APPENDIX B
TENDER DRAWINGS

List of Tender Drawings:

a) Waterline delineation from Gill Marcus to Donkerhoek Site
b) 600x600 Chamber Manhole Cover
c) Isolation Valve Chamber
d) Pressure Reducing Valve
e) Scour Valve Chamber
f) Thrust Block
g) Typical Pipe Trench and Pipe Route Marker
h) Typical Stand Tap
i) Typical Valve Chamber

Note: More Drawings may be made available to the successful bidder.

General

G1 This drawing shall be read in conjunction with all other working drawings and specifications and with such other written instructions as may be issued during the course of the construction, Any discrepancies or variations shall be referred to the Engineer before proceeding with work.

G2 Work shall be done in accordance with requirements of all relevant andcurrent South African Codes where applicable.

G3 All dimensions relevant to setting out and offsite work shall be verified before construction and fabrication is commenced.

G4 Dimensions shall not be obtained by scaling the drawings.

G5 During construction all structures shall be maintained in a stable condition and no part shall be overstressed.

G6 All levels are in meters above mean sea level.

G7 Where connections to existing drainage systems/services is required the levels and locations of all relevant stormwater outlets, box culverts, outfalls, conduits/services shall be verified before construction and referred to the engineer before construction is commenced.

G8 It is the responsibility of the contractor to locate existing services, Any damage caused to existing services shall be repaired to the satisfaction of the engineer, at the contractors expense.

G9 Where pits/trenches which are to be constructed in the vicinity of buildings, shoring and bracing adequate to prevent undermining of the building shall be provided to the approval of the Engineer.

G10 All signs are to be provided in English. English only has been shown on the drawings.

G11 All dimensions and levels to be checked on site and where applicable to match existing structure,

G12 Any discrepancy or contradiction is to immediately reported to the Engineer.

G13 A complete set of drawings to be available on site at all times.

G14 All dimensions shown on the plan are to be plotted on site at the horizontal level.

G15 The contractor is responsible for the correct setting out, Details are to be in accordance with the drawings.

LEGEND

P.M. - Pipe Marker

S.V. - Scour valve

I.V. - Isolation valve

A.V. - Air valve

E.C. - End cap to tee

Blue - 110mm diameter uPVC

Green - 75mm /63mm diameter uPVC

Red - 50mm diameter HDPE

- stand pipe radius

Revision Details

No.	Date	Description	By

Client:

Project:

Drawing Title: Water Reticulation Layout

Designed:

Drawn:

Checked:

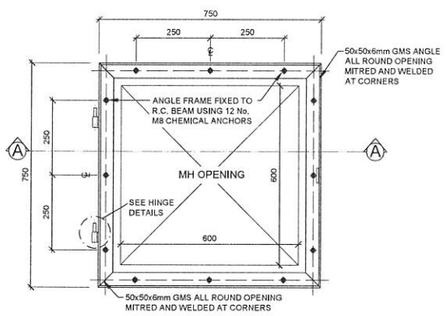
Scale: 1:10 000

Size: A1

Date:

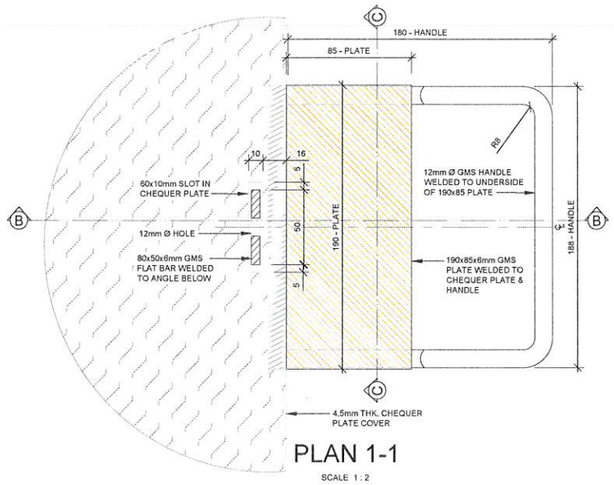
Revision:

Drawing No.:



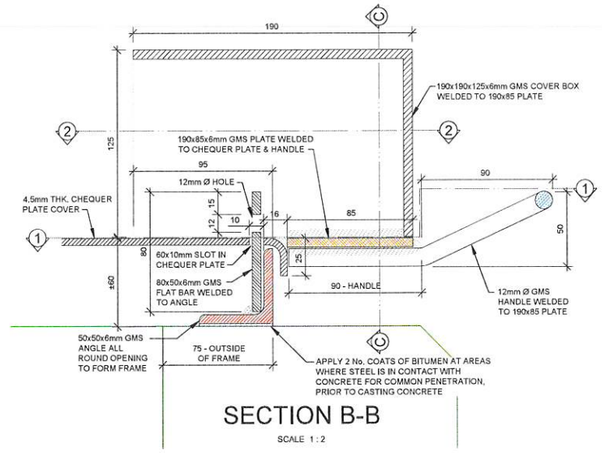
PLAN OF FRAME AROUND MANHOLE OPENING

SCALE 1 : 10



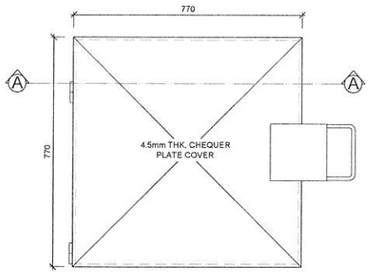
PLAN 1-1

SCALE 1 : 2



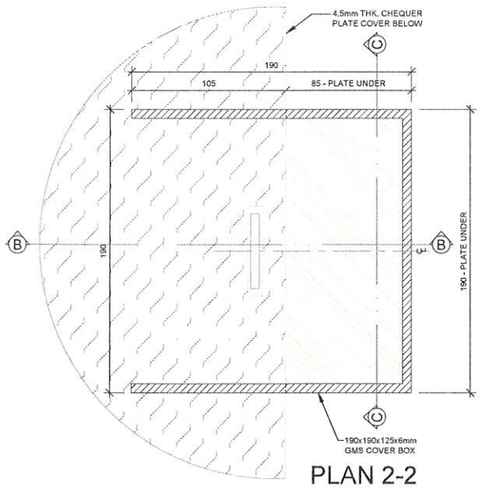
SECTION B-B

SCALE 1 : 2



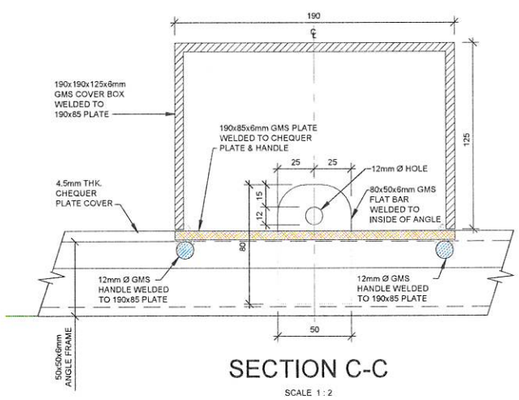
PLAN OF COVER OVER MANHOLE OPENING

SCALE 1 : 10



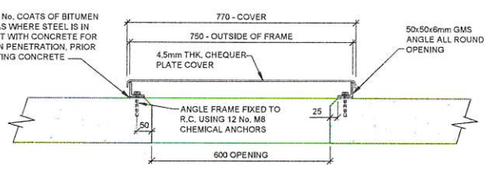
PLAN 2-2

SCALE 1 : 2



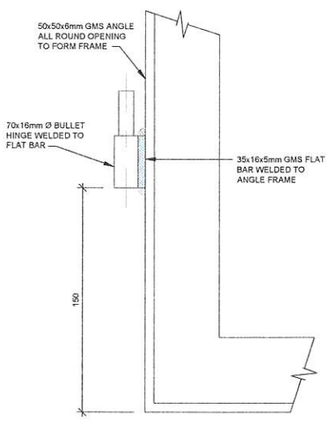
SECTION C-C

SCALE 1 : 2



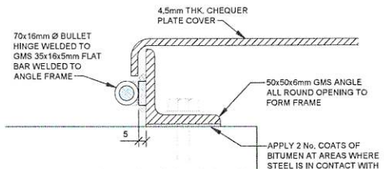
SECTION A-A

SCALE 1 : 10



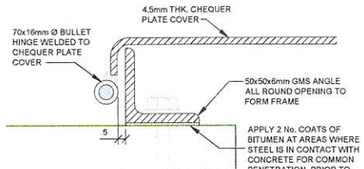
PLAN OF HINGE ON FRAME

SCALE 1 : 2



SECTION D-D

SCALE 1 : 2



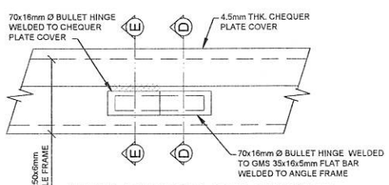
SECTION E-E

SCALE 1 : 2

USE A 40mm PADLOCK (65/40 ABUS WITH 442 KEY)

PADLOCK DETAIL

SCALE 1 : 2



ELEVATION OF HINGE

SCALE 1 : 2

CONSTRUCTION NOTES:

1. GMS - GALVANISED MILD STEEL
   TBC - TO BE CONFIRMED
   TBD - TO BE DETERMINED
2. APPLY 2 No. COATS OF BITUMEN AT AREAS WHERE STEEL IS IN CONTACT WITH CONCRETE FOR COMMON PENETRATION, PRIOR TO CASTING CONCRETE.

