

2400

4800

3457

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96

97

ANOTHER  
JOHANNESBURG WATER  
SERVICE  
DELIVERY PROJECT  
HELPDESK (011)375-5555

PROJECT DETAILS:

CONTRACT NO.: JW.....

DESCRIPTION:- .....

FONT : 70mm

FONT : 60mm  
SPACING : 60mm

CONSULTANT:

JOHANNESBURG WATER

DESIGN SECTION

TEL: 011 688 1400

FONT : 70mm

FONT : 50mm  
SPACING : 50mm

CONTRACTOR:

.....

TEL.....

FONT : 70mm

FONT : 50mm  
SPACING : 50mm

CLIENT

JOHANNESBURG WATER-

INVESTMENT DELIVERY

TEL: 011 688 1400

FONT : 70mm

FONT : 50mm  
SPACING : 50mm



A world class African City



Johannesburg Water

CONSULTING ENGINEERS  
CAPEX DESIGN SECTION  
SWISS HOUSE  
7TH FLOOR

|               |               |               |
|---------------|---------------|---------------|
| DESIGNED      | B.M.KHUMALO   | MAY 2017      |
| DRAWN         | B.M.KHUMALO   | MAY 2017      |
| CHECKED       | J.GUMBO       | DATE: 18/1/17 |
| SIGNATURE     |               | DATE: 18/1/17 |
| ECSA REG. No. | 201370044     |               |
| APPROVED BY:  | T.M.PANDAGUTA | DATE: 20/1/17 |
| SIGNATURE     |               | DATE: 20/1/17 |
| ECSA REG. No. | 201170150     |               |



Johannesburg Water

17 HARRISON STREET  
MARSHALLTOWN  
2107

TEL: (011) 688-1400  
FAX: (011) 688-1529



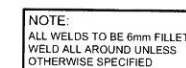
STANDARD DETAIL  
NAMEBOARD

| AMENDMENTS |      |             |          |      |
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DRAWING No. JW100-DET01-W01

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| CONSULTING ENGINEERS<br>CAPEX DESIGN SECTION<br>SWISS HOUSE<br>7TH FLOOR | DESIGNED      | B.M.KHUMALO  | MAY 2017     |
|                                                                          | DRAWN         | B.M.KHUMALO  | MAY 2017     |
|                                                                          | CHECKED       | J.GUMBO      | DATE 19/7/19 |
|                                                                          | SIGNATURE:    |              |              |
|                                                                          | ECSA REG. No. | 201370044    |              |
|                                                                          | APPROVED BY:  | T.MPANDAGUTA | DATE         |
|                                                                          | SIGNATURE:    |              |              |
|                                                                          | ECSA REG. No. | 201720150    |              |

**Johannesburg Water**

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STANDARD DETAIL  
NAMEBOARD HOLDER

| AMENDMENTS |      |             |          |      |
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DRAWING No.JW100-DET01.1-W01

PROJECT No.

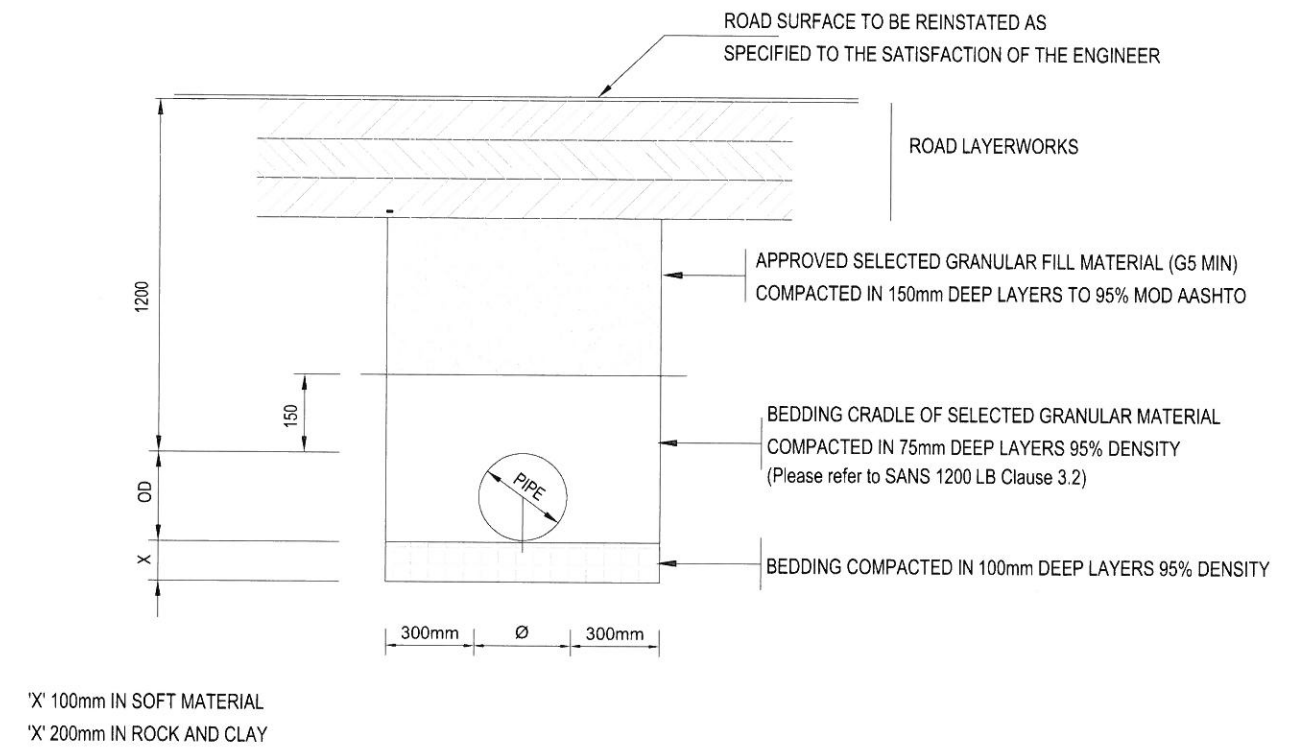
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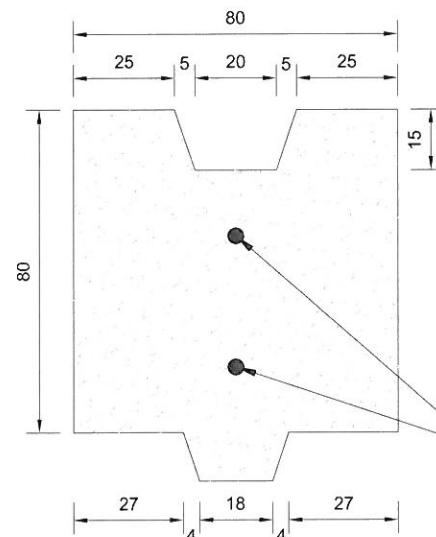
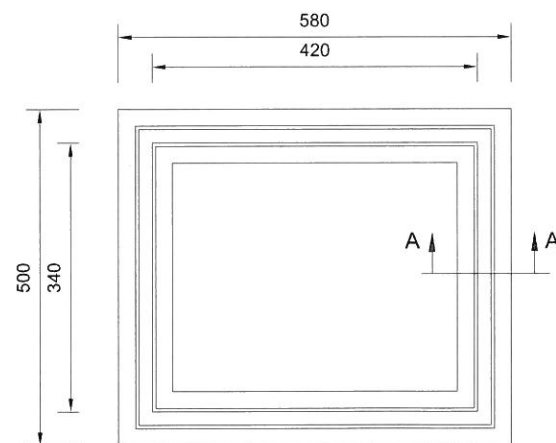
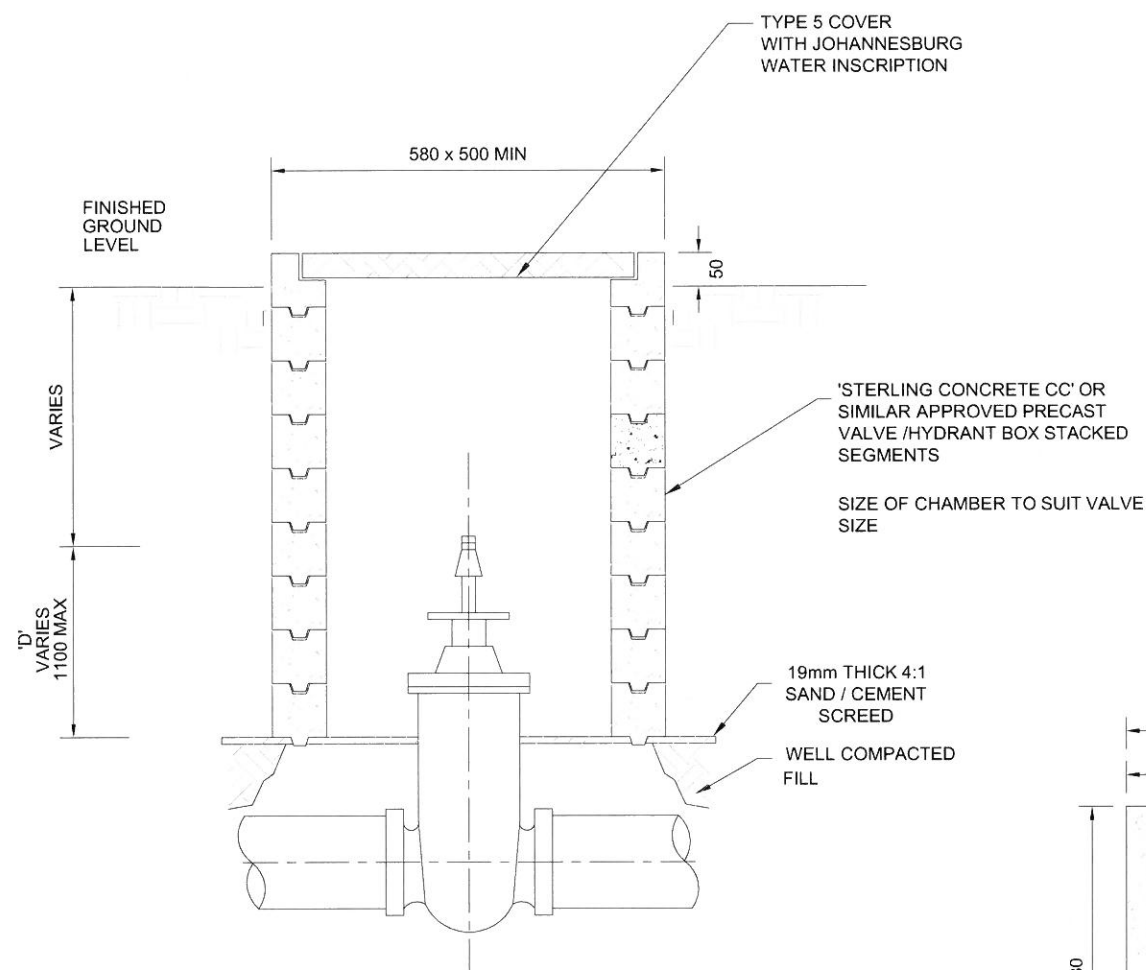
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### TYPICAL TRENCH SECTION BENEATH ROAD

1. PIPE SIDE ALLOWANCE OF 300mm TYPICAL FOR UP TO 700mm Dia. FOR PIPES GREATER THAN 700mm REFER TO SANS 1200DB CLAUSE 5.2 "MINIMUM BASE WIDTHS."
2. COMPACTION OF MAIN FILL TO MINIMUM MOD AASHTO OR THAT OF SURROUNDING IN SITU UNDISTURBED GROUND AND AS DIRECTED BY THE ENGINEER.
3. DIMENSIONS IN MILLIMETERS (mm)
4. REFER ALSO TO JRA AND OTHER SERVICE PROVIDERS SPECIFICATIONS FOR BEDDING DETAILS IN ROAD RESERVES OR WHERE THE PIPE INTERSECT WITH OTHER SERVICES.

|                                                                          |                                                                                     |                                                                                     |               |                                                                                                           |                                                                                              |                                                                                                                                   |            |      |             |          |      |                                                                                                                                                                              |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------|------|-------------|----------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CONSULTING ENGINEERS<br>CAPEX DESIGN SECTION<br>SWISS HOUSE<br>7TH FLOOR | DESIGNED                                                                            | B.M. KHUMALO                                                                        | MAY 2017      | <br>Johannesburg Water | 17 HARRISON STREET<br>MARSHALLTOWN<br>2107<br><br>TEL: (011) 688-1400<br>FAX: (011) 688-1529 | <br>STANDARD DETAIL<br>WATER BEDDING DETAILS | AMENDMENTS |      |             |          |      | DRAWING No. JW100-DET02-W01                                                                                                                                                  |
|                                                                          | DRAWN                                                                               | B.M. KHUMALO                                                                        | MAY 2017      |                                                                                                           |                                                                                              |                                                                                                                                   | SCALE      | REV. | DESCRIPTION | APPROVED | DATE | <div> <div>PROJECT No.</div> <div>REV.</div> </div> <div> <div>A3</div> <div>SHEET</div> <div>2</div> <div>OF</div> </div> <div>ORIGINAL PAGE SIZE</div> <div>FILE No.</div> |
|                                                                          | CHECKED                                                                             | J. GUMBO                                                                            | DATE: 19/7/17 |                                                                                                           |                                                                                              |                                                                                                                                   |            |      |             |          |      |                                                                                                                                                                              |
|                                                                          | SIGNATURE                                                                           |  |               |                                                                                                           |                                                                                              |                                                                                                                                   |            |      |             |          |      |                                                                                                                                                                              |
|                                                                          | ECSA REG. No.                                                                       | 201370045                                                                           |               |                                                                                                           |                                                                                              |                                                                                                                                   |            |      |             |          |      |                                                                                                                                                                              |
|                                                                          | APPROVED BY:                                                                        | T. MPANDAGUTA                                                                       | DATE:         |                                                                                                           |                                                                                              |                                                                                                                                   |            |      |             |          |      |                                                                                                                                                                              |
| SIGNATURE                                                                |  |                                                                                     |               |                                                                                                           |                                                                                              |                                                                                                                                   |            |      |             |          |      |                                                                                                                                                                              |
| ECSA REG. No.                                                            | 20170150                                                                            |                                                                                     |               |                                                                                                           |                                                                                              |                                                                                                                                   |            |      |             |          |      |                                                                                                                                                                              |



SECTION A-A (1 PRECAST SEGMENT)

NOTE: 28 DAYS CONCRETE STRENGTH TO BE 25 MPa

## NOTES

### a) VALVES UP TO 350mm N.B.

- 1) RESILIENT SEAL GATE VALVE (80mm UP TO 150mm N.B)
- 2) WEDGE TYPE GATE VALVES (200mm UP TO 350mm N.B)
- 3) NON RISING SPINDLE
- 4) ANTI CLOCKWISE CLOSING, EXCEPT IN MIDRAND AREA - CLOCKWISE CLOSING.
- 5) SPECIFICATIONS TO SANS 664 AND SPECIFICATIONS IN ANNEXURE E OF THE JW STANDARDS GUIDELINES.

### b) PRECAST SEGMENT SPECIFICATIONS

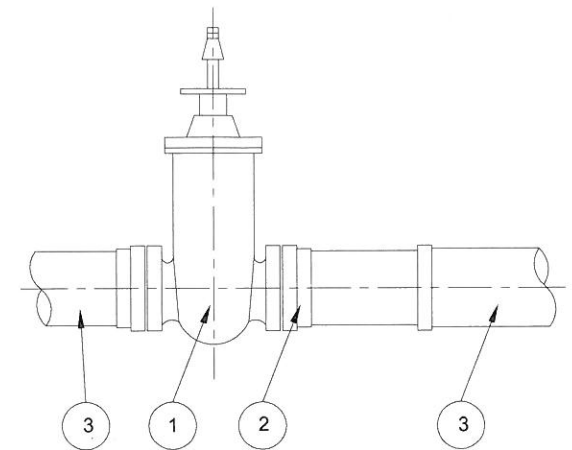
- 1) ALL MANHOLE SEGMENTS ACCORDING TO SANS 1294-1981
- 2) TOP SURFACE OF MANHOLE COVER TO BE 50 mm ABOVE THE FINISHED GROUND LEVEL EXCEPT IN PAVED AREAS
- 3) SEGMENTS TO BE DRY STACKED

### c) ISOLATION VALVE

ALL VALVES SHALL BE FLANGED.

- 1) VICTAULIC VALVES AND FITTINGS MAY BE USED AS AN ALTERNATIVE TO THE PROPOSED ASSEMBLY.
- 2) WRITTEN PERMISSION FROM THE ENGINEER MUST BE OBTAINED FOR THE INSTALLATION OF ALTERNATIVES.
- 3) THE INSTALLATION MUST BE OF SUCH A NATURE THAT THE REMOVAL OF VALVES AND FITTINGS, FOR MAINTENANCE PURPOSES, CAN EASILY BE EXECUTED.

2 x 3 mmØ MILD STEEL REINFORCING BARS  
(15mm MINIMUM COVER)



TYPICAL VALVE ASSEMBLY

## SCHEDULE

1. FLANGED RESILIENT WEDGE TYPE GATE VALVE
2. FLANGE ADAPTOR COMPATIBLE TO BOTH uPVC/HDPE PIPES
3. uPVC /HDPE PIPE

TYPICAL VALVE BOXES FOR VALVES NOT EXCEEDING 350mm N.B.

|                                                                          |                                                |  |
|--------------------------------------------------------------------------|------------------------------------------------|--|
| CONSULTING ENGINEERS<br>CAPEX DESIGN SECTION<br>SWISS HOUSE<br>7TH FLOOR | DESIGNED<br>B.M.KHUMALO<br>MAY 2017            |  |
|                                                                          | DRAWN<br>B.M.KHUMALO<br>MAY 2017               |  |
|                                                                          | CHECKED<br>J.GUMBO<br>DATE 2013/04/04          |  |
|                                                                          | SIGNATURE<br>[Signature]                       |  |
|                                                                          | ECSA REG. No. 2013/04/04                       |  |
|                                                                          | APPROVED BY<br>T.MPANDAGUTA<br>DATE 2011/01/10 |  |
|                                                                          | SIGNATURE<br>[Signature]                       |  |
|                                                                          | ECSA REG. No. 2011/01/10                       |  |



17 HARRISON STREET  
MARSHALLTOWN  
2107

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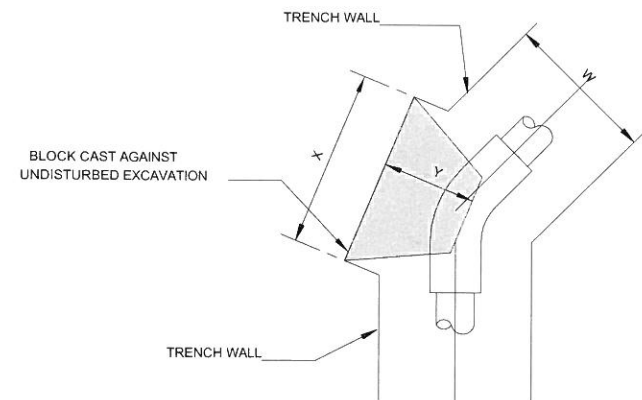
STANDARD DETAIL  
TYPICAL VALVE BOXES FOR VALVES NOT EXCEEDING 350mm N.B.

| AMENDMENTS |      |             |          |      |
|------------|------|-------------|----------|------|
| SCALE      | REV. | DESCRIPTION | APPROVED | DATE |
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DRAWING No. JW100-DET03-W01

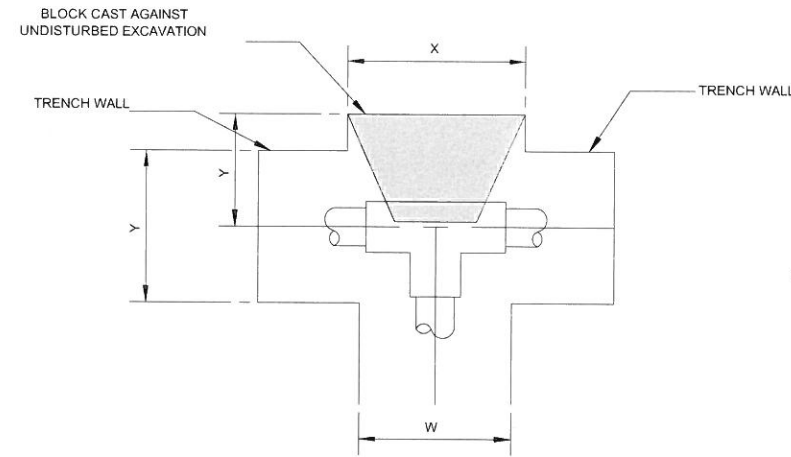
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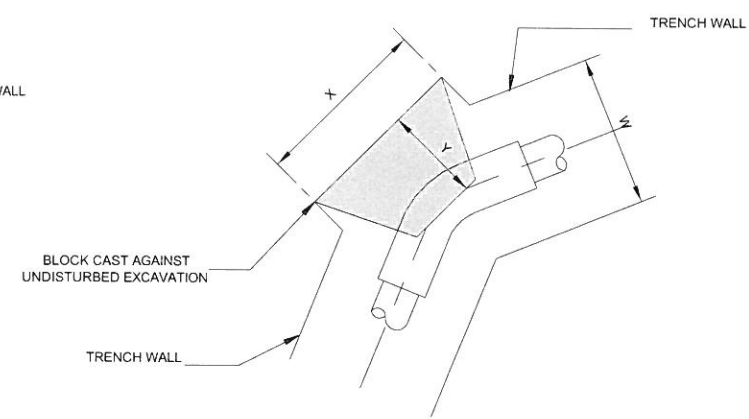
THRUST BLOCK FOR 45° BEND

| NOMINAL<br>DIAMETER<br>ø<br>(mm) | DIMENSIONS |           |           |           |              |
|----------------------------------|------------|-----------|-----------|-----------|--------------|
|                                  | D<br>(mm)  | Z<br>(mm) | X<br>(mm) | Y<br>(mm) | VOL.<br>(m³) |
| 300                              | 1 400      | 700       | 2 000     | 1 000     | 1,400        |
| 250                              | 1 300      | 650       | 1 600     | 800       | 0,800        |
| 200                              | 1 200      | 600       | 1 200     | 600       | 0,430        |
| 150                              | 1 000      | 500       | 1 000     | 500       | 0,250        |
| 100                              | 1 000      | 500       | 350       | 250       | 0,043        |
| 75                               | 800        | 400       | 350       | 200       | 0,028        |



THRUST BLOCK FOR TEE

| NOMINAL<br>DIAMETER<br>ø<br>(mm) | DIMENSIONS |           |           |           |              |
|----------------------------------|------------|-----------|-----------|-----------|--------------|
|                                  | D<br>(mm)  | Z<br>(mm) | X<br>(mm) | Y<br>(mm) | VOL.<br>(m³) |
| 300                              | 1 400      | 700       | 2 700     | 1 300     | 2,550        |
| 250                              | 1 300      | 650       | 2 150     | 1 100     | 1,500        |
| 200                              | 1 200      | 600       | 1 600     | 800       | 0,770        |
| 150                              | 1 000      | 500       | 1 300     | 650       | 0,420        |
| 100                              | 1 000      | 500       | 500       | 300       | 0,075        |
| 75                               | 800        | 400       | 450       | 300       | 0,054        |

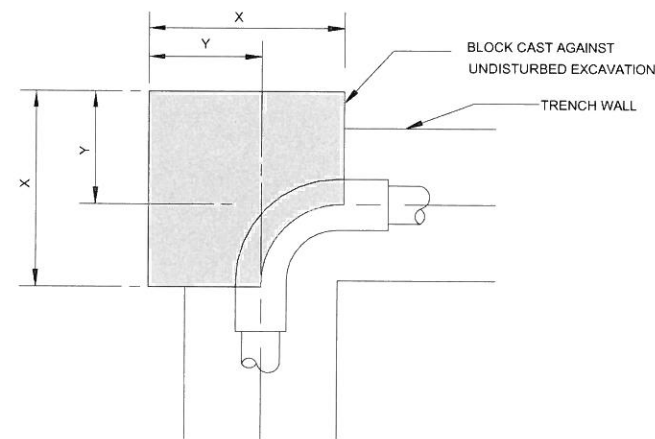


THRUST BLOCK FOR 22 1/2° BEND

| NOMINAL<br>DIAMETER<br>ø<br>(mm) | DIMENSIONS |           |           |           |              |
|----------------------------------|------------|-----------|-----------|-----------|--------------|
|                                  | D<br>(mm)  | Z<br>(mm) | X<br>(mm) | Y<br>(mm) | VOL.<br>(m³) |
| 300                              | 1 400      | 700       | 1 000     | 500       | 0,350        |
| 250                              | 1 300      | 650       | 760       | 400       | 0,200        |
| 200                              | 1 200      | 600       | 600       | 400       | 0,150        |
| 150                              | 1 000      | 500       | 500       | 300       | 0,075        |
| 100                              | 1 000      | 400       | 300       | 200       | 0,024        |
| 75                               | 800        | 300       | 300       | 200       | 0,018        |

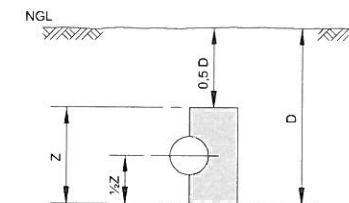
TYPICAL THRUST BLOCK DETAILS

N.T.S.



THRUST BLOCK FOR 90° BEND

| NOMINAL<br>DIAMETER<br>ø<br>(mm) | DIMENSIONS |           |           |           |              |
|----------------------------------|------------|-----------|-----------|-----------|--------------|
|                                  | D<br>(mm)  | Z<br>(mm) | X<br>(mm) | Y<br>(mm) | VOL.<br>(m³) |
| 300                              | 1 400      | 700       | 2 700     | 1 400     | 5,00         |
| 250                              | 1 300      | 650       | 2 150     | 1 100     | 3,00         |
| 200                              | 1 200      | 600       | 1 600     | 800       | 1,54         |
| 150                              | 1 000      | 500       | 1 300     | 700       | 0,80         |
| 100                              | 1 000      | 500       | 500       | 300       | 0,12         |
| 75                               | 800        | 400       | 450       | 300       | 0,08         |



SECTION

NOTES:

- THIS TABLE WAS CALCULATED FOR THRUST BLOCKS IN SANDY SOILS.
- USE 15 MPa CONCRETE.
- HALF THE DEPTH OF THE THRUST BLOCK NEEDS TO BE BELOW THE PIPE AXIS.
- KEEP THE CONCRETE AWAY FROM THE COUPLINGS & THE PIPE JOINTS.
- THRUST BLOCKS FOR PIPE ø LARGER THAN 300mm & HIGHER TEST PRESSURES THAN 18 BAR NEEDS TO BE DESIGNED BY THE ENGINEER.
- THRUST BLOCKS AT PADDLE FLANGES NEEDS TO BE REINFORCED & DESIGNED BY THE ENGINEER.
- IN CASES OF SOFT CLAY & SILTY SANDS, THE ANCOR BLOKS NEED TO BE DESIGNED BY THE ENGINEER.

CONSULTING ENGINEERS  
CAPEX DESIGN SECTION  
SWISS HOUSE  
7TH FLOOR

|               |                    |          |
|---------------|--------------------|----------|
| DESIGNED      | B.M.KHUMALO        | MAY 2017 |
| DRAWN         | B.M.KHUMALO        | MAY 2017 |
| CHECKED       | J.GUMBO            | 18/11/17 |
| SIGNATURE     | <i>[Signature]</i> | 20/13/17 |
| ECSA REG. No. |                    |          |
| APPROVED BY   | T.MPANDAGUTA       |          |
| SIGNATURE     | <i>[Signature]</i> | 20/11/17 |
| ECSA REG. No. |                    |          |

17 HARRISON STREET  
MARSHALLTOWN  
2107

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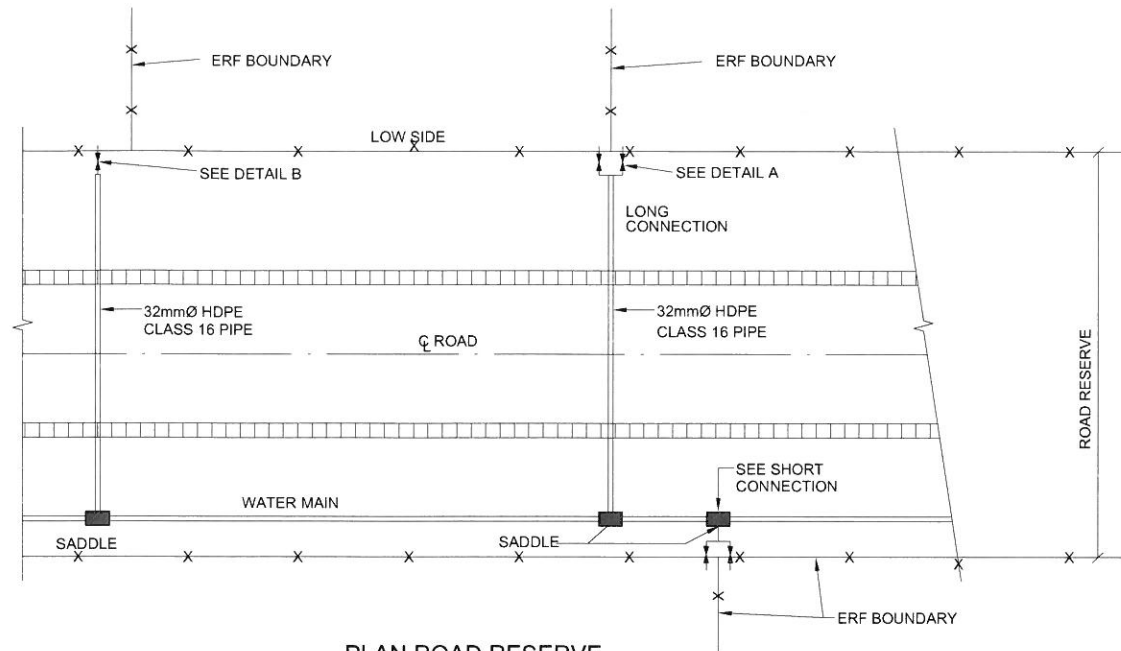
STANDARD DETAIL  
TYPICAL THRUST BLOCK DETAILS

| AMENDMENTS |      |             |          |      |
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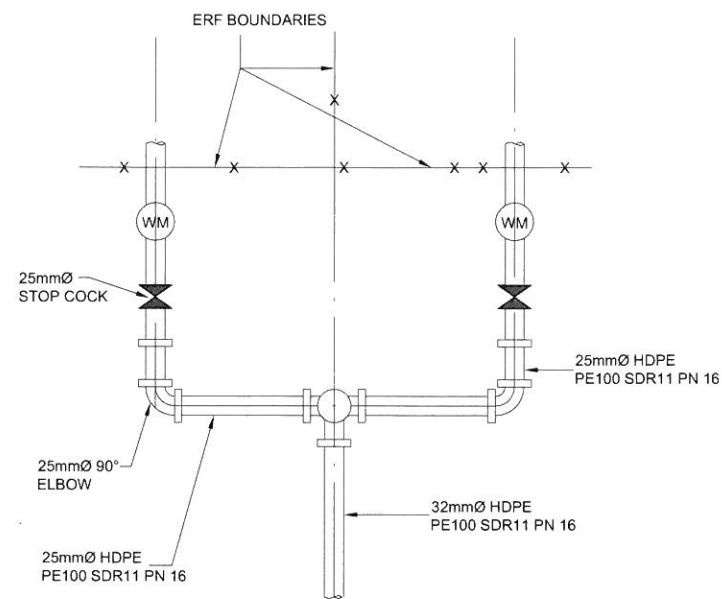
DRAWING No. JW100-DET05-W01

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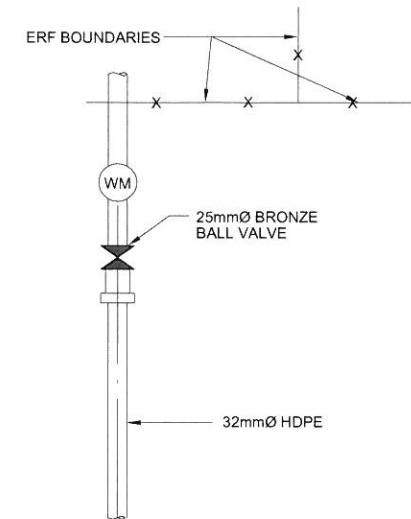




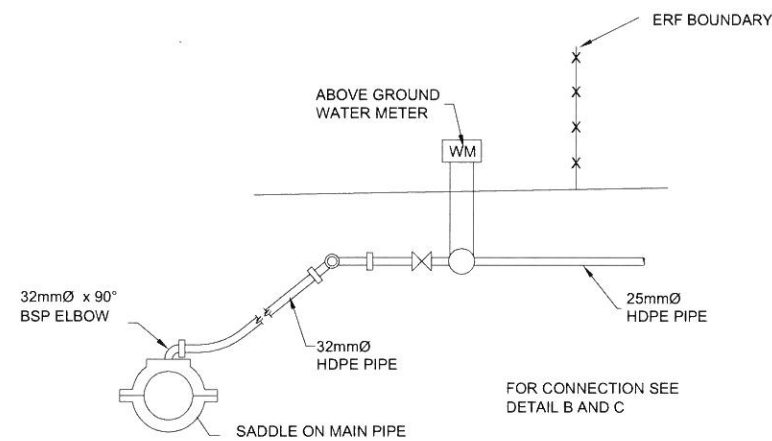
**PLAN ROAD RESERVE**  
N.T.S.  
SEE NOTE 4 FOR INDUSTRIAL CONNECTIONS



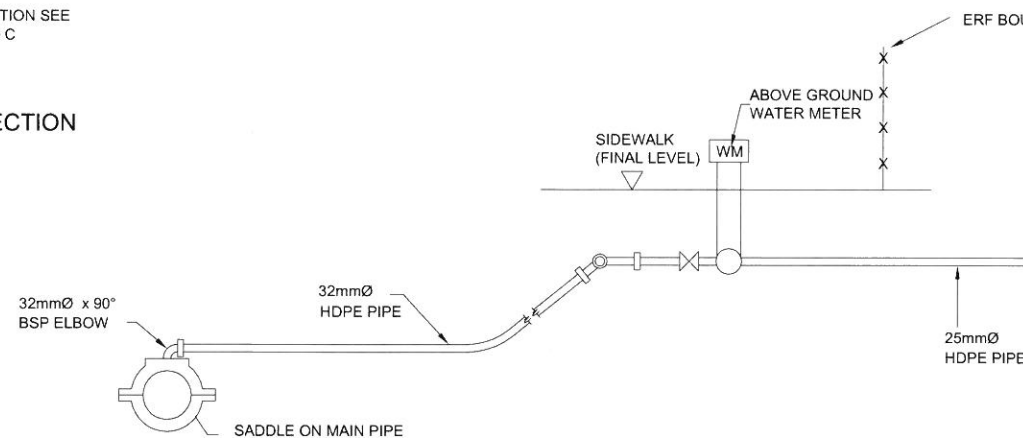
**DETAIL A**  
(LONG DOUBLE ERF CONNECTION)  
N.T.S.  
SEE NOTE 4 FOR INDUSTRIAL CONNECTIONS



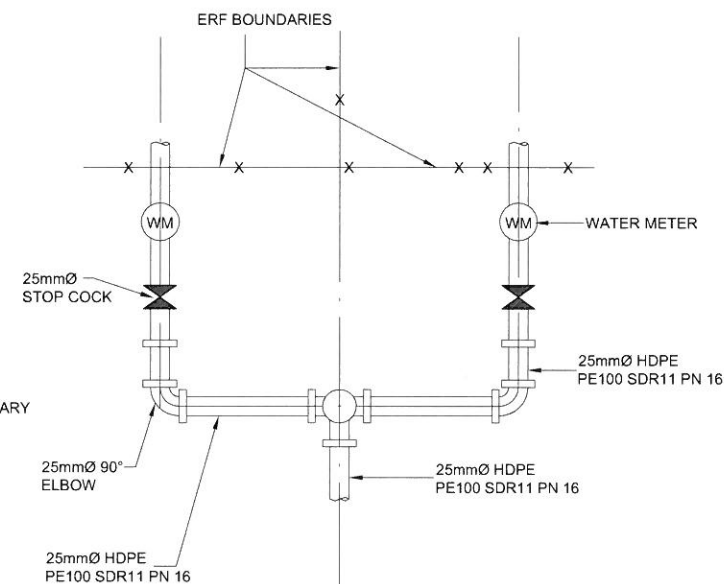
**DETAIL B**  
(LONG AND SHORT SINGLE ERF CONNECTION)  
N.T.S.  
SEE NOTE 4 FOR INDUSTRIAL CONNECTIONS



**SECTION OF SHORT DOUBLE ERF CONNECTION**  
N.T.S.  
SEE NOTE 4 FOR INDUSTRIAL CONNECTIONS



**SECTION OF LONG DOUBLE ERF CONNECTION**  
N.T.S.



**DETAIL C**  
(SHORT DOUBLE ERF CONNECTION)  
N.T.S.  
SEE NOTE 4 FOR INDUSTRIAL CONNECTIONS

CONSULTING ENGINEERS  
CAPEX DESIGN SECTION  
SWISS HOUSE  
7TH FLOOR

|               |                    |          |
|---------------|--------------------|----------|
| DESIGNED      | B.M.KHUMALO        | MAY 2017 |
| DRAWN         | B.M.KHUMALO        | MAY 2017 |
| CHECKED       | J.GUMBO            | DATE     |
| SIGNATURE     | <i>[Signature]</i> |          |
| ECSA REG. No. | 201379044          |          |
| APPROVED BY:  | T.MPANDAGUTA       | DATE     |
| SIGNATURE     | <i>[Signature]</i> |          |
| ECSA REG. No. | 20170150           |          |



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MARSHALLTOWN  
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TEL: (011) 688-1400  
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**Joburg**

STANDARD DETAIL  
WATER ERF CONNECTIONS

AMENDMENTS

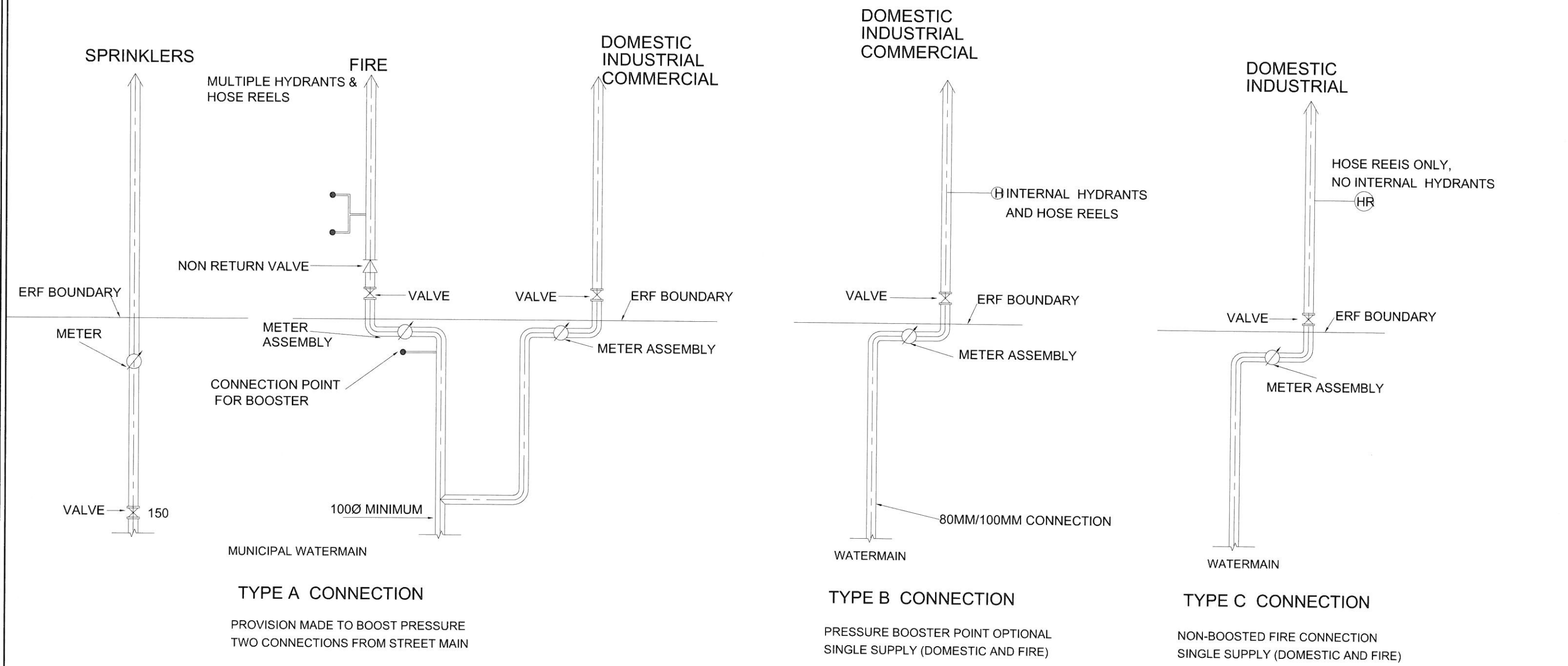
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DRAWING No. JW/100-DET07-W01

PROJECT No. REV.

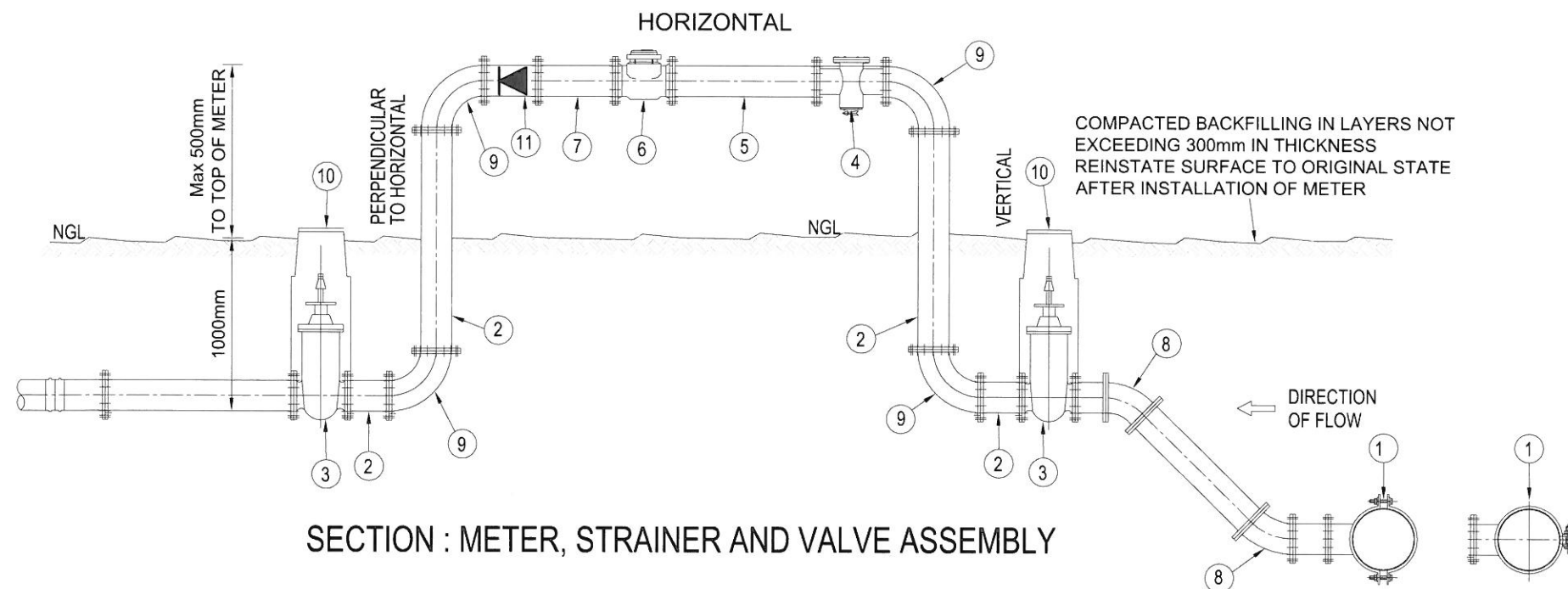
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**SCHEMATIC LAYOUT OF TYPICAL WATER CONNECTIONS FOR DOMESTIC, INDUSTRIAL AND COMMERCIAL PROPERTIES ( BIG CONNECTION)**  
(HOSE REELS, INTERNAL HYDRANTS AND OR SPRINKLERS REQUIRED)

- NOTES:**
1. VALVES TYPE: RESILIENT OR WEDGE TYPE GATE VALVE AS APPLICABLE.
  2. REFER TO METERING GUIDELINES. (LATEST VERSION)
  3. METER ASSEMBLY TO INCLUDE STRAINER, METER AND ISOLATION VALVE.
  4. METER ARRANGEMENT: AS PER DETAIL JW100-DET09W01 FOR SIZES 50-150mm N.B



SECTION : METER, STRAINER AND VALVE ASSEMBLY

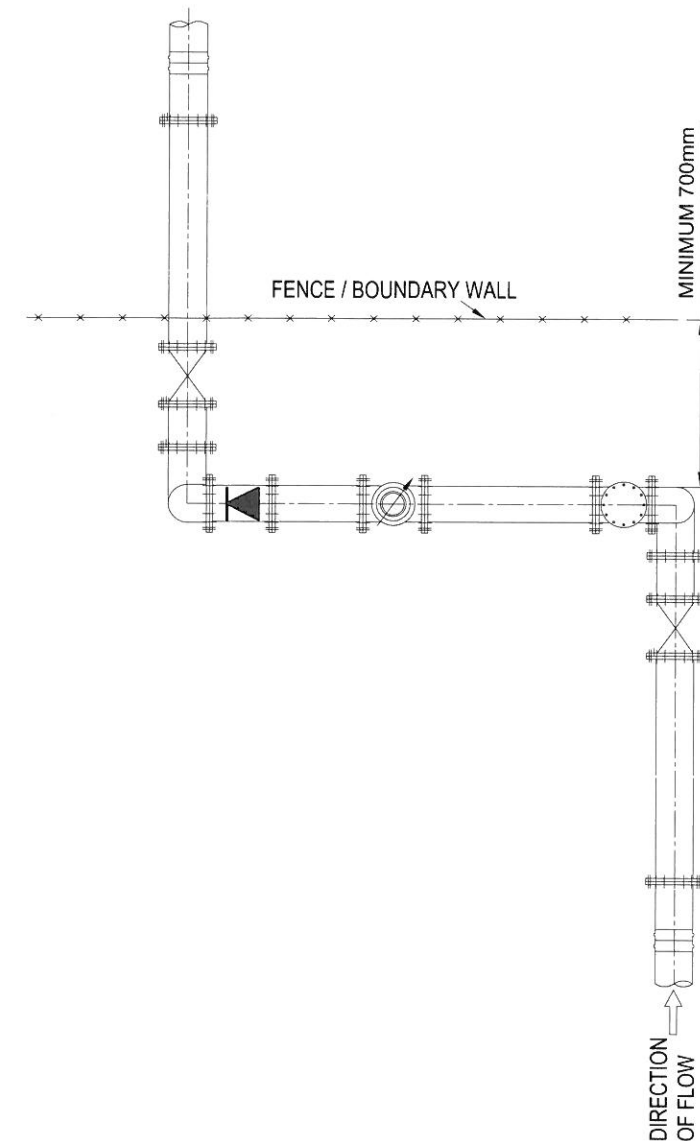
TYPICAL DETAIL FOR METER INSTALLATIONS FOR JOHANNESBURG WATER

PIPE SCHEDULE AND FITTINGS 50 -150mm + DIA. WATER METER INSTALLATION

| ITEM | No OFF | DESCRIPTION                                                                                                       |
|------|--------|-------------------------------------------------------------------------------------------------------------------|
| 1    | 1      | REDUCING TEE (TO BE FLANGED OR FABRICATED TO SUIT EXISTING PIPE MATERIAL)                                         |
| 2    | 4      | FLANGED STEEL PIPE TO SUIT                                                                                        |
| 3    | 2      | RSV (Ø UP TO AND INCLUDING 150mm) NON RISING SPINDLE GATE VALVE, FLANGED ON BOTH ENDS TO JHB WATER SPECIFICATION. |
| 4    | 1      | IN LINE STRAINER, FLANGED BOTH ENDS                                                                               |
| 5    | 1      | 5 X Dia. STEEL FLANGED DISTANCE PIECE,(50mm : 5xDia STEEL FLANGED DISTANCE PIECE MINIMUM 250mm)                   |
| 6    | 1      | WPD WATER METER FLANGED BOTH ENDS.                                                                                |
| 7    | 1      | 3 X Dia . STEEL FLANGED DISTANCE PIECE,(50mm : 3xDia STEEL FLANGED DISTANCE PIECE MINIMUM 150mm)                  |
| 8    | 2      | FLANGED 45° BEND                                                                                                  |
| 9    | 4      | FLANGED 90° BEND                                                                                                  |
| 10   | 1      | JOHANNESBURG WATER VALVE BOXES WITH BLUE LID, TO SUIT VALVE SIZE TYPE 5 TO SANS 1808..                            |
| 11   | 1      | NON RETURN VALVE                                                                                                  |

NOTES:

- ALL FLANGES TO TABLE 1600/3.
- ALL FLANGES ABOVE GROUND MUST HAVE ONE SHEARING BOLTS PER FLANGE ARRANGEMENT.
- ALL DIMENSIONS TO BE CHECKED BEFORE MANUFACTURE/FITTING.
- ALL PIPES AND FITTINGS TO HAVE MINIMUM WORKING PRESSURE OF 16 BAR.
- LENGTH OF ITEM 5 TO BE AT LEAST 5 X DIA.AND ITEM 7 TO AT LEAST 3 X DIA.
- ALL BURIED MILD STEEL FLANGES AND COUPLINGS MUST BE CORROSION PROTECTED USING DENSO PRODUCTS. OR SIMILAR APPROVED PRODUCT USED FOR CATHODIC PROTECTION TO BE SUITABLE FOR MATERIAL PROTECTION.
- METER ARRANGEMENT APPLICABLE TO ALL NEW INSTALLATIONS SUCH AS INDUSTRIAL/ COMMERCIAL/ TOWNHOUSE/COMPLEXES/ FIRE INSTALLATIONS AS APPLICABLE.
- ALL STEEL PIPE PIECES FOR ABOVE GROUND INSTALLATIONS MUST BE LINED INTERNALLY AND COATED EXTERNALLY WITH NON-TAINING FUSION BONDED POWDERED EPOXY COATING (SANS 1217 TYPE 2) WITH MINIMUM 250 MICRONS AND MAXIMUM 600 MICRONS COAT FILM THICKNESS. FOR FLANGED DISTANCE PIECES AND FLANGED BENDS A UV PROTECTOR MUST BE INCORPORATED ON THE EXTERNAL COATING. THE FINAL COLOUR FOR ALL PIPES AND FITTINGS SHALL BE CORNFLOWER BLUE.
- FOR ALL OTHER SPECIFICATIONS NOT COVERED ABOVE , REFER TO THE JW METERING GUIDELINES.



CONSULTING ENGINEERS  
CAPEX DESIGN SECTION  
SWISS HOUSE  
7TH FLOOR

|               |                    |               |
|---------------|--------------------|---------------|
| DESIGNED      | B.M.KHUMALO        | MAY 2017      |
| DRAWN         | B.M.KHUMALO        | MAY 2017      |
| CHECKED       | J.GUMBO            | DATE: 18/7/17 |
| SIGNATURE     | <i>[Signature]</i> |               |
| ECSA REG. No. | 201370044          |               |
| APPROVED BY:  | T.M.PANDAGUTA      | DATE: 20/7/17 |
| SIGNATURE     | <i>[Signature]</i> |               |
| ECSA REG. No. | 201170150          |               |



17 HARRISON STREET  
MARSHALLTOWN  
2107

TEL: (011) 688-1400  
FAX: (011) 688-1529

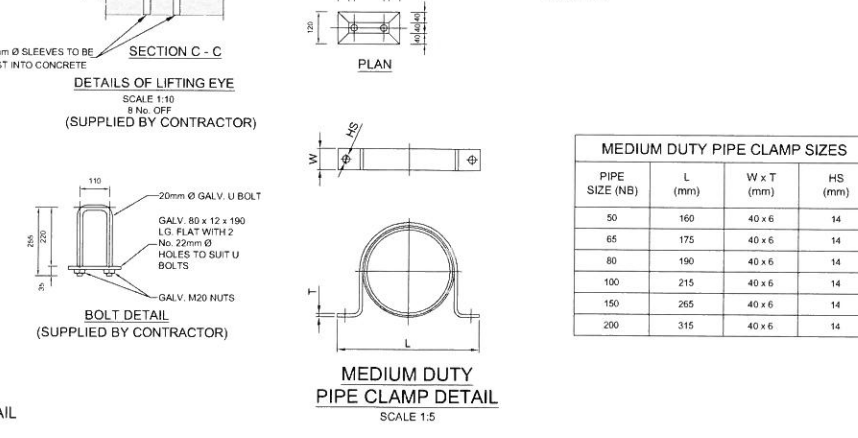
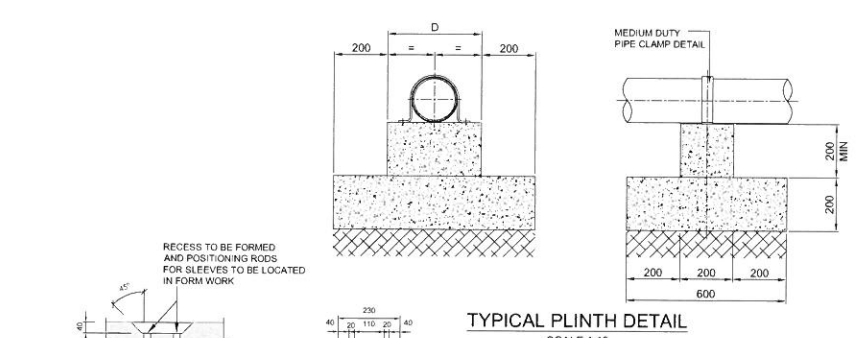
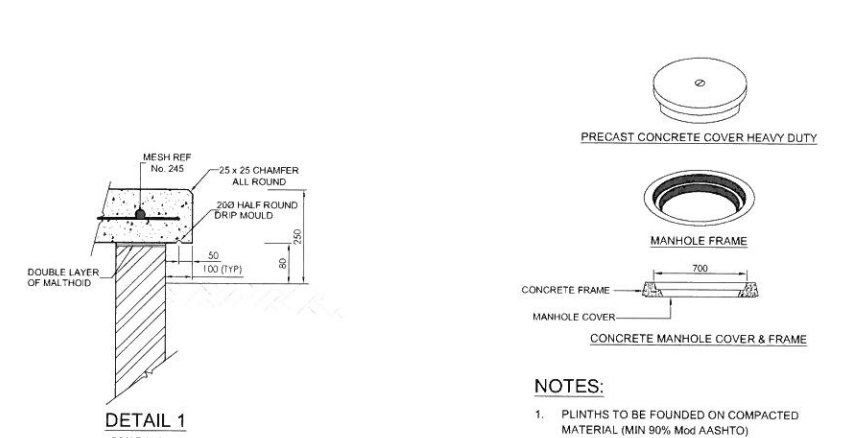
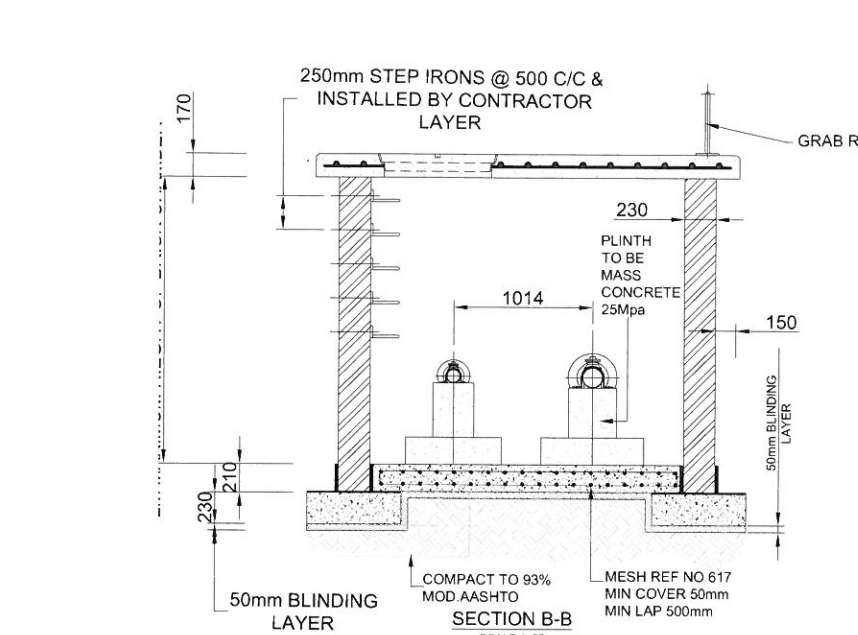
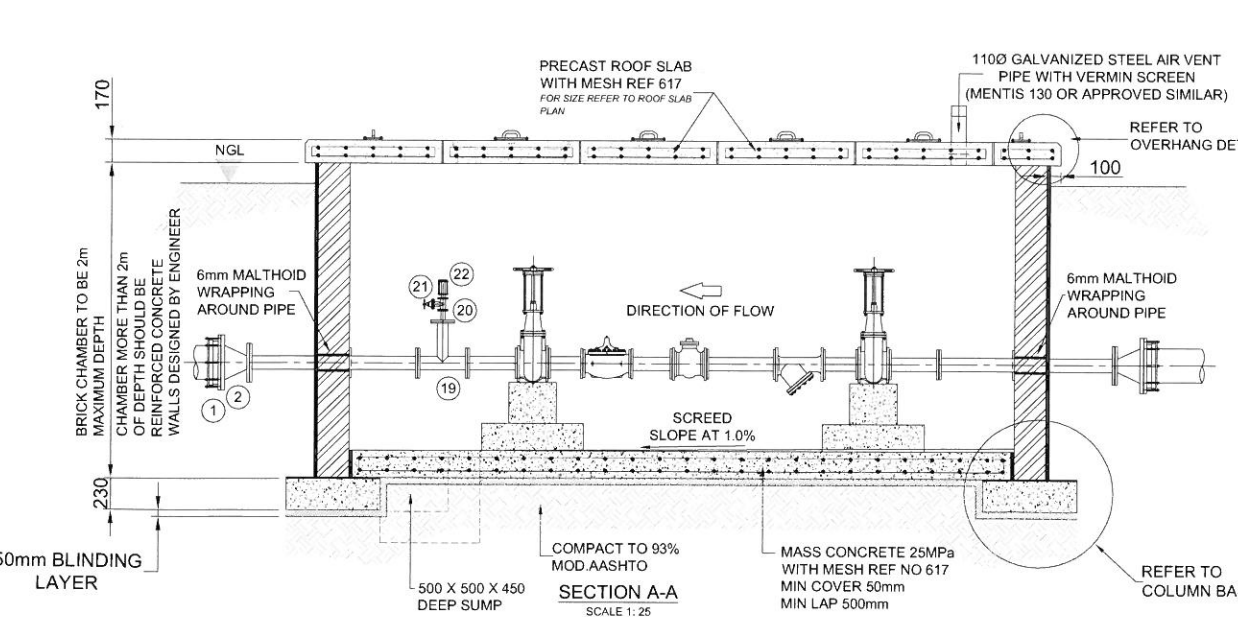
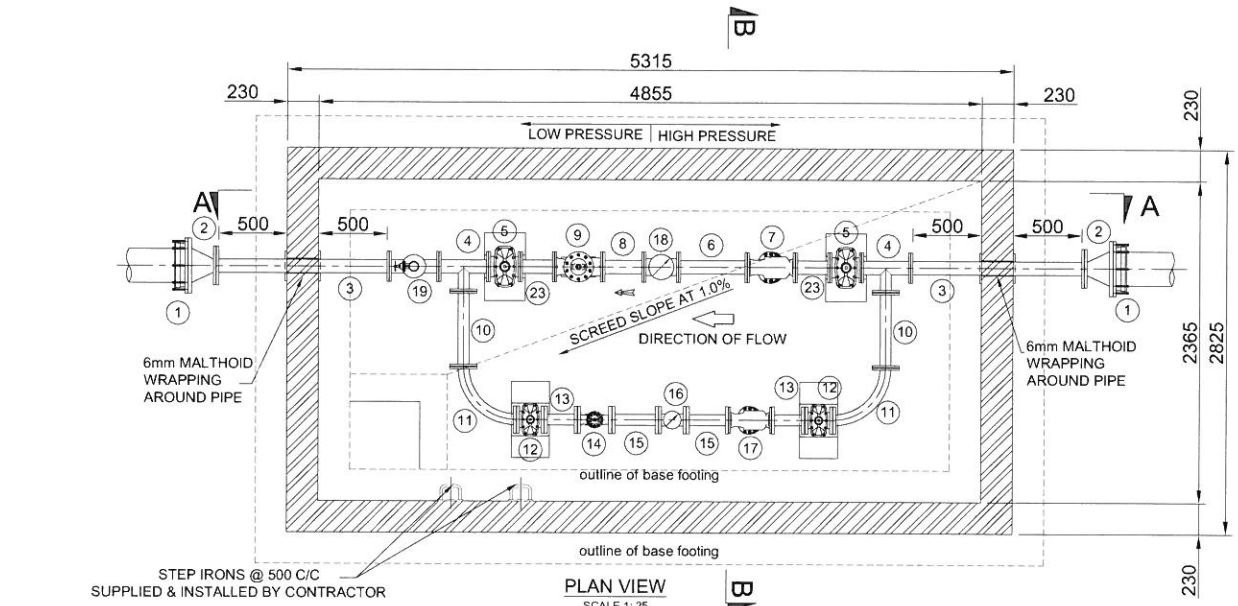
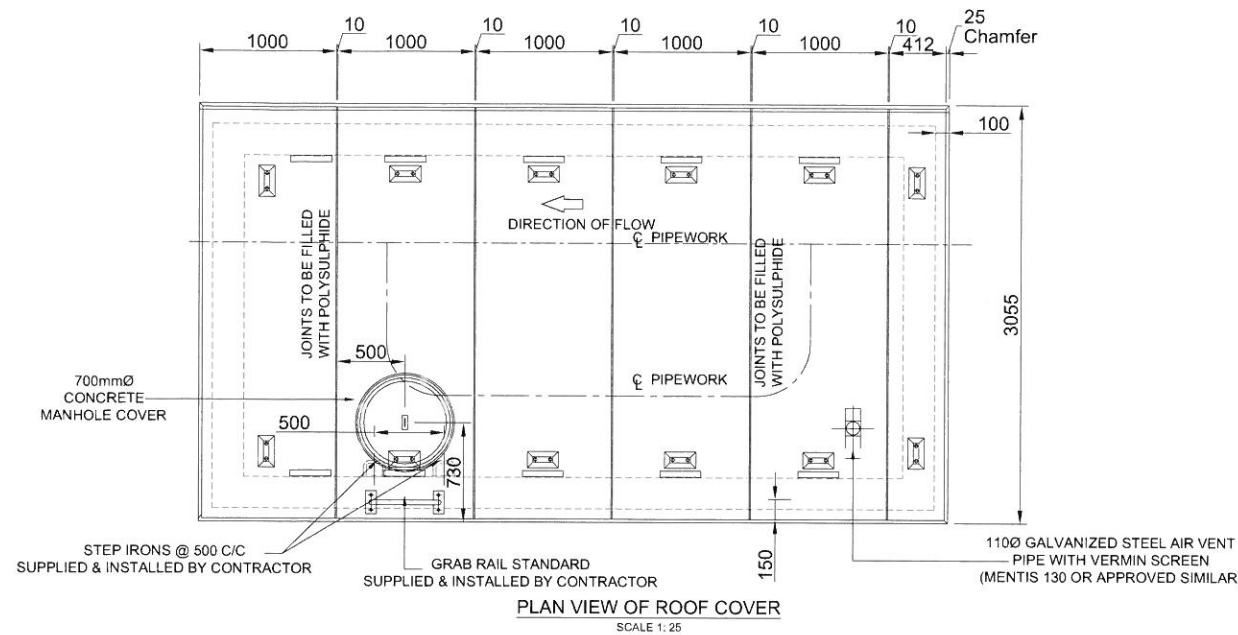
**Johburg**

STANDARD DETAIL  
ABOVE GROUND WATER METER UP TO 150mm N.B

| AMENDMENTS |      |             |          |      |
|------------|------|-------------|----------|------|
| SCALE      | REV. | DESCRIPTION | APPROVED | DATE |
|            |      |             |          |      |
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DRAWING No.JW100-DET09-W01

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| PROJECT No.        | 1       | REV. |
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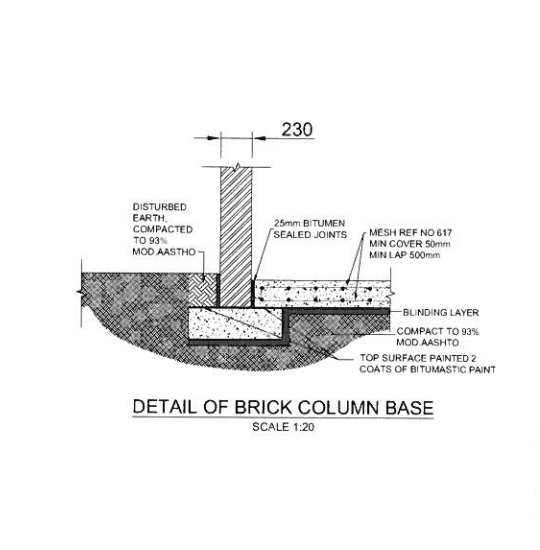


| PRESSURE REDUCING VALVE |                                                                                                                             |            |          |              |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------|----------|--------------|
| ITEM NR                 | DESCRIPTION                                                                                                                 | DIMENSIONS | QUANTITY | FLANGE TABLE |
| 1                       | 2500 FLANGE ADAPTOR FOR STEEL/UPVC CLASS 16 PIPE                                                                            |            | 2        |              |
| 2                       | 2500/150 FLANGED REDUCER                                                                                                    |            | 2        |              |
| 3                       | 1500 DOUBLE FLANGED STEEL PIPE WITH A PRESSURE TRANSMITTER (EXCLUDING PRESSURE GAUGE) AND PUDDLE FLANGE                     |            | 2        |              |
| 4                       | 150 x 100 FLANGED REDUCING TEE                                                                                              |            | 2        |              |
| 5                       | 1500 NB ISOLATING WEDGE TYPE GATE VALVE                                                                                     |            | 2        |              |
| 6                       | 1500 DOUBLE FLANGED DISTANCE PIECE WITH CLAMP PRESSURE TRANSMITTER                                                          |            | 1        |              |
| 7                       | 1500 FLANGED STRAINER                                                                                                       |            | 1        |              |
| 8                       | 1500 DOUBLE FLANGED DISTANCE PIECE WITH CLAMP                                                                               |            | 1        |              |
| 9                       | 1500 PRESSURE REDUCING VALVE                                                                                                |            | 1        |              |
| 10                      | 1000 DOUBLE FLANGED DISTANCE PIECE                                                                                          |            | 2        |              |
| 11                      | 1000 x 90° FLANGED STEEL BEND                                                                                               |            | 2        |              |
| 12                      | 1000 NB ISOLATING WEDGE TYPE GATE VALVE                                                                                     |            | 2        |              |
| 13                      | 1000 DOUBLE FLANGED DISTANCE PIECE                                                                                          |            | 2        |              |
| 14                      | 1000 PRESSURE REDUCING VALVE                                                                                                |            | 1        |              |
| 15                      | 1000 DOUBLE FLANGED DISTANCE PIECE                                                                                          |            | 2        |              |
| 16                      | 1000 MEINECKE TURBINE COSMOS WPD WATER METER (OR SIMILAR APPROVED), PN16, BOTH ENDS FLANGED TO SABS 1123 - 1600/3           |            | 1        |              |
| 17                      | 1000 FLANGED STRAINER                                                                                                       |            | 1        |              |
| 18                      | 1000 MEINECKE TURBINE COSMOS WPD WATER METER (OR SIMILAR APPROVED), PN16, BOTH ENDS FLANGED TO SABS 1123 - 1600/3           |            | 2        |              |
| 19                      | 150NB x 80NB FLANGED UNEQUAL TEE (AIR ACCUMULATOR), FLANGES DRILLED TO SABS 1123-1600/3                                     |            | 1        |              |
| 20                      | FLANGED RISER PIECE, ONE END FLANGED TO SUIT AIR VALVE, OTHER END FLANGED TO SUIT 80NB, FLANGES DRILLED TO SABS 1123-1600/3 |            | 1        |              |
| 21                      | 80NB FLANGED, PN 16, RSV, (TO JOHANNESBURG WATER SPECIFICATIONS)                                                            |            | 1        |              |
| 22                      | 80mm VENT-O-MAT AIR VALVE TYPE 080 REX 1601                                                                                 |            | 1        |              |
| 23                      | 1500 DOUBLE FLANGED DISTANCE PIECE                                                                                          |            | 2        |              |

NOTES:

- PLINTHS TO BE FOUND ON COMPACTED MATERIAL (MIN 90% MOD AASHTO)

| PIPE POSITIONING ON PLINTHS |              |             |     |     |
|-----------------------------|--------------|-------------|-----|-----|
| PIPE SIZE (NB)              | PIPE CRS 'A' | PLINTH SIZE |     |     |
|                             |              | 'B'         | 'C' | 'D' |
| 50                          | 165          | 600         | 400 | 200 |
| 65                          | 185          | 650         | 450 | 200 |
| 80                          | 195          | 650         | 450 | 300 |
| 100                         | 220          | 750         | 500 | 300 |
| 160                         | 275          | 900         | 600 | 350 |
| 200                         | 330          | 1060        | 700 | 400 |



GENERAL NOTES:

- ALL BRICKWORK TO BE PLASTERED EXTERNALLY AND INTERNALLY TO ENSURE WATER-TIGHT CHAMBER. USE ENGINEERING BRICKS.
- CONCRETE FOR THE BASE AND ROOF SLAB TO BE GRADE 25/19. COVER TO REINFORCEMENT = 30mm.
- ALL FITTINGS TO BE PAINTED WITH COPON KSI88 EPOXY PAINT. AFTER INSTALLATION 5mm BFOV REPAIR WRAP COATING.
- ALL FLANGES TO TABLE 1600 OF SABS 1123. PIPES TO BE WRAPPED WITH 6mm THICK MALTHOID WRAPPING THROUGH WALLS. CHAMBER DIMENSION AND DEPTH ARE SUBJECT TO CHANGE UPON CONFIRMATION OF THE EXISTING PIPE LOCATION AND DEPTH. FITTINGS ARE SUBJECT TO CHANGE UPON CONFIRMATION OF THE EXISTING PIPE MATERIALS.
- EVERY CHAMBER MUST HAVE A 100mm DIAMETER VENT PIPE WITH MOSQUITO GAUZE. DISTANCE TO BE PROVIDED AS DIRECTED BY THE ENGINEER AT SITE.
- VALVE KEY HOLES TO BE PROVIDED IN THE ROOF ABOVE EVERY VALVE OR AS DIRECTED. DEPTH OF CHAMBERS 2m MAXIMUM HEIGHT OF BRICK CHAMBER.
- ENGINEERING BRICKS WITH BRICK-FORCE EVERY 3rd COURSE FOR ALL CHAMBERS.
- ROOF SLAB TO BE MADE OF PRECAST PANELS. 230mm BRICK-WALL OF 1m HIGH FROM BASE SLAB.

PRESSURE REDUCING VALVE (CLAYTON + ANTI CAVITATION RING)

ALL PVP SHALL COMPLY WITH FOLLOWING SPECIFICATIONS:

- 680G-01ABCS: x101 PRESSURE REDUCING VALVES
- DUCTILE IRON BODY AND COVER WITH STAINLESS STEEL TRIM
- FUSION BONDED EPOXY COATED INTERNALLY AND EXTERNALLY TO A MINIMUM OF 250 MICRONS PN 25 RATED.
- COMPLETE WITH FULLY ADJUSTABLE CRD PRESSURE REDUCING PILOT VALVE (ADJUSTABLE DOWNSTREAM BETWEEN 2:1 BARS AND 21 BARS).
- WITH PRESSURE GAUGE, OPENING AND CLOSING SPEED CONTROLS AND x101 VISION POSITION INDICATOR
- MUST BE FLANGED AND DRILLED TO SABS 1123 TABLE 1600, INCLUDING CUTTING OF PIPES COUPLING etc.
- MUST BE COMPLETE WITH H-TYPE STRAINER-DUCTILE IRON BODY AND COVER-STAINLESS STEEL REMOVABLE IN A DUCTILE IRON FUSION BONDED EPOXY COATED FRAME 2mm MESH-FUSION BONDED EPOXY INTERNALLY AND EXTERNALLY TO A MINIMUM OF 250mm MICRON - PN 25 RATED FLANGED AND DRILLED TO SABS 1123 TABLE 1600 FACE TO FACE = 900mm
- WALLS TO BE REINFORCEMENT CONCRETE.

|                |                    |                 |
|----------------|--------------------|-----------------|
| DESIGNED       | B.M.KHUMALO        | MAY 2017        |
| DRAWN          | B.M.KHUMALO        | MAY 2017        |
| CHECKED        | J.GUMBO            | DATE: 18/1/17   |
| SIGNATURE      | <i>[Signature]</i> | DATE: 20/3/2017 |
| APPROVED BY    | T.MPANDAGUTA       | DATE: 24/1/2017 |
| SIGNATURE      | <i>[Signature]</i> | DATE: 24/1/2017 |
| ECOSA REG. No. | 201370044          |                 |

**Johannesburg Water**

17 HARRISON STREET  
MARSHALLTOWN  
2107

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FAX: (011) 688-1529

**Joburg**

STANDARD DETAIL  
TYPICAL 1000 PRESSURE REDUCING VALVE CHAMBER

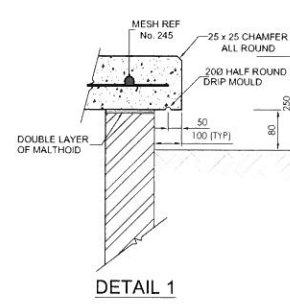
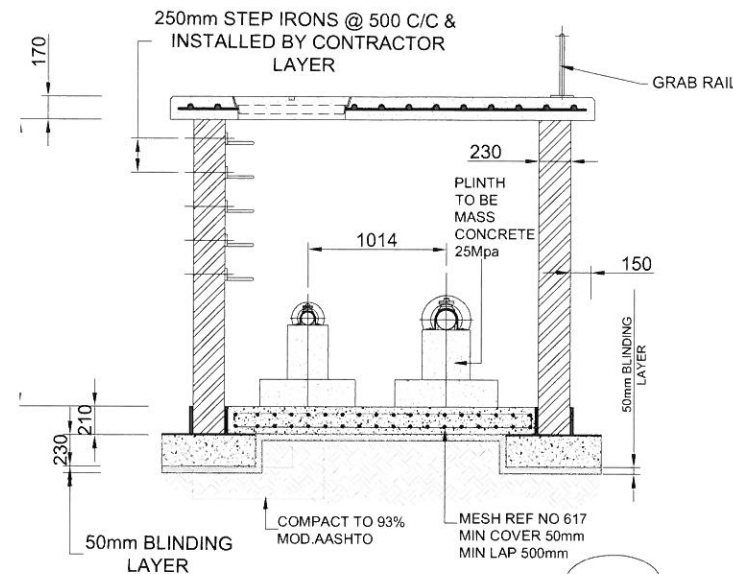
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NOTES:

1. PLINTHS TO BE FOUNDED ON COMPACTED MATERIAL (MIN 90% Mod AASHTO)

| PRESSURE REDUCING VALVE |                                                                                                                            |                                                                                     |          |  | FLANGE TABLE |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|--|--------------|
| ITEM NR.                | DESCRIPTION                                                                                                                | DIMENSIONS                                                                          | QUANTITY |  |              |
| 1                       | 2500 FLANGE ADAPTOR FOR STEEL/PVC CLASS 16 PIPE                                                                            |  | 2        |  |              |
| 2                       | 250x150 FLANGED REDUCER                                                                                                    |  | 2        |  |              |
| 3                       | 1500 DOUBLE FLANGED STEEL PIPE WITH A PRESSURE TRANSMITTER (EXCLUDING PRESSURE GAUGE AND PUDDLE FLANGE)                    |  | 2        |  |              |
| 4                       | 150 x 100 FLANGED REDUCING TEE                                                                                             |  | 2        |  |              |
| 5                       | 1500 NB ISOLATING WEDGE TYPE GATE VALVE                                                                                    |  | 2        |  |              |
| 6                       | 1500 DOUBLE FLANGED DISTANCE PIECE WITH CLAMP PRESSURE TRANSMITTER                                                         |  | 1        |  |              |
| 7                       | 1500 FLANGED STRAINER                                                                                                      |  | 1        |  |              |
| 8                       | 1500 DOUBLE FLANGED DISTANCE PIECE WITH CLAMP                                                                              |  | 1        |  |              |
| 9                       | 1500 PRESSURE REDUCING VALVE                                                                                               |  | 1        |  |              |
| 10                      | 1000 DOUBLE FLANGED DISTANCE PIECE                                                                                         |  | 2        |  |              |
| 11                      | 1000 x 90° FLANGED STEEL BEND                                                                                              |  | 2        |  |              |
| 12                      | 1000 NB ISOLATING WEDGE TYPE GATE VALVE                                                                                    |  | 2        |  |              |
| 13                      | 1000 DOUBLE FLANGED DISTANCE PIECE                                                                                         |  | 2        |  |              |
| 14                      | 1000 PRESSURE REDUCING VALVE                                                                                               |  | 1        |  |              |
| 15                      | 1000 DOUBLE FLANGED DISTANCE PIECE                                                                                         |  | 2        |  |              |
| 16                      | 1000 MEINCKE TURBINE COSMOS WPD WATER METER (OR SIMILAR APPROVED), PN16, BOTH ENDS FLANGED TO SABS 1123 - 1600/3.          |  | 1        |  |              |
| 17                      | 1000 FLANGED STRAINER                                                                                                      |  | 1        |  |              |
| 18                      | 1000 MEINCKE TURBINE COSMOS WPD WATER METER (OR SIMILAR APPROVED), PN16, BOTH ENDS FLANGED TO SABS 1123 - 1600/3.          |  | 2        |  |              |
| 19                      | 150NB x 80NB FLANGED UNEQUAL TEE (AIR ACCUMULATOR), FLANGES DRILLED TO SABS 1123-1600/3                                    |  | 1        |  |              |
| 20                      | FLANGED RISER PIPE, ONE END FLANGED TO SUIT AIR VALVE, OTHER END FLANGED TO SUIT 80NB, FLANGES DRILLED TO SABS 1123-1600/3 |  | 1        |  |              |
| 21                      | 80NB FLANGED, PN16, RSV: (TO JOHANNESBURG WATER SPECIFICATIONS)                                                            |  | 1        |  |              |
| 22                      | 80mm VENT-Q-MAT AIR VALVE: TYPE 080 RDX 1601                                                                               |  | 1        |  |              |
| 23                      | 1500 DOUBLE FLANGED DISTANCE PIECE                                                                                         |  | 2        |  |              |

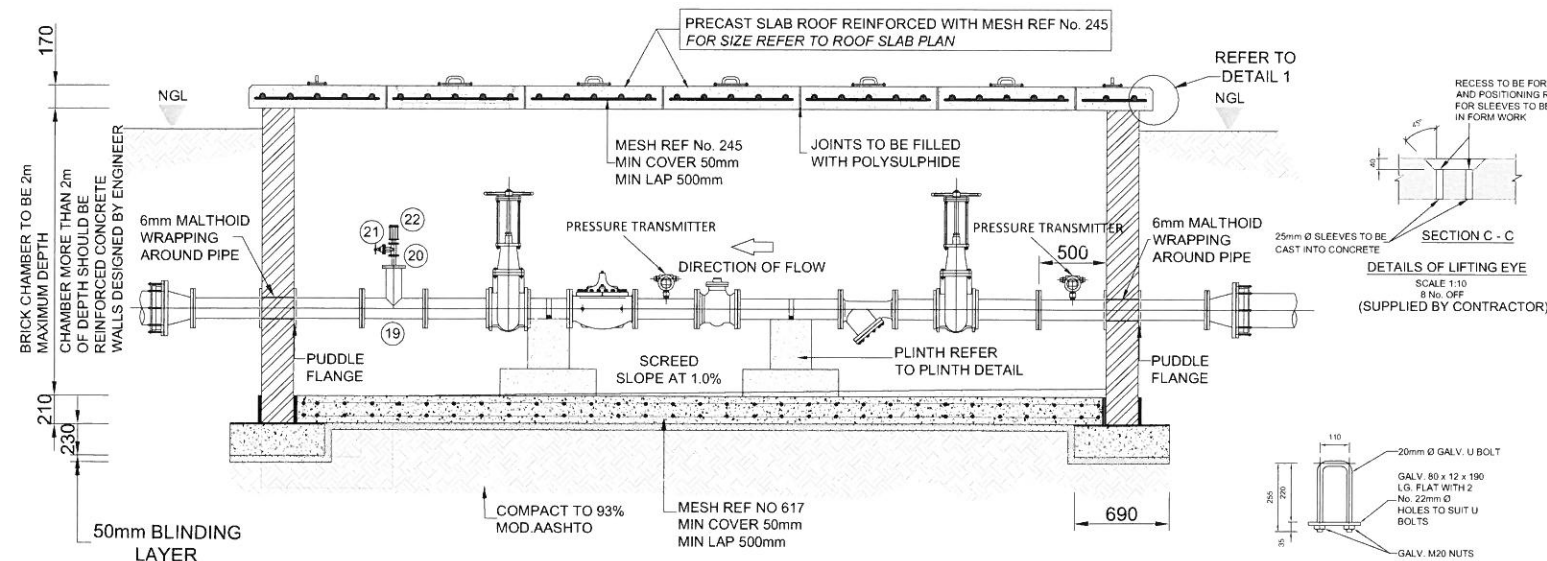
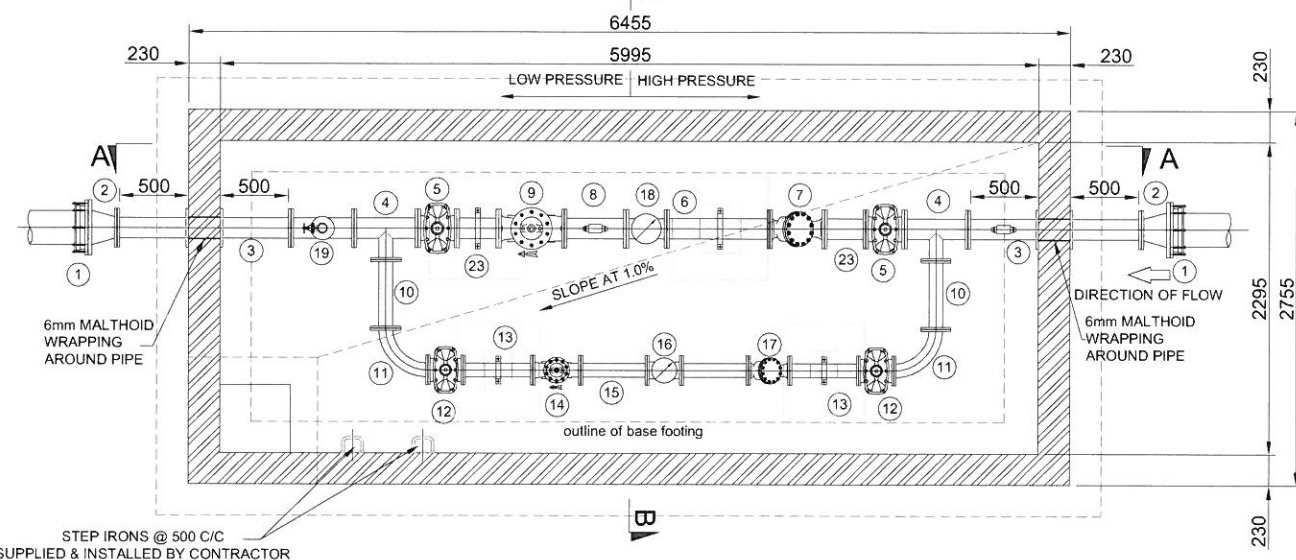
**GENERAL NOTES:**

- a. ALL BRICKWORK TO BE PLASTERED EXTERNALLY AND INTERNALLY TO ENSURE WATER/TIGHT CHAMBER. USE ENGINEERING BRICKS.
- b. CONCRETE FOR THE BASE AND ROOF SLAB TO BE GRADE 25/19 CONCRE TO REINFORCEMENT - 30mm.
- c. ALL FITTINGS TO BE PAINTED WITH COPON KS308 EPOXY PAINT. AFTER INSTALLATION 5mm MINIMUM REPAIR WRAP COAT WALLS.
- d. ALL FLANGES TO TABLE 1600 OF SANS 1123.
- e. PIPES TO BE WRAPPED WITH 6mm THICK FIBREGLASS REPAIR WRAP COAT WALLS.
- f. CHAMBER DIMENSION AND DEPTH ARE SUBJECT TO CHANGE UPON CONFIRMATION OF THE EXISTING PIPE LOCATION AND DEPTH.
- g. FITTINGS ARE SUBJECT TO CHANGE UPON CONFIRMATION OF THE EXISTING PIPE MATERIALS.
- h. EVERY CHAMBER MUST HAVE A 100mm DIAMETER VENT PIPE WITH MOSQUITO GAUZE. REPAIRS TO BE PROVIDED AS DIRECTED BY THE ENGINEER AT SITE.
- i. VALVE KEY HOLES TO BE PROVIDED IN THE BASE OF EVERY CHAMBER AND IS DIRECTED.
- j. DEPTH OF CHAMBERS 2m MAXIMUM HEIGHT OF BRICK CHAMBER.
- k. ENGINEERING BRICKS WITH BRICK/FORCE EVERY 3rd COURSE FOR ALL CHAMBERS.
- l. ROOF SLAB TO BE MADE OF PRECAST PANELS.
- m. 230mm BRICK-VAULT OF 1m HIGH FROM BASE SLAB.

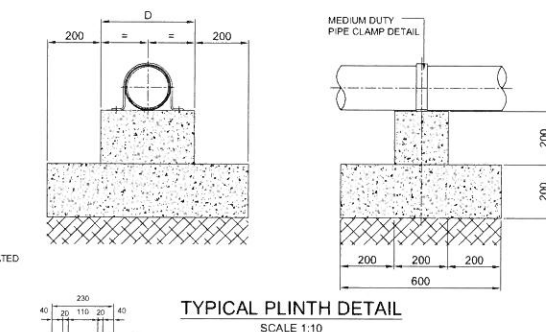
**PRESSURE REDUCING VALVE/CLAYTON / ANTI CAVITATION RANGE**

ALL PRV SHALL COMPLY WITH FOLLOWING SPECIFICATIONS

- a. 6505-014BCE/101 PRESSURE REDUCING VALVE
- b. CAST IRON BODY AND COVER WITH STAINLESS STEEL TRIM
- c. FULLY BONDED EPOXY COATED INTERNALLY AND EXTERNALLY TO A MINIMUM OF 250 MICRONS PH 25 RATED
- d. COME WITH PRESSURE ADJUSTABLE CORD PRESSURE REDUCED PILOT VALVE (ADJUSTABLE DOWNSTREAM BETWEEN 2.1 BAR TO 1.1 BAR)
- e. WITH PRESSURE GAUGE, OPENING AND CLOSING SPEED CONTROLS AND x101 VISUAL INDICATOR
- f. MUST BE FLANGED AND DRILLED TO SANS 1123 TABLE 1600. INCLUDING CUTTING OF PIPES AND NO G
- g. MUST BE COMPLETE WITH H-TYPE STRAINER-DUCTILE IRON BODY AND COVER WITH STAINLESS STEEL TRIM (W/ A DUCTILE IRON FUSION BONDED EPOXY COATED FRAME 2mm MESH-FUSION BONDED EPOXY COATED INTERNALLY AND EXTERNALLY TO A MINIMUM OF 250microns mcr- PH 25 RATED FLANGED AND DRILLED TO SANS 1123 TABLE 1600
- h. WELDS TO BE REINFORCEMENT CONCRETE

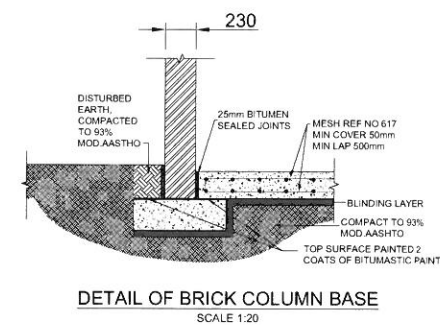


SECTION A-A  
SCALE 1:25



**TYPICAL PLINTH DETAIL**  
SCALE 1:10

| PIPE SIZE (NB) | L (mm) | W x T (mm) | HS (mm) |
|----------------|--------|------------|---------|
| 50             | 160    | 40 x 6     | 14      |
| 65             | 175    | 40 x 6     | 14      |
| 80             | 190    | 40 x 6     | 14      |
| 100            | 215    | 40 x 6     | 14      |
| 150            | 265    | 40 x 6     | 14      |
| 200            | 315    | 40 x 6     | 14      |



DETAIL OF BRICK COLUMN BASE  
SCALE 1:20

|                                                                          |               |                   |               |
|--------------------------------------------------------------------------|---------------|-------------------|---------------|
| CONSULTING ENGINEERS<br>CAPEX DESIGN SECTION<br>SWISS HOUSE<br>7TH FLOOR | DESIGNED      | B.M KHUJMALO      | MAY 2017      |
|                                                                          | DRAWN         | B.M KHUJMALO      | MAY 2017      |
|                                                                          | CHECKED       | J.GUMBO           | DATE: 14/7/17 |
|                                                                          | SIGNATURE     |                   | 14/6/17       |
|                                                                          | ECSA REG. No. | 201370844         |               |
| APPROVED BY:                                                             | T.MPANGAGUTA  | DATE              |               |
|                                                                          | SIGNATURE     | Thompson M. Gumbo |               |
|                                                                          | ECSA REG. No. | 201170150         |               |



17 HARRISON STREET  
MARSHALLTOWN  
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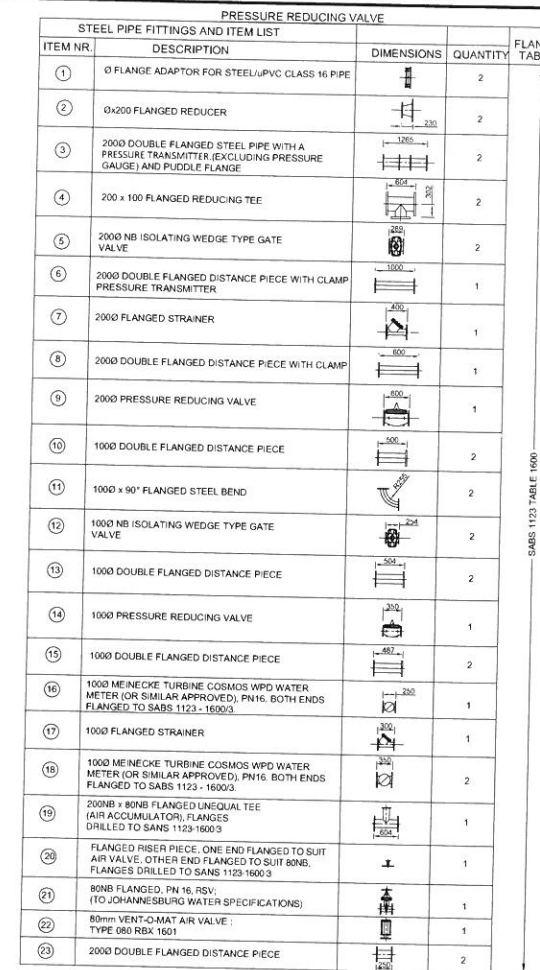
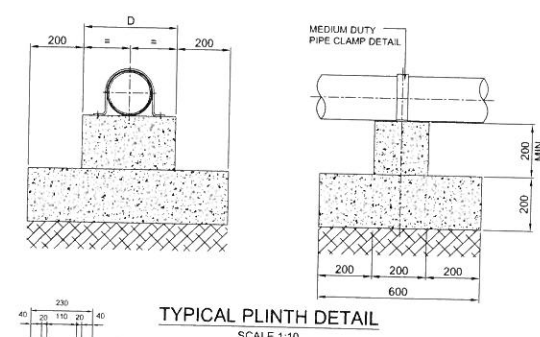
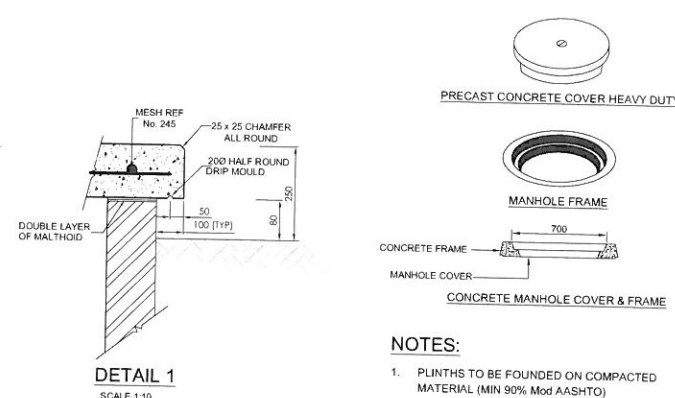
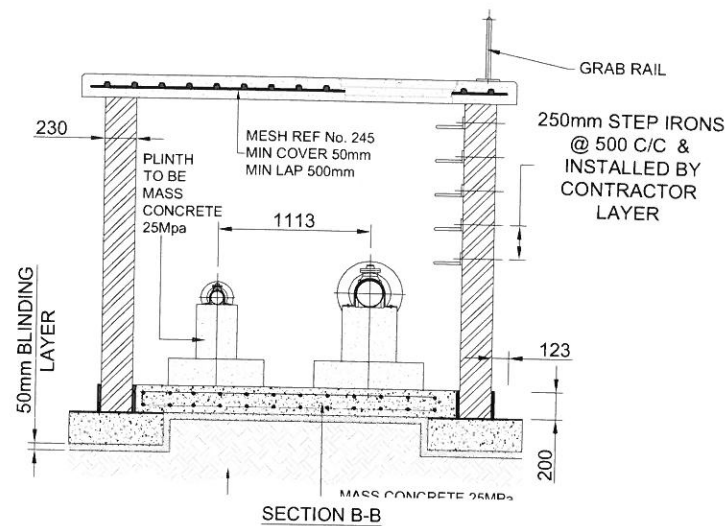
Joburg

STANDARD DETAIL  
TYPICAL 150Ø PRESSURE REDUCING VALVE CHAMBER

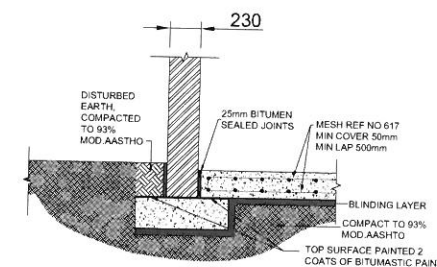
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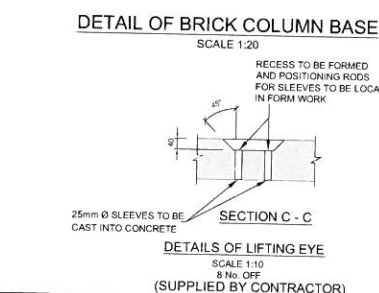
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| PIPE SIZE (NB) | PIPE CRS 'A' | PLINTH SIZE |     |     |
|----------------|--------------|-------------|-----|-----|
|                |              | 'B'         | 'C' | 'D' |
| 30             | 165          | 600         | 400 | 200 |
| 65             | 185          | 650         | 450 | 200 |
| 80             | 195          | 650         | 450 | 300 |
| 100            | 220          | 750         | 500 | 300 |
| 160            | 275          | 900         | 600 | 350 |
| 200            | 330          | 1060        | 700 | 400 |



| PIPE SIZE (NB) | L (mm) | W x T (mm) | HS (mm) |
|----------------|--------|------------|---------|
| 50             | 160    | 40 x 6     | 14      |
| 65             | 175    | 40 x 6     | 14      |
| 80             | 190    | 40 x 6     | 14      |
| 100            | 215    | 40 x 6     | 14      |
| 150            | 265    | 40 x 6     | 14      |
| 200            | 315    | 40 x 6     | 14      |



**GENERAL NOTES:**

- ALL BRICKWORK TO BE PLASTERED EXTERIORLY AND WATERPROOFED WITH INTERLOCKING CHAMBER LUE INSURING
- CONCRETE FOR THE BASE AND ROOF SLAB TO BE GRADE 25/10 CONCRETE TO REINFORCEMENT = 30mm.
- ALL FINISHES TO BE PAINTED WITH COPON KSR/88 EPOXY PAINT. AFTER INSTALLATION 5mm BPOI ROPED WRAP COATING.
- CHAMBERS TO BE TABLE 6000 OF SANS 1123.
- SLAB TO BE WRAPPED WITH 6mm THICK MALTODOL WRAPPING THROUGH WALLS.
- CHAMBER DIMENSION AND DEPTH TO BE SUBJECT TO CHANGE UPON CONFIRMATION OF THE EXISTING PIPE LOCATION AND DEPTH.
- FITTING OF CHAMBERS TO CHANGE UPON CONFIRMATION OF THE EXISTING PIPE MATERIALS.
- EVERY CHAMBER MUST HAVE A 100mm DIAMETER VENT PIPE WITH MOSQUITO GAUZE.
- PEDESTALS TO BE PROVIDED AS DIRECTED BY SITE SUPERVISOR.
- VALVE KEY HOLES TO BE PROVIDED IN THE ROOF ABOVE EVERY VALVE OR AS DIRECTED.
- FITTING OF CHAMBERS 2m MAXIMUM HEIGHT OF BRICK CHAMBER.
- ENGINEERING BRICKS WITH BRICKFORCE RATED COURSE FOR ALL CHAMBERS.
- ROOF SLAB TO BE MADE OF PRECAST PANELS.
- 230mm BRICK-WORK OF 1m HIGH FROM BASE SLAB.

**PRESSURE REDUCING VALVE (CAUTION + ANTI CAVITATION RING)**

ALL PVP SHALL COMPLY WITH FOLLOWING SPECIFICATIONS

- 650G-DIABICI 1001 PRESSURE REDUCING VALVE
- DIABICI IRON BODY AND COVER WITH STAINLESS STEEL TRIM
- USING BONDED EPDM GASKET INTERNALLY AND EXTERNALLY TO A MINIMUM OF 250MM PHN 25 PILOT
- COATED WITH 2mm ADJUSTABLE CRD PRESSURE REDUCING PILOT VALVE (ADJUSTABLE DOWNSTREAM BETWEEN 2.1 AND 2.5 BAR)
- WITH PRESSURE GAUGE, OPENING AND CLOSING SPEED CONTROLS AND +101M VISION SPEED INDICATOR
- MUST BE FLANGED AND DRILLED TO SANS 1123 TABLE 1600, INCLUDING CUTTING OF PRESSURE REDUCING
- MUST BE COMPLETE WITH TYPING OF DIABICI IRON BODY AND COVER
- COVER UNLESS OTHERWISE SPECIFIABLE IN A SPLITTER IRON FUSION BONDED EPOXY COATED FRAME 25mm MESH-FUSION BONDED EPOXY FINISH
- FINISH EXTERNALLY TO A MINIMUM OF 200mm MICRON PVP 25-DRATED
- FLANGED AND DRILLED TO SANS 1123 TABLE 1600 FACE TO FACE
- WALLS TO BE REINFORCEMENT CONCRETE.



Johannesburg Water

17 HARRISON STREET  
MARSHALLTOWN  
2107

TEL: (011) 688-1400  
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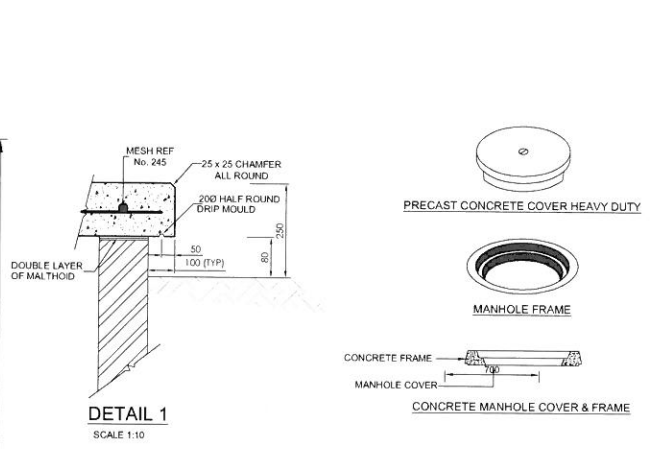
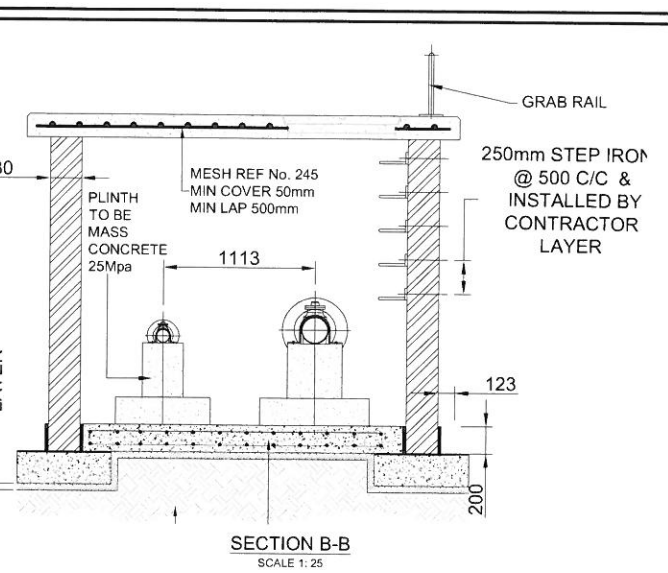
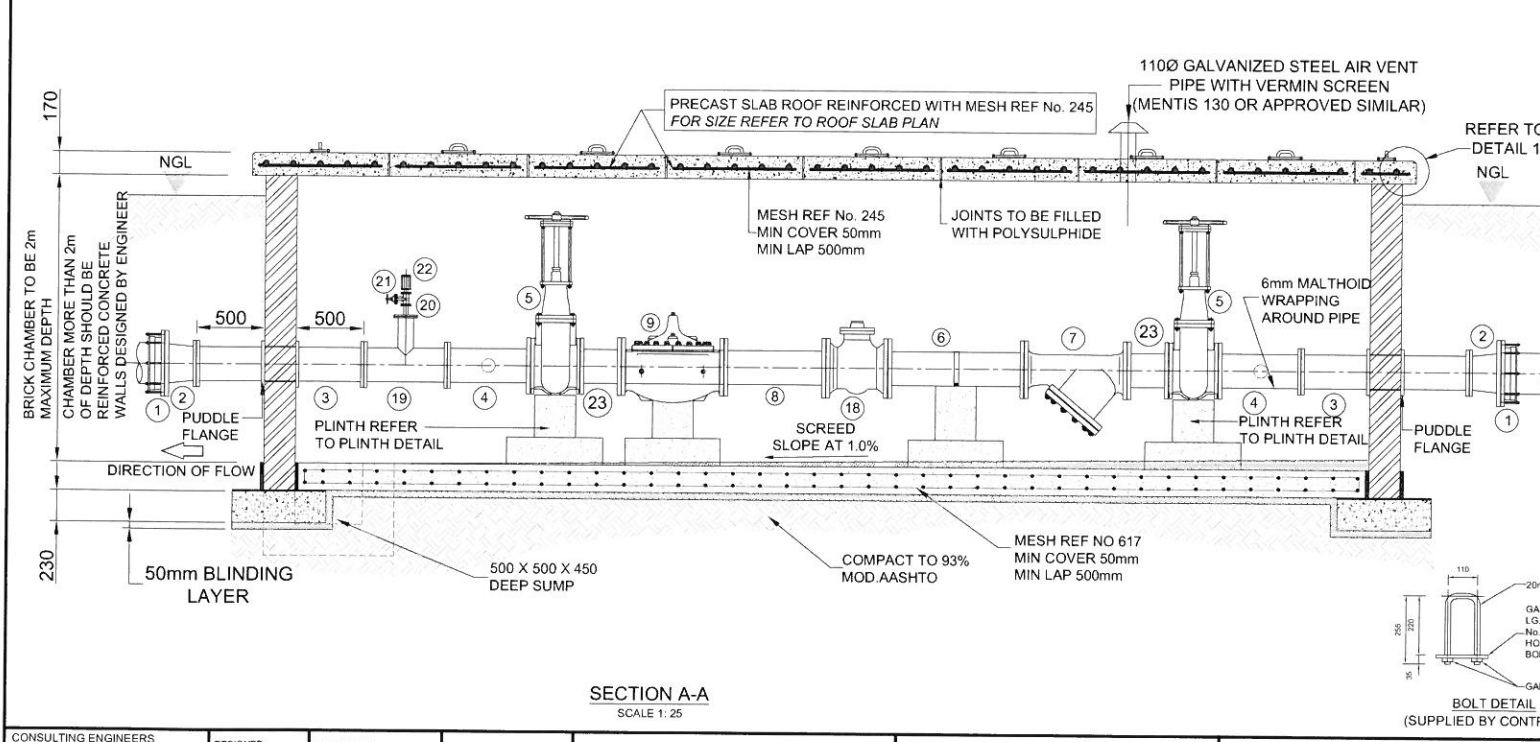
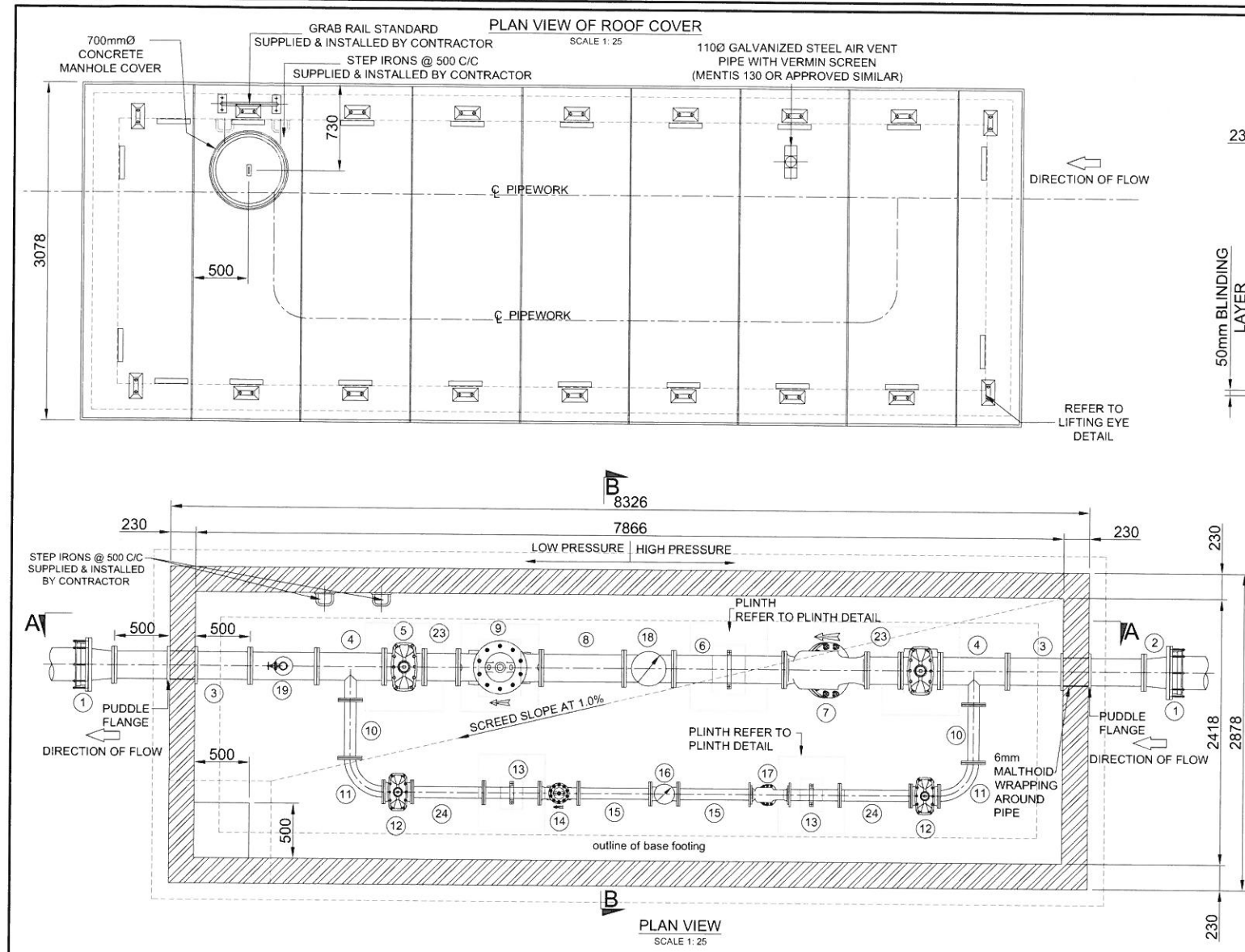
Joburg

STANDARD DETAIL  
TYPICAL 2000 PRESSURE REDUCING VALVE CHAMBER

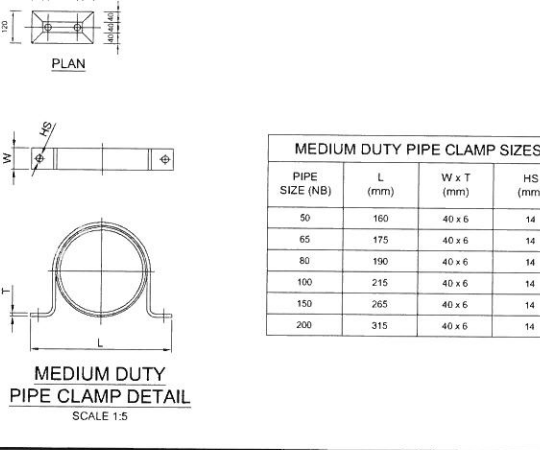
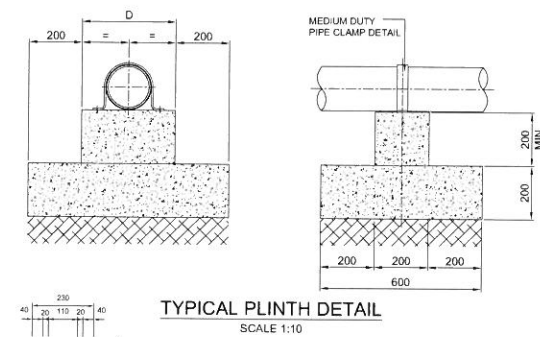
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DRAWING No. JW100-DET10.3-W01

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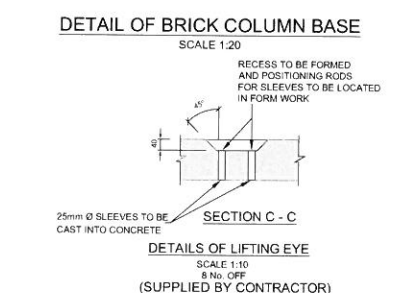
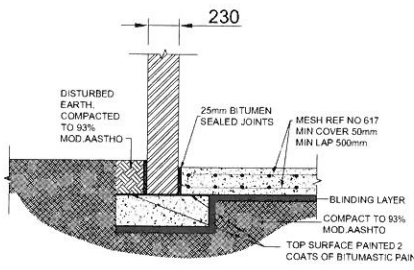


NOTES:  
1. PLINTHS TO BE FOUND ON COMPACTED MATERIAL (MIN 90% MOD AASHTO)



| PRESSURE REDUCING VALVE |                                                                                                                             |            |          |              |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------|----------|--------------|
| ITEM NR.                | DESCRIPTION                                                                                                                 | DIMENSIONS | QUANTITY | FLANGE TABLE |
| 1                       | Ø FLANGE ADAPTOR FOR STEEL/UPVC CLASS 16 PIPE                                                                               |            | 2        |              |
| 2                       | Ø250 FLANGED REDUCER                                                                                                        |            | 2        |              |
| 3                       | 2500 DOUBLE FLANGED STEEL PIPE WITH A PRESSURE TRANSMITTER (EXCLUDING PRESSURE GAUGE) AND PUDDLE FLANGE                     |            | 2        |              |
| 4                       | 250 x 100 FLANGED REDUCING TEE                                                                                              |            | 2        |              |
| 5                       | 2500 NB ISOLATING WEDGE TYPE GATE VALVE                                                                                     |            | 2        |              |
| 6                       | 2500 DOUBLE FLANGED DISTANCE PIECE WITH CLAMP PRESSURE TRANSMITTER                                                          |            | 1        |              |
| 7                       | 2500 FLANGED STRAINER                                                                                                       |            | 1        |              |
| 8                       | 2500 DOUBLE FLANGED DISTANCE PIECE WITH CLAMP                                                                               |            | 1        |              |
| 9                       | 2500 PRESSURE REDUCING VALVE                                                                                                |            | 1        |              |
| 10                      | 1000 DOUBLE FLANGED DISTANCE PIECE                                                                                          |            | 2        |              |
| 11                      | 1000 x 90° FLANGED STEEL BEND                                                                                               |            | 2        |              |
| 12                      | 1000 NB ISOLATING WEDGE TYPE GATE VALVE                                                                                     |            | 2        |              |
| 13                      | 1000 DOUBLE FLANGED DISTANCE PIECE                                                                                          |            | 2        |              |
| 14                      | 1000 PRESSURE REDUCING VALVE                                                                                                |            | 1        |              |
| 15                      | 1000 DOUBLE FLANGED DISTANCE PIECE                                                                                          |            | 2        |              |
| 16                      | 1000 MENECKE TURBINE COSMOS WPD WATER METER (OR SIMILAR APPROVED), PN16, BOTH ENDS FLANGED TO SABS 1123 - 1600/3            |            | 1        |              |
| 17                      | 1000 FLANGED STRAINER                                                                                                       |            | 1        |              |
| 18                      | 2500 MENECKE TURBINE COSMOS WPD WATER METER (OR SIMILAR APPROVED), PN16, BOTH ENDS FLANGED TO SABS 1123 - 1600/3            |            | 2        |              |
| 19                      | 250NB x 80NB FLANGED UNEQUAL TEE (AIR ACCUMULATOR), FLANGES DRILLED TO SABS 1123-1600/3                                     |            | 1        |              |
| 20                      | FLANGED RISER PIECE, ONE END FLANGED TO SUIT AIR VALVE, OTHER END FLANGED TO SUIT 80NB, FLANGES DRILLED TO SABS 1123-1600/3 |            | 1        |              |
| 21                      | 80NB FLANGED, PN 16, RSV, (TO JOHANNESBURG WATER SPECIFICATIONS)                                                            |            | 1        |              |
| 22                      | 80mm VENT-Q-MAT AIR VALVE TYPE 080 RBX 1601                                                                                 |            | 1        |              |
| 23                      | 2500 DOUBLE FLANGED DISTANCE PIECE                                                                                          |            | 2        |              |
| 24                      | 1000 DOUBLE FLANGED DISTANCE PIECE                                                                                          |            | 2        |              |

| PIPE POSITIONING ON PLINTHS |              |             |     |     |
|-----------------------------|--------------|-------------|-----|-----|
| PIPE SIZE (NB)              | PIPE CRS 'A' | PLINTH SIZE |     |     |
|                             |              | 'B'         | 'C' | 'D' |
| 50                          | 165          | 600         | 400 | 200 |
| 65                          | 185          | 650         | 450 | 200 |
| 80                          | 195          | 650         | 450 | 300 |
| 100                         | 220          | 750         | 500 | 300 |
| 150                         | 275          | 900         | 600 | 350 |
| 200                         | 330          | 1060        | 700 | 400 |



GENERAL NOTES:  
1. ALL BRICKWORK TO BE PLASTERED EXTERNALLY AND INTERNALLY TO ENSURE WATER-TIGHT CHAMBER. USE ENGINEERING BRICKS.  
2. CONCRETE FOR THE BASE AND ROOF SLAB TO BE GRADE 25/19. COVER TO REINFORCEMENT = 30mm.  
3. ALL FITTINGS TO BE PAINTED WITH COPON KSI88 EPOXY PAINT. AFTER INSTALLATION 6mm BFOV REPAIR WRAP COATINGS.  
4. ALL FLANGES TO TABLE 1600 OF SABS 1123.  
5. PIPES TO BE WRAPPED WITH 6mm THICK MALTHOID WRAPPING THROUGH WALLS.  
6. CHAMBER DIMENSION AND DEPTH ARE SUBJECT TO CHANGE UPON CONFIRMATION OF THE EXISTING PIPE LOCATION AND DEPTH.  
7. FITTINGS ARE SUBJECT TO CHANGE UPON CONFIRMATION OF THE EXISTING PIPE MATERIALS.  
8. EVERY CHAMBER MUST HAVE A 100mm DIAMETER VENT PIPE WITH MOSQUITO GAUZE.  
9. REFEEDS TO BE PROVIDED AS DIRECTED BY THE ENGINEER AT SITE.  
10. VALVE KEY HOLES TO BE PROVIDED IN THE ROOF ABOVE EVERY VALVE OR AS DIRECTED.  
11. DEPTH OF CHAMBERS 2m MAXIMUM HEIGHT OF BRICK CHAMBER.  
12. ENGINEERING BRICKS WITH BRICK FORCE EVERY 3rd COURSE FOR ALL CHAMBERS.  
13. ROOF SLAB TO BE MADE OF PRECAST PANELS.  
14. 230mm BRICK-WALL OF 1m HIGH FROM BASE SLAB.  
  
PRESSURE REDUCING VALVE (CLAYTON + ANTI CAVITATION RING)  
  
ALL PRV SHALL COMPLY WITH FOLLOWING SPECIFICATIONS:  
a. 650G-01ABCS x101 PRESSURE REDUCING VALVES.  
b. DUCTILE IRON BODY AND COVER WITH STAINLESS STEEL TRIM.  
c. FUSION BONDED EPOXY COATED INTERNALLY AND EXTERNALLY TO A MINIMUM OF 250 MICRONS PN 25 RATED.  
d. COMPLETE WITH FULLY ADJUSTABLE CRD PRESSURE REDUCING PILOT VALVE (ADJUSTABLE DOWNSTREAM BETWEEN 2.1 BARS AND 21 BARS).  
e. WITH PRESSURE GAUGE, OPENING AND CLOSING SPEED CONTROLS AND x101 VISION POSITION INDICATOR.  
f. MUST BE FLANGED AND DRILLED TO SABS 1123 TABLE 1600, INCLUDING CUTTING OF PIPES, COUPLING etc.  
g. MUST BE COMPLETE WITH H-TYPE STRAINER-DUCTILE IRON BODY AND COVER-STAINLESS STEEL REMOVABLE IN A DUCTILE IRON FUSION BONDED EPOXY COATED FRAME 2mm MESH-FUSION BONDED EPOXY INTERNALLY AND EXTERNALLY TO A MINIMUM OF 250micron- PN 25 RATED FLANGED AND DRILLED TO SABS 1123 TABLE 1600 FACE TO FACE = 900mm.  
h. WALLS TO BE REINFORCEMENT CONCRETE.

CONSULTING ENGINEERS  
CAPEX DESIGN SECTION  
SWISS HOUSE  
7TH FLOOR

DESIGNED: B.M. KHUMALO  
DRAWN: B.M. KHUMALO  
CHECKED: J. GUMBO  
SIGNATURE: [Signature]  
ECSA REG. No. 201370044  
APPROVED BY: T. MPANDAGUTA  
SIGNATURE: [Signature]  
ECSA REG. No. 201190150

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Johannesburg Water

Joburg

STANDARD DETAIL  
TYPICAL 2500 PRESSURE REDUCING VALVE CHAMBER

| AMENDMENTS |      |             |          |      |
|------------|------|-------------|----------|------|
| SCALE      | REV. | DESCRIPTION | APPROVED | DATE |
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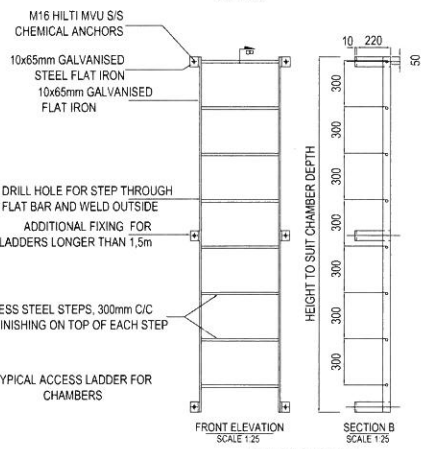
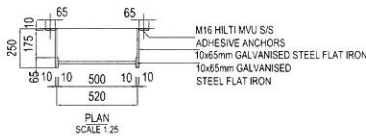
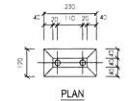
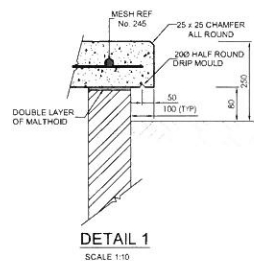
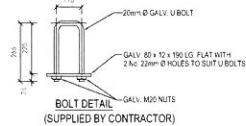
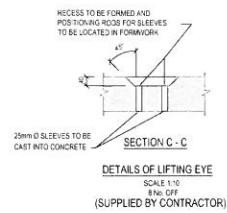
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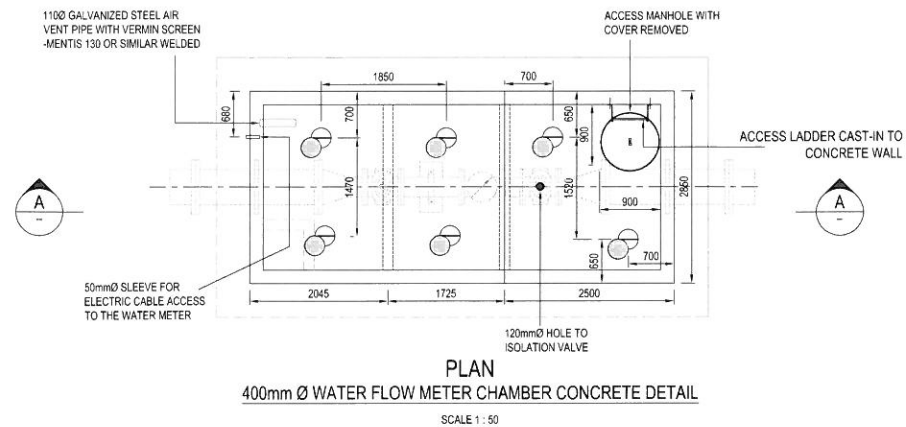
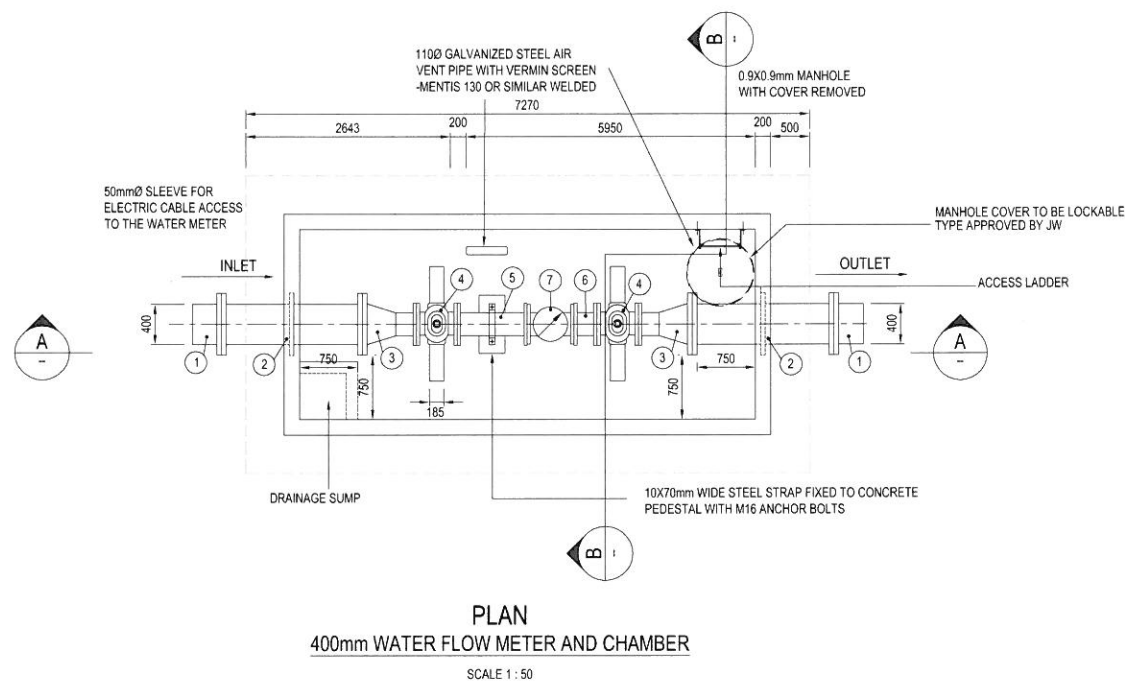
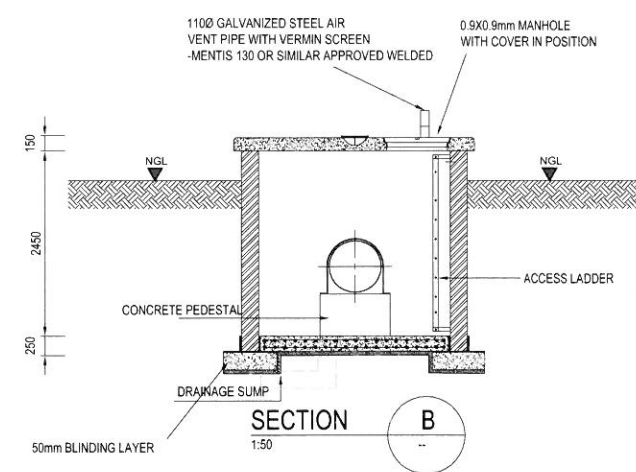
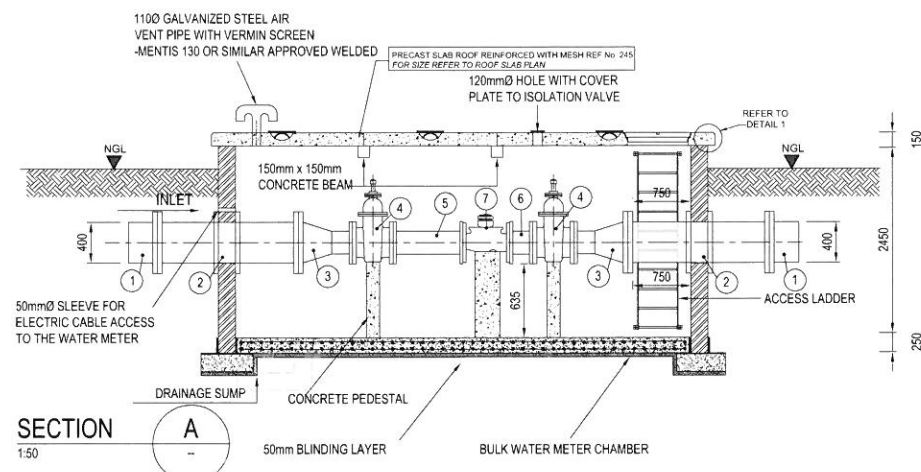
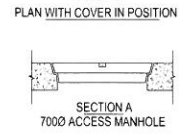
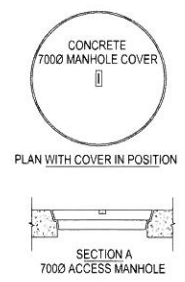
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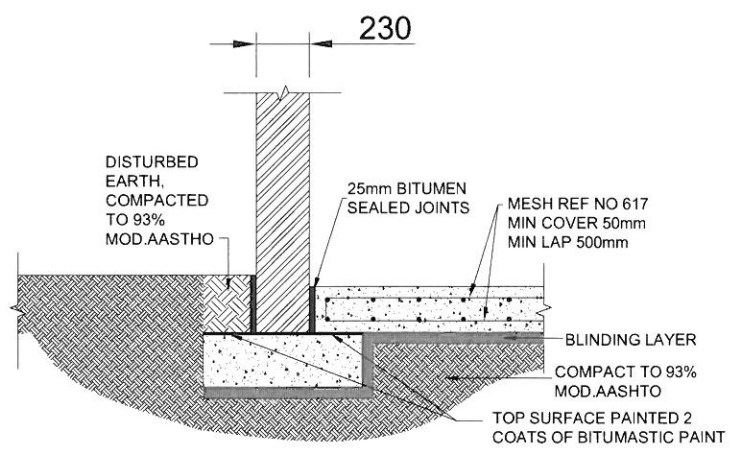




ACCESS LADDER  
(FOR CHAMBERS DEEPER THAN 2.5m)



| TYPICAL STEEL PIPE FITTINGS AND ITEM LIST<br>(400ND PIPE LINE WITH 2500kPa MAX. WORKING PRESSURE USED AS AN EXAMPLE) |                                                                                                                                                                    |         |            |
|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------|
| ITEM NR.                                                                                                             | DESCRIPTION                                                                                                                                                        | NO. OFF | DIMENSIONS |
| 1                                                                                                                    | 4000 mm FLANGED PIPE, FLANGED TO SAB1123-1600/3.                                                                                                                   | 2       |            |
| 2                                                                                                                    | 4000 x 1500mm LONG STEEL PIPE WITH PUDDLE FLANGE, BOTH ENDS FLANGED SABS 1123 - 1600/3                                                                             | 2       |            |
| 3                                                                                                                    | 4000 x 3000 STEEL REDUCER, BOTH ENDS FLANGED SABS 1123 - 1600/3                                                                                                    | 2       |            |
| 4                                                                                                                    | 3000 WEDGE TYPE GATE VALVE (PN16) WITH GEARBOX AND ANTI-CLOCKWISE CLOSING TO SABS 664, BOTH ENDS FLANGED TO SABS 1123 - 1600/3.                                    | 2       |            |
| 5                                                                                                                    | 3xØ STEEL STRAIGHT, BOTH ENDS FLANGED TO SABS 1123 - 1600/3.                                                                                                       | 1       |            |
| 6                                                                                                                    | 1xØ STEEL STRAIGHT, BOTH ENDS FLANGED TO SABS 1123 - 1600/3.                                                                                                       | 1       |            |
| 7                                                                                                                    | 300mm ON A 400mm (WPO 400T25) SENSUS WP TURBINE METER FLANGED TO BS4504, TABLE 25, WITH PRESSURE RATING 2500kPa AND OPERATIONAL MAXIMUM TEMP OF 50 DEGREES CELSIUS | 1       |            |



DETAIL OF BRICK COLUMN BASE  
SCALE 1:20

CONSULTING ENGINEERS  
CAPEX DESIGN SECTION  
SWISS HOUSE  
7TH FLOOR

|               |               |                |
|---------------|---------------|----------------|
| DESIGNED      | B.M.KHUMALO   | MAY 2017       |
| DRAWN         | B.M.KHUMALO   | MAY 2017       |
| CHECKED       | J.GUMBO       | DATE: 18/11/17 |
| SIGNATURE     |               |                |
| ECSA REG. No. | 201370044     |                |
| APPROVED BY:  | T.M.PANDAGUTA | DATE: 20/11/17 |
| SIGNATURE     |               |                |
| ECSA REG. No. | 201170150     |                |



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2107

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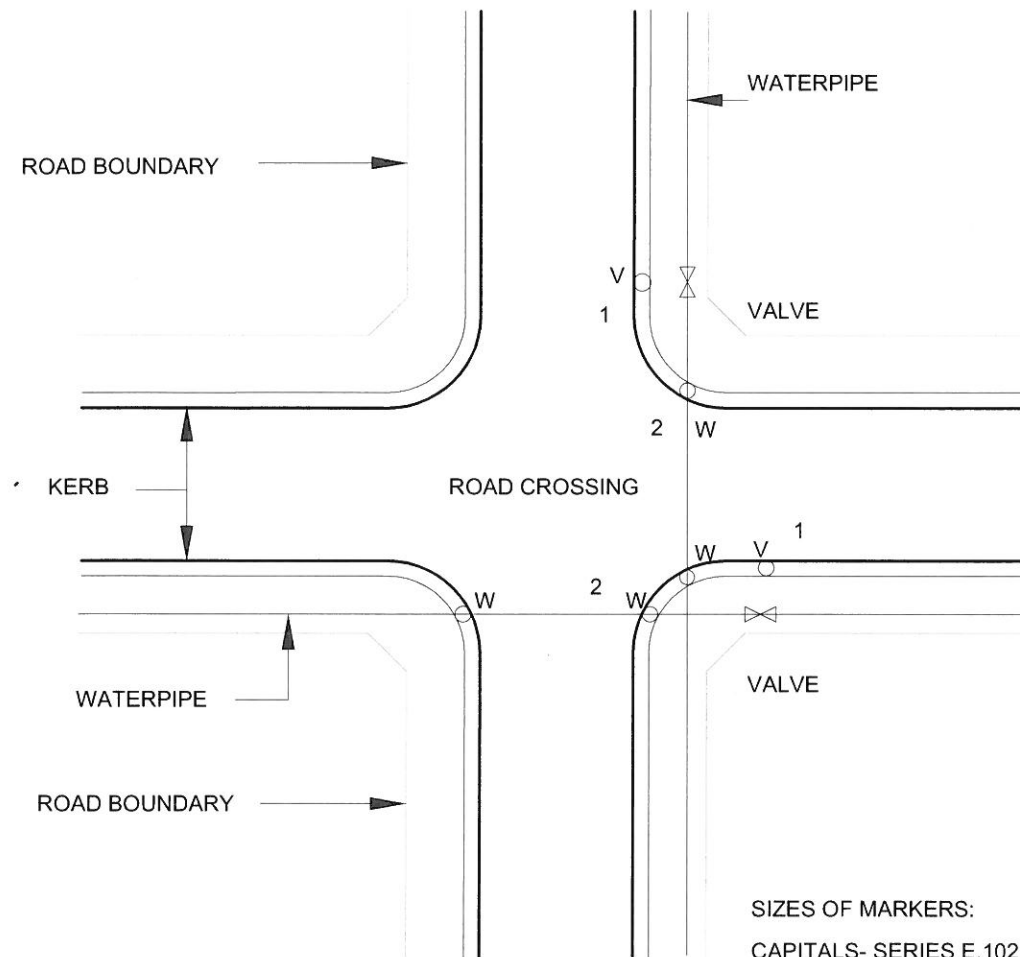


STANDARD DETAIL  
TYPICAL 400mm PIPELINE BULK FLOW METER DETAIL

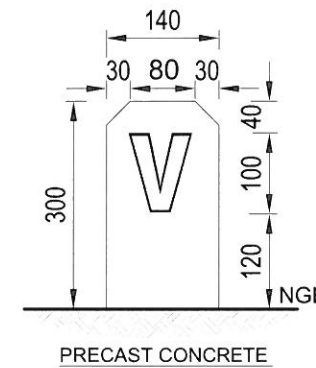
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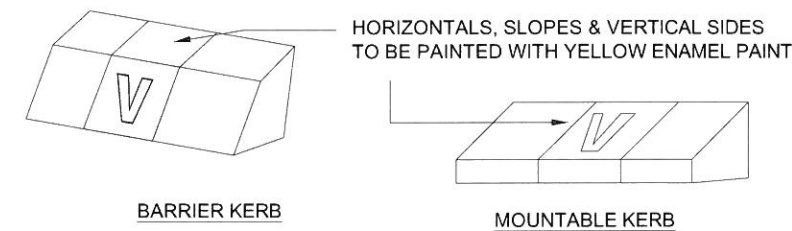
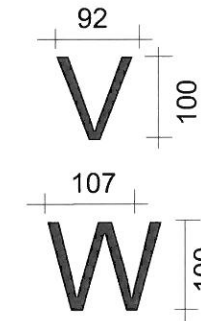
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SIZES OF MARKERS:  
CAPITALS- SERIES E, 102mm IN SIZE ACCORDING TO THE S.A.  
BOOK OF ROAD SIGNS.



- 1 VALVE MARKER-"V" MUST BE PAINTED
- 2 WATER PIPE MARKER-"W"



NOTE  
1) TOP SURFACE OF COVERS  
TO BE PAINTED AS FOLLOWS:  
VALVES NORMALLY OPEN : BLUE  
VALVES NORMALLY CLOSED : SIGNAL RED  
SCOUR VALVES : GREEN  
AIR VALVES : BROWN

## DETAILS OF SERVICE MARKERS

CONSULTING ENGINEERS  
CAPEX DESIGN SECTION  
SWISS HOUSE  
7TH FLOOR

|                |                    |              |
|----------------|--------------------|--------------|
| DESIGNED       | B.M. KHUMALO       | MAY 2017     |
| DRAWN          | B.M. KHUMALO       | MAY 2017     |
| CHECKED        | J. GUMBO           | DATE 18/7/17 |
| SIGNATURE      | <i>[Signature]</i> | DATE 18/7/17 |
| ECOSA REG. No. | 201370044          |              |
| APPROVED BY:   | T. MPANDAGUTA      | DATE         |
| SIGNATURE      | <i>[Signature]</i> | DATE         |
| ECOSA REG. No. | 201170150          |              |



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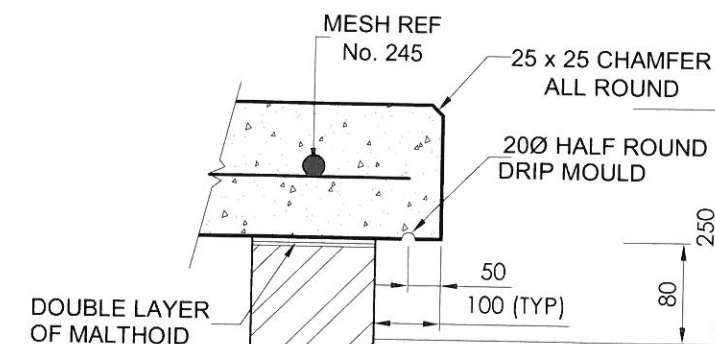
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DETAILS OF SERVICE MARKERS

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DRAWING No. JW100-DET12-W01

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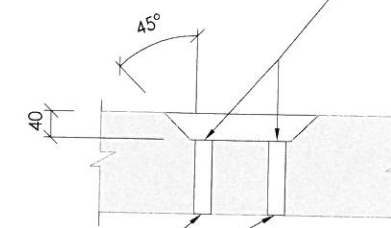
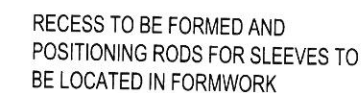


500 X 500 X 450  
DEEP SUMP

R20 LIFTING HANDLE

FLOW DIRECTION

SECTION B - B  
SCALE 1:15

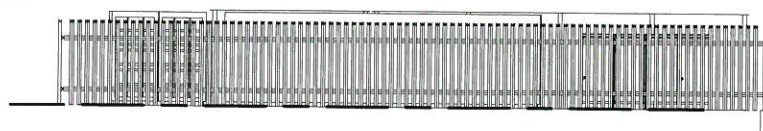
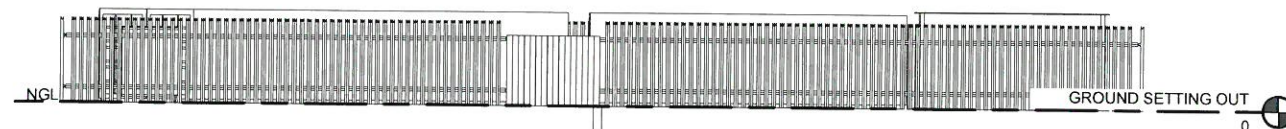
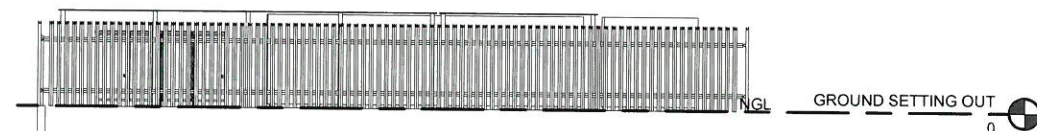
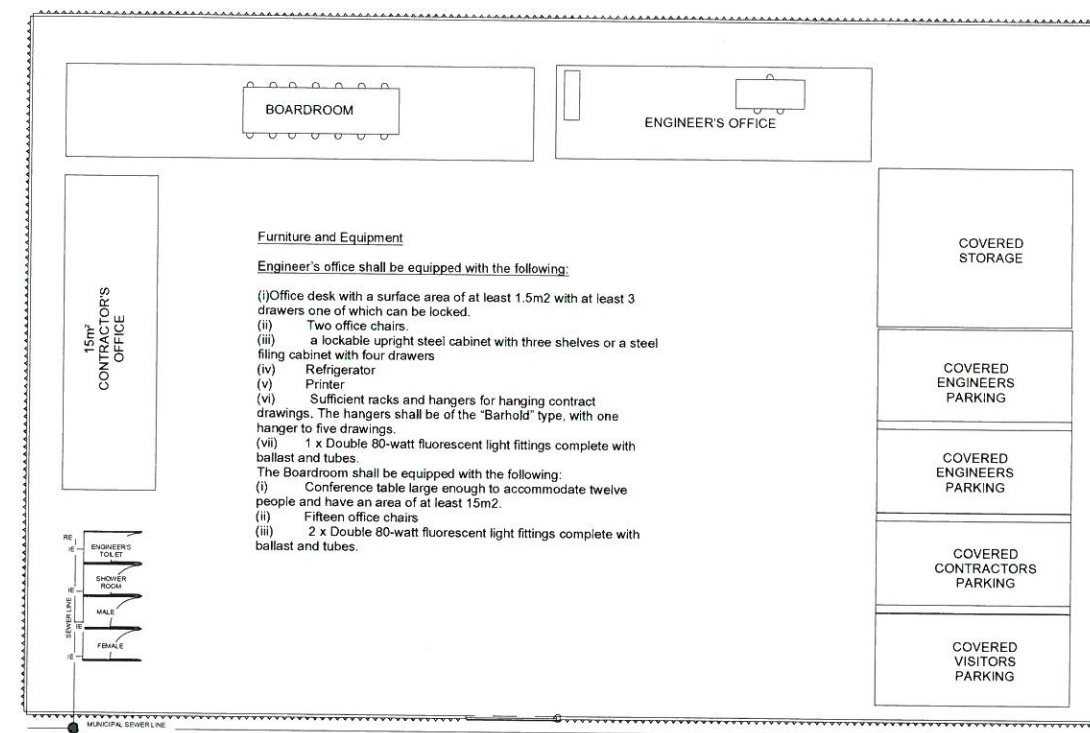
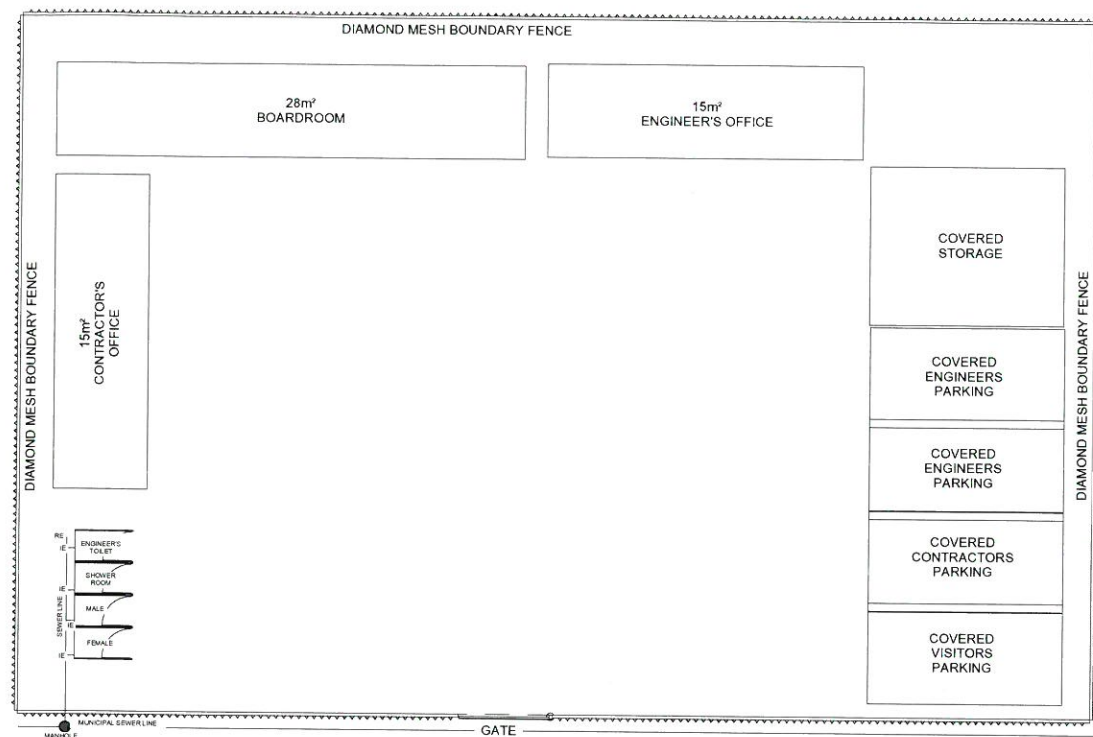


25mm Ø SLEEVES TO BE  
CAST INTO CONCRETE

SECTION C - C

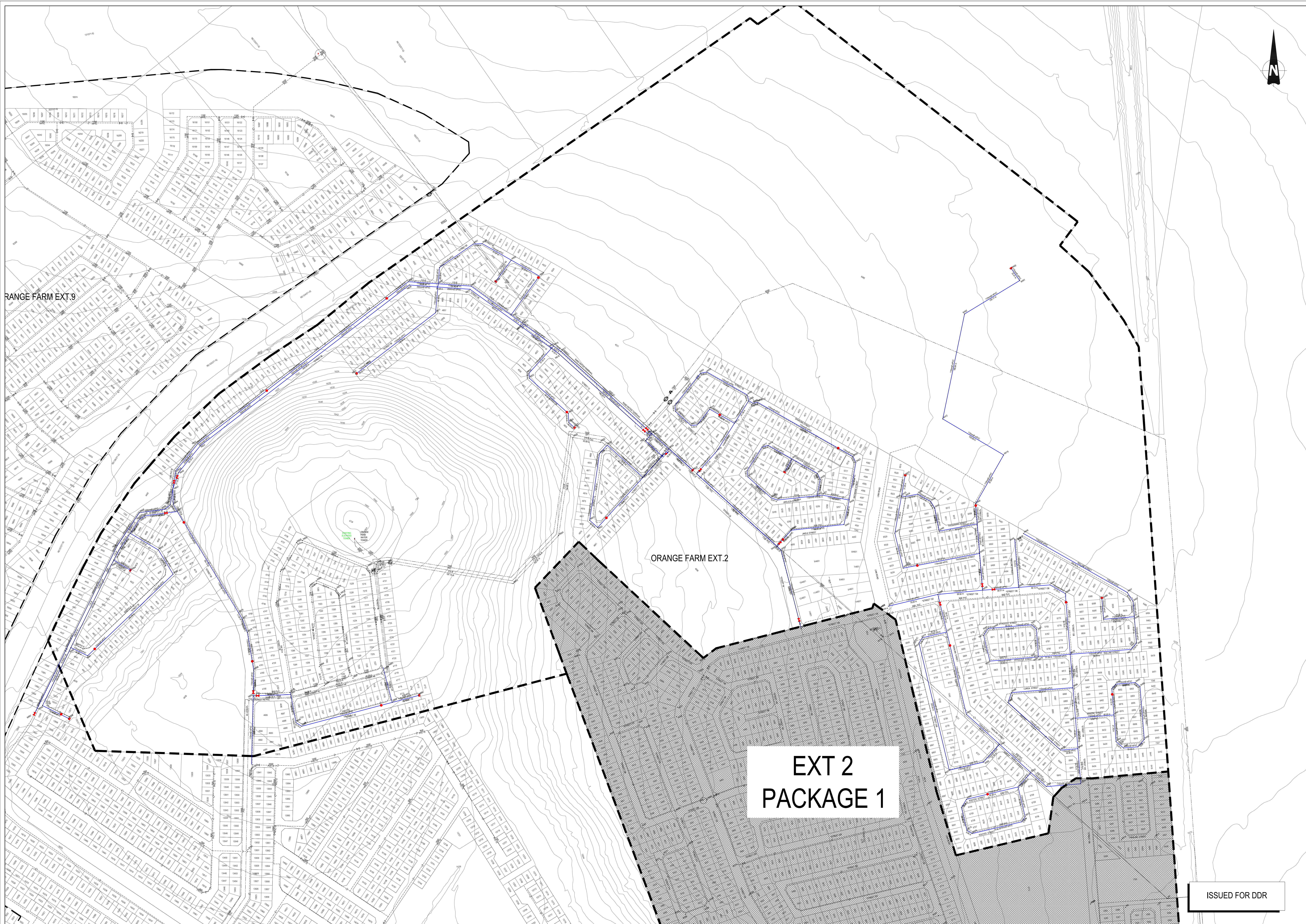
### DETAILS OF LIFTING EYE

SCALE 1:10  
8 No. OFF  
(SUPPLIED BY CONTRACTOR)



### SCHEDULE OF AREAS

| Dimensions                  | Boardroom         | Engineer's Office |
|-----------------------------|-------------------|-------------------|
| Minimum floor area          | 28m <sup>2</sup>  | 15m <sup>2</sup>  |
| Minimum window area         | 4.0m <sup>2</sup> | 3.0m <sup>2</sup> |
| Minimum window area opening | 2.4m <sup>2</sup> | 1.5m <sup>2</sup> |
| Minimum clear height        | 2.5m              | 2.5m              |



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- WATER:**
- ALL PIPES TO BE LAID IN ACCORDANCE WITH SANS 1200, LATEST REVISION AND THE REQUIREMENTS OF JOHANNESBURG WATER SOC LTD.
1. ALL PIPES TO BE LAID UNDER TRENCH CONDITIONS UNLESS OTHERWISE SHOWN.
  2. ALL NEW FIRE HYDRANTS ARE ABOVE GROUND
  3. CONTRACTOR TO CONFIRM LEVELS OF EXISTING PIPES WITH ENGINEER BEFORE COMMENCING CONSTRUCTION.
  4. POSITIONS OF ALL EXISTING SERVICES ARE APPROXIMATED AND MUST BE VERIFIED ON SITE.
  5. ALL CONSTRUCTION WORK TO BE CARRYOUT IN STRICT ACCORDANCE WITH REQUIREMENTS OF JOHANNESBURG WATER
  6. THRUST BLOCKS TO BE PLACED AT ALL BENDS AND CHANGE IN DIRECTION.
  7. mPVC PIPES TO BE CLASS 16 AND HDPE PIPES TO BE PE100 SDR11, UNLESS INSTRUCTED OTHERWISE.

**LEGEND**

|  |                                      |
|--|--------------------------------------|
|  | NEW mPVC WATER PIPE PACKAGE 1        |
|  | NEW HYDRANT                          |
|  | NEW VALVE                            |
|  | NEW FLOW CONTROL VALVE               |
|  | NEW BULK FLOW METER                  |
|  | NEW PRV                              |
|  | NEW BOUNDARY VALVE                   |
|  | NEW END CAP                          |
|  | EXISTING WATER PIPE                  |
|  | EXISTING VALVE                       |
|  | EXISTING HYDRANT                     |
|  | EXISTING BULK METER                  |
|  | EXISTING PRV                         |
|  | EXISTING BOUNDARY VALVE              |
|  | PIPE TO BE DECOMMISSIONED            |
|  | EXISTING RAND WATER / BULK PIPELINES |
|  | CONTOURS                             |
|  | EXTENSION BOUNDARY                   |

**REFER TO DRAWING No:**

|                     |                               |
|---------------------|-------------------------------|
| JW-OF-EXT2-GLP-W01: | GENERAL LAYOUT PLAN           |
| JW-OF-EXT2-LP-W01:  | LAYOUT PLAN PACKAGE 1 SHEET 1 |
|                     | LAYOUT PLAN PACKAGE 1 SHEET 2 |
| JW-OF-EXT2-LP-W02:  | LAYOUT PLAN PACKAGE 4 SHEET 1 |
|                     | LAYOUT PLAN PACKAGE 4 SHEET 2 |
| JW100-DET02-W01:    | BEDDINGS DETAIL               |
| JW100-DET03-W01:    | TYPICAL VALVE BOX             |
| JW100-DET05-W01:    | TYPICAL TRUST BLOCK DETAILS   |
| JW100-DET08-W01:    | FIRE HYDRANT DETAIL           |
| JW100-DET12-W01:    | DETAILS OF SERVICE MARKERS    |

**KEY PLAN:**

|                                                                                                                                                   |              |               |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|------------|
| CONSULTING ENGINEERS<br>CAPEX - ENGINEERING SERVICE UNIT<br>TURBINE HALL - 3RD FLOOR<br>65 NTEMI PILISO STREET<br>NEWTOWN<br>JOHANNESBURG<br>2113 | DESIGNED     | T.RAMATLO     | 10/03/2025 |
|                                                                                                                                                   | DRAWN        | SIGNATURE:    | ppc        |
|                                                                                                                                                   |              | SIGNATURE:    | 24/02/2025 |
|                                                                                                                                                   | CHECKED      | T.RAMATLO     |            |
|                                                                                                                                                   | APPROVED BY: | T.MPANDAGUTA  |            |
|                                                                                                                                                   | SIGNATURE:   | ECSA REG. No: |            |

JOHANNESBURG WATER SOC Ltd  
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FAX: +27(0)11 688-1528

Municipality:

a world class African city

ORANGE FARM EXT 2  
WATER UPGRADE PROJECT  
LAYOUT PLAN  
PACKAGE 4

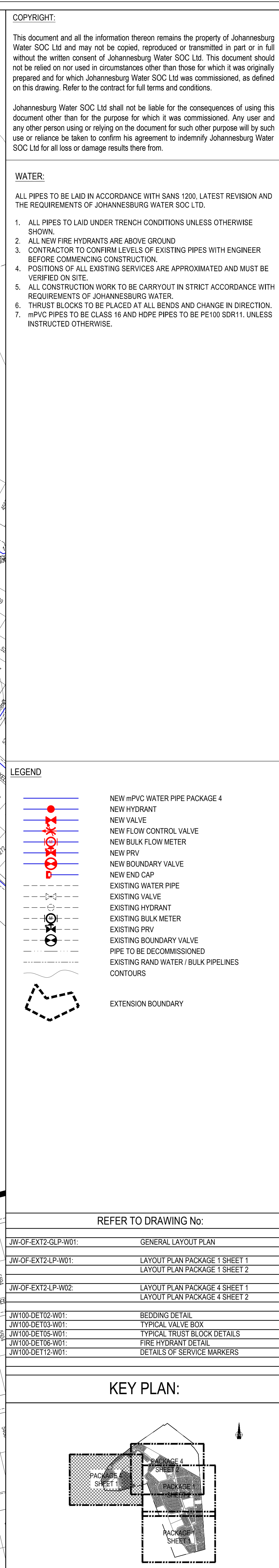
| SCALE  | AMENDMENTS |                |            |    |     |
|--------|------------|----------------|------------|----|-----|
| 1:2000 | REV        | DESCRIPTION    | DATE       | BY | APV |
|        | A          | ISSUED FOR PDR | 2023/07/06 | MB | TM  |
|        | B          | ISSUED FOR DDR | 2025/02/24 | MB | TM  |
|        |            |                |            |    |     |
|        |            |                |            |    |     |

**DRAWING No:** JW-OF-EXT2-LAY-W02

|             |    |       |   |    |   |
|-------------|----|-------|---|----|---|
| PROJECT No: | A0 | SHEET | 1 | OF | 1 |
| FILE No:    |    |       |   |    |   |

**WATER - B**

DISCIPLINARY REV.





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**WATER:**

ALL PIPES TO BE LAID IN ACCORDANCE WITH SANS 1200, LATEST REVISION AND THE REQUIREMENTS OF JOHANNESBURG WATER SOC LTD.

- ALL PIPES TO LAID UNDER TRENCH CONDITIONS UNLESS OTHERWISE SHOWN.
- ALL NEW FIRE HYDRANTS ARE ABOVE GROUND.
- CONTRACTOR TO CONFIRM LEVELS OF EXISTING PIPES WITH ENGINEER BEFORE COMMENCING CONSTRUCTION.
- POSITIONS OF ALL EXISTING SERVICES ARE APPROXIMATED AND MUST BE VERIFIED ON SITE.
- ALL CONSTRUCTION WORK TO BE CARRYOUT IN STRICT ACCORDANCE WITH REQUIREMENTS OF JOHANNESBURG WATER.
- THRUST BLOCKS TO BE PLACED AT ALL BENDS AND CHANGE IN DIRECTION.
- mPVC PIPES TO BE CLASS 16 AND HDPE PIPES TO BE PE100 SDR11, UNLESS INSTRUCTED OTHERWISE.

**LEGEND**

- NEW mPVC WATER PIPE PACKAGE 4
- NEW VALVE
- NEW FLOW CONTROL VALVE
- NEW BULK FLOW METER
- NEW PRV
- NEW BOUNDARY VALVE
- NEW END CAP
- EXISTING WATER PIPE
- EXISTING VALVE
- EXISTING HYDRANT
- EXISTING BULK METER
- EXISTING PRV
- EXISTING BOUNDARY VALVE
- PIPE TO BE DECOMMISSIONED
- EXISTING RAND WATER / BULK PIPELINES
- CONTOURS
- EXTENSION BOUNDARY

**REFER TO DRAWING No:**

|                     |                               |
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| JW-OF-EXT2-LP-W01:  | LAYOUT PLAN PACKAGE 1 SHEET 2 |
| JW-OF-EXT2-LP-W02:  | LAYOUT PLAN PACKAGE 4 SHEET 1 |
| JW-OF-EXT2-LP-W02:  | LAYOUT PLAN PACKAGE 4 SHEET 2 |
| JW100-DET02-W01:    | BEDDINGS DETAIL               |
| JW100-DET03-W01:    | TYPICAL VALVE BOX             |
| JW100-DET05-W01:    | TYPICAL TRUST BLOCK DETAILS   |
| JW100-DET08-W01:    | FIRE HYDRANT DETAIL           |
| JW100-DET12-W01:    | DETAILS OF SERVICE MARKERS    |

**KEY PLAN:**

**ISSUED FOR DDR**

**DRAWING No: JW-OF-EXT2-LP-W02**

| REV | DESCRIPTION    | DATE       | BY | APV |
|-----|----------------|------------|----|-----|
| A   | ISSUED FOR DDR | 2023/01/06 | MB | TM  |
| B   | ISSUED FOR DDR | 2023/02/24 | MB | TM  |

**SCALE**

1:1250

**AMENDMENTS**

| REV | DESCRIPTION    | DATE       | BY | APV |
|-----|----------------|------------|----|-----|
| A   | ISSUED FOR DDR | 2023/01/06 | MB | TM  |
| B   | ISSUED FOR DDR | 2023/02/24 | MB | TM  |

**PROJECT No:**

**A0**

**SHEET**

**2** OF **2**

**ORIGINAL PAGE SIZE**

**FILE No:**

**DESIGNED**

T.RAMATLO

**SIGNATURE:**

M.I.BALLIM

**24/02/2025**

**CHECKED**

T.RAMATLO

**SIGNATURE:**

T.M.PANDAGUTA

**APPROVED BY:**

T.M.PANDAGUTA

**SIGNATURE:**

ECSA REG. No:

**JOHANNESBURG WATER**

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a world class African city

**ORANGE FARM EXT 2**  
**WATER UPGRADE PROJECT**  
**LAYOUT PLAN**  
**PACKAGE 4**

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