

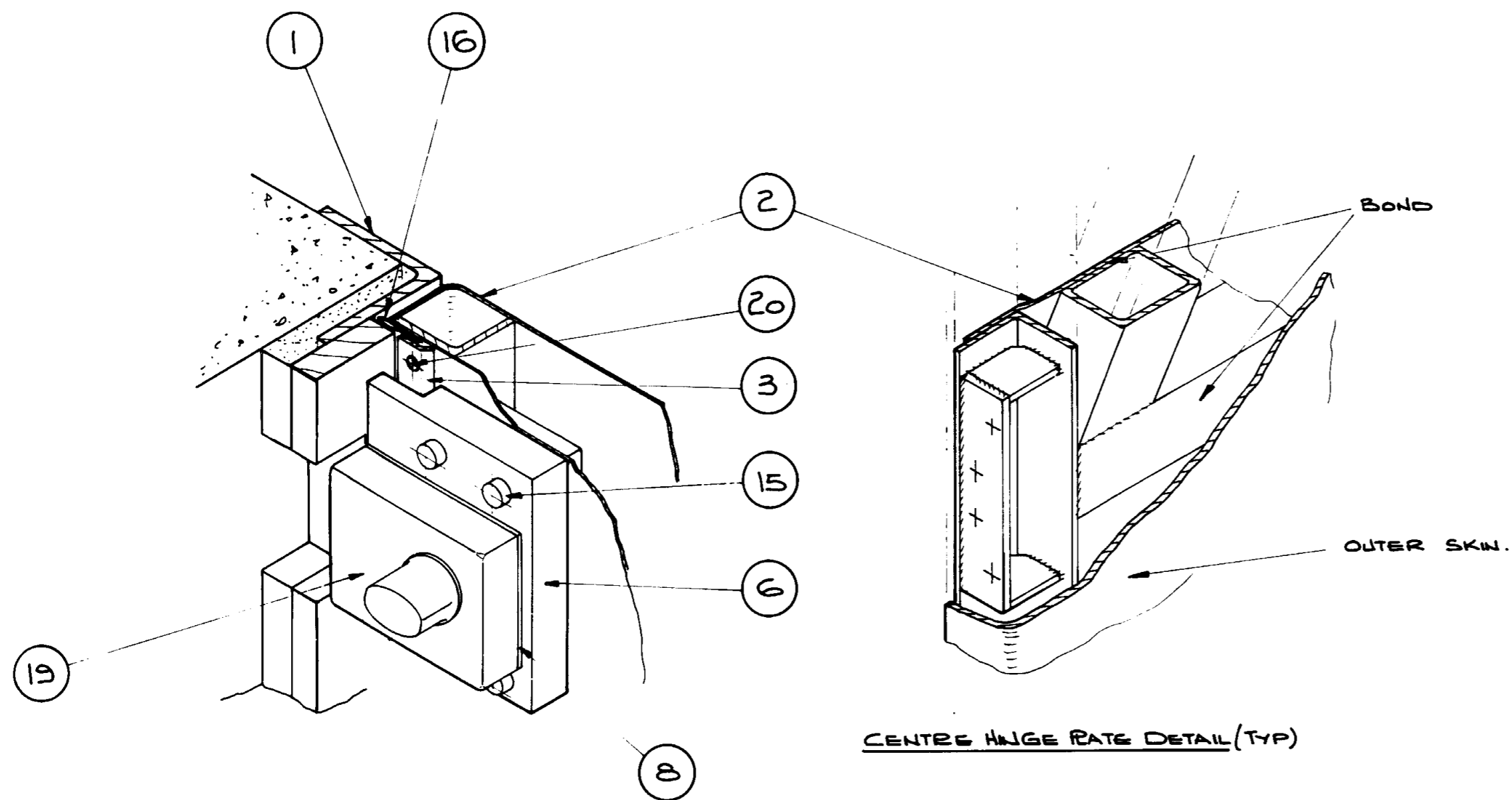
Drawing Index

Name	Doc.No	Document Description
0541540.002B.pdf	0541540.002	FACE MOUNTED STAINLESS STEEL SINGLE DOOR ASSEMBLY SHEET NO1
0541540.003B.pdf	0541540.003;B	FACE MOUNTED STAINLESS STEEL SINGLE DOOR ASSEMBLY SHEET NO2
0541540.004B.pdf	0541540.004;B	FACE MOUNTED STAINLESS STEEL SINGLE DOOR COMPONENT NO1 DOOR FRAME
0541540.005B.pdf	0541540.005;B	FACE MOUNTED STAINLESS STEEL SINGLE DOOR COMPONENT NO2 DOOR
0541540.006B.pdf	0541540.006;B	FACE MOUNTED STAINLESS STEEL SINGLE DOOR COMPONENT NO3 DOOR SEAL CLAMP NO4 DOOR SEAL CLAMP NO5 HINGE
0541540.007B.pdf	0541540.007;B	FACE MOUNTED STAINLESS STEEL SINGLE DOOR COMPONENT NO9 BOLT ARM NO10 BOLT
0541540.008C.pdf	0541540.008;C	RECESS MOUNTED STAINLESS STEEL SINGLE DOOR ASSEMBLY SHEET NO1
0541540.009C.pdf	0541540.009;C	RECESS MOUNTED STAINLESS STEEL SINGLE DOOR ASSEMBLY SHEET NO2
0541540.010C.pdf	0541540.010;C	RECESS MOUNTED STAINLESS STEEL SINGLE DOOR COMPONENT NO1 DOOR FRAME
0541540.011C.pdf	0541540.011;C	RECESS MOUNTED STAINLESS STEEL SINGLE DOOR COMPONENT NO2 DOOR
0541540.012B.pdf	0541540.012;B	RECESS MOUNTED STAINLESS STEEL SINGLE DOOR COMPONENT NO3 DOOR SEAL CLAMP NO4 DOOR SEAL CLAMP NO5 HINGE
0541540.013B.pdf	0541540.013;B	RECESS MOUNTED STAINLESS STEEL SINGLE DOOR COMPONENT NO9 BOLT ARM NO10 BOLT

2000244.003F.pdf	2000244.003	STANDARD WASTEWATER MANHOLES COVER POSITIONS STEP IRONS AND LADDER DETAILS
2000244.015D.pdf	2000244.015	STANDARD WASTEWATER CIRCULAR MANHOLE FOR LINES 375 NB TO 900 NB PLATFORM DETAIL FOR 1540 DIA MANHOLE
2000244.029.pdf	2000244.029	STANDARD WASTEWATER CIRCULAR MANHOLE POLYETHYLENE PIPE DN355 TO DN1000 LADDER CONSTRUCTION DETAILS
2000244.030.pdf	2000244.030	STANDARD WASTEWATER CIRCULAR MANHOLES FOR LINES 375MM NB TO 900MM NB PLATFORM LAYOUT AND DETAILS FOR 1959MM I.D. MANHOLE RISER
2000244.031.pdf	2000244.031	STANDARD WASTEWATER CIRCULAR MANHOLES FOR LINES 375MM N.B. TO 900MM N.B. PLATFORM DETAILS FOR 1950MM DIAMETER MANHOLE RISER
2000244.032.pdf	2000244.032	STANDARD WASTEWATER CIRCULAR MANHOLES FOR LINES 375MM N.B. TO 900MM N.B. PLATFORM LAYOUT AND DETAILS FOR 2300MM DIAMETER MANHOLE RISER
2000244.033.pdf	2000244.033	STANDARD WASTEWATER CIRCULAR MANHOLES FOR LINES 375MM N.B. TO 900MM N.B. PLATFORM DETAILS FOR 2300MM DIAMETER MANHOLE RISER
2000244.034.pdf	2000244.034	STANDARD WASTEWATER CIRCULAR MANHOLES FOR LINES 375MM N.B. TO 900MM N.B. PLATFORM LAYOUT AND DETAILS FOR 2550MM DIAMETER MANHOLE RISER
2000244.035.pdf	2000244.035	STANDARD WASTEWATER CIRCULAR MANHOLES FOR LINES 375MM N.B. TO 900MM N.B. PLATFORM DETAILS FOR 2550MM DIAMETER MANHOLE RISER
2000244.042.pdf	2000244.042	STANDARD WASTEWATER TRANSMISSION SAINT GOBAIN PAM HINGED ACCESS COVERS AND FRAMES DETAILS FOR KORUM PAMTIGHT AND PAMREX MODELS
2000244.043A.pdf	2000244.043	STANDARD WASTEWATER TRANSMISSION MANHOLES WITH SAINT GOBAIN FRAMES

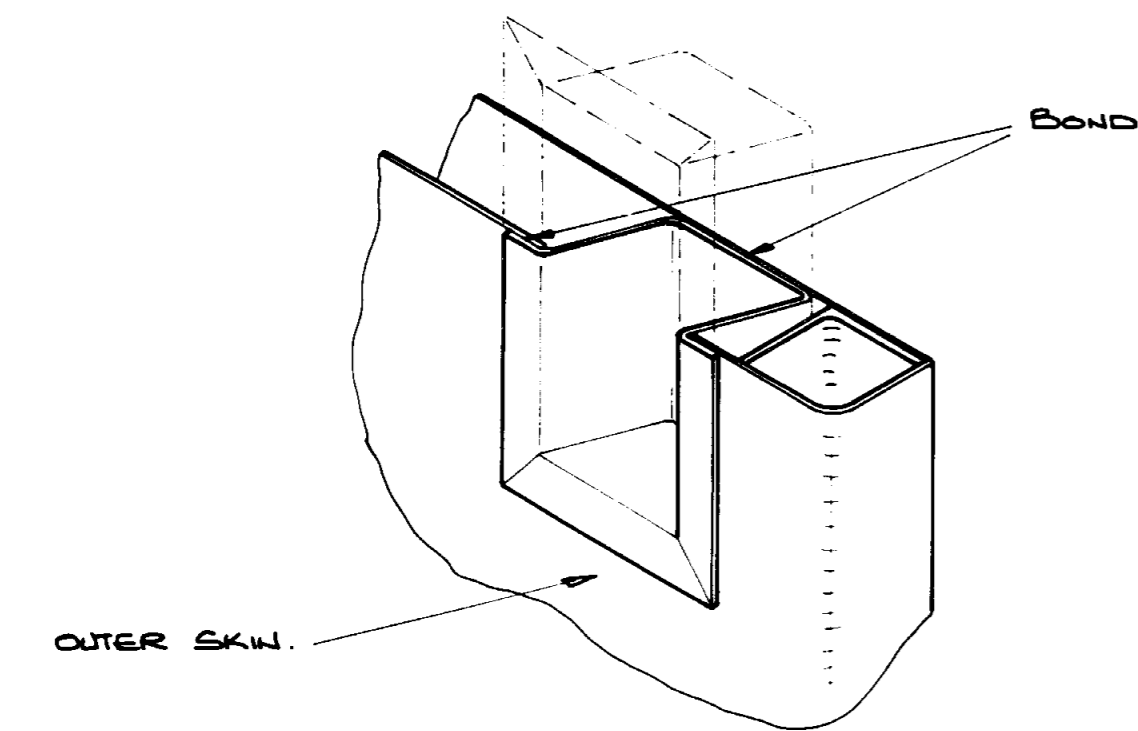
		AND LIDS LID ORIENTATION LADDER POSITION AND LAYOUT DETAILS
2000244.044.pdf	2000244.044	STANDARD WASTEWATER TRANSMISSION MANHOLES WITH SAINT GOBAIN FRAMES AND LIDS LID DIMENSIONS MANHOLE LID AND FRAME RAISING DETAILS
2000244.046.pdf	2000244.046	STANDARD WASTEWATER STAINLESS STEEL LADDER EXTENSION ELEVATION SECTION AND DETAILS
2000244.047.pdf	2000244.047	STANDARD PIPE BRIDGE SAFETY BARRIERS DIAGRAMMATIC VIEWS SHEET 1 OF 3
2000244.048.pdf	2000244.048	STANDARD PIPE BRIDGE SAFETY BARRIERS DETAILS SHEET 2 OF 3
2000244.049.pdf	2000244.049	STANDARD PIPE BRIDGE SAFETY BARRIERS DETAILS SHEET 3 OF 3
2003160.001B.pdf	2003160.001	WASTEWATER RETICULATION STANDARD ACCESS HATCH COVER OVERALL LAYOUT AND COMPONENT LIST
2003160.002B.pdf	2003160.002	WASTEWATER RETICULATION STANDARD ACCESS HATCH ASSEMBLY DETAIL LID AND FRAME
2003160.003B.pdf	2003160.003	WASTEWATER RETICULATION STANDARD ACCESS HATCH COVER FRAME AND DETAIL JOINING STRIP FOR MULTIPLE HATCH
2003160.004B.pdf	2003160.004	WASTEWATER RETICULATION STANDARD ACCESS HATCH COVER PLAN AND ISOMETRIC DETAIL HANDLE SEAL AND HINGE
2003160.005B.pdf	2003160.005	WASTEWATER RETICULATION STANDARD ACCESS HATCH COVER HINGE DETAIL SEAT AND FACE PACKER AND HINGE PIN
2003160.006B.pdf	2003160.006	WASTEWATER RETICULATION STANDARD ACCESS HATCH COVER UPPER AND LOWER CLAMP ITEM NO7 DETAIL CROX LOCK

2003160.007A.pdf	2003160.007	WASTEWATER RETICULATION STANDARD ACCESS HATCH UPPER AND LOWER STAY DETAIL COVER STAY MOUNT
2003160.008.pdf	2003160.008	WASTEWATER RETICULATION STANDARD ACCESS HATCH COVER ADDITIONAL FRAME AND SETTING OUT DETAIL

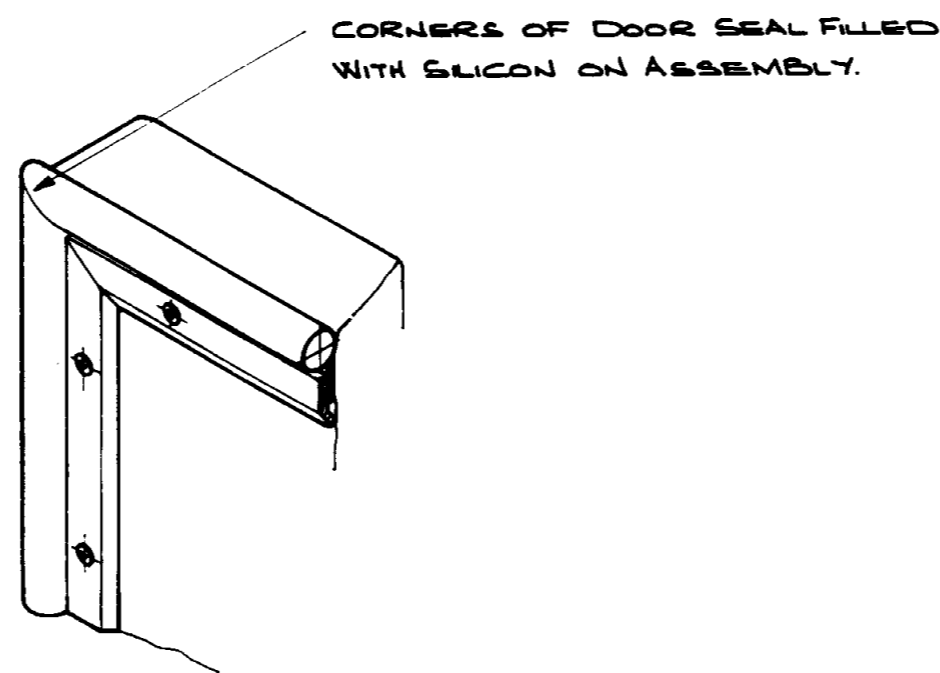


INSIDE VIEW ON LATCH.

CENTRE HINGE RATE DETAIL (TYP)



VIEW ON HANDHOLE.



VIEW ON DOOR CORNER (TYP)

ITEM	MATERIAL.	DESCRIPTION.	QTY.	MICROFILM N°
1	316. ST. ST.	DOOR FRAME.	1	0541540 04
2	316. ST. ST.	DOOR.	1	0541540 05
3	316. ST. ST.	DOOR SEAL CLAMP (VERTICAL)	2	0541540 06
4	316. ST. ST.	DOOR SEAL CLAMP (HORIZONTAL)	2	0541540 06
5	304. ST. ST.	BUTT HINGE.	3	0541540 06
6	316. ST. ST.	LATCH MOUNT.	1	0541540 06
7				
8	316. ST. ST.	LATCH PACKER.	1	0541540 06
9	316. ST. ST.	BOLT ARM.	1	0541540 07
10	316. ST. ST.	BOLT.	1	0541540 07
11	ST. ST.	M6x12 LG. COUNTERSUNK SOCKET SCREW.	24	
12	ST. ST.	CAP H ^o SCREW. M4x10 LG.	3	
13	ST. ST.	M6x 50 LG. BUTT HEAD SOCKET SCREW.	2	
14				
15	ST. ST.	CAP HEAD SCREW. M6x30 LG.	4	
16	SANTOPRENE THERMO PLASTIC	DOOR SEAL. P-SECTION.	To suit Door	RUBBERMARK INDUSTRIES LTD.
17	316. ST. ST.	DYNASET ANCHOR. M.10.	6	
18	ST. ST.	LENGTH TO SUIT LOCKWOOD LATCH. CAP H ^o SCREW. MID. BUILDING.	6	
19		LOCKWOOD LATCH. 002. OUTWARD OPENING. 3-2 Øx15 LG.	1	
20	MONEL.	POP BLIND RING CODE 414	To suit Door	
21	ST. ST.	RAIN WASHER. 11/16x22 ^o Øx2 THK.	6	

DESCRIPTION	DIMENSION CODE	DIMENSION	REMARKS.
CLEAR OPENING. WIDTH.	A		MEASURE ON SITE.
CLEAR OPENING. HEIGHT.	B		MEASURE ON SITE.
A MINUS 20. mm	C		
B MINUS 10. mm	D		
A MINUS 46. mm	E		MAX ALLOWABLE DOOR LEAF WIDTH(E) - 900
B MINUS 39. mm	F		DOOR LEAF HEIGHT F OVER 2000 TO HAVE 4 HINGES EQUI-SPACED. TOP & BOTTOM HINGES LOCATED 200 FROM DOOR EDGES.
BOLT LENGTH. ITEM. 18.	G		
SOUNDPROOFING REQUIRED	50mm THK. ANI. NOISE CONTROL BLANKET.	YES / NO DELETE ONE.	IF REQUIRED FILL DOORS INTERNAL CAVITIES WITH ANI. NOISE CONTROL BLANKET BEFORE BONDING 1mm THK INNER SKIN TO FRAME.
(F DIVIDED BY 2) PLUS 16 mm	H		
CLEARANCE UNDER DOOR WHEN OPEN.	I		150 MAX LENGTH.
I PLUS 42 mm	J		
I PLUS 135 mm	K		

ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE	FIELD OPERATIONS MANAGER
B	05-95	PLAN SET INTO WATERCARE PLAN FORM		I.M.M.			
A	08-92	ITEM 14 REMOVED. SCREWS ITEM 7 REMOVED. DOORSTOP ITEM 20 WAS M4x10LG SCREWS. ITEM 21 ADDED		D.L.	R.E.		

DESIGNED
DES. CHECKED G. SMITH 05-91
DRAWN D. LEHRLE 02-91
DWG. CHECKED R. ELLIOT 05-91
PROJECT LEADER R. ELLIOT 05-91

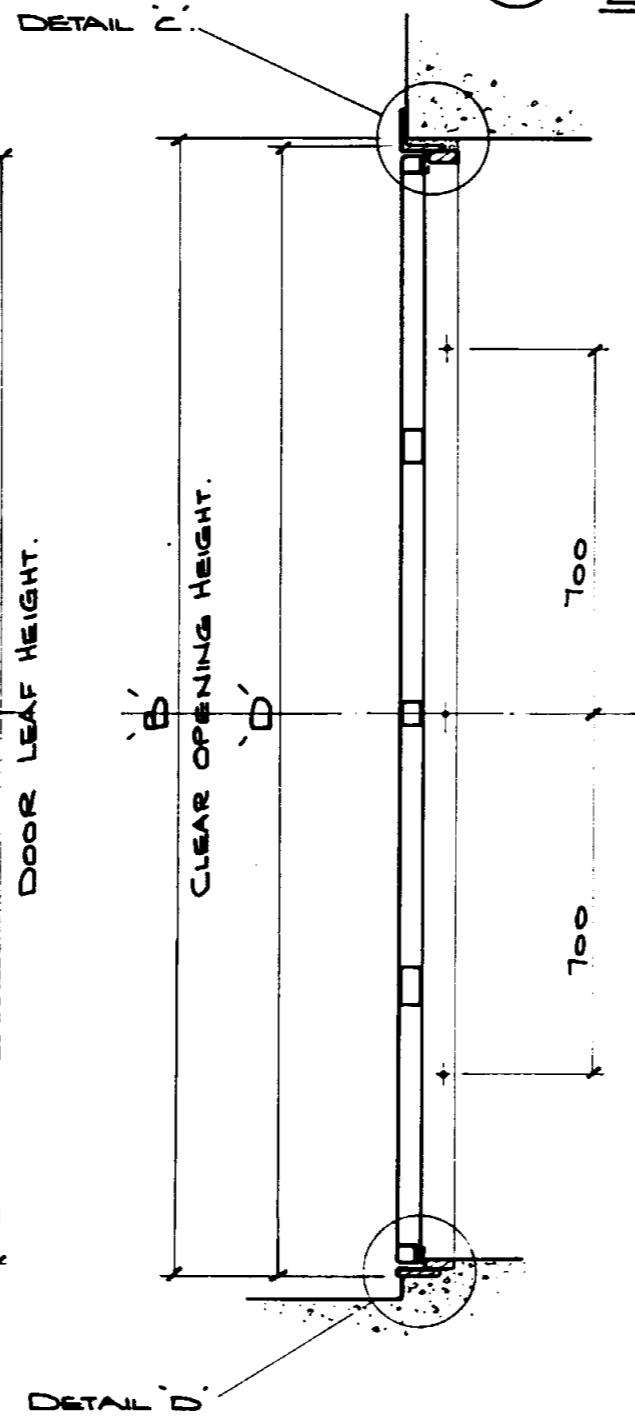
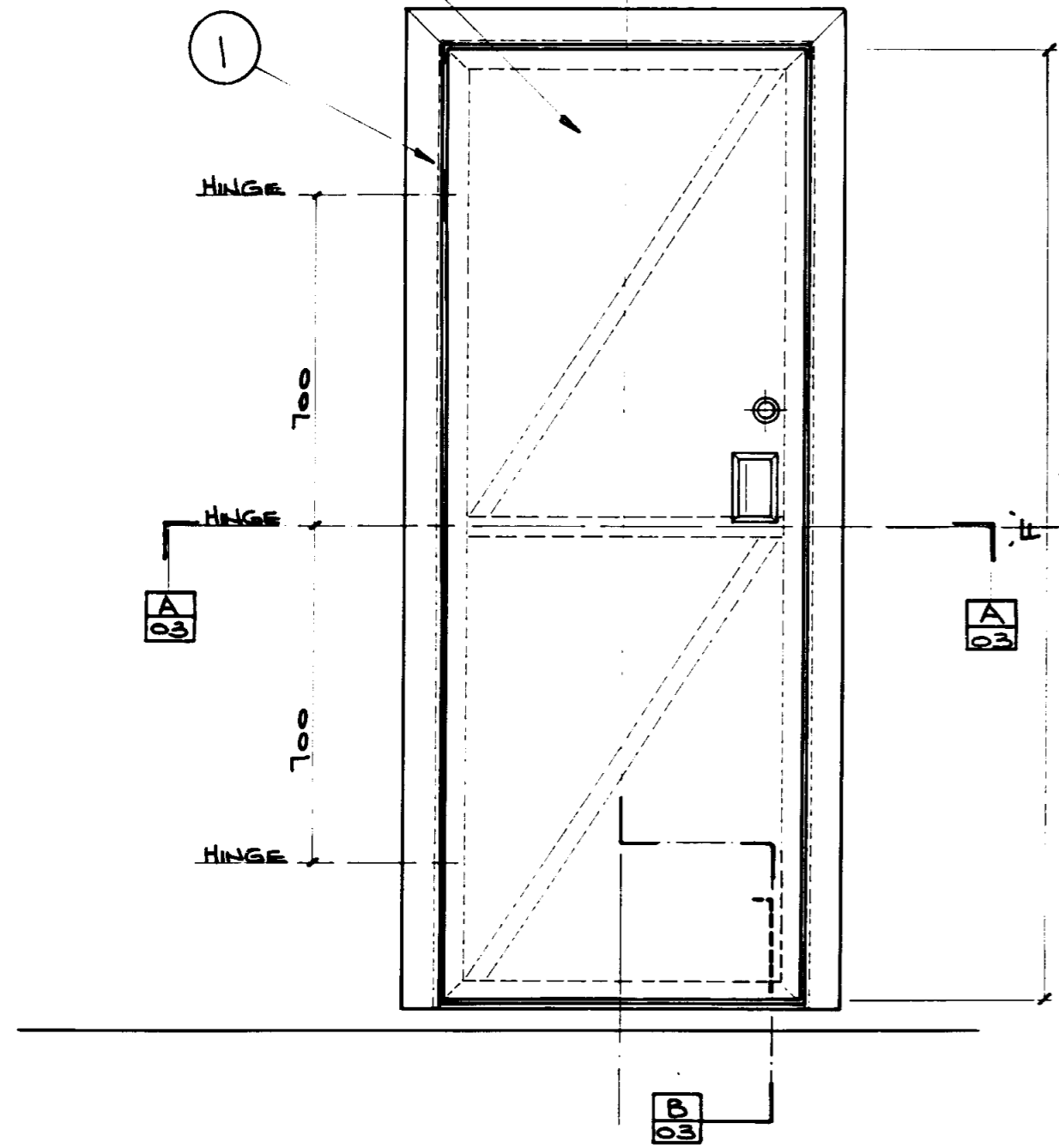
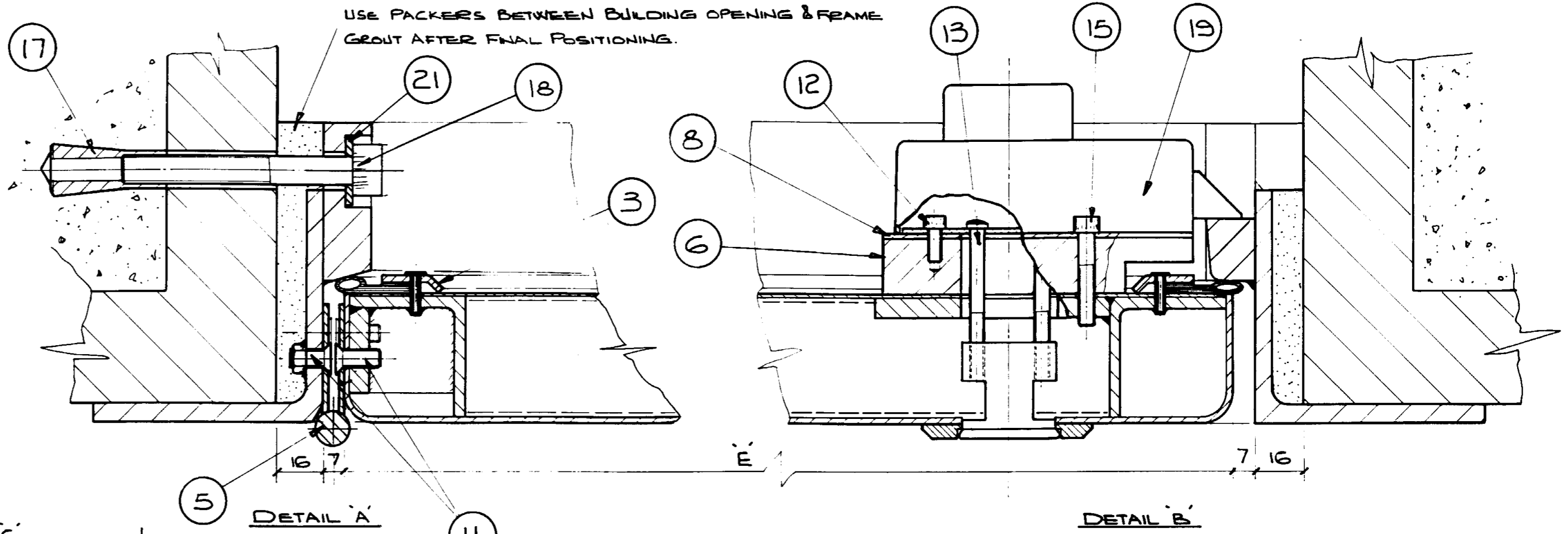
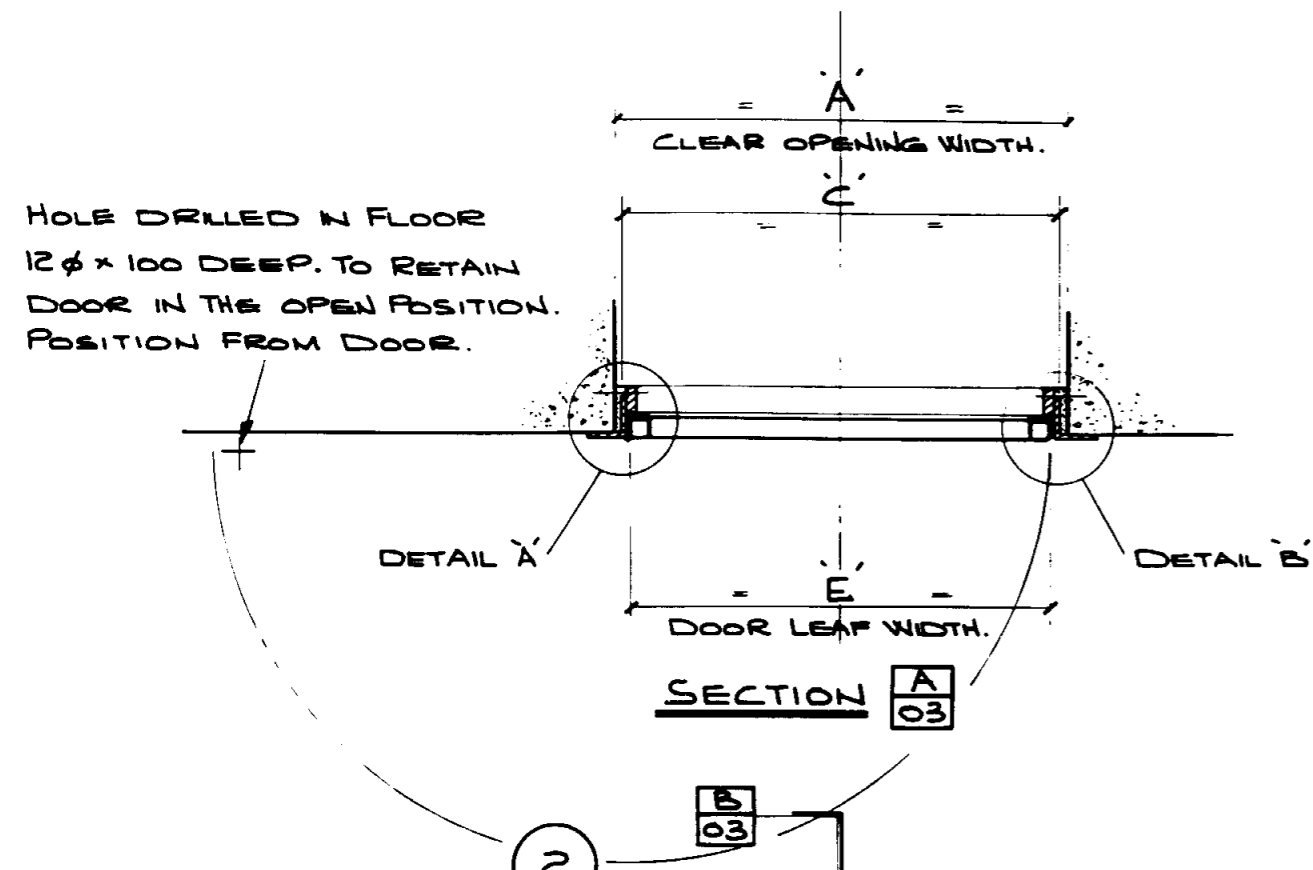
M. SCHOLFIELD
REGIONAL OPERATIONS
MANAGER
B. PARK
FIELD OPERATIONS MANAGER



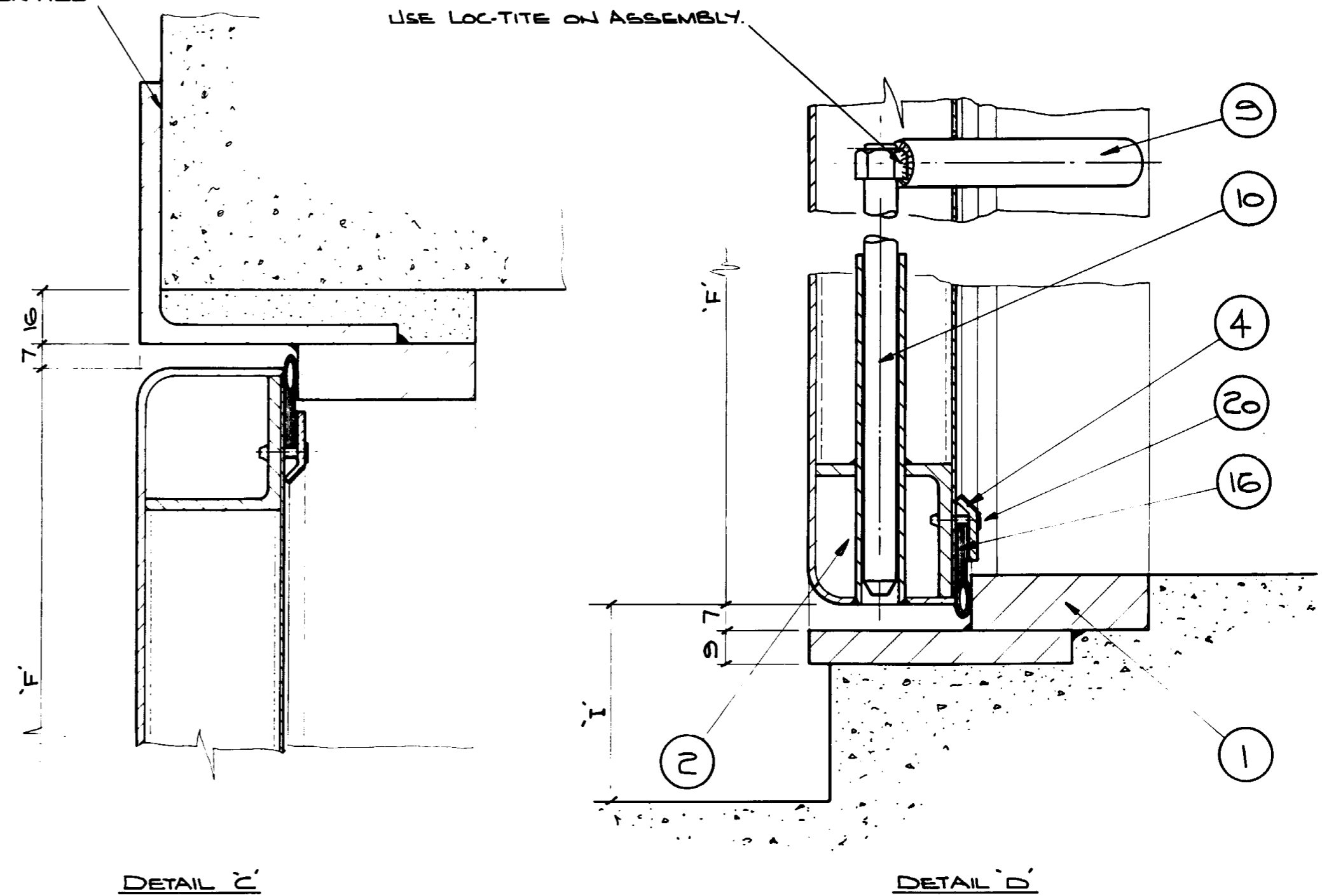
WATERCARE SERVICES LIMITED
STANDARD DETAILS
FACE MOUNTED STAINLESS STEEL SINGLE DOOR - ASSEMBLY (SHEET 1 OF 2)

CAD FILE -	DATE -
ORIGINAL SCALE A1	CONTRACT No.
DRAWING No. 0541540	ISSUE 002
	B

HOLE DRILLED IN FLOOR
12φ x 100 DEEP. TO RETAIN
DOOR IN THE OPEN POSITION.
POSITION FROM DOOR.



SECTION B 03



DETAIL C

DETAIL D

ISSUE	DATE	AMENDMENT	BY	APPD.
B	05-95	PLAN SET INTO WATERCARE PLAN FORM	I.M.M.	
A	08-92	ITEM 21 ADDED ITEM 20 WAS SCREWS, MOD TO ITEMS 1,9 & 10	D.L.	R.E.

DESIGNED	DES. CHECKED	DATE
G. SMITH	G. SMITH	05-91
D. LEHRLE	D. LEHRLE	02-91
R. ELLIOT	R. ELLIOT	05-91
R. ELLIOT	R. ELLIOT	05-91

REGIONAL OPERATIONS MANAGER	FIELD OPERATIONS MANAGER
M. SCHOLFIELD	B. PARK

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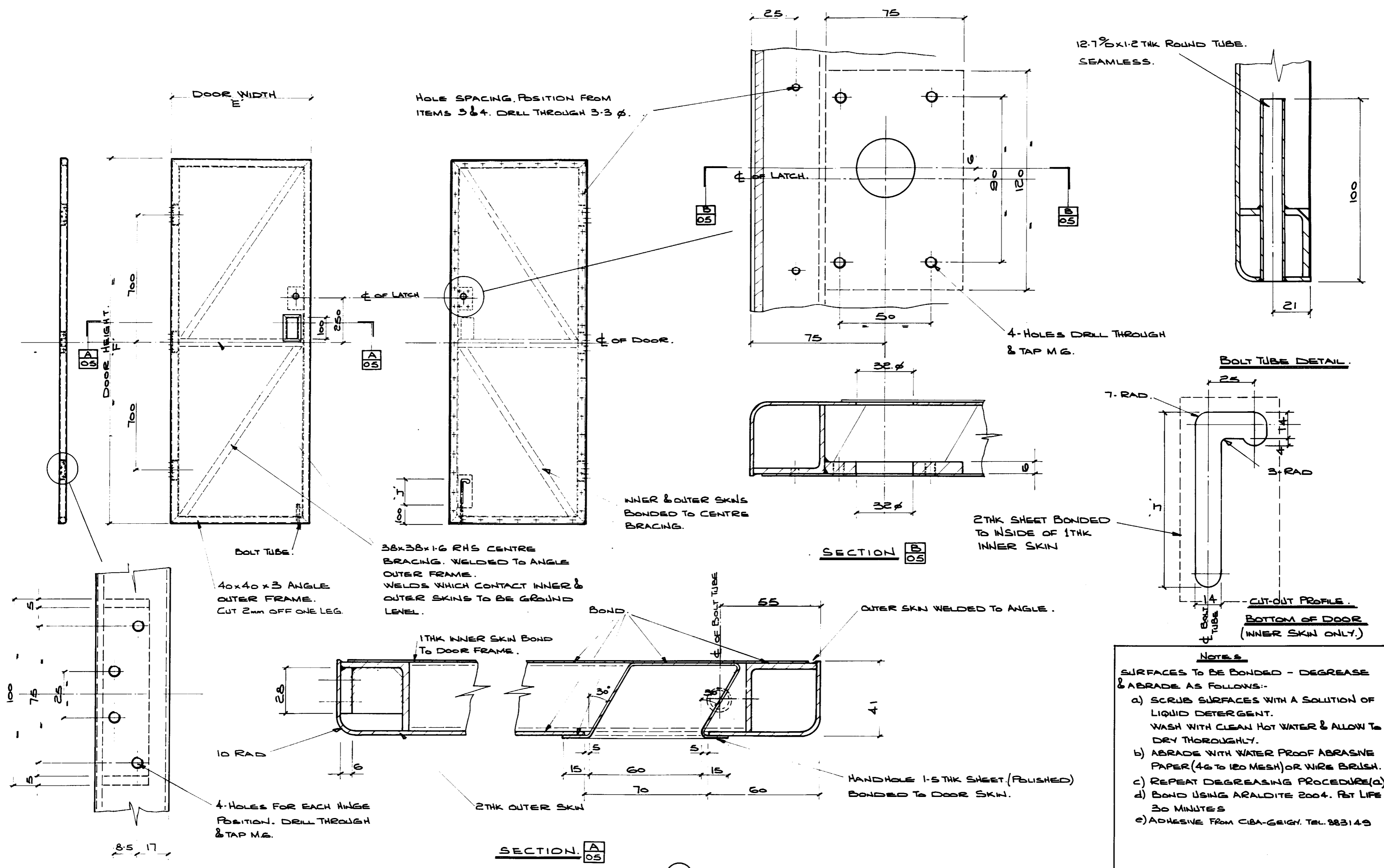


WATERCARE SERVICES LIMITED

STANDARD DETAILS

FACE MOUNTED STAINLESS STEEL SINGLE DOOR - ASSEMBLY (SHEET 2 OF 2)

CAD FILE	DATE
ORIGINAL SCALE A1	CONTRACT No.
1:10 1:1	-
DRAWING No.	ISSUE
0541540 003	B



HOLE SPACING, POSITION FROM ITEMS 3 & 4. DRILL THROUGH 3.3 Ø.

12.7x1.2THK ROUND TUBE. SEAMLESS.

4 HOLES DRILL THROUGH & TAP M6.

INNER & OUTER SKINS BONDED TO CENTRE BRACING.

2THK SHEET BONDED TO INSIDE OF 1THK INNER SKIN

40x40x3 ANGLE OUTER FRAME. CUT 2mm OFF ONE LEG.

38x38x1.6 RHS CENTRE BRACING. WELDED TO ANGLE OUTER FRAME. WELDS WHICH CONTACT INNER & OUTER SKINS TO BE GRIND LEVEL.

1THK INNER SKIN BOND TO DOOR FRAME.

OUTER SKIN WELDED TO ANGLE.

4 HOLES FOR EACH HINGE POSITION. DRILL THROUGH & TAP M6.

2THK OUTER SKIN

HANDHOLE 1.5THK SHEET (POLISHED) BONDED TO DOOR SKIN.

NOTES

- SURFACES TO BE BONDED - DEGREASE & ABRASE AS FOLLOWS:-
- a) SCRUB SURFACES WITH A SOLUTION OF LIQUID DETERGENT. WASH WITH CLEAN HOT WATER & ALLOW TO DRY THOROUGHLY.
 - b) ABRASE WITH WATER PROOF ABRASIVE PAPER (46 TO 120 MESH) OR WIRE BRUSH.
 - c) REPEAT DEGREASING PROCEDURE (a)
 - d) BOND USING ARALDITE 2004. F&T LIFE 30 MINUTES
 - e) ADHESIVE FROM CIBA-GEIGY. TEL: 383149

HINGE DRILLING DETAIL (TYP)

ITEM 2 DOOR

MATERIAL:- 316 ST. ST.
(EXTERNAL SURFACES OF DOOR TO BE BRUSH FINISH)

ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE
B	04-95	PLAN SET INTO WATERCARE PLAN FORM	I.M.M.			
A	08-92	HINGE 8.5 WAS 12, 17 WAS 16. 40x40x3 ANGLE WAS 38x38x3 3.3 HOLE WAS M4	D.L.	R.E.		

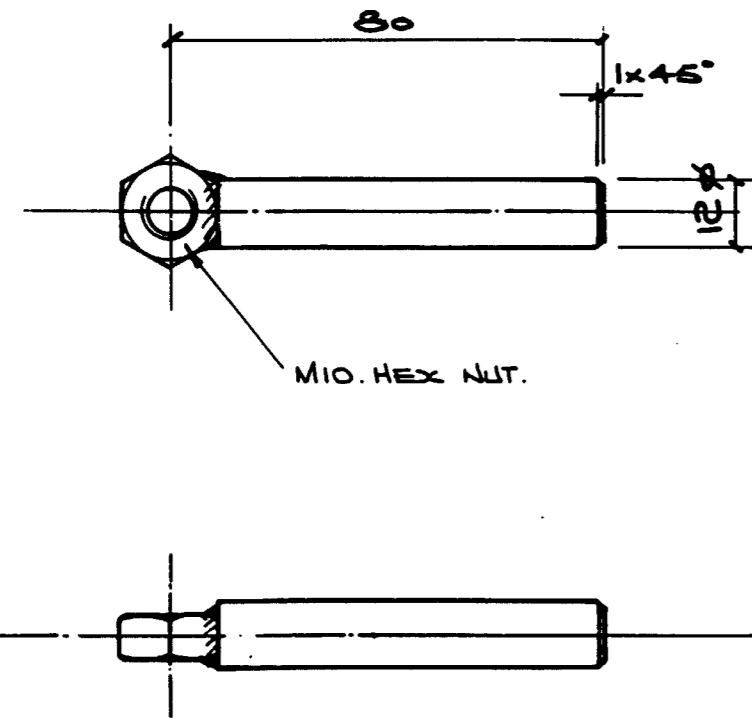
DESIGNED	DES. CHECKED	G. SMITH	05-91
M. SCHOLFIELD	REGIONAL OPERATIONS MANAGER		
B. PARK	FIELD OPERATIONS MANAGER		
DRAWN	D.W.G. CHECKED	R. ELLIOT	05-91
R. ELLIOT	PROJECT LEADER		

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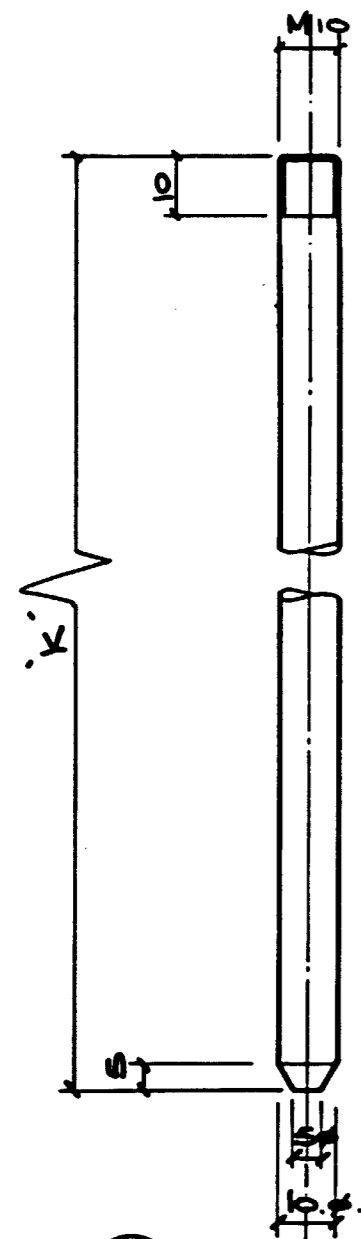
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WATERCARE SERVICES LIMITED
STANDARD DETAILS
FACE MOUNTED STAINLESS STEEL SINGLE DOOR - COMPONENT 2

CAD FILE -	DATE -
ORIGINAL SCALE A1	CONTRACT No.
1:10 1:1	
DRAWING No. 0541540	ISSUE 005 B



ITEM (9) BOLT ARM.
 MATERIAL: 316 ST. ST.



ITEM (10) BOLT.
 MATERIAL: 316 ST. ST.

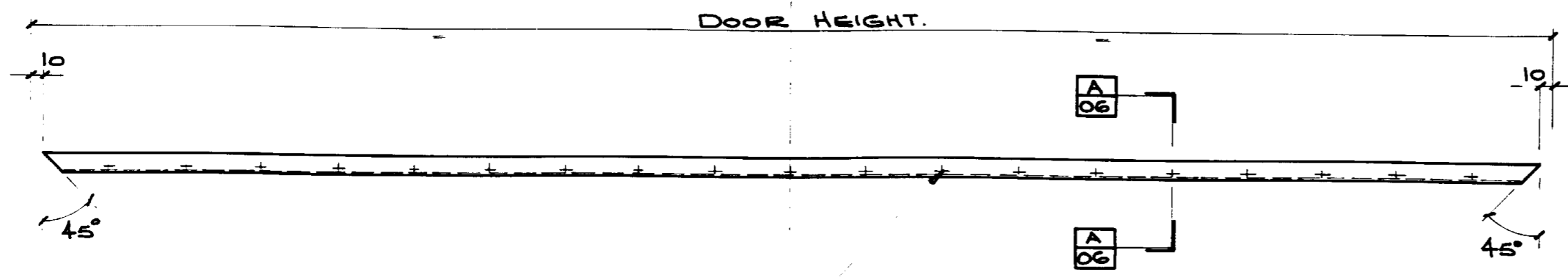
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE
B	04-95	PLAN SET INTO WATERCARE PLAN FORM	L.M.M.			
A	08-92	ITEMS 3 & 4 - 3.3 WAS 5. ITEM 5 - 38 WAS 35.55 WAS 60 ITEM 7 REMOVED	D.L.	R.E.		

DESIGNED	DES. CHECKED	DATE	REGIONAL OPERATIONS MANAGER
	G. SMITH	05-91	M. SCHOLFIELD
DRAWN	DWG. CHECKED	DATE	PROJECT LEADER
	D.LEHRLE	02-91	R. ELLIOT
	R. ELLIOT	05-91	R. ELLIOT
			B. PARK
			FIELD OPERATIONS MANAGER

water Care
 services limited

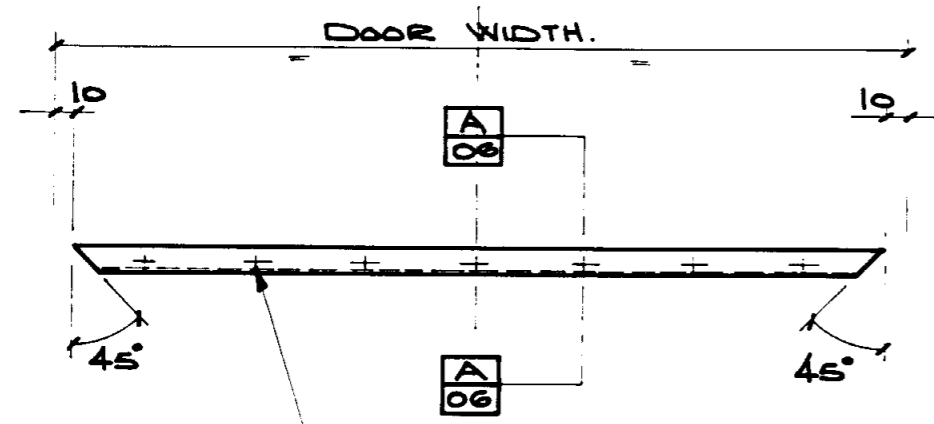
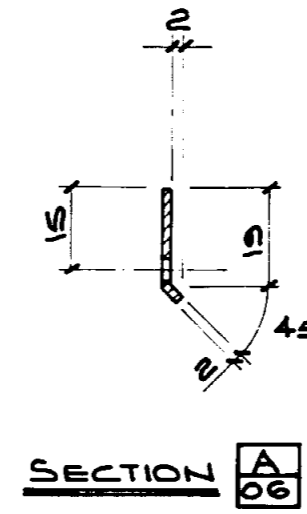
WATERCARE SERVICES LIMITED
 STANDARD DETAILS
 FACE MOUNTED STAINLESS STEEL SINGLE DOOR - COMPONENT 3,4,5,6,8

CAD FILE -	DWG -
ORIGINAL SCALE A1	CONTRACT No.
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DRAWING No.	ISSUE
0541540 006	B



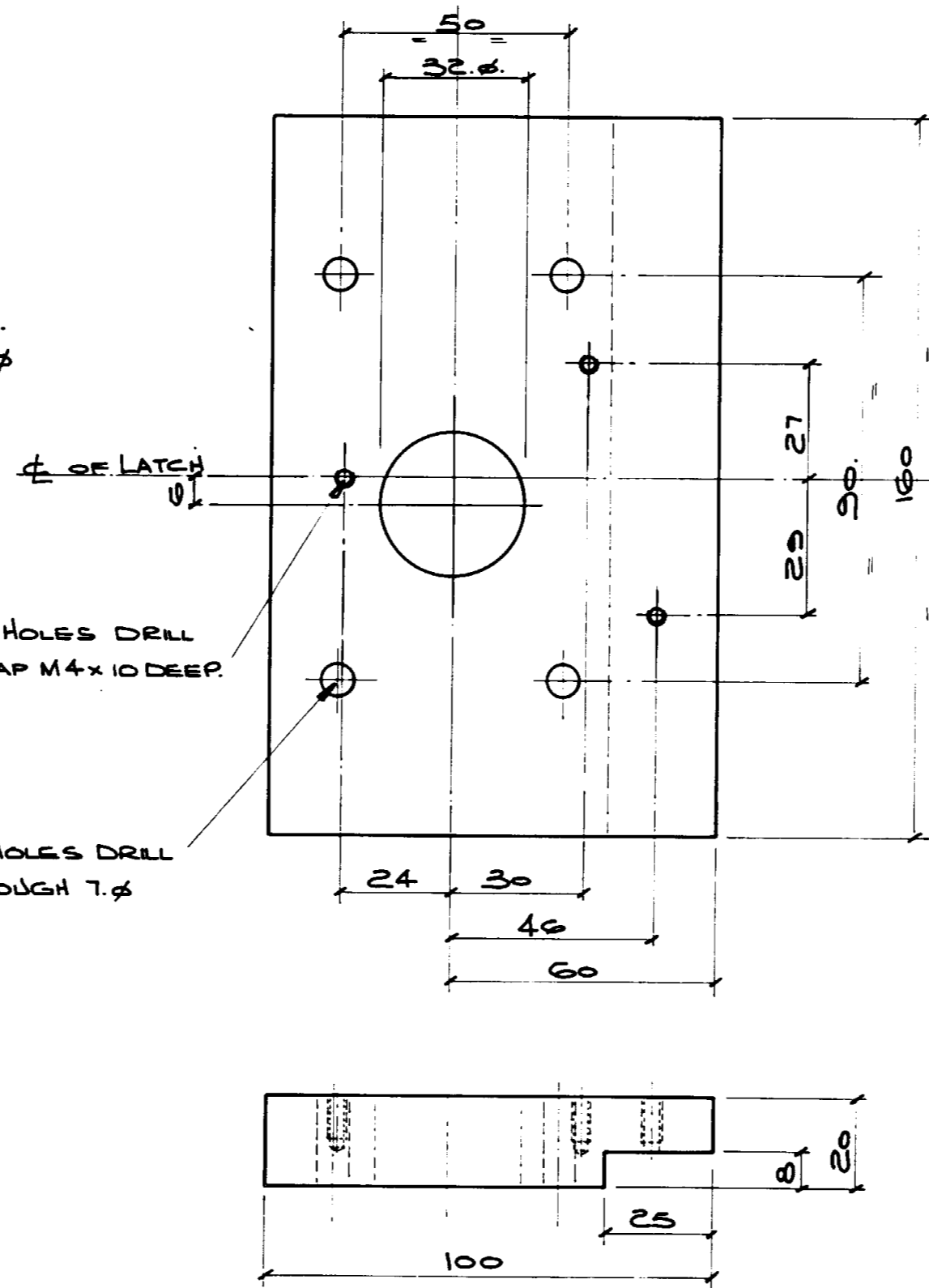
HOLES SPACED TO SUIT DOOR HEIGHT.
MAX CENTRES 100. DRILL THROUGH 3.3φ

ITEM 3 DOOR SEAL CLAMP (VERTICAL)
MATERIAL: 316 ST. ST.

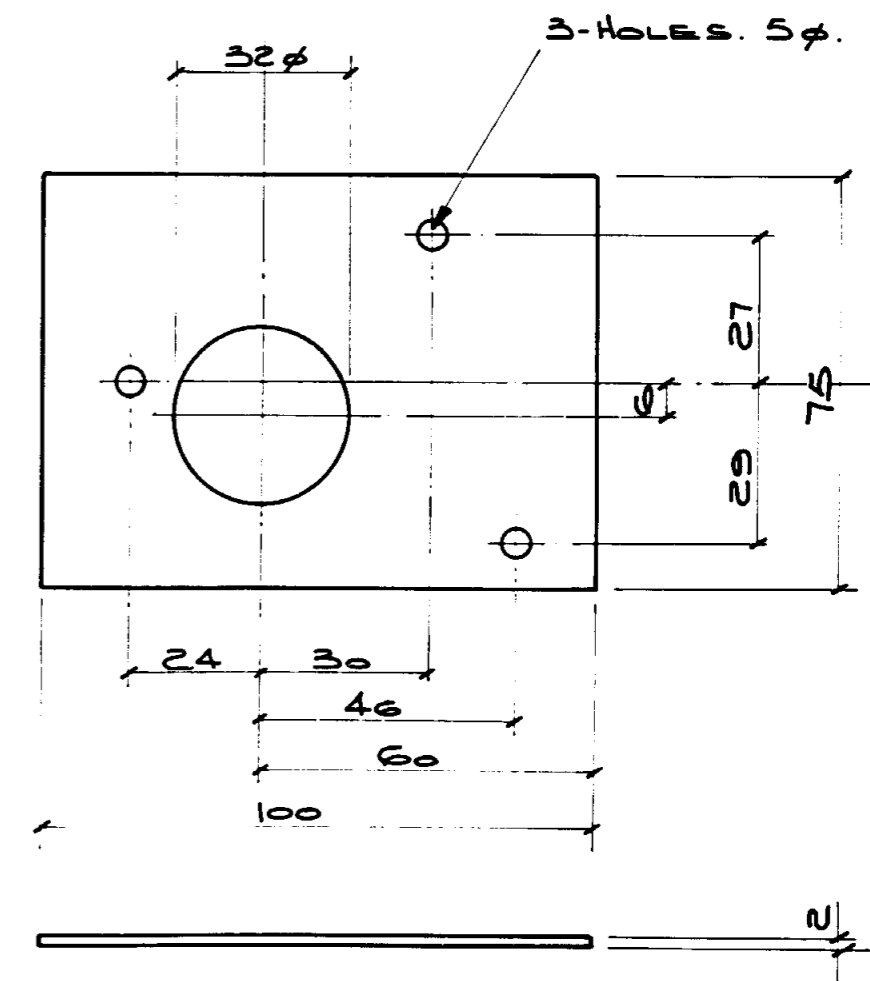


HOLES SPACED TO SUIT DOOR WIDTH.
MAX CENTRES 100. DRILL THROUGH 3.3φ

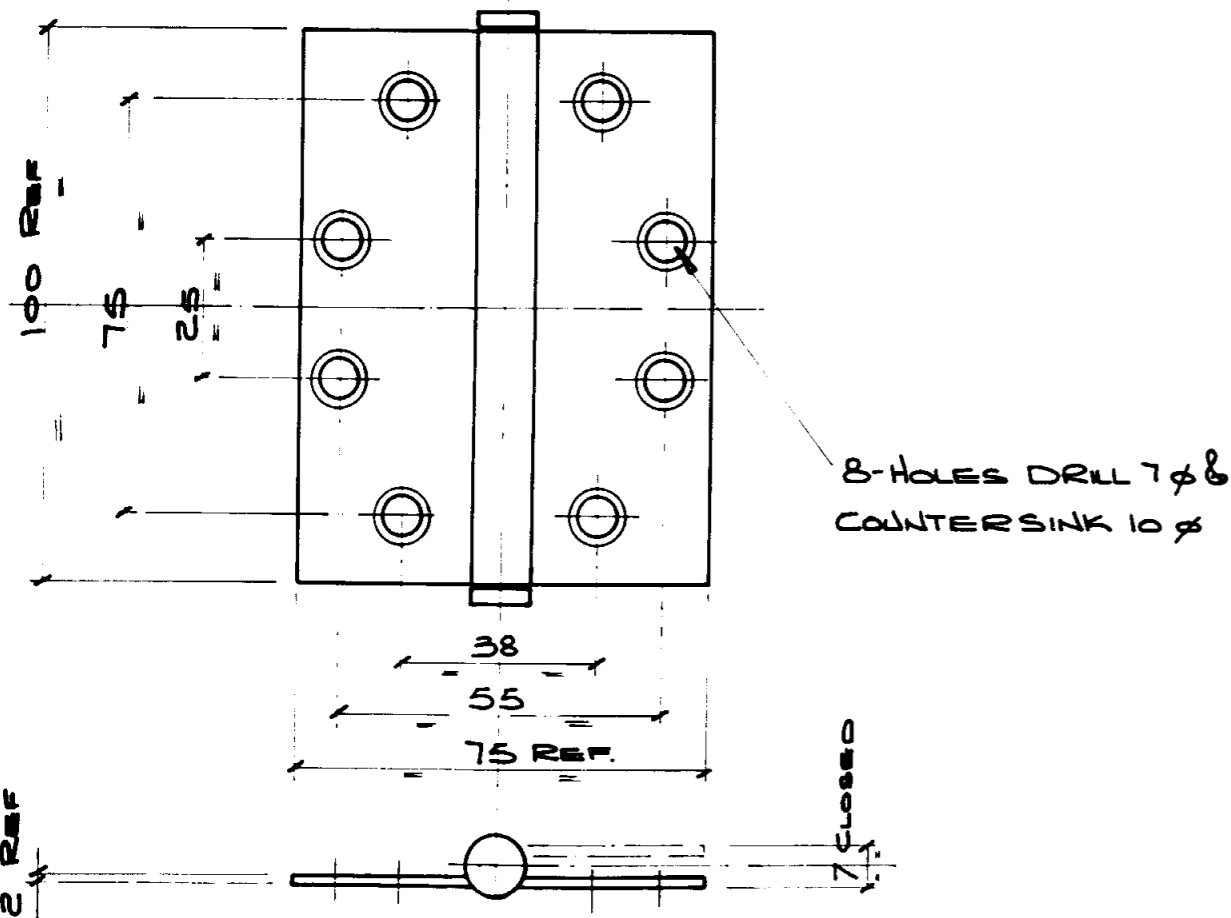
ITEM 4 DOOR SEAL CLAMP (HORIZONTAL)
MATERIAL: 316 ST. ST.



ITEM 6 LATCH MOUNT.
MATERIAL: 316 ST. ST.



ITEM 8 LATCH PACKER.
MATERIAL: 316 ST. ST.



ITEM 5 HINGE. (BOUGHT UNDRILLED FROM N.Z. FASTENERS.)
HINGE CODE: Z.H.G.B.26075100
MATERIAL: 304 ST. ST.

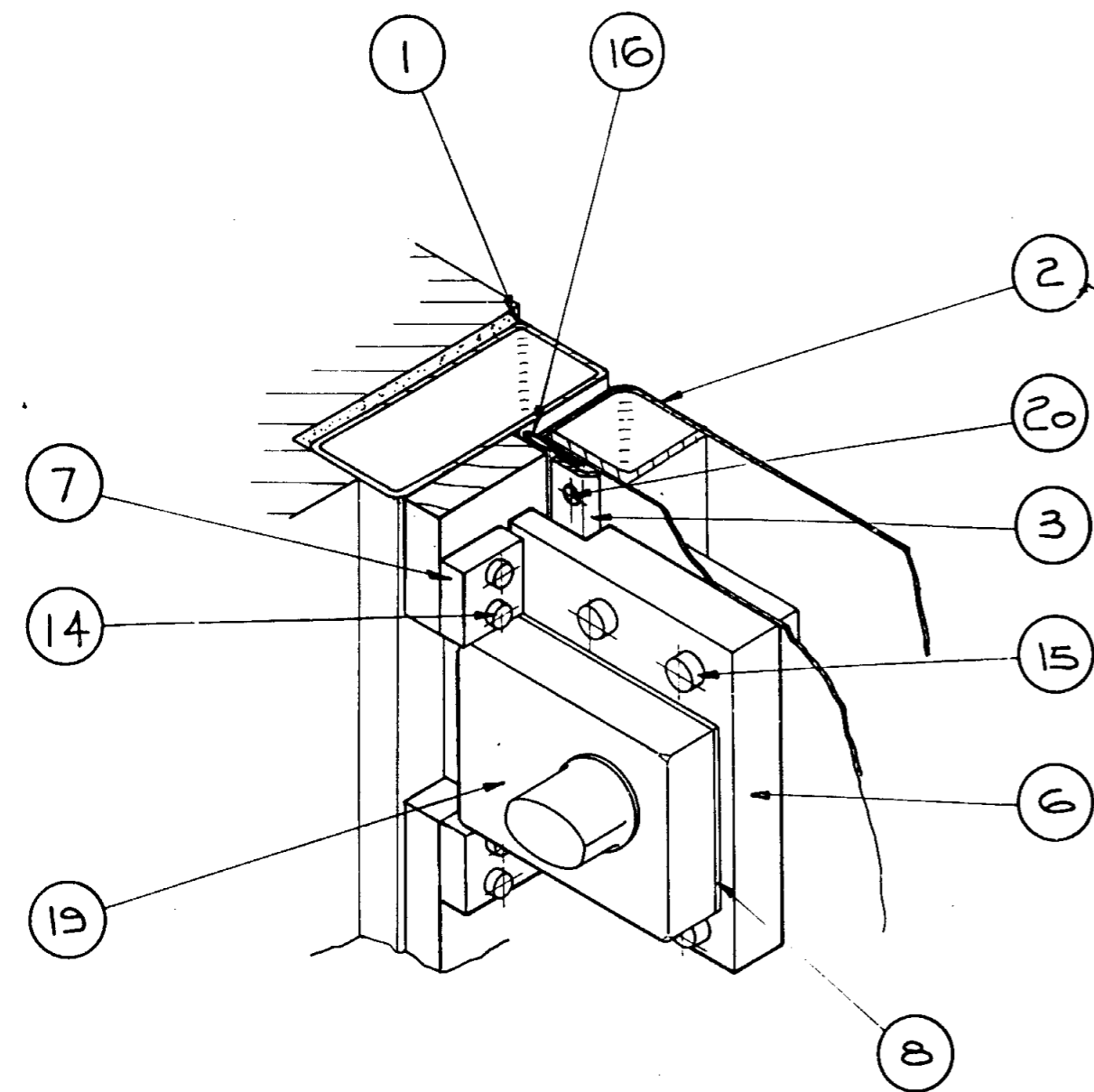
ISSUE	DATE	AMENDMENT	BY	APPD.	DESIGNED	BY	DATE	REGIONAL OPERATIONS MANAGER	FIELD OPERATIONS MANAGER
B	04-95	PLAN SET INTO WATERCARE PLAN FORM	I.M.M.		DES. CHECKED	G. SMITH	05-91	M. SCHOLFIELD	
A	08-92	ITEMS 9 & 10 MODIFIED	D.L.	R.E.	DRAWN	D. LEHRLE	02-91		
					DWG. CHECKED	R. ELLIOT	05-91		
					PROJECT LEADER	R. ELLIOT	05-91	B. PARK	

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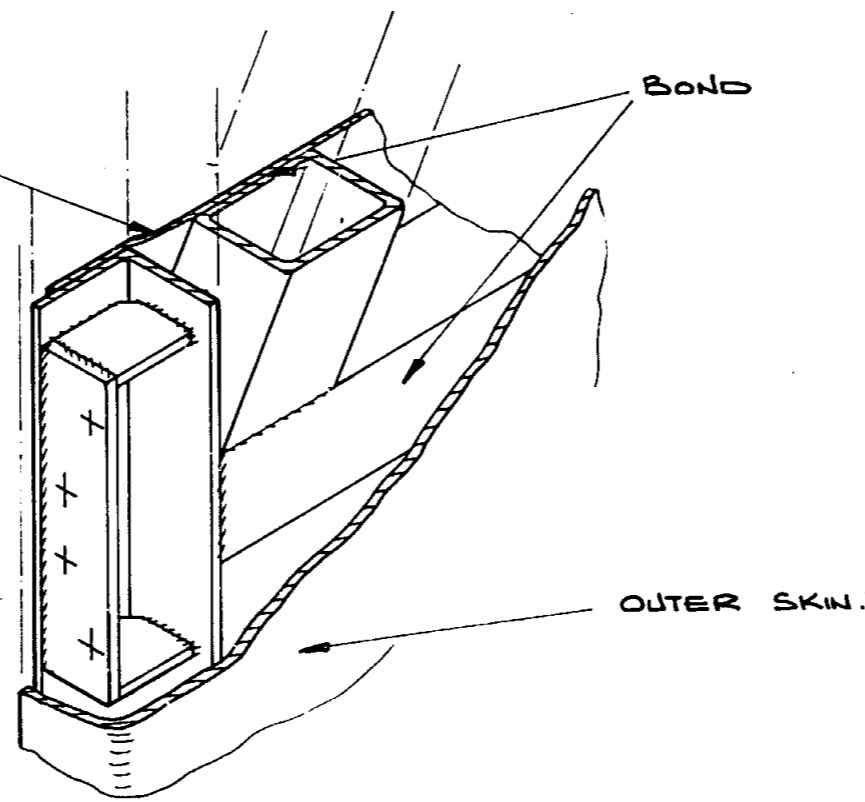


WATERCARE SERVICES LIMITED
STANDARD DETAILS
FACE MOUNTED STAINLESS STEEL SINGLE DOOR - COMPONENTS 9 & 10

CAD FILE -	DATE -
ORIGINAL SCALE A1	CONTRACT No.
1:1	-
DRAWING No.	ISSUE
0541540	007 B

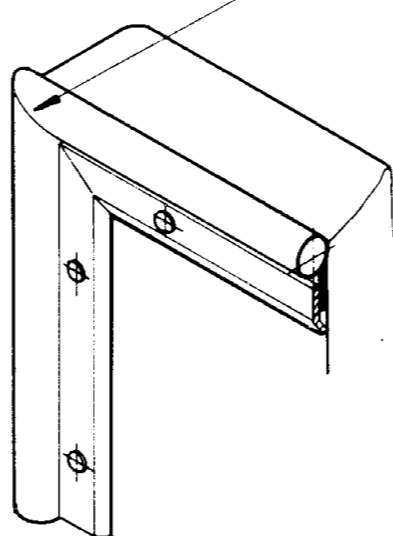


INSIDE VIEW ON LATCH.

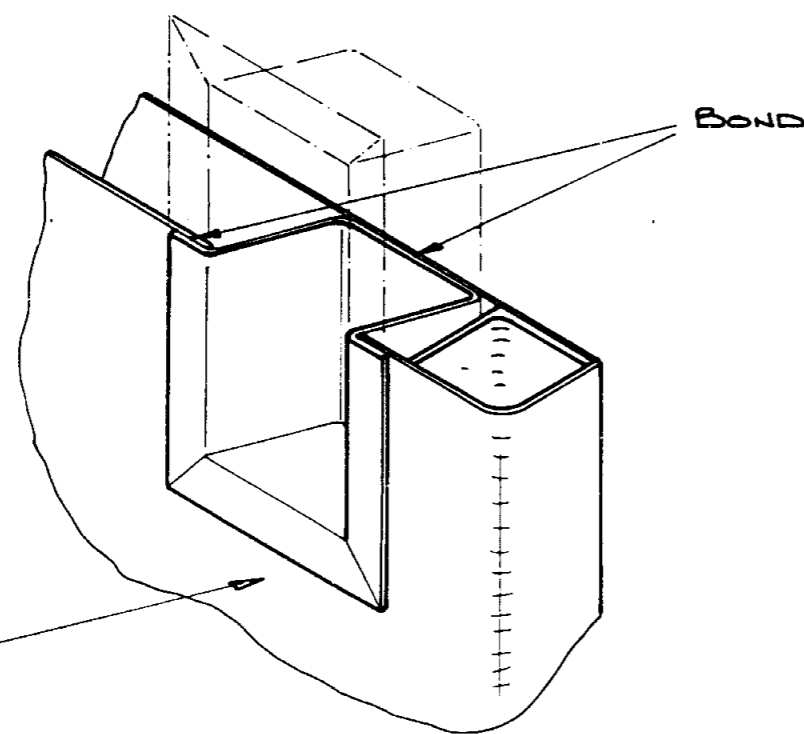


CENTRE HINGE RATE DETAIL (TYP)

CORNERS OF DOOR SEAL FILLED WITH SIKAFLEX 15LM ON ASSEMBLY.



VIEW ON DOOR CORNER (TYP)



VIEW ON HANDHOLE.

ITEM	MATERIAL.	DESCRIPTION.	QTY.	MICROFILM N ^o
1	316. ST. ST#	DOOR FRAME.	1	0541540 10
2	316. ST. ST#	DOOR.	1	0541540 11
3	316. ST. ST#	DOOR SEAL CLAMP. (VERTICAL)	2	0541540 12
4	316. ST. ST#	DOOR SEAL CLAMP. (HORIZONTAL)	2	0541540 12
5	304. ST. ST#	BUTT HINGE.	3	0541540 12
6	316. ST. ST#	LATCH MOUNT.	1	0541540 12
7	316. ST. ST#	DOOR STOP.	2	0541540 12
8	316. ST. ST#	LATCH PACKER.	1	0541540 12
9	316. ST. ST#	BOLT ARM.	1	0541540 13
10	316. ST. ST#	BOLT.	1	0541540 13
11	ST. ST#	M6x12 LG. COUNTERSUNK SOCKET SCREW.	24	
12	ST. ST#	CAP H ^o SCREW. M4x10 LG.	3	
13	ST. ST#	M6x5 LG. BUTTON HEAD SOCKET SCREW.	2	
14	ST. ST#	CAP HEAD SCREW. M6x20 LG.	4	
15	ST. ST#	CAP HEAD SCREW. M6x30 LG.	4	
16	SANTOPRENE TRIAL PASTE	DOOR SEAL. P-SECTION.	To suit Door	RUBBERMARK INDUSTRIES LTD
17	316. ST. ST#	M6x12 LG. DYNASET ANCHOR. M.10.	6	
18	ST. ST#	MID HEX. BOLT. - LENGTH TO SUIT BUILDING.	6	
19		LOCKWOOD LATCH. 002. OUTWARD OPENING. 32x16 LG.	1	To suit Door
20	MONEL.	POP BLIND RIVET. CODE 414	To suit Door	
21	ST. ST#	RAIN WASHER. 1 1/2 x 22 1/2 x 2 THK	6	

DESCRIPTION	DIMENSION CODE	DIMENSION	REMARKS.
CLEAR OPENING. WIDTH.	A		MEASURE ON SITE
CLEAR OPENING. HEIGHT.	B		MEASURE ON SITE.
A MINUS 20 mm.	C		
B MINUS 10 mm.	D		
A MINUS 134 mm	E		MAX ALLOWABLE DOOR LEAF WIDTH (E) - 900
B MINUS 83 mm	F		DOOR LEAF HEIGHT F OVER 2000 TO HAVE 4 HINGES EQUI-SPACED. TOP & BOTTOM HINGES LOCATED 200 FROM DOOR ENDS.
BOLT LENGTH. ITEM. 18.	G		
SOUNDPROOFING REQUIRED	50mm THK. AHI. NOISE CONTROL BLANKET.	YES / NO	IF REQUIRED FILL DOORS INTERNAL CAVITIES WITH AHI NOISE CONTROL BLANKET BEFORE BONDING 1mm THK INNER SKIN TO FRAME.
(F DIVIDED BY 2) PLUS 16 mm CLEARANCE UNDER DOOR WHEN OPEN.	H		
I PLUS 42 mm	I		
I PLUS 135 mm	J		
	K		

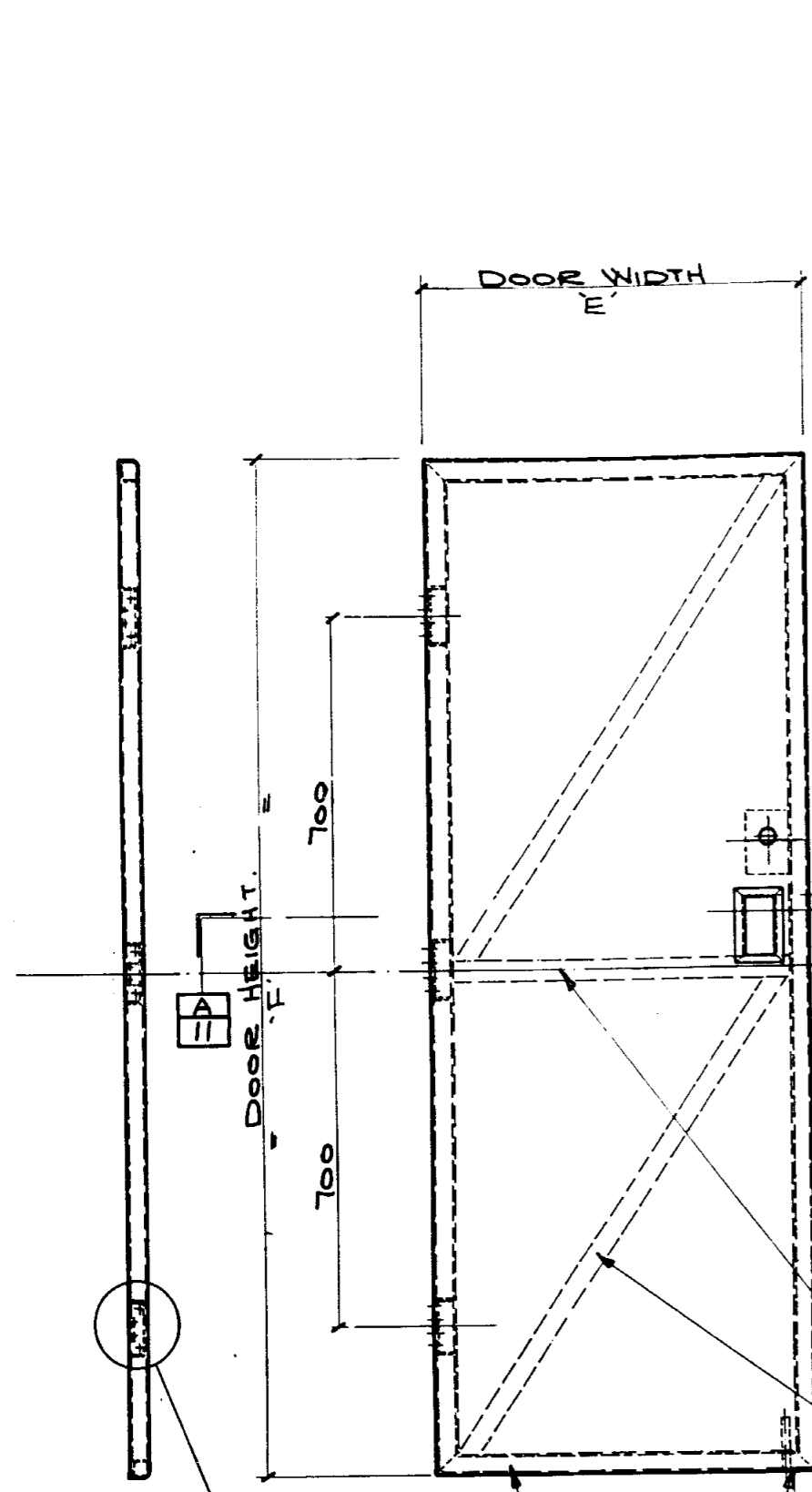
ISSUE DATE	AMENDMENT	BY	APPD.	DATE
C	154 WAS 114. B3 WAS 73. SIKAFLEX WAS SILICON. TITLE BLOCK CHANGED	N.S.		5/91
B	10641 MODS	DL		11-2-91
A	10642 MODS	DL		

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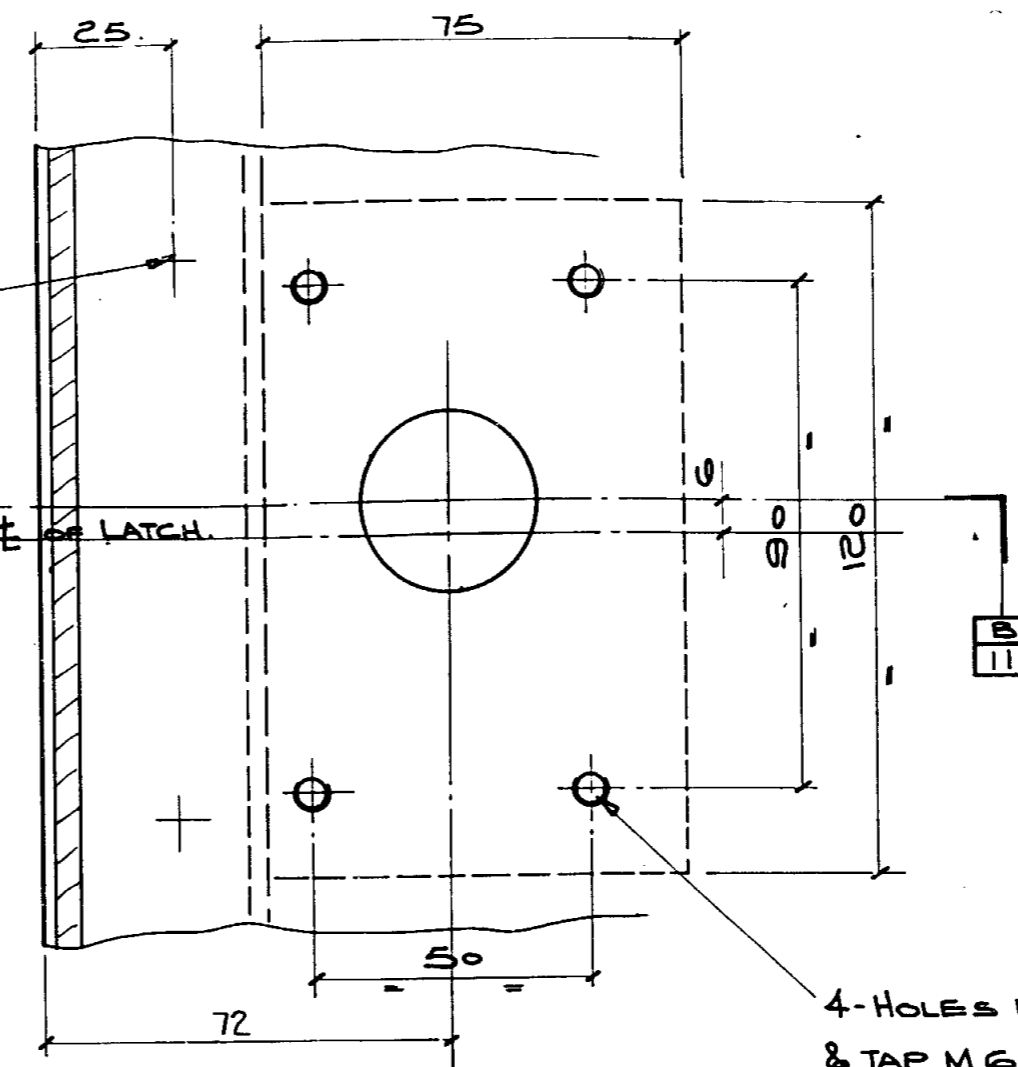
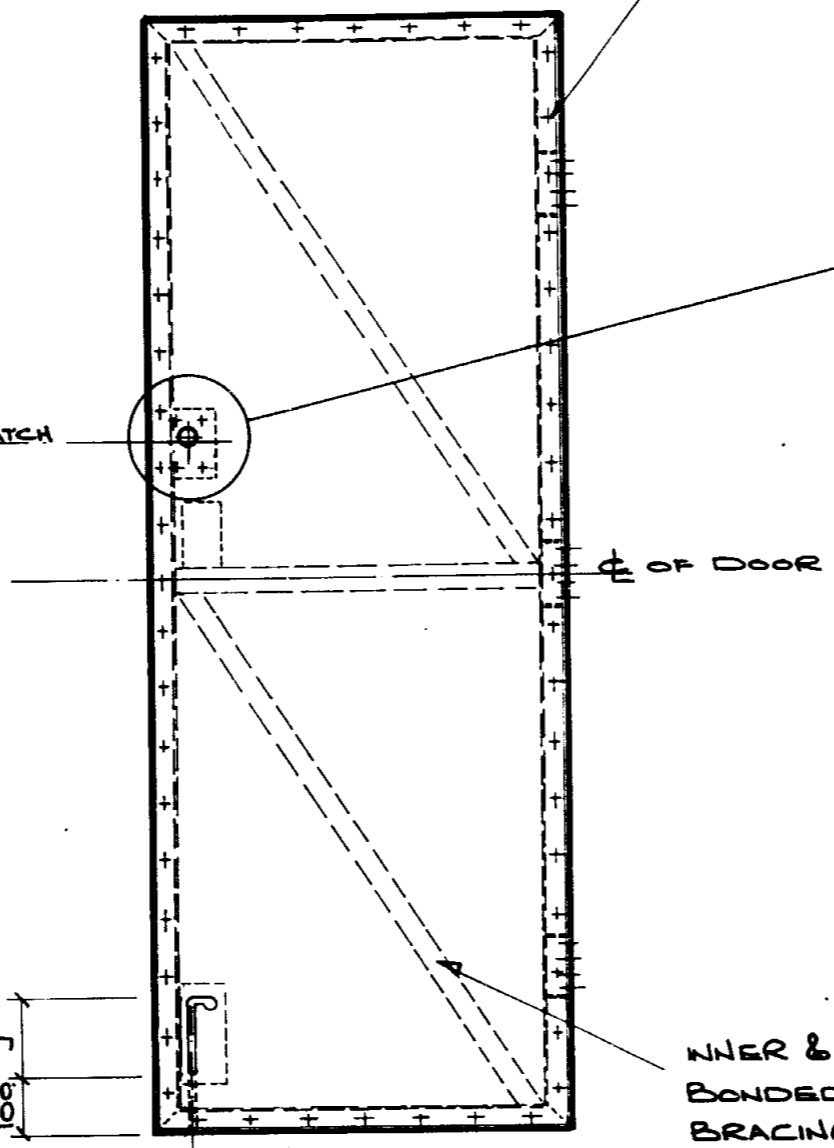


WATERCARE SERVICES LTD STANDARDS
RECESS MOUNTED STAINLESS STEEL SINGLE DOOR.
ASSEMBLY (SHEET 1 OF 2)

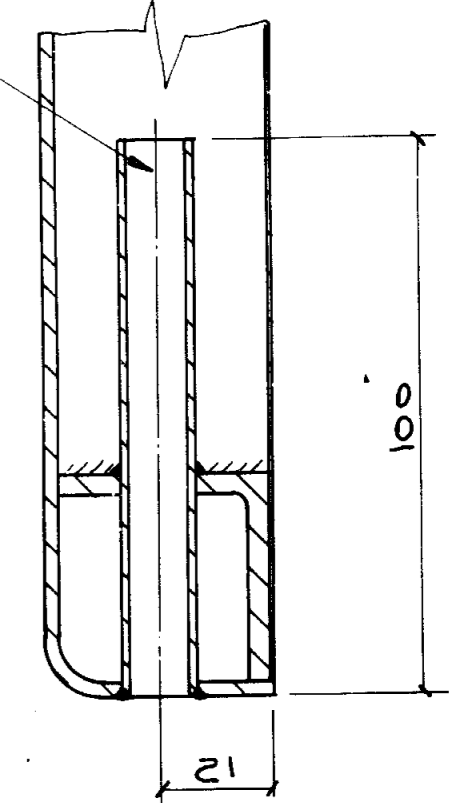
ORIGINAL SCALE A1	CONTRACT No.
DRAWING No.	ISSUE
0541540 08	C



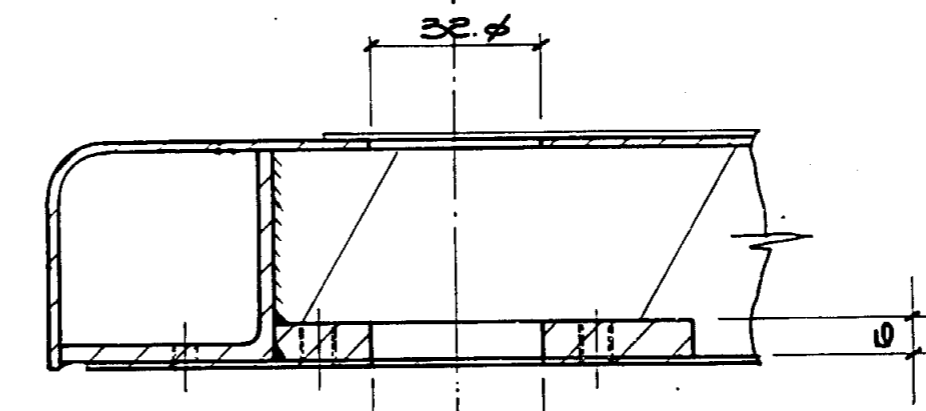
HOLE SPACING POSITION FROM ITEMS 3 & 4. DRILL THROUGH 3.3 Ø



158 d(5/8") x 16THK ROUND TUBE SEAMLESS.