General Notes:

1. All dimensions and levels are to be checked on site and where applicable to match the existing structure.
2. Any discrepancies or contradictions on the drawings are to immediately be reported to the Engineer.
3. All dimensions are in millimeters. Drawings are not to be scaled.
4. All dimensions shown on the drawings are to be set out on site on the horizontal plane.
5. A complete set of drawings to be available on site at all times.
6. The contractor is responsible for the correct setting out on site and to ensure that the setting out details are in accordance with the drawings.
7. All drawings are to be read in conjunction with the architects details and drawings.
8. The contractor is responsible for checking that the reinforcement is fixed and maintained in the correct position before and during the casting of concrete.
9. Finished structure is to comply with the latest amendments of SANS 10400.
10. No concrete may be cast without the approval from the Engineer and a minimum of 48 hours' notice is to be given to the Engineer prior to an inspection on site.
11. All reinforcing steel to comply with SANS 0920 as follows.:
    - R - Plain round mild steel bars of strength 250MPa.
    - Y - High yield deformed steel bars of strength 450MPa.
12. All reinforcing steel is to be bent in accordance with SANS 282:2004.
13. Symbols.:
    - T - Top
    - M - Middle
    - B - Bottom
    - EW - Each way
    - HOR - Horizontal
    - ABR - Alternate bars reversed
    - STG - Staggered
    - NTS - Not to Scale
14. Minimum splicing to reinforcing steel bars are as follows.:
    - Y10 - 400mm
    - Y12 - 480mm
    - Y16 - 640mm
    - Y20 - 800mm
    - Y25 - 1000mm
    - Y32 - 1280mm
    - Y40 - 1600mm
15. Minimum cover to reinforcing steel bars unless otherwise stated on drawings are as follows.:
    - Column bases - 75mm
    - Strip foundations - 50mm
    - Raft foundations - 40mm
    - Staircases - 40mm
    - Columns - 40mm
    - Slabs - 40mm
    - Beams - 40mm
    - Walls - 40mm
16. Max slump for all concrete to be 75mm unless otherwise stated on drawings.
17. All concrete to be 25/19 MPa unless otherwise stated on drawings. Contractor to provide Engineer with test results for 3 x test cubes. All concrete to be vibrated when placed on site.
18. Concrete to be cured on site by daily watering for a period of seven (7) days.
19. All concrete works supporting brickwork to be cured for a minimum of three (3) days prior to any construction of brickwork commencing.
20. Minimum compressive strength of bricks shall be 7Mpa in accordance with SANS 10400 unless otherwise stated on the drawings.
21. Clay bricks to be thoroughly wetted before use.
22. A slip joint comprising of 2 by layers 3 ply malthoid must be provided between all loadbearing brickwork and the concrete structure.
23. A 10mm soft joint must be provided between all non loadbearing brickwork and the concrete structure.
24. The specification for fill material to be as follows.:
    - Contain no organic material.
    - Contain no stone with a dimension of larger than two thirds of the layer being compacted.
    - A PI of not exceeding 10 and a CBR of at least 15% at 93% MOD A.A.S.H.T.O and be capable of being compacted to 98% MOD A.A.S.H.T.O.
    - Swell at 100% MOD A.A.S.H.T.O shall not exceed 1.5%.
25. A sample of fill material together with test results to be provided to Engineer prior to construction.

Removal of formwork & supports from concrete:	Days:
Beam sides	2
Deck plates - props left under	7
Beam soffits - props left under	12
Removal of slab props	17
Removal of beam props	21

NB: The above does not include any adjustment for loading (excluding normal loading) being applied above the structural element.

No.	Date	Description	By

Revision Details

PROUDLY SOUTH AFRICAN

Client:

Project:

Drawing Title:
600x600mm Chamber Manhole Cover Details

Designed:

Scale: AS SHOWN

Drawn:

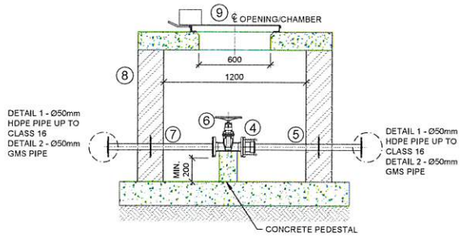
Size: A1

Checked:

Date:

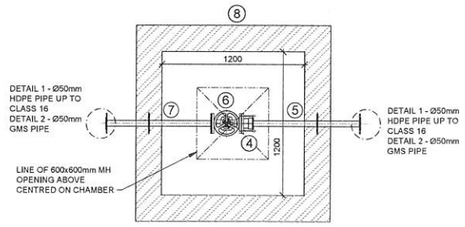
Drawing No.:

Revision:



SECTION THROUGH Ø50mm ISOLATION VALVE CHAMBER

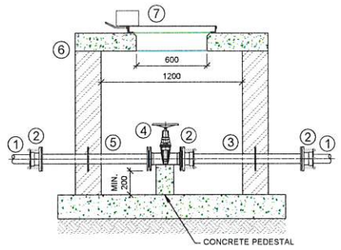
SCALE 1 : 25



PLAN OF Ø50mm ISOLATION VALVE CHAMBER

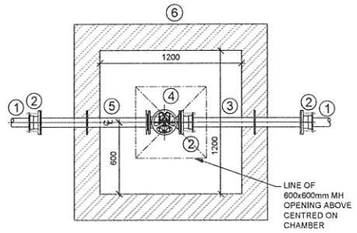
SCALE 1 : 25

Ø50mm ISOLATION VALVE CHAMBER FITTINGS SCHEDULE			
ITEM No.	NAME	DRAWING	QTY
1	Ø50mm HDPE PIPE	PE	
2	Ø50x Ø50mm "PLASSON" COMPRESSION FLANGE ADAPTOR (WITH METAL FLANGE) OR SIMILAR APPROVED		2
3	Ø50mm GMS PIPE	PE	
4	Ø50mm "VJ" FLANGE ADAPTOR OR SIMILAR APPROVED	FL	3
5	Ø50mm GMS PUDDLE PIPE, FLANGED ONE END	1000; 635; 365; INT; PF; PE; FL	1
6	Ø50mm "AVK" CLASS 25 RS GATE VALVE OR SIMILAR APPROVED CAST INTO CONCRETE PEDESTAL	FL; 250; ELEVATION; PLAN	1
7	Ø50mm GMS FLANGED PUDDLE PIPE	900; 365; 535; FL; PF; INT	1
8	1200x1200mm BRICKWORK CHAMBER, HEIGHT TBD. REFER TO DWG. S173063-WD-05 FOR DETAILS		1
9	MH COVER TO SUIT 600x600mm OPENING. REFER TO DWG. S173063-WD-06 FOR DETAILS		1



SECTION THROUGH Ø75/90mm ISOLATION VALVE CHAMBER

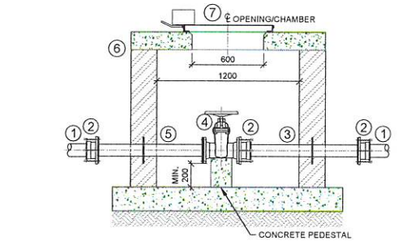
SCALE 1 : 25



PLAN OF Ø75/90mm ISOLATION VALVE CHAMBER

SCALE 1 : 25

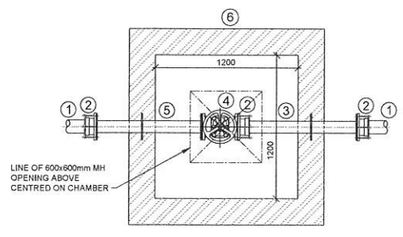
Ø75/90mm ISOLATION VALVE CHAMBER FITTINGS SCHEDUL			
ITEM No.	NAME	DRAWING	QTY
1	Ø75/90mm uPVC PIPE	PE	
2	Ø80mm "VJ" FLANGE ADAPTOR OR SIMILAR APPROVED	FL	3
3	Ø80mm GMS PUDDLE PIPE, FLANGED ONE END	1000; 625; 375; INT; PF; PE; FL	1
4	Ø80mm "AVK" CLASS 25 RS GATE VALVE OR SIMILAR APPROVED CAST INTO CONCRETE PEDESTAL	FL; 270; ELEVATION; PLAN	1
5	Ø80mm GMS FLANGED PUDDLE PIPE	900; 375; 525; FL; PF; INT	1
6	1200x1200mm BRICKWORK CHAMBER. HEIGHT TBD. REFER TO DWG. S173063-WD-05 FOR DETAILS		1
7	MH COVER TO SUIT 600x600mm OPENING. REFER TO DWG. S173063-WD-06 FOR DETAILS		1



SECTION THROUGH Ø110mm ISOLATION VALVE CHAMBER

SCALE 1 : 25

Ø110mm ISOLATION VALVE CHAMBER FITTINGS SCHEDULE			
ITEM No.	NAME	DRAWING	QTY
1	Ø110mm uPVC PIPE/Ø100mm GMS PIPE	PE	
2	Ø100mm "VJ" FLANGE ADAPTOR OR SIMILAR APPROVED	FL	3
3	Ø100mm GMS PUDDLE PIPE, FLANGED ONE END	1000; 610; 390; INT; FL; PF; FL	1
4	Ø100mm "AVK" CLASS 25 RS GATE VALVE OR SIMILAR APPROVED CAST INTO CONCRETE PEDESTAL	FL; 300; ELEVATION; PLAN	1
5	Ø100mm GMS FLANGED PUDDLE PIPE	900; 390; 510; FL; PF; INT	1
6	1200x1200mm BRICKWORK CHAMBER. HEIGHT TBD. REFER TO DWG. S173063-WD-05 FOR DETAILS		1
7	MH COVER TO SUIT 600x600mm OPENING. REFER TO DWG. S173063-WD-06 FOR DETAILS		1



PLAN OF Ø110 ISOLATION VALVE CHAMBER

SCALE 1 : 25

CONSTRUCTION NOTES:

1. GMS - GALVANISED MILD STEEL
   uPVC - UNPLASTICISED POLYVINYL CHLORIDE
   HDPE - HIGH DENSITY POLYETHYLENE
   RS - RESILIENT SEAL
   FL - FLANGE
   PE - PLAIN END
   PF - PUDDLE FLANGE
   INT - INTERNAL
   TBC - TO BE CONFIRMED
   TBD - TO BE DETERMINED

2. APPLY 2 No. COATS OF BITUMEN AT AREAS WHERE STEEL IS IN CONTACT WITH CONCRETE FOR COMMON PENETRATION, PRIOR TO CASTING CONCRETE.

