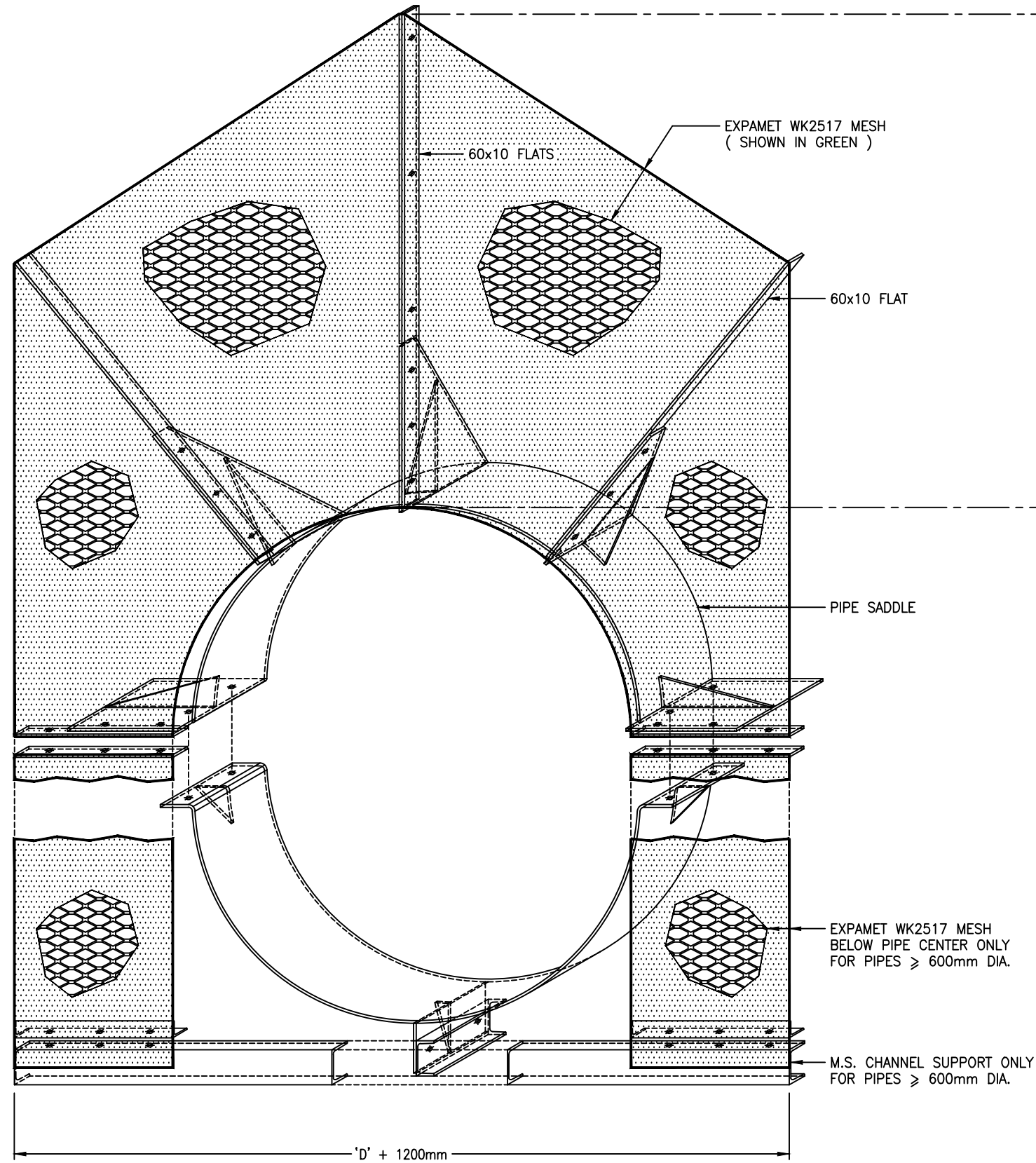


## Drawing Index

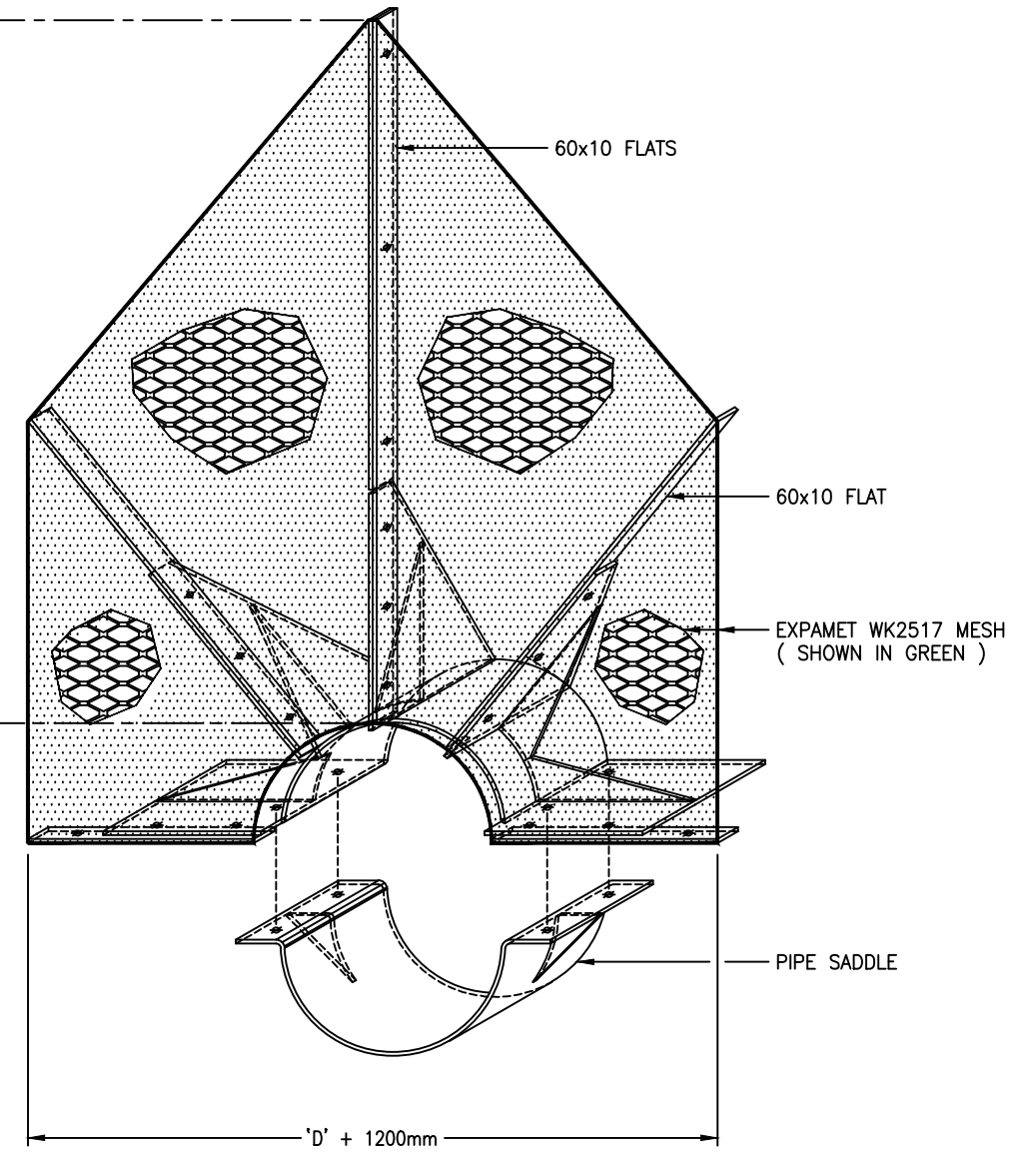
| Name                             | Doc.No      | Document Description  |
|----------------------------------|-------------|---|
| <a href="#">2000244.047.pdf</a>  | 2000244.047 | STANDARD PIPE BRIDGE SAFETY BARRIERS DIAGRAMMATIC VIEWS SHEET 1 OF 3  |
| <a href="#">2000244.048.pdf</a>  | 2000244.048 | STANDARD PIPE BRIDGE SAFETY BARRIERS DETAILS SHEET 2 OF 3   |
| <a href="#">2000244.049.pdf</a>  | 2000244.049 | STANDARD PIPE BRIDGE SAFETY BARRIERS DETAILS SHEET 3 OF 3   |
| <a href="#">2001979.001A.pdf</a> | 2001979.001 | WATER RETICULATION STANDARD SEALED ACCESS HATCH COVER ASSEMBLY AND COMPONENT LIST SHEET 1 OF 2                |
| <a href="#">2001979.003A.pdf</a> | 2001979.003 | WATER RETICULATION STANDARD SEALED ACCESS HATCH COMPONENT NO1 DETAILS   |
| <a href="#">2001979.004A.pdf</a> | 2001979.004 | WATER RETICULATION STANDARD SEALED ACCESS HATCH COMPONENT NO2 DETAILS   |
| <a href="#">2001979.005A.pdf</a> | 2001979.005 | WATER RETICULATION STANDARD SEALED ACCESS HATCH COVER STAY AND PACKER COMPONENTS NO7 NO8 NO9 NO10 NO14 DETAIL |
| <a href="#">2001979.007.pdf</a>  | 2001979.007 | WATER RETICULATION STANDARD SEALED ACCESS HATCH COVER STAY COMPONENTS   |
| <a href="#">2001979.008.pdf</a>  | 2001979.008 | WATER RETICULATION STANDARD ROADWAY SECURITY GATE GENERAL ARRANGEMENT AND GATE CATCH DETAIL                   |
| <a href="#">2001979.009.pdf</a>  | 2001979.009 | WATER RETICULATION STANDARD RESERVOIR LANDING AND LADDER DETAIL OF HINGE SUPPORT AND GATE CATCH               |

|                                  |             |  |
|----------------------------------|-------------|--|
| <a href="#">2001979.010.pdf</a>  | 2001979.010 | WATER RESERVOIR STANDARD RESERVOIR LANDING AND LADDERS PLAN AND DETAILS OF LANDING END PLATES AND LOWER STEPS          |
| <a href="#">2001979.011.pdf</a>  | 2001979.011 | WATER RETICULATION STANDARD RESERVOIR LANDING AND LADDERS PLANS AND ELEVATIONS OF ALTERNATIVE LANDINGS                 |
| <a href="#">2001979.014.pdf</a>  | 2001979.014 | WATER RETICULATION STANDARD RESERVOIR LATCH CROX LOCK COMPONENTS NO1 AND NO2   |
| <a href="#">2001979.015A.pdf</a> | 2001979.015 | WATER RETICULATION STANDARD RESERVOIR ACCESS TOWER DETAILS SHEET NO1   |
| <a href="#">2001979.016.pdf</a>  | 2001979.016 | WATER RETICULATION STANDARD RESERVOIR ACCESS TOWER DETAILS SHEET NO2   |
| <a href="#">2001979.017C.pdf</a> | 2001979.017 | WATER RETICULATION STANDARD RECTANGULAR CHAMBER COVER CONSTRUCTION DETAILS   |
| <a href="#">2001979.039.pdf</a>  | 2001979.039 | WATER RETICULATION STANDARD RESERVOIR SAFETY EQUIPMENT STEEL POST AND BRACKETS FOR HARNESS SAFETY LINES                |
| <a href="#">2001979.053.pdf</a>  | 2001979.053 | WATER RETICULATION STANDARD POSITIONING OF RESERVOIR ROOF HATCHES DETAILS OF ROOF HATCHES OVER EXISTING OPENINGS       |
| <a href="#">2001979.054.pdf</a>  | 2001979.054 | WATER RETICULATION STANDARD RESERVOIR VENT COVERS AND HOLE COVER PLATES DETAILS OF VENT COVERS OVER EXISTING OPENINGS  |
| <a href="#">2001979.080.pdf</a>  | 2001979.080 | WATER RETICULATION STANDARD EXTENDABLE ALUMINIUM ACCESS LADDER FOR RECTANGULAR CHAMBER PLAN SECTION AND BRACKET DETAIL |
| <a href="#">2001979.081A.pdf</a> | 2001979.081 | WATER RETICULATION STANDARD EXTENDABLE ALUMINIUM ACCESS LADDER FOR   |

|                                  |             |  |
|----------------------------------|-------------|--|
|                                  |             | CIRCULAR CHAMBER PLAN SECTION AND BRACKET DETAIL   |
| <a href="#">2001979.083A.pdf</a> | 2001979.083 | WATER RETICULATION STANDARD ALUMINIUM LADDER BRACKET DETAIL  |
| <a href="#">2001979.085.pdf</a>  | 2001979.085 | WATER RETICULATION STANDARD EXTENDABLE ALUMINIUM ACCESS LADDER DETAILS AT CIRCULAR AND RECTANGULAR CHAMBERS                          |
| <a href="#">2001979.102A.pdf</a> | 2001979.102 | WATER RETICULATION STANDARD FIXED ALUMINIUM ACCESS LADDER AT RECTANGULAR OR CIRCULAR CHAMBER PLAN SECTION AND BRACKET DETAILS        |
| <a href="#">2001979.103.pdf</a>  | 2001979.103 | WATER RETICULATION STANDARD FIXED ALUMINIUM BRACKET FOR ACCESS LADDERS TYPICAL DETAILS   |
| <a href="#">2001979.104A.pdf</a> | 2001979.104 | WATER RETICULATION STANDARD FIXED ALUMINIUM ACCESS LADDER DETAILS OF ACCESS LADDERS AND HEAVY DUTY MANHOLE LIDS FOR DESIGN USE ONLY  |
| <a href="#">2001979.105.pdf</a>  | 2001979.105 | WATER RETICULATION STANDARD EXTENDABLE ALUMINIUM ACCESS LADDER AND DETAILS OF GALVANISED MILD STEEL ACCESS FRAME FOR DESIGN USE ONLY |
| <a href="#">2001979.123.pdf</a>  | 2001979.123 | WATER RETICULATION STANDARD HATCH COVER LOCKING BAR ASSEMBLY AND DETAILS   |



DIAGRAMATIC VIEW OF PIPE SAFETY BARRIER  
FOR WATERCARE PIPES  $\geq$  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. | DESIGNED | DES. CHECKED | DRAWN | DWG. CHECKED | PROJECT LEADER | INFRASTR APP'D |
|-------|-------|--------------------------------|------|-------|----------|--------------|-------|--------------|----------------|----------------|
| -     | 09-13 | SAFETY BARRIERS - SHEET 1 OF 3 | L.C. | A.M.  |          |              |       |              |                |                |

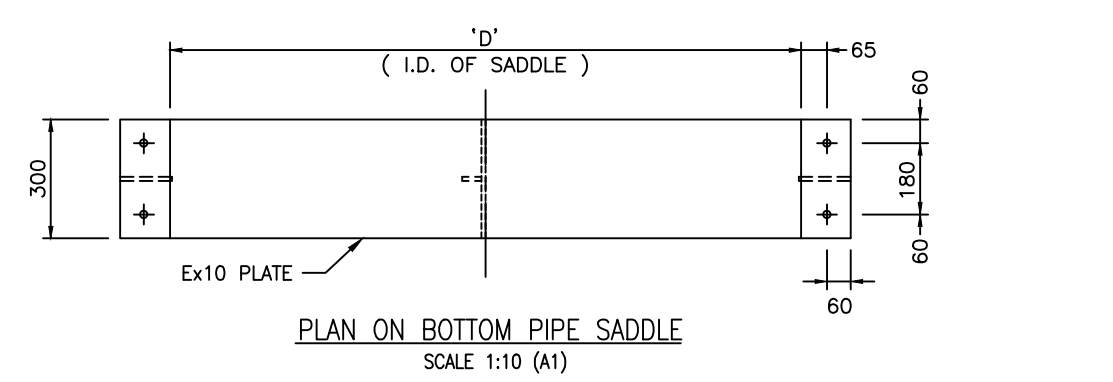
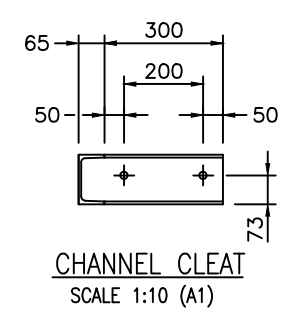
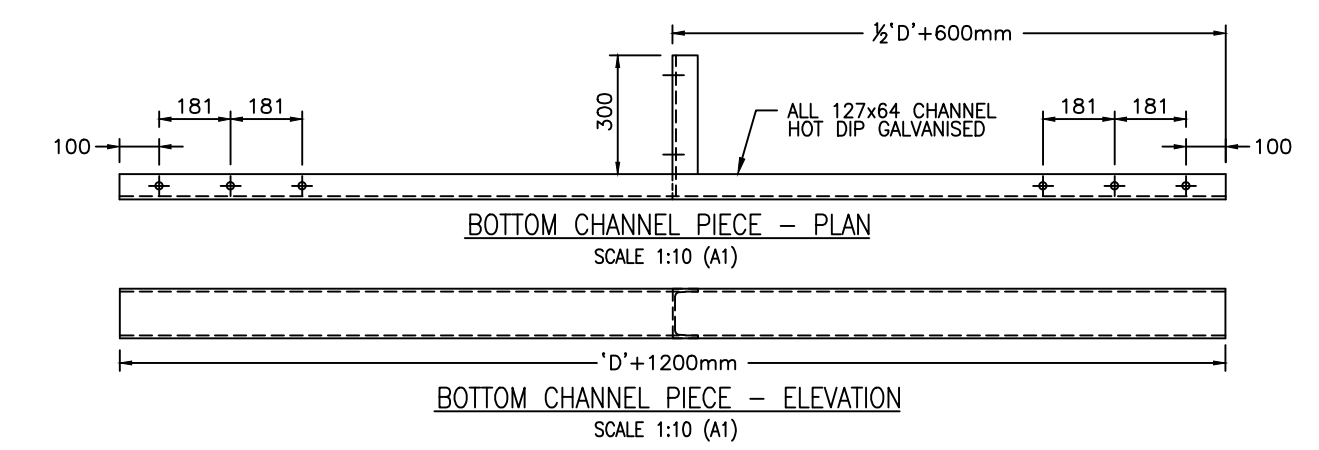
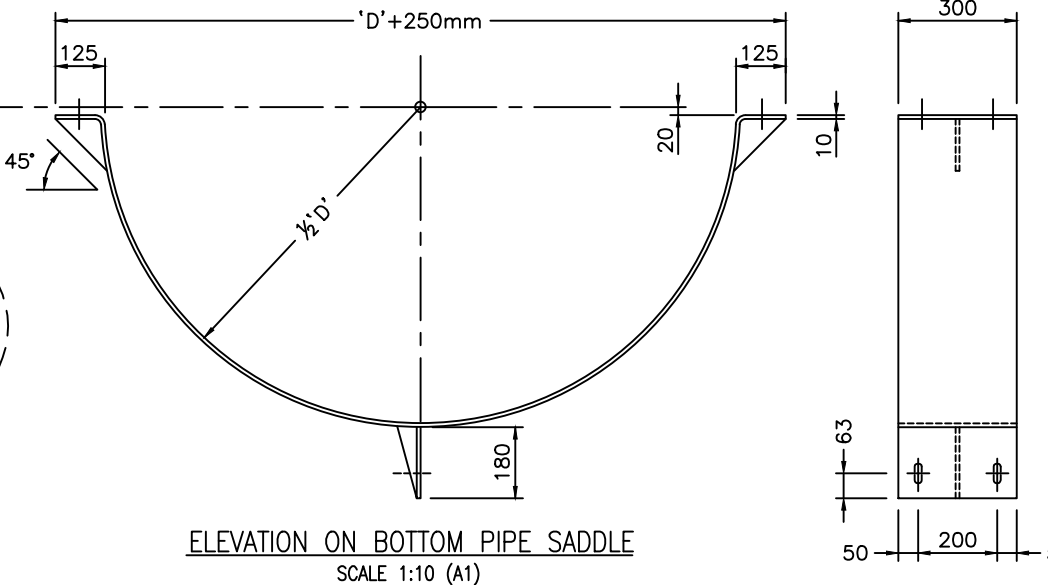
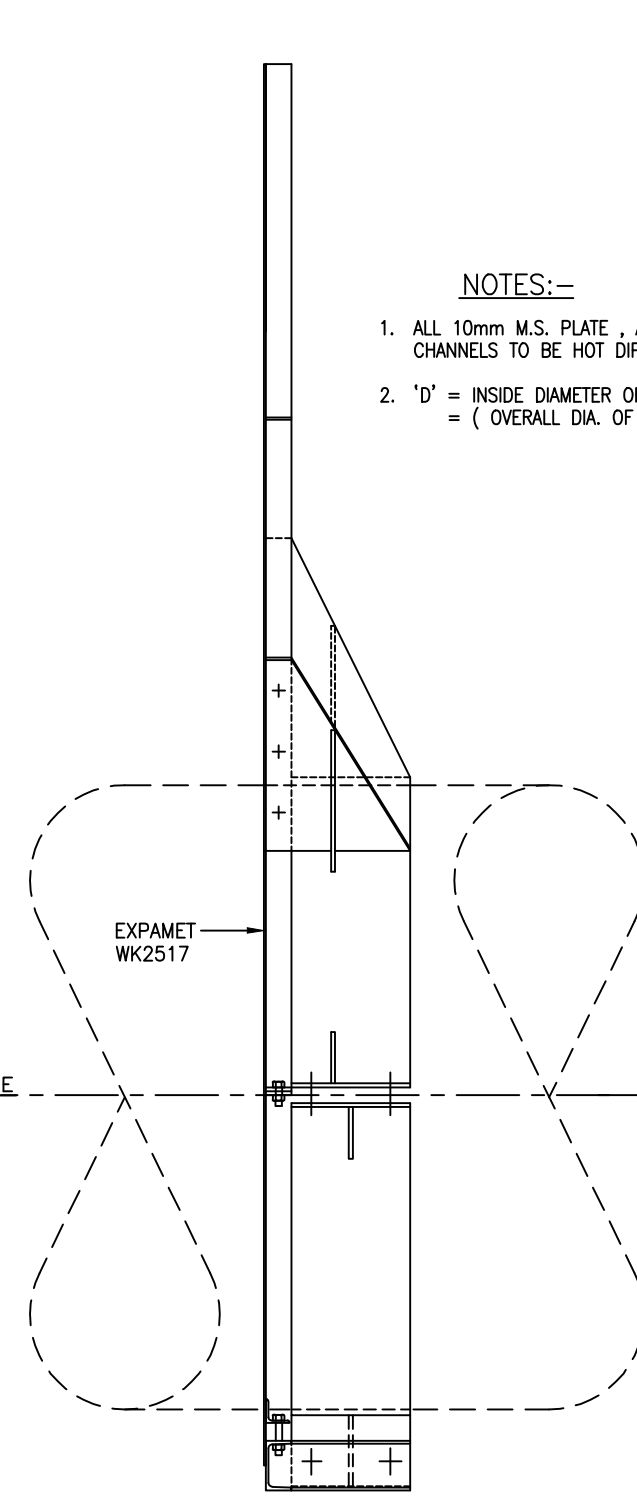
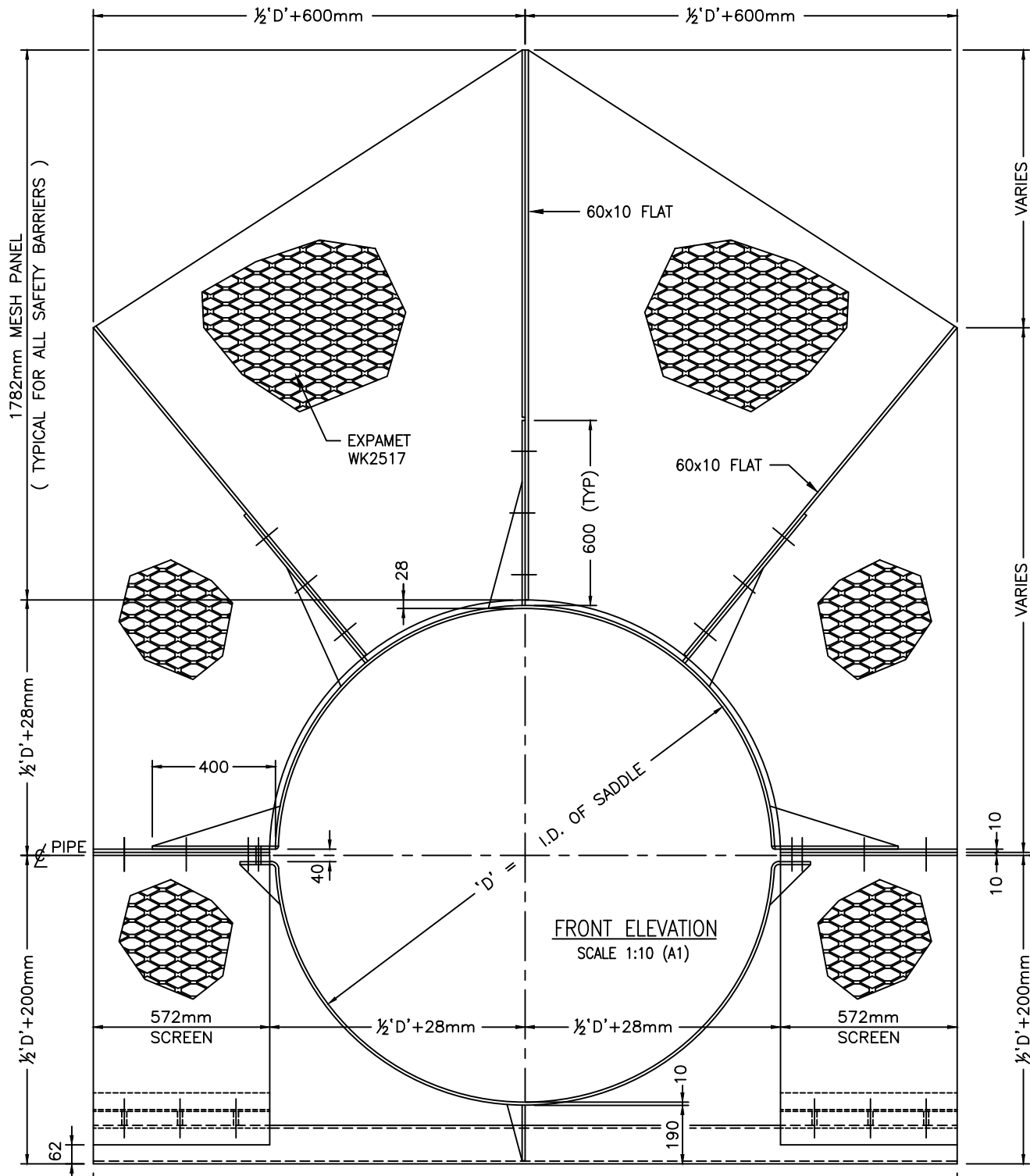
| OPERATIONS | INFRASTRUCTURE |
|------------|----------------|
|            |                |



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

|                               |                   |
|-------------------------------|-------------------|
| CAD FILE 2000244.047          | DATE 16-09-13     |
| ORIGINAL SCALE A1<br>AS SHOWN | CONTRACT No.<br>- |
| REF. No.                      | ISSUE             |
| DWG. No. 2000244.047          | -                 |



NOTES:-

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

NOTES FOR PIPE BRIDGE SAFETY BARRIER

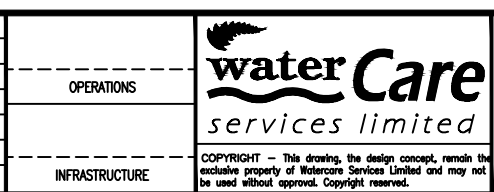
THE PRIMARY FUNCTION OF A PIPE BRIDGE SAFETY BARRIER IS TO PREVENT CHILDREN FROM CLIMBING ONTO THE PIPE AND THEN ACCIDENTLY FALLING OFF. BARRIERS ARE NOT INTENDED AS A SECURITY MEASURE FOR ADJOINING PRIVATE PROPERTY.

THE FOLLOWING IS A SET OF GUIDELINES :

1. RELATIVELY SHORT PIPES ( eg. CROSSING NARROW WATERCOURSES ) MAY ONLY REQUIRE A SINGLE BARRIER AT MID-SPAN.
2. LONGER PIPES ( eg. CROSSING A RIVER , STREAM OR TIDAL AREA ) WILL NORMALLY REQUIRE TWO BARRIERS , ONE AT EACH END.
3. POSITION IS A SIGNIFICANT FACTOR IN THE EFFECTIVENESS OF THE BARRIER. BARRIER LOCATION WILL REQUIRE THE APPROVAL OF THE FACILITY OPERATOR.
4. 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.
5. THE BARRIERS ARE TO BE FABRICATED AND INSTALLED SUCH THAT THERE ARE NO FOOTHOLDS ON THE ACCESSIBLE ( FRONT ) SIDE OF THE BARRIER.
6. THE BARRIER FIXTURES SHOULD BE BOTH INACCESSIBLE TO VANDALS , AND TAMPER-RESISTANT.

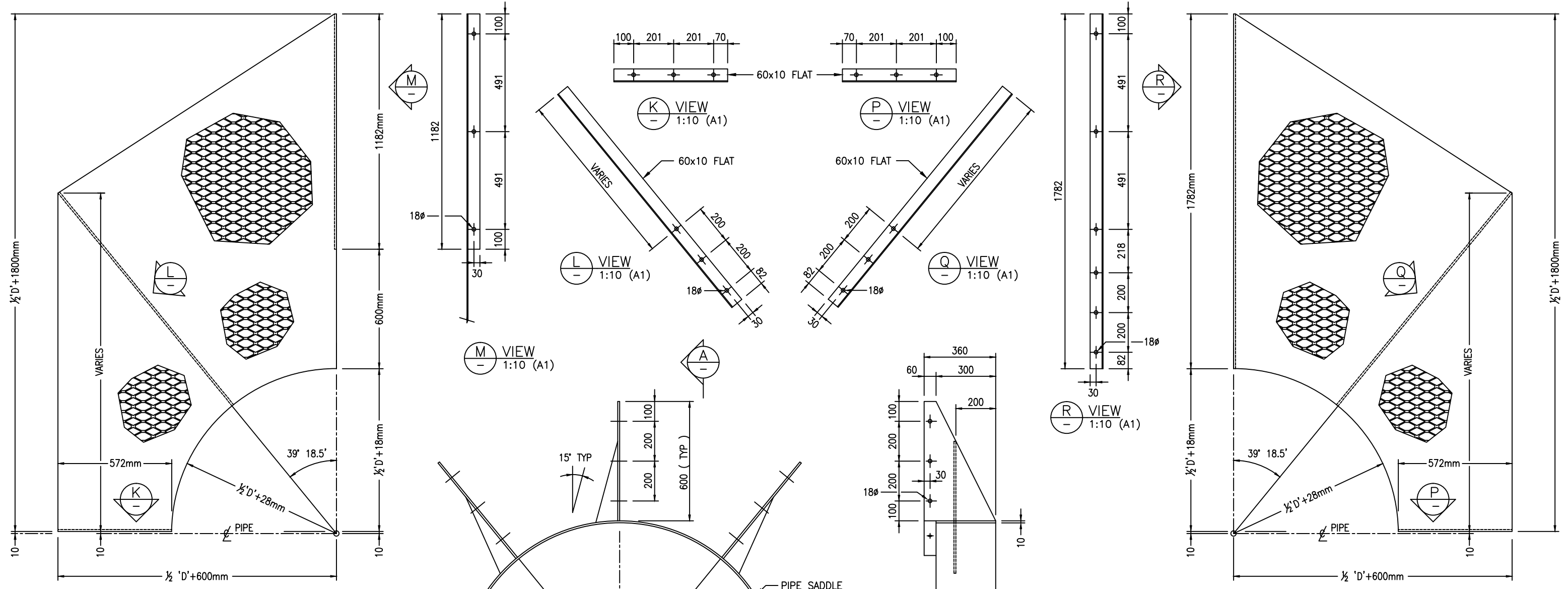
L:\ --- \ EGCADF1 \ 2013 \ WATERCARE SAFETY BARRIER \ 2000244.048 .DWG

|                |       |                                |       |                |      |
|----------------|-------|--------------------------------|-------|----------------|------|
| 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.           |      |



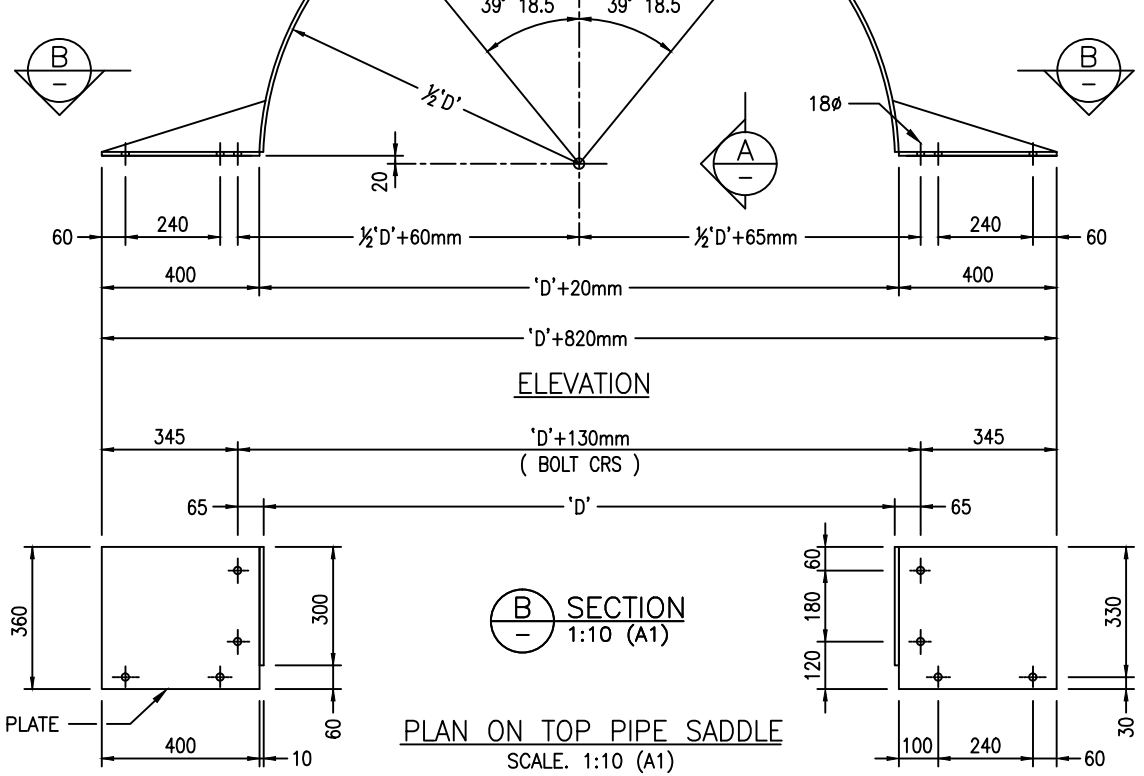
WATERCARE SERVICES STANARD  
PIPE BRIDGE SAFETY BARRIERS  
SAFETY BARRIER DETAILS - SHEET 2 OF 3

|                |             |              |          |
|----------------|-------------|--------------|----------|
| CAD FILE       | 2000244.048 | DATE         | 16-09-13 |
| ORIGINAL SCALE | A1          | CONTRACT No. | -        |
| AS SHOWN       |             |              |          |
| REF. No.       |             | ISSUE        |          |
| DWG. No.       | 2000244.048 |              |          |



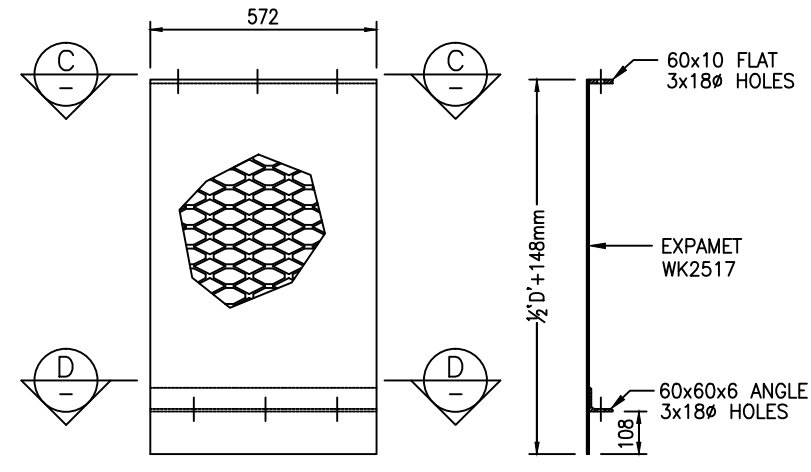
**LEFT HAND SCREEN SECTION**  
HOT DIP GALVANISED FINISH

**RIGHT HAND SCREEN SECTION**  
HOT DIP GALVANISED FINISH



**ELEVATION**

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

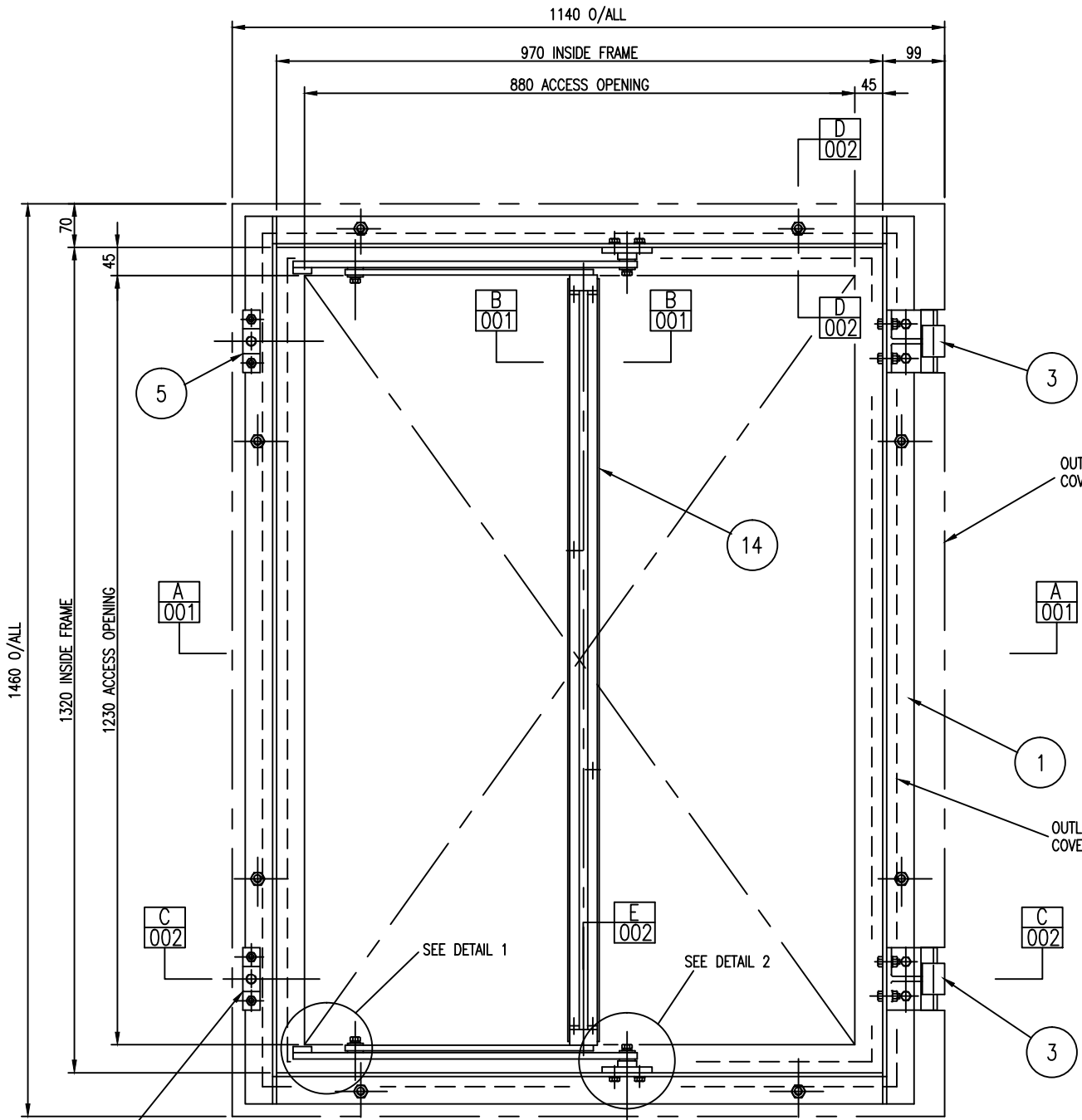


**BOTTOM SCREEN SECTIONS**  
1 OFF AS SHOWN - 1 OFF OPP HAND  
HOT DIP GALVANISED FINISH

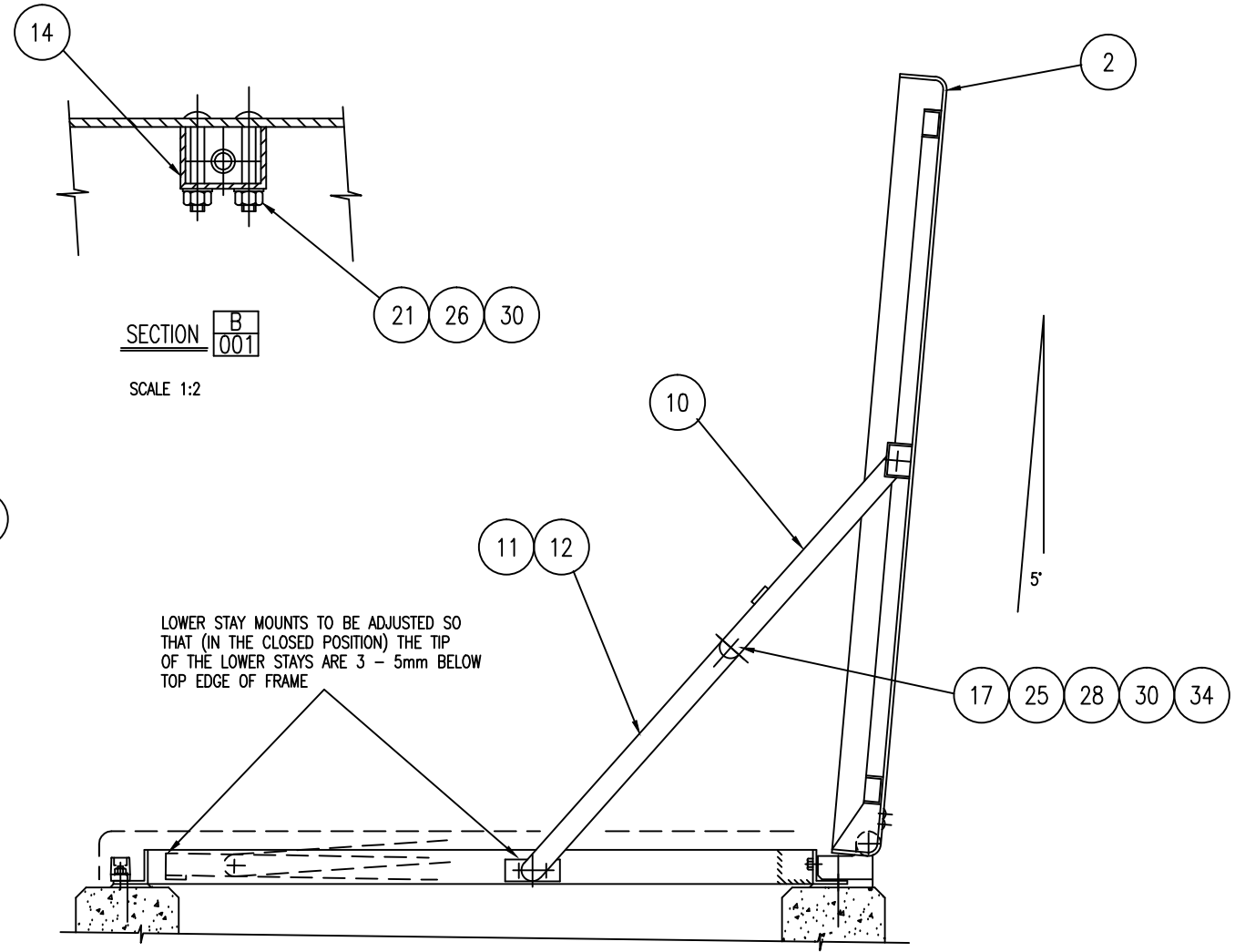
- NOTES:-**
- ALL 10mm M.S. PLATE, ANGLES & CHANNELS TO BE HOT DIP GALVANISED
  - 'D' = INSIDE DIAMETER OF PIPE SADDLE  
= ( OVERALL DIA. OF PIPE + 5mm )