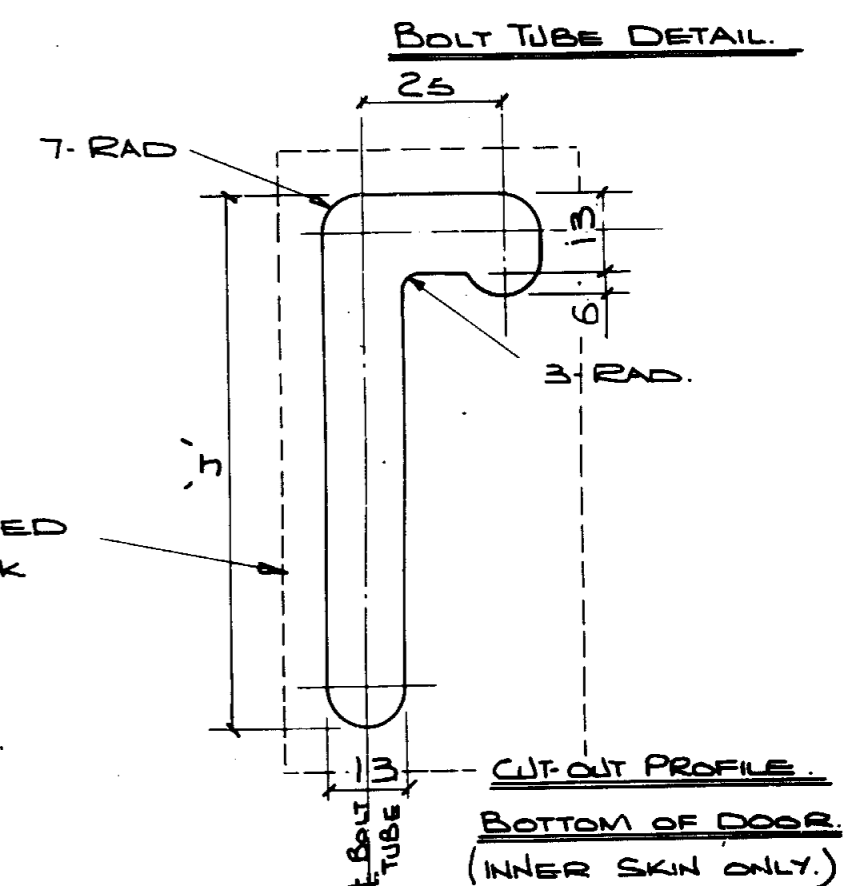


4-HOLES DRILL THROUGH & TAP M.G.



INNER & OUTER SKINS BONDED TO CENTRE BRACING.

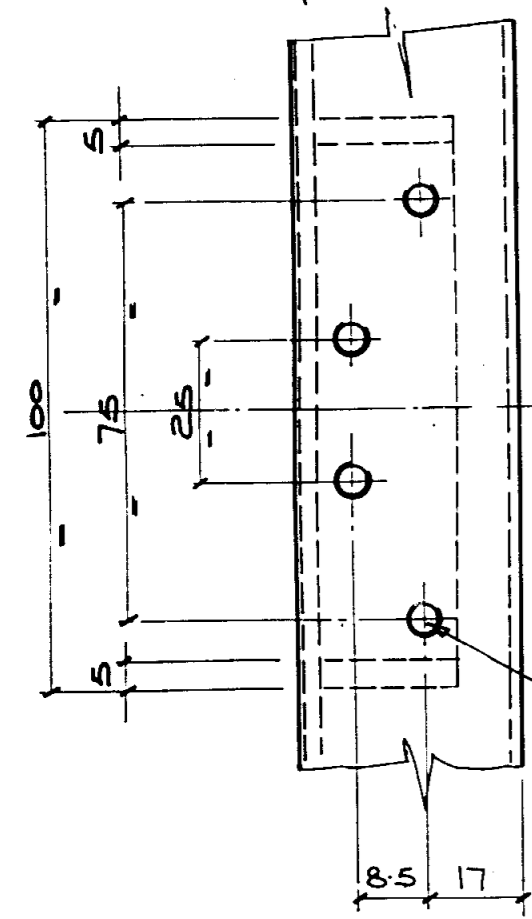
2THK SHEET BONDED TO INSIDE OF 1THK INNER SKIN.



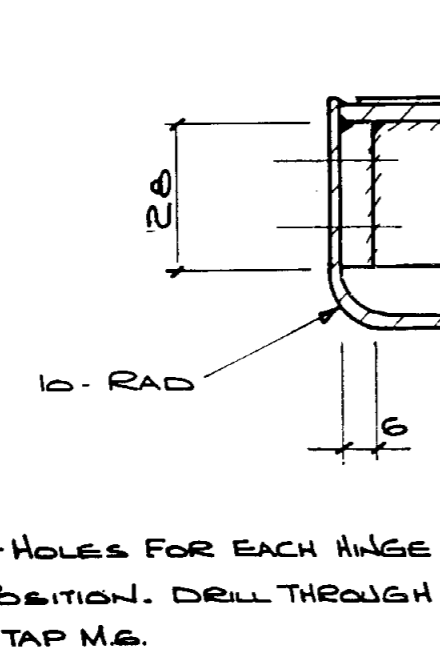
SECTION B-B

40 x 40 x 3 ANGLE OUTER FRAME. CUT 2mm OFF ONE LEG.

38x38x16 RHS CENTRE BRACING. WELDED TO ANGLE OUTER FRAME. WELDS WHICH CONTACT INNER & OUTER SKINS TO BE GRIND LEVEL.



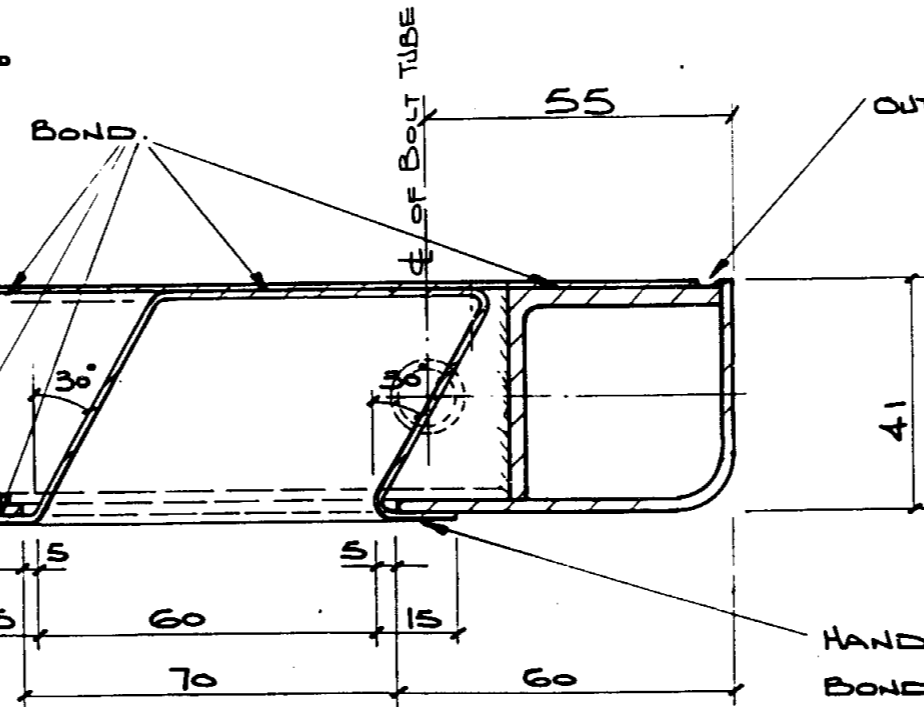
HINGE DRILLING DETAIL (TYP)



1THK INNER SKIN BOND TO DOOR FRAME.

2THK OUTER SKIN

SECTION A-A



OUTER SKIN WELDED TO ANGLE.

HANDHOLE 1.5THK SHEET (POLISHED) BONDED TO DOOR SKIN.

ITEM 2 DOOR

MATERIAL:- 316 ST. ST

(EXTERNAL SURFACES OF DOOR TO BE BRUSH FINISH)

- NOTES**
- SURFACES TO BE BONDED - DEGREASE & ABRASE AS FOLLOWS:-
- SCRUB SURFACES WITH A SOLUTION OF LIQUID DETERGENT. WASH WITH CLEAN HOT WATER & ALLOW TO DRY THOROUGHLY.
 - ABRADE WITH WATER PROOF ABRASIVE PAPER (46 TO 120 MESH) OR WIRE BRUSH.
 - REPEAT DEGREASING PROCEDURE (a)
 - BOND USING ARALDITE 2004. PBT LIFE 30 MINUTES
 - ADHESIVE FROM CIBA-GEIGY. TEL. 883 149

DESIGNED	G. SMITH	5/91
DES. CHECKED	D. LEHRLE	11-2-91
DRAWN		
DWG. CHECKED		
APPROVED		
BY		
DATE		

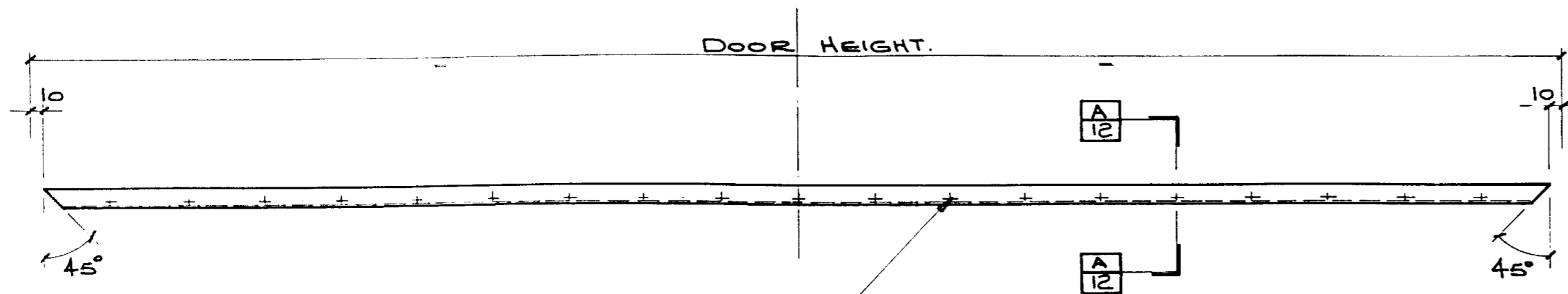
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J. Skum
RETICULATION MANAGER
WASTE WATER



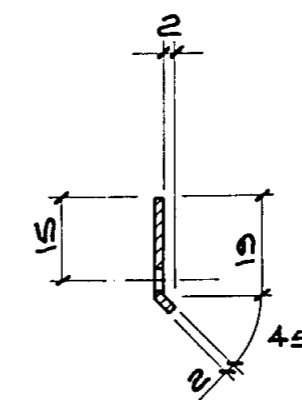
WATERCARE SERVICES LTD STANDARDS
RECESS MOUNTED STAINLESS STEEL SINGLE DOOR
COMPONENT 2

ORIGINAL SCALE A1	CONTRACT No.
1:10 1:1	
DRAWING No.	ISSUE
0541540	11 C

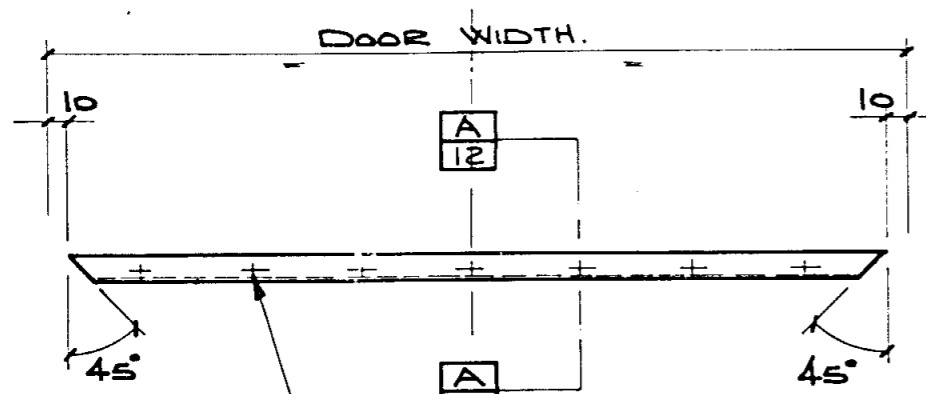


HOLES SPACED TO SUIT DOOR HEIGHT.
MAX CENTRES 100. DRILL THROUGH 3.3ϕ

ITEM 3 DOOR SEAL CLAMP (VERTICAL)
MATERIAL: 316 ST. ST.

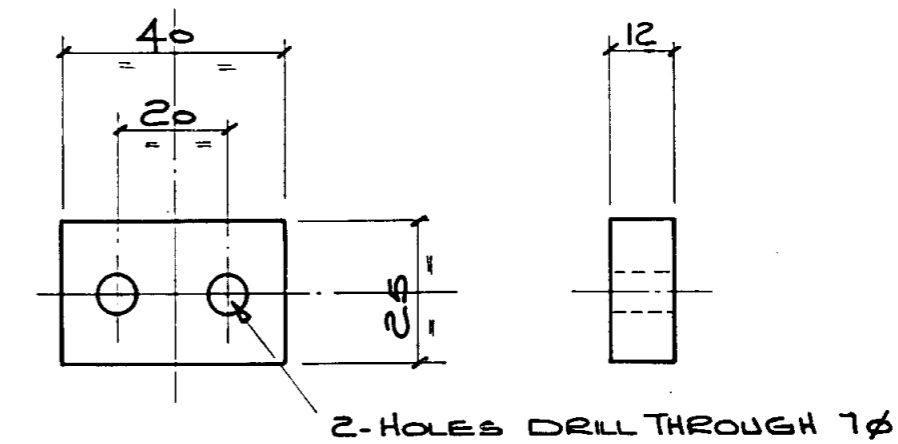


SECTION **A 12**



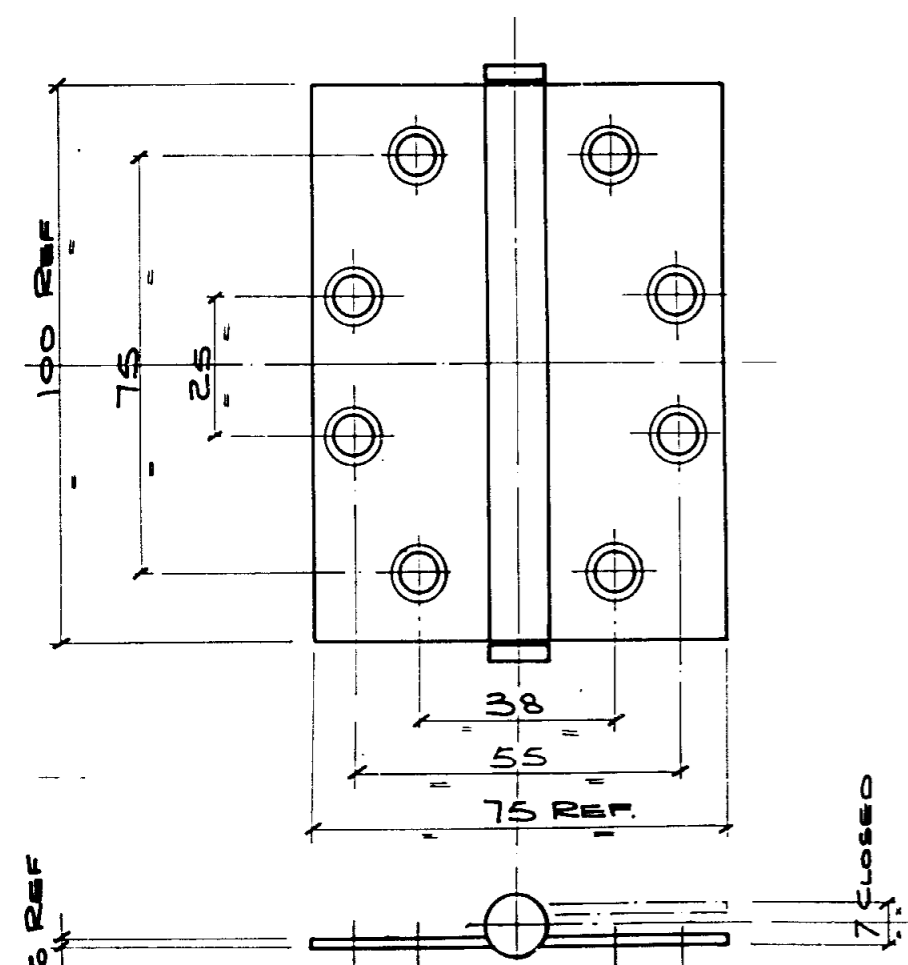
HOLES SPACED TO SUIT DOOR WIDTH.
MAX CENTRES 100. DRILL THROUGH 3.3ϕ

ITEM 4 DOOR SEAL CLAMP (HORIZONTAL)
MATERIAL: 316 ST. ST.

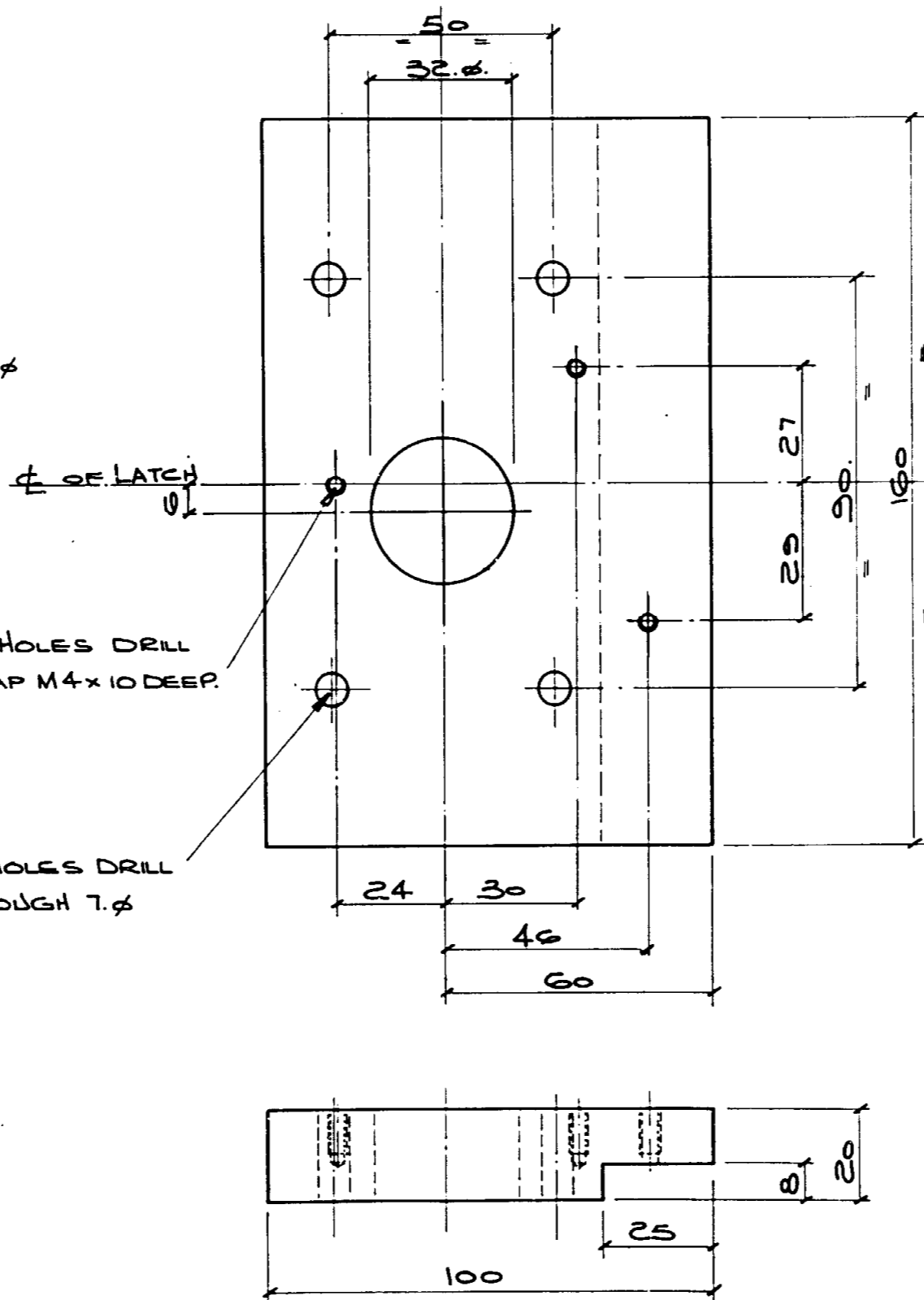


2-HOLES DRILL THROUGH 7ϕ.

ITEM 7 DOOR STOP
MATERIAL: 316 ST. ST.



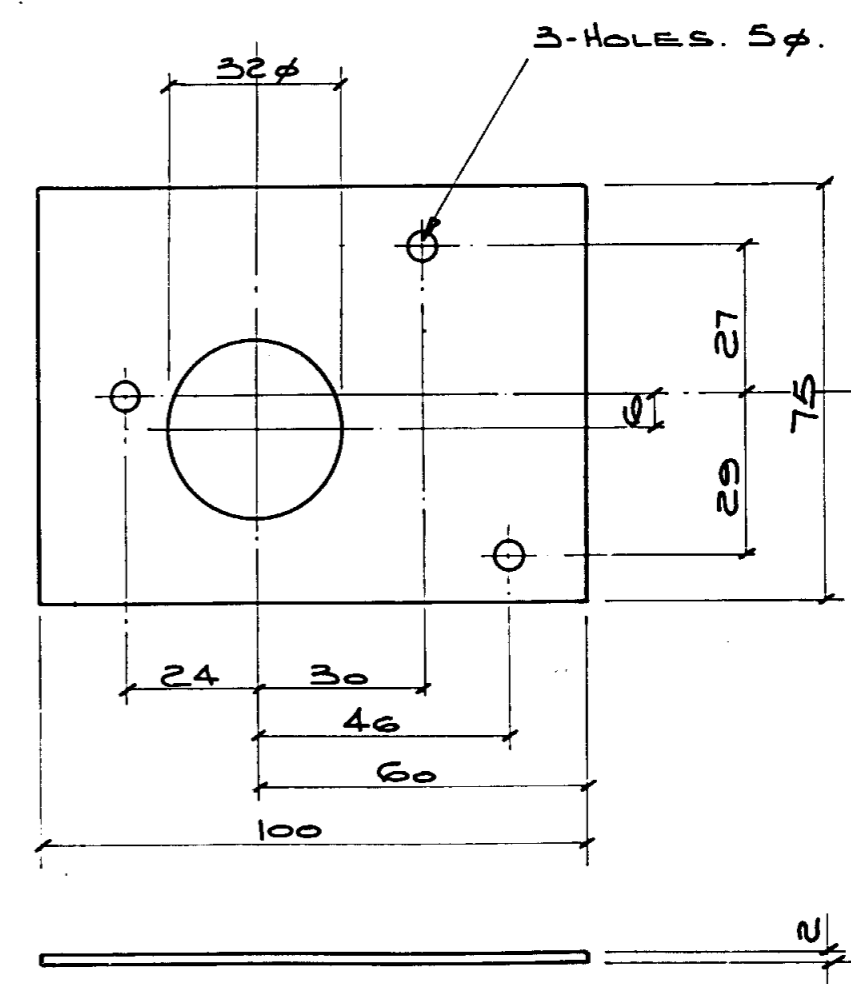
ITEM 5 HINGE. (BOUGHT FROM N.Z. FASTENERS LTD.)
HINGE CODE Z.H.GB26075100
MATERIAL: 304 ST. ST.



3-HOLES DRILL & TAP M4 x 10 DEEP.

4-HOLES DRILL THROUGH 7ϕ.

ITEM 6 LATCH MOUNT.
MATERIAL: 316 ST. ST.



3-HOLES 5ϕ.

ITEM 8 LATCH PACKER.
MATERIAL: 316 ST. ST.

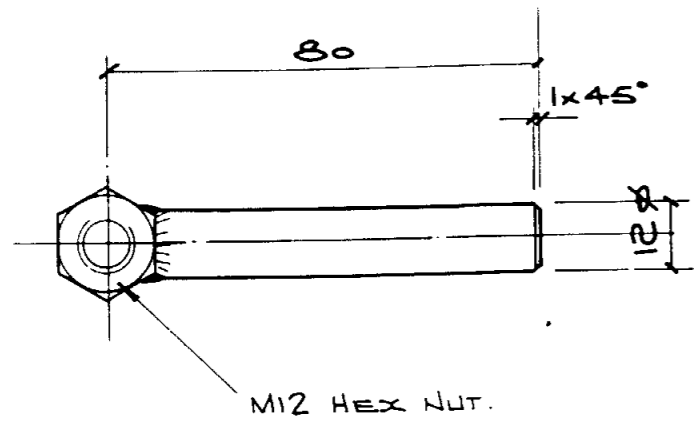
DESIGNED					
DES. CHECKED	G. SMITH	5/9/11			
DRAWN	D. LEHRLE	2/9/11			
DWG. CHECKED					
APPROVED					
ISSUE DATE	AMENDMENT	BY	APPD.	BY	DATE
B 25/93	TITLE BLOCK CHANGED	G.S.			
A 9/92	ITEMS 3 & 4 - 3.3ϕ WAS 3ϕ	D.L.			
	ITEM 5 - 30 WAS 25 55 WAS 100				

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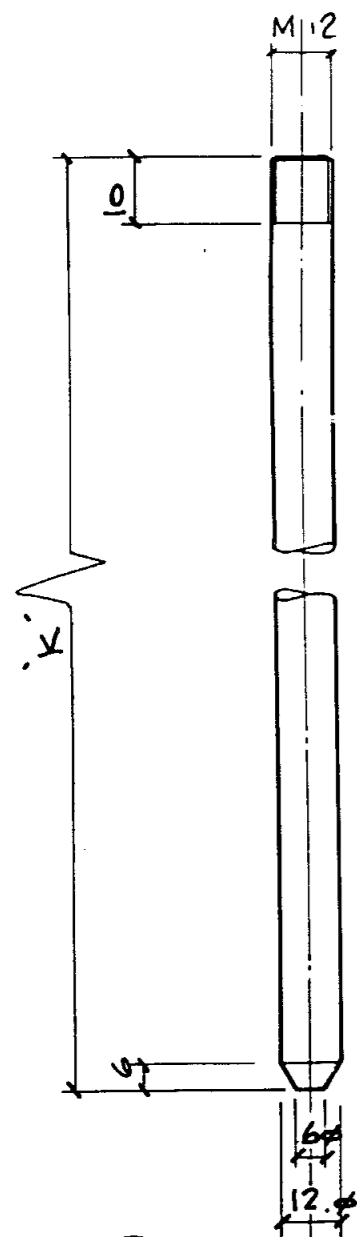


WATERCARE SERVICES LTD STANDARDS
RECESS MOUNTED STAINLESS STEEL SINGLE DOOR
COMPONENTS 3. 4. 5. 6. 7. & 8

ORIGINAL SCALE A1 1:5 1:1	CONTRACT No.
DRAWING No. 0541540	ISSUE 12 B



ITEM 9 BOLT ARM.
MATERIAL:- 316 ST. ST.



ITEM 10 BOLT.
MATERIAL:- 316 ST. ST.

ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE
B	13/5/93	TITLE BLOCK CHANGED	G.S			
A	18/5/92	ITEMS 9 & 10 MODIFIED	D.L.			

DESIGNED	
DES. CHECKED	G. SMITH 5/92
DRAWN	D. LEHRLE 2/91
DWG. CHECKED	
APPROVED	

REG. OPS. MANAGER.
I. Skinner
RETICULATION MANAGER
WASTE WATER.

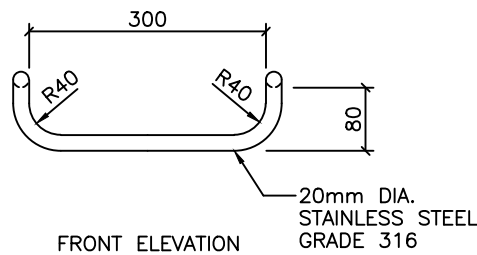


WATERCARE SERVICES LTD STANDARDS
RECESS MOUNTED STAINLESS STEEL SINGLE DOOR
COMPONENTS 9 & 10

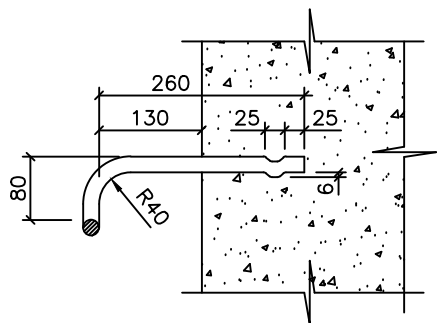
ORIGINAL SCALE A1 1:1	CONTRACT No.
DRAWING No. 0541540	ISSUE 13 B

NOTES

1. ALL SHARP EDGES ON STEELWORK TO BE GROUND OFF.
2. LADDER STEELWORK TO BE HOT DIPPED GALVANISED AFTER FABRICATION.
3. TOP RUNG TO BE AT FLOOR LEVEL WHEN STEPPING OFF FLOORS OR PLATFORMS.
4. TOP RUNG TO BE 450mm FROM TOP OF MANHOLE COVER.
5. BOTTOM RUNG TO BE A MAX. OF 380mm ABOVE LANDING.
6. ALL RECESSED STEPS, STEP IRONS, CAST IRON FRAMES AND COVERS ARE TO BE SUPPLIED BY WATERCARE
7. LADDER LENGTH MAX. 10 RUNGS MIN. 3 RUNGS. USE LADDER JOINING TUBES FOR LARGER LADDERS.
8. ORKOT TOP HAT OR APPROVED EQUIVALENT TO BE USED BETWEEN NUT AND FLAT WASHER
9. ALL STAINLESS STEEL COMPONENTS TO BE GRADE 316
10. 60x70 FL. CLEAT IS ON INSIDE OF STRINGER BRACKET FOR CIRCULAR MANHOLE RISER
11. 60x70 FL. CLEAT IS ON OUTSIDE OF STRINGER BRACKET FOR RECTANGULAR MANHOLE



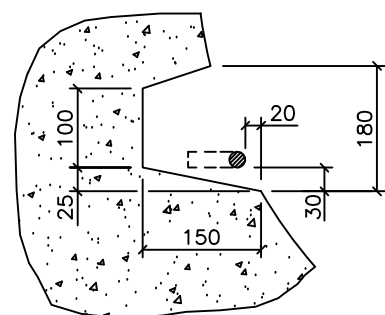
FRONT ELEVATION



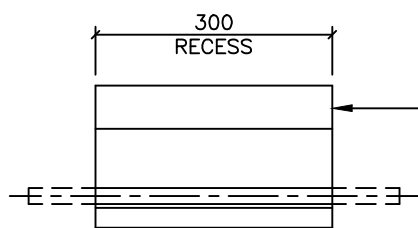
SIDE ELEVATION

STEP IRONS IN WALLS

SCALE 1:5 (A1)

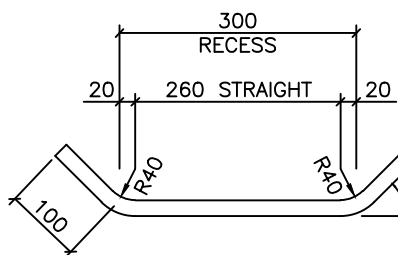


SECTION



FRONT ELEVATION

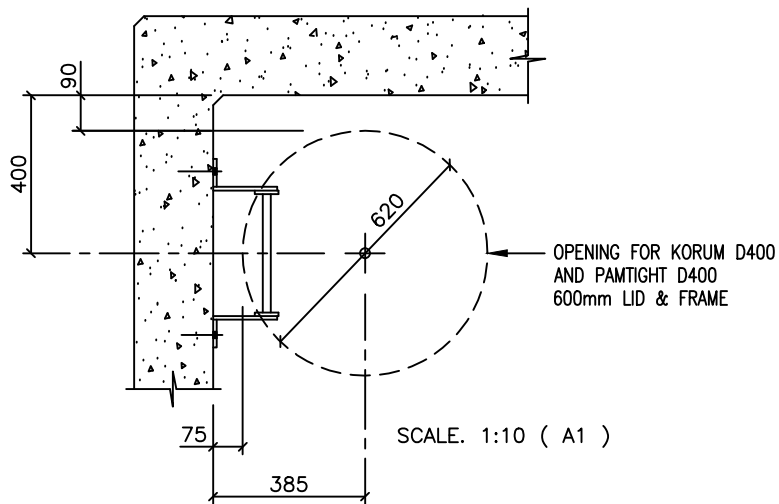
NOTE:
RECESSED STEPS
DO NOT HAVE
CHAMFERS



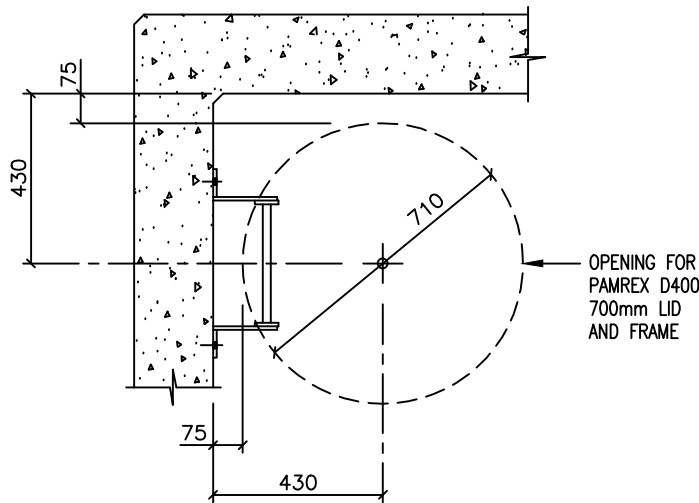
BAR DETAIL

RECESSED STEP IRONS

SCALE 1:5 (A1)

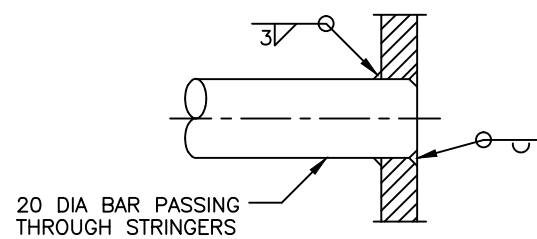


SCALE 1:10 (A1)



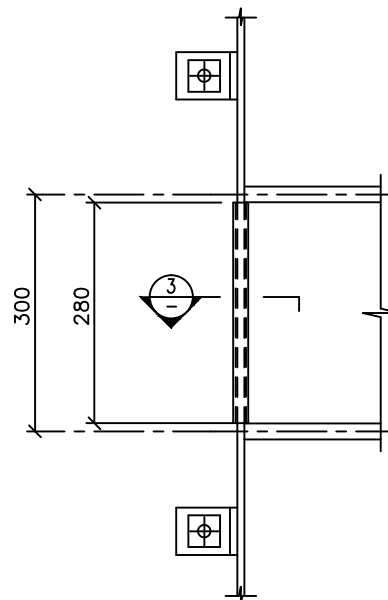
**RELATIVE POSITIONS OF OPENINGS FOR
M.H. FRAMES, LIDS AND LADDERS**

SCALE 1:10 (A1)

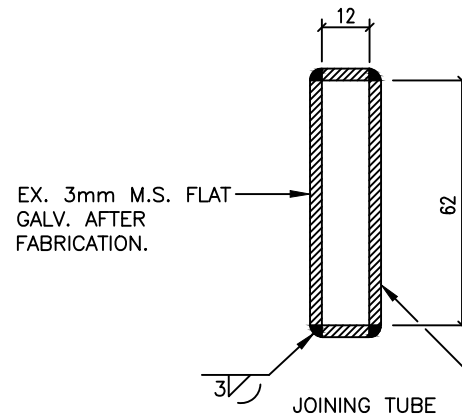


RUNG DETAIL
SCALE FULL SIZE (A1)

NOTE:
STRINGER TO BE NEAT DRILLED
FOR RUNG TO PASS THROUGH



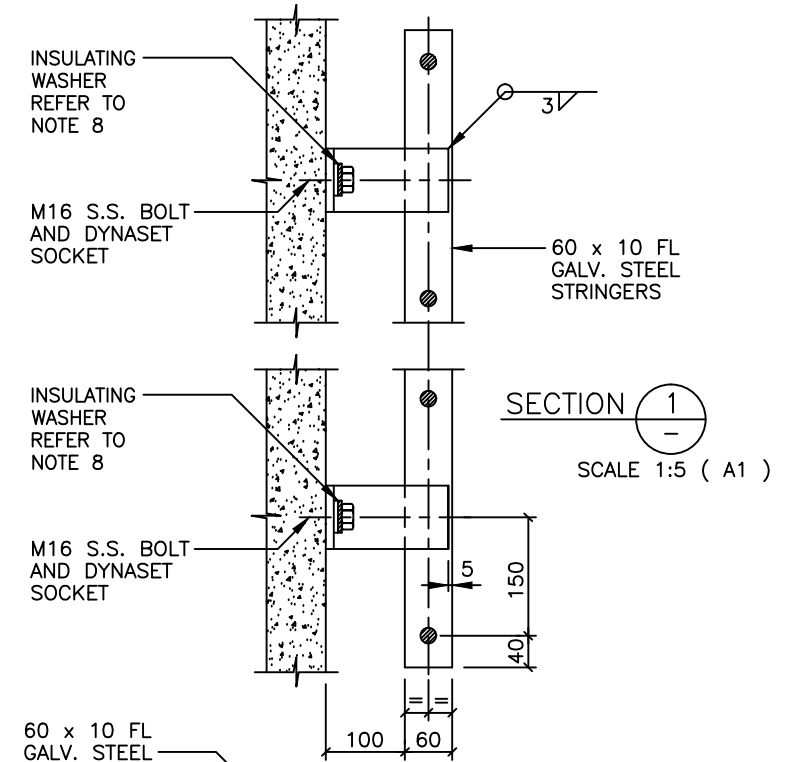
LADDER JOINING TUBE DETAIL



SECTION 3

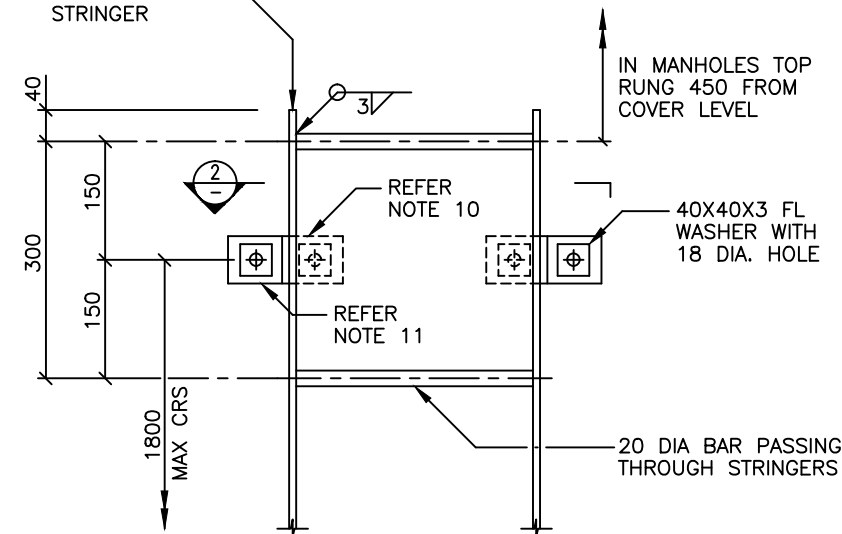
SCALE 1:1 (A1)

ANY SHARP EDGES
TO BE REMOVED
AFTER FABRICATION.