3. 'CALCAMITE' OR SIMILAR APPROVED STEP IRONS ARE TO BE INSTALLED IN CHAMBERS DEEPER THAN 1500mm.

General Notes:

1. All dimensions and levels are to be checked on site and where applicable to match the existing structure.
2. Any discrepancies or contradictions on the drawings are to immediately be reported to the Engineer.
3. All dimensions are in millimeters. Drawings are not to be scaled.
4. All dimensions shown on the drawings are to be set out on site on the horizontal plane.
5. A complete set of drawings to be available on site at all times.
6. The contractor is responsible for the correct setting out on site and to ensure that the setting out details are in accordance with the drawings.
7. All drawings are to be read in conjunction with the architects details and drawings.
8. The contractor is responsible for checking that the reinforcement is fixed and maintained in the correct position before and during the casting of concrete.
9. Finished structure is to comply with the latest amendments of SANS 10400.
10. No concrete may be cast without the approval from the Engineer and a minimum of 48 hours' notice is to be given to the Engineer prior to an inspection on site.
11. All reinforcing steel to comply with SANS 0920 as follows.:
    - R - Plain round mild steel bars of strength 250MPa.
    - Y - High yield deformed steel bars of strength 450MPa.
12. All reinforcing steel is to be bent in accordance with SANS 282:2004.
13. Symbols.:
    - T - Top
    - M - Middle
    - B - Bottom
    - EW - Each way
    - HOR - Horizontal
    - ABR - Alternate bars reversed
    - STG - Staggered
    - NTS - Not to Scale
14. Minimum splicing to reinforcing steel bars are as follows.:
    - Y10 - 400mm
    - Y12 - 480mm
    - Y16 - 640mm
    - Y20 - 800mm
    - Y25 - 1000mm
    - Y32 - 1280mm
    - Y40 - 1600mm
15. Minimum cover to reinforcing steel bars unless otherwise stated on drawings are as follows.:
    - Column bases - 75mm
    - Strip foundations - 50mm
    - Raft foundations - 40mm
    - Staircases - 40mm
    - Columns - 40mm
    - Slabs - 40mm
    - Beams - 40mm
    - Walls - 40mm
16. Max slump for all concrete to be 75mm unless otherwise stated on drawings.
17. All concrete to be 25/19 MPa unless otherwise stated on drawings. Contractor to provide Engineer with test results for 3 x test cubes. All concrete to be vibrated when placed on site.
18. Concrete to be cured on site by daily watering for a period of seven (7) days.
19. All concrete works supporting brickwork to be cured for a minimum of three (3) days prior to any construction of brickwork commencing.
20. Minimum compressive strength of bricks shall be 7Mpa in accordance with SANS 10400 unless otherwise stated on the drawings.
21. Clay bricks to be thoroughly wetted before use.
22. A slip joint comprising of 2 by layers 3 ply malthoid must be provided between all loadbearing brickwork and the concrete structure.
23. A 10mm soft joint must be provided between all non loadbearing brickwork and the concrete structure.
24. The specification for fill material to be as follows.:
    - Contain no organic material.
    - Contain no stone with a dimension of larger than two thirds of the layer being compacted.
    - A PI of not exceeding 10 and a CBR of at least 15% at 93% MOD A.A.S.H.T.O and be capable of being compacted to 98% MOD A.A.S.H.T.O.
    - Swell at 100% MOD A.A.S.H.T.O shall not exceed 1.5%.
25. A sample of fill material together with test results to be provided to Engineer prior to construction.

Removal of formwork & supports from concrete:	Days:
Beam sides	2
Deck plates - props left under	7
Beam soffits - props left under	12
Removal of slab props	17
Removal of beam props	21

NB: The above does not include any adjustment for loading (excluding normal loading) being applied above the structural element.

No.	Date	Description	By

Revision Details

PROUDLY SOUTH AFRICAN

Client:

Project:

Drawing Title:

Isolation Valve Chamber Detail

Designed:

Scale: AS SHOWN

Drawn:

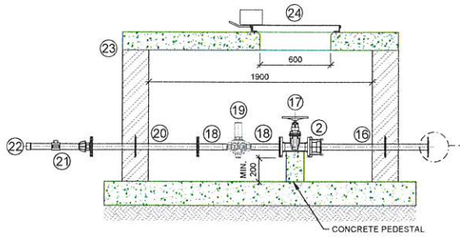
Size: A1

Checked:

Date:

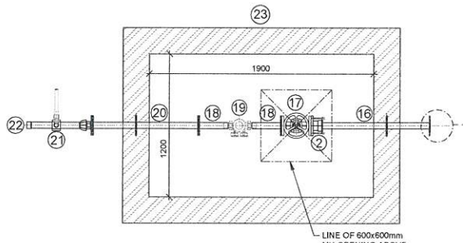
Drawing No.:

Revision:



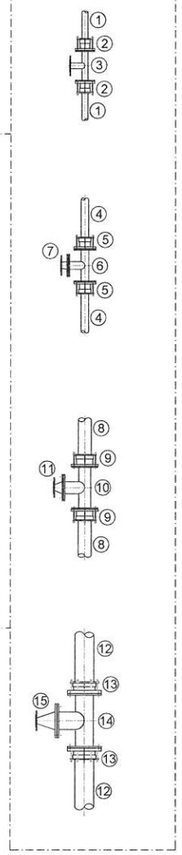
SECTION THROUGH Ø50mm PRESSURE REDCING VALVE CHAMBER

SCALE 1 : 25



PLAN OF Ø50mm PRESSURE REDUCING VALVE CHAMBER

SCALE 1 : 25



Ø50mm PRESSURE REDUCING VALVE CHAMBER FITTINGS SCHEDULE

ITEM No.	NAME	DRAWING	QTY
1	Ø50mm HDPE PIPE/Ø50mm GMS PIPE	PE	
2	Ø50mm "VJ" FLANGE ADAPTOR OR SIMILAR APPROVED	FL	3
3	Ø50mm GMS FLANGED EQUAL TEE	FL, 130, FL, FL, 130, 130	1
4	Ø75/90mm uPVC PIPE	PE	
5	Ø80mm "VJ" FLANGE ADAPTOR OR SIMILAR APPROVED	FL	2
6	Ø80mm GMS FLANGED EQUAL TEE	FL, FL, 140, FL, 140, 140	1
7	Ø80mm TO Ø50mm FLANGED GMS REDUCER	FL, FL	1
8	Ø110mm uPVC PIPE/Ø100mm GMS PIPE	PE	
9	Ø100mm "VJ" FLANGE ADAPTOR OR SIMILAR APPROVED	FL	2
10	Ø100mm GMS FLANGED EQUAL TEE	FL, FL, 180, FL, 180, 180	1
11	Ø100mm TO Ø50mm FLANGED GMS REDUCER	FL, FL	1
12	Ø160mm uPVC PIPE/Ø150mm GMS PIPE	PE	
13	Ø150mm "VJ" RS FLANGE ADAPTOR OR SIMILAR APPROVED	FL	2
14	Ø150mm GMS FLANGED EQUAL TEE	FL, FL, 230, FL, 230, 230	1
15	Ø150mm TO Ø50mm FLANGED GMS REDUCER	FL, FL	1
16	Ø50mm GMS PUDDLE PIPE, FLANGED ONE END	1000, 635, 365, INT, PE, PF, FL	1
17	Ø50mm "AVK" CLASS 25 RS GATE VALVE OR SIMILAR APPROVED CAST INTO CONCRETE PEDESTAL	FL, FL, 250, ELEVATION; FL, FL, FL, PLAN	1
18	Ø50mm GMS PIPE FLANGED ONE END AND THREADED FEMALE CONNECTION AT THE OTHER END	250, FL	2
19	Ø50mm CLASS 25 "CALEFFI" 5365.1 SERIES PRESSURE REDUCING VALVE WITH MALE CONNECTIONS AND DOUBLE PRESSURE GUAGE	ELEVATION, PLAN	1
20	Ø50mm GMS FLANGED PUDDLE PIPE	900, 370, 530, FL, PF, INT, FL	1
21	Ø50mm CLASS 10 HDPE PIPE FLANGED ONE END WITH Ø50x Ø50mm 'PLASSON' COMPRESSION FLANGE ADAPTOR (WITH METAL FLANGE) AND CAST IRON SADDLE WITH Ø20mm FEMALE OUTLET, LENGTH TBD.	PE, FL	1
22	Ø50mm END CAP		1
23	1200x1900mm BRICKWORK CHAMBER. HEIGHT TBD.		1
24	MH COVER TO SUIT 600x600mm OPENING.		1

CONSTRUCTION NOTES:

1. GMS - GALVANISED MILD STEEL
   uPVC - UNPLASTICISED POLYVINYL CHLORIDE
   HDPE - HIGH DENSITY POLYETHYLENE
   RS - RESILIENT SEAL
   FL - FLANGE
   PE - PLAIN END
   PF - PUDDLE FLANGE
   INT - INTERNAL
   TBC - TO BE CONFIRMED
   TBD - TO BE DETERMINED
2. APPLY 2 No. COATS OF BITUMEN AT AREAS WHERE STEEL IS IN CONTACT WITH CONCRETE FOR COMMON PENETRATION, PRIOR TO CASTING CONCRETE.
3. 'CALCAMITE' OR SIMILAR APPROVED STEP IRONS ARE TO BE INSTALLED IN CHAMBERS DEEPER THAN 1500mm.

