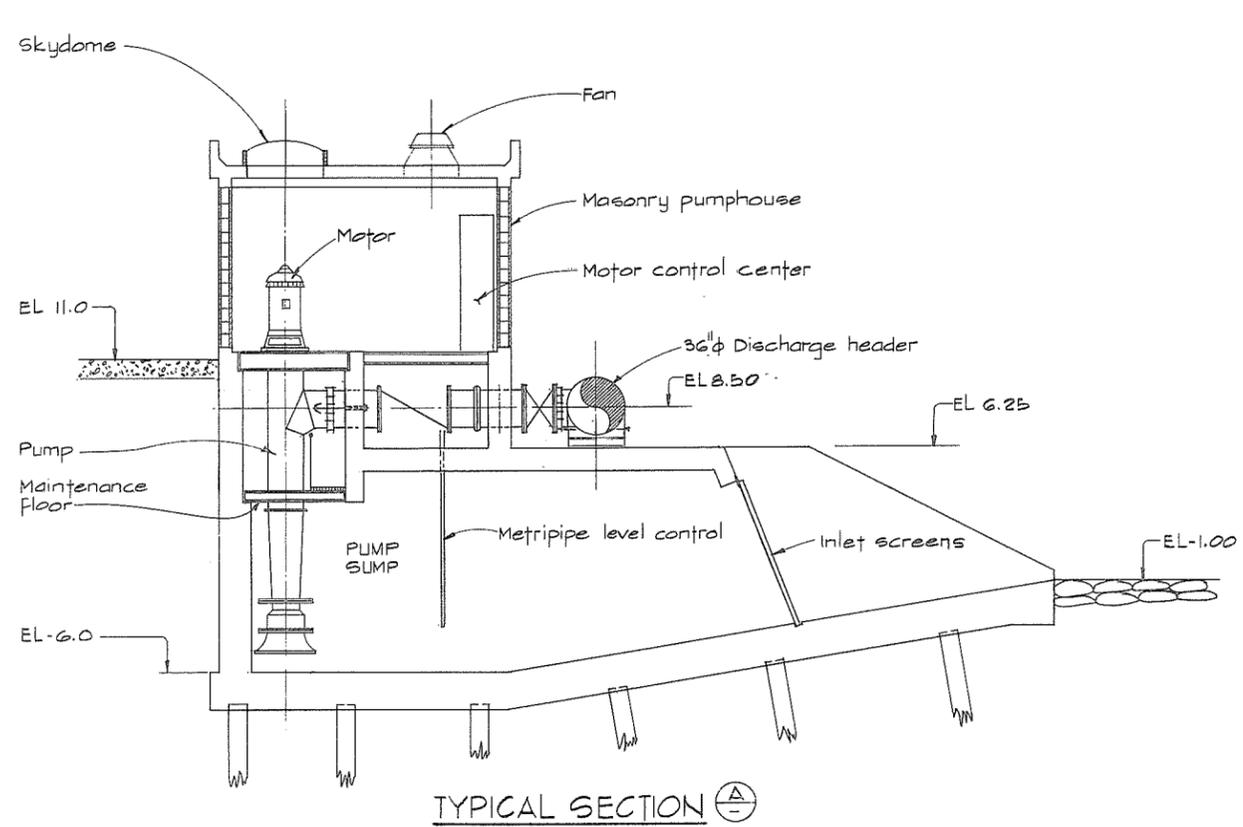
CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
4		A/R	

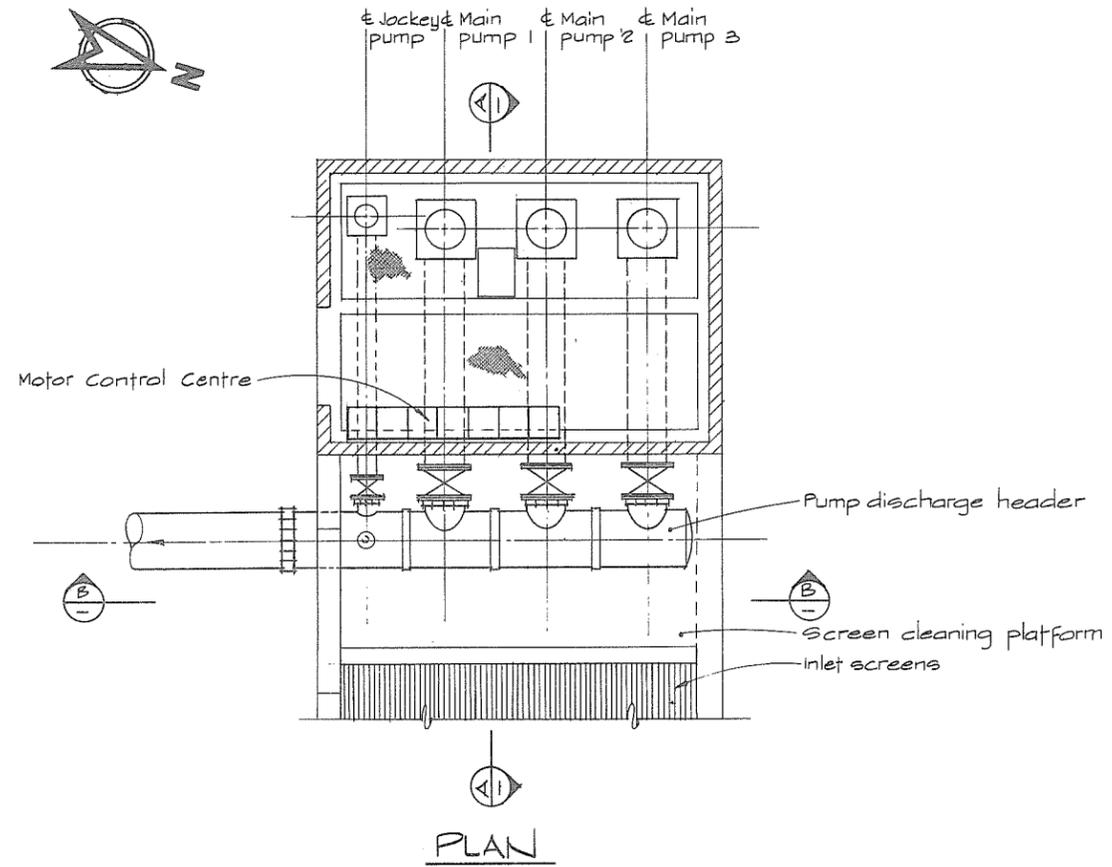
RECOMMENDED *R. S. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *John Fuller*
 for DIRECTOR
 DATE *Nov 29/79*

DESIGNED	SURVEYED
DRAWN SP	DATE
CHECKED DLC	FILE NO. 0281550-C10-18
SCALE AS SHOWN	DATE Dec. 1979
DWG. NO. 4795-18-50A	SHEET ___ OF ___ SHEETS

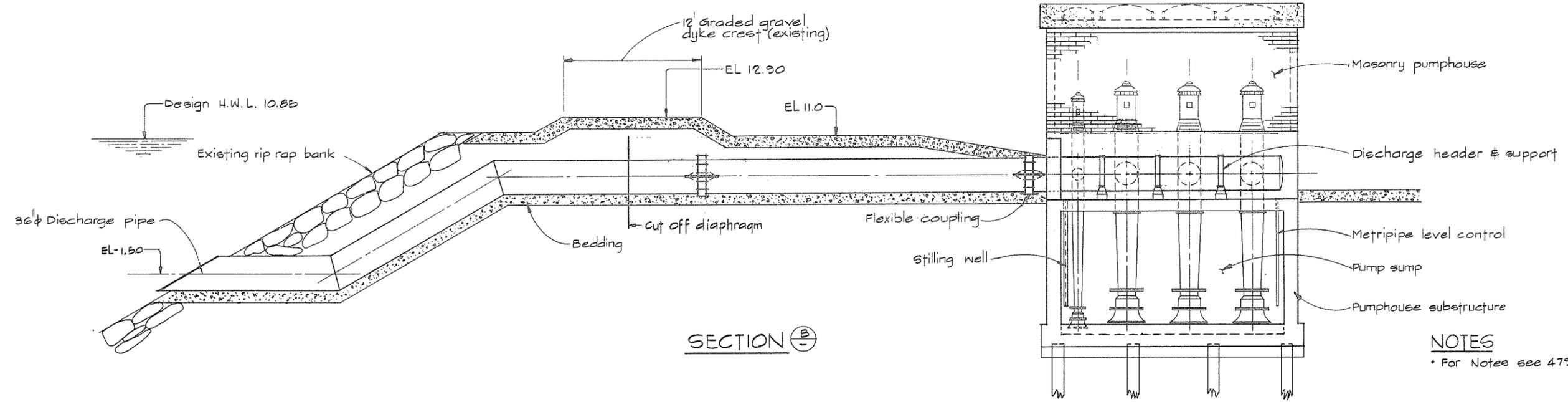
BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
 PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 EWEN ROAD - DRAINAGE DISCHARGE STRUCT NO. 22
 GENERAL ARRANGEMENT PLAN SHOWING POWER SUPPLY
 AND PROPERTY REQUIREMENTS



TYPICAL SECTION A-A



PLAN



SECTION B-B

NOTES
 • For Notes see 4795-18-50



266 560



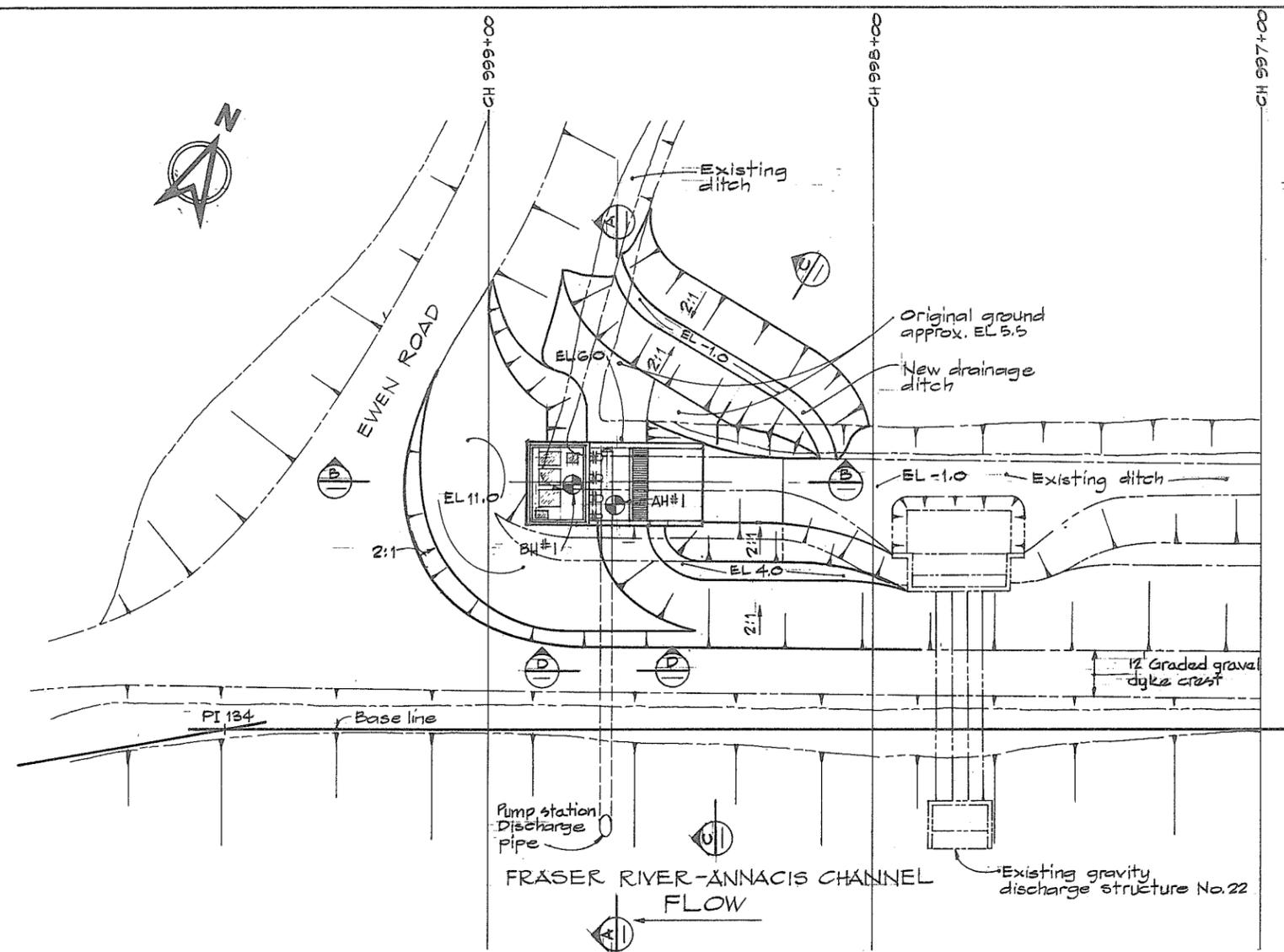
CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
	A	A12	

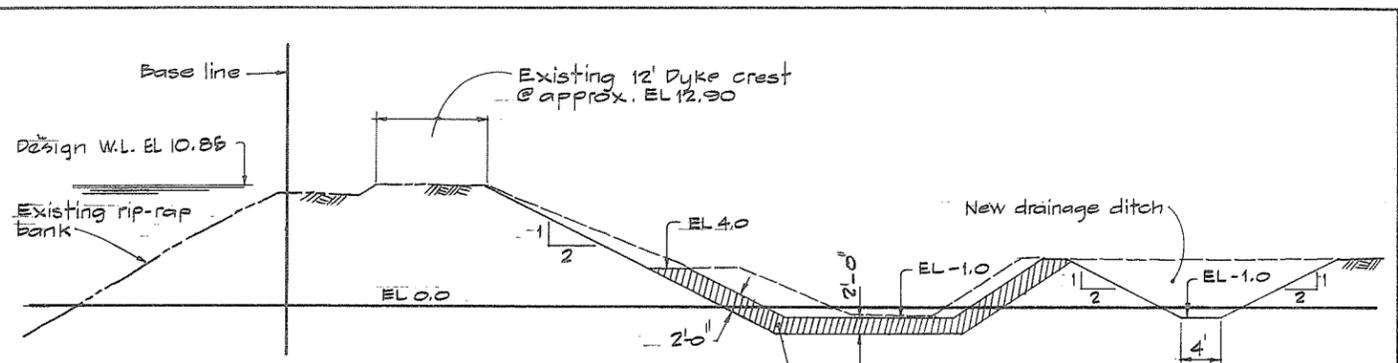
RECOMMENDED *R.D. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *[Signature]*
 DIRECTOR
 DATE *Nov 29/79*

BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
 PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 EWEN ROAD - DRAINAGE DISCHARGE STRUCT. NO. 22
 GENERAL ARRANGEMENT SECTIONS

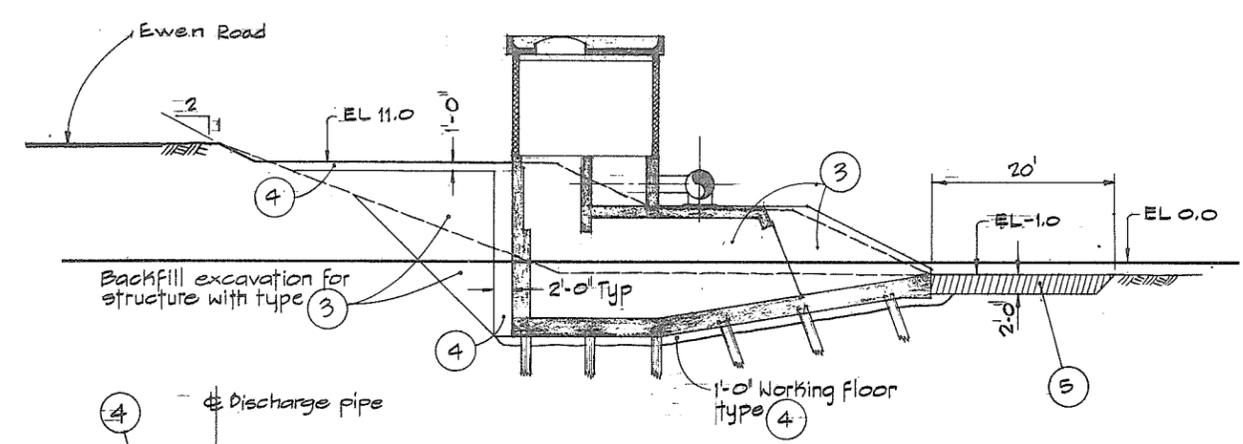
DESIGNED	SURVEYED
DRAWN <i>SP, P.D.</i>	DATE
CHECKED <i>DLC</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-51A</i>	SHEET <i>1</i> OF <i>1</i> SHEETS



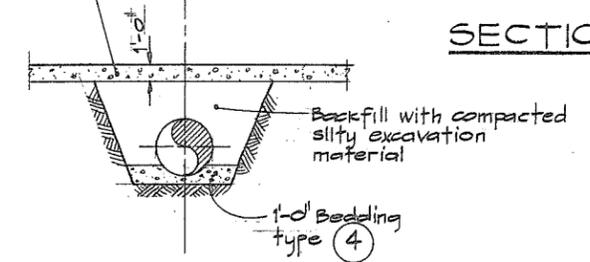
PLAN
SCALE IN FEET
20 10 0 20 40



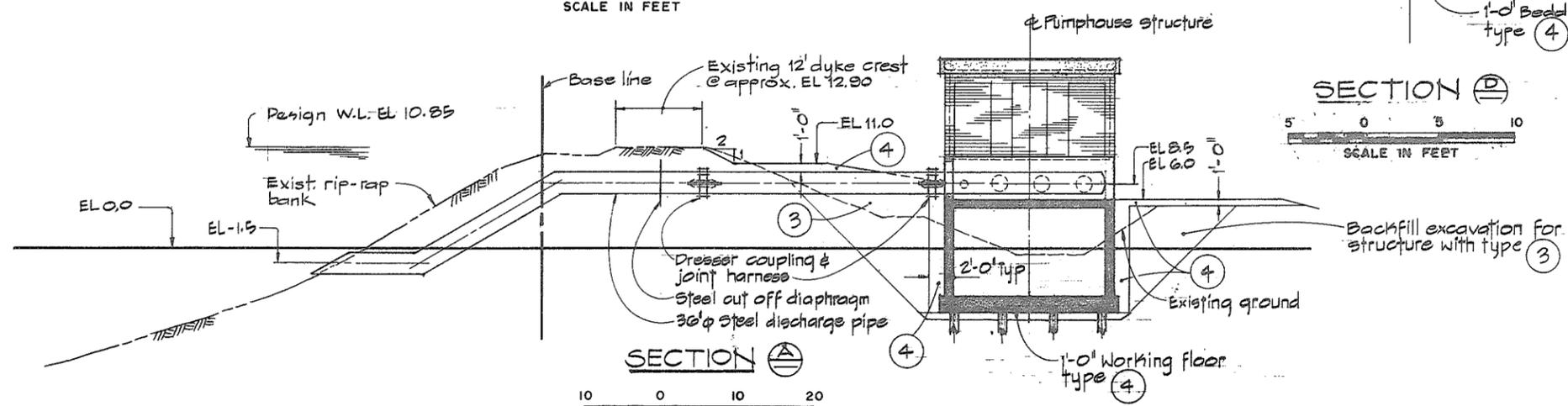
SECTION C
SCALE IN FEET
10 0 10 20



SECTION B
SCALE IN FEET
10 0 10 20



SECTION D
SCALE IN FEET
5 0 5 10



SECTION A
SCALE IN FEET
10 0 10 20

- LEGEND**
- ⊕ TH#22 — Test hole #22
 - ▨ Existing ground surface (section)
 - ▧ Existing ground & structures (Plan)
 - Ⓡ — Section identification letter
 - Ⓡ/18 — Drawing No. on which the section is drawn (ie 4795-18-[18])
 - Ⓢ — Detail identification number
 - Ⓢ/18 — Drawing No. on which the detail is drawn (ie 4795-18-[18])

- MATERIAL LEGEND**
- ① Silt-clay
 - ② Sand
 - ③ Sand, gravel, cobbles
 - ④ Crushed gravel
 - ⑤ Light rip-rap
 - ⑥ Rip-rap

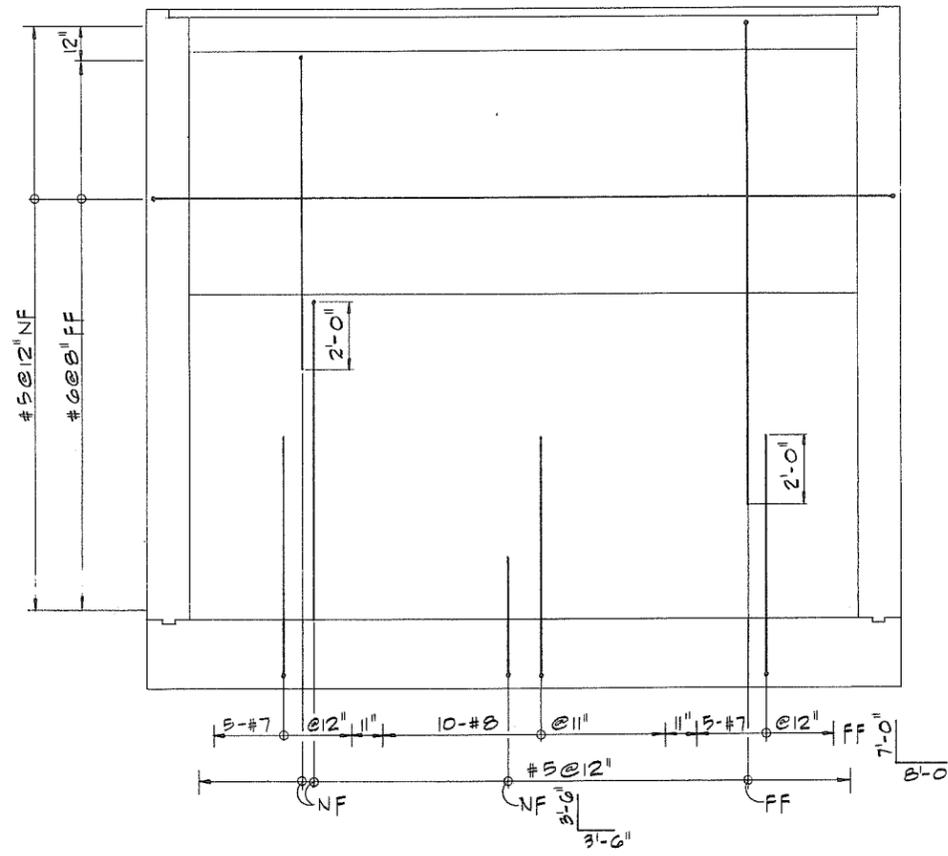
- NOTES**
- Elevations refer to the Geodetic Survey of Canada.
 - A smooth alignment shall be maintained over the entire length of the dyke.
 - Offset distances from base line to crest lines are taken at the design crest elevation.
 - The angle of offset is 90° to base line, unless otherwise indicated.
 - Terminal parts of the work shall be constructed to blend with the existing ground.



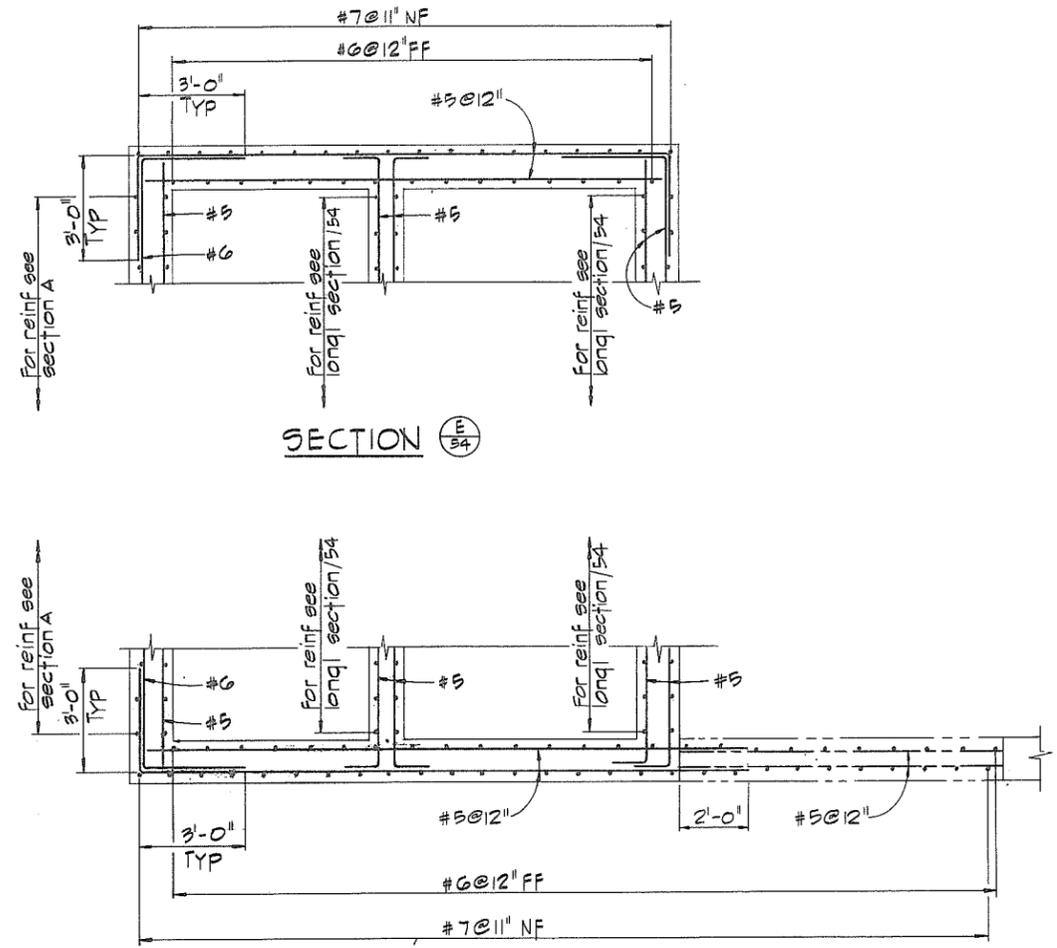
CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO. BY	REVISIONS	DATE	RECOMMENDED <i>R. N. Cameron</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT	DESIGNED	SURVEYED
A	1/8		DATE <i>Nov. 29/79</i>	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A	DRAWN <i>L. Grave</i>	DATE
			APPROVED <i>John Fuller</i> DIRECTOR	EWEN ROAD - DRAINAGE DISCHARGE STRUCT NO. 22	CHECKED <i>GMH</i>	FILE NO. <i>0281550-C10-18</i>
			DATE <i>Nov 29/79</i>	DETAILS OF EARTHWORKS	SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
					DWG. NO. <i>4795-18-52</i>	SHEET <i>1</i> OF <i>1</i> SHEETS

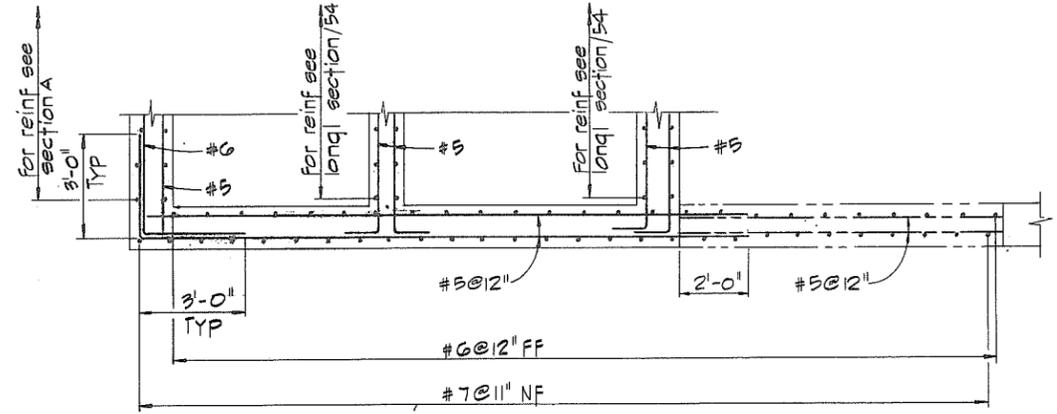
266561



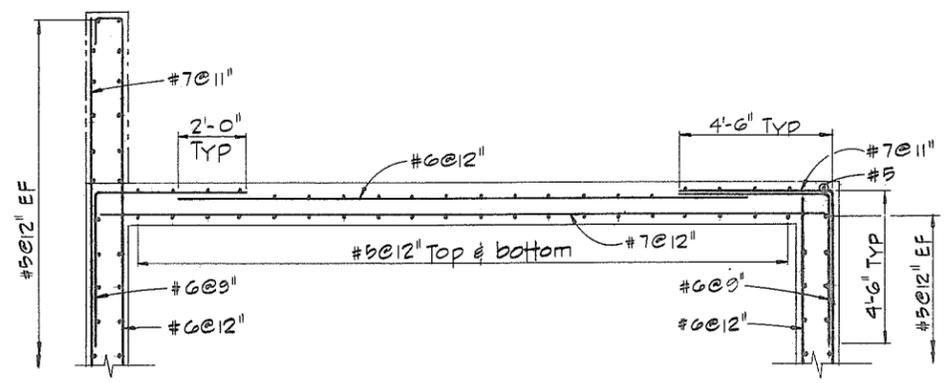
SECTION A-54



SECTION E-54



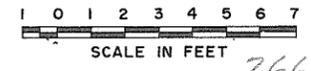
SECTION F-54



SECTION C-54

GENERAL NOTES - STRUCTURAL

- Design is in accordance with CSA A23.3-1973, Code for the Design of Plain or Reinforced Concrete Structures.
- Construction shall be in accordance with CSA A23.1-1973, Specifications for Structural Concrete for Buildings.
- Specified strength of concrete f'_c 4000 p.s.i.
- Reinforcing steel shall be deformed bars conforming to CSA G30.12-1972, Grade 40 or 60.
- 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 and base slabs - steel trowel
 - Exposed horizontal surfaces - broom
 - Interior, exterior exposed walls and beams - rubbed.
 - See specs for details.
- CHAMFERS - $\frac{3}{4} \times \frac{3}{4}$ for all exposed corners
- For location of workpoint see 4705-18-50
- For location of embedded electrical conduit see 4705-18-55

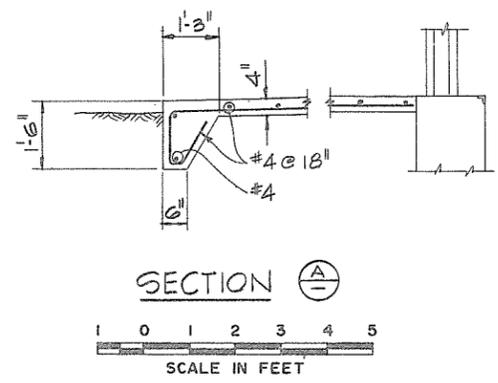
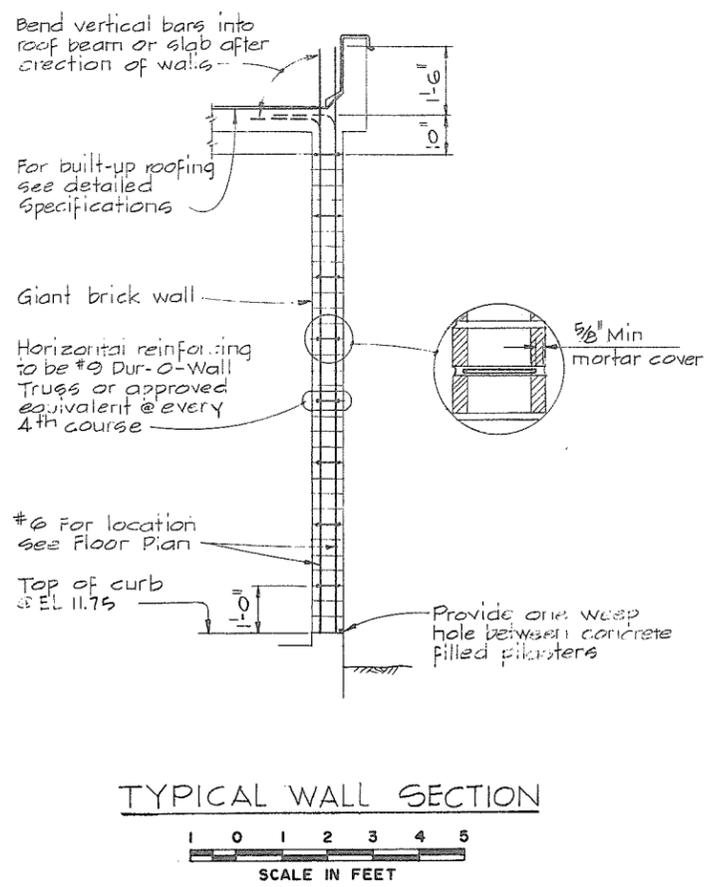
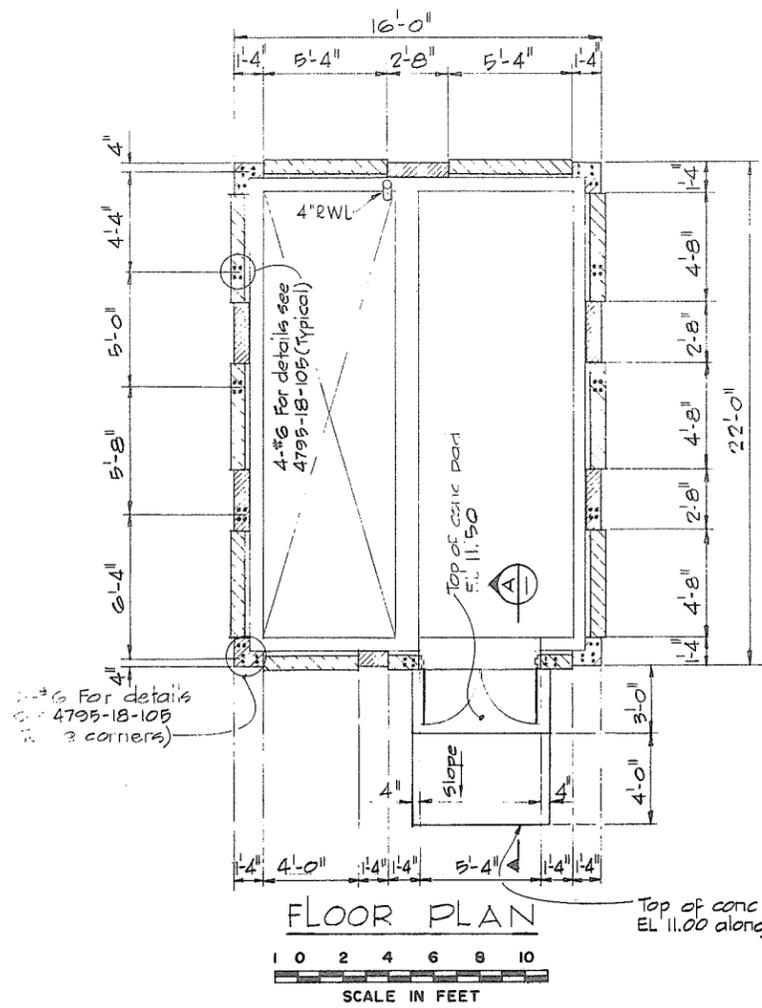
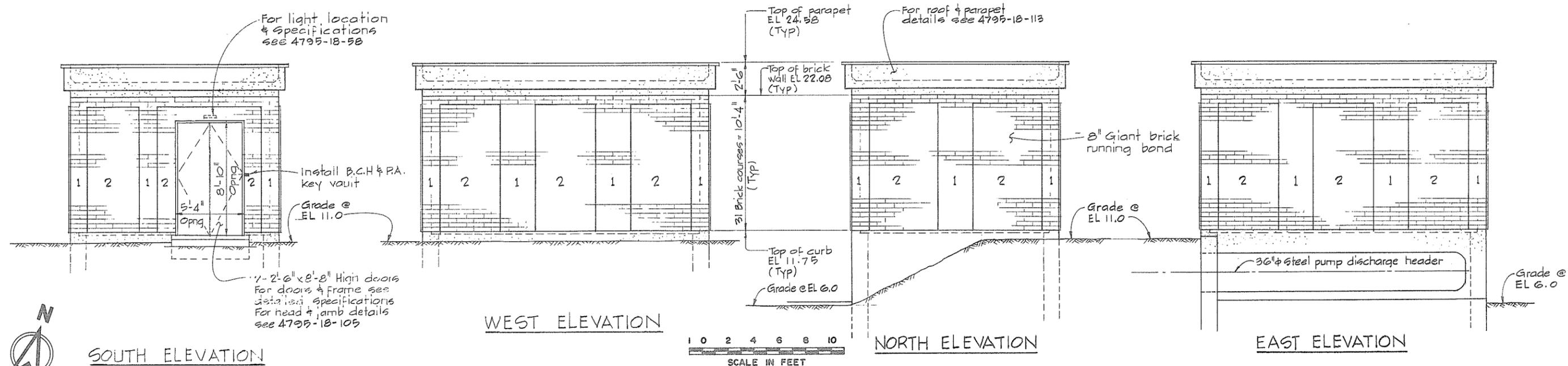


SCALE IN FEET 266564



CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO. BY	A	REVISIONS	A/B	DATE	RECOMMENDED <i>B.R. Ramson</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1969 AGREEMENT PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A EWEN ROAD - DRAINAGE DISCHARGE STRUCT NO. 22 MAIN STRUCTURE REINFORCING	DESIGNED	SURVEYED
			DATE <i>Nov. 29/79</i>		DRAWN <i>Wn</i>		DATE	
			APPROVED <i>[Signature]</i> for DIRECTOR		CHECKED <i>GCW/TP</i>		FILE NO. <i>0281550-C10-18</i>	
			DATE <i>Nov 29/79</i>		SCALE <i>AS SHOWN</i>		DATE <i>Dec. 1979</i>	
							DWG. NO. <i>4795-18-55A</i>	SHEET <i>2</i> OF <i>2</i> SHEETS



NOTES
 • All elevations refer to the Geodetic Survey of Canada.
 • For General Notes see 4795-18-55.
 • Cores to be filled with concrete as specified in the detailed specifications.

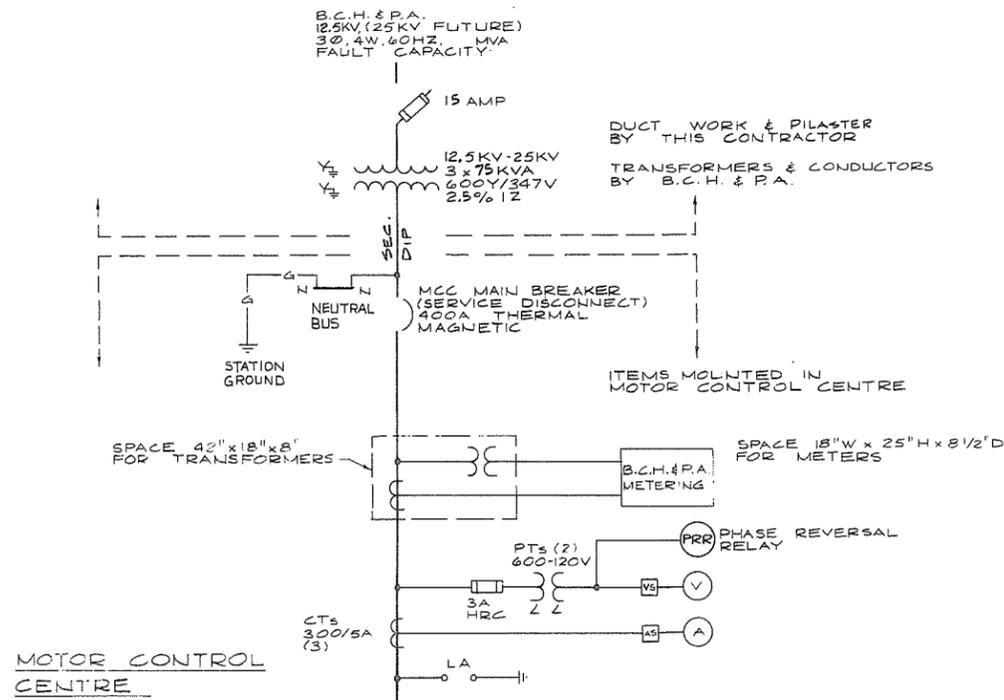
LEGEND
 1 Denotes Giant Brick Western Buff colour.
 2 Denotes Giant Brick Chestnut colour.



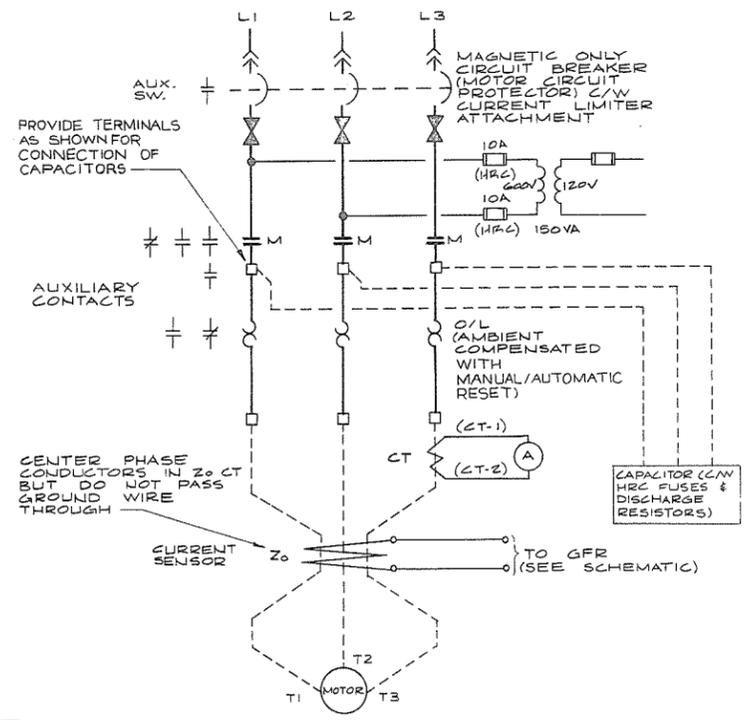
CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED PROJECT MANAGER <i>P. A. Compton</i>	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT	DESIGNED	SURVEYED
DATE: Nov. 29/79	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A	DRAWN: WZ	DATE
APPROVED: <i>M. J. H.</i> DIRECTOR	EWEN ROAD - DRAINAGE DISCHARGE STRUCT. NO. 22	CHECKED: GCW/TP	FILE NO. 0281550-C10-18
DATE: Nov. 29/79	ARCHITECTURAL DETAILS	SCALE: AS SHOWN	DATE: Dec. 1979
NO. BY: A	REVISIONS: A/8	DWG. NO. 4795-18-56	SHEET OF SHEETS

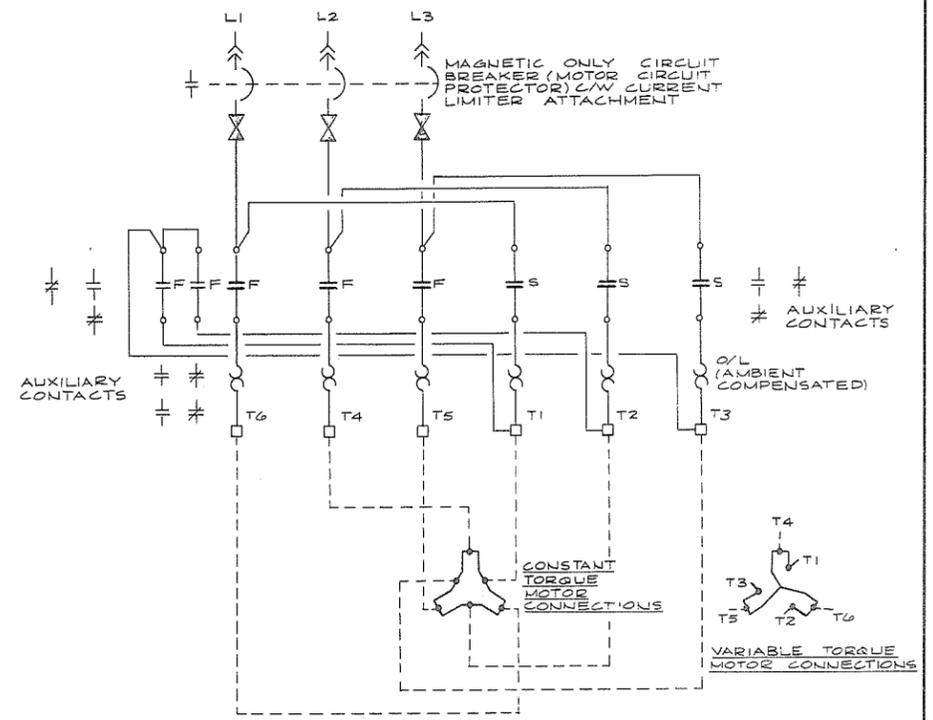
266565



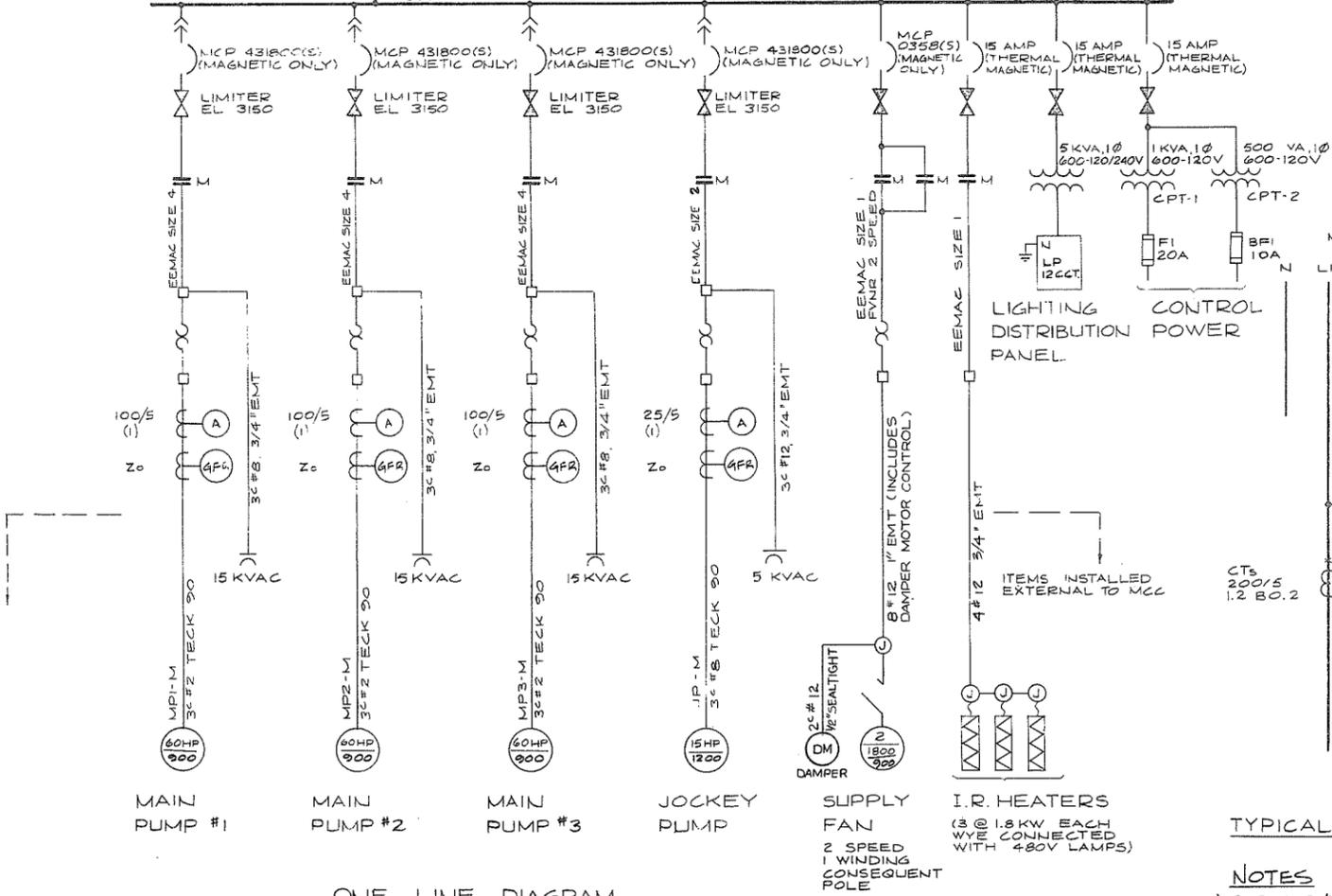
MOTOR CONTROL CENTRE



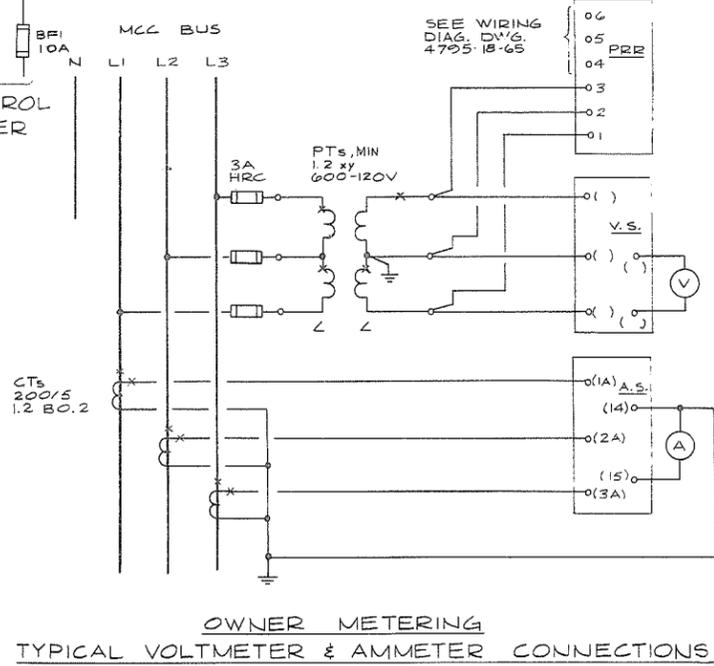
TYPICAL PUMP STARTER CONNECTIONS



TYPICAL 2 SPEED FAN STARTER CONNECTIONS (SINGLE WINDING - CONSEQUENT POLE)



ONE LINE DIAGRAM

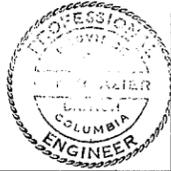


OWNER METERING TYPICAL VOLTMETER & AMMETER CONNECTIONS

- NOTES**
- FOR SERVICE DETAILS AND SITE PLAN REFER TO DWG NO 4795-18-50
 - FOR BUILDING DETAILS REFER TO ARCHITECTURAL DWG NO 4795-18-56, 4795-18-105 & 4795-18-113

- GENERAL NOTES:**
- THE ENTIRE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE CANADIAN ELECTRICAL CODE PART I (13th EDITION) AND THE ELECTRICAL ENERGY INSPECTION ACT OF BRITISH COLUMBIA AS ENFORCED BY THE MINISTRY OF LABOUR SAFETY ENGINEERING, ELECTRICAL SAFETY BRANCH, AND ALL REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION.
 - ALL ELECTRICAL EQUIPMENT AND MATERIAL SHALL BE NEW AND CSA APPROVED WHERE STANDARDS HAVE BEEN ESTABLISHED BY THAT AGENCY
 - THE ENTIRE INSTALLATION SHALL COMPLY WITH THE CONTRACT DOCUMENTS
 - LOCATION OF BLOCKOUTS IN CONCRETE AND PLACING OF EMBEDDED CONDUIT AND SLEEVES SHALL BE CO-ORDINATED WITH THE OTHER TRADES.

- LEGEND**
- (A) AMMETER
 - (V) VOLTMETER
 - AS AMMETER SWITCH
 - VS VOLTMETER SWITCH
 - GFR GROUND FAULT RELAY FPE TYPE GFR OR EQUAL
 - PRR PHASE REVERSAL RELAY
 - ⊕ CAPACITOR
 - ⊞ TRANSFORMER
 - OR OVERLOAD RELAY
 - FUSE
 - ⊕ CURRENT TRANSFORMER
 - TERMINAL BLOCK
 - (M) MOTOR STARTER CONTACTOR
 - (F) TWO SPEED STARTER "FAST" CONTACTOR
 - (S) TWO SPEED STARTER "SLOW" CONTACTOR
 - ⊞ MOLDED CASE AIR CIRCUIT BREAKER WITH CURRENT LIMITER



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

CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

REFERENCE: 1292

NO.	BY	REVISIONS	DATE
		A10	

RECOMMENDED <i>R.D. Cameron</i> PROJECT MANAGER	DESIGNED <i>HO</i>	SURVEYED
DATE <i>Nov. 29/79</i>	DRAWN <i>SEO</i>	DATE
APPROVED <i>John Juffer</i> FOR DIRECTOR	CHECKED <i>WNB</i>	FILE NO. <i>0281550-C10-18</i>
DATE <i>Nov 29/79</i>	SCALE <i>NONE</i>	DATE <i>Dec. 1979</i>
	DWG. NO. <i>4795-18-57</i>	SHEET <i>OF</i> SHEETS

266 566



UFER GROUND ELECTRODE
#2/0 BARE COPPER WITHIN
BOTTOM 2" OF FOOTING

UP THROUGH WALL
TO SWITCH C/W
EYS SEAL

INCANDESCENT FIXTURE
1/4 OF FLOOR
MOUNT ON T-BAR FLOOR
SUPPORT
SEE SECTION (A)
(59)

METRIPIPE LEVEL
CONTROL SENSOR
SEE DETAIL (1)
(103)

FOR CABLE SUPPORT
SEE DETAIL (5)
(103)

2" #12, 1/2" RIGID CONDUIT
EMBEDDED IN CONCRETE
(PROVIDE EYS SEAL IN TROUGH)

3/4" RIGID CONDUIT FOR 1PR
SHIELDED CABLE BELDON #8760
TO R/T SIGNAL CONVERTER IN MCC
AND METRIPIPE BREATHER TUBE
(PROVIDE EYS SEAL IN TROUGH)

3 ONLY 2" RIGID CONDUIT
SLEEVES C/W BUSHINGS
ON 8" CENTERS (TYP.)
SEAL WITH RTV SILICONE

4" PVC JACKETED RIGID
GALV. STEEL CONDUIT UP
TO MCC SERVICE SECTION
SEE DETAIL (104)

BOND END OF UFER
GROUND ELECTRODE TO
MCC GROUND BUS

2" PVC JACKETED RIGID
GALV. STEEL CONDUIT UP
TO MCC CONTROL &
RELAY SECTION (TELEPHONE)

SHORT LENGTH OF BURNDY
"FLEXIBAR" 3H SUPPORT
CHANNEL HOT DIP GALV.
AFTER FABRICATION (TYP.)

STAINLESS STEEL PIPE CLAMP

UP TO MCC GROUND BUS

UP TO MCC (TYP.)

2" PVC JACKETED RIGID
GALV. STEEL CONDUIT
(TELEPHONE)

KEY ENCASUREMENT CONCRETE
TO WALL

COUPLING

4" PVC JACKETED RIGID
GALV. STEEL CONDUIT
(SERVICE)

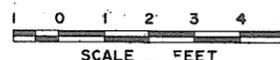
INV. EL. 8.5'

26" I.D. PLASTIC SERVICE
PULLBOX (REFER TO B.C. HYDRO
STANDARD DWG. #ES43U2.4-04 REV.1)
& ES43U5.2-25)

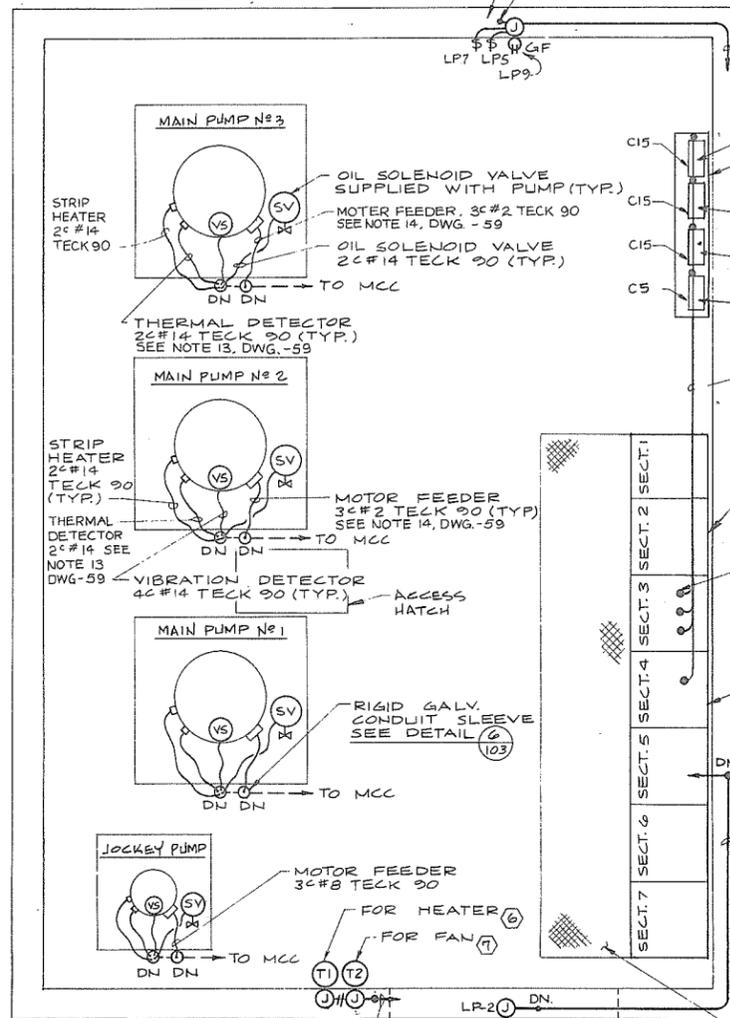
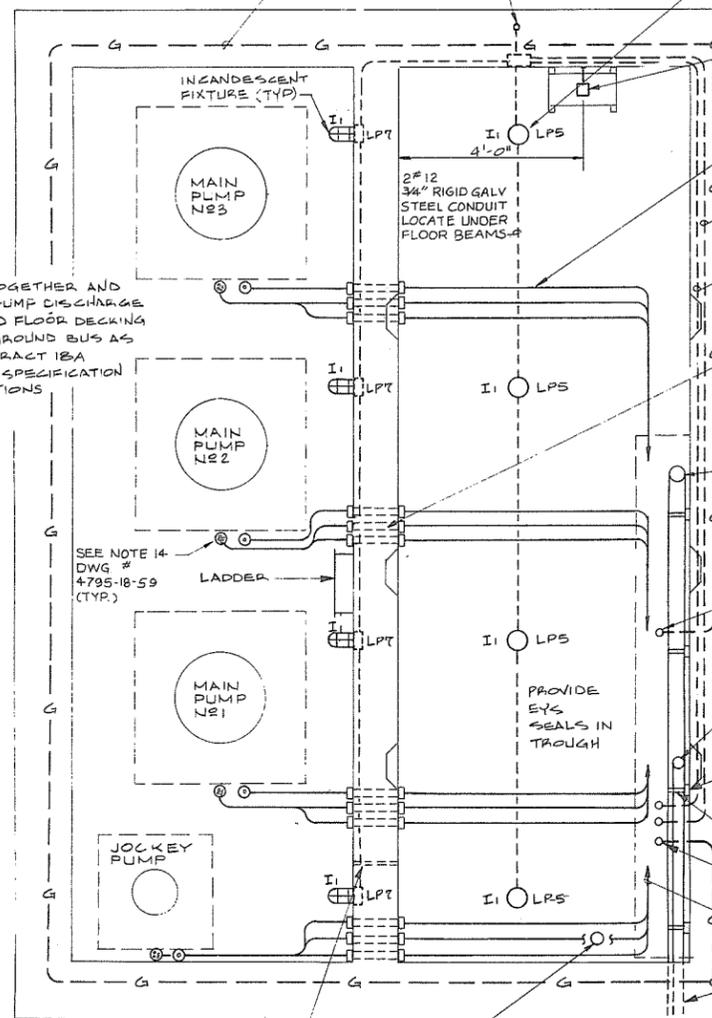
STILLING WELL &
BUBBLER TUBE
CONCRETE

TO SERVICE POLE
SEE DWG. N°
4795-18-50

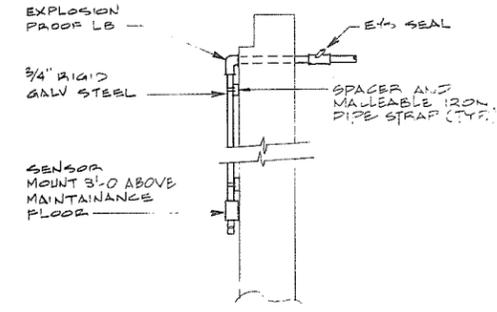
PLAN @ EL. 9'-0"



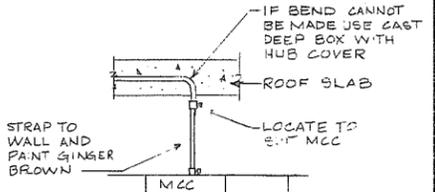
BOUND TOGETHER AND
GROUND PUMP DISCHARGE
PIPING AND FLOOR DECKING
TO MCC GROUND BUS AS
PER CONTRACT 18A
DETAILED SPECIFICATION
SUBSECTIONS



PLAN @ EL. 20'-0"

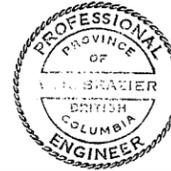


DETAIL (1)
N.T.S.
GAS DETECTOR MONITOR



DETAIL (2)
CAPACITOR CONDUIT FROM MCC
(STUB-UPS AT CAPACITOR ENCLOSURE
SIMILAR BUT MUCH SHORTER)

NOTES
1. FOR GENERAL NOTES SEE DWG.
4795-18-57
2. FOR OTHER EMBEDDED CONDUIT REFER
TO DWG. No. 4795-18-59



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

CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

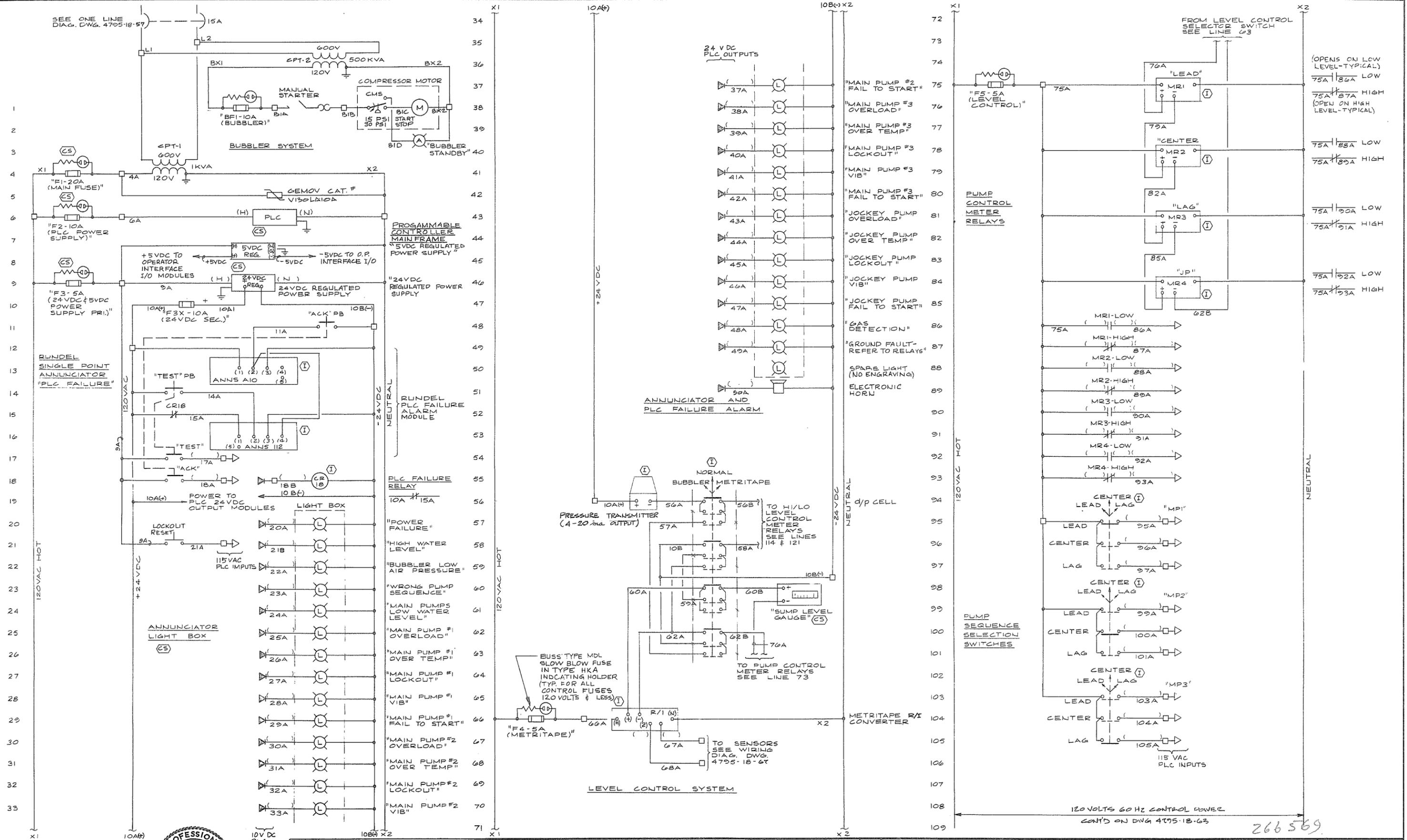
NO.	BY	REVISIONS	DATE

RECOMMENDED *R. d. Cameron*
PROJECT MANAGER
DATE *Nov. 29/79*
APPROVED *J. B. Fuller*
for DIRECTOR
DATE *Nov 29/79*

BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
EWEN ROAD - DRAINAGE DISCHARGE STRUCT. NO. 22
ELECTRICAL LAYOUTS

DESIGNED	HO	SURVEYED	
DRAWN	SEO	DATE	
CHECKED		FILE NO.	0281550-C10-18
SCALE	AS SHOWN	DATE	Dec. 1979
DWG. NO.	4795-18-58	SHEET	1 OF 2 SHEETS

266 567



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



NO. BY
 A 1/3

RECOMMENDED *A.R. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*

APPROVED *John Fuller*
 PROJECT DIRECTOR
 DATE *Nov 29/79*

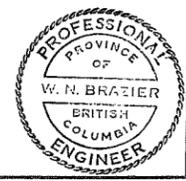
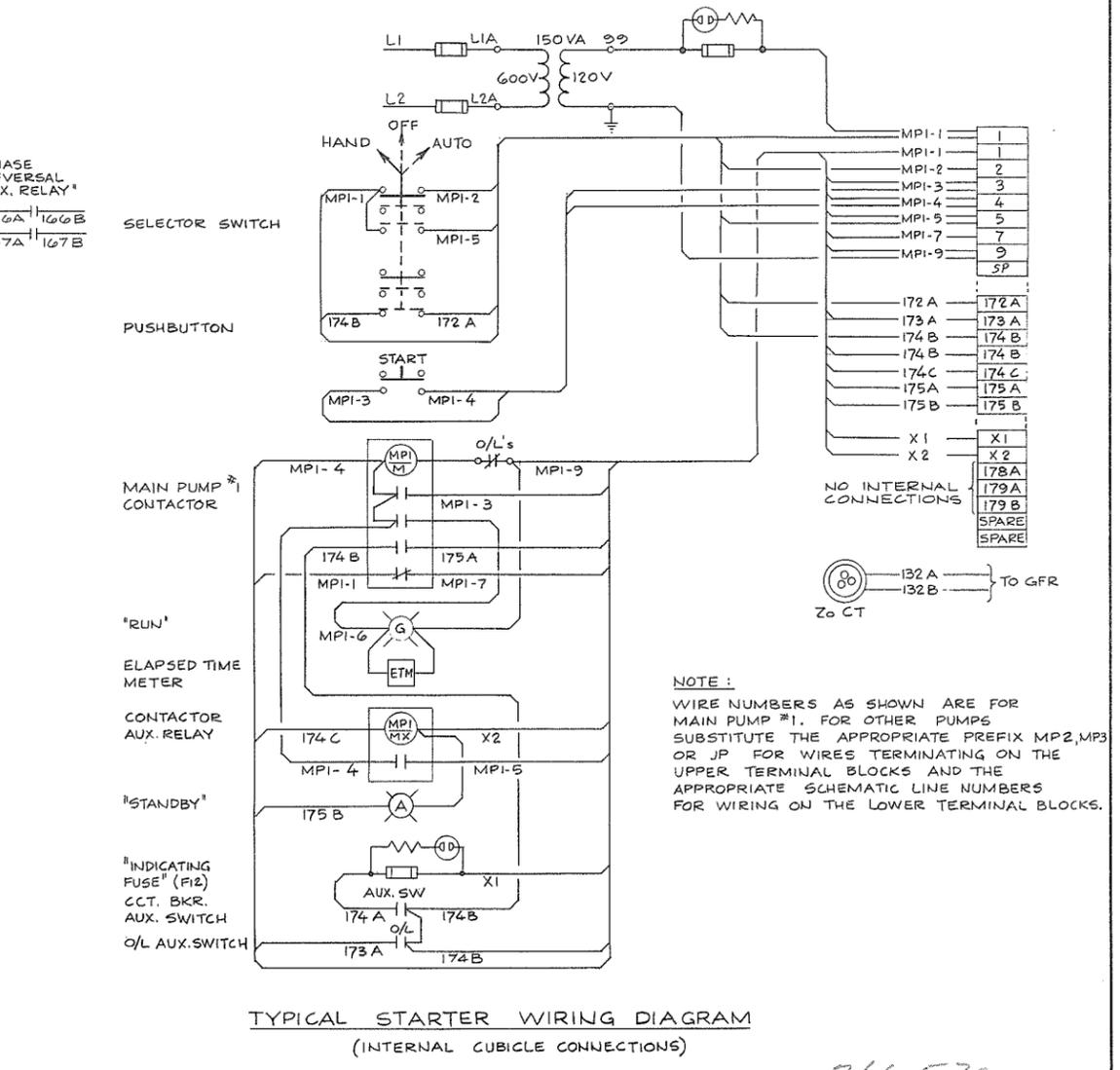
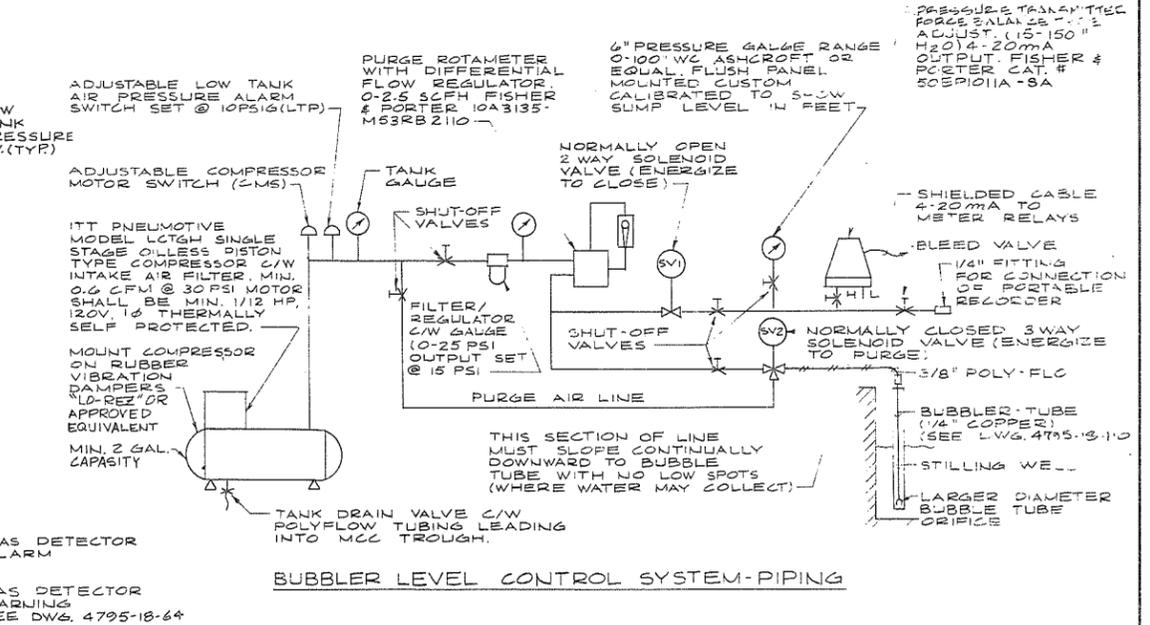
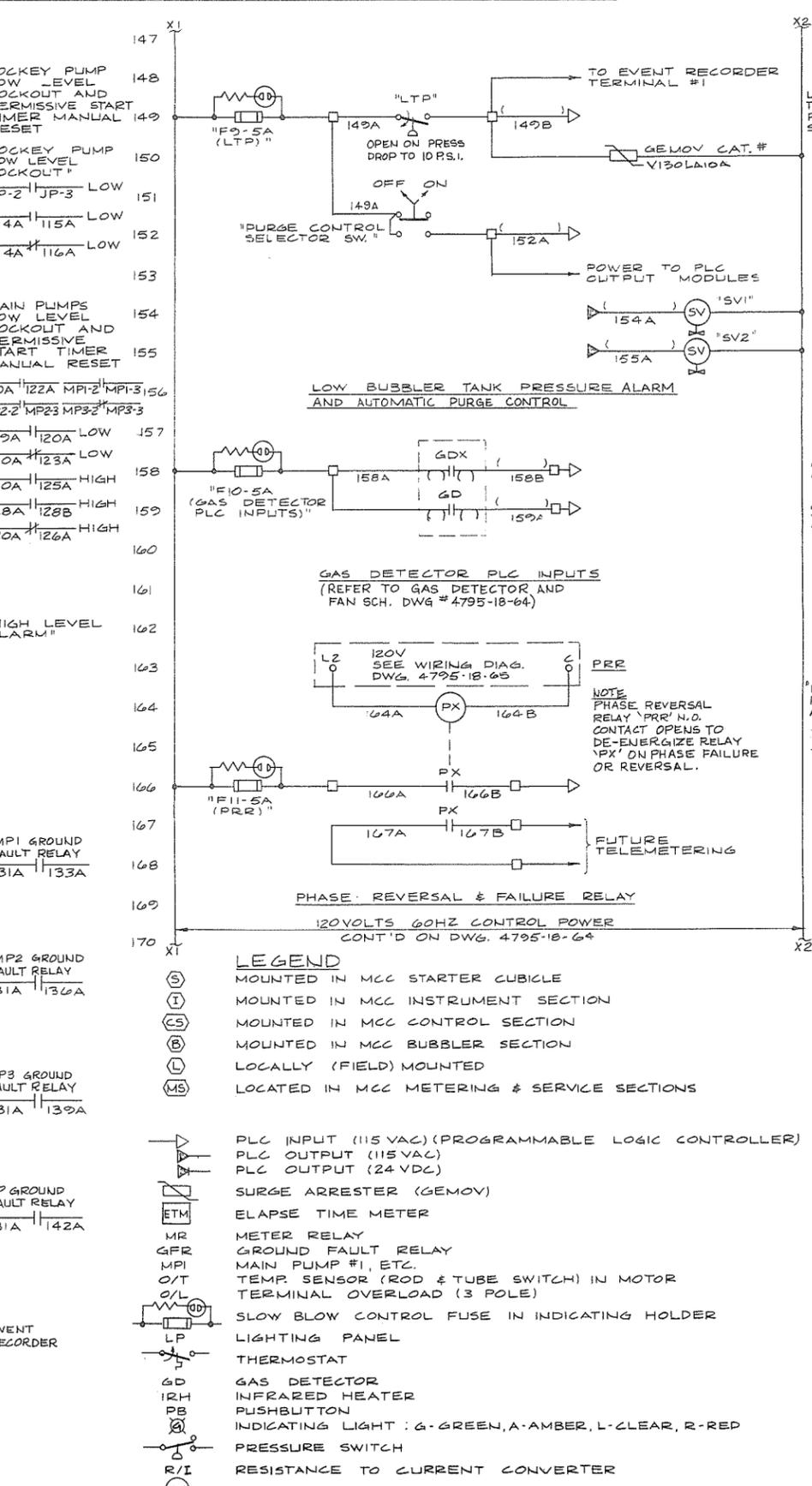
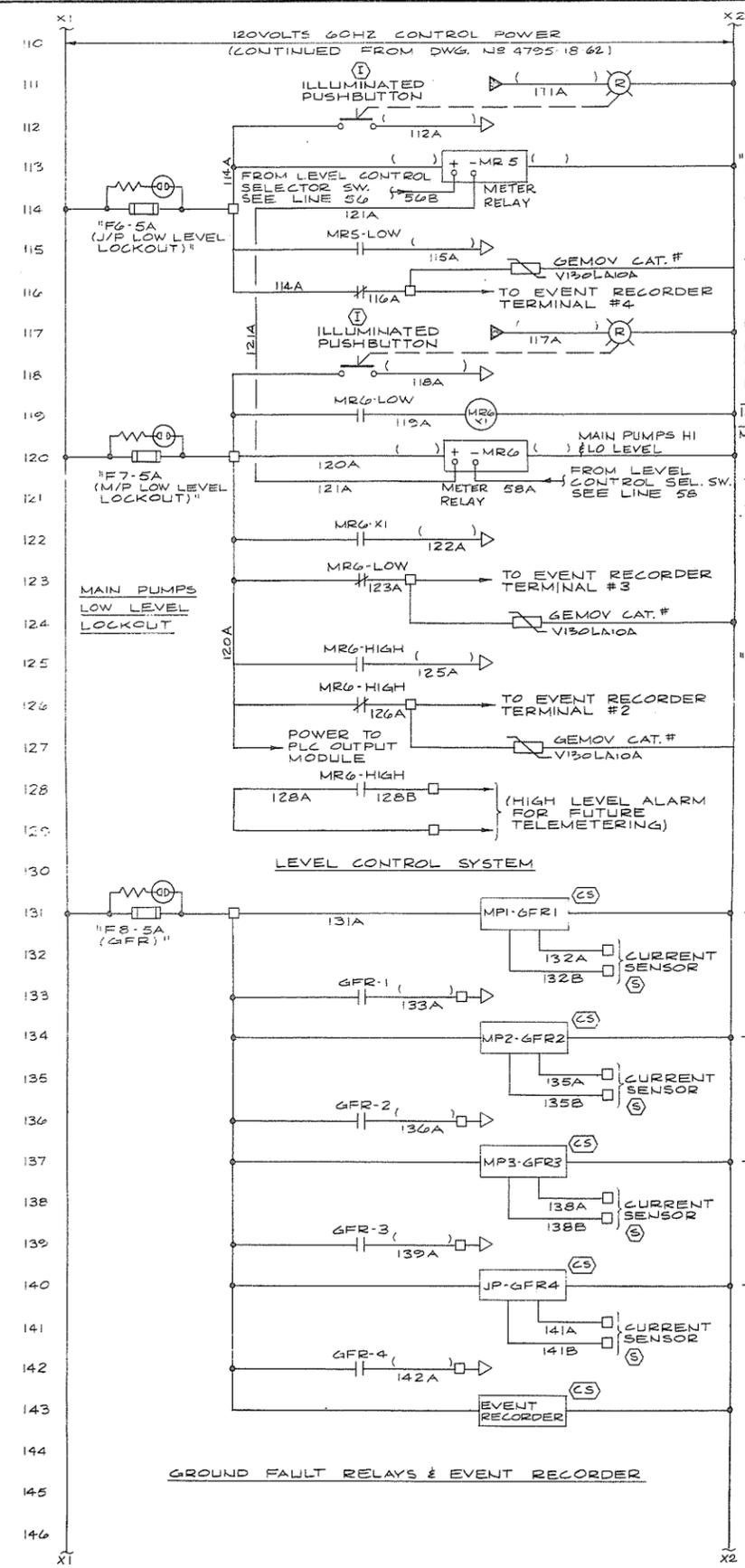
BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 EWEN ROAD - DRAINAGE DISCHARGE STRUCT. NO. 22

ELECTRICAL SCHEMATIC DIAGRAMS

DESIGNED HO	SURVEYED
DRAWN SEO	DATE
CHECKED WNB	FILE NO. 0281550-C10-18
SCALE NONE	DATE Dec 1979
DWG. NO. 4795-18-62	SHEET 1 OF 3 SHEETS

REFERENCE: 1292



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



NO.	BY	REVISIONS	DATE
		A/B	

RECOMMENDED *R.A. Cameron*
PROJECT MANAGER

DATE *Nov. 29/79*

APPROVED *G.W. Fuller*
DIRECTOR

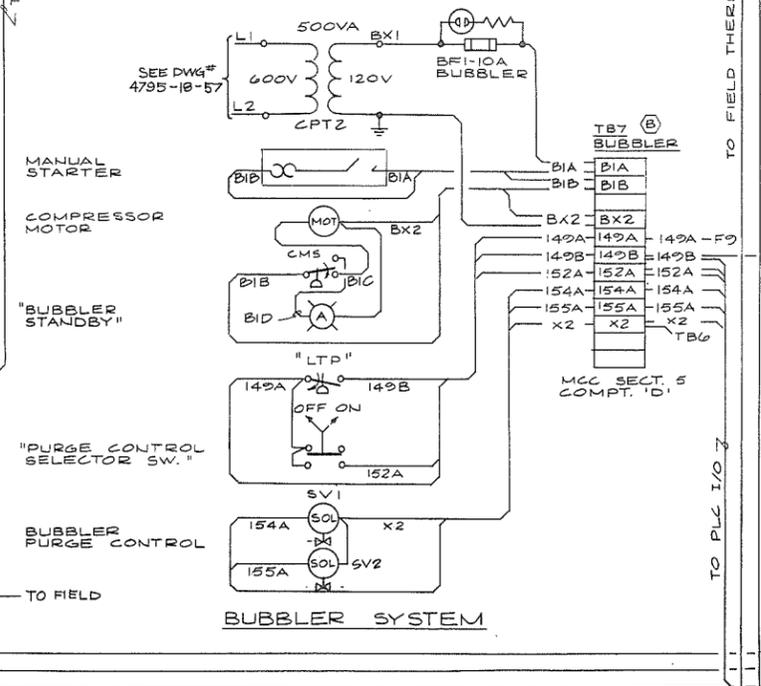
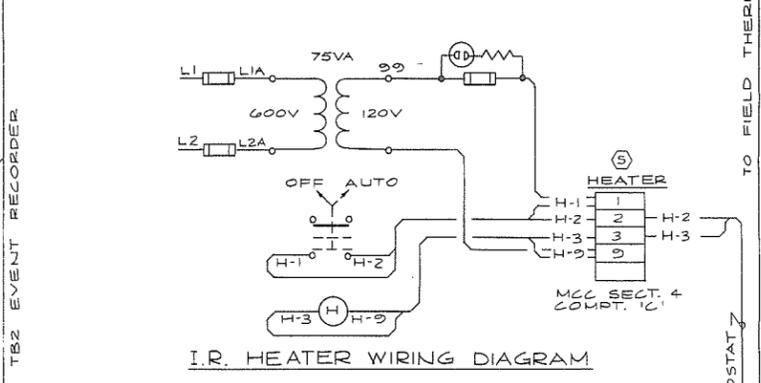
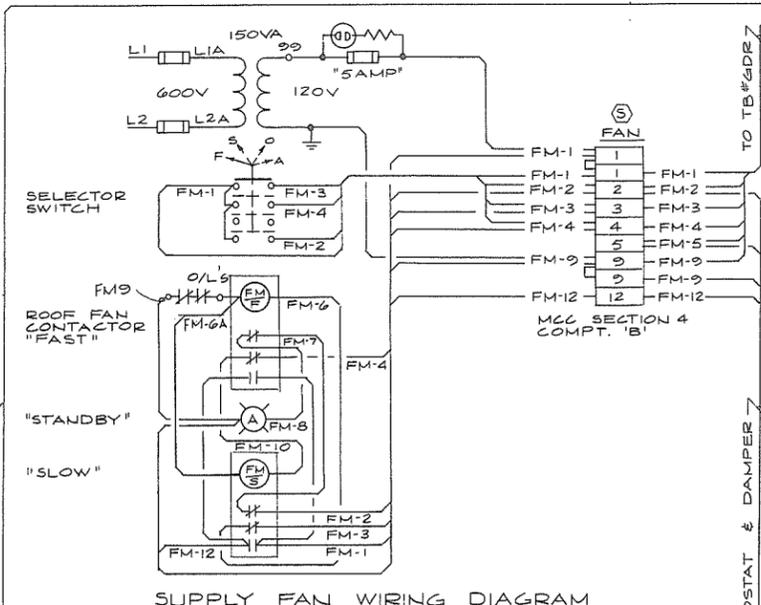
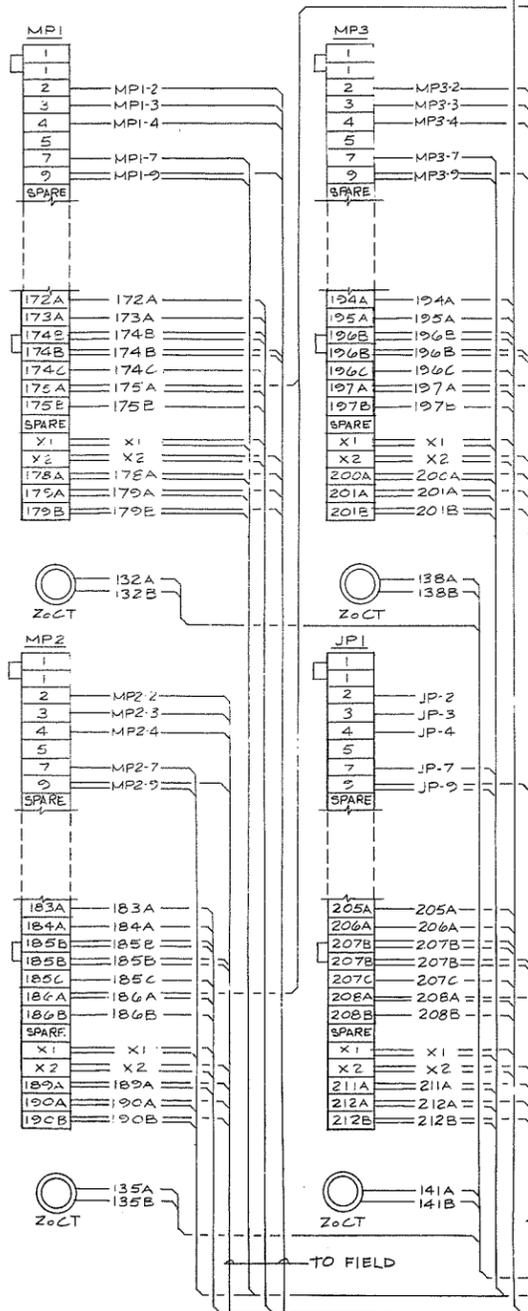
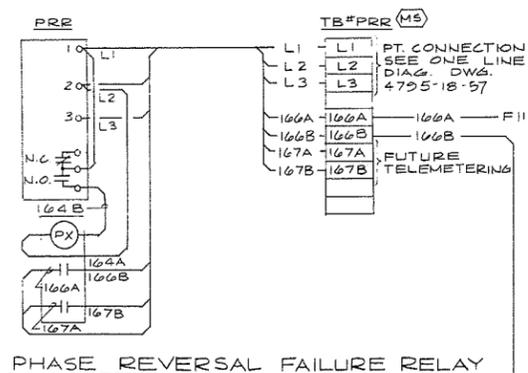
DATE *Nov 29/79*

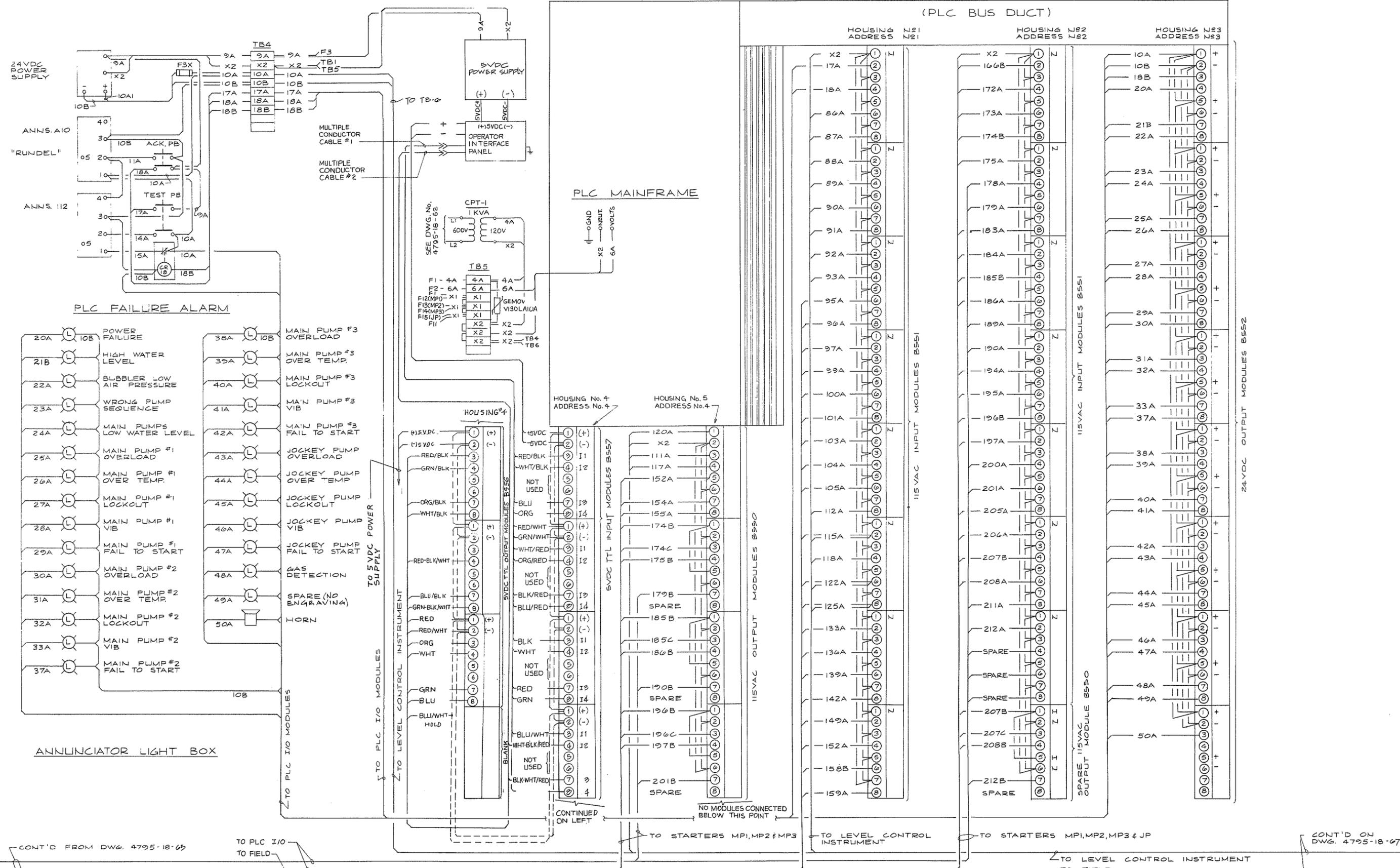
BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18 A
EWEN ROAD - DRAINAGE DISCHARGE STRUCT NO. 22
ELECTRICAL SCHEMATIC DIAGRAMS

DESIGNED	HO	SURVEYED	
DRAWN	SEO/MB	DATE	
CHECKED	WNB	FILE NO.	0281550-C10-18
SCALE	NONE	DATE	Dec 1979
DWG. NO.	4795-18-63	SHEET	2 OF 3 SHEETS

266 570





CONT'D FROM DWG. 4795-18-65 TO PLC I/O TO FIELD

CONT'D ON DWG. 4795-18-67

TO STARTERS MP1, MP2 & MP3

TO STARTERS MP1, MP2, MP3 & JP

TO LEVEL CONTROL INSTRUMENT

TO LEVEL CONTROL INSTRUMENT

TO FIELD



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



NO.	BY	REVISIONS	DATE
A		A/B	

RECOMMENDED *R. V. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*

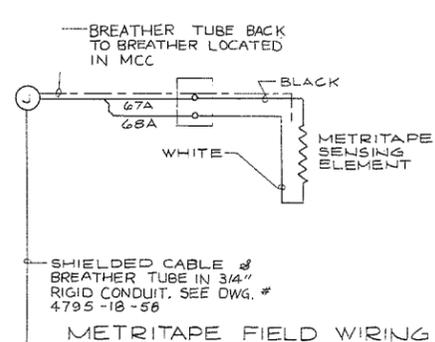
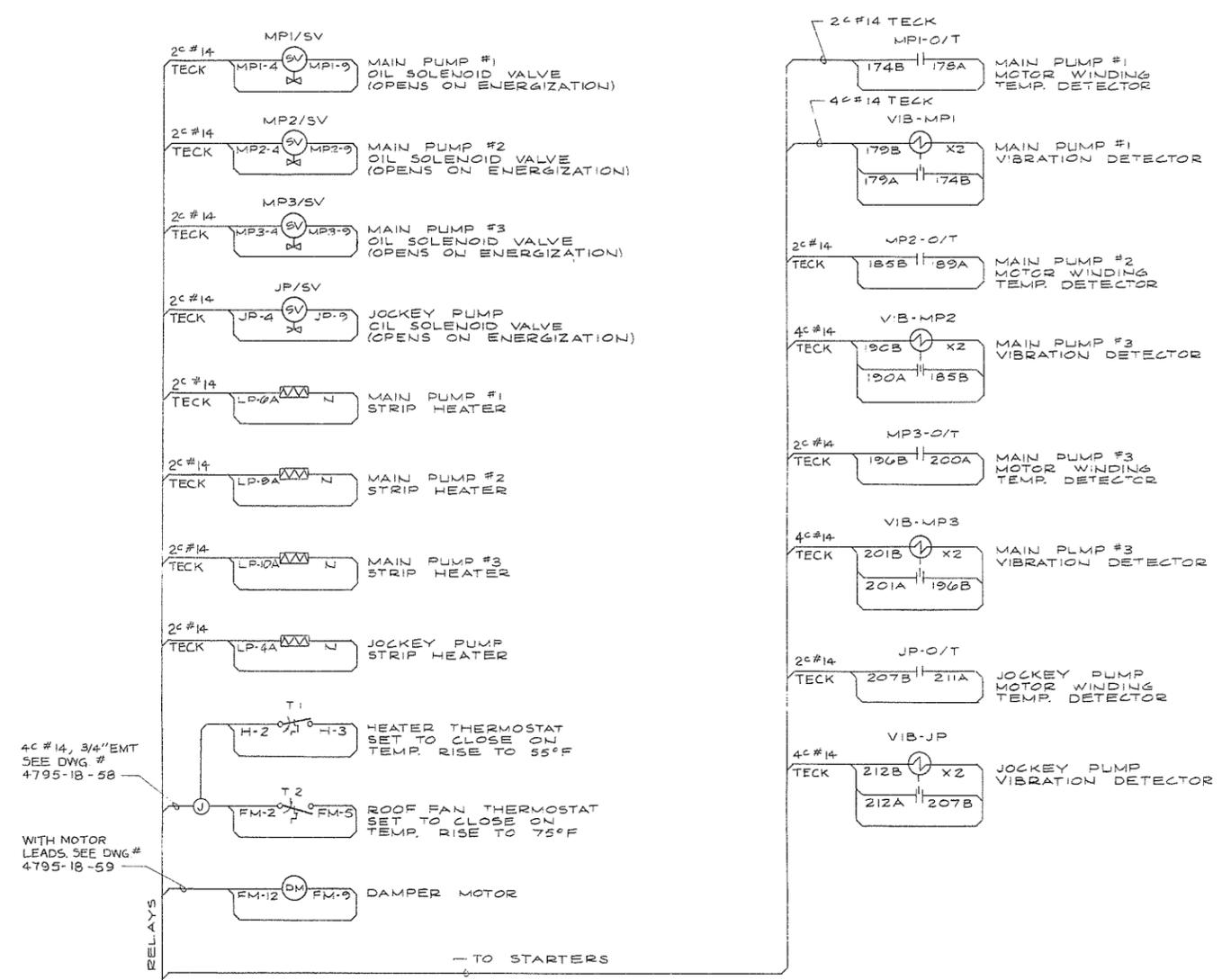
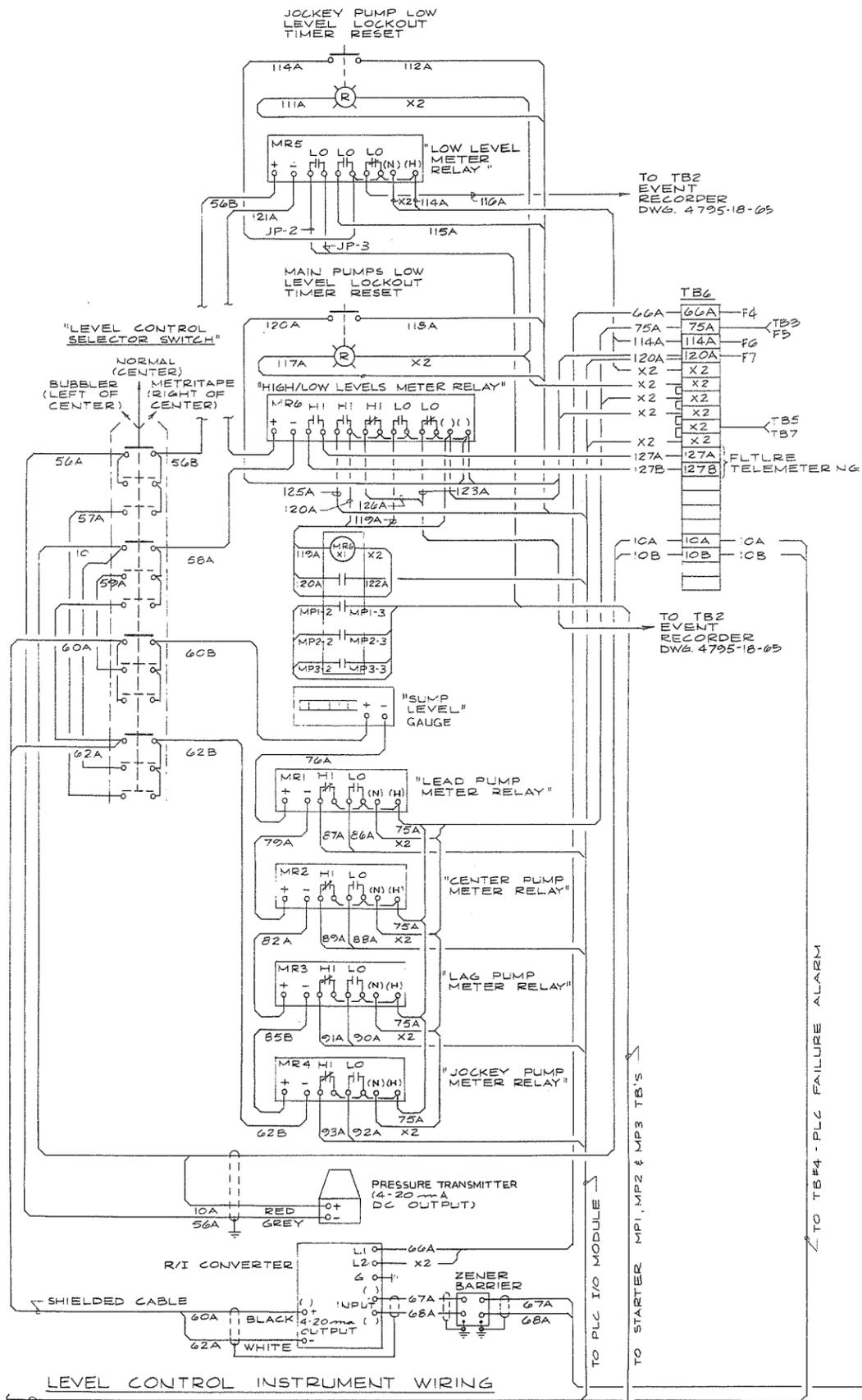
APPROVED *[Signature]*
 DIRECTOR
 DATE *Nov. 29/79*

BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 EWEN ROAD - DRAINAGE DISCHARGE STRUCT NO. 22
 ELECTRICAL WIRING DIAGRAMS

DESIGNED	HO	SURVEYED	
DRAWN	SEO	DATE	<i>266573</i>
CHECKED	WNB	FILE NO.	0281550-C10-18
SCALE	NONE	DATE	Dec. 1979
DWG. NO.	4795-18-66	SHEET	2 OF 3 SHEETS

REFERENCE: 1292



CONT'D FROM DWG 4795-18-66



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



NO.	BY	REVISIONS	DATE
		A/1	

RECOMMENDED *R. H. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *[Signature]*
 DIRECTOR
 DATE *Nov 29/79*

BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 EWEN ROAD - DRAINAGE DISCHARGE STRUCT NO. 22
 ELECTRICAL WIRING DIAGRAMS

DESIGNED	HO	SURVEYED	
DRAWN	SEO	DATE	Dec. 1979
CHECKED	WNB	FILE NO.	0281550-C10-18
SCALE	NONE	DATE	Dec 1979
DWG. NO.	4795-18-67	SHEET	3 OF 3 SHEETS

266574



STURGEON BANK

Drainage discharge structure

Training dyke @ EL 6.0

Berm @ EL 5.0

CH 18x13

Discharge spillway

Pump discharge outlet box

Outlet screen

12' graded gravel dyke crest @ EL 11.0

Base line

26" i.d. plastic service pullbox as per B.C.H. & P.A. std No. E543 U5.2-25 & E543 U2.4-04 Rev 1

18" steel pump discharge pipe

P.I. 5 76° 15' 00"

3/4" x 10' copper ground rod see B.C.H. & P.A. std No. E543 U5.2-25 for installation.
4" rigid galv steel refer to B.C.H. & P.A. std No. G-408-DB22 & No. 431-U13-B1

Workpoint Pump station

Existing ditch

Realigned 48" CSP culvert

Concrete bag wall

Existing ditch

Pump access hatches

Existing timber bulkhead

Existing ditch

Inlet screens

Transition section

3'-6" x 2'-6" High concrete U culvert

Only 4" secondary duct to MCC

Only 2" telephone duct to MCC

Existing timber barricades & gate

STEVESTON HIGHWAY

Install pilasters as per B.C.H. & P.A. std No. E543 U3.2-04 Rev 5 & B.C. Tel std EX-A-1038-0

Existing B.C. Hydro service pole

NOTES

- Trenching and duct installation shall be as per B.C.H. & P.A. standards No. E543 U1.1-01 to 04 and B.C.H. U/G service dng No. 411-U07-B1061
- Ducts shall be encased in concrete as per B.C.H. & P.A. standard No. E543 U6.6-20. Burial depth shall be min 3 ft below finished grade
- For location of work see 4795-18-1
- For details of earthwork see 4795-18-89
- For connections to service switch in MCC see No. 4795-18-94

LEGEND

Property line



266 575



CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
A		AIR	

RECOMMENDED *R. St. Cameron*
PROJECT MANAGER

DATE Nov. 29/79

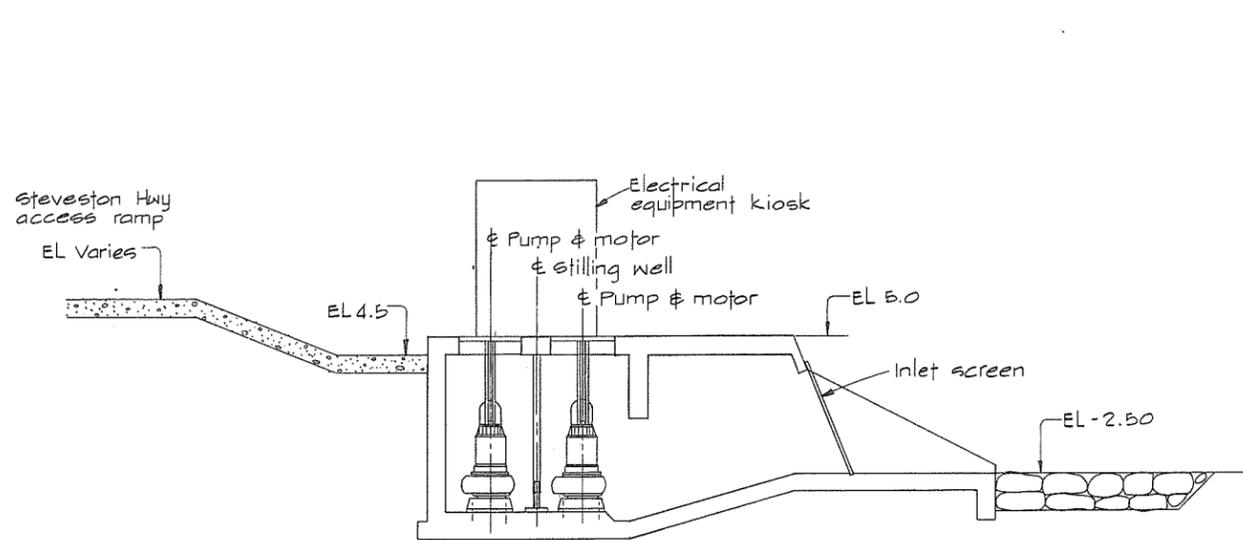
APPROVED *John Fuller*
FOR DIRECTOR

DATE Nov 29/79

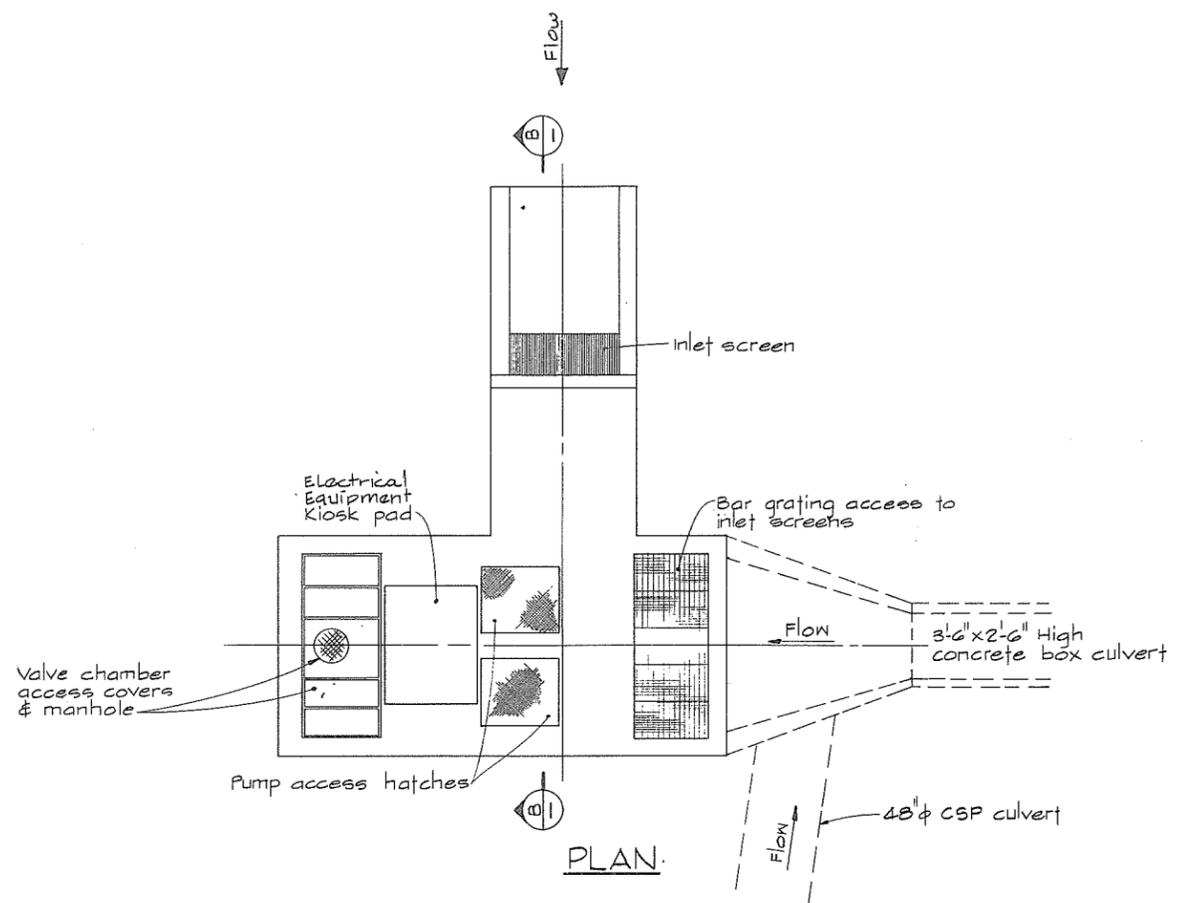
BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1989 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
STEVESTON HWY WEST-DRAINAGE DISCHARGE STRUCT NO. 35A
GENERAL ARRANGEMENT PLAN SHOWING POWER SUPPLY
AND PROPERTY REQUIREMENTS

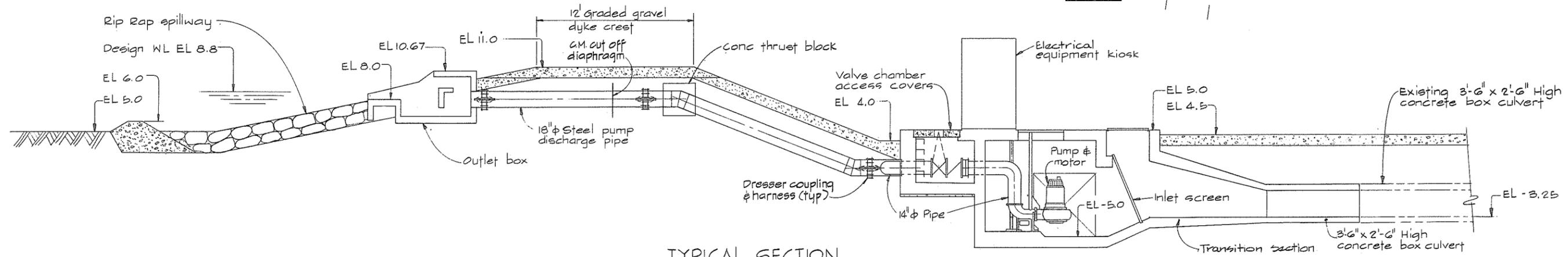
DESIGNED	SURVEYED
DRAWN SP	DATE
CHECKED DLC	FILE NO. 0281550-C10-18
SCALE AS SHOWN	DATE Dec. 1979
DWG. NO. 4795-18-87	SHEET OF SHEETS



SECTION B



PLAN



TYPICAL SECTION

NOTES

• For Notes see 4795-18-87



266576



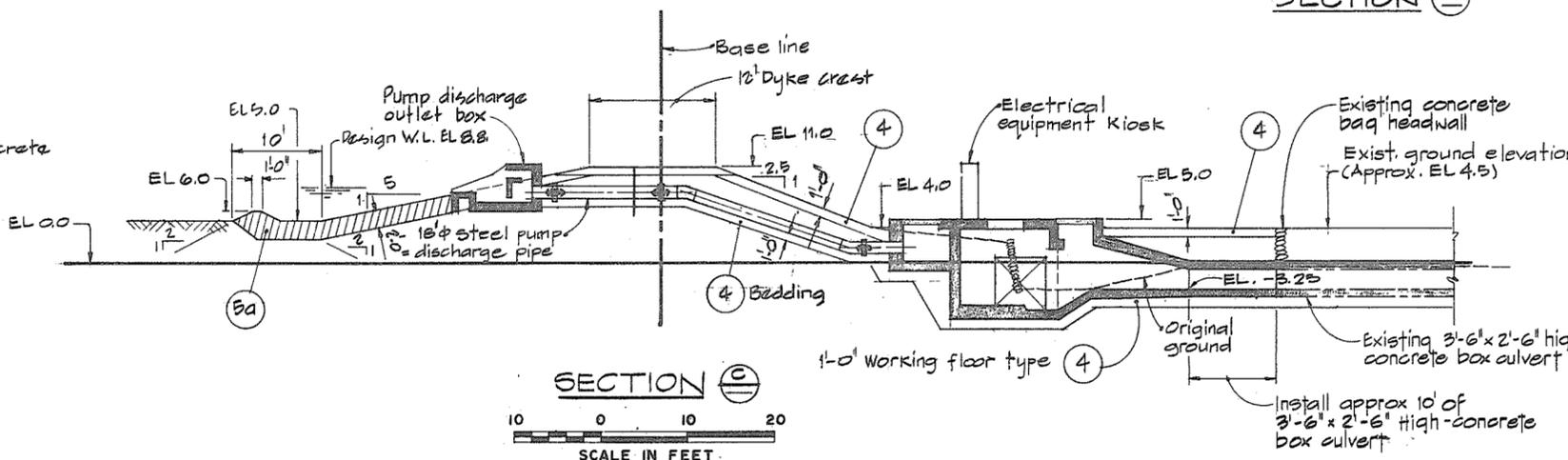
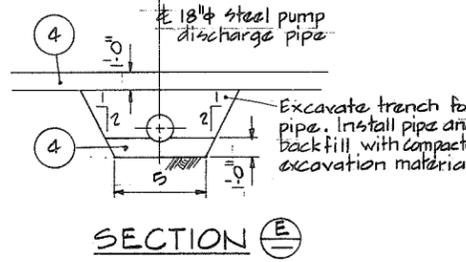
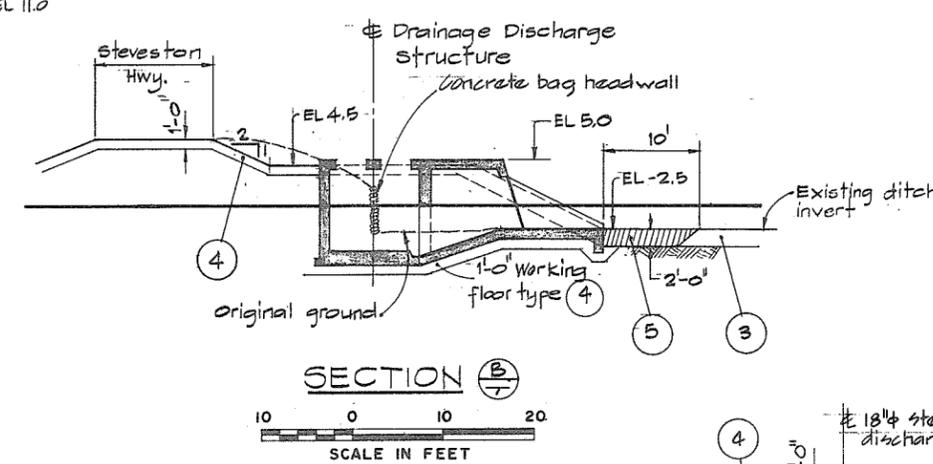
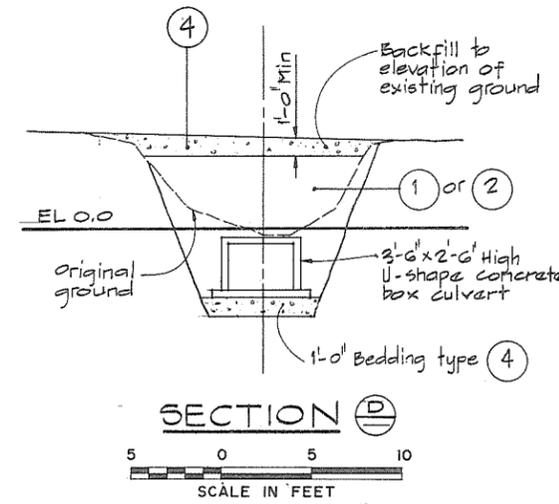
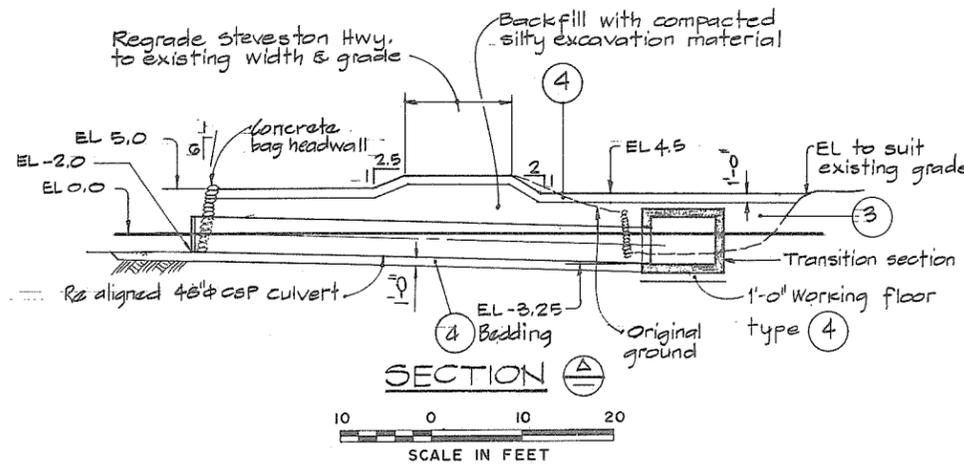
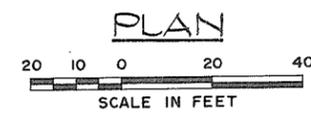
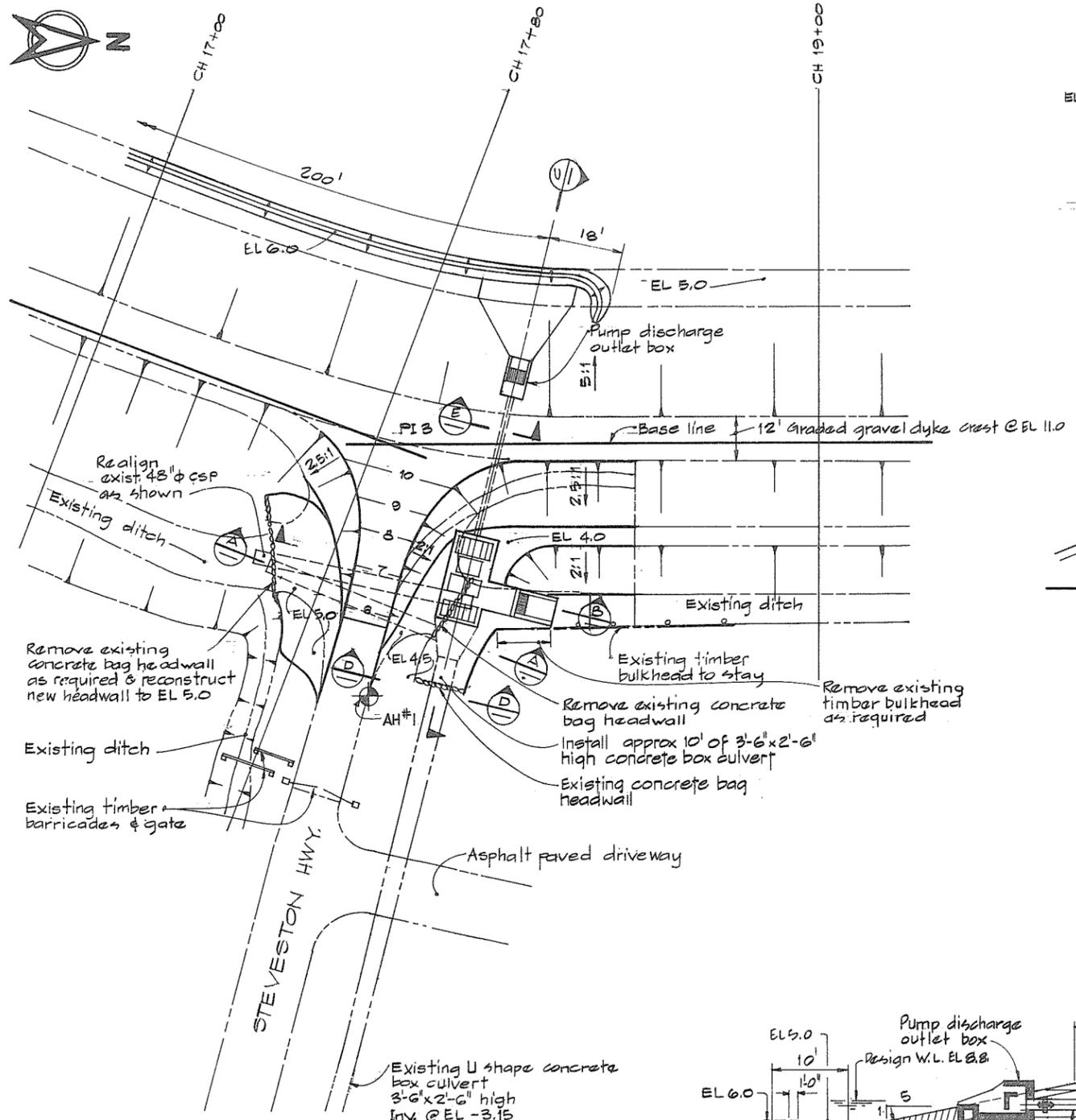
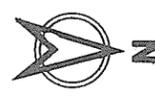
CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	<i>R. d. Comber</i>	PROJECT MANAGER
DATE	<i>Nov. 29/79</i>	
APPROVED	<i>J. H. Fuller</i>	DIRECTOR
DATE	<i>Nov 29/79</i>	

BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
STEVESTON HWY WEST-DRAINAGE DISCHARGE STRUCT NO. 35A
GENERAL ARRANGEMENT SECTIONS

DESIGNED	SURVEYED
DRAWN <i>SP</i>	DATE
CHECKED <i>DLC</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-88</i>	SHEET <i> </i> OF <i> </i> SHEETS



MATERIAL LEGEND

- 1 Silt-clay
- 2 Sand
- 3 Sand, gravel, cobbles
- 4 Crushed gravel
- 5 Light rip-rap
- 5a Light rip-rap

LEGEND

- Existing ground surface (section).
- Existing ground & structures (Plan).
- Section identification letter.
- Drawing No. on which the section is drawn (ie 4795-18-1181).
- Detail identification number, Drawing No. on which the detail is drawn (ie 4795-18-1181).

NOTES

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



CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED <i>B.D. Cameron</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
DATE <i>Nov. 29/79</i>	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
APPROVED <i>John Fuller</i> BY DIRECTOR	STEVESTON HWY WEST-DRAINAGE DISCHARGE STRUCT NO. 35 A
DATE <i>Nov 29/79</i>	DETAILS OF EARTHWORKS

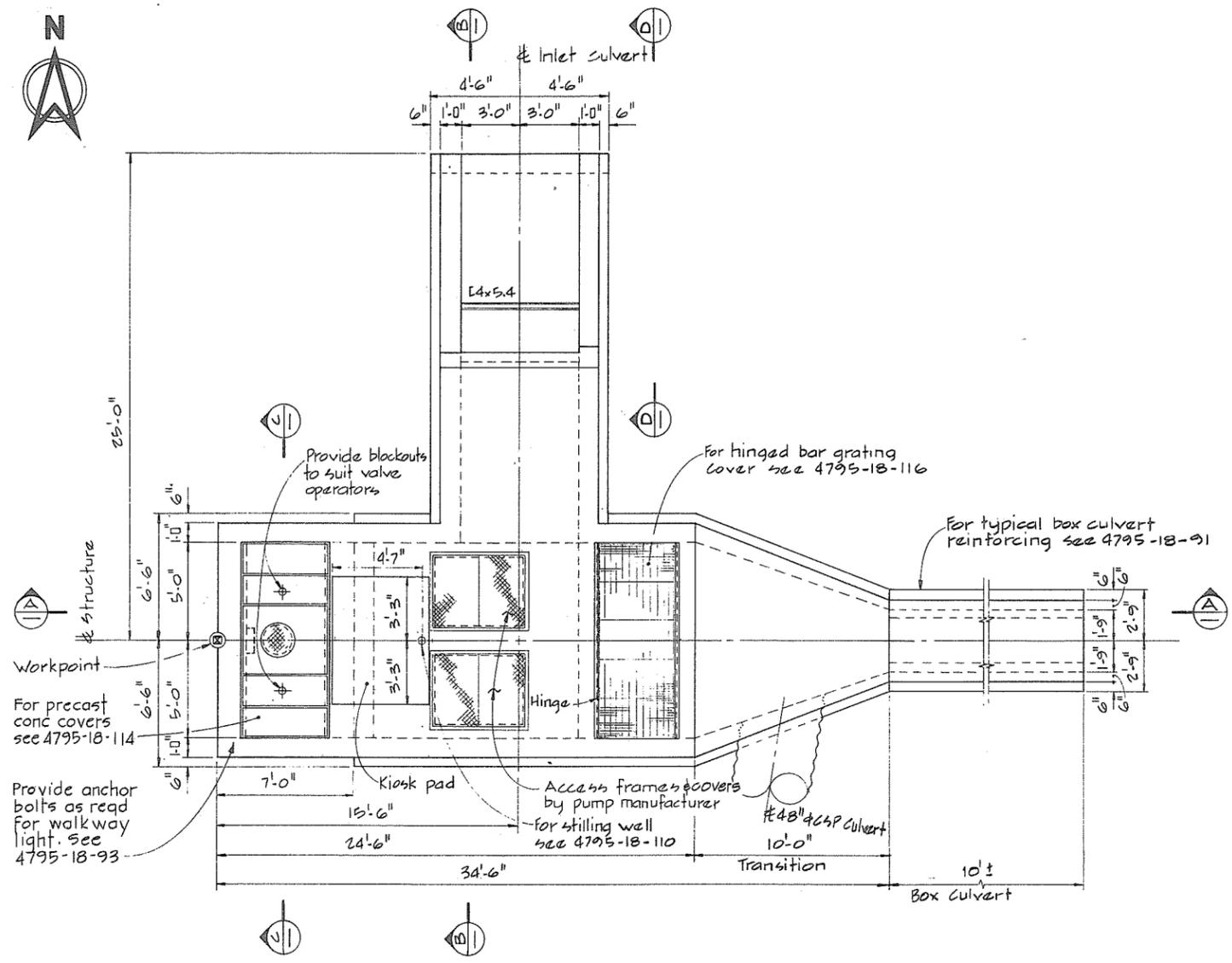
DESIGNED	SURVEYED
DRAWN <i>L. Grave</i>	DATE
CHECKED <i>EMH</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-89</i>	SHEET _____ OF _____ SHEETS

266 577

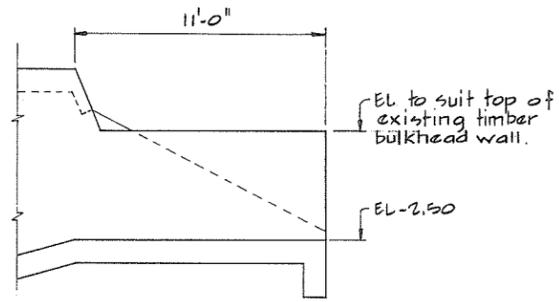


GENERAL NOTES - STRUCTURAL

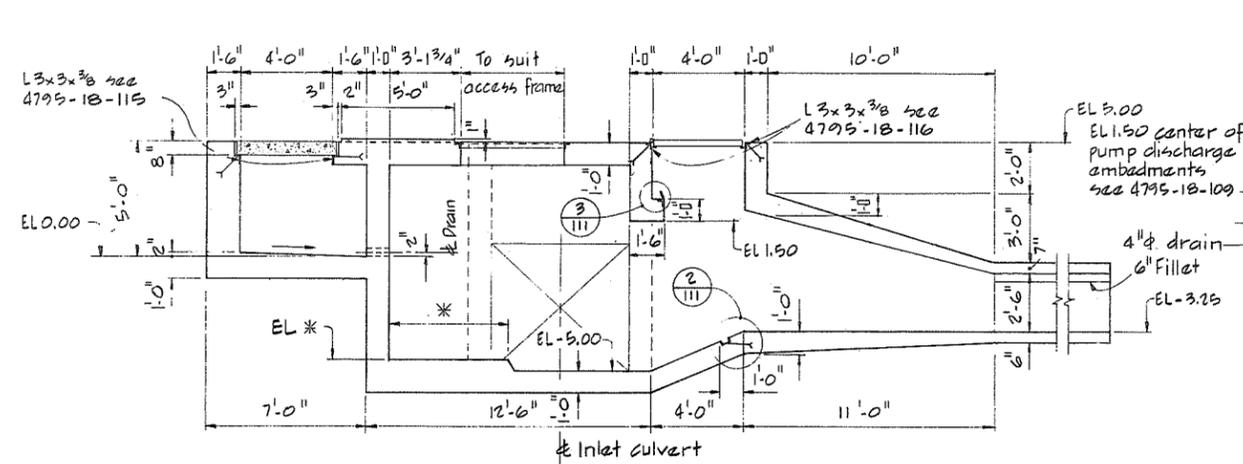
- Design is in accordance with CSA A23.3-1973 Code for the Design of Plain or Reinforced Concrete Structures.
- Construction shall be in accordance with CSA A23.1-1973 Specifications for Structural Concrete for Buildings.
- Specified strength of concrete f'_c 4000 psi.
- Reinforcing steel shall be deformed bars conforming to CSA A30.12-1972, Grade 40 or 60.
- 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 and base slabs - steel trowel
 - Exposed horizontal surfaces - broom
 - Interior, exterior exposed walls and beams - rubbed.
 - See specs for details.
- CHAMFERS - $\frac{3}{4} \times \frac{3}{4}$ for all exposed corners.
- For location of workpoint see 4795-18-87.
- For location of embedded electrical conduit see 4795-18-93.



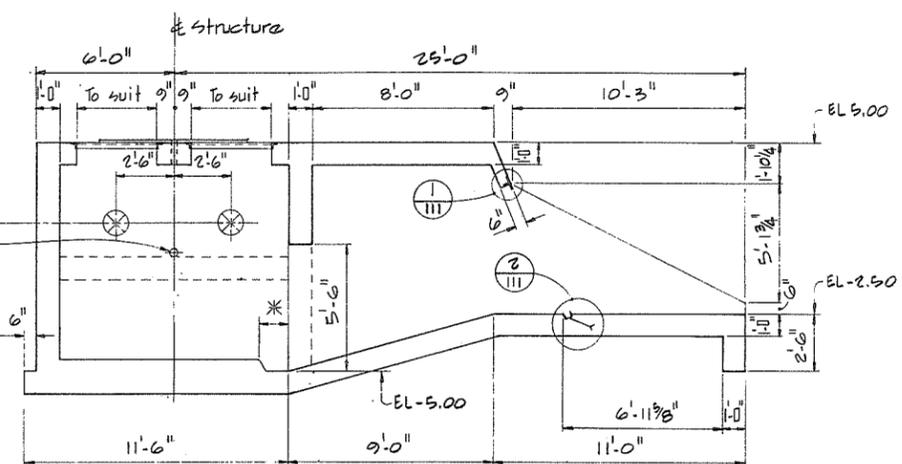
PLAN



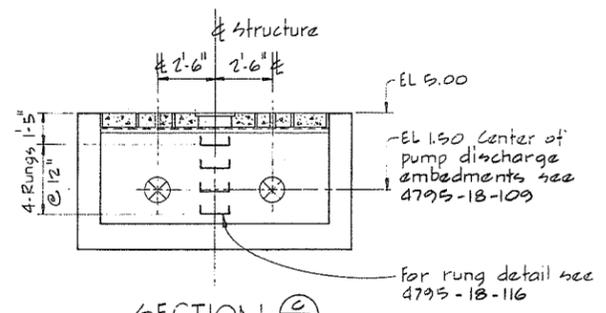
VIEW D



SECTION A

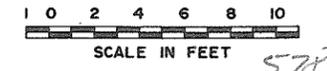


SECTION B



SECTION C

NOTE
Bolt locations, dimensions & elevations marked thus * to suit pump manufacturers specifications

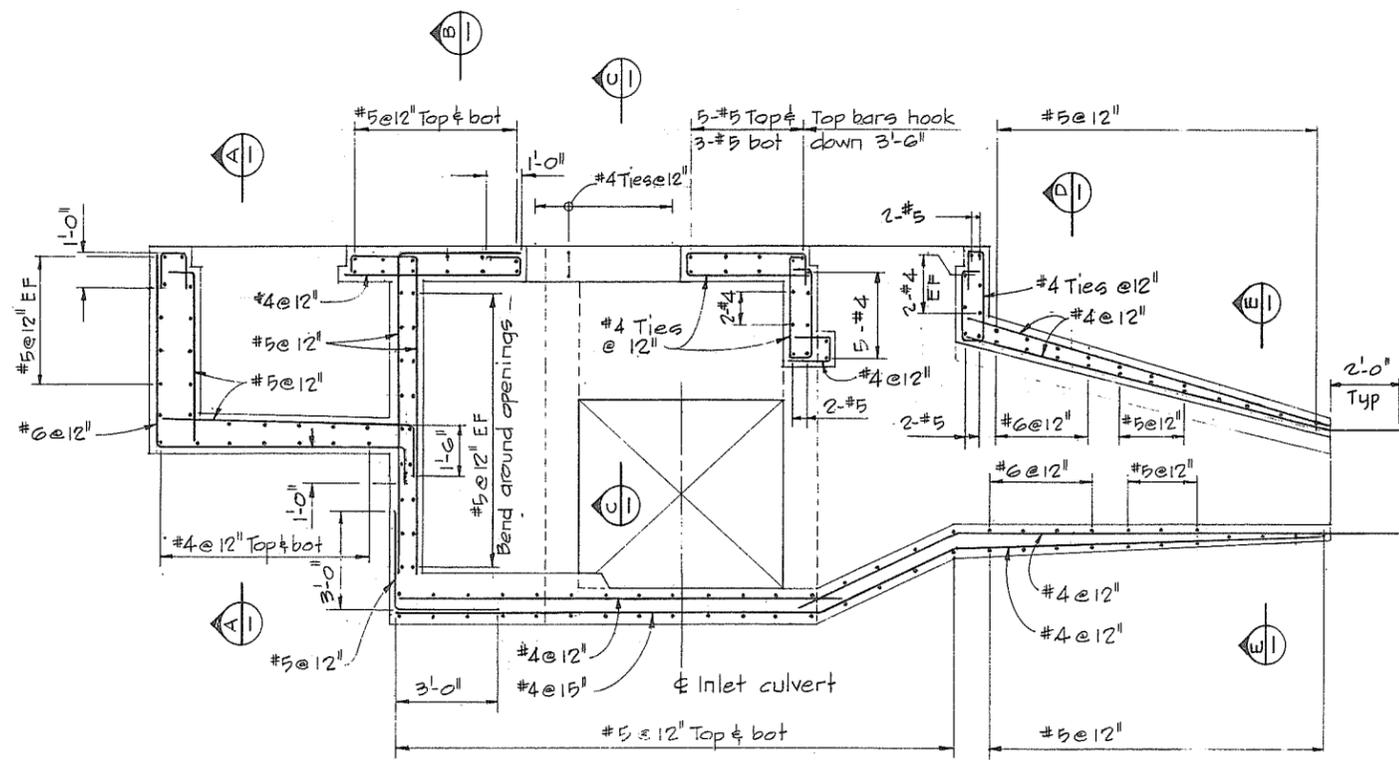


CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

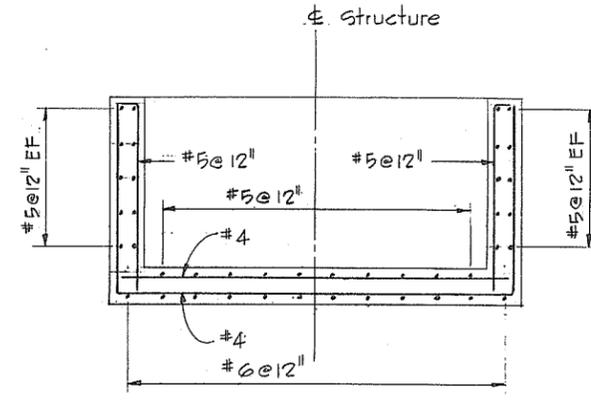
NO.	BY	REVISIONS	DATE
	A	A13	

RECOMMENDED <i>R.D. Cameron</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
DATE <i>Nov. 29/79</i>	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
APPROVED <i>[Signature]</i> DIRECTOR	STEVESTON HWY WEST-DRAINAGE DISCHARGE STRUCT NO.35A
DATE <i>Nov 29/79</i>	MAIN STRUCTURE - CONCRETE OUTLINE

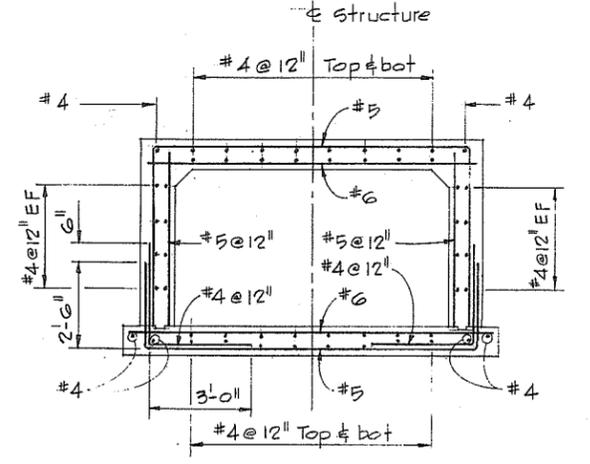
DESIGNED	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED <i>GCW/TP</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-90A</i>	SHEET <i>578</i> OF <i>578</i> SHEETS



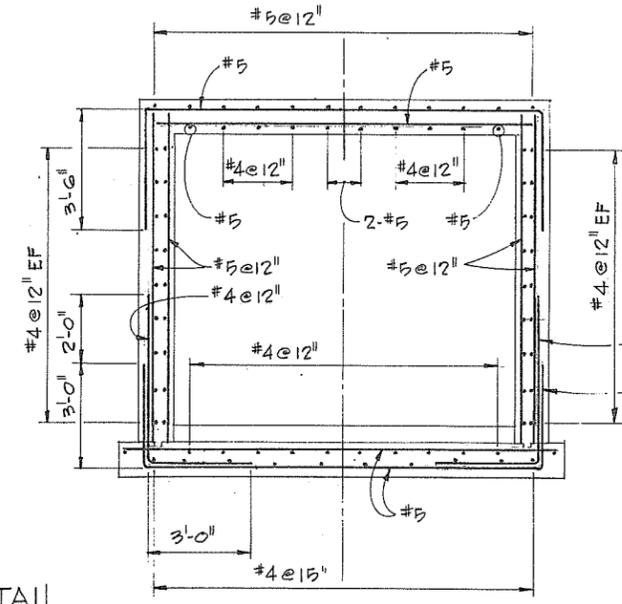
LONGITUDINAL SECTION
LOOKING NORTH



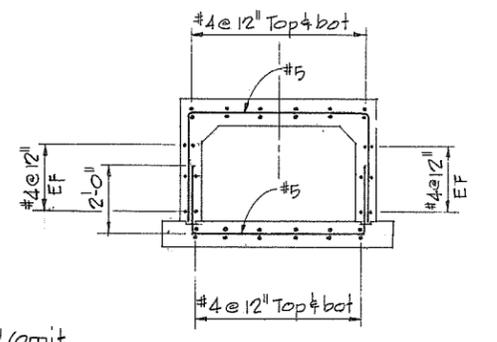
SECTION A



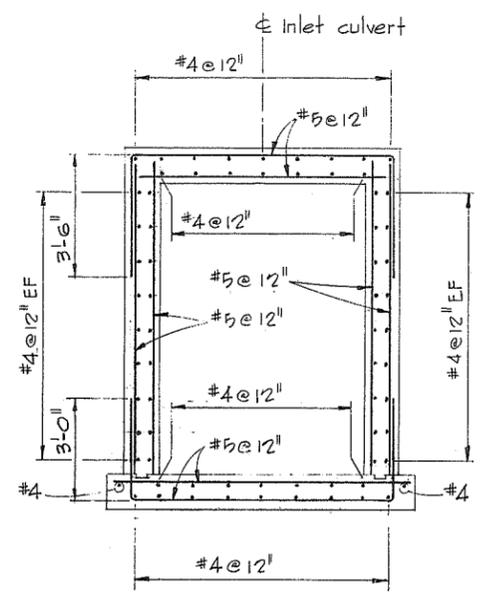
SECTION D



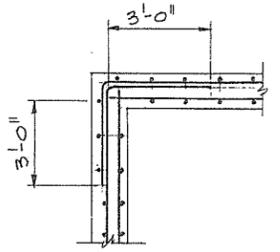
SECTION B



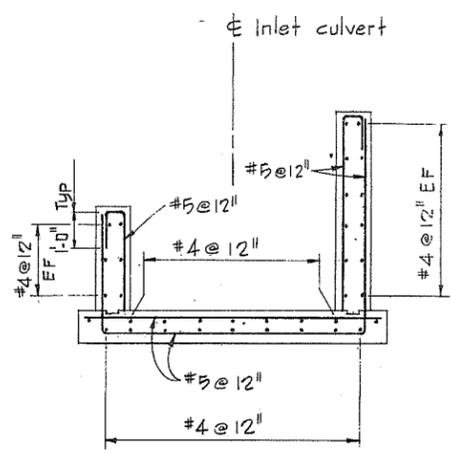
SECTION E



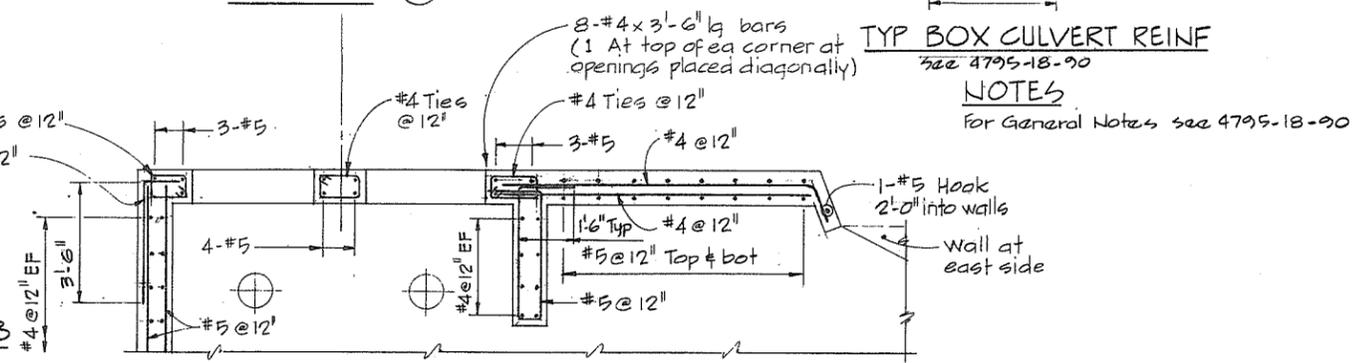
SECTIONS THRU INLET CULVERT
LOOKING NORTH



TYPICAL CORNER DETAIL



END DETAIL AT
INLET CULVERT BOTTOM SLAB



SECTION C

TYP BOX CULVERT REINF
see 4795-18-90

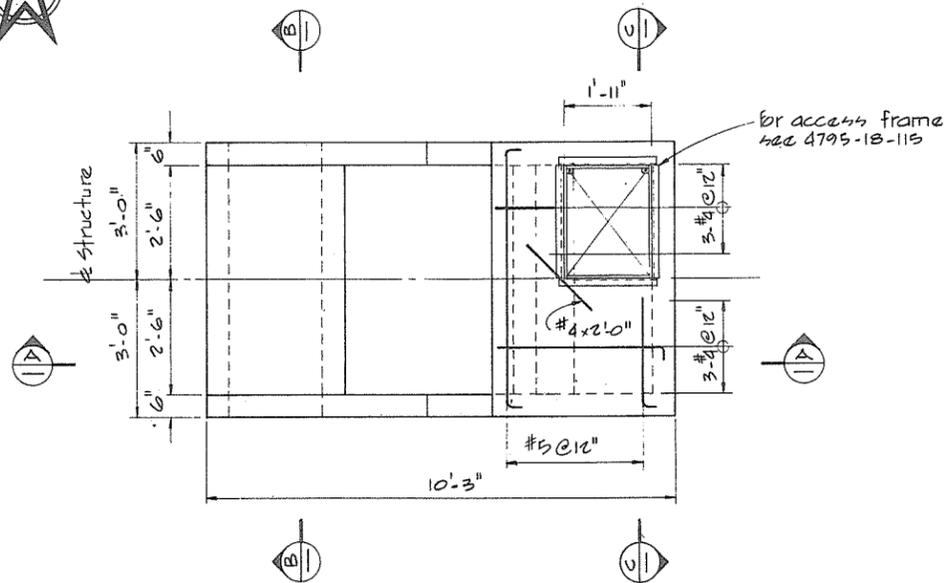
NOTES
For General Notes see 4795-18-90

1 0 1 2 3 4 5 6 7

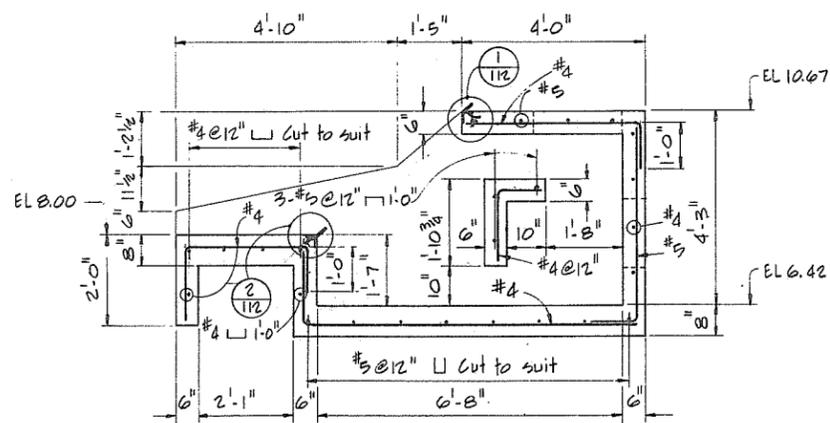
SCALE IN FEET
266 579



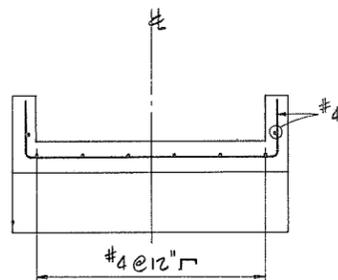
RECOMMENDED <i>R.D. Cameron</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT	DESIGNED <i>GCW</i>	SURVEYED
DATE <i>Nov. 29/79</i>	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A	DRAWN <i>WZ</i>	DATE
APPROVED <i>[Signature]</i> DIRECTOR	STEVESTON HWY WEST - DRAINAGE DISCHARGE STRUCT NO. 35 A MAIN STRUCTURE REINFORCING	CHECKED <i>GCW/TP</i>	FILE NO. <i>0281550-C10-18</i>
DATE <i>Nov 29/79</i>		SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
		DWG. NO. <i>4795-18-91 A</i>	SHEET <i>OF</i> SHEETS



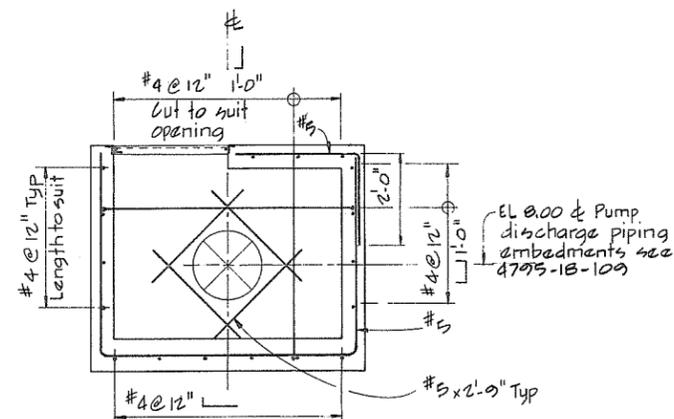
PLAN



SECTION A-A

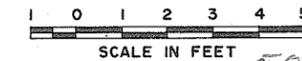


SECTION B-B



SECTION C-C

NOTES
For General Notes see 4795-18-90

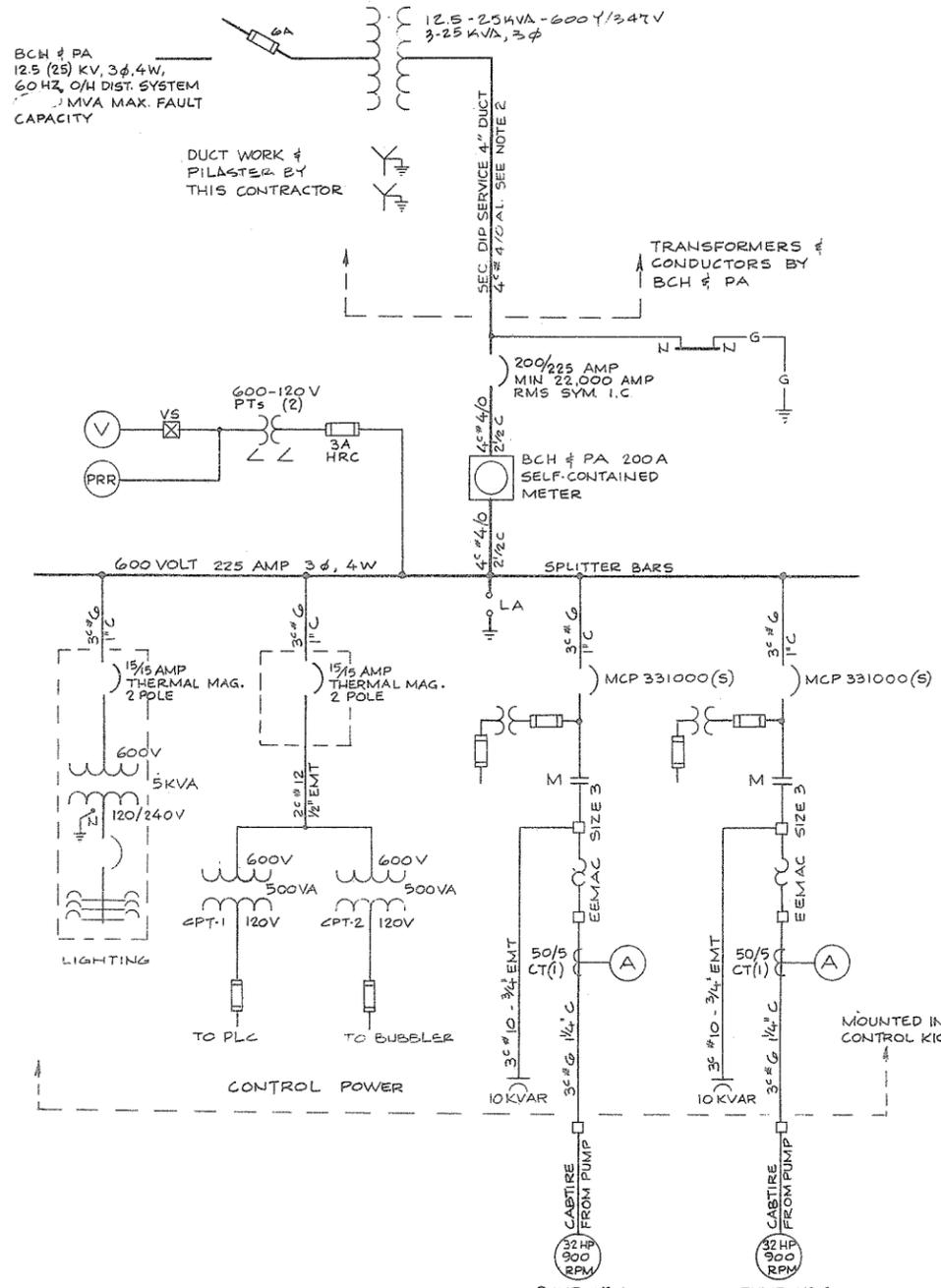


CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

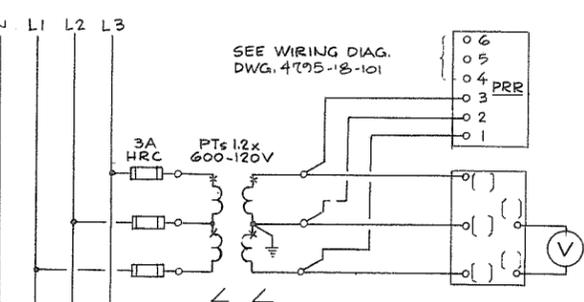
NO.	BY	REVISIONS	DATE
A		A/B	

RECOMMENDED <i>R. A. Cameron</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
DATE <i>Nov. 29/79</i>	
APPROVED <i>[Signature]</i> DIRECTOR	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A STEVESTON HWY WEST-DRAINAGE DISCHARGE STRUCT NO. 35 A PUMP DISCHARGE STRUCTURE CONCRETE OUTLINE AND REINFORCING
DATE <i>Nov 29/79</i>	

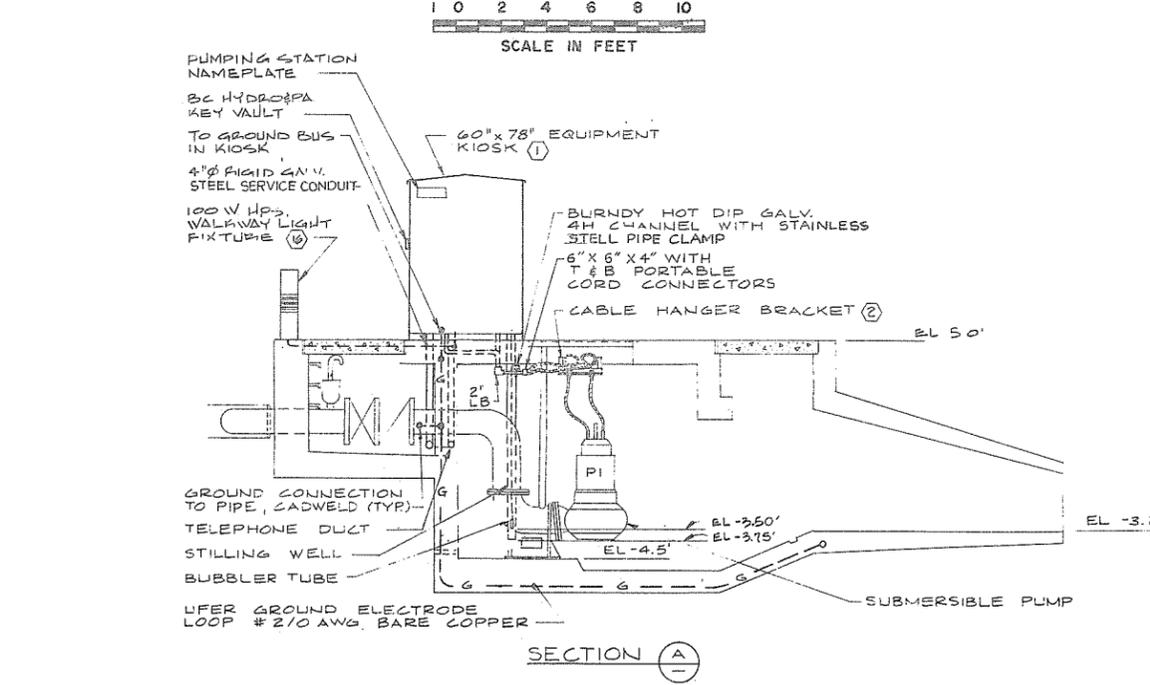
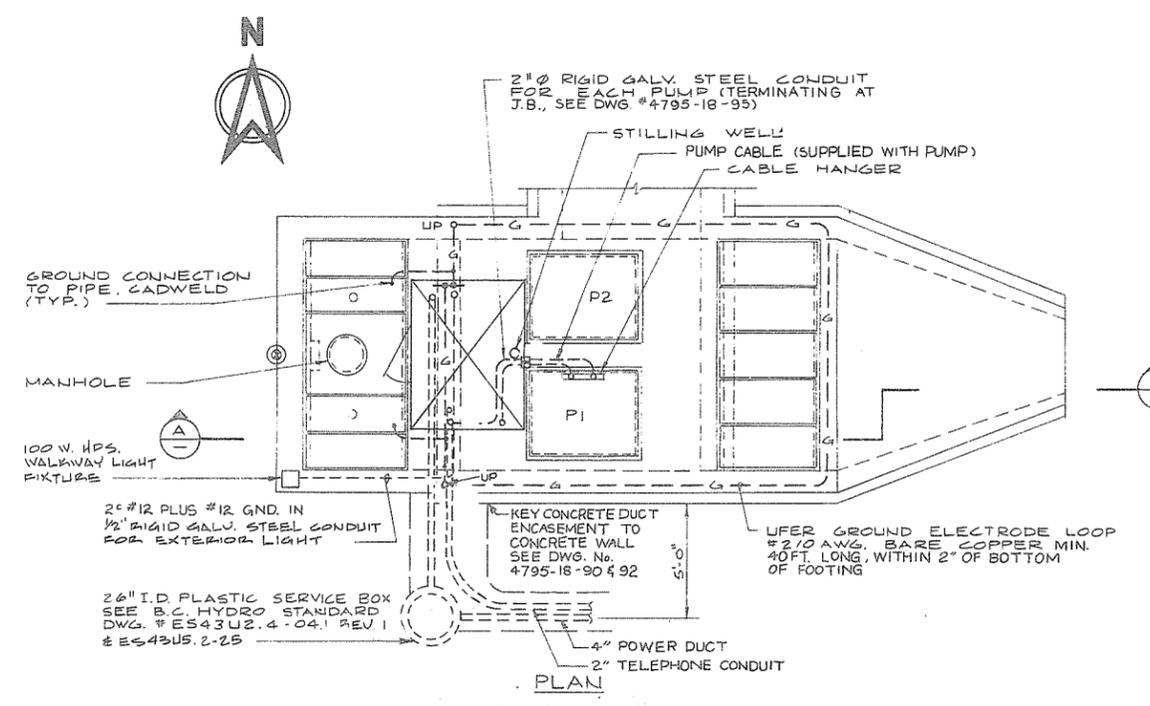
DESIGNED	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED <i>GCW/TP</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-92 A</i>	SHEET <i>580</i> OF <i>580</i> SHEETS



SINGLE LINE DIAGRAM



VOLTMETER & PHASE REVERSAL RELAY CONNECTIONS



	START	STOP	LOW LEVEL	LOCKOUT	HIGH LEVEL ALARM
LEAD PUMP	-0.5'	-1.5'	-2.25'		0.0
LAG PLMP	-0.25'	-1.25'			

PUMP OPERATING LEVELS

NOTES

- FOR GENERAL NOTES REFER TO DWG # 4795-18-57
- FOR UTILITY SERVICE DETAILS REFER TO SITE PLAN DWG. #4795-18-87

KEY TO MATERIAL

NOTE: (1) This is not a complete material list, refer to drawings and Specifications.
(2) Quantities shall be as specified and/or shown on the Drawings.
(3) Material shall be as specified or approved equivalent (in writing).

ITEM	QTY.	DESCRIPTION
1	1 only	Equipment kiosk constructed as shown on DWG. 4795-18-94&95 "Steveston West-equipment kiosk" and as specified in contract 18, subsection 5.17.
2	1 only	Cable hanger bracket, Flygt Canada Ltd. Cat. #002-00-06 or approved equivalent complete with portable cord connectors to suit pump motor cables.
3	1 only	200A breaker, 600V, 3 pole, minimum 22,000 Amp RMS sym. I.C. molded case circuit breaker complete with surface mount EEMAC 1 general purpose enclosure with provision for padlocking and sealing by B. C. Hydro & Power Authority.
4	1 only	7 terminal 200A, 347/600V square type meter socket with lay in neutral, as approved by B. C. Hydro & Power Authority.
5	1 only	Owner metering cabinet 16" x 12" x 7" min., Hammond Cat. #1420 B7.
6	2 only	Control transformer 500VA, 1 ϕ , 600-120V, Hammond Cat. #EL9J.
7	1 only	3 ϕ , 4W, 225A, 347/600V splitter box, minimum 24" x 10" x 6".
8	1 only	Indoor mini-power centre, 5 kVA, 600-120/240V. Westinghouse Cat. #M60F11505B or approved equivalent.
9	1 only	Panel box for bubbler system. Minimum 20" x 20" x 8", Hammond Cat. #1418 D8.
10	2 only	Power factor correction capacitor, 10 kVAC, 600V, 3 ϕ silicone fluid filled for the use on a grounded wye system. Unit shall be complete with indicating type HRC fuses. Westinghouse Cat. #1931B60A03 or approved equivalent.
11	2 only	EEMAC Size 3 FVNR combination circuit breaker type starters in a CEMA 1 general purpose enclosure complete with 150VA control transformer and with O/L heater sized to suit motor, Similar to Westinghouse type A206 combination starter with wiring as specified and shown on the drawings.
12	1 only	Annunciator light box 4 high by 4 wide for a total of 12 alarm points. Each window shall be engraved as shown on the drawings and back lit with a 3 watt, 24V D.C. lamp. (Fed from the PLC 24V D.C. output module.) The unit shall be Ronan Cat. #44LB-4000, 24V D.C. lamp cabinet (available from Instrument Service Laboratories) complete with Ronan Series X36-24 electronic horn having an adjustable warble sound, or approved equivalent.
13	1 only	1000 watt 240V utility heater, FPE Cat. #U27-1210 or approved equivalent.
14	1 only	Industrial fluorescent fixture having 2-4' T12, 60 watt, cool white, low temperature lamps and ballast for 120 Volt operation. The fixtures shall be sealed in accordance with CSA "Enclosed and Gasketed" requirements and shall have a baked enamel finish and acrylic lens, suitable for surface mounting. The fixture shall be Electrolite Cat. #KFP-76-248, or approved equivalent.
15	1 only	Insulating mat for placement on floor of kiosk. It shall be coloured grey. The mat shall be "Heron Rib Vinyl Ductboard" (E. B. Peerless Ltd.) or approved equivalent. The mat shall cover an area of 4'-6" x 3'-6" (cut two mats to fit).
16	1 only	Weatherproof & vandal resistant walkway mounted light fixture for installation in front of equipment kiosk. The fixture shall be 100W H.P.S. with ballast for 120V operation. The fixture shall be Sterner Lighting Systems, "Annapolis series" Cat. #AS36GP100S120AC available from Associated Lighting Ltd., or approved equivalent.
17	1 only	Duplex receptacle of the integral ground fault protected type, Pass & Seymour Cat. #1591 with Cat. #9306 stainless steel wall plate (Brettell Electric Ltd.) or approved equivalent.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA

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

CBA ENGINEERING LTD. CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED: R.A. Cameron PROJECT MANAGER

DATE: Nov. 29/79

APPROVED: J. D. Fuller FOR DIRECTOR

DATE: Nov 29/79

BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A STEVESTON HWY WEST - DRAINAGE DISCHARGE STRUCT NO. 35A ELECTRICAL ONE LINE DIAGRAM

DESIGNED: HO

DRAWN: MB/SEC

CHECKED: WNB

SCALE: AS SHOWN

DWG. NO.: 4795-18-93

SURVEYED: DATE

FILE NO.: 0281550-C10-18

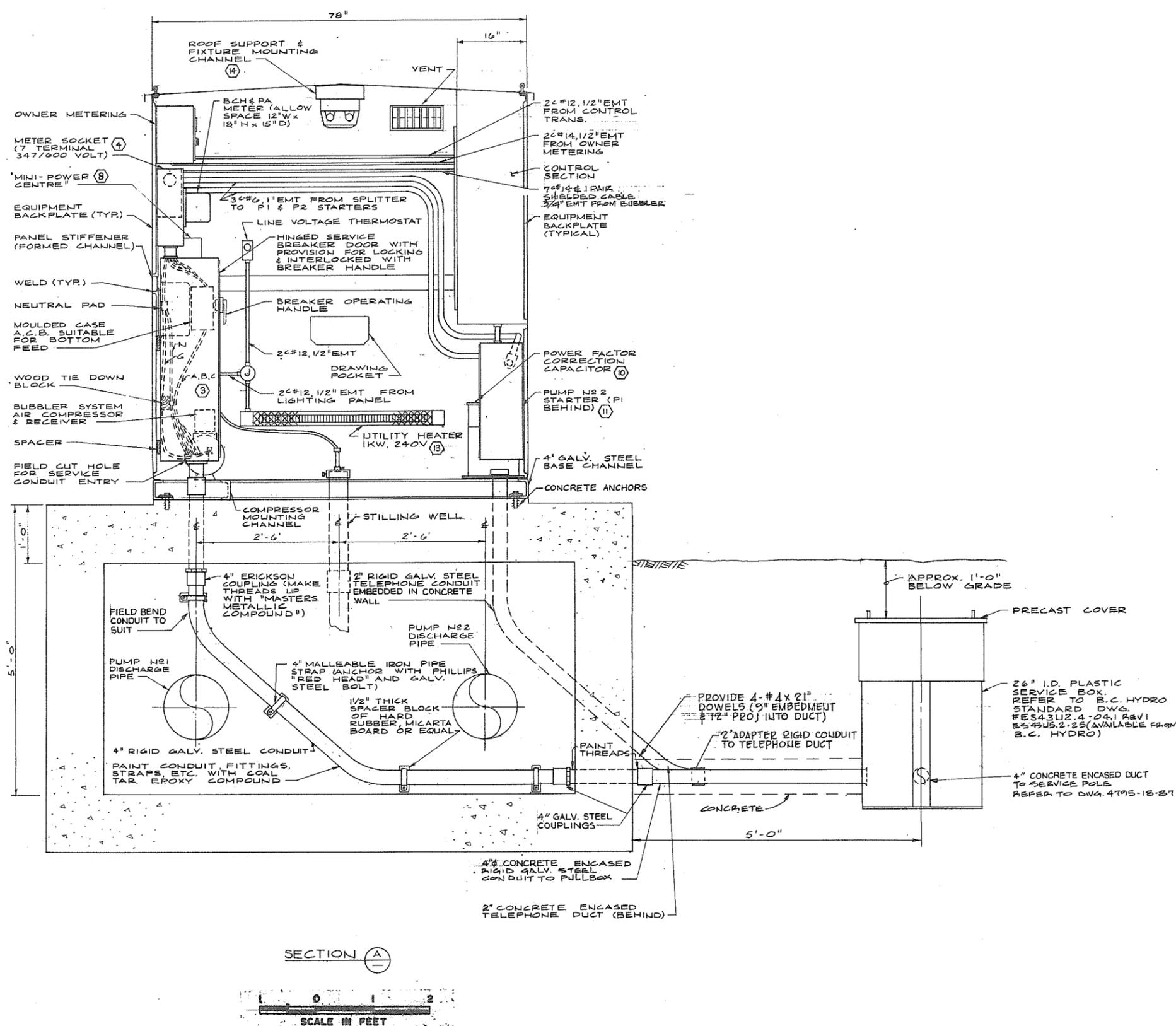
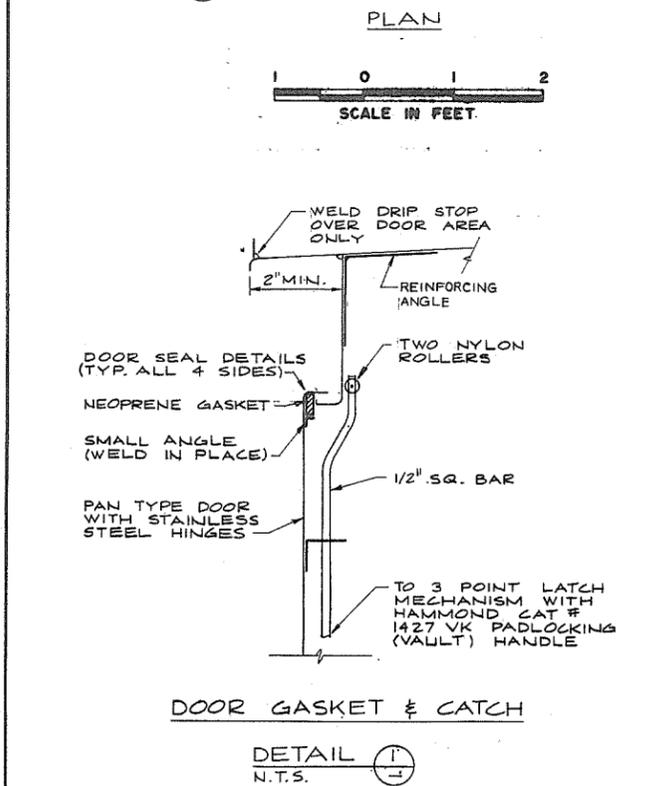
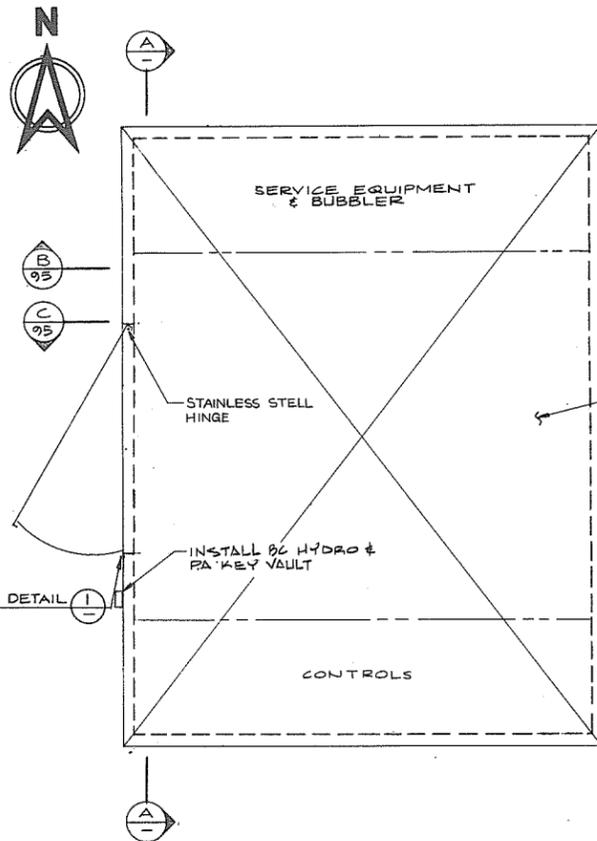
DATE: Dec 1979

SHEET OF SHEETS

REFERENCE: 1292

NO. BY REVISIONS DATE

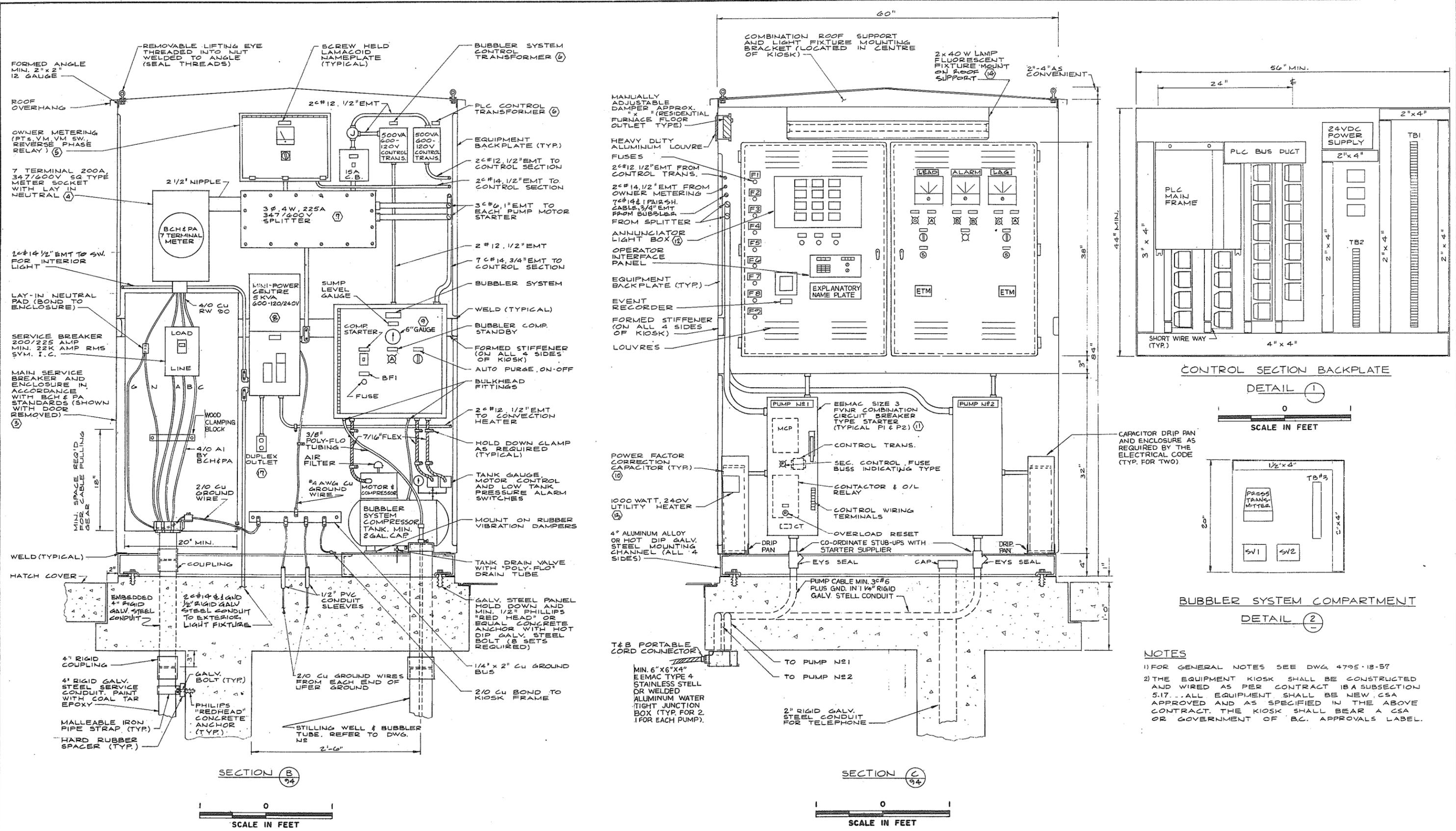
266 581



266502



PREPARED BY: M.A. THOMAS & ASSOCIATES LTD. CONSULTING ENGINEERS VANCOUVER, B.C. - CANADA.	CBA ENGINEERING LTD. CONSULTING ENGINEERS - VANCOUVER - CANADA	RECOMMENDED <i>R.A. Cameron</i> PROJECT MANAGER DATE <i>Nov. 29/79</i>	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT	DESIGNED <i>WNB</i>	SURVEYED
				DRAWN <i>SEO</i>	DATE
REFERENCE: 1292	NO. BY <i>A/10</i>	APPROVED <i>J.D. Sullivan</i> DIRECTOR DATE <i>Nov 29/79</i>	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A STEVESTON HWY WEST - DRAINAGE DISCHARGE STRUCT NO. 35A ELECTRICAL EQUIPMENT KIOSK	CHECKED <i>WNB</i>	FILE NO. <i>0281550-C10-1B</i>
				SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
				DWG. NO. <i>4795-18-94</i>	SHEET <i>1</i> OF <i>2</i> SHEETS



NOTES

- 1) FOR GENERAL NOTES SEE DWG. 4795-18-57
- 2) THE EQUIPMENT KIOSK SHALL BE CONSTRUCTED AND WIRED AS PER CONTRACT 18A SUBSECTION 5.17. ALL EQUIPMENT SHALL BE NEW, CSA APPROVED AND AS SPECIFIED IN THE ABOVE CONTRACT. THE KIOSK SHALL BEAR A CSA OR GOVERNMENT OF B.C. APPROVALS LABEL.

266583



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

CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

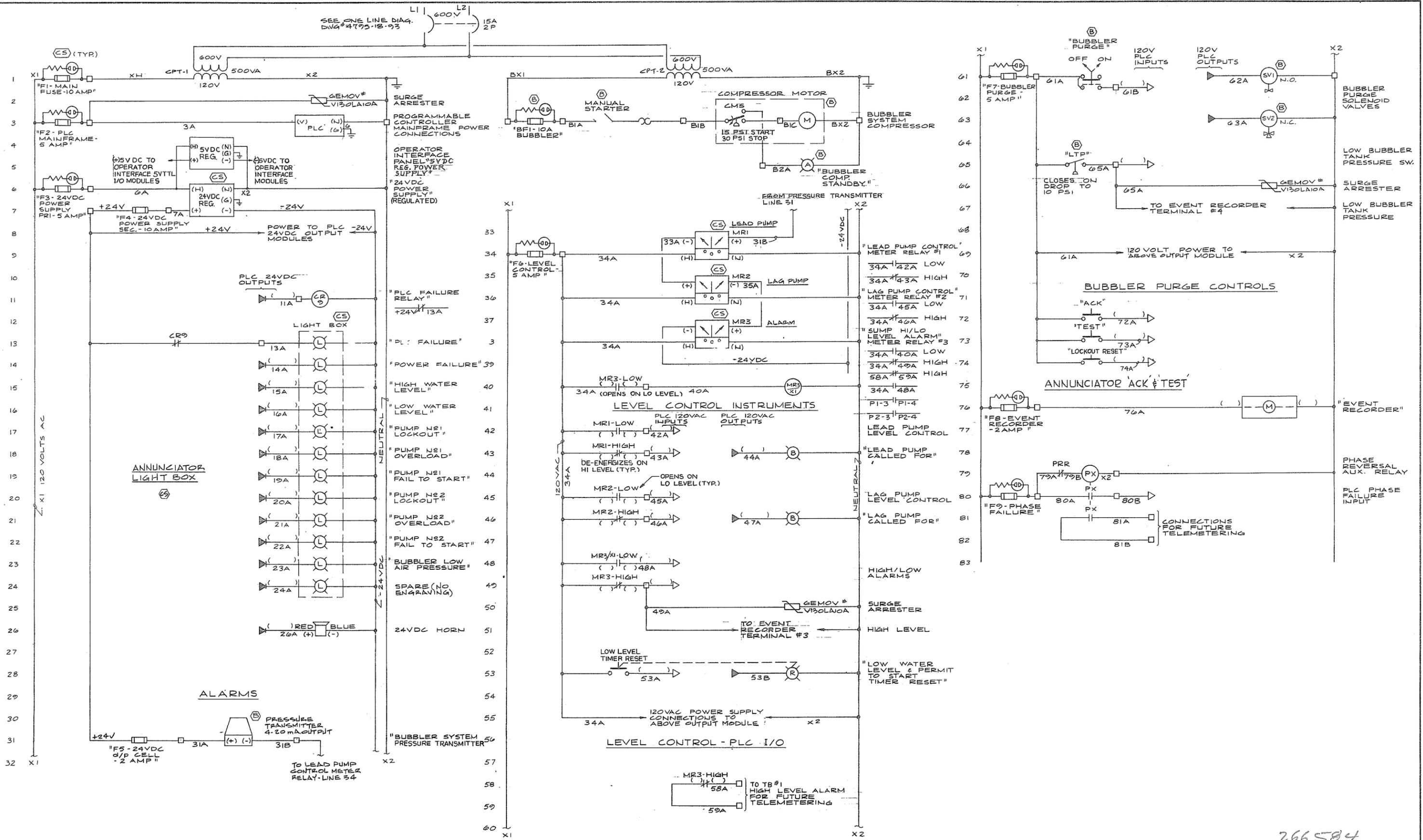
RECOMMENDED *R. A. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *John J. Fisher*
 DIRECTOR
 DATE *Nov 29/79*

BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA — BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
 PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 STEVESTON HWY WEST-DRAINAGE DISCHARGE STRUCT NO. 35A
 ELECTRICAL EQUIPMENT KIOSK

DESIGNED WNB	SURVEYED
DRAWN SEO	DATE
CHECKED WNB	FILE NO. 0281550-C10-18
SCALE AS SHOWN	DATE Dec 1979
DWG. NO. 4795-18-95	SHEET 2 OF 2 SHEETS

REFERENCE 1292

NO. BY REVISIONS DATE



266584



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

CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

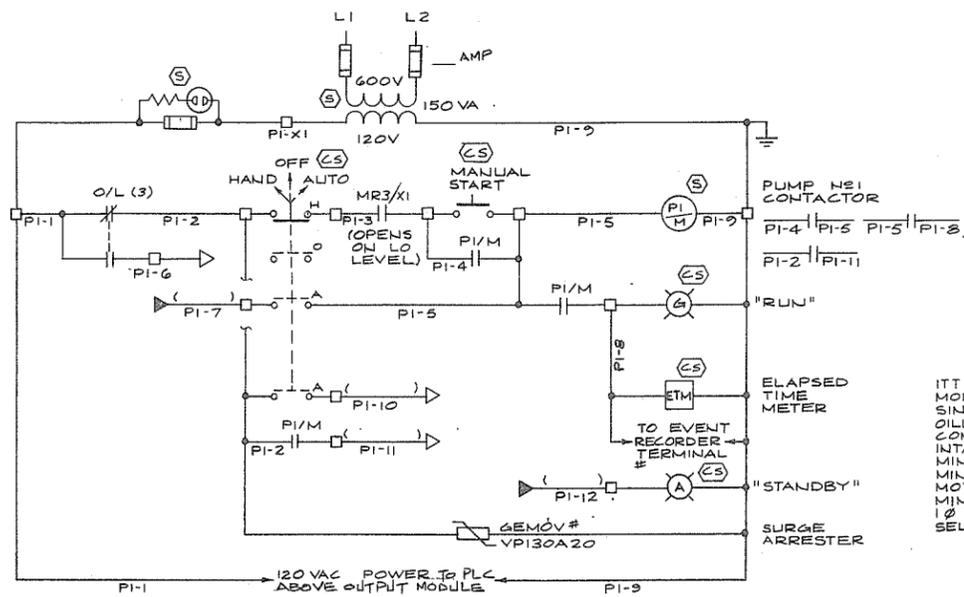
NO.	BY	REVISIONS	DATE
	A	A17	

RECOMMENDED *R. S. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *John Tiller*
 DIRECTOR
 DATE *Nov 29/79*

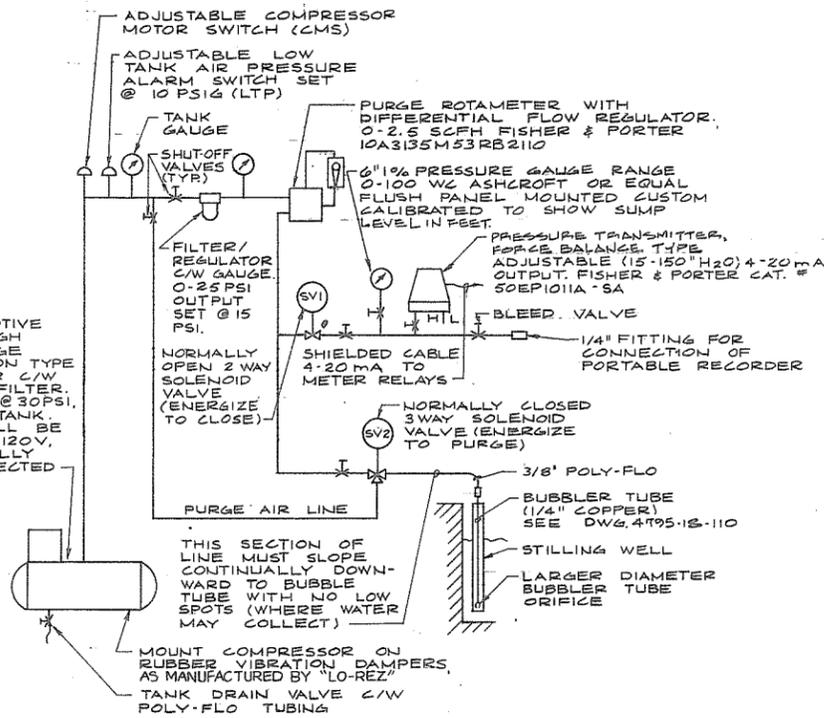
BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
 PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18 A
 STEVESTON HWY WEST - DRAINAGE DISCHARGE STRUCT NO. 35A
 ELECTRICAL SCHEMATIC DIAGRAMS

DESIGNED	WNB	SURVEYED	
DRAWN	SEO	DATE	
CHECKED	WNB	FILE NO.	0281550-C10-18
SCALE	NONE	DATE	Dec. 1979
DWG. NO.	4795-18-98	SHEET	1 OF 2 SHEETS

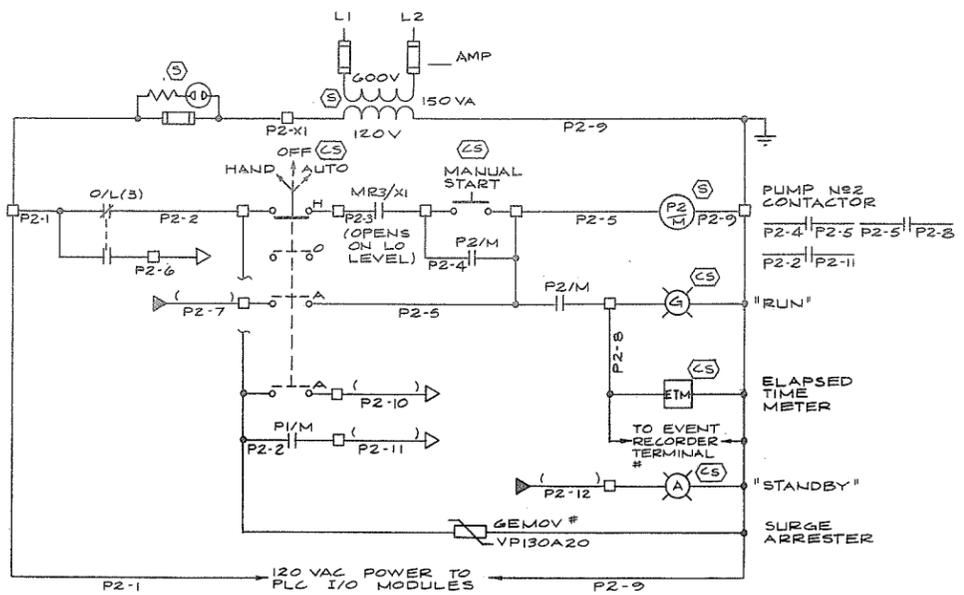
REFERENCE: 1292



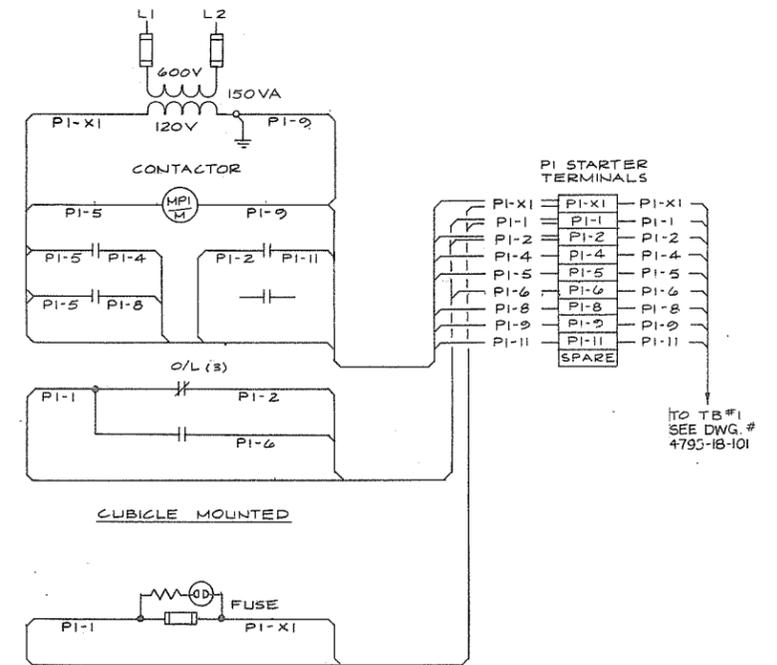
PUMP NO 1



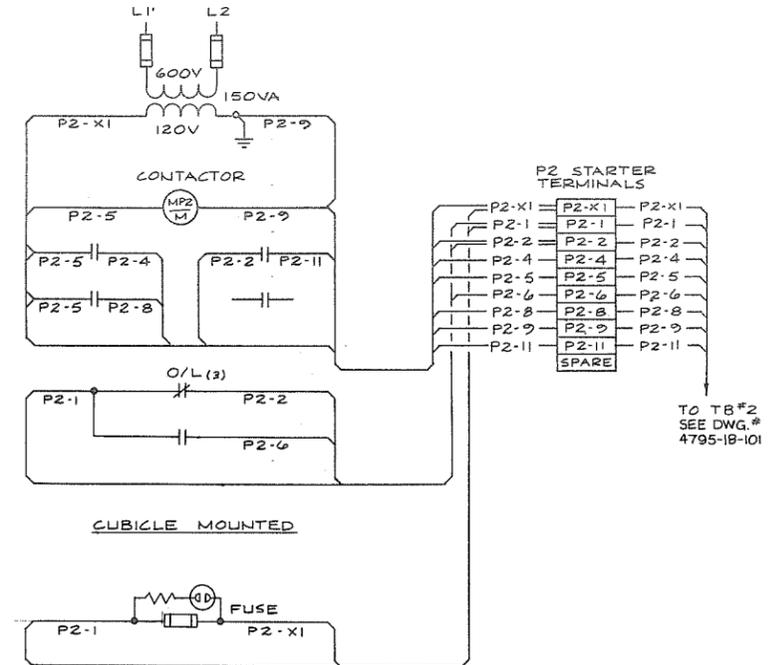
BUBBLER LEVEL CONTROL SYSTEM - PIPING



PUMP NO 2



PI STARTER WIRING



P2 STARTER WIRING



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



CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

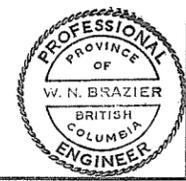
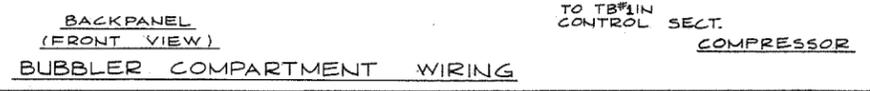
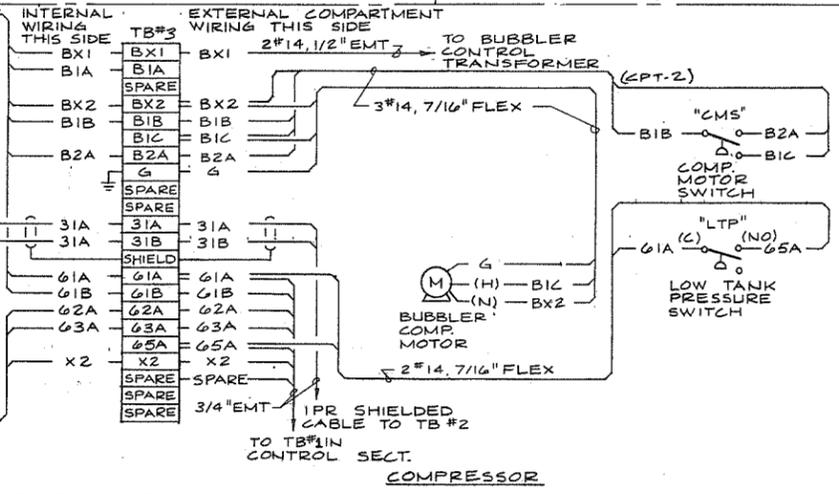
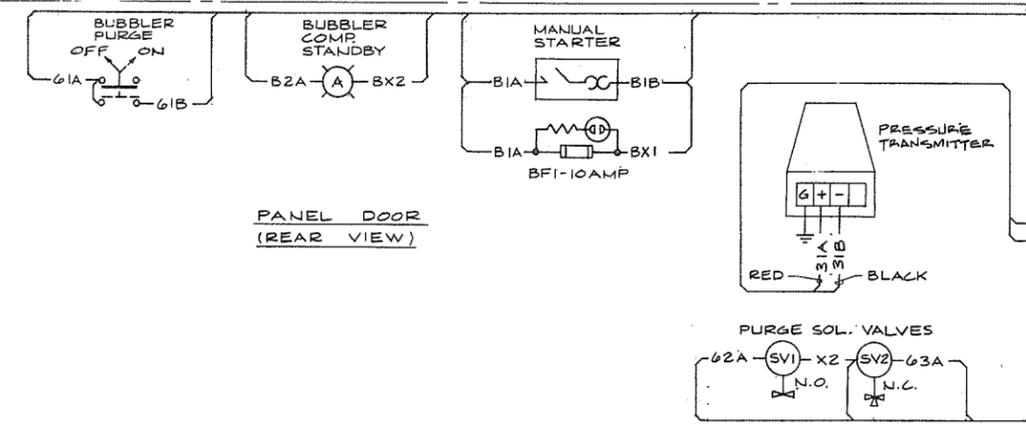
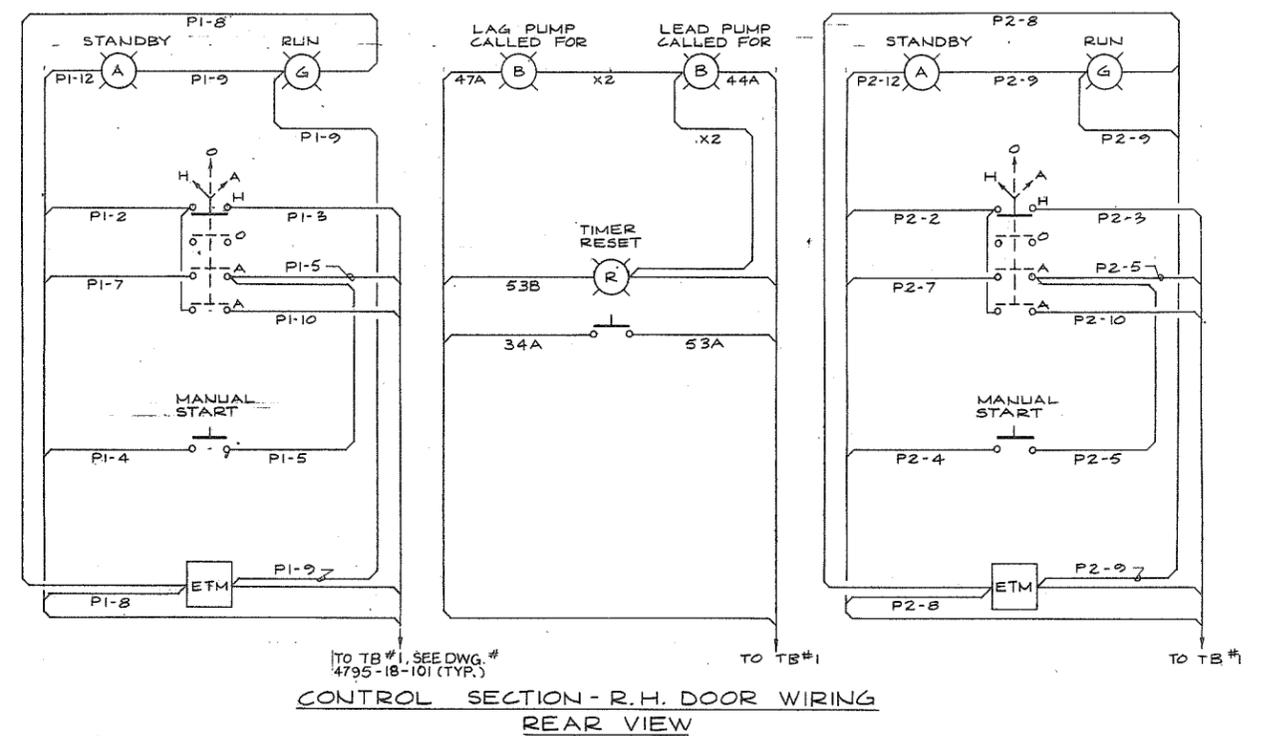
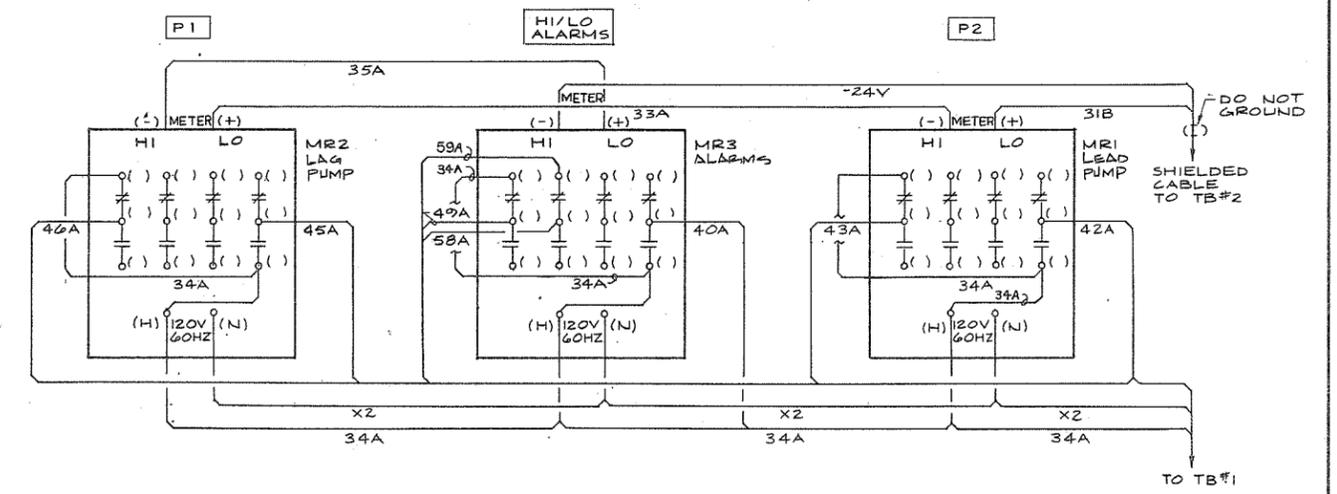
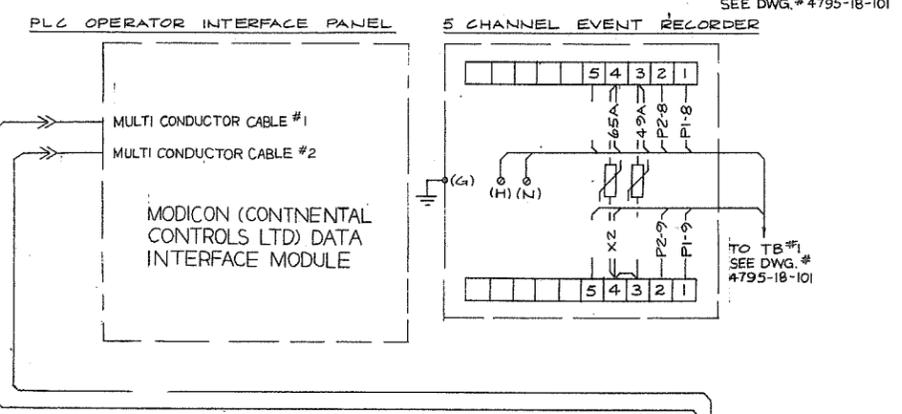
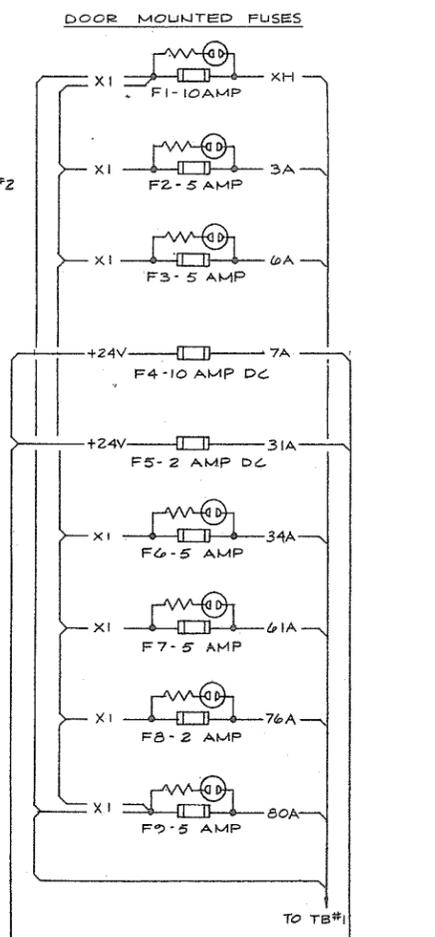
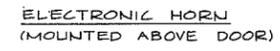
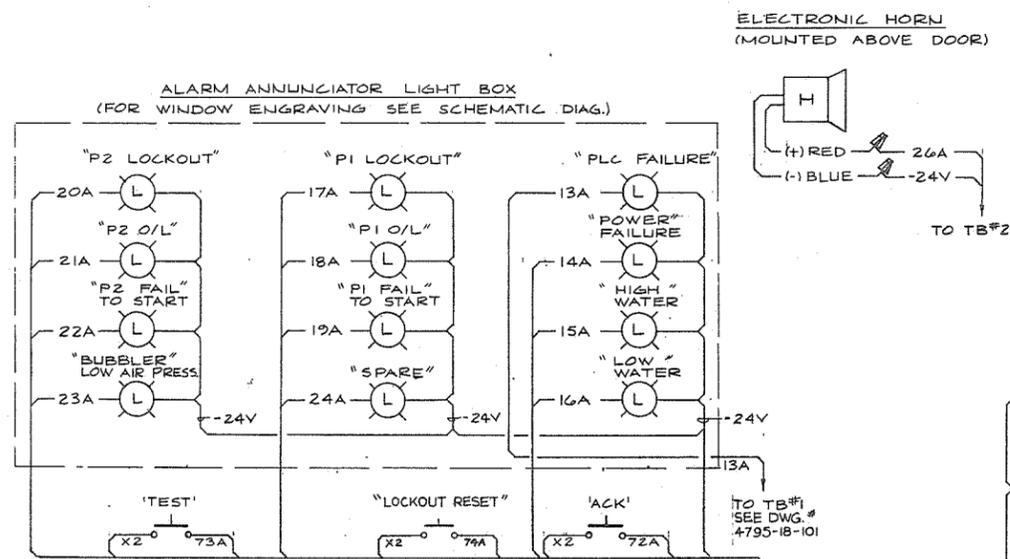
NO.	BY	REVISIONS	DATE
		A/B	

RECOMMENDED *R.A. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *[Signature]*
 DIRECTOR
 DATE *Nov 29/79*

BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
 PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 STEVESTON HWY WEST - DRAINAGE DISCHARGE STRUCT NO. 35A
 ELECTRICAL SCHEMATIC DIAGRAMS

DESIGNED	WNB	SURVEYED	
DRAWN	SEO	DATE	
CHECKED	WNB	FILE NO.	0281550-C10-18
SCALE	NONE	DATE	Dec. 1979
DWG. NO.	4795-18-99	SHEET	2 OF 2 SHEETS

266.585



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

CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED *B.K. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *John Fuller*
 DIRECTOR
 DATE *Nov 29/79*

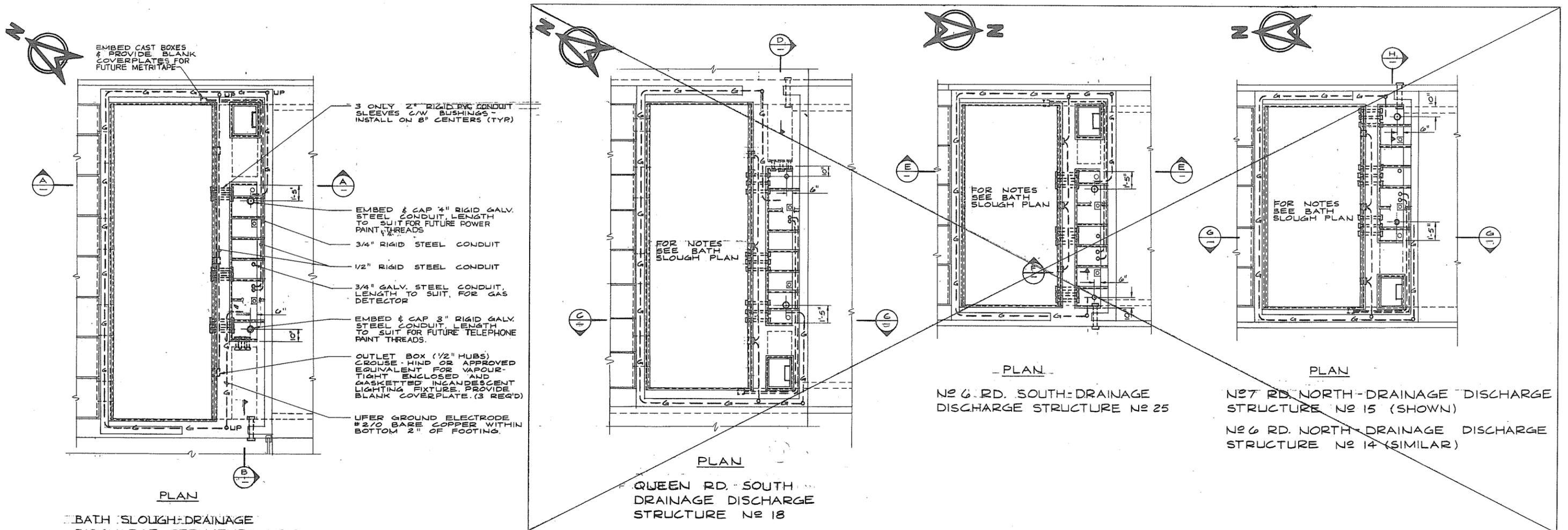
BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 STEVESTON HWY WEST - DRAINAGE DISCHARGE STRUCT NO. 35A
 ELECTRICAL WIRING DIAGRAMS

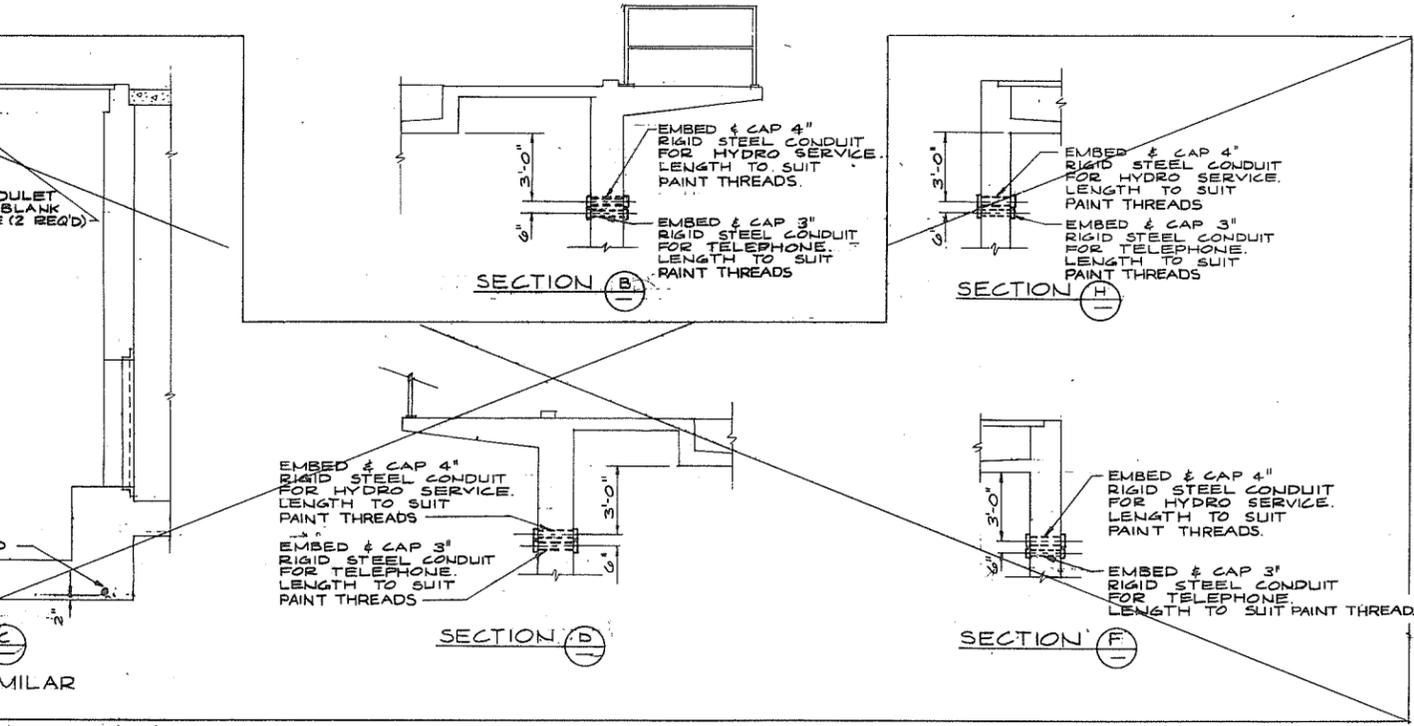
DESIGNED WNB
 DRAWN SEO
 CHECKED WNB
 SCALE NONE
 DWG. NO. 4795-18-100

SURVEYED
 DATE
 FILE NO. 0281550-C10-18
 DATE Dec. 1979
 SHEET 1 OF 2 SHEETS

266586



BATH SLOUGH DRAINAGE DISCHARGE STRUCTURE NO 13



NOTES
 1. INSTALL UFER GROUND ELECTRODE AND LEAVE BOTH ENDS IN MCC TROUGH FOR FUTURE CONNECTION. FOR DETAILS REFER TO DWG. #4795-18-58 AND SPECIFICATIONS FOR SAME



SCALE IN FEET
 (TYPICAL ALL VIEWS)



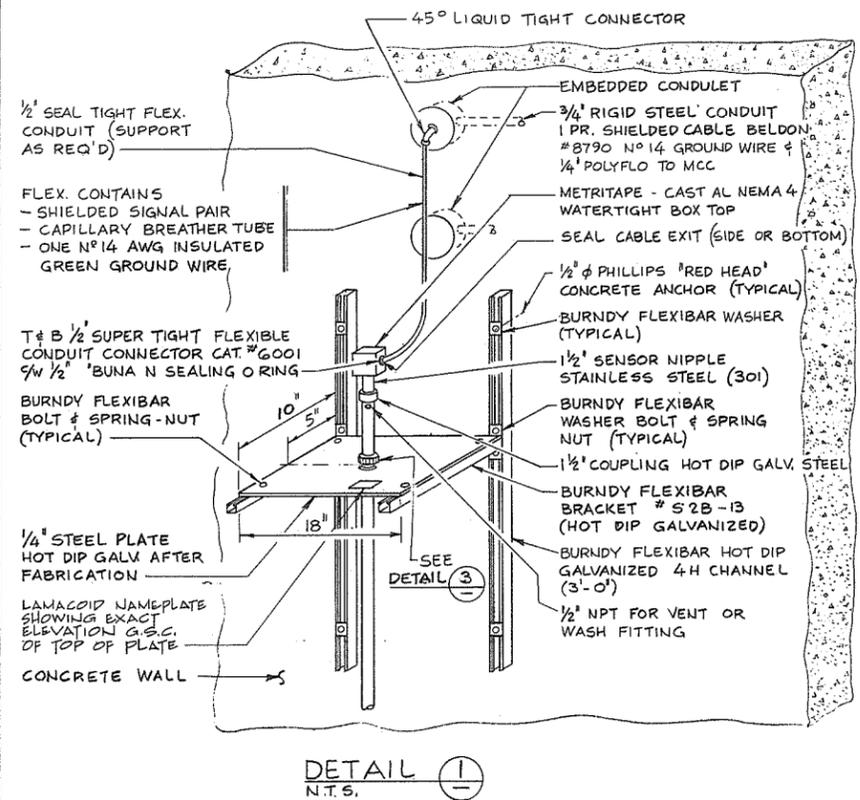
PREPARED BY:
M.A. THOMAS & ASSOCIATES LTD.
 CONSULTING ENGINEERS
 VANCOUVER, B.C. CANADA.

CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

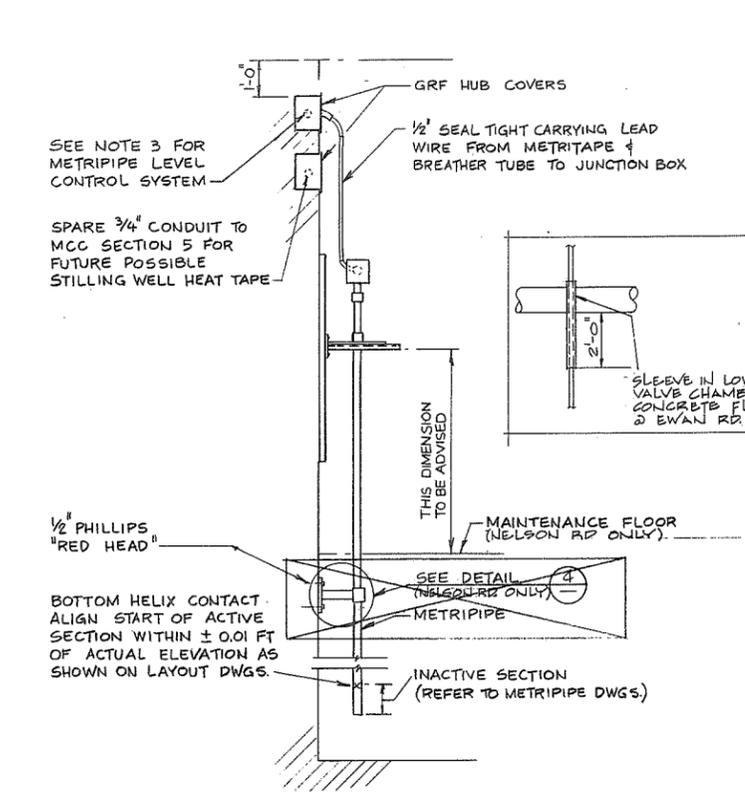
RECOMMENDED *P.R. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *John Fuller*
 DIRECTOR
 DATE *Nov 29/79*

BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1989 AGREEMENT
 PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 10 A
 EMBEDDED ELECTRICAL CONDUIT
 DRAINAGE DISCHARGE STRUCTURE 13

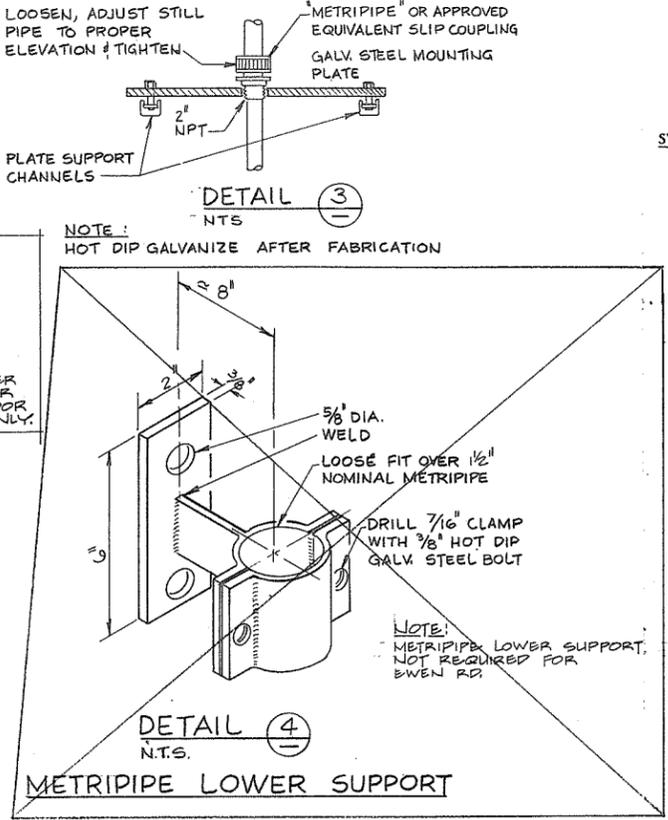
DESIGNED	HO	SURVEYED	
DRAWN	SEO	DATE	
CHECKED	W.N.B.	FILE NO.	0281550-C10-18
SCALE	AS SHOWN	DATE	Dec. 1979
DWG. NO.	4795-18-102	SHEET	OF SHEETS



DETAIL 1
N.T.S.



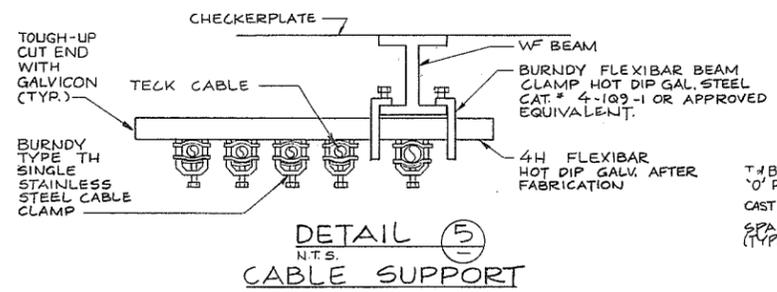
DETAIL 2
N.T.S.



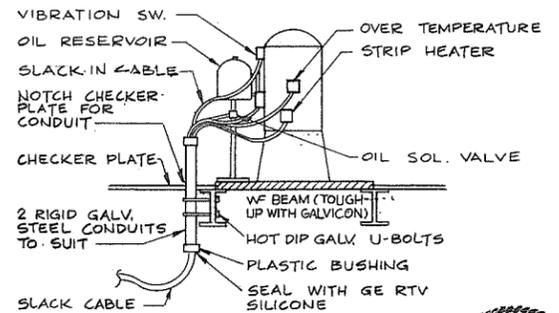
DETAIL 3
N.T.S.
METRIPIPE LOWER SUPPORT

METRIPIPE LEVEL CONTROL SYSTEM MOUNTING

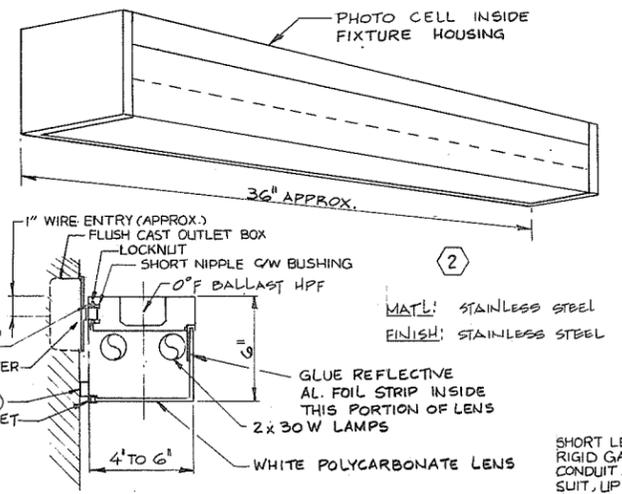
- NOTES:**
- FOR FURTHER EQUIPMENT SPECIFICATIONS REFER TO THE CONTRACT DOCUMENTS "DETAIL SPECIFICATIONS"
 - THE TOP CONNECTION BOX AND ALL FITTINGS SHALL BE WATERTIGHT SUCH THAT AN OCCASIONAL SHORTTIME SUBMERSION UNDER SEVERAL FEET OF WATER WILL NOT IMPAIR OPERATION. SEAL WITH GENERAL ELECTRIC "RTV" SILICONE COMPOUND AS REQUIRED.
 - AS METRIPIPE TOP BOX IS SEALED RUN 1/4" POLYFLO BREATHER TUBING BACK TO MCC WITH SIGNAL WIRES. COUPLE TO BREATHER (FILTERING & DESSICANT) CARTRIDGE IN METRIPIPE BOX TOP. ATTACH OTHER END (POINTING DOWNWARDS) IN MCC ADJACENT TO R/I CONVERTER, IDENTIFY AS "METRIPIPE BREATHER" WITH A LAMACOID NAMEPLATE.



DETAIL 5
N.T.S.
CABLE SUPPORT



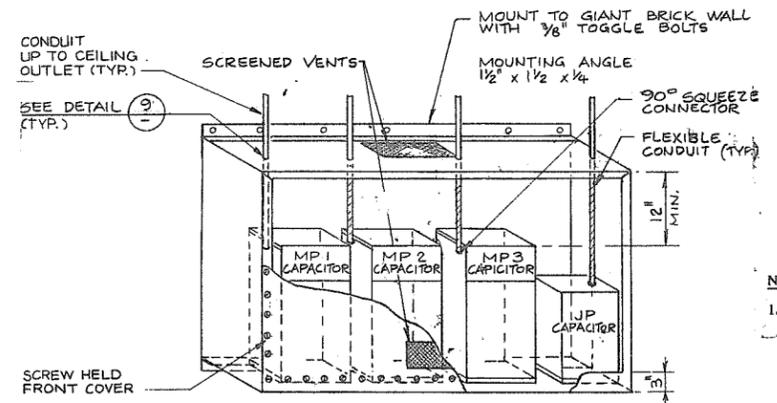
DETAIL 6
N.T.S.
CABLE SUPPORT



- NOTES:**
- FIXTURE IS TOTALLY ENCLOSED AND GASKETED FOR OUTDOOR USE.
 - ALL FIXTURE SCREWS AND FITTINGS TO BE OF STAINLESS STEEL.

DETAIL 7
N.T.S.

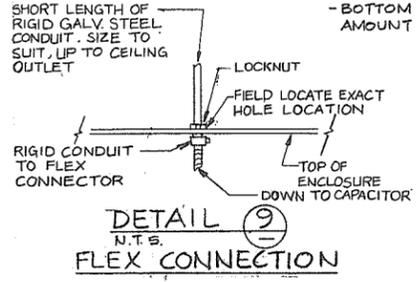
EXTERIOR FLUORESCENT LIGHT - "F'3"



- NOTES:**
- THE CONTRACTOR SHALL CO-ORDINATE CEILING CONDUIT LOCATIONS WITH ENCLOSURE MANUFACTURER
 - MOUNT CAPACITOR ENCLOSURE 6" BELOW CEILING
 - SHEET STEEL ENCLOSURE MIN. 14 GAUGE C/W WALL
 - MOUNTING BRACKETS AND INTERNAL SUPPORTS & BRACES AS REQUIRED, PRIME AND PAINT TWO COATS GINGER BROWN COLOUR, BAPCO #802C-4.
 - DIMENSIONS TO SUIT CAPACITORS.
 - BOTTOM 3" HIGH OIL TIGHT "PAN" TO CONTAIN TOTAL AMOUNT OF FLAMMABLE (SILICONE) LIQUID IN CAPACITORS.

DETAIL 8
N.T.S.
CAPACITOR ENCLOSURE

1) EWEN RD. SOUTH CAPACITOR ENCLOSURE AS SHOWN.



DETAIL 9
N.T.S.
FLEX CONNECTION

KEY TO MATERIAL

- NOTE:**
- This is not a complete material list, refer to Drawings and Specifications.
 - Quantities shall be as specified and/or shown on the Drawings.

SYMBOL	ITEM	DESCRIPTION
F1	1	Fluorescent lighting fixtures having 2-4' T12, 60 watt, cool white, low temperature lamps and ballast, for 120 volt operation. The fixture shall be sealed in accordance with CSA "Enclosed and Gasketed" 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. Approximately 36" long, 5" high and 4 to 6" deep totally enclosed and gasketed fabricate of 0.04" aluminum - colour Duracolor finish, white polycarbonate gasketed lens 2x30 W fluorescent, rapid start, cool white, 0 F HPF ballast with integral photocell (hidden within housing) Pacific Photon Products, Port Coupland, B. C. Series J - 10228 or approved equivalent. See Detail 7, 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" OKH Series, Cat. #OKH-344. Complete with 480 volt lamps (for approximately 1.8 kW output at 347 volts).
I1	4	Vapourtight enclosed and gasketed incandescent lighting fixture complete with guard, globe, socket and outlet box (1/2" hubs), Crouse-Hinds or approved equivalent complete with 150 watt lamp rated Class 1 Division 2.
FAN	5	Roof supply fan, Penn ventilator, Domet Model Q36T (available from Dennis D. Kiselback Ltd.) or approved equivalent air supply fan complete with special belt driven cast fan to delivery 3000 CFM at 0.75" W.C. Unit shall have a minimum 2 HP, T frame, 600 volt, 3 phase, 60 Hz, two speed (1800/900 RPM) consequent pole (single winding), sealed anti-friction bearing type drive motor. Unit shall be complete with a motor operated (120 volt) backdraft damper (to prevent upward air flow), bird screens and motor disconnect. Fan out housing shall be factory painted ASA 60 light grey or similar.
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.
C15	8	Power factor correction capacitor, 15 kVAC, 600 volts, 3 phase silicone fluid filled for the use on an ungrounded wye system. As manufactured by CGE, Westinghouse or approved equivalent. Unit shall be complete with indicating type HRC fuses, discharge resistors, terminal clamps, wall mounting enclosure as detailed. Enclosure shall be painted ginger brown to match the MCC.
C7.5	9	As per Item 8 above except 5 kVAC.
	10	Insulating mat for placement in front of the MCC. It shall be coloured grey. The mat shall be "Heron Rib Vinyl Ductboard" (E. B. Peerless Ltd.) or approved equivalent. The mat shall be: 1 at 2 ft. wide by 10 ft. long for Nelson Road South 1 at 2 ft. wide by 12 ft. long for Ewen Road South
GF	11	Duplex receptacle of the integral ground fault protected type, Pass & Seymour Cat. #1591 with Cat. #9306 stainless steel wallplate (Brettell Electric Ltd.) or approved equivalent.

- NOTES:**
- For General Notes refer to Dwg. No. 4795-17-57.

266 508



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

CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

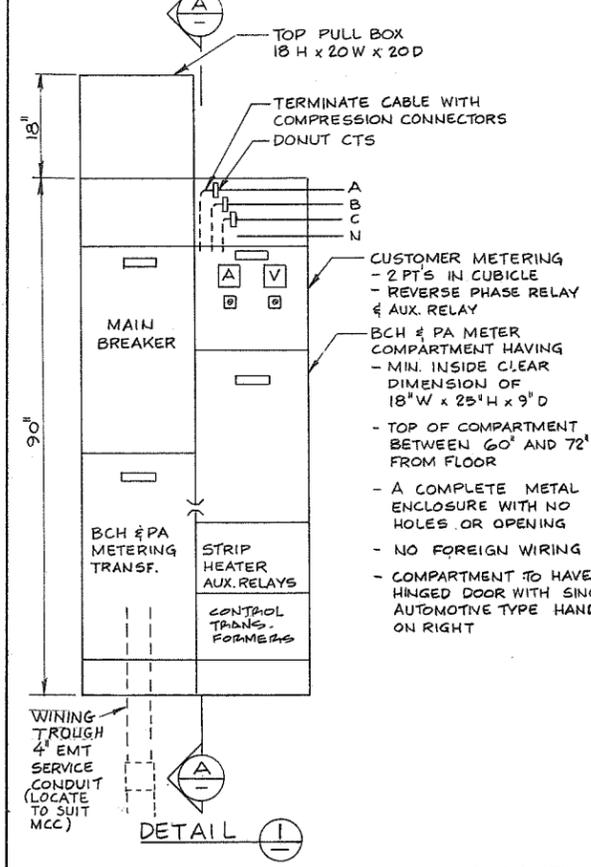
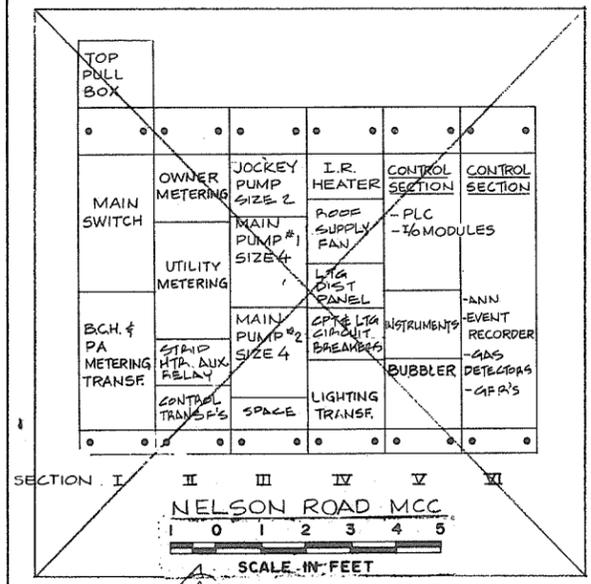
NO.	BY	REVISIONS	DATE
A		A10	

RECOMMENDED *B.N. Cameron*
PROJECT MANAGER
DATE *Nov. 29/79*
APPROVED *W. J. J. J.*
DIRECTOR
DATE *Nov 29/79*

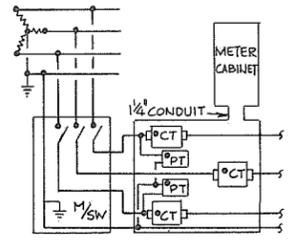
BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
ELECTRICAL INSTALLATION DETAILS

DESIGNED	H.O.	SURVEYED	
DRAWN	M.B.	DATE	
CHECKED	W.N.B.	FILE NO.	0281550-C10-18
SCALE	AS SHOWN	DATE	Dec. 1979
DWG. NO.	4795-18-103	SHEET	1 OF 2 SHEETS

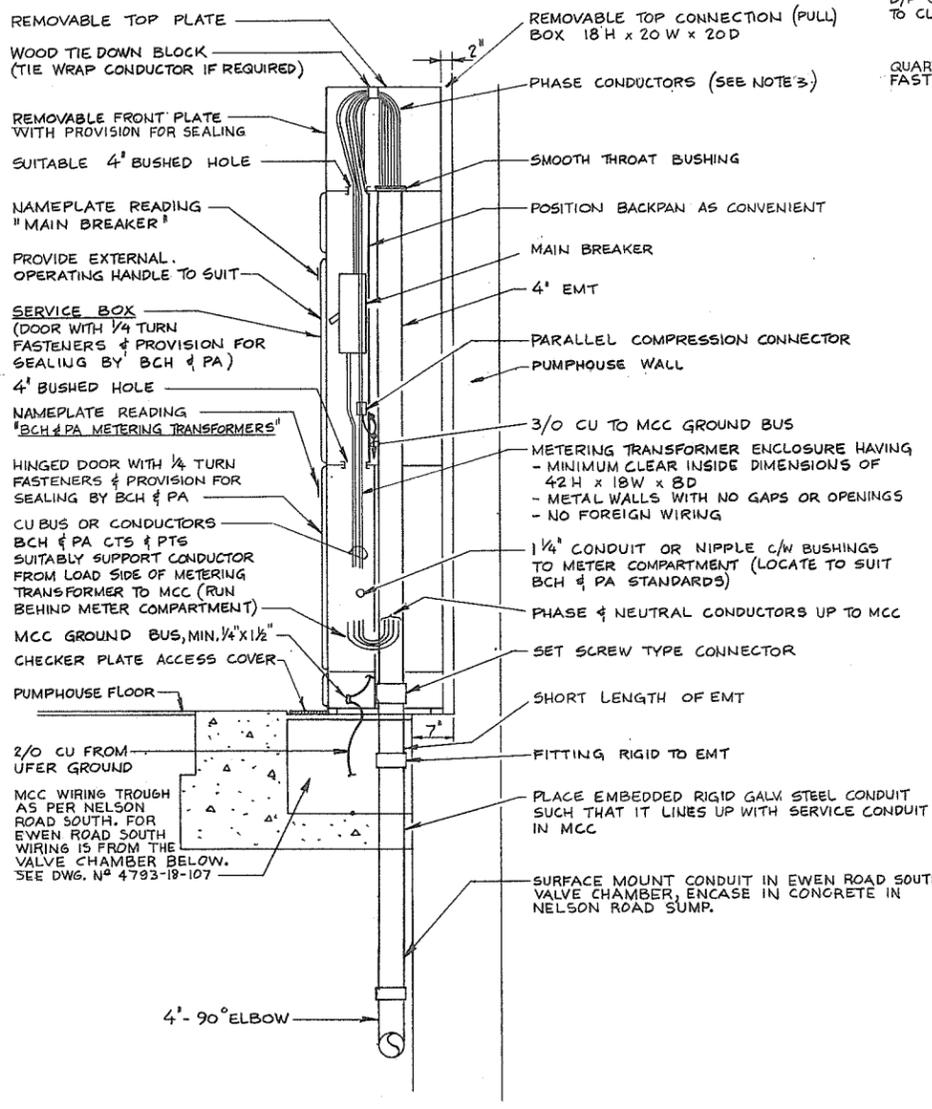
REFERENCE: 1292



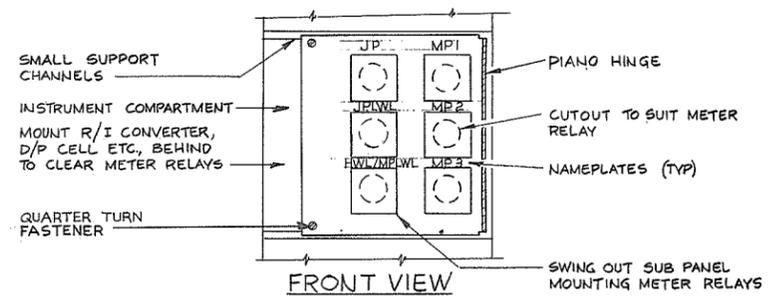
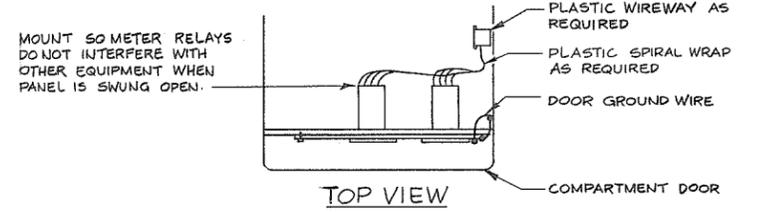
FRONT VIEW, NELSON & EWEN ROADS SOUTH MCC SERVICE ENTRANCE SECTION.



