

ALEXANDRA BOROUGH COUNCIL

BRIDGE HILL.

SEWERAGE STAGE I AND

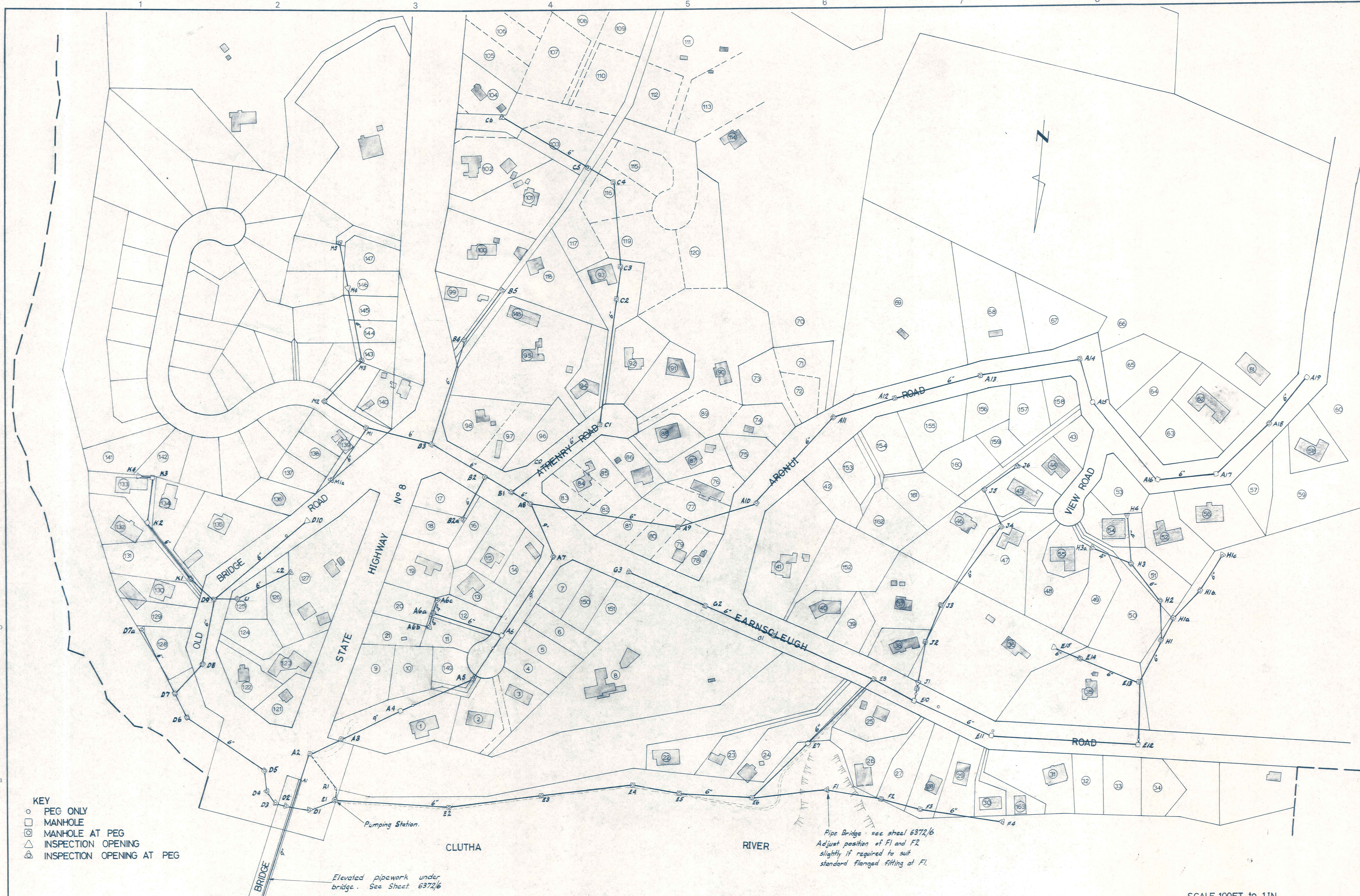
WATER SUPPLY STAGES I AND 2

DUFFILL, WATTS & KING
CONSULTING CIVIL & STRUCTURAL ENGINEERS
DUNEDIN & INVERCARGILL N. Z.

SET NO.

6372/1

ORIGINAL SIZE
INCHES
300
200
100
50
30
20
10
5
0



- KEY**
- PEG ONLY
 - MANHOLE
 - ⊗ MANHOLE AT PEG
 - △ INSPECTION OPENING
 - ⊗ INSPECTION OPENING AT PEG

Elevated pipework under bridge. See Sheet 6372/6

Pipe Bridge - see sheet 6372/6
Adjust position of F1 and F2 slightly if required to suit standard flanged fitting at F1.

SCALE 100FT to 1IN

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Christchurch 139 Clyde Rd., Ph. 515-901

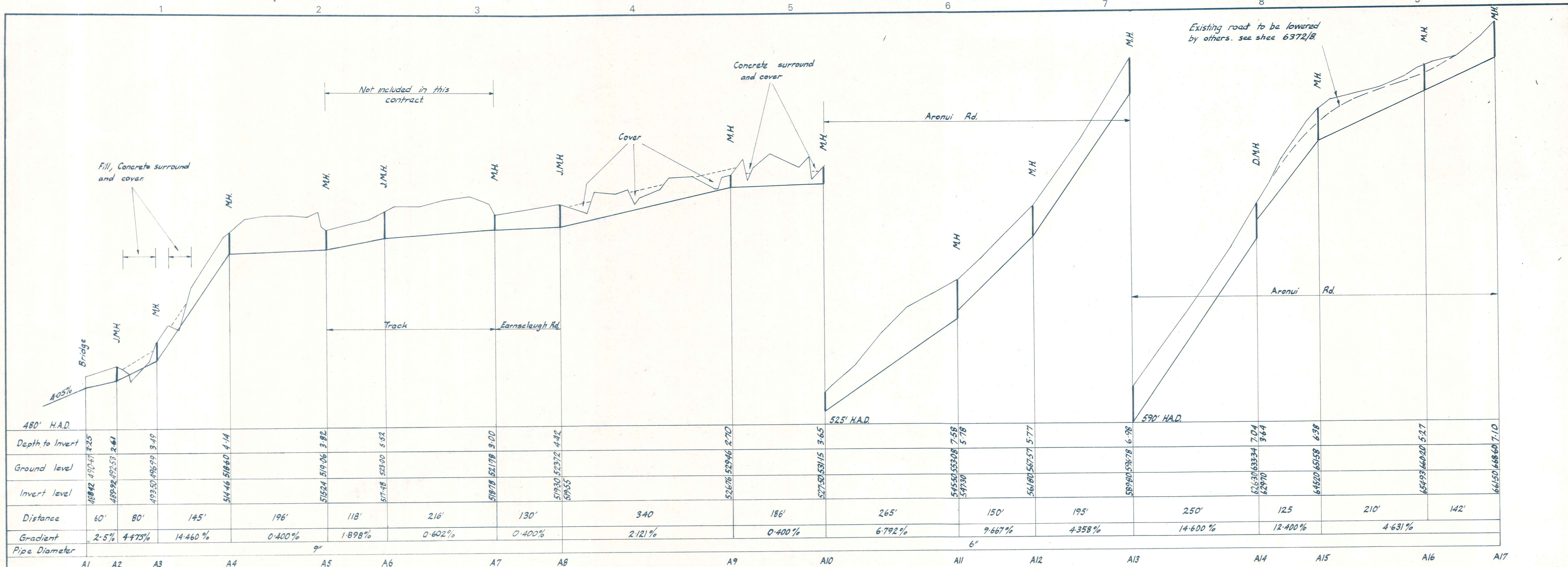
**ALEXANDRA
BOROUGH COUNCIL**

**BRIDGE HILL SEWERAGE
GENERAL LAYOUT**

AMENDMENTS		Appvd.	Surveyed	NAME	DATE
NO.	BY	DATE	Drawn	A.H. Govan	Sept 71
			Calculations	G.R. Duff	May 72
			Traced	M.J. Blakie	Feb 72
			Checked	G.R. Duff	May 72
			Approved		

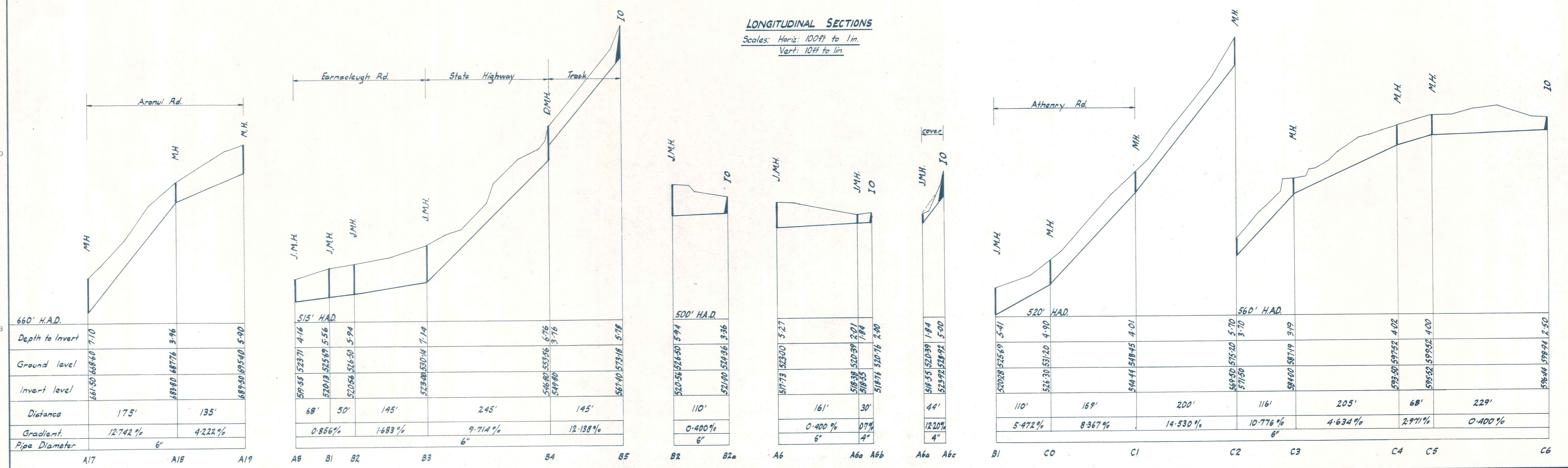
Job No.	6372
Sheet No.	1
of sheets	

File	S/3	LB	63,70,86	F.B	48,49
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LONGITUDINAL SECTIONS

Scales: Horiz: 100ft to 1in.
Vert: 10ft to 1in.



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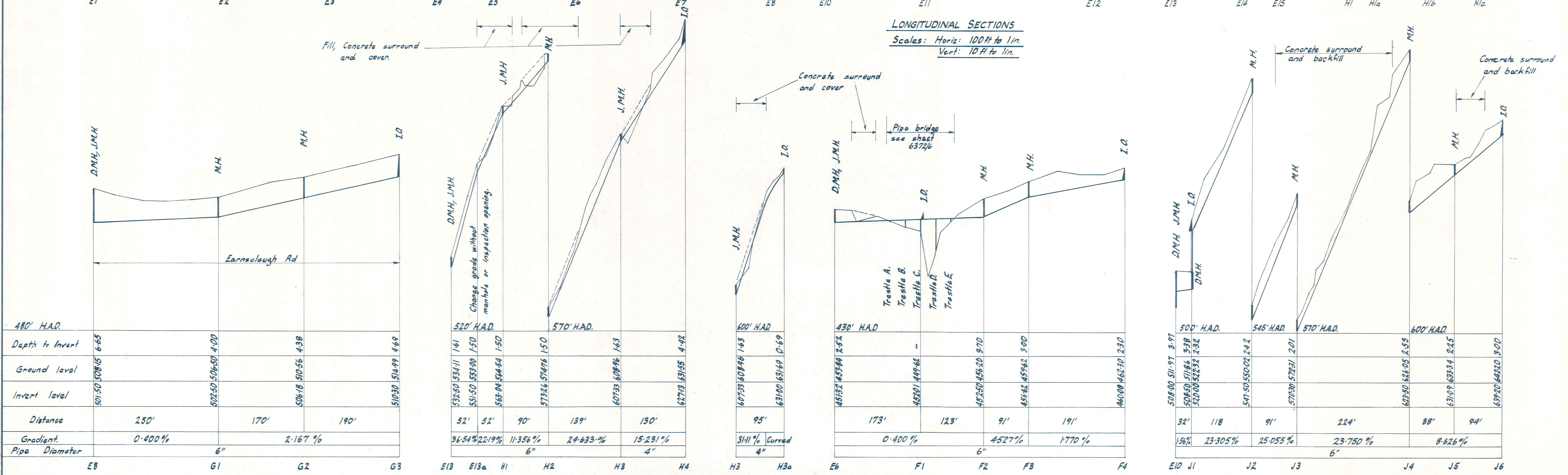
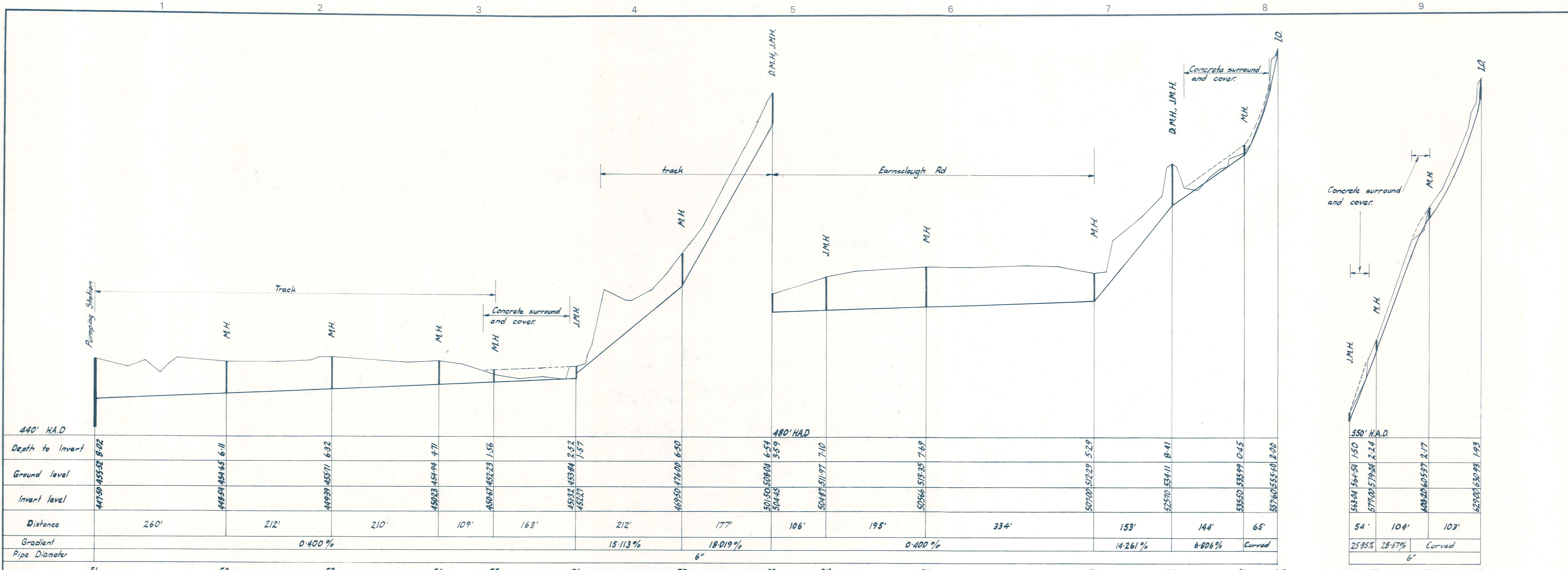
ALEXANDRA BOROUGH COUNCIL

BRIDGE HILL SEWERAGE PROFILES

AMENDMENTS			NAME	DATE	JOB NO.	Sheet No.	
NO.	BY	DATE			6372	2	
			Survised	A.H. Govan			Sep. 71
			Drawn	G.R. Duff			May 72
			Calculations	"			"
			Traced	M.J. Burtie			"
			Checked	G.R. Duff	"		
			Approved	M.J. Burtie	"		

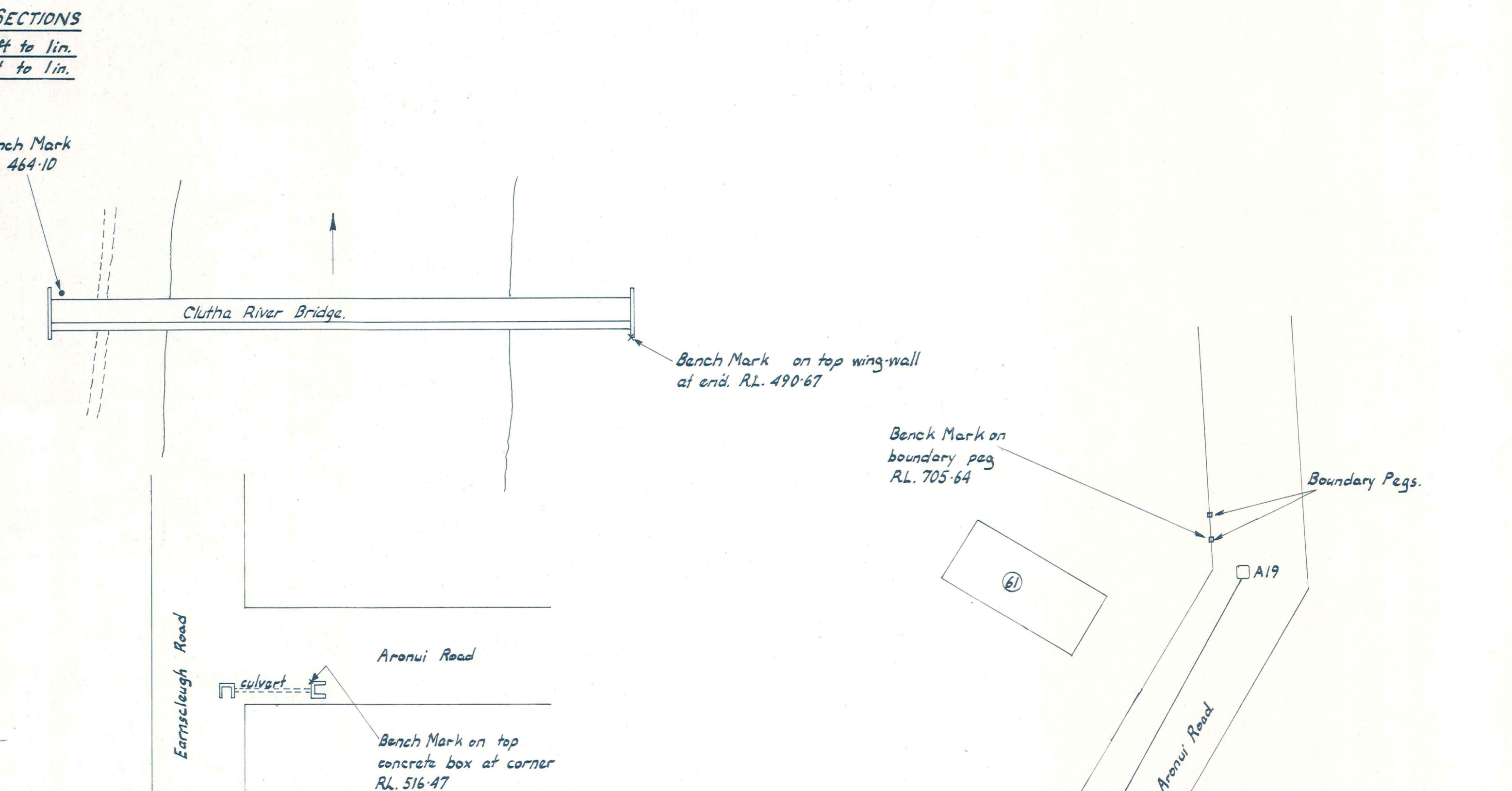
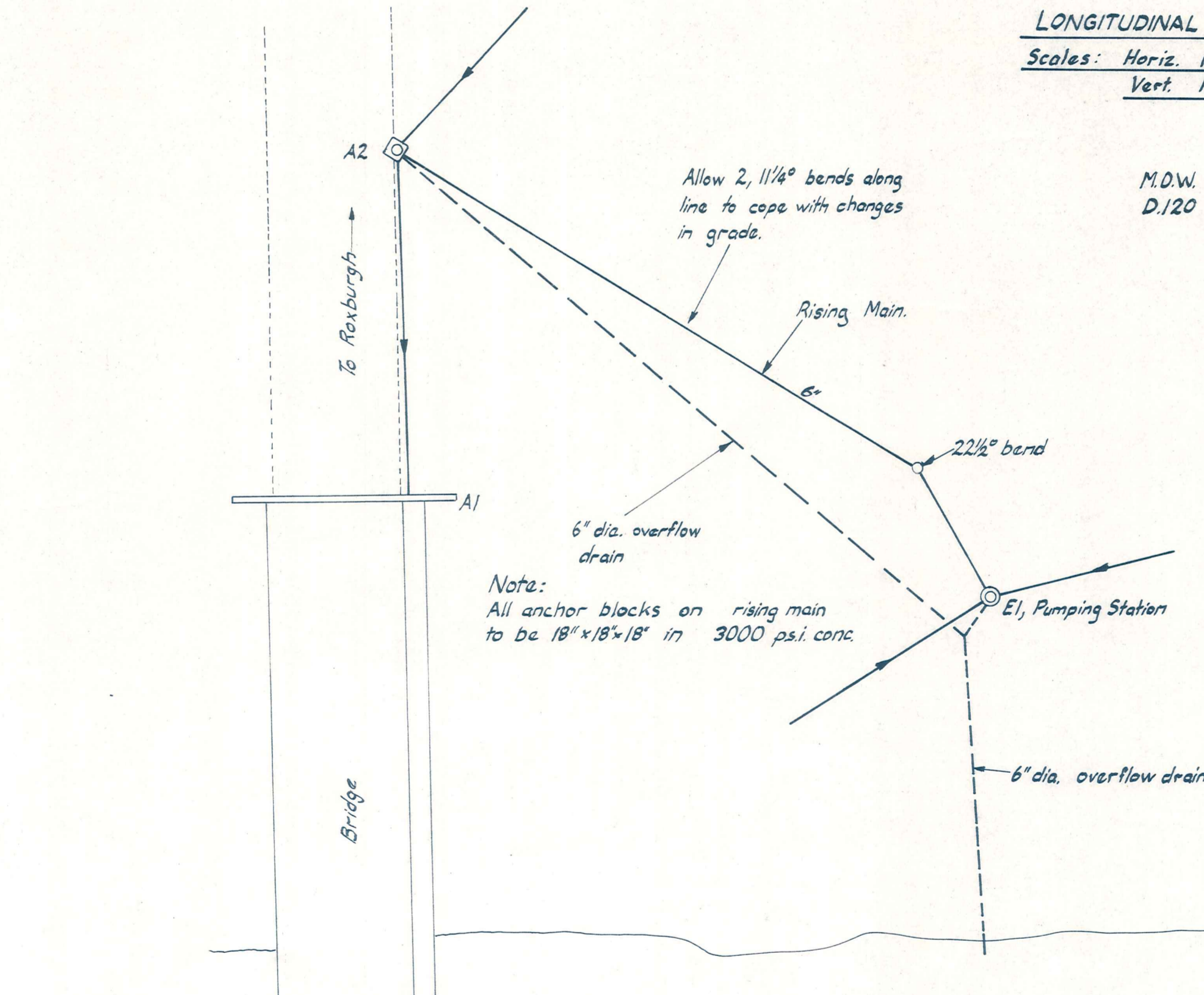
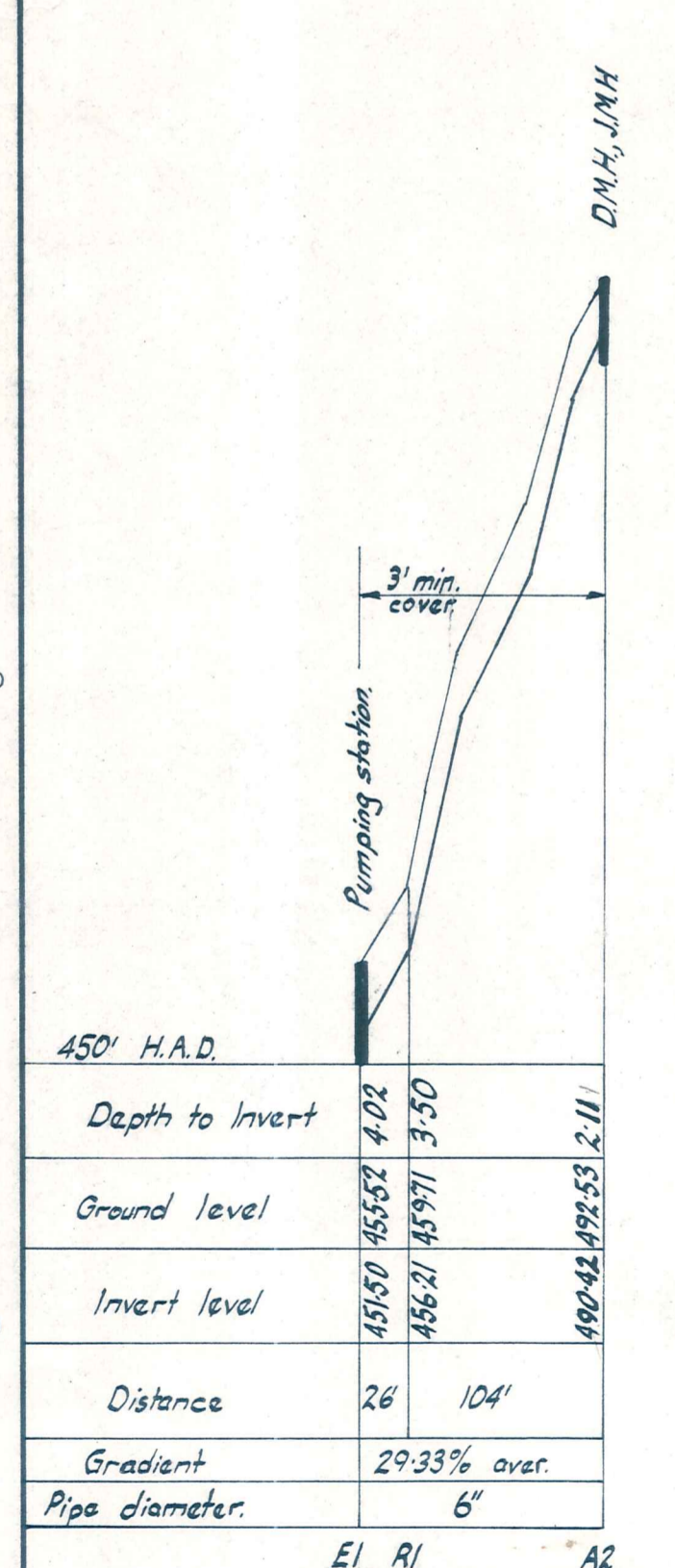
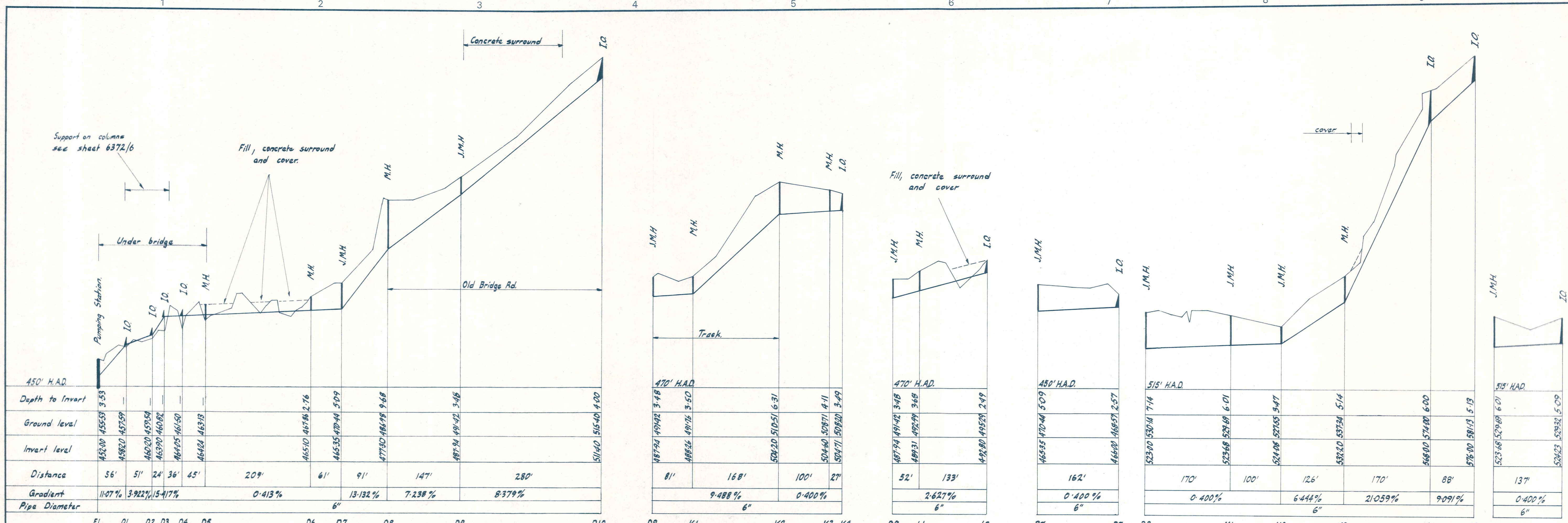
ORIGINAL SIZE INCHES

ORIGINAL SIZE
 INCHES
 0 10 20 30 40 50 60 70 80 90 100 150 200 300



DUFFILL WATTS & KING CONSULTING CIVIL & STRUCTURAL ENGINEERS <small>Dunedin P.O. Box 5269, Ph. 77-240 Invercargill P.O. Box 576, Ph. 303-499 Christchurch 139 Clyde Rd., Ph. 515-801</small>	ALEXANDRA BOROUGH COUNCIL	BRIDGE	HILL	SEWERAGE	PROFILES	AMENDMENTS			NAME DATE		JOB NO. 6372	Sheet No. 3
						NO. BY DATE	Appvd.	Surveyed	Drawn	Calculations		

ORIGINAL SIZE INCHES



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 CONSULTING CIVIL & STRUCTURAL ENGINEERS
 Dunedin P.O. Box 5269, Ph. 77-240 Invercargill P.O. Box 576, Ph. 3049
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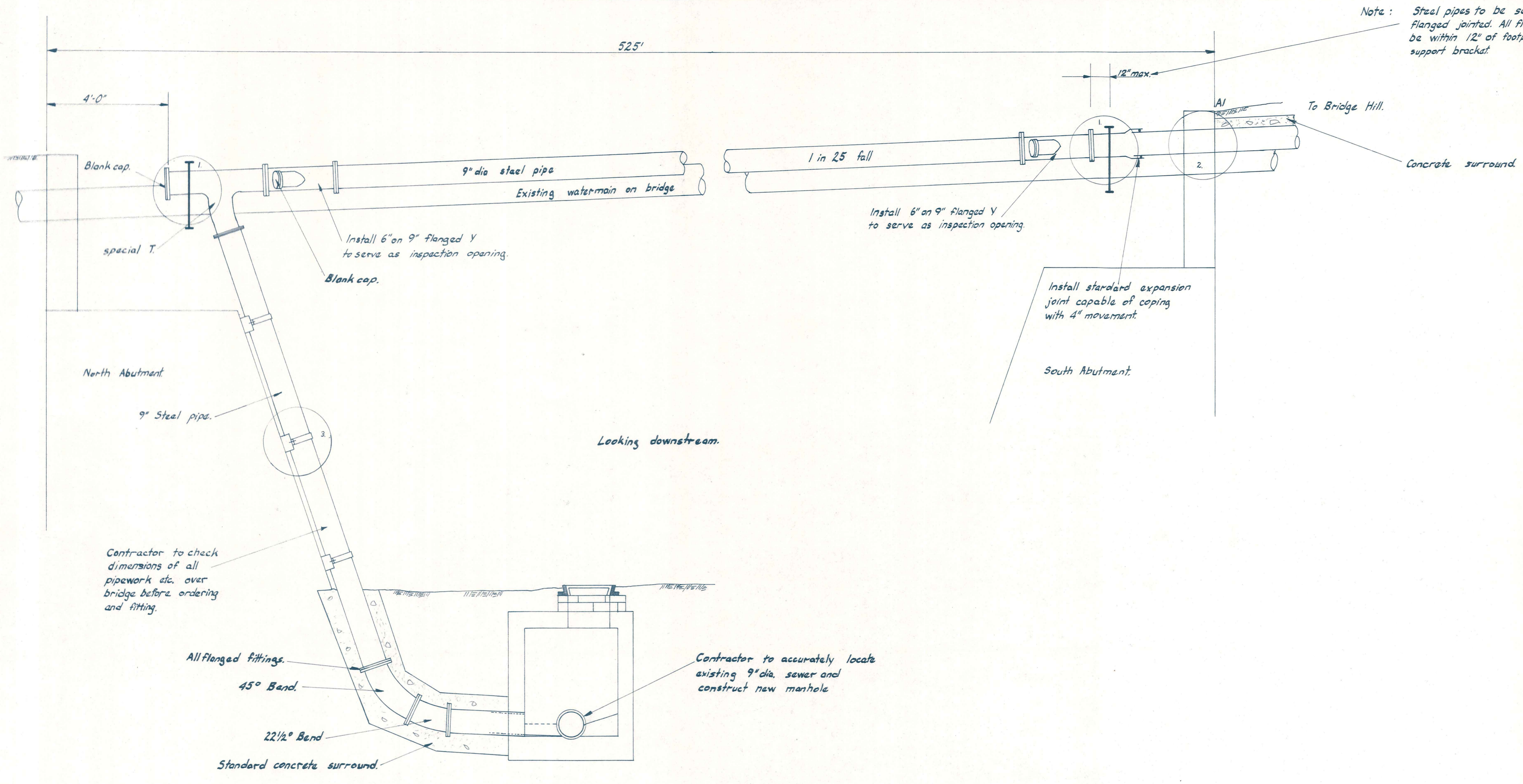
ALEXANDRA BOROUGH COUNCIL

BRIDGE HILL SEWERAGE RISING MAIN, PROFILE, BENCH MARKS.

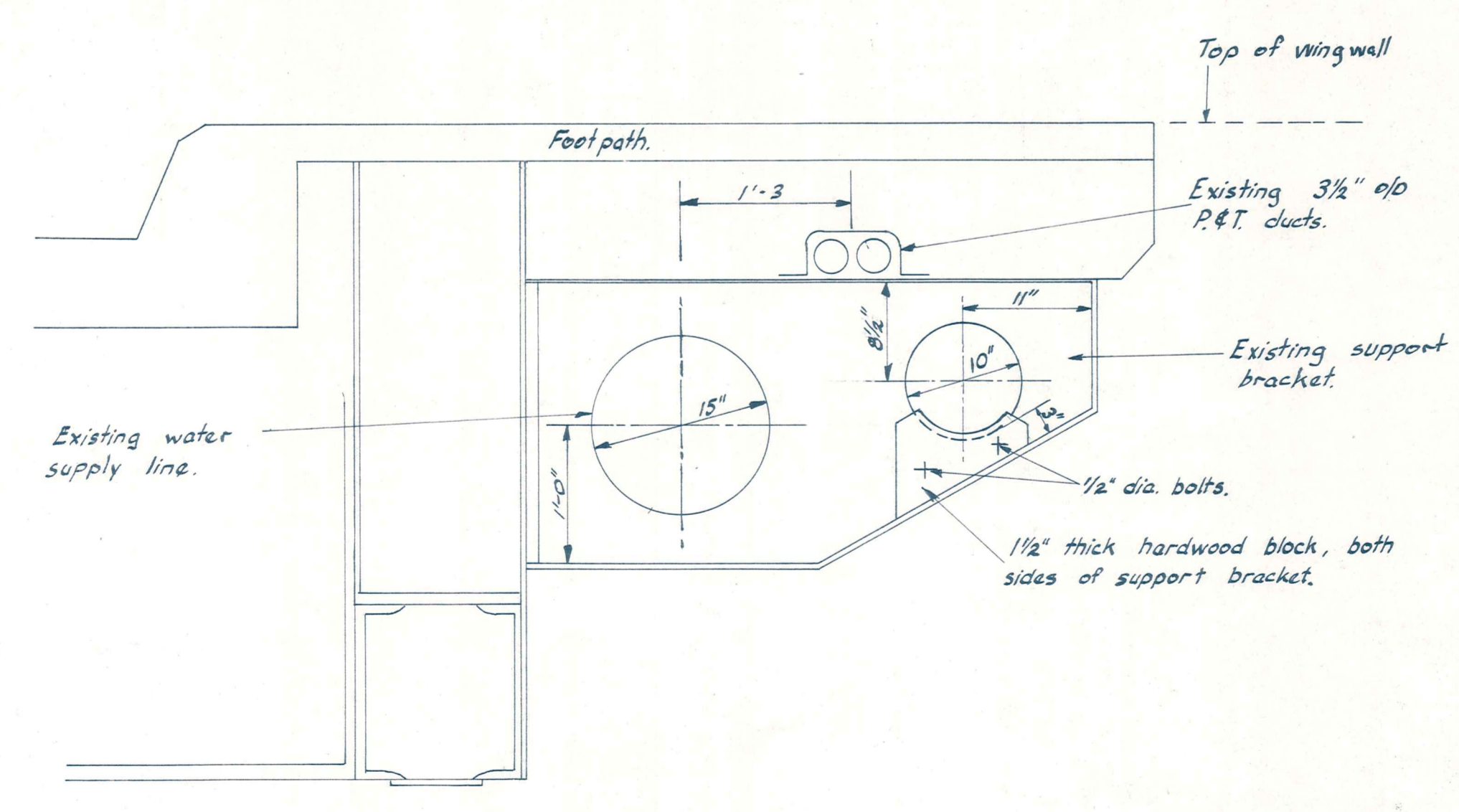
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NO.	BY	DATE	Appvd.	Surveyed	A.H. Gordon	6372	4
				Drawn	G.R. Duff		
				Calculations	" "		
				Traced	M.J. Blahie		
				Checked	G.R. Duff		
				Approved	M.J. Blahie		

File S/3 L.B. 63,708 F.B. 49,49

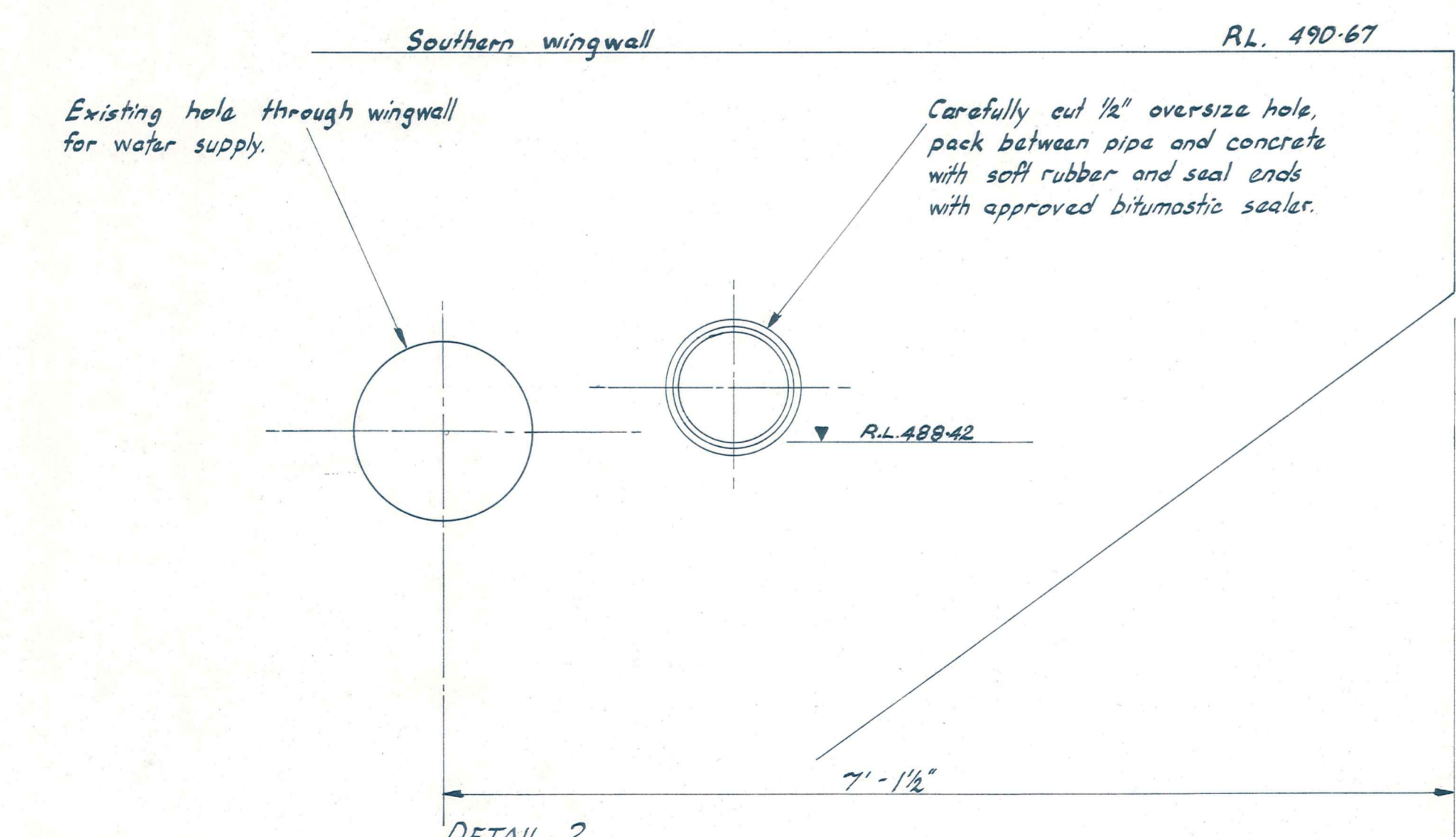
ORIGINAL SIZE
mm INCHES



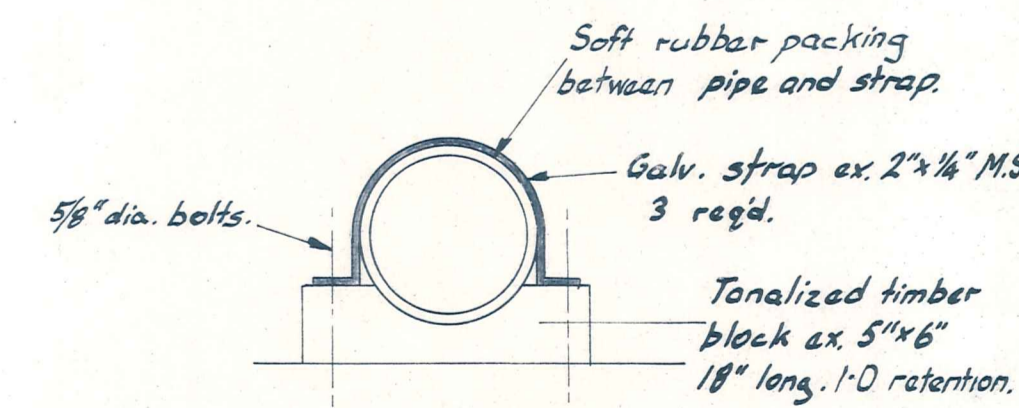
SCALE 1/2 IN. TO 1 FT.