General Notes:

1. All dimensions and levels are to be checked on site and where applicable to match the existing structure.
2. Any discrepancies or contradictions on the drawings are to immediately be reported to the Engineer.
3. All dimensions are in millimeters. Drawings are not to be scaled.
4. All dimensions shown on the drawings are to be set out on site on the horizontal plane.
5. A complete set of drawings to be available on site at all times.
6. The contractor is responsible for the correct setting out on site and to ensure that the setting out details are in accordance with the drawings.
7. All drawings are to be read in conjunction with the architects details and drawings.
8. The contractor is responsible for checking that the reinforcement is fixed and maintained in the correct position before and during the casting of concrete.
9. Finished structure is to comply with the latest amendments of SANS 10400.
10. No concrete may be cast without the approval from the Engineer and a minimum of 48 hours' notice is to be given to the Engineer prior to an inspection on site.
11. All reinforcing steel to comply with SANS 0920 as follows.:
    - R - Plain round mild steel bars of strength 250MPa.
    - Y - High yield deformed steel bars of strength 450MPa.
12. All reinforcing steel is to be bent in accordance with SANS 282:2004.
13. Symbols.:
    - T - Top
    - M - Middle
    - B - Bottom
    - EW - Each way
    - HOR - Horizontal
    - ABR - Alternate bars reversed
    - STG - Staggered
    - NTS - Not to Scale
14. Minimum splicing to reinforcing steel bars are as follows.:
    - Y10 - 400mm
    - Y12 - 480mm
    - Y16 - 640mm
    - Y20 - 800mm
    - Y25 - 1000mm
    - Y32 - 1280mm
    - Y40 - 1600mm
15. Minimum cover to reinforcing steel bars unless otherwise stated on drawings are as follows.:
    - Column bases - 75mm
    - Strip foundations - 50mm
    - Raft foundations - 40mm
    - Staircases - 40mm
    - Columns - 40mm
    - Slabs - 40mm
    - Beams - 40mm
    - Walls - 40mm
16. Max slump for all concrete to be 75mm unless otherwise stated on drawings.
17. All concrete to be 25/19 MPa unless otherwise stated on drawings. Contractor to provide Engineer with test results for 3 x test cubes. All concrete to be vibrated when placed on site.
18. Concrete to be cured on site by daily watering for a period of seven (7) days.
19. All concrete works supporting brickwork to be cured for a minimum of three (3) days prior to any construction of brickwork commencing.
20. Minimum compressive strength of bricks shall be 7Mpa in accordance with SANS 10400 unless otherwise stated on the drawings.
21. Clay bricks to be thoroughly wetted before use.
22. A slip joint comprising of 2 by layers 3 ply mathoid must be provided between all loadbearing brickwork and the concrete structure.
23. A 10mm soft joint must be provided between all non loadbearing brickwork and the concrete structure.
24. The specification for fill material to be as follows.:
    - Contain no organic material.
    - Contain no stone with a dimension of larger than two thirds of the layer being compacted.
    - A PI of not exceeding 10 and a CBR of at least 15% at 93% MOD A,A,S,H,T,O and be capable of being compacted to 98% MOD A,A,S,H,T,O.
    - Swell at 100% MOD A,A,S,H,T,O shall not exceed 1.5%.
25. A sample of fill material together with test results to be provided to Engineer prior to construction.

Removal of formwork & supports from concrete:	Days:
Beam sides	2
Deck plates - props left under	7
Beam soffits - props left under	12
Removal of slab props	17
Removal of beam props	21

NB: The above does not include any adjustment for loading (excluding normal loading) being applied above the structural element.

No.	Date	Description	By

Revision Details

PROUDLY SOUTH AFRICAN

Client:

Project:

Drawing Title:

Pressure Reducing Valve Chamber Details

Designed:

Scale: AS SHOWN

Drawn:

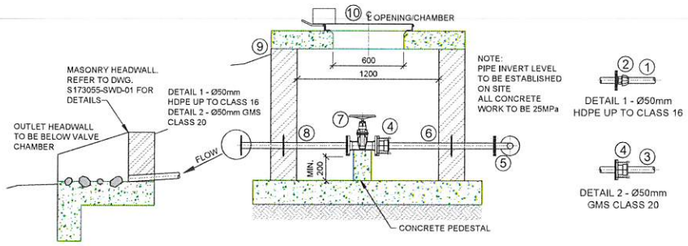
Size: A1

Checked:

Date:

Drawing No.:

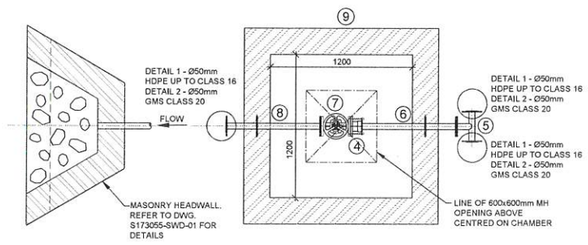
Revision:



SECTION THROUGH Ø50mm SCOUR VALVE CHAMBER

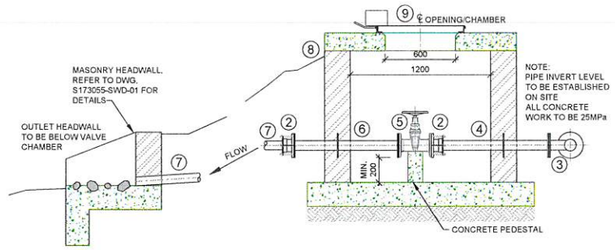
SCALE 1 : 25

Ø50mm SCOUR VALVE CHAMBER FITTINGS SCHEDULE			
ITEM No.	NAME	DRAWING	QTY
1	Ø50mm HDPE PIPE	PE	
2	Ø50x Ø50mm "PLASSON" COMPRESSION FLANGE ADAPTOR (WITH METAL FLANGE) OR SIMILAR APPROVED		3
3	Ø50mm GMS PIPE	PE	
4	Ø50mm "VJ" FLANGE ADAPTOR OR SIMILAR APPROVED	FL	3
5	Ø50mm GMS FLANGED EQUAL TEE	FL, 90, FL, FL, 130, 130	1
6	Ø50mm GMS PUDDLE PIPE, FLANGED ONE END	1000, 635, 365, INT, PF, PE, FL	1
7	Ø50mm "AVK" RS GATE VALVE OR SIMILAR APPROVED CAST INTO CONCRETE PEDESTAL	FL, 250, ELEVATION, PLAN	1
8	Ø50mm GMS FLANGED PUDDLE PIPE	900, 365, 535, FL, PF, INT	1
9	1200x1200mm BRICKWORK CHAMBER. HEIGHT TBD. REFER TO DWG. S173063-WD-05 FOR DETAILS		1
10	MH COVER TO SUIT 600x600mm OPENING. REFER TO DWG. S173063-WD-06 FOR DETAILS		1



PLAN OF Ø50mm SCOUR VALVE CHAMBER

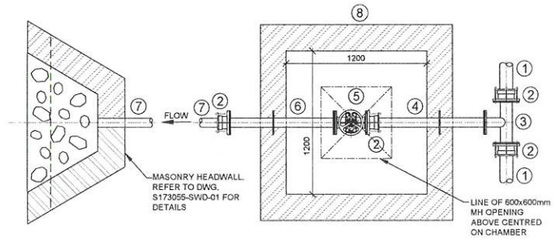
SCALE 1 : 25



SECTION THROUGH Ø80mm SCOUR VALVE CHAMBER FOR 75/90mm uPVC PIPE

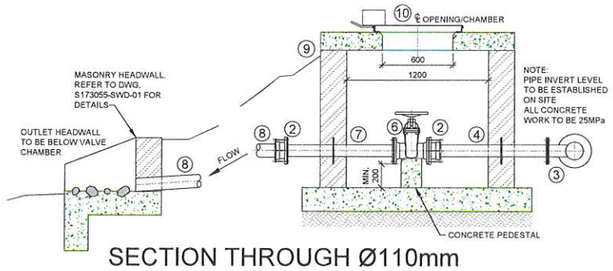
SCALE 1 : 25

Ø75/90mm SCOUR VALVE CHAMBER FITTINGS SCHEDULE			
ITEM No.	NAME	DRAWING	QTY
1	Ø75/90mm uPVC PIPE	PE	
2	Ø80mm "VJ" FLANGE ADAPTOR OR SIMILAR APPROVED	FL	4
3	Ø80mm GMS FLANGED EQUAL TEE	FL, 180, FL, 180, 180	1
4	Ø80mm GMS PUDDLE PIPE, FLANGED ONE END	1000, 615, 385, INT, PF, PE, FL	1
5	Ø80mm "AVK" RS GATE VALVE OR SIMILAR APPROVED CAST INTO CONCRETE PEDESTAL	FL, 280, ELEVATION, PLAN	1
6	Ø80mm GMS FLANGED PUDDLE PIPE	900, 375, 525, FL, PF, INT	1
7	Ø75/90mm uPVC PIPE	PE	
8	1200x1200mm BRICKWORK CHAMBER. HEIGHT TBD. REFER TO DWG. S173063-WD-05 FOR DETAILS		1
9	MH COVER TO SUIT 600x600mm OPENING. REFER TO DWG. S173063-WD-06 FOR DETAILS		1



PLAN OF Ø80mm SCOUR VALVE CHAMBER FOR 75/90mm uPVC PIPE

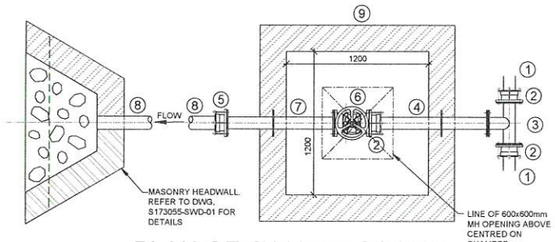
SCALE 1 : 25



SECTION THROUGH Ø110mm SCOUR VALVE CHAMBER

SCALE 1 : 25

Ø110mm SCOUR VALVE CHAMBER FITTINGS SCHEDULE			
ITEM No.	NAME	DRAWING	QTY
1	Ø110mm uPVC PIPE/Ø150mm GMS PIPE	PE	
2	Ø100mm "VJ" FLANGE ADAPTOR OR SIMILAR APPROVED	FL	4
3	100mm GMS FLANGED EQUAL TEE	FL, 180, FL, FL, 180, 180	1
4	Ø100mm GMS PUDDLE PIPE, FLANGED ONE END	1000, 610, 390, INT, PF, PE, FL	1
6	Ø100mm "AVK" RS GATE VALVE OR SIMILAR APPROVED CAST INTO CONCRETE PEDESTAL	FL, 300, ELEVATION, PLAN	1
7	Ø100mm GMS FLANGED PUDDLE PIPE	900, 390, 510, FL, PF, INT	1
8	Ø110mm uPVC PIPE	PE	
9	1200x1200mm BRICKWORK CHAMBER. HEIGHT TBD. REFER TO DWG. S173063-WD-05 FOR DETAILS		1
10	MH COVER TO SUIT 600x600mm OPENING. REFER TO DWG. S173063-WD-06 FOR DETAILS		1