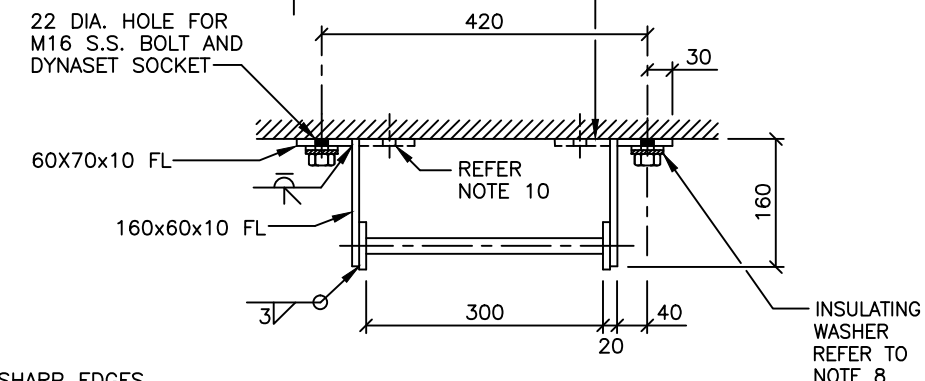


SECTION 1

SCALE 1:5 (A1)



BRACKETS ANGLED TO
SUIT CHAMBER WALLS
IF REQUIRED



STANDARD GALV. M.S. LADDER

SECTION 2

SCALE 1:5 (A1)

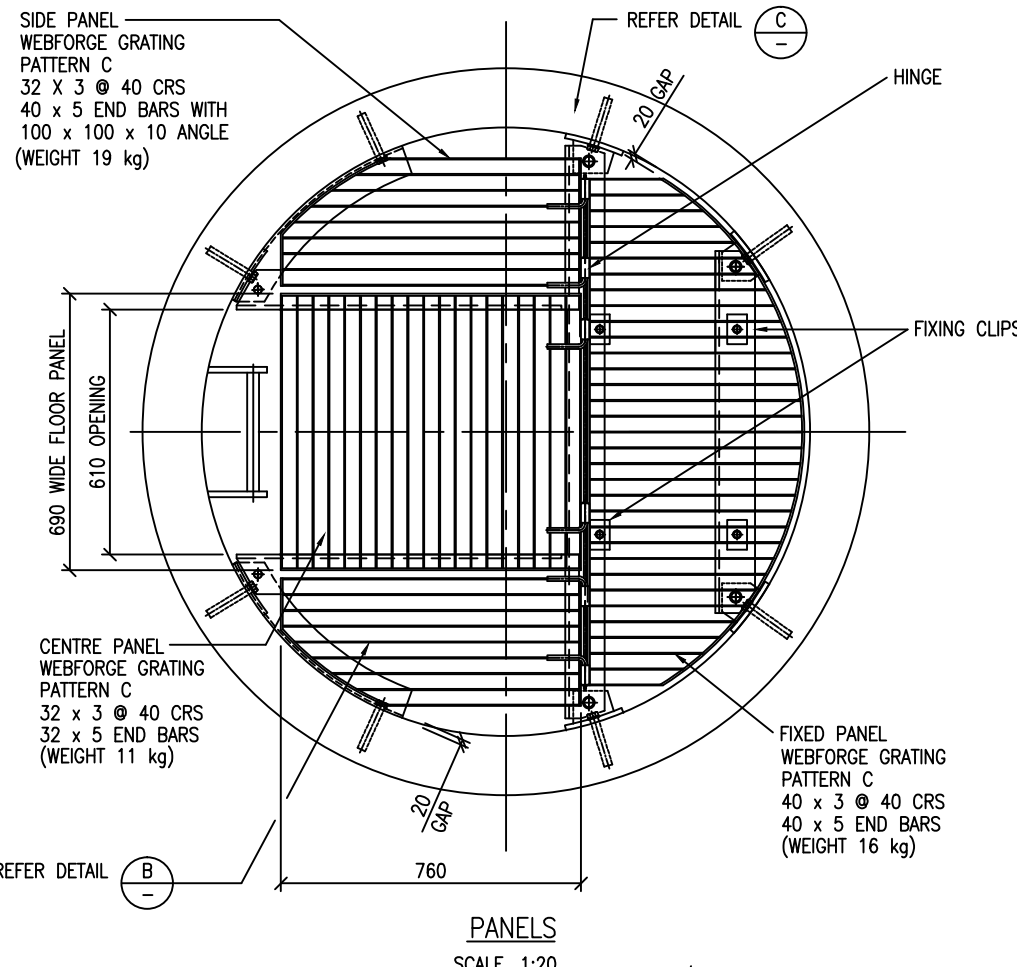
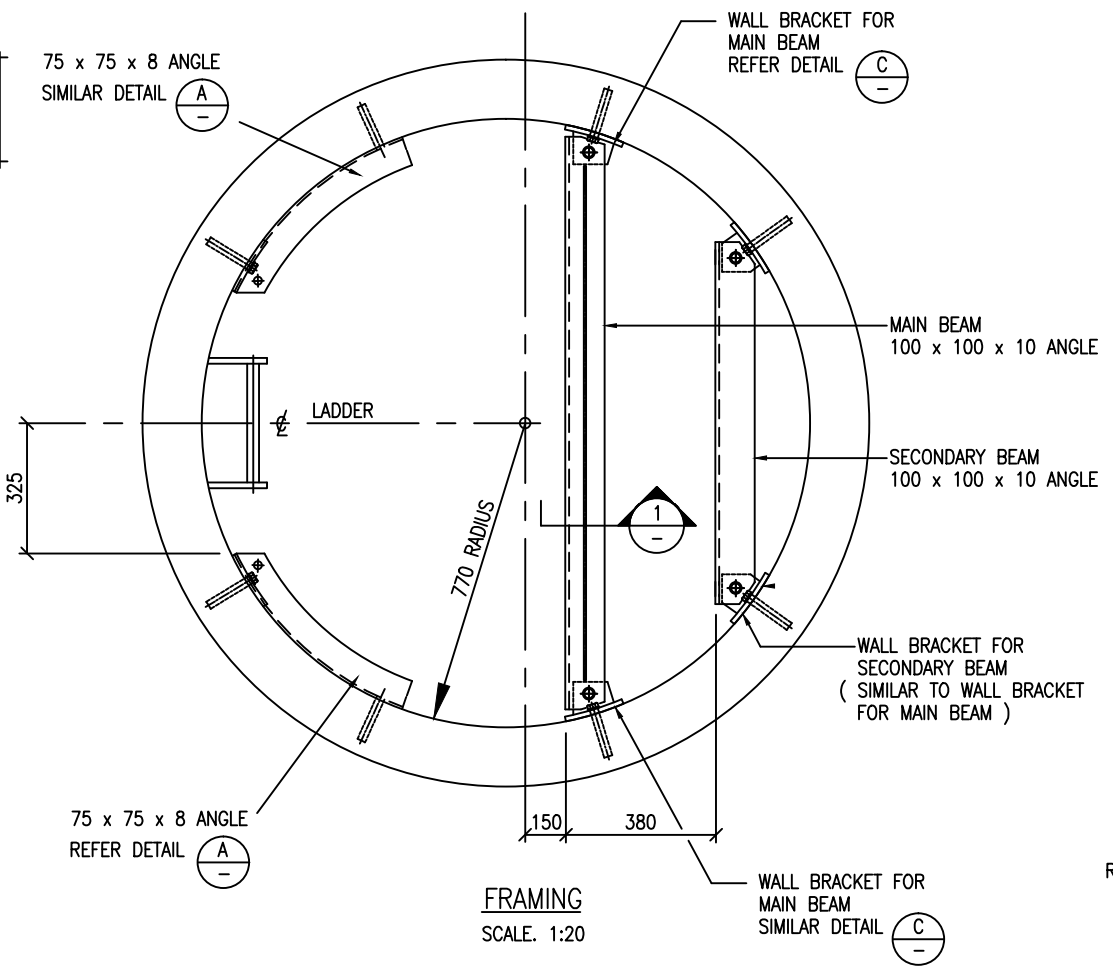
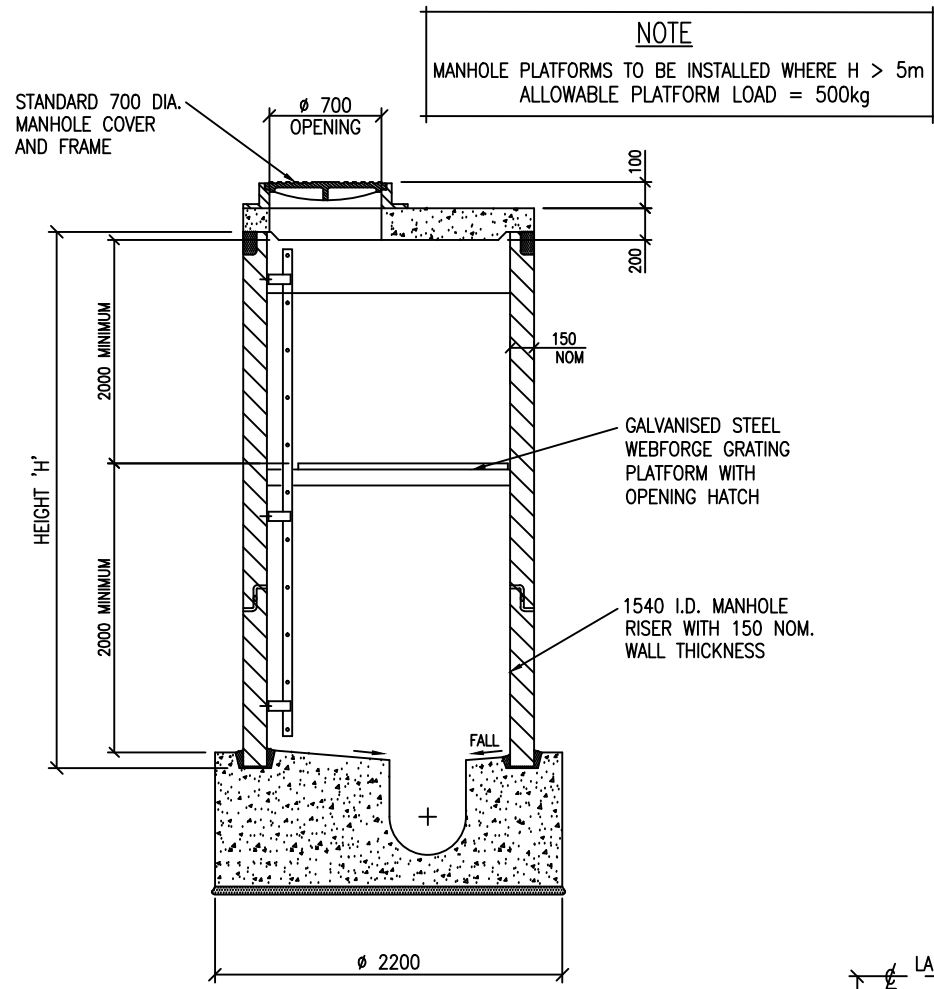
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE	INFRASTRUCTURE
F	4-13	JOINT TUBE DETAIL & GENERAL REVISION	L.C.	C.H.	DESIGNED		
E	6-12	STANDARD FRAME & LID DETAIL UPDATED	I.M.	C.H.	DES. CHECKED	B. MILLER	06/92
D	2-06	FRAME & COVER FIXING AND NOTES	I.M.	B.M.	DRAWN	I. MOSES	06/92
C	03:05	LADDER DETAILS CORRECTED	I.M.		DWG. CHECKED	I.M.M.	06/92
B	05:01	LADDER JOINING DETAIL AND COVERS AMEND'D	P.R.		PROJECT LEADER	D. McCANN	06/92
A	6:95	WSL PLAN FORM AND GENERAL UPDATE	I.M.M.		SECTION HEAD		

DESIGNED	DES. CHECKED	DRAWN	DWG. CHECKED	PROJECT LEADER	SECTION HEAD
	B. MILLER	I. MOSES	I.M.M.	D. McCANN	

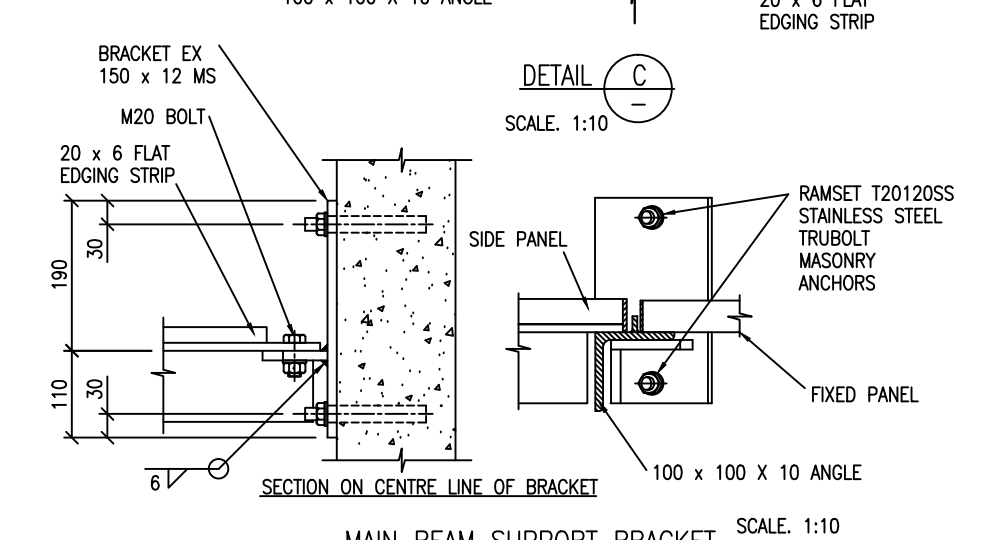
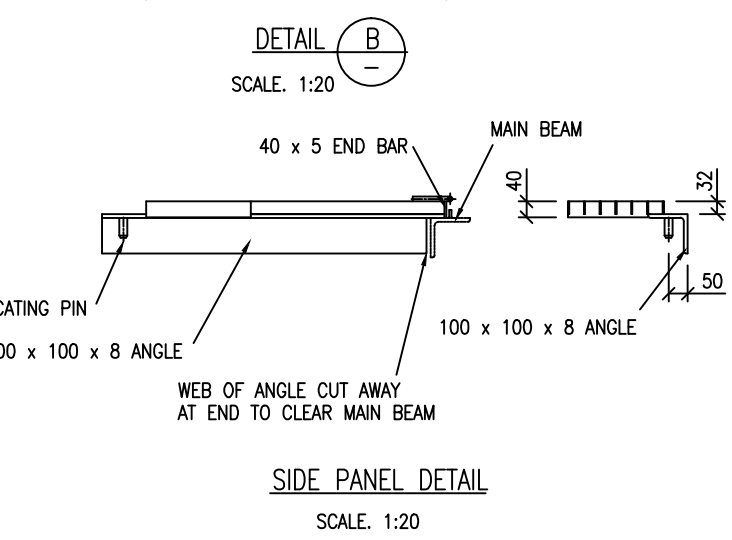
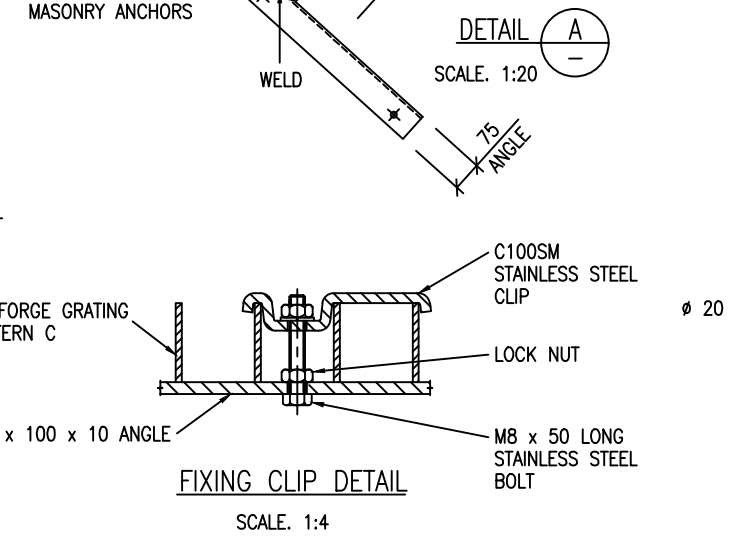
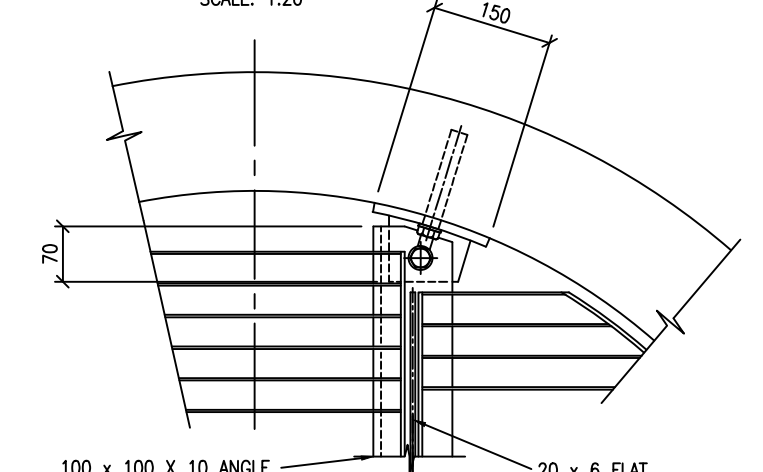
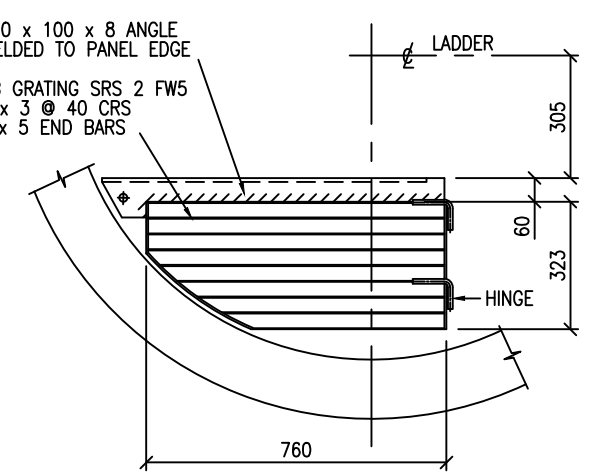
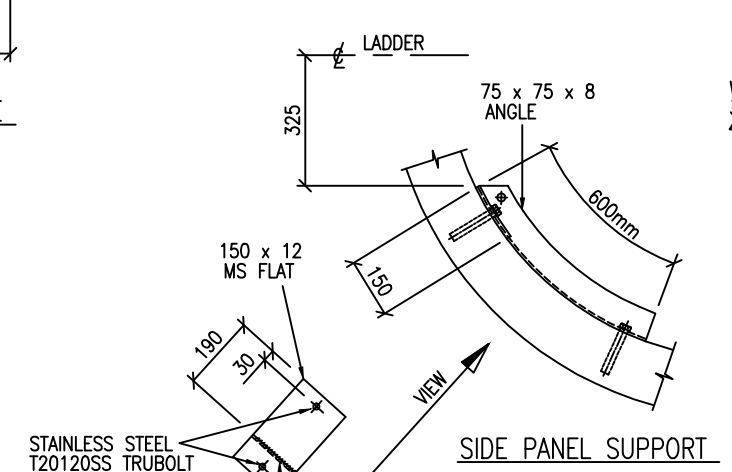
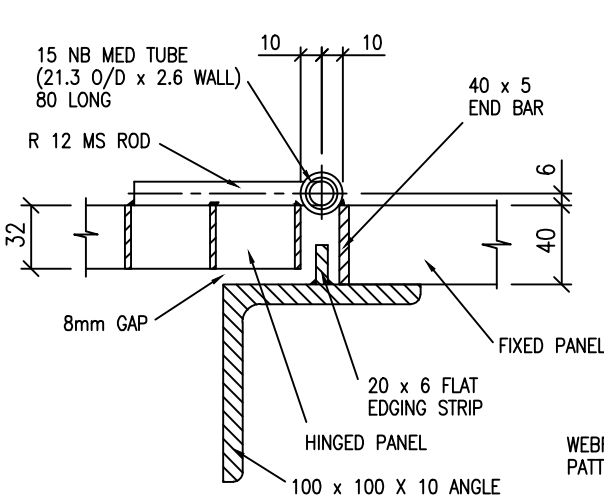
waterCare
services limited

STANDARD WASTEWATER MANHOLES
COVER POSITIONS, STEP IRONS AND LADDERS
DETAILS

CAD FILE	DATE	ORIGINAL SCALE	CONTRACT No.
2000244.003F	23-04-13	AS SHOWN	-
DRAWING No.	ISSUE		
2000244 .003	F		



NOTE :- ALL M.S. ITEMS TO BE HOT DIP GALVANISED AFTER FABRICATION



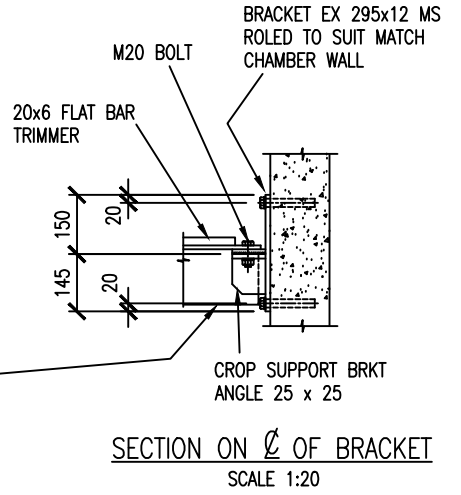
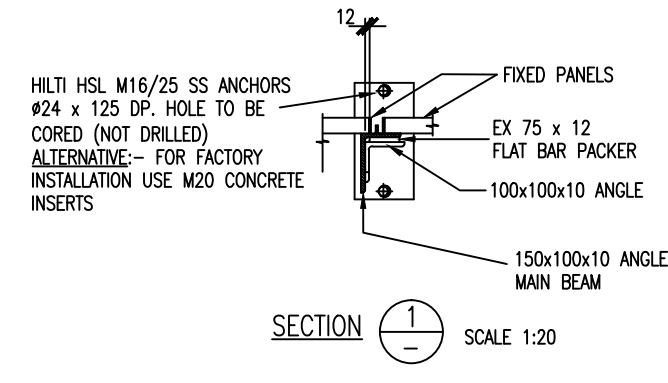
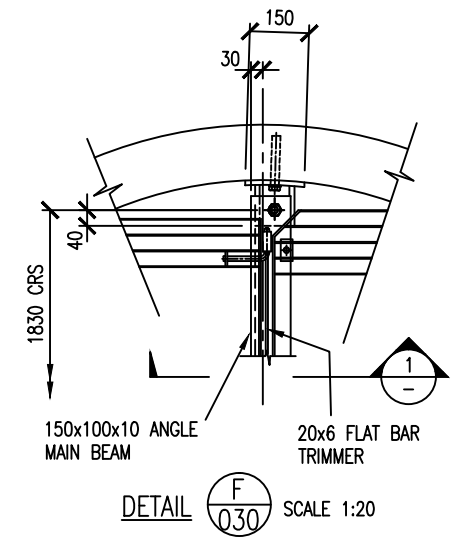
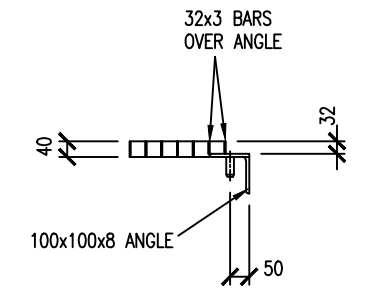
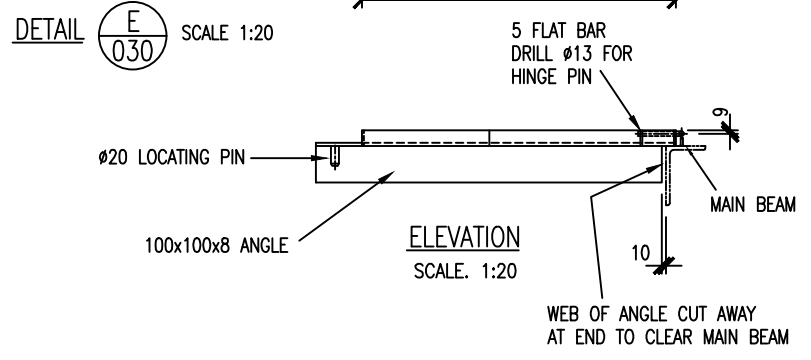
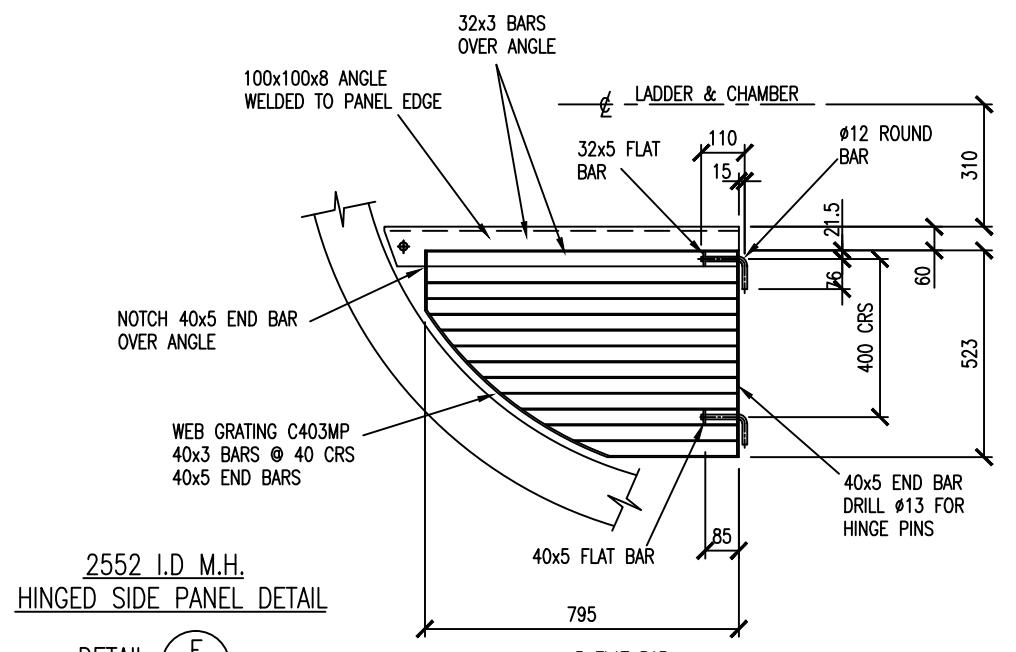
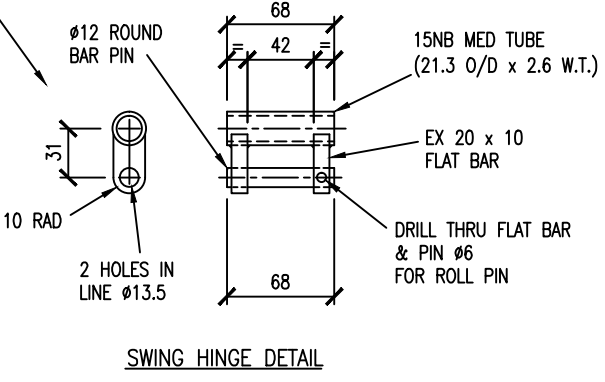
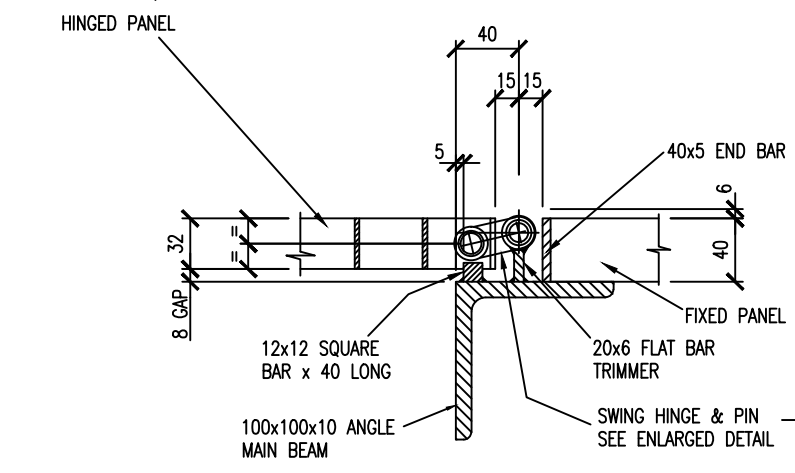
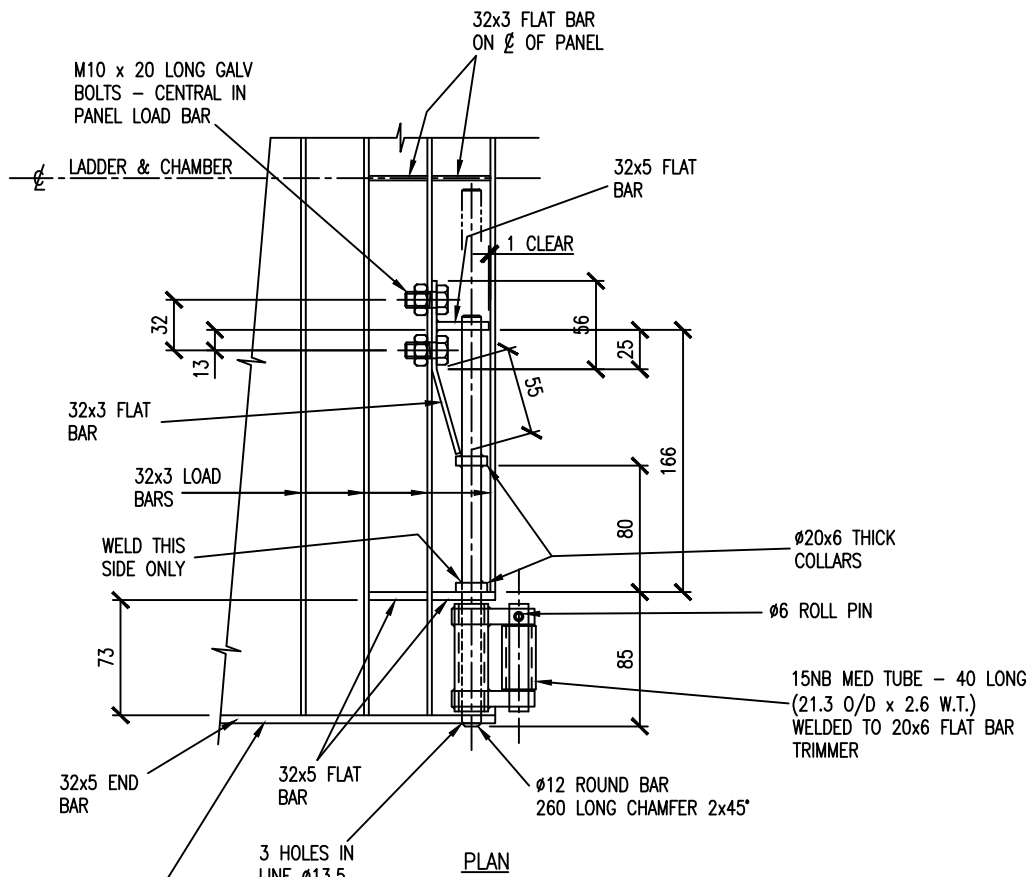
ISSUE	DATE	AMENDMENT	BY	APPD.	DESIGNED	C. RODLUFFE	11-01	DES. CHECKED	D. McCANN	11-01	DRAWN	I.M. & L.C.	11-01	OPERATIONS	PROJECT LEADER	C. RODLUFFE	11-01	A.D. APPROVED	A. KENNARD	11-01	ASSET MANAGEMENT	
D	9:10	OPENING DIMENSIONS REVISED	L.C.	C.R.	DWG. CHECKED	I. MOSES.	11-01															
B	5:10	FRAMING AND FIXING ANCHORS REVISED	L.C.	C.R.																		
C	11:09	MH LID DIMENSION & PLATFORM NOTE ADDED	G.B.	B.M.																		
A	1:03	OPENING WIDTH ALTERED AND NOTES ADDED	L.C.	C.R.																		

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STANDARD CIRCULAR WASTEWATER MANHOLES
FOR LINES 375 N.B. TO 900 N.B.
PLATFORM DETAILS FOR Ø1540 MANHOLE

CAD FILE	2000244.015D	DATE	23-9-10
ORIGINAL SCALE	A3	CONTRACT No.	-
AS SHOWN			
DRAWING No.	2000244	ISSUE	D
	.015		



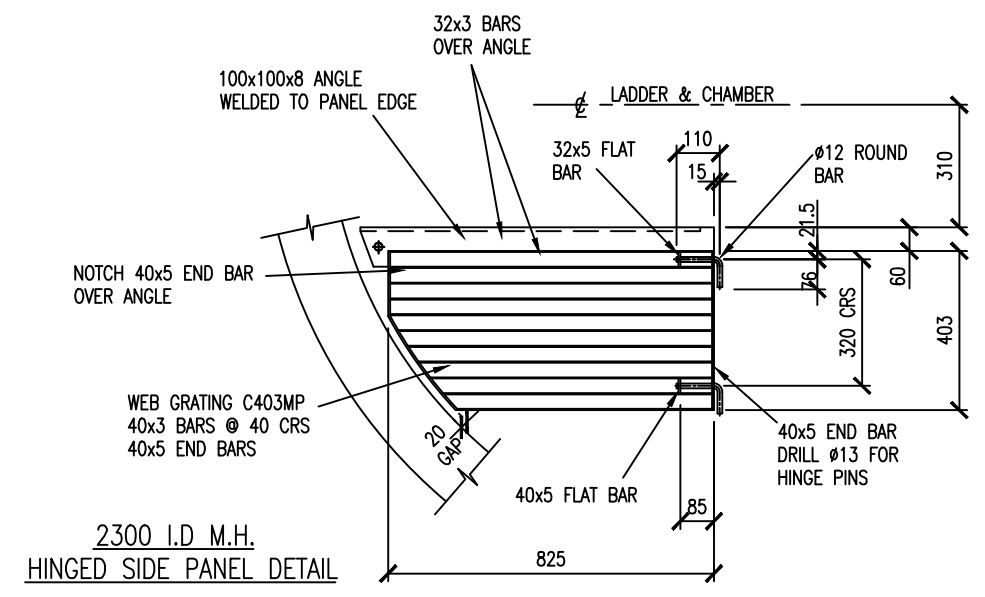
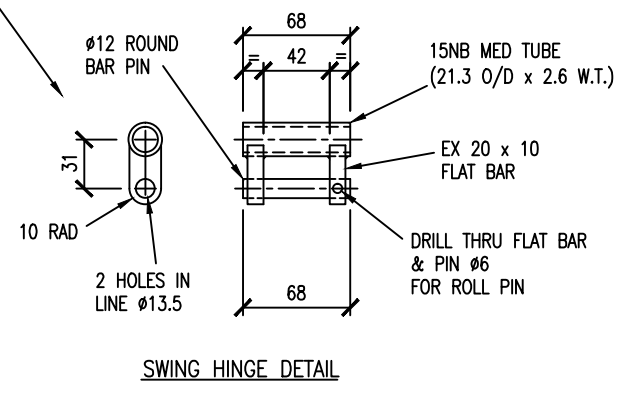
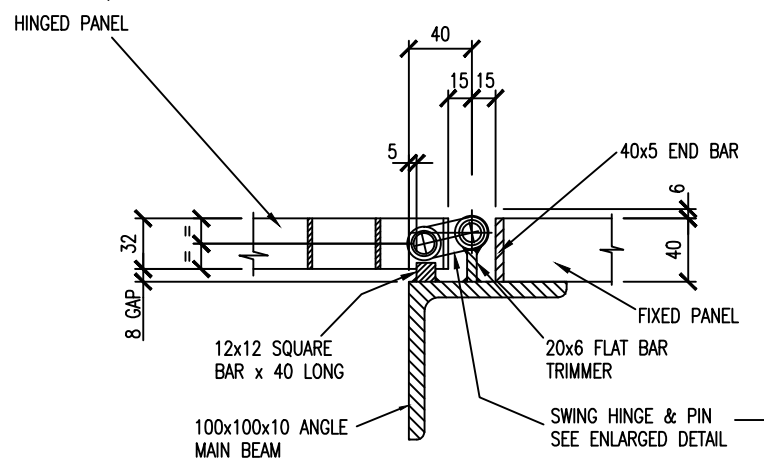
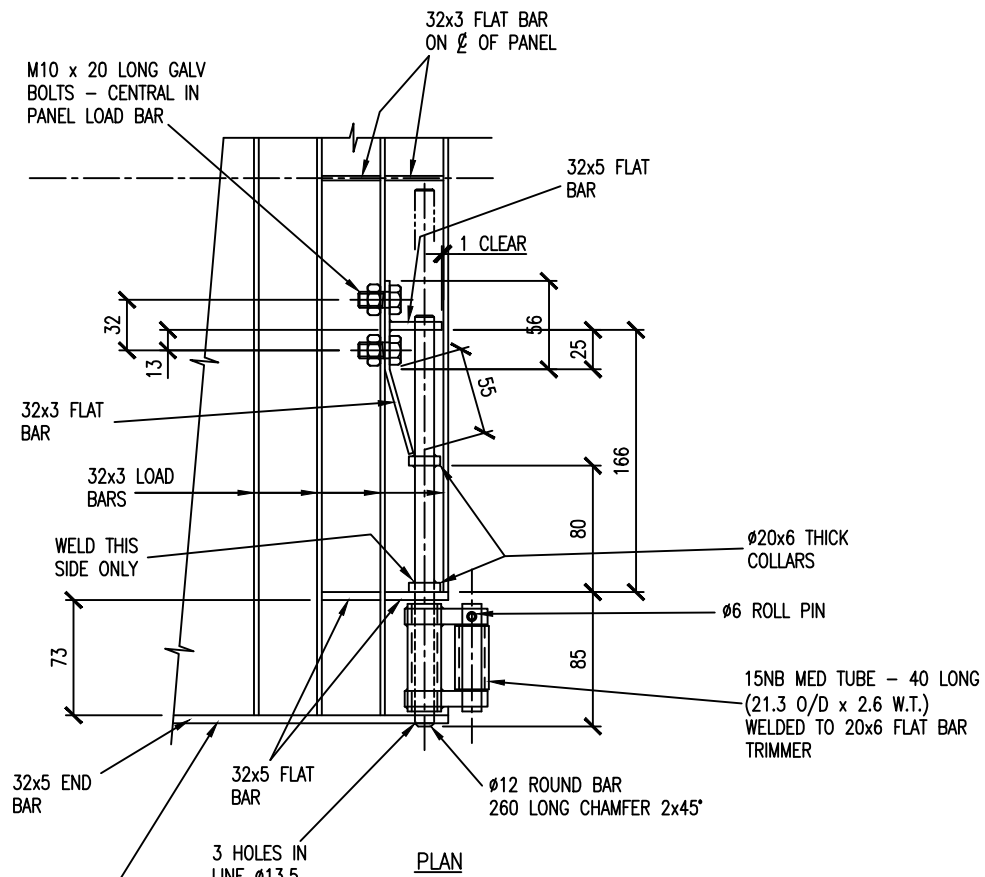
DESIGNED	J. GRAHAM	09/11		
DES. CHECKED	P. GOWANS			
DRAWN	N. SMITH	09/11		
DWG. CHECKED	J. GRAHAM	09/11		
PROJECT LEADER				
INFRASTR'R APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09-11	APPROVED FOR ISSUE	G.S.	J.G.

OPERATIONS	
INFRASTRUCTURE	

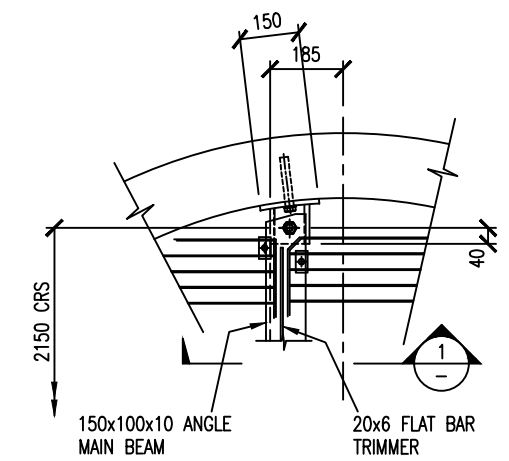
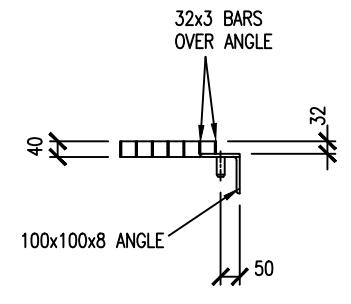
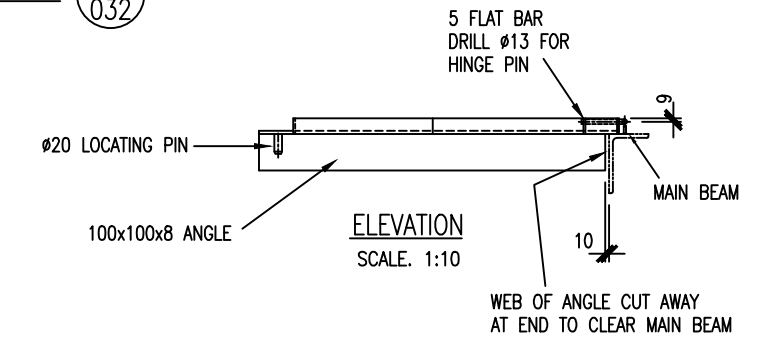


WASTEWATER TRANSMISSION STANDARD - CIRCULAR MANHOLES
FOR LINES 375 N.B. TO 900 N.B.
PLATFORM DETAILS FOR 1950 DIAMETER MANHOLE RISER

CAD FILE	2000244.031	DATE	01/09/11
ORIGINAL SCALE	A3	CONTRACT No.	-
AS SHOWN			
REF No.		ISSUE	
DWG No.	2000244.031		

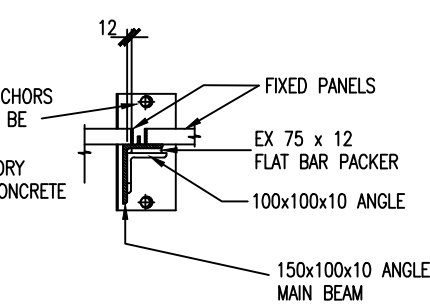


DETAIL E SCALE 1:10

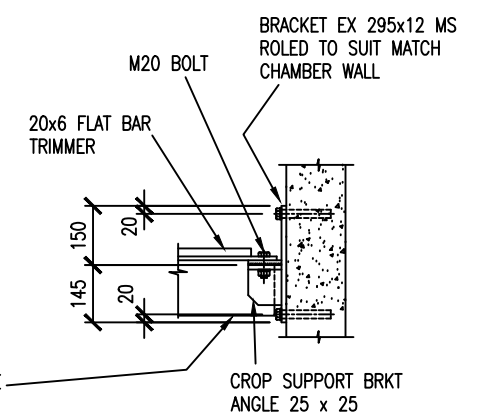


HILTI HSL M16/25 SS ANCHORS $\phi 24 \times 125$ DP. HOLE TO BE CORED (NOT DRILLED) ALTERNATIVE - FOR FACTORY INSTALLATION USE M20 CONCRETE INSERTS

DETAIL F SCALE 1:10



SECTION 1



SECTION ON $\frac{1}{2}$ OF BRACKET

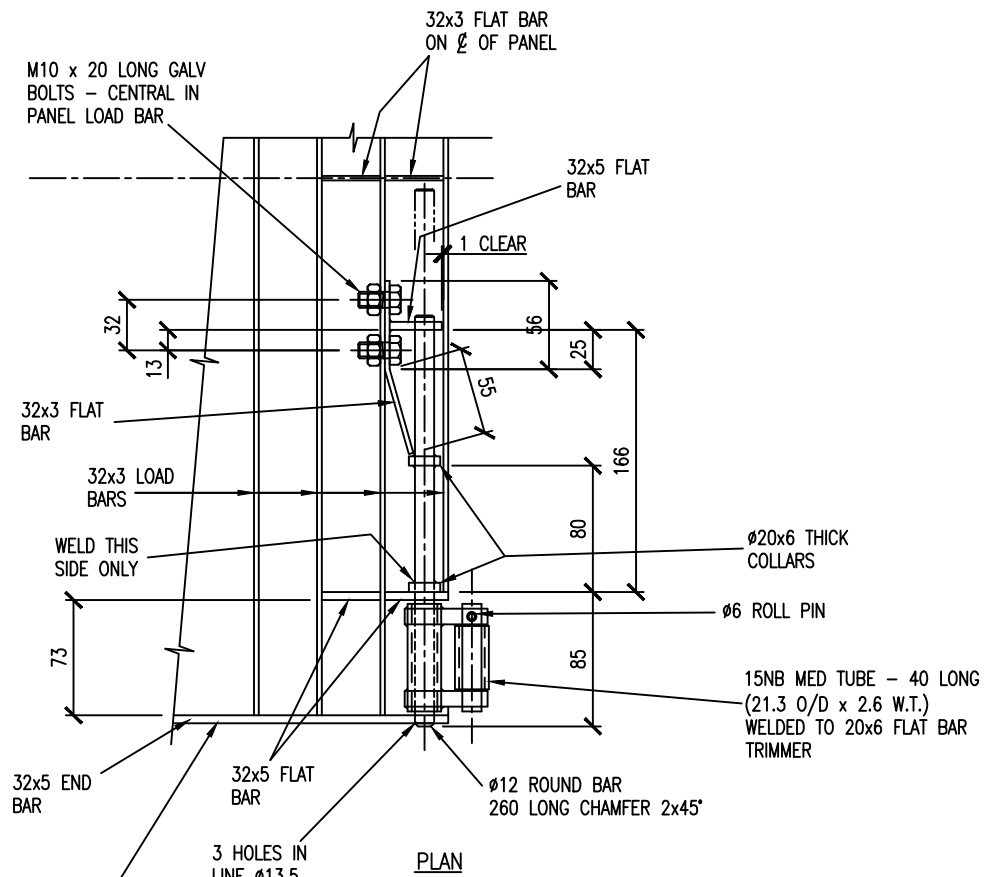
DESIGNED	J. GRAHAM	09/11		
DES. CHECKED	P. GOWANS			
DRAWN	N. SMITH	09/11		
DWG. CHECKED	J. GRAHAM	09/11		
PROJECT LEADER				
INFRAS'T'R APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09-11	APPROVED FOR ISSUE	G.S.	J.G.

OPERATIONS	
INFRASTRUCTURE	

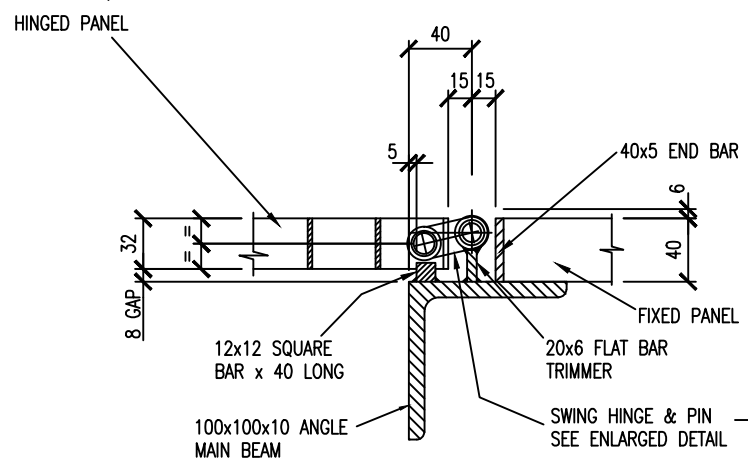


WASTEWATER TRANSMISSION STANDARD - CIRCULAR MANHOLES FOR LINES 375 N.B. TO 900 N.B. PLATFORM DETAILS FOR 2300 DIAMETER MANHOLE RISER

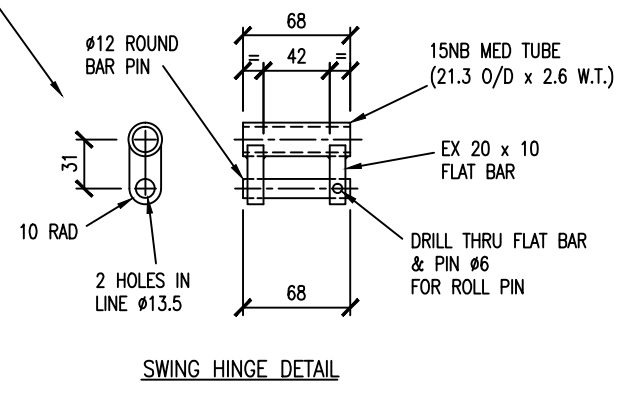
CAD FILE	2000244.033	DATE	01/09/11
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.		ISSUE	
DWG No.	2000244.033		



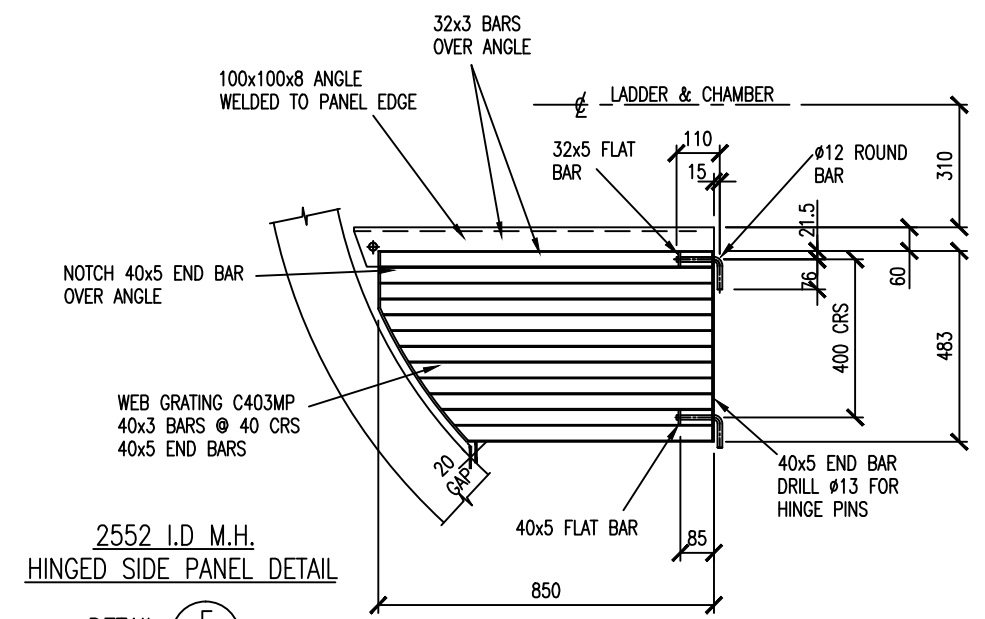
PLAN



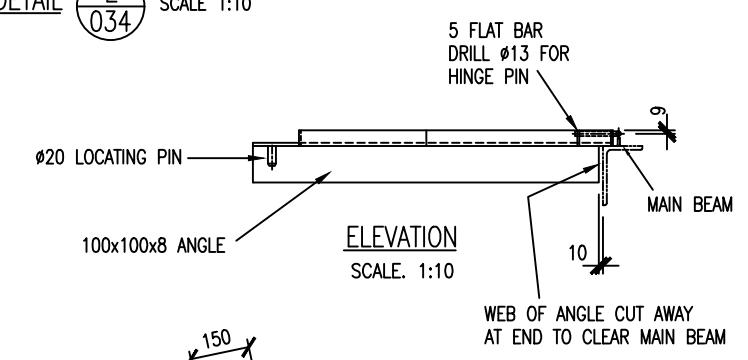
CENTRE PANEL HINGE DETAIL SECTION 1/034 SCALE: 1:5



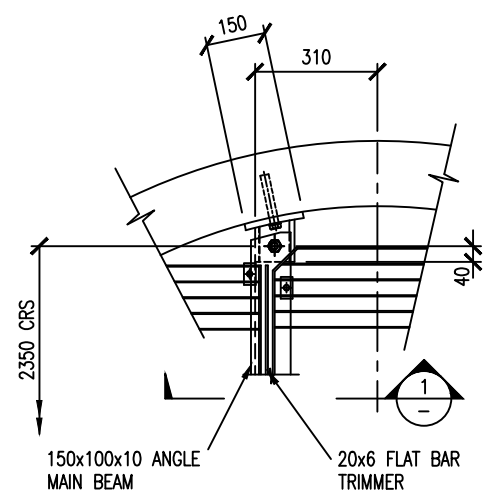
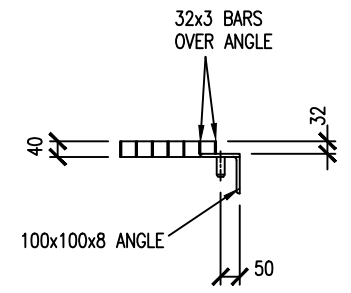
SWING HINGE DETAIL



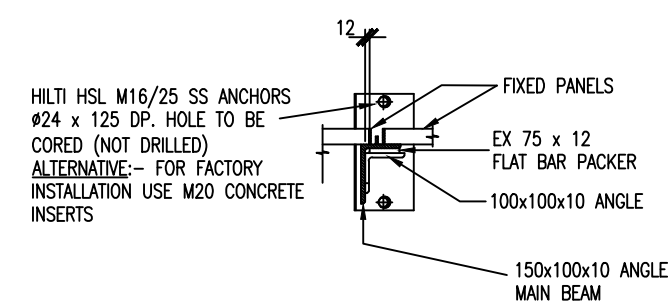
2552 I.D M.H. HINGED SIDE PANEL DETAIL DETAIL E/034 SCALE 1:10



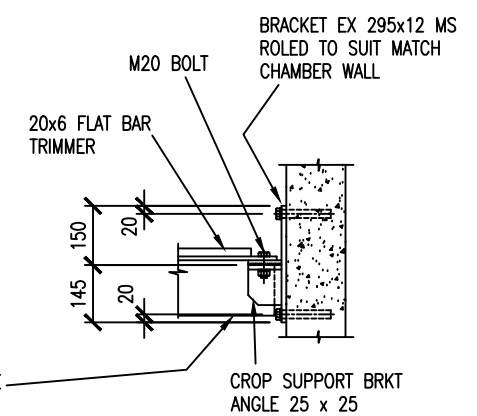
ELEVATION SCALE: 1:10



DETAIL F/034



SECTION 1/034



SECTION ON C OF BRACKET

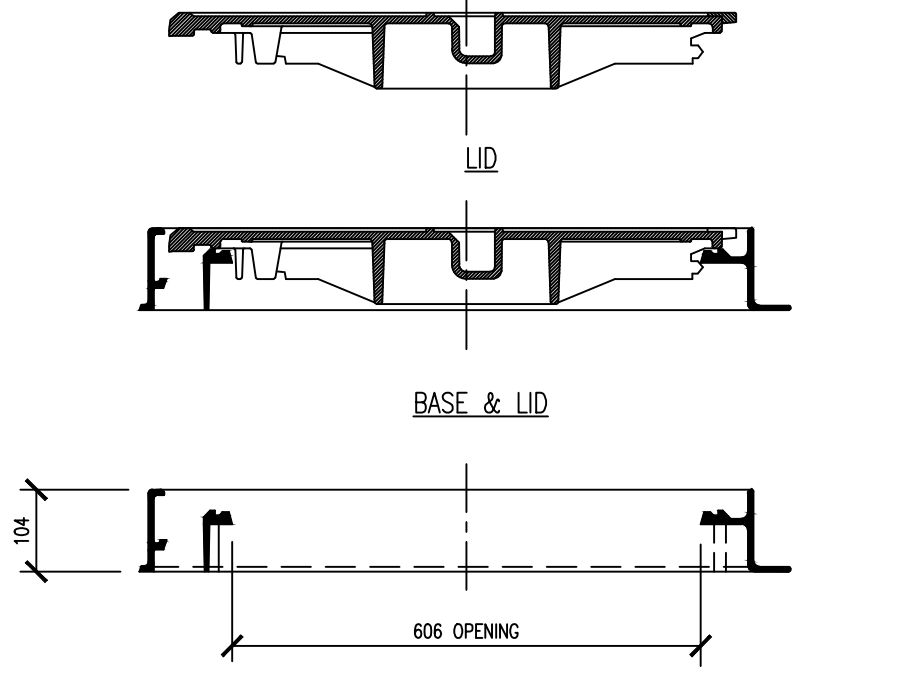
DESIGNED	J. GRAHAM	09/11		
DES. CHECKED	P. GOWANS			
DRAWN	N. SMITH	09/11		
DWG. CHECKED	J. GRAHAM	09/11		
PROJECT LEADER				
INFRASTR'R APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09-11	APPROVED FOR ISSUE	G.S.	J.G.

OPERATIONS

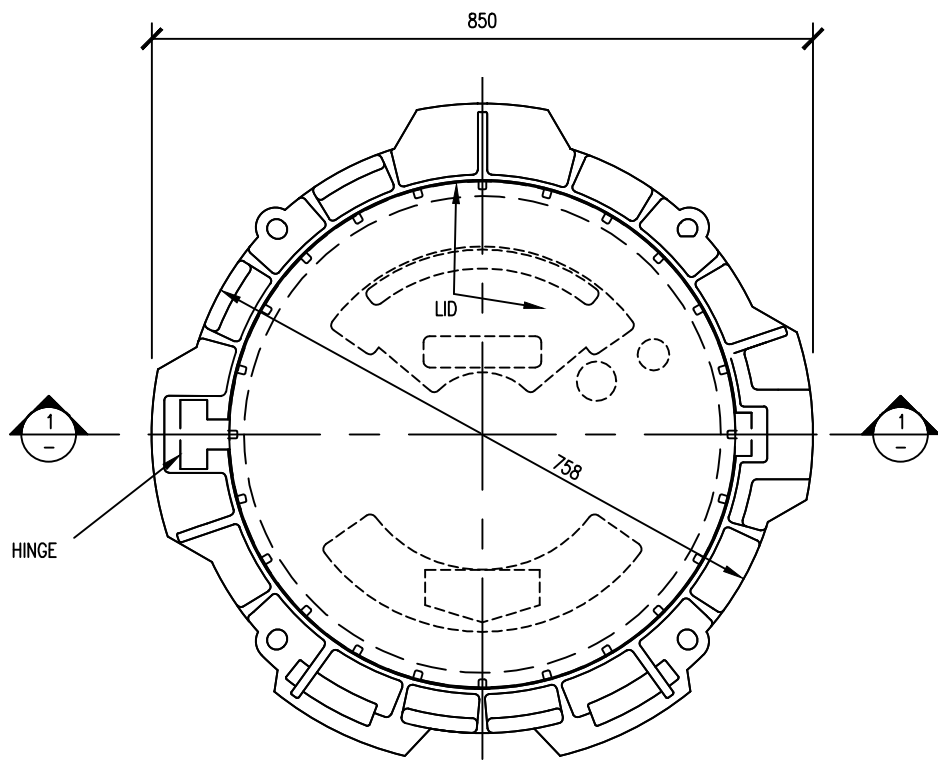
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WASTEWATER TRANSMISSION STANDARD - CIRCULAR MANHOLES FOR LINES 375 N.B. TO 900 N.B. PLATFORM DETAILS FOR 2550 DIAMETER MANHOLE RISER

CAD FILE	2000244.035	DATE	01/09/11
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.		ISSUE	
DWG No.	2000244.035		

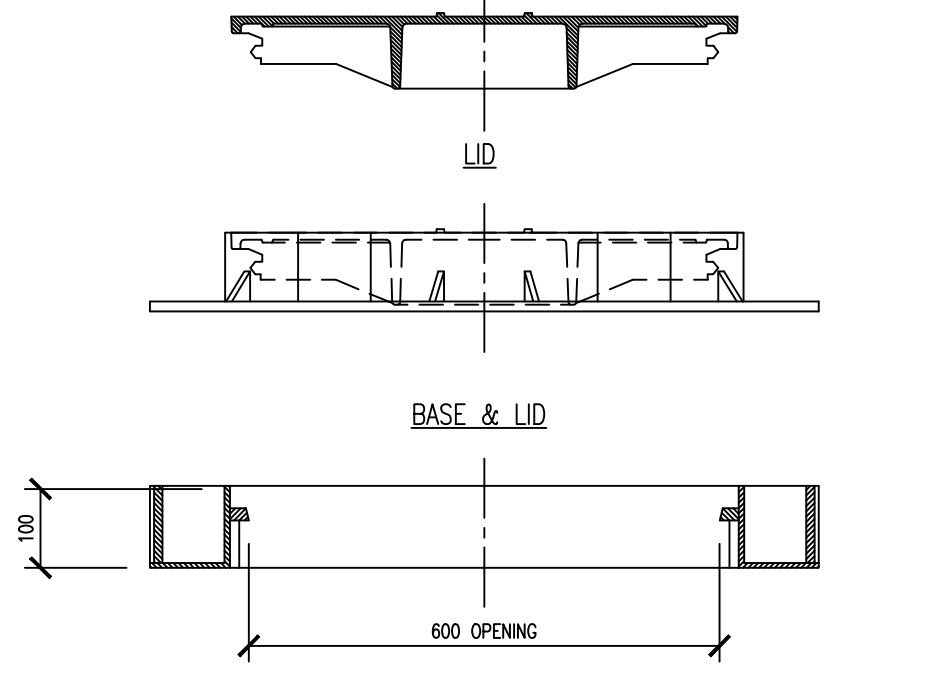


BASE - SECTION 1-1

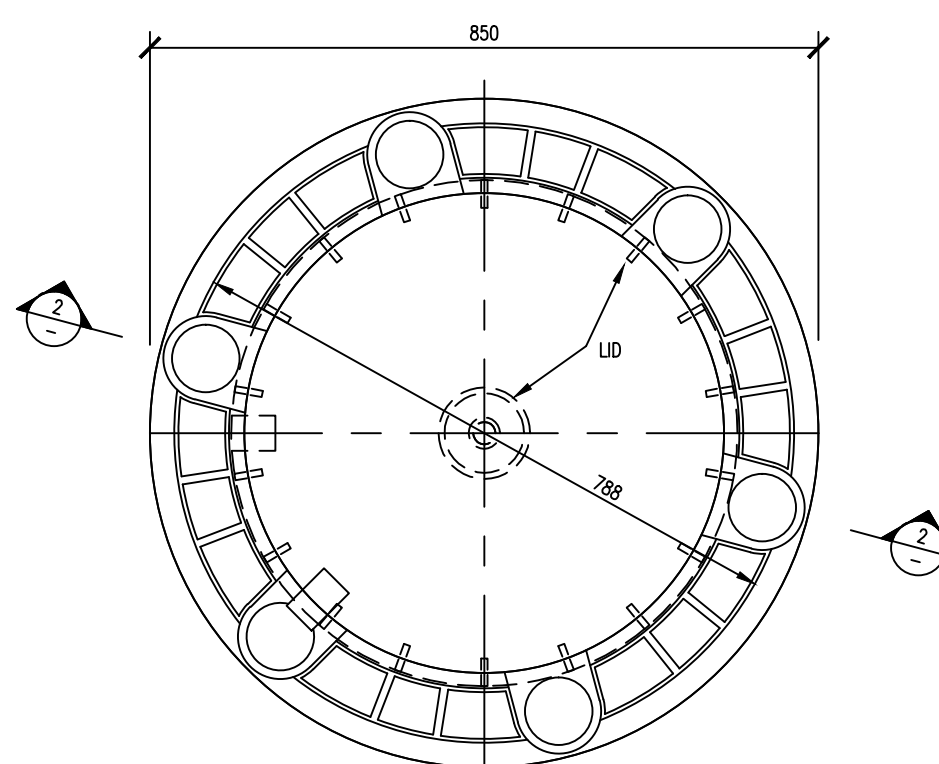


PLAN ON 606mm DIA. FRAME OPENING
SCALE 1:5

KORUM D400 STANDARD APPLICATION
(REFER NOTE No.3)



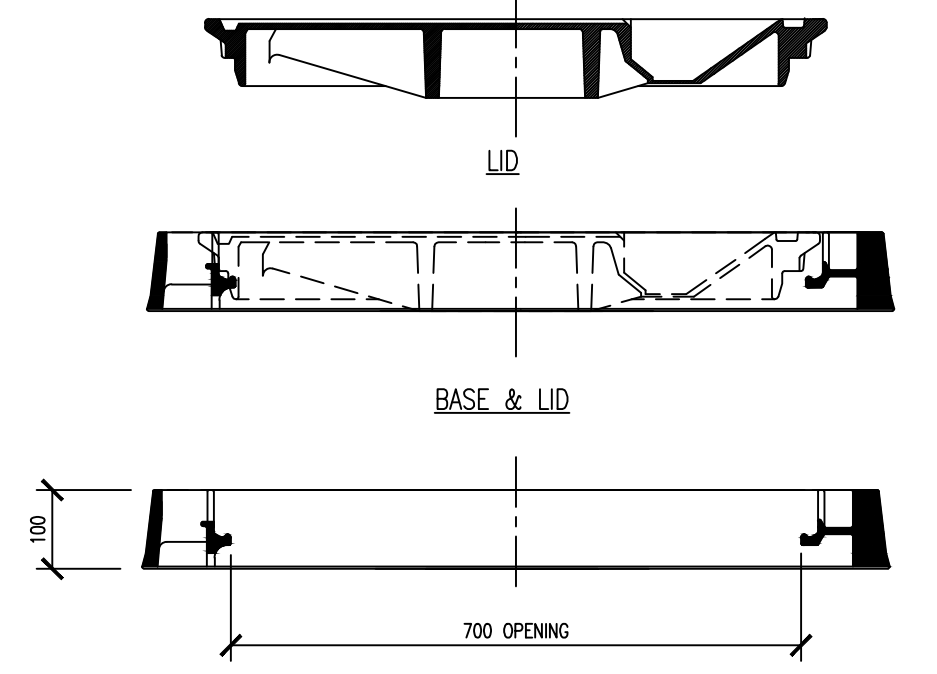
BASE - SECTION 2-2



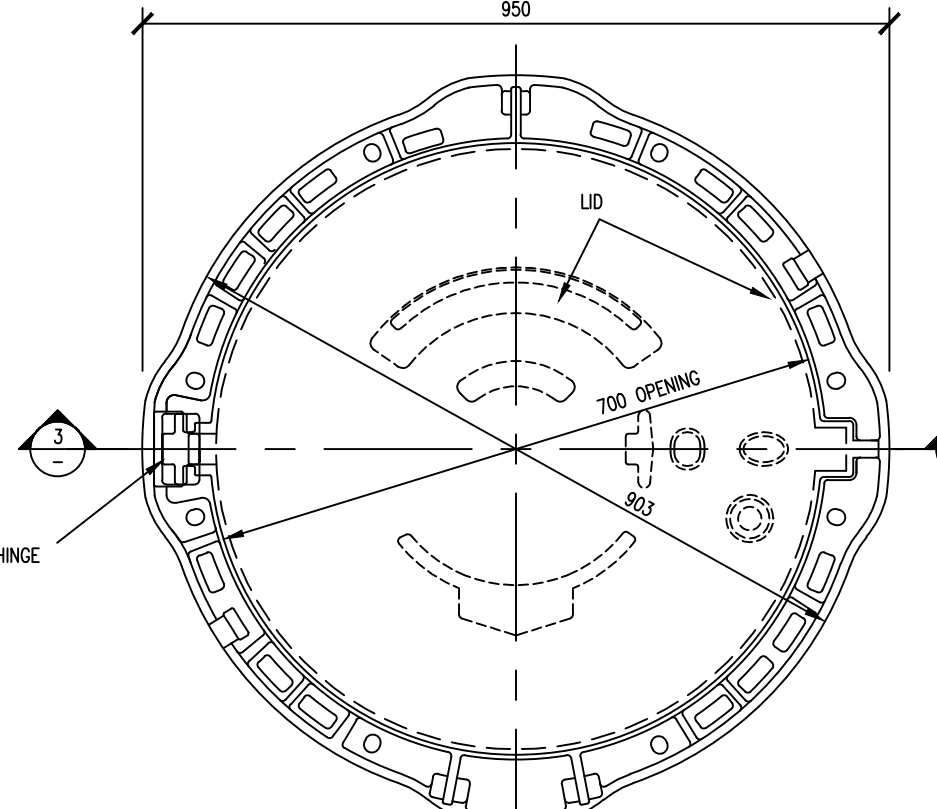
PLAN ON 600mm DIA. FRAME OPENING
SCALE 1:5

PAMTIGHT
(REFER NOTE No.3)

LOCATIONS WHERE SURCHARGE PREVENTION OR AIRTIGHT/SECURE SEAL IS REQUIRED



BASE - SECTION 3-3



PLAN ON 700mm DIA. FRAME OPENING
SCALE 1:5

PAMREX
(REFER NOTE No.3)

LOCATIONS WHERE LARGER OPENING IS REQUIRED

- NOTES**
- REFER 2000244.043 FOR MANHOLE LADDER, FRAME AND HINGE POSITIONS AND REQUIREMENTS
 - REFER 2000244.044 FOR MANHOLE LID RAISING DETAILS
 - D400 REFERS TO INTENSE TRAFFIC CARRIAGEWAY LOADING

ISSUE	DATE	AMENDMENT	BY	APPD.
-	04-12	APPROVED FOR ISSUE	I.M.	C.H.
2	02-12	PRELIMINARY FOR ENGINEERS APPROVAL	I.M.	

DESIGNED	SAINT GOBAIN
DES. CHECKED	
DRAWN	I.M. 02-12
DWG. CHECKED	
PROJECT LEADER	A.McG. 04-12
INFRASTR'R APP'D	

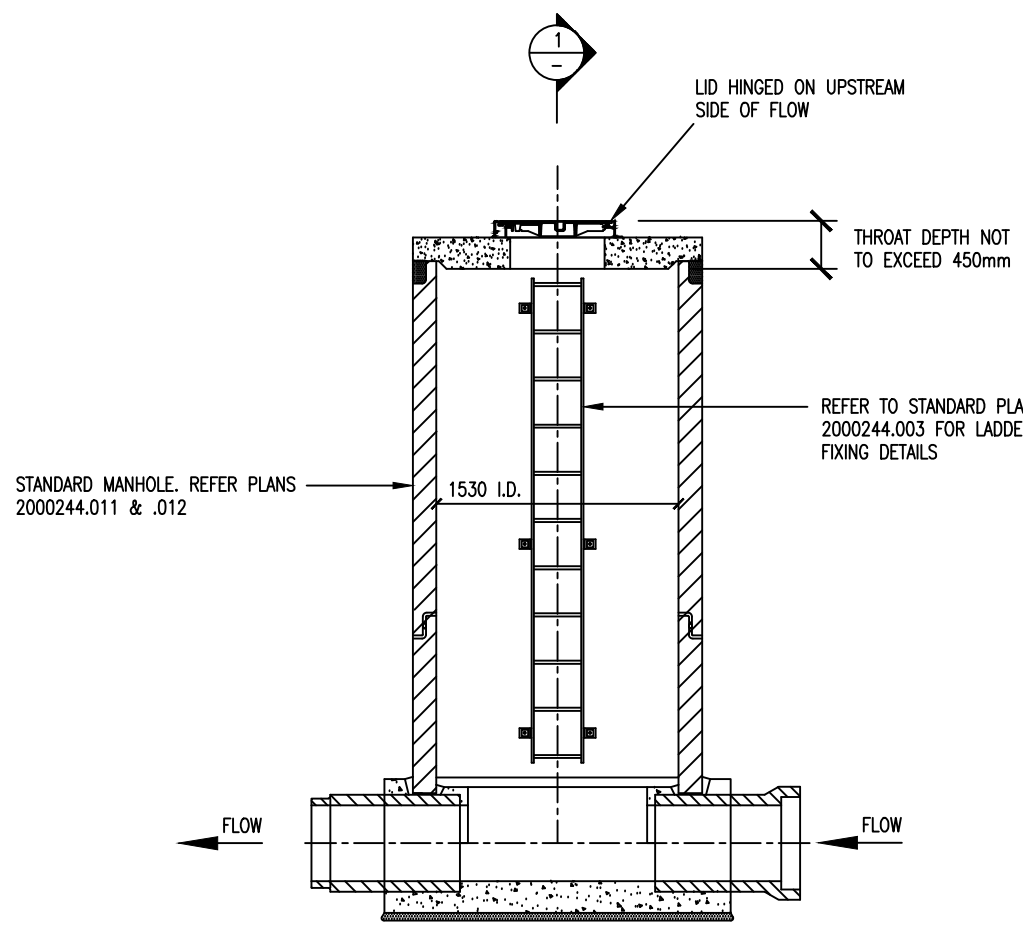
C. HARBOUR OPERATIONS

WATER CARE services limited

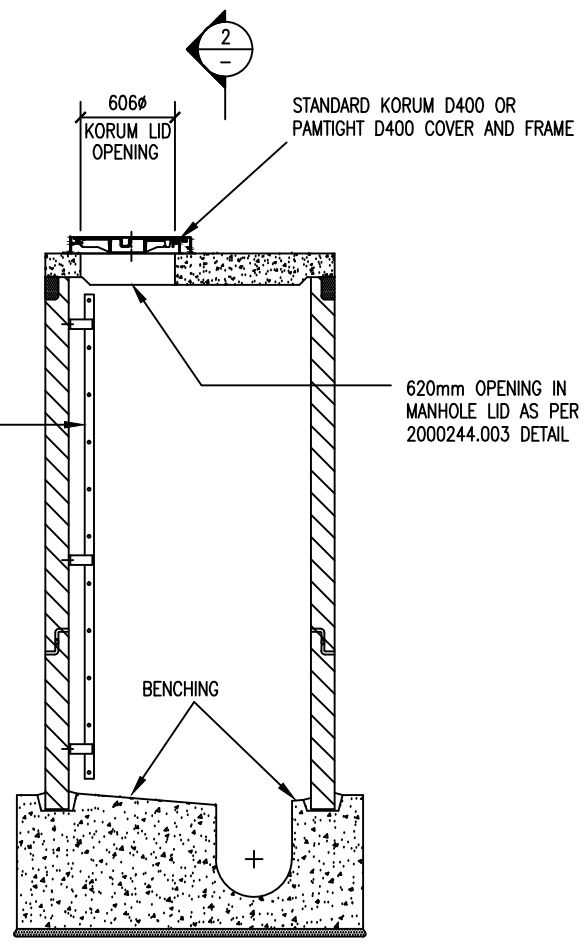
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WASTEWATER TRANSMISSION MANHOLE STANDARDS
SAINT GOBAIN HINGED ACCESS COVERS AND FRAMES
DETAILS FOR KORUM, PAMTIGHT AND PAMREX MODELS

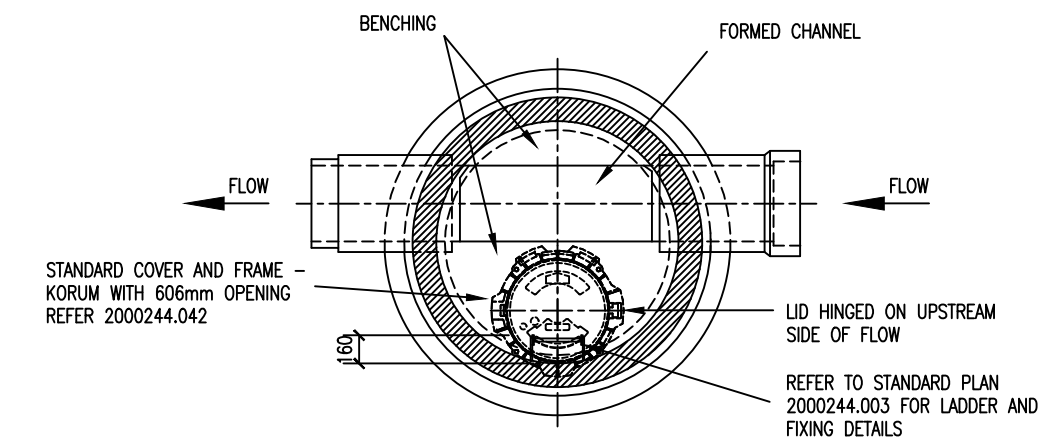
CAD FILE	2000244.042	DATE	30-04-2012
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.		ISSUE	
DWG No.	2000244.042		



SECTION 2
SCALE: 1:5



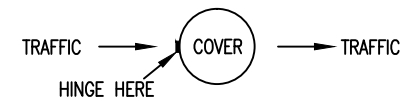
SECTION 1
SCALE: 1:5



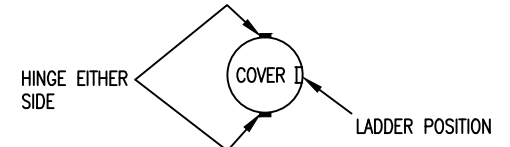
PLAN ON 606mm DIA. FRAME OPENING
SCALE 1:5

SPECIAL NOTES

1. UNLESS OTHERWISE SPECIFIED, STANDARD COVER IS THE KORUM WITH 606mm OPENING – REFER DWG. 2000244.042
2. FOR DEEPER MANHOLES (WITH LANDINGS) THE COVER IS THE PAMREX WITH 700mm OPENING – REFER DWG. 2000244.042
3. LADDER POSITION IS DICTATED BY THE BENCHING AREA AND IS TO BE INSTALLED SO THAT THE ENTRANT STEPS ON TO THE BENCHING. THE LADDER IS TO BE INSTALLED AS PER THE DETAILS SHOWN ON DWG. 2000244.013 WITH THE TOP RUNG AS CLOSE TO THE OPENING AS PRACTICABLE AND NO MORE THAN 450mm. ENSURE THAT THE MANHOLE OPENING IN THE CONCRETE LID IS APPROX. 200mm FROM THE CHAMBER WALL SO THAT THE LADDER POSITION DOES NOT REDUCE THE ENTRY OPENING.
4. MANHOLE COVERS IN ROAD SHOULD BE CONSTRUCTED SO THAT THE HINGE IS FACING THE ONCOMING TRAFFIC REGARDLESS OF LADDER POSITIONING.



5. FOR ALL OTHER COVERS THE ORIENTATION SHOULD BE SO THAT THE COVER HINGE IS AT 90° FROM THE LADDER (EITHER SIDE)



6. ALL FRAMES TO BE FITTED WITH SAFETY GRILLES
7. ANTI-INTRUSION LOCKS MAY BE SPECIFIED BY THE ENGINEER IN SOME CIRCUMSTANCES
8. THE FITTING OF 'WATERCARE TRANSMISSION' IDENTIFICATION TAGS MAY BE SPECIFIED BY THE ENGINEER.
9. NOTE: CLASS D400 REFERS TO INTENSE TRAFFIC CARRIAGEWAY LOADING

NOTES

1. REFER 2000244.044 FOR MANHOLE LID RAISING DETAILS

ISSUE	DATE	AMENDMENT	BY	APPD.
A	04-13	MANHOLE OPENING IN LID NOW 200MM FROM CHAMBER WALL	I.M.	C.H.
-	04-12	APPROVED FOR ISSUE	I.M.	C.H.
2	04-12	PRELIMINARY FOR ENGINEERS APPROVAL	I.M.	