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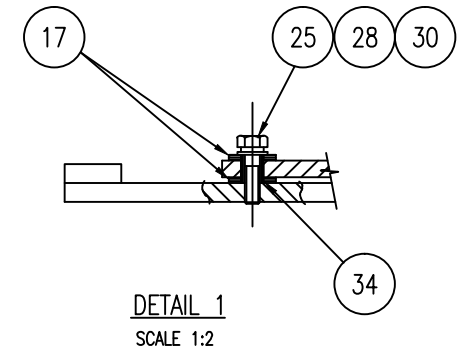
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|--------------------------------|------|--------------|-------|-------|-------|--|-------|----------------|--|-----------------|----------------|
| DESIGNED                       |      | DES. CHECKED |       | DRAWN |       | DWG. CHECKED   |       | PROJECT LEADER |  | INFRAS'TR APP'D |                |
|                                |      | L.C.         |       | L.M.  |       | L.M.   |       | L.C.           |  | A.M.            |                |
| 09-13                          |      | 09-13        |       | 09-13 |       | 09-13  |       | 09-13          |  | 09-13           |                |
| SAFETY BARRIERS - SHEET 3 OF 3 |      | L.C.         |       | A.M.  |       | L.C.   |       | A.M.           |  | L.C.            |                |
| ISSUE                          | DATE | BY           | APPD. | BY    | APPD. | BY   | APPD. | BY             | APPD.  | DATE            | INFRASTRUCTURE |
|                                |      |              |       |       |       |  |       |                |  |                 |                |
|                                |      |              |       |       |       |  |       |                | <p>WATERCARE SERVICES STANDARD<br/>PIPE BRIDGE SAFETY BARRIERS<br/>SAFETY BARRIER DETAILS - SHEET 3 OF 3</p> |                 |                |
|                                |      |              |       |       |       | <p>CAD FILE 2000244.049<br/>ORIGINAL SCALE A1<br/>AS SHOWN</p> |       |                | <p>DATE 16-09-13<br/>CONTRACT No. -<br/>ISSUE -</p>  |                 |                |
|                                |      |              |       |       |       | <p>REF. No. -</p>  |       |                | <p>DWG. No. 2000244.049</p>  |                 |                |



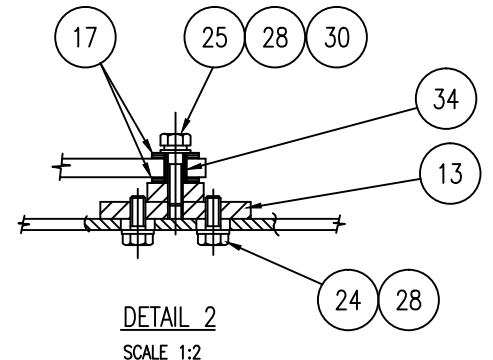
PLAN VIEW  
LID SHOWN IN OUTLINE ONLY FOR CLARITY



SECTION A 001



DETAIL 1  
SCALE 1:2



DETAIL 2  
SCALE 1:2

| ITEM | MATL     | DESCRIPTION                           | QTY | MICROFILM NO. |
|------|----------|---------------------------------------|-----|---------------|
| 35   | ST. STL. | M6 x 10 LG. CONE POINT GRUB SCREW     | 4   |               |
| 34   | (INA)    | INNER BRG. SLEEVE 9-1/Dx12 O/Dx16 LG. | 4   |               |
| 33   | ST. STL. | M10 STANDARD NUT                      | 4   |               |
| 32   | ST. STL. | M8 STANDARD NUT                       | 18  |               |
| 31   | ST. STL. | M6 STANDARD NUT                       | 6   |               |
| 30   | ST. STL. | Ø8 SPRING WASHER                      | 4   |               |
| 29   | ST. STL. | Ø10 FLAT WASHER                       | 4   |               |
| 28   | ST. STL. | Ø8 FLAT WASHER                        | 26  |               |
| 27   | ST. STL. | Ø6 FLAT WASHER                        | 6   |               |
| 26   | ST. STL. | M10 x 30 LG. HEX HD. BOLT             | 4   |               |
| 25   | ST. STL. | M8 x 30 LG. HEX HD. BOLT              | 4   |               |
| 24   | ST. STL. | M8 x 20 LG. HEX HD. BOLT              | 4   |               |
| 23   | ST. STL. | M8 x 30 LG. C'SUNK SCREW              | 4   |               |
| 22   | ST. STL. | COACH BOLT - M8 x 25 LG.              | 10  |               |
| 21   | ST. STL. | COACH BOLT - M6 x 50 LG.              | 6   |               |

| ITEM | MATL         | DESCRIPTION                     | QTY | MICROFILM NO. |
|------|--------------|---------------------------------|-----|---------------|
| 20   |              |                                 |     |               |
| 19   | PTFE         | HINGE BEARING                   | 2   | 2001979 005   |
| 18   | U.H.W.M.P.E. | TORSION BAR BEARING             | 2   | 2001979 007   |
| 17   | U.H.W.M.P.E. | WASHER                          | 8   | 2001979 007   |
| 16   | BRASS        | HINGE PIN                       | 2   | 2001979 007   |
| 15   | ST.STL.      | PUZZLE SCREW                    | 2   | 2001979 006   |
| 14   | ALUMINIUM    | TORSION STAY COVER              | 1   | 2001979 005   |
| 13   | ST.STL.      | LOWER STAY MOUNT                | 2   | 2001979 007   |
| 12   | ST.STL.      | LOWER STAY R.H. (OPPOSITE HAND) | 1   | 2001979 007   |
| 11   | ST.STL.      | LOWER STAY L.H. (AS DRAWN)      | 1   | 2001979 007   |
| 10   | ST. STL.     | TORSION STAY                    | 1   | 2001979 005   |
| 9    | NYLON        | HINGE PACKER                    | 2   | 2001979 005   |
| 8    | NYLON        | HINGE PACKER                    | 2   | 2001979 005   |
| 7    |              |                                 |     |               |
| 6    |              |                                 |     |               |
| 5    | PLASTIC      | UPPER & LOWER LOCK CLAMP        | 2   | 2001979 006   |
| 4    | ALUMINIUM    | HINGE                           | 2   | 2001979 006   |
| 3    | ALUMINIUM    | HINGE BASE                      | 2   | 2001979 006   |
| 2    | ALUMINIUM    | COVER                           | 1   | 2001979 004   |
| 1    | ST. STL.     | FRAME                           | 1   | 2001979 003   |

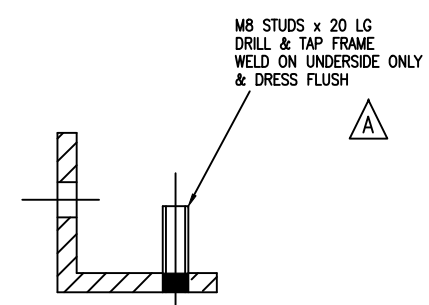
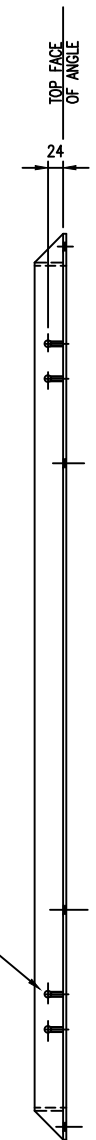
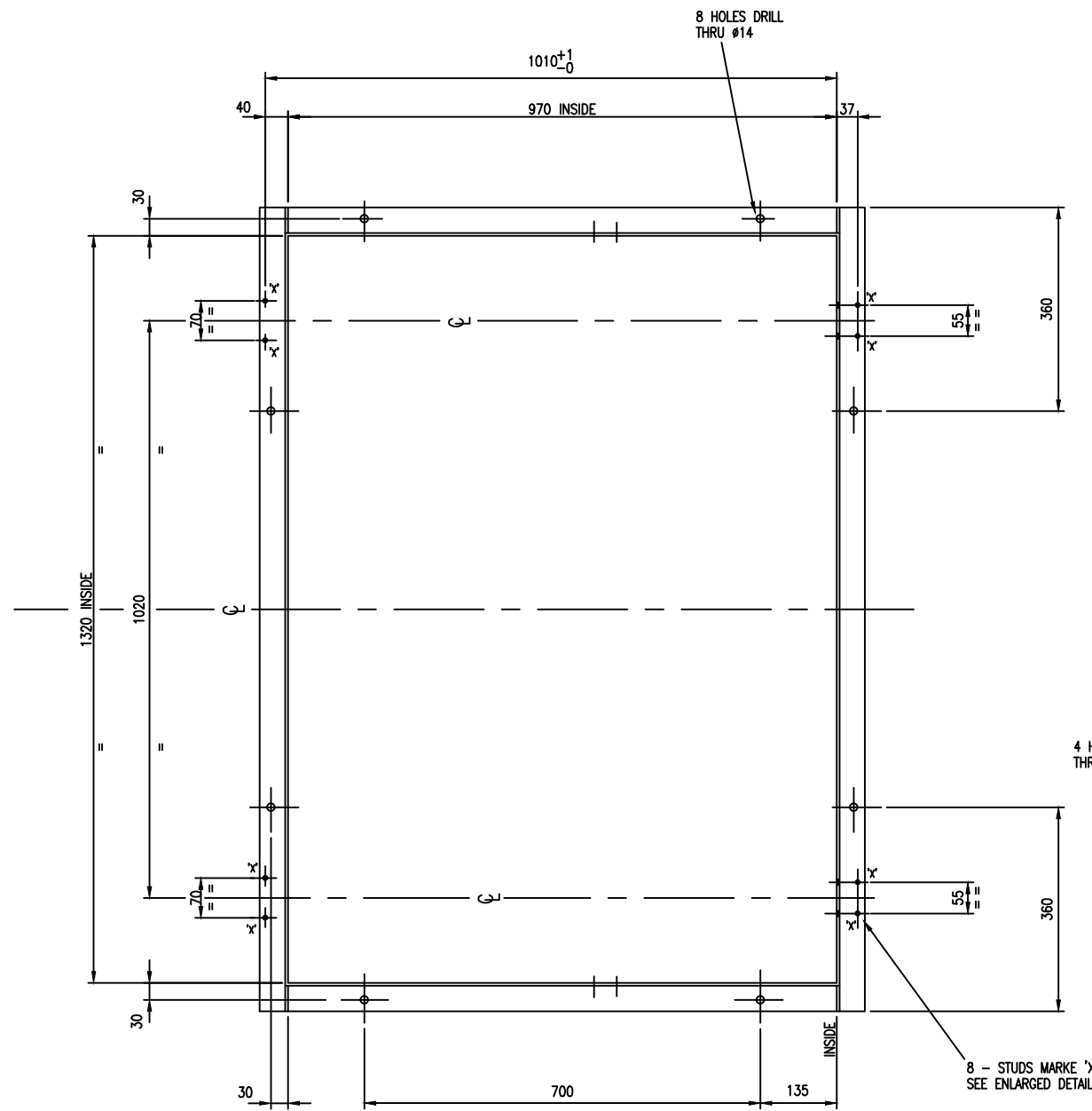
| ISSUE | DATE  | AMENDMENT                           | BY   | APPD. | BY | DATE |
|-------|-------|-------------------------------------|------|-------|----|------|
| A     | 08/11 | ITEM 6 & 7 REMOVED                  | G.S. |       |    |      |
| A     | 08/11 | ITEM 5 & 15 RENAMED - ITEM 19 ADDED | G.S. |       |    |      |

| DESIGNED | DES. CHECKED | DRAWN          | G.S.MITH | 6/97 | MANAGER |
|----------|--------------|----------------|----------|------|---------|
|          |              | DWG. CHECKED   |          |      |         |
|          |              | PROJECT LEADER |          |      |         |

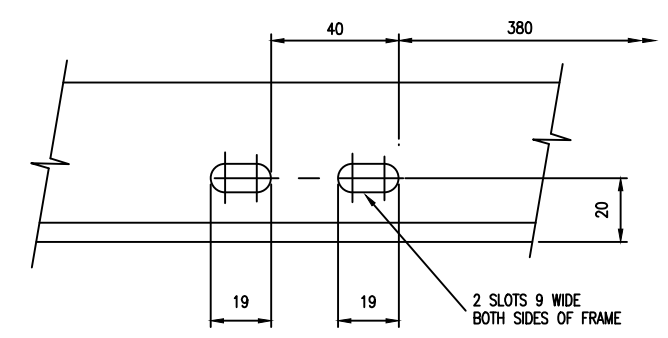


WATERCARE SERVICES WATER RETICULATION  
STANDARD SEALED ACCESS HATCH  
ASSEMBLY (SHEET 1 OF 2)

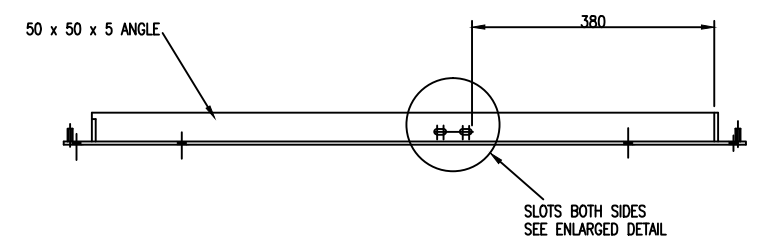
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| CAD FILE 2001979.001 | DATE 15:08:11 |
| ORIGINAL SCALE A1    | CONTRACT No.  |
| 1:5                  | -             |
| DRAWING No.          | ISSUE         |
| 2001979 .001         | A             |



STUD DETAIL



SLOT DETAIL



ITEM 1 FRAME  
 MATERIAL :- 316 STAINLESS STEEL

|                |         |      |  |
|----------------|---------|------|--|
| DESIGNED       |         |      |  |
| DES. CHECKED   |         |      |  |
| DRAWN          | G.SMITH | 6/97 |  |
| DWG. CHECKED   |         |      |  |
| PROJECT LEADER |         |      |  |
| BY             | G.S.    |      |  |
| APPD.          |         |      |  |
| BY             |         |      |  |
| DATE           |         |      |  |

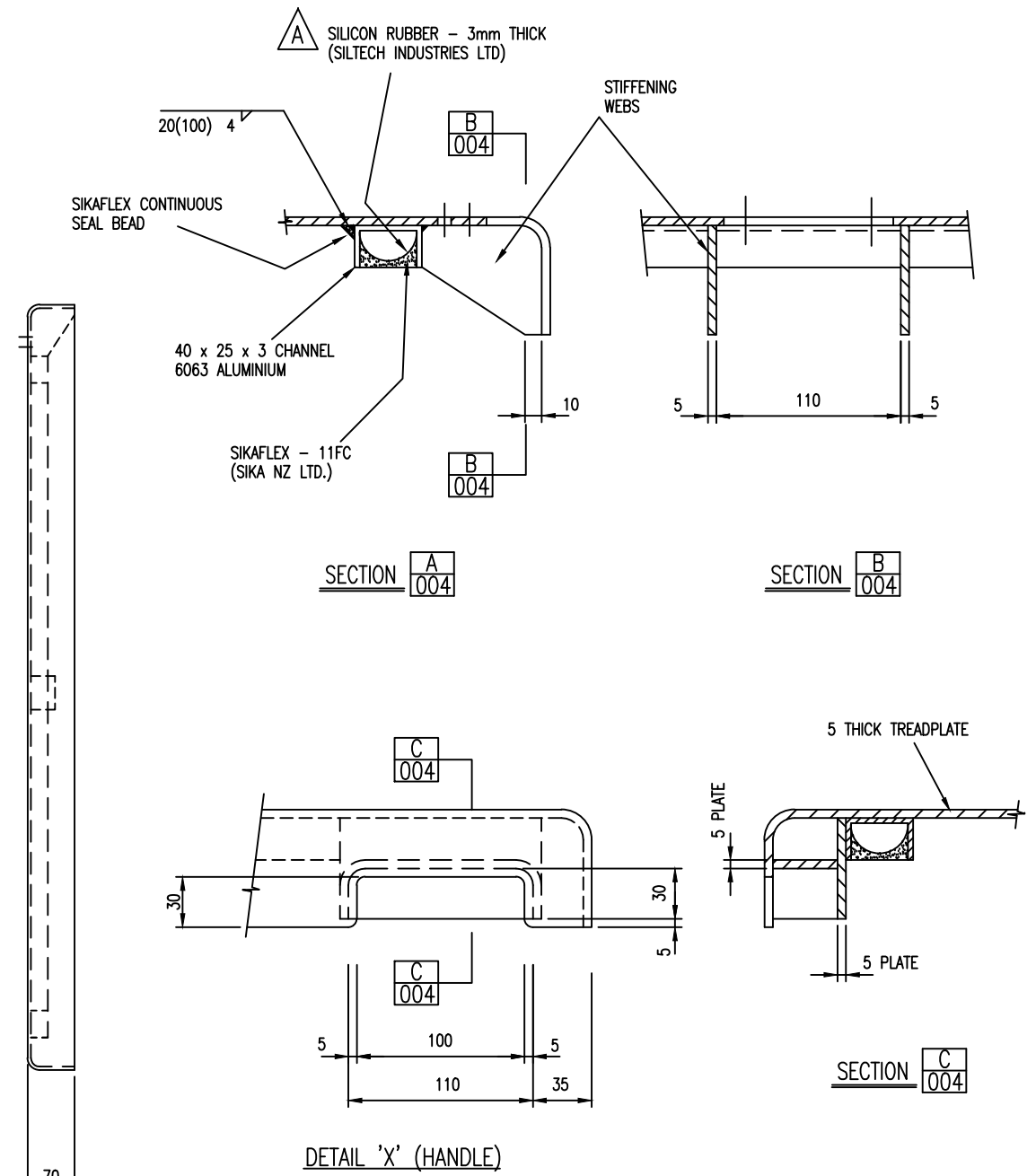
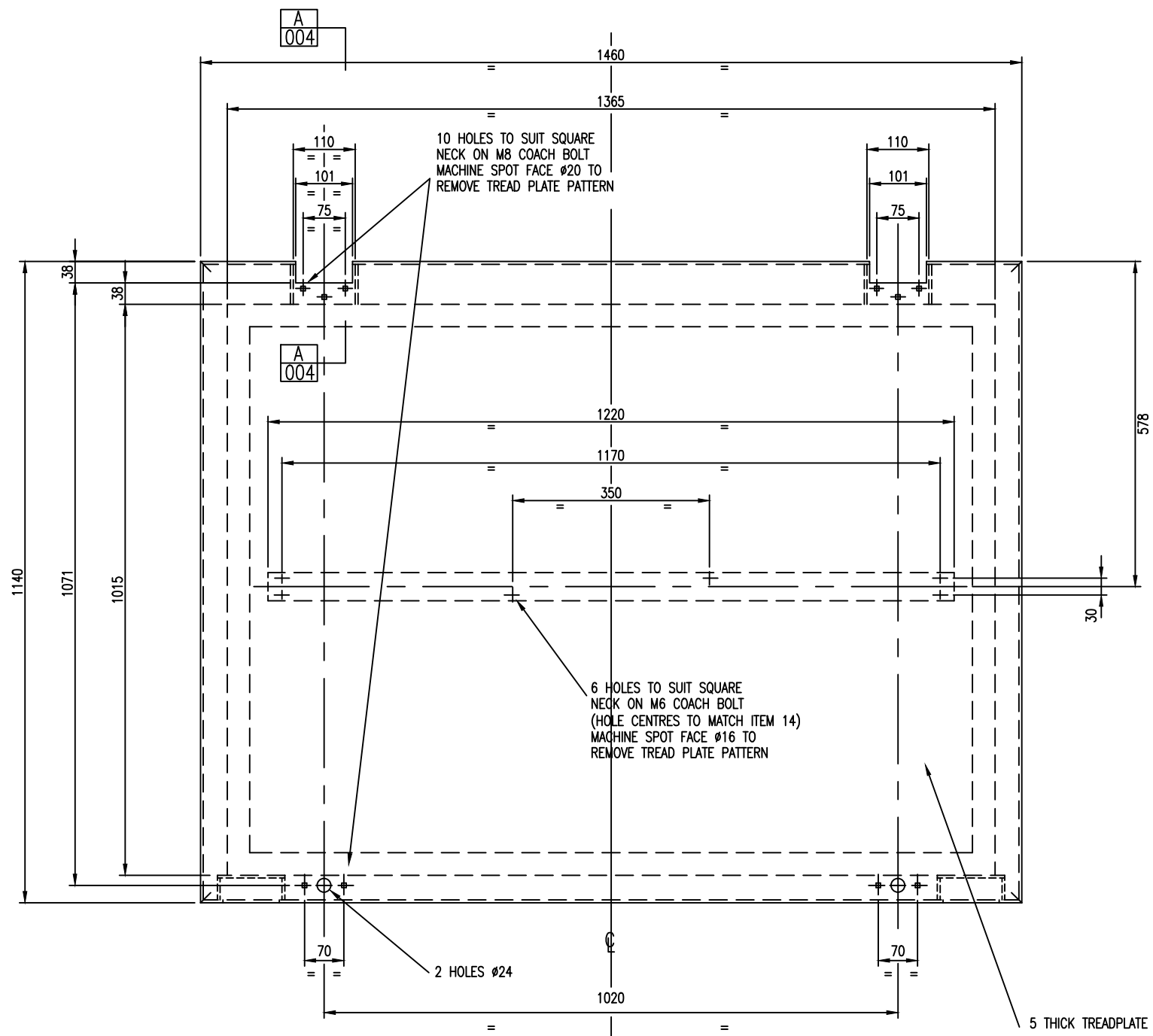
MANAGER  
 WATER OPERATIONS



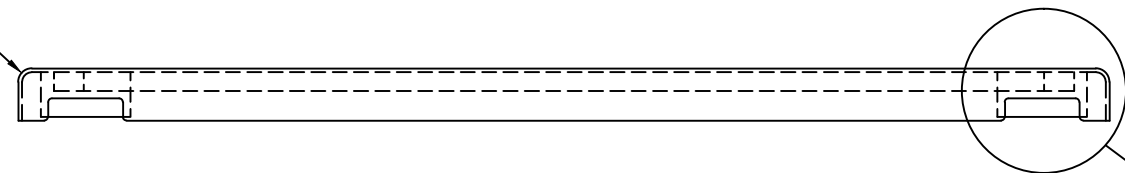
WATERCARE SERVICES WATER RETICULATION  
 STANDARD SEALED ACCESS HATCH  
 COMPONENT 1

|                       |               |
|-----------------------|---------------|
| CAD FILE 2001979.003A | DATE 15-08-11 |
| ORIGINAL SCALE A1     | CONTRACT No.  |
| 1:5                   | -             |
| DRAWING No.           | ISSUE         |
| 2001979 .003          | A             |





18 EXTERNAL RAD (TYP)



2 HANDLES SEE DETAIL 'X'

ITEM 2 COVER

MATERIAL :- 5251 ALUMINIUM UNLESS STATED OTHERWISE (MEDIUM STRENGTH ALUM-MAGNESIUM ALLOY FOR MARINE & ROAD VEHICLES)

|                |         |                               |      |       |    |
|----------------|---------|-------------------------------|------|-------|----|
| DESIGNED       |         |                               |      |       |    |
| DES. CHECKED   |         |                               |      |       |    |
| DRAWN          | G.SMITH | 6/97                          |      |       |    |
| DWG. CHECKED   |         |                               |      |       |    |
| PROJECT LEADER |         |                               |      |       |    |
| ISSUE          | DATE    | AMENDMENT                     | BY   | APPD. | BY |
| A              | 08/11   | SEAL BACKING MATERIAL CHANGED | G.S. |       |    |
|                |         |                               |      |       |    |

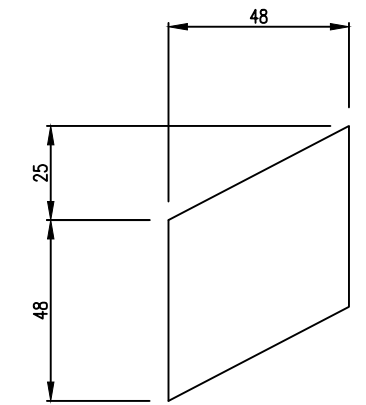
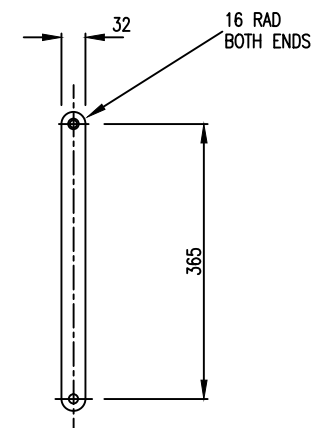
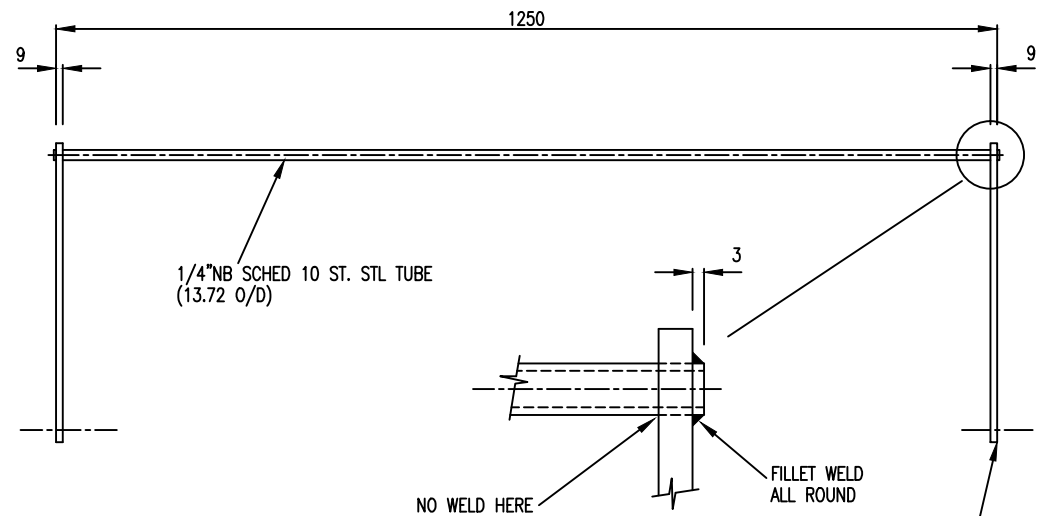
|                          |  |
|--------------------------|--|
| MANAGER                  |  |
| MANAGER WATER OPERATIONS |  |

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WATERCARE SERVICES WATER RETICULATION  
STANDARD SEALED ACCESS HATCH  
COMPONENT 2

|                             |                   |
|-----------------------------|-------------------|
| CAD FILE 2001979.004A       | DATE 15:08:11     |
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| DRAWING No.<br>2001979 .004 | ISSUE<br>A        |

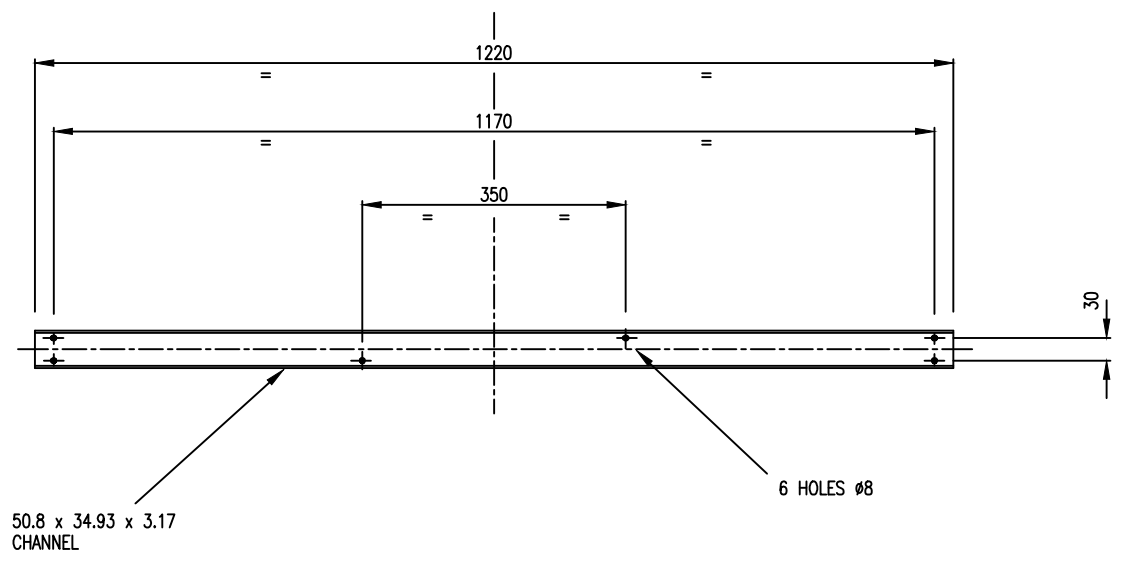


ITEM 8 HINGE BEARING  
MATERIAL :- 0.8mm PTFE SHEET

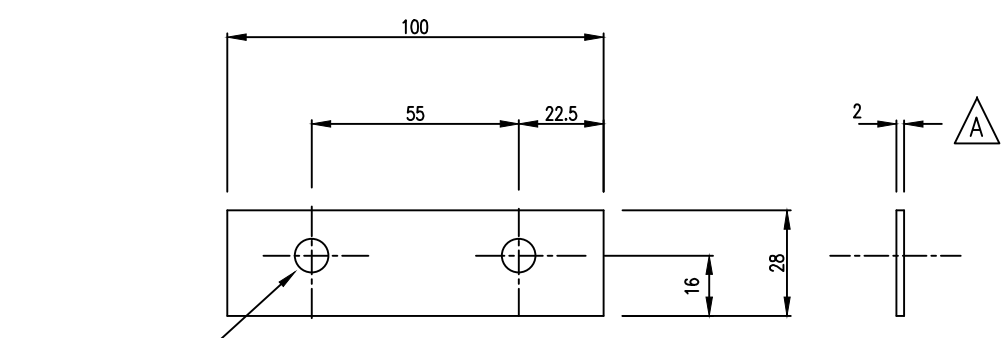
ITEM 10 TORSION STAY  
MATERIAL :- 316 STAINLESS STEEL

NOTE !  
ARMS TO BE PARALLEL, IN  
LINE WITH EACH OTHER &  
SQUARE TO TUBE CENTRE LINE

DRILL Ø12.2

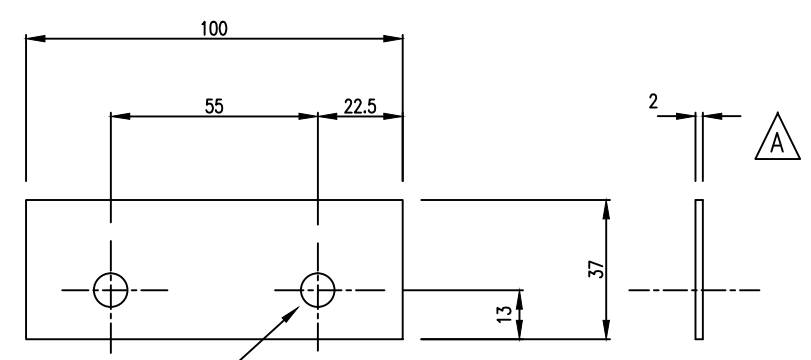


ITEM 14 TORSION STAY COVER  
MATERIAL:- ALUMINIUM 6351



ITEM 8 HINGE PACKER  
MATERIAL :- NYLON

2 HOLES Ø9



ITEM 9 HINGE PACKER  
MATERIAL :- NYLON

2 HOLES Ø9

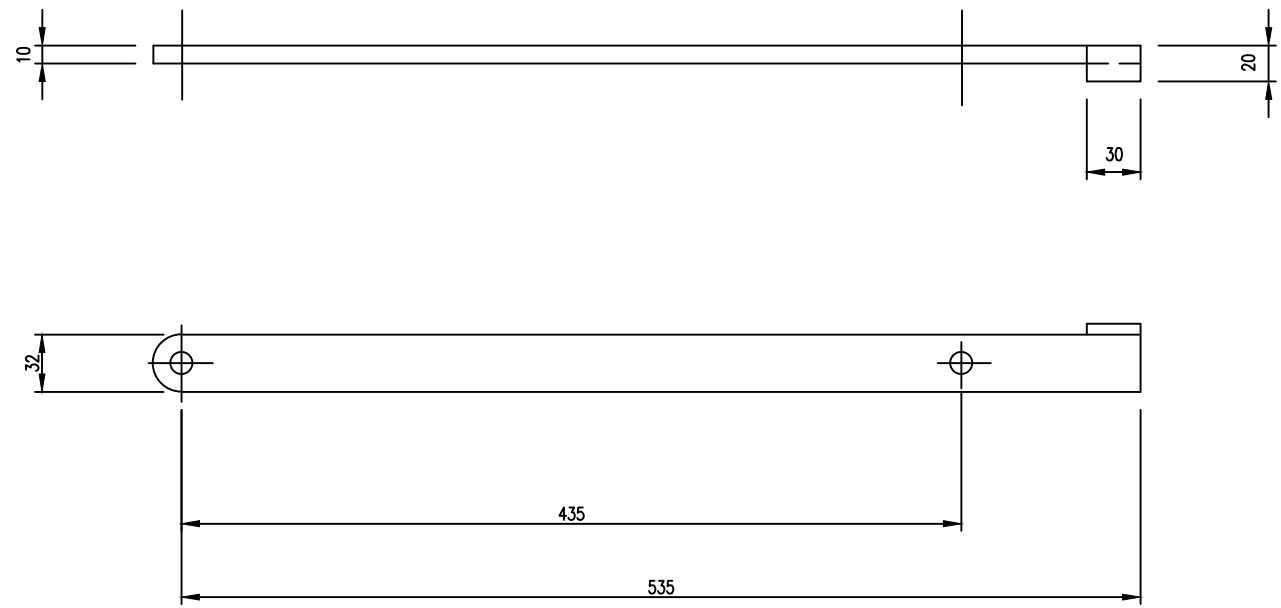
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| DES. CHECKED   |                                    |           |    |       |
| DRAWN          | G.SMITH                            | 6/97      |    |       |
| DWG. CHECKED   |                                    |           |    |       |
| PROJECT LEADER |                                    |           |    |       |
| A 08-11        | ITEM 19 ADDED- ITEM 8 & 9 MODIFIED | G.S.      |    |       |
| ISSUE          | DATE                               | AMENDMENT | BY | APPD. |

|                          |  |
|--------------------------|--|
| MANAGER                  |  |
| MANAGER WATER OPERATIONS |  |



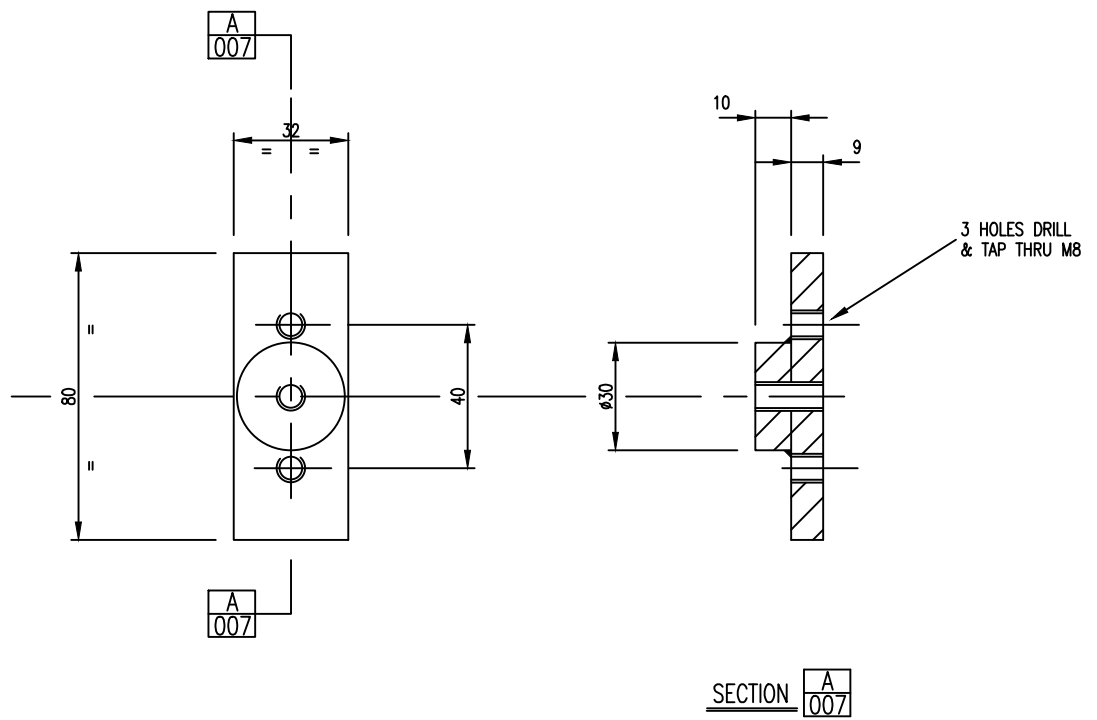
WATERCARE SERVICES WATER RETICULATION  
STANDARD SEALED ACCESS HATCH  
COMPONENTS 7, 8, 9, 10, 14.

|                       |               |
|-----------------------|---------------|
| CAD FILE 2001979.005A | DATE 15:08:11 |
| ORIGINAL SCALE A1     | CONTRACT No.  |
| 1:5 1:1               | -             |
| DRAWING No.           | ISSUE         |
| 2001979 .005          | A             |

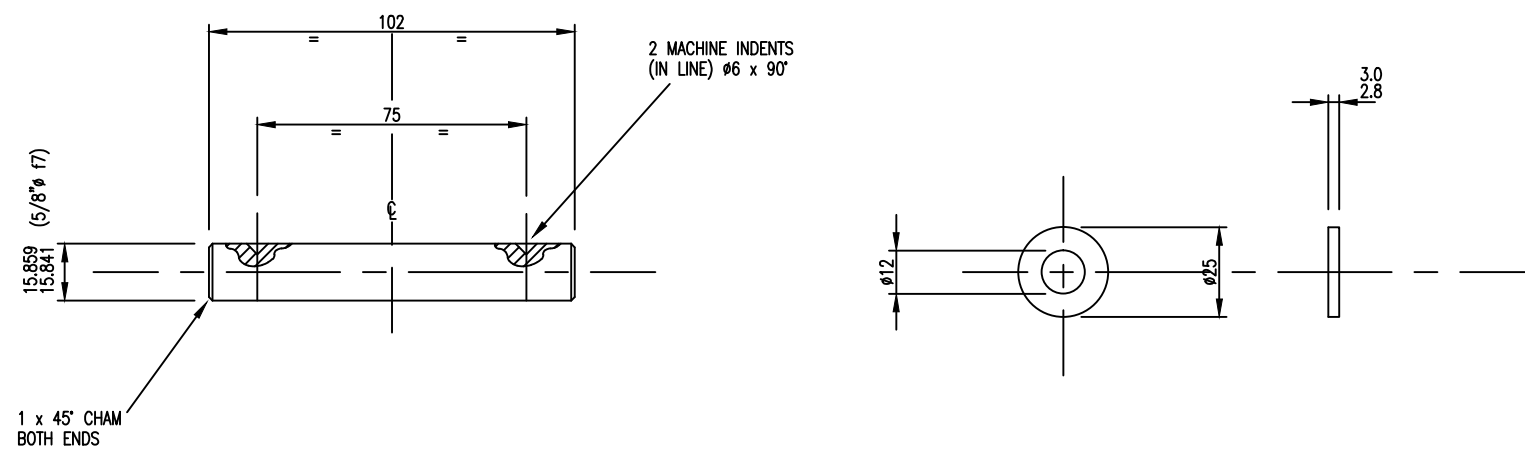


ITEM 11 LOWER STAY L.H. (AS DRAWN)  
MATERIAL:- 316 STAINLESS STEEL

ITEM 12 LOWER STAY R.H. (OPPOSITE HAND)  
MATERIAL:- 316 STAINLESS STEEL

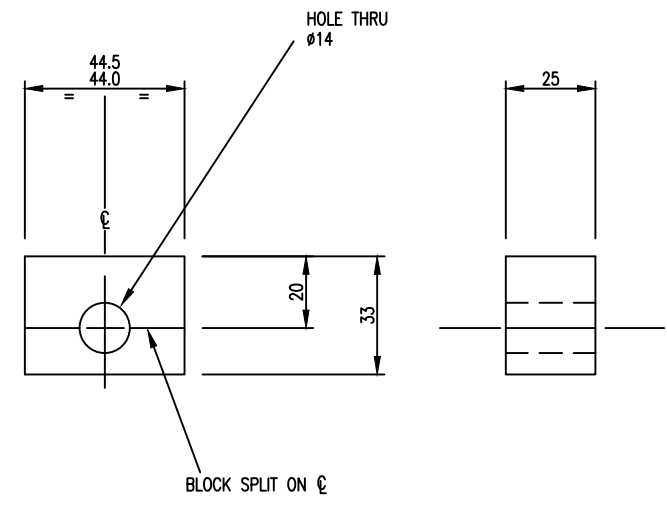


ITEM 13 LOWER STAY MOUNT  
MATERIAL:- 316 STAINLESS STEEL



ITEM 16 HINGE PIN  
MATERIAL:- BRASS

ITEM 17 WASHER  
MATERIAL:- U.H.W.M.P.E.



ITEM 18 TORSION BAR BEARING  
MATERIAL:- U.H.W.M.P.E.

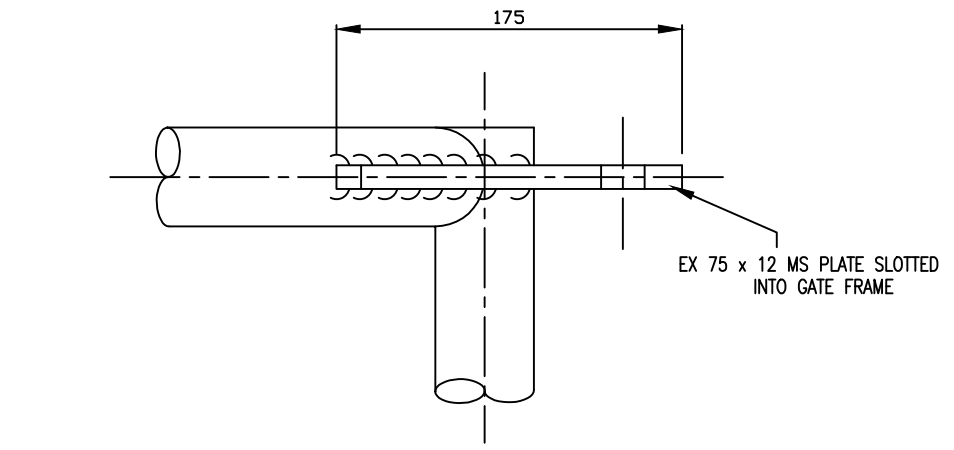
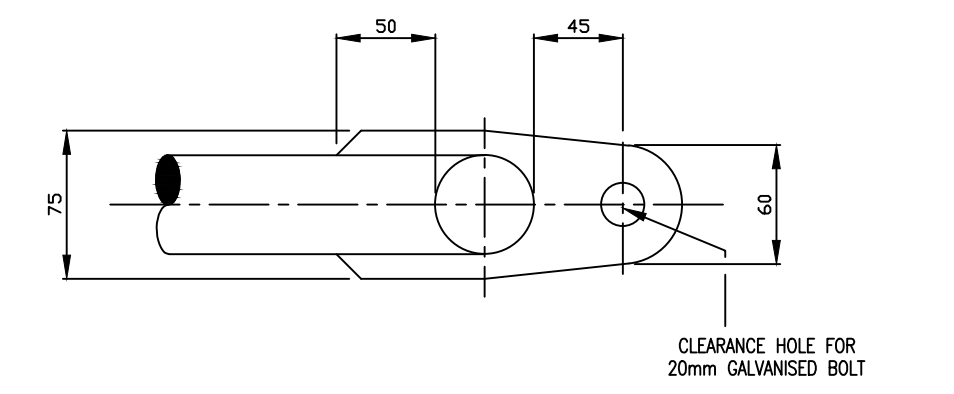
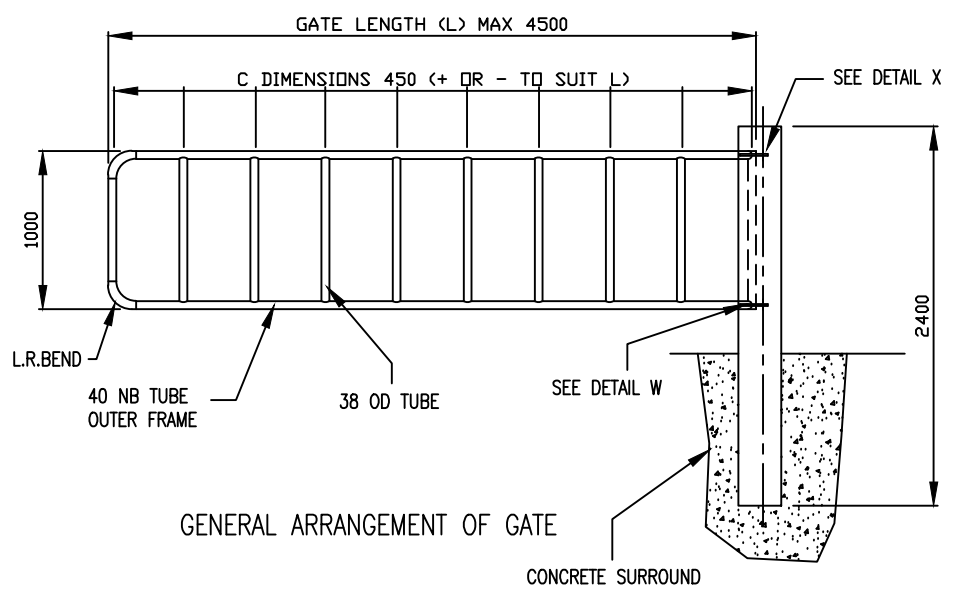
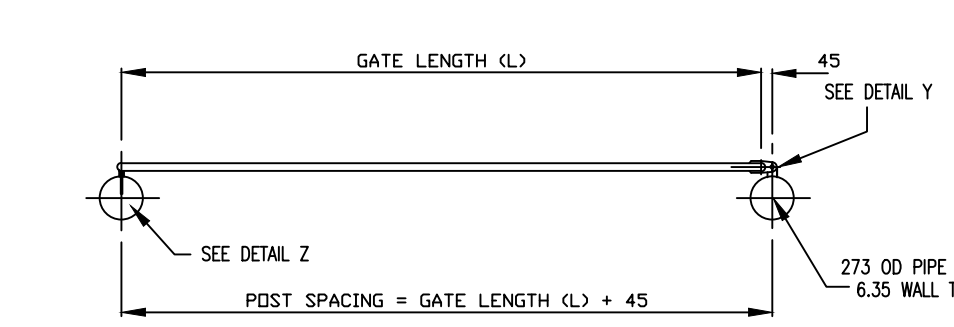
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| DESIGNED       |         |           |    |       |      |
| DES. CHECKED   |         |           |    |       |      |
| DRAWN          | G.SMITH | 6/97      |    |       |      |
| DWG. CHECKED   |         |           |    |       |      |
| PROJECT LEADER |         |           |    |       |      |
| ISSUE          | DATE    | AMENDMENT | BY | APPD. | DATE |

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WATERCARE SERVICES WATER RETICULATION  
STANDARD SEALED ACCESS HATCH COVER  
COMPONENTS 11, 12, 13, 16, 17, 18.

|                      |               |
|----------------------|---------------|
| CAD FILE 2001979.007 | DATE 28:08:01 |
| ORIGINAL SCALE A1    | CONTRACT No.  |
| 1:1 1:2              | -             |
| DRAWING No.          | ISSUE         |
| 2001979 .007         | -             |



DETAIL 

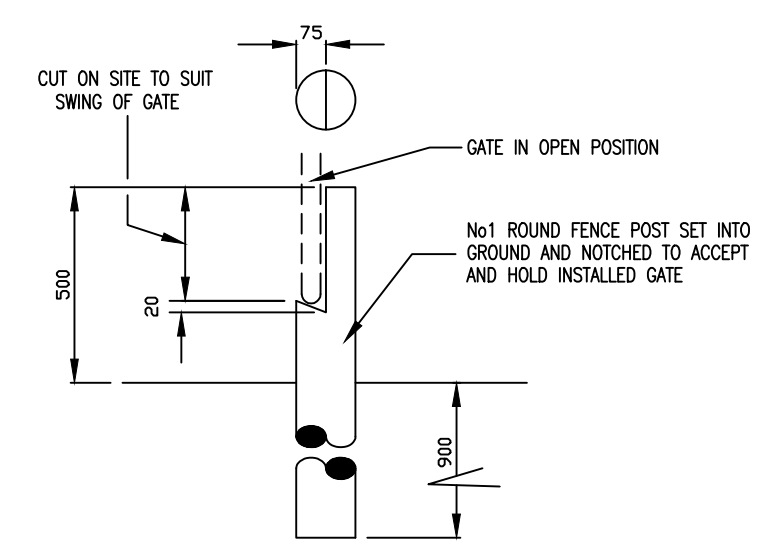
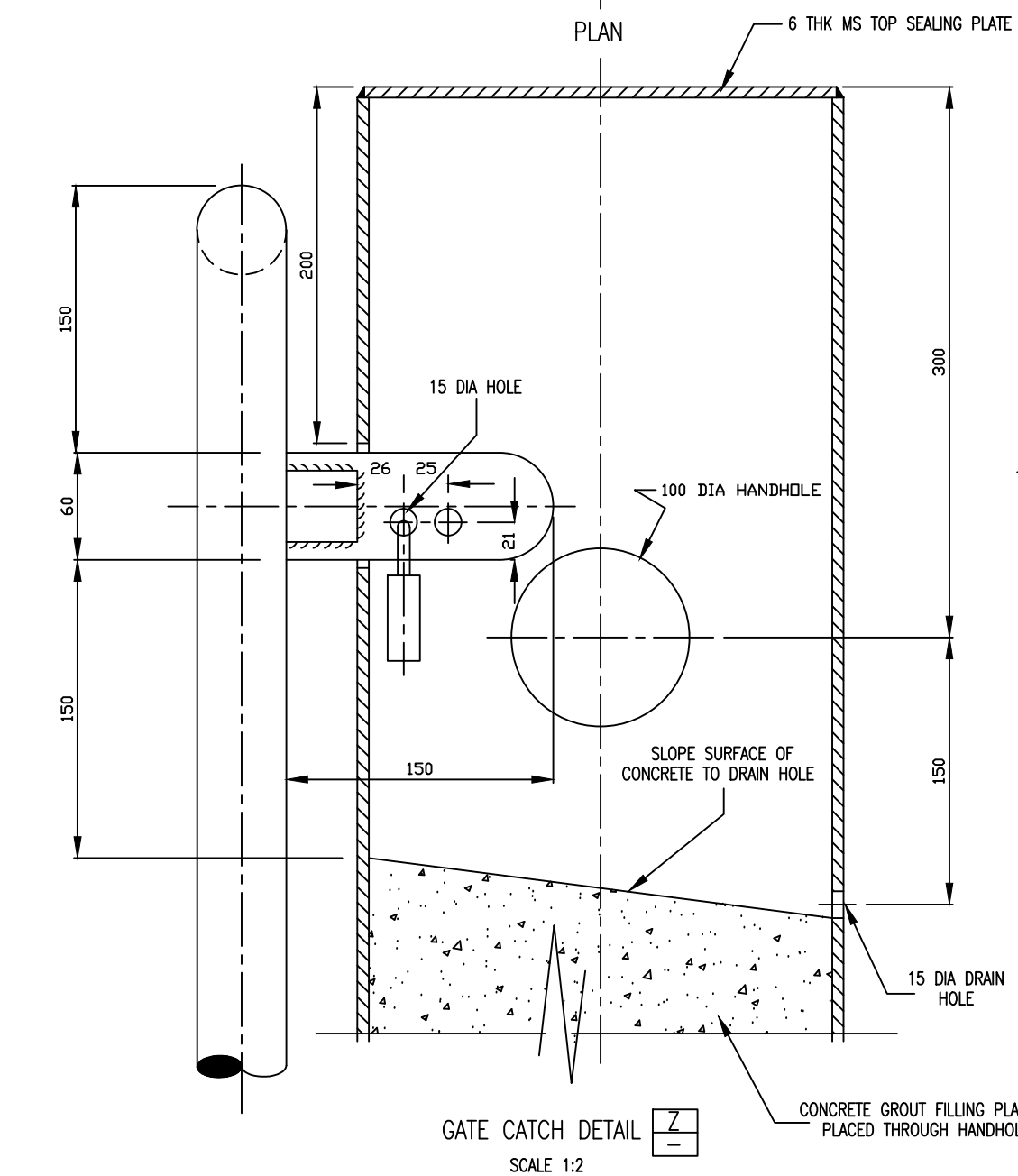
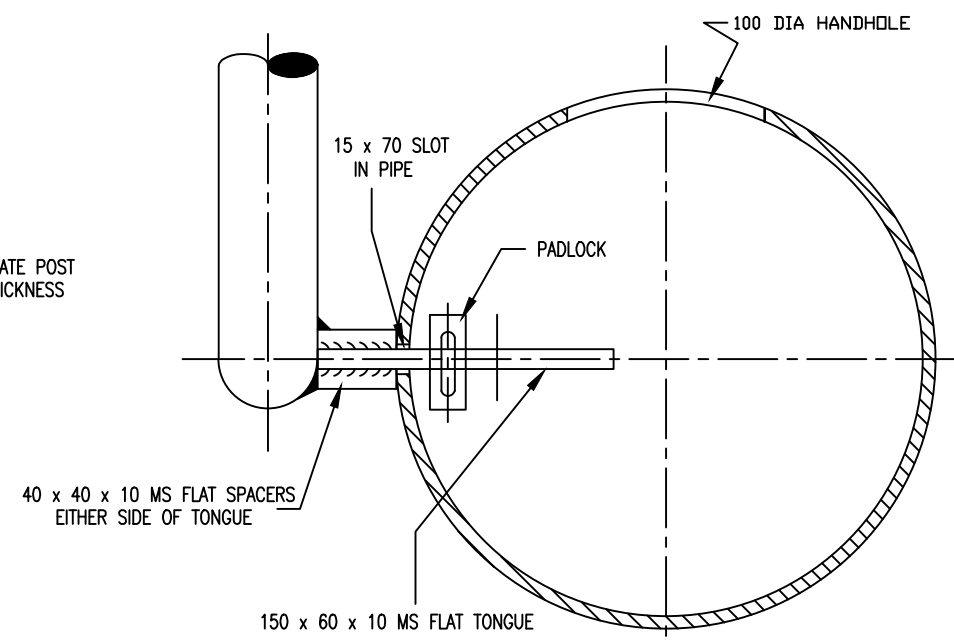
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| X |
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 AND DETAIL 

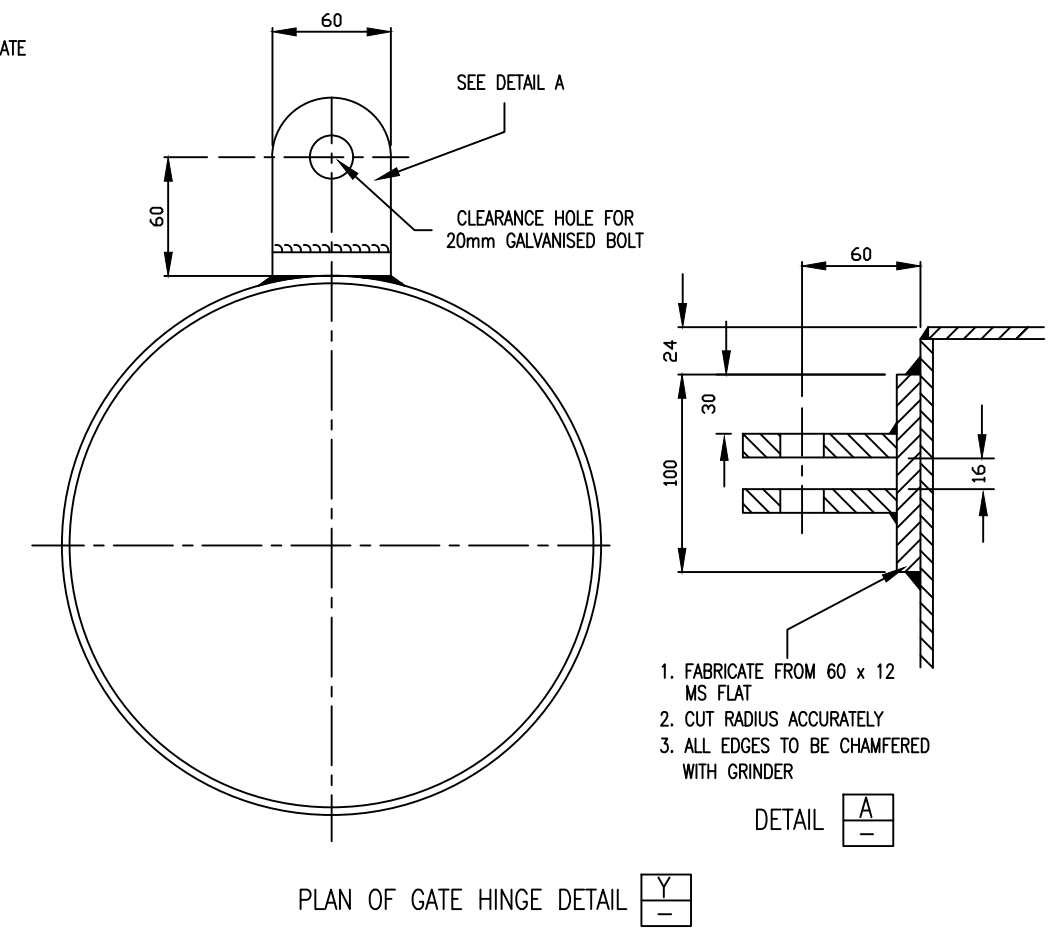
|   |
|---|
| W |
| - |

 SIMILAR

SCALE 1:2



GATE STOP



1. FABRICATE FROM 60 x 12 MS FLAT
2. CUT RADIUS ACCURATELY
3. ALL EDGES TO BE CHAMFERED WITH GRINDER

DETAIL 

|   |
|---|
| A |
| - |

NOTES

1. ALL WELDS TO BE 5mm FILLET WELDS ALL ROUND UNLESS SHOWN OTHERWISE
2. HOT DIP GALVANISE ALL COMPONENTS AFTER FABRICATION
3. REMOVE ALL SHARP EDGES WITH GRINDER BEFORE GALVANISING
4. PROVIDE 10 DIA VENT/DRAIN HOLES NEAR EACH END OF ALL GATE MEMBERS DURING FABRICATION TO ENSURE COMPLETE AND SAFE GALVANISING (REFER GALVANISING MANUAL PUBLISHED BY GALVANISING ASSOCIATION OF AUSTRALIA)
5. ASSEMBLY :-  
(A) SET IN HINGE POST AND HANG GATE  
(B) SET IN OTHER POST TO MATCH TANG OF GATE CATCH

|                |           |           |                    |       |    |
|----------------|-----------|-----------|--------------------|-------|----|
| DESIGNED       | S.CUNIS   |           |                    |       |    |
| DES. CHECKED   |           |           |                    |       |    |
| DRAWN          | M.PILCHER | 09:82     | OPERATIONS MANAGER | WATER |    |
| DWG. CHECKED   |           |           |                    |       |    |
| PROJECT LEADER |           |           |                    |       |    |
| ISSUE          | DATE      | AMENDMENT | BY                 | APPD. | BY |
|                |           |           |                    |       |    |

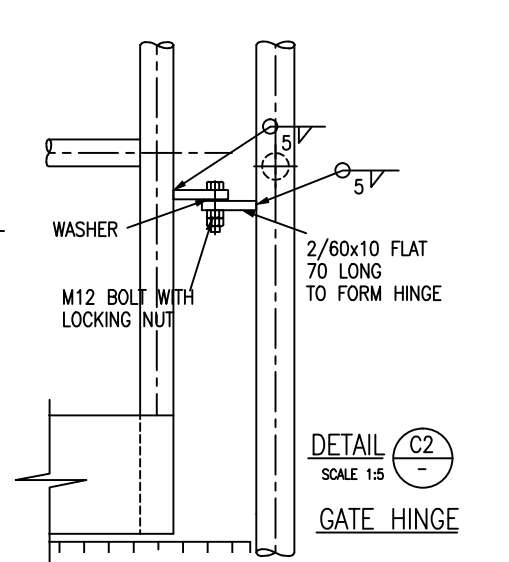
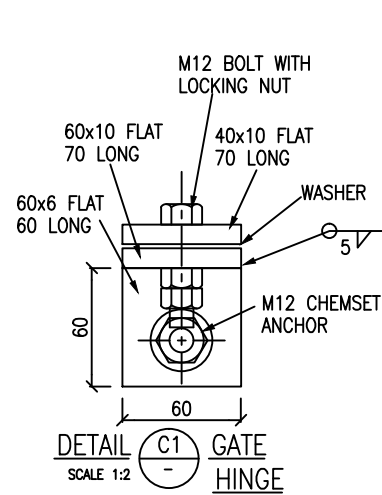
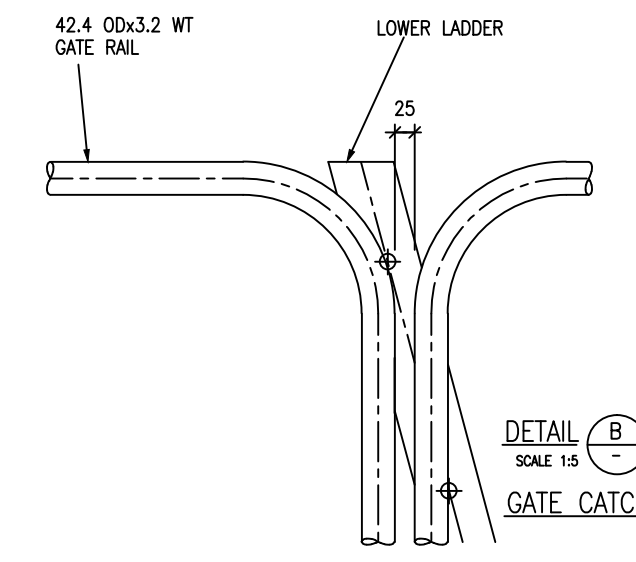
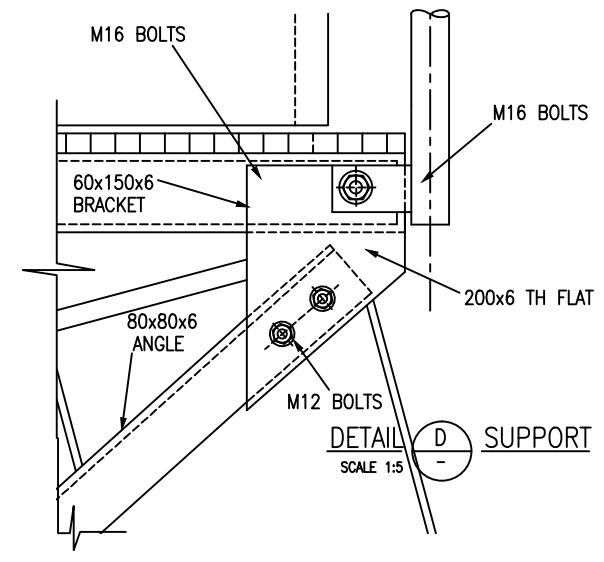
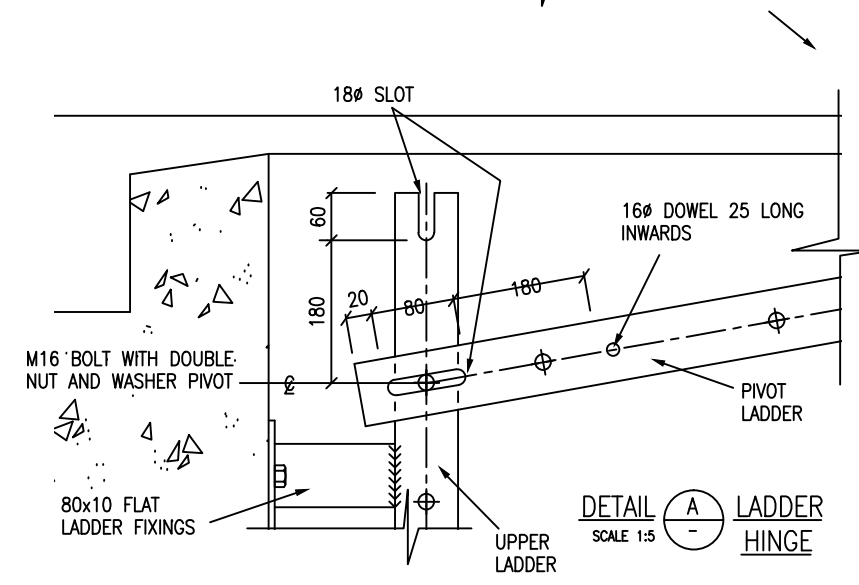
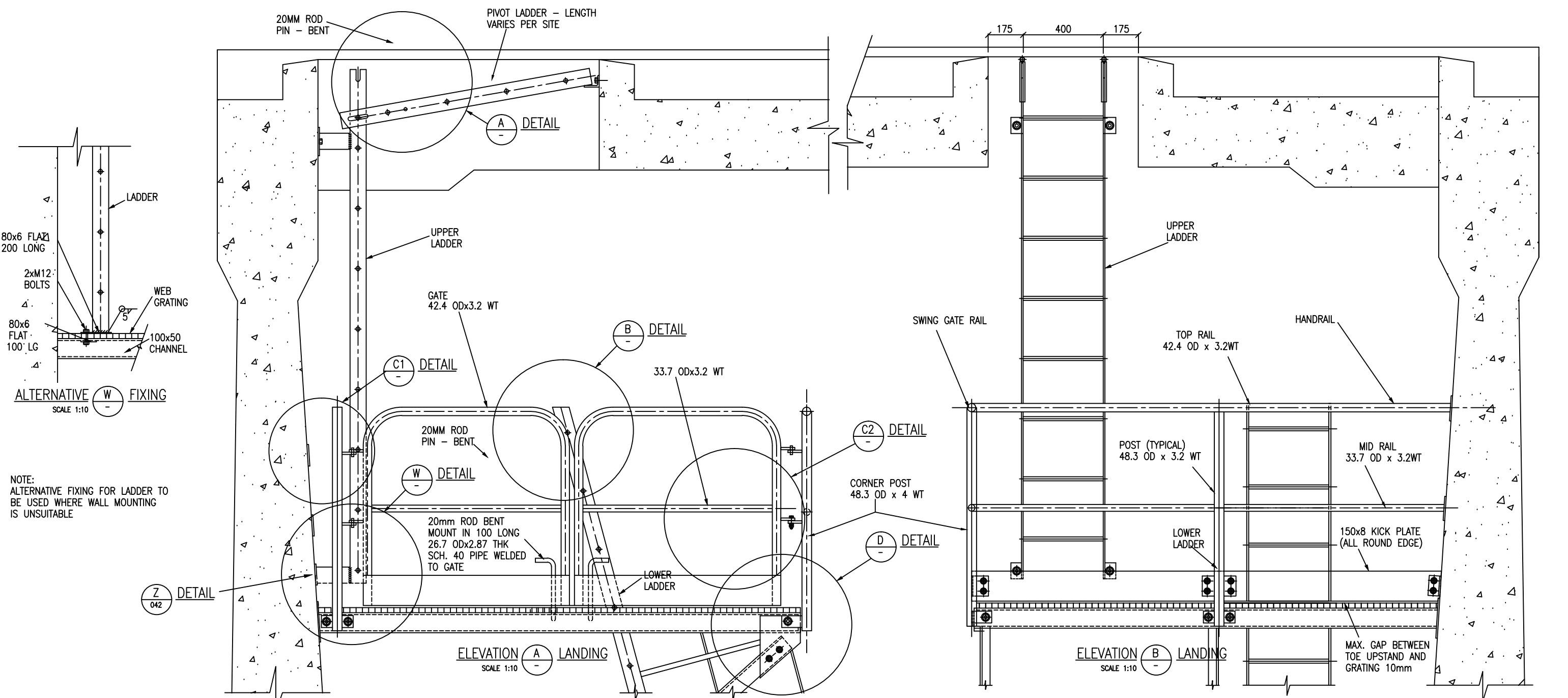
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PLANNING MANAGER  
WATER



WATERCARE SERVICES WATER RETICULATION  
STANDARD ROADWAY SECURITY GATE  
GENERAL ARRANGEMENT AND GATE CATCH DETAILS

|                      |               |
|----------------------|---------------|
| CAD FILE 2001979.008 | DATE 28:08:01 |
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| 1:2                  |               |
| DRAWING No.          | ISSUE         |
| 2001979 .008         |               |



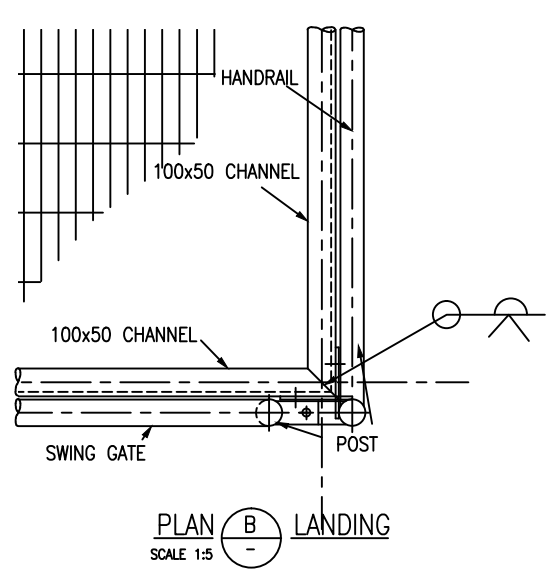
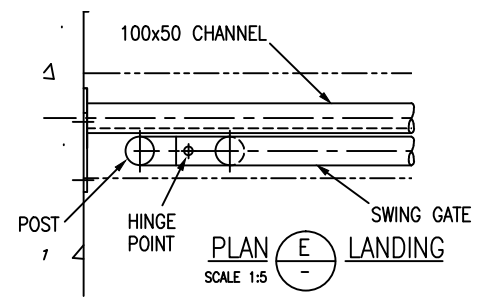
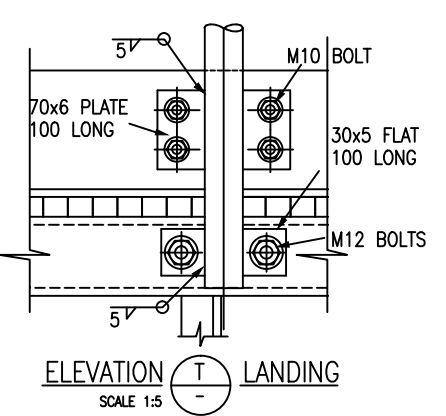
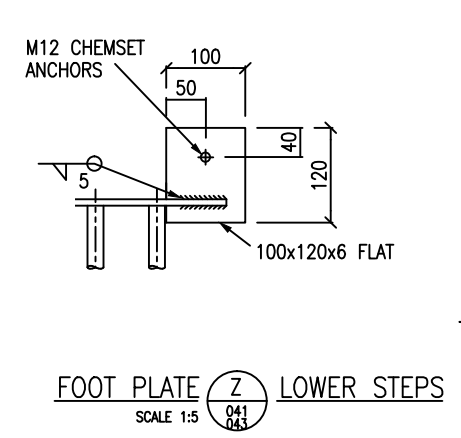
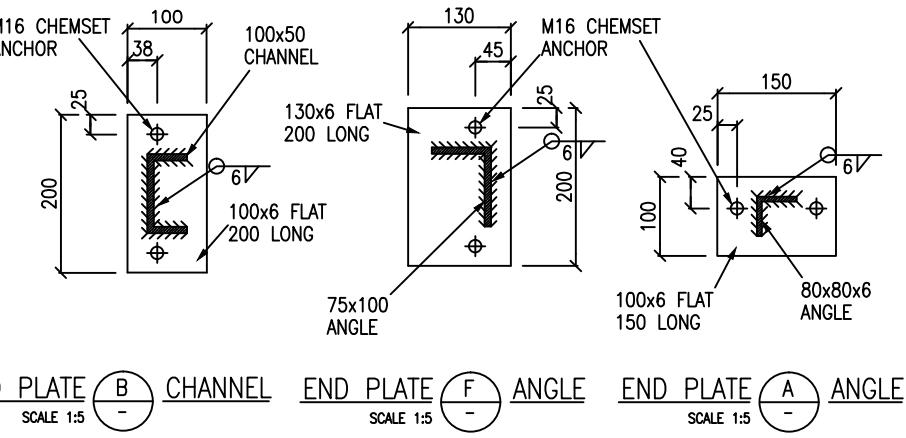
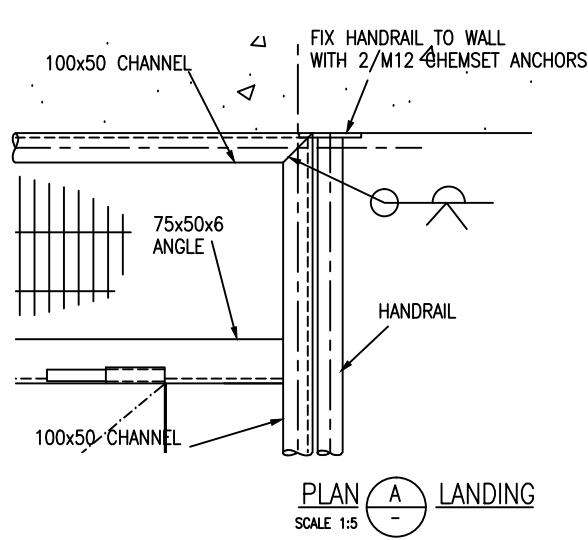
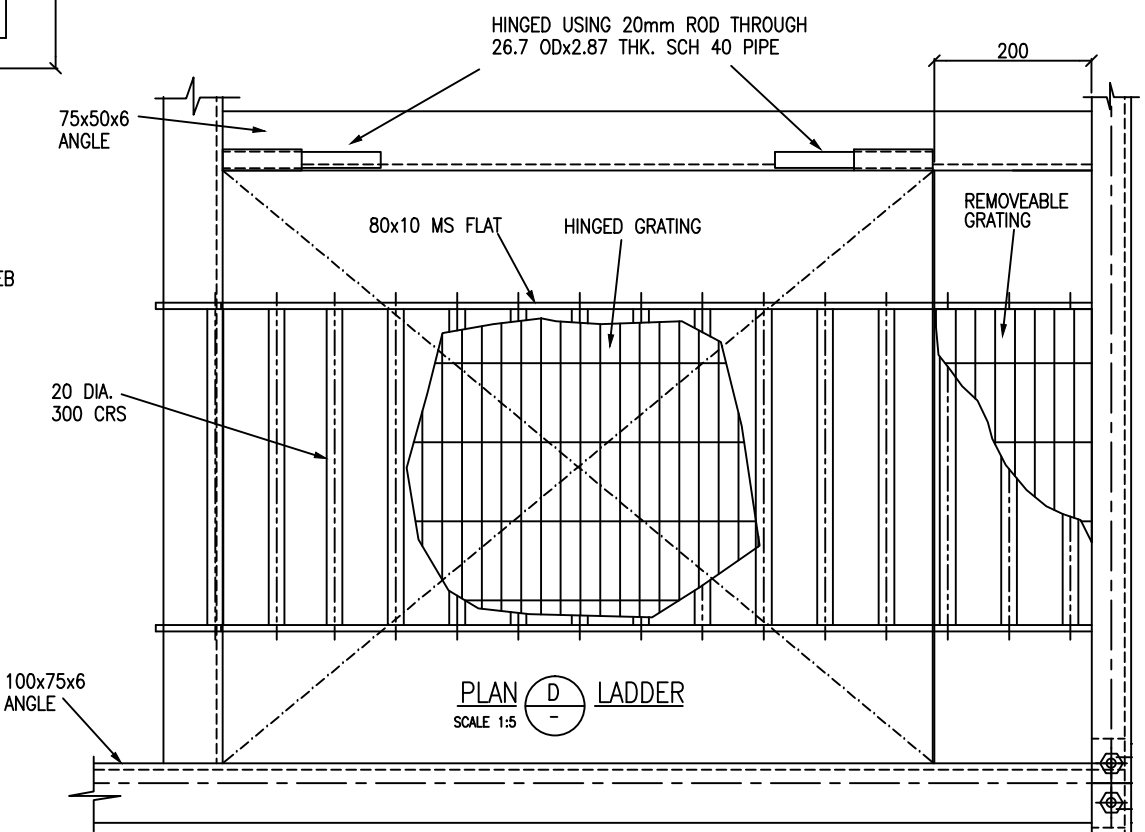
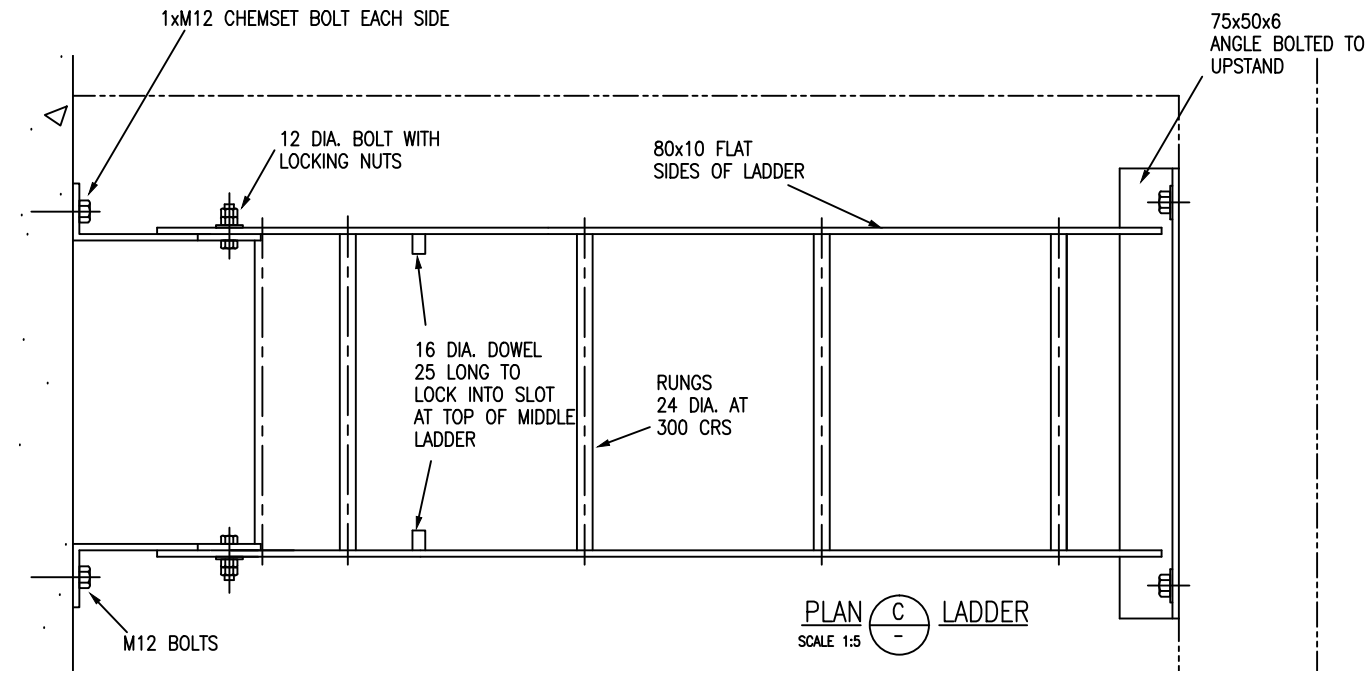
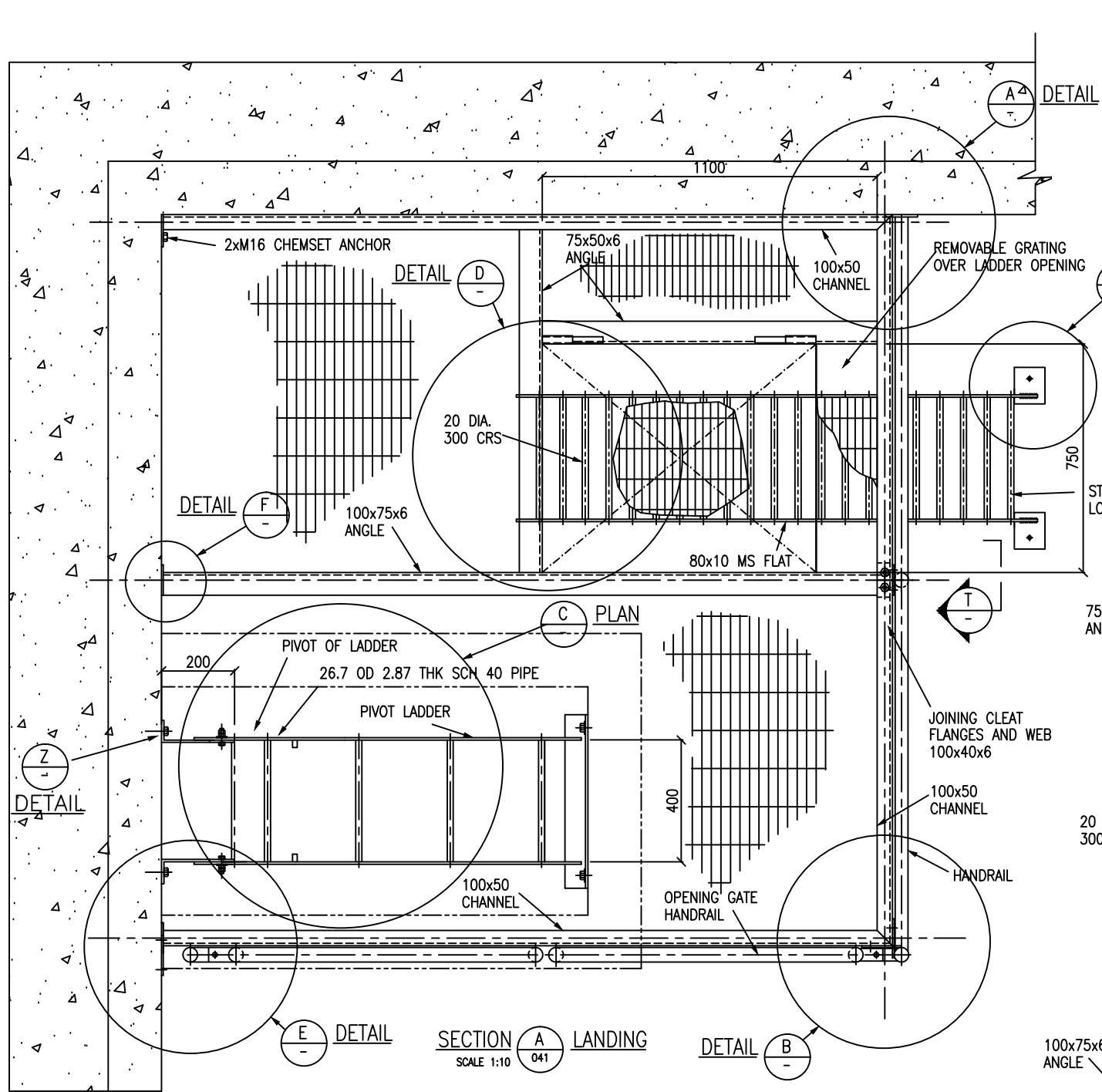
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| DRAWN          | P.BARDSLEY | 02:11:95  | OPERATIONS MANAGER |       |    |
| DWG. CHECKED   |            |           |                    |       |    |
| PROJECT LEADER |            |           |                    |       |    |
| ISSUE          | DATE       | AMENDMENT | BY                 | APPD. | BY |
|                |            |           |                    |       |    |

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WATERCARE SERVICES WATER RESERVOIRS  
STANDARD LANDING AND LADDERS  
DETAILS OF HINGE, SUPPORT AND GATE CATCH

|                      |               |
|----------------------|---------------|
| CAD FILE 2001979.009 | DATE 29:08:01 |
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| AS SHOWN             | -             |
| DRAWING No.          | ISSUE         |
| 2001979 .009         |               |



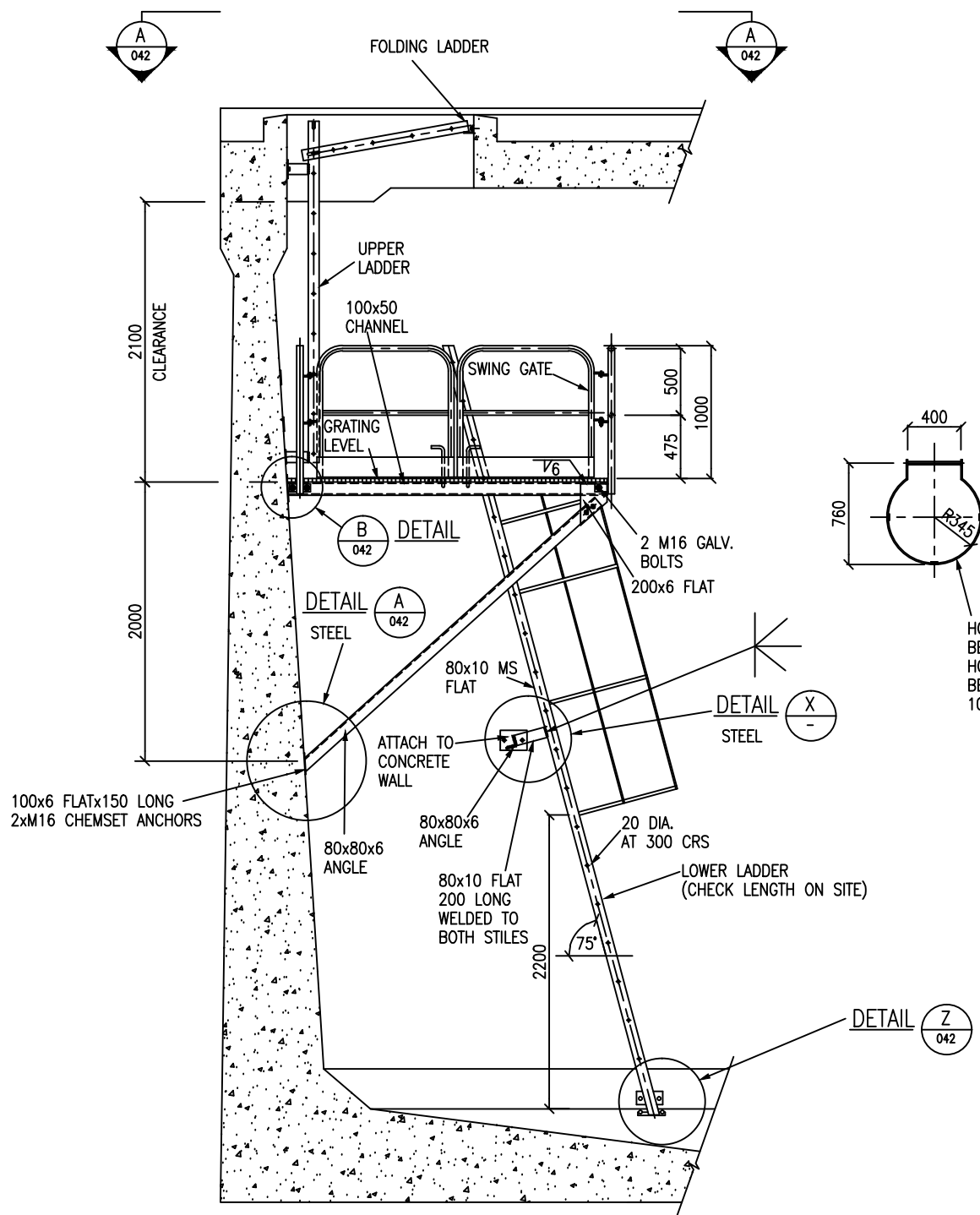
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| DES. CHECKED   |            |           |                    |       |    |
| DRAWN          | P.BARDSLEY | 02:11:95  | OPERATIONS MANAGER |       |    |
| DWG. CHECKED   |            |           |                    |       |    |
| PROJECT LEADER |            |           |                    |       |    |
| ISSUE          | DATE       | AMENDMENT | BY                 | APPD. | BY |
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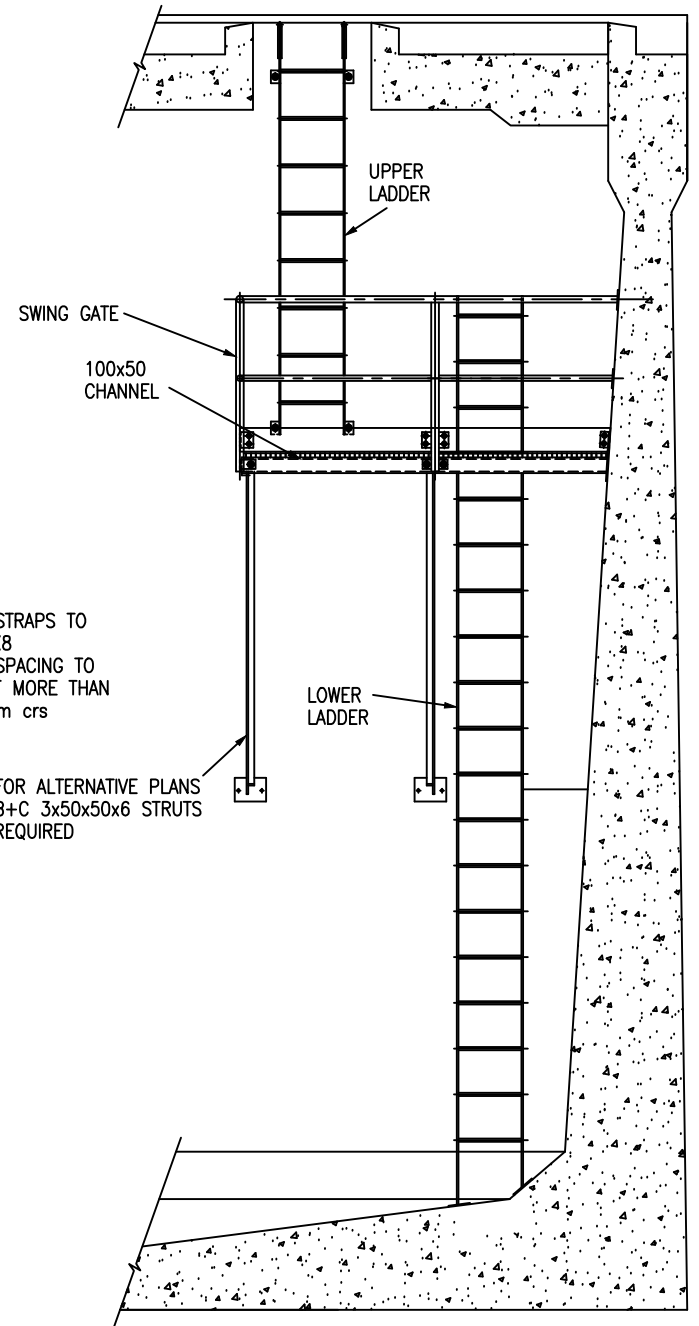


WATERCARE SERVICES WATER RESERVOIRS  
STANDARD LANDING AND LADDERS  
PLANS AND DETAILS OF LANDING, END PLATES AND LOWER STEPS

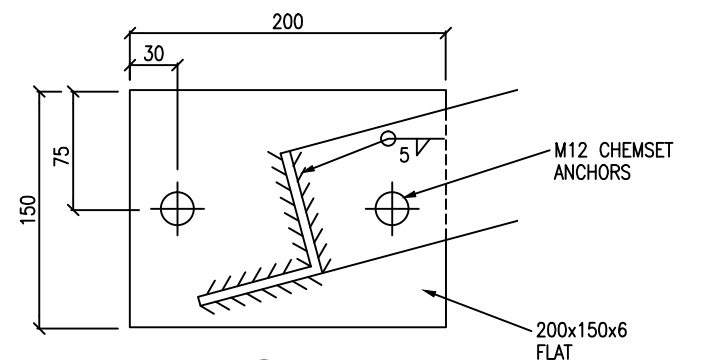
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| DRAWING No.          | ISSUE         |
| 2001979 .010         |               |



SECTION 2 LANDING  
SCALE 1:25

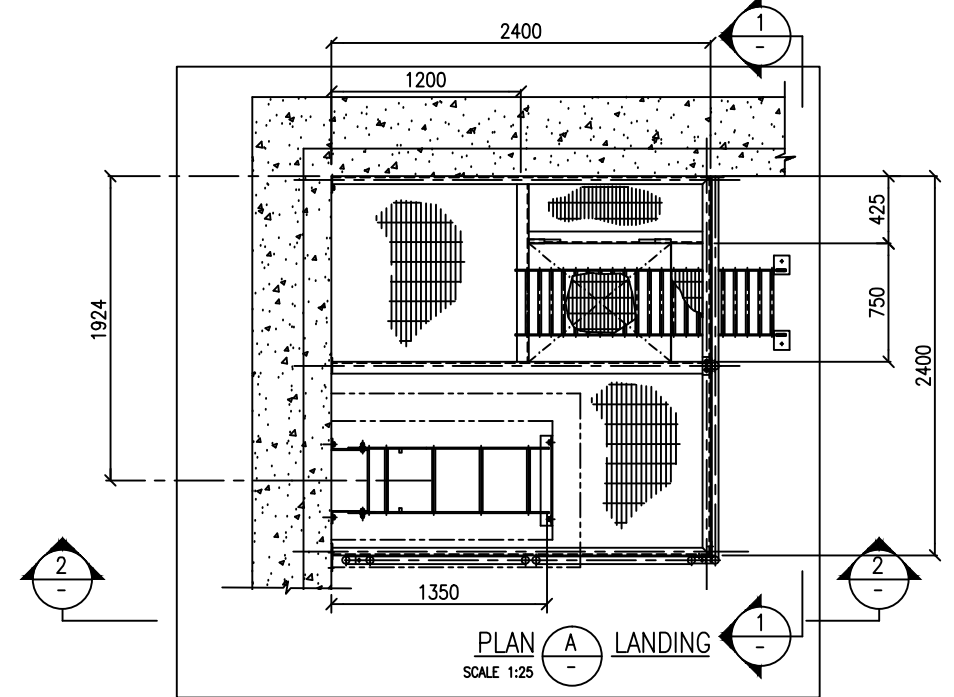


SECTION 1 LANDING  
SCALE 1:25

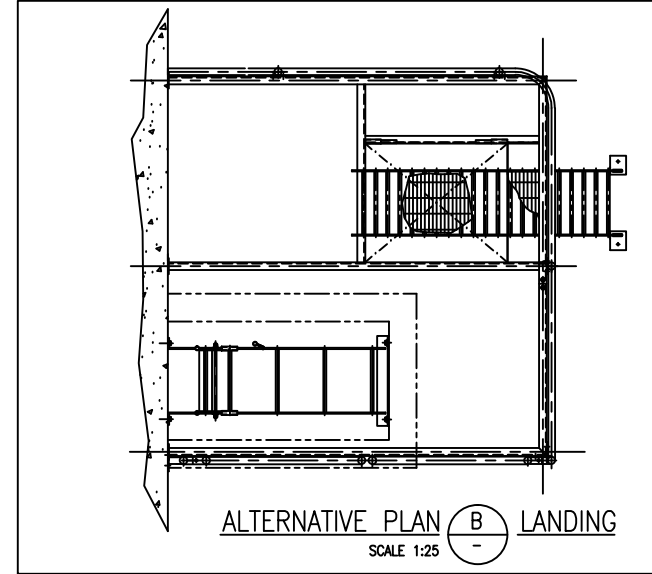


ELEVATION X BRACKET  
SCALE 1:2.5  
MID SUPPORT  
(WALL CONNECTION)

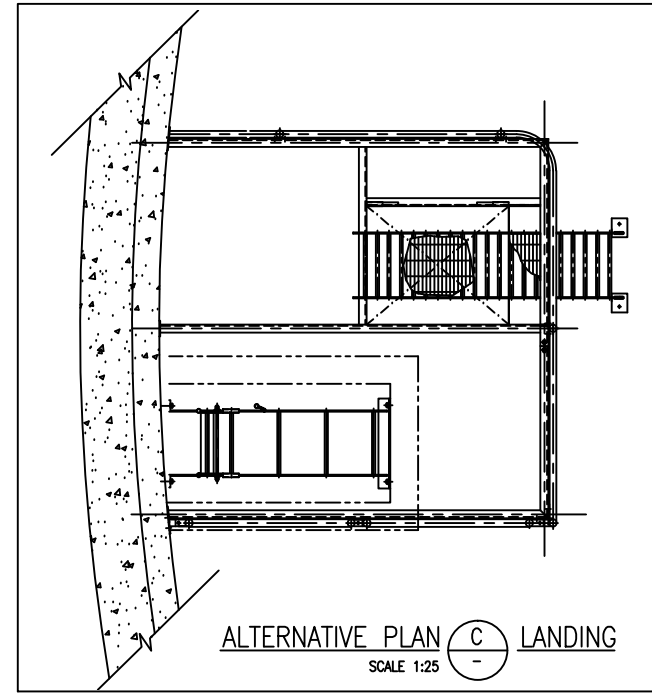
- NOTES:
1. SITE MEASUREMENTS TO BE TAKEN PRIOR TO STEEL FABRICATION
  2. BED ALL BASEPLATES ON MINIMUM 20mm THICK DRYPACK MORTAR
  3. CHEMSET ANCHORS TO BE INSTALLED TO MANUFACTURERS INSTRUCTIONS
  4. ALL STEELWORK TO BE FABRICATED FROM MILD STEEL CONFORMING WITH NZS 3404 Part 1:1992
  5. WELDING SHALL COMPLY WITH AS 1554.1 Part 1 WELDING OF STEEL STRUCTURES EXCEPT AS MODIFIED BY CLAUSE 9.7.1.4 AND APPENDIX D OF NZS 3404:1992
  6. THE ENGINEERS REPRESENTATIVE SHALL HAVE ACCESS FOR SPOT INSPECTIONS DURING NORMAL BUSINESS HOURS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF COMMENCEMENT AND COMPLETION OF WELDING OPERATIONS,
  7. ALL STEELWORK TO BE HOT DIPPED GALVANIZED
  8. GRATING TO BE FW5 SERIES 5 WEB GRATING FIXED WITH STANDARD CLIPS



PLAN A LANDING  
SCALE 1:25



ALTERNATIVE PLAN B LANDING  
SCALE 1:25



ALTERNATIVE PLAN C LANDING  
SCALE 1:25

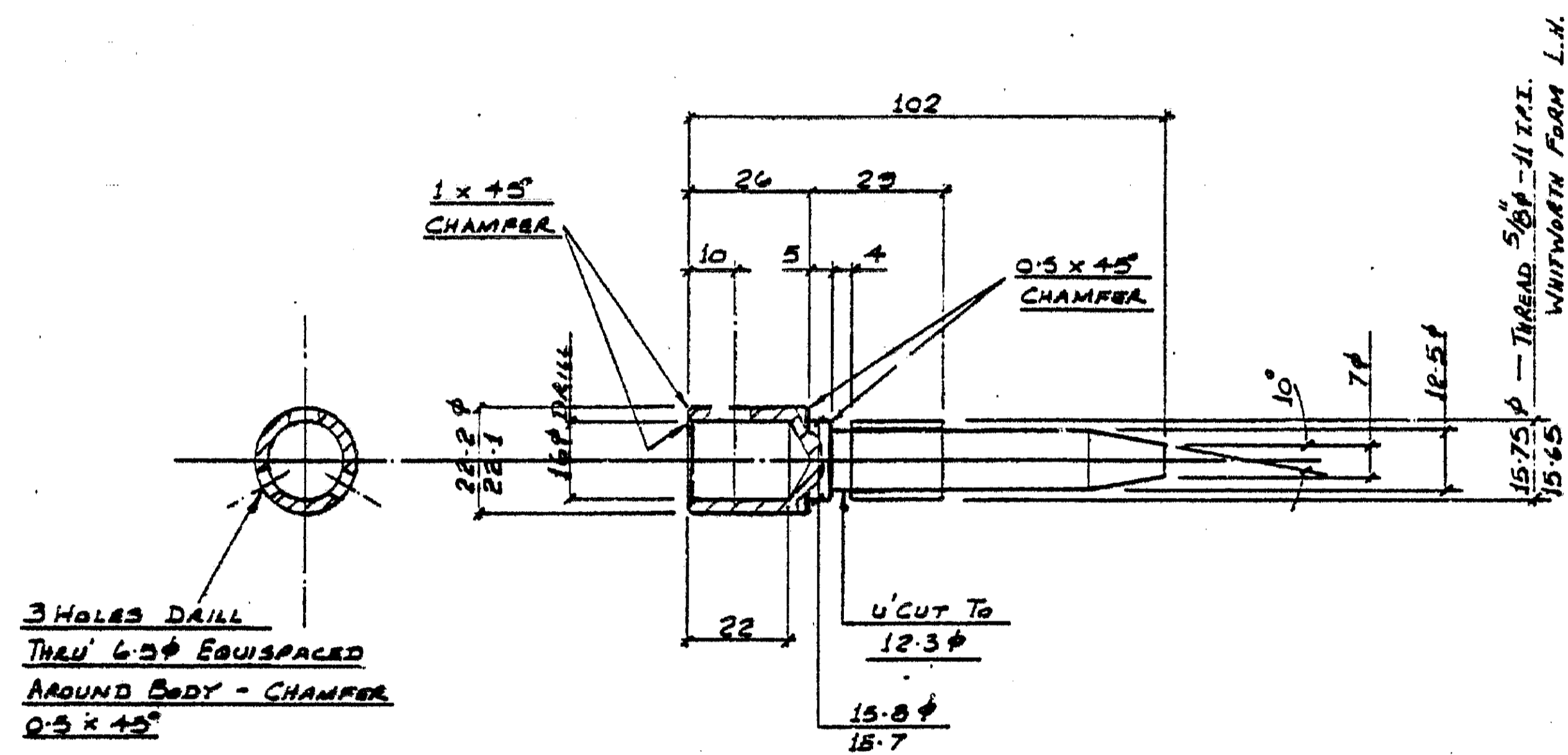
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| DESIGNED       | R.LOBAN    | 11:95     |                    |       |    |
| DES. CHECKED   |            |           |                    |       |    |
| DRAWN          | P.BARDSLEY | 02:11:95  | OPERATIONS MANAGER |       |    |
| DWG. CHECKED   |            |           |                    |       |    |
| PROJECT LEADER |            |           |                    |       |    |
| ISSUE          | DATE       | AMENDMENT | BY                 | APPD. | BY |
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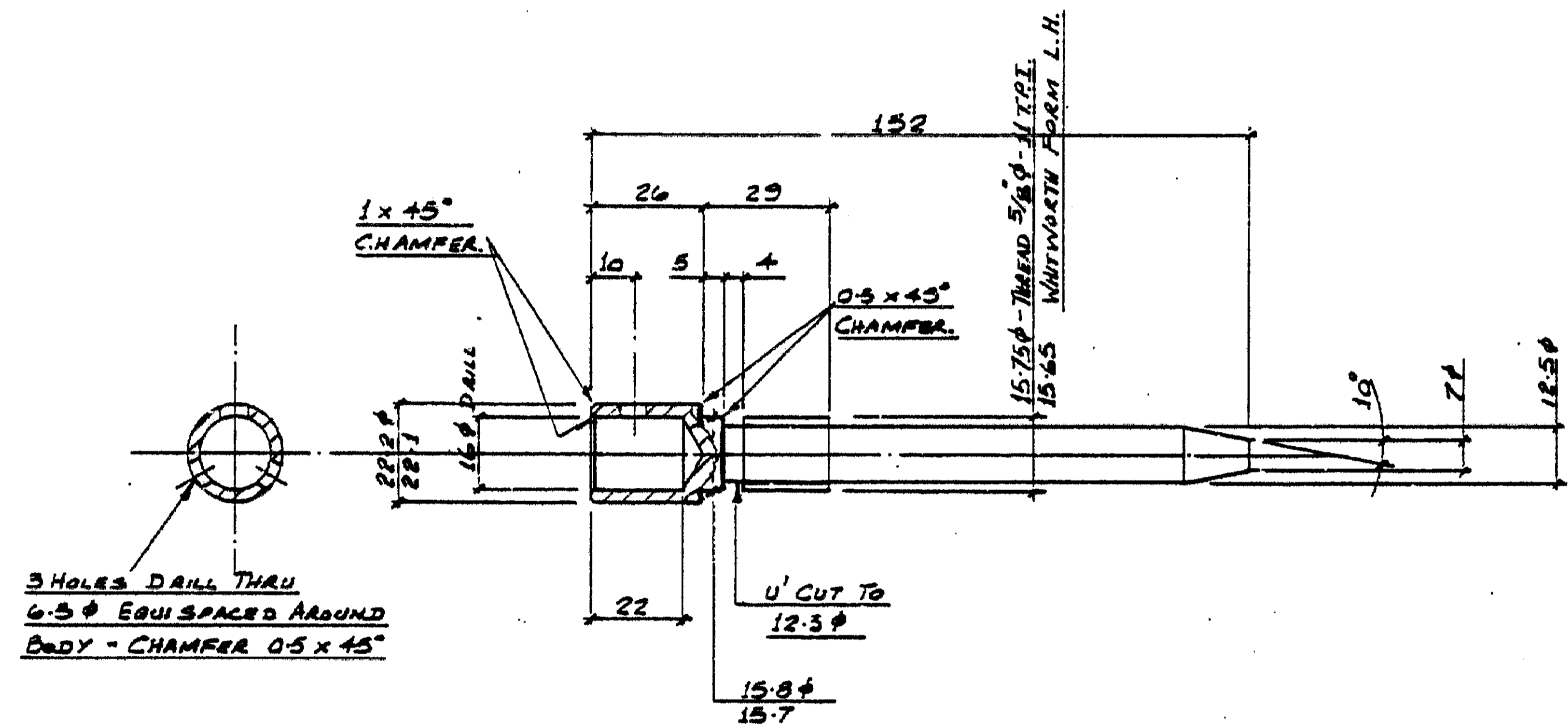
WATERCARE SERVICES WATER RESERVOIRS  
STANDARD LANDING AND LADDERS  
PLANS AND ELEVATIONS OF ALTERNATIVE LANDINGS

|                      |               |
|----------------------|---------------|
| CAD FILE 2001979.011 | DATE 29:08:01 |
| ORIGINAL SCALE A1    | CONTRACT No.  |
| AS SHOWN             |               |
| DRAWING No.          | ISSUE         |
| 2001979              | .011          |



ITEM ① SHORT LOCKING PIN

MATERIAL :- 304 STAINLESS STEEL



ITEM ② LONG LOCKING PIN

MATERIAL :- 304 STAINLESS STEEL

|              |     |     |                          |
|--------------|-----|-----|--------------------------|
| DESIGNED     |     |     |                          |
| DES. CHECKED |     |     |                          |
| DRAWN        | CSM | 6/8 | OPERATIONS MANAGER WATER |
| DWG. CHECKED |     |     |                          |
| SECTION HEAD |     |     |                          |

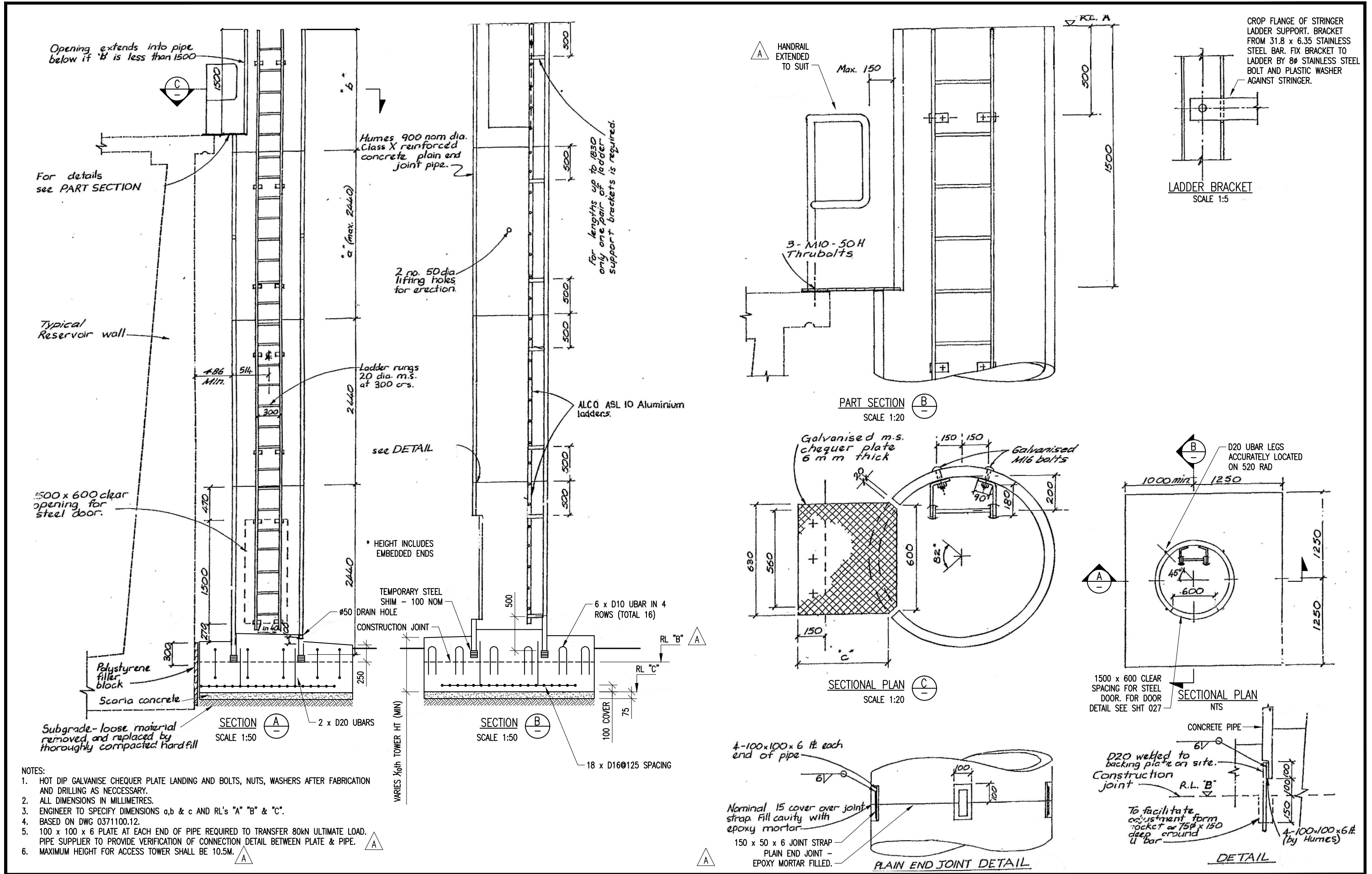
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WATERCARE SERVICES WATER RESERVOIRS  
STANDARD HATCH CROX LOCK  
COMPONENTS 1 AND 2

|                       |               |
|-----------------------|---------------|
| CAD FILE 2001979.014  | DATE 30-08-01 |
| ORIGINAL SCALE AT 1:1 | CONTRACT No.  |
| DRAWING No. 2001979   | ISSUE .014    |





|                |       |                 |      |
|----------------|-------|-----------------|------|
| DESIGNED       |       |                 |      |
| DES. CHECKED   |       |                 |      |
| DRAWN          | G. B. | mm-10           |      |
| DWG. CHECKED   | I.M.  | mm-10           |      |
| PROJECT LEADER |       |                 |      |
| A.M. APPROVED  |       |                 |      |
| BY             | APPD. | BY              | DATE |
| A              | 04-10 | DRAWING UPDATED |      |
| ISSUE          | DATE  | AMENDMENT       |      |

OPERATIONS

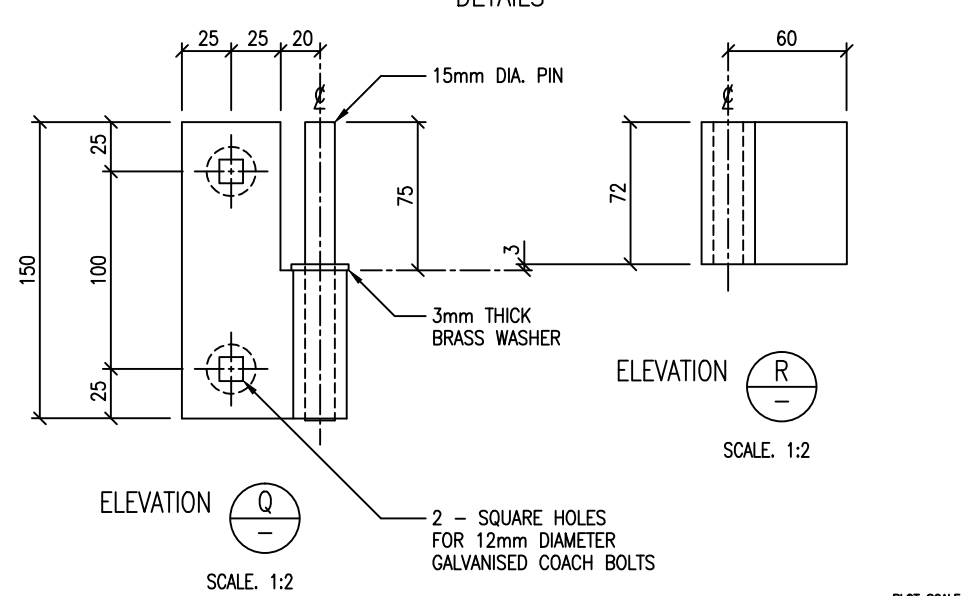
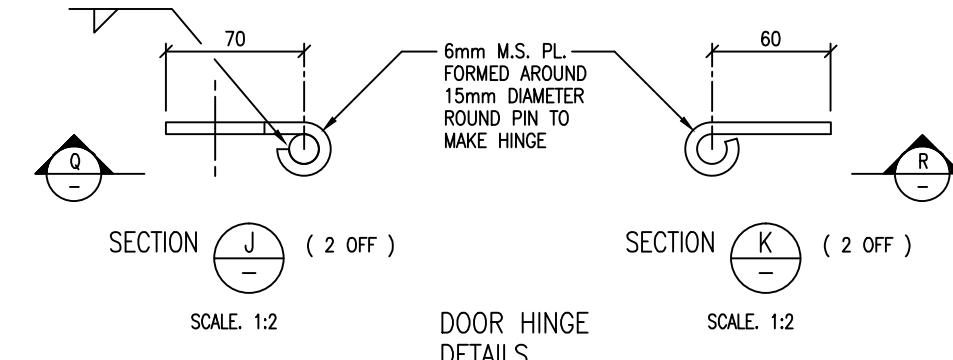
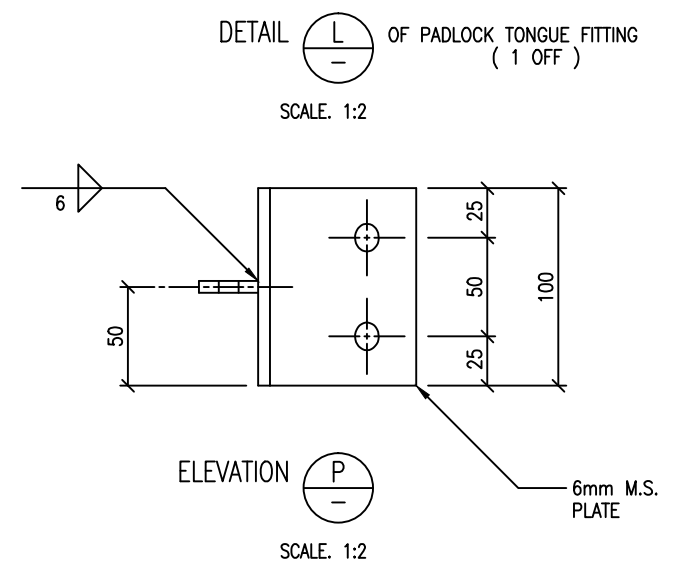
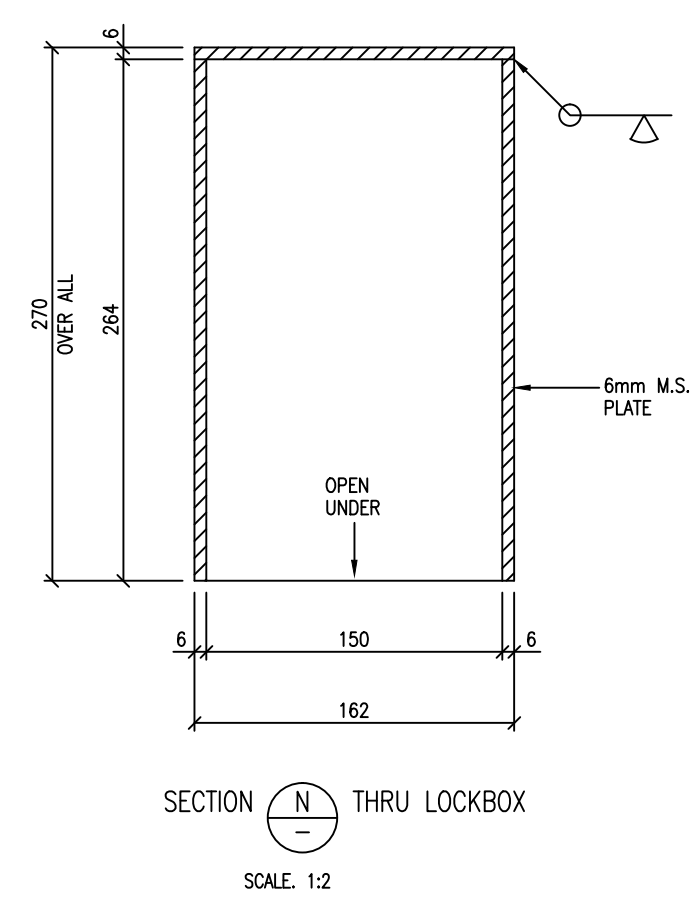
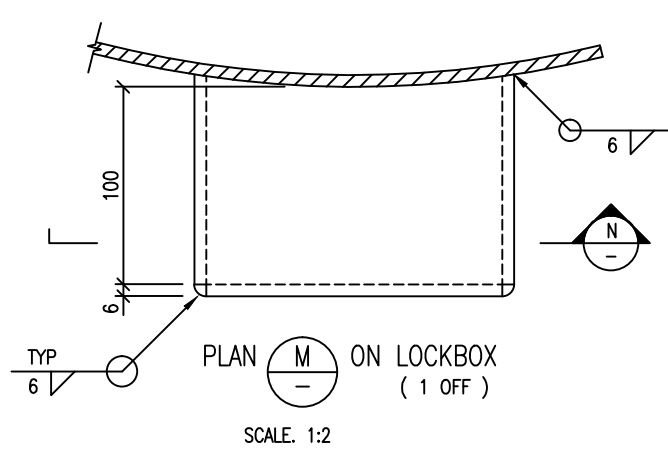
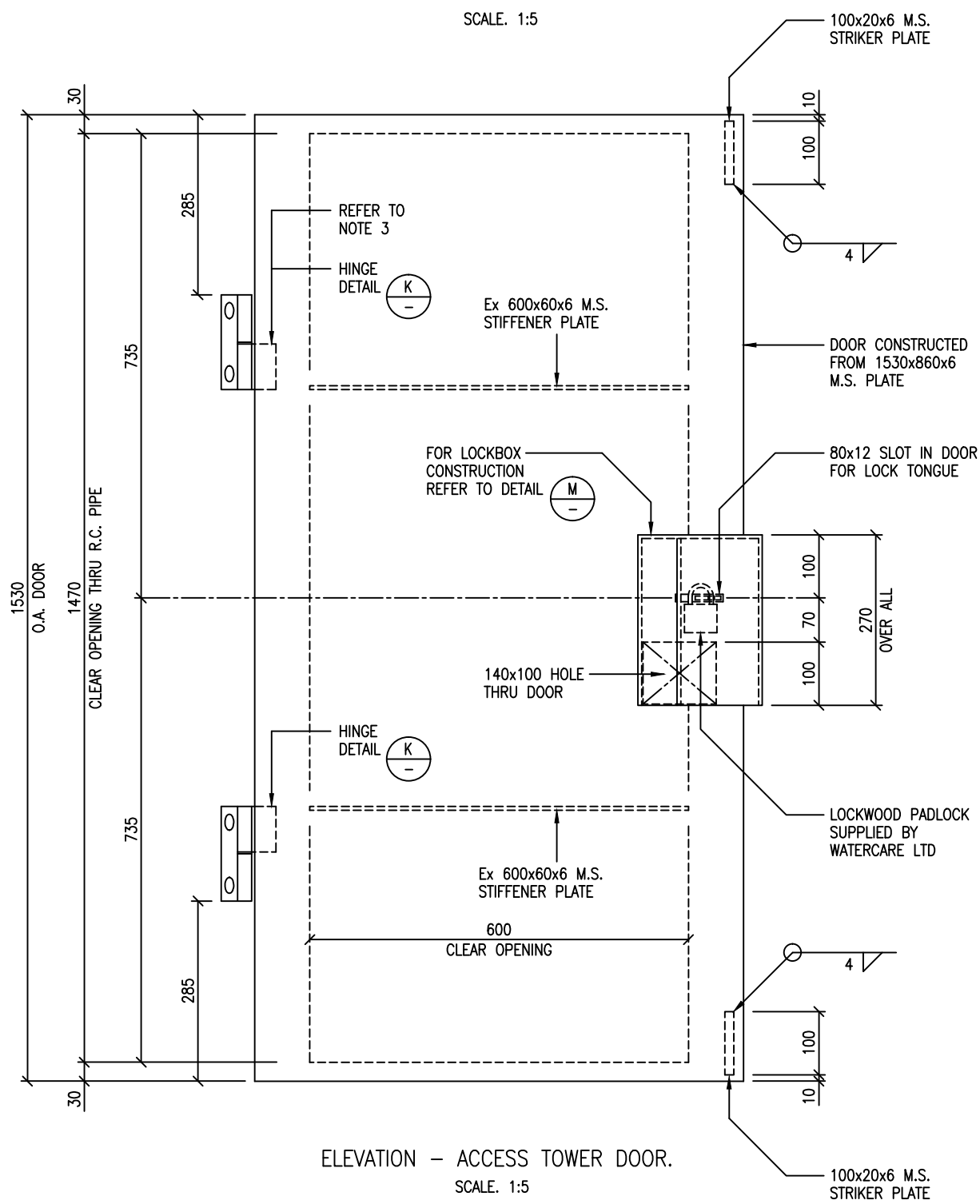
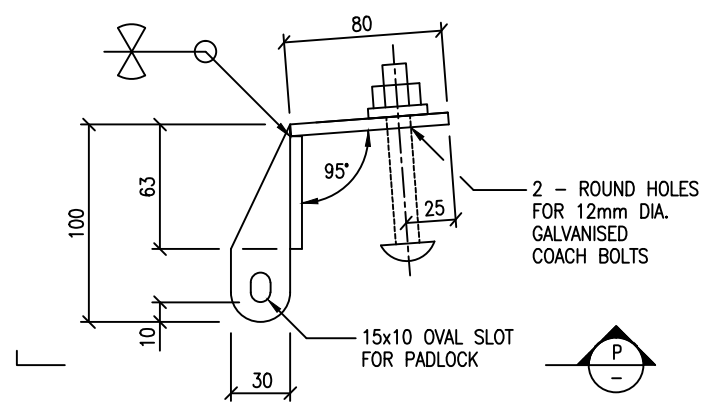
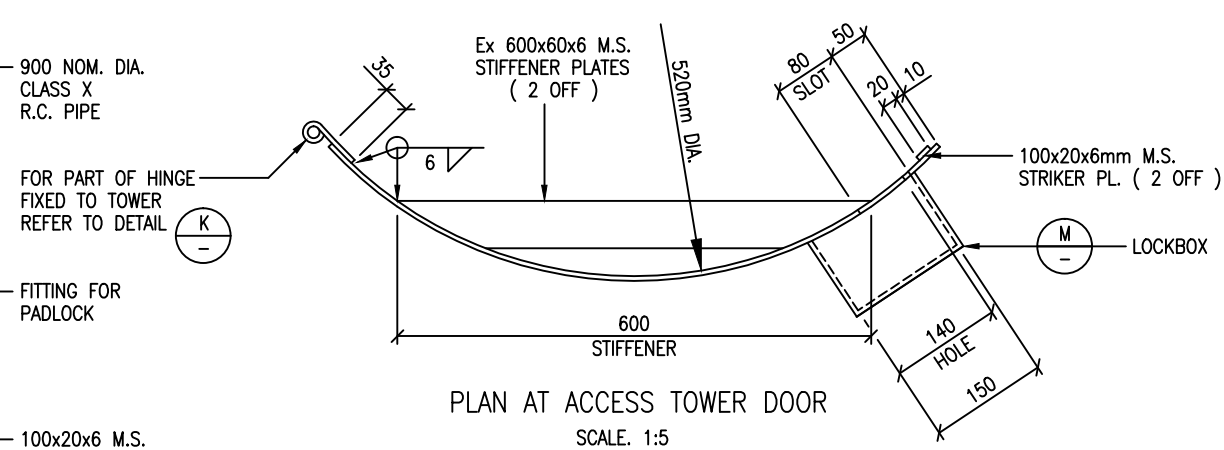
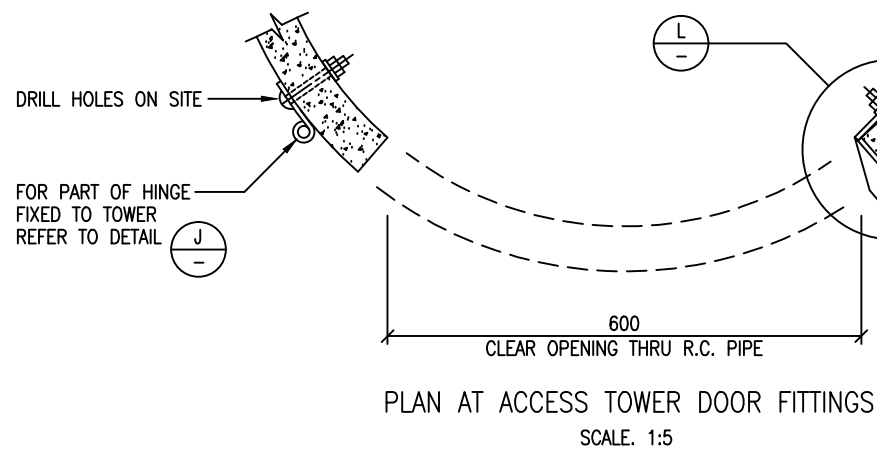
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ASSET MANAGEMENT

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WATERCARE SERVICES WATER RESERVOIR  
STANDARD RESERVOIR ACCESS TOWER  
DETAILS - SHEET 1

|                |             |              |          |
|----------------|-------------|--------------|----------|
| CAD FILE       | 2001979.015 | DATE         | 13-04-10 |
| ORIGINAL SCALE | A3          | CONTRACT No. | -        |
| SCALE          |             |              |          |
| DRAWING No.    | 2001979     | ISSUE        | A        |
|                |             | .015         |          |



- NOTES**
1. DOOR & ALL FITTINGS - FROM 6mm M.S. PLATE UNLESS NOTED OTHERWISE
  2. DOOR & ALL FITTINGS TO BE HOT-DIP GALVANISED AFTER FABRICATION
  3. UPPER HINGE REVERSED - PIN POINTS DOWN

PLOT SCALE: 1:1

|                |        |           |    |       |    |
|----------------|--------|-----------|----|-------|----|
| DESIGNED       |        |           |    |       |    |
| DES. CHECKED   |        |           |    |       |    |
| DRAWN          | I.M.M. | 7/85      |    |       |    |
| DWG. CHECKED   |        |           |    |       |    |
| PROJECT LEADER |        |           |    |       |    |
| ISSUE          | DATE   | AMENDMENT | BY | APPD. | BY |
|                |        |           |    |       |    |

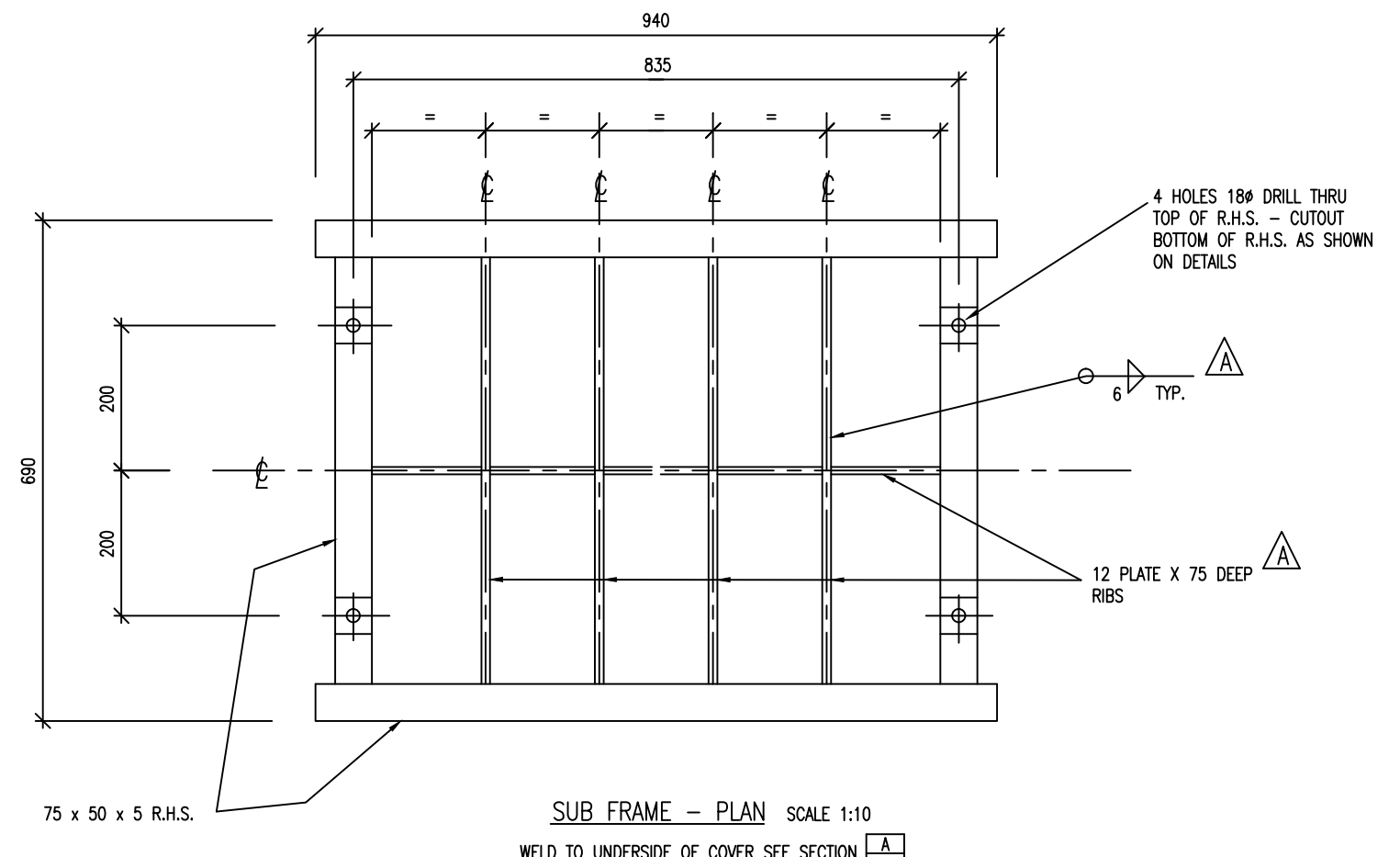
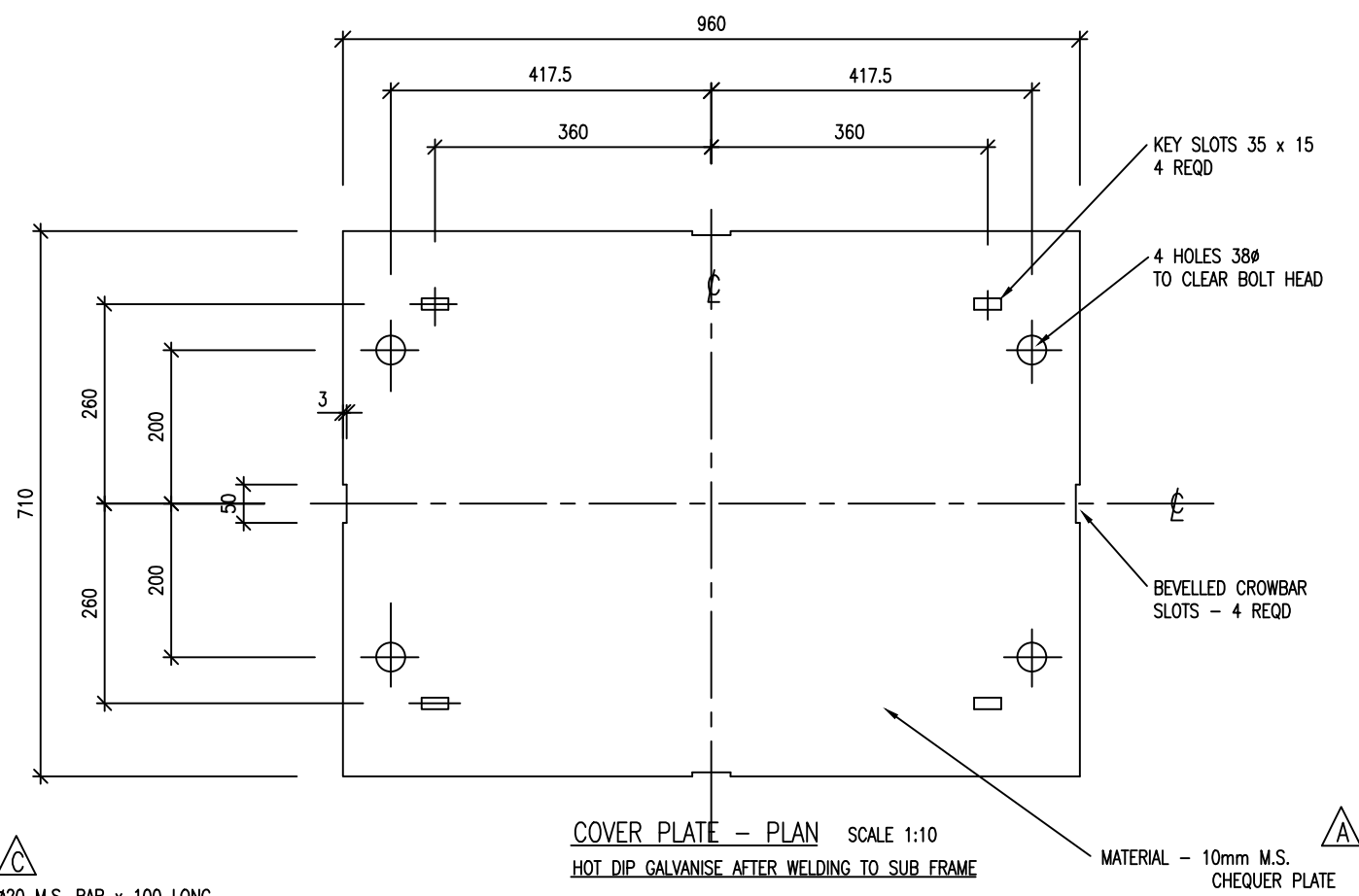
OPERATIONS MANAGER  
WATER

PLANNING MANAGER  
WATER

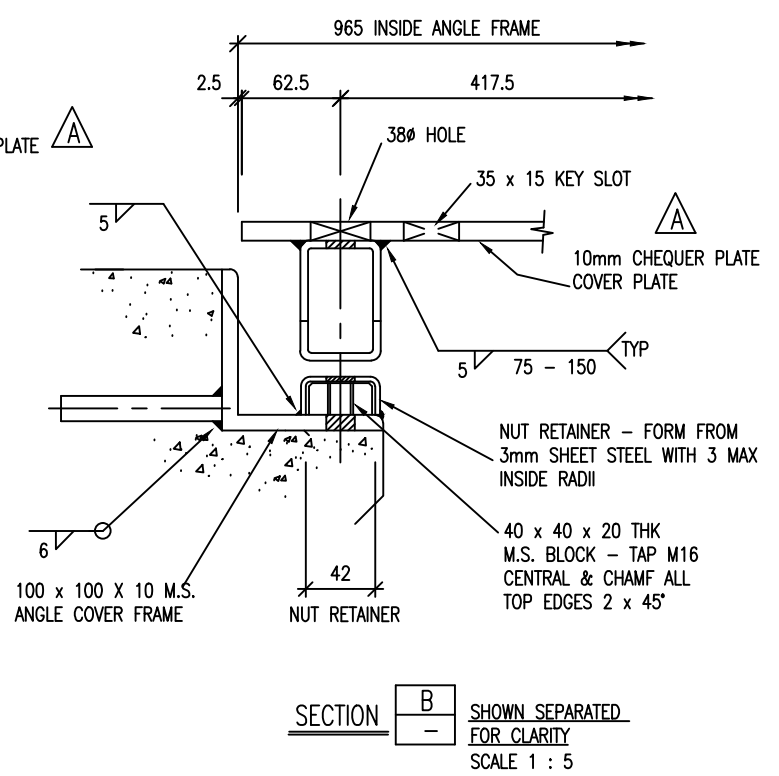
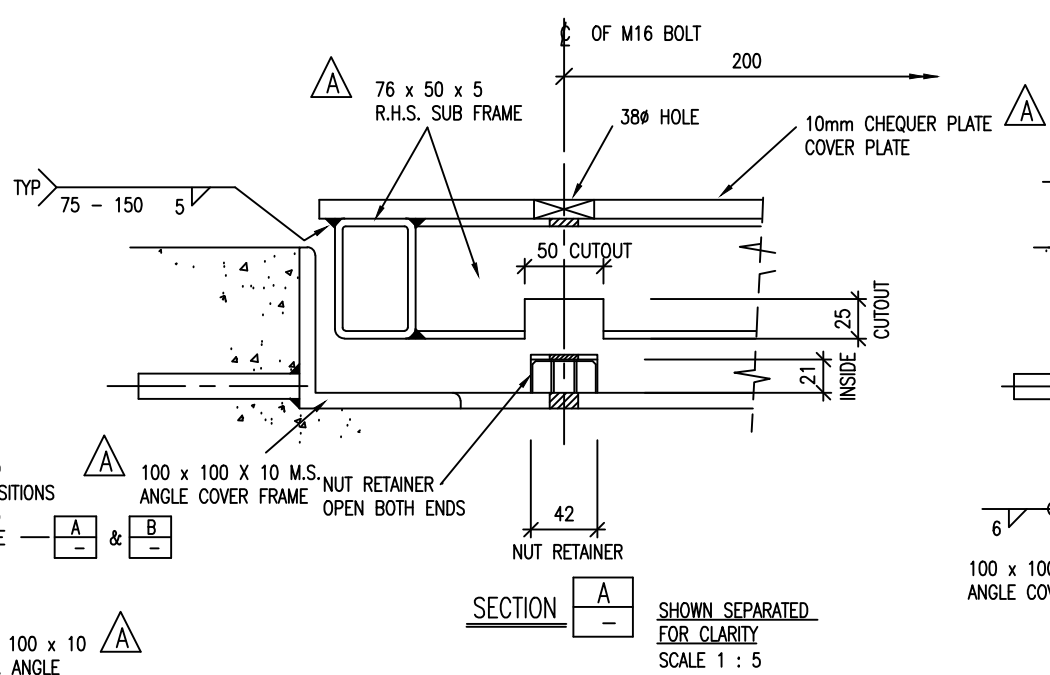
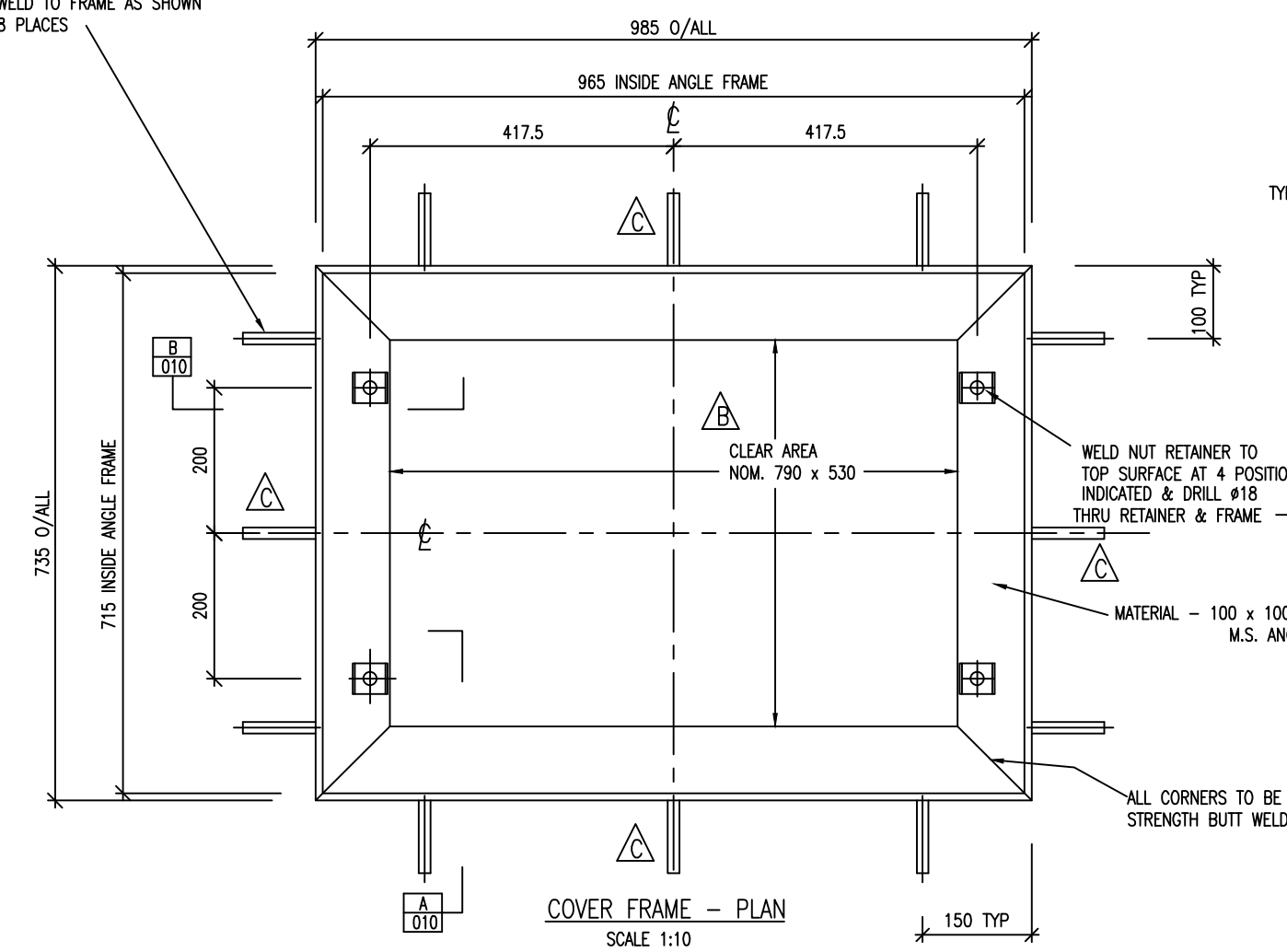


WATERCARE SERVICES WATER RETICULATION  
STANDARD RESERVOIR ACCESS TOWER  
DETAILS - SHEET No2

|                      |               |
|----------------------|---------------|
| CAD FILE 2001979.016 | DATE 29:08:01 |
| ORIGINAL SCALE A1    | CONTRACT No.  |
| AS SHOWN             |               |
| DRAWING No.          | ISSUE         |
| 2001979 .016         |               |



Ø20 M.S. BAR x 100 LONG  
WELD TO FRAME AS SHOWN  
8 PLACES



**LOADING**  
THIS COVER IS DESIGNED  
FOR HN-HO-72 LOADING

- NOTES**
- HOT DIP GALVANISE ALL COMPONENTS AFTER FABRICATION.
  - MINIMUM STEEL STRENGTH 250 MPa
  - ALL WELDING TO AS/NZS 1554.1 : 2000 - WELDING OF STEEL STRUCTURES.

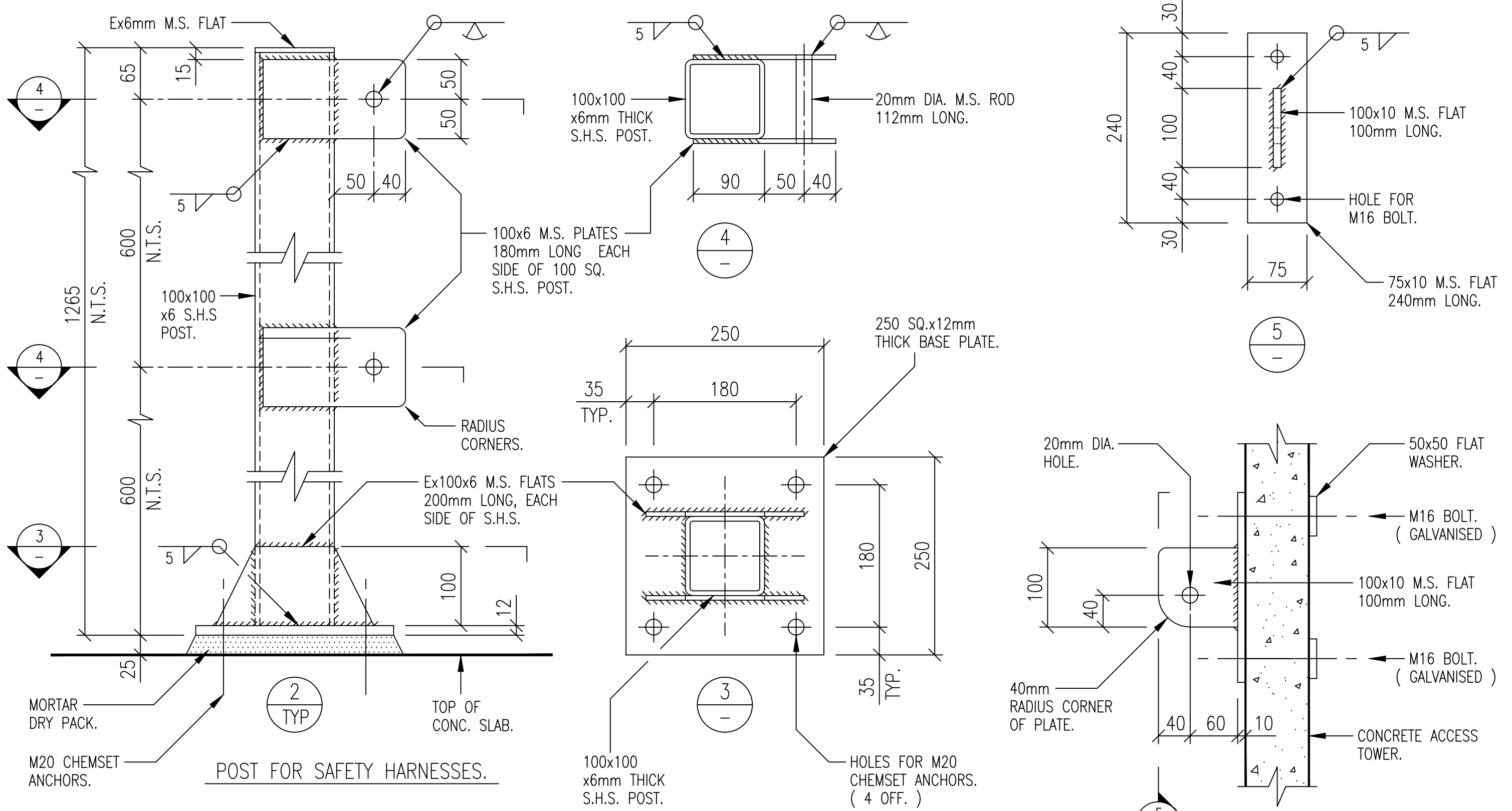
| ISSUE | DATE  | AMENDMENT                              | BY   | APPD.  | DESIGNED       | R.G. | 11/02 | DES. CHECKED | T.C. | 11/02 | DRAWN | G.SMITH | 6/95 |
|-------|-------|--|------|--------|----------------|------|-------|--------------|------|-------|-------|---------|------|
| C     | 8-06  | FOUR ADDITIONAL ANCHOR BARS & SIZE     | I.M. | J.P.   | DWG. CHECKED   |      |       |              |      |       |       |         |      |
| B     | 11-04 | CLEAR AREA DIMENSIONS ADDED            | I.M. | T.A.C. | PROJECT LEADER |      |       |              |      |       |       |         |      |
| A     | 10-02 | RIB PLATES REPOSITIONED & MISC. AMND'S | I.M. | T.A.C. | A.M. APPROVED  |      |       |              |      |       |       |         |      |

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WATERCARE SERVICES WATER RETICULATION  
STANDARD CHAMBER COVERS  
CONSTRUCTION DETAILS

|                               |                   |
|-------------------------------|-------------------|
| CAD FILE 2001979.017C         | DATE 04-08-06     |
| ORIGINAL SCALE A3<br>AS SHOWN | CONTRACT No.<br>- |
| DRAWING No.<br>2001979 .017   | ISSUE<br>C        |



NOTES.

- LOAD CAPACITY OF SLAB TO SUPPORT POST TO BE CHECKED BEFORE POST IS INSTALLED.
- LAYOUT OF POST & HATCH TO BE SUCH THAT ANGLE BETWEEN SAFETY LANYARD & POST WILL NOT EXCEED 45° WHEN LANYARD ON TOP MOUNTING POINT.
- HOT DIP GALVANISE ALL STEELWORK AFTER FABRICATION.
- STEEL SPECIFICATION:  
S.H.S. POSTS TO BE AS1163 GRADE C350.  
FLATES TO BE AS3679 GRADE 250.

BRACKET FOR FASTENING SAFETY LINE  
AT RESERVOIR ACCESS TOWERS.

PLOT SCALE 1:5

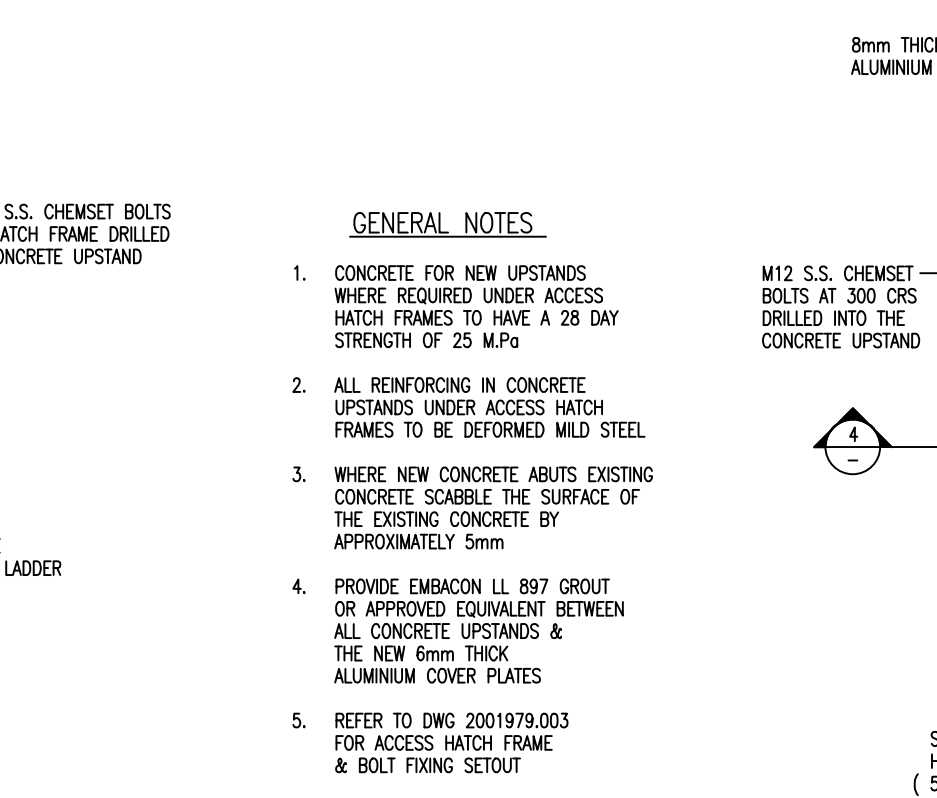
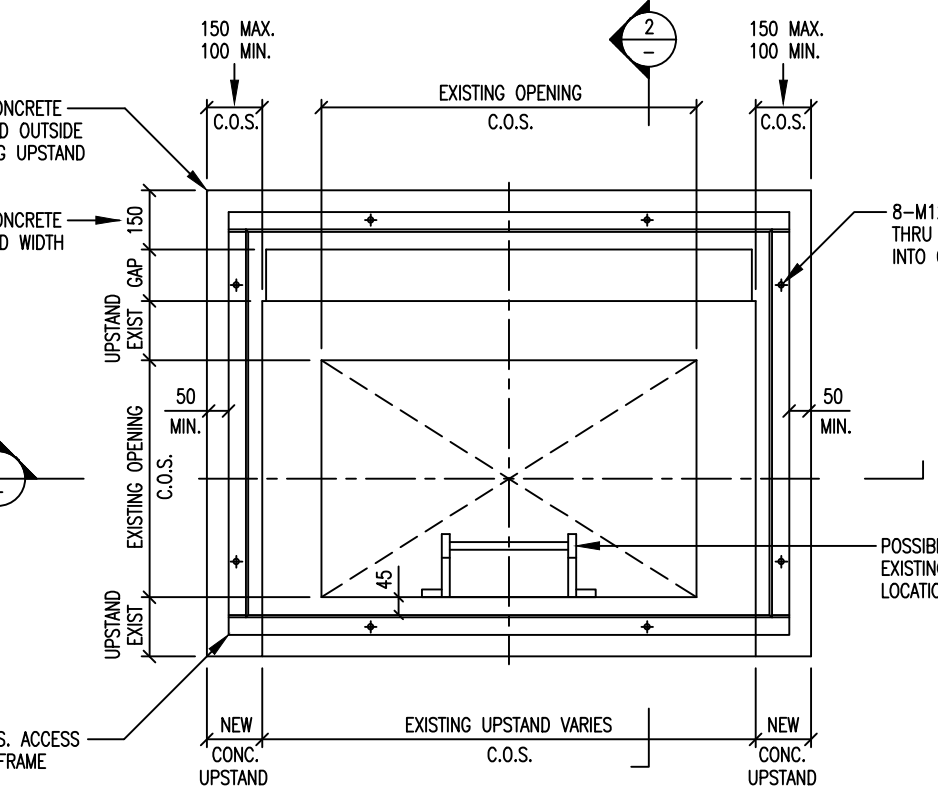
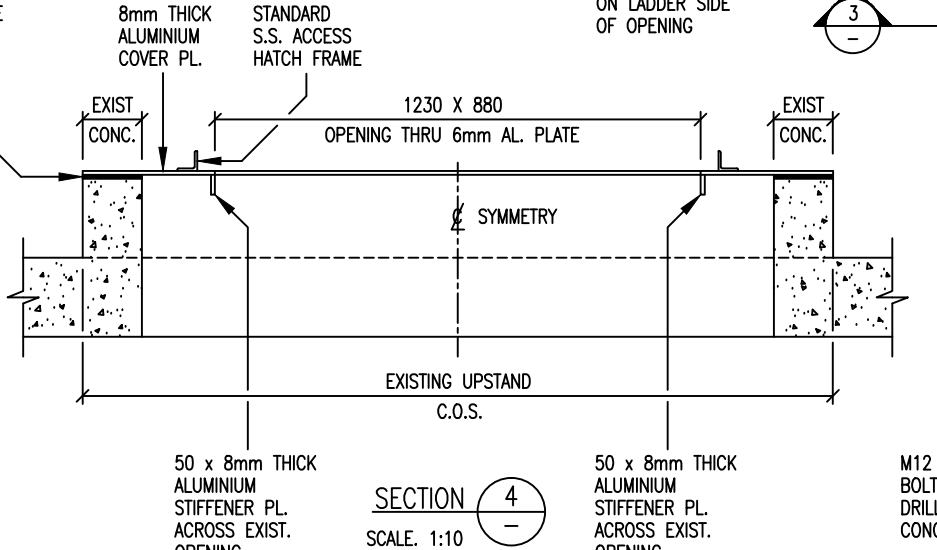
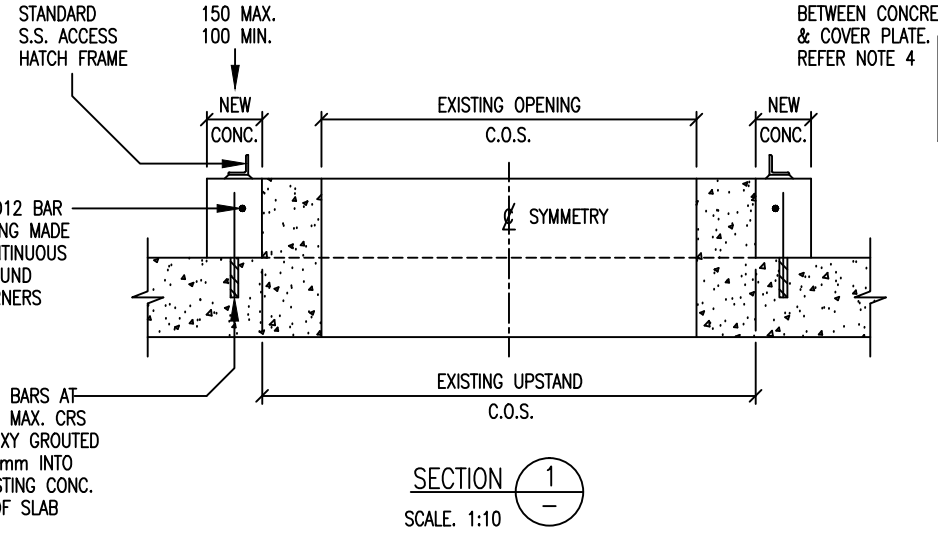
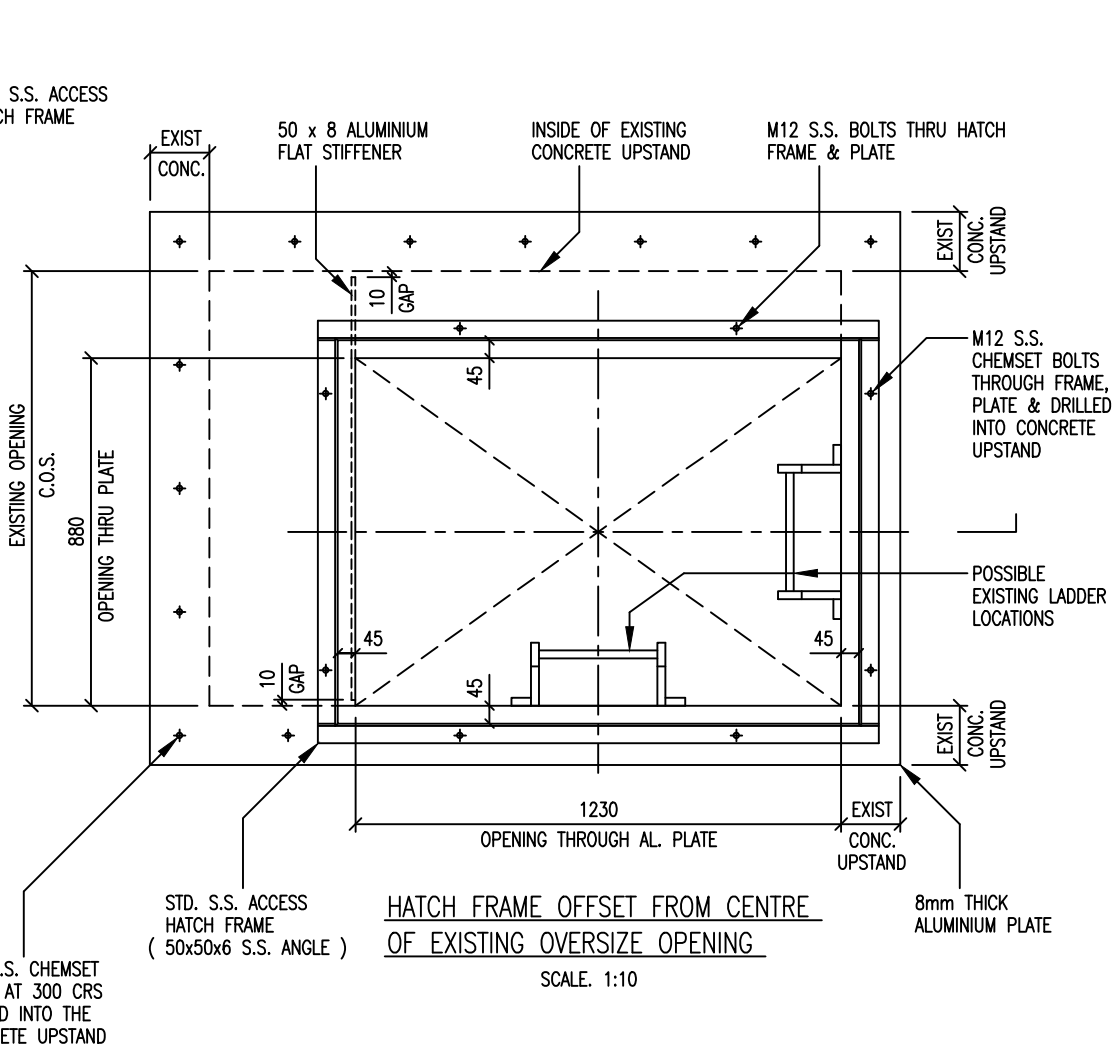
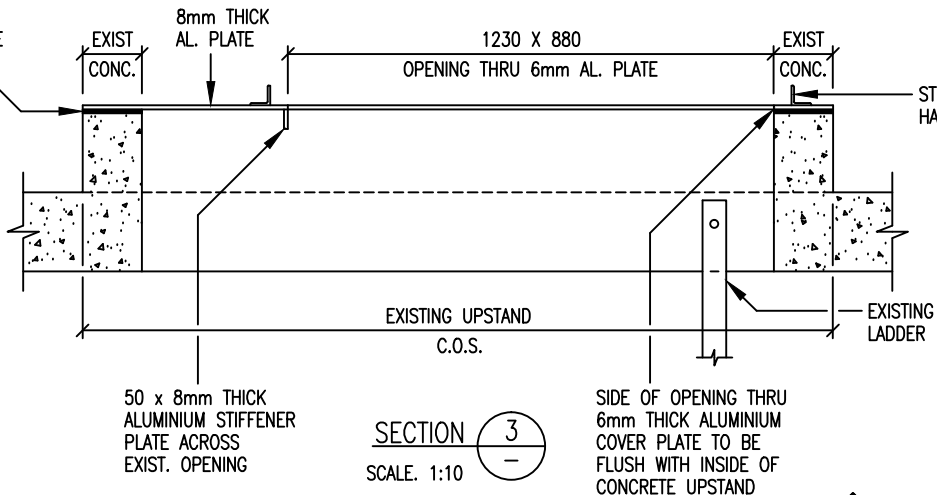
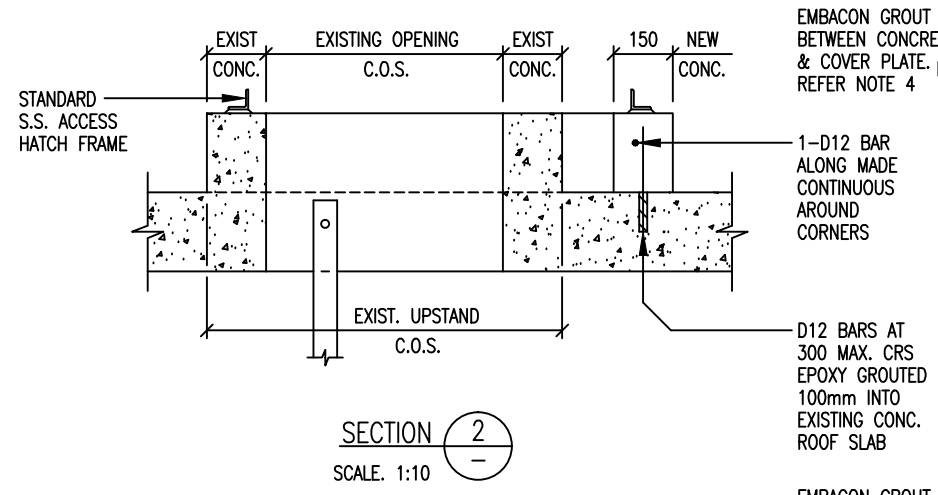
|              |              |           |
|--------------|--------------|-----------|
| DESIGNED     | R.GALLAGHER  | 10:96     |
| DES. CHECKED |              |           |
| TRACED       | L.A.COLLINGE | 10:96     |
| DWG. CHECKED | I.MOSES      | 10:96     |
| APPROVED     |              |           |
| ISSUE        | DATE         | AMENDMENT |
| BY           | APPD.        |           |
| BY           | DATE         |           |

|                    |       |
|--------------------|-------|
| OPERATIONS MANAGER | WATER |
| PLANNING MANAGER   | WATER |



WATERCARE SERVICES WATER RESERVOIRS  
STANDARD RESERVOIR EQUIPMENT  
STEEL POST & BRACKETS FOR HARNESS SAFETY LINES.

|                       |                |
|-----------------------|----------------|
| CAD FILE: 2001979.039 | DATE: 29:08:01 |
| ORIGINAL SCALE A3     | CONTRACT No.   |
| 1:5                   |                |
| DRAWING No.           | ISSUE          |
| 2001979 .039          |                |



**GENERAL NOTES**

1. CONCRETE FOR NEW UPSTANDS WHERE REQUIRED UNDER ACCESS HATCH FRAMES TO HAVE A 28 DAY STRENGTH OF 25 M.Pa
2. ALL REINFORCING IN CONCRETE UPSTANDS UNDER ACCESS HATCH FRAMES TO BE DEFORMED MILD STEEL
3. WHERE NEW CONCRETE ABUTS EXISTING CONCRETE SCABBLE THE SURFACE OF THE EXISTING CONCRETE BY APPROXIMATELY 5mm
4. PROVIDE EMBAICON LL 897 GROUT OR APPROVED EQUIVALENT BETWEEN ALL CONCRETE UPSTANDS & THE NEW 6mm THICK ALUMINIUM COVER PLATES
5. REFER TO DWG 2001979.003 FOR ACCESS HATCH FRAME & BOLT FIXING SETOUT

**HATCH FRAME CENTRED WITH THAT OF EXISTING UNDERSIZED OPENING**  
SCALE: 1:10

**HATCH FRAME CENTRED WITH THAT OF EXISTING OVERSIZE OPENING**  
SCALE: 1:10

|                |                |           |    |       |      |
|----------------|----------------|-----------|----|-------|------|
| DESIGNED       | D. Mc CANN     | 1/03      |    |       |      |
| DES. CHECKED   | R. GALLAGHER   | 1/03      |    |       |      |
| DRAWN          | L. A. COLLINGE | 1/03      |    |       |      |
| DWG. CHECKED   | I. MOSES.      | 1/03      |    |       |      |
| PROJECT LEADER | R. GALLAGHER   | 1/03      |    |       |      |
| ISSUE          | DATE           | AMENDMENT | BY | APPD. | DATE |

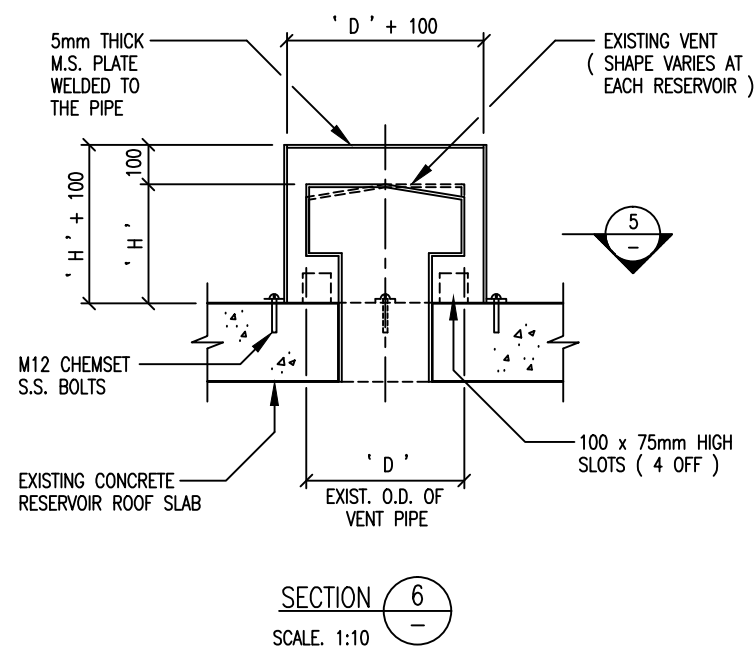
OPERATIONS MANAGER  
WATER

PLANNING MANAGER  
WATER

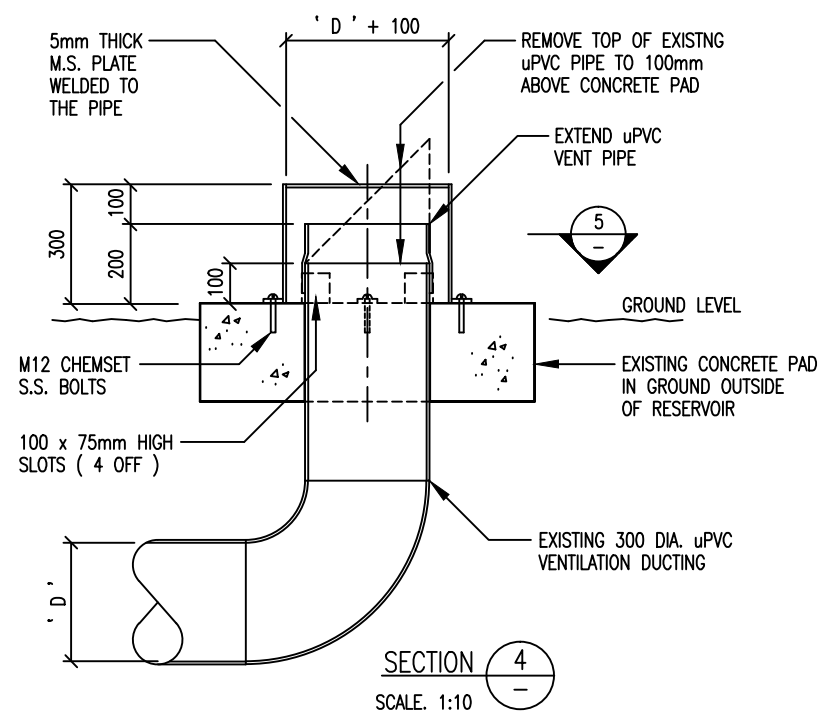


STANDARD WATER STRUCTURES  
POSITIONING OF RESERVOIR ROOF HATCHES  
DETAILS OF ROOF HATCHES OVER EXISTING OPENINGS

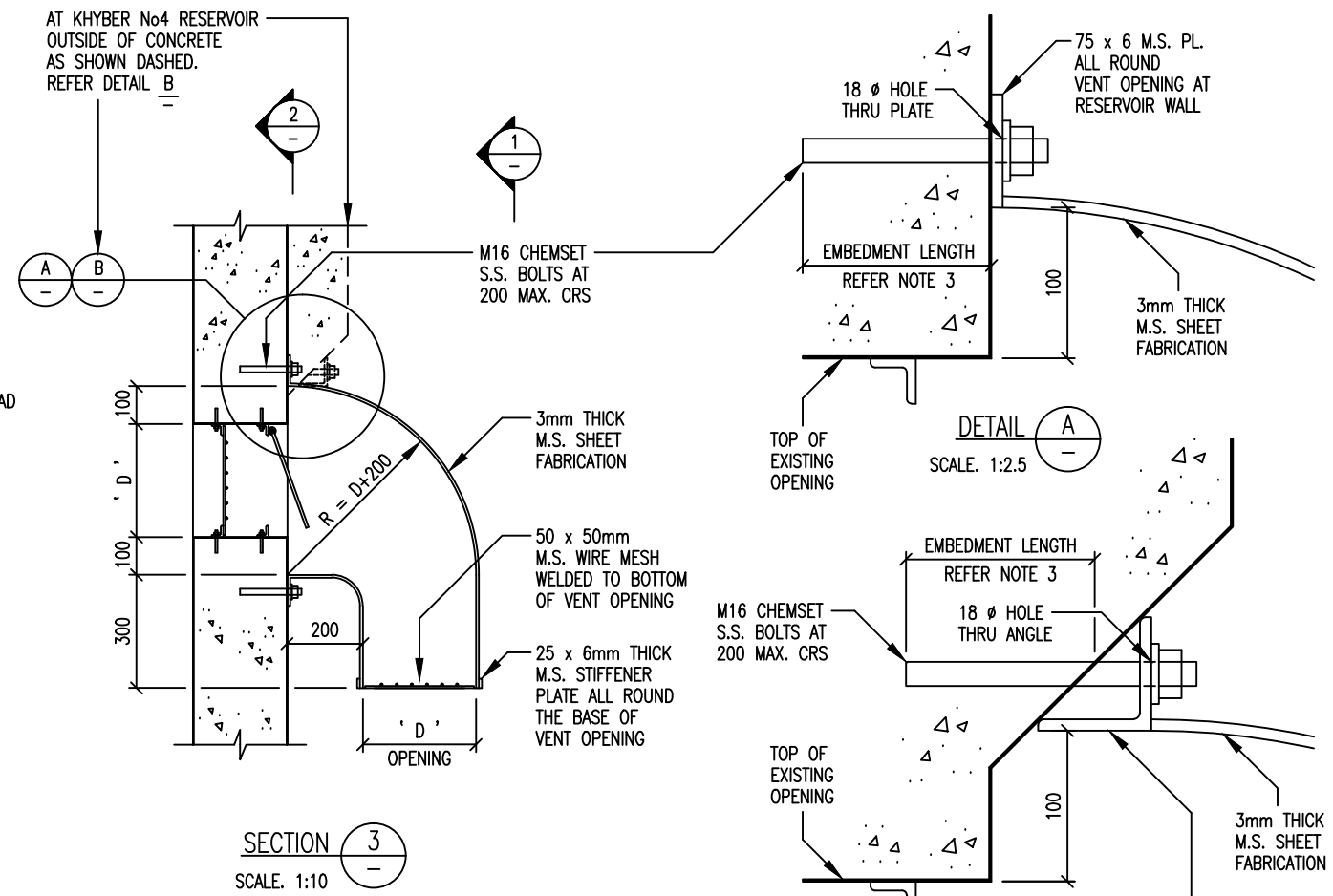
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|-------------------------|--------------|
| CAD FILE EG 2001979.053 | DATE 12-2-03 |
| ORIGINAL SCALE A1       | CONTRACT No. |
| 1:10                    | -            |
| DRAWING No.             | ISSUE        |
| 2001979 .053            | -            |



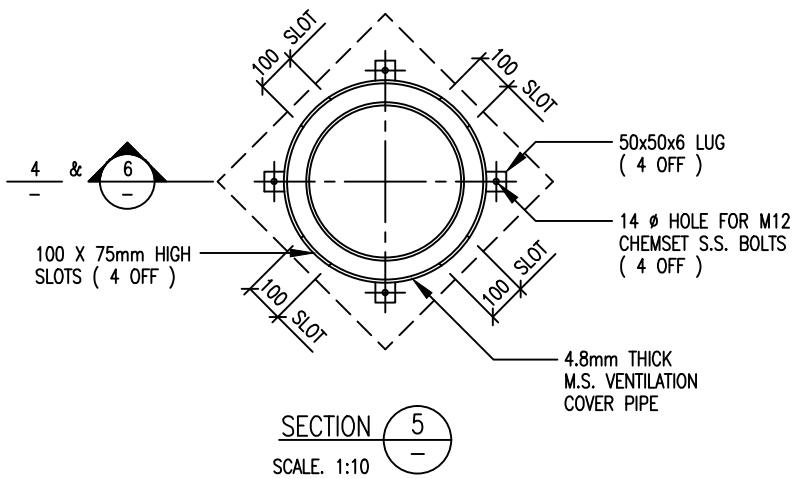
RESERVOIR VENT COVERS ( TYPE C )  
OVER EXISTING VERTICAL VENT HOLES



RESERVOIR VENT COVER ( TYPE B )  
OVER EXISTING VERTICAL VENT HOLE  
AT MILL ROAD RESERVOIR



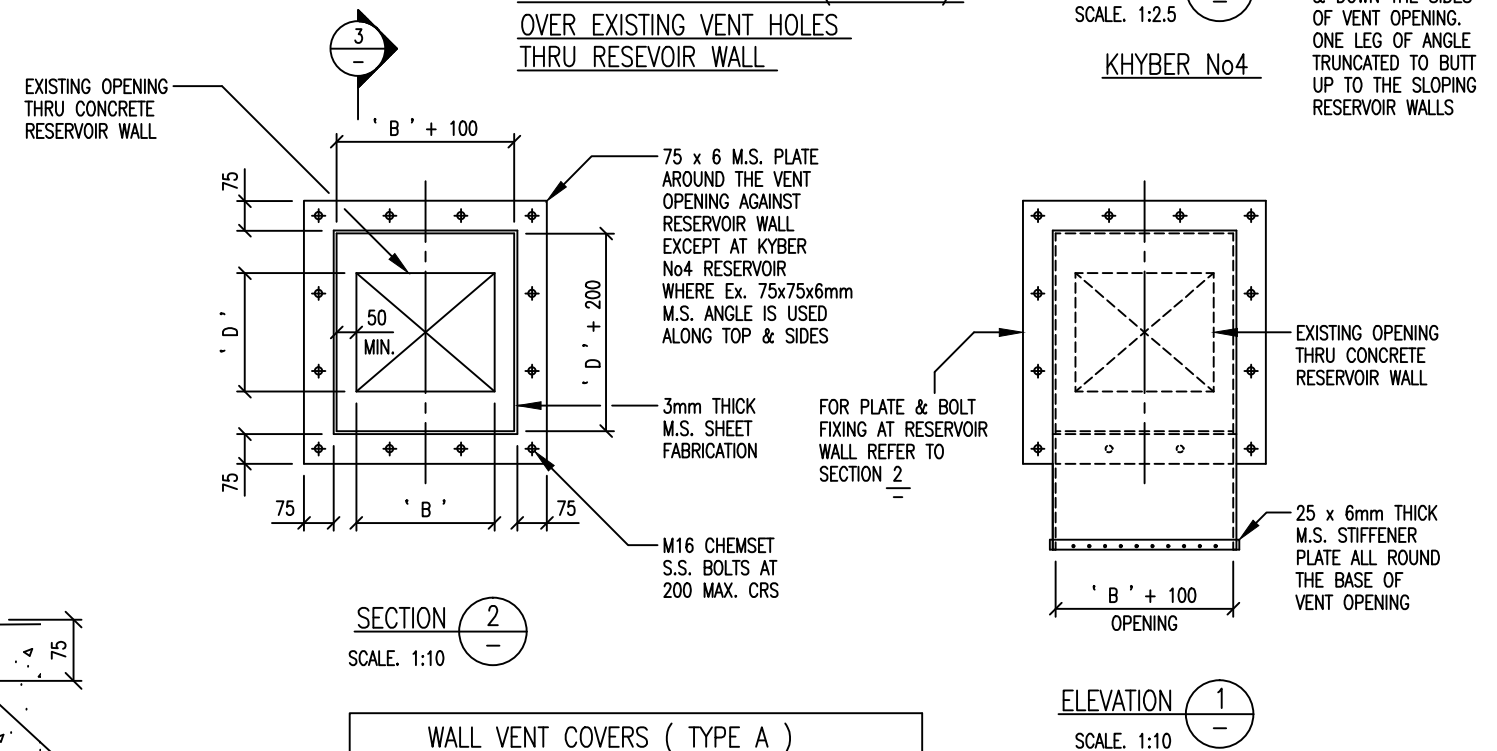
RESERVOIR VENT COVERS ( TYPE A )  
OVER EXISTING VENT HOLES  
THRU RESEVOIR WALL



COVER PLATE FOR SINGLE OR MULTIPLE HOLES  
SCALE: 1:5

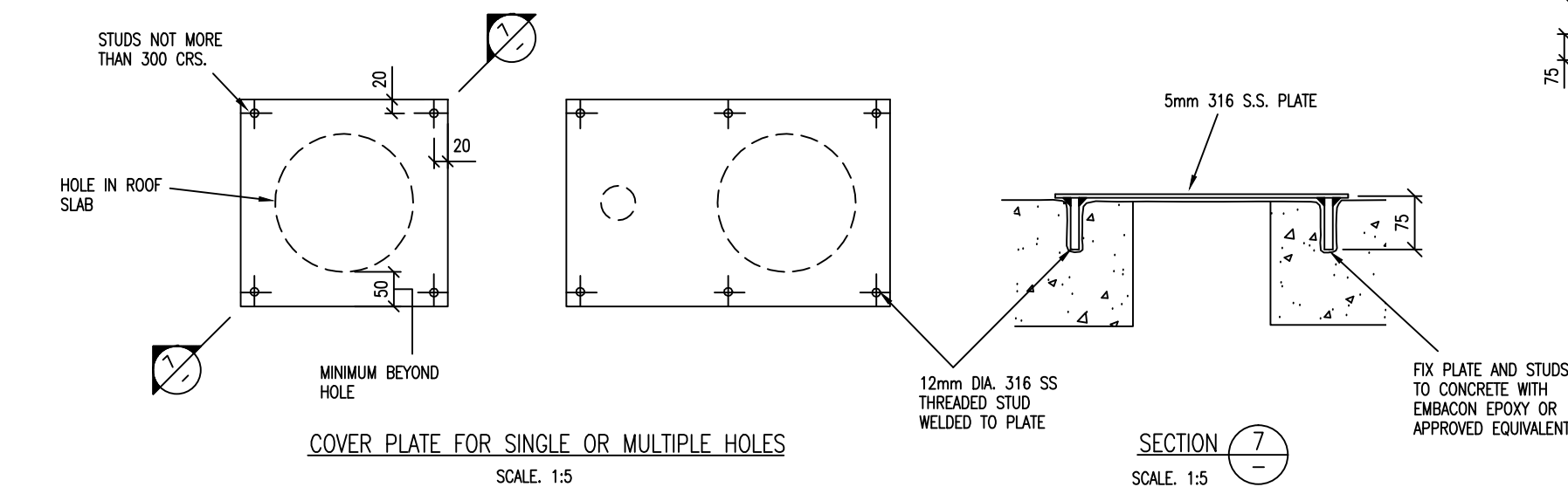
GENERAL NOTES

1. ALL BOLTS & WASHERS TO BE STAINLESS STEEL ( S.S. )
2. ALL VENT COVERS TO BE CONSTRUCTED FROM MILD STEEL ( M.S. ) & HOT-DIP GALVANISED AFTER FABRICATION
3. CHEMSET BOLT EMBEDMENT DEPTHS INTO CONCRETE TO COMPLY WITH MANUFACTURERS RECOMMENDATIONS
4. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO FABRICATION



| WALL VENT COVERS ( TYPE A ) |                     |         |
|-----------------------------|---------------------|---------|
| LOCATION                    | EXIST. OPENING SIZE | No. OFF |
| PONSONBY N03 RESERVOIR      | 300mm x 350mm       | 4       |
| KHYBER No4 RESERVOIR        | 480mm x 800mm       | 10      |
| ONEHUNGA FINAL WATER TANK   | 320mm x 1000mm      | 2       |

NOTE.  
ACTUAL EXISTING HOLE SIZES ' D x B ' THROUGH RESERVOIR WALLS TO BE CHECKED ON SITE PRIOR TO FABRICATION



SECTION 7  
SCALE: 1:5

| ISSUE | DATE | AMENDMENT | BY | APPD. | BY | DATE |
|-------|------|-----------|----|-------|----|------|
|       |      |           |    |       |    |      |

DESIGNED D. Mc CANN 1/03  
DES. CHECKED R. GALLAGHER 1/03  
DRAWN L. A. COLLINGE 1/03  
DWG. CHECKED I. MOSES. 1/03  
PROJECT LEADER R. GALLAGHER 1/03

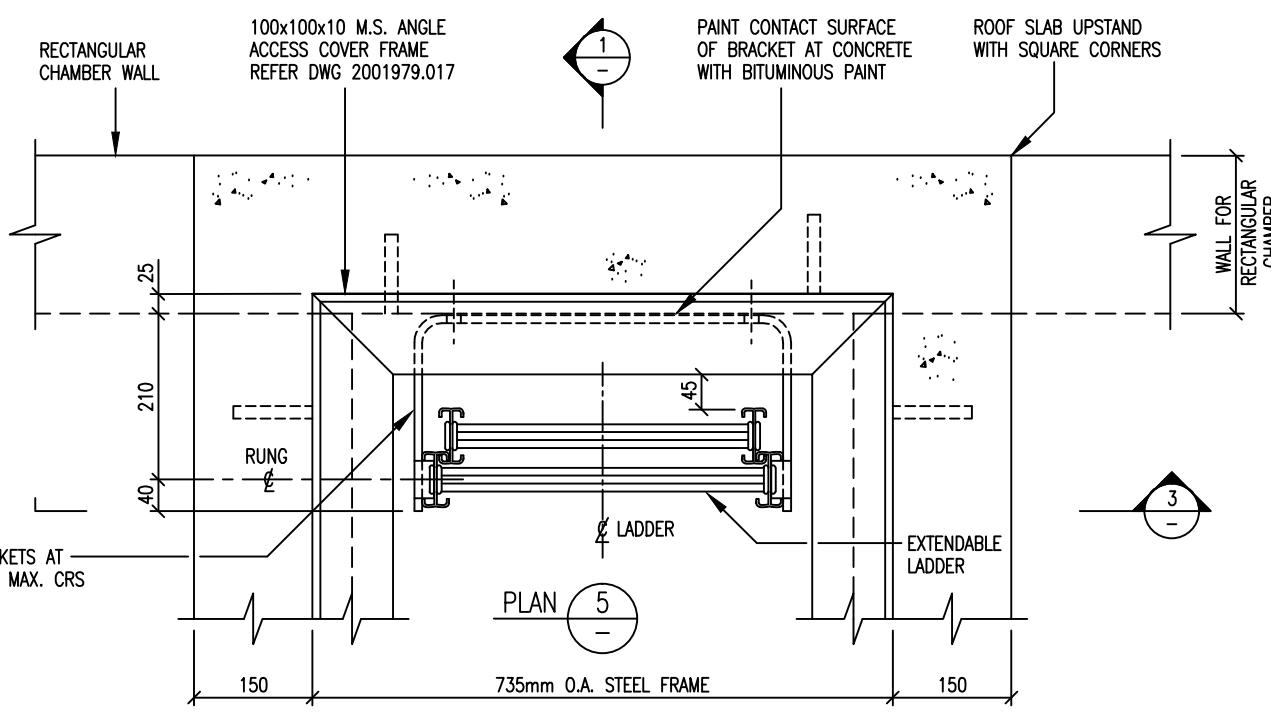
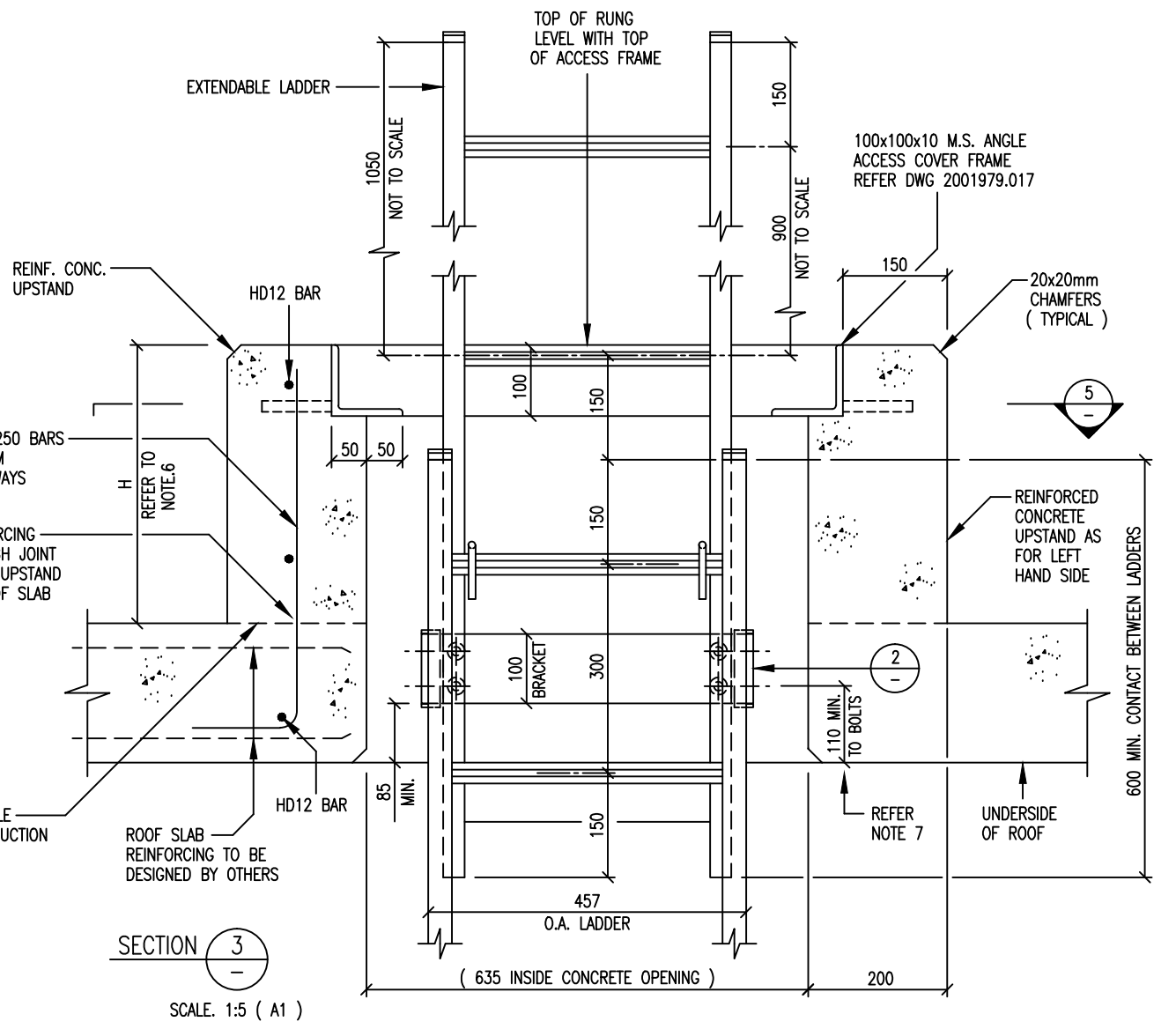
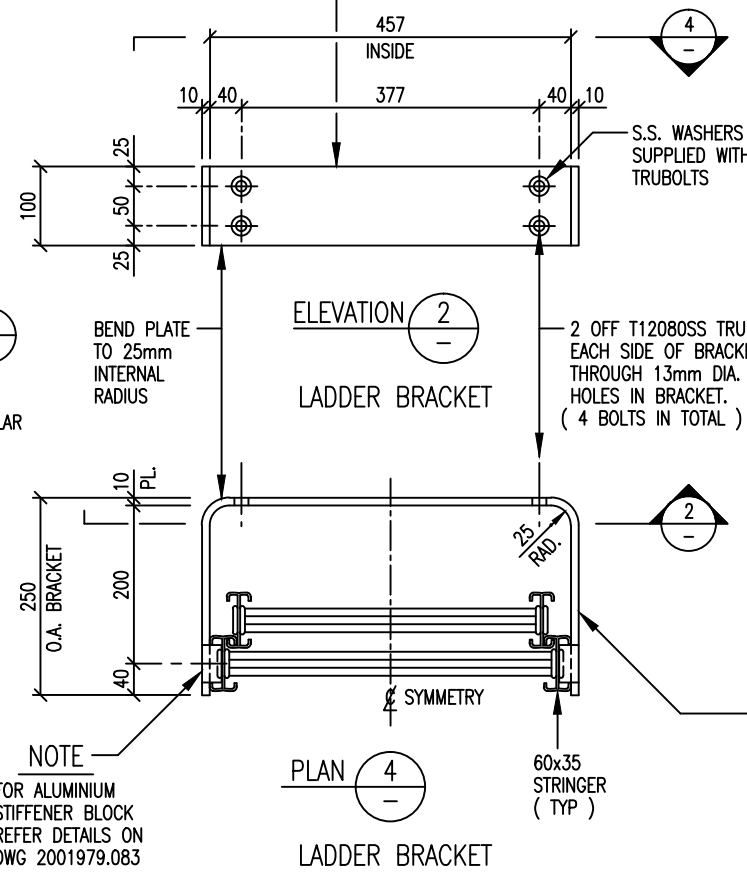
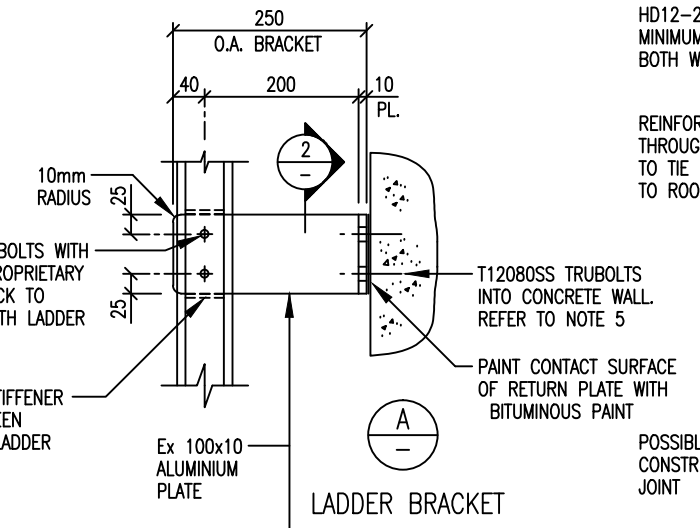
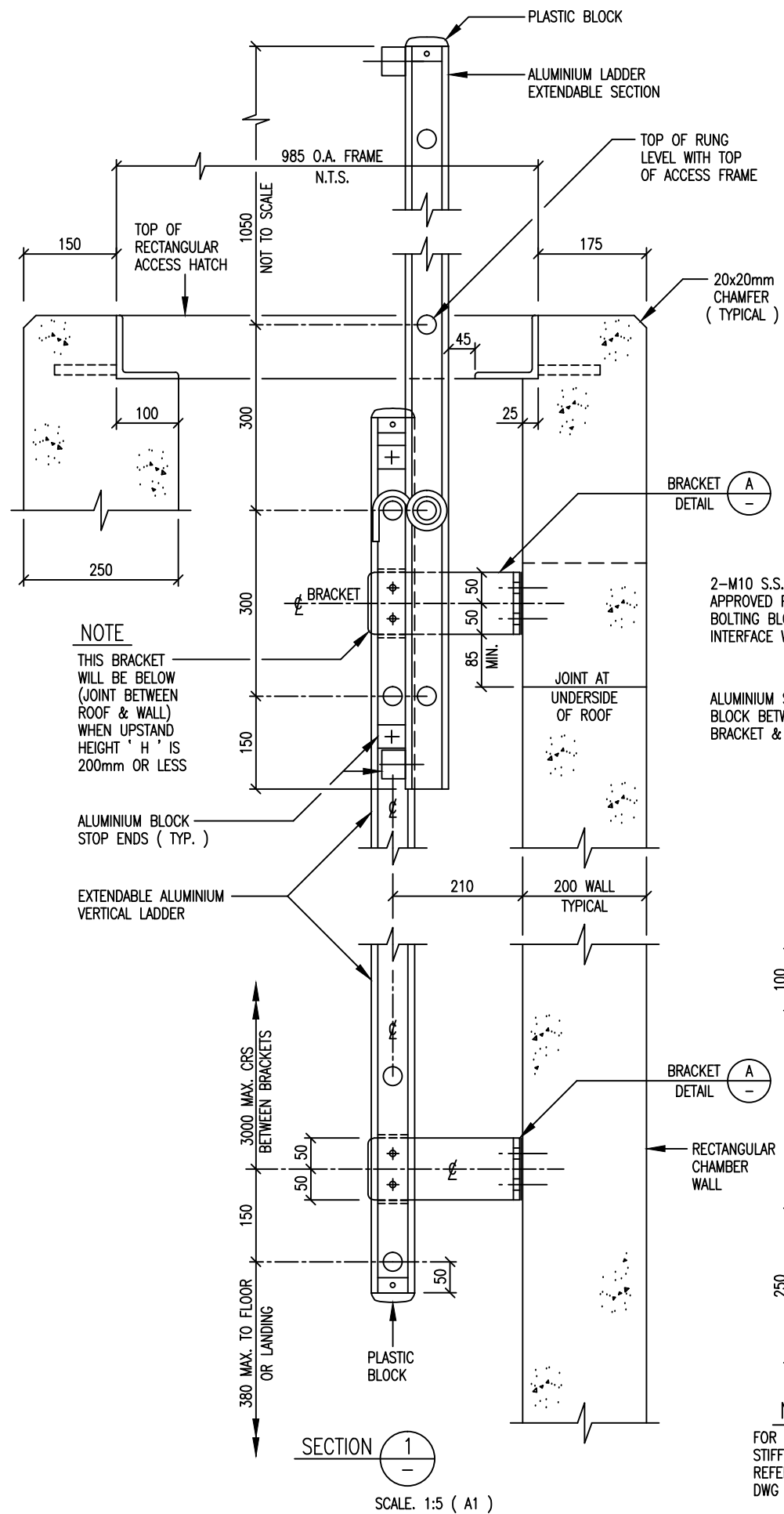


STANDARD WATER STRUCTURES  
RESERVOIR VENT COVERS AND HOLE COVER PLATES  
DETAILS OF VENT COVERS OVER EXISTING OPENINGS

|                         |                |
|-------------------------|----------------|
| CAD FILE EG 2001979.054 | DATE 27-02-03  |
| ORIGINAL SCALE A1       | CONTRACT No. - |
| AS SHOWN                |                |
| DRAWING No. 2001979     | ISSUE .054     |

LADDER NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG 2001979.083
2. BOTTOM RUNG TO BE A MAX. OF 380mm ABOVE LANDING.
3. LADDER, BRACKETS, BRACKET-TO-LADDER BOLTS, NUTS & WASHERS SUPPLIED BY WATERCARE SERVICES.
4. ALUMINIUM ALLOY FOR BRACKETS TO BE GRADE 5032-H32 OR APPROVED ALTERNATIVE
5. ALL BOLTS & WASHERS ARE STAINLESS STEEL
6. UPSTAND HEIGHT H FOR ALL CHAMBERS MAY VARY FROM 0mm TO 200mm THEN GREATER THAN OR EQUAL TO 400mm.
7. BRACKET BOLTS TO BE 110mm MINIMUM FROM JOINT BETWEEN ROOF & WALLS WHETHER BRACKET IS ABOVE OR BELOW JOINT



| ISSUE | DATE  | AMENDMENT        | BY   | APPD. | DESIGNED    | T.C./J.P. | DATE  |
|-------|-------|------------------|------|-------|-------------|-----------|-------|
| -     | 12:07 | FOR CONSTRUCTION | L.C. | J.P.  | AD APPROVED | D.B.      | 12:06 |

|                  |           |       |
|------------------|-----------|-------|
| DESIGNED         | T.C./J.P. | 12:06 |
| DES. CHECKED     | T.C.      | 12:06 |
| DRAWN            | L.C.      | 12:06 |
| DWG. CHECKED     | I.M.      | 12:06 |
| PROJECT LEADER   | T.C.      | 12:06 |
| ASSET MANAGEMENT |           |       |

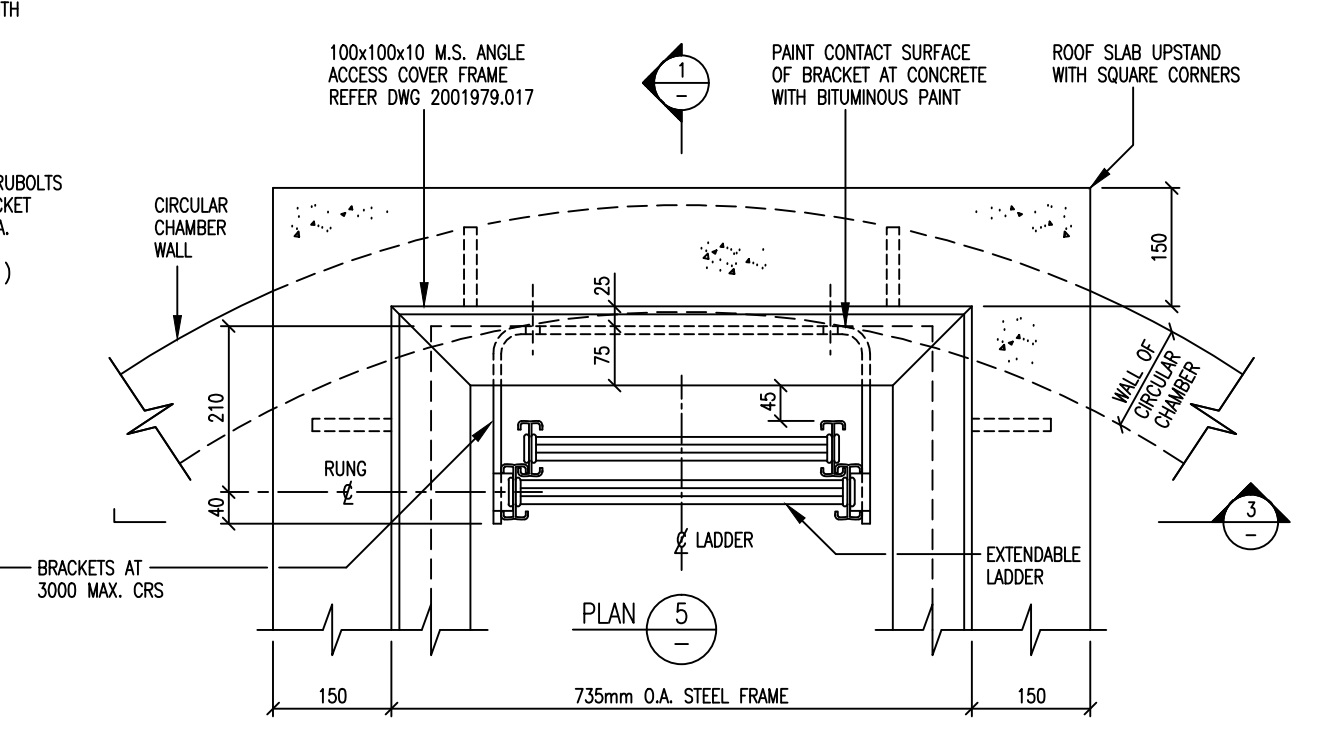
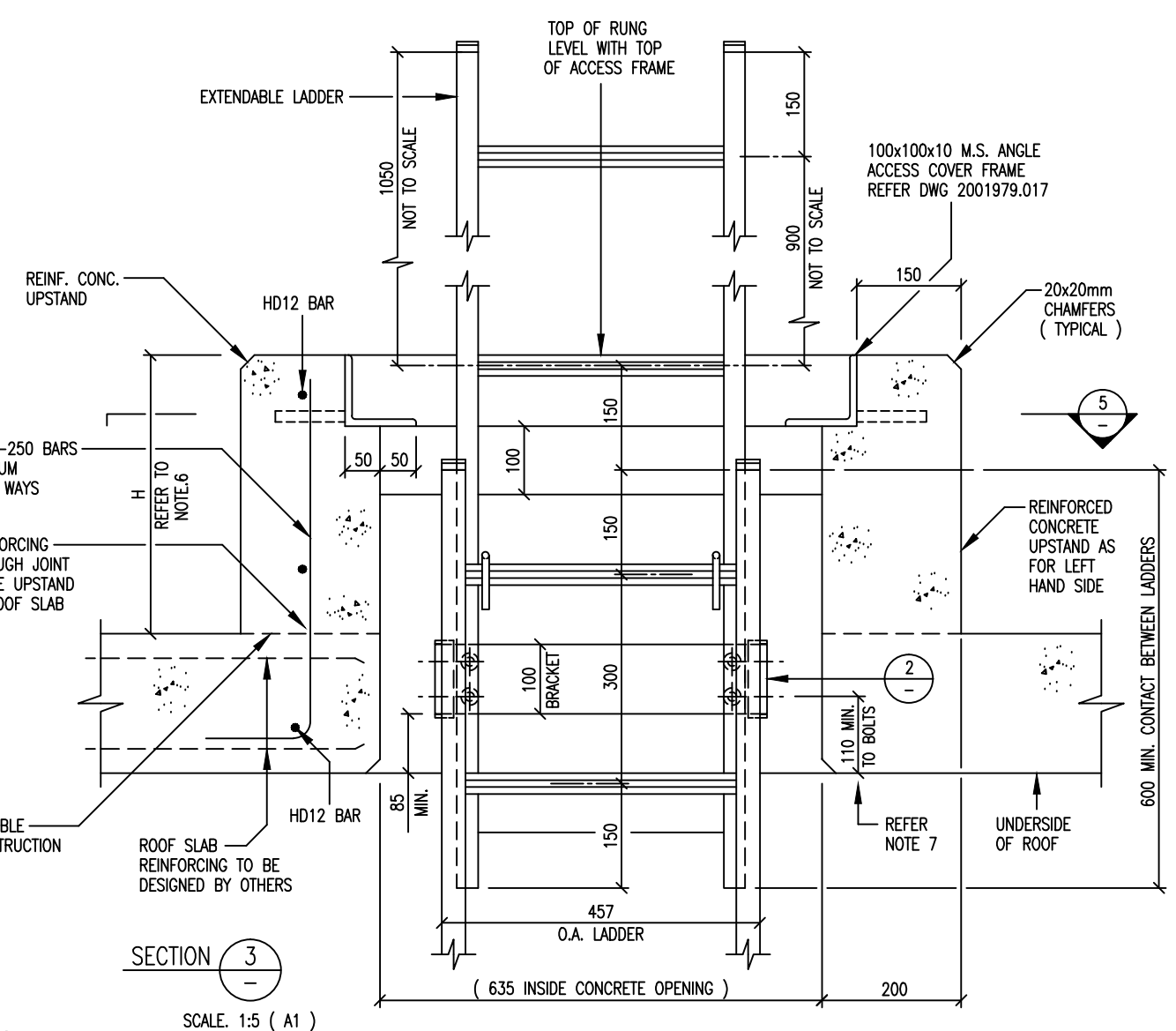
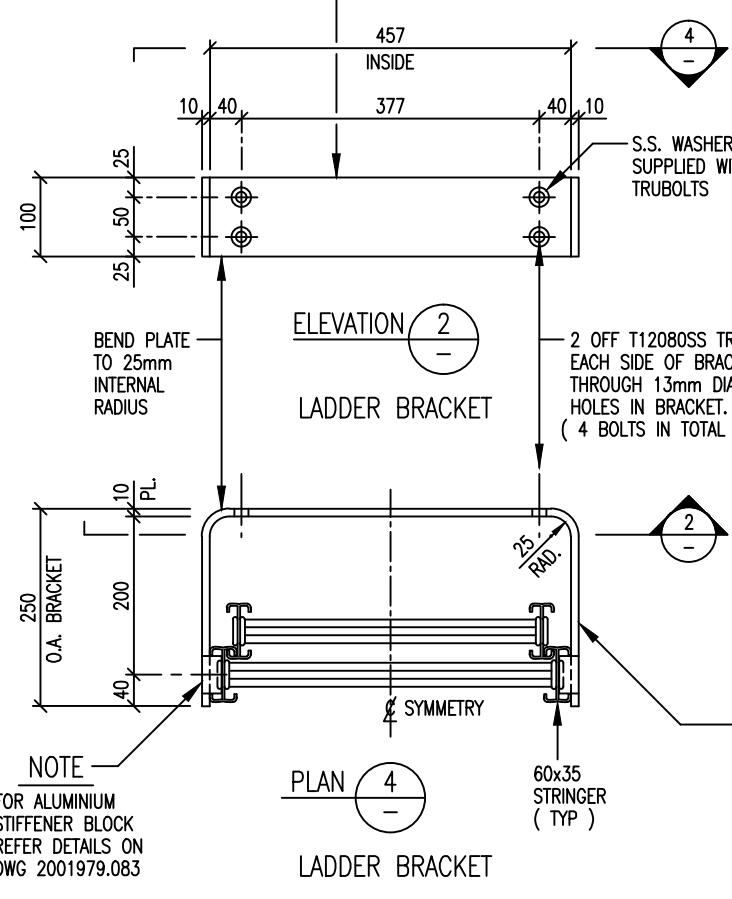
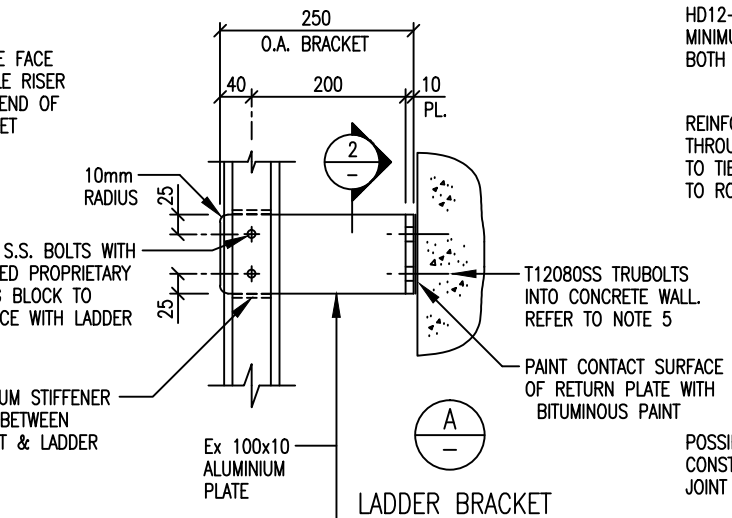
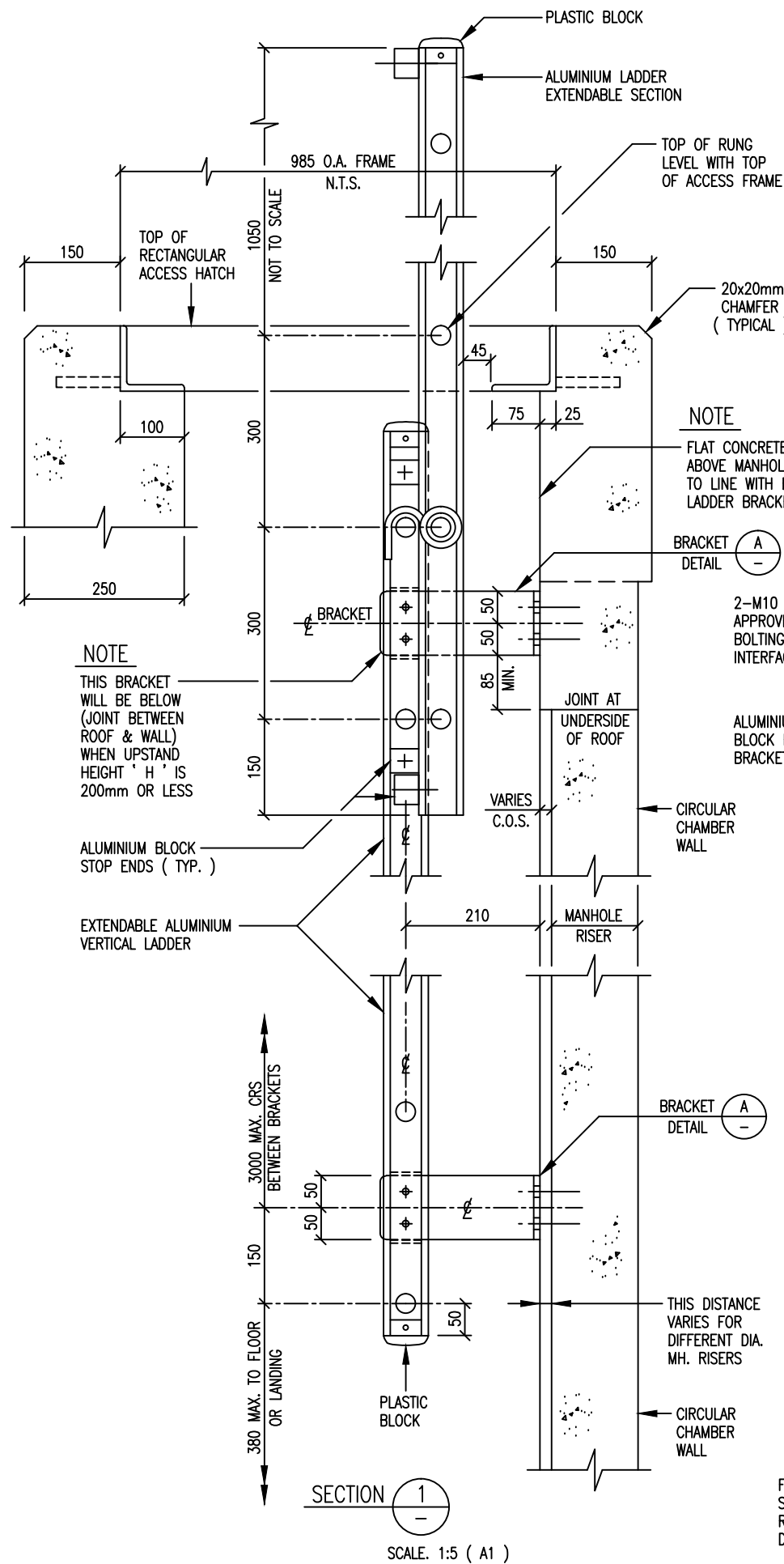


WATER RETICULATION STANDARD  
 EXTENDABLE ALUMINIUM ACCESS LADDER  
 FOR RECTANGULAR CHAMBER - PLAN, SECTION & BRACKET DETAIL

|                      |               |
|----------------------|---------------|
| CAD FILE 2001979.080 | DATE 14-12-07 |
| ORIGINAL SCALE A1    | CONTRACT No.  |
| 1:5                  | -             |
| DRAWING No.          | ISSUE         |
| 2001979 .080         | -             |

LADDER NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG 2001979.083
2. BOTTOM RUNG TO BE A MAX. OF 380mm ABOVE LANDING.
3. LADDER, BRACKETS, BRACKET-TO-LADDER BOLTS, NUTS & WASHERS SUPPLIED BY WATERCARE SERVICES.
4. ALUMINIUM ALLOY FOR BRACKETS TO BE GRADE 5032-H32 OR APPROVED ALTERNATIVE
5. ALL BOLTS & WASHERS ARE STAINLESS STEEL
6. UPSTAND HEIGHT H FOR ALL CHAMBERS MAY VARY FROM 0mm TO 200mm THEN GREATER THAN OR EQUAL TO 400mm.
7. BRACKET BOLTS TO BE 110mm MINIMUM FROM JOINT BETWEEN ROOF & WALLS WHETHER BRACKET IS ABOVE OR BELOW JOINT



L:\---\EGCAD\FI\2007\WATER STANDARDS UPDATE\2001979.081A.DWG

| ISSUE | DATE  | AMENDMENT                                   | BY   | APPD. | DESIGNED | T.C./J.P. | DATE  |
|-------|-------|---|------|-------|----------|-----------|-------|
| A     | 12:07 | GENERAL REVISION                            | L.C. | J.P.  | J.P.     | J.P.      | 12:06 |
| -     | 12:06 | FOR CONSTRUCTION - REPLACES DWG 2001979.051 | L.C. | J.P.  | J.P.     | J.P.      | 12:06 |

| DESIGNED       | T.C./J.P. | DATE  |
|----------------|-----------|-------|
| DES. CHECKED   | T.C.      | 12:06 |
| DRAWN          | L.C.      | 12:06 |
| DWG. CHECKED   | I.M.      | 12:06 |
| PROJECT LEADER | T.C.      | 12:06 |
| AD APPROVED    | D.B.      | 12:06 |

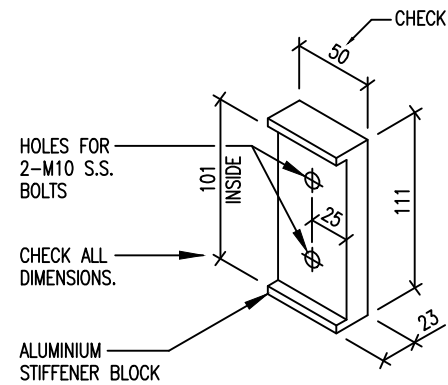
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WATER RETICULATION STANDARD  
EXTENDABLE ALUMINIUM ACCESS LADDER  
FOR CIRCULAR CHAMBER - PLAN, SECTION & BRACKET DETAIL

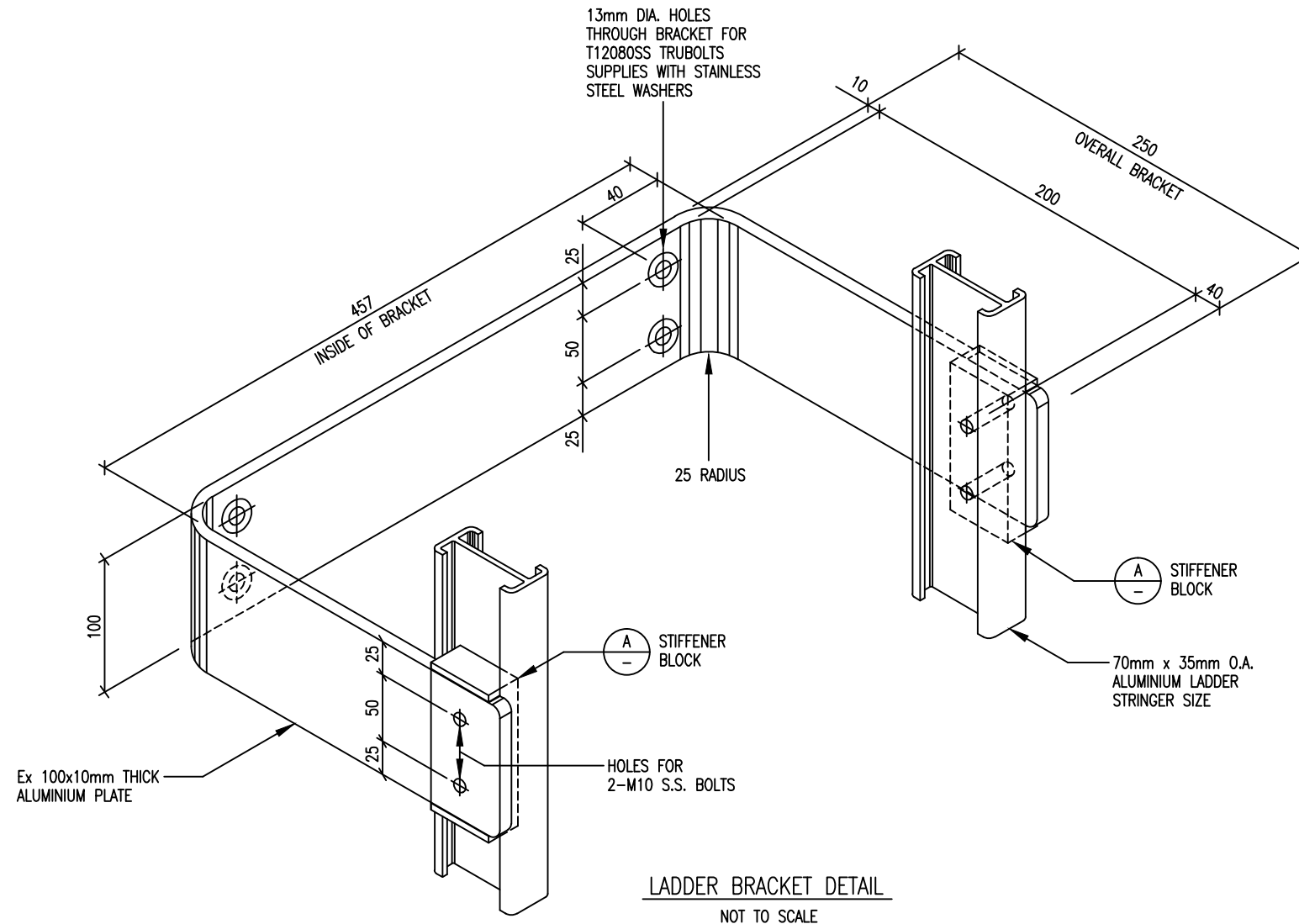
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|-----------------------|---------------|
| CAD FILE 2001979.081A | DATE 14-12-07 |
| ORIGINAL SCALE A1     | CONTRACT No.  |
| 1:5                   | -             |
| DRAWING No.           | ISSUE         |
| 2001979 .081          | A             |





STIFFENER BLOCK (A)

SCALE: 1:2.5 ( A1 )



LADDER BRACKET DETAIL  
NOT TO SCALE

LADDER BRACKET DETAILS

SCALE: 1:5 ( A1 )  
1:10 ( A3 )

NOTE

THIS DRAWING TO BE READ  
IN CONJUNCTION WITH DRAWINGS  
2001979 .081 , .082 , .084 & .085

L:\EXISTING\GR\EGCAD\F\2006\STANDARD DWGS\2001979.083 .DWG

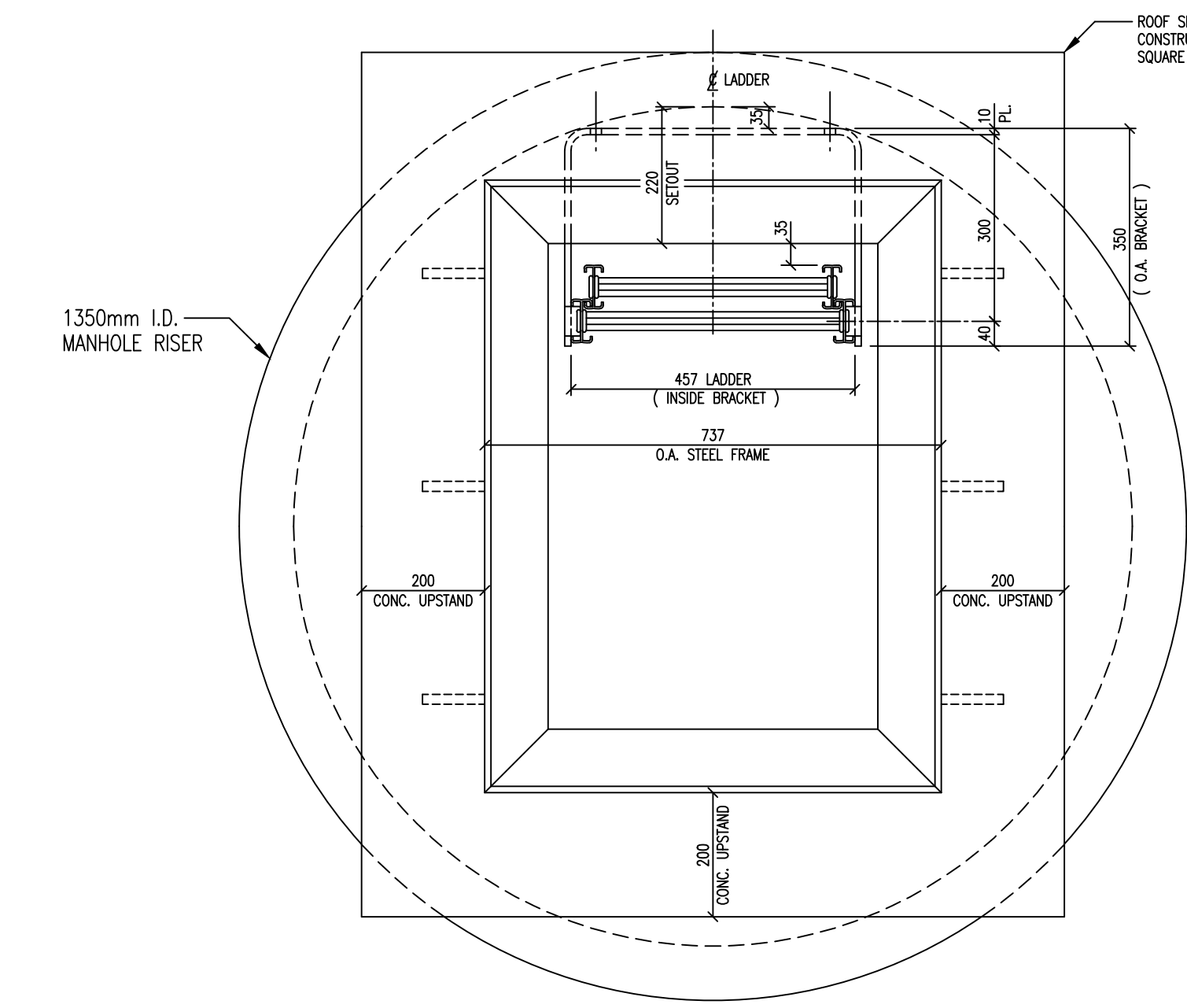
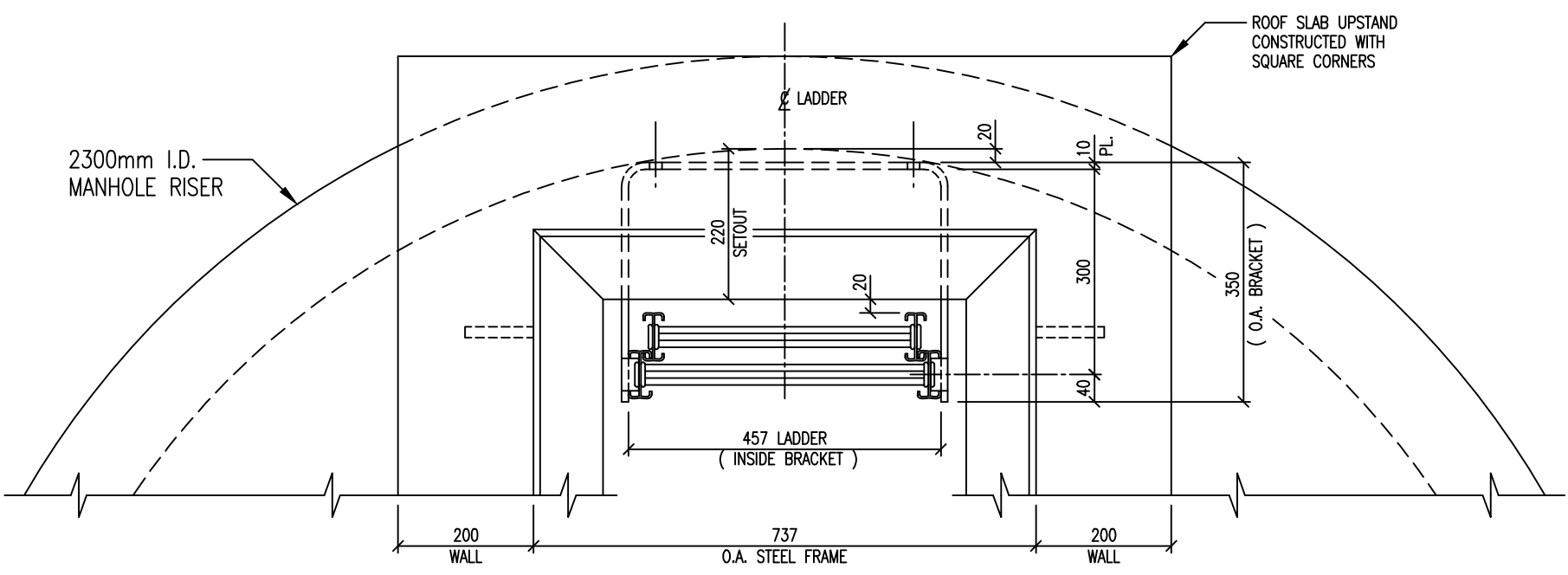
| ISSUE | DATE  | AMENDMENT                                   | BY   | APPD. | DESIGNED | J.P. | 12:06 | DES. CHECKED | T.C. | 12:06 | DRAWN | L.C. | 12:06 | DWG. CHECKED | I.M. | 12:06 | PROJECT LEADER | J.P. | 12:06 | AD APPROVED | D.B. | 12:06 |  |
|-------|-------|---|------|-------|----------|------|-------|--------------|------|-------|-------|------|-------|--------------|------|-------|----------------|------|-------|-------------|------|-------|--|
| A     | 12:07 | GENERAL REVISION                            | L.C. | J.P.  | J.P.     |      |       |              |      |       |       |      |       |              |      |       |                |      |       |             |      |       |  |
| -     | 12:06 | FOR CONSTRUCTION - REPLACES DWG 2001979.079 | L.C. | J.P.  | J.P.     |      |       |              |      |       |       |      |       |              |      |       |                |      |       |             |      |       |  |
|       |       |   |      |       |          |      |       |              |      |       |       |      |       |              |      |       |                |      |       |             |      |       |  |

|           |                  |  |
|-----------|------------------|--|
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| A. SPITAL | ASSET MANAGEMENT |  |



WATER RETICULATION STANDARD  
ALUMINIUM BRACKET FOR ACCESS LADDERS  
TYPICAL DETAILS

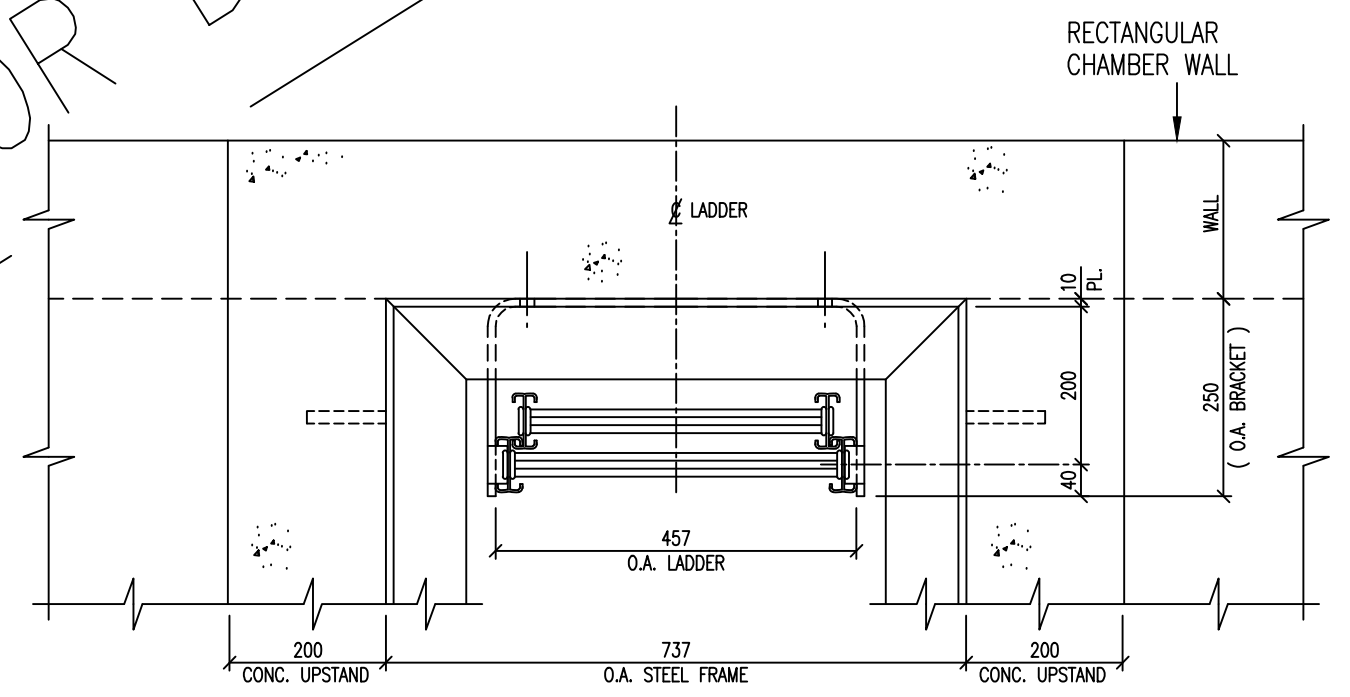
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|-----------------------|---------------|
| CAD FILE 2001979.083A | DATE 14-12-07 |
| ORIGINAL SCALE A1     | CONTRACT No.  |
| AS SHOWN              | -             |
| DRAWING No.           | ISSUE         |
| 2001979 .083          | A             |



FOR DESIGN

**NOTE**  
THIS DRAWING TO BE READ  
IN CONJUNCTION WITH DRAWINGS  
2001979.081 & 2001979.083

USE ONLY



**EXTENDABLE LADDER SETOUT DETAILS**

SCALE: 1:5 ( A1 )  
1:10 ( A3 )

L:\EXISTING\GR\EGCAD\F\2006\STANDARD DWGS\2001979.085 .DWG

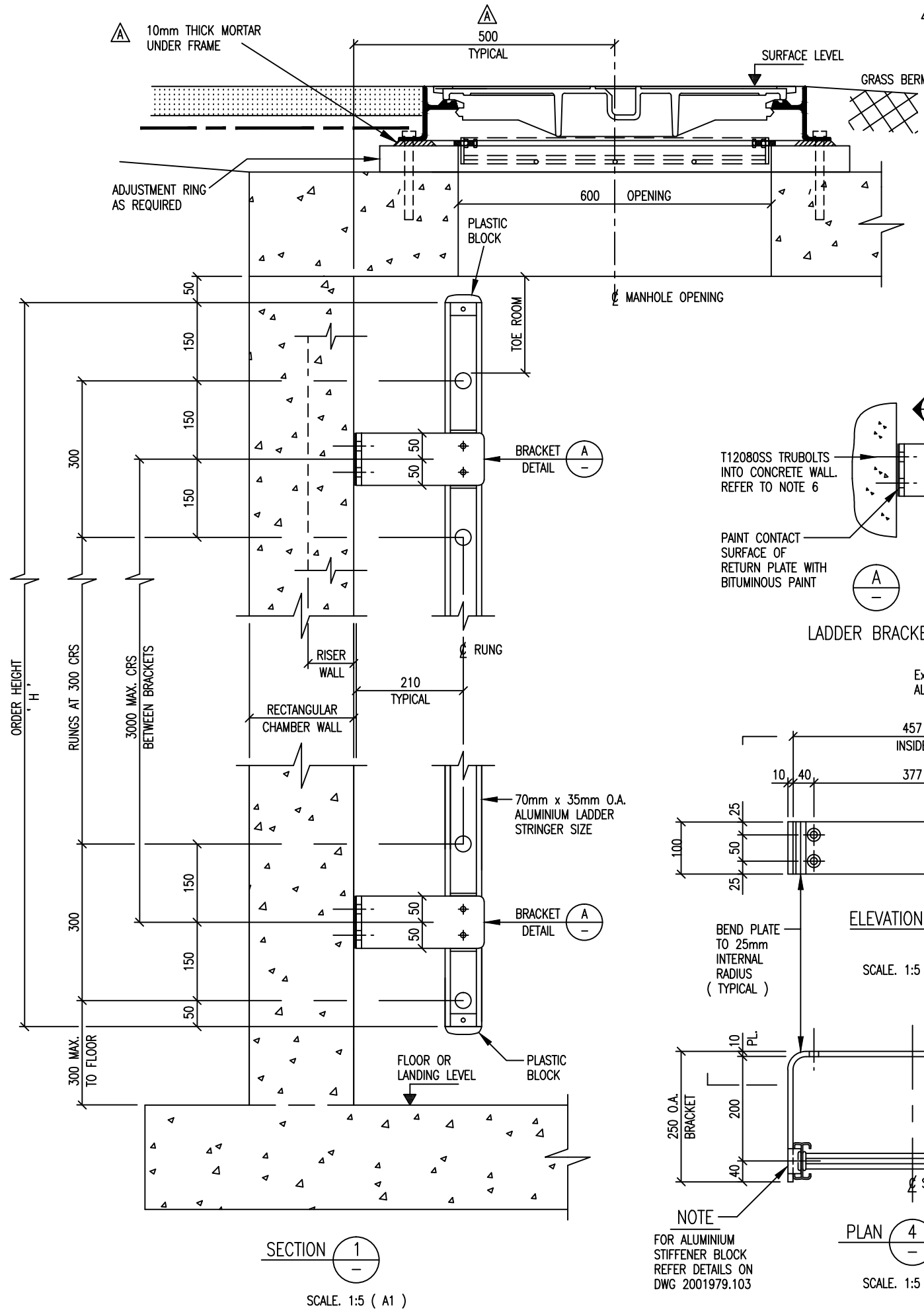
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|----------------|-------|---|------|-------|
| DESIGNED       | J.P.  | 12:06                                       |      |       |
| DES. CHECKED   | T.C.  | 12:06                                       |      |       |
| DRAWN          | L.C.  | 12:06                                       |      |       |
| DWG. CHECKED   | I.M.  | 12:06                                       |      |       |
| PROJECT LEADER | T.C.  | 12:06                                       |      |       |
| AD APPROVED    | D.B.  | 12:06                                       |      |       |
| ISSUE          | DATE  | AMENDMENT                                   | BY   | APPD. |
| -              | 12:06 | FOR CONSTRUCTION - REPLACES DWG 2001979.078 | L.C. | J.P.  |

OPERATIONS  
ASSET MANAGEMENT



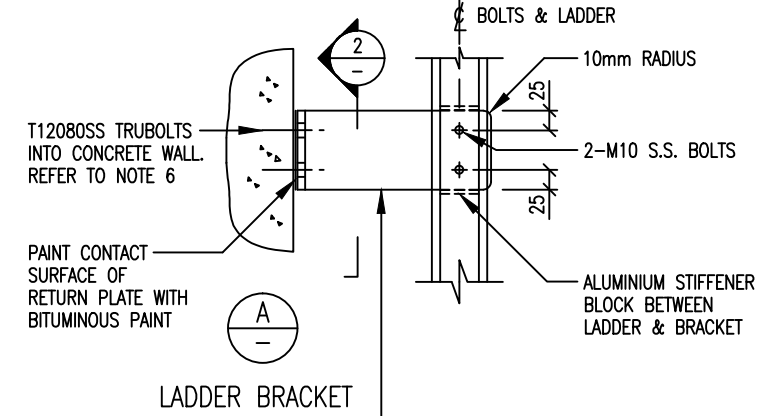
**WATERCARE SERVICES WATER RETICULATION**  
STANDARD EXTENDABLE ALUMINIUM ACCESS LADDER  
DETAIL OF MANHOLE ACCESS LIDS

|                |             |              |          |
|----------------|-------------|--------------|----------|
| CAD FILE       | 2001979.085 | DATE         | 21-12-06 |
| ORIGINAL SCALE | A1          | CONTRACT No. | -        |
|                | 1:5         |              |          |
| DRAWING No.    | 2001979     | ISSUE        | -        |
|                | .085        |              |          |

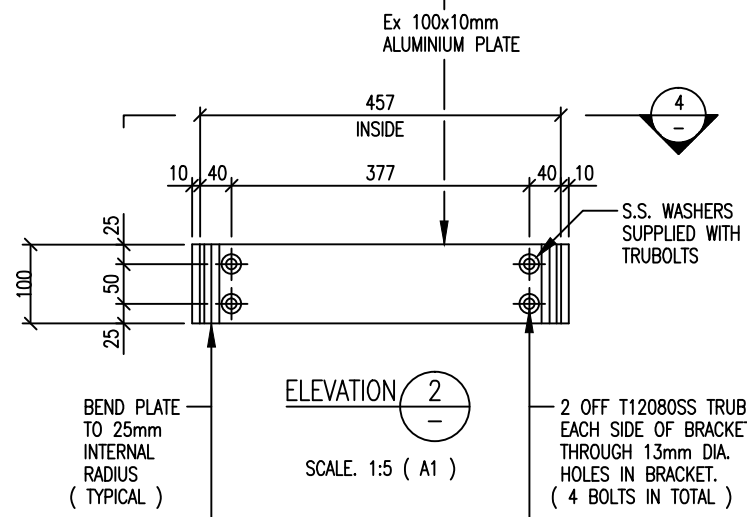


SECTION 1  
SCALE: 1:5 (A1)

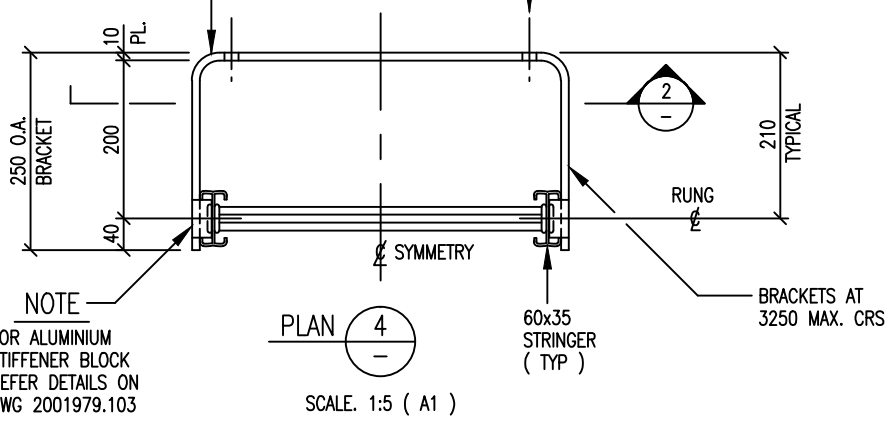
- LADDER NOTES**
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG 2001979.103
  2. TOP RUNG TO BE 200mm BELOW UNDERSIDE OF ROOF.
  3. BOTTOM RUNG TO BE A MAX. OF 380mm ABOVE FLOOR.
  4. LADDER, BRACKETS, BRACKET-TO-LADDER BOLTS, NUTS & WASHERS SUPPLIED BY WATERCARE SERVICES.
  5. ALUMINIUM ALLOY FOR BRACKETS TO BE GRADE 5032-H32 OR APPROVED ALTERNATIVE
  6. ALL BOLTS, NUTS & WASHERS ARE STAINLESS STEEL. THE INTERFACES WITH ALUMINIUM ARE TO BE ELECTRICALLY ISOLATED BY MEANS OF APPROVED COLLARED NYLON SLEEVES AND NYLON WASHERS (EX. SHUK ENGINEERING) BRACKET HOLES ARE 16 DIA. AND DRILLED STRAIGHT IN ALL CASES.
  7. ALL DIMENSIONS TO BE CHECKED ON SITE & WITH THE MAKE OF LADDER USED
  8. FOR CHAMBER BACKFILL DETAILS REFER DWG. 2001979.137



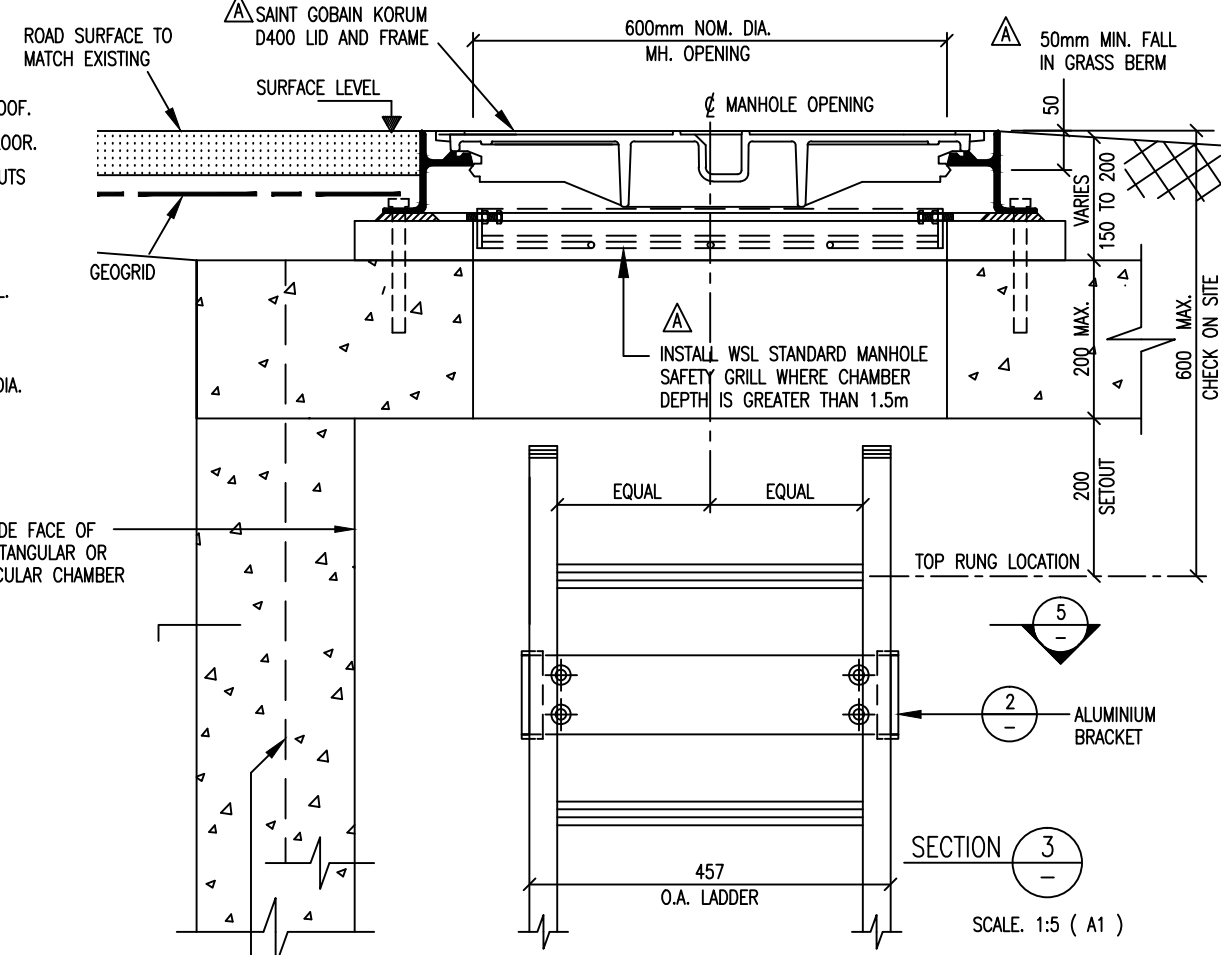
LADDER BRACKET



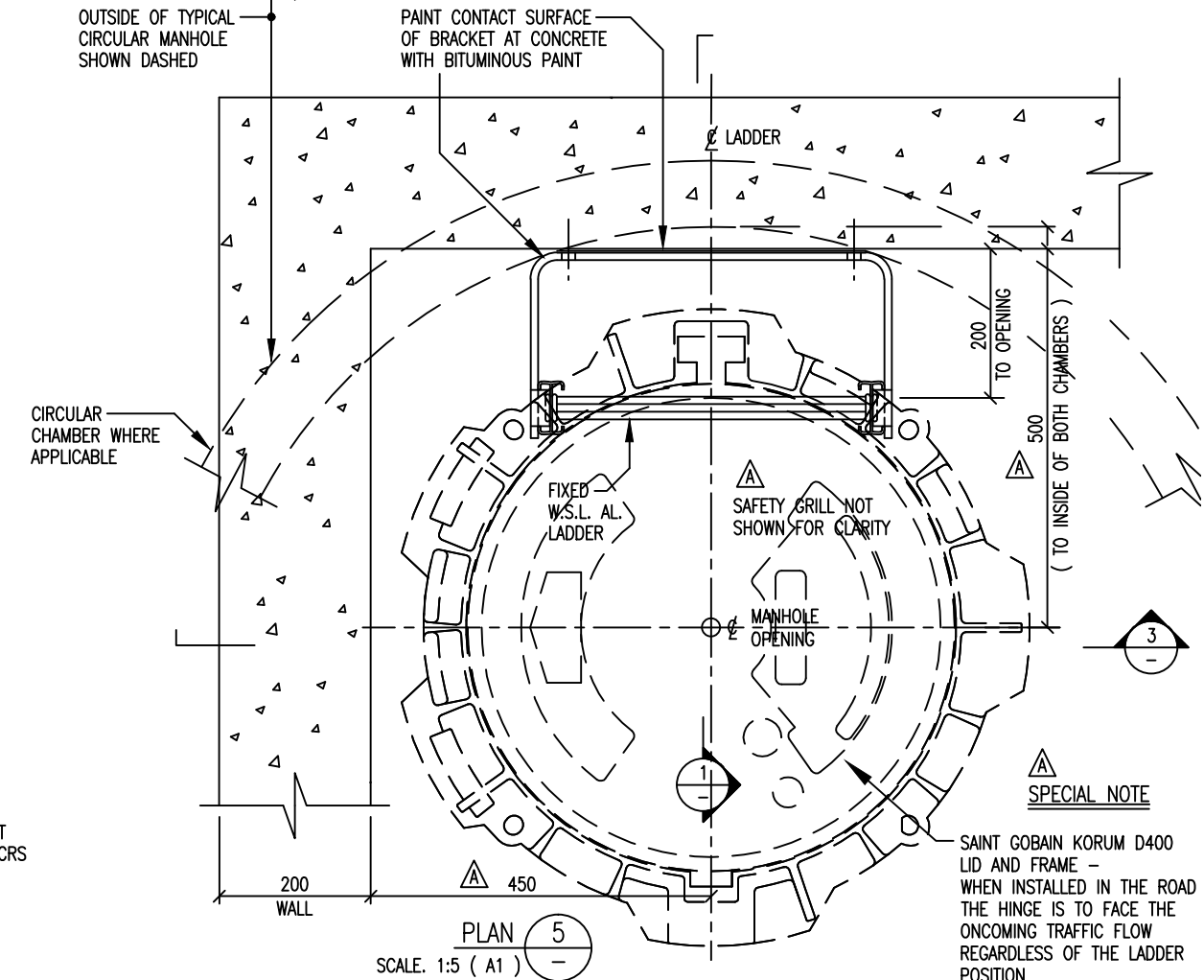
ELEVATION 2  
SCALE: 1:5 (A1)



PLAN 4  
SCALE: 1:5 (A1)



SECTION 3  
SCALE: 1:5 (A1)



PLAN 5  
SCALE: 1:5 (A1)

**SPECIAL NOTE**  
SAINT GOBAIN KORUM D400 LID AND FRAME - WHEN INSTALLED IN THE ROAD THE HINGE IS TO FACE THE ONCOMING TRAFFIC FLOW REGARDLESS OF THE LADDER POSITION

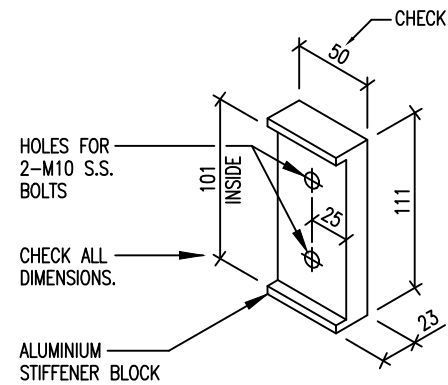
| ISSUE | DATE  | AMENDMENT  | BY   | APPD. | DESIGNED       | T.C. | 11:08 |
|-------|-------|--|------|-------|----------------|------|-------|
| A     | 04-13 | MANHOLE FRAME & LID CHANGED TO KORUM D400 FOR CONSTRUCTION | I.M. | T.C.  | J.P.           | L.C. | 11:08 |
| -     | 11:08 |  | L.C. | T.C.  | D.W.G.         | I.M. | 11:08 |
|       |       |  | L.C. | T.C.  | PROJECT LEADER | T.C. | 11:08 |
|       |       |  | L.C. | T.C.  | AM APPROVED    | A.S. | 11:08 |

|            |                  |       |
|------------|------------------|-------|
| T. HAWKE   | OPERATIONS       | 11:08 |
| A. STEWART | ASSET MANAGEMENT | 11:08 |

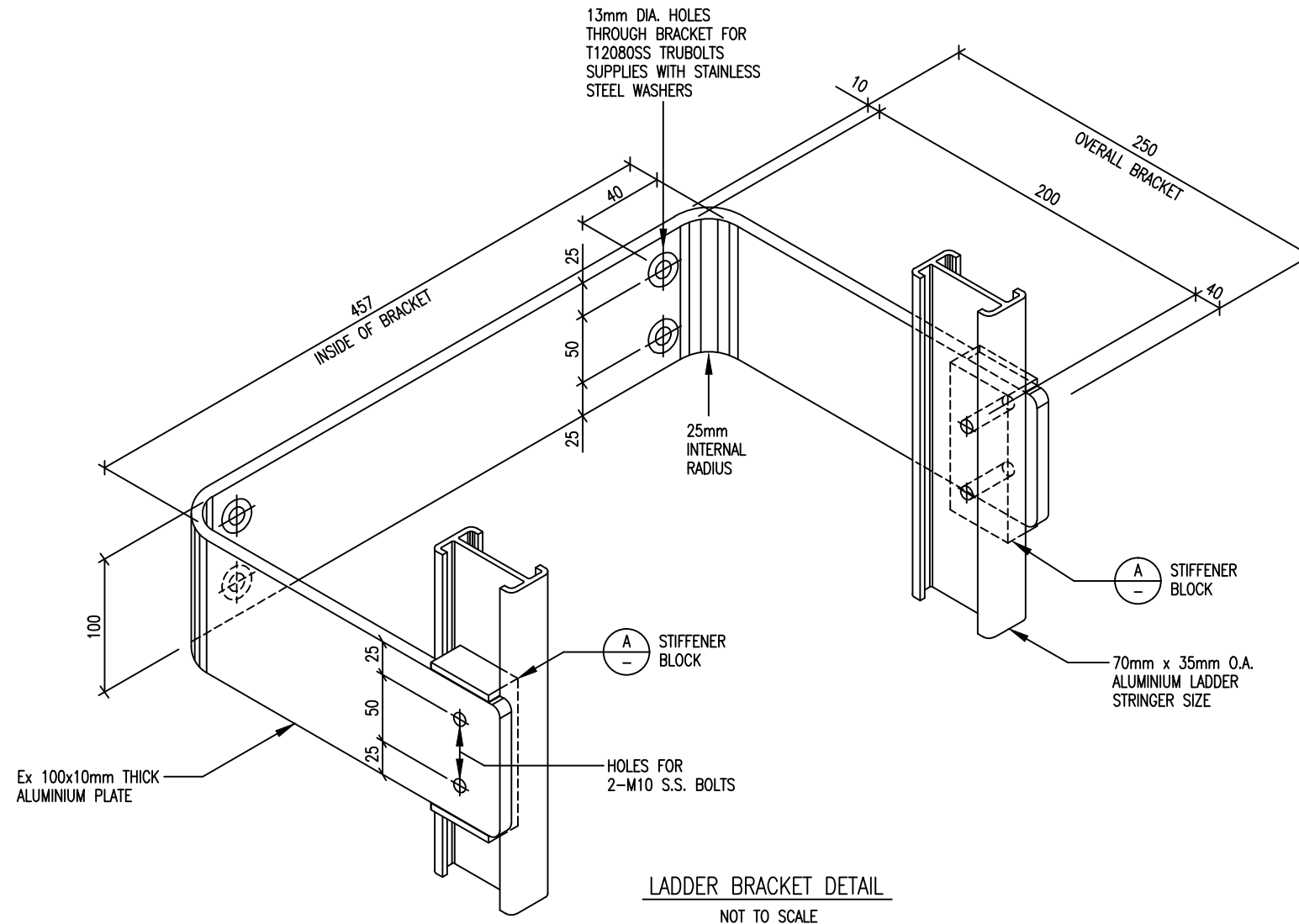


WATER RETICULATION STANDARD  
FIXED ALUMINIUM ACCESS LADDER  
RECTANGULAR & CIRCULAR CHAMBERS - PLAN, SECTION & BRACKET DETAILS

|   |               |
|---|---------------|
| LEGCADP\2013\WNS2013\STD AIR VALVE PLANS-TERRY CARMELL\2001979.102A.DWG |               |
| CAD FILE 2001979.102A   | DATE 17-06-13 |
| ORIGINAL SCALE A1   | CONTRACT No.  |
| 1:5   | -             |
| DRAWING No.   | ISSUE         |
| 2001979 .102  | A             |



STIFFENER BLOCK (A)  
SCALE: 1:2.5 ( A1 )



LADDER BRACKET DETAILS  
SCALE: 1:5 ( A1 )  
1:10 ( A3 )

NOTE

THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWINGS 2001979 .098 , .099 , .100 , .101 .102 , .104 , 105 & .106

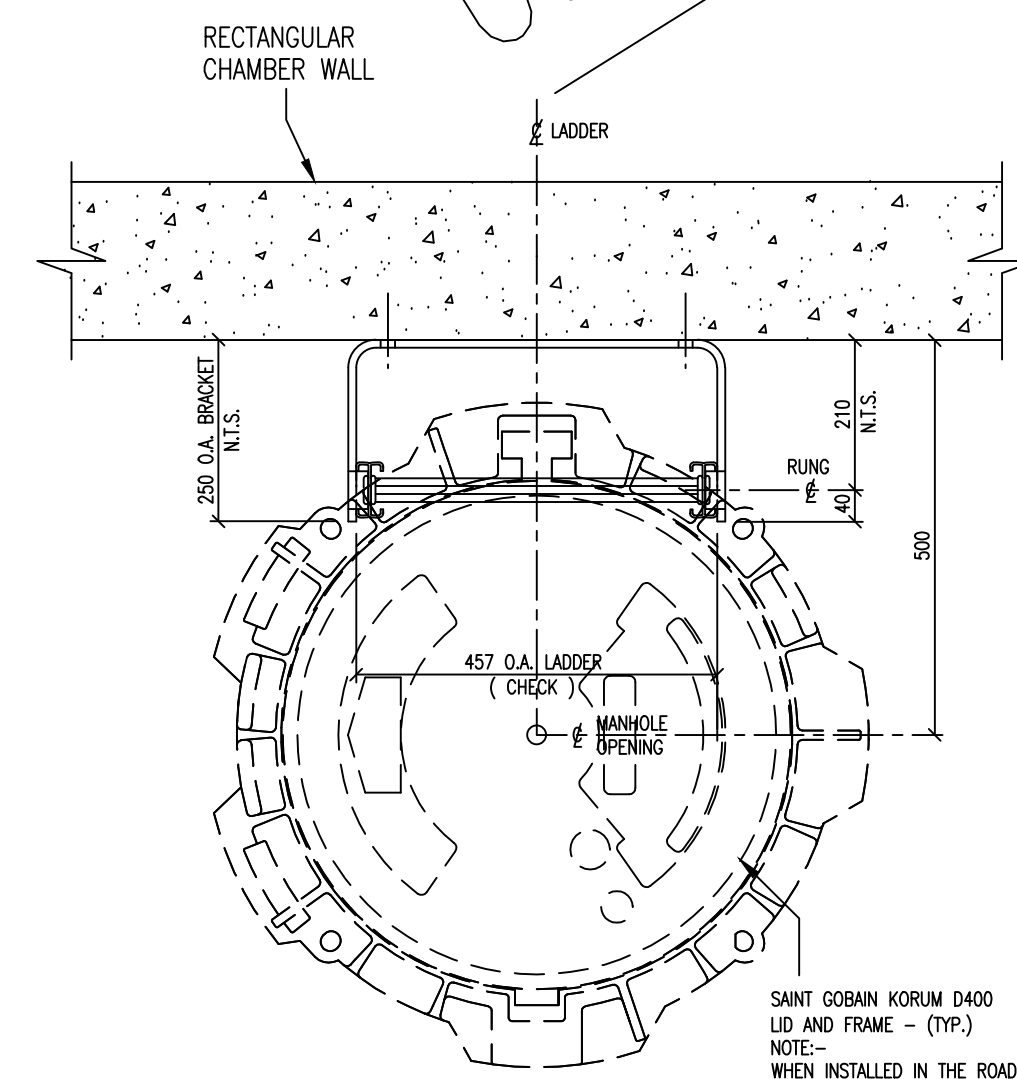
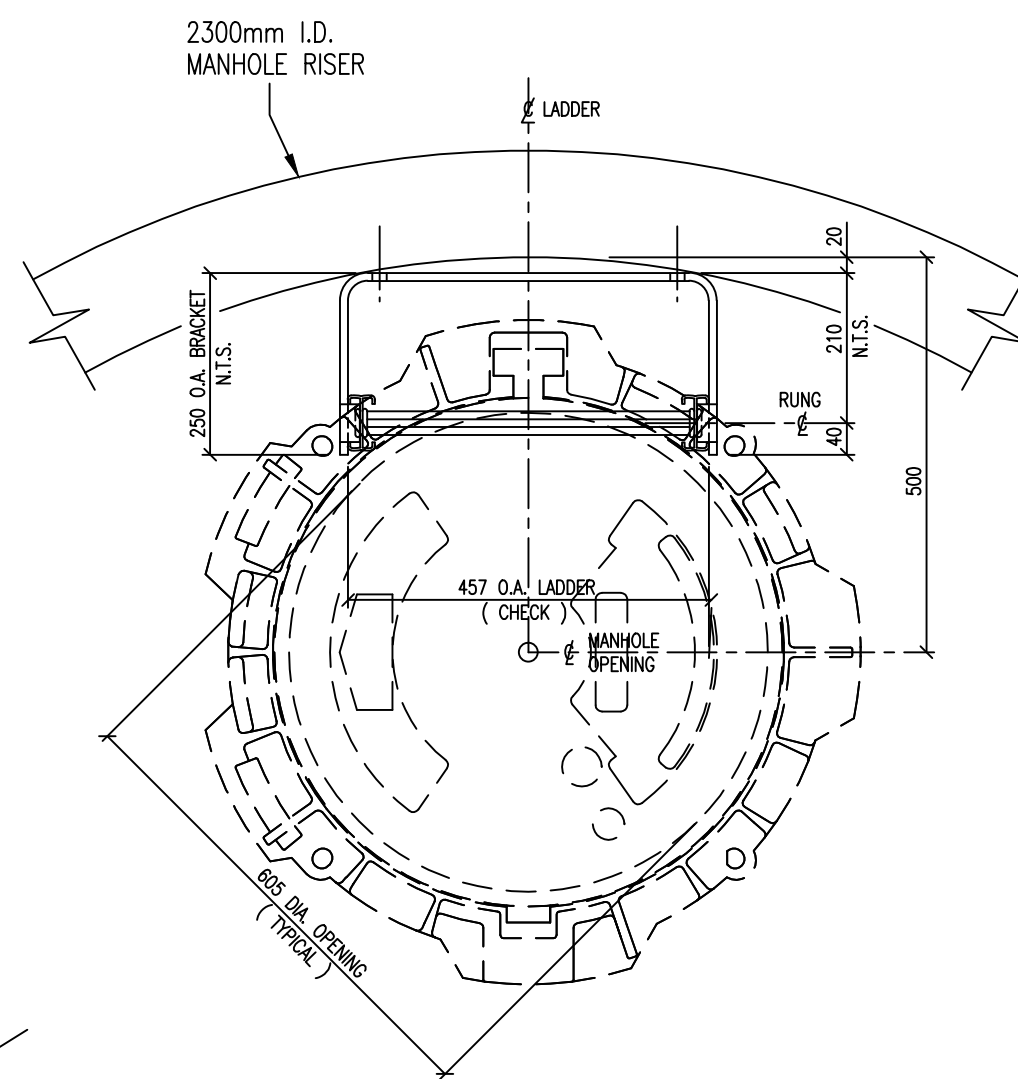
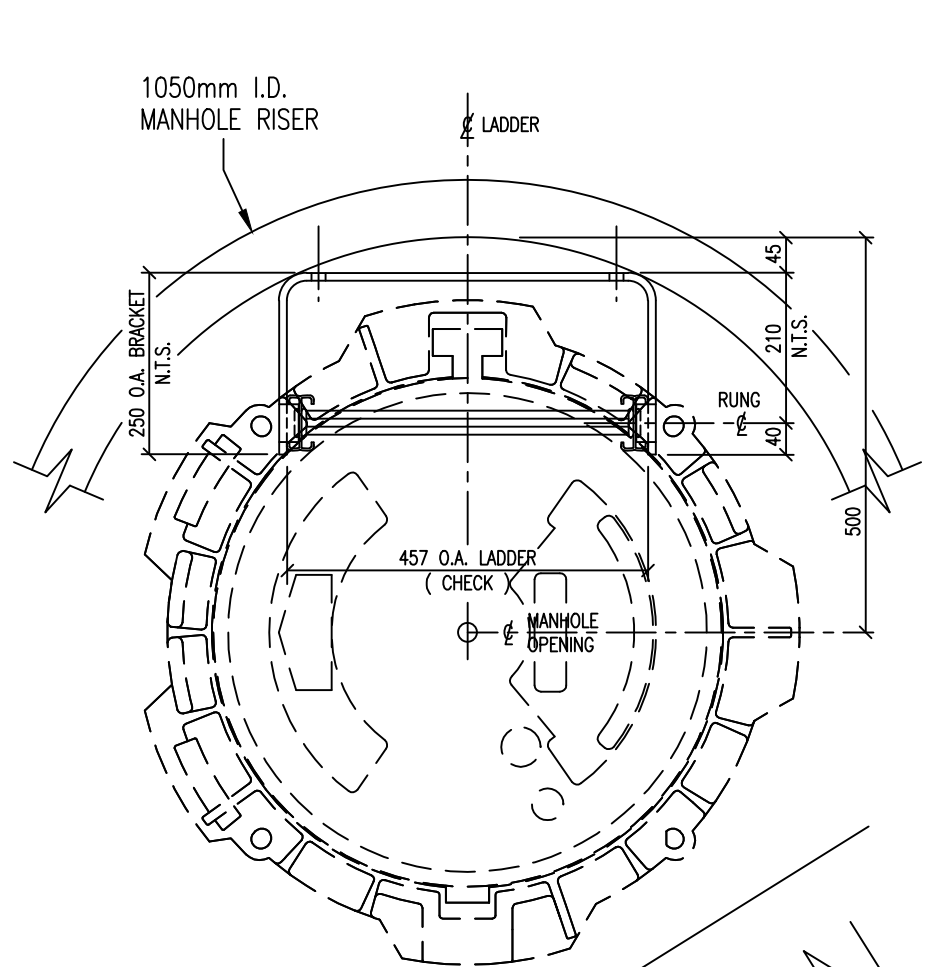
|                |       |                  |                  |  |    |      |
|----------------|-------|------------------|------------------|--|----|------|
| DESIGNED       | J.P.  | 11:08            | T. HAWKE         | COPYRIGHT<br>This drawing, the design and concept, remain the exclusive property of Watercare Services Limited and may not be used without approval<br>Copyright reserved. |    |      |
| DES. CHECKED   | T.C.  | 11:08            | OPERATIONS       |  |    |      |
| DRAWN          | L.C.  | 11:08            |                  |  |    |      |
| DWG. CHECKED   | I.M.  | 11:08            | A. STEWART       |  |    |      |
| PROJECT LEADER | J.P.  | 11:08            | ASSET MANAGEMENT |  |    |      |
| AM APPROVED    | A.S.  | 11:08            |                  |  |    |      |
| ISSUE          | DATE  | AMENDMENT        | BY               | APPD.  | BY | DATE |
| -              | 11:08 | FOR CONSTRUCTION | L.C.             | T.C.   |    |      |



WATER RETICULATION STANDARD  
ALUMINIUM BRACKET FOR ACCESS LADDERS  
TYPICAL DETAILS

|                      |                |
|----------------------|----------------|
| CAD FILE 2001979.103 | DATE 11-11-08  |
| ORIGINAL SCALE A1    | CONTRACT No. - |
| AS SHOWN             |                |
| DRAWING No. 2001979  | ISSUE -        |
| .103                 |                |

USE ONLY



FOR DESIGN

FIXED LADDER SETOUT DETAILS

SCALE. 1:5 ( A1 )  
1:10 ( A3 )

NOTE

THIS DRAWING TO BE READ  
IN CONJUNCTION WITH DRAWINGS  
2001979.102 & .103

SAINT GOBAIN KORUM D400  
LID AND FRAME - (TYP.)  
NOTE:-  
WHEN INSTALLED IN THE ROAD  
THE HINGE IS TO FACE THE  
ONCOMING TRAFFIC FLOW  
REGARDLESS OF THE LADDER  
POSITION

| ISSUE | DATE  | AMENDMENT                     | BY   | APPD. | BY | DATE  |
|-------|-------|-------------------------------|------|-------|----|-------|
| A     | 05-13 | KORUM D400 LID AND FRAME USED | I.M. | T.C.  |    | 11:08 |
| -     | 11:08 | FOR CONSTRUCTION              | L.C. | T.C.  |    | 11:08 |

| DESIGNED       | J.P. | 11:08 |
|----------------|------|-------|
| DES. CHECKED   | T.C. | 11:08 |
| DRAWN          | L.C. | 11:08 |
| DWG. CHECKED   | I.M. | 11:08 |
| PROJECT LEADER | T.C. | 11:08 |
| AM APPROVED    | A.S. | 11:08 |

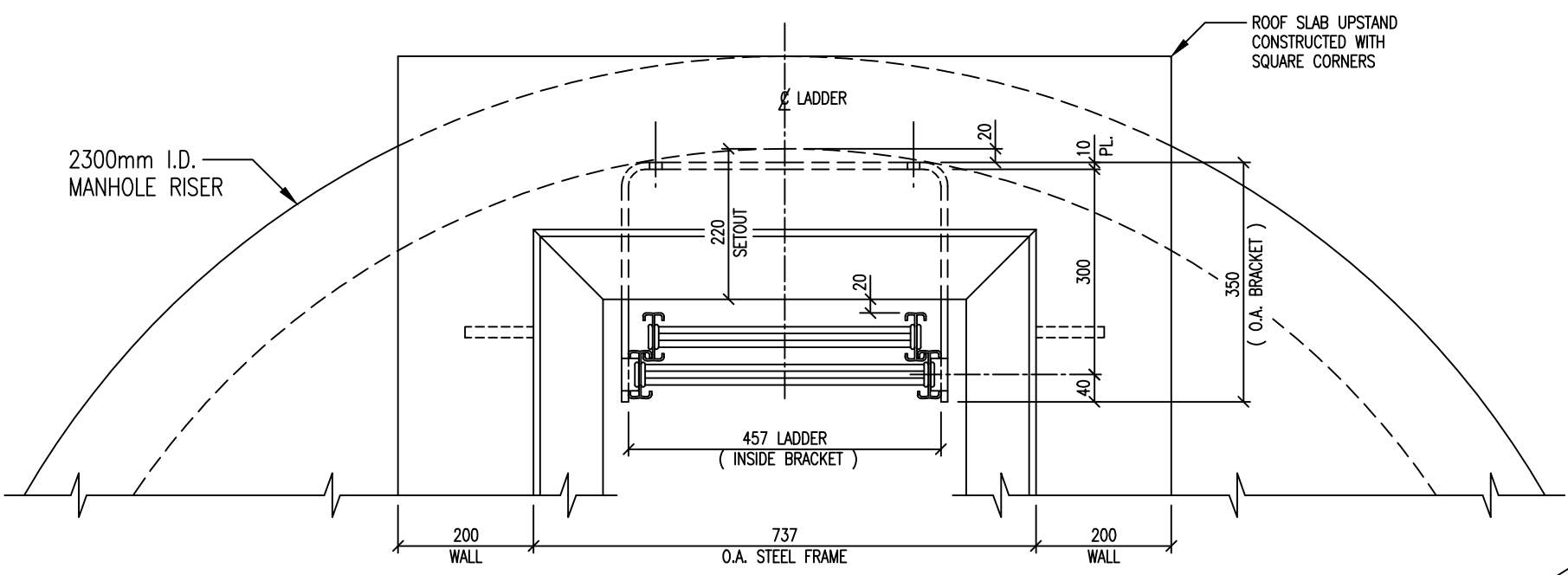
M. BOURNE  
OPERATIONS

A. STEWART  
ASSET MANAGEMENT

COPYRIGHT  
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Copyright reserved.

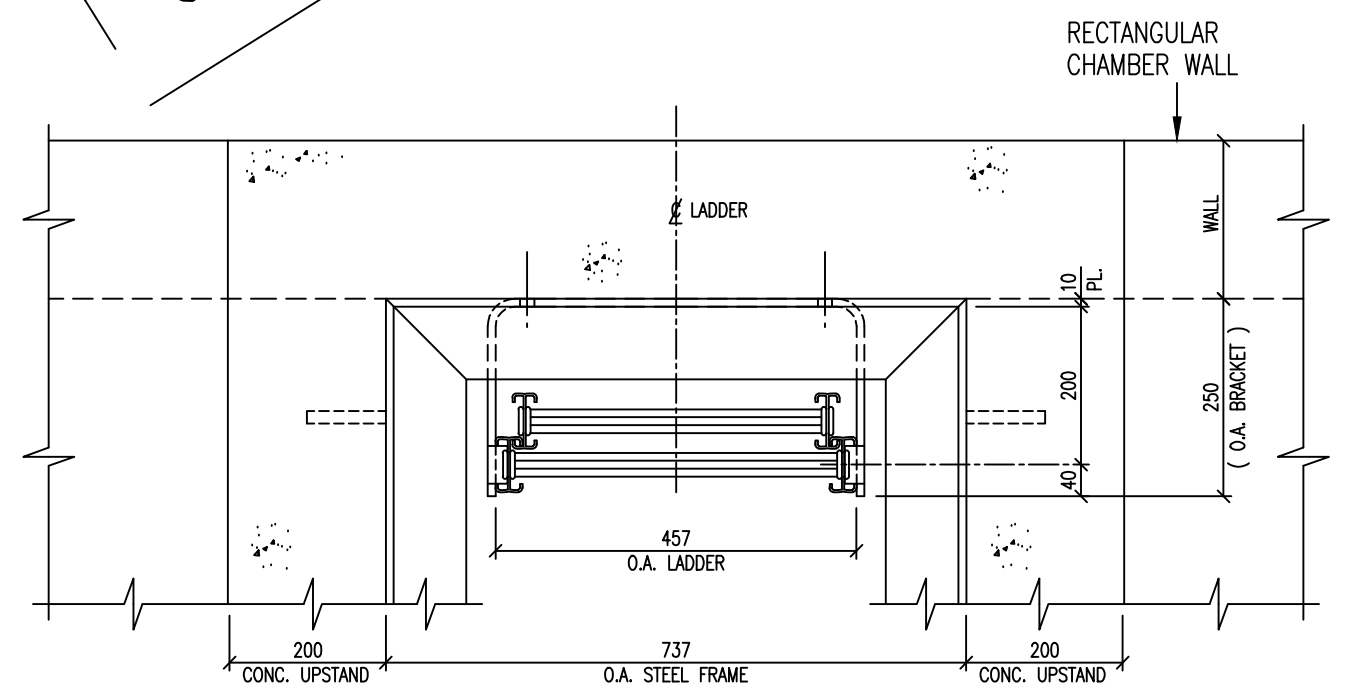
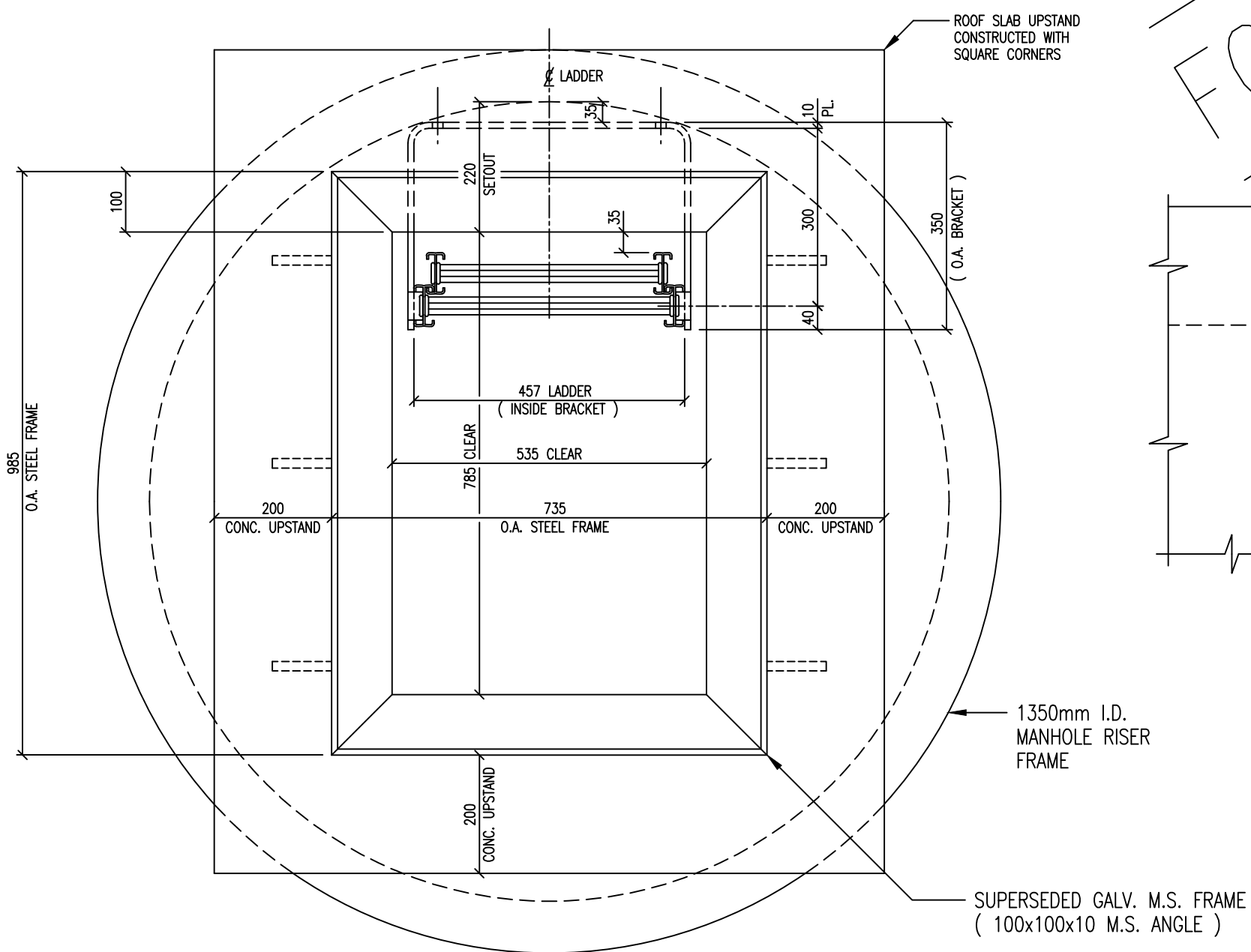
WATER RETICULATION STANDARD  
FIXED ALUMINIUM ACCESS LADDER  
DETAILS OF ACCESS LADDERS & LIDS

|                       |               |
|-----------------------|---------------|
| CAD FILE 2001979.104A | DATE 31-05-13 |
| ORIGINAL SCALE A1     | CONTRACT No.  |
| 1:5                   | -             |
| DRAWING No.           | ISSUE         |
| 2001979 .104          | A             |



FOR DESIGN USE ONLY

FOR STANDARD GALVANISED M.S. FRAME & LID



**EXTENDABLE LADDER SETOUT DETAILS**

SCALE: 1:5 ( A1 )  
1:10 ( A3 )

**NOTE**

THIS DRAWING TO BE READ  
IN CONJUNCTION WITH DRAWINGS  
2001979 .098 , .099 , .100  
.101 & .103

L:\EXISTING\GR\EGCAD\2008\STANDARD DWGS\2001979.105 .DWG

|                |                  |       |       |       |
|----------------|------------------|-------|-------|-------|
| DESIGNED       | J.P.             | 11:08 |       |       |
| DES. CHECKED   | T.C.             | 11:08 |       |       |
| DRAWN          | L.C.             | 11:08 |       |       |
| DWG. CHECKED   | I.M.             | 11:08 |       |       |
| PROJECT LEADER | T.C.             | 11:08 |       |       |
| AM APPROVED    | A.S.             | 11:08 |       |       |
| ISSUE DATE     | AMENDMENT        | BY    | APPD. | DATE  |
| - 11:08        | FOR CONSTRUCTION | L.C.  | T.C.  | 11:08 |

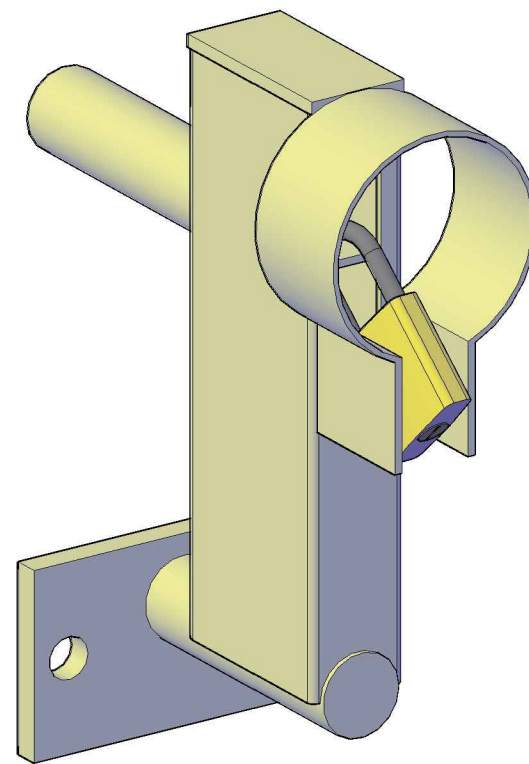
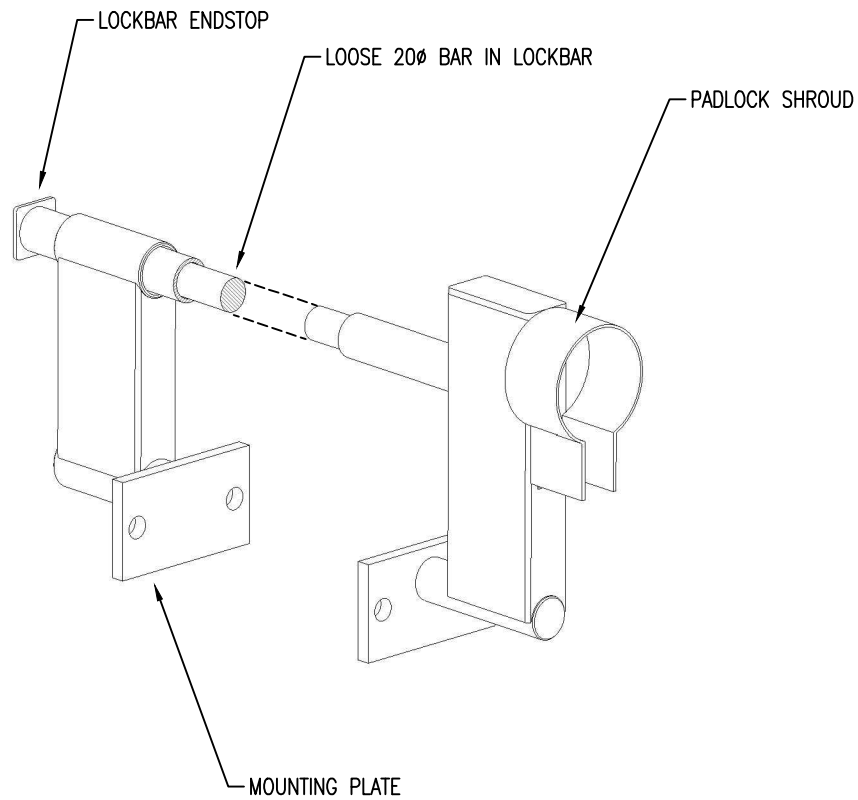
**M. BOURNE**  
OPERATIONS

**A. STEWART**  
ASSET MANAGEMENT

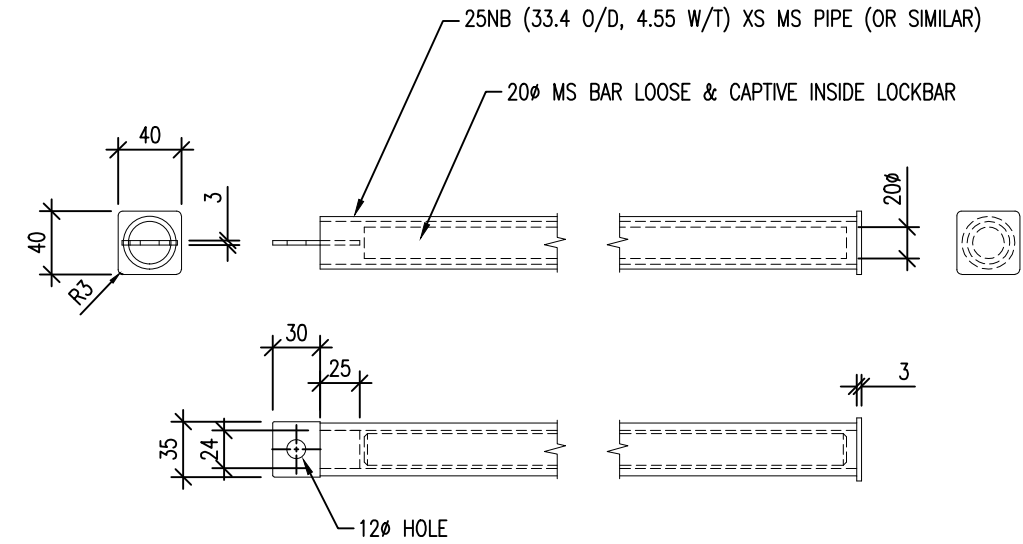


**WATER RETICULATION STANDARD**  
**EXTENDABLE ALUMINIUM ACCESS LADDER**  
**DETAIL OF GALVANISED MILD STEEL MANHOLE ACCESS FRAME**

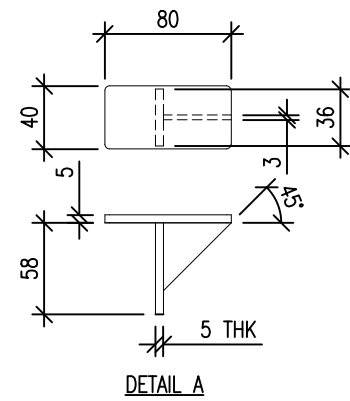
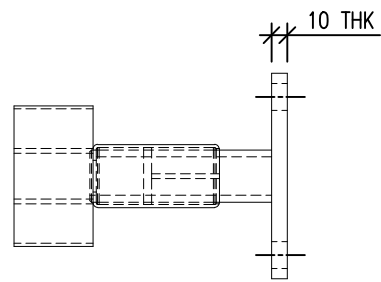
|                |             |              |          |
|----------------|-------------|--------------|----------|
| CAD FILE       | 2001979.105 | DATE         | 11-11-08 |
| ORIGINAL SCALE | A1          | CONTRACT No. | -        |
|                | 1:5         |              |          |
| DRAWING No.    | 2001979     | ISSUE        | -        |
|                | .105        |              |          |



3D VIEW (WITH PADLOCK INSTALLED)  
SCALE NTS

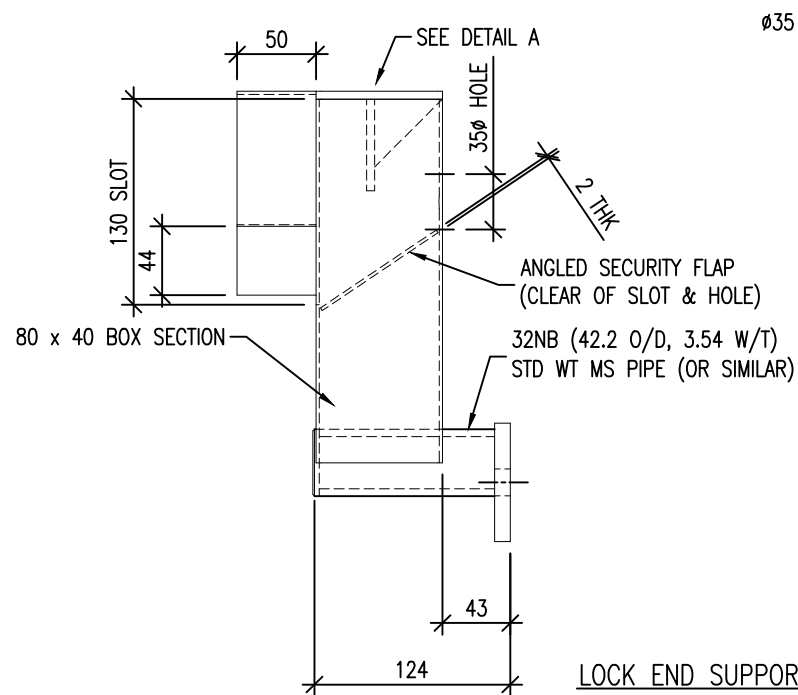
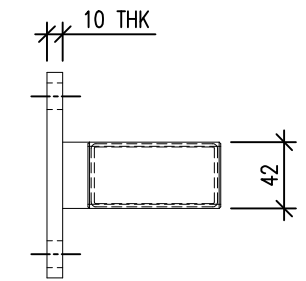


LOCKING ROD  
SCALE 1:5  
1 REQUIRED PER ASSY

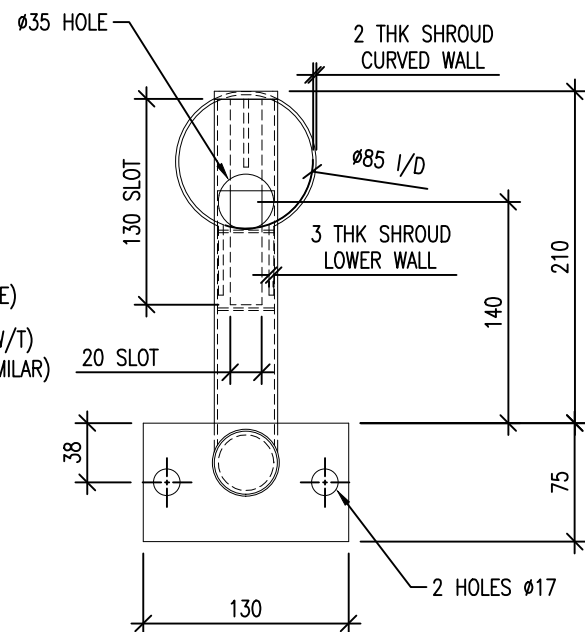


NOTES:

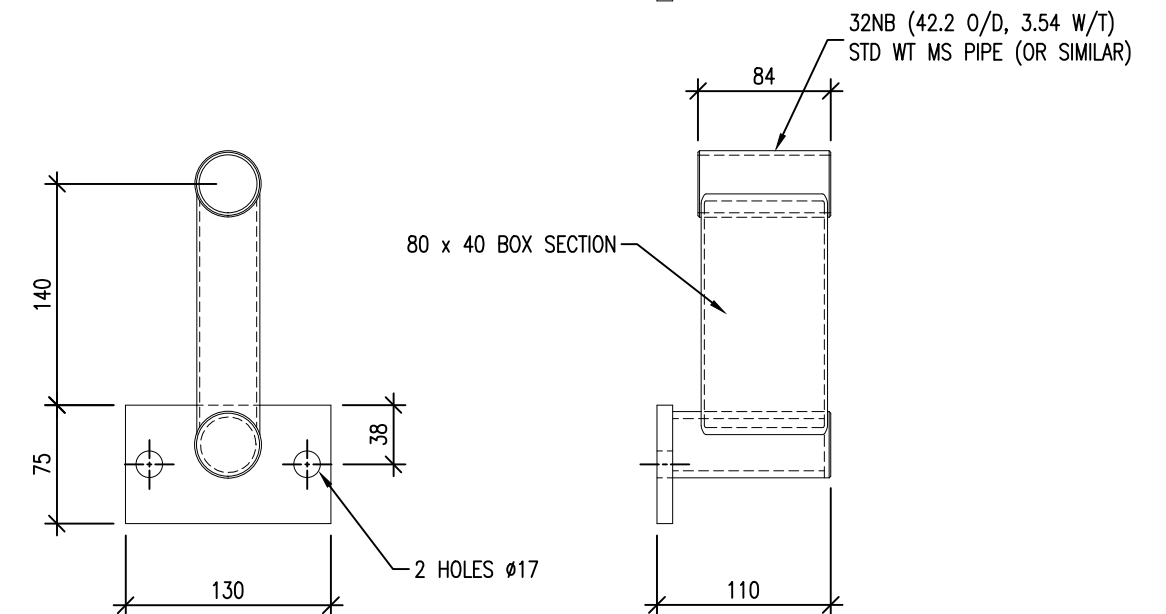
1. ALL MATERIAL MILD STEEL
2. ALL PARTS TO BE HOT DIP GALVANISED AFTER FABRICATION



LOCK END SUPPORT BRACKET  
SCALE 1:5  
1 REQUIRED PER ASSY



STOP END SUPPORT BRACKET  
SCALE 1:5  
1 REQUIRED PER ASSY



|                |                    |           |      |
|----------------|--------------------|-----------|------|
| DESIGNED       | DES. CHECKED       | DES CHECK | 9-09 |
| DRAWN          | G.B.               | 9-09      |      |
| DWG. CHECKED   | I.M.               | 9-09      |      |
| PROJECT LEADER | PROJECT LEADER     | 9-09      |      |
| A.M. APPROVED  | A.M. APPROVER      | 8-09      |      |
| ISSUE DATE     | AMENDMENT          | BY APPD.  | DATE |
| 9-10           | CONSTRUCTION ISSUE | G.B. A.M. |      |

|            |                  |
|------------|------------------|
| OPERATIONS | ASSET MANAGEMENT |
|------------|------------------|



WATERCARE RETICULATION STANDARD  
HATCH COVER LOCKING BAR ASSEMBLY  
DETAILS

|                      |              |
|----------------------|--------------|
| CAD FILE 2001979.123 | DATE 14-9-10 |
| ORIGINAL SCALE A3    | CONTRACT No. |
| AS SHOWN             | -            |
| DRAWING No.          | ISSUE        |
| 2001979 .123         | -            |