PLAN OF Ø110mm SCOUR VALVE CHAMBER

SCALE 1 : 25

CONSTRUCTION NOTES:

1. GMS - GALVANISED MILD STEEL
   uPVC - UNPLASTICISED POLYVINYL CHLORIDE
   HDPE - HIGH DENSITY POLYETHYLENE
   RS - RESILIENT SEAL
   FL - FLANGE
   PE - PLAIN END
   PF - PUDDLE FLANGE
   INT - INTERNAL
   TBC - TO BE CONFIRMED
   TBD - TO BE DETERMINED
2. APPLY 2 No. COATS OF BITUMEN AT AREAS WHERE STEEL IS IN CONTACT WITH CONCRETE FOR COMMON PENETRATION, PRIOR TO CASTING CONCRETE.
3. 'CALCAMITE' OR SIMILAR APPROVED STEP IRONS ARE TO BE INSTALLED IN CHAMBERS DEEPER THAN 1500mm.

General Notes:

1. All dimensions and levels are to be checked on site and where applicable to match the existing structure.
2. Any discrepancies or contradictions on the drawings are to immediately be reported to the Engineer.
3. All dimensions are in millimeters. Drawings are not to be scaled.
4. All dimensions shown on the drawings are to be set out on site on the horizontal plane.
5. A complete set of drawings to be available on site at all times.
6. The contractor is responsible for the correct setting out on site and to ensure that the setting out details are in accordance with the drawings.
7. All drawings are to be read in conjuction with the architects details and drawings.
8. The contractor is responsible for checking that the reinforcement is fixed and maintained in the correct position before and during the casting of concrete.
9. Finished structure is to comply with the latest amendments of SANS 10400.
10. No concrete may be cast without the approval from the Engineer and a minimum of 48 hours' notice is to be given to the Engineer prior to an inspection on site.
11. All reinforcing steel to comply with SANS 0920 as follows.:
    - R - Plain round mild steel bars of strength 250MPa
    - Y - High yield deformed steel bars of strength 450MPa.
12. All reinforcing steel is to be bent in accordance with SANS 282:2004.
13. Symbols.:
    - T - Top
    - M - Middle
    - B - Bottom
    - EW - Each way
    - HOR - Horizontal
    - ABR - Alternate bars reversed
    - STG - Staggered
    - NTS - Not to Scale
14. Minimum splicing to reinforcing steel bars are as follows.:
    - Y10 - 400mm
    - Y12 - 480mm
    - Y16 - 640mm
    - Y20 - 800mm
    - Y25 - 1000mm
    - Y32 - 1280mm
    - Y40 - 1600mm
15. Minimum cover to reinforcing steel bars unless otherwise stated on drawings are as follows.:
    - Column bases - 75mm
    - Strip foundations - 50mm
    - Raft foundations - 40mm
    - Staircases - 40mm
    - Columns - 40mm
    - Slabs - 40mm
    - Beams - 40mm
    - Walls - 40mm
16. Max slump for all concrete to be 75mm unless otherwise stated on drawings.
17. All concrete to be 25/19 MPa unless otherwise stated on drawings. Contractor to provide Engineer with test results for 3 x test cubes. All concrete to be vibrated when placed on site.
18. Concrete to be cured on site by daily watering for a period of seven (7) days.
19. All concrete works supporting brickwork to be cured for a minimum of three (3) days prior to any construction of brickwork commencing.
20. Minimum compressive strength of bricks shall be 7Mpa in accordance with SANS 10400 unless otherwise stated on the drawings.
21. Clay bricks to be thoroughly wetted before use.
22. A slip joint comprising of 2 by layers 3 ply malthoid must be provided between all loadbearing brickwork and the concrete structure.
23. A 10mm soft joint must be provided between all non loadbearing brickwork and the concrete structure.
24. The specification for fill material to be as follows.:
    - Contain no organic material.
    - Contain no stone with a dimension of larger than two thirds of the layer being compacted.
    - A PI of not exceeding 10 and a CBR of at least 15% at 93% MOD A.A.S.H.T.O and be capable of being compacted to 98% MOD A.A.S.H.T.O.
    - Swell at 100% MOD A.A.S.H.T.O shall not exceed 1.5%.
25. A sample of fill material together with test results to be provided to Engineer prior to construction.

Removal of formwork & supports from concrete:	Days.
Beam sides	2
Deck plates - props left under	7
Beam soffits - props left under	12
Removal of slab props	17
Removal of beam props	21

NB: The above does not include any adjustment for loading (excluding normal loading) being applied above the structural element.

No.	Date	Description	By

Revision Details

PROUDLY SOUTH AFRICAN

Client:

Project:

Drawing Title:

Scour Valve Chamber Detail

Designed:

Scale: AS SHOWN

Drawn:

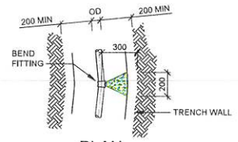
Size: A1

Checked:

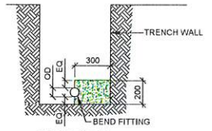
Date:

Drawing No.:

Revision:



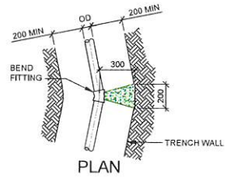
PLAN



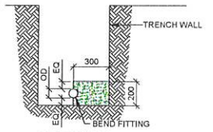
SECTION

Ø50/Ø75mm @ 11.25°

SCALE 1 : 25



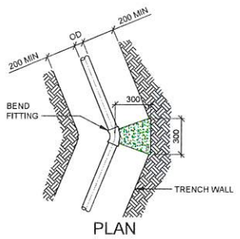
PLAN



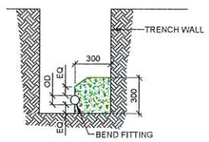
SECTION

Ø50/Ø75mm @ 22.5°

SCALE 1 : 25



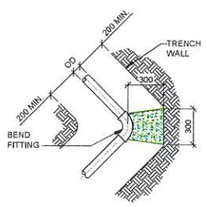
PLAN



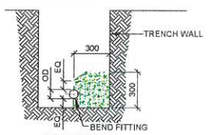
SECTION

Ø50/Ø75mm @ 45°

SCALE 1 : 25



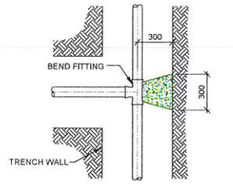
PLAN



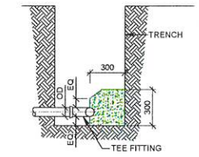
SECTION

Ø50/Ø75mm @ 90°

SCALE 1 : 25



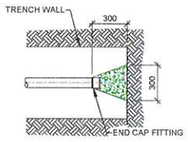
PLAN



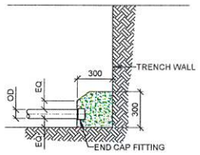
SECTION

Ø50/Ø75mm TEE

SCALE 1 : 25



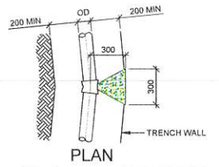
PLAN



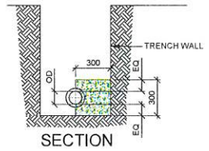
SECTION

Ø50/Ø75mm END CAP

SCALE 1 : 25



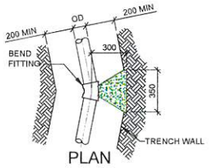
PLAN



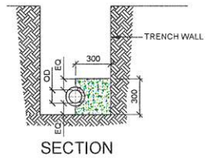
SECTION

Ø110/Ø90 @ 11.25°

SCALE 1 : 25



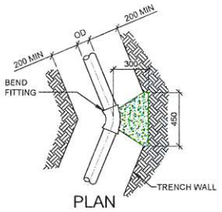
PLAN



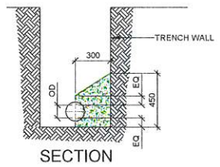
SECTION

Ø110/Ø90 @ 22.5°

SCALE 1 : 25



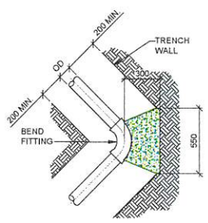
PLAN



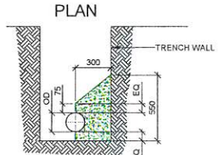
SECTION

Ø110/Ø90 @ 45°

SCALE 1 : 25



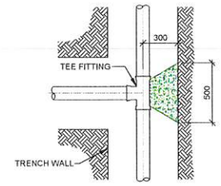
PLAN



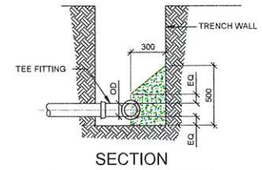
SECTION

Ø110/Ø90 @ 90°

SCALE 1 : 25



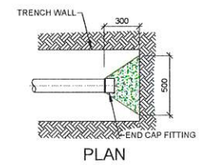
PLAN



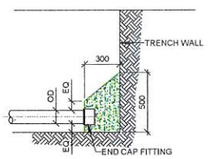
SECTION

Ø110/Ø90 TEE

SCALE 1 : 25



PLAN



SECTION

Ø110/Ø90 END CAP

SCALE 1 : 25

CONSTRUCTION NOTES:

1. GMS - GALVANISED MILD STEEL
   TBC - TO BE CONFIRMED
   TBD - TO BE DETERMINED
2. APPLY 2 No. COATS OF BITUMEN AT AREAS WHERE STEEL IS IN CONTACT WITH CONCRETE FOR COMMON PENETRATION, PRIOR TO CASTING CONCRETE.