DETAIL 1
Scale 1 in = 1 ft.



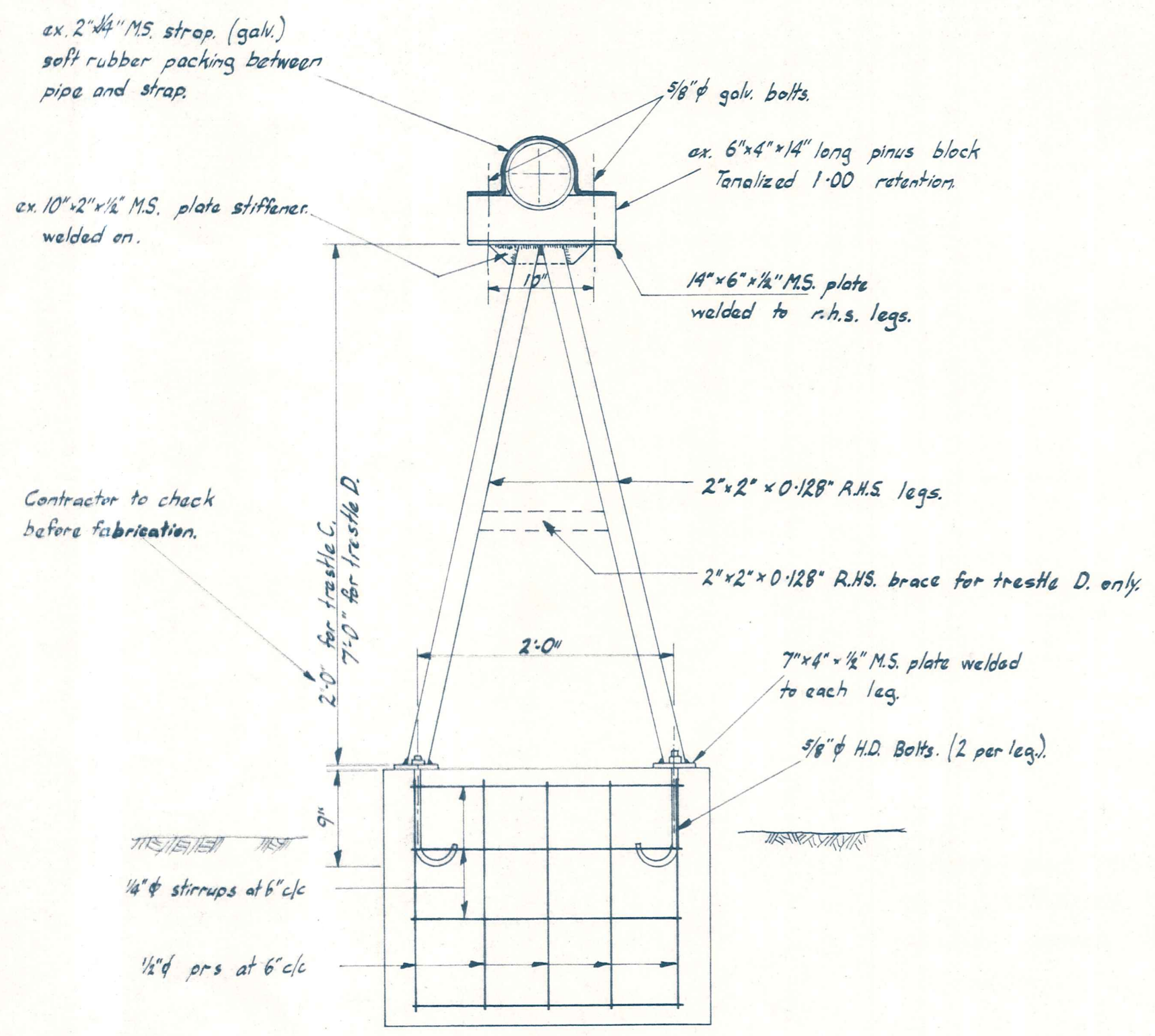
DETAIL 2
Scale 1 in = 1 ft.



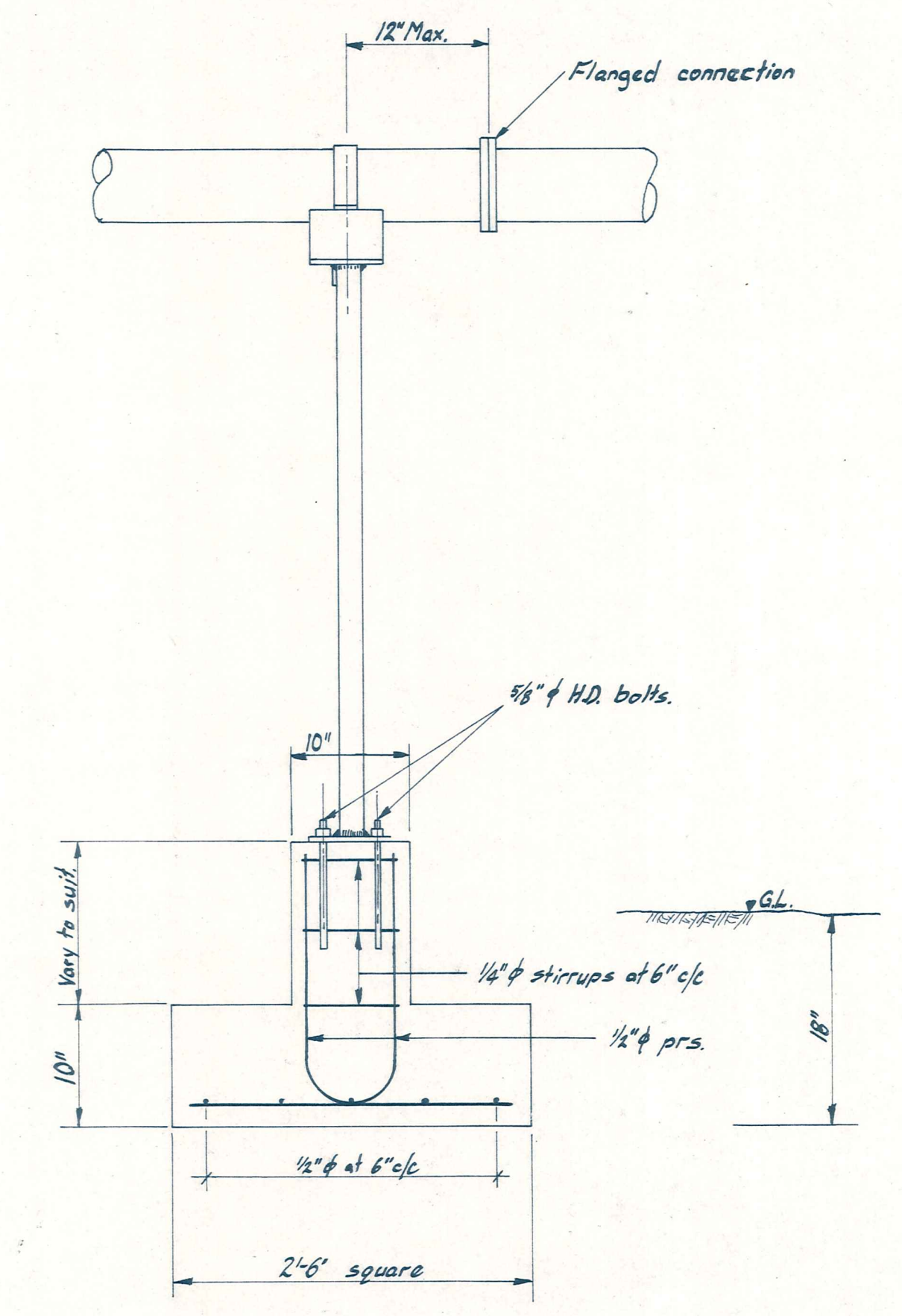
DETAIL 3
Scale 1 in = 1 ft.

DUFFILL WATTS & KING CONSULTING CIVIL & STRUCTURAL ENGINEERS <small>Dunedin P.O. Box 5269, Ph. 77-240 Invercargill P.O. Box 576, Ph. 3049 Christchurch 139 Clyde Rd., Ph. 515-801</small>		ALEXANDRA BOROUGH COUNCIL		BRIDGE HILL CLUTHA RIVER BRIDGE CROSSING		SEWERAGE		AMENDMENTS <table border="1"> <thead> <tr> <th>NO.</th> <th>BY</th> <th>DATE</th> <th>Appvd.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		NO.	BY	DATE	Appvd.																	NAME DATE Surveyed A.H. Govan Sept. 71 Drawn G.R. Duff May 72 Calculations " " " " Traced M.S. Blakie " " Checked G.R. Duff " " Approved M.L.L. [Signature] " "		JOB NO. 6372		Sheet No. 5 <small>of sheets</small>	
NO.	BY	DATE	Appvd.																																
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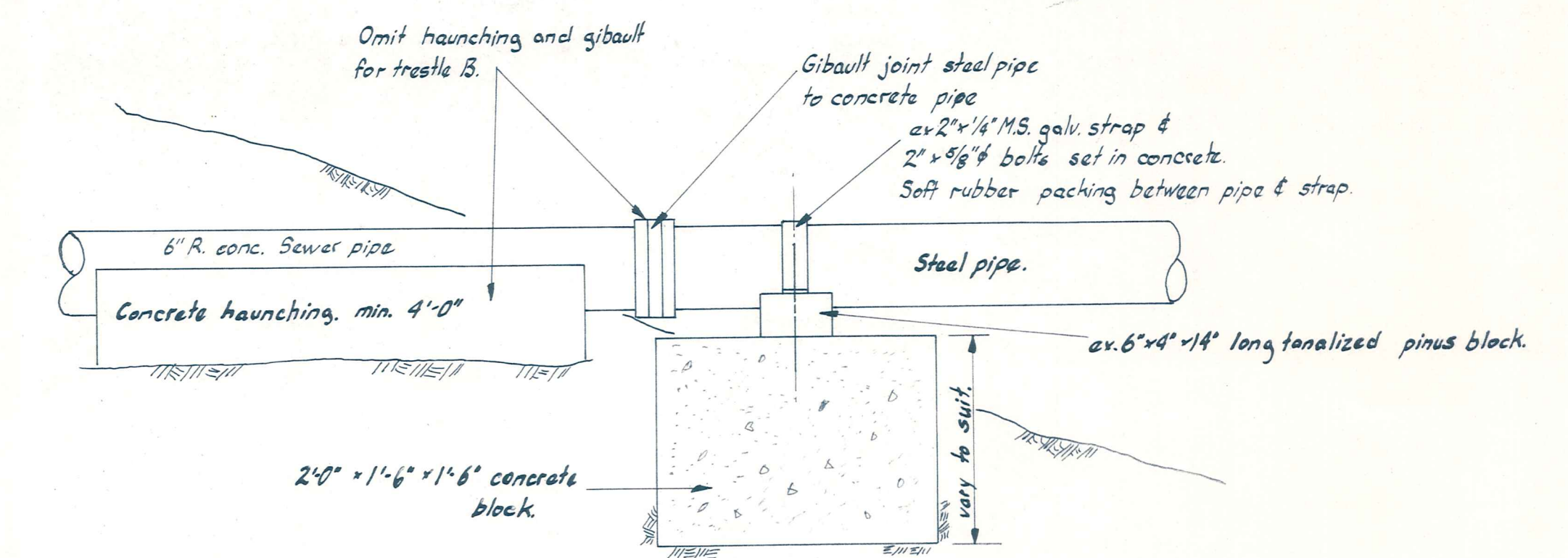
ORIGINAL SIZE
mm INCHES



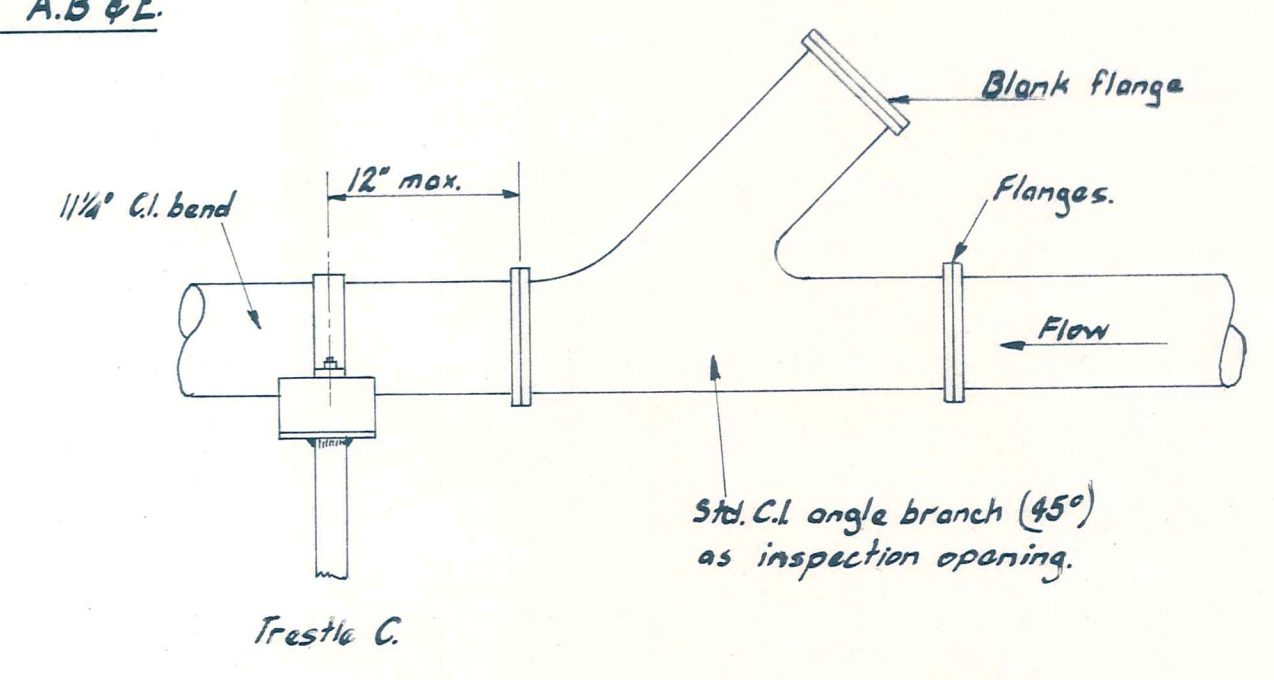
TRESTLES C & D.
Scale: 1 in. to 1 ft.



PIPE BRIDGE ON 'F' LINE

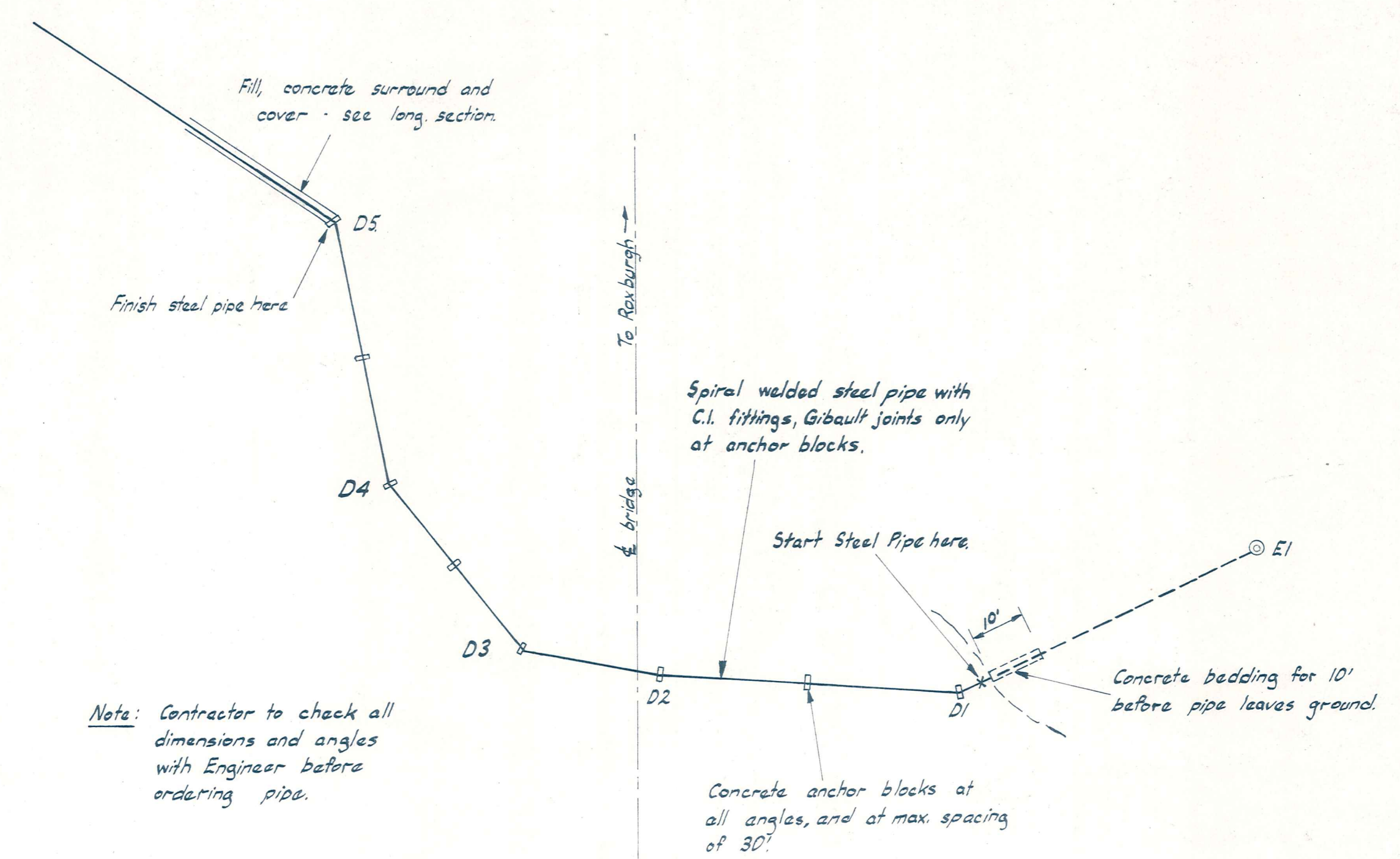


TRESTLES A, B & E

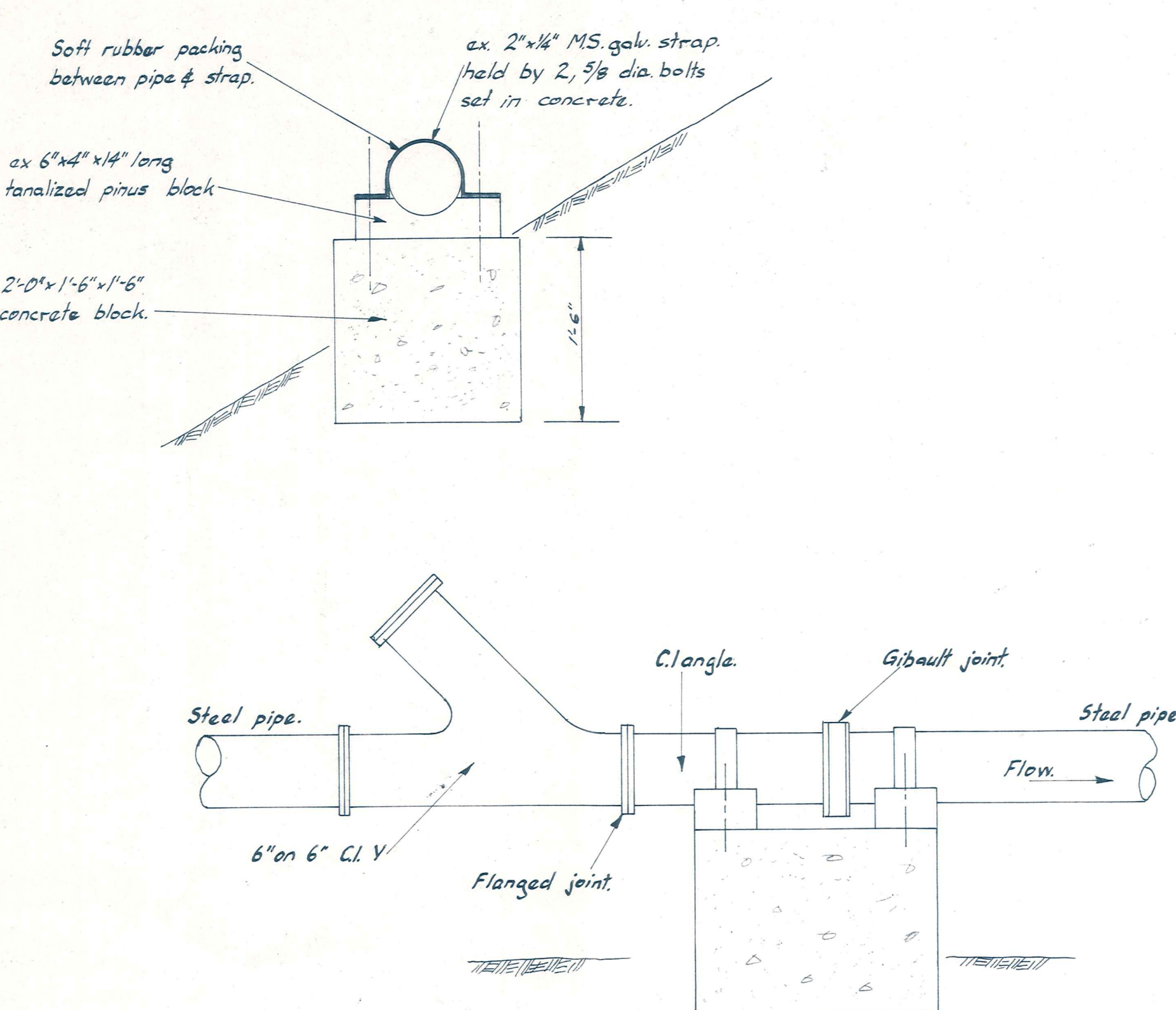


INSPECTION OPENING FOR PIPE BRIDGE
(For location see longitudinal section.)

Steelwork Protection.
Steel trestles after fabrication to be sand-blasted to SA 2 1/2 and given 2 coats of inorganic Zinc Silicate to total dry film thickness of 5 mils.
H.D. bolt heads and nuts to be given 2 coats of K16 or similar anticorrosive paint after erection of trestles.



GENERAL LAYOUT
Scale: 20 ft to 1 in.



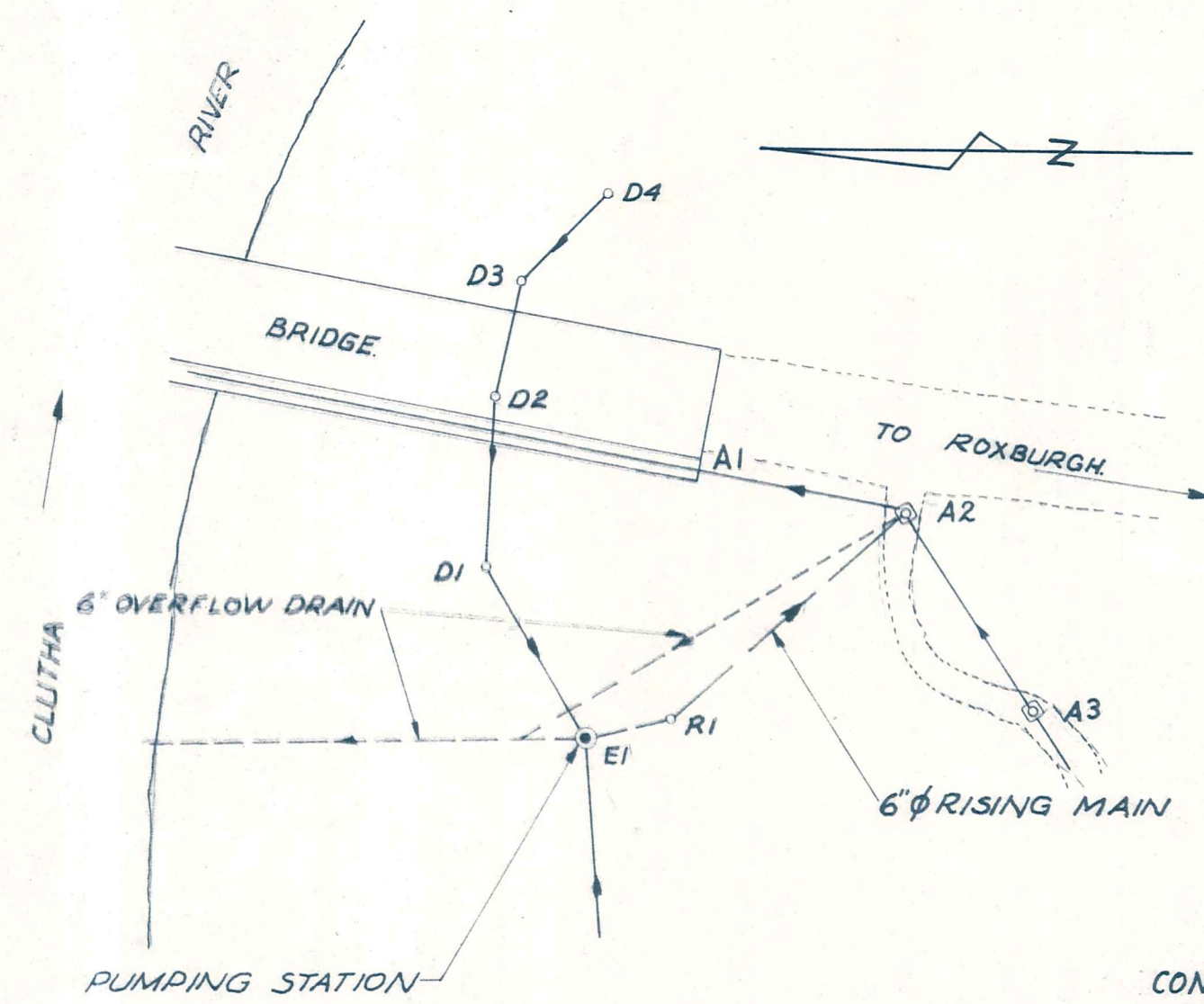
ELEVATED PIPE LINE UNDER BRIDGE.

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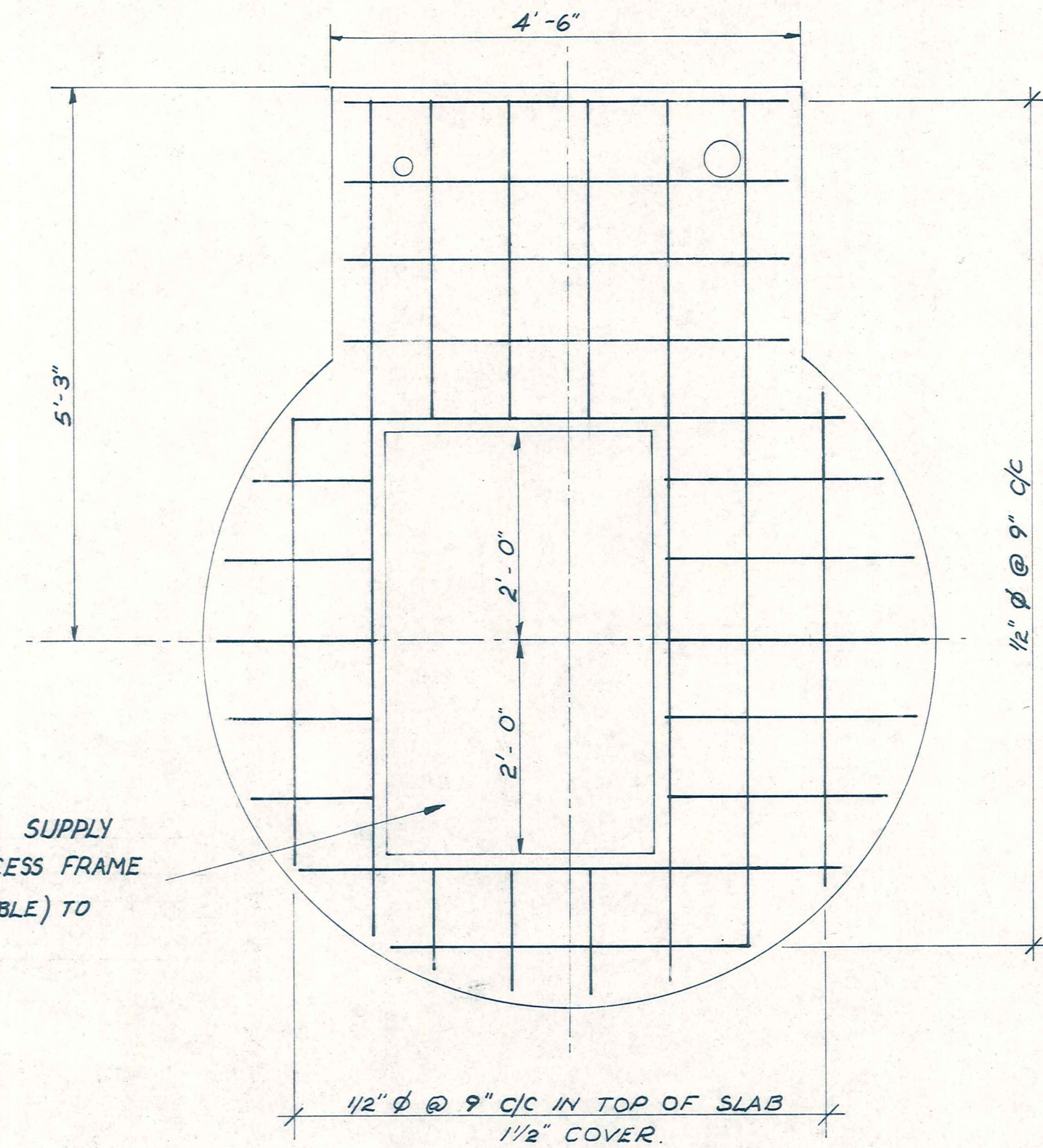
ALEXANDRA
BOROUGH COUNCIL

BRIDGE HILL SEWERAGE
ELEVATED PIPE & PIPE BRIDGE DETAILS

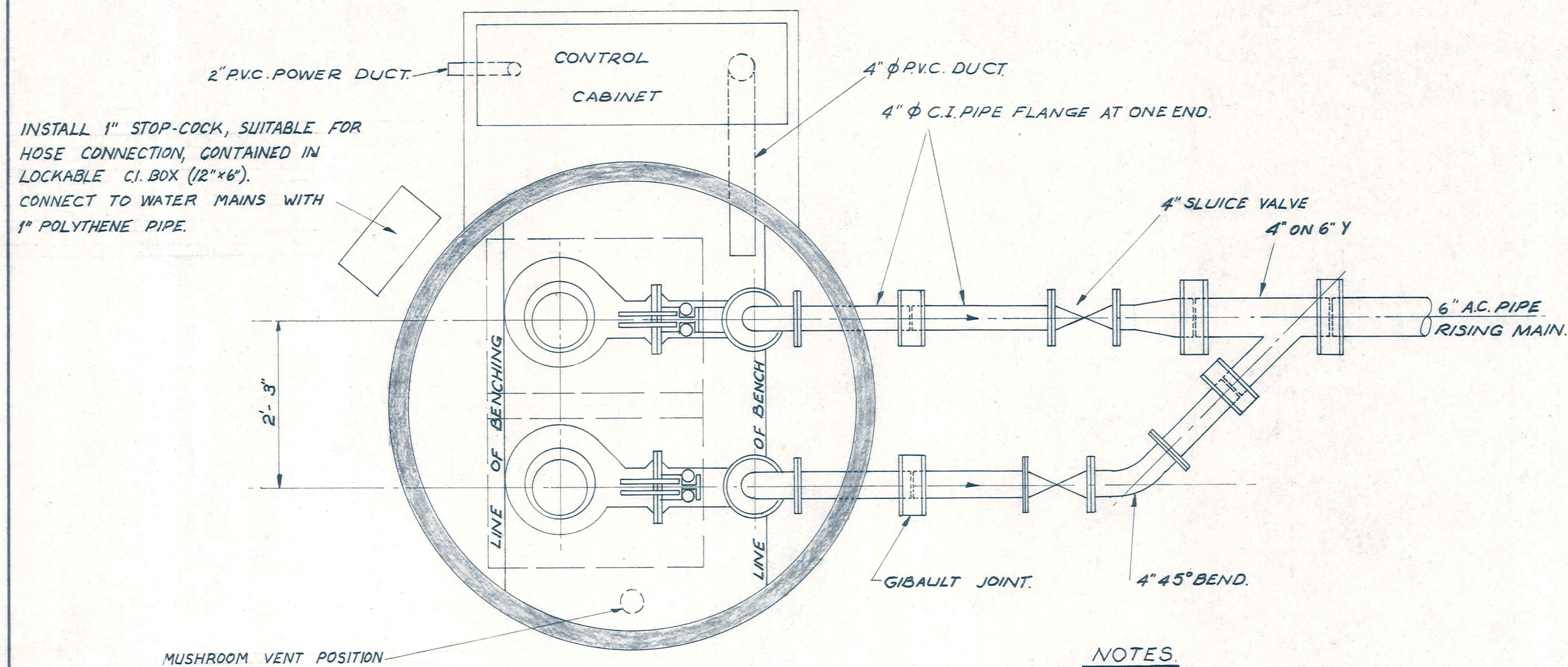
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NO.	BY	DATE						
			Appvd.	Surveyed	A.H. Govan	Sept. 71	6372	6
				Drawn	B.A. Duff	May 72		
				Calculations	" "	" "		
				Traced	M.J. Blawie	" "		
				Checked	G.A. Duff	" "		
				Approved	M.A. Duff	" "		
						File S/3	LB. 63, 70, 86	F.B. 48, 49



SITE PLAN
SCALE 50 FT TO 1 IN.



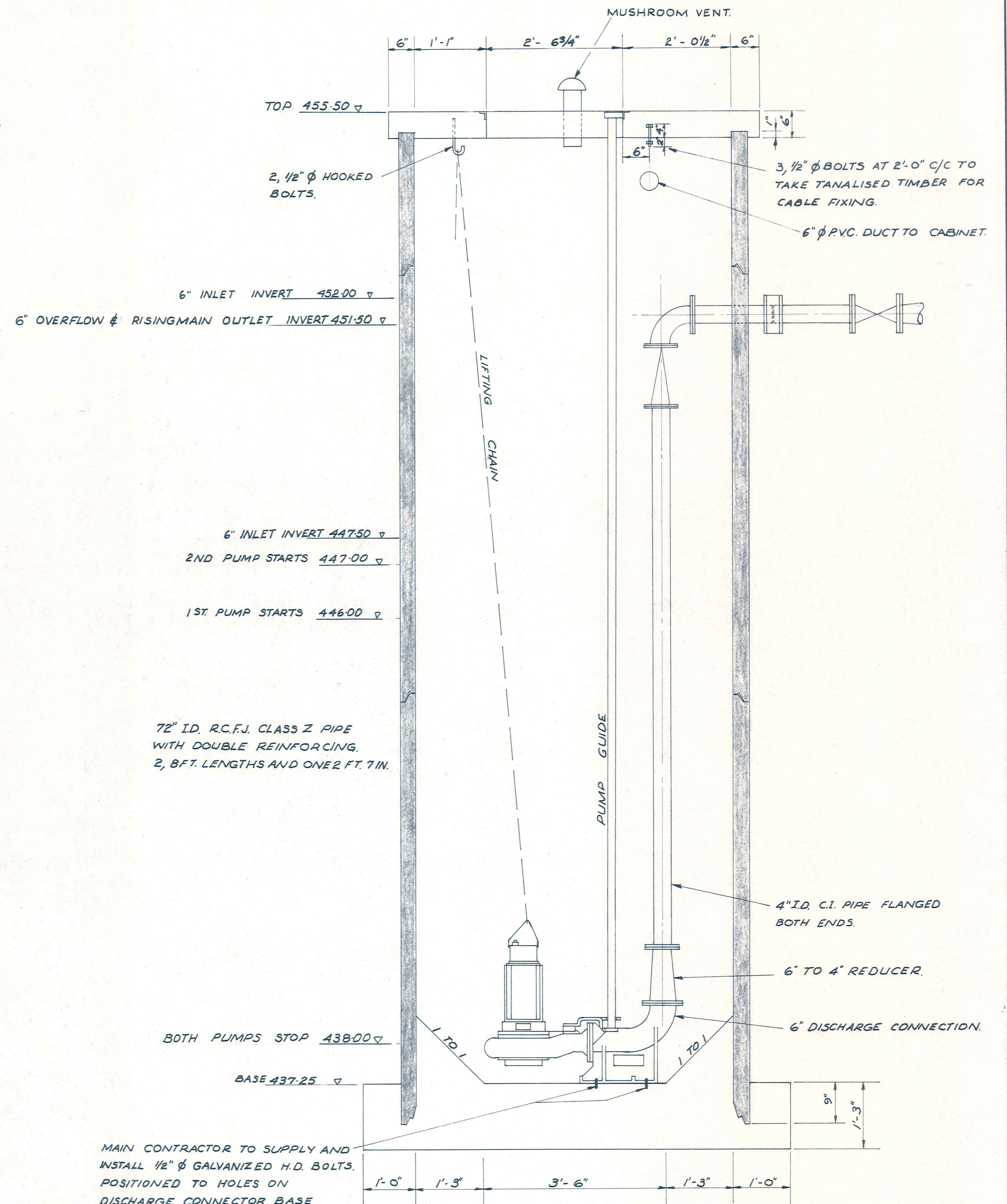
PLAN
SCALE 3/4" TO 1'-0"



PUMP LAYOUT PLAN
SCALE 3/4" TO 1'-0"

NOTES

- WHERE PIPES, DUCTS AND VENTS PASS THROUGH THE WELL WALLS MAKE GOOD WITH EPOXY RESIN. PUMP WELL TO BE WATER TIGHT.
- REINFORCING STEEL IN TOP OF WELL WALL TO BE EXPOSED AND BONDED INTO COVER SLAB.
- 2, CP 3126 FLYGT PUMPS EACH CAPABLE OF DELIVERING 180 G.P.M. AGAINST TOTAL HEAD OF 52 FT. WITH 430 IMPELLOR.
- PROVIDE "JOY PLUGS" IN CONTROL PANELS FOR CONNECTION OF PUMP CABLES.

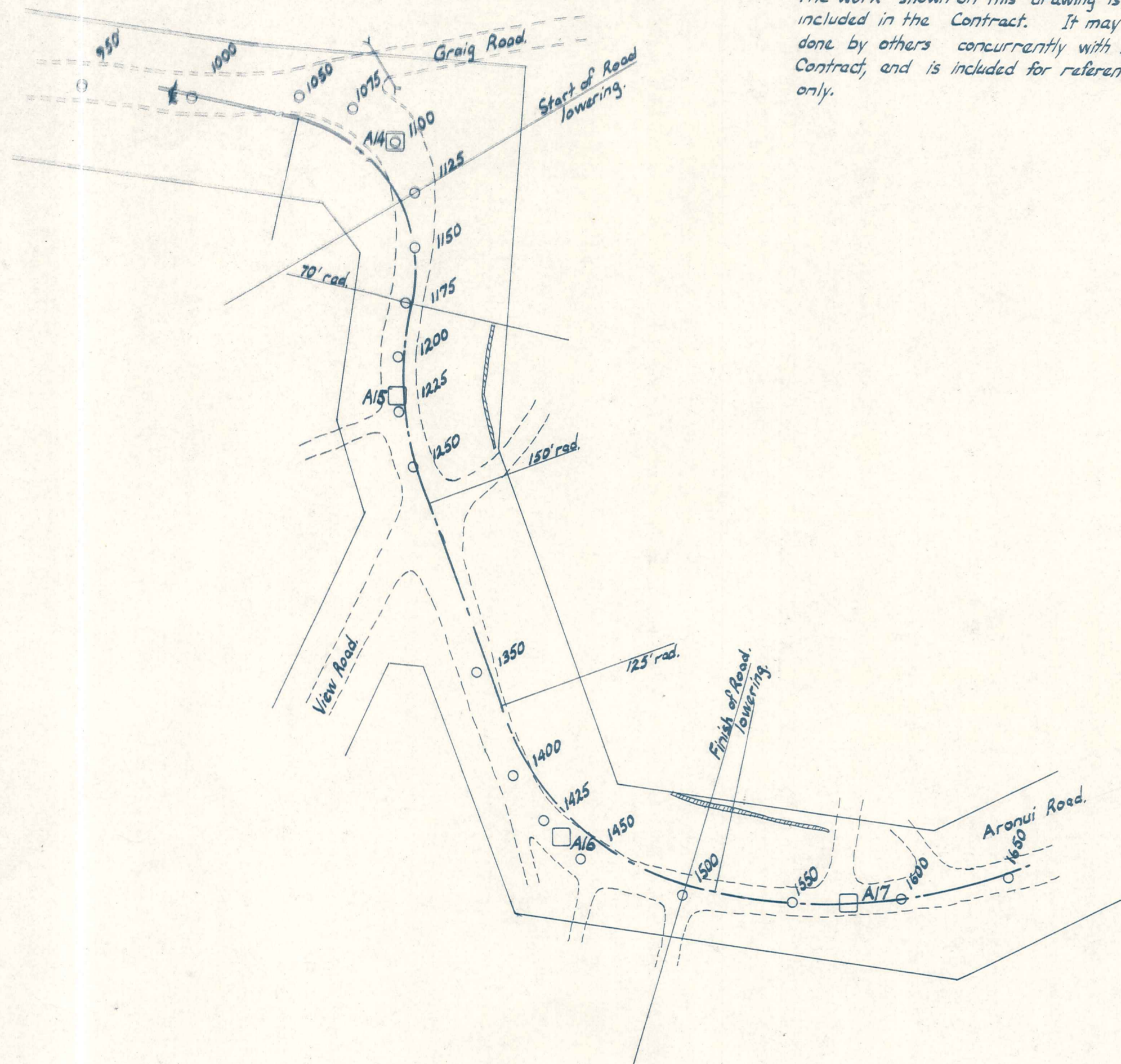


SECTIONAL ELEVATION
SCALE 3/4" TO 1'-0"

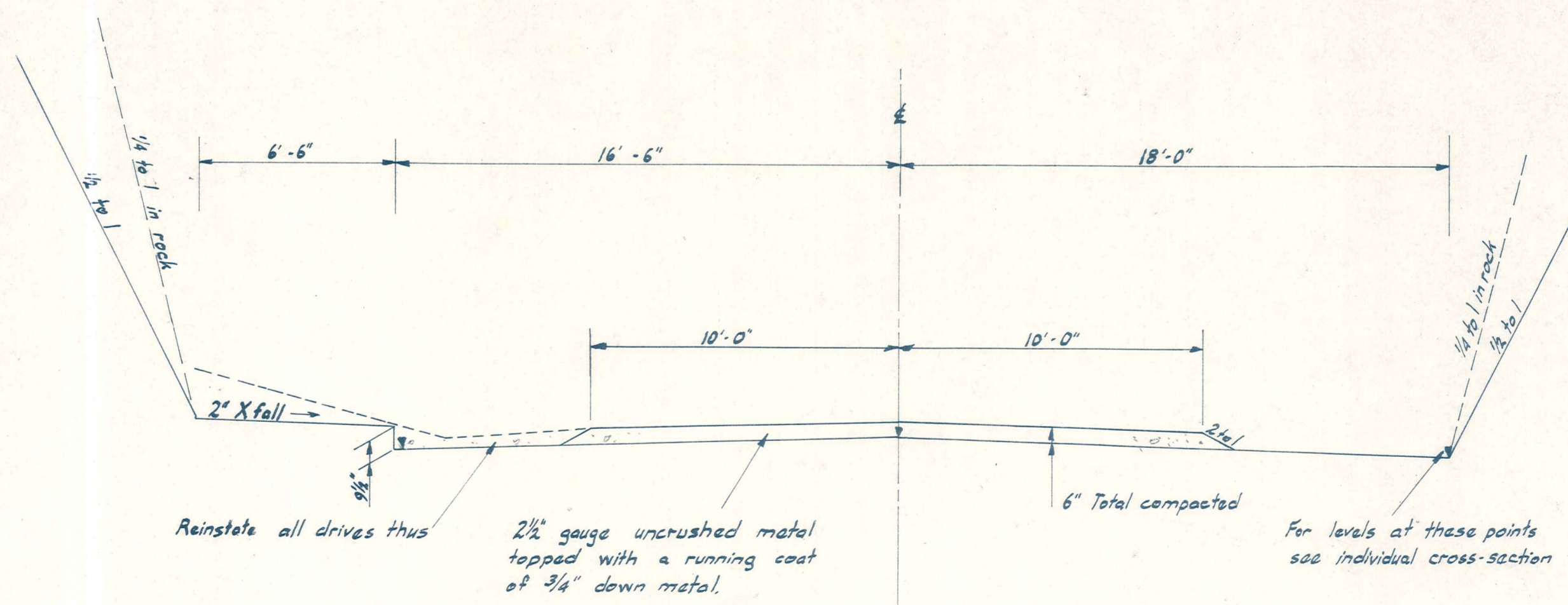
AMENDMENTS				NAME	DATE	JOB NO.	Sheet No.
NO.	BY	DATE	Appvd	Surveyed	A.H. GOVAN	Sept. 70	6372
				Drawn	R.T. SMITH	May 72	
				Calculations	G.R. DUFF	" "	
				Traced	M.J. BLAKIE	" "	
				Checked	G.R. DUFF	" "	
				Approved	M.L. WATTS	" "	File S/3
						L.B. 63	F.B. 48.49

ORIGINAL SIZE mm INCHES

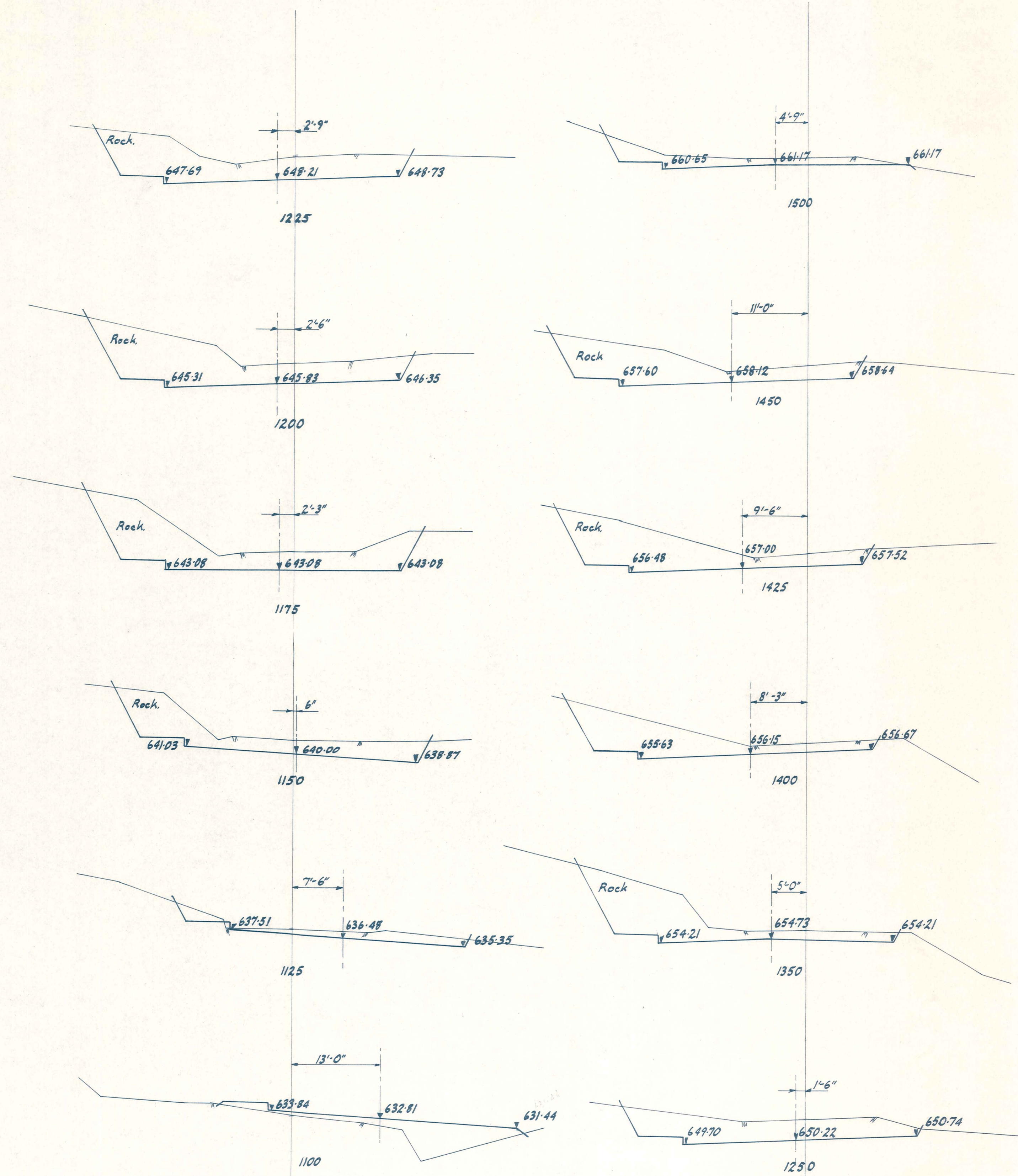
NOTE
 The work shown on this drawing is not included in the Contract. It may be done by others concurrently with this Contract, and is included for reference only.



PLAN
 Scale: 100 ft. to 1 in.



TYPICAL CROSS SECTION
 Scale: 4 ft. to 1 in.



CROSS SECTIONS
 Scale: 10 ft. to 1 in.

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

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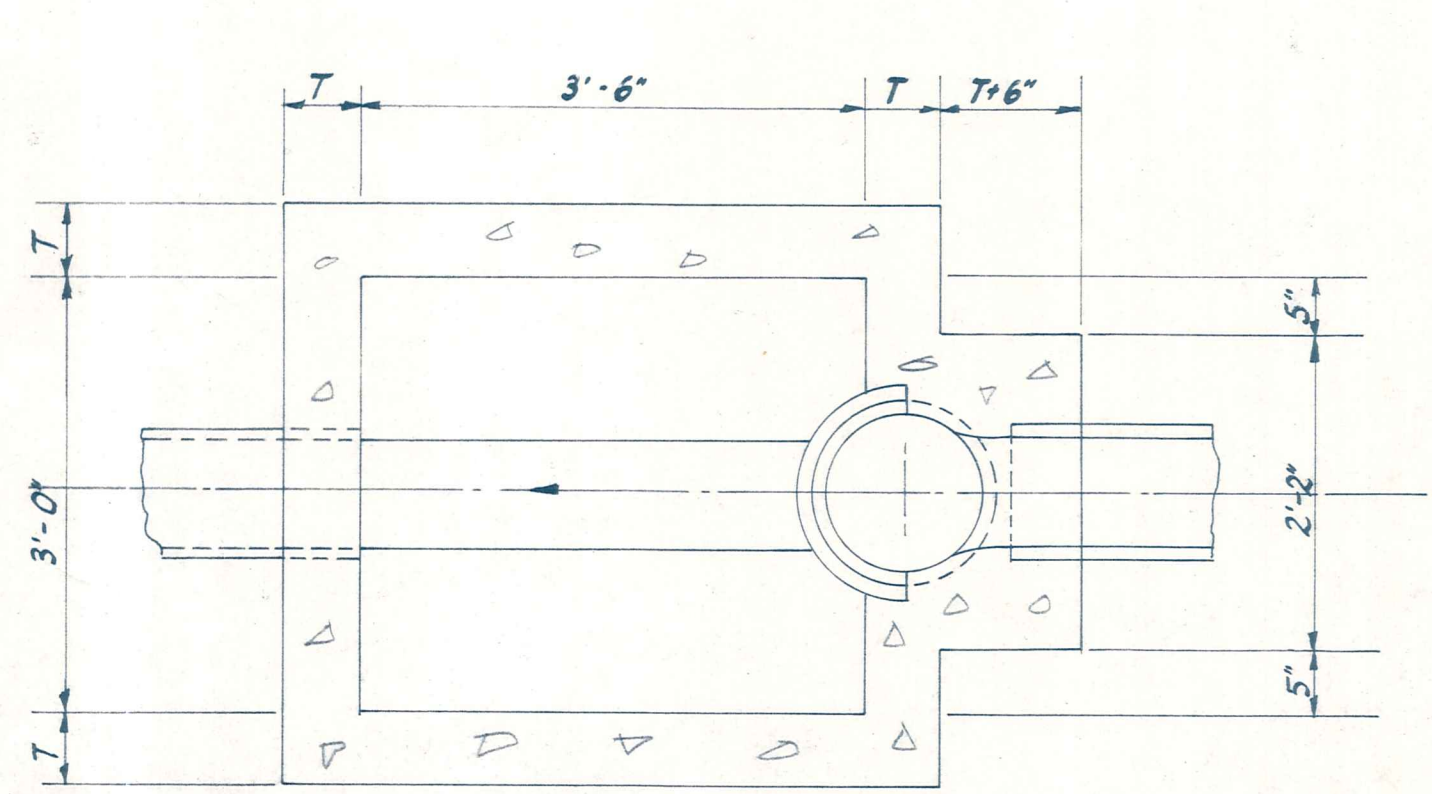
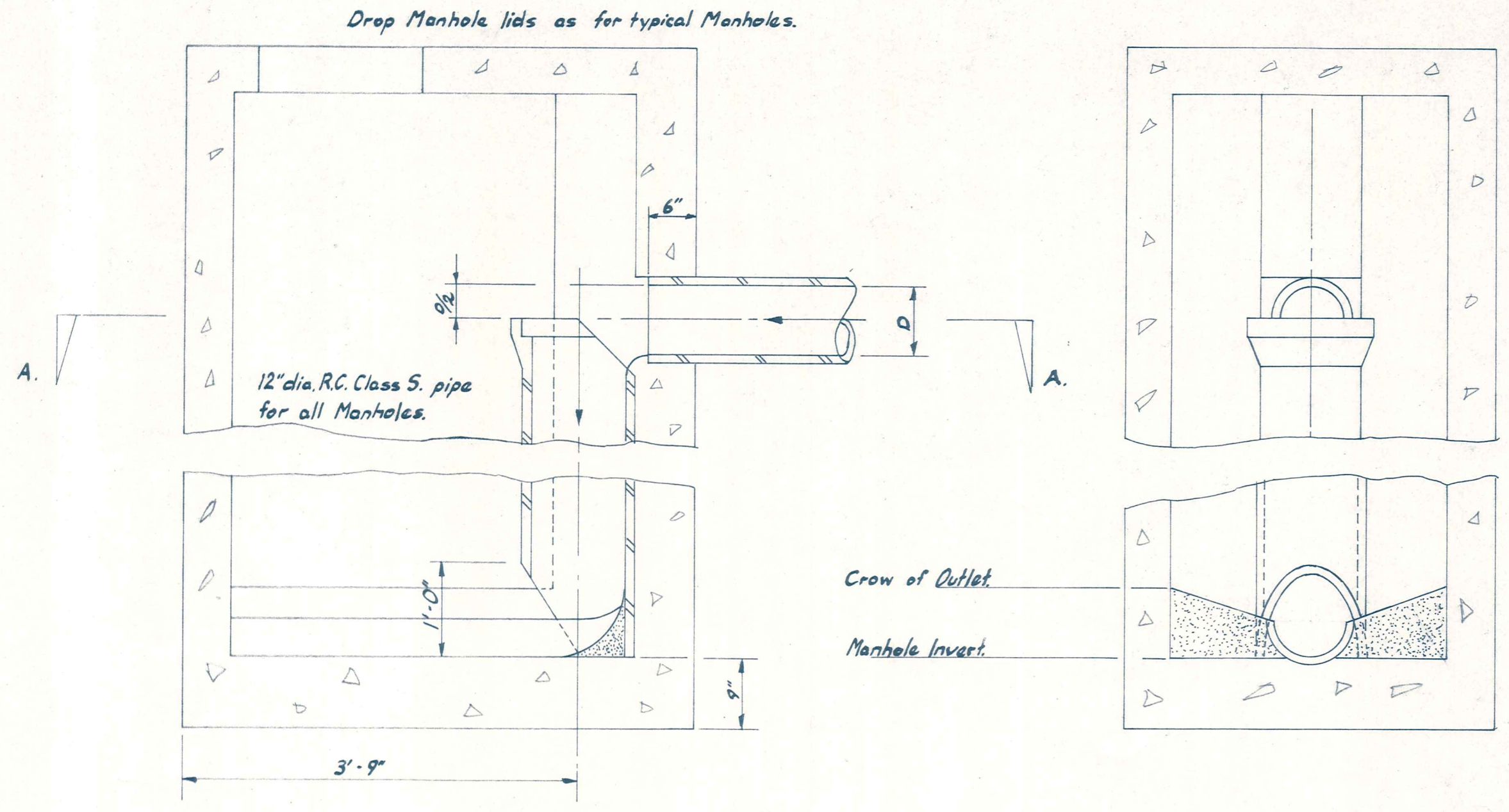
ALEXANDRA BOROUGH COUNCIL

BRIDGE ARONUI HILL ROAD - SEWERAGE LOWERING

AMENDMENTS			NAME		DATE
NO.	BY	DATE	Appvd.	Surveyed	
				A.H. Owen	Sept. 71
				G.R. Duff	May 72
				Calculations	" "
				Traced	" "
				M.J. Blahie	" "
				Checked	" "
				G.R. Duff	" "
				Approved	" "
				M.Watts	" "

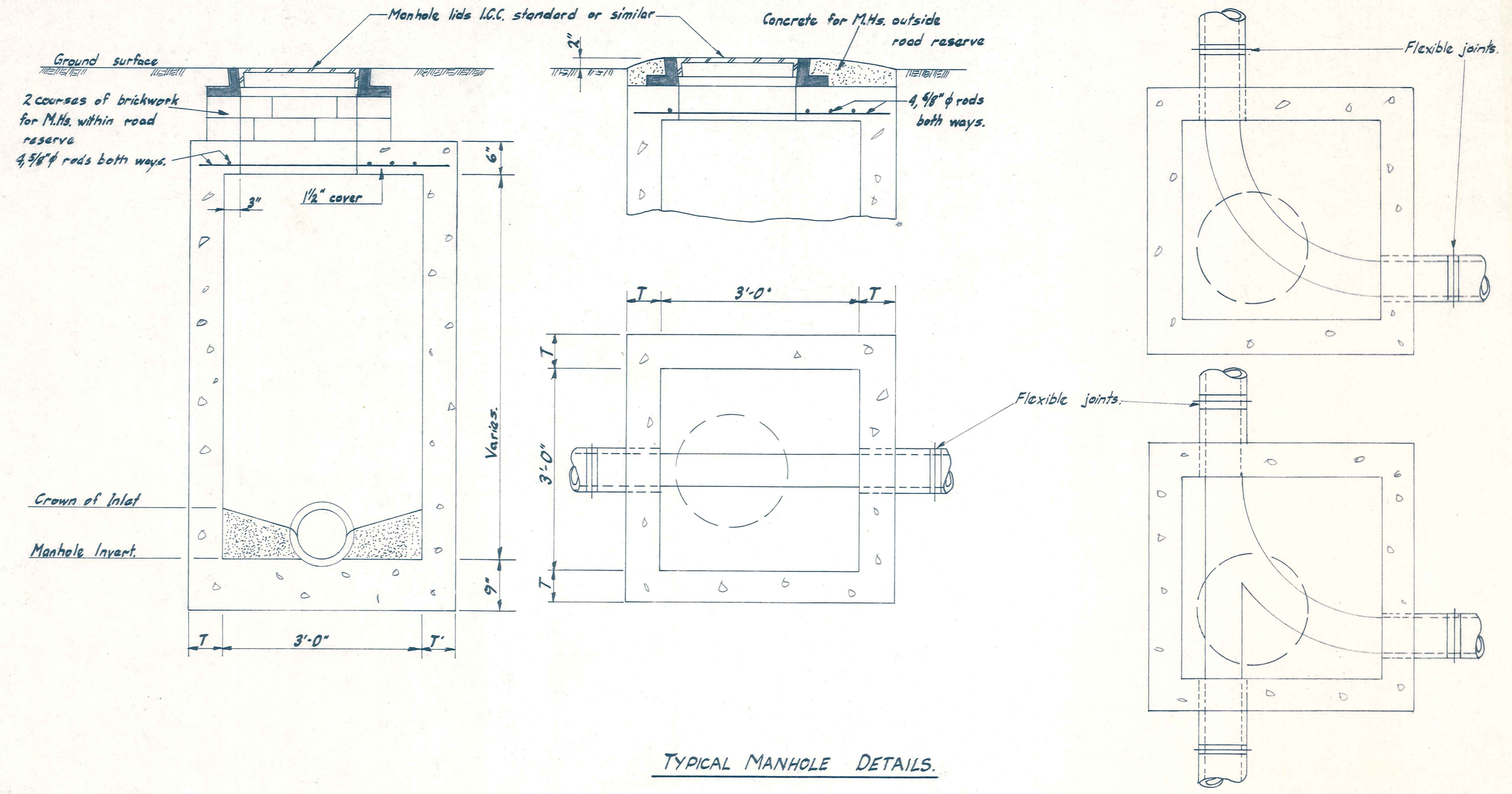
JOB NO. **6372**
 Sheet No. **8**
 of sheets
 File **S/3** L.B. **63,7086** F.B. **48,49**

ORIGINAL SIZE mm INCHES

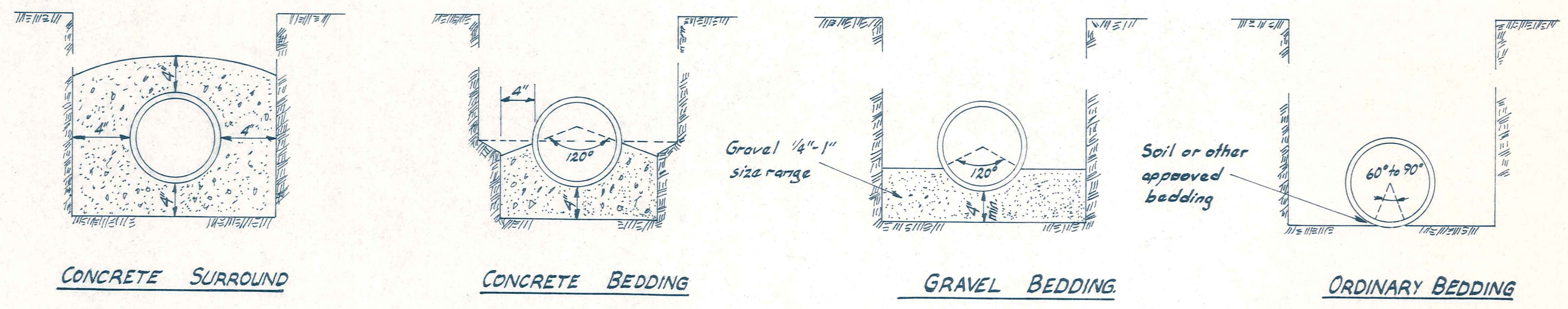


SECTION A-A
STANDARD DROP MANHOLE

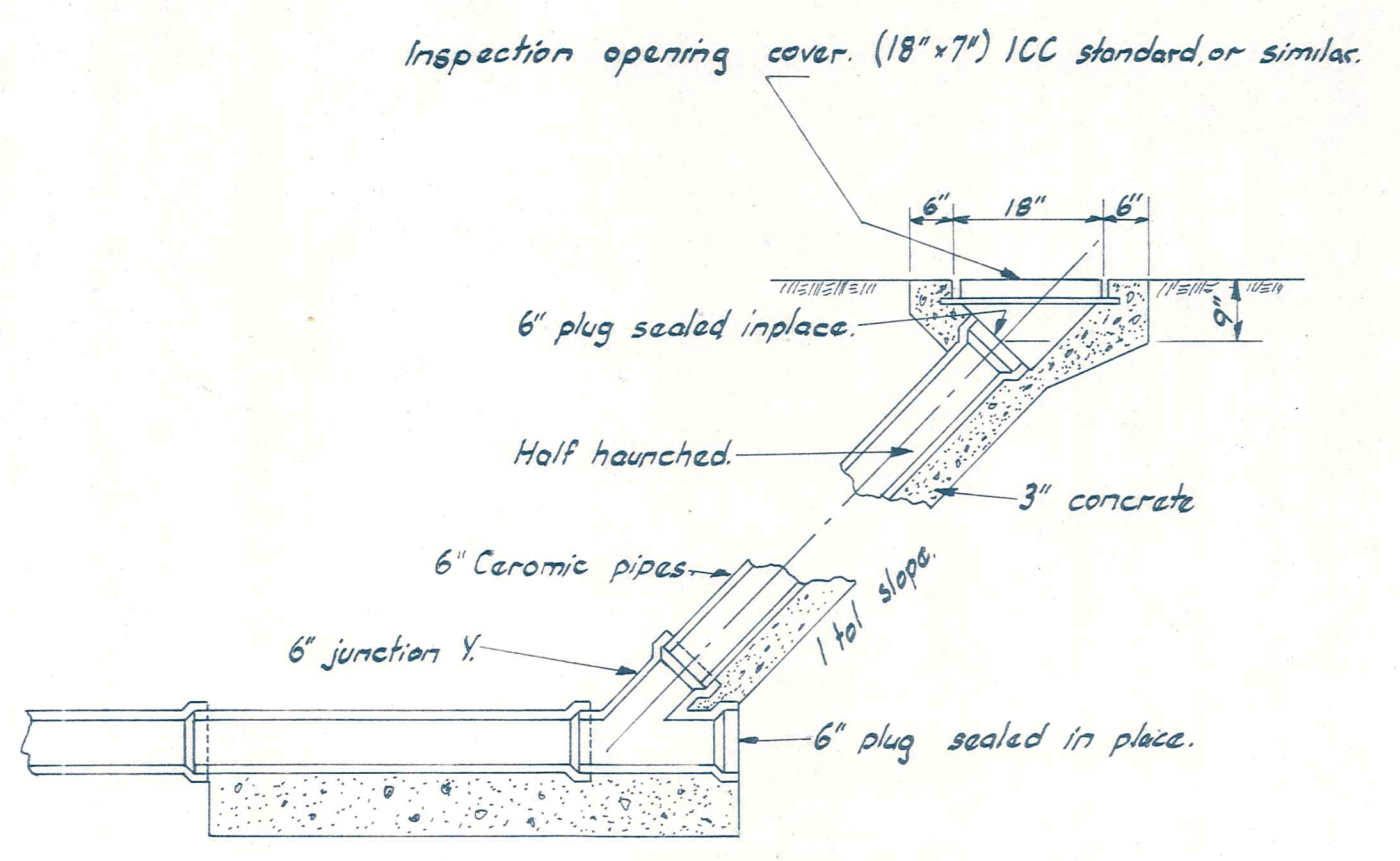
For Manholes less than 9'-0" in depth T=6'
For Manholes 9'-0" in depth or greater T=9'



TYPICAL MANHOLE DETAILS



BEDDING OF SEWERS



STANDARD INSPECTION OPENINGS

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ALEXANDRA
BOROUGH COUNCIL

BRIDGE HILL SEWERAGE
MANHOLE & PIPE BEDDING DETAILS

AMENDMENTS			Appvd.	NAME	DATE
NO.	BY	DATE			

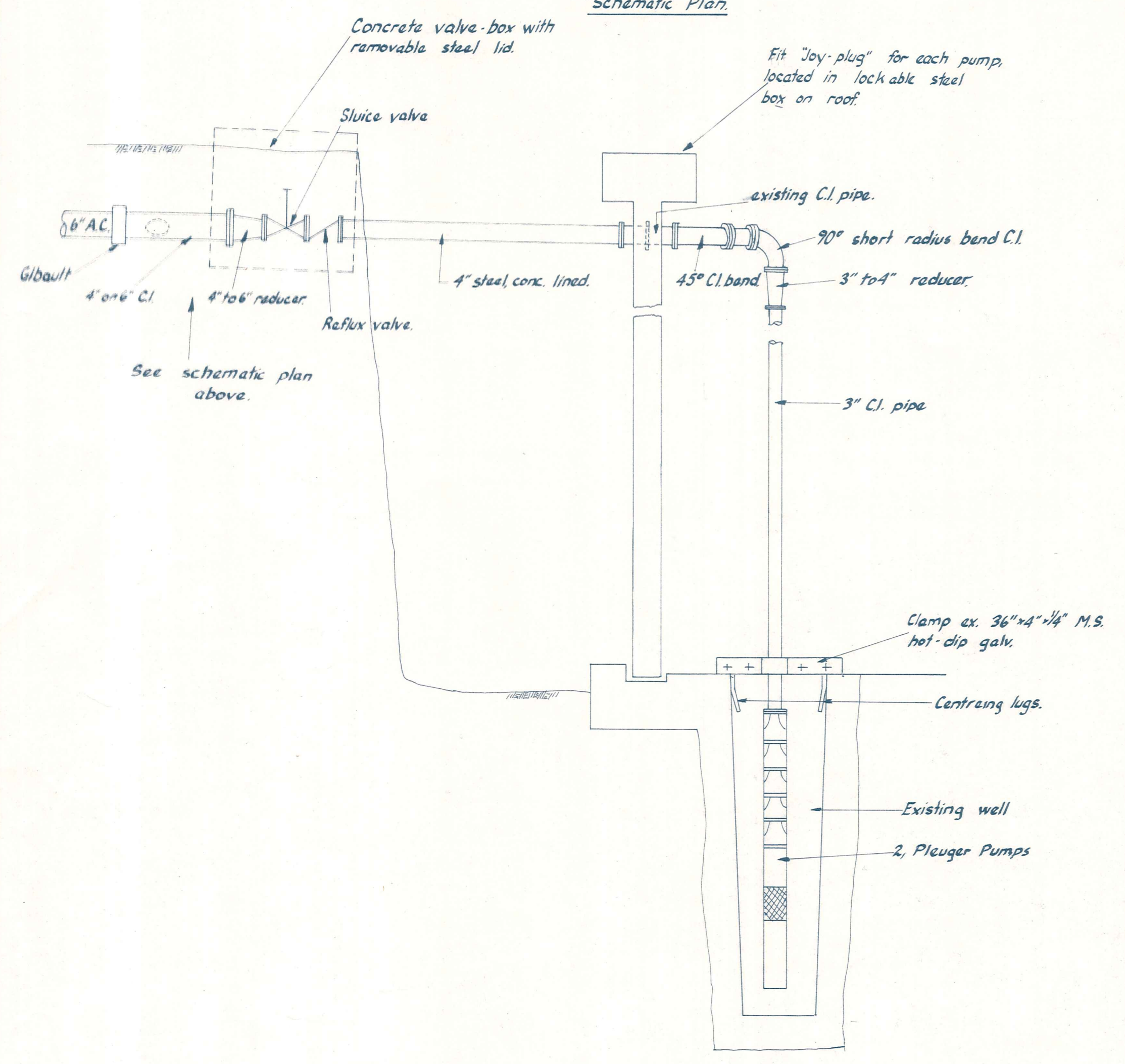
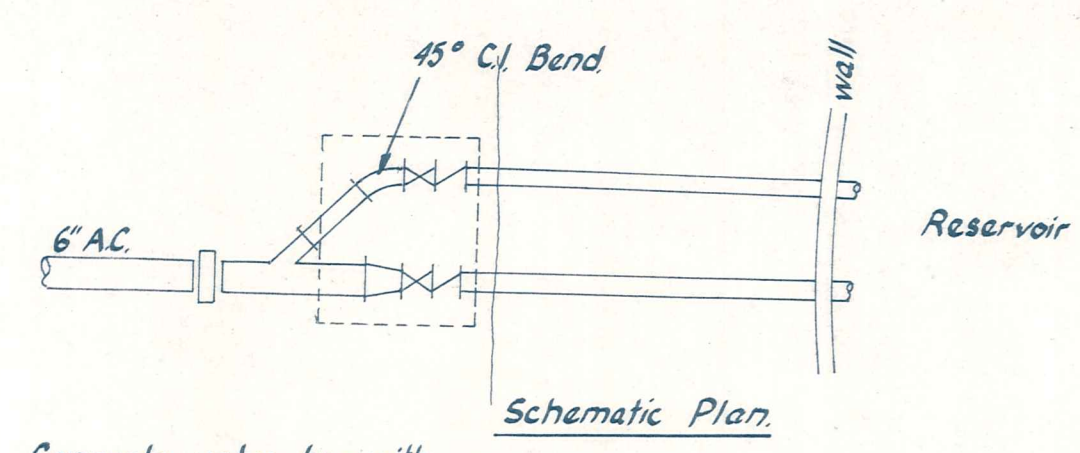
Surveyed	A.H.Govan	Sept. 71
Drawn	G.R.Duff	Nov. 72
Calculations	"	"
Traced	M.J. Blakie	"
Checked	G.R.Duff	"
Approved		

JOB NO.	6372	Sheet No.	9
File	S/3	L.B.637086	F.B.48.49

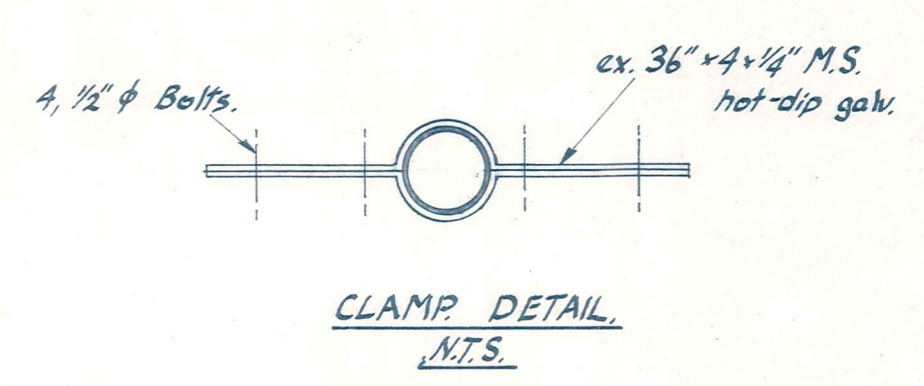
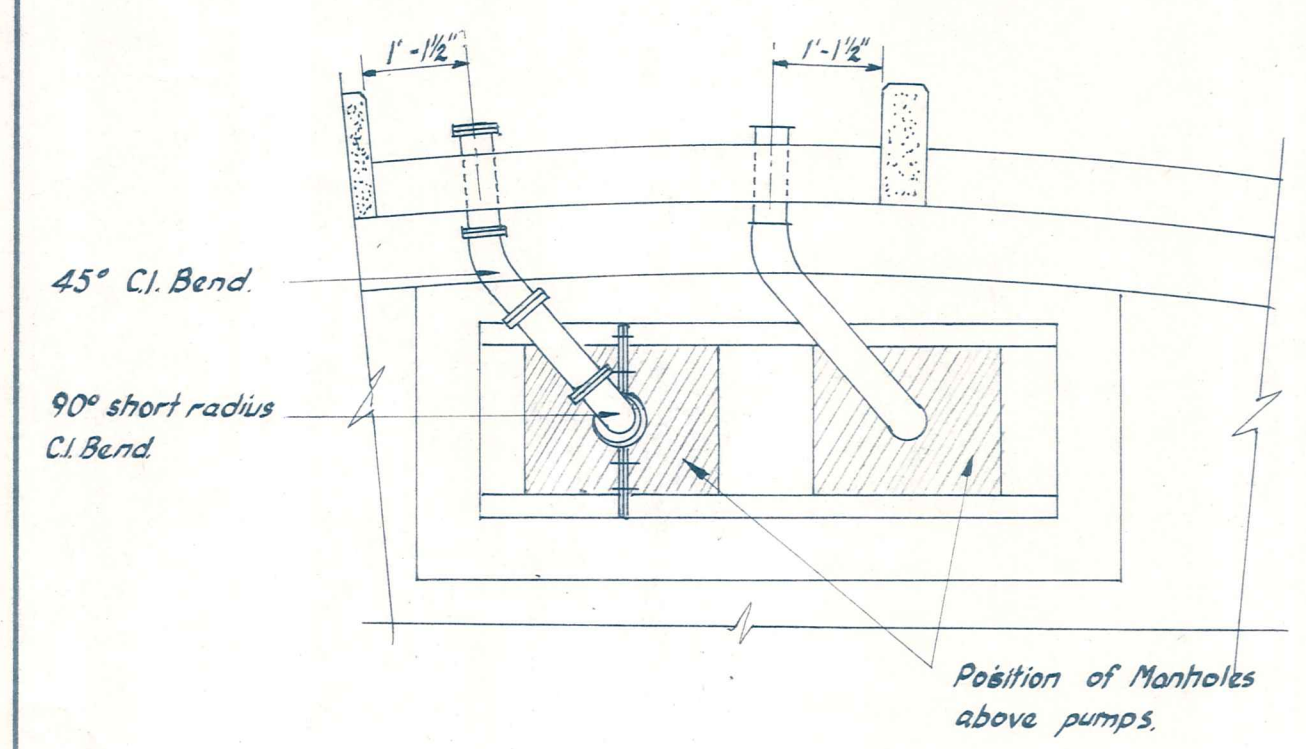
ORIGINAL SIZE
mm INCHES

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100
0

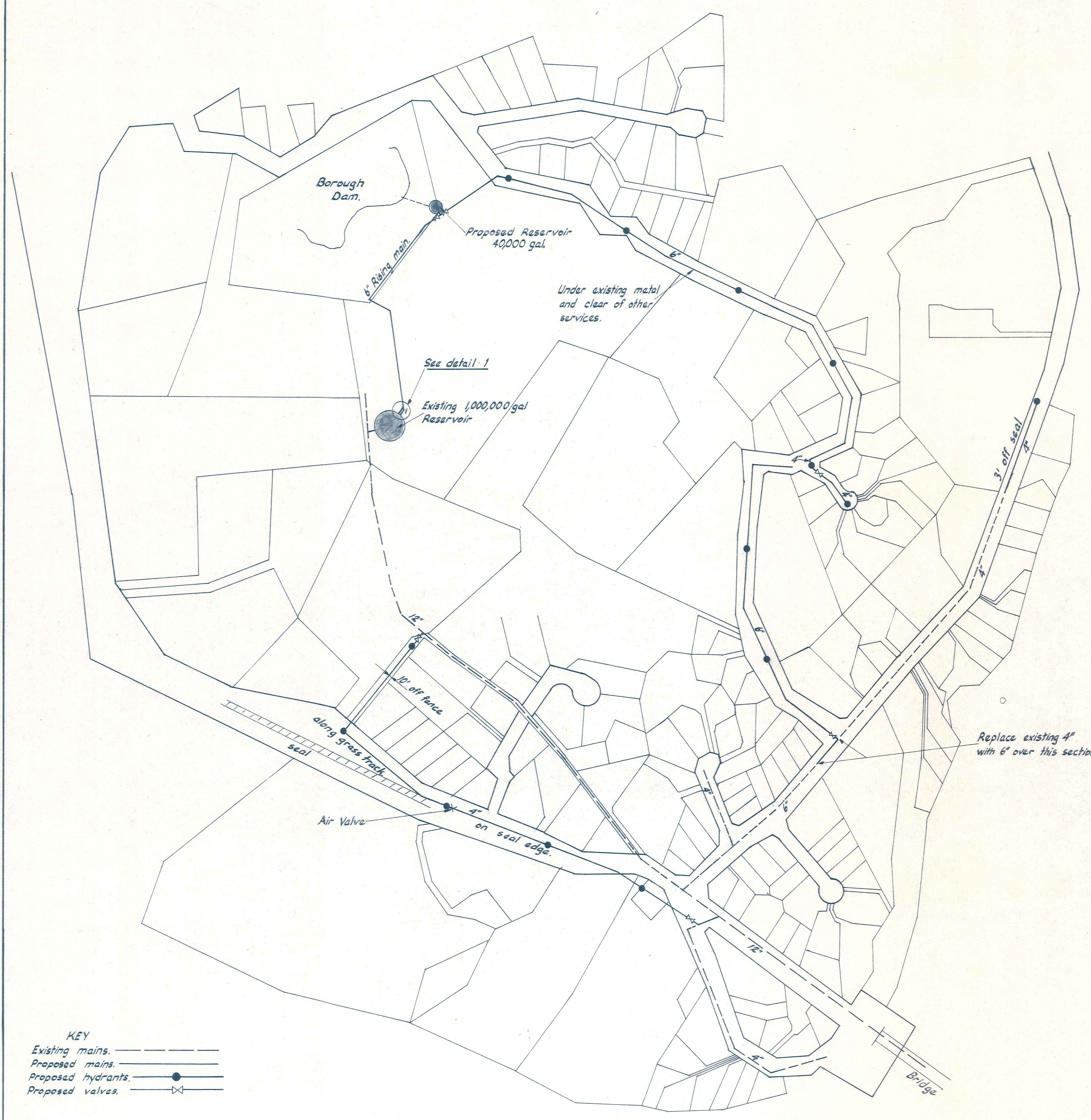
12
11
10
9
8
7
6
5
4
3
2
1
0



Scale: 1/2" to 1'-0"



DETAIL 1



PLAN
SCALE: 1" = 220.26 FT.

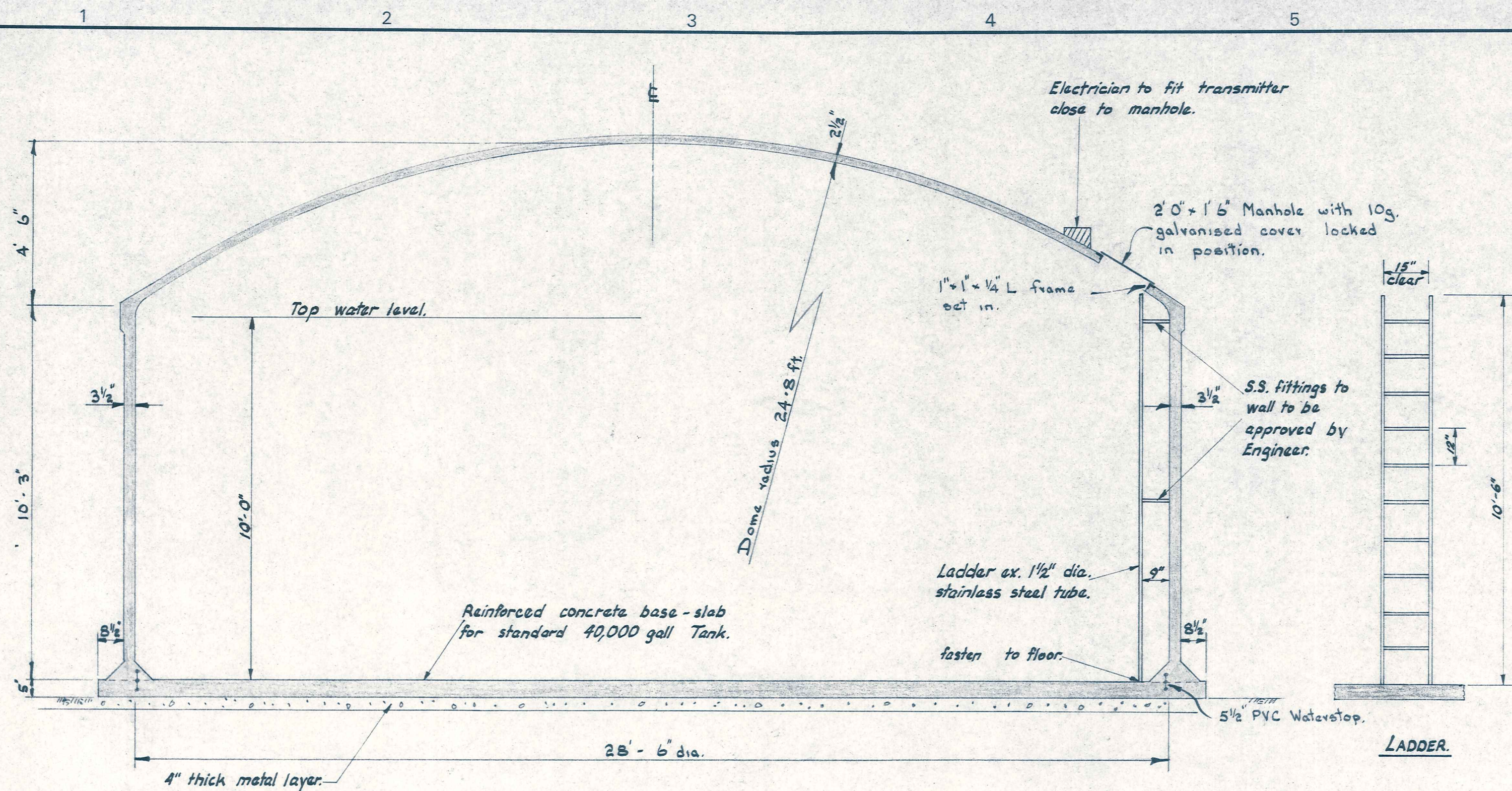
DUFFILL WATTS & KING
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ALEXANDRA BOROUGH COUNCIL

BRIDGE LAYOUT HILL AND WATER SUPPLY PUMP INSTALLATION

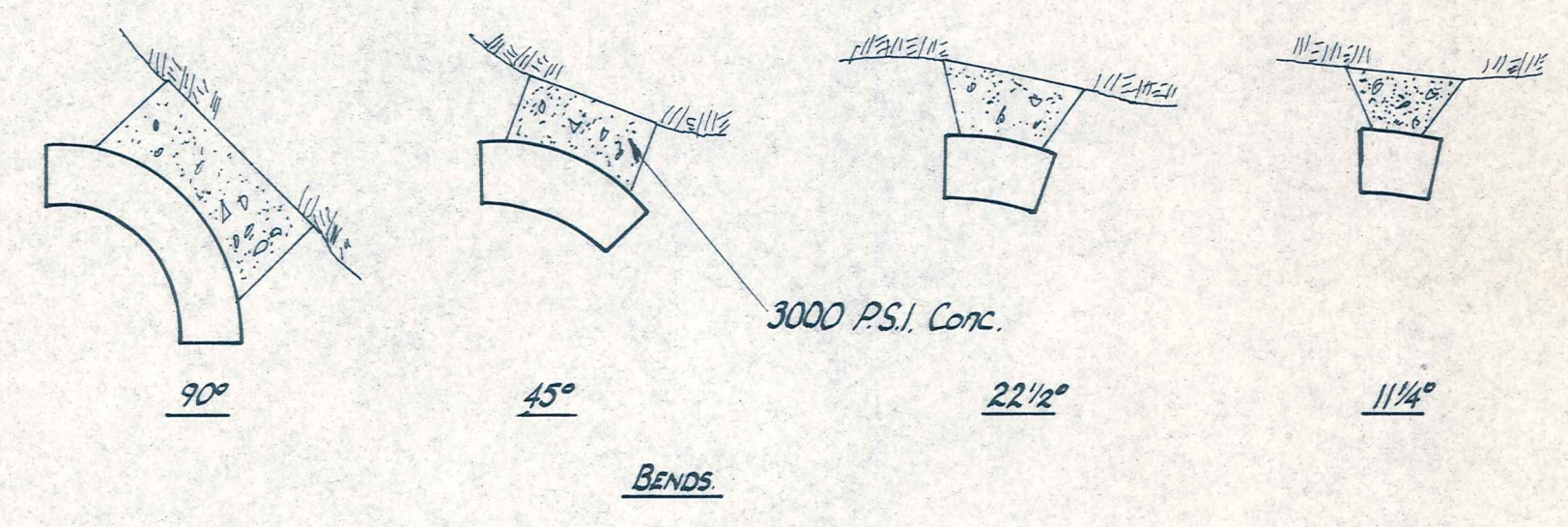
AMENDMENTS				NAME		DATE	JOB NO.	Sheet No.
NO.	BY	DATE	Appvd.					
				Surveyed	G.R. Duff	May 72	6372	10
				Drawn	" "	" "		
				Calculations	" "	" "		
				Traced	M.J. Slavice	" "		
				Checked	G.R. Duff	" "		
				Approved	D.W. Watts	" "	File S/3	L.B. 6370/86

F.B. 48/49



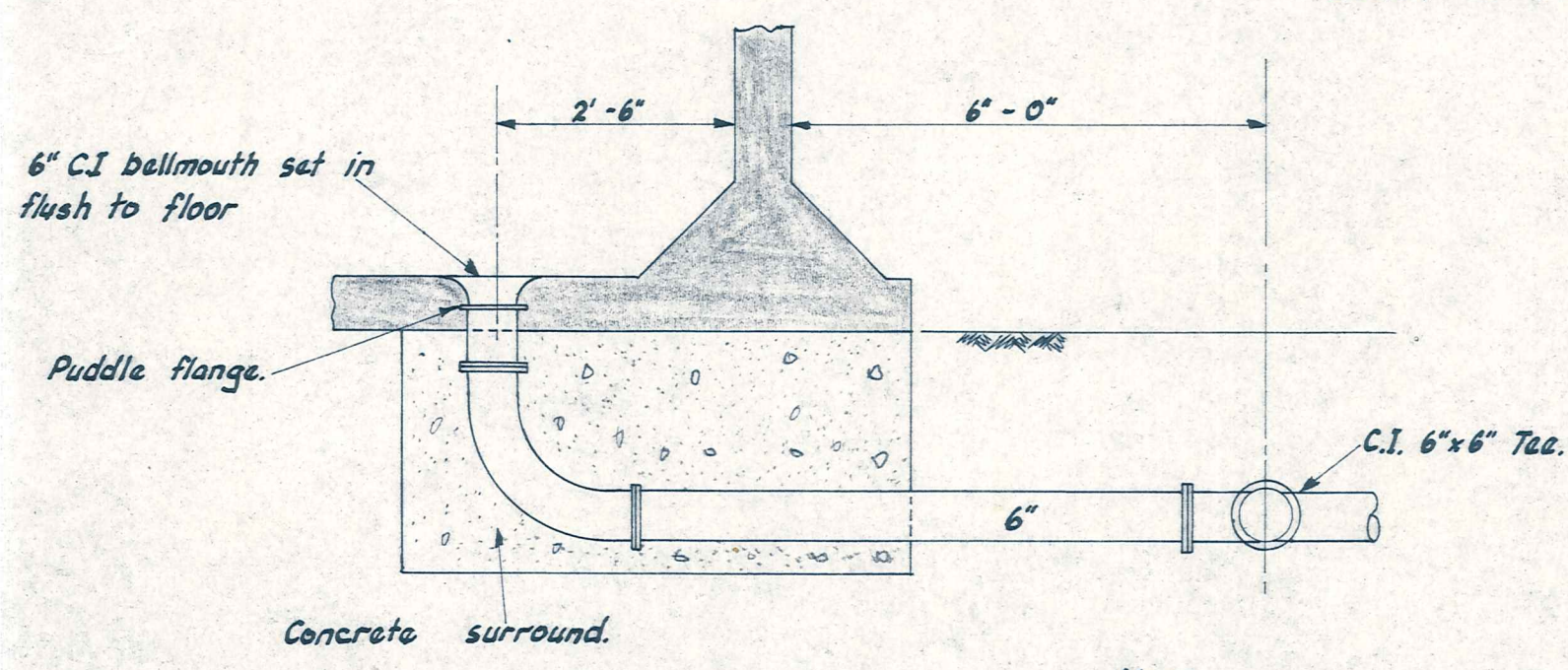
SECTION THROUGH TANK

Scale: 3/8" = 1'0"



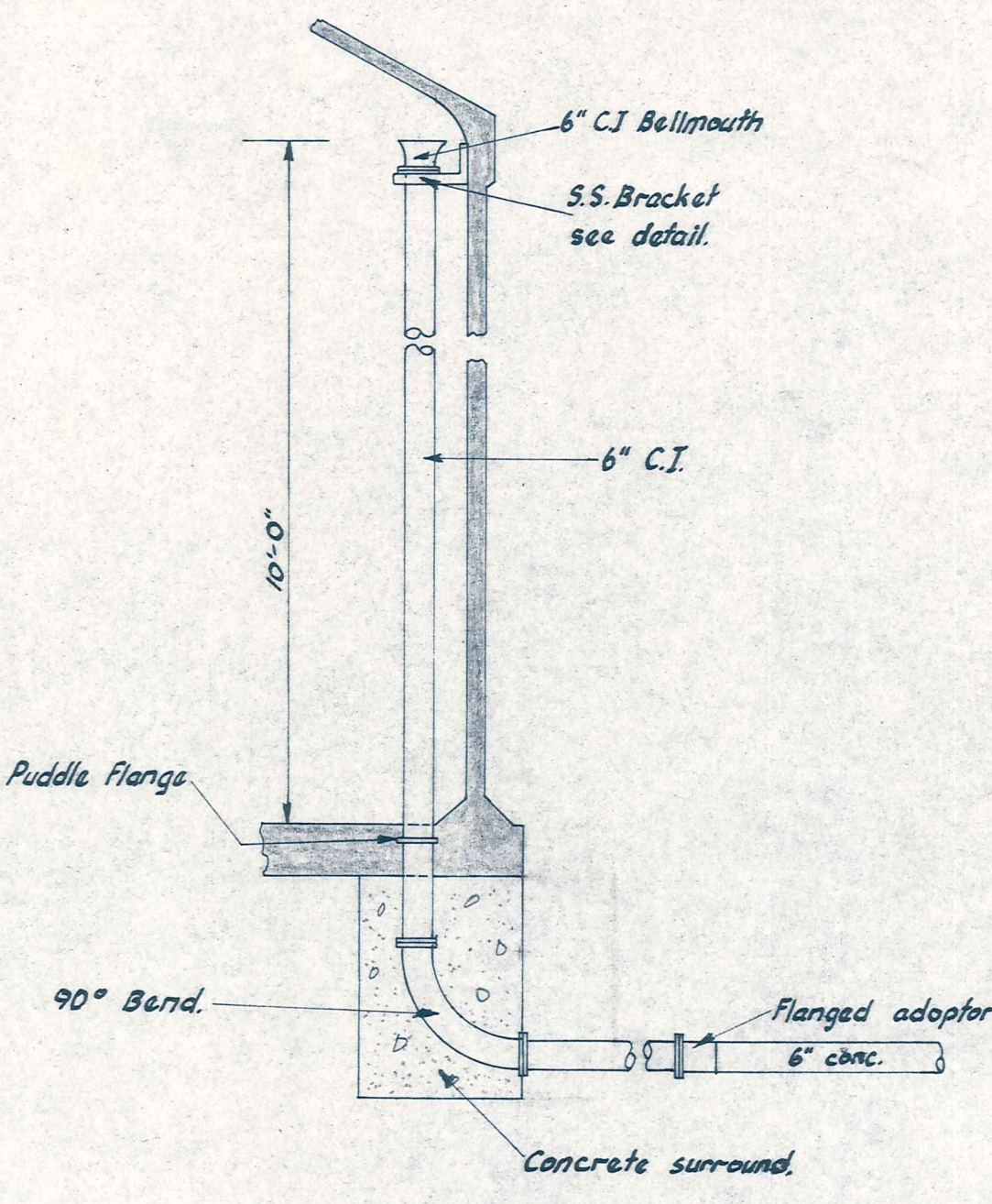
BEARING AREAS FOR ANCHOR BLOCKS.

Dia.	90° Bend	45° Bend	22 1/2° Bend	11 1/4° Bend	Tee or Blank-end	6" to 4" Reducer
4"	4 sq. ft.	2 sq. ft.	2 sq. ft.	2 sq. ft.	2 sq. ft.	-
6"	6 " "	3 " "	2 " "	2 " "	4 " "	4 sq. ft.



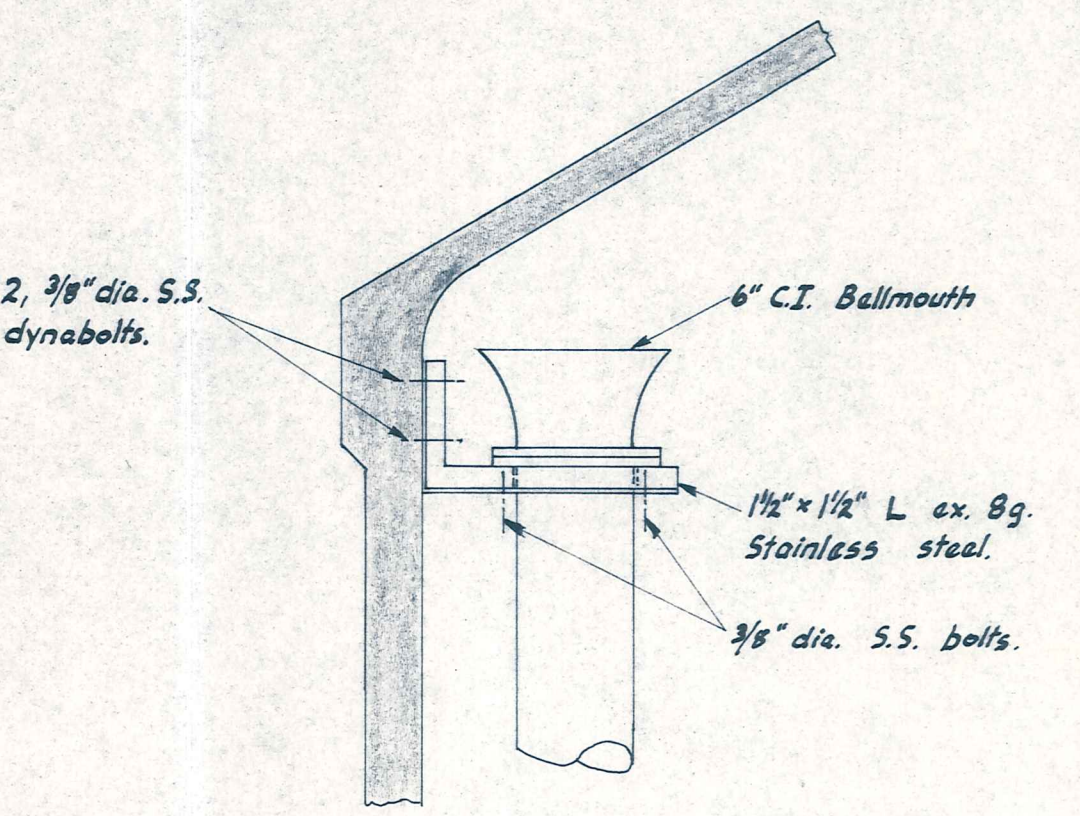
INLET DETAIL

NOTE:
Scour detail same as inlet detail but situated close to over flow. See schematic diagram.

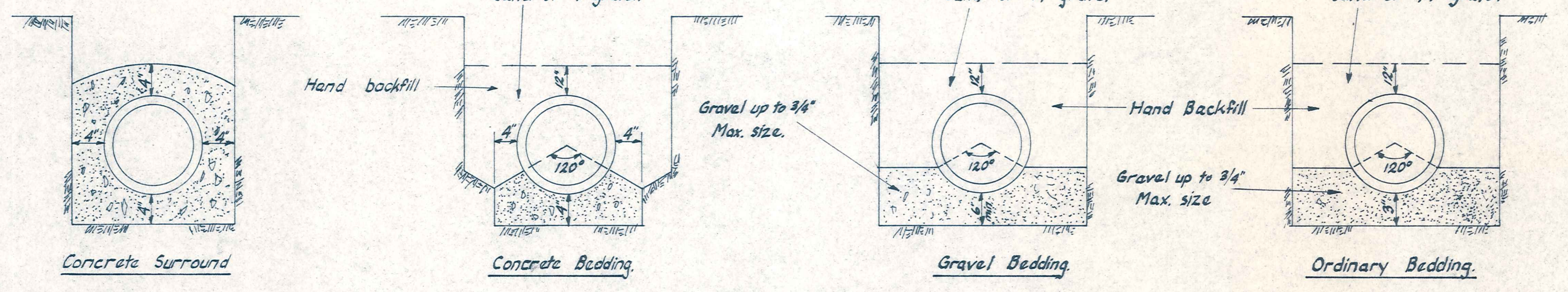


OVERFLOW DETAIL

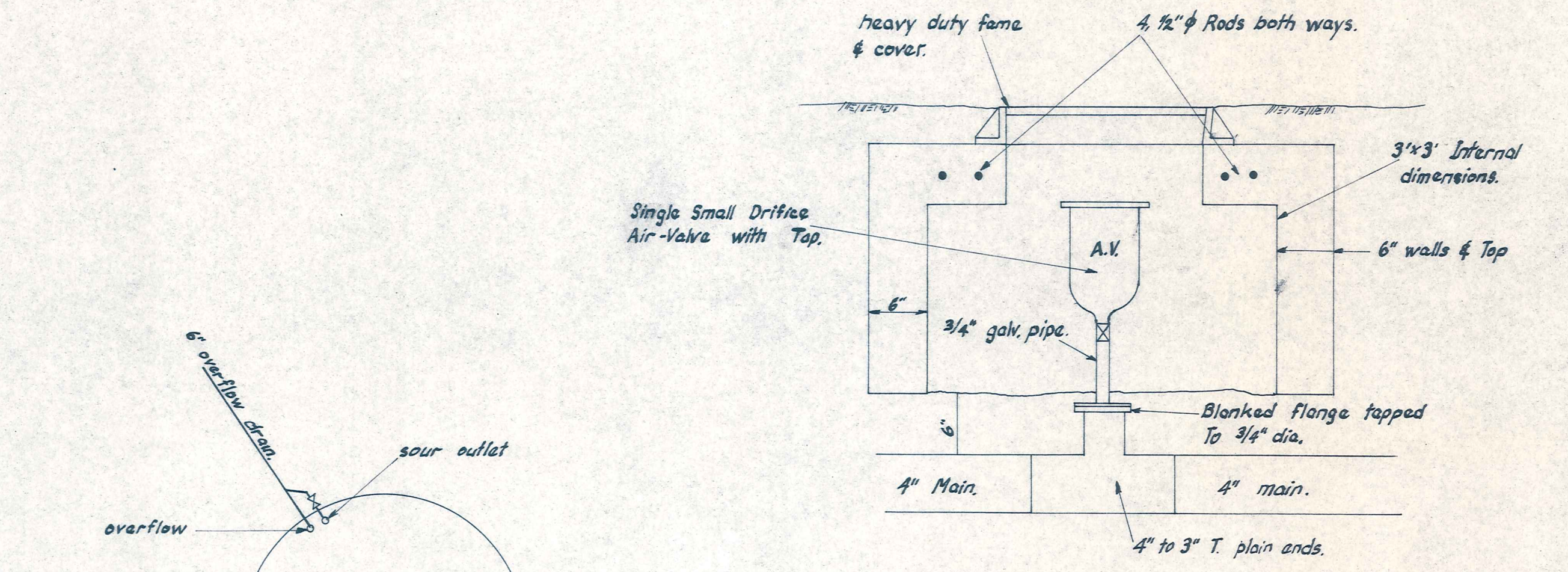
Important:
Overflow pipework must not be hung from brackets, these are to prevent sway only.



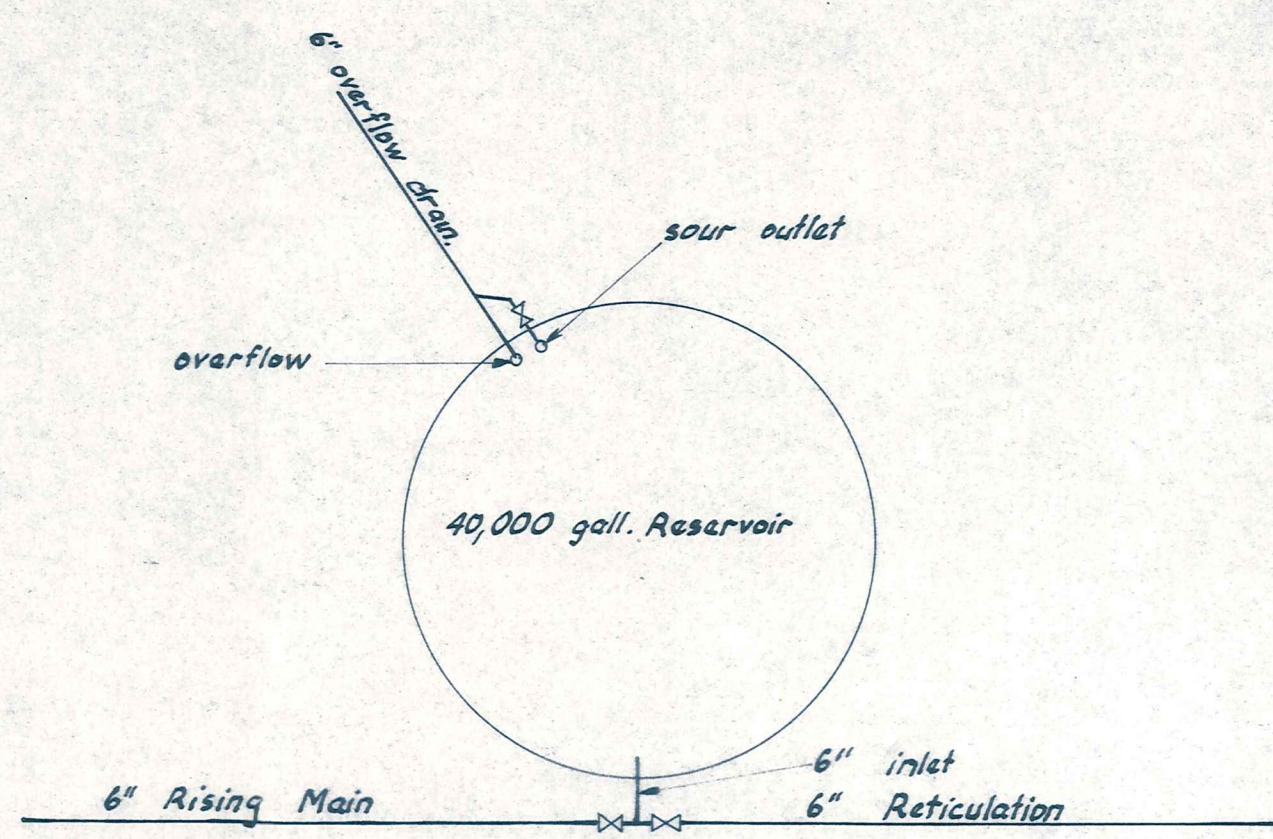
OVERFLOW BRACKET DETAIL
Scale 1/4" = 1 in.



BEDDING DETAILS
N.T.S.



AIR VALVE
Scale: 1 in to 1 ft



SCHEMATIC DIAGRAM

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Christchurch 139 Clyde Rd., Ph. 515-801

ALEXANDRA BOROUGH COUNCIL

BRIDGE HILL WATER SUPPLY
40,000 GALLON RESERVOIR, RETICULATION DETAILS

AMENDMENTS			NAME	DATE
NO.	BY	DATE		

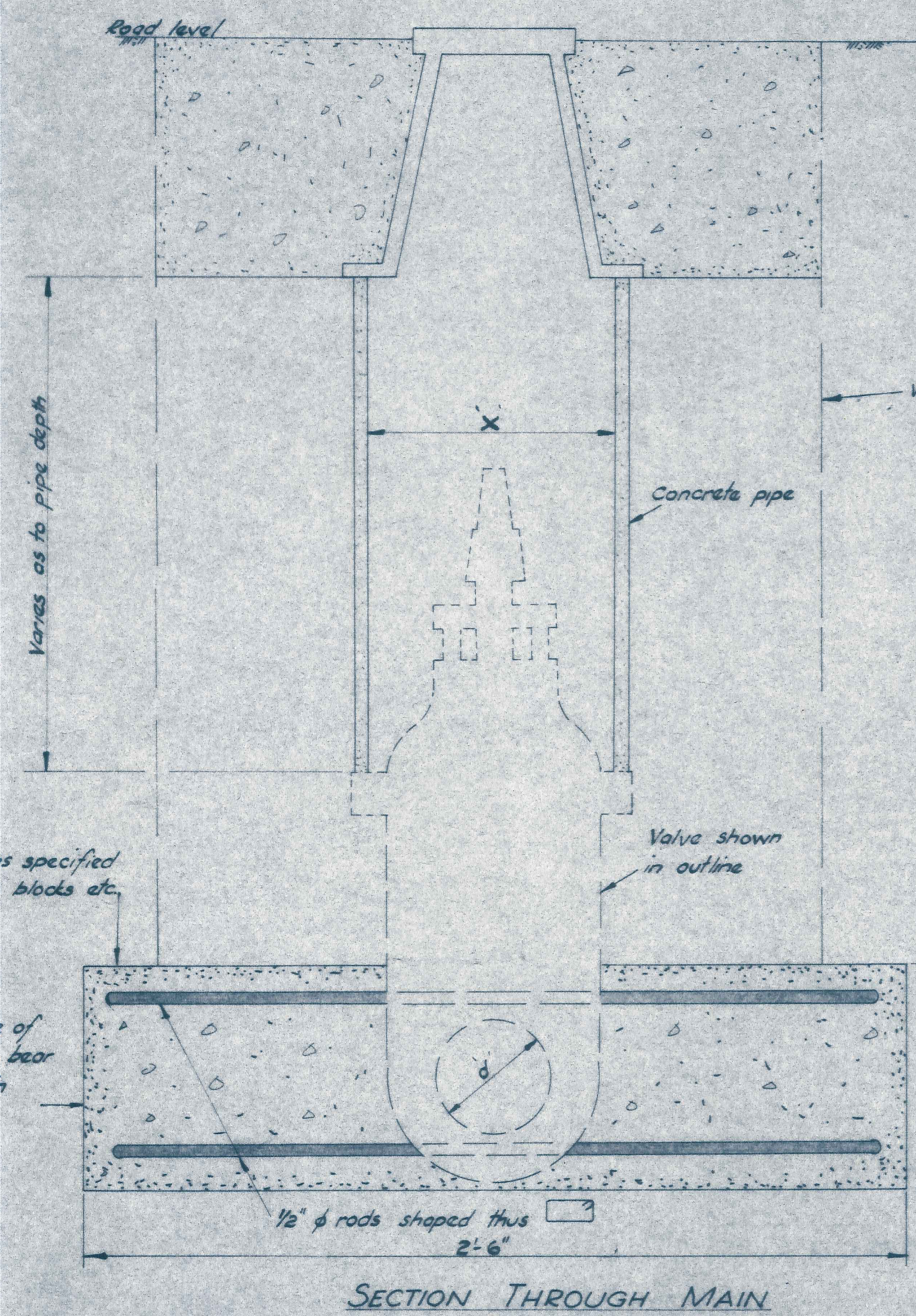
JOB NO.		Sheet No.	
6372		11	
of sheets		File 5/3	
L.B. 63,70,86		F.B. 48, 49	

ORIGINAL SIZE INCHES
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200
100
0
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ORIGINAL SIZE INCHES

300
200
100
0

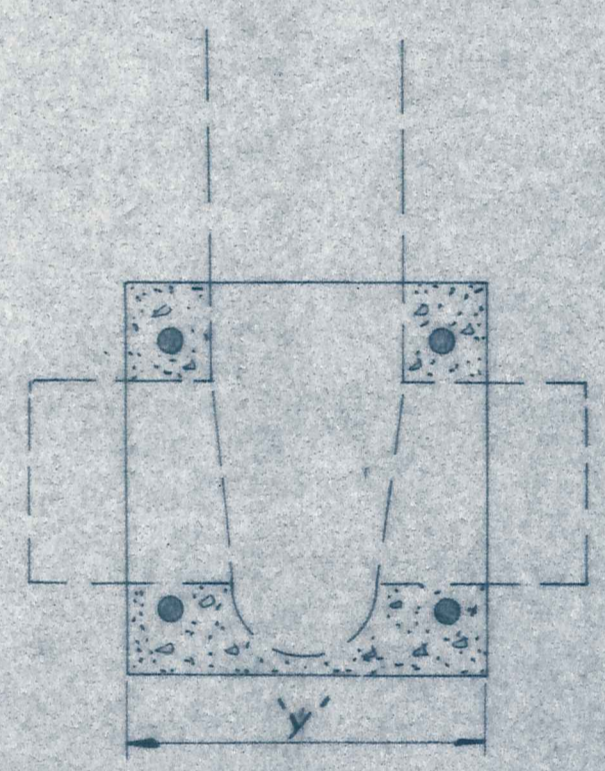
12
11
10
9
8
7
6
5
4
3
2
1
0



Sealed surface. Backfill to level shown with metal or flooded sand then fill to within 3/4" of surface with lean mix concrete and finish with seal-coat.
Unsealed surface. Backfill to surface with excavated material or trench-backfill and ram hard.

Sealed surface. Backfill between concrete box and sides of trench with lean mix concrete to within 3/4" of surface and finish with seal-coat.
Unsealed surface. Backfill with excavated material or specified trench backfill and ram hard.

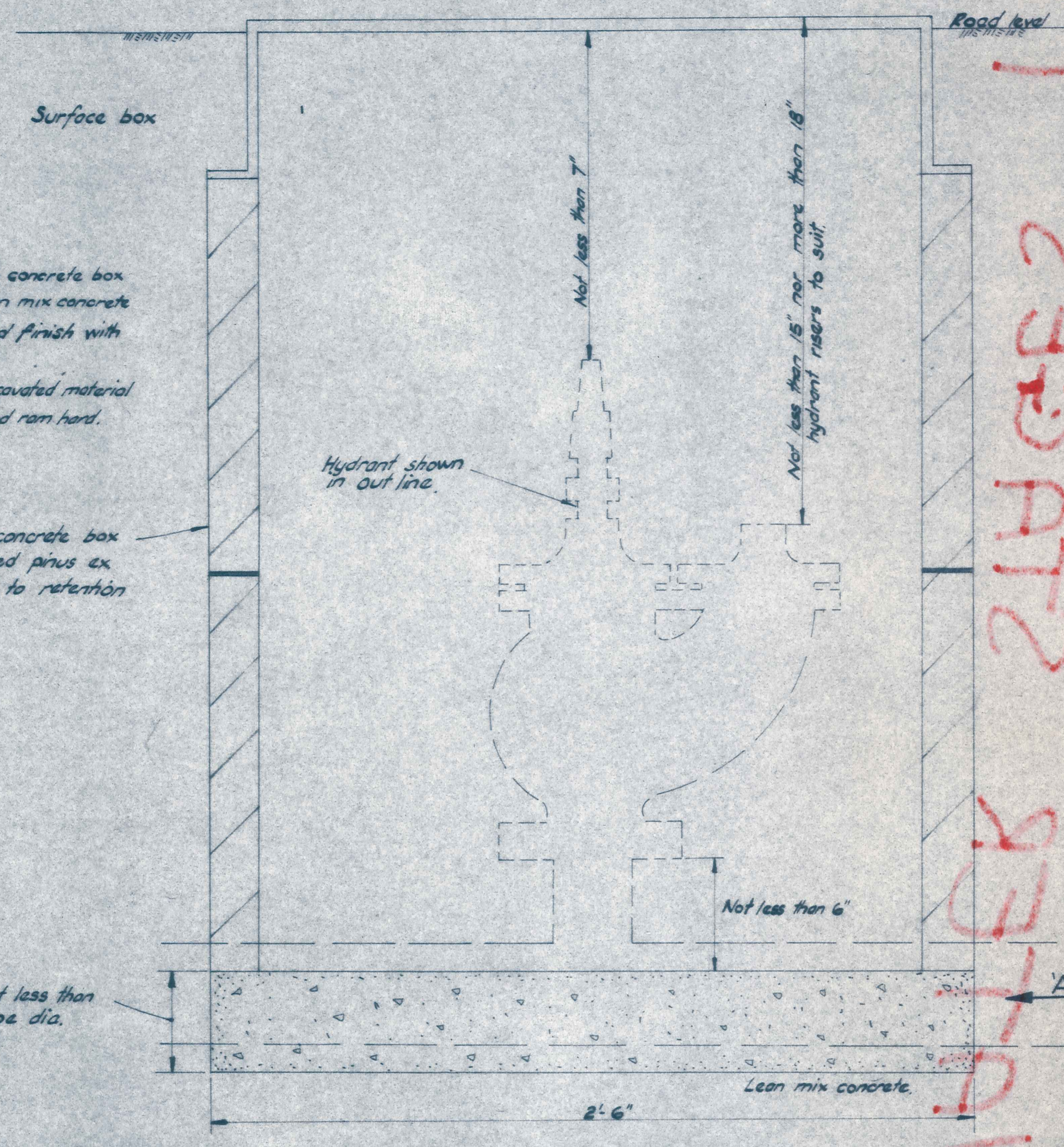
Precast concrete box or tanaligid pins ex 2" timber to retention of 10.



SIDE ELEVATION

Valve Dia	X'	Y'
4"	9"	8"
6"	12"	9"
8"	15"	12"

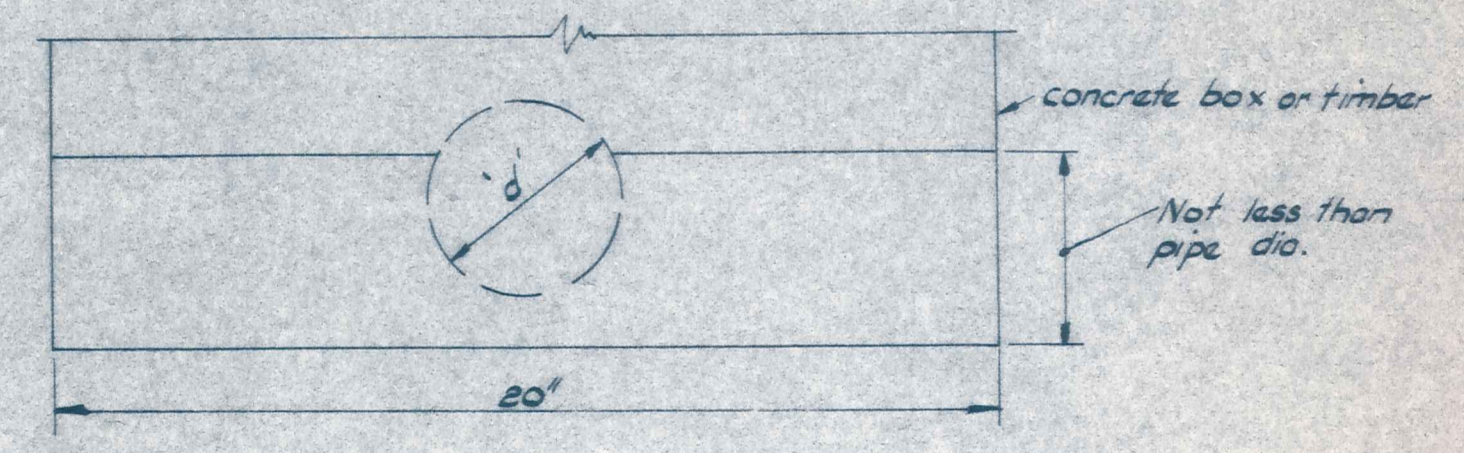
DETAIL OF VALVE INSTALLATION



Not less than pipe dia.

Lean mix concrete.

SECTION ALONG MAIN



VIEW A

DETAIL OF HYDRANT INSTALLATION

Note:- Lean mix concrete to be 12 aggregate to 1 cement to be placed fairly dry and rammed hard.

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 WATER
 SUPPLY
 BRIDGE
 HILL
 WATER
 SUPPLY
 BRIDGE
 HILL
 WATER
 SUPPLY

SCALE:- 1/4. F.S.

DUFFILL WATTS & KING
 CONSULTING CIVIL & STRUCTURAL ENGINEERS
 Dunedin P.O. Box 5289 Ph. 77-240 Invercargill P.O. Box 576 Ph. 3049
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ALEXANDRA
 BOROUGH COUNCIL

BRIDGE HILL WATER SUPPLY
 HYDRANT & VALVE INSTALLATION FOR 4" & 6" DIA. A.C. MAINS

AMENDMENTS			NAME	DATE
NO	BY	DATE		
			G.R. Duff	May 72
			R.T. Smith	" "
			G.R. Duff	" "
			R.T. Smith	" "
			G.R. Duff	" "
			M.L. [unclear]	" "

JOB NO. 6372
 Sheet No. 12
 of sheets
 File S/3 LB6370/86 F.B. 48/49