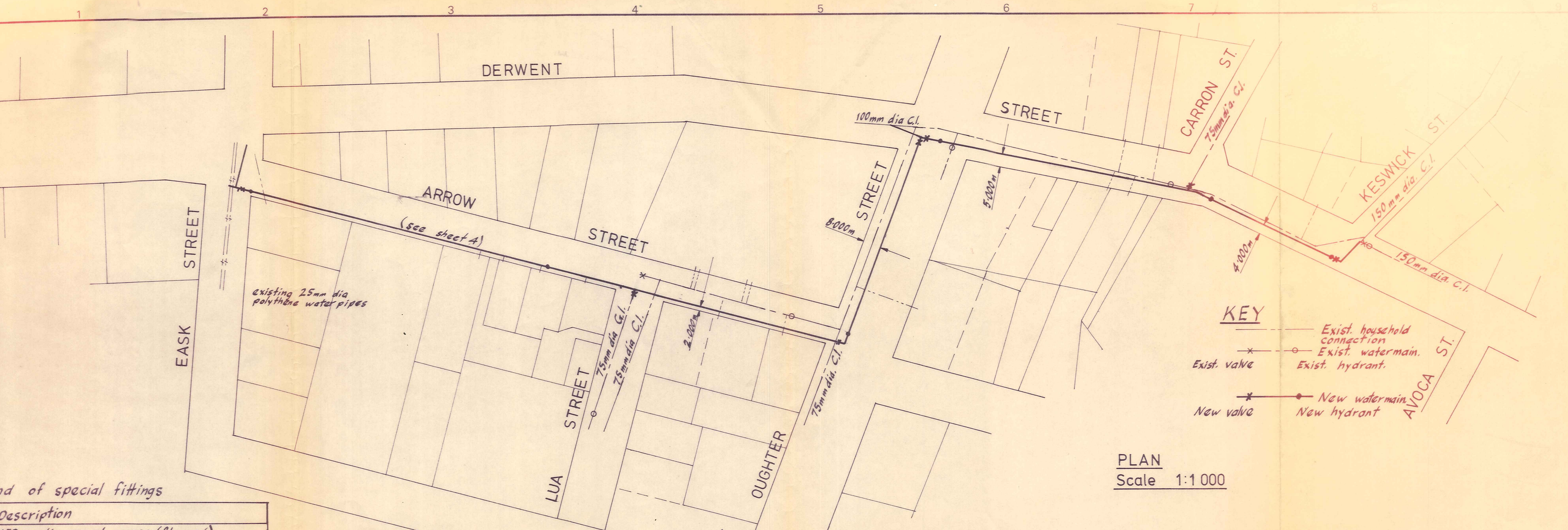


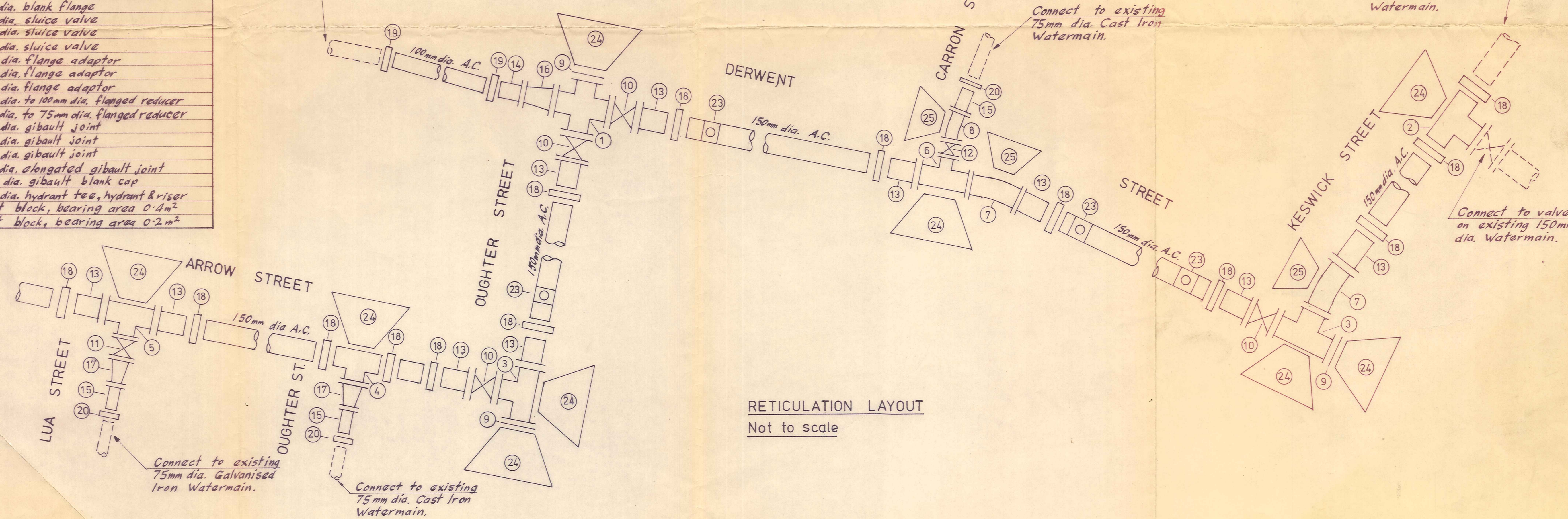
ORIGINAL SIZE mm INCHES



Legend of special fittings

Item	Description
1	150 mm dia. equal cross (flanged)
2	150 mm dia. equal tee (1 end flanged)
3	150 mm dia. equal tee (all flanged)
4	100 mm dia. on 150 mm dia. tee (1 end flanged)
5	100 mm dia. on 150 mm dia. tee (all flanged)
6	75 mm dia. on 150 mm dia. tee (all flanged)
7	150 mm dia. 1 1/4° bend (flanged)
8	75 mm dia. 1 1/4° bend (flanged)
9	150 mm dia. blank flange
10	150 mm dia. sluice valve
11	100 mm dia. sluice valve
12	75 mm dia. sluice valve
13	150 mm dia. flange adaptor
14	100 mm dia. flange adaptor
15	75 mm dia. flange adaptor
16	150 mm dia. to 100 mm dia. flanged reducer
17	100 mm dia. to 75 mm dia. flanged reducer
18	150 mm dia. gibault joint
19	100 mm dia. gibault joint
20	75 mm dia. gibault joint
21	150 mm dia. elongated gibault joint
22	150 mm dia. gibault blank cap
23	150 mm dia. hydrant tee, hydrant & riser
24	Thrust block, bearing area 0.4m ²
25	Thrust block, bearing area 0.2m ²

Adjust angles at joints to connect to existing 100 mm. dia. Cast Iron Watermain.



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Balclutha P.O. Box 220 Phone 1425

NASEBY BOROUGH COUNCIL

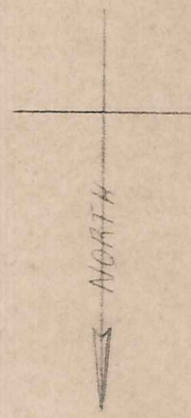
WATERMAIN EXTENSIONS 1978-79

AMENDMENTS		NAME	DATE	JOB NO.	Sheet No.
NO.	BY	DATE			
1	D.W.J.	Oct 78	Watermain extended in Arrow Street. (A4 sheet included)	8874	1 of 4 sheets
	Appvd	Surveyed			
	Drawn	D.W. Jack	Aug. 78		
	Calculations				
	Traced	B. Kingston	Aug. 78		
	Checked		24/8/78		
	Approved				

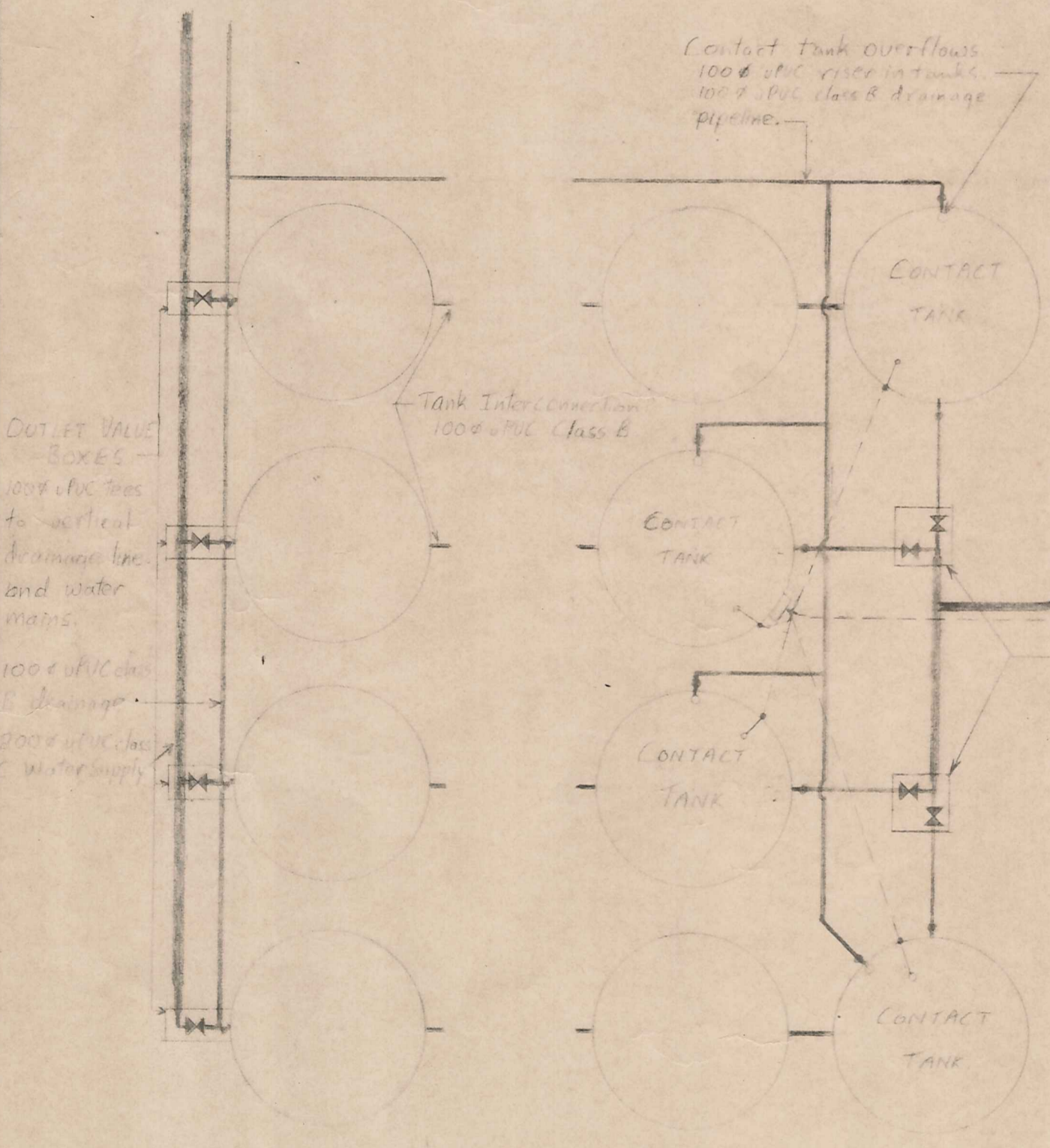
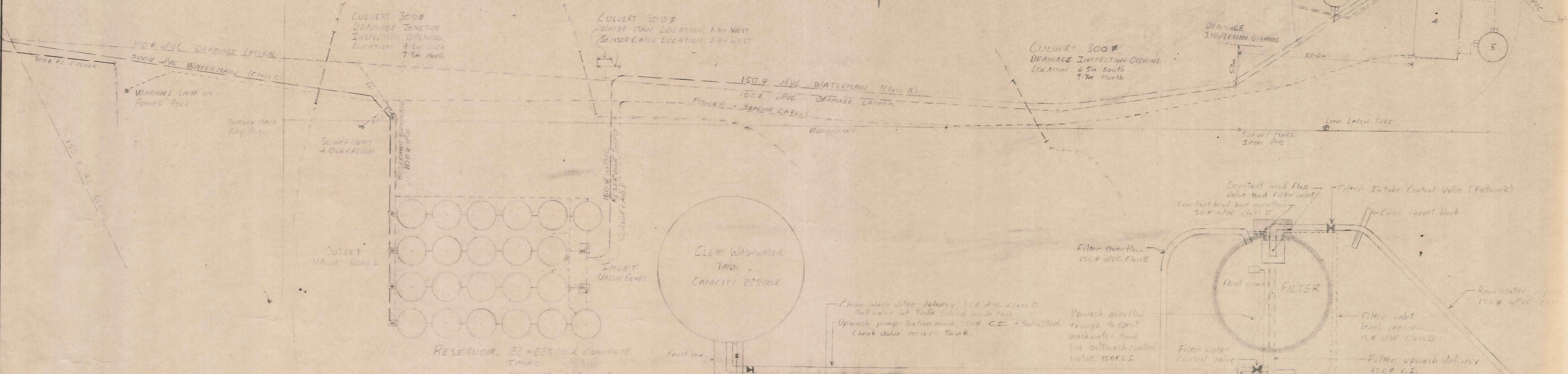
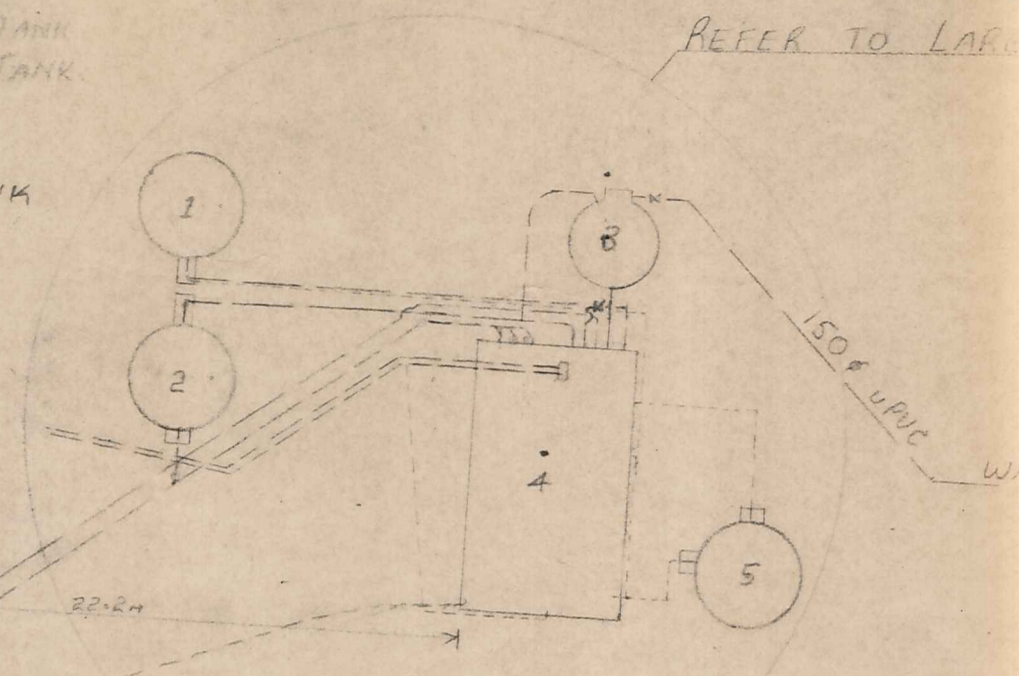
MANHOLE G12
1.37m deep
DRAINAGE LATERAL
INSPECTION OPENING
10.5m upstream of TH

SITE PLAN

Scale 1:250



- 1 CLEAN WASHWATER TANK
- 2 SPENT WASHWATER TANK
- 3 FILTER
- 4 TREATMENT STATION
- 5 ALUM SOLUTION TANK

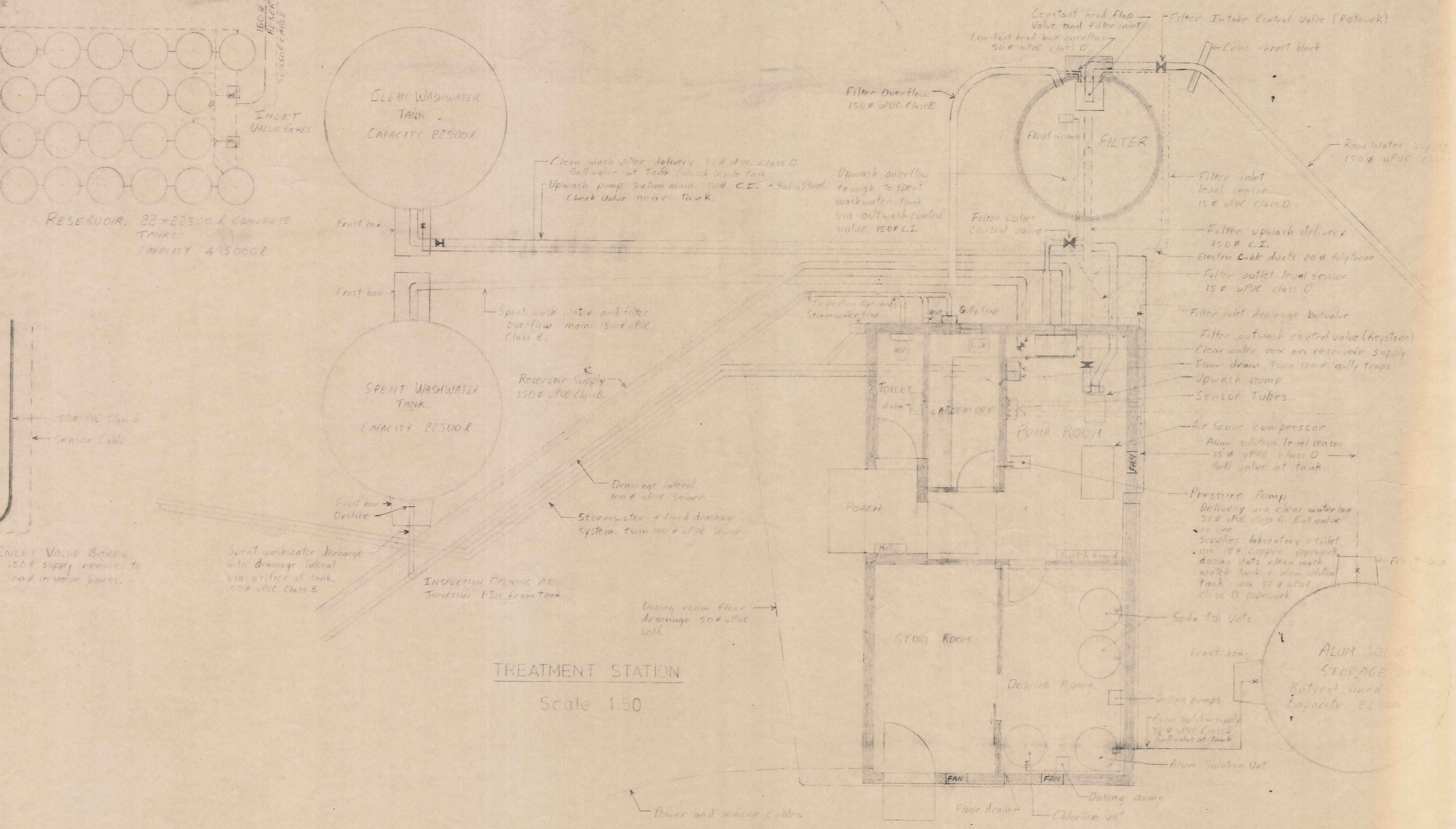


RESERVOIR CONTROL VALVES

Scale 1:100

TREATMENT STATION

Scale 1:50

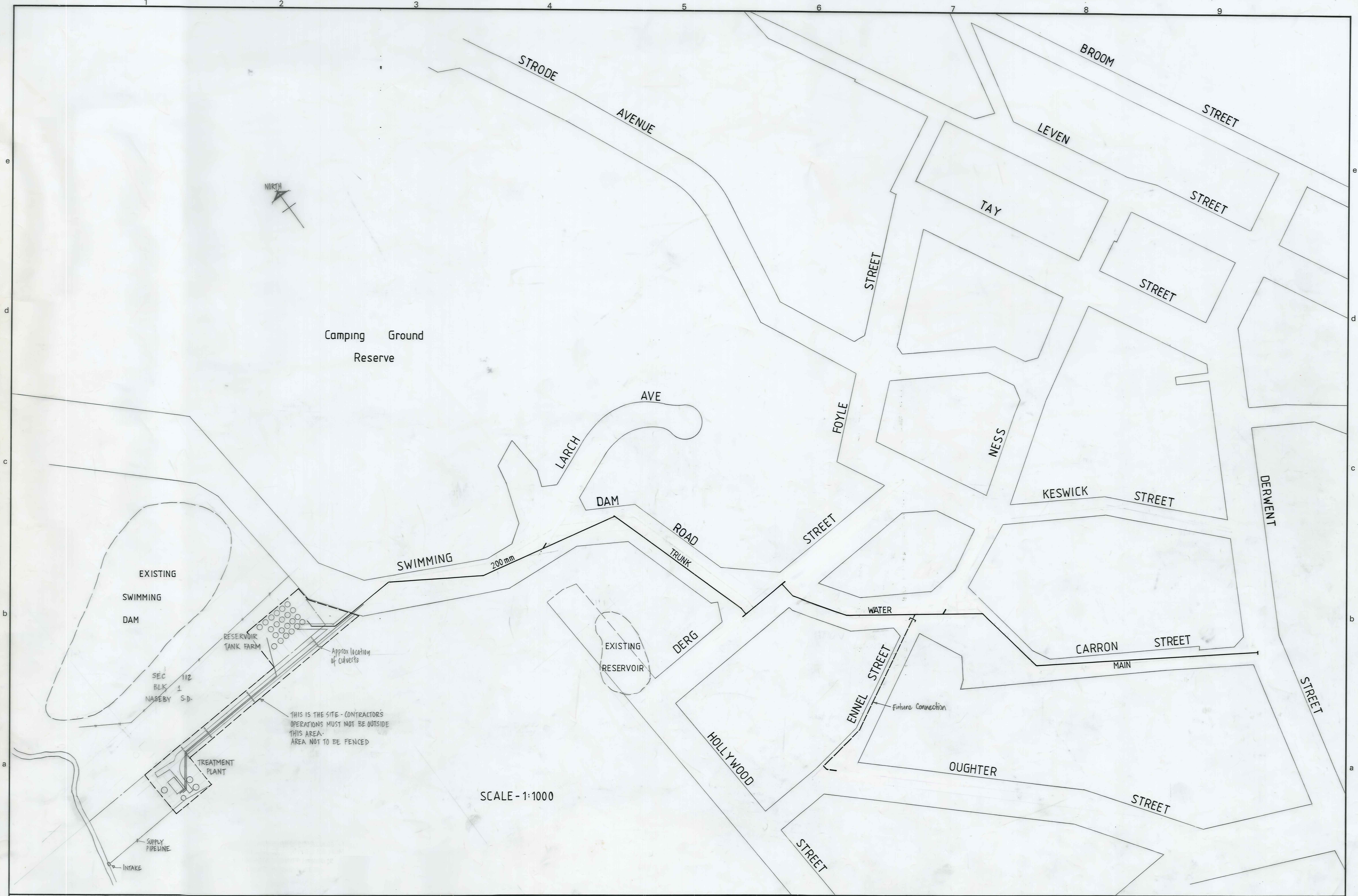
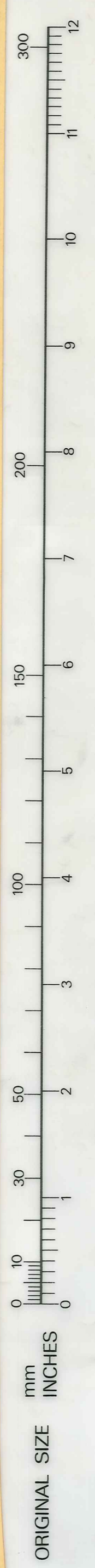


NASEBY WATER SUPPLY

SCALE	DRAWN BY
DATE	CHECKED BY
SHEET NO	OF
TRACED	

Naseby Water Supply Locality Plan

Re-Order Filemaster "D" SELF-ADHESIVE PLAN HANGER
Patent Number 137541



SCALE - 1:1000

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NASEBY BOROUGH COUNCIL

NASEBY WATER SUPPLY LOCALITY PLAN

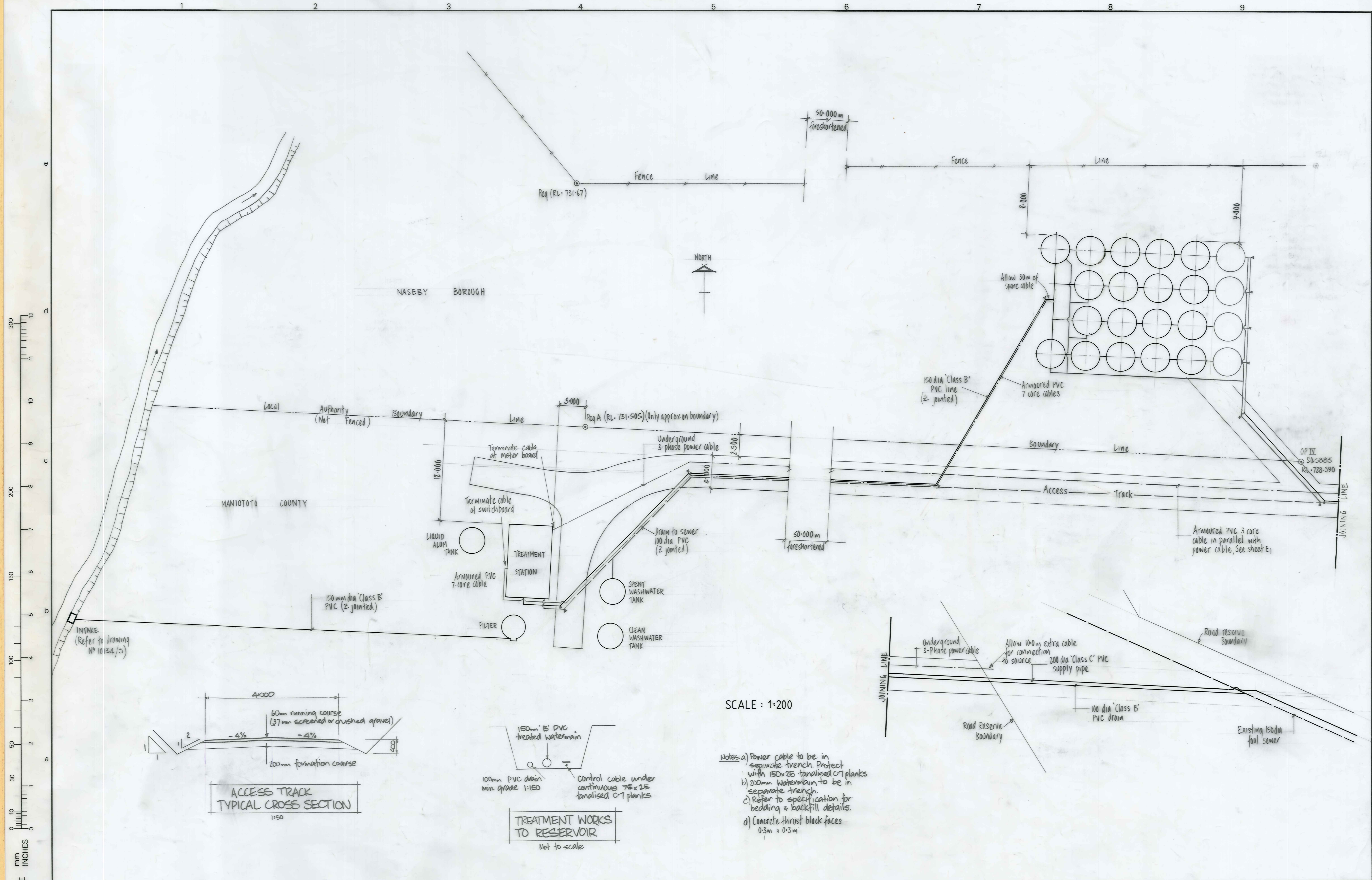
AMENDMENTS			
NO.	BY	DATE	Appvd.