General Notes:

1. All dimensions and levels are to be checked on site and where applicable to match the existing structure.
2. Any discrepancies or contradictions on the drawings are to immediately be reported to the Engineer.
3. All dimensions are in millimeters. Drawings are not to be scaled.
4. All dimensions shown on the drawings are to be set out on site on the horizontal plane.
5. A complete set of drawings to be available on site at all times.
6. The contractor is responsible for the correct setting out on site and to ensure that the setting out details are in accordance with the drawings.
7. All drawings are to be read in conjunction with the architects details and drawings.
8. The contractor is responsible for checking that the reinforcement is fixed and maintained in the correct position before and during the casting of concrete.
9. Finished structure is to comply with the latest amendments of SANS 10400.
10. No concrete may be cast without the approval from the Engineer and a minimum of 48 hours' notice is to be given to the Engineer prior to an inspection on site.
11. All reinforcing steel to comply with SANS 0920 as follows.:
    - R - Plain round mild steel bars of strength 250MPa.
    - Y - High yield deformed steel bars of strength 450MPa.
12. All reinforcing steel is to be bent in accordance with SANS 282:2004.
13. Symbols.:
    - T - Top
    - M - Middle
    - B - Bottom
    - EW - Each way
    - HOR - Horizontal
    - ABR - Alternate bars reversed
    - STG - Staggered
    - NTS - Not to Scale
14. Minimum splicing to reinforcing steel bars are as follows.:
    - Y10 - 400mm
    - Y12 - 480mm
    - Y16 - 640mm
    - Y20 - 800mm
    - Y25 - 1000mm
    - Y32 - 1280mm
    - Y40 - 1600mm
15. Minimum cover to reinforcing steel bars unless otherwise stated on drawings are as follows.:
    - Column bases - 75mm
    - Strip foundations - 50mm
    - Raft foundations - 40mm
    - Staircases - 40mm
    - Columns - 40mm
    - Slabs - 40mm
    - Beams - 40mm
    - Walls - 40mm
16. Max slump for all concrete to be 75mm unless otherwise stated on drawings.
17. All concrete to be 25/19 MPa unless otherwise stated on drawings. Contractor to provide Engineer with test results for 3 x test cubes. All concrete to be vibrated when placed on site.
18. Concrete to be cured on site by daily watering for a period of seven (7) days.
19. All concrete works supporting brickwork to be cured for a minimum of three (3) days prior to any construction of brickwork commencing.
20. Minimum compressive strength of bricks shall be 7Mpa in accordance with SANS 10400 unless otherwise stated on the drawings.
21. Clay bricks to be thoroughly wetted before use.
22. A slip joint comprising of 2 ply layers 3 ply malthoid must be provided between all loadbearing brickwork and the concrete structure.
23. A 10mm soft joint must be provided between all non loadbearing brickwork and the concrete structure.
24. The specification for fill material to be as follows.:
    - Contain no organic material.
    - Contain no stone with a dimension of larger than two thirds of the layer being compacted.
    - A PI of not exceeding 10 and a CBR of at least 15% at 93% MOD A,A,S,H,T,O and be capable of being compacted to 95% MOD A,A,S,H,T,O.
    - Swell at 100% MOD A,A,S,H,T,O shall not exceed 1.5%.
25. A sample of fill material together with test results to be provided to Engineer prior to construction.

Removal of formwork & supports from concrete:	Days:
Beam sides	2
Deck plates - props left under	7
Beam soffits - props left under	12
Removal of slab props	17
Removal of beam props	21

NB: The above does not include any adjustment for loading (excluding normal loading) being applied above the structural element.

No.	Date	Description	By

Revision Details

PROUDLY SOUTH AFRICAN

Client:

Project:

Drawing Title:

Thrust Block Details

Designed:

Scale: AS SHOWN

Drawn:

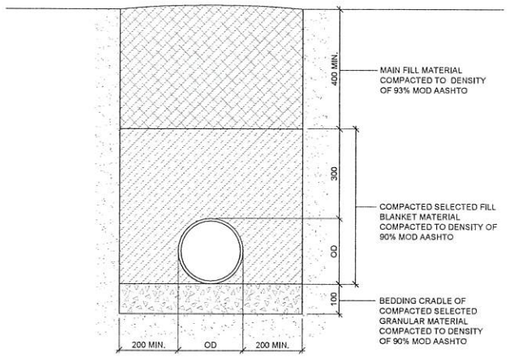
Size: A1

Checked:

Date:

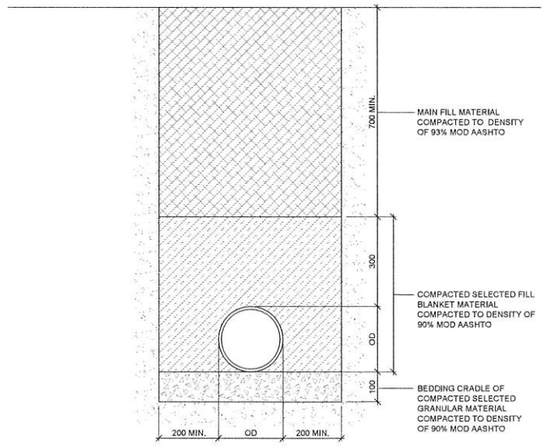
Drawing No.:

Revision:



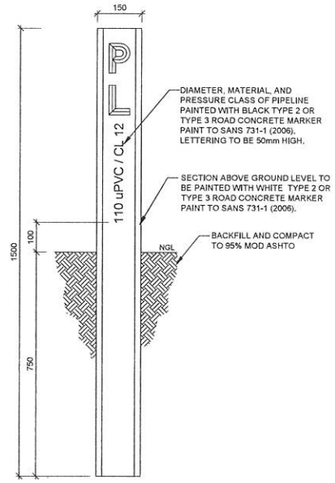
TYPICAL SECTION
PIPE TRENCH

SCALE 1 : 10



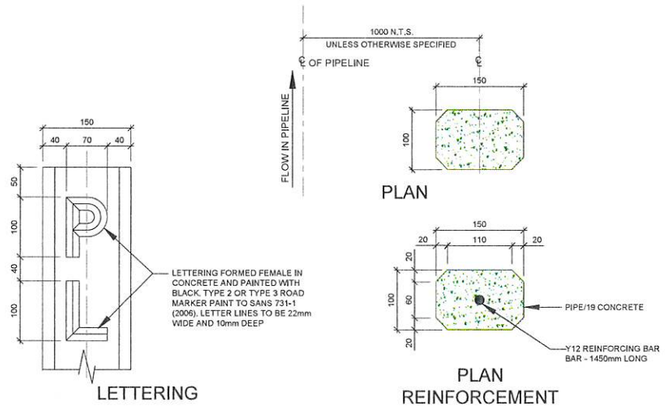
TYPICAL SECTION
PIPE TRENCH AT ROAD CROSSINGS

SCALE 1 : 10



FRONT ELEVATION
PIPE ROUTE MARKER

SCALE 1 : 10



PIPE ROUTE MARKER DETAILS

SCALE 1 : 5

CONSTRUCTION NOTES:

1. APPLY 2 No. COATS OF BITUMEN AT AREAS WHERE STEEL IS IN CONTACT WITH CONCRETE FOR COMMON PENETRATION, PRIOR TO CASTING CONCRETE.

General Notes:

1. All dimensions and levels are to be checked on site and where applicable to match the existing structure.
2. Any discrepancies or contradictions on the drawings are to immediately be reported to the Engineer.
3. All dimensions are in millimeters. Drawings are not to be scaled.
4. All dimensions shown on the drawings are to be set out on site on the horizontal plane.
5. A complete set of drawings to be available on site at all times.
6. The contractor is responsible for the correct setting out on site and to ensure that the setting out details are in accordance with the drawings.
7. All drawings are to be read in conjunction with the architects details and drawings.
8. The contractor is responsible for checking that the reinforcement is fixed and maintained in the correct position before and during the casting of concrete.
9. Finished structure is to comply with the latest amendments of SANS 10400.
10. No concrete may be cast without the approval from the Engineer and a minimum of 48 hours' notice is to be given to the Engineer prior to an inspection on site.
11. All reinforcing steel to comply with SANS 0920 as follows.:
    - R - Plain round mild steel bars of strength 250MPa.
    - Y - High yield deformed steel bars of strength 450MPa.
12. All reinforcing steel is to be bent in accordance with SANS 282:2004.
13. Symbols.:
    - T - Top
    - M - Middle
    - B - Bottom
    - EW - Each way
    - HOR - Horizontal
    - ABR - Alternate bars reversed
    - STG - Staggered
    - NTS - Not to Scale
14. Minimum splicing to reinforcing steel bars are as follows.:
    - Y10 - 400mm
    - Y12 - 480mm
    - Y16 - 640mm
    - Y20 - 800mm
    - Y25 - 1000mm
    - Y32 - 1280mm
    - Y40 - 1600mm
15. Minimum cover to reinforcing steel bars unless otherwise stated on drawings are as follows.:
    - Column bases - 75mm
    - Strip foundations - 50mm
    - Raft foundations - 40mm
    - Staircases - 40mm
    - Columns - 40mm
    - Slabs - 40mm
    - Beams - 40mm
    - Walls - 40mm
16. Max slump for all concrete to be 75mm unless otherwise stated on drawings.
17. All concrete to be 25/19 MPa unless otherwise stated on drawings. Contractor to provide Engineer with test results for 3 x test cubes. All concrete to be vibrated when placed on site.
18. Concrete to be cured on site by daily watering for a period of seven (7) days.
19. All concrete works supporting brickwork to be cured for a minimum of three (3) days prior to any construction of brickwork commencing.
20. Minimum compressive strength of bricks shall be 7Mpa in accordance with SANS 10400 unless otherwise stated on the drawings.
21. Clay bricks to be thoroughly wetted before use.
22. A slip joint comprising of 2 by layers 3 ply malthoid must be provided between all loadbearing brickwork and the concrete structure.
23. A 10mm soft joint must be provided between all non loadbearing brickwork and the concrete structure.
24. The specification for fill material to be as follows.:
    - Contain no organic material.
    - Contain no stone with a dimension of larger than two thirds of the layer being compacted.
    - A PI of not exceeding 10 and a CBR of at least 15% at 93% MOD A.A.S.H.T.O and be capable of being compacted to 98% MOD A.A.S.H.T.O.
    - Swell at 100% MOD A.A.S.H.T.O shall not exceed 1.5%.
25. A sample of fill material together with test results to be provided to Engineer prior to construction.