STANDARD B.C.H. & P.A. METERING CONNECTIONS 347/600 VOLT 3 ϕ , 4W WYE SERVICE

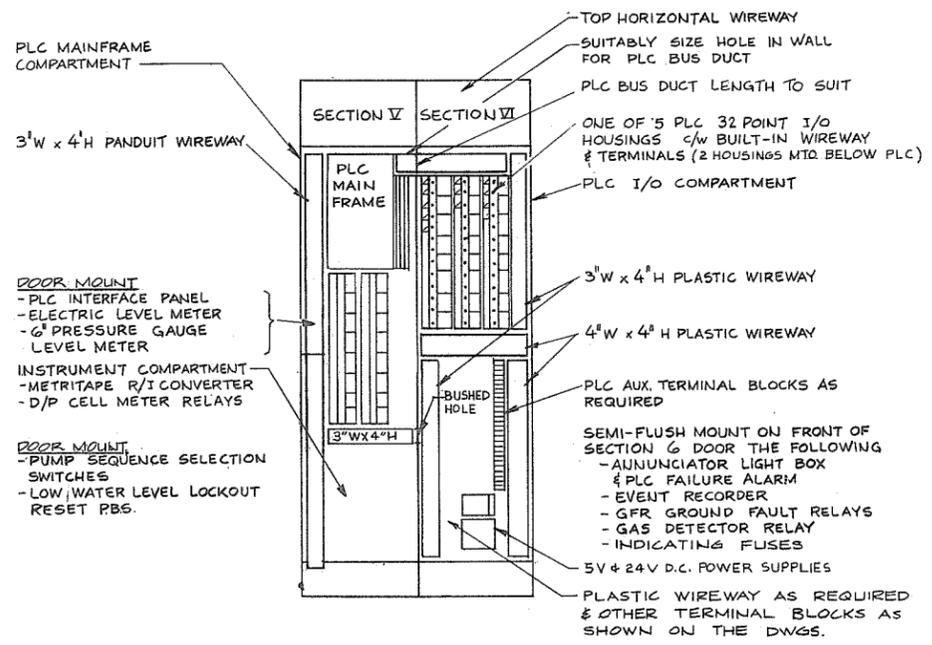


SECTION A



NOTES
 1) EWEN ROAD, SOUTH MCC SECTION V INSTRUMENT COMPARTMENT METER RELAY MOUNTING AS SHOWN ABOVE.
 2) METER RELAY MOUNTING FOR NELSON ROAD SOUTH SIMILAR EXCEPT INSTALL A TOTAL OF 3 METER RELAYS FOR JP, MPI & MP2. START/STOP ON RIGHT SIDE AND JPLWL, AND HWL/MPWL ON LEFT SIDE.

DETAIL 3
 N.T.S.



DETAIL 2
 MCC CONTROL SECTIONS

NOTES
 1) REFER TO ONE LINE DIAGRAMS & THE DETAILED SPECIFICATIONS FOR COMPLETE DESIGN DATA.
 2) THE METERING TRANSFORMER COMPARTMENT AND THE METER COMPARTMENT SHALL BE IN ACCORDANCE WITH B.C.H. & P.A. GUIDE FOR SECONDARY METERING SPECIFICATIONS FOR 3PHASE 4W 347/600VOLT WYE SERVICES.
 3) MCC SECTIONS I & II SHALL MEET ALL ELECTRICAL CODE REQUIREMENTS FOR SERVICE ENTRANCES.



TOP PULL BOX	REMOVABLE FOR SHIPPING																		
MAIN SWITCH	OWNER METERING	MAIN PUMP #1 SIZE 4	JOCKEY PUMP SIZE 2	LIGHTING DIST PANEL	CONTROL SECTION	CONTROL SECTION													
	UTILITY METERING	MAIN PUMP #2 SIZE 4	ROOF SUPPLY FAN	STRIP HEATER AUX. RELAYS															
	B.C.H. & P.A. METERING TRANSF.	MAIN PUMP #3 SIZE 4	I.R. HEATER CONTACTOR																
		CONTROL TRANSF.'S	SPACE	CONTROL SECTION															
			STRIP HEATER																
			CONTROL TRANSFORMERS																

EWEN ROAD MCC
 SCALE IN FEET



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 *R.A. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *John Fuller*
 for DIRECTOR
 DATE *Nov 29/79*

BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
 PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 ELECTRICAL INSTALLATION DETAILS

DESIGNED H.O.
 DRAWN M.B.
 CHECKED WNB
 SCALE AS SHOWN
 DWG. NO. 4795-18-104

SURVEYED
 DATE
 FILE NO. 0281550-C10-18
 DATE Dec 1979
 SHEET 2 OF 2 SHEETS

266 589

For details of flashing see detailed specifications

4" φ Wade W 3220 cast iron roof drain w flashing clamp, gravel stop & large self locking cast aluminum dome strainer or approved equal.

For details of built-up roofing see detailed specifications

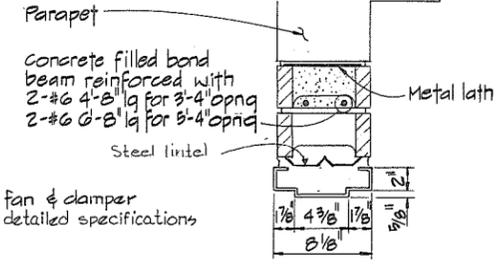
#15 roofing felts mopped on roof & curb

For details of skydome & aluminum curb see detailed specification

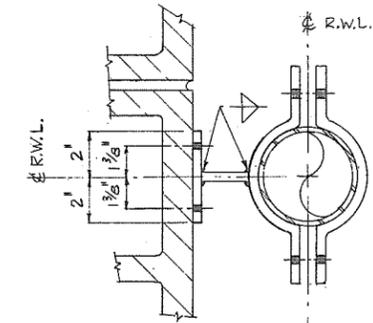
#15 Roofing felts mopped on roof & extended up the sides of the curb

Curb to be placed on caulking bead

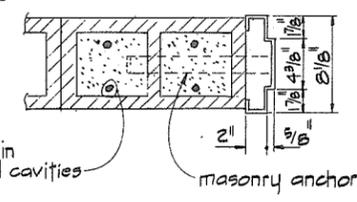
For fan & damper see detailed specifications



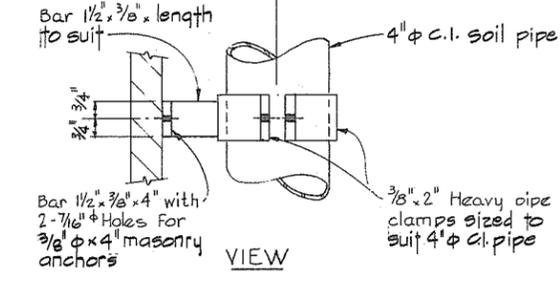
HEAD



PLAN

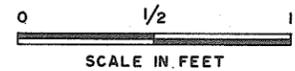


JAMB



DETAIL ①

2 Required for each R.W.L.



SCALE IN FEET

For details of parapet & roof see 4795-18-113

Clayburn giant brick wall

For details of built-up roofing see detailed specifications

R.W.L. to be 4" φ c.i. with MJ couplings as manufactured by Antes Imperial Ltd or approved equal.

For pipe support see detail ①

3 3/4"

3'-0" N.T.S.

1'-0"

Pumphouse floor

MJ coupling

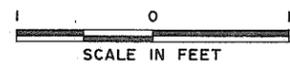
1'-0"

Position 45° elbow in field to ensure that run-off does not fall on support steel

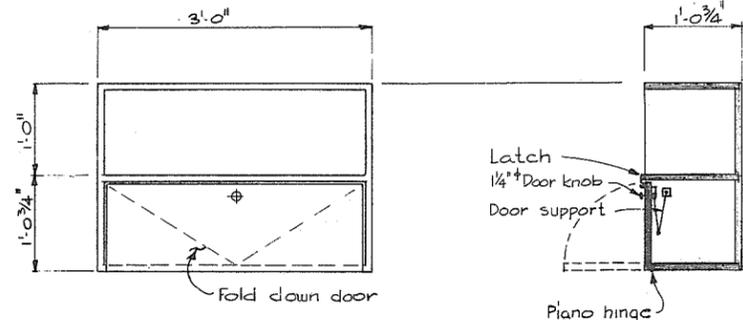
NOTE

For location of roof drains see 4795-18-113

TYPICAL DRAIN DETAIL



SCALE IN FEET



ELEVATION

SECTION

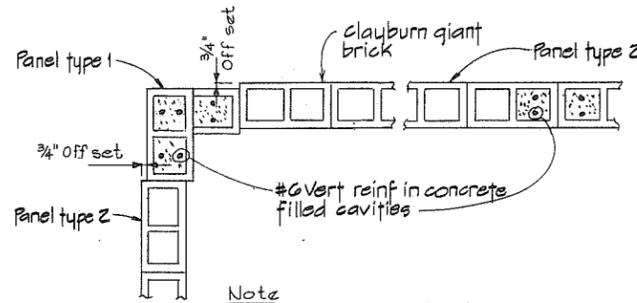
SHELVING DETAIL

Shelving shall be made from 3/4" fir plywood. All exposed surfaces shall be covered with laminated Arborite (color N# 822). Shelving shall be field located.



SCALE IN FEET

TYPICAL SKYDOME DETAIL



TYPICAL WALL REINFORCEMENT



SCALE IN FEET

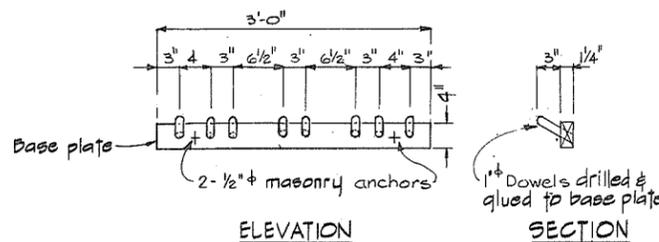
NOTE For location of reinforcing see 4795-18-56&75

TYPICAL ROOF FAN DETAIL



SCALE IN FEET

TYPICAL JAMB & HEAD DETAIL

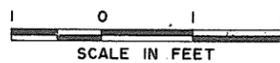


ELEVATION

SECTION

Dowels & base plate cut from hardwood

TOOL & COAT RACK DETAILS



SCALE IN FEET



SHELVING DETAIL



CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

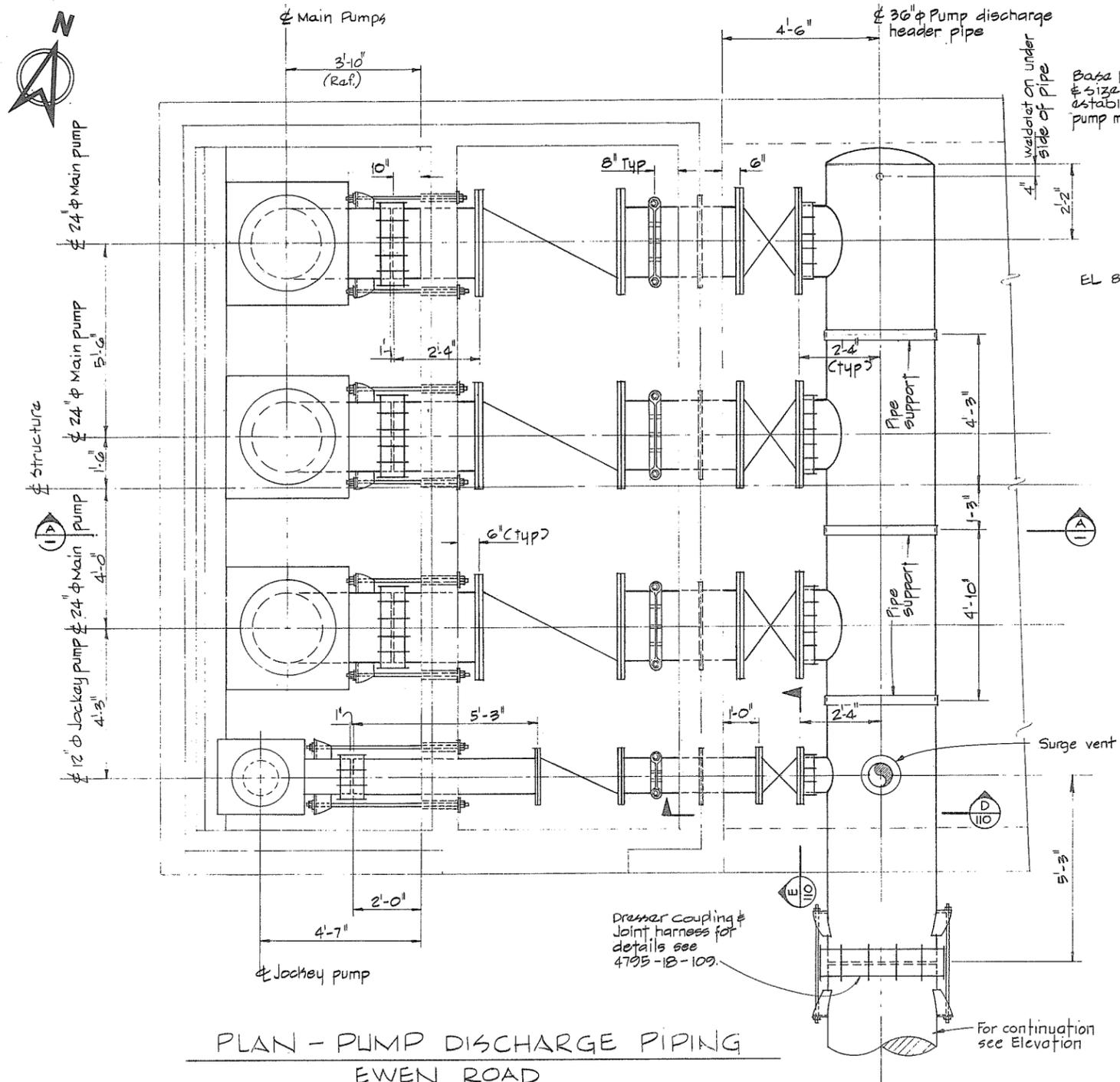
NO. BY REVISIONS DATE

RECOMMENDED *R. H. Conner*
PROJECT MANAGER
DATE *Nov. 29/79*
APPROVED *J. M. Fuller*
DIRECTOR
DATE *Nov. 29/79*

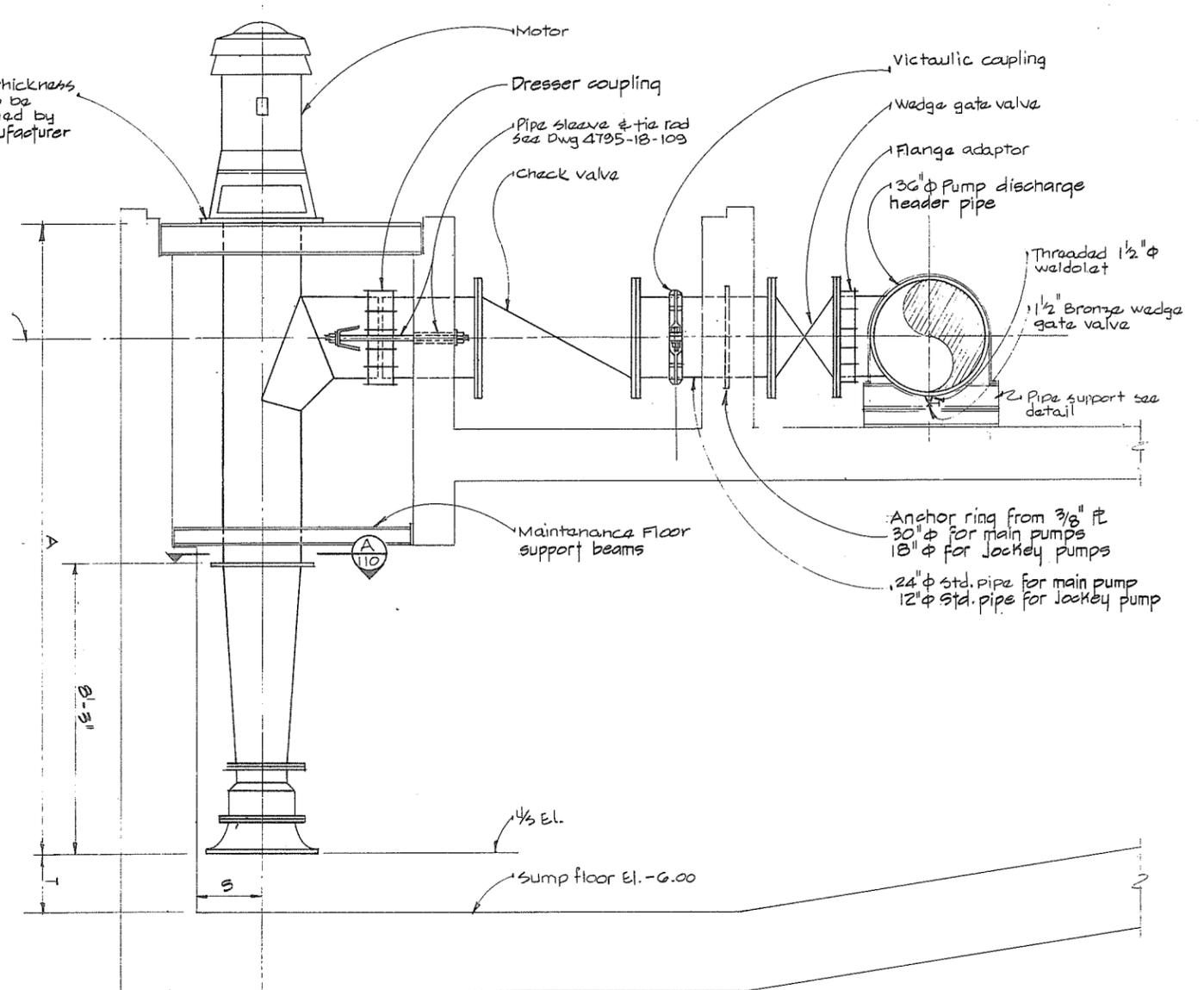
BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
MISCELLANEOUS ARCHITECTURAL DETAILS

DESIGNED
DRAWN *t.y.*
CHECKED *AR*
SCALE AS SHOWN
DWG. NO. 4795-18-105
SURVEYED
DATE
FILE NO. 0281550-C10-18
DATE Dec. 1979
SHEET OF SHEETS

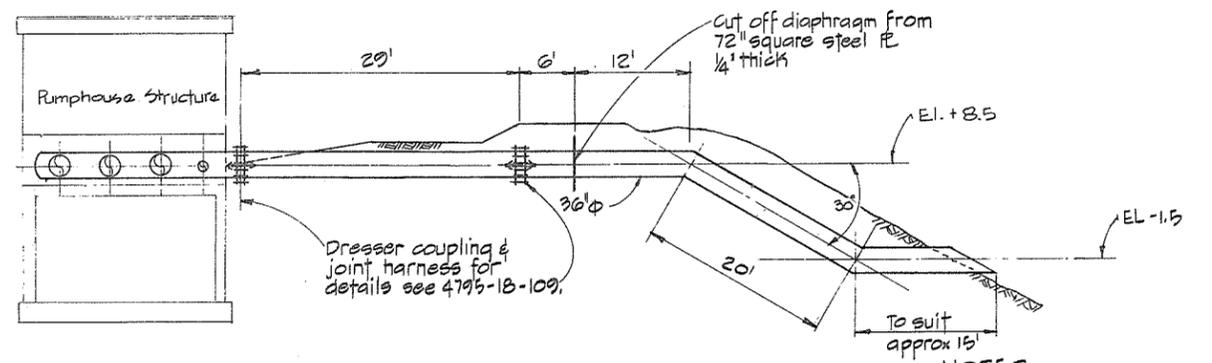
266 590



PLAN - PUMP DISCHARGE PIPING
EWEN ROAD
N.T.S.



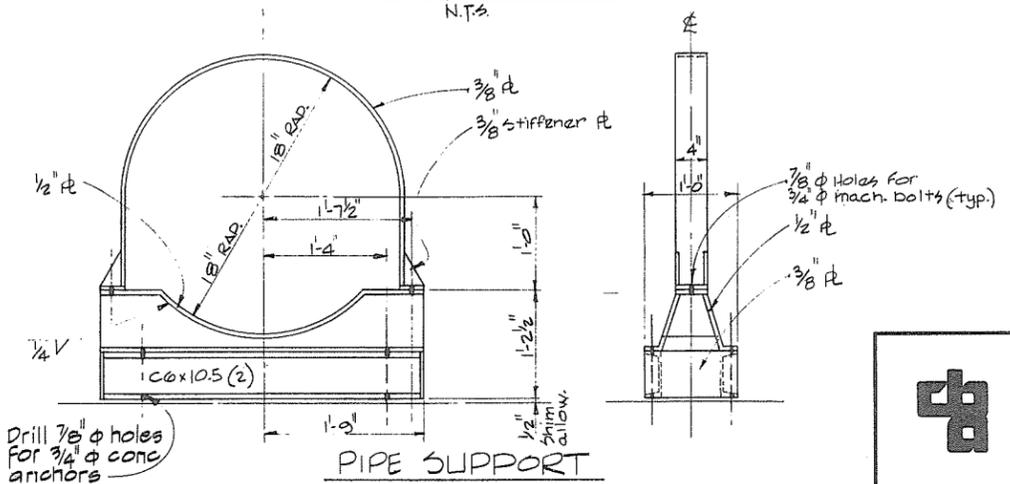
SECTION (A)
N.T.S.



ELEVATION - PUMP DISCHARGE
N.T.S.

NOTES
For General Notes see 4795-18-109.

266 592

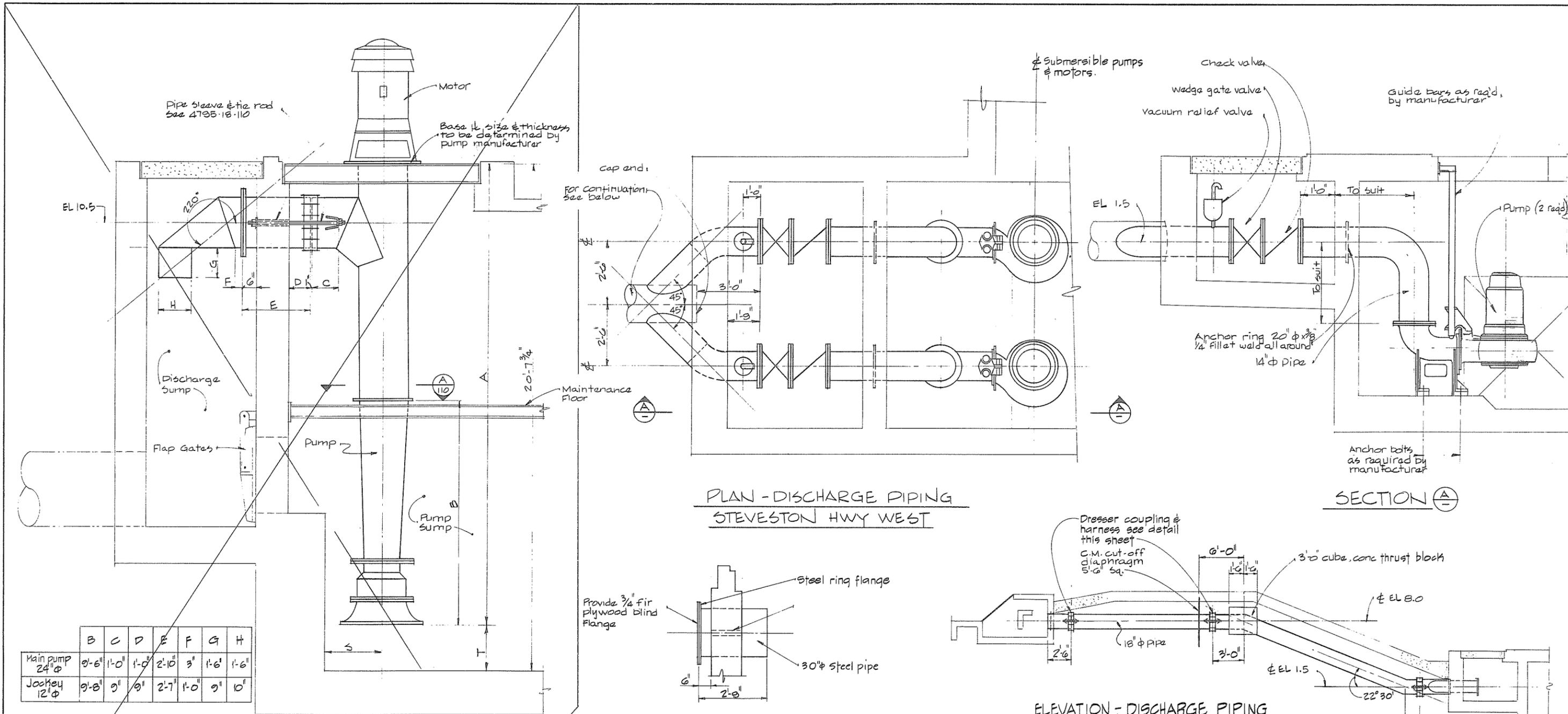


PIPE SUPPORT



CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO. BY A A17	RECOMMENDED <i>R. N. Cameron</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT	DESIGNED	SURVEYED
	DATE <i>Nov. 29/79</i>	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A	DRAWN <i>D.D.</i>	DATE
	APPROVED <i>J.M. Sullivan</i> DIRECTOR	DISCHARGE PIPING DETAILS	CHECKED <i>GA</i>	FILE NO. <i>0281550-C10-18</i>
	DATE <i>Nov 29/79</i>		SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
			DWG. NO. <i>4795-18-108</i>	SHEET <i>1</i> OF <i>2</i> SHEETS

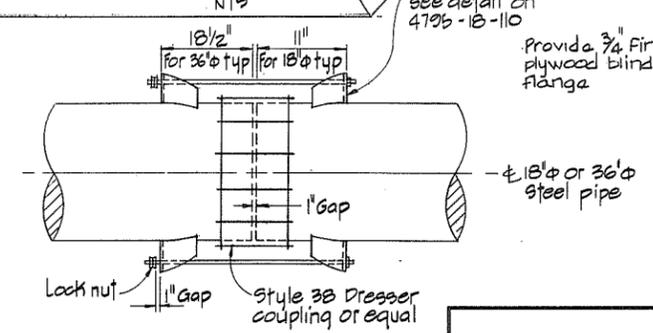


	B	C	D	E	F	G	H
Main pump 24" φ	0'-6"	1'-0"	1'-0"	2'-10"	3'	1'-6"	1'-6"
Jockey 12" φ	0'-8"	0'	0'	2'-7"	1'-0"	0'	0'

NOTES

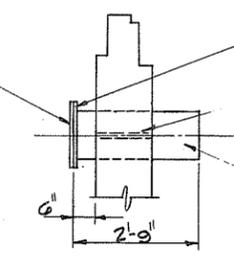
- Roof hatches are designed to allow withdrawal of pump columns and elbows with approx 1" minimum clearance all around.
- Dimensions 's' & 't' & 'A' to be supplied by the pump manufacturer. 's' will determine location of each pump center line. 't' will determine required pump column length.
- All clearances will be verified on receipt of drainage pump external dimensions for structural details of Drainage Discharge structures see appropriate contract drawings.

DISCHARGE PIPING NELSON ROAD
NTS

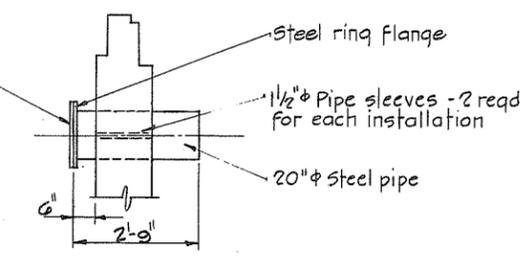


DRESSER COUPLING & HARNESS
NTS

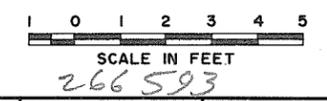
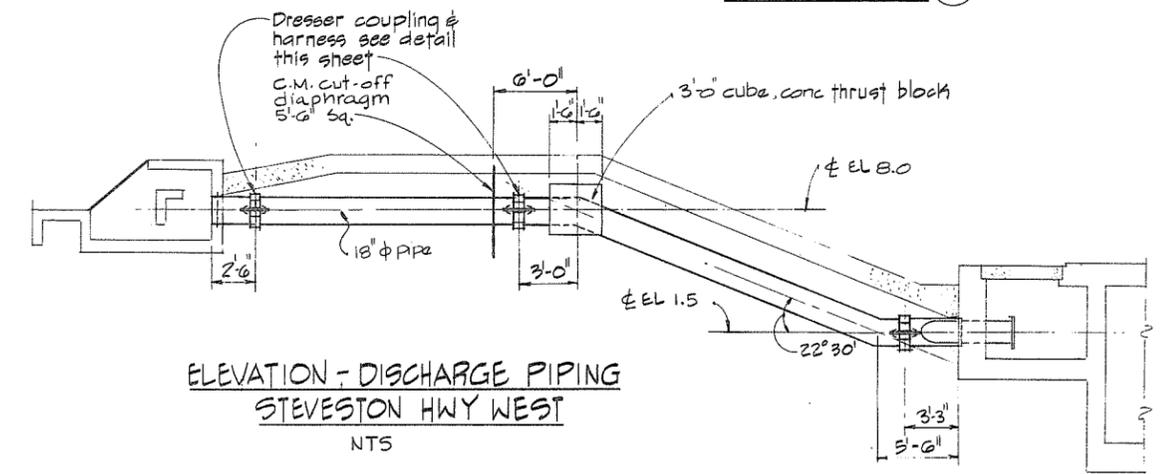
SECTION V-7



SECTION W-7



ELEVATION - DISCHARGE PIPING STEVESTON HWY WEST
NTS

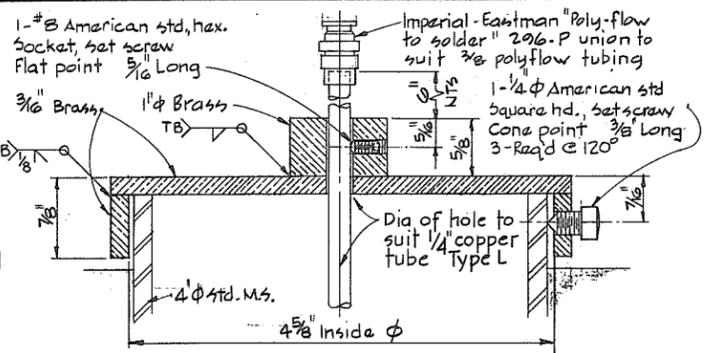
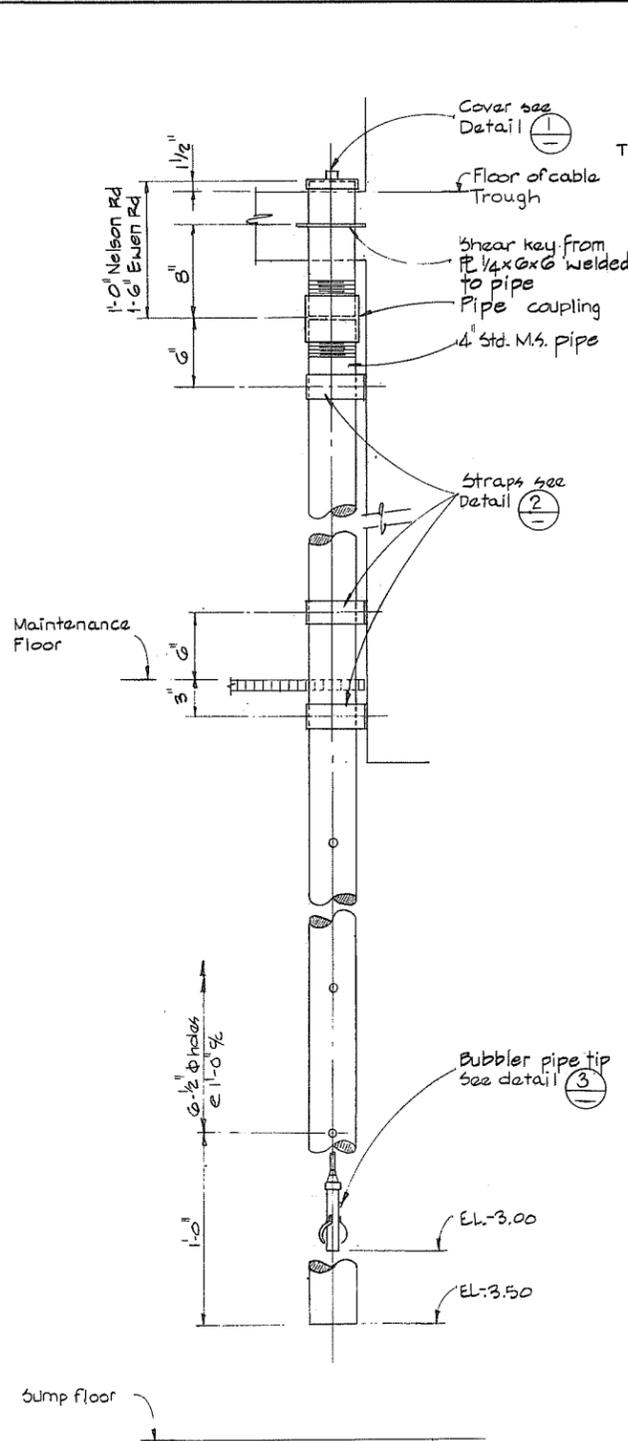


CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

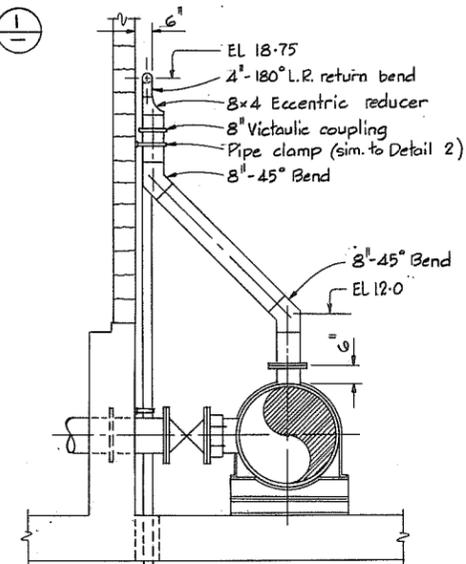
RECOMMENDED *R.D. Cameron*
PROJECT MANAGER
DATE *Nov 29/79*
APPROVED *John Fuller*
DIRECTOR
DATE *Nov 29/79*

BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
DISCHARGE PIPING DETAILS

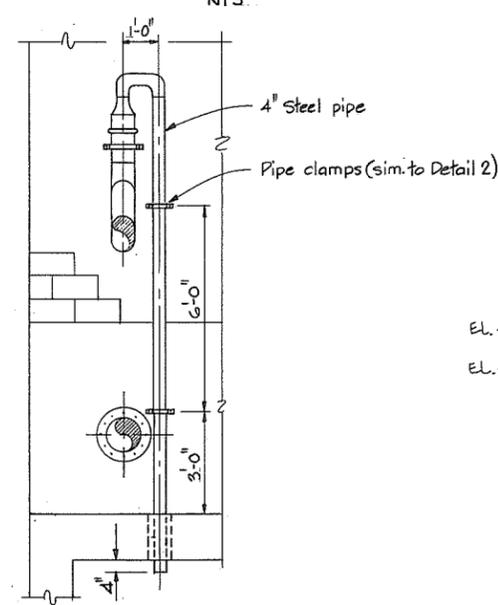
DESIGNED	SURVEYED
DRAWN <i>DD</i>	DATE
CHECKED <i>GA</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-109</i>	SHEET <i>2</i> OF <i>2</i> SHEETS



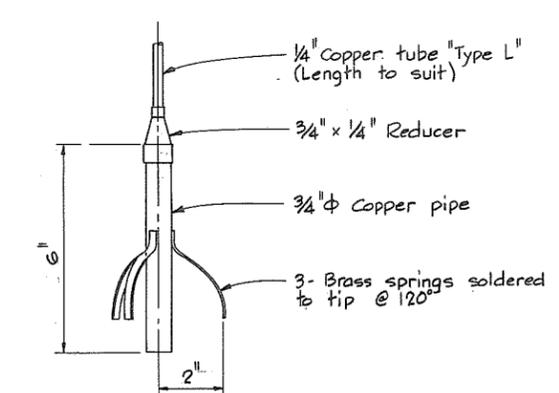
DETAIL 1
FULL SIZE



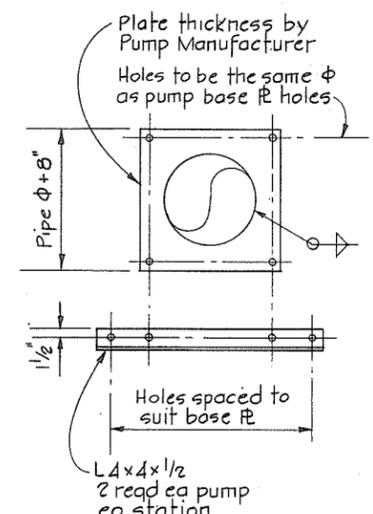
SECTION D
NTS



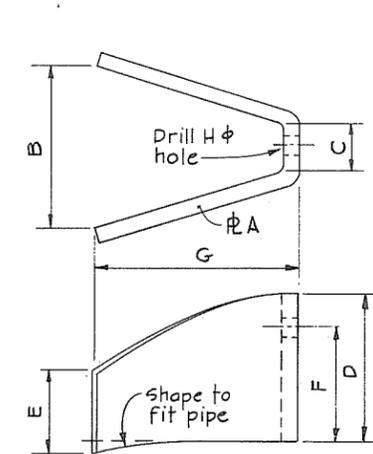
SECTION E
NTS



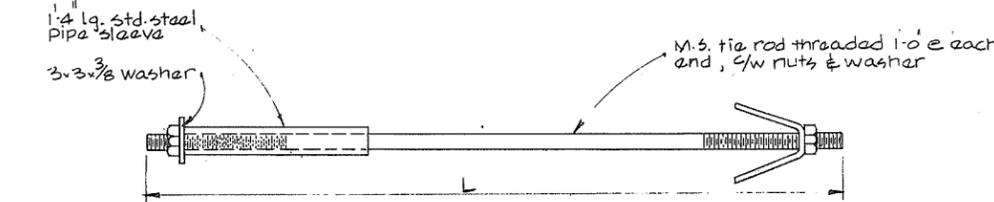
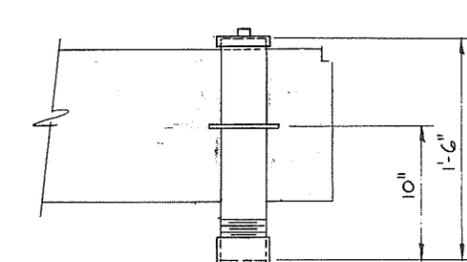
DETAIL 3
NTS



SECTION A
NTS

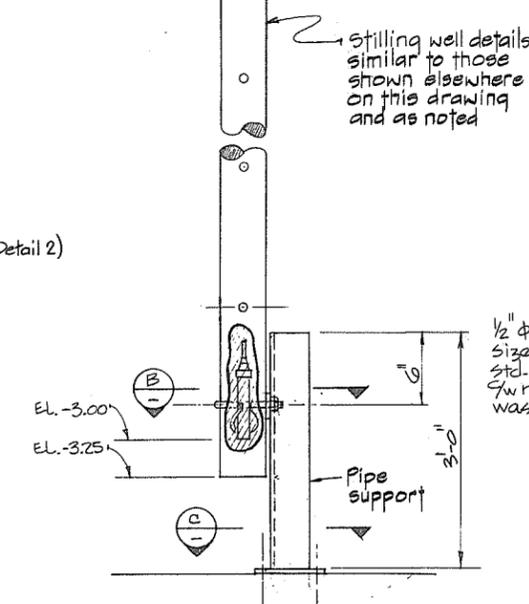


LUG DETAIL
NTS

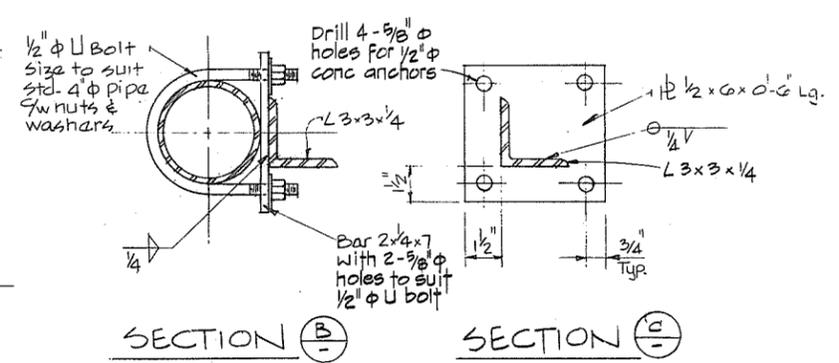


PIPE SLEEVE & TIE ROD
NTS

	REQD	LUGS								TIE ROD				
		A	B	C	D	E	F	G	H	REQD	ROD Φ	L	sleeve Φ	
EWEN ROAD DISCHARGE PIPING	36	4	1/2	5/8	3/4	5/8	2 1/2	3 7/8	9/2	1 3/4	4	1 5/8	3'-9"	Not reqd
STEVESTON HWY PIPE	18	6	1/2	4 7/16	1 1/16	4 1/4	2	3 1/8	4 1/2	1"	6	7/8	2'-2"	Not reqd
EWEN ROAD PUMP STATION	MAIN 24	6	1/2	6 5/8	2 3/8	4 3/4	2 1/2	3 5/8	6 1/8	1 1/4	6	1 1/8	3'-9 3/4"	2"
	JOCKEY 12	2	3/8	2 7/8	1 1/2	3 7/8	2	3	3	3/4	2	5/8	4'-5/8"	1"



STILLING WELL
1-Req'd @ Steveston Hwy West
NTS

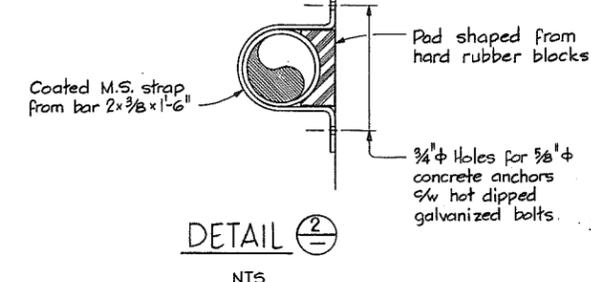


SECTION B SECTION C

SCALE IN FEET
0 1/2 1

NOTES
• For General Notes see 4795-18-108
266 594

STILLING WELL
1-Req'd @ Ewen Road
NTS

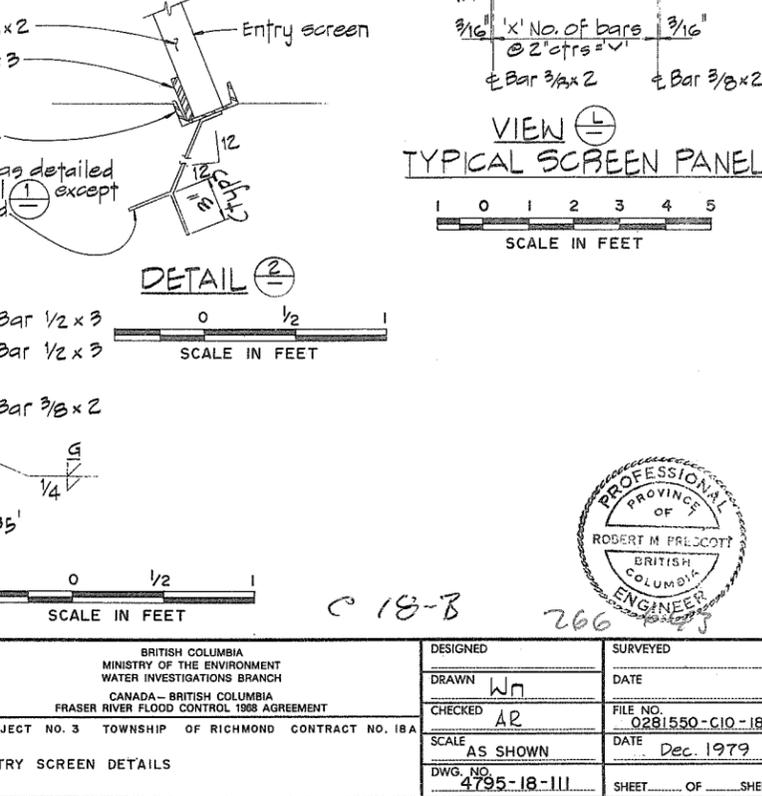
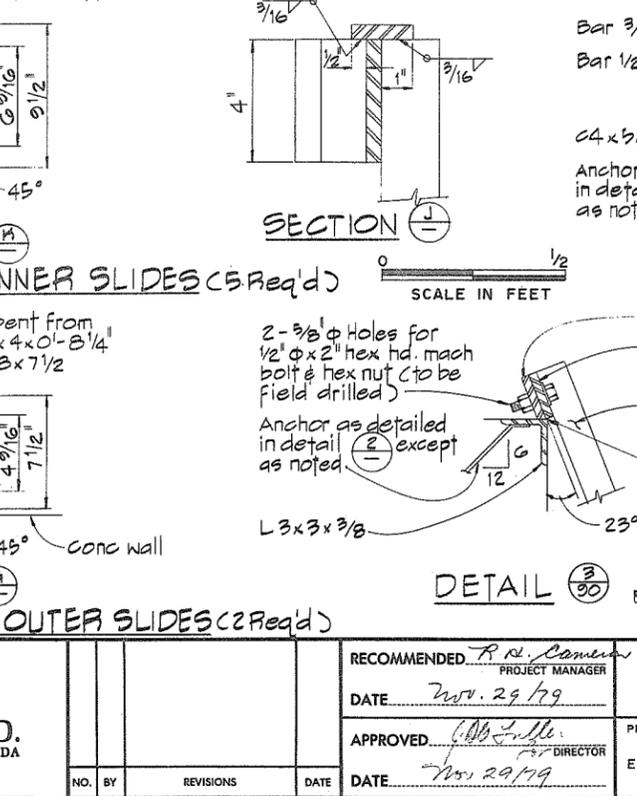
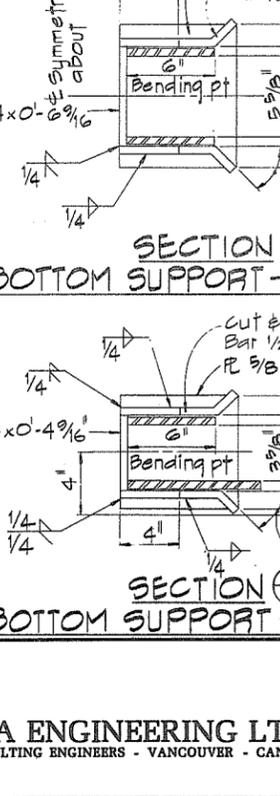
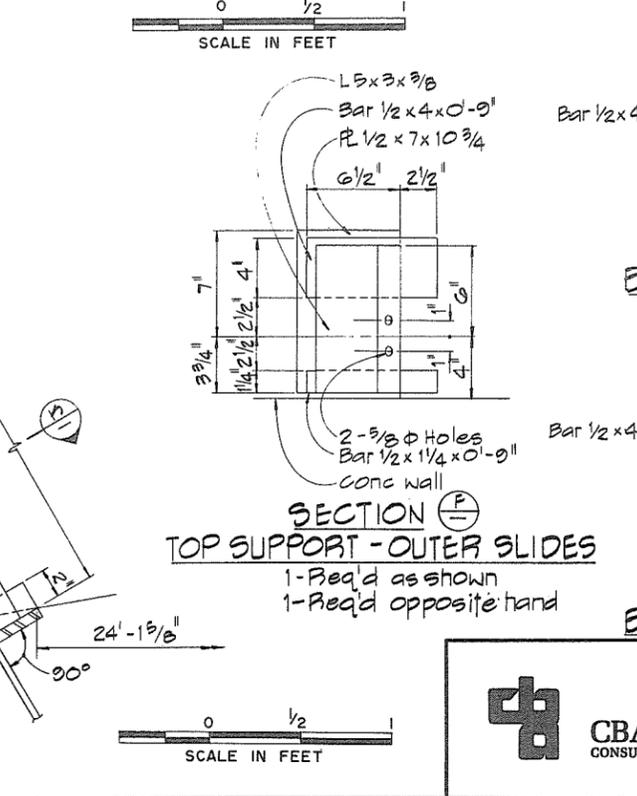
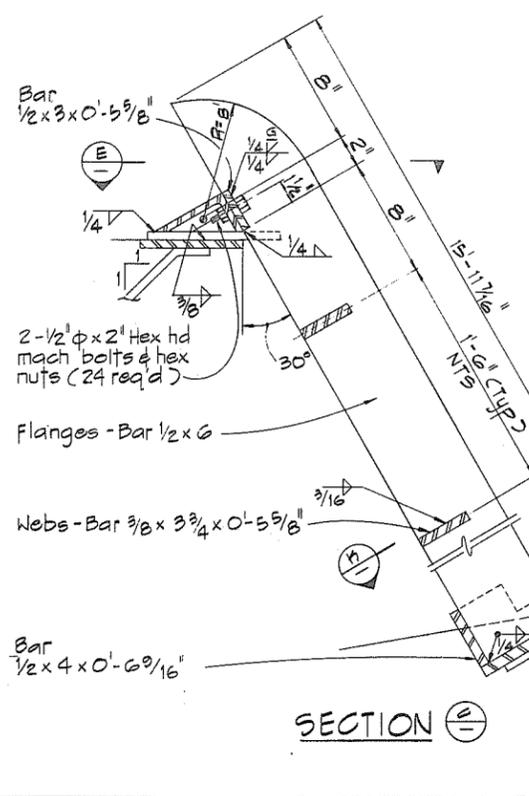
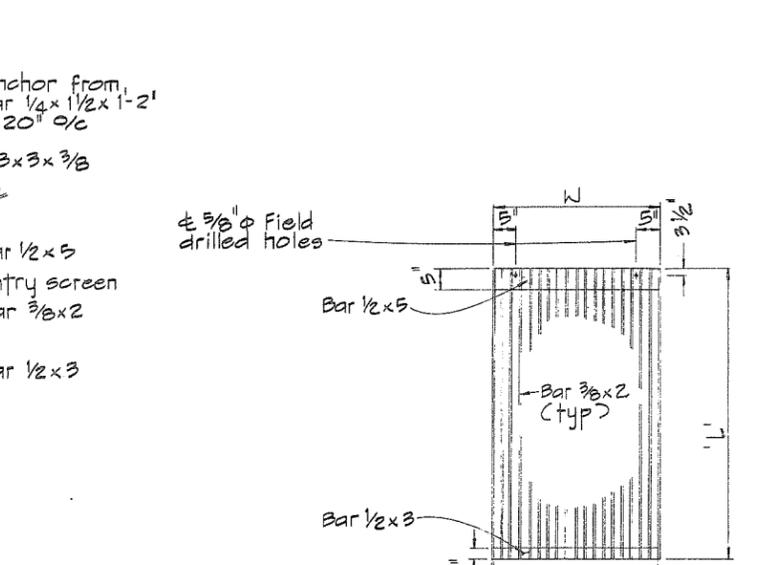
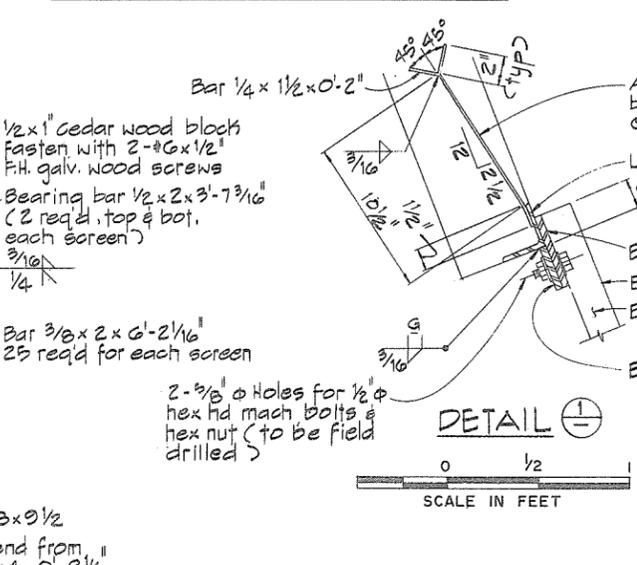
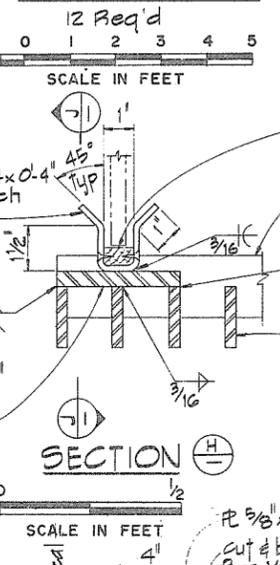
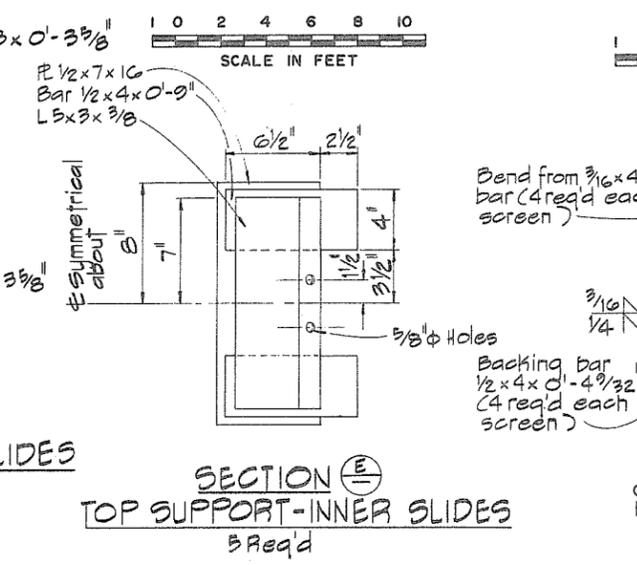
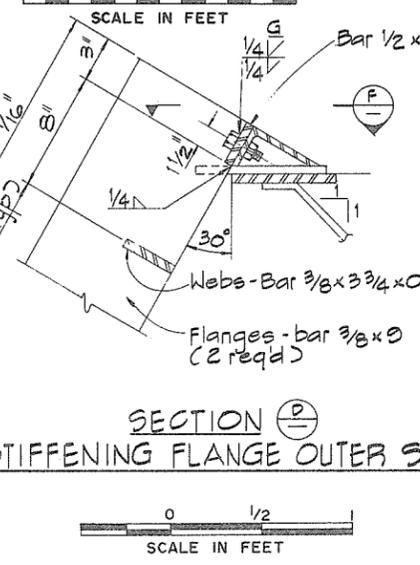
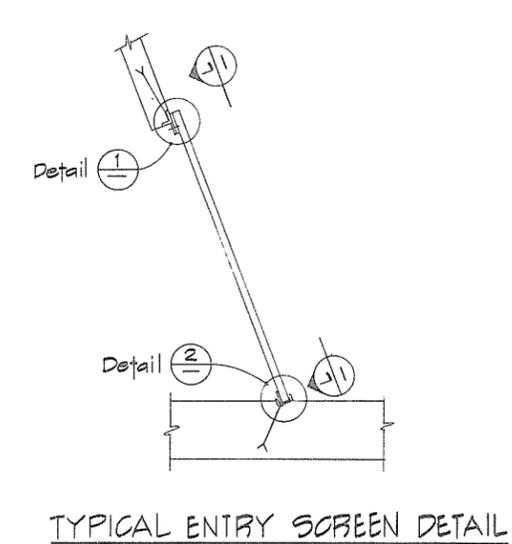
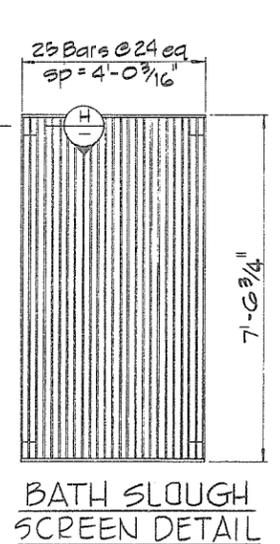
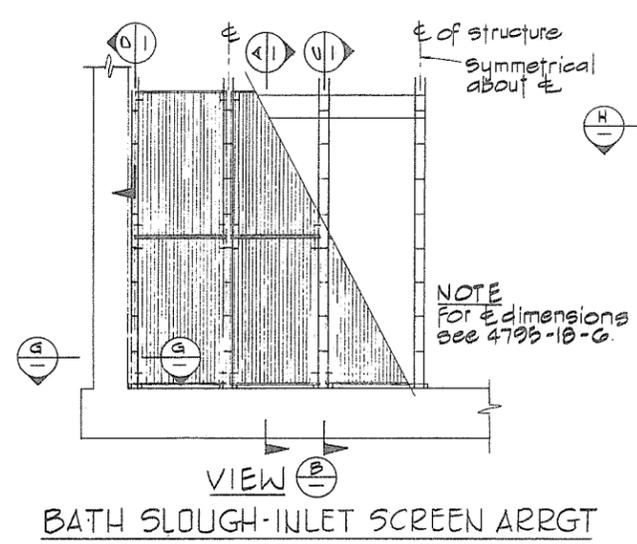
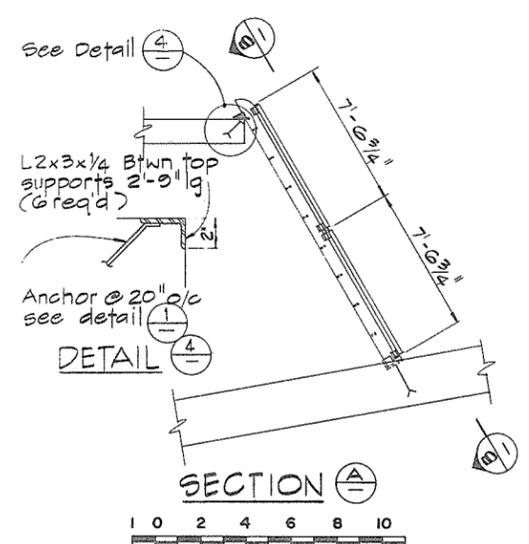


DETAIL 2
NTS



CBA ENGINEERING LTD. CONSULTING ENGINEERS - VANCOUVER - CANADA	RECOMMENDED <i>R.W. Cameron</i> PROJECT MANAGER DATE <i>Nov. 29 1979</i>	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT	DESIGNED <i>I.T.</i> DRAWN <i>D.J.</i> CHECKED <i>G.A.</i> SCALE AS SHOWN DWG. NO. <i>4795-18-110</i>	SURVEYED DATE FILE NO. <i>020155 - C10-18</i> DATE <i>Dec. 1979</i>
	APPROVED <i>J.H. Sullivan</i> DIRECTOR DATE <i>Nov 29/79</i>	PROJECT NO.3 TOWNSHIP OF RICHMOND CONTRACT NO.18A MISCELLANEOUS MECHANICAL DETAILS	SHEET OF SHEETS	

ENTRY SCREEN PANELS					
DISCHARGE STA	'X'	'Y'	'W'	'L'	No. REQ'D
No. 6 Road North	18	2'-10"	3'-10 ³ / ₈ "	5'-9 ³ / ₈ "	3
Ewen Road South	28	4'-6"	4'-6 ³ / ₈ "	8'-7 ³ / ₈ "	2
Steveston Highway West	18	2'-10"	2'-9 ³ / ₈ "	6'-5"	2
	29	4'-8"	4'-8 ³ / ₈ "	7'-0 ¹ / ₂ "	2



CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE

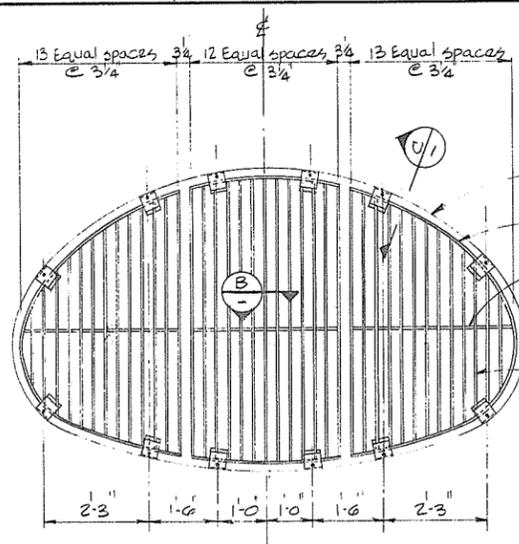
RECOMMENDED: *R. R. Conner*
PROJECT MANAGER
DATE: *Nov. 29/79*
APPROVED: *G. D. Fuller*
DIRECTOR
DATE: *Nov. 29/79*

BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
ENTRY SCREEN DETAILS

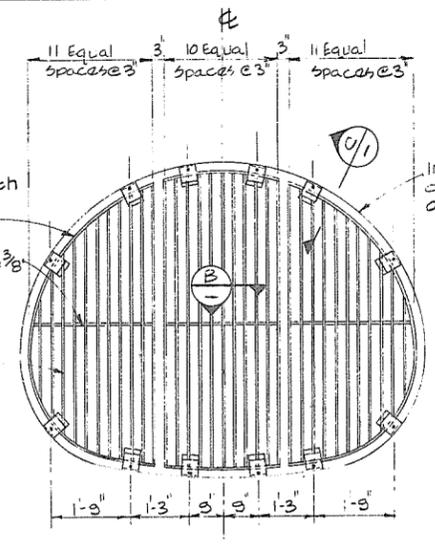
DESIGNED	SURVEYED
DRAWN: <i>WJ</i>	DATE: <i> </i>
CHECKED: <i>AR</i>	FILE NO.: <i>0281550-C10-18</i>
SCALE: <i>AS SHOWN</i>	DATE: <i>Dec. 1979</i>
DWG. NO.: <i>4795-18-111</i>	SHEET: <i> </i> OF <i> </i> SHEETS



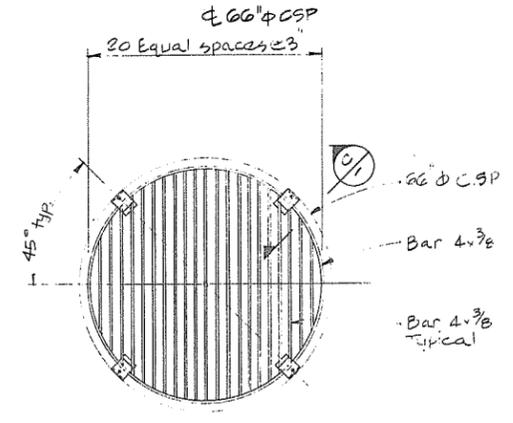
C 18-B 266



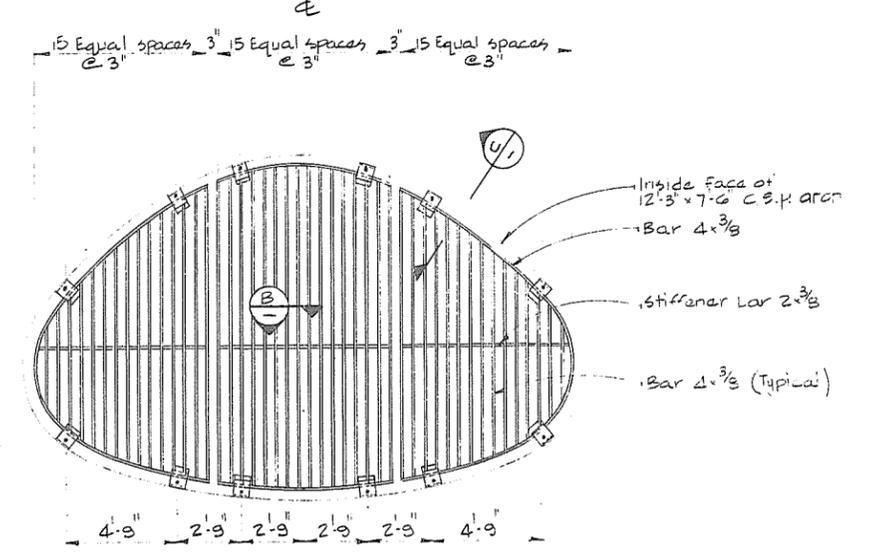
OUTLET SCREEN (3 PANELS)
 1- Req'd @ N^o 7 Rd. North
 SCALE IN FEET



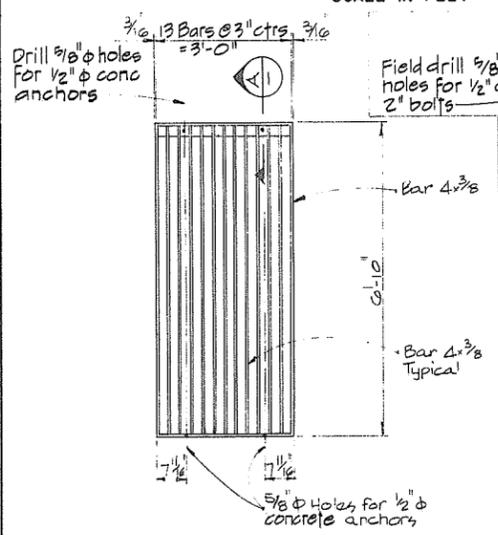
OUTLET SCREEN (3 PANELS)
 1- Req'd @ Queen Rd. North
 SCALE IN FEET



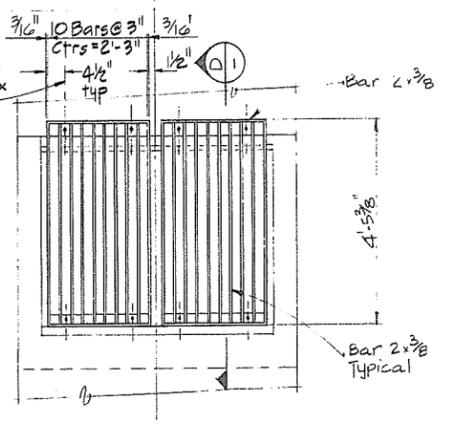
OUTLET SCREEN
 1- Req'd @ N^o 6 Rd. North
 SCALE IN FEET



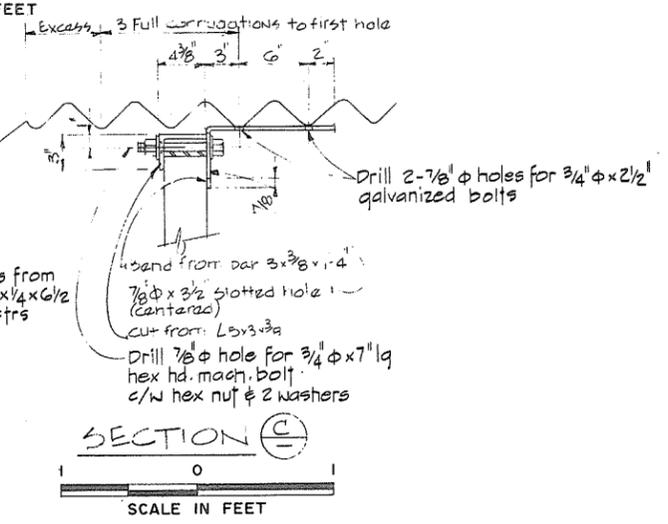
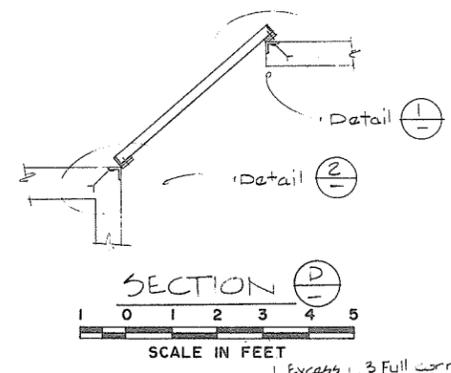
OUTLET SCREEN (3 PANELS)
 1- Req'd @ Bath Slough
 SCALE IN FEET



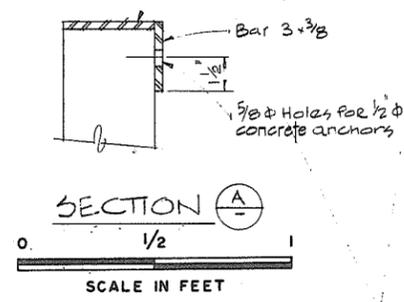
OUTLET SCREEN
 4- Req'd @ N^o 6 Rd. South
 SCALE IN FEET



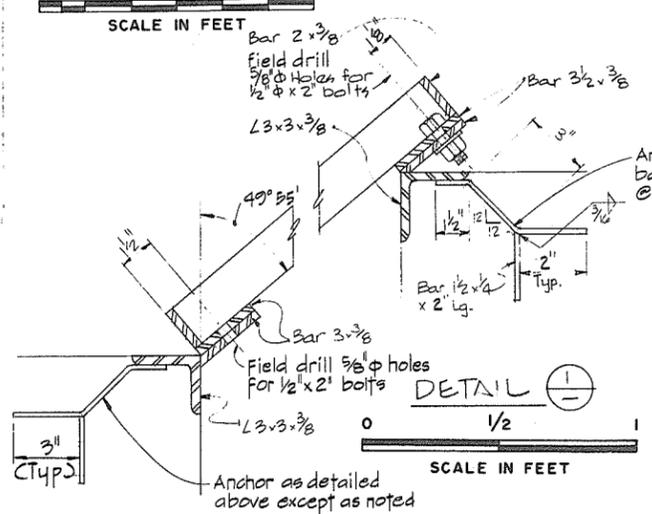
OUTLET SCREEN
 1- Req'd @ Steveston Hwy. West
 SCALE IN FEET



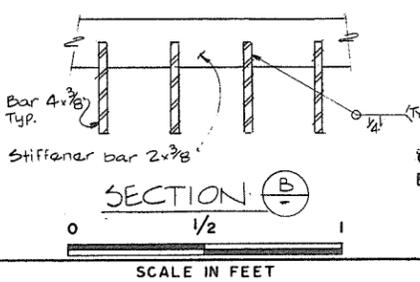
SECTION C
 SCALE IN FEET



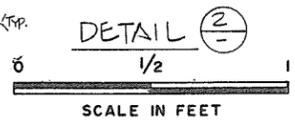
SECTION A
 SCALE IN FEET



DETAIL 1
 SCALE IN FEET



SECTION B
 SCALE IN FEET



DETAIL 2
 SCALE IN FEET

CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
		A/B	

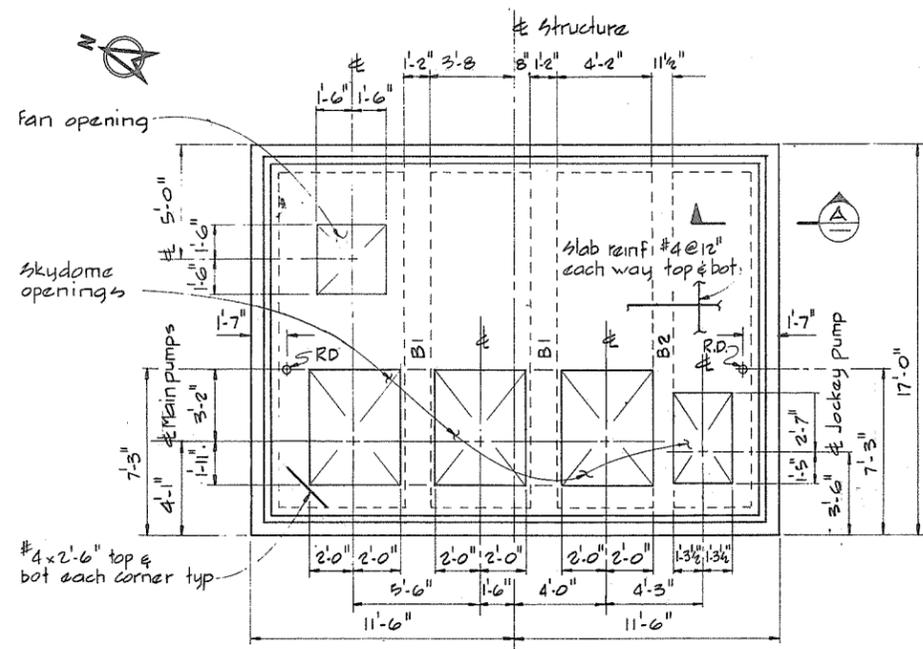
RECOMMENDED *R. de Lencastre*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *[Signature]*
 DIRECTOR
 DATE *[Signature]*

BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT
 PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 DISCHARGE SCREEN DETAILS

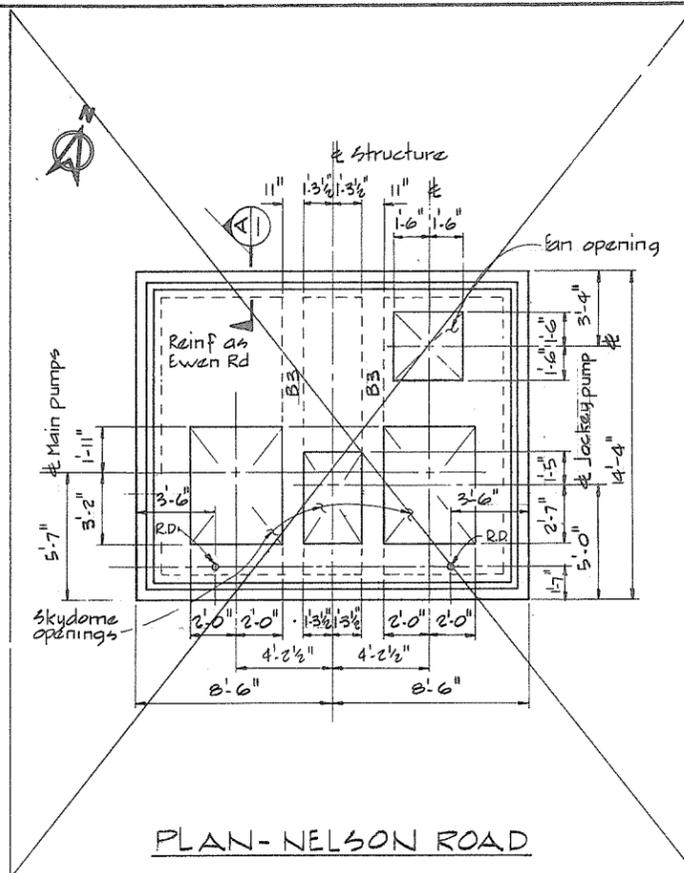
DESIGNED	SURVEYED
DRAWN	DATE
CHECKED <i>Al</i>	FILE NO. 0281550-C10-18
SCALE AS SHOWN	DATE Dec. 1979
DWG. NO. 4795-18-112	SHEET OF SHEETS

266 595





PLAN-EWEN ROAD

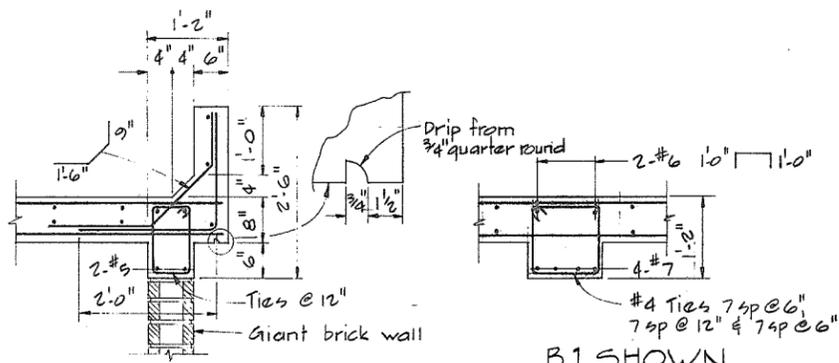


PLAN-NELSON ROAD



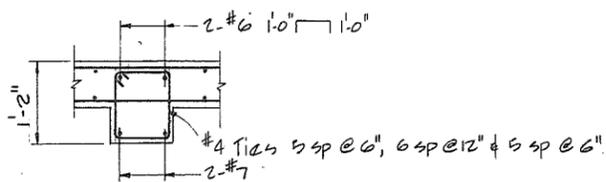
NOTE

Skydome openings shown are approximate only & will be confirmed after approval of Pump Manufacturer's drawings



SECTION A
TYPICAL PARAPET & REINF

B1 SHOWN
B2 SIMILAR



B3

NOTE
All bars #4 unless noted otherwise



NOTES

- R.D. denotes - Roof Drain, for details see dwg. 4795-18-105.
- For details of skydome & roof fan installation see 4795-18-105.

266 596

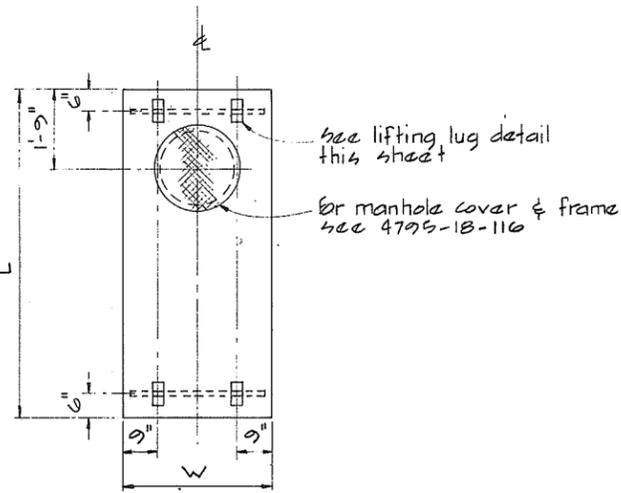


CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

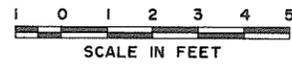
RECOMMENDED	<i>B. B. Camion</i> PROJECT MANAGER
DATE	Nov 29/79
APPROVED	<i>W. Fuller</i> for DIRECTOR
DATE	Nov 29/79

BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT
PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
ROOF CONCRETE OUTLINE AND REINFORCING

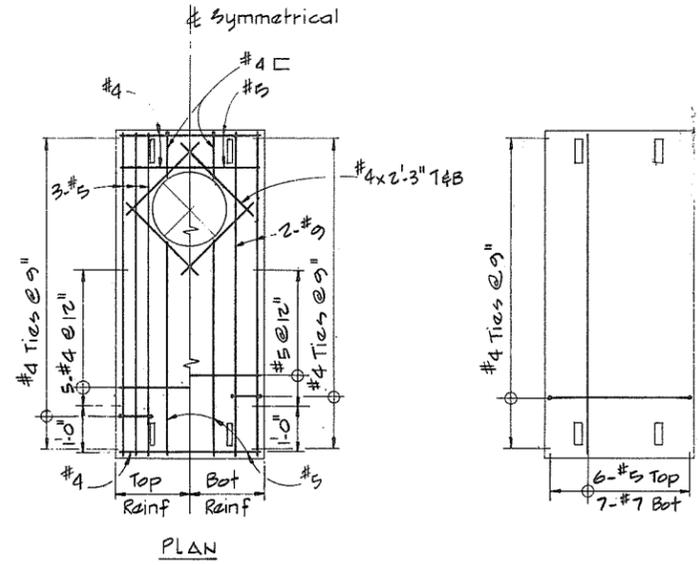
DESIGNED	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED <i>GCW/TP</i>	FILE NO. 028155-C10-18
SCALE AS SHOWN	DATE Dec. 1979
DWG. NO. 4795-18-113	SHEET OF SHEETS



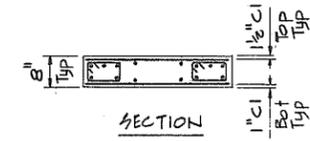
PRECAST CONCRETE COVERS



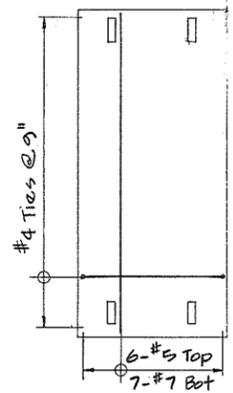
DRAINAGE DISCHARGE STRUCTURE	WITH MANHOLE			WITHOUT MANHOLE		
	L	W	REQD	L	W	REQD
Bath Slough	7'-2"	3'-3"	3	7'-2"	3'-3"	4
Steveston Hwy W	4'-5"	3'-3"	1	4'-5"	1'-7 1/2"	4



PLAN

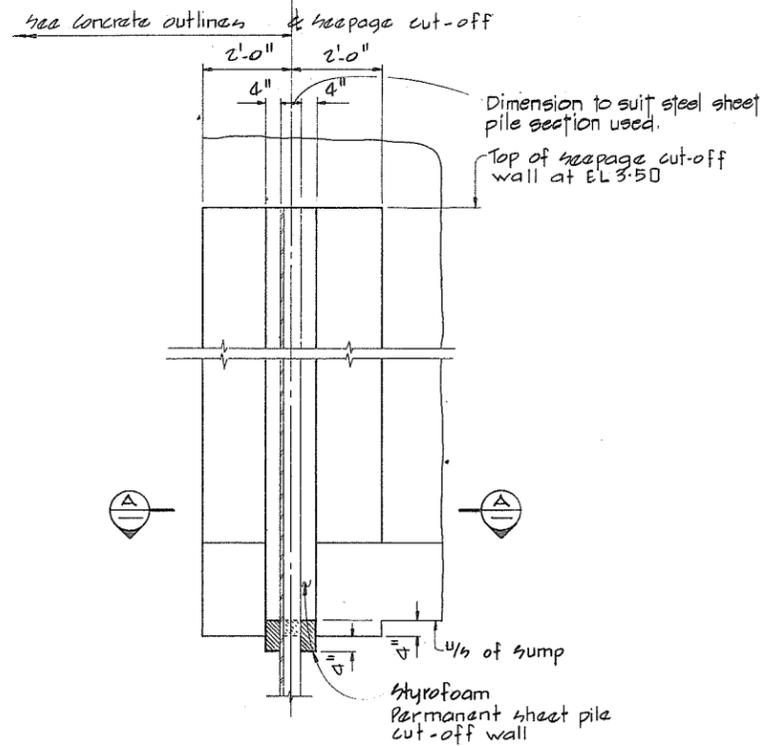


SECTION

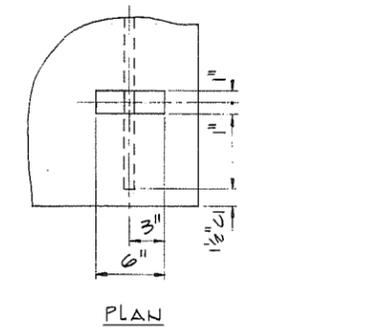


SECTION

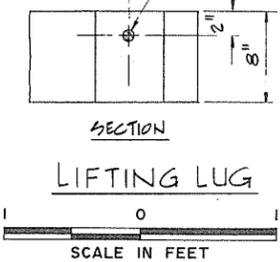
PRECAST CONCRETE COVER REINFORCEMENT - BATH SLOUGH



VIEW (X) SHOWN
VIEW (Y) SIMILAR
BUT OPPOSITE HAND
NTS

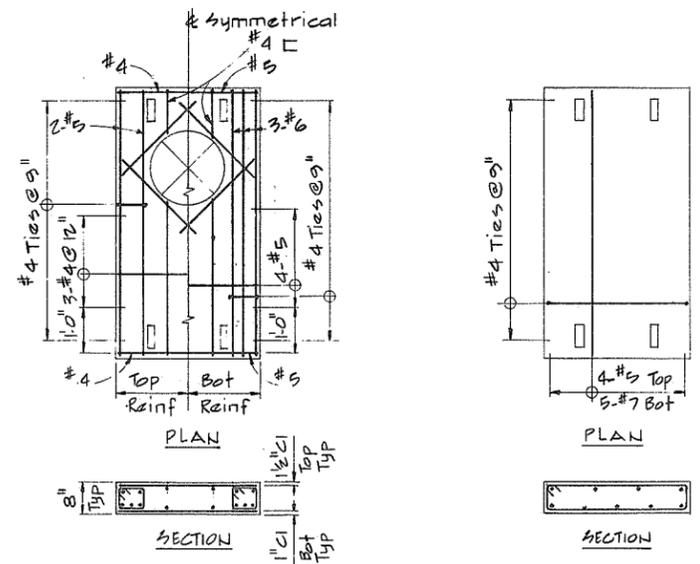


#6 length to suit

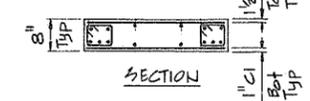


LIFTING LUG

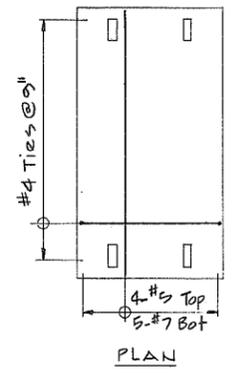
SCALE IN FEET



PLAN



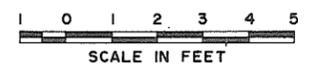
SECTION



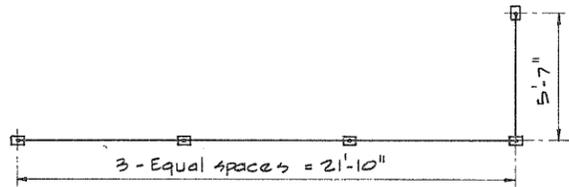
PLAN

SECTION

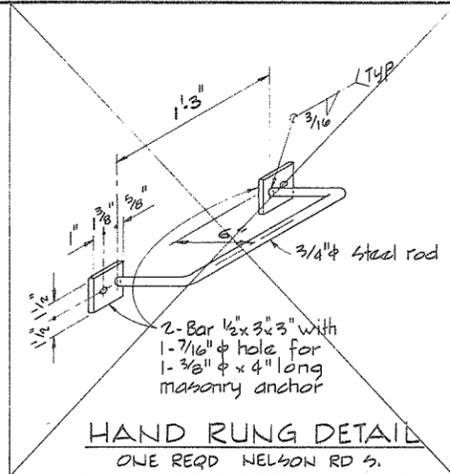
PRECAST CONCRETE COVER REINFORCEMENT - STEVESTON HWY



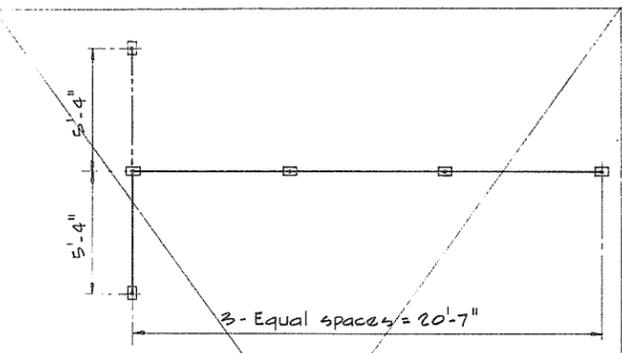
NO. BY REVISIONS DATE	RECOMMENDED <i>R. d. Cameron</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT	DESIGNED	SURVEYED
	DATE <i>Nov. 29/79</i>	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A	DRAWN <i>AR</i>	DATE
	APPROVED <i>J. M. Sullivan</i> DIRECTOR	MISCELLANEOUS CONCRETE DETAILS	CHECKED <i>GCW/TP</i>	FILE NO. <i>028155 - C10-18</i>
	DATE <i>Nov 29/79</i>		SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
			DWG. NO. <i>4795-18-114</i>	SHEET <i>266597</i> OF <i>1</i> SHEETS



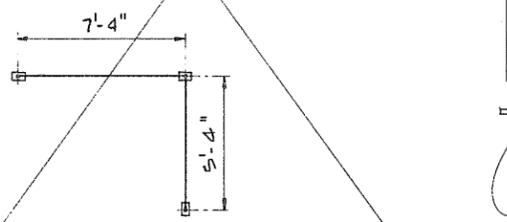
PLAN-PIPE HANDRAIL
ONE REQD BATH SLOUGH



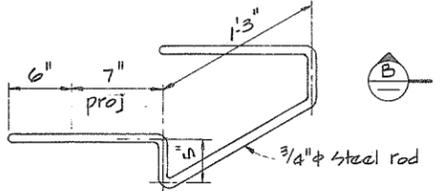
HAND RUNG DETAIL
ONE REQD NELSON RD S.



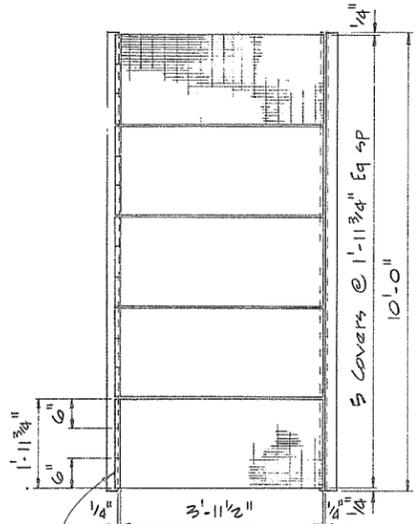
PLAN-PIPE HANDRAILS
ONE REQD QUEEN RD N.
ONE REQD QUEEN RD N.



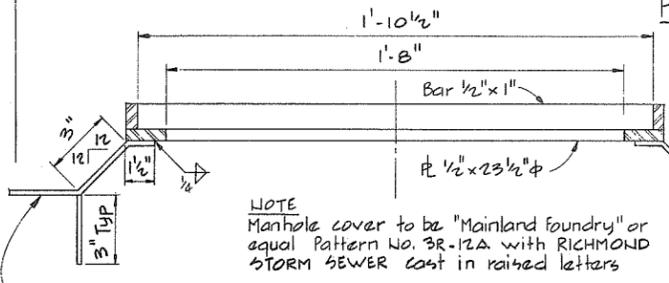
PLAN-PIPE HANDRAIL
ONE REQD NELSON RD S



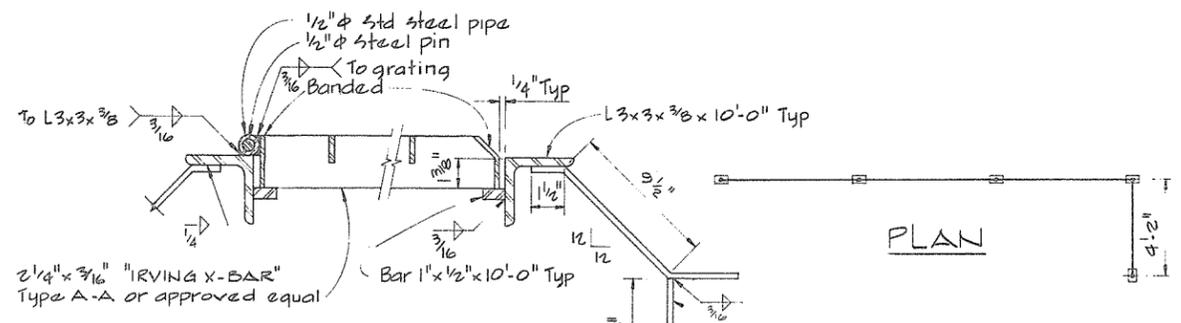
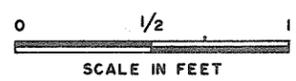
RUNG DETAIL
60 REQD



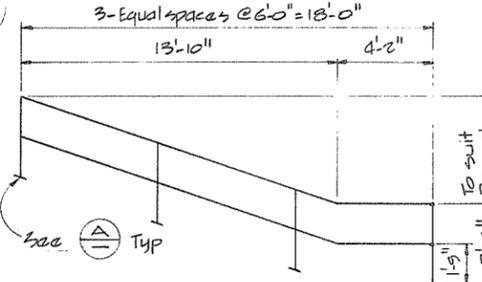
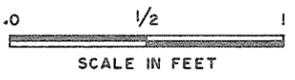
PLAN-HINGED BAR GRATING
ONE REQD STEVESTON HWY



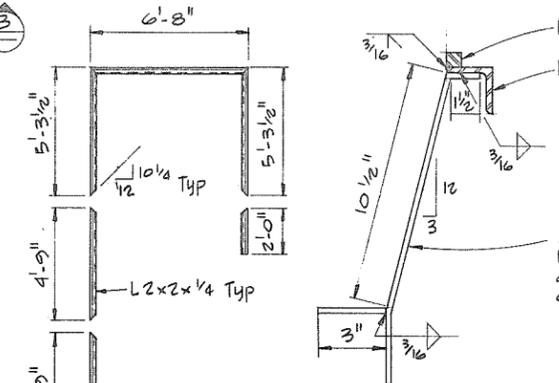
MANHOLE FRAME
4 REQD



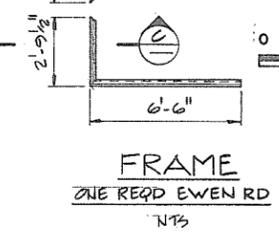
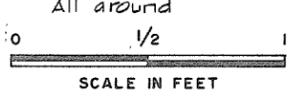
SECTION B



ELEVATION-PIPE HANDRAIL
ONE REQD BATH SLOUGH



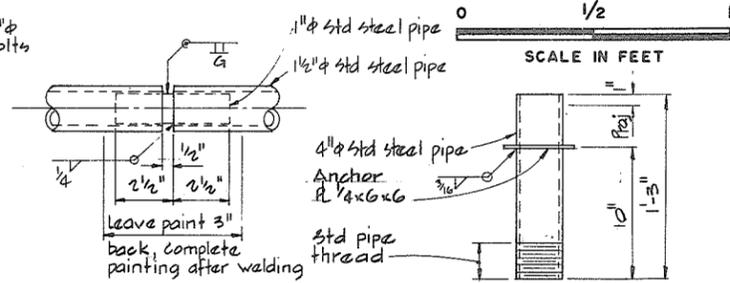
SECTION C



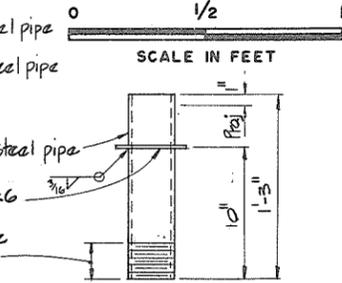
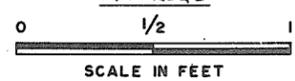
FRAME
ONE REQD EWEN RD

NOTE
Manhole cover to be "Mainland foundry" or equal Pattern No. 3R-12A with RICHMOND STORM SEWER cast in raised letters

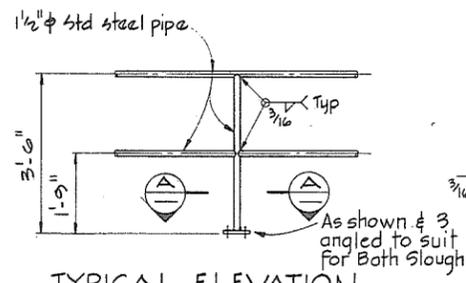
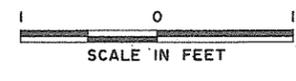
MCC TROUGH DRAIN
2 REQD



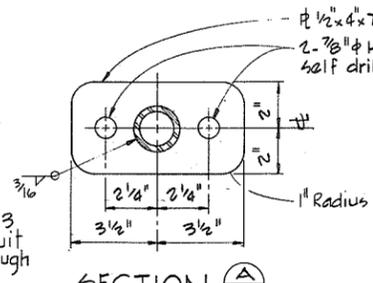
TYPICAL FIELD JOINT
AS REQD



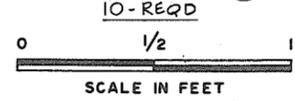
STILLING WELL PIPE
1 REQD



TYPICAL ELEVATION



SECTION A



NOTES
For Notes see 4795-18-115



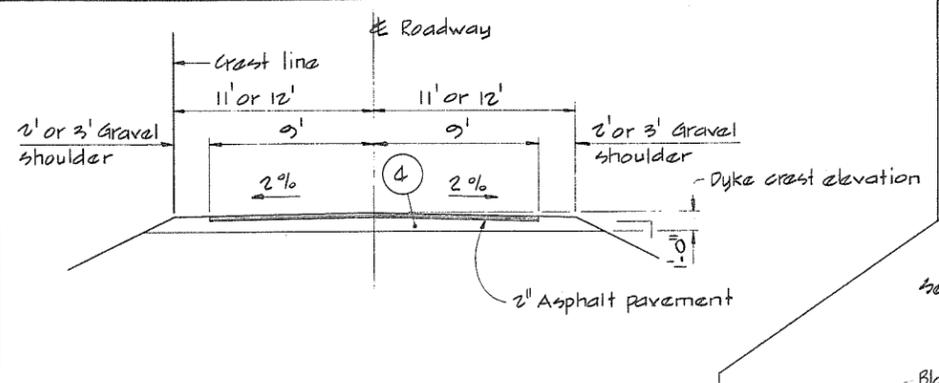
NO.	BY	REVISIONS	DATE
		A/17	

RECOMMENDED	<i>B. R. Cameron</i>
PROJECT MANAGER	
DATE	<i>Nov. 29/79</i>
APPROVED	<i>John Fuller</i>
DIRECTOR	
DATE	<i>Nov 29/79</i>

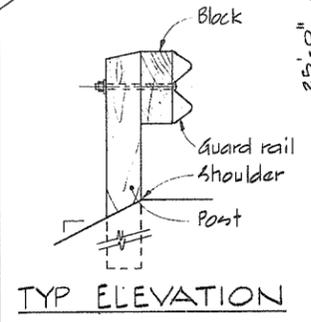
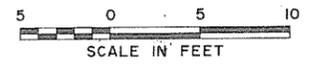
BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1988 AGREEMENT	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A MISCELLANEOUS STEEL DETAILS
--	--

DESIGNED	SURVEYED
DRAWN <i>AK</i>	DATE
CHECKED <i>GA</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-116 A</i>	SHEET <i>2</i> OF <i>2</i> SHEETS

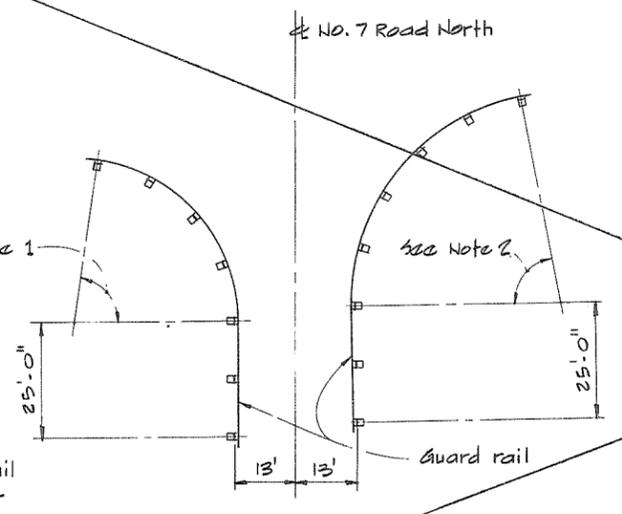
266 599



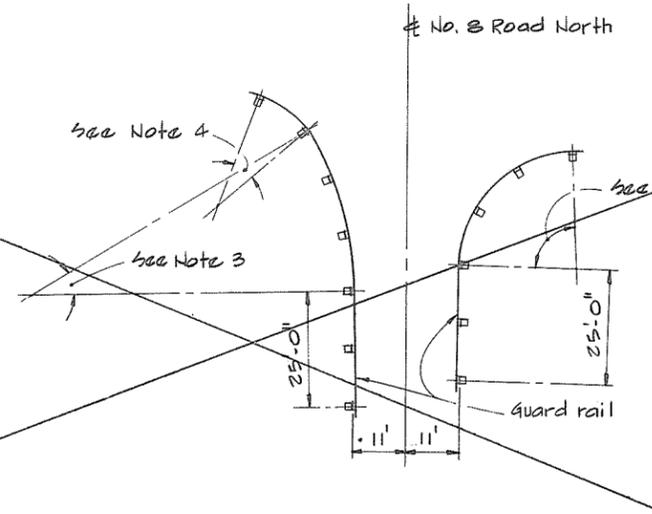
TYPICAL PAVED ROAD DETAIL



TYP ELEVATION



GUARD RAIL GEOMETRY FOR No. 7 ROAD NORTH



GUARD RAIL GEOMETRY FOR No. 8 ROAD NORTH

GUARD RAIL NOTES

- Guard rail to be installed in accordance with the Government of British Columbia - Department of Highways Drawing No. 186-15 A-1
- Posts to be located on the ditch side of the road shoulder.
- Note 1 - 50' of guard rail installed on a 35' radius with the posts at approx 12'-4 3/8" centers.
- Note 2 - 62'-6" of guard rail installed on a 45' radius with the posts at approx 12'-5" centers.
- Note 3 - 37'-6" of guard rail installed on a 70' radius with the posts at approx 12'-5 3/8" centers.
- Note 4 - 12'-6" of guard rail installed on a 25' radius with the posts at approx 12'-4 3/8" centers.
- Note 5 - 37'-6" of guard rail installed on a 25' radius with the posts at approx 12'-4 3/8" centers.

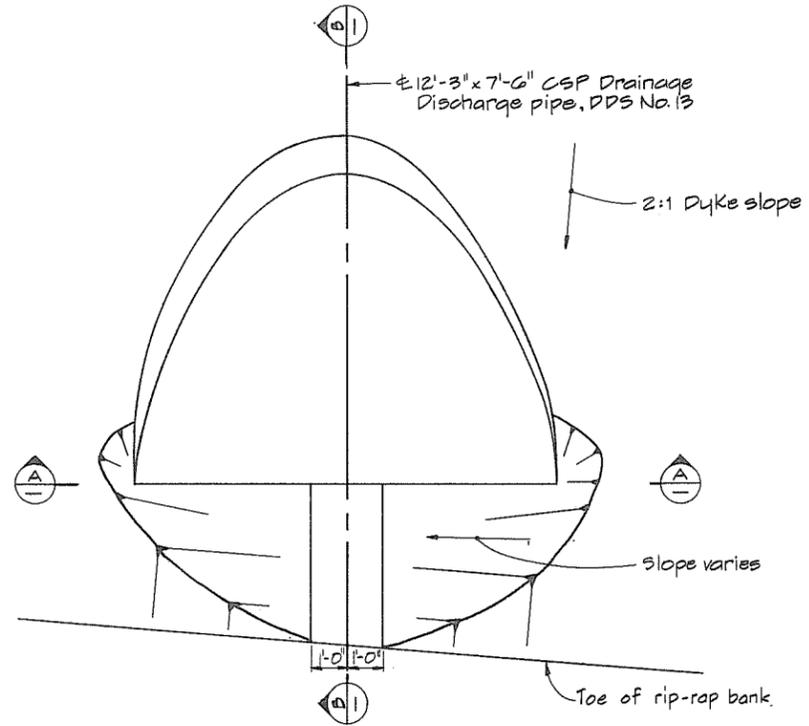


CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

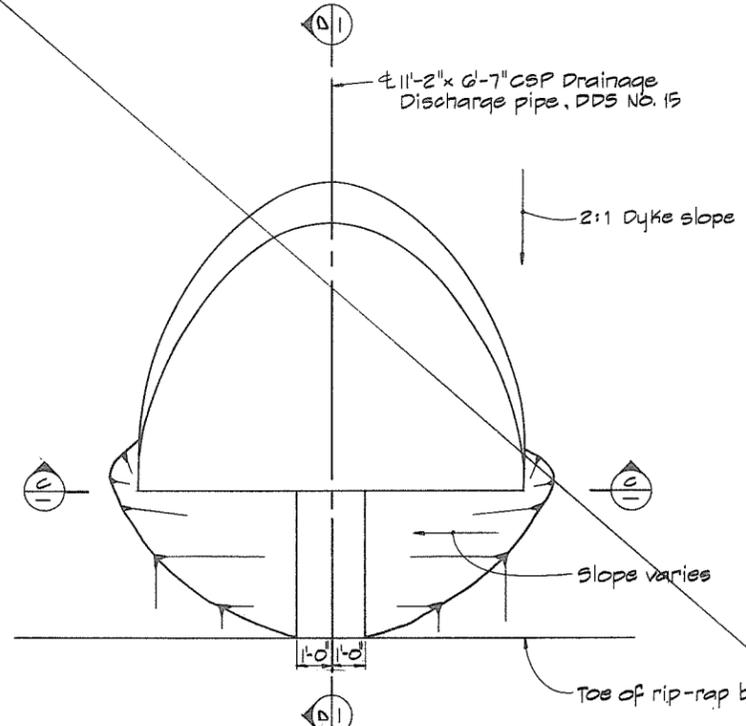
RECOMMENDED <i>R. A. Cameron</i> PROJECT MANAGER	BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT WATER INVESTIGATIONS BRANCH
DATE <i>Nov. 29/79</i>	CANADA - BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL 1968 AGREEMENT
APPROVED <i>G. A. Kelly</i> DIRECTOR	PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
DATE <i>Nov. 29/79</i>	MISCELLANEOUS EARTHWORKS DETAILS

DESIGNED	SURVEYED
DRAWN <i>AR</i>	DATE
CHECKED <i>SMH</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-117</i>	SHEET <i>1</i> OF <i>1</i> SHEETS

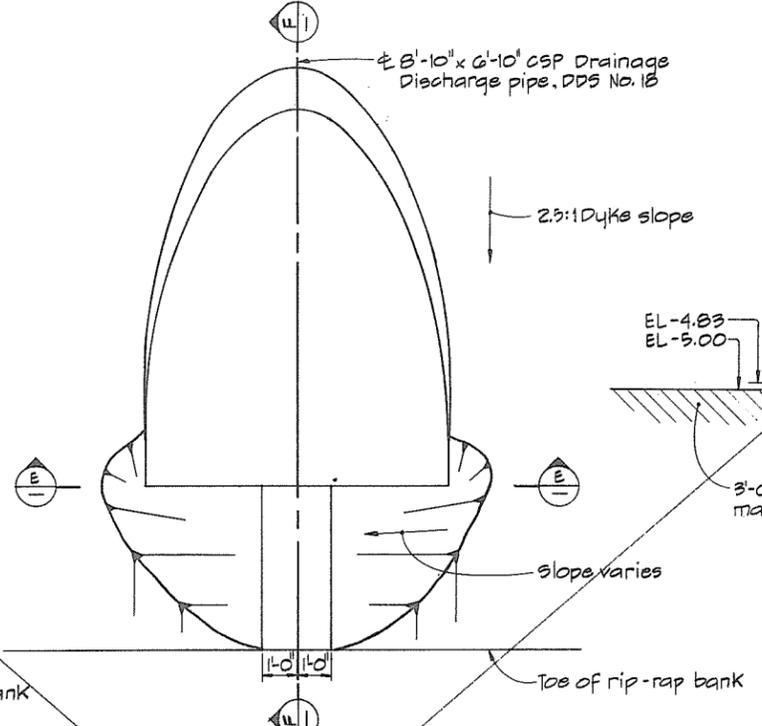
266600



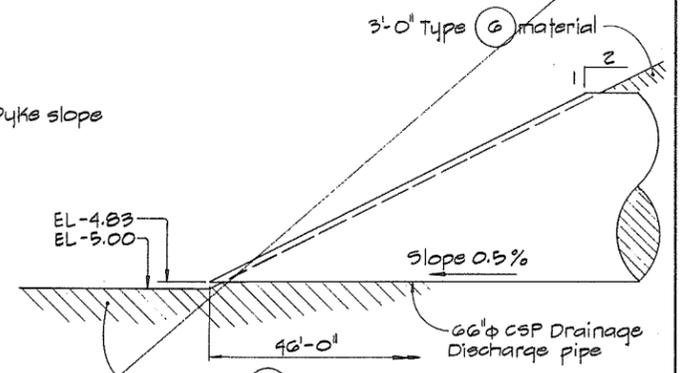
DDS No. 13



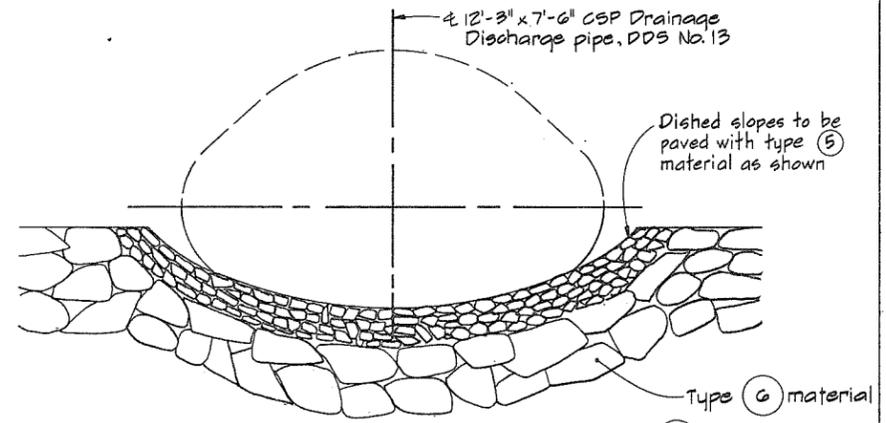
DDS No. 15



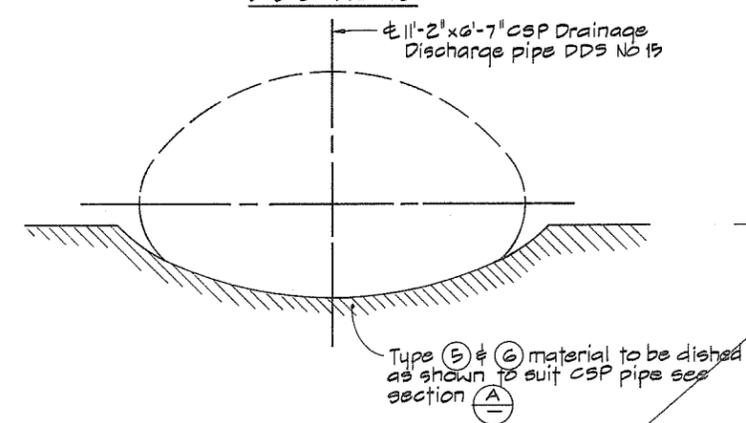
DDS No. 18



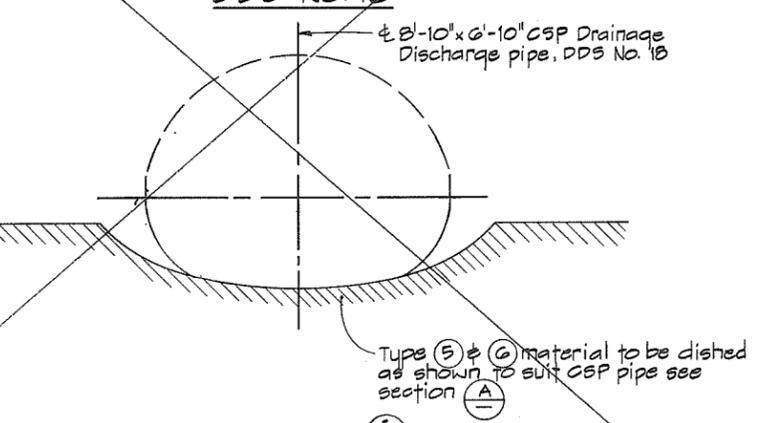
DDS No. 14



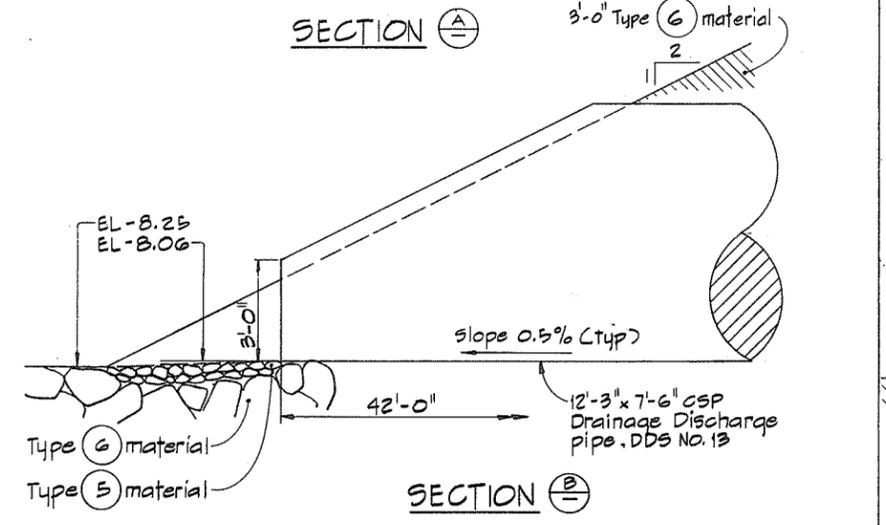
SECTION A-A



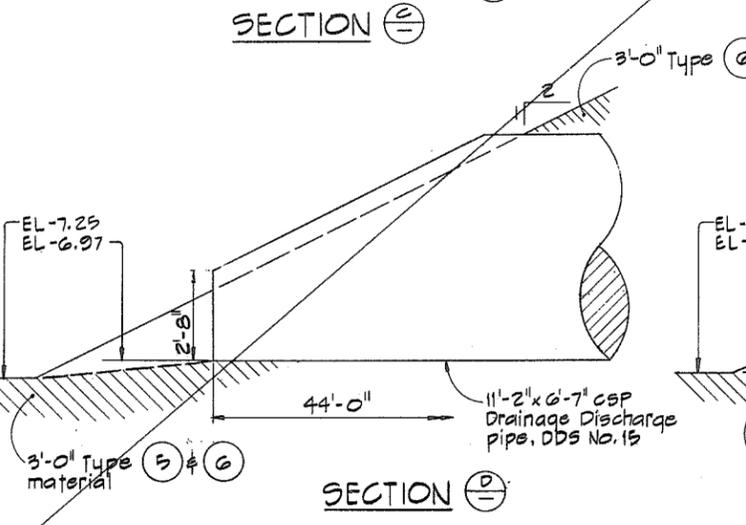
SECTION C-C



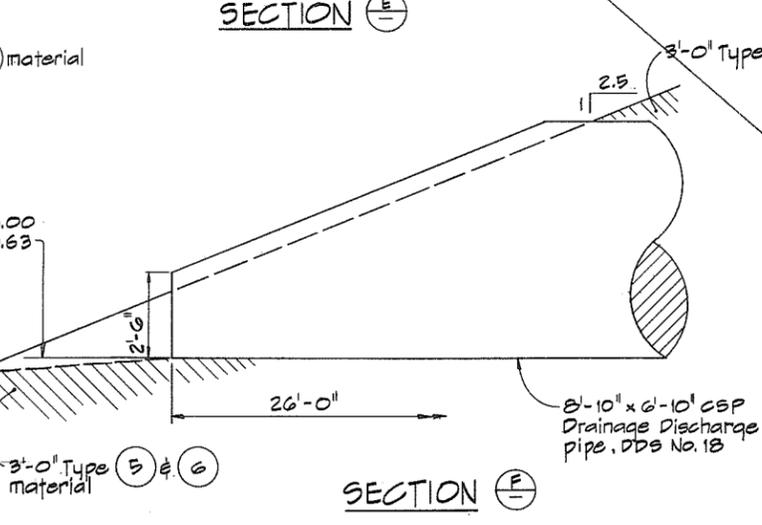
SECTION E-E



SECTION B-B



SECTION D-D



SECTION U-U

NOTES
 * For locations of CSP discharge pipes see appropriate earthworks detail drawings.



CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

RECOMMENDED	<i>P. A. Lamson</i>
PROJECT MANAGER	
DATE	Nov. 29/79
APPROVED	<i>John Keller</i>
DIRECTOR	
DATE	Nov 29/79

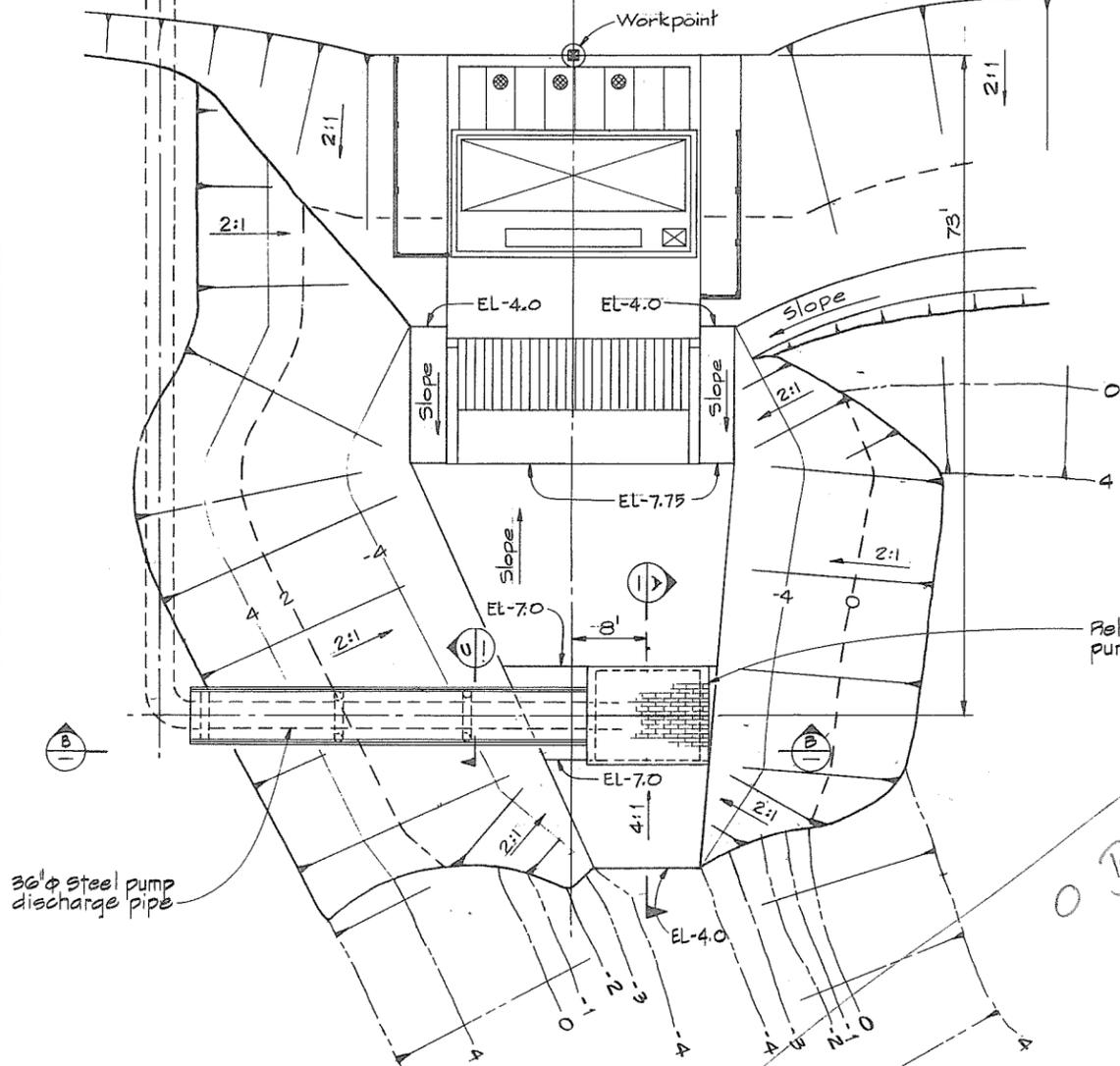
BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT

PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
 INSTALLATION DETAILS OF CS DRAINAGE DISCHARGE PIPES

DESIGNED		SURVEYED	
DRAWN	WJn	DATE	
CHECKED	GA	FILE NO.	
SCALE	AS SHOWN	DATE	Dec. 1979
DWG. NO.	4795-18-118 A	SHEET	OF SHEETS

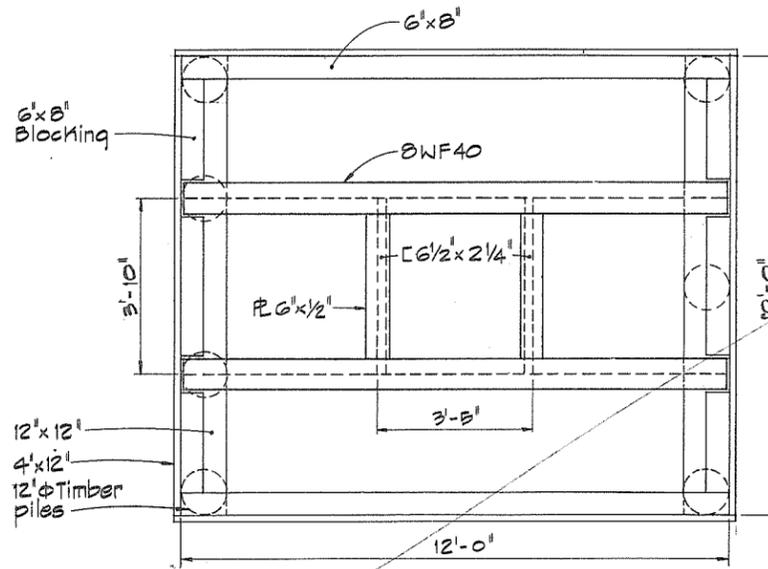


RIVER ROAD



36" φ steel pump discharge pipe

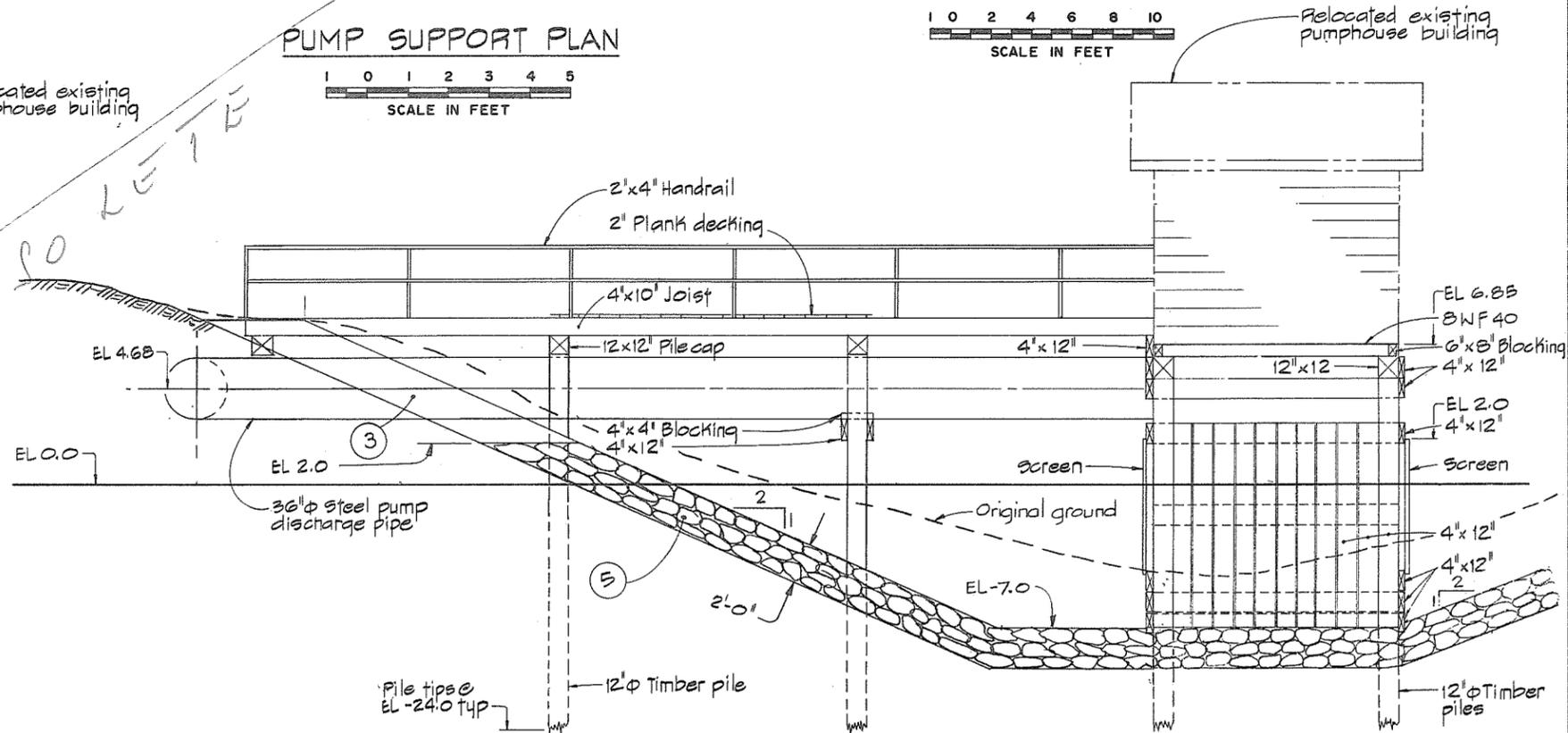
PLAN



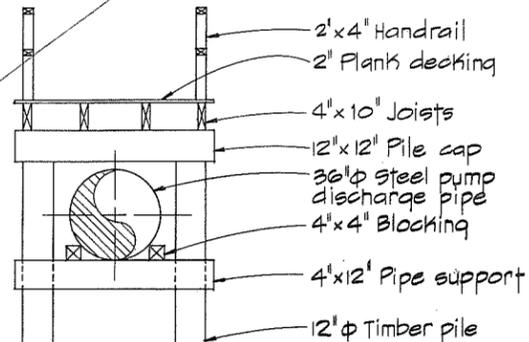
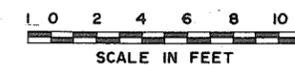
SECTION A



PUMP SUPPORT PLAN



SECTION B



SECTION C
NTS

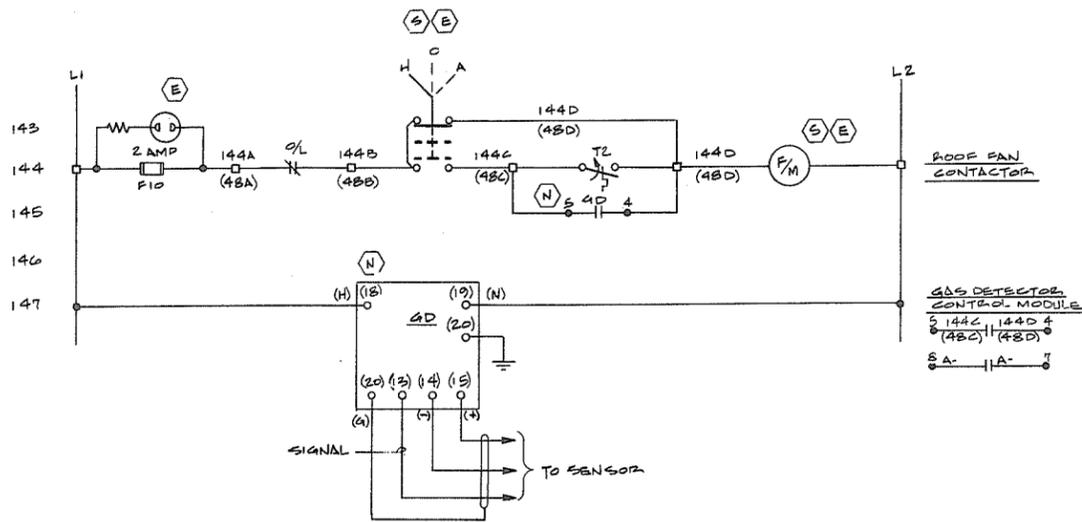


CBA ENGINEERING LTD.
CONSULTING ENGINEERS - VANCOUVER - CANADA

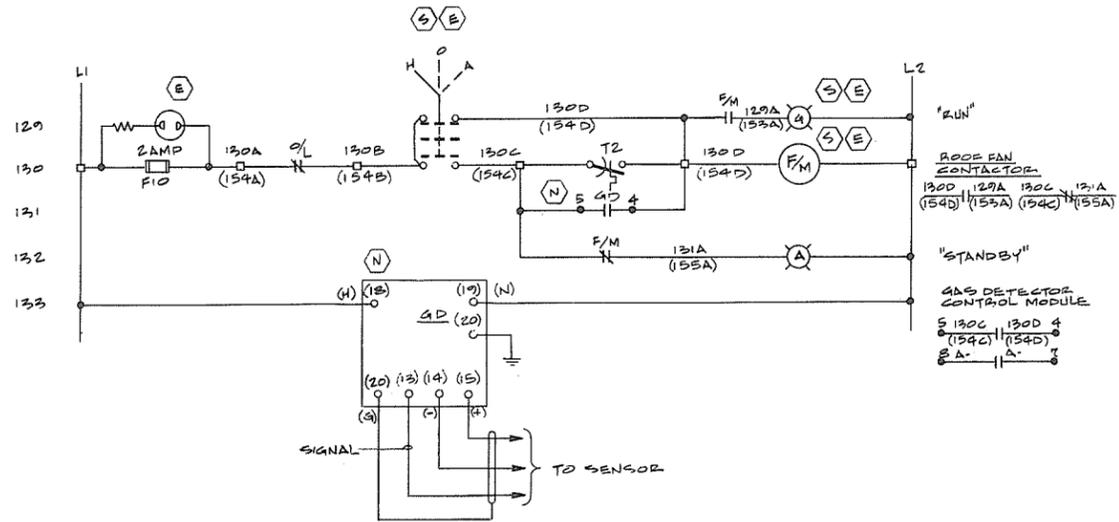
RECOMMENDED *R. N. Cameron*
PROJECT MANAGER
DATE *Nov. 29/79*
APPROVED *John Miller*
FOR DIRECTOR
DATE *Nov 29/79*

BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
WATER INVESTIGATIONS BRANCH
CANADA - BRITISH COLUMBIA
FRASER RIVER FLOOD CONTROL 1988 AGREEMENT
PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18A
BATH SLOUGH - DRAINAGE DISCHARGE STRUCT NO. 13
RELOCATION OF EXISTING PUMPHOUSE FACILITY

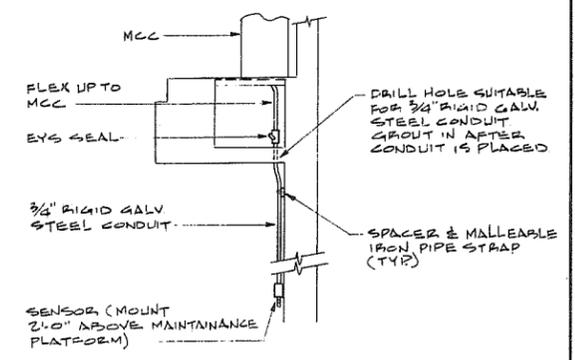
DESIGNED	SURVEYED
DRAWN <i>Wn</i>	DATE
CHECKED <i>DLC</i>	FILE NO. <i>0281550-C10-18</i>
SCALE <i>AS SHOWN</i>	DATE <i>Dec. 1979</i>
DWG. NO. <i>4795-18-120</i>	SHEET <i>266602</i> OF <i>2</i> SHEETS



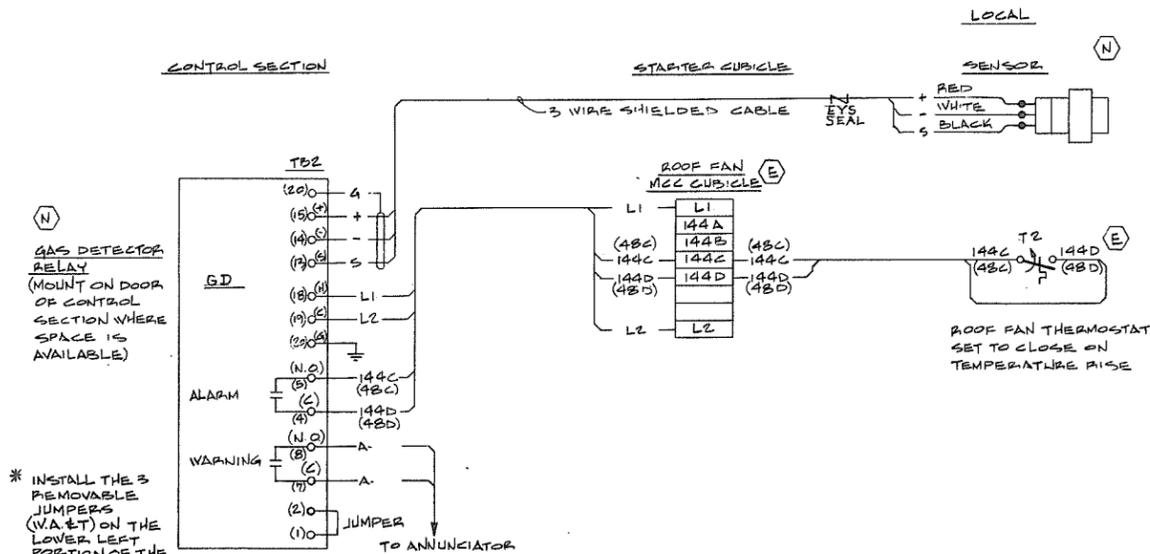
GAS DETECTOR ADDITION TO EXISTING FAN CONTROL SCHEMATIC DIAGRAM



GAS DETECTOR ADDITION TO EXISTING FAN CONTROL SCHEMATIC DIAGRAM

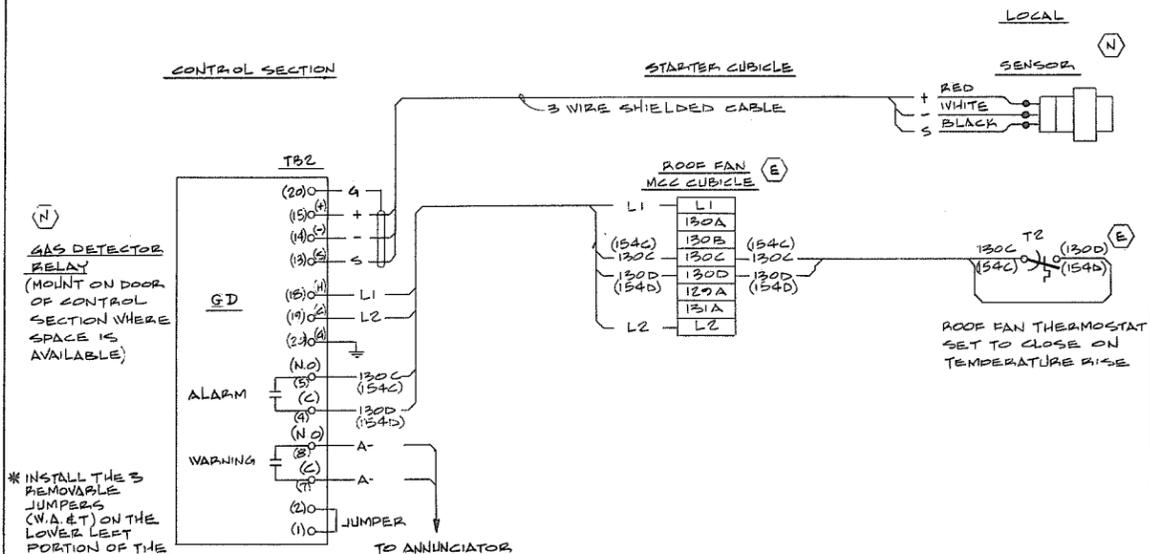


GAS DETECTOR SENSOR MOUNTING DETAIL (TYP)



GAS DETECTOR ADDITION TO EXISTING FAN CONTROL WIRING DIAGRAM

* SCHEMATIC & WIRING DIAGRAM TYPICAL FOR N#4 RD. NORTH & SHELL RD. NORTH
 - CAMBIE ROAD NORTH SIMILAR EXCEPT FOR WIRE NUMBERS
 (WIRE NUMBERS FOR CAMBIE RD SHOWN IN BRACKETS, eg. 48A, 48B, ETC.)



GAS DETECTOR ADDITION TO EXISTING FAN CONTROL WIRING DIAGRAM

- SCHEMATIC & WIRING DIAGRAM TYPICAL FOR N#1 RD. NORTH, N#2 RD. NORTH & McALLAM RD. NORTH
 - GILBERT ROAD NORTH SIMILAR EXCEPT WIRE NUMBERS
 (WIRE NUMBERS FOR GILBERT RD SHOWN IN BRACKETS eg. 154A, 154B, ETC.)

CONTRACT 4 - PUMP STATION ADDITIONS

CONTRACT 5 - PUMP STATION ADDITIONS

- LEGEND:**
- (S) STARTER CUBICLE
 - (L) FIELD DEVICES (LOCAL)
 - (E) EXISTING ITEMS
 - (N) NEW ITEMS TO BE ADDED

266 603



PREPARED BY:
M.A. THOMAS & ASSOCIATES LTD.
 CONSULTING ENGINEERS
 VANCOUVER, B.C. CANADA.
 REFERENCE: 1272

CBA ENGINEERING LTD.
 CONSULTING ENGINEERS - VANCOUVER - CANADA

NO.	BY	REVISIONS	DATE
A		A/B	

RECOMMENDED *P. G. Cameron*
 PROJECT MANAGER
 DATE *Nov. 29/79*
 APPROVED *John Fuller*
 DIRECTOR
 DATE *Nov 29/79*

DESIGNED	Ho.	SURVEYED	
DRAWN	JR	DATE	
CHECKED	WNB	FILE NO.	0281550-C10-18
SCALE	NONE	DATE	Dec. 1979
DWG. NO.	4795-18-121A	SHEET	OF SHEETS

BRITISH COLUMBIA
 MINISTRY OF THE ENVIRONMENT
 WATER INVESTIGATIONS BRANCH
 CANADA - BRITISH COLUMBIA
 FRASER RIVER FLOOD CONTROL 1968 AGREEMENT
 PROJECT NO. 3 TOWNSHIP OF RICHMOND CONTRACT NO. 18 A
 COMBUSTIBLE GAS DETECTOR INSTALLATION IN
 EXISTING DRAINAGE DISCHARGE STRUCTURES