NAME	DATE
Surveyed	
Drawn	B. HANIKINS
Calculations	
Traced	J. KNIX JULY 1982
Checked	<i>[Signature]</i>
Approved	<i>[Signature]</i> A. J. D.

JOB NO.	10134	Sheet No.	1
File	L.B.	F.B.	of shts

Naseby Water Supply Treatment Station & Reservoir site layout

Order Filemaster "D" SELF-ADHESIVE PLAN HANGER
Number 137841



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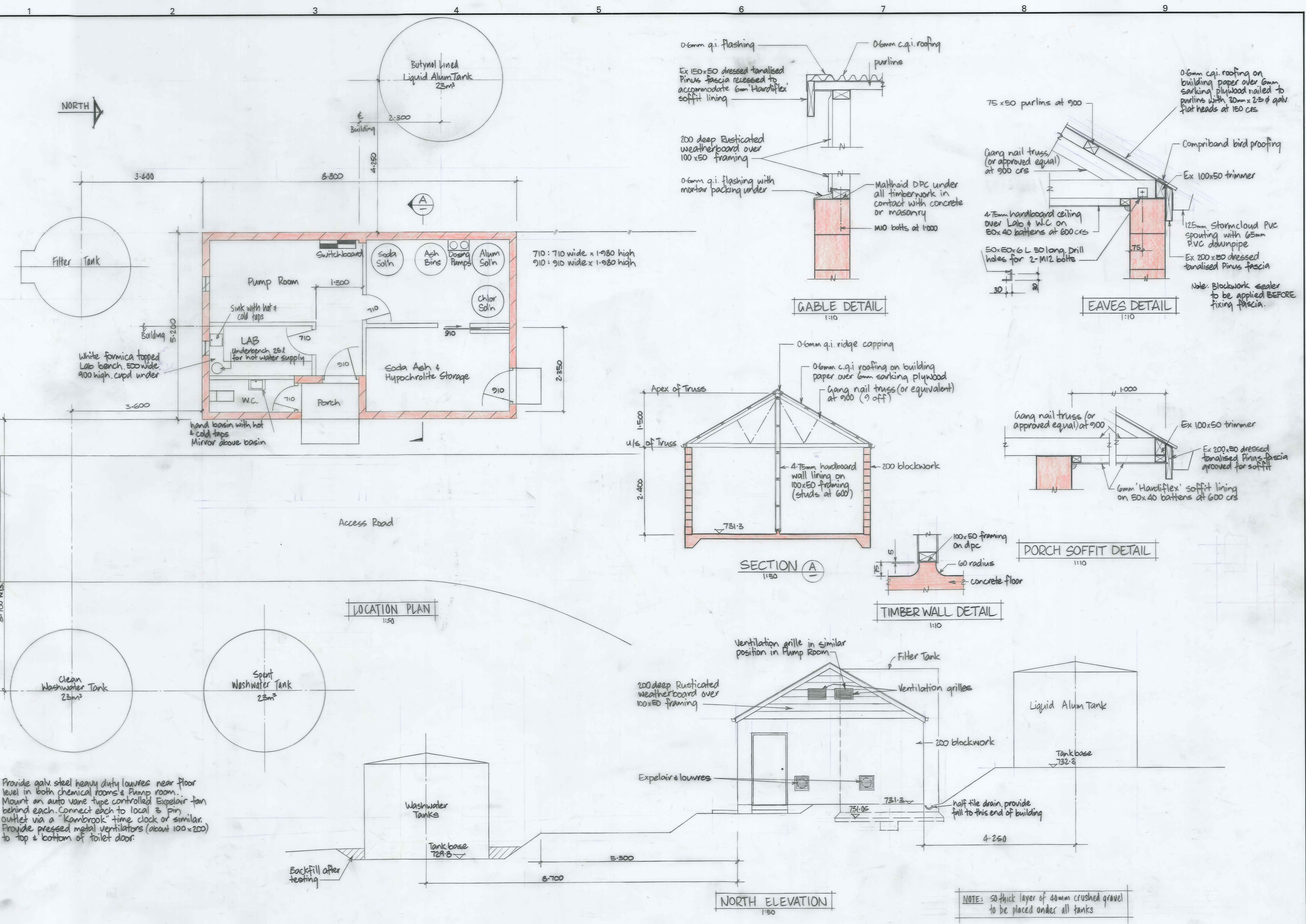
Naseby Borough Council

Naseby Water Supply Treatment Station & Reservoir Site Layout

AMENDMENTS			NAME	DATE	JOB NO.	Sheet No	
NO.	BY	DATE			10134	2	
			Surveyed				
			Drawn	SW-NEWLANDS JULY 1983			
			Calculations				
			Traced	J. KNOX JULY 1983			
			Checked		of	shts.	
			Approved		File	L.B.	F.B.

1924/3
 Naseby water supply
 Treatment station

ORIGINAL SIZE
 mm INCHES
 300 12
 200 8
 150 6
 100 4
 50 2
 0 0



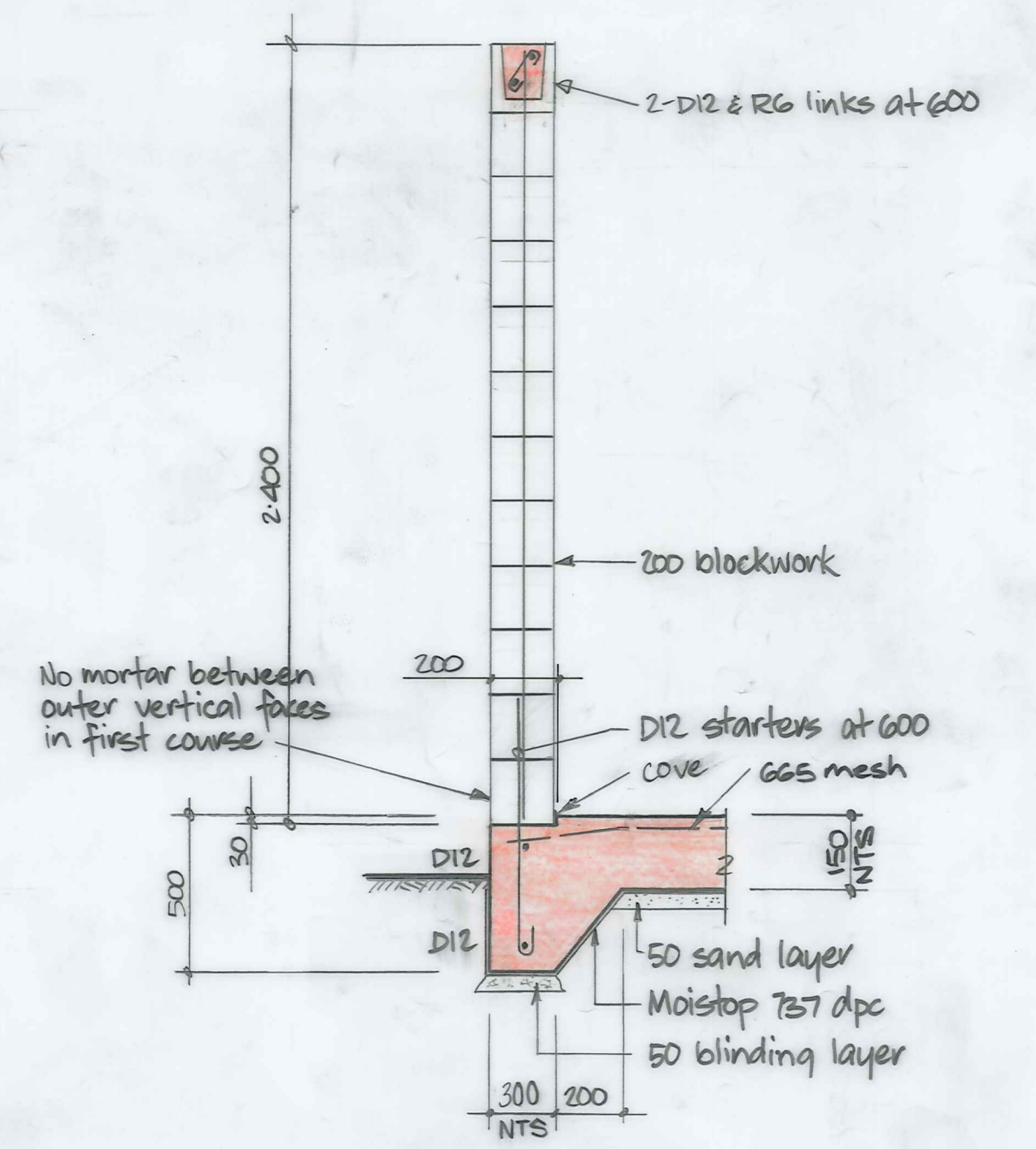
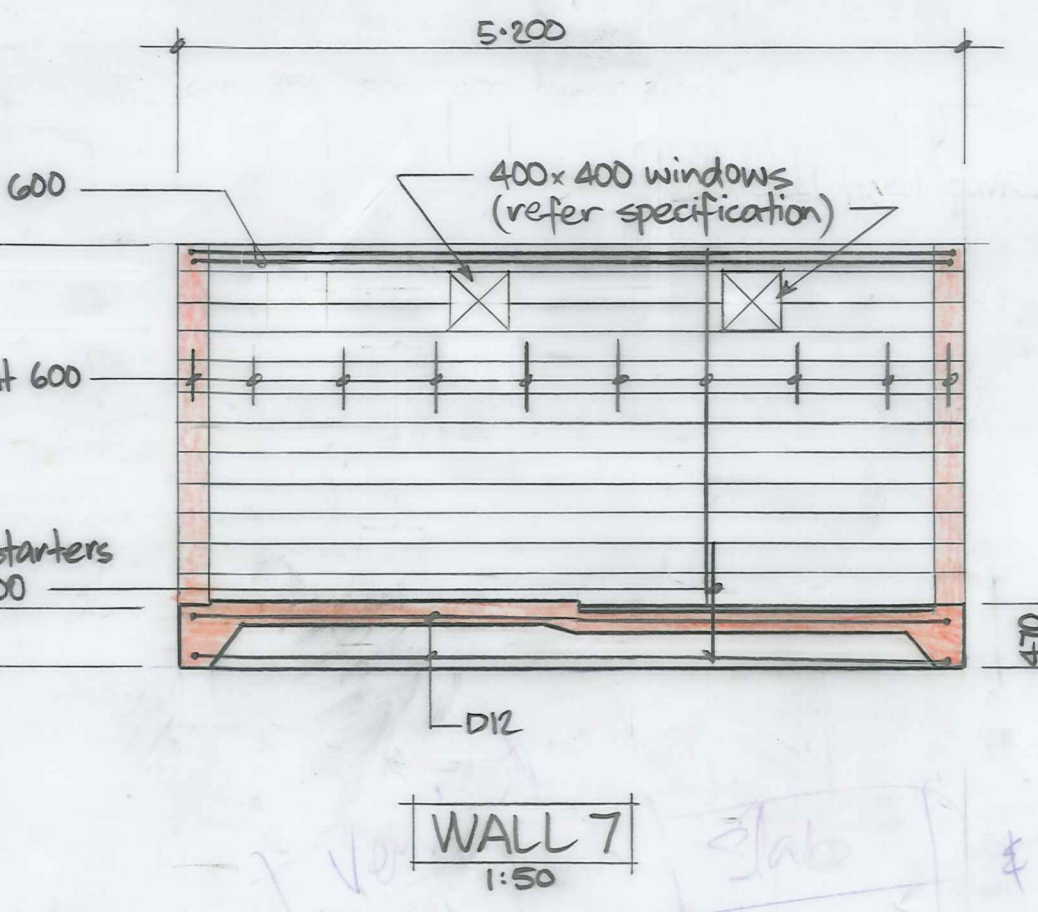
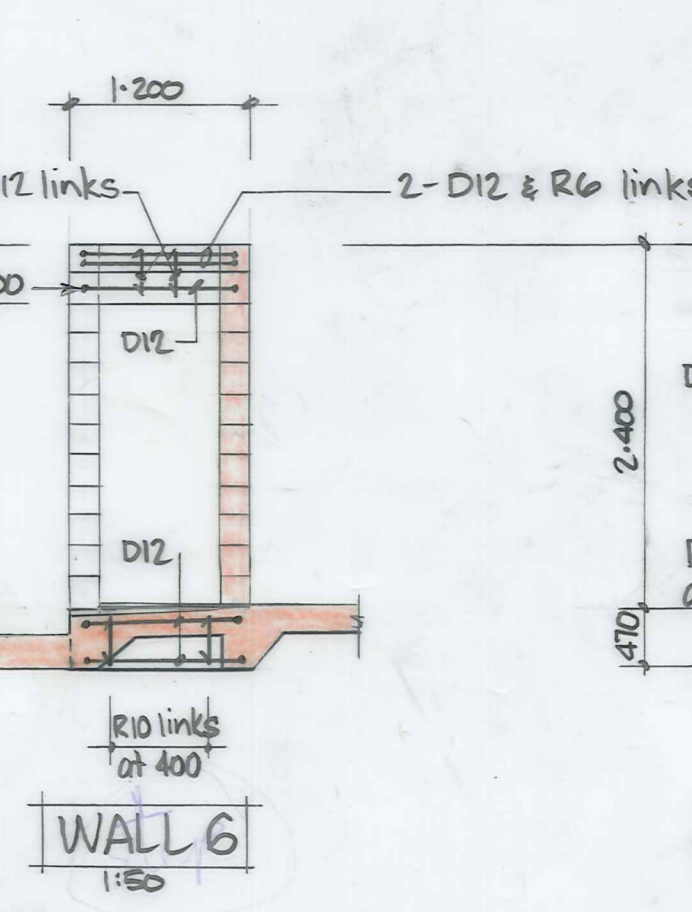
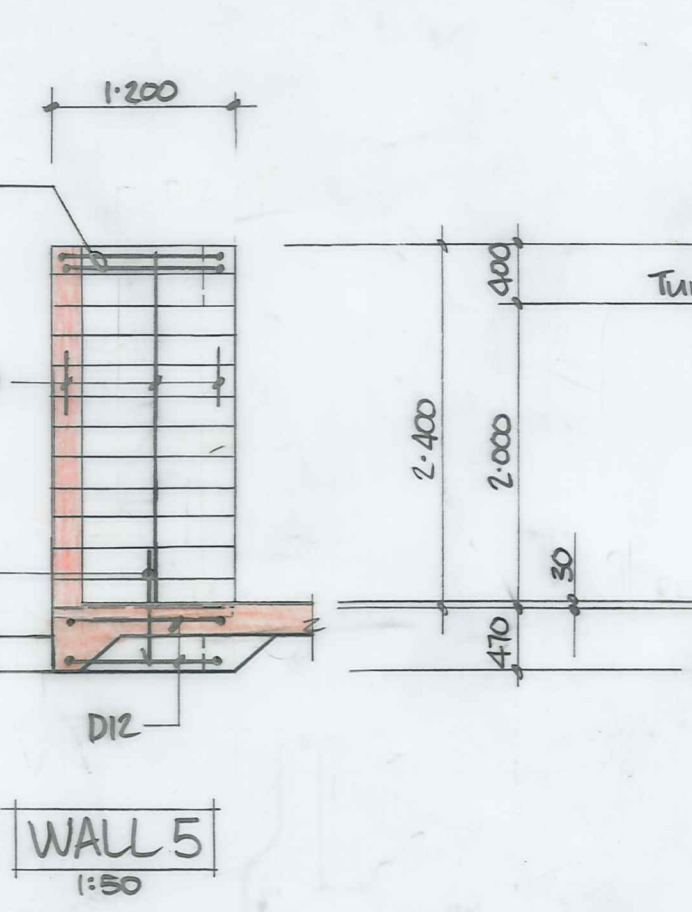
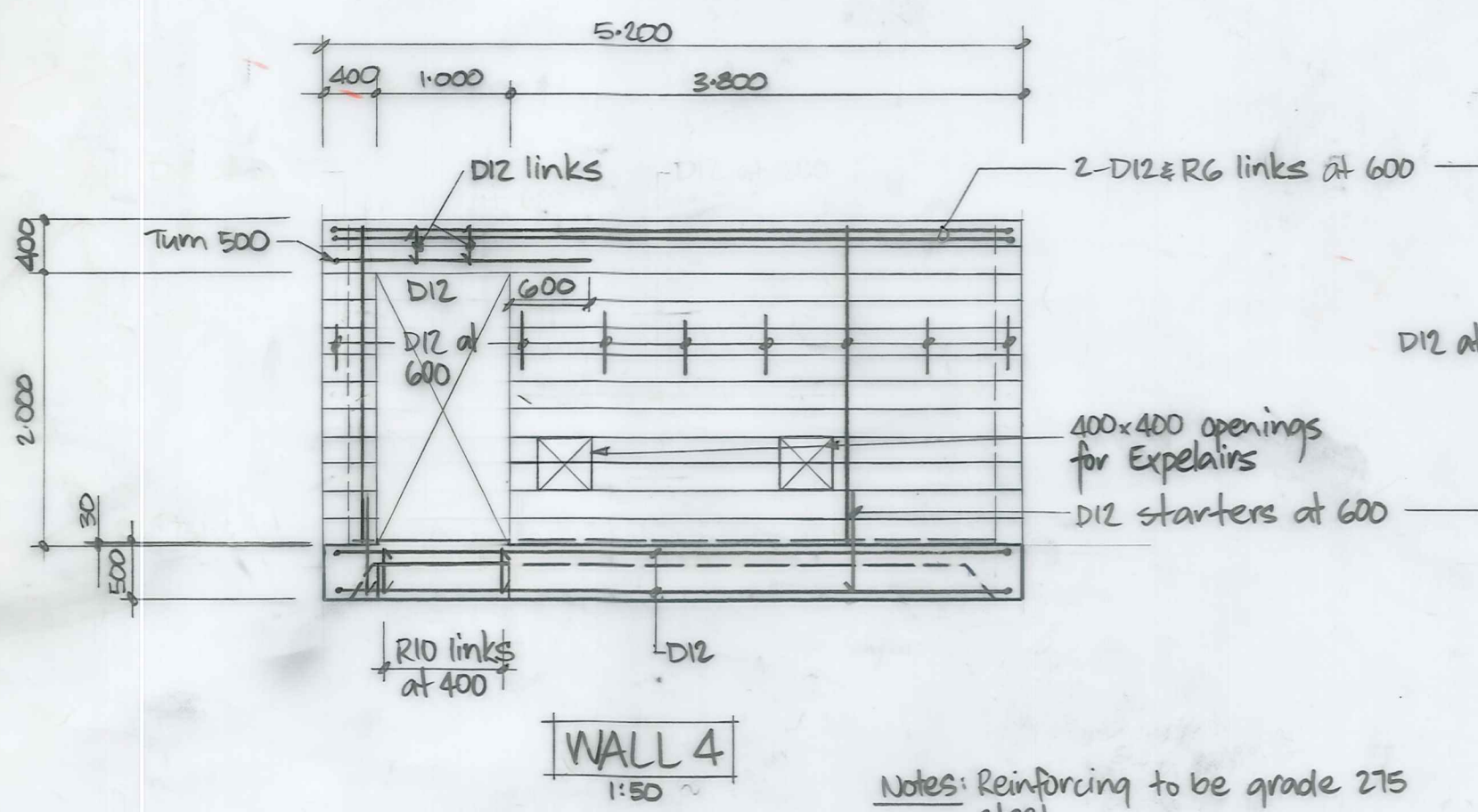
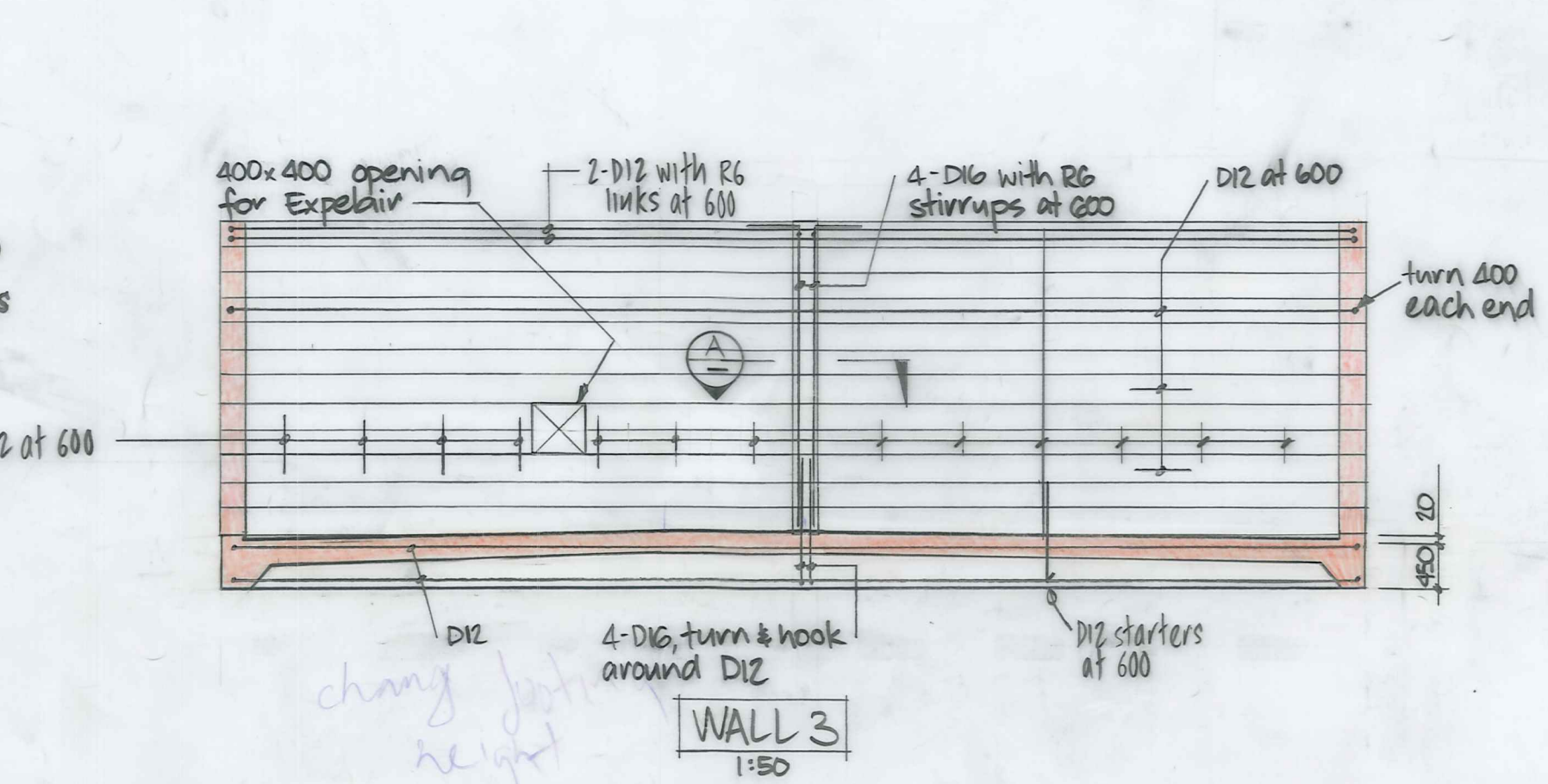
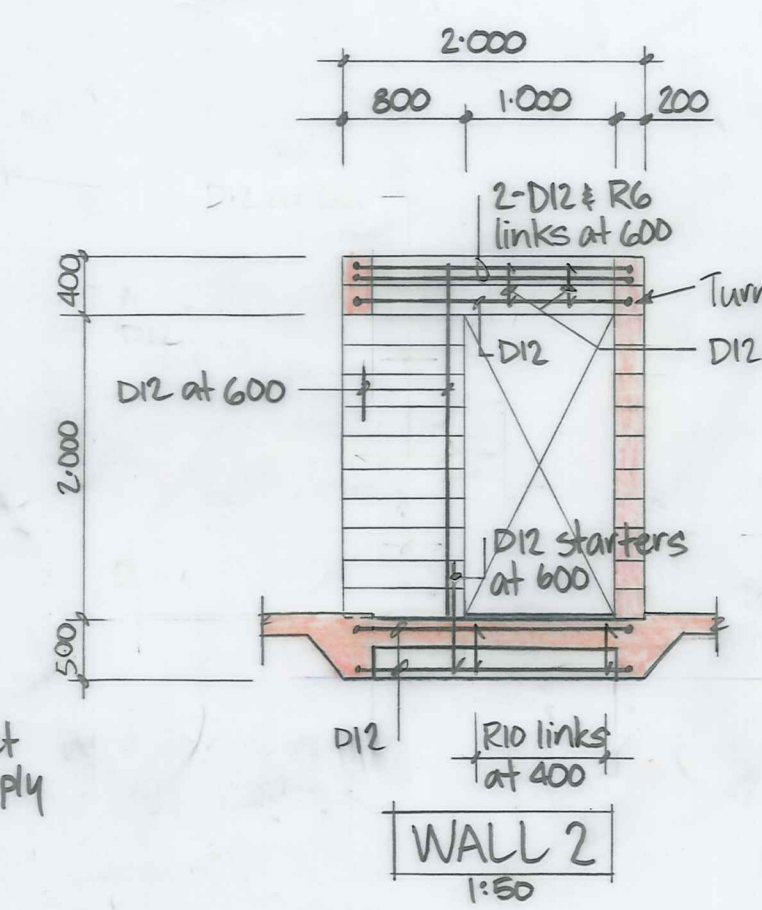
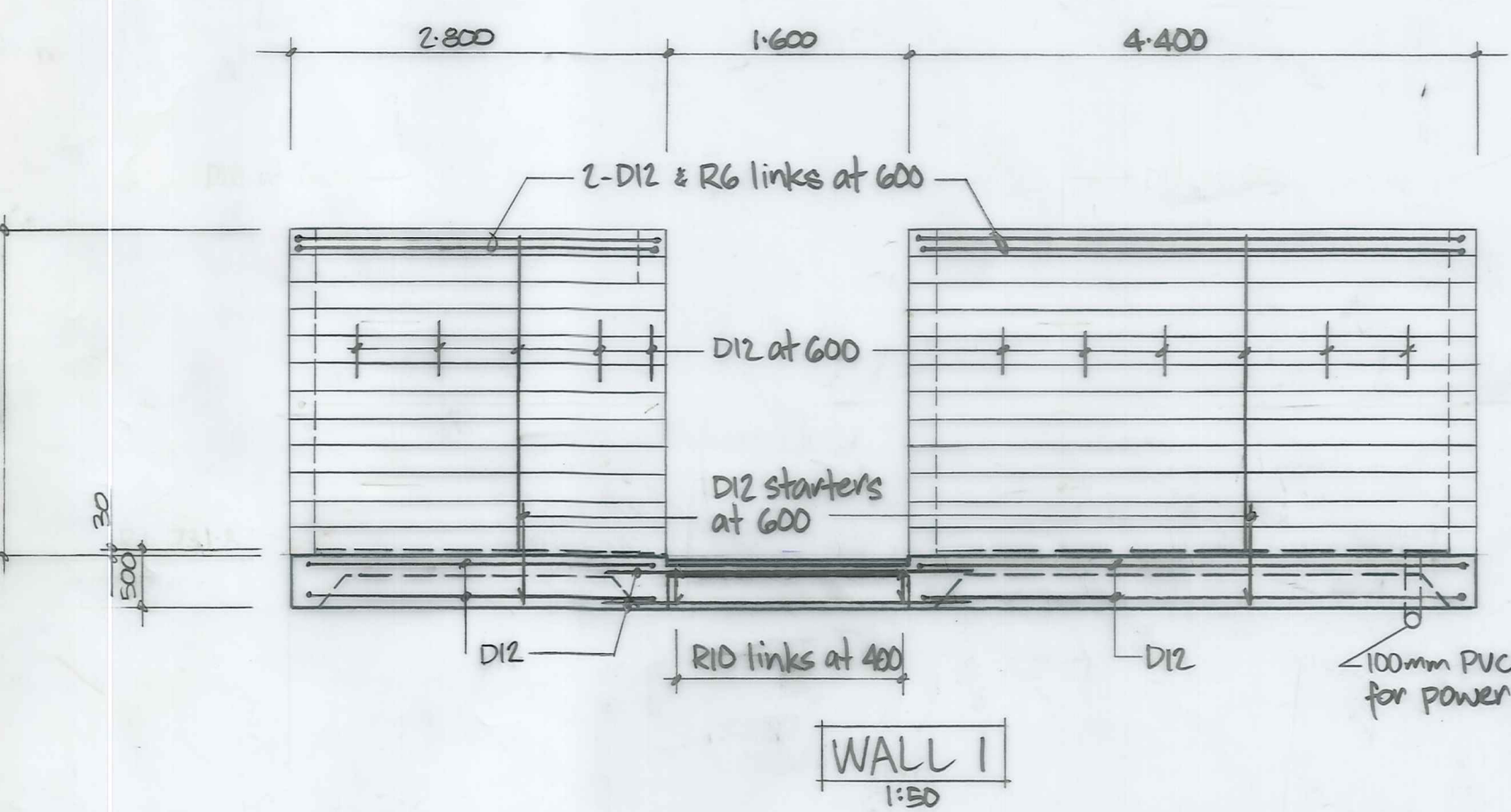
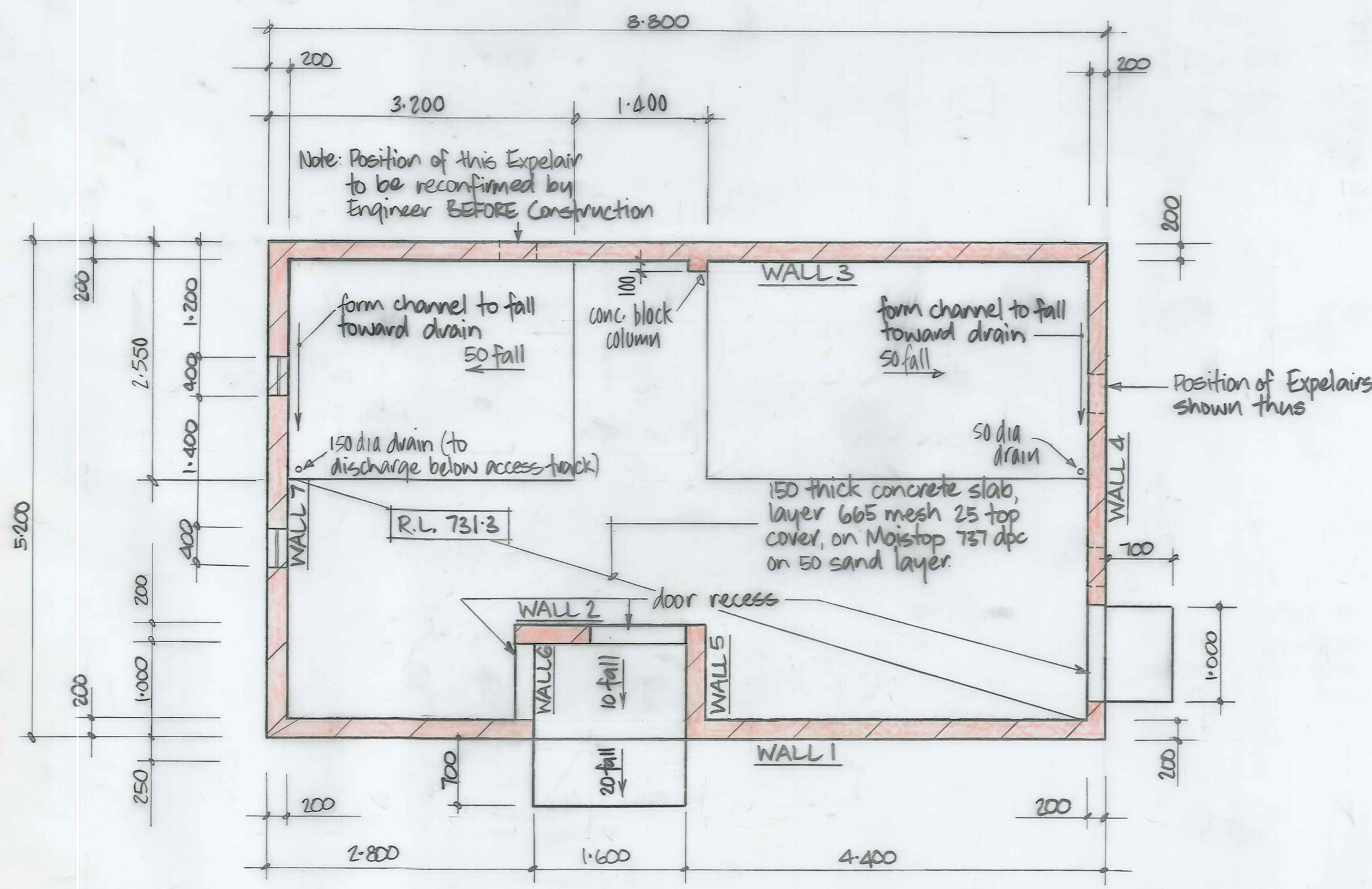
Notes: Provide galv. steel heavy duty louvres near floor level in both chemical rooms & Pump room. Mount an auto vane type controlled Expelair fan behind each. Connect each to local 3 pin outlet via a "Kambrook" time clock or similar. Provide pressed metal ventilators (about 100x200) to top & bottom of toilet door.

NOTE: 50 thick layer of 40mm crushed gravel to be placed under all tanks

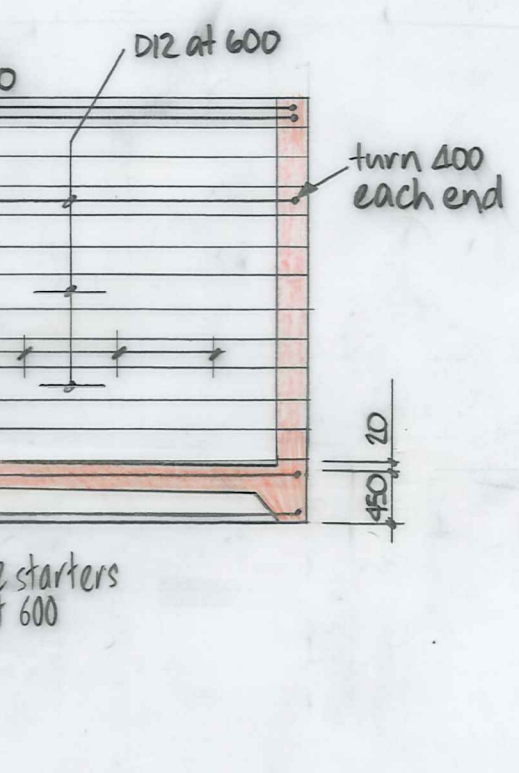
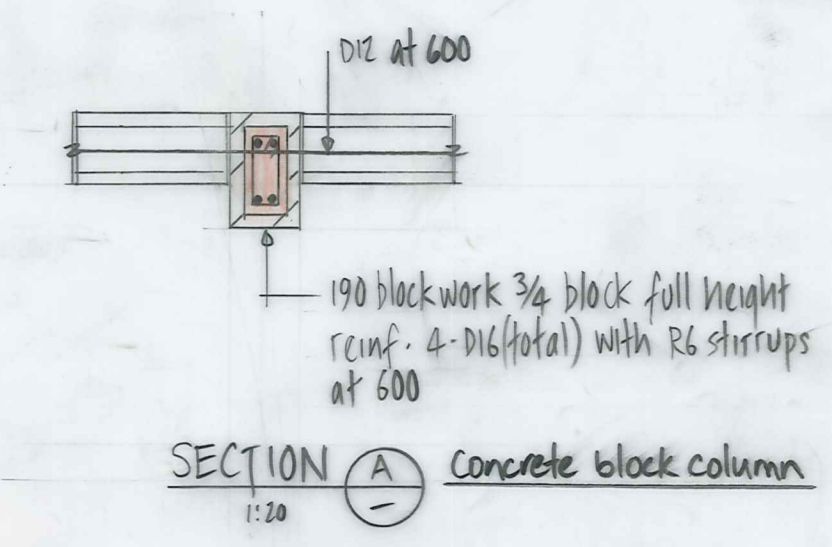
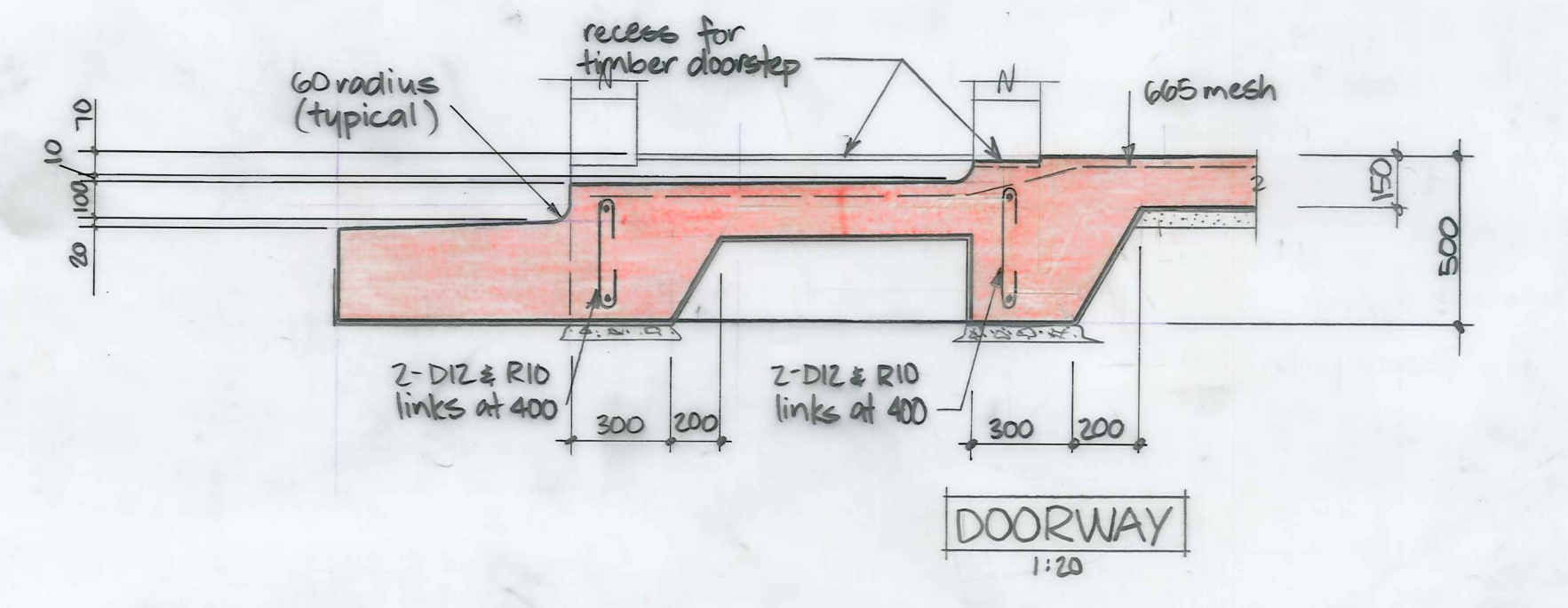
DUFFILL WATTS & KING LTD CONSULTING CIVIL & STRUCTURAL ENGINEERS Dunedin P.O. Box 5269 Ph. 777-133 Invercargill P.O. Box 576 Ph. 83049 Cromwell P.O. Box 82 Ph. 50-391		NASEBY BOROUGH COUNCIL		NASEBY WATER SUPPLY TREATMENT STATION		AMENDMENTS <table border="1"> <thead> <tr> <th>NO.</th> <th>BY</th> <th>DATE</th> <th>Appvd.</th> <th>Surveyed</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		NO.	BY	DATE	Appvd.	Surveyed																										NAME DATE G. Murray June 1983 S. Newlands June 1983 G. Murray June 1983 Checked J. McLeod Approved J. McLeod Aug 83		JOB NO. 10134 Sheet No. 3 of 3 shts. File L.B. F.B.	
NO.	BY	DATE	Appvd.	Surveyed																																					

Order Filemaster "D"
 SELF-ADHESIVE PLAN HANGER
 Number 137841

ORIGINAL SIZE INCHES



Notes: Reinforcing to be grade 275 steel.
Concrete to have a crushing strength of 20MPa at 28 days.
All cells in blockwork to be filled with concrete with a crushing strength of 17.5MPa at 28 days.

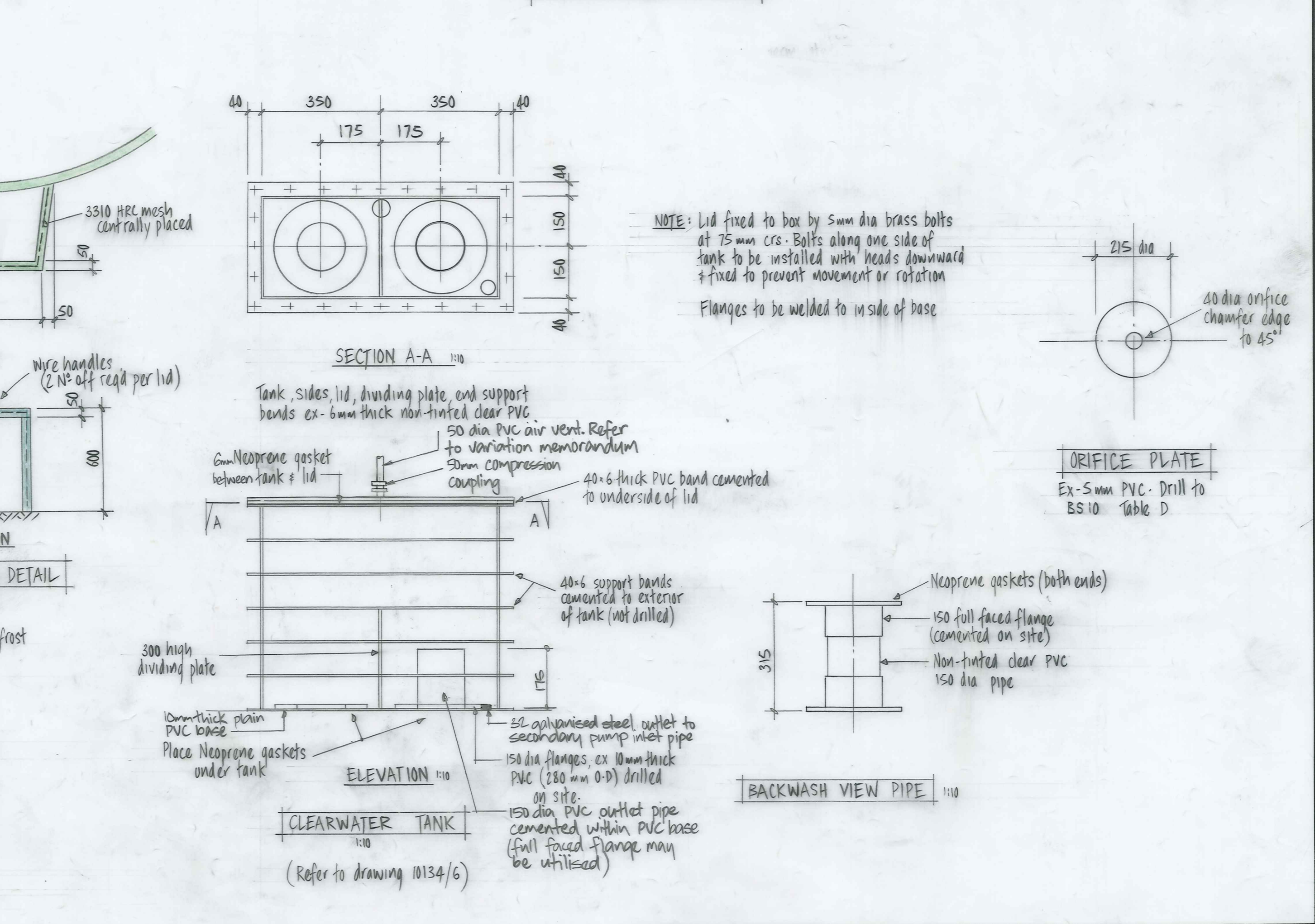
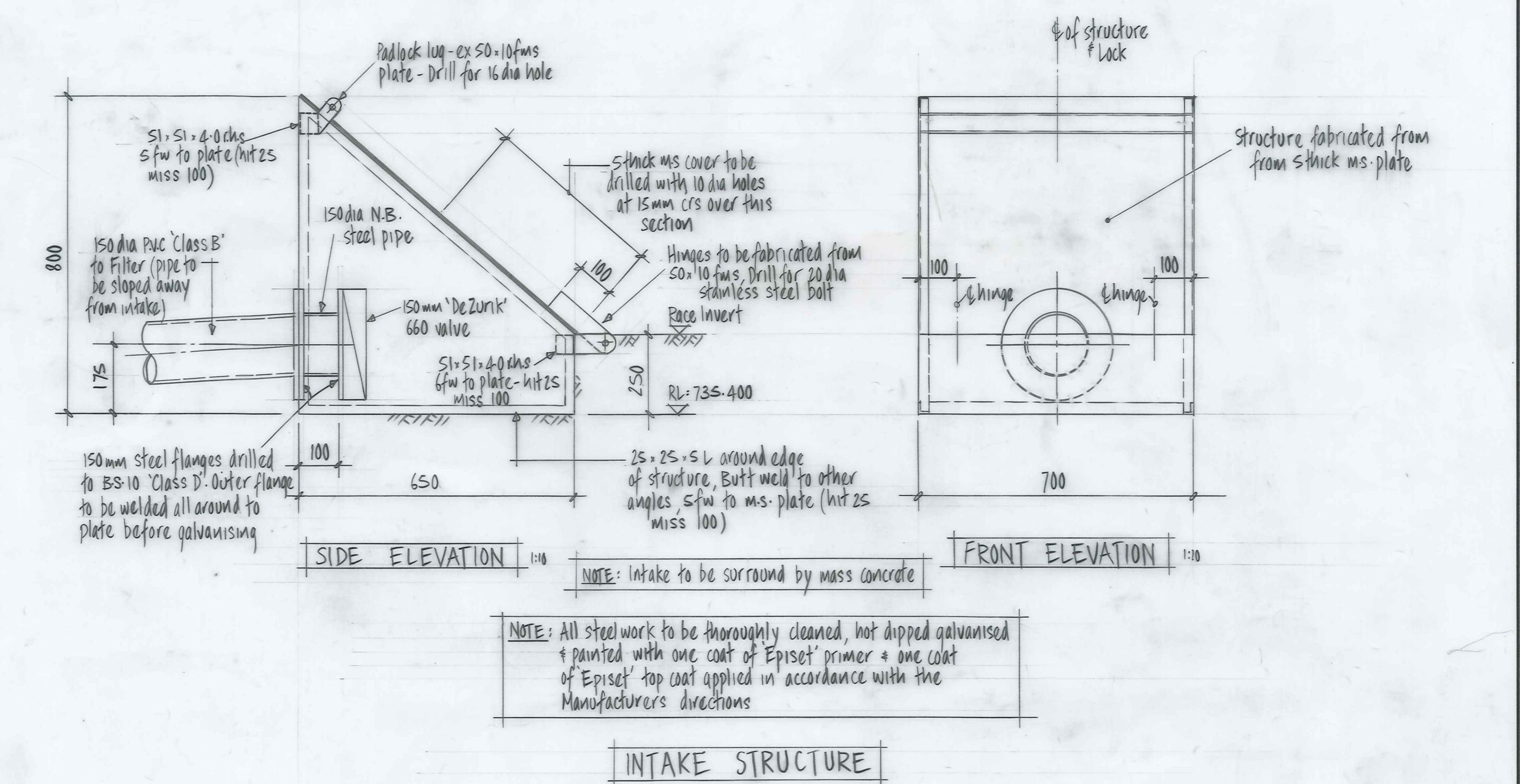
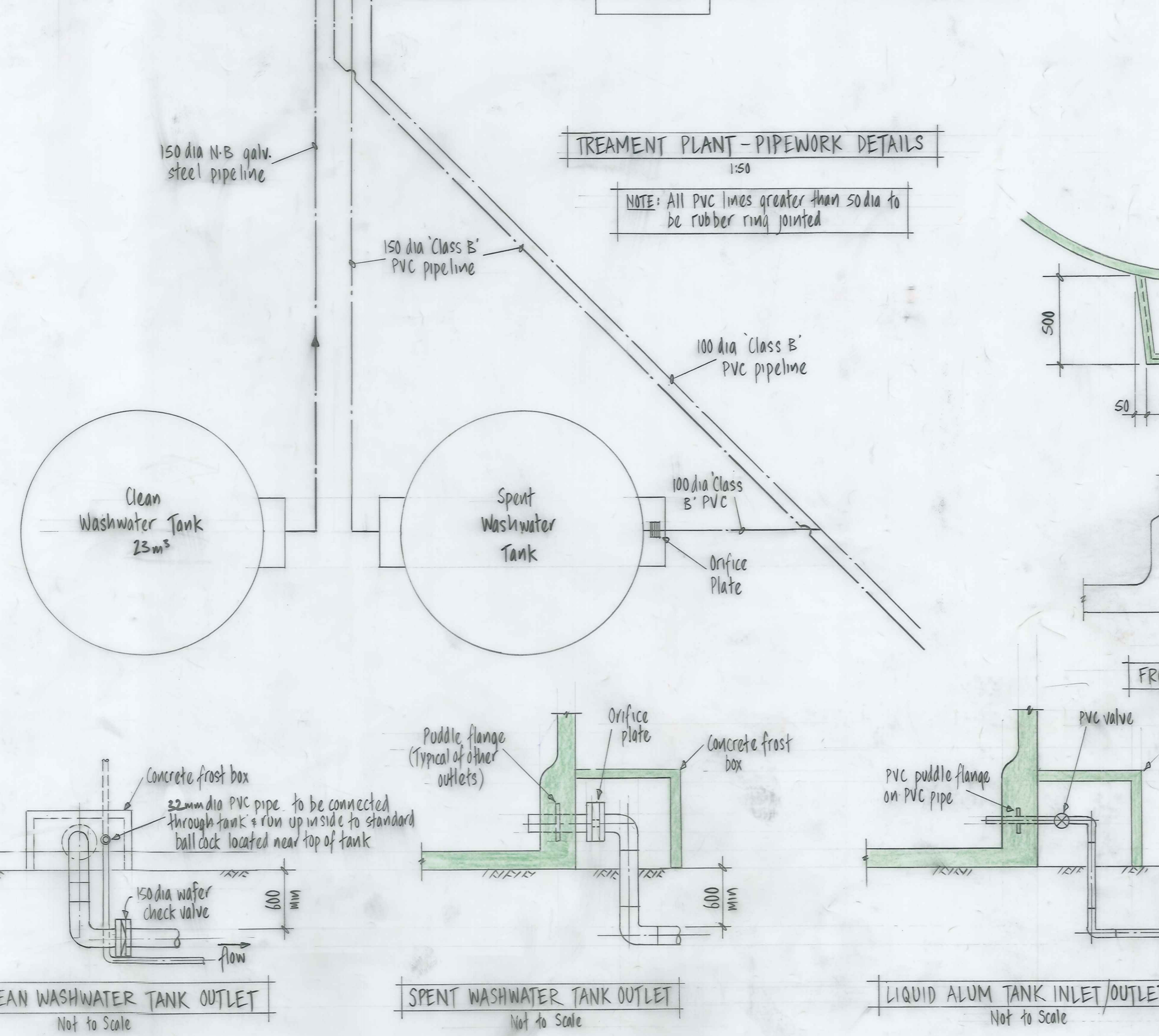
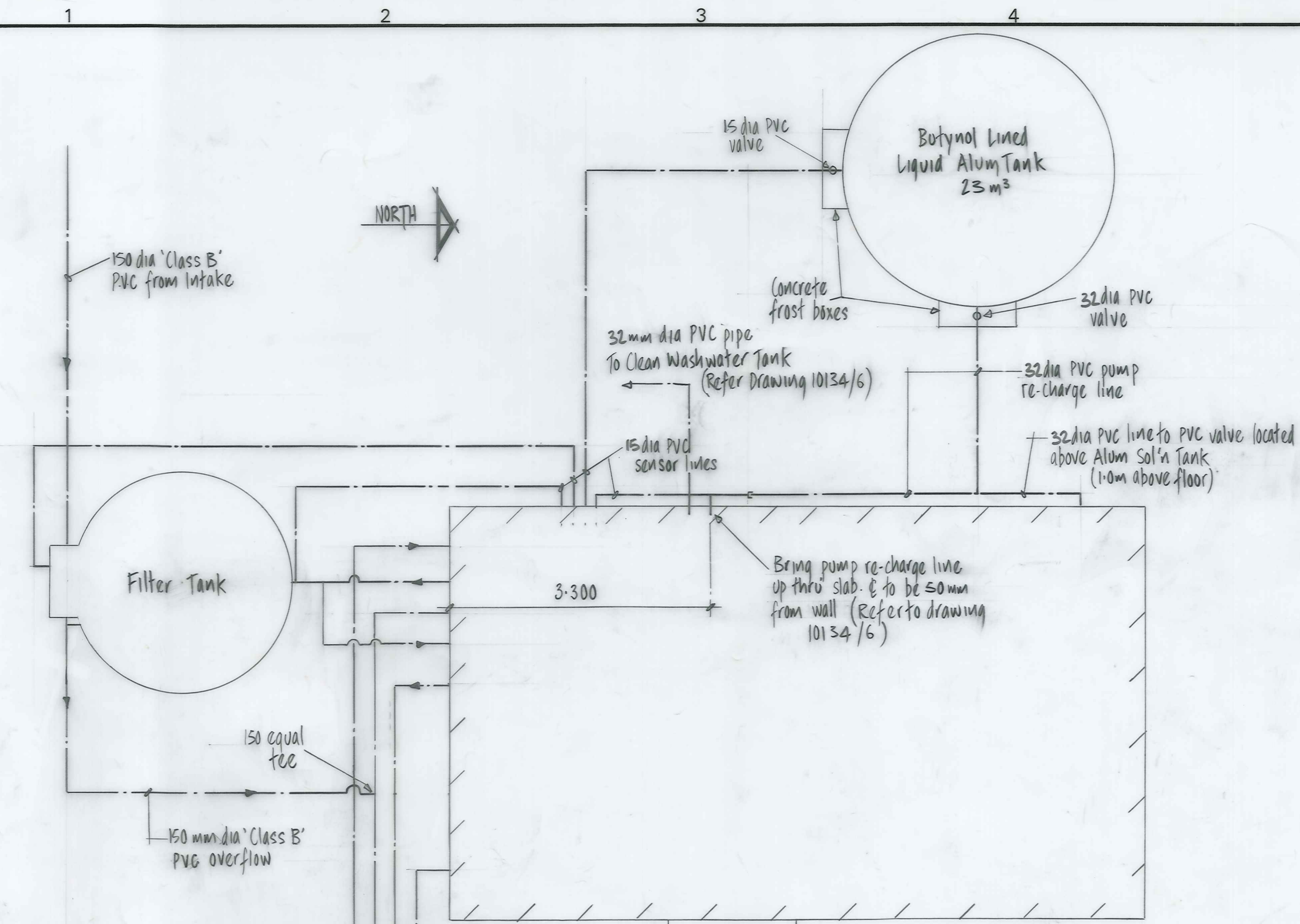


3 slab height change footing

DUFFILL WATTS & KING LTD CONSULTING CIVIL & STRUCTURAL ENGINEERS Dunedin P.O. Box 5269 Ph. 777-133 Invercargill P.O. Box 576 Ph. 83049 Cromwell P.O. Box 82 Ph. 50391		NASEBY BOROUGH COUNCIL		NASEBY WATER SUPPLY TREATMENT STATION		AMENDMENTS NO. BY DATE A SN 5/1/88 50mm drain in pump area replaced by 150mm drain. Extractor fan on wall 5 relocated.		NAME DATE G Murray June '88 G Murray June '88 S. Marshall Aug '83		JOB NO. 10134		Sheet No. 4A of 4 sheets	
						Appvd. Surveied Drawn Calculations Traced Checked Approved		File L.B. F.B.					

10134/3 Naseby Water Supply Treatment Station Pipework & Intake Structure

ORIGINAL SIZE
mm INCHES
300
200
150
100
50
0
0 1 2 3 4 5 6 7 8 9 10 11 12



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NASEBY BOROUGH COUNCIL

**NASEBY WATER SUPPLY
TREATMENT STATION PIPEWORK & INTAKE STRUCTURE**

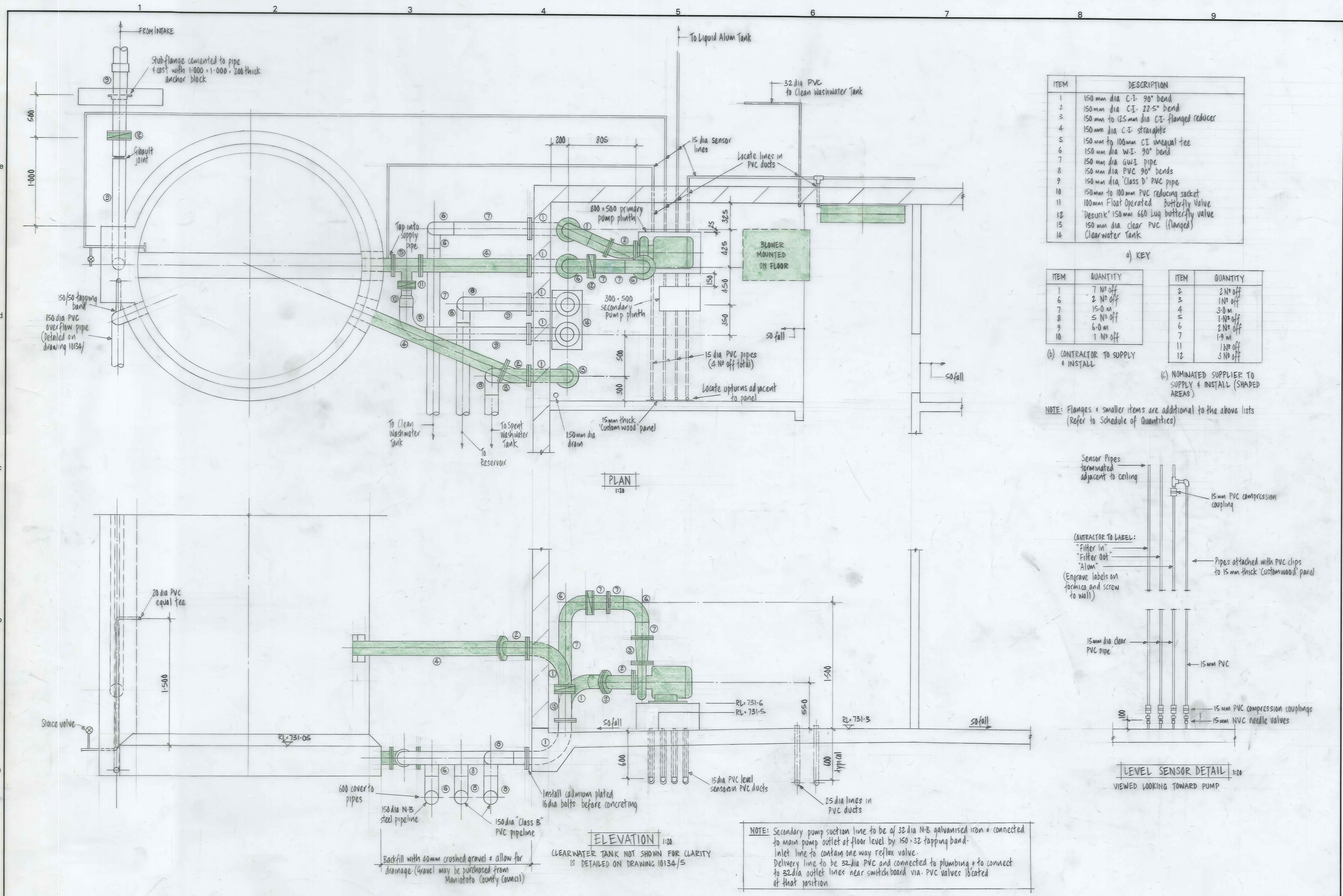
AMENDMENTS			NAME	DATE	JOB NO.	Sheet No
NO.	BY	DATE			10134	5A
A	SN	29/1/83	Air bleed valve replaced by vent	Appvd. Surveyed		
			Alum. Clearwater tank outlet weir	Drawn		
			pipe & secondary tank outlet	Calculations		
			provided. Sec. pump 25mm delivery	Traced		
			line replaced with 32mm	Checked	SW NEWLANDS JULY 1983	
				Approved	J. KNIX JULY 1983	
					J. R. [Signature]	
					Approved Aug 83	

Naseby Water Supply Treatment Plant Pipework Details

10/13/7/0

Re-Order Filemaster "D" SELF-ADHESIVE PLAN HANGER

ORIGINAL SIZE mm INCHES



ITEM	DESCRIPTION
1	150 mm dia C.I. 90° bend
2	150 mm dia C.I. 22.5° Bend
3	150 mm to 125 mm dia C.I. flanged reducer
4	150 mm dia C.I. straights
5	150 mm to 100 mm CI unequal tee
6	150 mm dia W.I. 90° bend
7	150 mm dia G.W.I pipe
8	150 mm dia PVC 90° bends
9	150 mm dia 'Class D' PVC pipe
10	150 mm to 100 mm PVC reducing socket
11	100 mm Float Operated Butterfly Valve
12	'Desunk' 150 mm 660 Lug butterfly valve
13	150 mm dia clear PVC (flanged) Clearwater Tank
14	

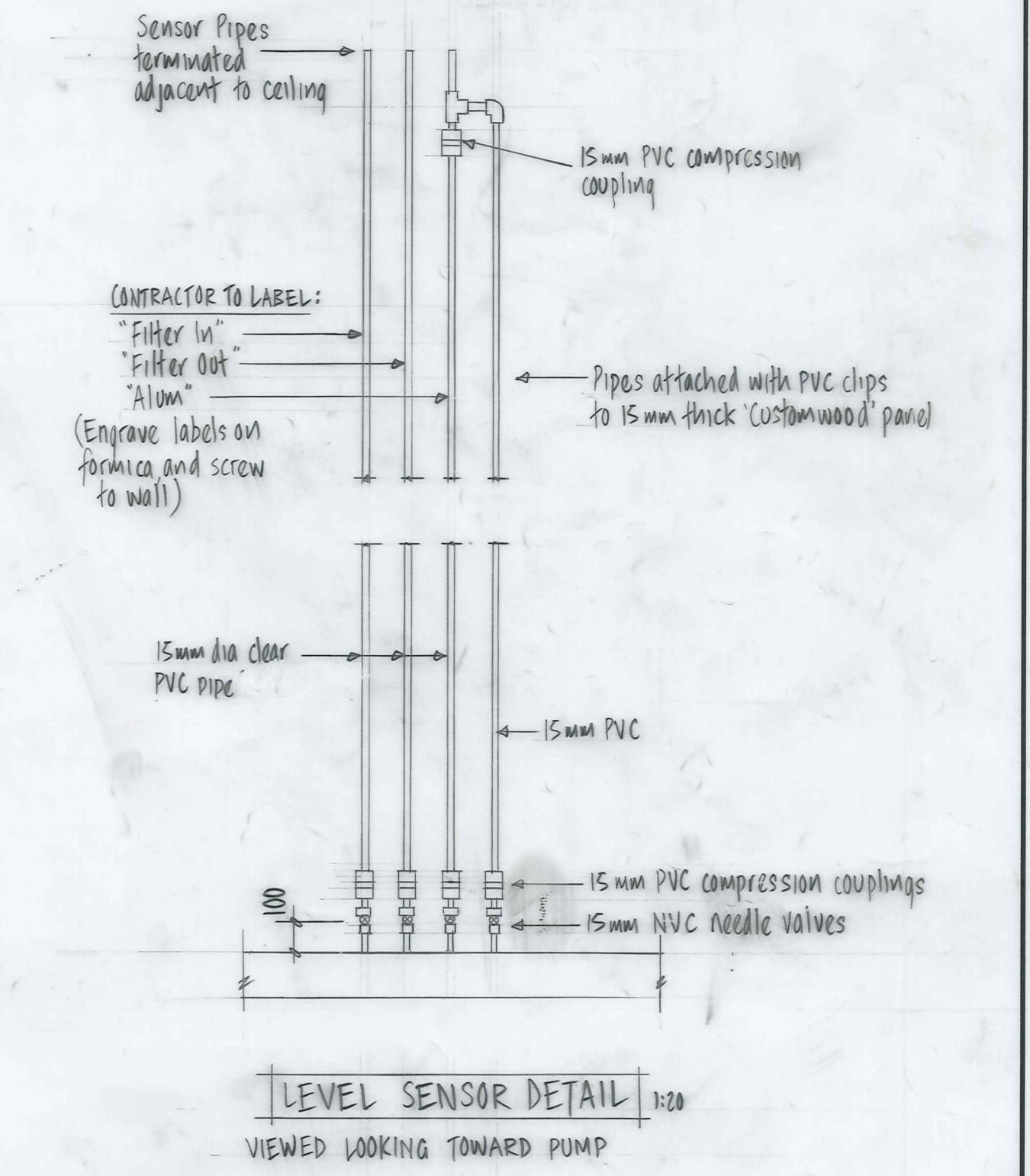
a) KEY

ITEM	QUANTITY	ITEM	QUANTITY
1	7 No off	2	2 No off
6	2 No off	3	1 No off
7	15.0 m	4	3.0 m
8	5 No off	5	1 No off
9	6.0 m	6	2 No off
10	1 No off	7	1.9 m
		11	1 No off
		12	3 No off

(b) CONTRACTOR TO SUPPLY & INSTALL

(c) NOMINATED SUPPLIER TO SUPPLY & INSTALL (SHADED AREAS)

NOTE: Flanges & smaller items are additional to the above lists (Refer to Schedule of Quantities)



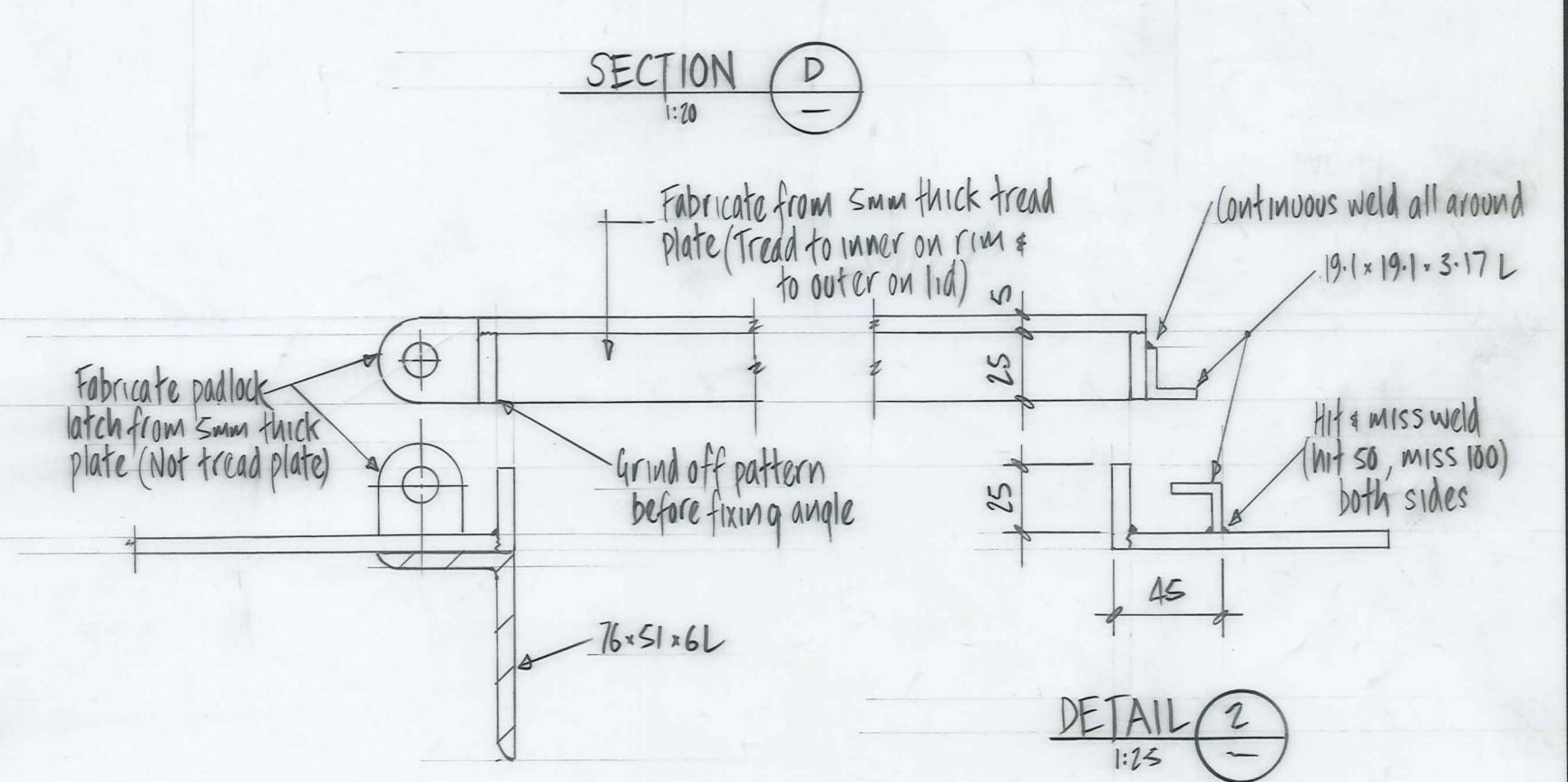
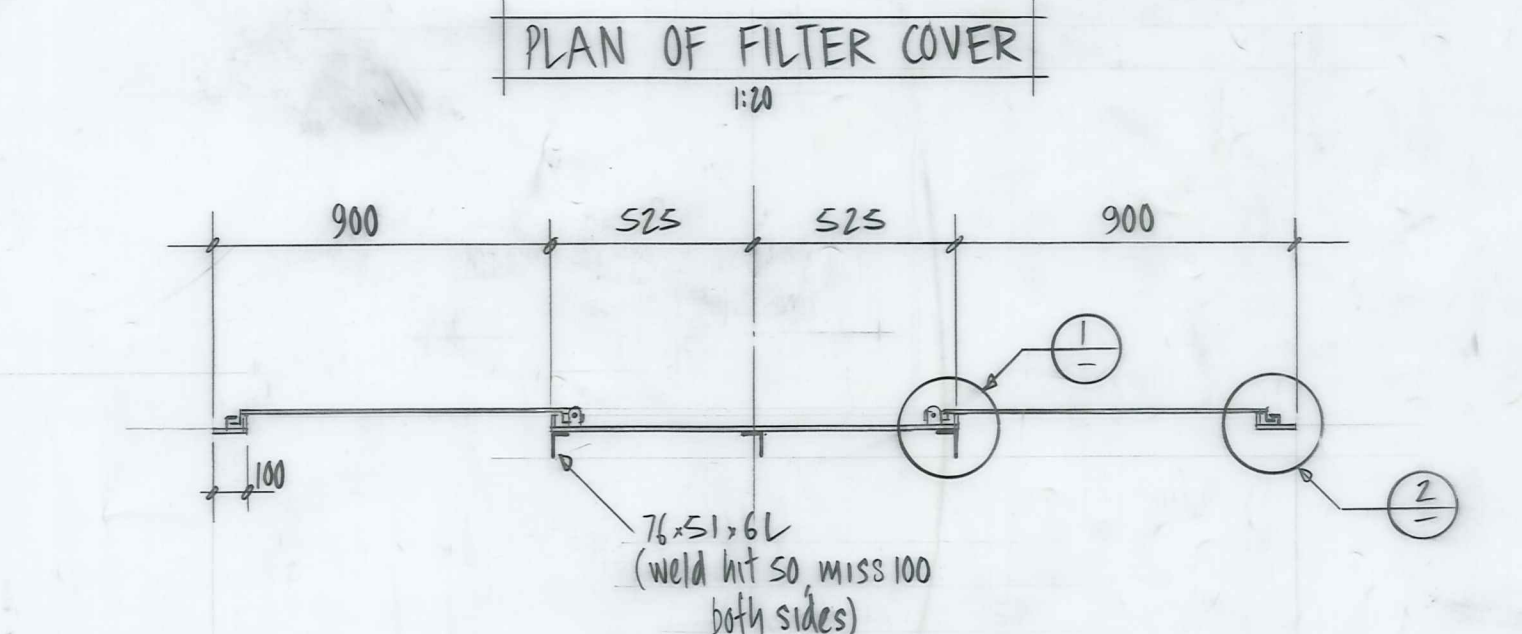
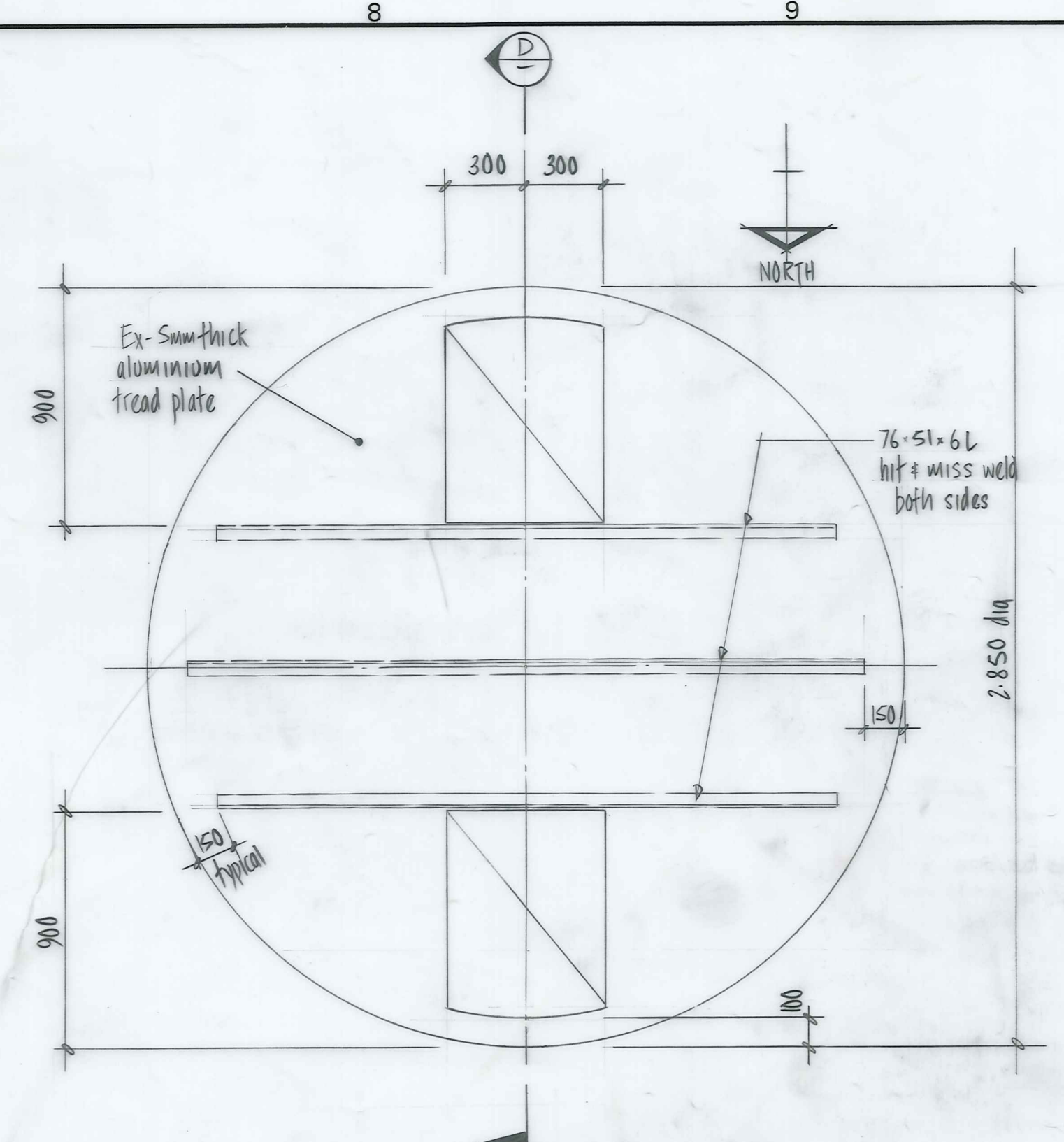
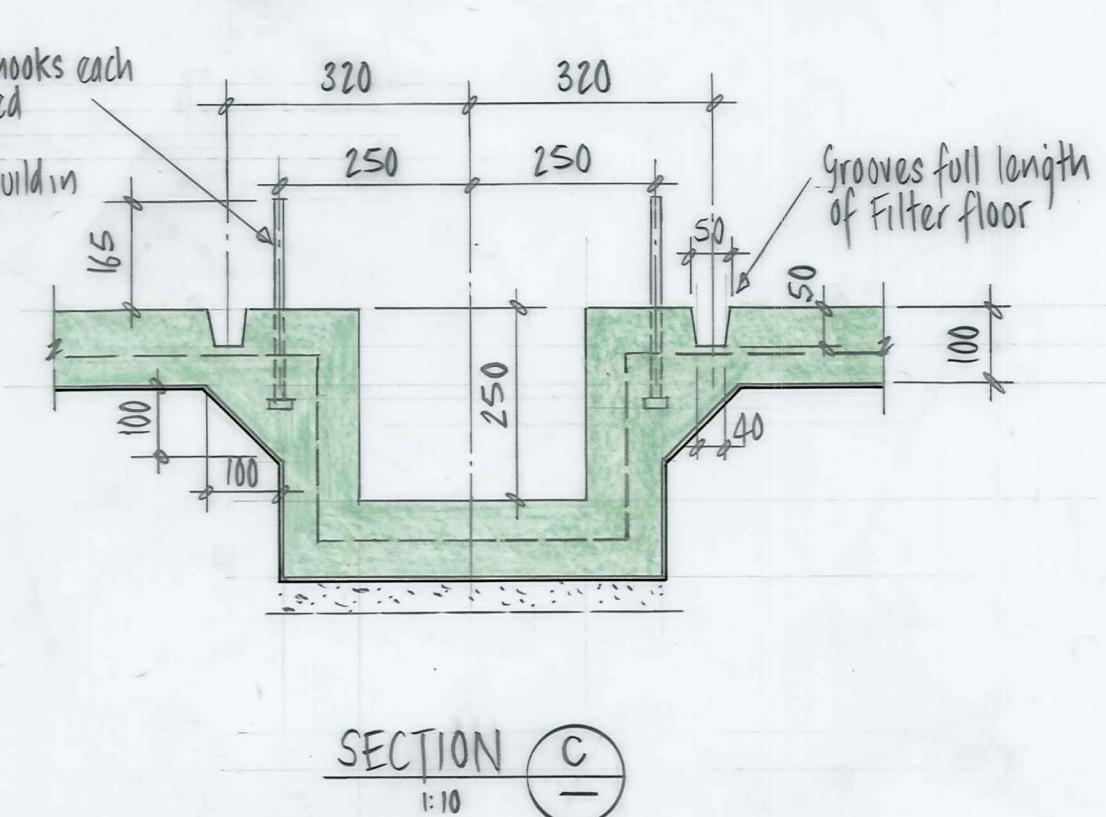
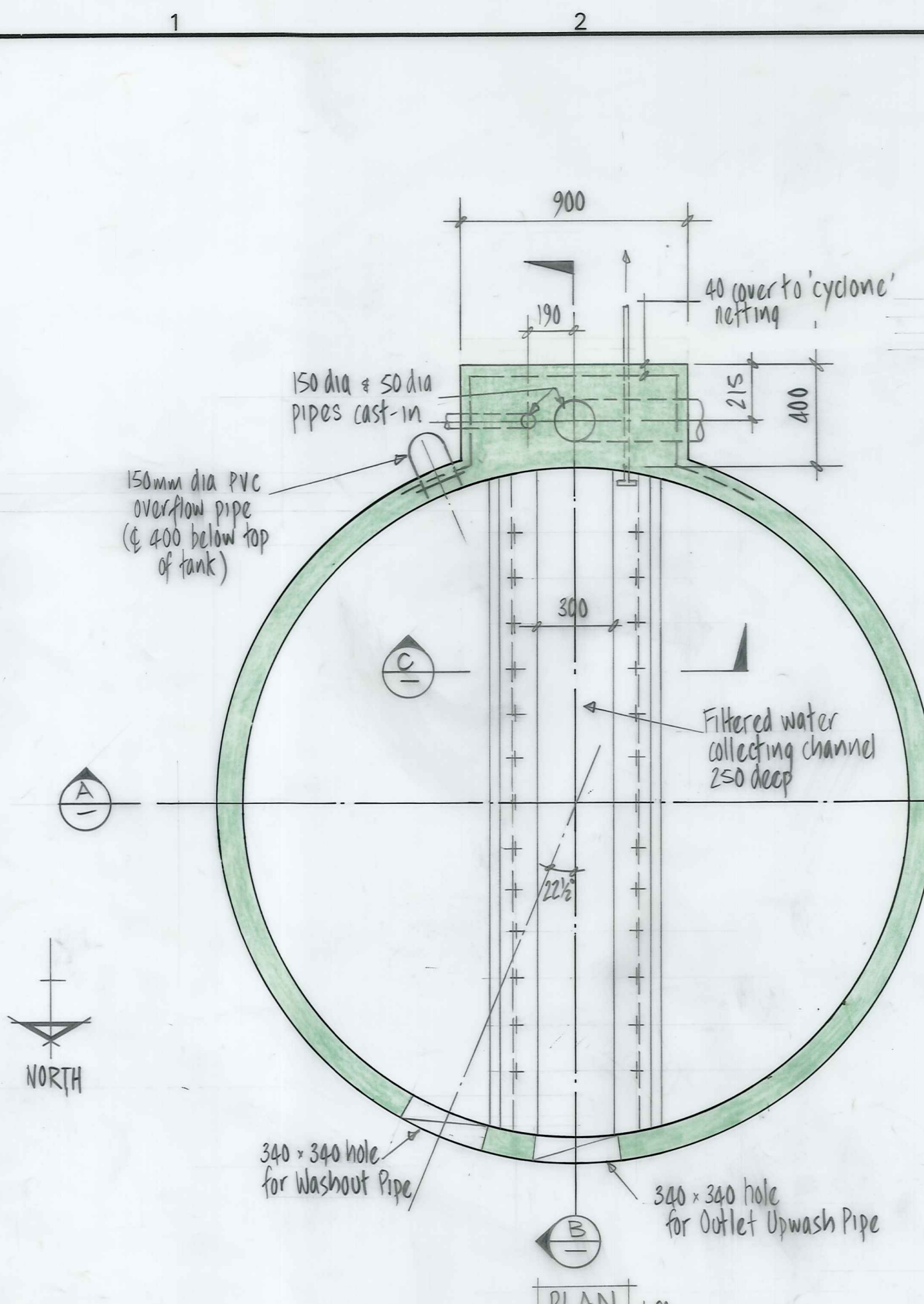
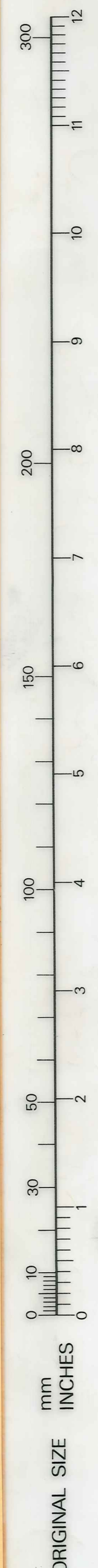
NOTE: Secondary pump suction line to be of 32 dia N-B galvanised iron & connected to main pump outlet at floor level by 150-32 tapping band. Inlet line to contain one way reflux valve. Delivery line to be 32 dia PVC and connected to plumbing & to connect to 32 dia outlet lines near switch board via PVC valves located at that position.

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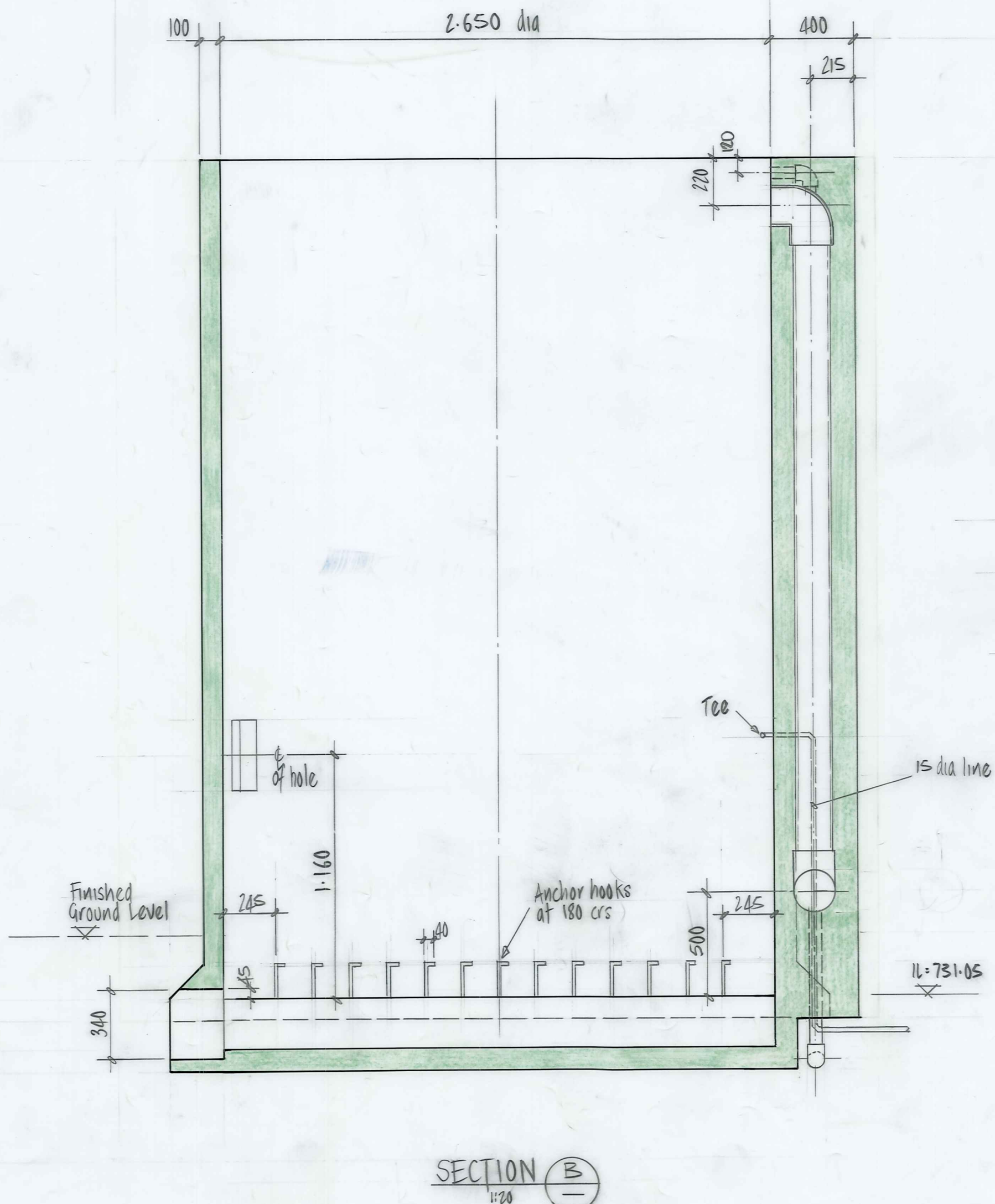
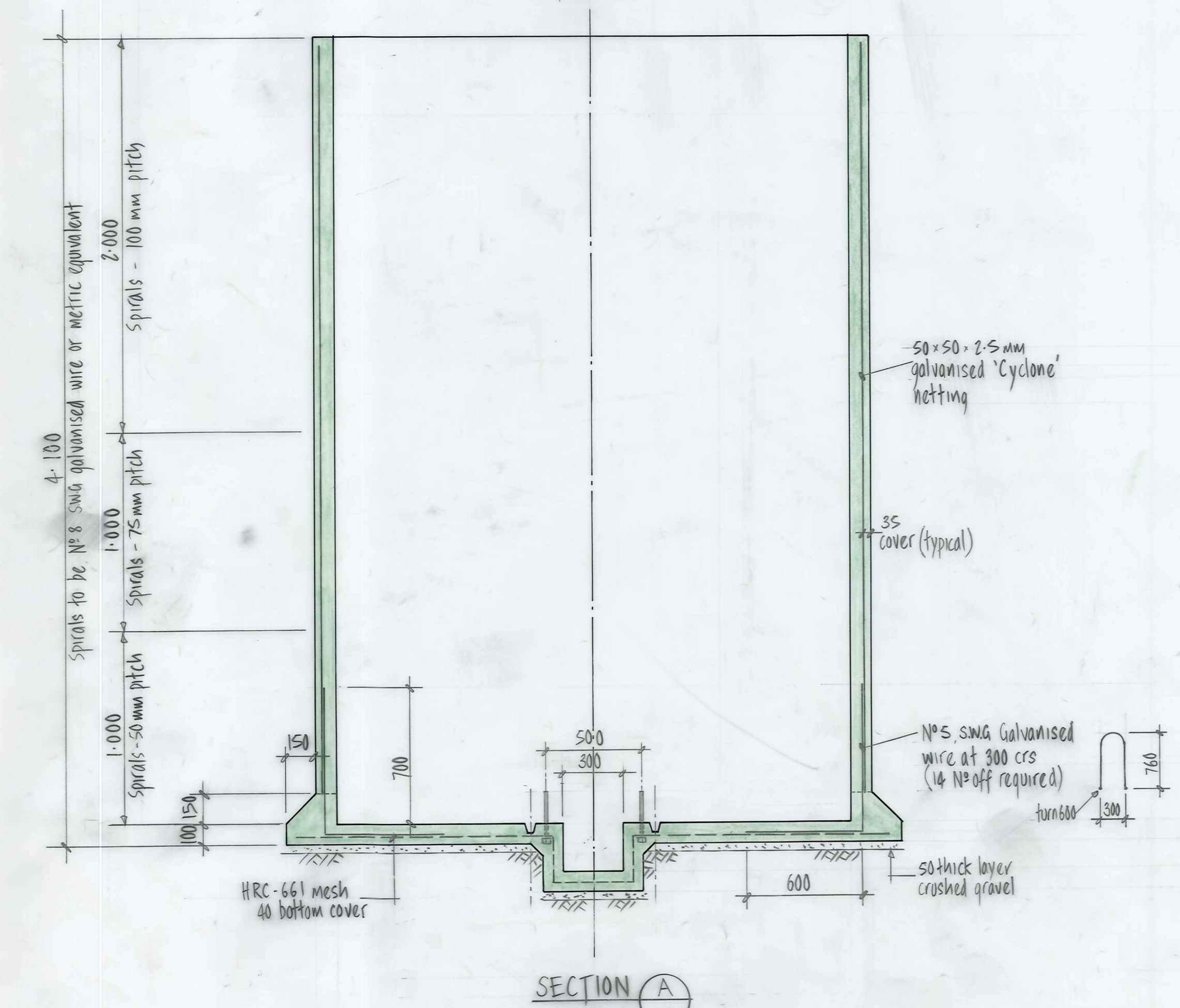
NASEBY BOROUGH COUNCIL

NASEBY WATER SUPPLY AUGMENTATION TREATMENT PLANT PIPEWORK DETAILS

AMENDMENTS				NAME	DATE	JOB NO.	Sheet No	
NO.	BY	DATE	Appvd.	Surveyed		10134	6A	
A	SN	2/1/83		Drawn	S.W. NEWLANDS			JUNE 1982
				Calculations				
				Traced	J. KNIX			JULY 1983
				Checked				
				Approved		File	L.B.	F.B.



- NOTE:
1. Cover to be fixed to top of Filter Tank with 12 No off 12 dia 'Dynamolts' equally spaced
 2. Cover to be isolated from tank concrete by 'Flintkote' Type 7 emulsion
 3. Dynamolts to be isolated using nylon washers
 4. All cover materials to be aluminium

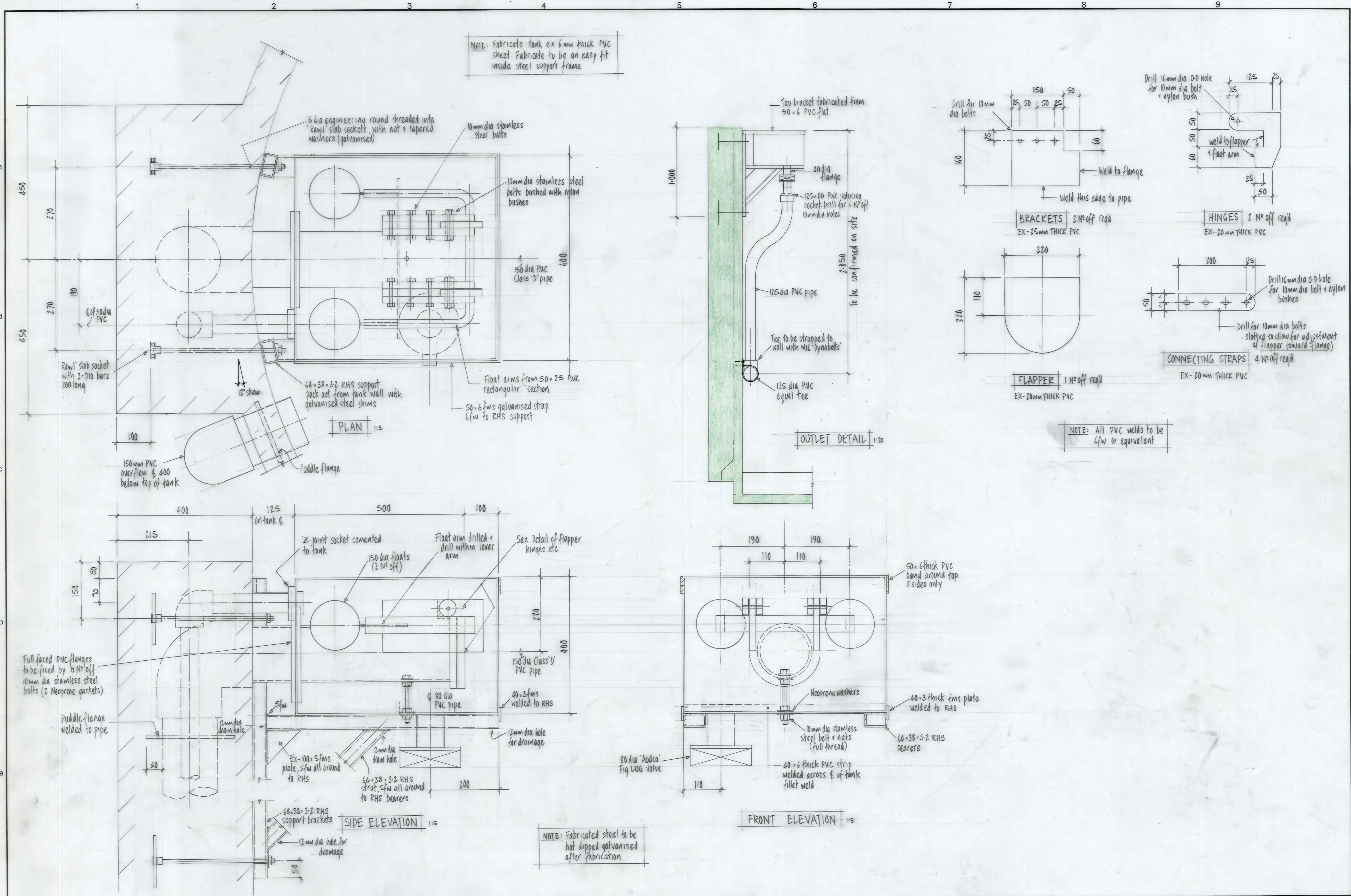


DUFFILL WATTS & KING LTD CONSULTING CIVIL & STRUCTURAL ENGINEERS Dunedin P.O. Box 5269 Ph. 777-133 Invercargill P.O. Box 576 Ph. 83-049 Cromwell P.O. Box 82 Ph. 50-391		NASEBY BOROUGH COUNCIL		NASEBY WATER SUPPLY AUGMENTATION TREATMENT FILTER		AMENDMENTS NO. BY DATE A SN 29/83 Dimension to 50mm dia. overflow amended		Appvd. _____ Surved _____ Drawn _____ Calculations _____ Traced _____ Checked _____ Approved _____		NAME _____ DATE JUNE 1983 JUNE 1983 Aug 83		JOB NO. 10134 File _____ L.B. _____ F.B. _____		Sheet No. 7A of _____ shts	
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Naseby Water Supply Filter Constant Head Tank

Order Filemaster "D" SELF-ADHESIVE PLAN HANGER Number 137941

ORIGINAL SIZE INCHES



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Cromwell P.O. Box 82 Ph. 50391

NASEBY BOROUGH COUNCIL

NASEBY WATER SUPPLY FILTER CONSTANT HEAD TANK

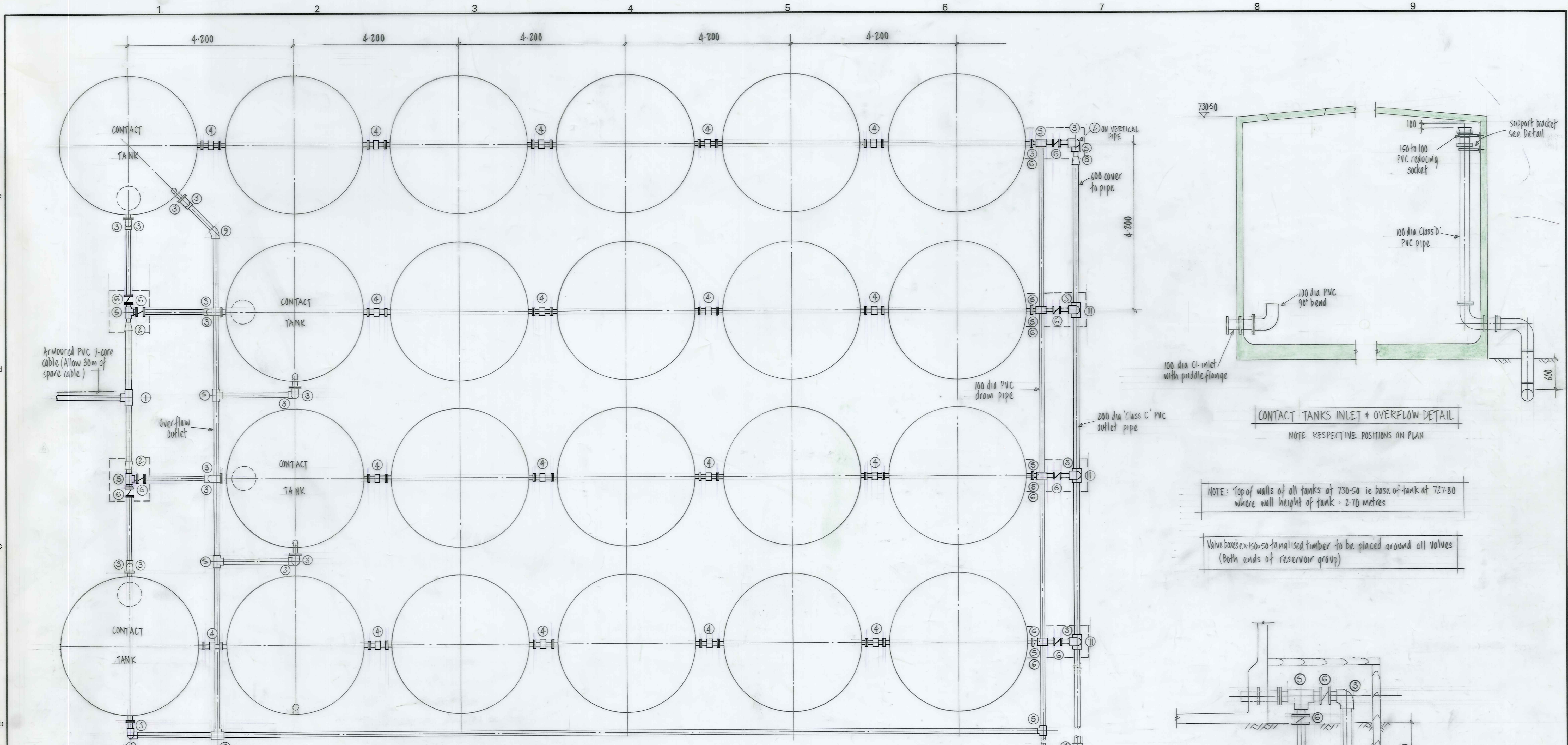
AMENDMENTS				NAME	DATE	JOB NO.	Sheet No	
NO.	BY	DATE	Appvd.	Surveyed		10134	8A	
A	EN	5/1/83	Dimension to overflow shown	Drawn				
				Calculations				
				Traced	J. KNOX JUNE 1983			
				Checked				
				Approved		File	L.B.	F.B.

Naseby Water Supply Reservoir Tank Group

10134/1

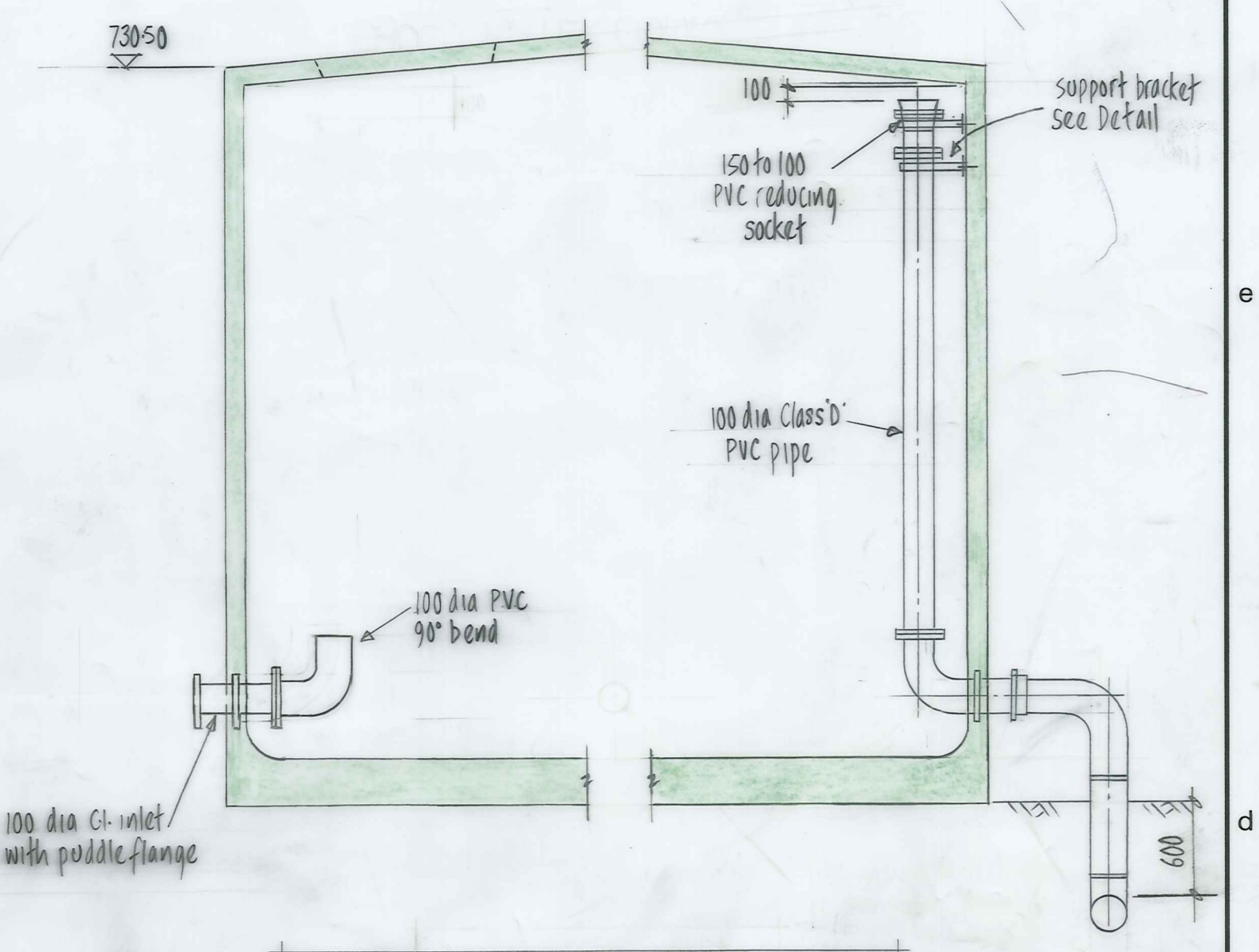
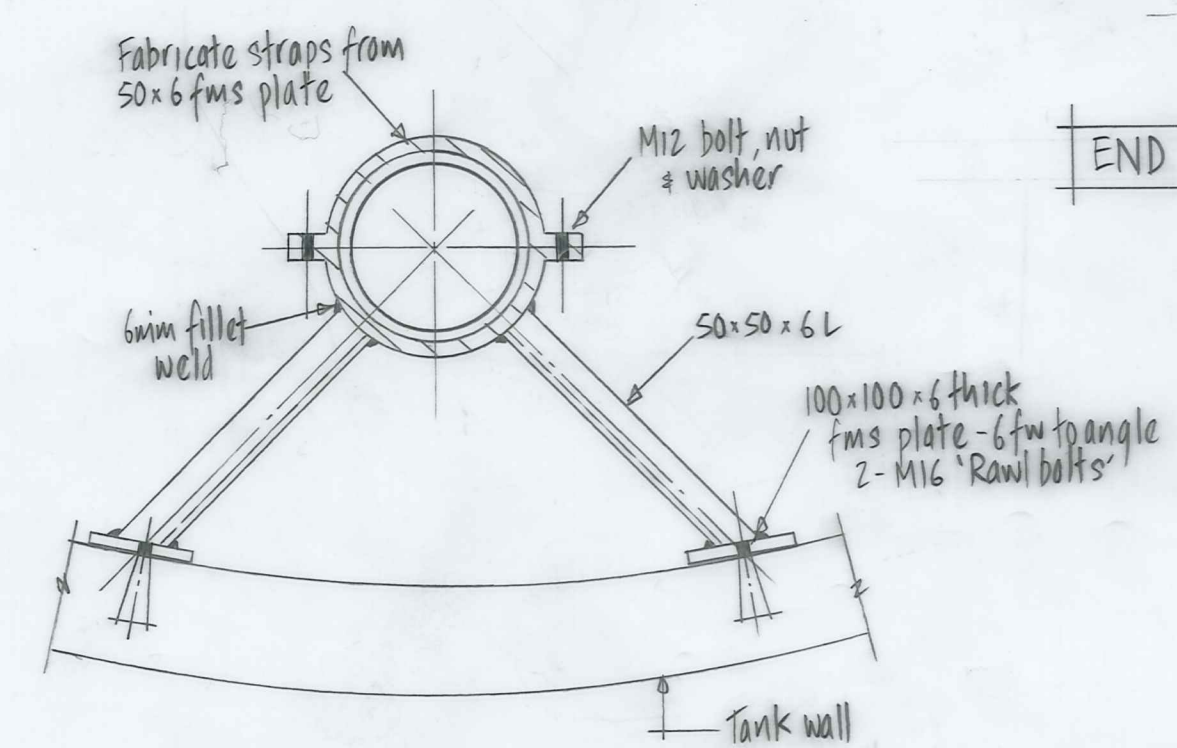
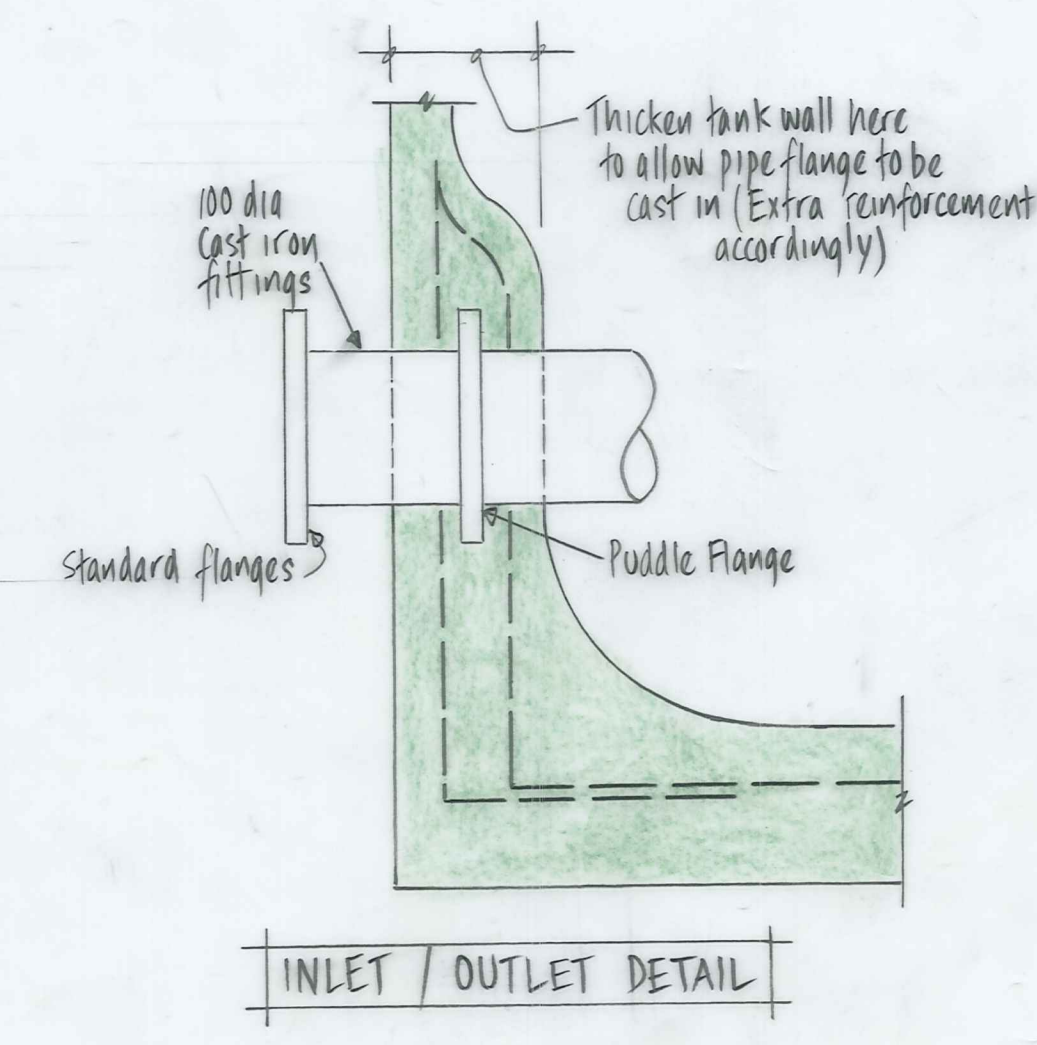
Re-Order Filemaster "D" SELF-ADHESIVE PLAN HANGER

ORIGINAL SIZE mm INCHES



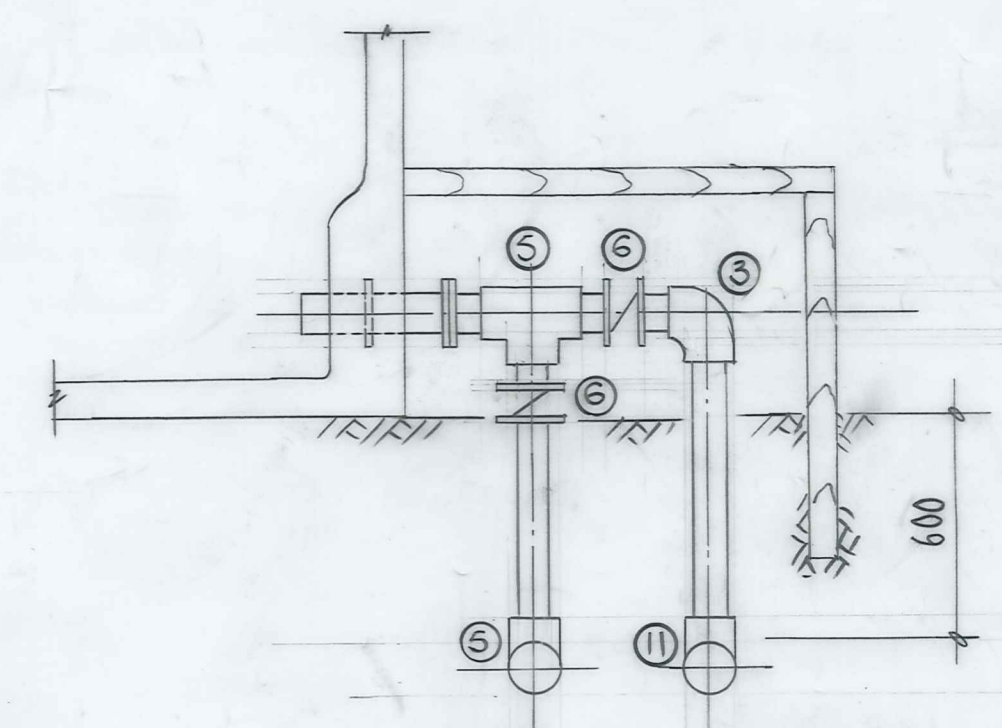
ITEM No	DESCRIPTION	NO OFF
1	150 dia PVC equal tee	1
2	150 to 100 PVC reducing socket	3
3	100 dia PVC 90° formed bend	21
4	100 dia gibault coupling	18
5	100 dia PVC equal tee	13
6	100 dia Butterfly valve	12
7	150 dia PVC 90° bend	1
8	200 to 150 PVC reducing socket	1
9	100 dia PVC 45° formed bend	2
10	200 dia PVC 45° formed bend	1
11	200 x 100 "Milnes" gibault tee	3

PLAN 1:50
NOTE: 50 mm layer of 40 mm crushed gravel to be placed under all tanks



NOTE: Top of walls of all tanks at 730.50 ie base of tank at 727.80 where wall height of tank = 2.70 metres

Valve boxes x 150x50 galvanised timber to be placed around all valves (both ends of reservoir group)



Engraved formica labels stating "Filter inlet valve to be closed and mains at treatment plant to be isolated before closing all four valves" are to be located in the two inlet valve boxes.

DUFFILL WATTS & KING LTD CONSULTING CIVIL & STRUCTURAL ENGINEERS Dunedin P.O. Box 5269 Ph. 777-133 Invercargill P.O. Box 576 Ph. 83-049 Cromwell P.O. Box 82 Ph. 50-391	NASEBY BOROUGH COUNCIL	NASEBY WATER SUPPLY RESERVOIR TANK GROUP	AMENDMENTS		NAME DATE S.W. NEWLANDS JULY 1983 J. KNOX JULY 1983 Approved <i>[Signature]</i> Aug 83	JOB NO. 10134	Sheet No 9A of 9 shts
			NO. BY DATE	Appvd. Sd.			
			1 A SN 1/1/83 Labels in valve boxes added				

NASEBY WATER SUPPLY
 WATER RETICULATION & TRUNK MAIN DETAILS

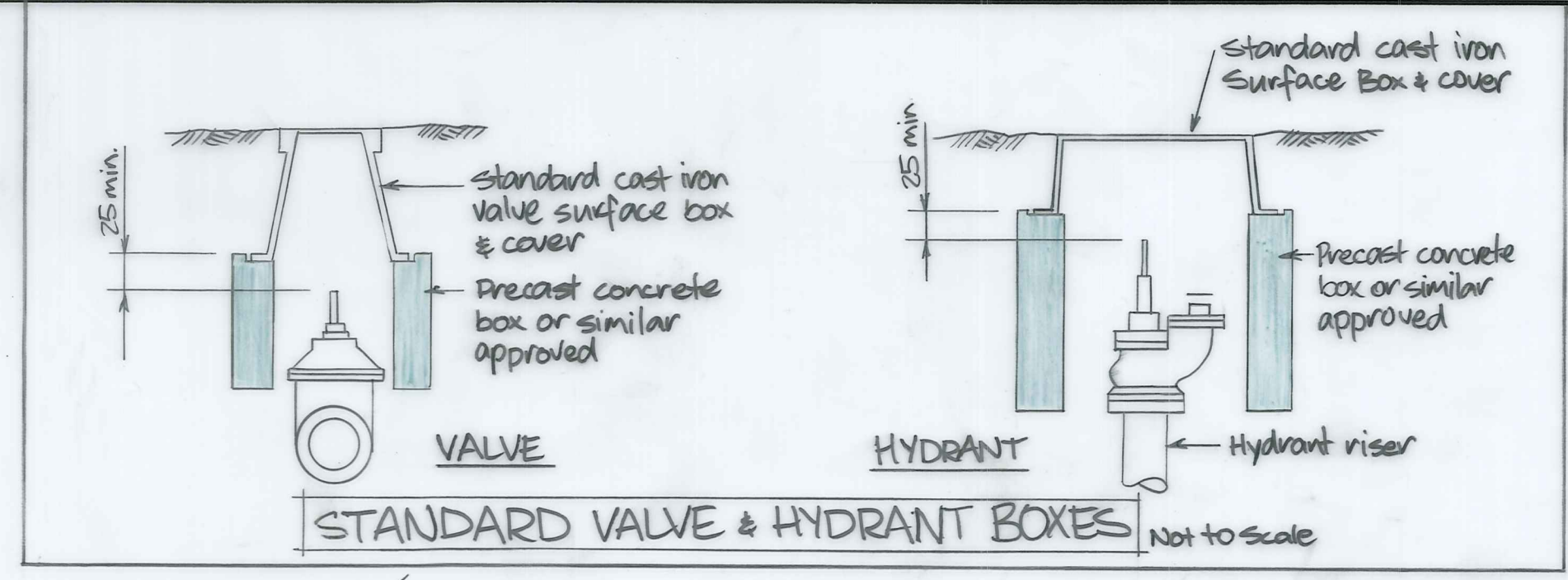
W1547/10

Re-Order Filemaster "D"
 SELF-ADHESIVE PLAN HANGER
 Patent Number 137841

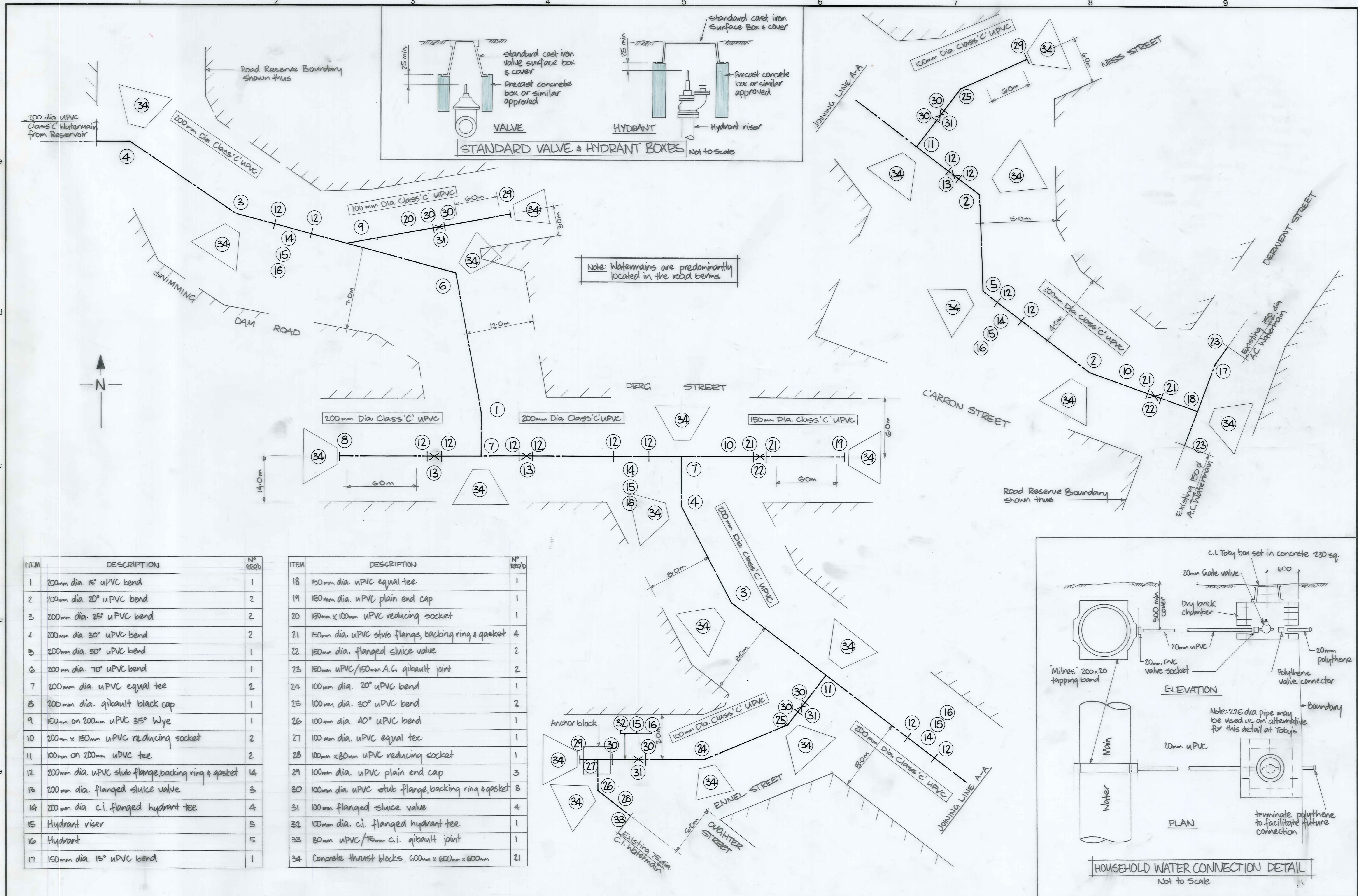
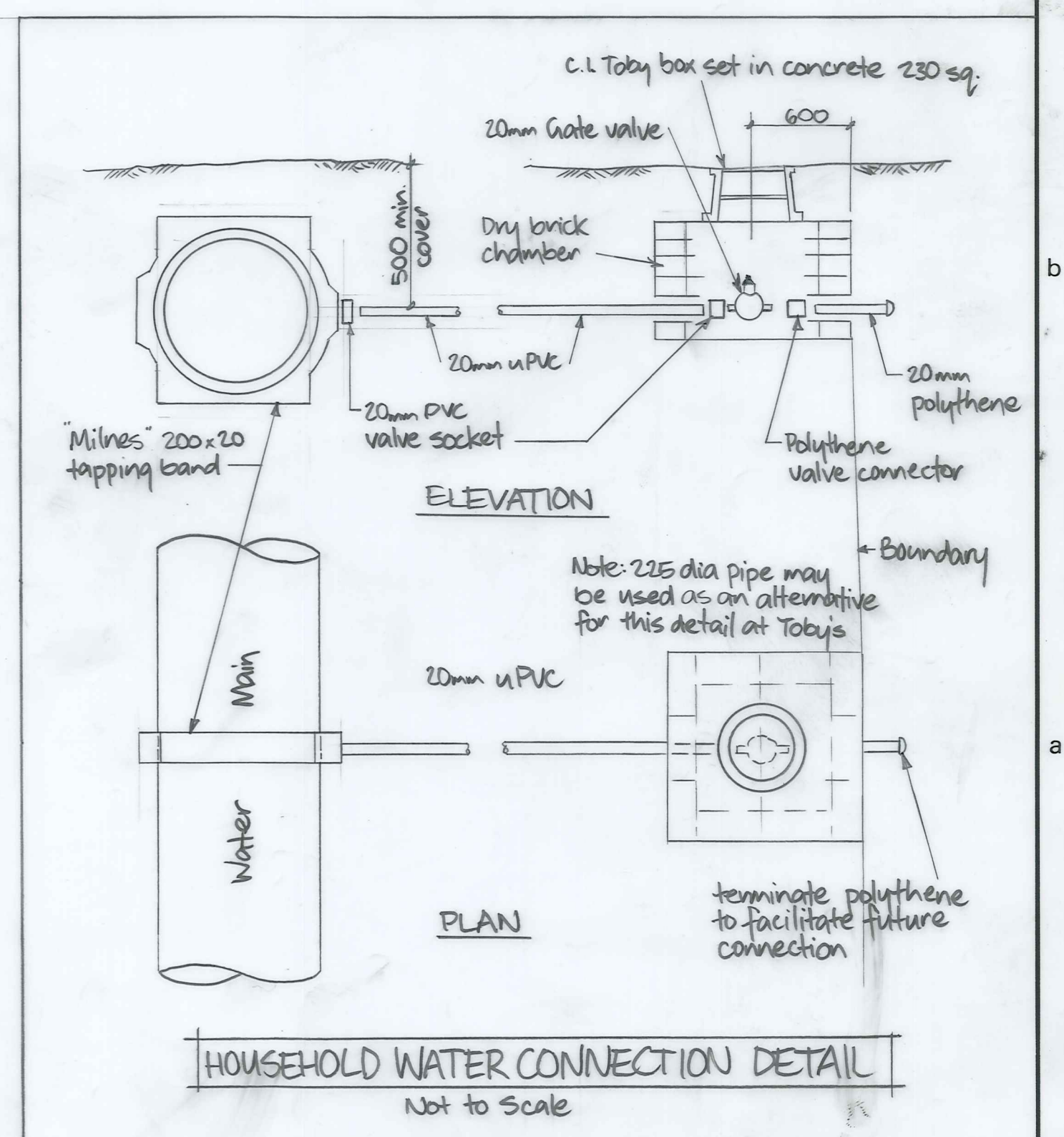
ORIGINAL SIZE
 mm INCHES
 300 12
 200 8
 150 6
 100 4
 50 2
 0 0

ITEM	DESCRIPTION	NO REQ'D
1	200mm dia. 15° uPVC bend	1
2	200mm dia. 20° uPVC bend	2
3	200mm dia. 25° uPVC bend	2
4	200mm dia. 30° uPVC bend	2
5	200mm dia. 50° uPVC bend	1
6	200mm dia. 70° uPVC bend	1
7	200mm dia. uPVC equal tee	2
8	200mm dia. gibault black cap	1
9	150mm on 200mm uPVC 35° Wye	1
10	200mm x 150mm uPVC reducing socket	2
11	100mm on 200mm uPVC tee	2
12	200mm dia. uPVC stub flange, backing ring & gasket	14
13	200mm dia. flanged sluice valve	3
14	200mm dia. c.i. flanged hydrant tee	4
15	Hydrant riser	5
16	Hydrant	5
17	150mm dia. 15° uPVC bend	1

ITEM	DESCRIPTION	NO REQ'D
18	150mm dia. uPVC equal tee	1
19	150mm dia. uPVC plain end cap	1
20	150mm x 100mm uPVC reducing socket	1
21	150mm dia. uPVC stub flange, backing ring & gasket	4
22	150mm dia. flanged sluice valve	2
23	150mm uPVC/150mm A.C. gibault joint	2
24	100mm dia. 20° uPVC bend	1
25	100mm dia. 30° uPVC bend	2
26	100mm dia. 40° uPVC bend	1
27	100mm dia. uPVC equal tee	1
28	100mm x 80mm uPVC reducing socket	1
29	100mm dia. uPVC plain end cap	3
30	100mm dia. uPVC stub flange, backing ring & gasket	8
31	100mm flanged sluice valve	4
32	100mm dia. c.i. flanged hydrant tee	1
33	80mm uPVC/75mm c.i. gibault joint	1
34	Concrete thrust blocks, 600mm x 600mm x 600mm	21



Note: Watermains are predominantly located in the void beams



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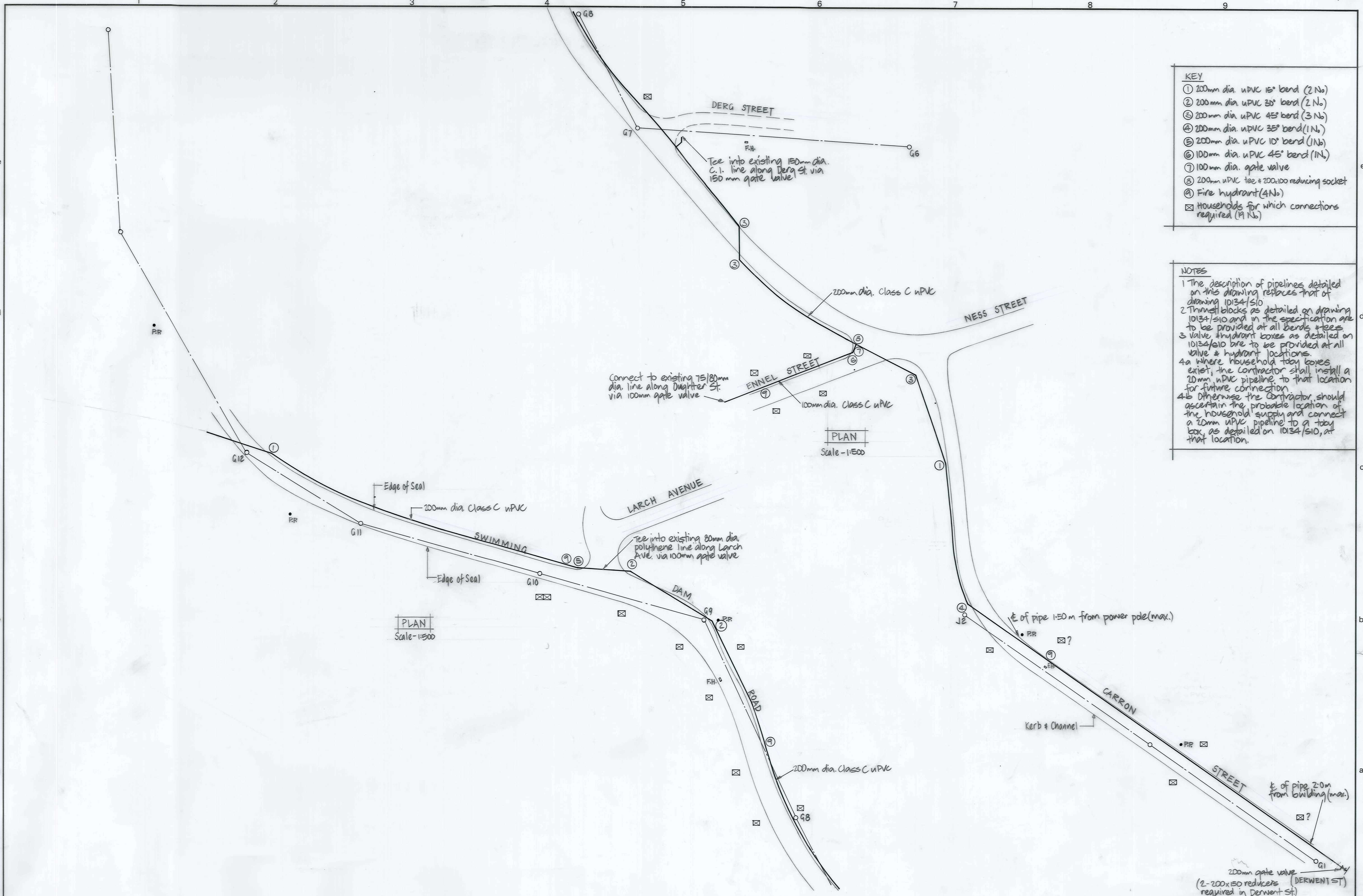
NASEBY BOROUGH COUNCIL

**NASEBY WATER SUPPLY
 WATER RETICULATION & TRUNK MAIN DETAILS**

AMENDMENTS			Appvd.	Surveyed	NAME	DATE	JOB NO.	Sheet No
NO.	BY	DATE		Drawn	G. Murray	Aug '83	10134	10
A	S.N.	8.8.83		Calculations	B. Hankins	June '83		
				Traced	G. Murray	Aug '83		
				Checked	S. [Signature]	Aug '83		
				Approved	[Signature]	Aug '83	File 26/4/8	L.B.

10134/11
 Naseby Water Supply
 Water Reticulation & Trunk Mains Layout

SELF-ADHESIVE PLAN HANGER
 Number 137541



KEY

- ① 200mm dia. uPVC 15° bend (2 No)
- ② 200mm dia. uPVC 30° bend (2 No)
- ③ 200mm dia. uPVC 45° bend (3 No)
- ④ 200mm dia. uPVC 35° bend (1 No)
- ⑤ 200mm dia. uPVC 10° bend (1 No)
- ⑥ 100mm dia. uPVC 45° bend (1 No)
- ⑦ 100mm dia. gate valve
- ⑧ 200mm uPVC tee + 200x100 reducing socket
- ⑨ Fire hydrant (4 No)
- ⊠ Households for which connections required (19 No)

NOTES

- 1 The description of pipelines detailed on this drawing replaces that of drawing 10134/S10
- 2 Thrust blocks as detailed on drawing 10134/S10 and in the specification are to be provided at all bends & tees
- 3 Valve & hydrant boxes as detailed on 10134/S10 are to be provided at all valve & hydrant locations
- 4a Where household tap boxes exist, the contractor shall install a 20mm uPVC pipeline to that location for future connection
- 4b Otherwise the contractor should ascertain the probable location of the household supply and connect a 20mm uPVC pipeline to a tap box as detailed on 10134/S10, at that location.

PLAN
Scale - 1:500

PLAN
Scale - 1:500

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COUNCIL

NASEBY WATER SUPPLY
WATER RETICULATION & TRUNK MAINS LAYOUT

AMENDMENTS				NAME	DATE
NO.	BY	DATE	Appvd.		
				J. MURIE	
				T. BERREN	
				J. KNOX	OCT 1985
				S. [unclear]	OCT 1983
				[unclear]	[unclear]

JOB NO.	Sheet No
10134	11
File	of sheets
L.B.	F.B.

Naseby Borough Council 10134
Water Supply Augmentation 1983

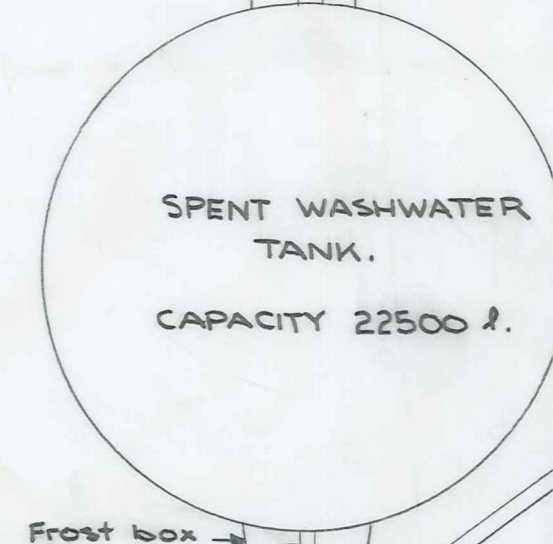
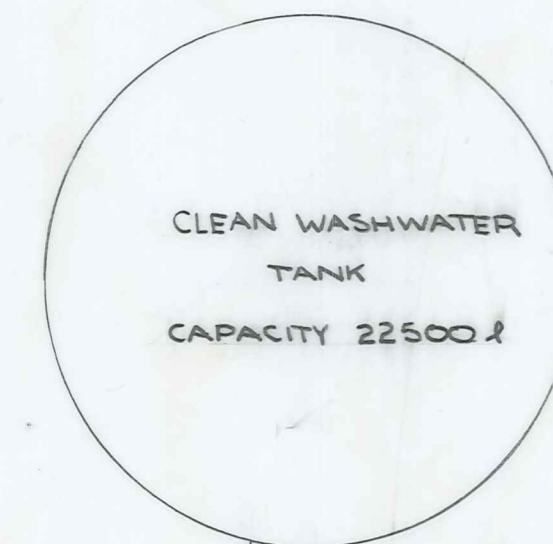
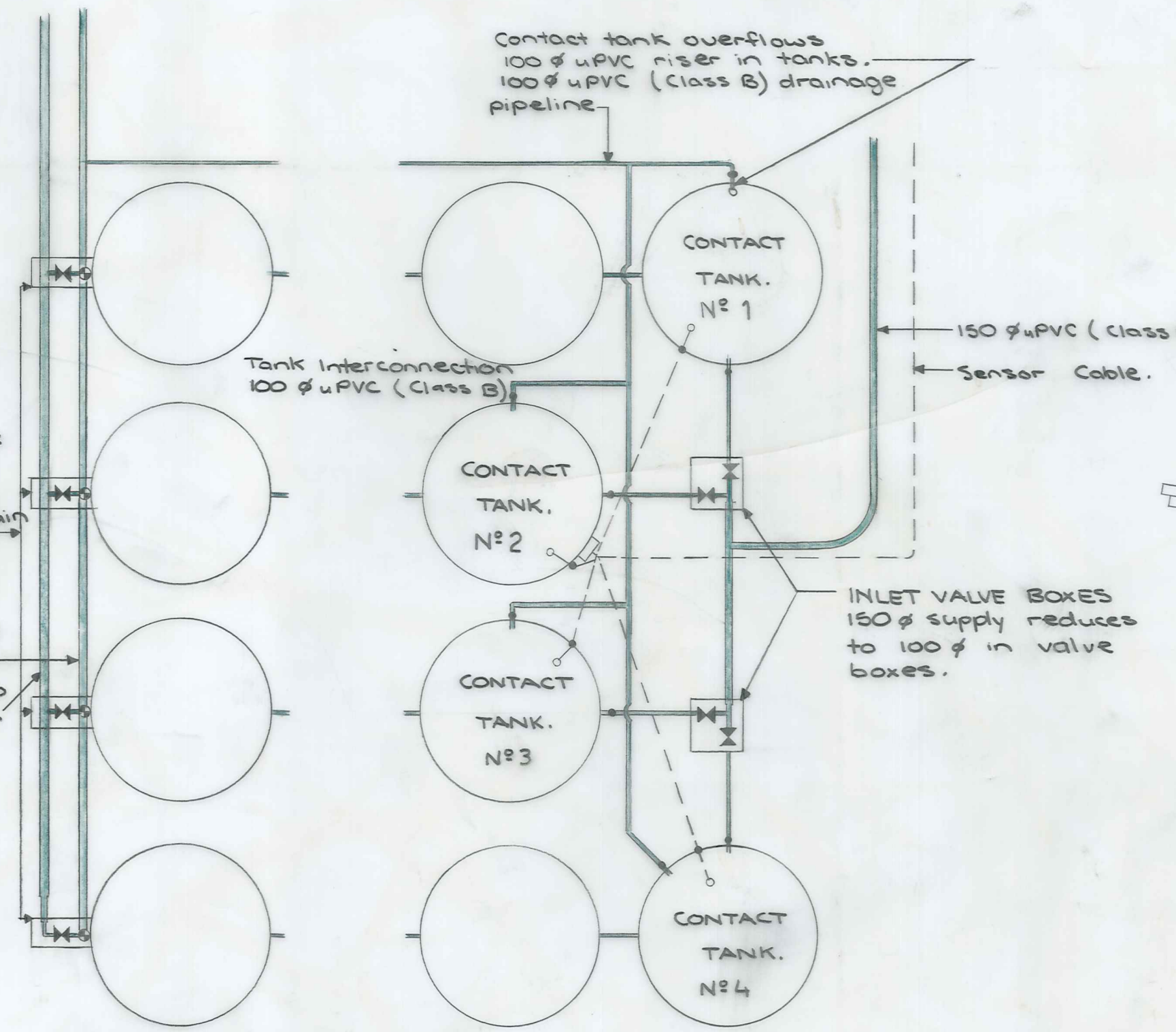
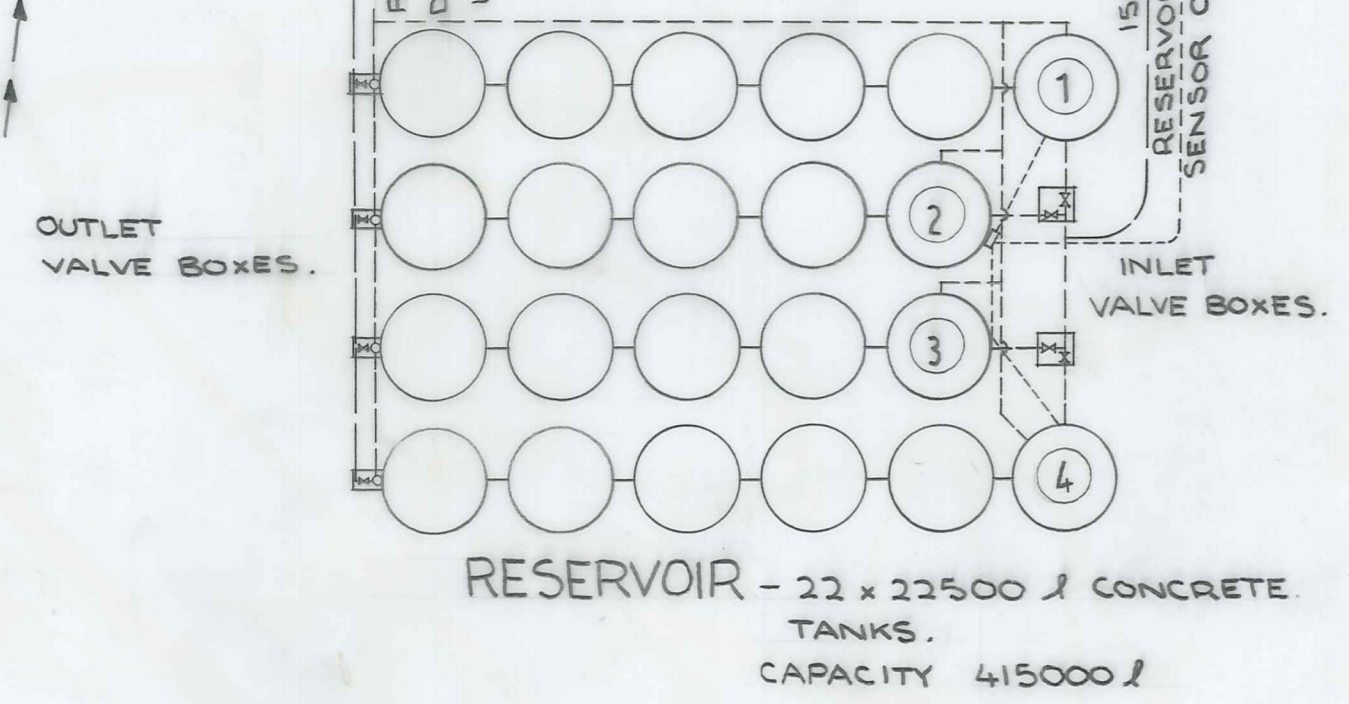
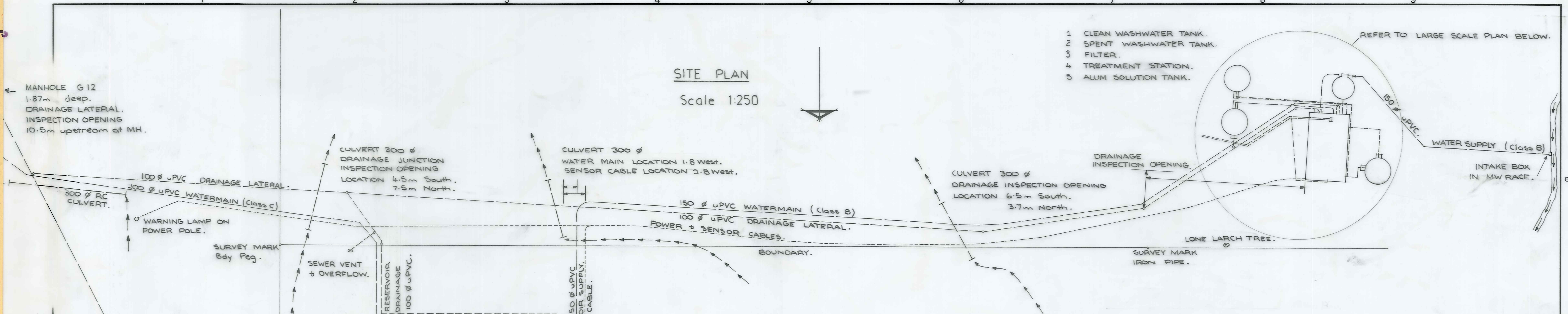
Refer also to Record Drawings

As-built drawings (2)

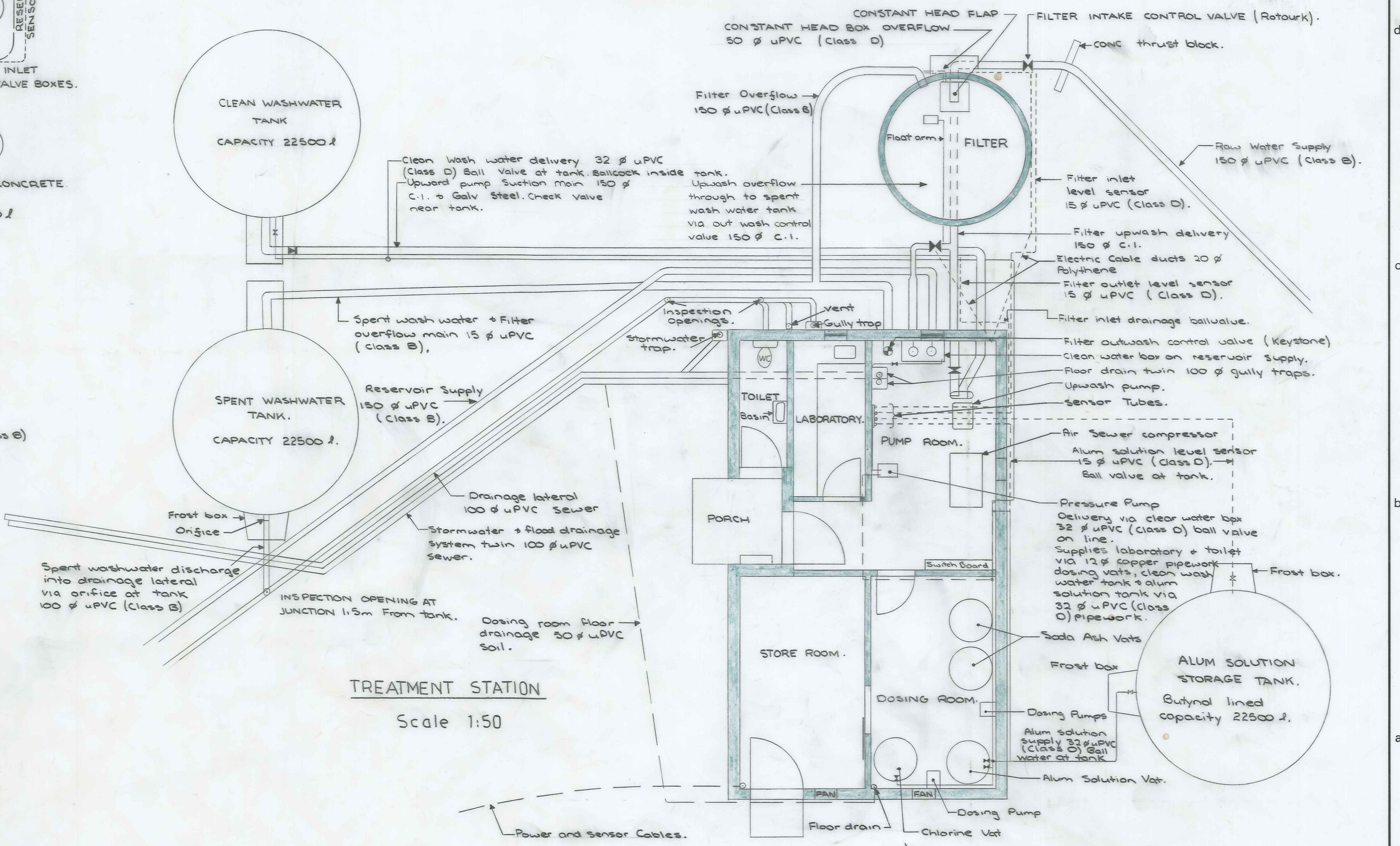
Re-Order Filemaster "D"
SELF-ADHESIVE PLAN HANGER
Patent Number 137841

SITE PLAN
Scale 1:250

- 1 CLEAN WASHWATER TANK.
- 2 SPENT WASHWATER TANK.
- 3 FILTER.
- 4 TREATMENT STATION.
- 5 ALUM SOLUTION TANK.



TREATMENT STATION
Scale 1:50



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NO.	BY	DATE	Appvd.	Surveyed	Drawn	Checked	Approved	CONTRACTOR	FEB 1984			File	L.B.	F.B.
								D. BUIST	MAY 1984					

ORIGINAL SIZE mm INCHES

300 12

200 8

150 6

100 4

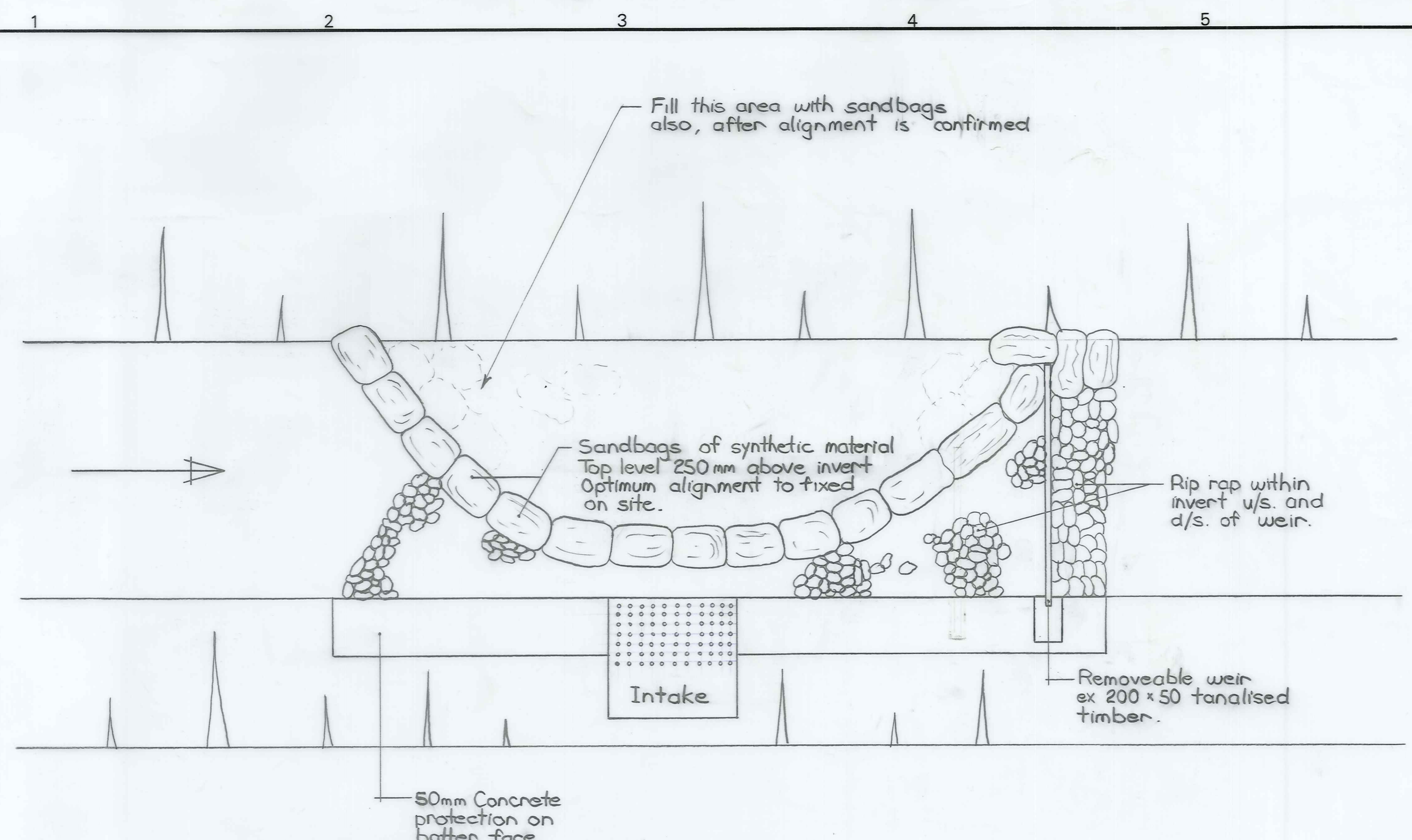
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30 1

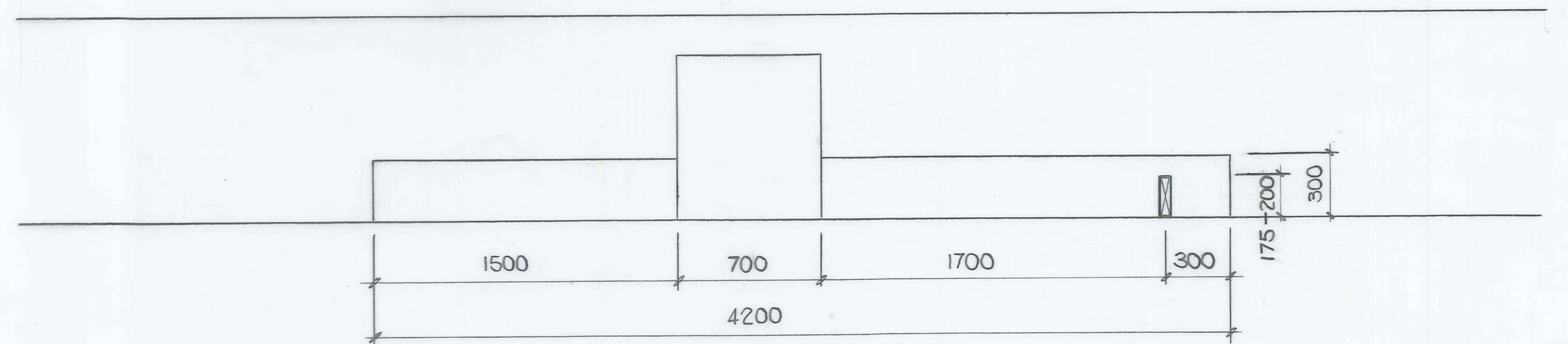
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10/134/S/16
 NASEBY BOROUGH COUNCIL
 NASEBY WATER SUPPLY
 PROPOSED IMPROVEMENTS TO INTAKE

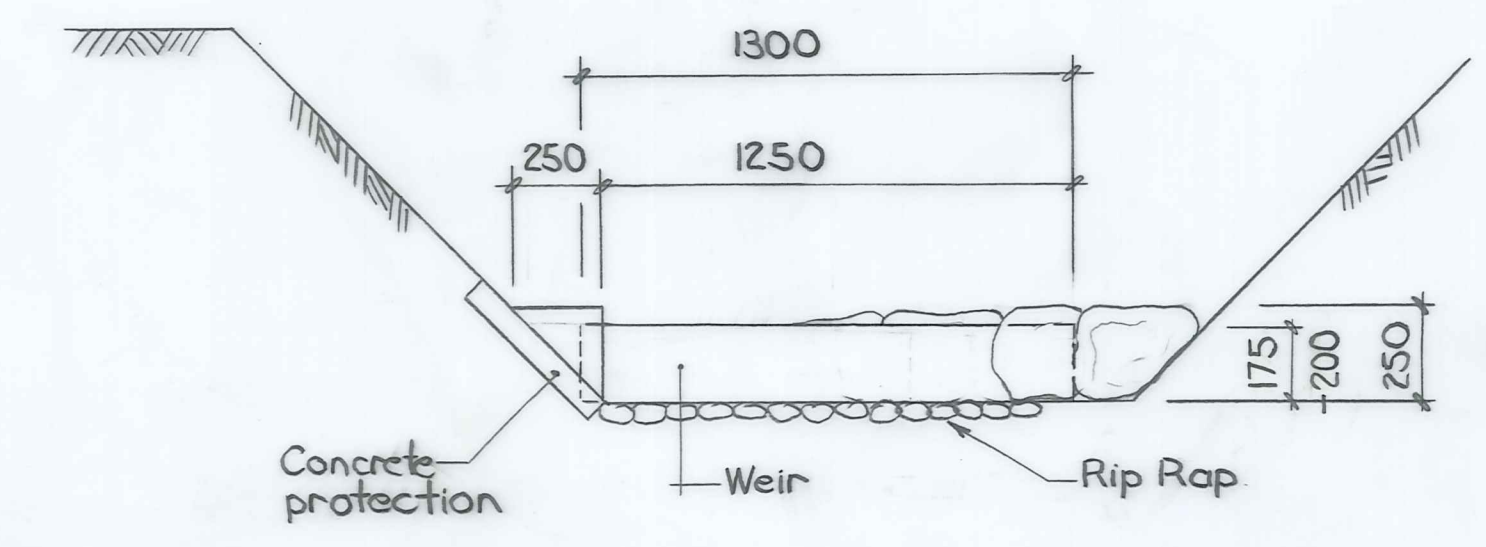
ORIGINAL SIZE
 INCHES
 0 10 20 30 40 50 100 150 200 300
 mm



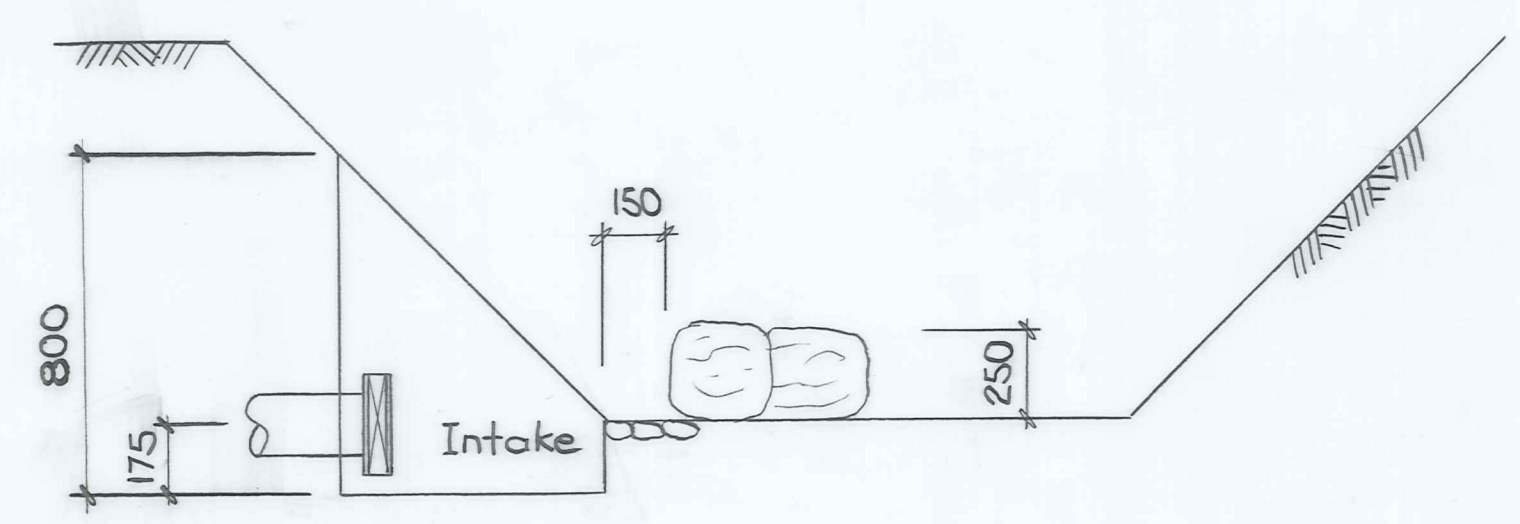
PLAN
1:20



ELEVATION
1:20



SECTION D/S OF WEIR
(Viewed from downstream)
1:20



SECTION THROUGH INTAKE
(Viewed from downstream)
1:20

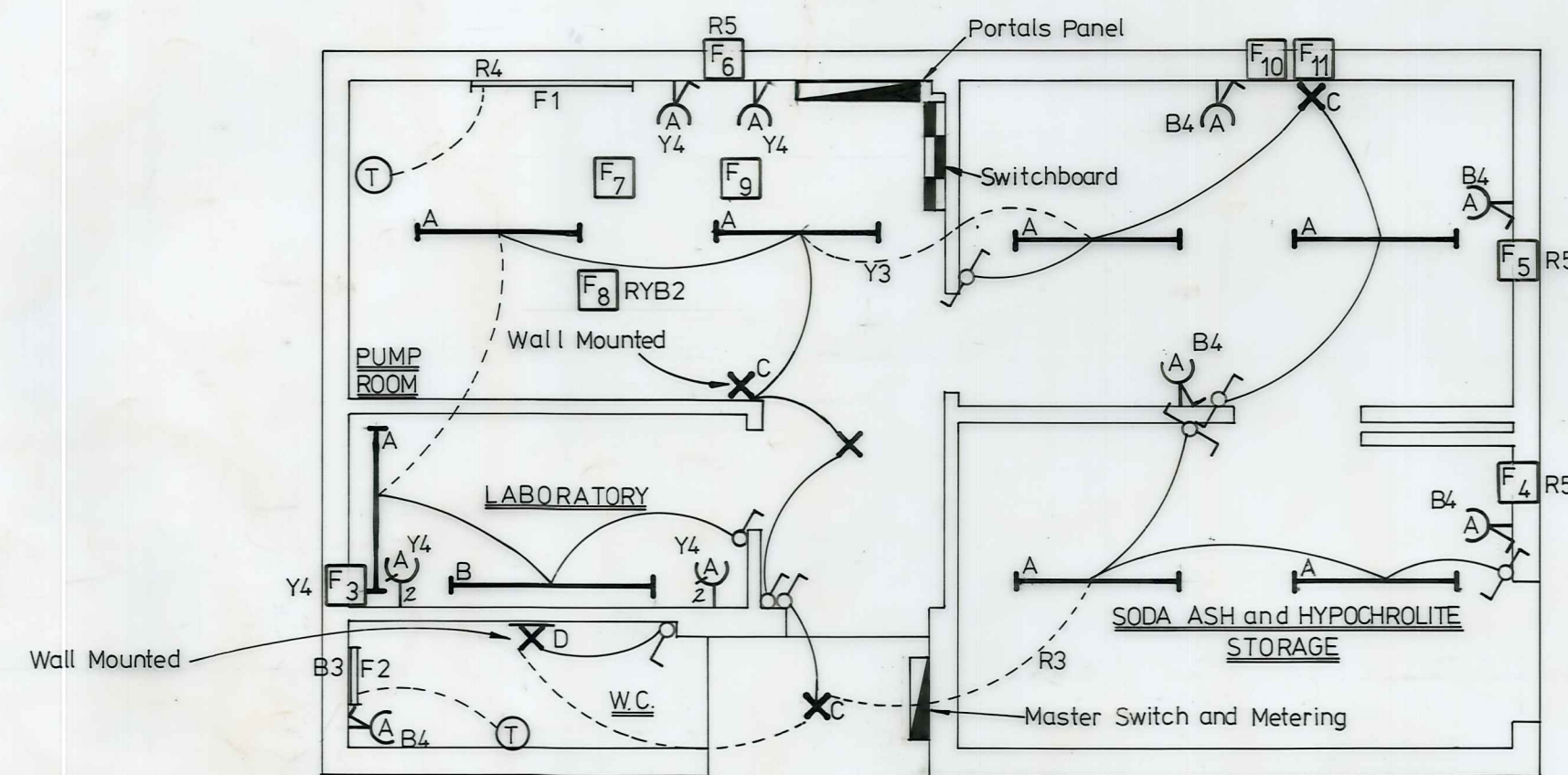
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 Alexandra P.O. Box 313 Ph. 6819

NASEBY WATER SUPPLY
 Proposed Improvements To Intake

AMENDMENTS				NAME		DATE	JOB NO.	Sheet No.
NO.	BY	DATE	Appvd.	Surveyed			10134	S16
				Drawn	S. Newlands	Sept. 04		
				Calculations	"	"		
				Traced	T. Berben	"		
				Checked	"	"		
				Approved	"	"	File	L.B. <input type="checkbox"/>

Order Filenaster "D"
 SELF-ADHESIVE PLAN HANGER
 Item 13764

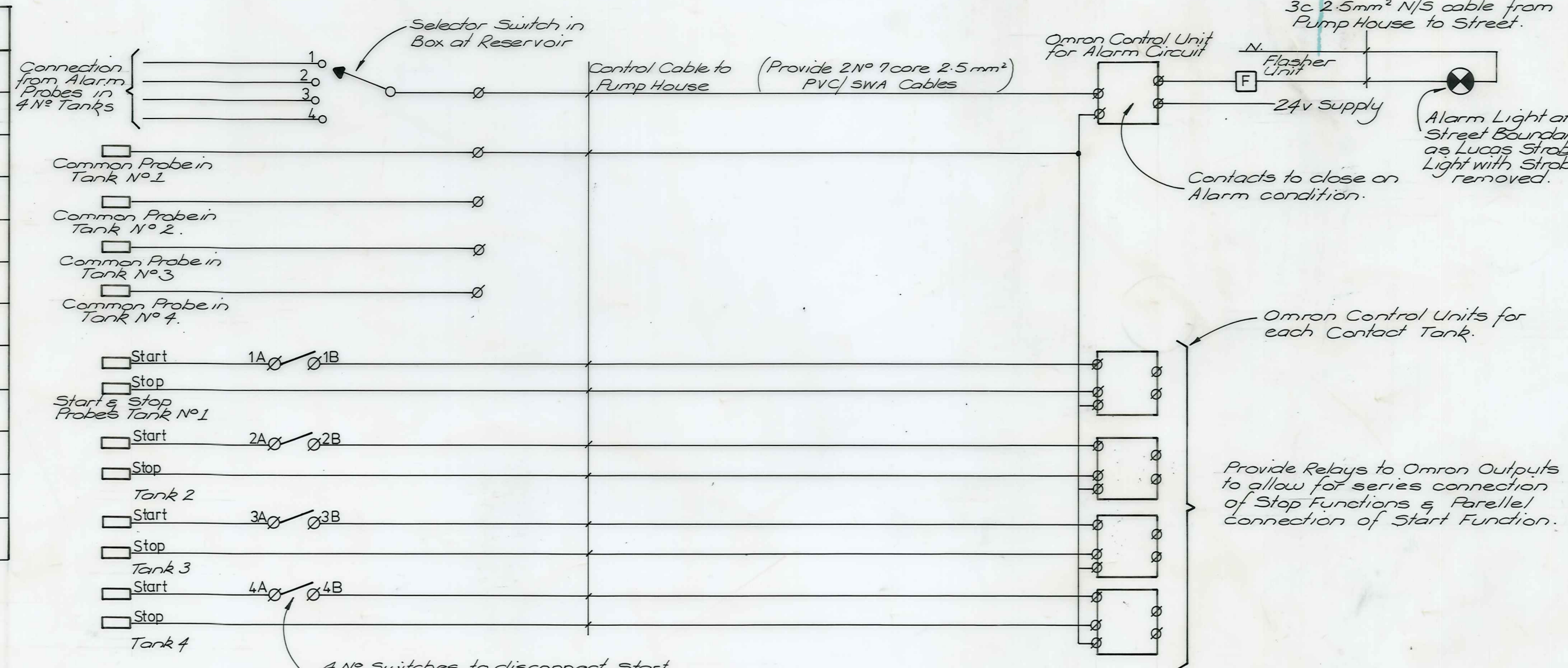
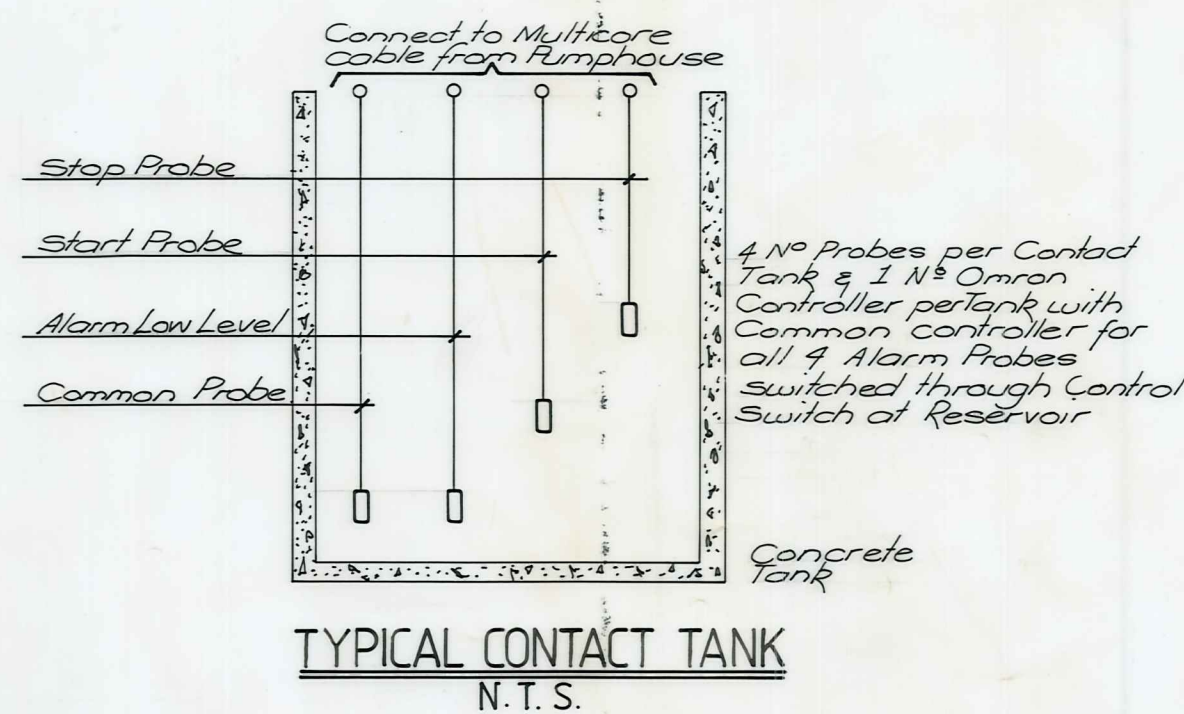
NOTE - Provide Flow Switch for each Pump & interconnect with motor starters. Allow oil costs for supply & fitting of switches to each pipe line.



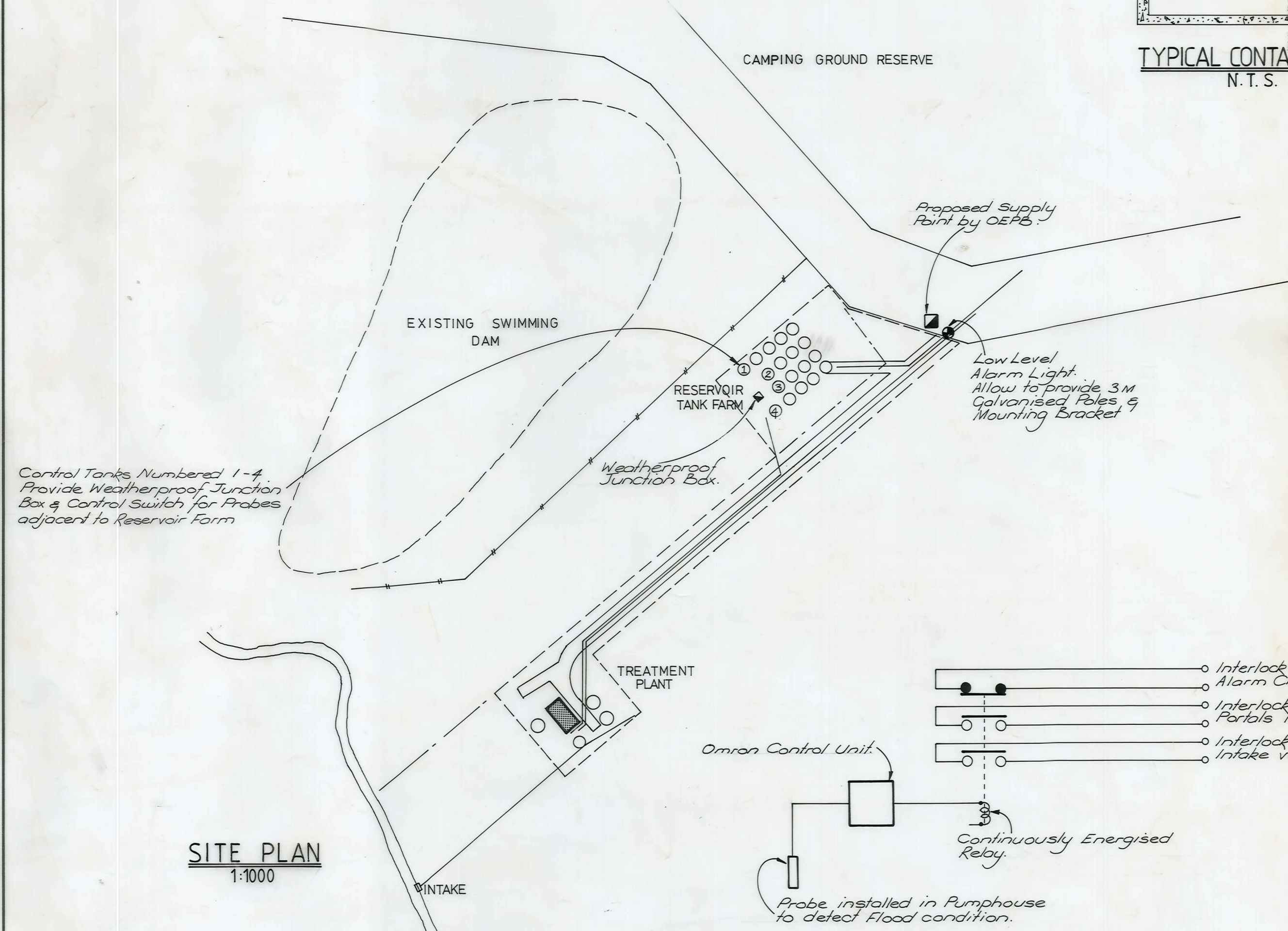
ELECTRICAL LAYOUT
1:50

LEGEND	
A	2 Tube 1200mm Reflector Pattern Fluorescent
B	2 Tube 1500mm Reflector Pattern Fluorescent
X ^C	Incandescent Bulkhead
X ^D	Incandescent Bulkhead
⊕	Protected Pattern Switched Socket Outlet.
⊕	Protected Pattern Light Switch.

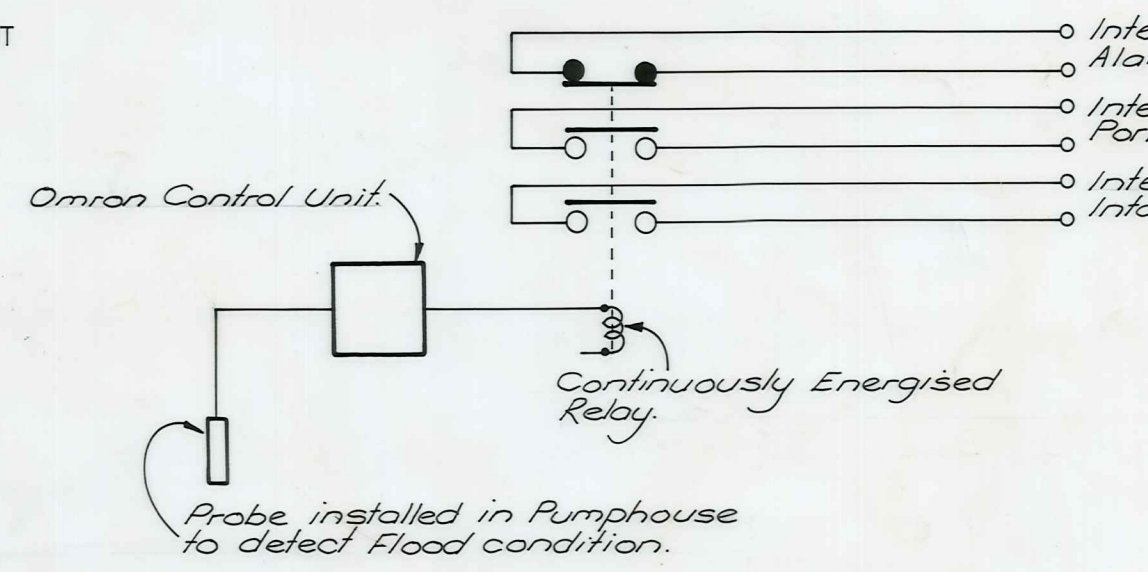
SCHEDULE OF FIXED CONNECTIONS	
F1	1500 watt Skirting Heater with Wall Mounted Thermostat
F2	60 watt Tubular Heater mounted under Toilet, Eastern on brackets. Provide Room Thermostat.
F3	Under Sink Zip with Isolator above Bench
F4, F5 & F6	300mm Auto Shutter Xpelair Exhaust Fans.
F7	Primary Pump 3 φ 11 kW
F8	Secondary Pump 3 φ 0.93 kW
F9	Air Blower 3 φ 5.5 kW
F10 & F11	Dosing Pumps 1 φ 0.1 kW
F12	Filter High Level Sensor.
F13	Intake Valve.
F14	Control Valve.
F15	Outlet Valve.



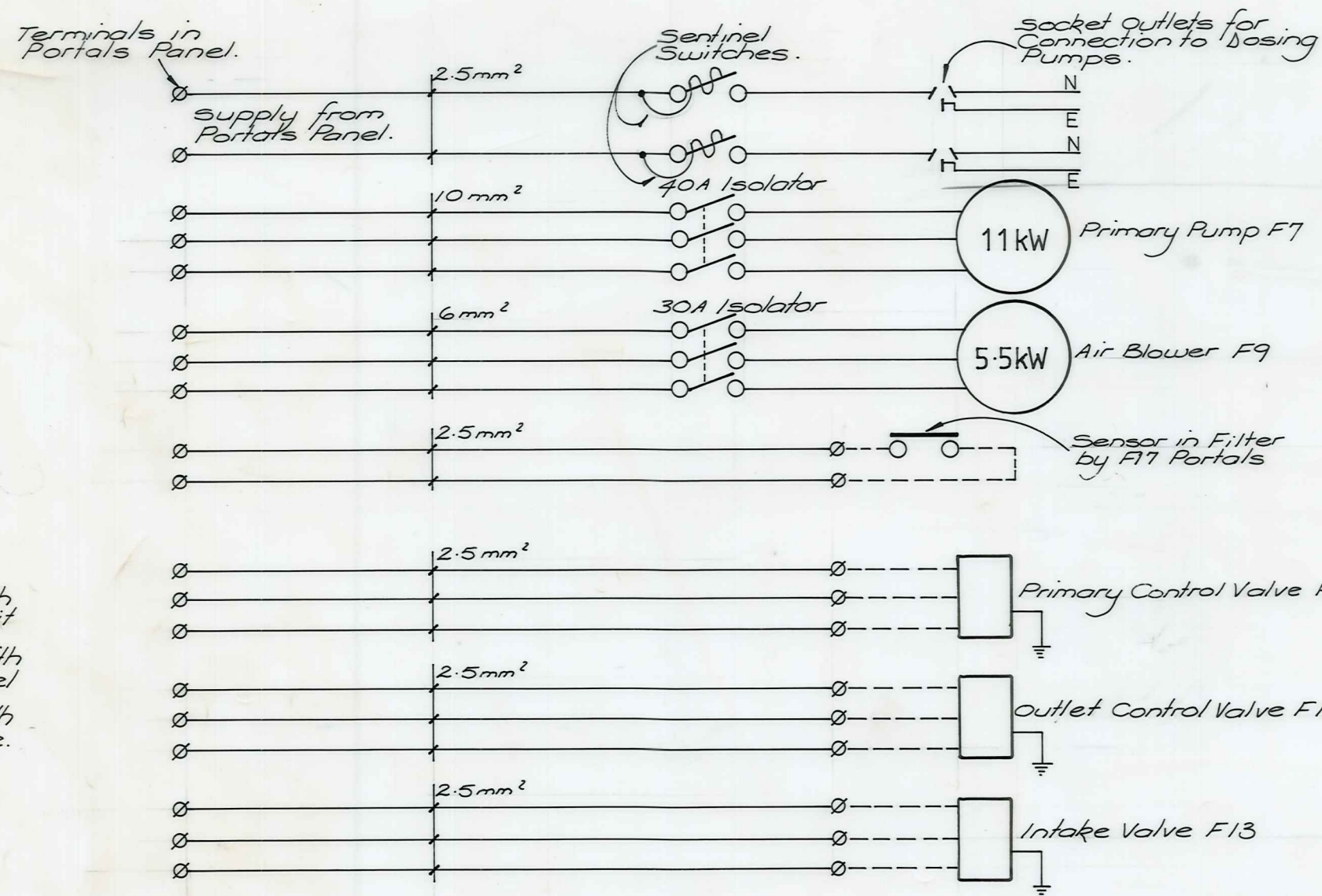
RESERVOIR and PROBE CONTROL CONNECTION SCHEMATIC DIAGRAM



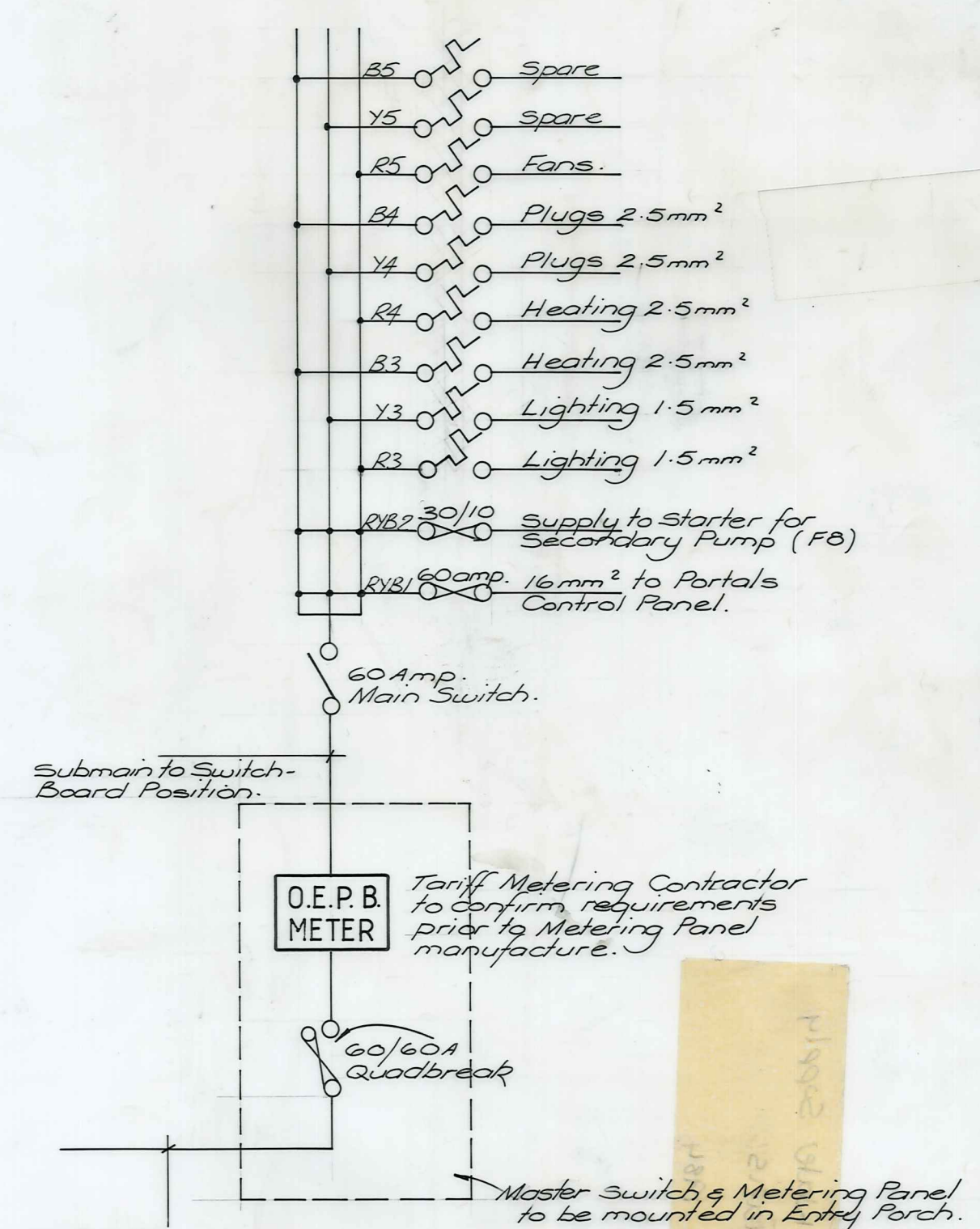
SITE PLAN
1:1000



FLOOD CONDITION WARNING CIRCUIT
N.T.S.



WIRING DIAGRAM FROM PORTALS CONTROL PANEL



MAIN SCHEMATIC DIAGRAM

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DUNEDIN CHRISTCHURCH

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AMENDMENTS				NAME	DATE	JOB NO.	Sheet No	
NO.	BY	DATE	Appvd.	Surveyed		10134	E1 _A	
A	S.N.	19/08/83	Flow switches & Flood condition warning circuit included.	Drawn	J. Rutherford			August '83
				Calculations	M.E. Gill			August '83
				Traced				
				Checked		File	L.B.	
				Approved			F.B.	

Naseby Water Supply

e-Order Filemaster "D" SELF-ADHESIVE PLAN HANGER

Item Number 137841