Removal of formwork & supports from concrete:	Days:
Beam sides	2
Deck plates - props left under	7
Beam soffits - props left under	12
Removal of slab props	17
Removal of beam props	21

NB: The above does not include any adjustment for loading (excluding normal loading) being applied above the structural element.

No.	Date	Description	By

Revision Details

PROUDLY SOUTH AFRICAN

Client:

Project:

Drawing Title:
Typical Pipe Trench and Pipe Route Marker Details

Designed:

Scale: AS SHOWN

Drawn:

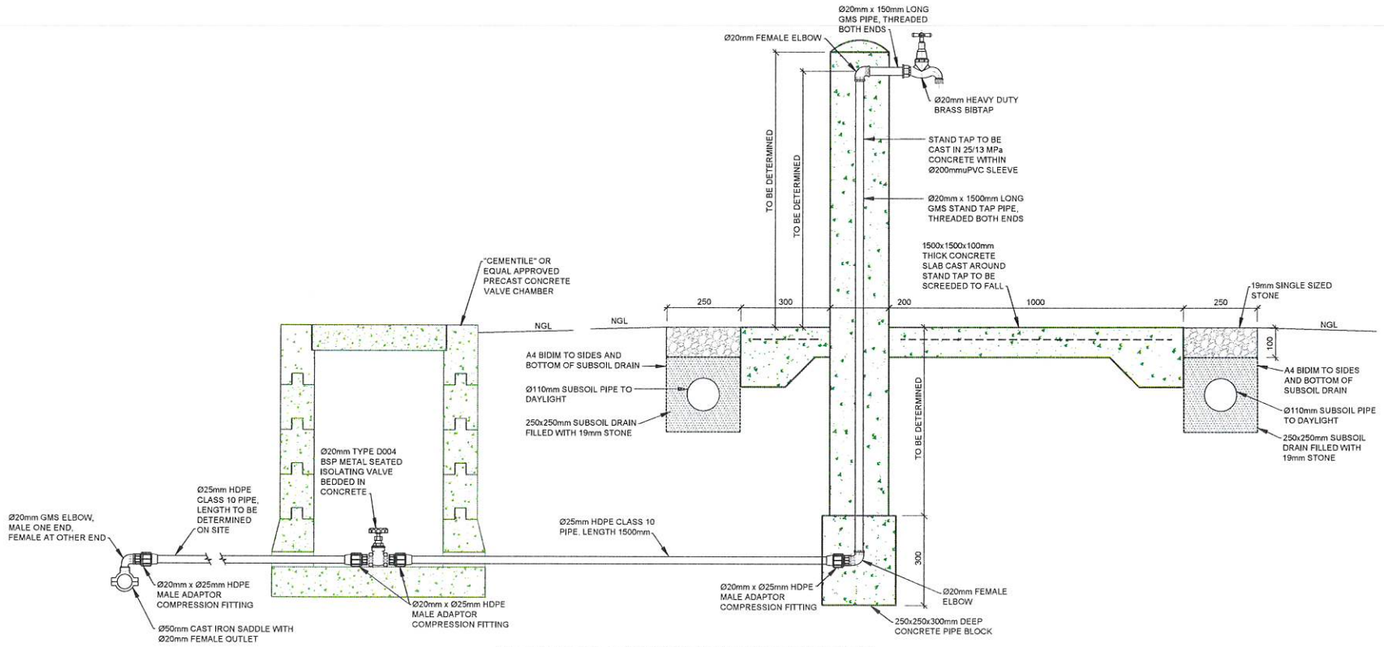
Size: A1

Checked:

Date:

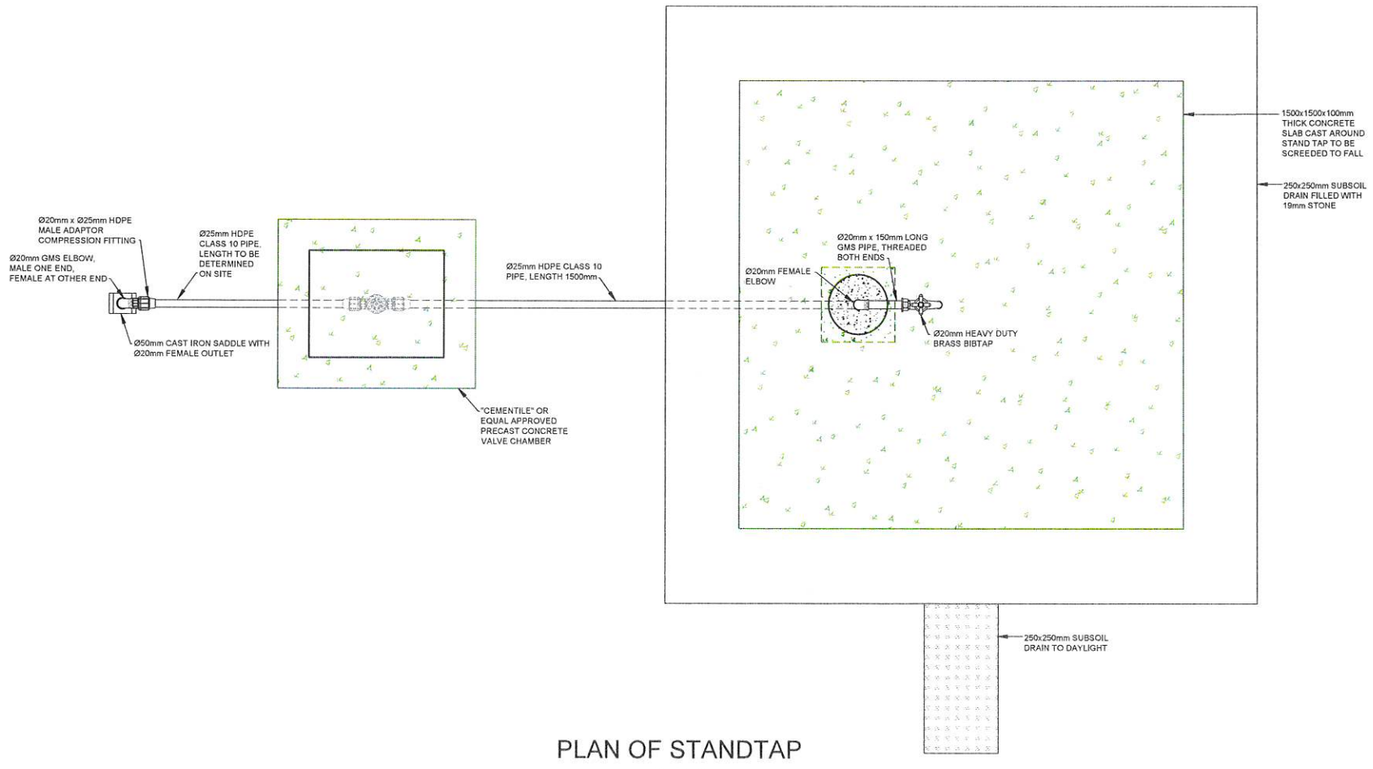
Drawing No.:

Revision:



SECTION THROUGH STANDTAP

SCALE 1 : 10



PLAN OF STANDTAP

SCALE 1 : 10

CONSTRUCTION NOTES:

1. GMS - GALVANISED MILD STEEL
   TBC - TO BE CONFIRMED
   TBD - TO BE DETERMINED
2. APPLY 2 No. COATS OF BITUMEN AT AREAS WHERE STEEL IS IN CONTACT WITH CONCRETE FOR COMMON PENETRATION, PRIOR TO CASTING CONCRETE.
3. POSITION OF SUBSOIL OUTLET TO BE DETERMINED ON SITE. ALLOW FOR SUBSOIL TO DRAIN FREELY.