DESIGNED	SAINT GOBAIN
DES. CHECKED	
DRAWN	I. M.
DWG. CHECKED	
PROJECT LEADER	A. McG.
INFRASTR'R APP'D	

C. HARBOUR OPERATIONS

WATERCARE TRANSMISSION

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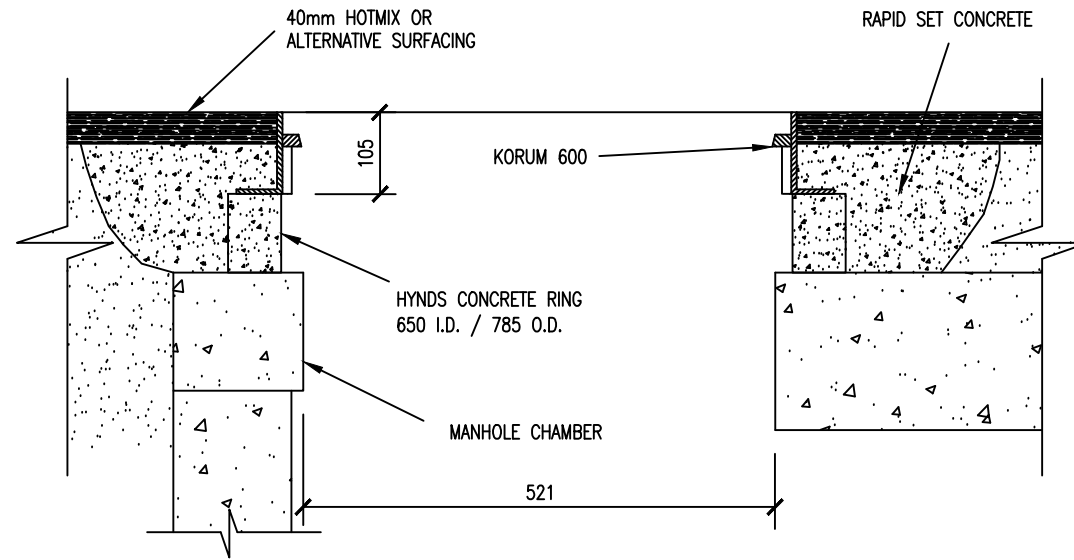
WASTEWATER TRANSMISSION MANHOLE STANDARDS
 SAINT GOBAIN DUCTILE IRON FRAMES AND LIDS
 LID ORIENTATION, LADDER POSITION AND LAYOUT DETAILS

CAD FILE	2000244.043A	DATE	12-04-13
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.		ISSUE	
DWG No.	2000244.043		A

SAINT
GOBAIN
DUCTILE IRON

KORUM

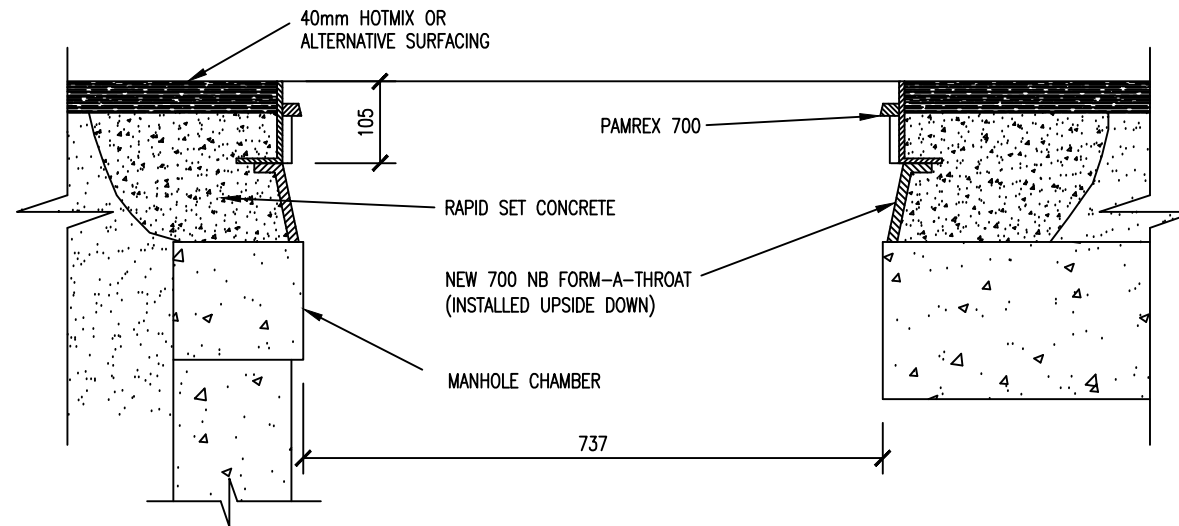
600mm
WITH CONCRETE ADJUSTMENT RING FROM
HYNDS - NOTE MINIMUM 50mm RING
NEEDED WITH KORUM TO ACHIEVE SAME
LID LEVEL



SAINT
GOBAIN
DUCTILE IRON

PAMREX

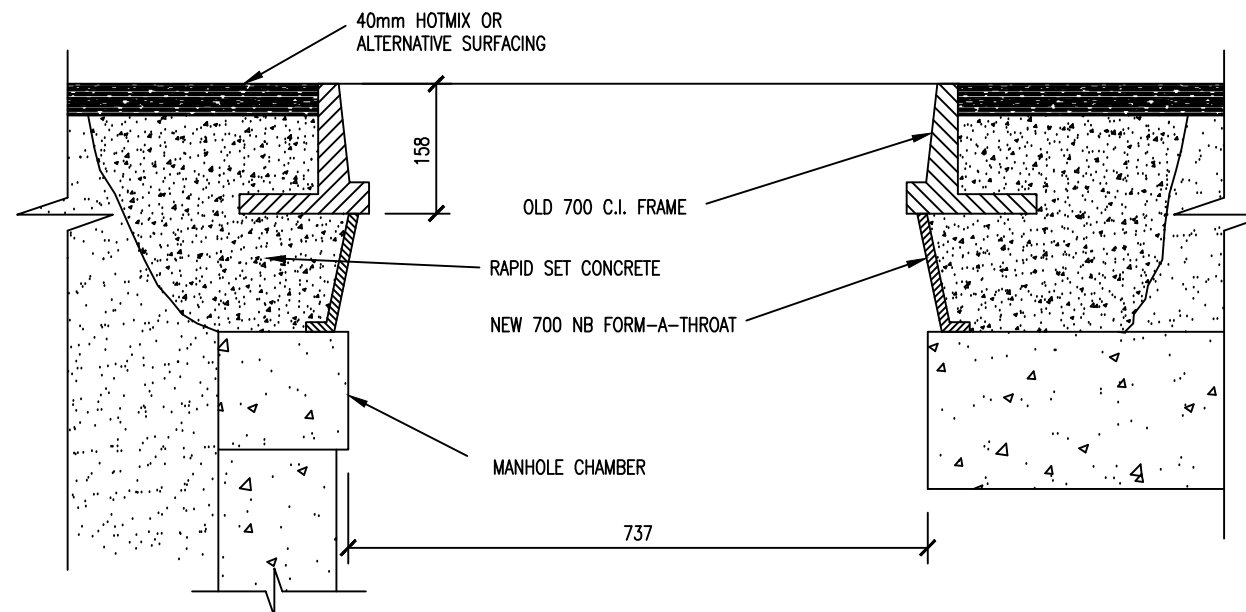
WITH NEW SIZE FORM-A-THROAT



STANDARD FOR RETRO-FITTING SAINT GOBAIN
COVERS & FRAMES IN ROAD OR OTHER HARD-PAVED AREAS
SCALE 1:10

AMD
CAST IRON

AMD 700 RING, 500 COVER WITH
NEW SIZE FORM-A-THROAT



ALTERNATIVE USE OF NEW SIZE FORM-A-THROAT
RAISING EXISTING MANHOLE LIDS
SCALE 1:10

DESIGNED	W.B.	02-12
DES. CHECKED		
DRAWN	I.M.	02-12
DWG. CHECKED		
PROJECT LEADER	A. McG	
INFRAS'T'R APP'D		
BY	APPD.	

C. HARBOUR
OPERATIONS

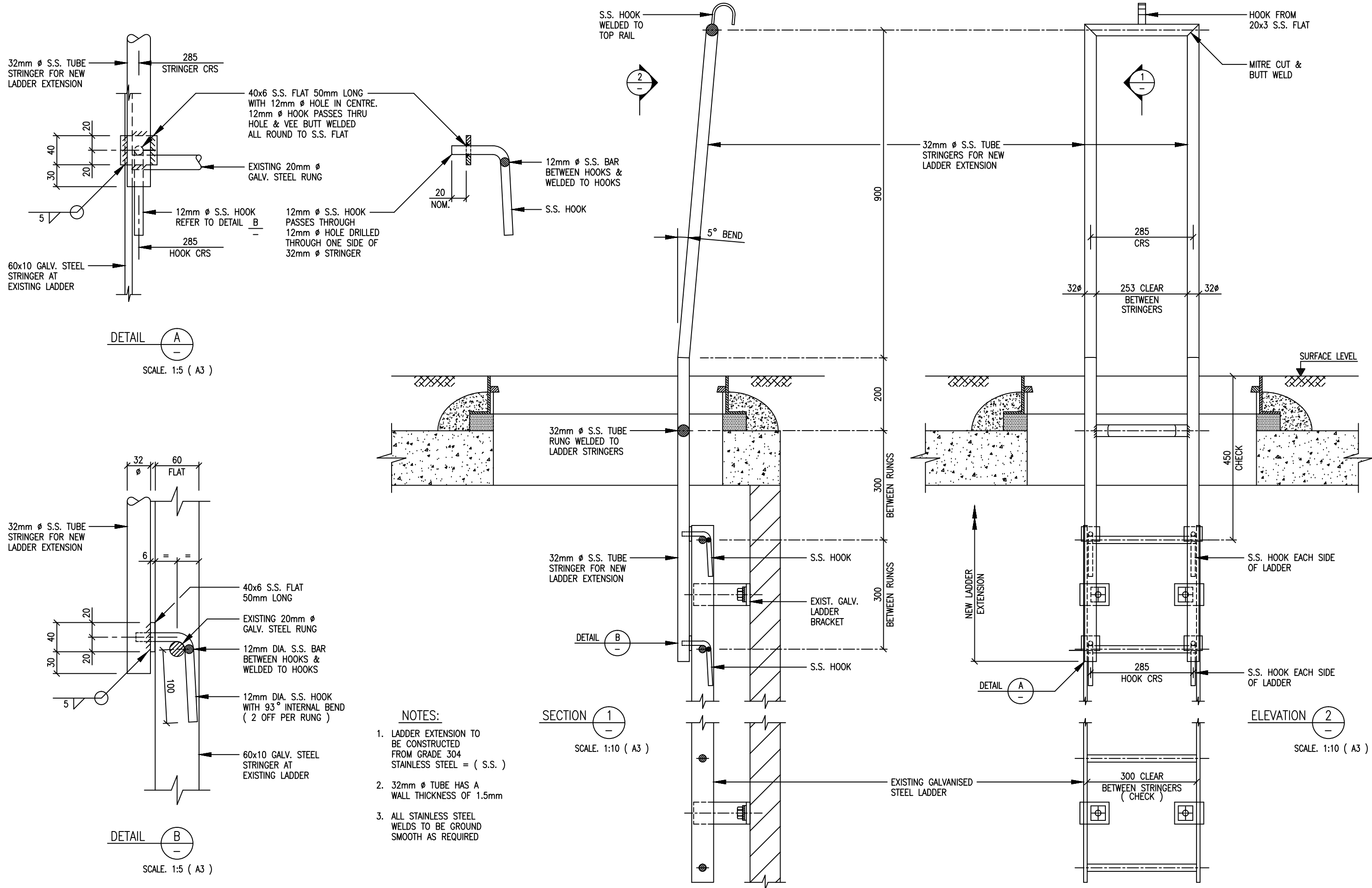


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WASTEWATER TRANSMISSION MANHOLE STANDARDS
MISCELLANEOUS DETAILS
MANHOLE LID AND FRAME RAISING DETAILS

CAD FILE	2000244.044	DATE	30-04-2012
ORIGINAL SCALE	A3	CONTRACT No.	-
AS SHOWN			
REF No.		ISSUE	
DWG No.	2000244 .044		-

ISSUE	DATE	AMENDMENT	BY	APPD.
-	04-12	APPROVED FOR ISSUE	I.M.	C.H.
2	04-12	PRELIMINARY FOR ENGINEERS APPROVAL	I.M.	



- NOTES:**
- LADDER EXTENSION TO BE CONSTRUCTED FROM GRADE 304 STAINLESS STEEL = (S.S.)
 - 32mm ϕ TUBE HAS A WALL THICKNESS OF 1.5mm
 - ALL STAINLESS STEEL WELDS TO BE GROUND SMOOTH AS REQUIRED

L:\-----\EGCAD\F\2013\WASTEWATER TRANSMISSION STANDARD\LADDER EXTENSION\2000244.046 .DWG

DESIGNED	A.Mc.	04-13
DES. CHECKED	C.H.	04-13
DRAWN	L.C.	04-13
DWG. CHECKED	I.M.	04-13
PROJECT LEADER	A.Mc.	04-13
INFRAS'T'R APP'D		

ISSUE	DATE	AMENDMENT	BY	APPD.

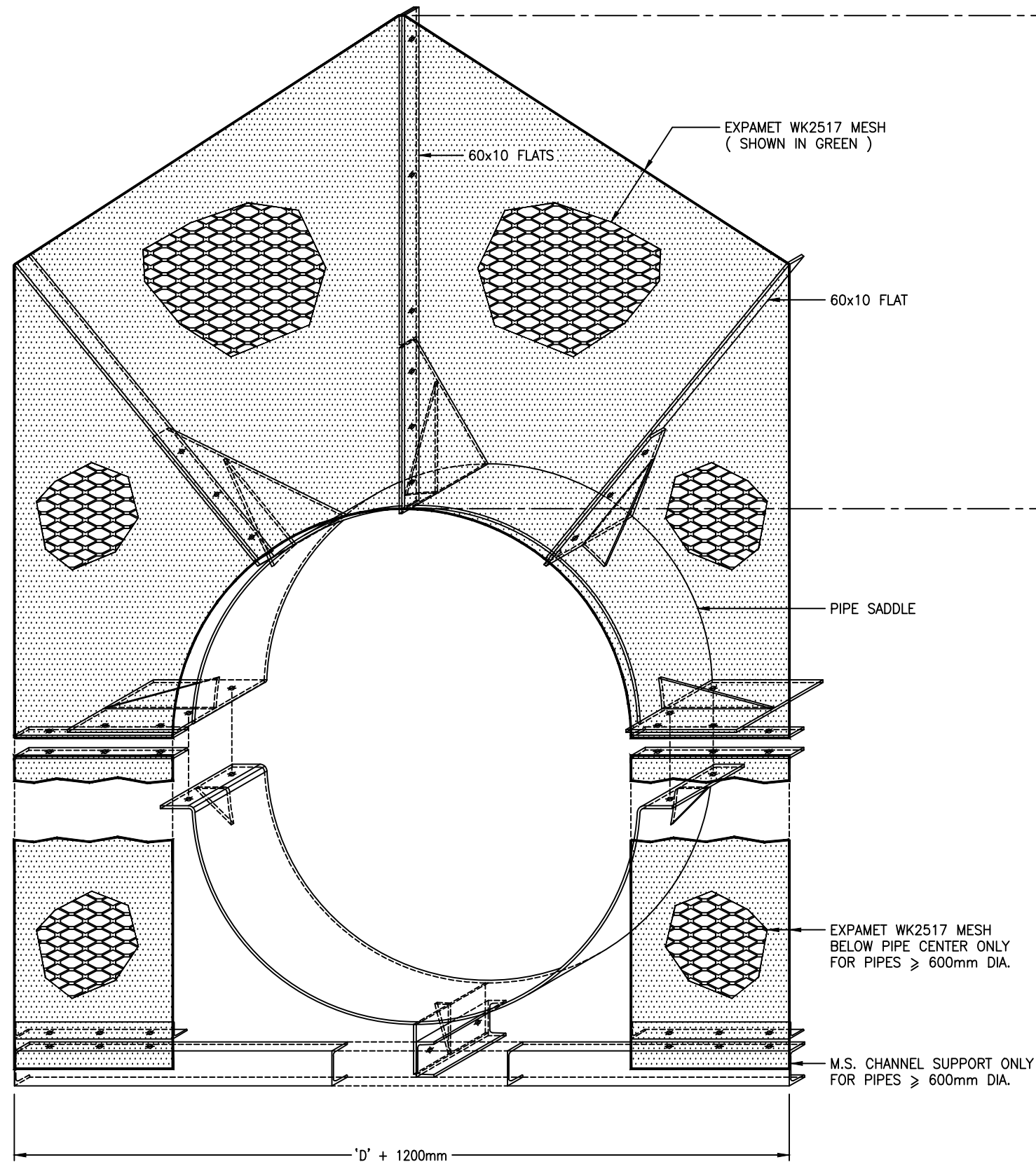
C. HARBOUR
OPERATIONS

WASTEWATER TRANSMISSION STANDARD
STAINLESS STEEL LADDER EXTENSION
ELEVATION , SECTION AND DETAILS

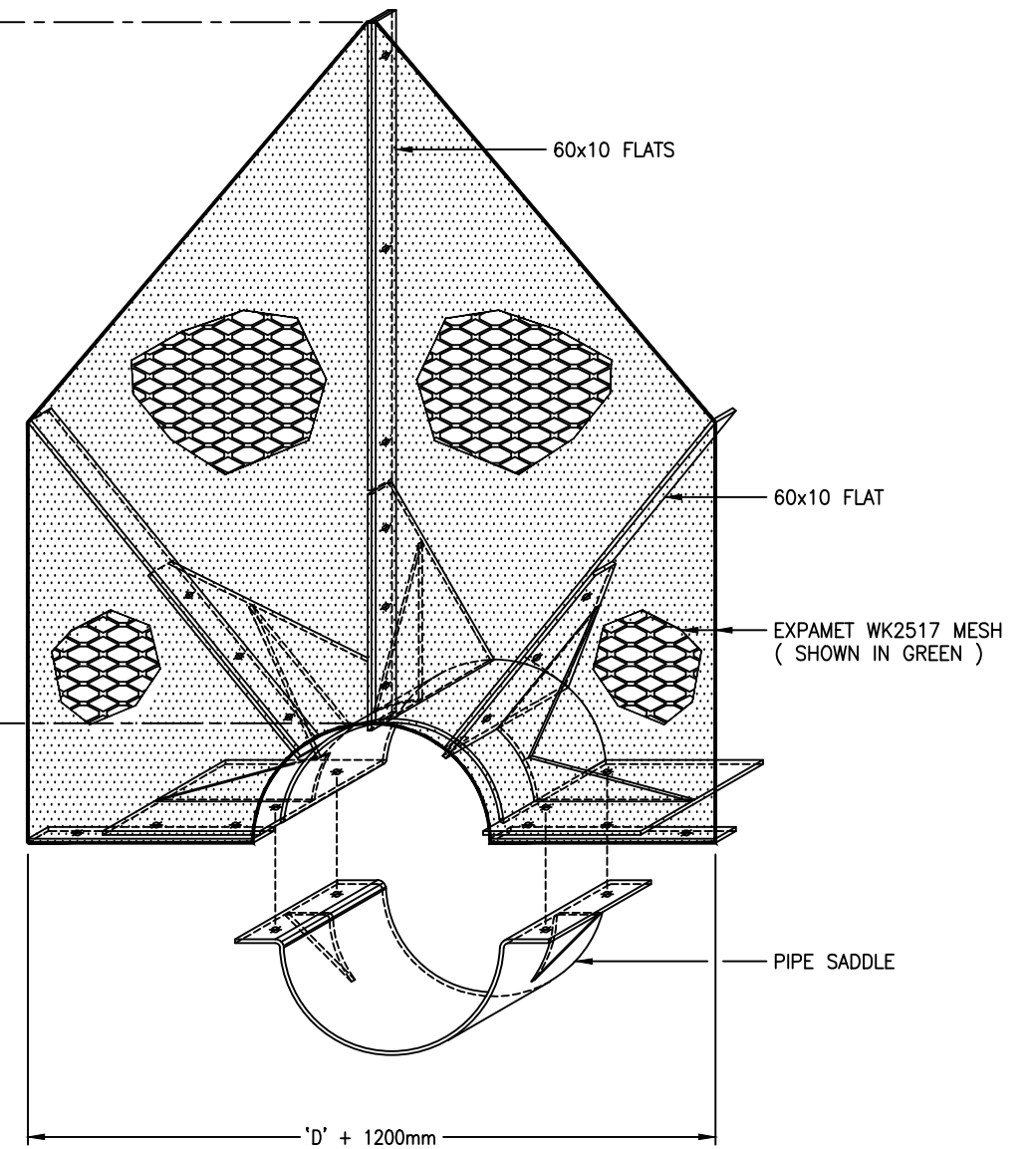
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CAD FILE	2000244.046	DATE	12-3-13
ORIGINAL SCALE	A3	CONTRACT No.	-
AS SHOWN			
REF No.	-	ISSUE	-
DWG No.	2000244 .046		

REF No.	-	ISSUE	-
DWG No.	2000244 .046		



DIAGRAMATIC VIEW OF PIPE SAFETY BARRIER
FOR WATERCARE PIPES ≥ 600mm DIA.
SCALE. 1:10 (A1) & NOT TO SCALE.



DIAGRAMATIC VIEW OF PIPE SAFETY BARRIER
FOR WATERCARE PIPES < 600mm DIA.
SCALE. 1:10 (A1) & NOT TO SCALE.

NOTES:-

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWINGS .002 & .003
2. 'D' = INSIDE DIAMETER OF PIPE SADDLE = (OVERALL DIA. OF PIPE + 5mm)

L:\ --- \ EGCADFI \ 2013 \ WATERCARE SAFETY BARRIER \ 2000244.047 .DWG

ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE
-	09-13	SAFETY BARRIERS - SHEET 1 OF 3	L.C.	A.M.		

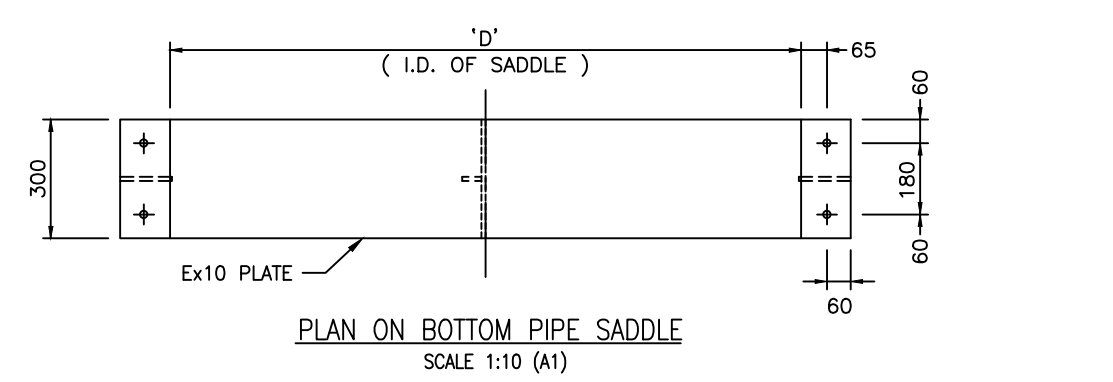
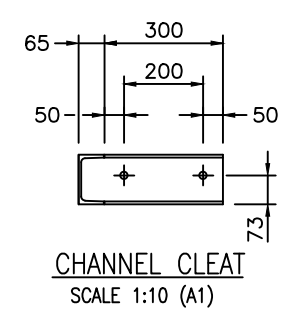
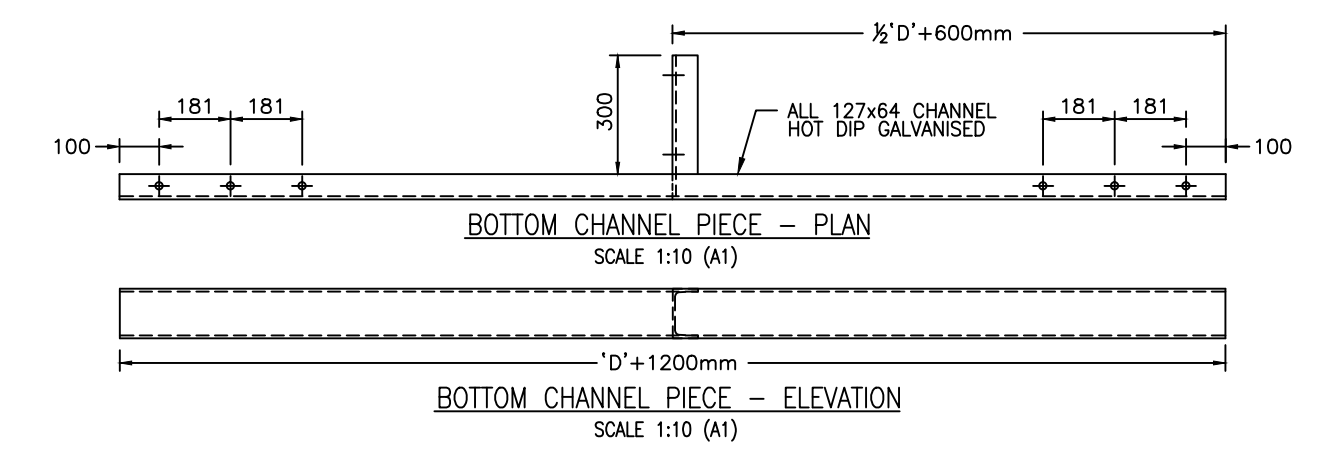
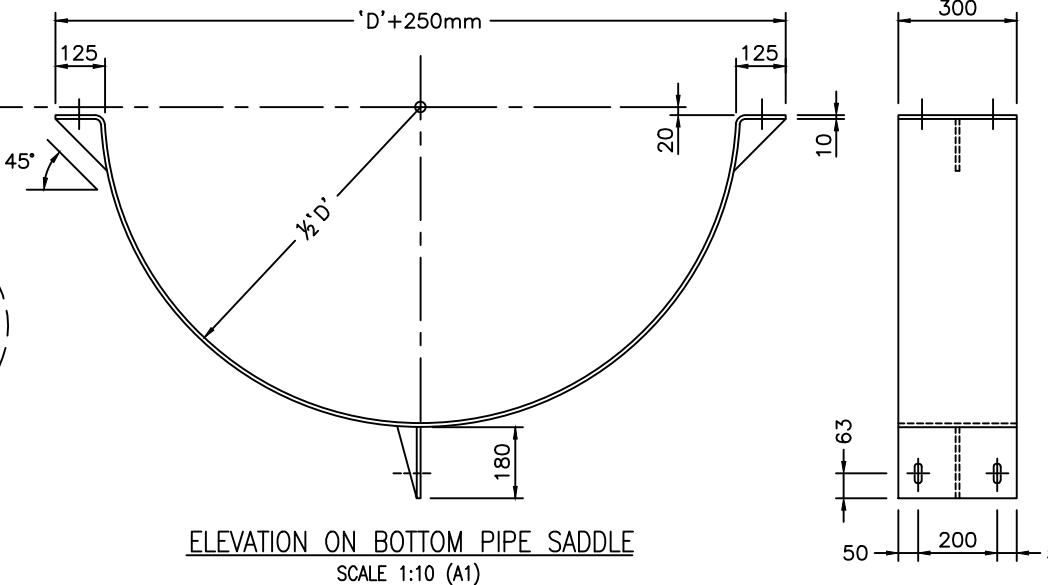
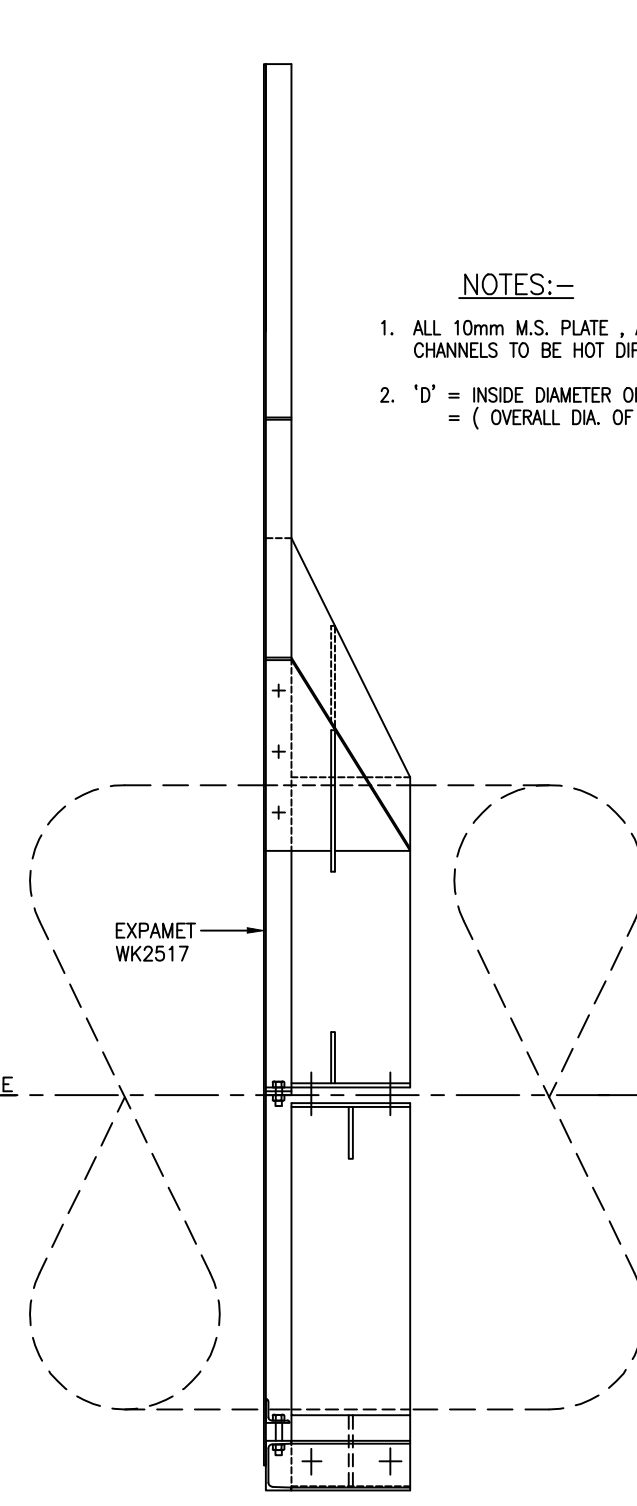
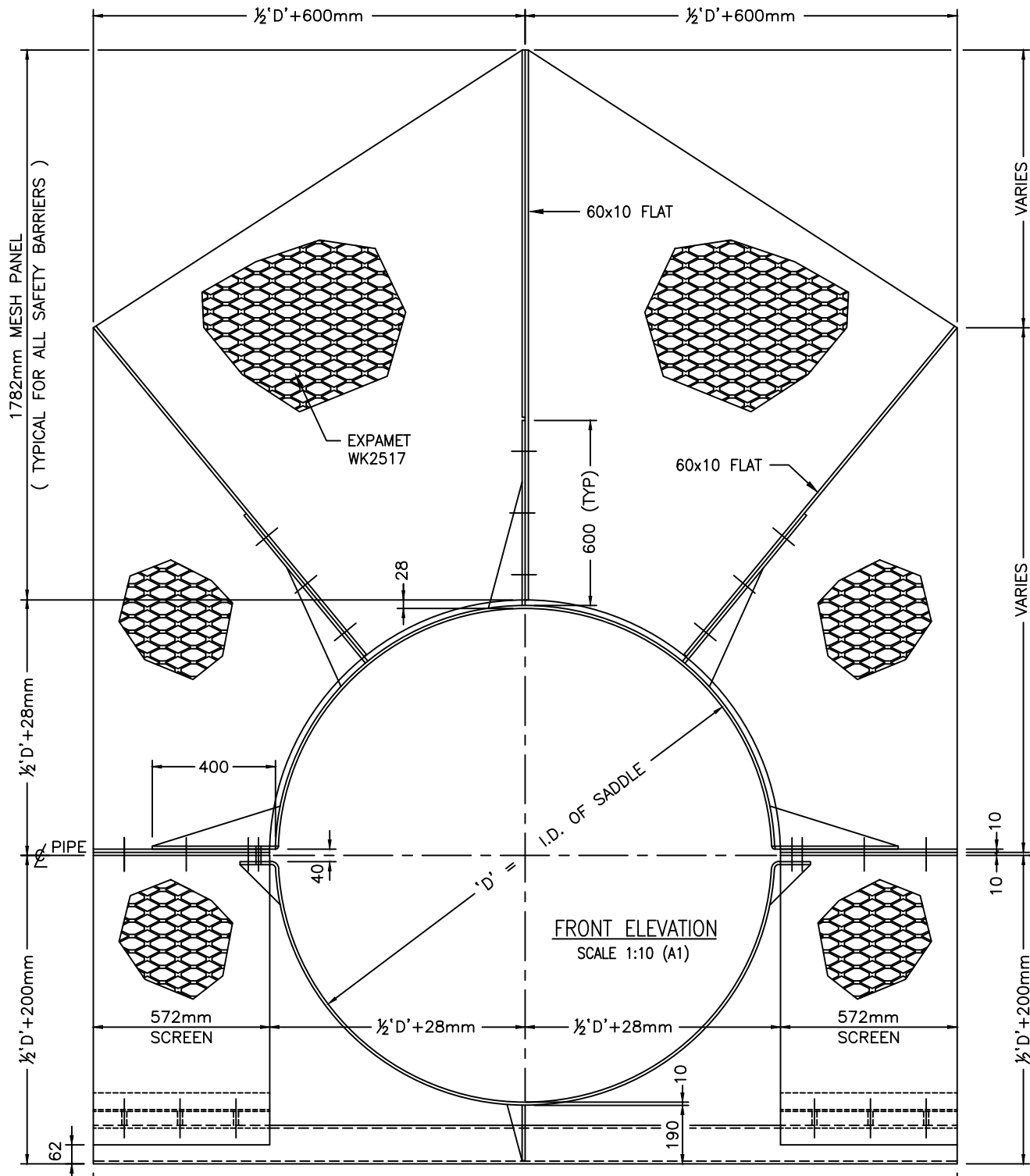
DESIGNED	DES. CHECKED	DRAWN	DWG. CHECKED	PROJECT LEADER	INFRASTR APP'D
		L.C.	I.M.	A.M.	

waterCare
services limited

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WATERCARE SERVICES STANDARD
PIPE BRIDGE SAFETY BARRIERS
DIAGRAMATIC VIEWS OF SAFETY BARRIERS - SHEET 1 OF 3

CAD FILE	DATE	ORIGINAL SCALE	CONTRACT No.	REF. No.	ISSUE
2000244.047	16-09-13	A1 AS SHOWN	-		
DWG. No.	2000244 .047				



NOTES:-

- ALL 10mm M.S. PLATE, ANGLES & CHANNELS TO BE HOT DIP GALVANISED
- 'D' = INSIDE DIAMETER OF PIPE SADDLE = (OVERALL DIA. OF PIPE + 5mm)

NOTES FOR PIPE BRIDGE SAFETY BARRIER

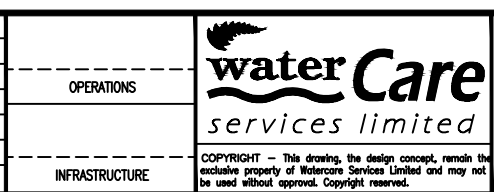
THE PRIMARY FUNCTION OF A PIPE BRIDGE SAFETY BARRIER IS TO PREVENT CHILDREN FROM CLIMBING ONTO THE PIPE AND THEN ACCIDENTLY FALLING OFF. BARRIERS ARE NOT INTENDED AS A SECURITY MEASURE FOR ADJOINING PRIVATE PROPERTY.

THE FOLLOWING IS A SET OF GUIDELINES :

- RELATIVELY SHORT PIPES (eg. CROSSING NARROW WATERCOURSES) MAY ONLY REQUIRE A SINGLE BARRIER AT MID-SPAN.
- LONGER PIPES (eg. CROSSING A RIVER , STREAM OR TIDAL AREA) WILL NORMALLY REQUIRE TWO BARRIERS , ONE AT EACH END.
- POSITION IS A SIGNIFICANT FACTOR IN THE EFFECTIVENESS OF THE BARRIER. BARRIER LOCATION WILL REQUIRE THE APPROVAL OF THE FACILITY OPERATOR.
- WHERE TWO BARRIERS ARE REQUIRED , EACH BARRIER SHOULD BE POSITIONED FAR ENOUGH OUT FROM THE END TO ACHIEVE SUCH A HEIGHT ABOVE GROUND FOR IT TO BE DIFFICULT FOR A YOUNG CHILD TO CLIMB ONTO THE PIPE BEHIND THE BARRIER. THEY SHOULD NOT BE POSITIONED TOO FAR OUT AS TO RESULT IN EXCESSIVE HEIGHT ABOVE GROUND , AND THEREFORE POSE A GREATER DANGER TO CHILDREN WHO MAY HAVE VENTURED ONTO THE PIPE IN FRONT OF THE BARRIER.
- THE BARRIERS ARE TO BE FABRICATED AND INSTALLED SUCH THAT THERE ARE NO FOOTHOLDS ON THE ACCESSIBLE (FRONT) SIDE OF THE BARRIER.
- THE BARRIER FIXTURES SHOULD BE BOTH INACCESSIBLE TO VANDALS , AND TAMPER-RESISTANT.

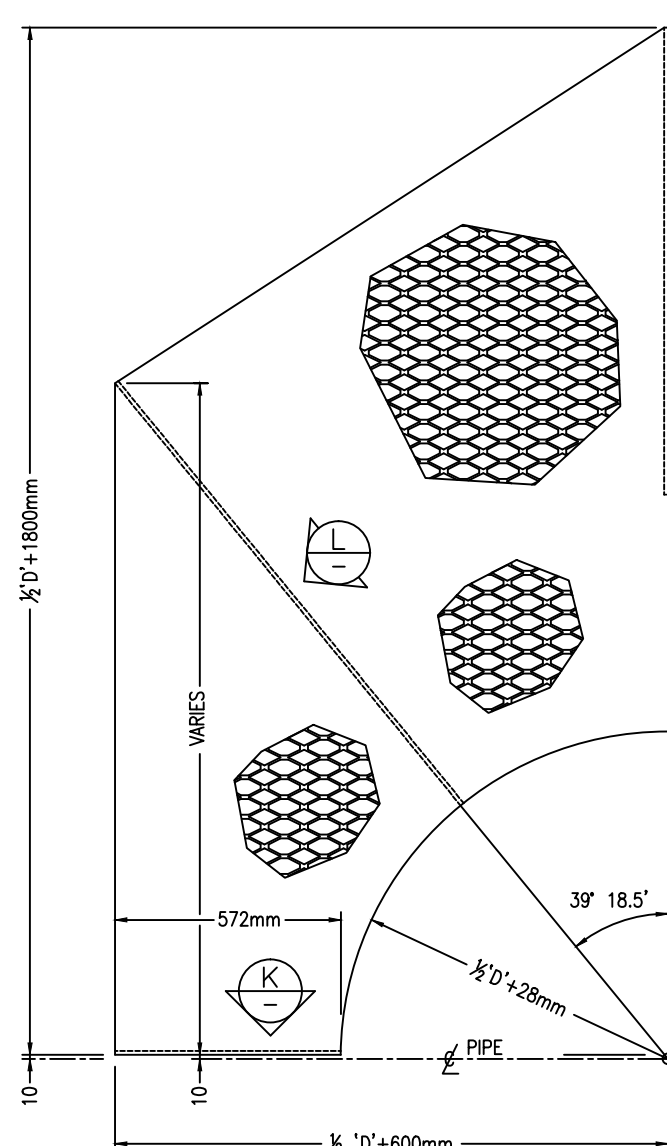
L:\ --- \ EGCADFI \ 2013 \ WATERCARE SAFETY BARRIER \ 2000244.048 .DWG

DESIGNED					
DES. CHECKED					
DRAWN	L.C.		09-13	OPERATIONS	
DWG. CHECKED	I.M.		09-13		
PROJ. LEADER	A.M.		09-13		
INFRASTR APP'D				INFRASTRUCTURE	
ISSUE	DATE	AMENDMENT	BY	APPD.	DATE
-	09-13	SAFETY BARRIERS - SHEET 2 OF 3	L.C.	A.M.	

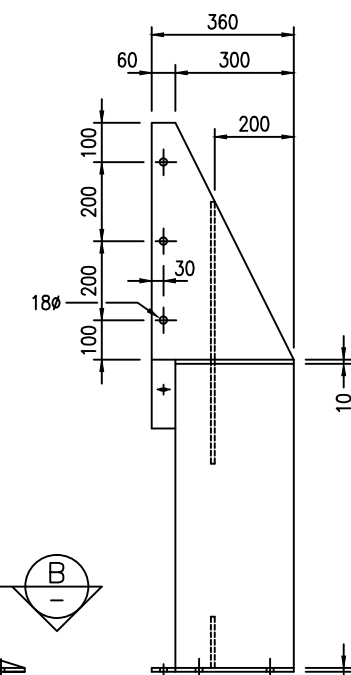
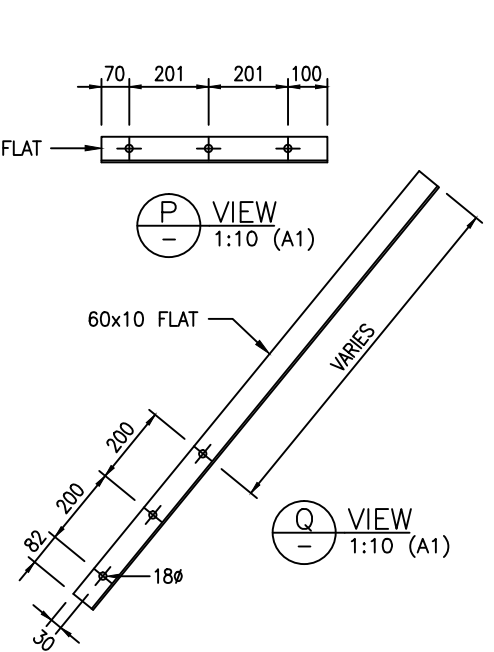
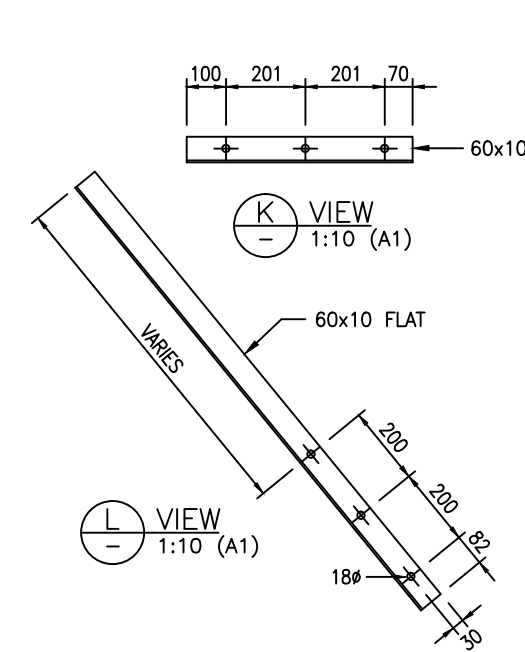
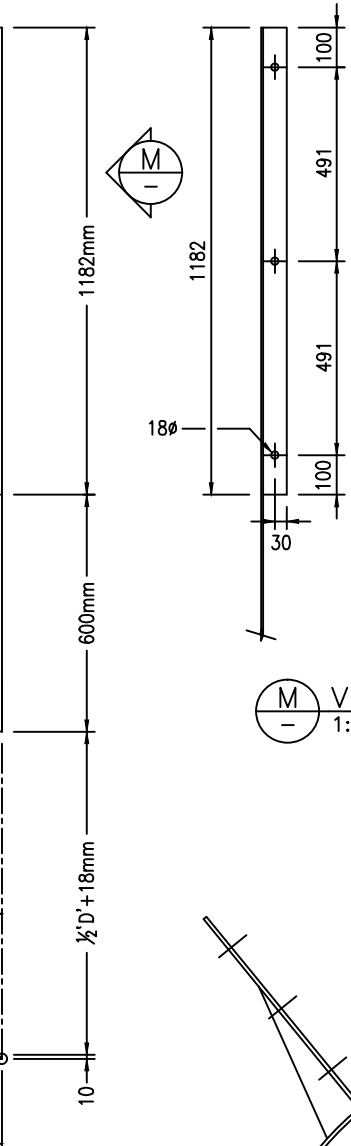


WATERCARE SERVICES STANARD
PIPE BRIDGE SAFETY BARRIERS
SAFETY BARRIER DETAILS - SHEET 2 OF 3

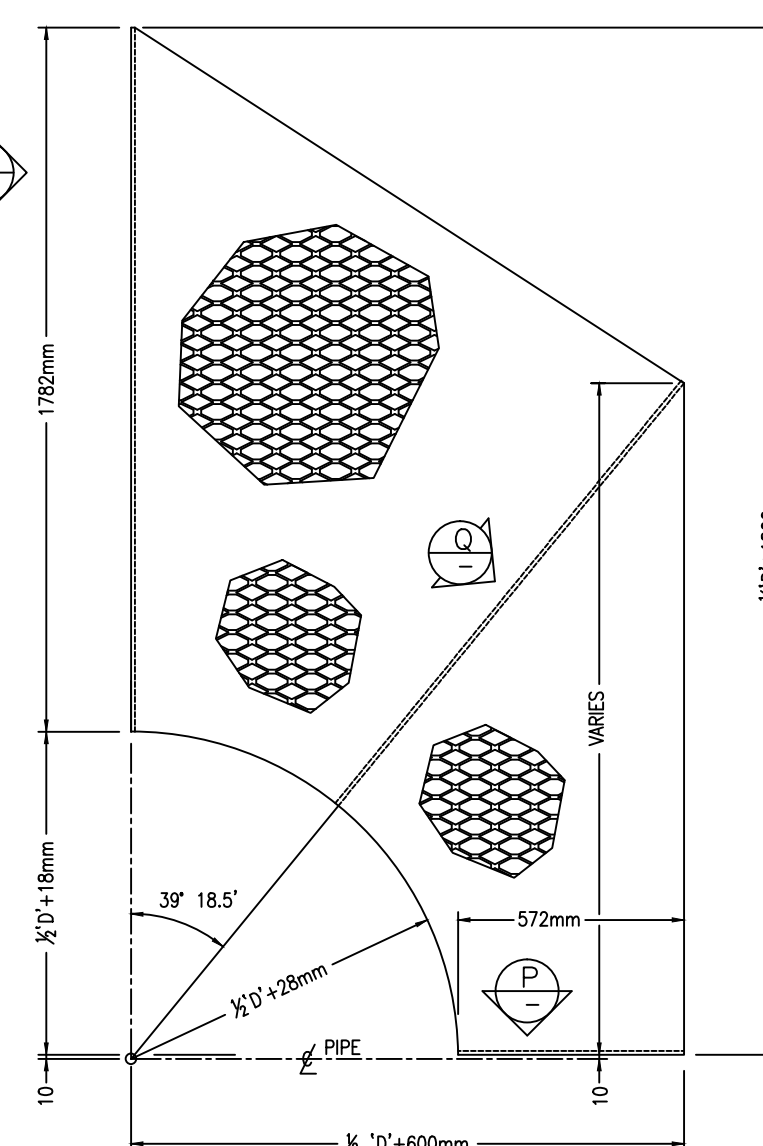
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ORIGINAL SCALE	A1	CONTRACT No.	-
AS SHOWN		ISSUE	
REF. No.		DWG. No.	2000244.048



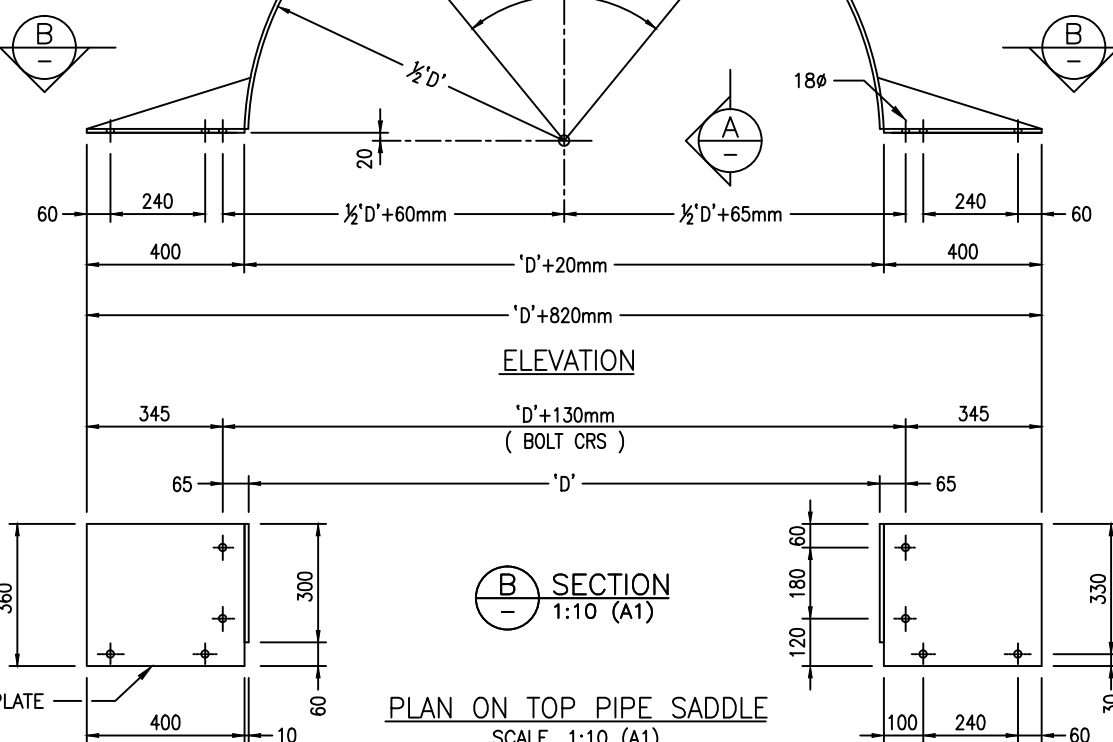
LEFT HAND SCREEN SECTION
HOT DIP GALVANISED FINISH



A SECTION
1:10 (A1)

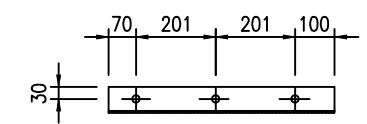


RIGHT HAND SCREEN SECTION
HOT DIP GALVANISED FINISH

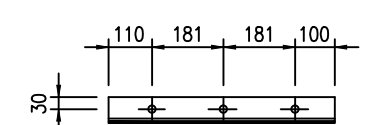


B SECTION
1:10 (A1)

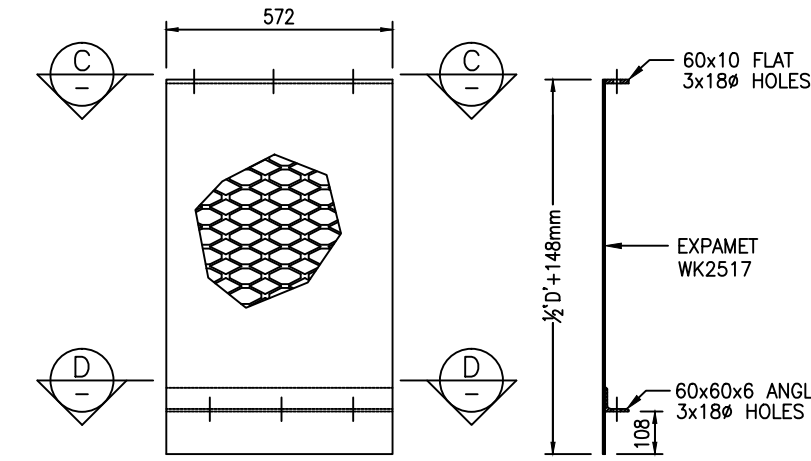
PLAN ON TOP PIPE SADDLE
SCALE: 1:10 (A1)



C SECTION
1:10 (A1)



D SECTION
1:10 (A1)



BOTTOM SCREEN SECTIONS
1 OFF AS SHOWN - 1 OFF OPP HAND
HOT DIP GALVANISED FINISH

- NOTES:-**
- ALL 10mm M.S. PLATE, ANGLES & CHANNELS TO BE HOT DIP GALVANISED
 - 'D' = INSIDE DIAMETER OF PIPE SADDLE
= (OVERALL DIA. OF PIPE + 5mm)

L:\ --- \ EGCADF1 \ 2013 \ WATERCARE SAFETY BARRIER \ 2000244.049 .DWG

DESIGNED					
DES. CHECKED					
DRAWN	L.C.	09-13			
DWG. CHECKED	I.M.	09-13			
PROJECT LEADER	A.M.	09-13			
INFRAS'TR APP'D					
ISSUE	DATE	AMENDMENT	BY	APPD.	DATE
-	09-13	SAFETY BARRIERS - SHEET 3 OF 3	L.C.	A.M.	

waterCare
services limited

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WATERCARE SERVICES STANDARD
PIPE BRIDGE SAFETY BARRIERS
SAFETY BARRIER DETAILS - SHEET 3 OF 3

CAD FILE	2000244.049	DATE	16-09-13
ORIGINAL SCALE	A1	CONTRACT No.	-
AS SHOWN			
REF. No.		ISSUE	
DWG. No.	2000244.049		

△ A

SCHEDULE OF COMPONENTS

ITEM		MATERIAL	DESCRIPTION	QUANTITY WITH STAYS	QUANTITY WITHOUT STAYS	MICROFILM No.
01		316 S/S	FRAME	01	01	2003160.003
02		ALUMINIUM 5251	COVER	01	01	2003160.004
03	HINGE	CAST AL.	HINGE BASE	02	02	2003160.005
04	HINGE	CAST AL.	HINGE	02	02	2003160.005
05	HINGE	BRASS	HINGE PIN	02	02	2003160.005
05A	HINGE	316 S/S	GRUB SCREW CONE POINT M6x10 LG.	04	04	2003160.005
06	HINGE	NYLON	HINGE PACKER	02	02	2003160.005
06A	HINGE	NYLON	HINGE PACKER	02	02	2003160.005
07	LOCK	PLASTIC	UPPER & LOWER CLAMP	04	04	2003160.006
08						
09						
10	LOCK	316 S/S	PUZZLE BOLT	02	02	2003160.006
11	STAY	316 S/S	COVER STAY MOUNT (AS DRAWN)	01		2003160.007
12	STAY	316 S/S	COVER STAY MOUNT (OPPOSITE HAND)	01		2003160.007
13	STAY	NYLON	COVER STAY PACKER	01		2003160.007
14	STAY	316 S/S	UPPER STAY ASSEMBLY	01		2003160.007
15	STAY	316 S/S	LOWER STAY	02		2003160.007
16	STAY	316 S/S	FRAME STAY MOUNT	02		2003160.007
17	STAY	NYLON	SLEEVE 10ØIDx16ØODx10 LG.	02		
18	STAY	NYLON	SLEEVE 10ØIDx16ØODx22 LG.	02		
19	STAY	NYLON	WASHER 10ØIDx25ØODx3	14		
20		316 S/S	COACH BOLT M8x25 LG	10	06	
21		316 S/S	COACH BOLT M8x30 LG	04	04	
22		316 S/S	HEX BOLT M10x25 LG	04	04	
23		316 S/S	HEX NUT M8	22	18	
24		316 S/S	HEX NUT M10	04	04	
25		316 S/S	HEX BOLT M8x20 LG	04	04	
26		316 S/S	PLAIN WASHER 8Ø	26	18	
27		316 S/S	PLAIN WASHER 10Ø	14	04	
28	HINGE	PTFE	HINGE BEARING	02	02	2003160.005
29	STAY	316 S/S	SPLIT PIN 3.0Øx20 LG	04		
30		316 S/S	CHEMSETS M12160	06	08 (REFER NOTE 5.)	
31		316 S/S	COUNTERSUNK SCREWS M8x25 LG	08	08	
32	STAY	316 S/S	NYLOC HEX NUT M10	02		
33	STAY	316 S/S	HEX BOLT M10x45 LG	02		
34	STAY	NYLON	WASHER 16ØIDx30ØOD x3	02		
35		316 S/S	FRAME JOINTING STRIP (NOTE 4.)	01		2003160.003
36		316 S/S	COUNTERSUNK SOCKET SCREWS M8x25 LG (REFER NOTE 4)		QUANTITY VARIES	

△ B

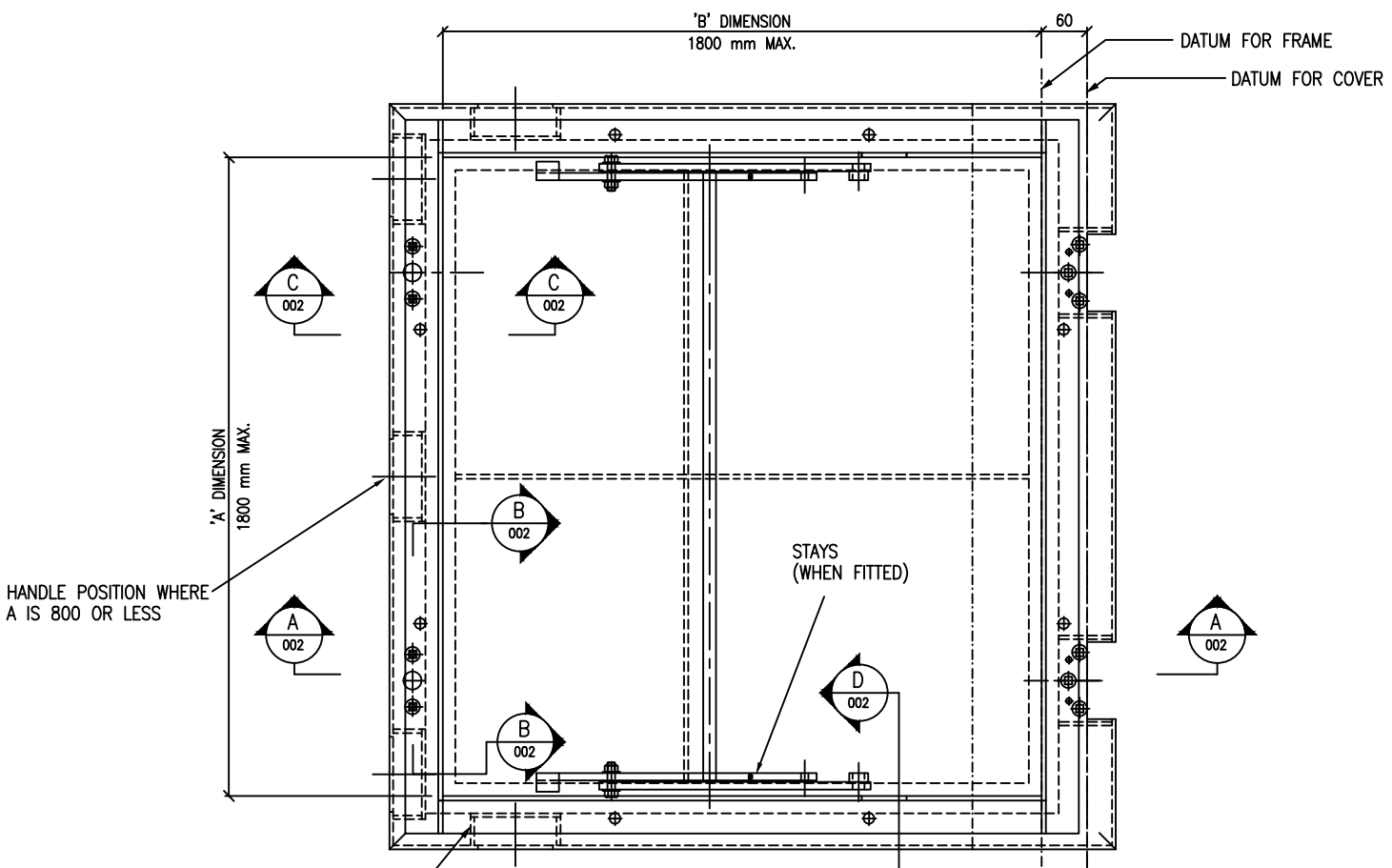
△ B

NOTES

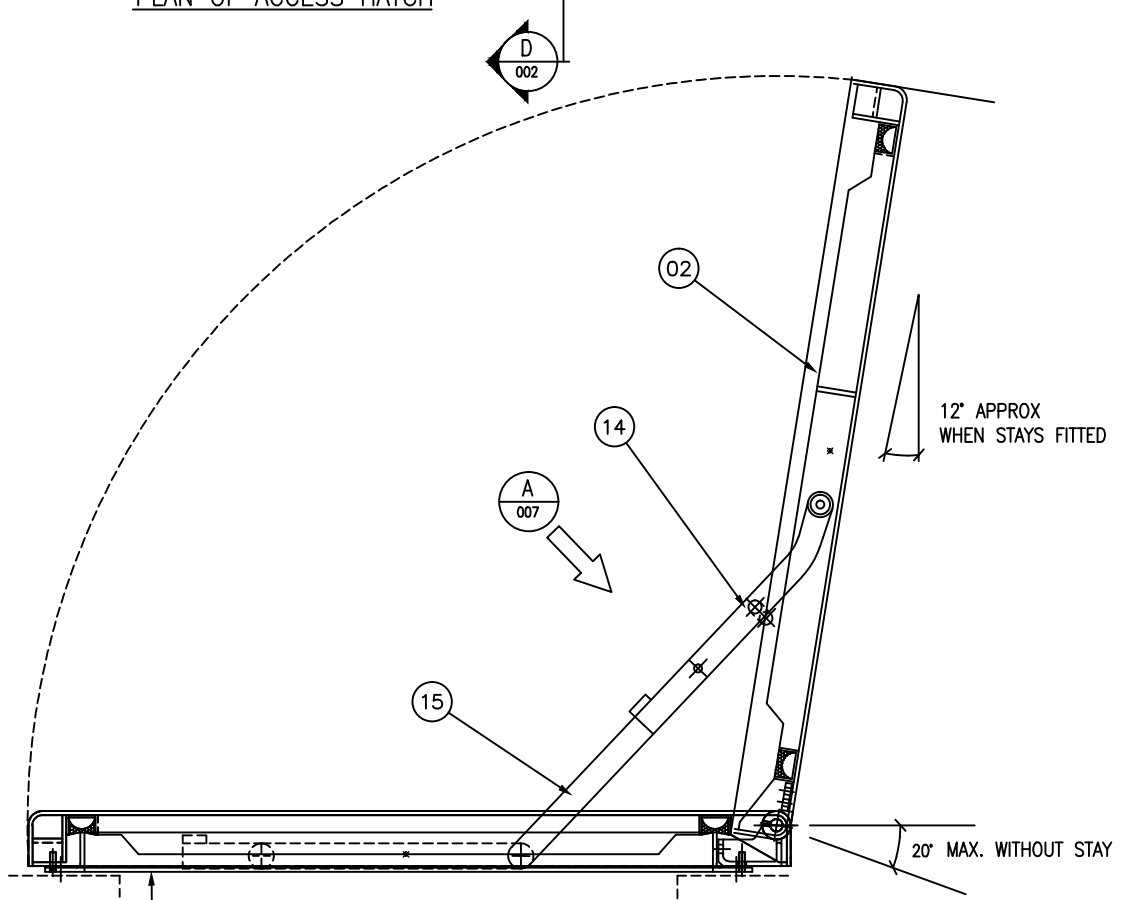
- STAYS WILL NORMALLY BE REQUIRED WHEN NO OTHER MEANS OF SUPPORT IS AVAILABLE, AND THE OPENING (B) IS GREATER THAN 750mm.
- WHEN STAYS ARE NOT USED ITEM Nos. 11,12,13,14,15,16,17,29,32,33 AND ASSOCIATED WASHERS, SLEEVES AND FASTENERS WILL NOT BE REQUIRED
- COMPLETE HINGE AND LOCK ASSEMBLIES ARE TO BE OBTAINED FROM PELTECH ENGINEERING LTD 388-B CHURCH STREET, PENROSE
- WHERE MULTIPLE HATCHES ARE USED FOR AN OPENING, THE FRAME JOINTING STRIP MAY BE USED (ITEM 35 IN SCHEDULE). THE ADJOINING FRAME MEMBERS SHALL BE DRILLED AND COUNTERSUNK TO MATCH THE ADJOINING STRIP HOLE SPACINGS. (ITEM 36 IN SCHEDULE).
- CHEMSET HOLDING DOWN BOLTS WILL INCREASE IN QUANTITY FOR LARGE HATCHES.

△ A

△ B



PLAN OF ACCESS HATCH



SECTION OF ACCESS HATCH

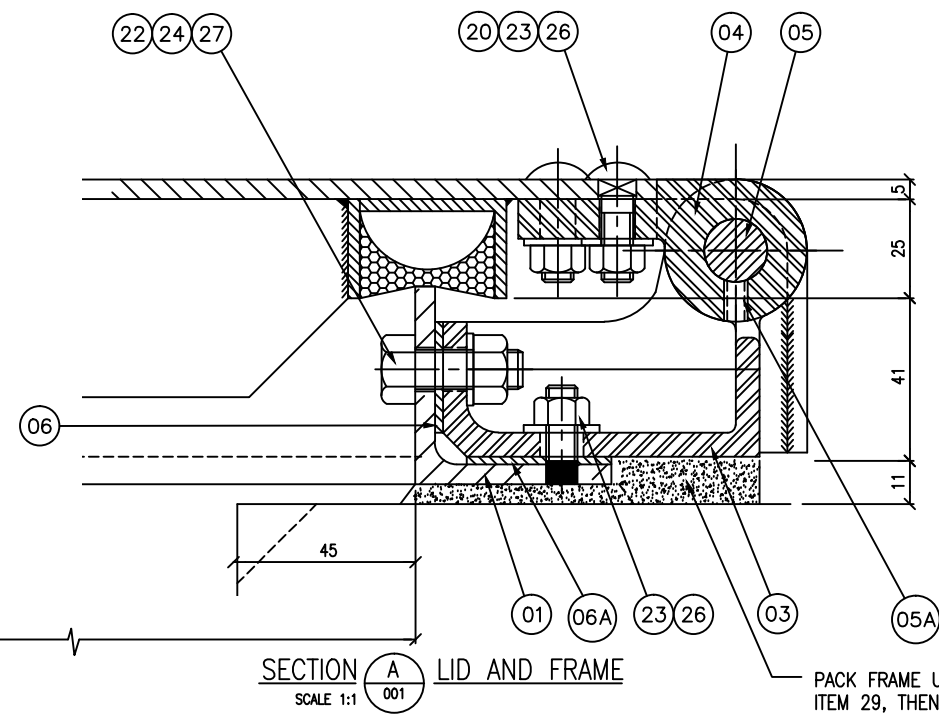
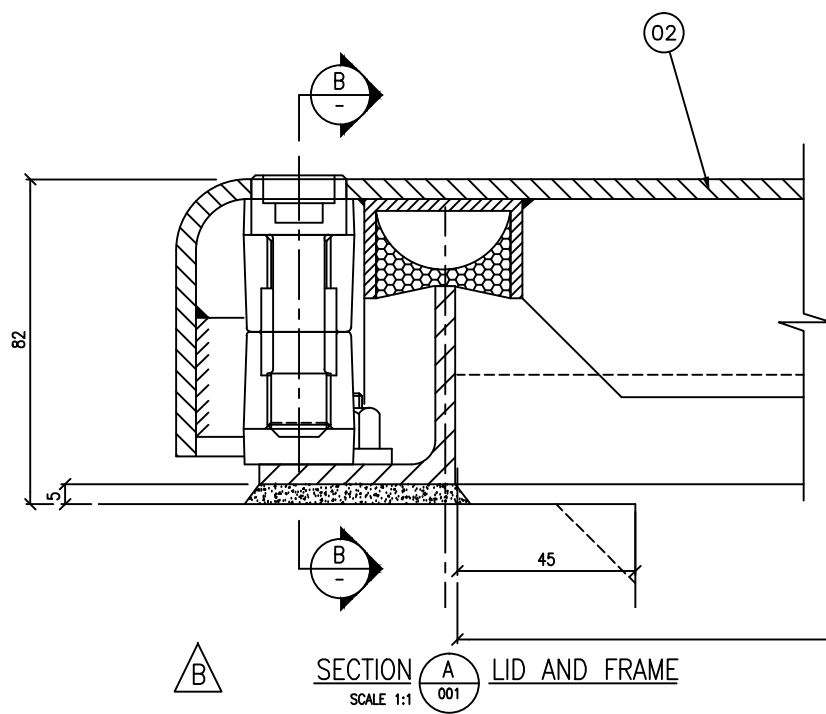
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE	WASTEWATER OPERATIONS	WASTEWATER PLANNING
B	08:11	ITEM 8 & 9 REMOVED	G.S.					
B	08:11	NOTE 3 CHANGED - ITEM 28 ADDED	G.S.					
A	02:02	TITLE, NOTES AND SCHEDULE CHANGED	B.M.					

DESIGNED GS/CR 12-00
 DES. CHECKED D. McCANN 01-01
 DRAWN I. MOSES 02-01
 DWG. CHECKED
 PROJECT LEADER
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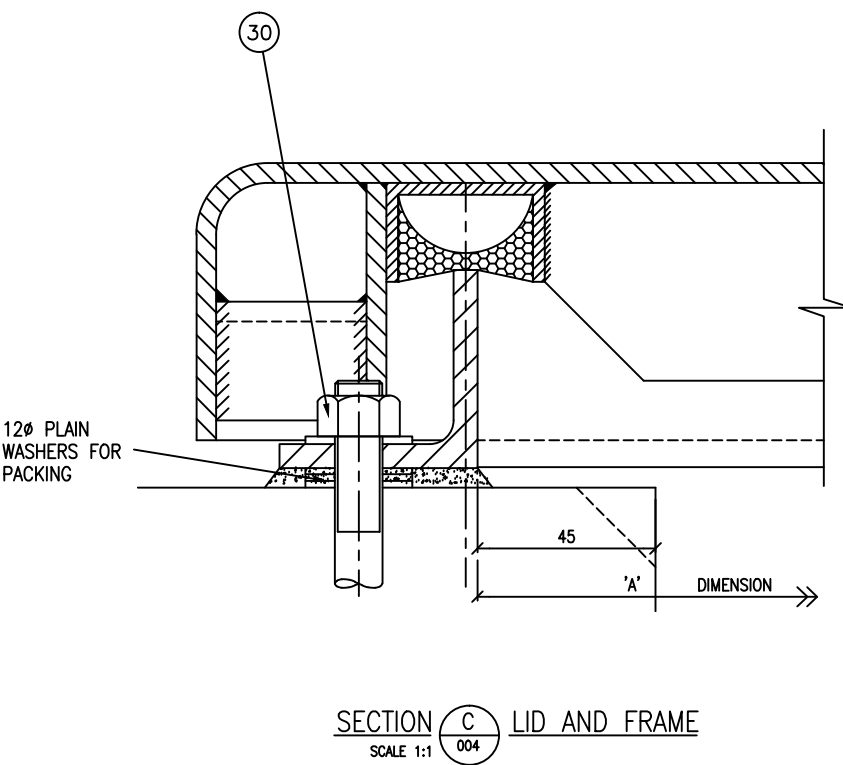
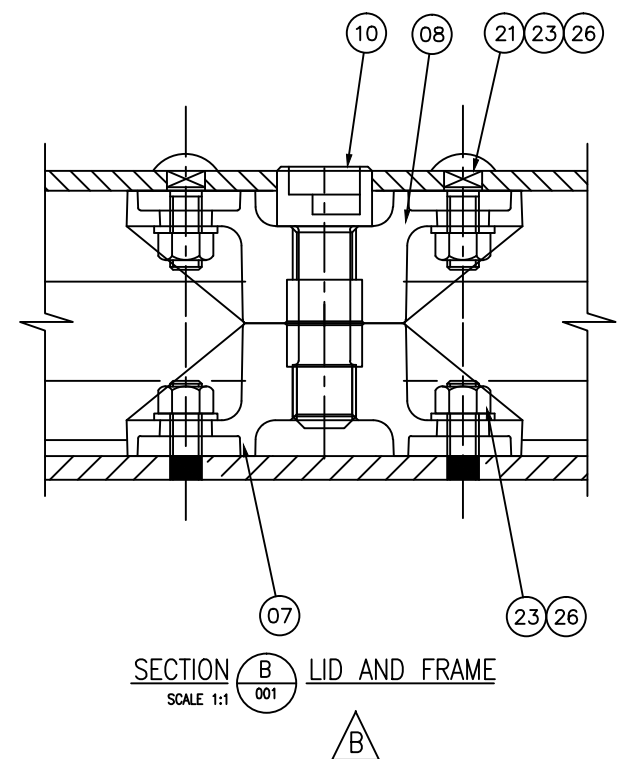


WASTEWATER RETICULATION
 STANDARD ACCESS HATCH COVER
 OVERALL LAYOUT AND COMPONENT LIST

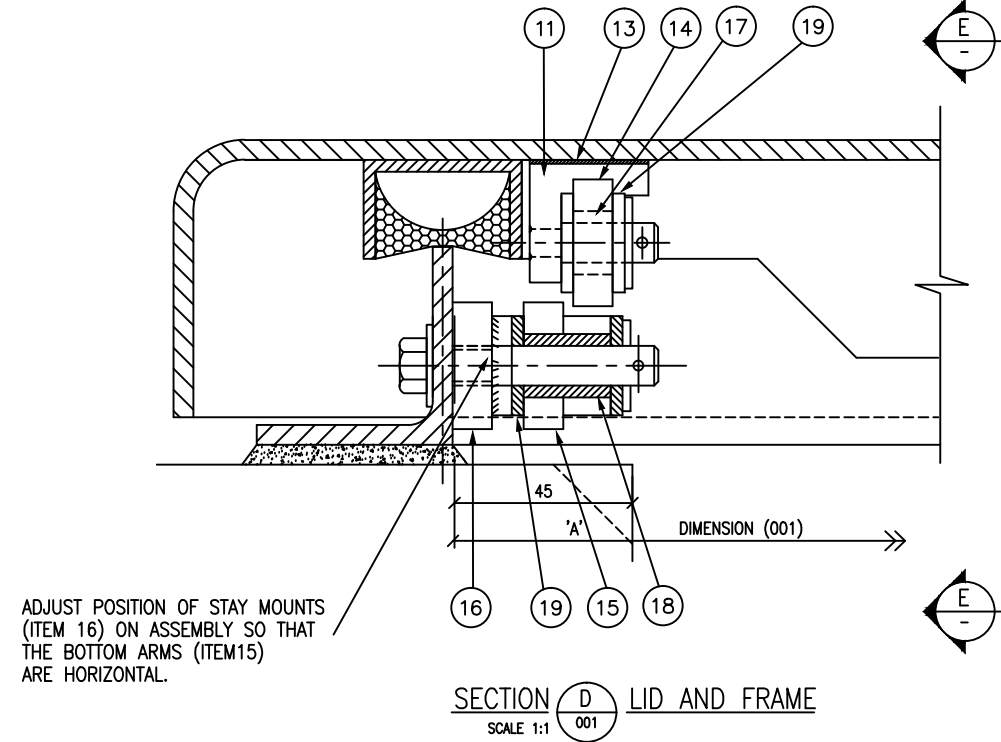
CAD FILE 2003160.001B	DATE 15.08.11
ORIGINAL SCALE A1	CONTRACT No.
1 : 5	-
DRAWING No. 2003160 .001	ISSUE B



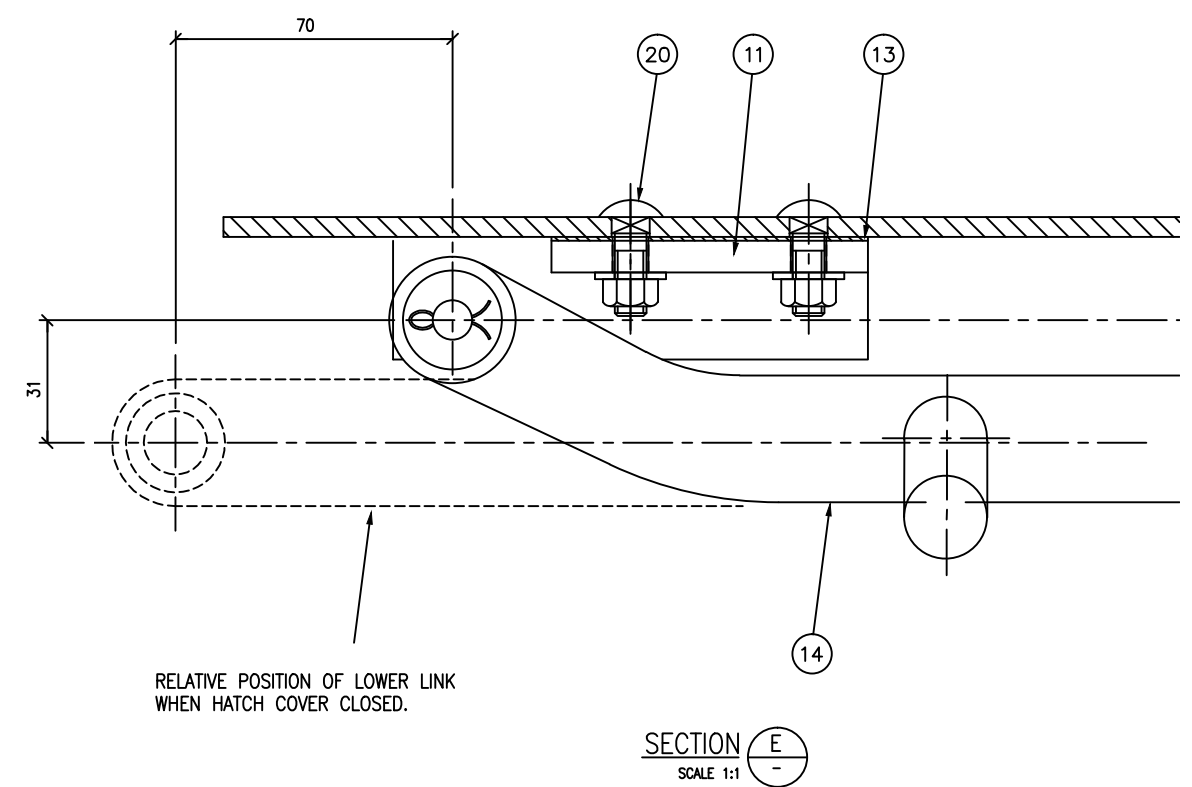
PACK FRAME UP LEVEL USING WASHERS ITEM 29, THEN GROUT UNDER USING EMBECON '897' GROUT



12Ø PLAIN WASHERS FOR PACKING



ADJUST POSITION OF STAY MOUNTS (ITEM 16) ON ASSEMBLY SO THAT THE BOTTOM ARMS (ITEM15) ARE HORIZONTAL.



RELATIVE POSITION OF LOWER LINK WHEN HATCH COVER CLOSED.

ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE
B	08:11	COMPLETE LOCK UNIT REDESIGNED	G.S.			
A	02:02	TITLE CHANGED	B.M.			

DESIGNED	GS/CR	12-00
DES. CHECKED	D. McCANN	01-01
DRAWN	I. MOSES	02-01
DWG. CHECKED	I. MOSES	02-01
PROJECT LEADER		

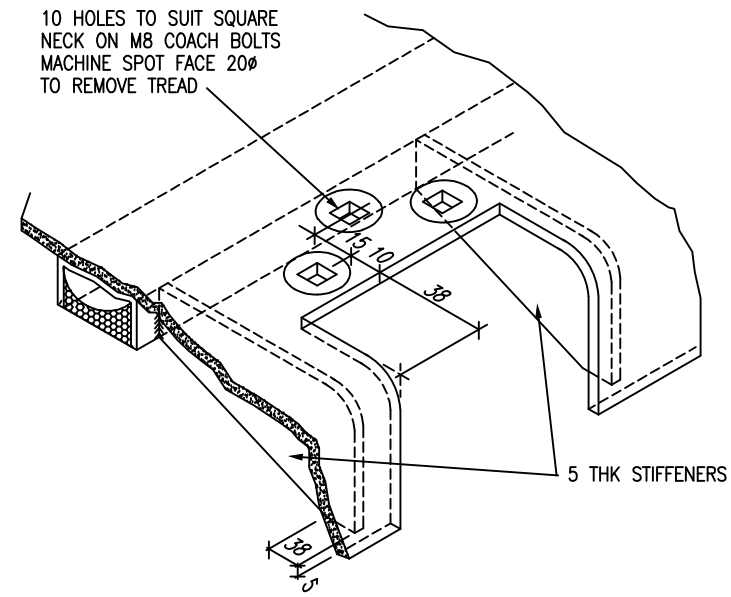
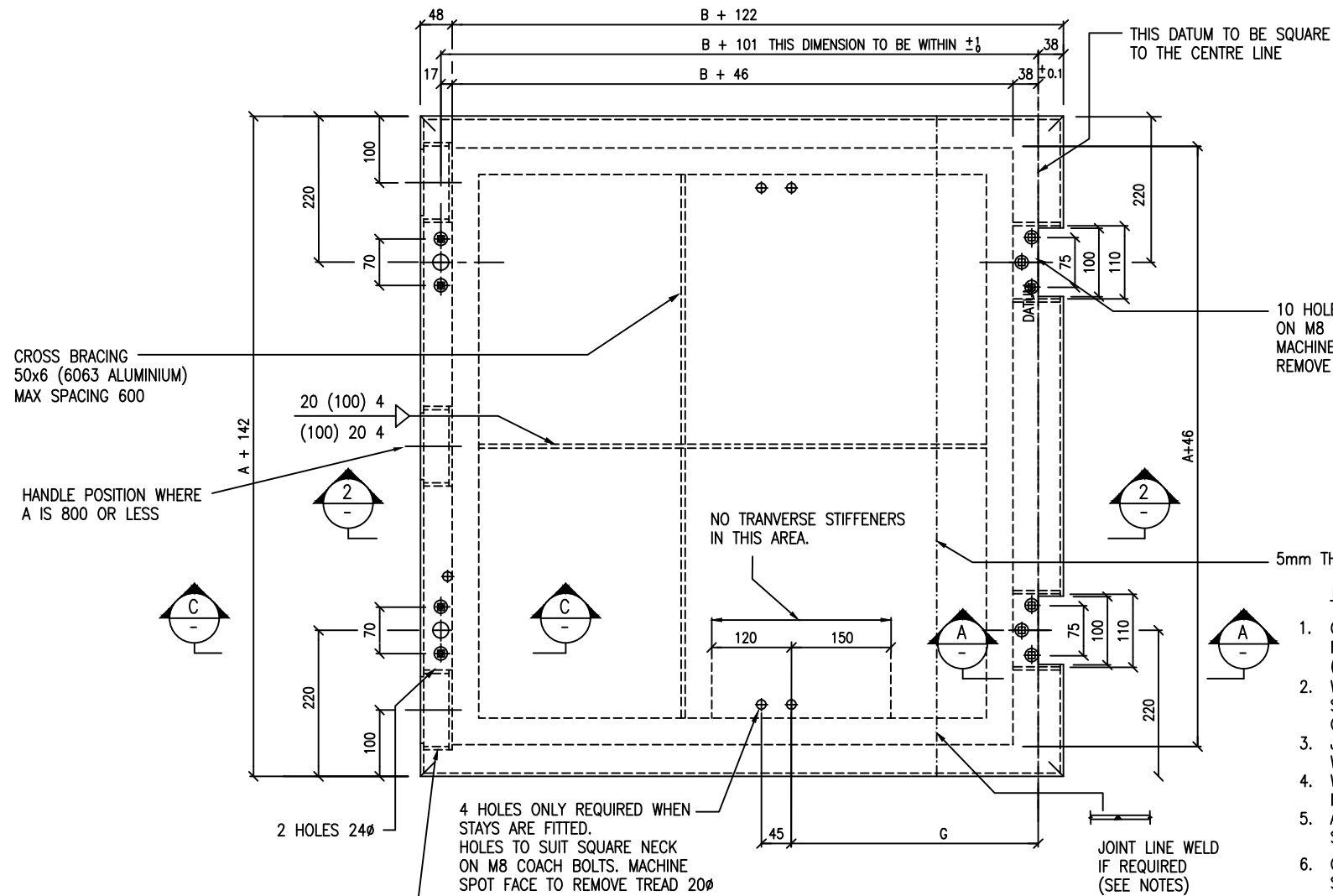
WASTEWATER OPERATIONS

WASTEWATER PLANNING

waterCare
services limited

WASTEWATER RETICULATION
STANDARD ACCESS HATCH COVER
ASSEMBLY DETAILS

CAD FILE 2003160.002B	DATE 15:08:11
ORIGINAL SCALE A1 AS SHOWN	CONTRACT No. -
DRAWING No. 2003160	ISSUE B
.002	

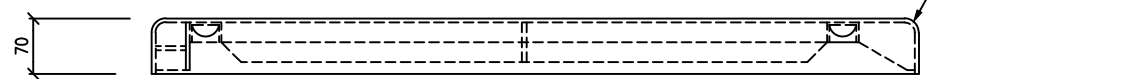


ISOMETRIC DETAIL A HINGE
SCALE NTS

- NOTES:
- COVER MATERIAL: 5251 ALUMINIUM, MEDIUM STRENGTH, MAGNESIUM ALLOY (FOR MARINE AND ROAD VEHICLES)
 - WHEN MANUFACTURING LIDS LARGER THAN STANDARD SHEET SIZE, THERE MUST BE ONE JOINT LINE ONLY
 - JOINT LINE TO BE POSITIONED PARALLEL WITH AND AS CLOSE TO THE HINGE AS POSSIBLE
 - WHEN JOINTING TREADPLATE LIDS, PATTERN MUST BE MATCHED
 - ALL WELDS TO BE CONTINUOUS UNLESS STATED OTHERWISE
 - CROSS BRACING TO BE AT MAX 600 SPACING EACH WAY.

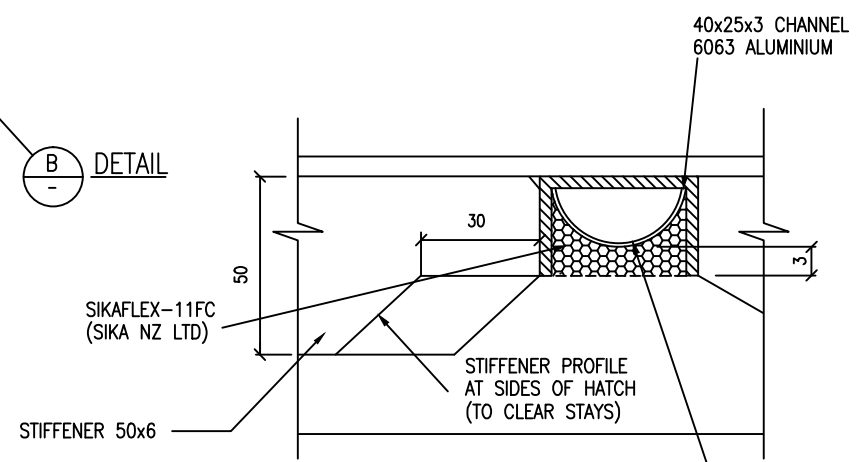
PLAN ITEM 2 HATCH COVER
SCALE 1:2.5

MATERIAL: 5251 ALUMINIUM UNLESS STATED OTHERWISE

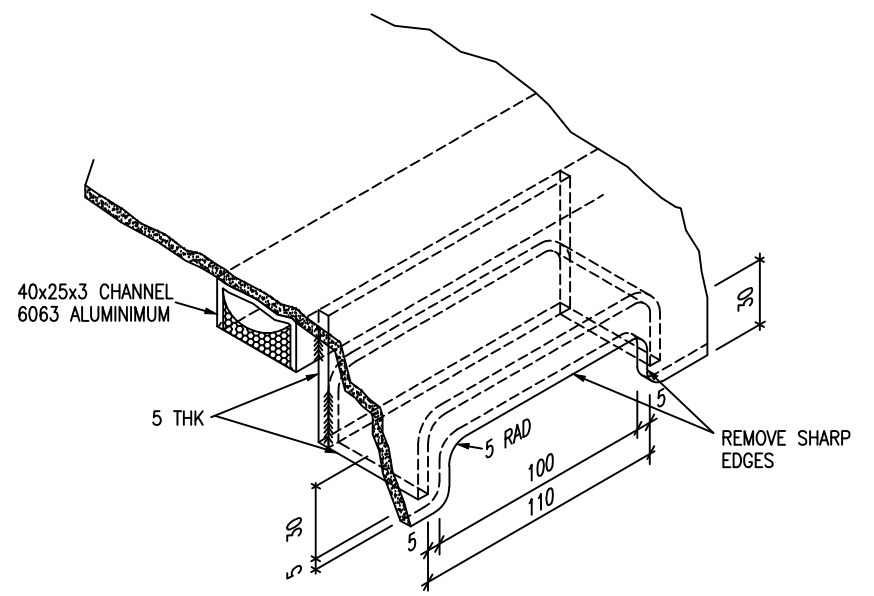


ELEVATION ITEM 2 HATCH COVER
SCALE 1:2.5

B DETAIL



DETAIL B SEAL
SCALE 1:1



ISOMETRIC DETAIL C HANDLE
SCALE NTS

OPENING DIMENSION B	G
700-900	420
901-1200	535
1201-1500	695
1501-1800	850

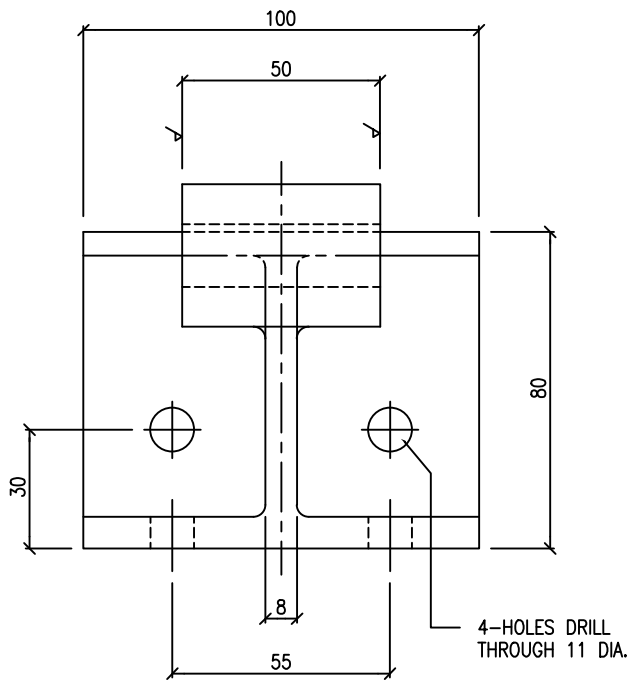
ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE
B	08:11	SEAL BACKING MATERIAL CHANGED	G.S.			
A	02:02	TITLE CHANGED	B.M.			

DESIGNED	C. RODLIFFE	12-00
DES. CHECKED	D.McCANN	12-00
DRAWN	I. MOSES	12-00
DWG. CHECKED	I.MOSES	12-00
PROJECT LEADER		

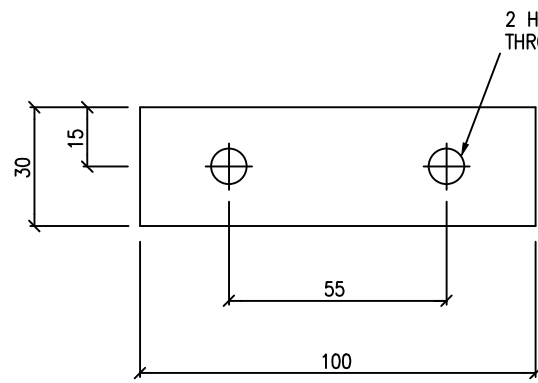


WASTEWATER RETICULATION
STANDARD ACCESS HATCH COVER
COVER AND DETAILS

CAD FILE 2003160.004B	DATE 15:08:11
ORIGINAL SCALE A1	CONTRACT No.
AS SHOWN	-
DRAWING No.	ISSUE
2003160 .004	B

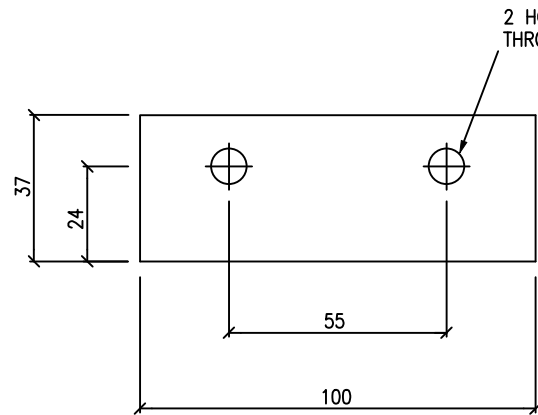


PLAN - HINGE BASE



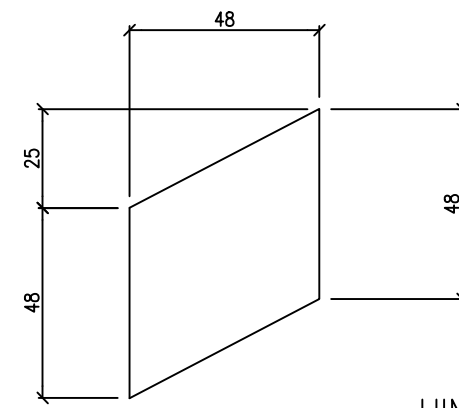
FACE PACKER FOR HINGE BASE
ITEM 6

MATERIAL:
2mm NYLON



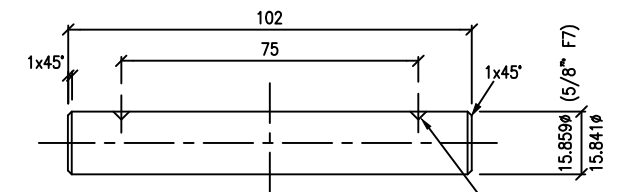
SEAT PACKER FOR HINGE BASE
ITEM 6A

MATERIAL:
2mm NYLON



HINGE BEARING - ITEM 28

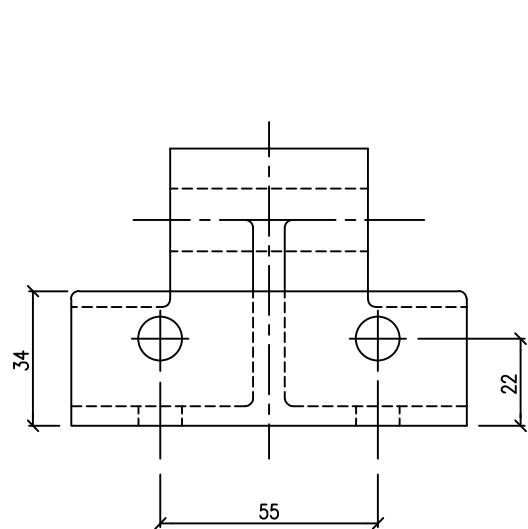
MATERIAL:
0.8mm PTFE SHEET



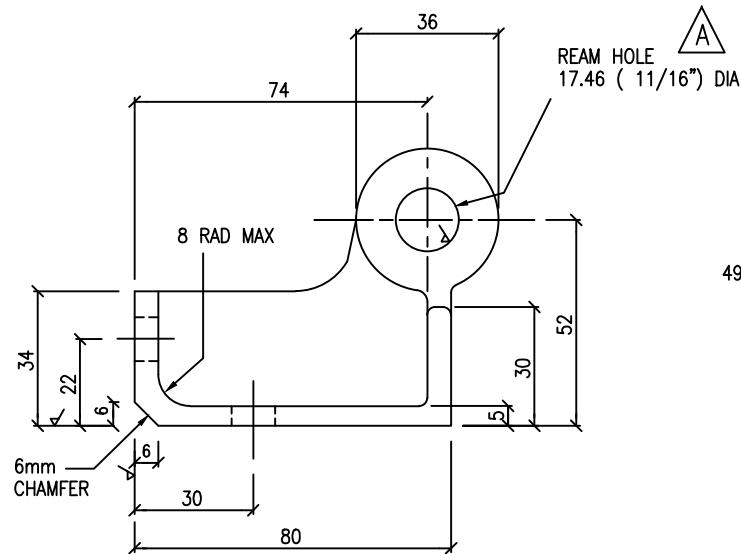
HINGE PIN - ITEM 5

MATERIAL:
5/8" BRASS ROD

MACHINE INDENTS 6x90°
2 OFF



FRONT ELEVATION - HINGE BASE

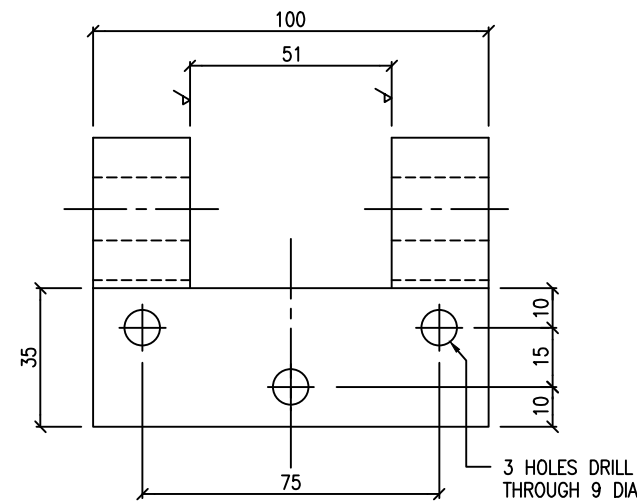


SIDE ELEVATION - HINGE BASE

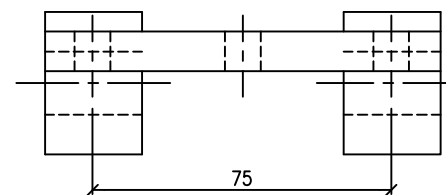
SUPPLIED WITH 0.76 THICK (0.030") RULON T LINER
FITTED IN HINGE PIN HOLE

HINGE BASE - ITEM 3

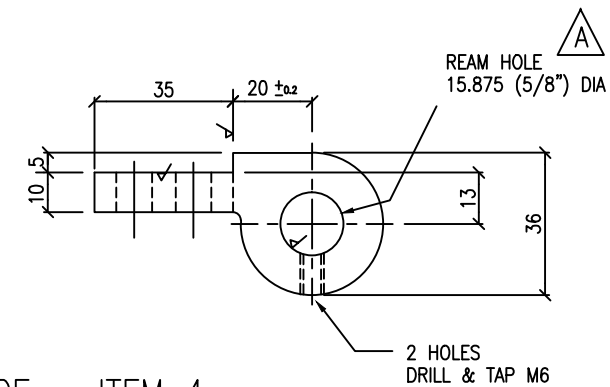
MATERIAL:
ALUMINIUM
✓ MACHINE WHERE INDICATED



PLAN - HINGE



FRONT ELEVATION - HINGE



SIDE ELEVATION - HINGE

HINGE - ITEM 4

MATERIAL:
ALUMINIUM
✓ MACHINE WHERE INDICATED

ISSUE	DATE	AMENDMENT	BY	APPD.	BY	DATE
B	08:11	PACKER THKNSS INCR'D & ITEM 28 ADD'D	G.S.			
A	02:02	TITLE CHANGED DIMENSION ALTERED	B.M.			

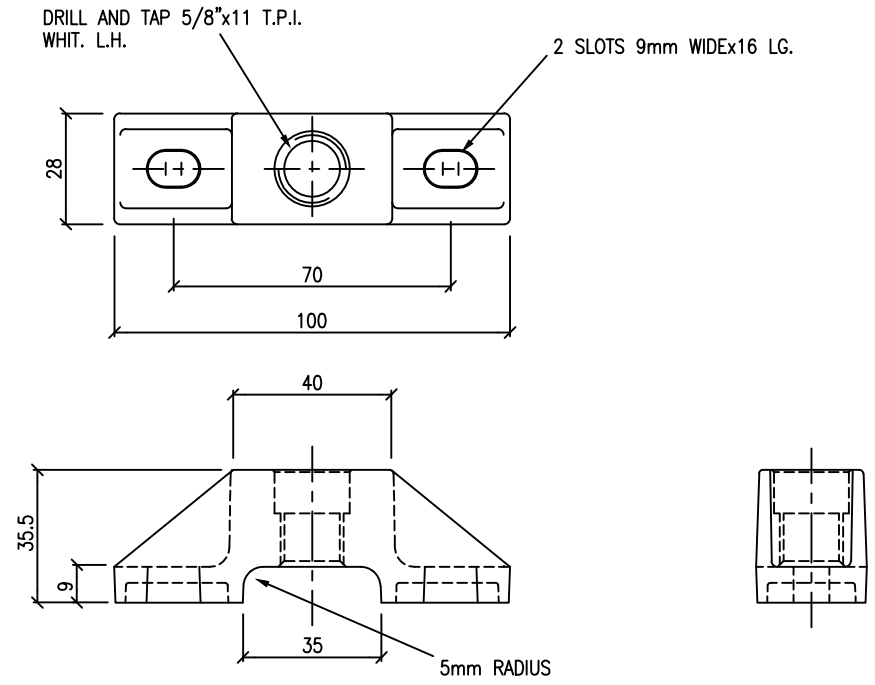
DESIGNED	C. RODLIFFE	12-00
DES. CHECKED	D.McCANN	12-00
DRAWN	I. MOSES	12-00
DWG. CHECKED	I. MOSES	12-00
PROJECT LEADER		

WASTEWATER OPERATIONS

WASTEWATER PLANNING

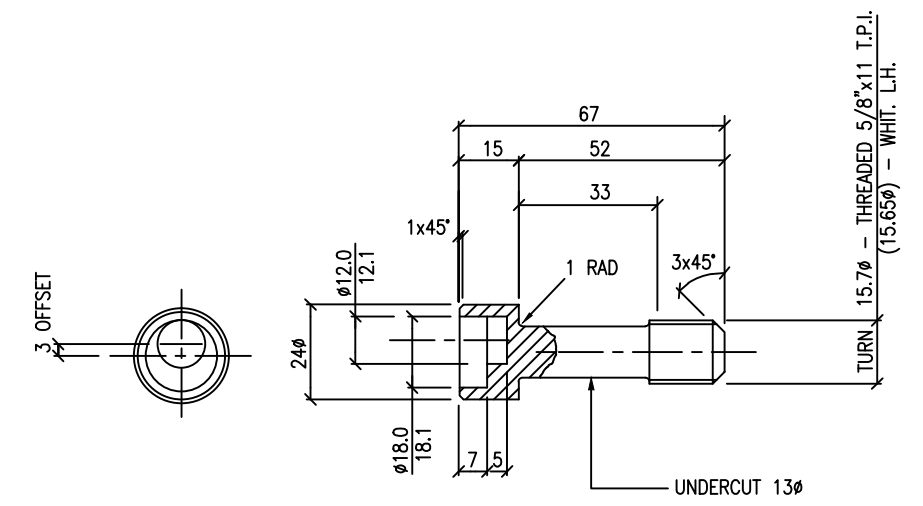
WASTEWATER RETICULATION
STANDARD ACCESS HATCH COVER
HINGES DETAILS

CAD FILE	2003160.005B	DATE	26:02:02
ORIGINAL SCALE	A1	CONTRACT No.	-
SCALE	1:1		
DRAWING No.	2003160	ISSUE	B
	.005		



B UPPER & LOWER CLAMP – ITEM 7

MATERIAL:
GLASS REINFORCED PLASTIC



B PUZZLE BOLT – ITEM 10

MATERIAL:
316 S/S

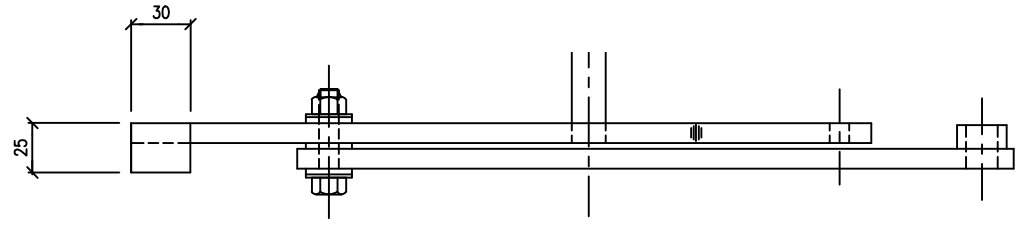
DESIGNED	G. SMITH	05-96
DES. CHECKED		
DRAWN	I. MOSES	12-00
DWG. CHECKED	I. MOSES	12-00
PROJECT LEADER		
BY	B.M.	
APPD.		
BY		
DATE		

WASTEWATER OPERATIONS
WASTEWATER PLANNING



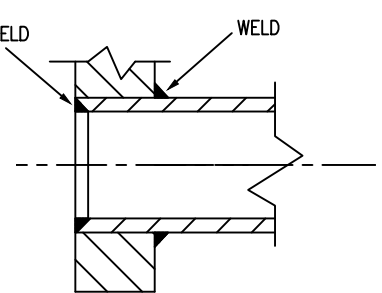
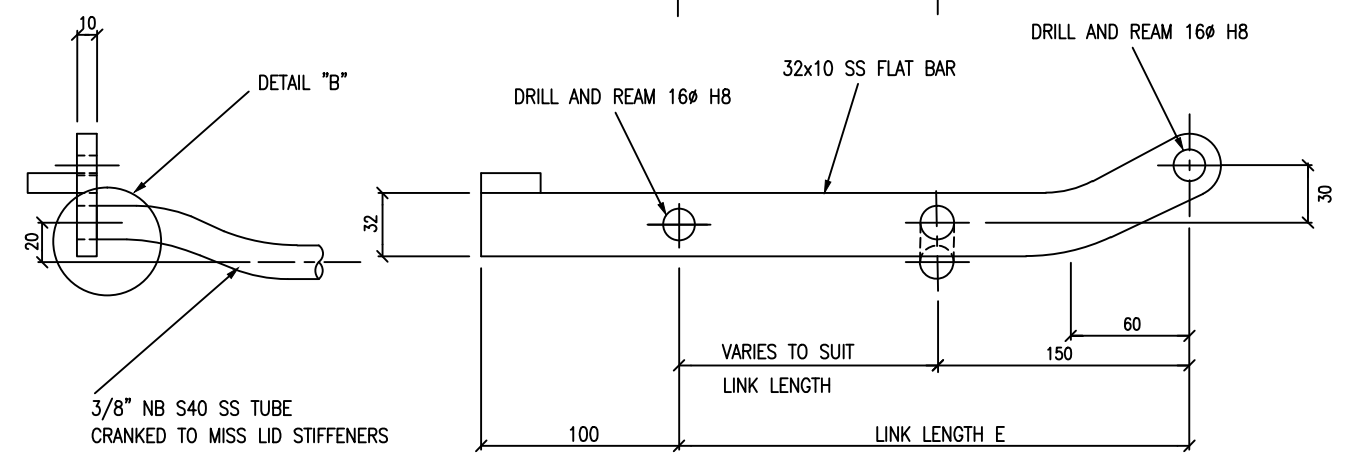
WASTEWATER RETICULATION
STANDARD ACCESS HATCH COVER
LOCK DETAILS

CAD FILE	2003160.006B	DATE	25:02:02
ORIGINAL SCALE	A1	CONTRACT No.	-
AS SHOWN			
DRAWING No.	2003160	ISSUE	B
.006			

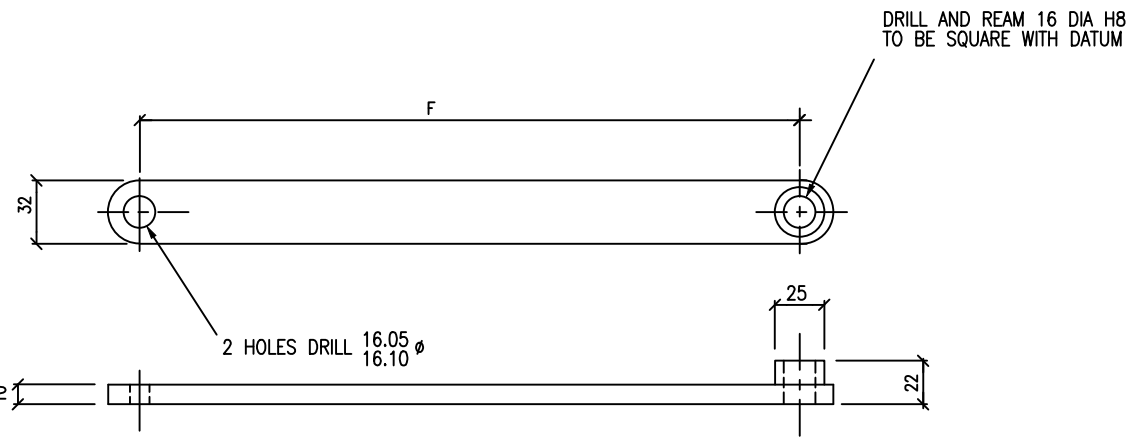


UPPER STAY ASSEMBLY- ITEM 14

OPENING DIMENSION B	UPPER STAY	LOWER STAY
	E	F
700-900	258	328
901-1200	345	415
1201-1500	470	540
1501-1800	585	660

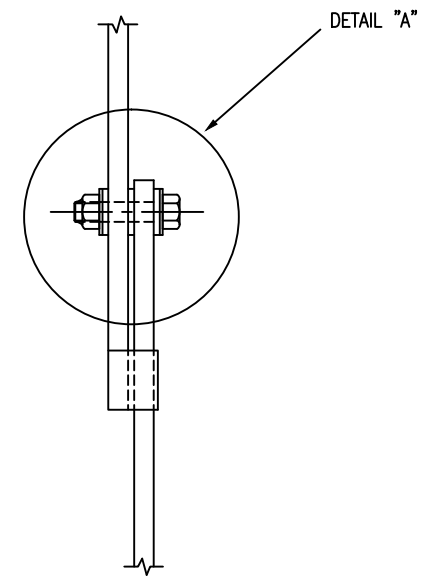


DETAIL "B" SCALE:- 2:1

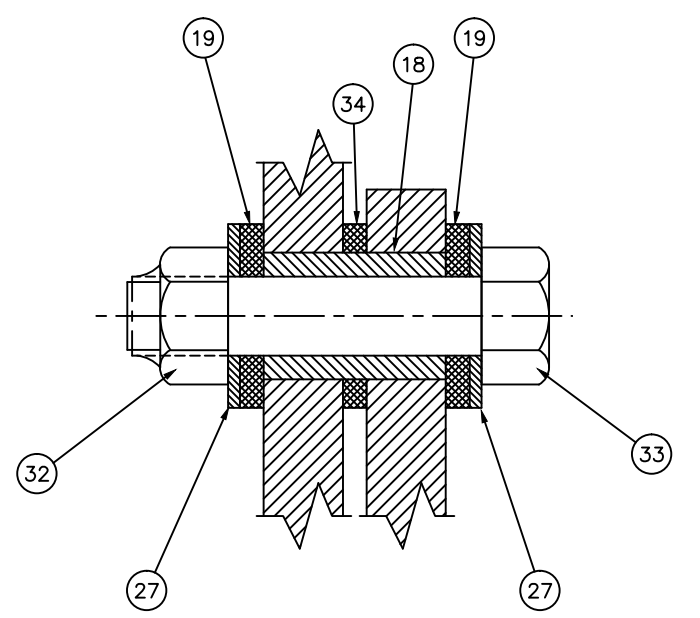


LOWER STAY - ITEM 15

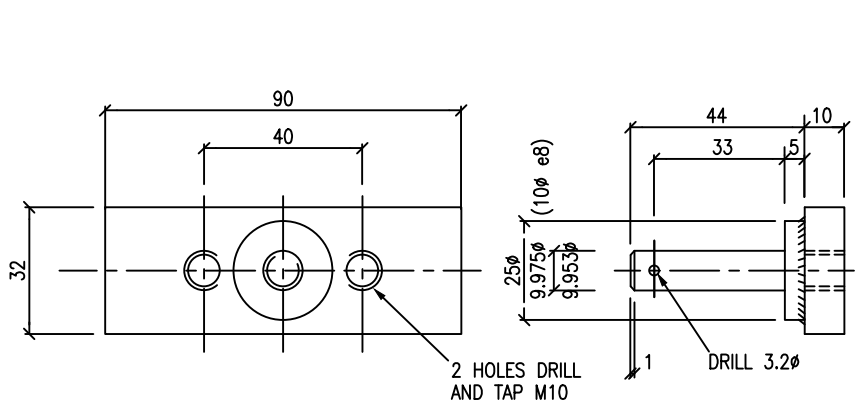
MATERIAL: 316 S/S SCALE:- 1:2



VIEW ON ARROW (A) STAYS SCALE 1:2

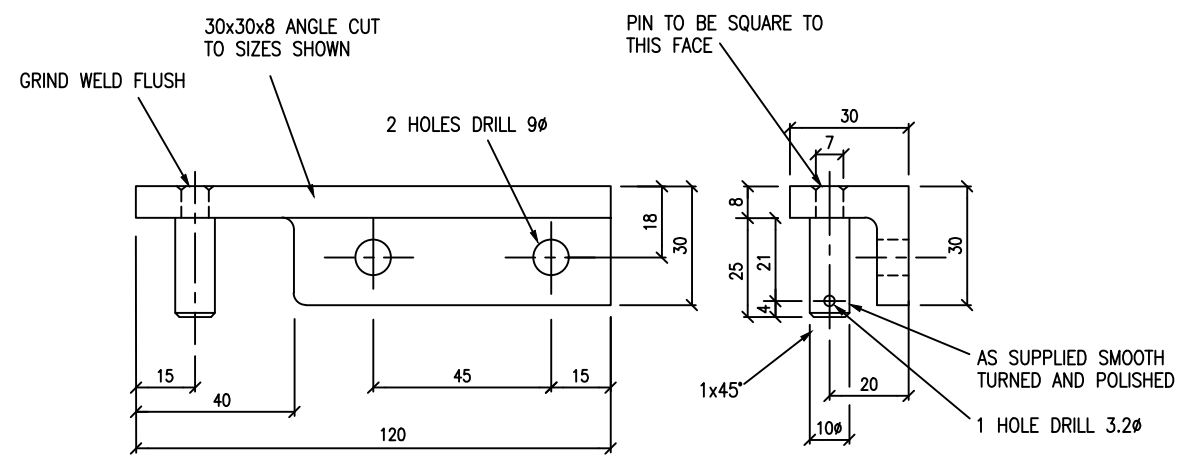


DETAIL "A" SCALE:- 2:1



FRAME STAY MOUNT - ITEM 16

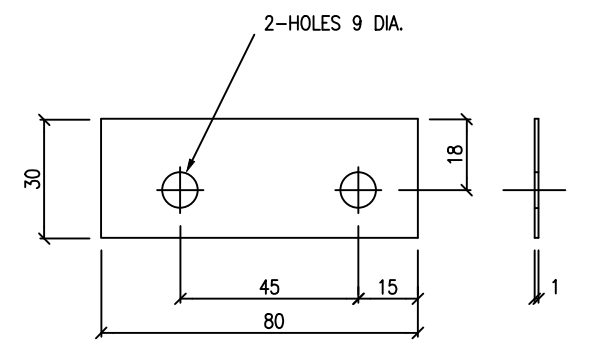
MATERIAL: 316 S/S SCALE:- 1:1



COVER STAY MOUNT (AS DRAWN) - ITEM 11

COVER STAY MOUNT (OPP. HAND) - ITEM 12

MATERIAL: 316 S/S SCALE:- 1:1



COVER STAY PACKER - ITEM 13

MATERIAL: 1mm NYLON SCALE:- 1:1

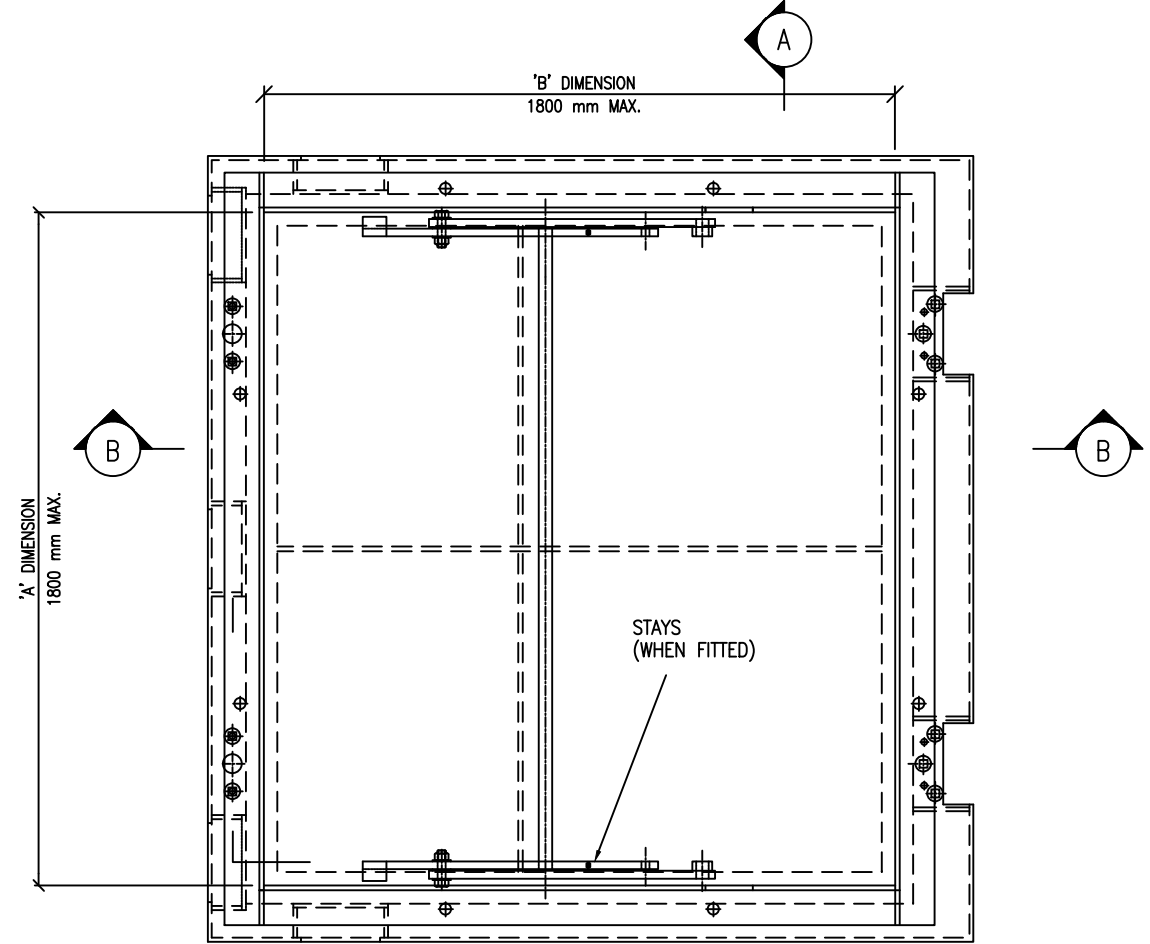
ISSUE	DATE	AMENDMENT	BY	APPD.	DATE
A	02:02	TITLE CHANGED	B.M.		

DESIGNED	C. RODLIFFE	12-00
DES. CHECKED	D.McCANN	12-00
DRAWN	I. MOSES	12-00
DWG. CHECKED	I. MOSES	12-00
PROJECT LEADER		

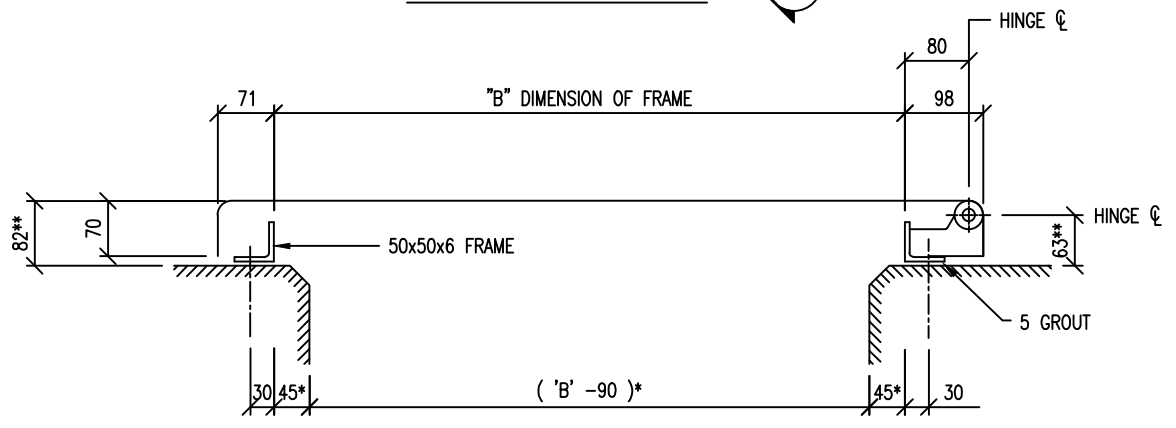


WASTEWATER RETICULATION
STANDARD ACCESS HATCH COVER
STAYS DETAILS

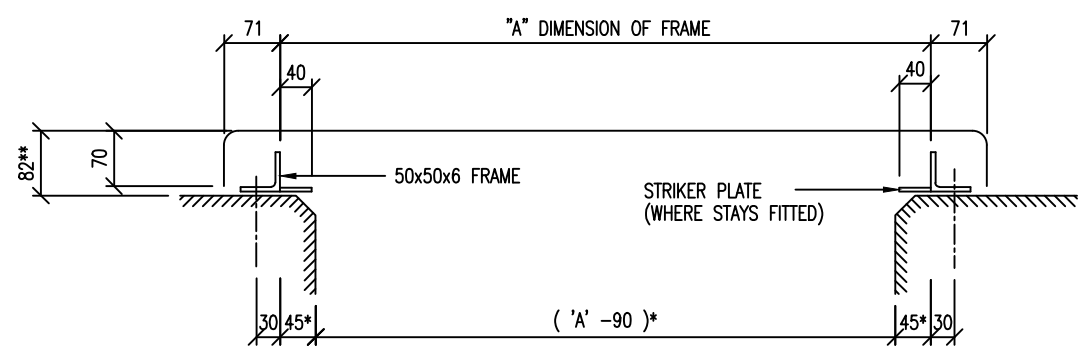
CAD FILE	EG 2003160.007	DATE	25:02:02
ORIGINAL SCALE	A1	CONTRACT No.	-
AS SHOWN			
DRAWING No.	2003160	ISSUE	A
	.007		



PLAN OF ACCESS HATCH



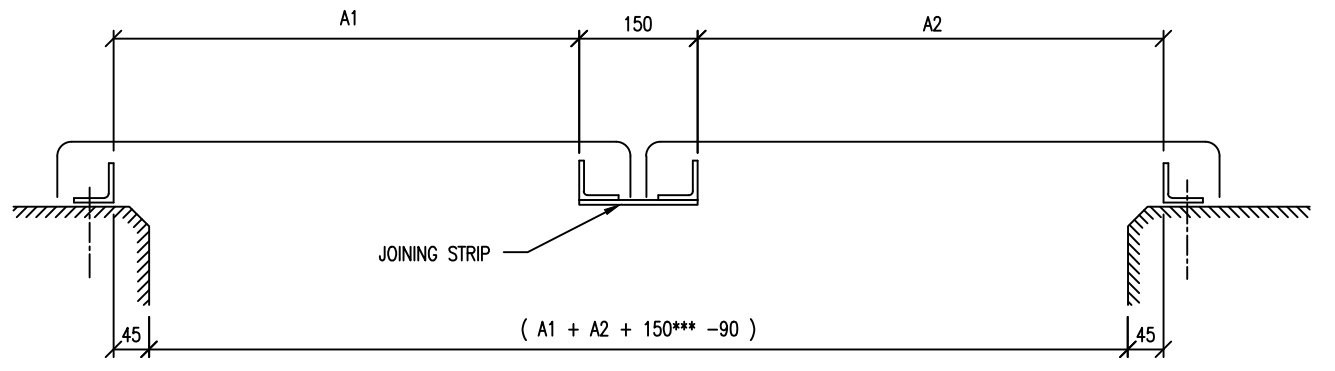
SECTION B-B



SECTION A-A

NOTE

- * = UNLESS OTHERWISE SHOWN
- ** = ASSUMES 5mm GROUT UNDER FRAME
- *** = 150mm PER JOINING STRIP



MULTIPLE COVERS WITH JOINING STRIP

DESIGNED	C.R.	7-08	T. KING
DES. CHECKED			OPERATIONS
DRAWN	I.M.	7-08	
DWG. CHECKED			T. MUNRO
PROJECT LEADER			ASSET MANAGEMENT
A.M. APPROVED			
ISSUE	DATE	AMENDMENT	BY APPD.

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WASTEWATER RETICULATION STANDARD
ACCESS HATCH COVER
INSTALLATION DIMENSIONS

CAD FILE 2003160.008	DATE 17-07-08
ORIGINAL SCALE A1	CONTRACT No.
1:5	-
DRAWING No.	ISSUE
2003160 .008	-