General Notes:

1. All dimensions and levels are to be checked on site and where applicable to match the existing structure.
2. Any discrepancies or contradictions on the drawings are to immediately be reported to the Engineer.
3. All dimensions are in millimeters. Drawings are not to be scaled.
4. All dimensions shown on the drawings are to be set out on site on the horizontal plane.
5. A complete set of drawings to be available on site at all times.
6. The contractor is responsible for the correct setting out on site and to ensure that the setting out details are in accordance with the drawings.
7. All drawings are to be read in conjunction with the architects details and drawings.
8. The contractor is responsible for checking that the reinforcement is fixed and maintained in the correct position before and during the casting of concrete.
9. Finished structure is to comply with the latest amendments of SANS 10400.
10. No concrete may be cast without the approval from the Engineer and a minimum of 48 hours' notice is to be given to the Engineer prior to an inspection on site.
11. All reinforcing steel to comply with SANS 0920 as follows.:
    - R - Plain round mild steel bars of strength 250MPa.
    - Y - High yield deformed steel bars of strength 450MPa.
12. All reinforcing steel is to be bent in accordance with SANS 282:2004.
13. Symbols.:
    - T - Top
    - M - Middle
    - B - Bottom
    - EW - Each way
    - HOR - Horizontal
    - ABR - Alternate bars reversed
    - STG - Staggered
    - NTS - Not to Scale
14. Minimum splicing to reinforcing steel bars are as follows.:
    - Y10 - 400mm
    - Y12 - 480mm
    - Y16 - 640mm
    - Y20 - 800mm
    - Y25 - 1000mm
    - Y32 - 1280mm
    - Y40 - 1600mm
15. Minimum cover to reinforcing steel bars unless otherwise stated on drawings are as follows.:
    - Column bases - 75mm
    - Strip foundations - 50mm
    - Raft foundations - 40mm
    - Staircases - 40mm
    - Columns - 40mm
    - Slabs - 40mm
    - Beams - 40mm
    - Walls - 40mm
16. Max slump for all concrete to be 75mm unless otherwise stated on drawings.
17. All concrete to be 25/19 MPa unless otherwise stated on drawings. Contractor to provide Engineer with test results for 3 x test cubes. All concrete to be vibrated when placed on site.
18. Concrete to be cured on site by daily watering for a period of seven (7) days.
19. All concrete works supporting brickwork to be cured for a minimum of three (3) days prior to any construction of brickwork commencing.
20. Minimum compressive strength of bricks shall be 7Mpa in accordance with SANS 10400 unless otherwise stated on the drawings.
21. Clay bricks to be thoroughly wetted before use.
22. A slip joint comprising of 2 by layers 3 ply malthoid must be provided between all loadbearing brickwork and the concrete structure.
23. A 10mm soft joint must be provided between all non loadbearing brickwork and the concrete structure.
24. The specification for fill material to be as follows.:
    - Contain no organic material.
    - Contain no stone with a dimension of larger than two thirds of the layer being compacted.
    - A PI of not exceeding 10 and a CBR of at least 15% at 93% MOD A.A.S.H.T.O and be capable of being compacted to 98% MOD A.A.S.H.T.O.
    - Swell at 100% MOD A.A.S.H.T.O shall not exceed 1.5%.
25. A sample of fill material together with test results to be provided to Engineer prior to construction.

Removal of formwork & supports from concrete:	Days:
Beam sides	2
Deck plates - props left under	7
Beam soffits - props left under	12
Removal of slab props	17
Removal of beam props	21

NB: The above does not include any adjustment for loading (excluding normal loading) being applied above the structural element.

No.	Date	Description	By

Revision Details

PROUDLY SOUTH AFRICAN

Client:

Project:

Drawing Title:

Typical Standtap Details

Designed:

Scale: AS SHOWN

Drawn:

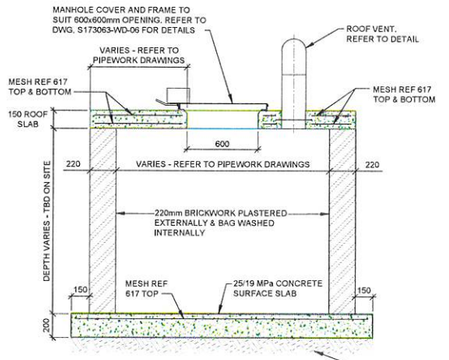
Size: A1

Checked:

Date:

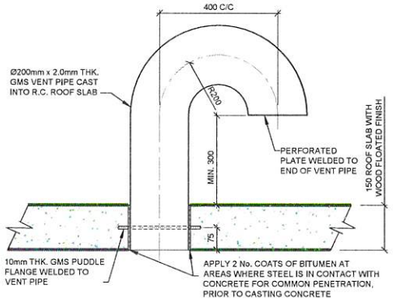
Drawing No.:

Revision:



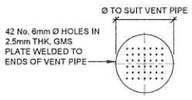
SECTION A-A
TYPICAL CHAMBER

SCALE 1 : 25



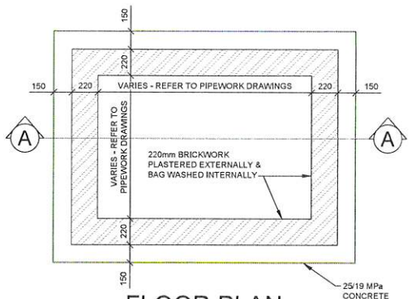
TYPICAL SECTION
CHAMBER ROOF VENT

SCALE 1 : 10



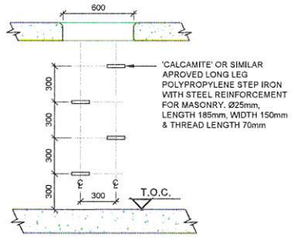
PLAN OF
PERFORATED PLATE
TO ROOF VENT

SCALE 1 : 10



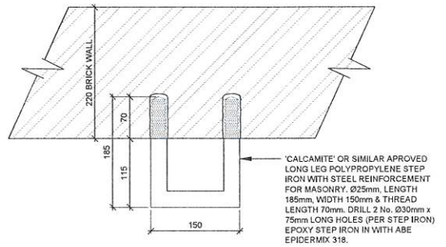
FLOOR PLAN
TYPICAL CHAMBER

SCALE 1 : 25



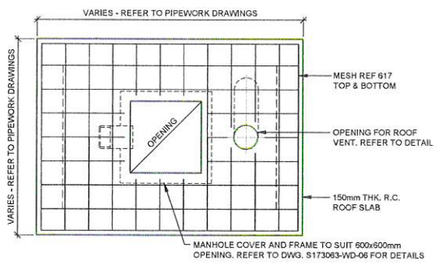
ELEVATION OF
INTERNAL STEP IRONS

SCALE 1 : 25



PLAN
STEP IRON

SCALE 1 : 5



ROOF PLAN
TYPICAL CHAMBER

SCALE 1 : 25

CONSTRUCTION NOTES:

1. GMS - GALVANISED MILD STEEL
   TBC - TO BE CONFIRMED
   TBD - TO BE DETERMINED
2. APPLY 2 No. COATS OF BITUMEN AT AREAS WHERE STEEL IS IN CONTACT WITH CONCRETE FOR COMMON PENETRATION, PRIOR TO CASTING CONCRETE.
3. 'CALCAMITE' OR SIMILAR APPROVED STEP IRONS ARE TO BE INSTALLED IN CHAMBERS DEEPER THAN 1500mm.

General Notes:

1. All dimensions and levels are to be checked on site and where applicable to match the existing structure.
2. Any discrepancies or contradictions on the drawings are to immediately be reported to the Engineer.
3. All dimensions are in millimeters. Drawings are not to be scaled.
4. All dimensions shown on the drawings are to be set out on site on the horizontal plane.
5. A complete set of drawings to be available on site at all times.
6. The contractor is responsible for the correct setting out on site and to ensure that the setting out details are in accordance with the drawings.
7. All drawings are to be read in conjunction with the architects details and drawings.
8. The contractor is responsible for checking that the reinforcement is fixed and maintained in the correct position before and during the casting of concrete.
9. Finished structure is to comply with the latest amendments of SANS 10400.
10. No concrete may be cast without the approval from the Engineer and a minimum of 48 hours' notice is to be given to the Engineer prior to an inspection on site.
11. All reinforcing steel to comply with SANS 0920 as follows.:
    - R - Plain round mild steel bars of strength 250MPa.
    - Y - High yield deformed steel bars of strength 450MPa.
12. All reinforcing steel is to be bent in accordance with SANS 282:2004.
13. Symbols.:
    - T - Top
    - M - Middle
    - B - Bottom
    - EW - Each way
    - HOR - Horizontal
    - ABR - Alternate bars reversed
    - STG - Staggered
    - NTS - Not to Scale
14. Minimum splicing to reinforcing steel bars are as follows.:
    - Y10 - 400mm
    - Y12 - 480mm
    - Y16 - 640mm
    - Y20 - 800mm
    - Y25 - 1000mm
    - Y32 - 1280mm
    - Y40 - 1600mm
15. Minimum cover to reinforcing steel bars unless otherwise stated on drawings are as follows.:
    - Column bases - 75mm
    - Strip foundations - 50mm
    - Raft foundations - 40mm
    - Staircases - 40mm
    - Columns - 40mm
    - Slabs - 40mm
    - Beams - 40mm
    - Walls - 40mm
16. Max slump for all concrete to be 75mm unless otherwise stated on drawings.
17. All concrete to be 25/19 MPa unless otherwise stated on drawings. Contractor to provide Engineer with test results for 3 x test cubes. All concrete to be vibrated when placed on site.
18. Concrete to be cured on site by daily watering for a period of seven (7) days.
19. All concrete works supporting brickwork to be cured for a minimum of three (3) days prior to any construction of brickwork commencing.
20. Minimum compressive strength of bricks shall be 7Mpa in accordance with SANS 10400 unless otherwise stated on the drawings.
21. Clay bricks to be thoroughly wetted before use.
22. A slip joint comprising of 2 by layers 3 ply malthoid must be provided between all loadbearing brickwork and the concrete structure.
23. A 10mm soft joint must be provided between all non loadbearing brickwork and the concrete structure.
24. The specification for fill material to be as follows.:
    - Contain no organic material.
    - Contain no stone with a dimension of larger than two thirds of the layer being compacted.
    - A PI of not exceeding 10 and a CBR of at least 15% at 93% MOD A.A.S.H.T.O and be capable of being compacted to 98% MOD A.A.S.H.T.O.
    - Swell at 100% MOD A.A.S.H.T.O shall not exceed 1.5%.
25. A sample of fill material together with test results to be provided to Engineer prior to construction.

Removal of formwork & supports from concrete:	Days:
Beam sides	2
Deck plates - props left under	7
Beam soffits - props left under	12
Removal of slab props	17
Removal of beam props	21

NB: The above does not include any adjustment for loading (excluding normal loading) being applied above the structural element.

No.	Date	Description	By

Revision Details

PROUDLY SOUTH AFRICAN

Client:

Project:

Drawing Title:
Typical Valve Chamber Detail

Designed:

Scale: AS SHOWN

Drawn:

Size: A1

Checked:

Date:

Drawing No.:

Revision: