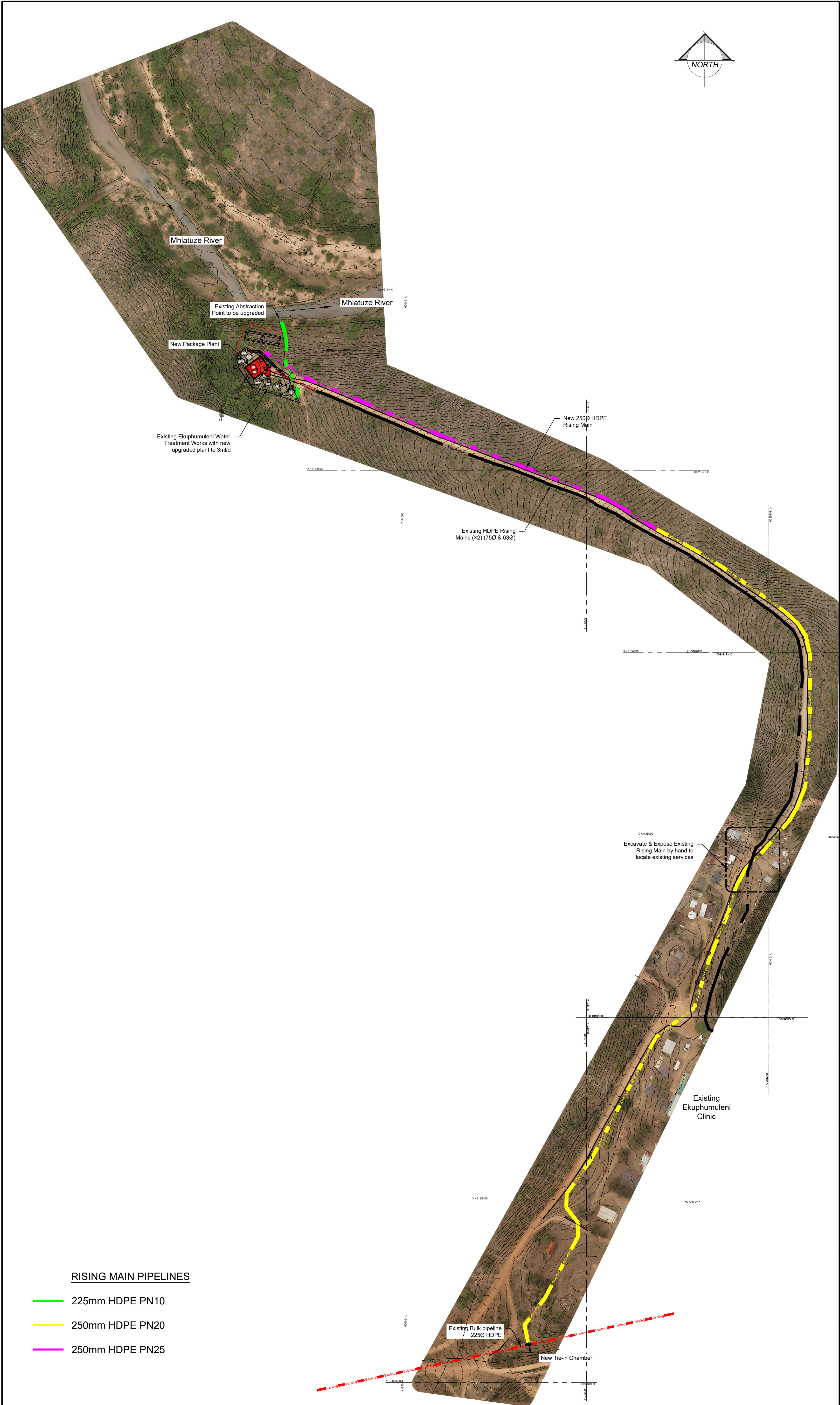


Do not scale off drawing - ASK THE ENGINEER IF UNCERTAIN!
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FOR TENDER PURPOSES ONLY

READ THIS DRAWING IN CONJUNCTION WITH

Drawing Number	Drawing Description

AMENDMENTS

Rev.	Date	Description

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Civil and Structural Engineers

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Vryheid | Kwa Zulu Natal |
RSA
vryheid@ecacsaconsult.co.za
Tel: +27 (0)34 983 3625
www.ecacsaconsult.co.za
OTHER OFFICES:
MBOMBELA | GAUTENG |
PIETERMARITZBURG |
LADYSMITH

Approved by Engineer: Name: J.W. Janse v Rensburg
Designation: PrTechEng
ECSA Reg.: 201070143
Signature: _____
Date: 28 Oct 2022

Project Funder/ Client:
mig
Municipal Infrastructure Grant



Project Implementing Agent:
KING CETSHWAYO DISTRICT MUNICIPALITY

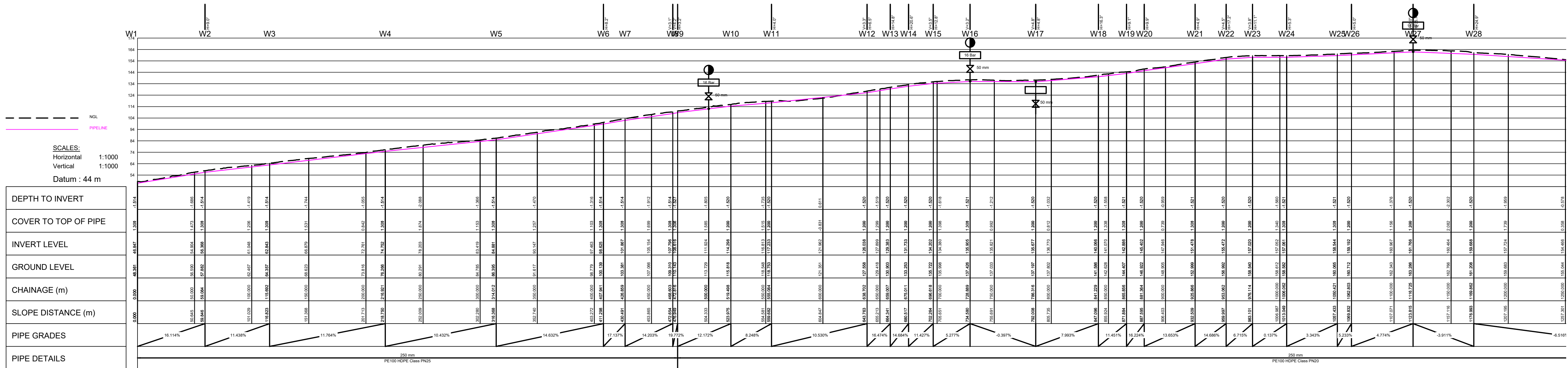


Approved by Client:
Name: _____
Signature: _____ Date: _____

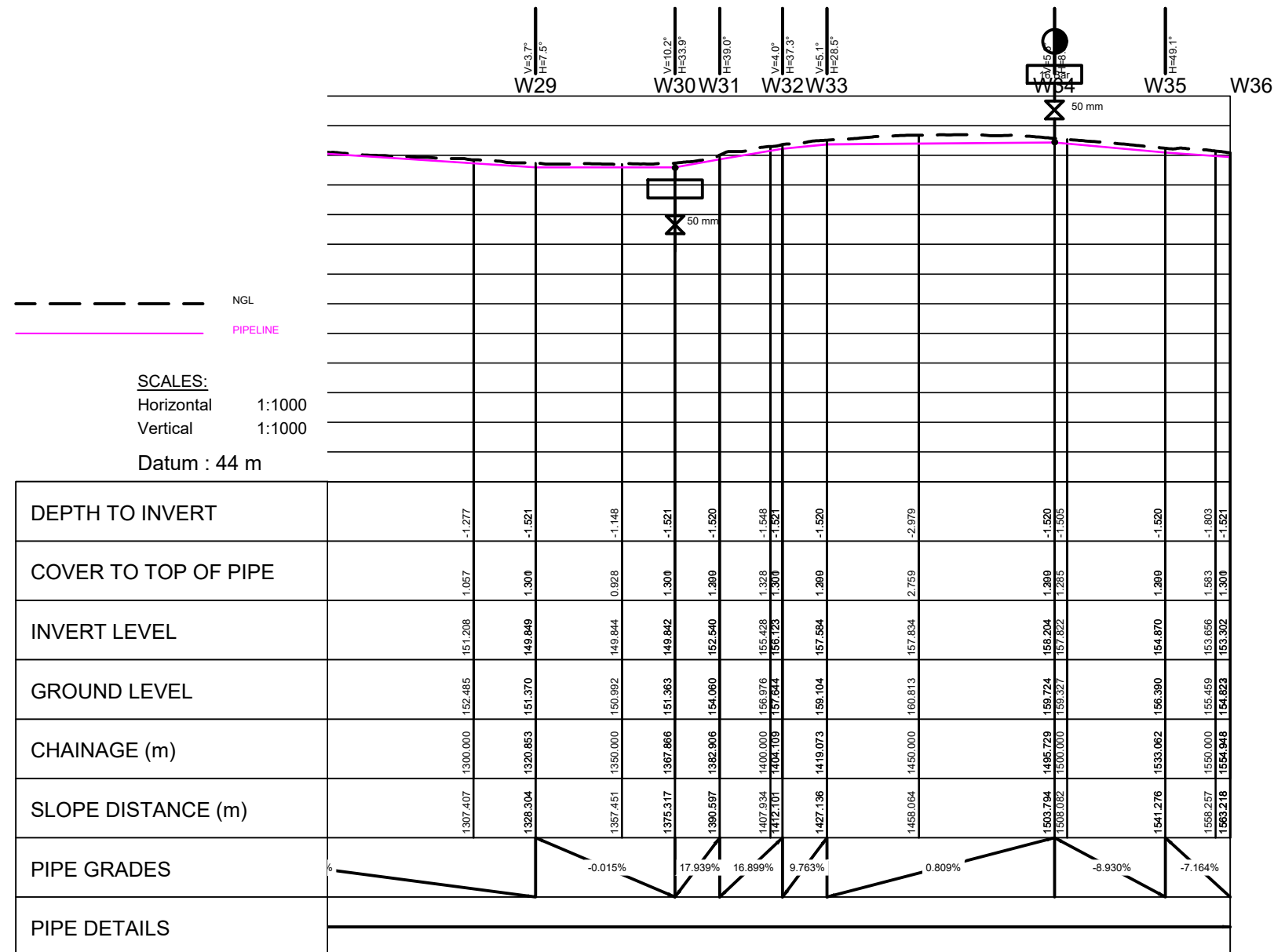
Project:
KWAHLOKOHLKO SSA5: PHASE 4 BULK AUGMENTATION

Drawing description:
SITE LAYOUT PLAN

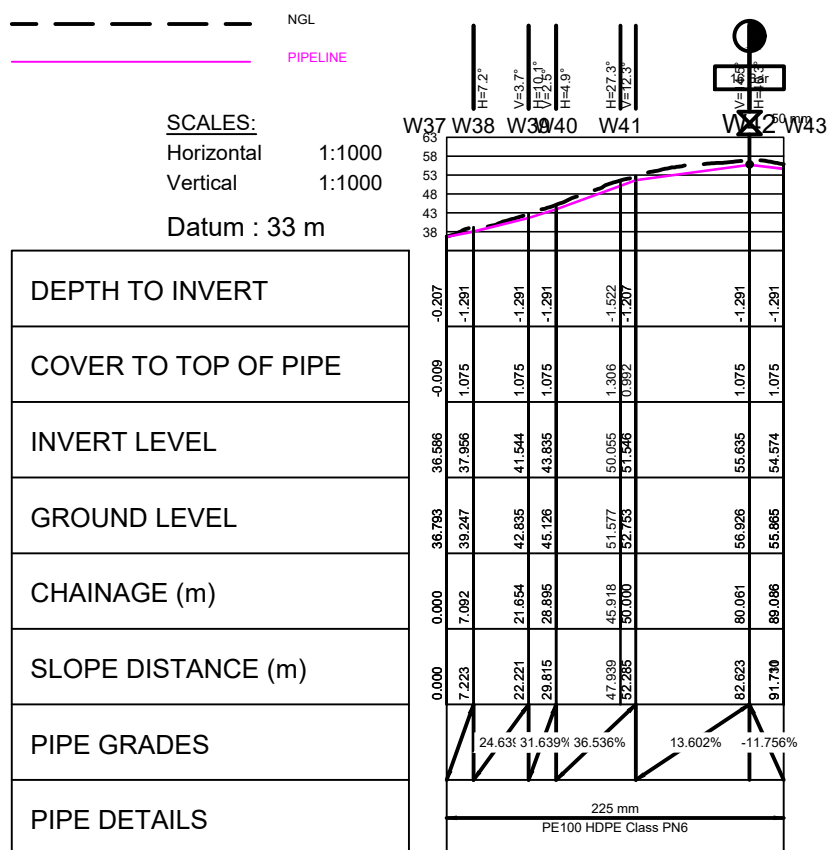
Drawn: G.D Bezuidenhout Date: Jul 2022
Scale/s: As Shown
Drawing number: 22-032-V-PH4-01-01 Rev.: 00



RIISING MAIN LONG SECTION
Scale 1 : 2000



RIISING MAIN LONG SECTION
(CONTINUED)
Scale 1 : 2000



RAW WATER RISING MAIN
LONG SECTION
Scale 1 : 2000

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vryheid@ecaconsult.co.za
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LADYSMITH

Approved by Engineer: _____ Signature: _____
Name: J.W. Janse v Rensburg
Designation: PrTechEng
ECSA Reg.: 201070143 Date: 28 Oct 2022

Project Funder/ Client:

**mig**
Municipal
Infrastructure
Grant



Project Implementing Agent:

**KING
CETSHWAYO
DISTRICT
MUNICIPALITY**

**KING CETSHWAYO**
DISTRICT MUNICIPALITY

Approved by Client: _____
Name: _____
Signature: _____ Date: _____

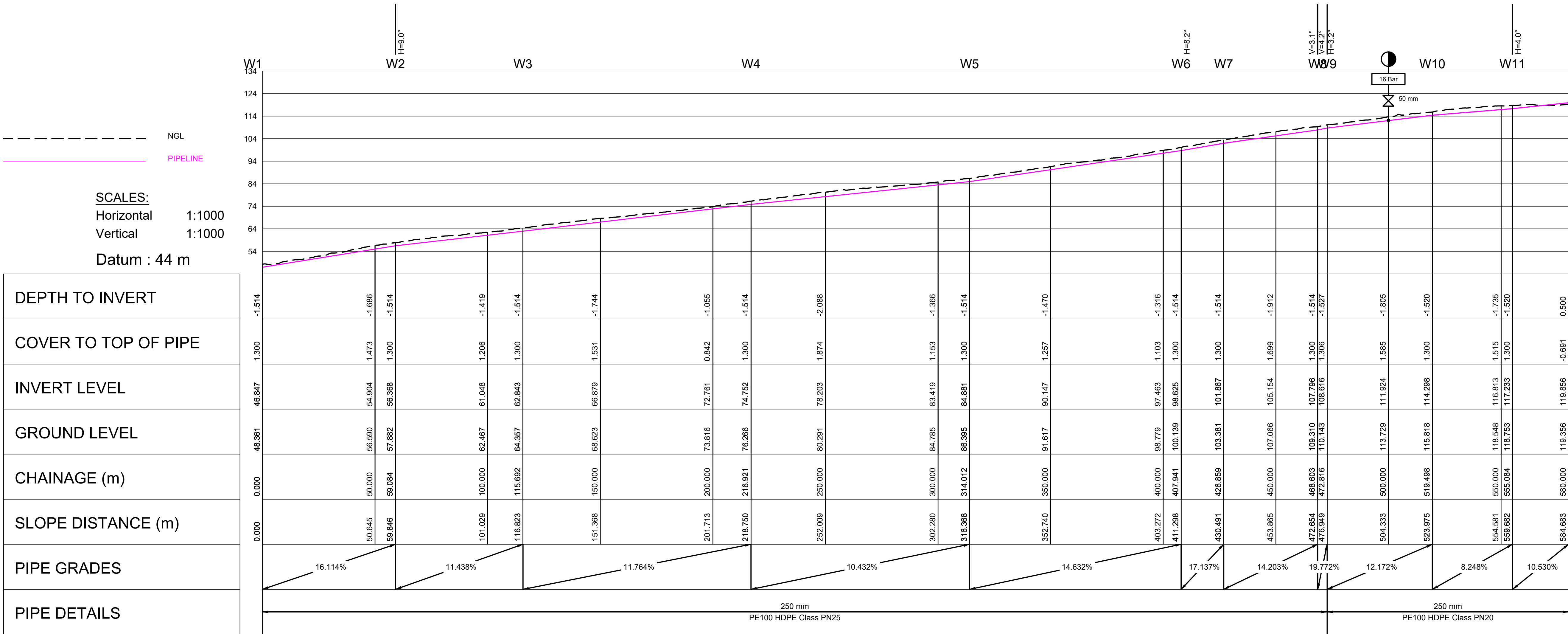
Project:
**KWAHLOKOHLOKO SSA5:
PHASE 4 BULK
AUGMENTATION**

Drawing description:
LONG SECTIONS

Drawn: G.D Bezuidenhout Date: Jul 2022
Scale/s: As Shown
Drawing number: 22-032-V-PH4-01-02 Rev.: 00



PLAN
Scale 1:1000



LONG SECTION
Scale 1:1000

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LADYSMITH

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Name: J.W. Janse v Rensburg
Designation: PrTechEng
ECSA Reg.: 201070143 Date: 28 Oct 2022

Project Funder/ Client:

Municipal
Infrastructure
Grant

Project Implementing Agent:

**KING
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MUNICIPALITY**

DISTRICT MUNICIPALITY

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Signature: _____ Date: _____

Project:

**KWAHLOKOHLOKO SSA5:
PHASE 4 BULK
AUGMENTATION**

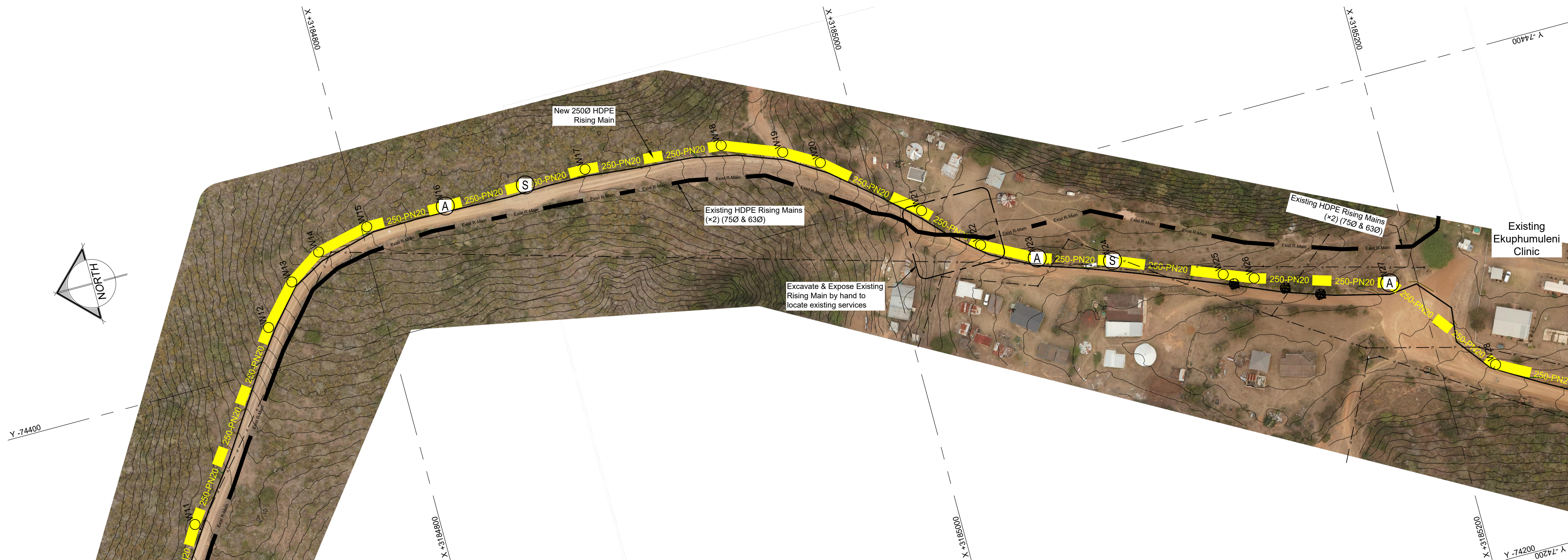
Drawing description:

**RIISING MAIN PLAN &
LONG SECTION
SHEET 01**

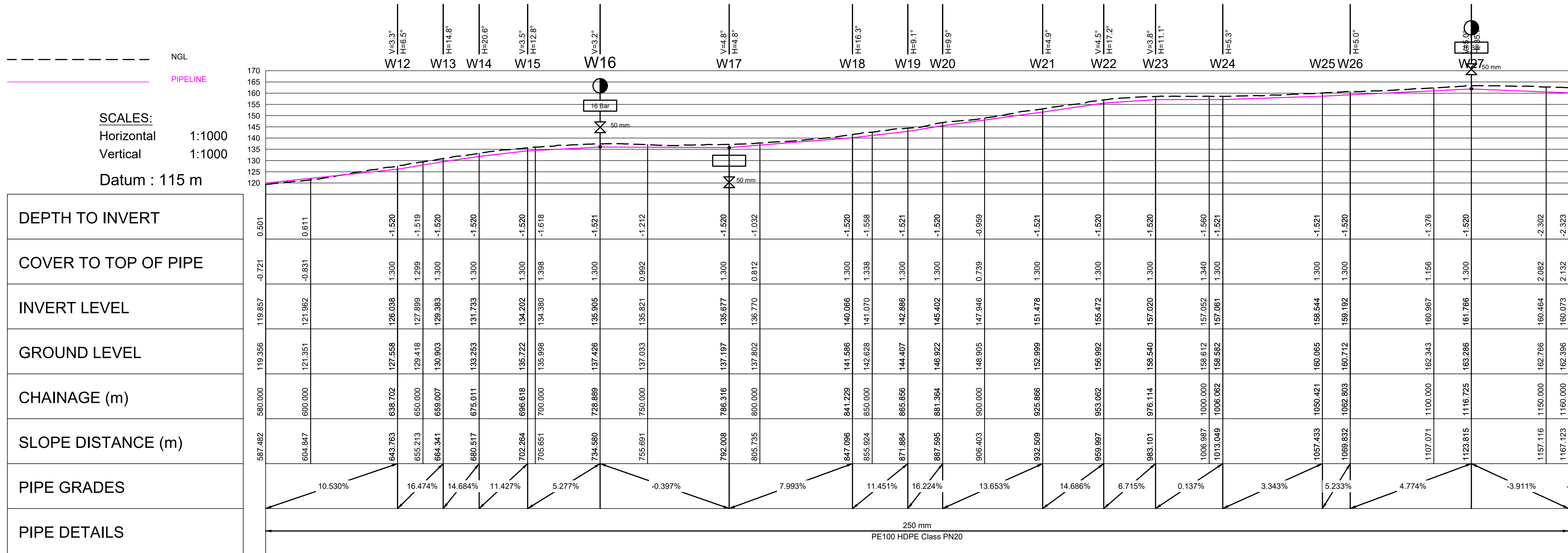
Drawn: G.D Bezuidenhout Date: Jul 2022

Scale/s: As Shown

Drawing number: 22-032-V-PH4-01-03 Rev.: 00



PLAN
Scale 1:1000



PROFILE
Scale 1:1000

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ISO Registered 9001:2015

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Vryheid | Kwa Zulu Natal |
RSA
vryheid@ecaconsult.co.za
Tel: +27 (0)34 983 2825
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PIETERMARITZBURG |
LADYSMITH

Approved by Engineer: _____ Signature: _____
Name: J.W. Janse v Rensburg
Designation: PrTechEng
ECSA Reg.: 201070143 Date: 28 Oct 2022

Project Funder/ Client:
mig
Municipal Infrastructure Grant

Project Implementing Agent:
KING CETSHWAYO DISTRICT MUNICIPALITY

Approved by Client: _____
Name: _____
Signature: _____ Date: _____

Project:
KWAHLOKOHLOKO SSA5: PHASE 4 BULK AUGMENTATION

Drawing description:
RIISING MAIN PLAN & LONG SECTION SHEET 02

Drawn: G.D Bezuidenhout Date: Jul 2022
Scale/s: As Shown
Drawing number: 22-032-V-PH4-01-04 Rev.: 00

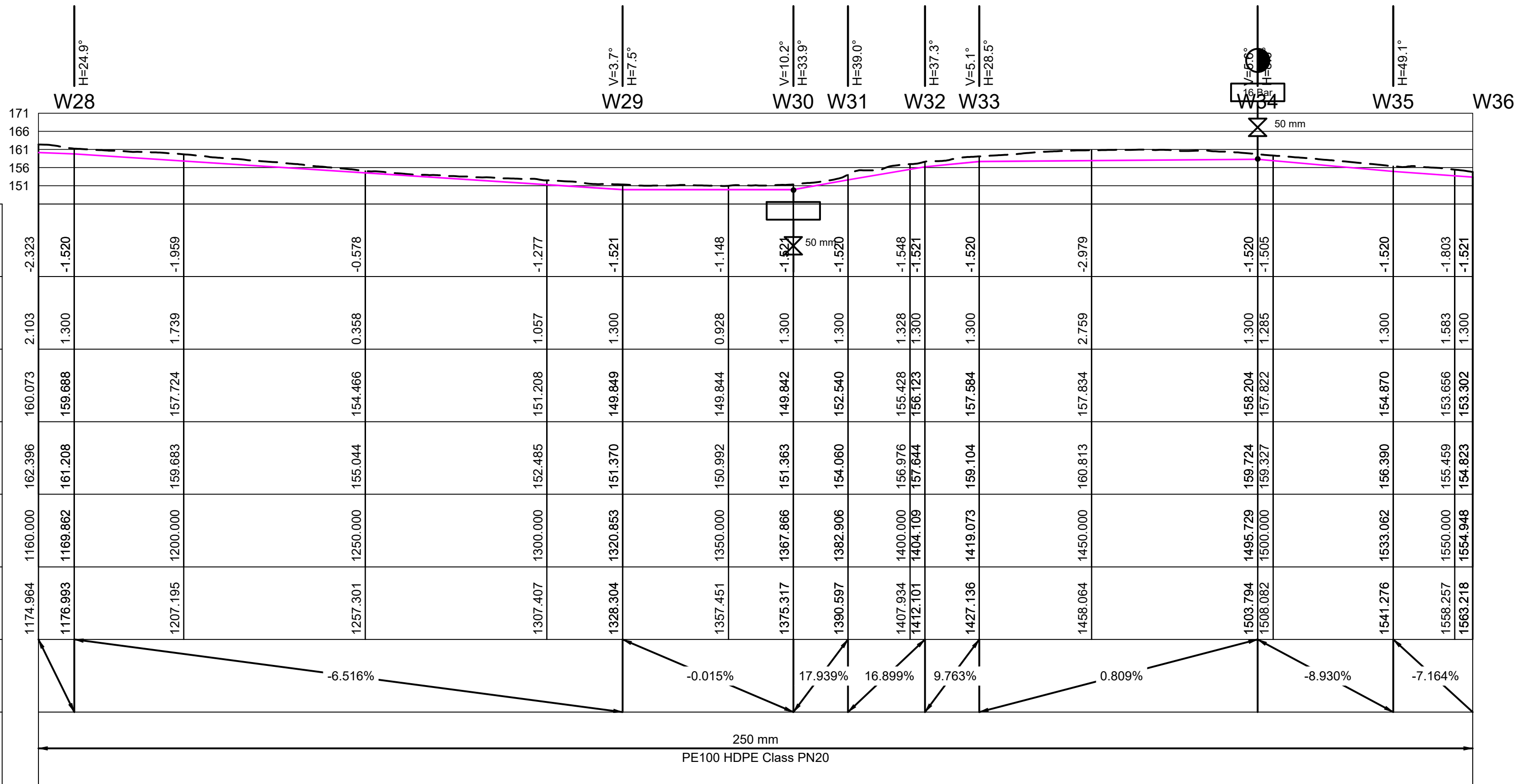


PLAN
Scale 1:1000

--- NGL
--- PIPELINE

SCALES:
Horizontal 1:1000
Vertical 1:1000
Datum : 146 m

DEPTH TO INVERT
COVER TO TOP OF PIPE
INVERT LEVEL
GROUND LEVEL
CHAINAGE (m)
SLOPE DISTANCE (m)
PIPE GRADES
PIPE DETAILS



PROFILE
Scale 1:1000

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LADYSMITH

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Municipal Infrastructure Grant

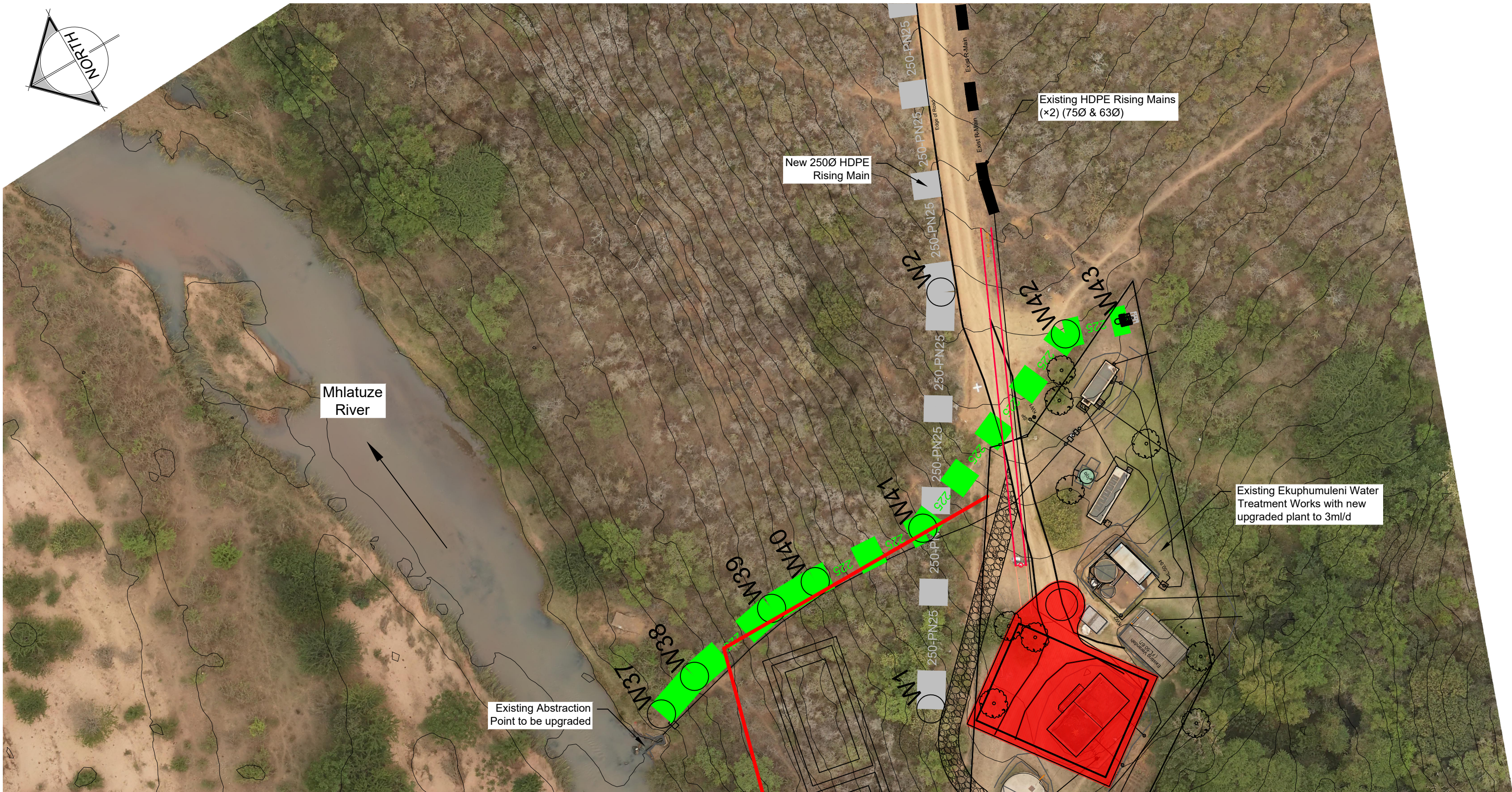
Project Implementing Agent:
KING CETSHWAYO DISTRICT MUNICIPALITY

Approved by Client:
Name: _____
Signature: _____ Date: _____

Project:
**KWAHLOKOHLOKO SSA5:
PHASE 4 BULK
AUGMENTATION**

Drawing description:
**RIISING MAIN PLAN &
LONG SECTION
SHEET 03**

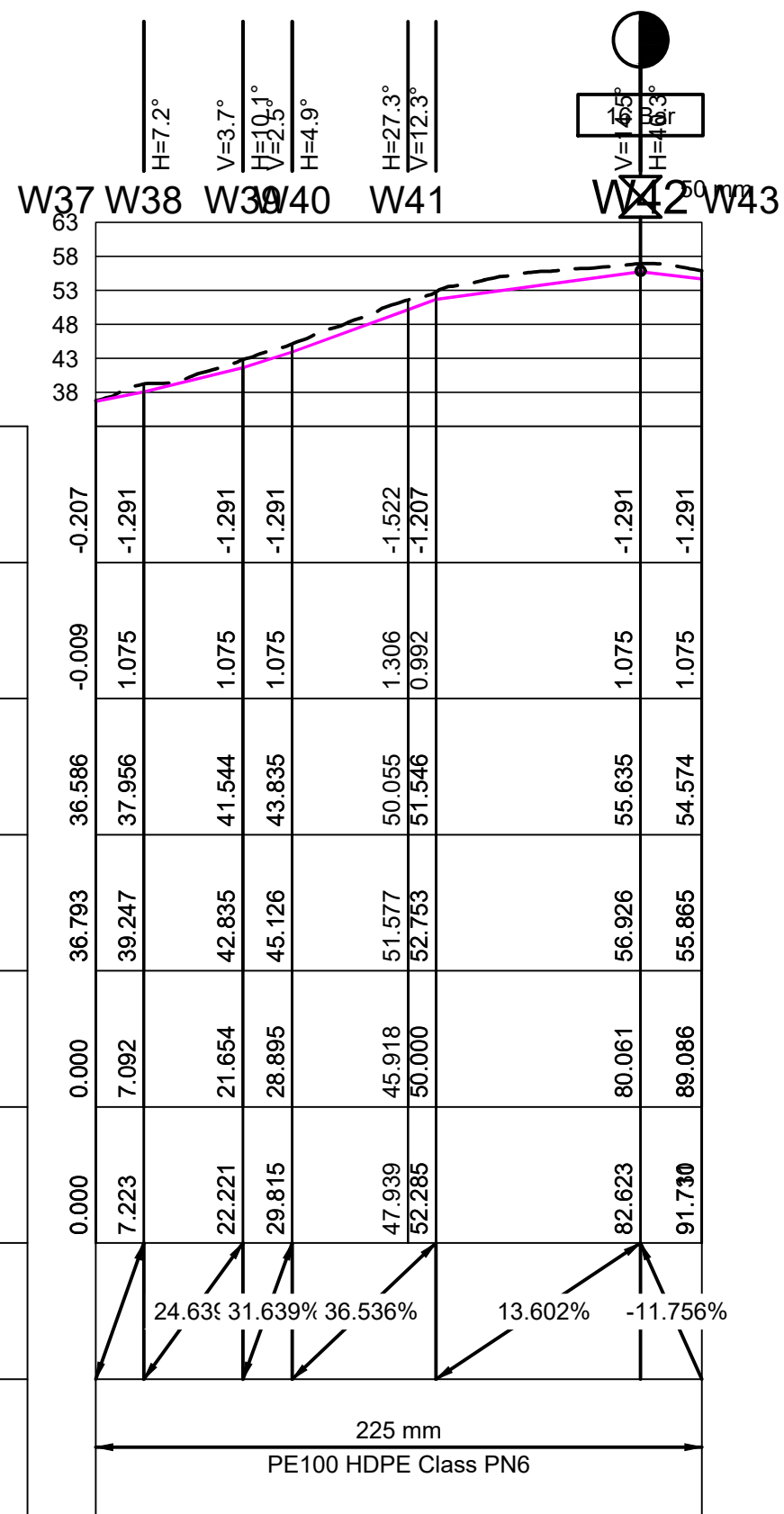
Drawn: G.D Bezuidenhout Date: Jul 2022
Scale/s: As Shown
Drawing number: 22-032-V-PH4-01-05 Rev.: 00



PLAN
Scale 1:500

----- NGL
----- PIPELINE

SCALES:
Horizontal 1:1000
Vertical 1:1000
Datum : 33 m



LONG SECTION
Scale 1:1000

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RSA
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LADYSMITH

Approved by Engineer: Signature: _____
Name: J.W. Janse v Rensburg
Designation: PrTechEng
ECSA Reg.: 201070143 Date: 28 Oct 2022

Project Funder/ Client:



Project Implementing Agent:

KING CETSHWAYO DISTRICT MUNICIPALITY

Approved by Client: _____
Name: _____
Signature: _____ Date: _____

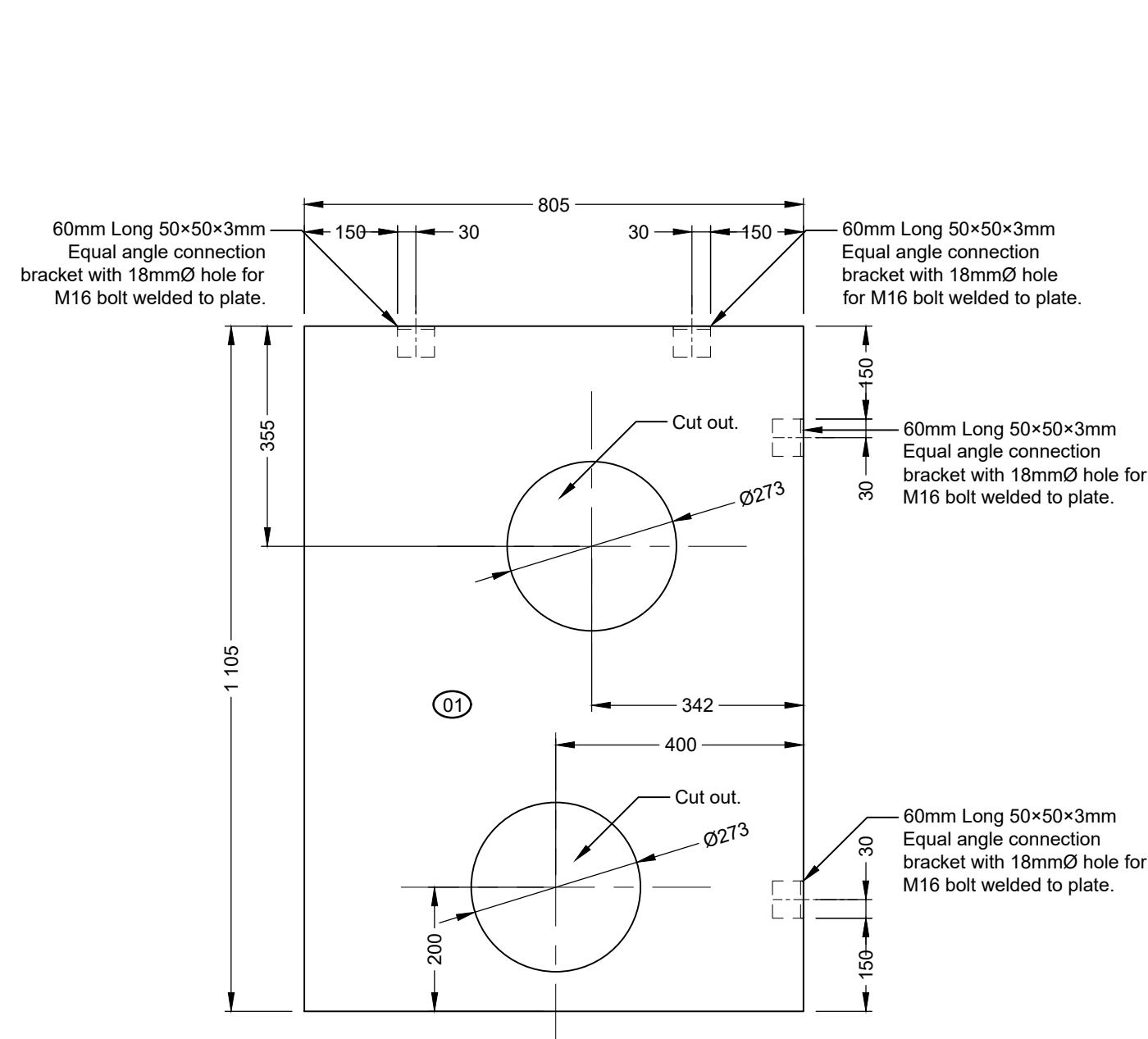
Project:

**KWAHLOKOHLOKO SSA5:
PHASE 4 BULK
AUGMENTATION**

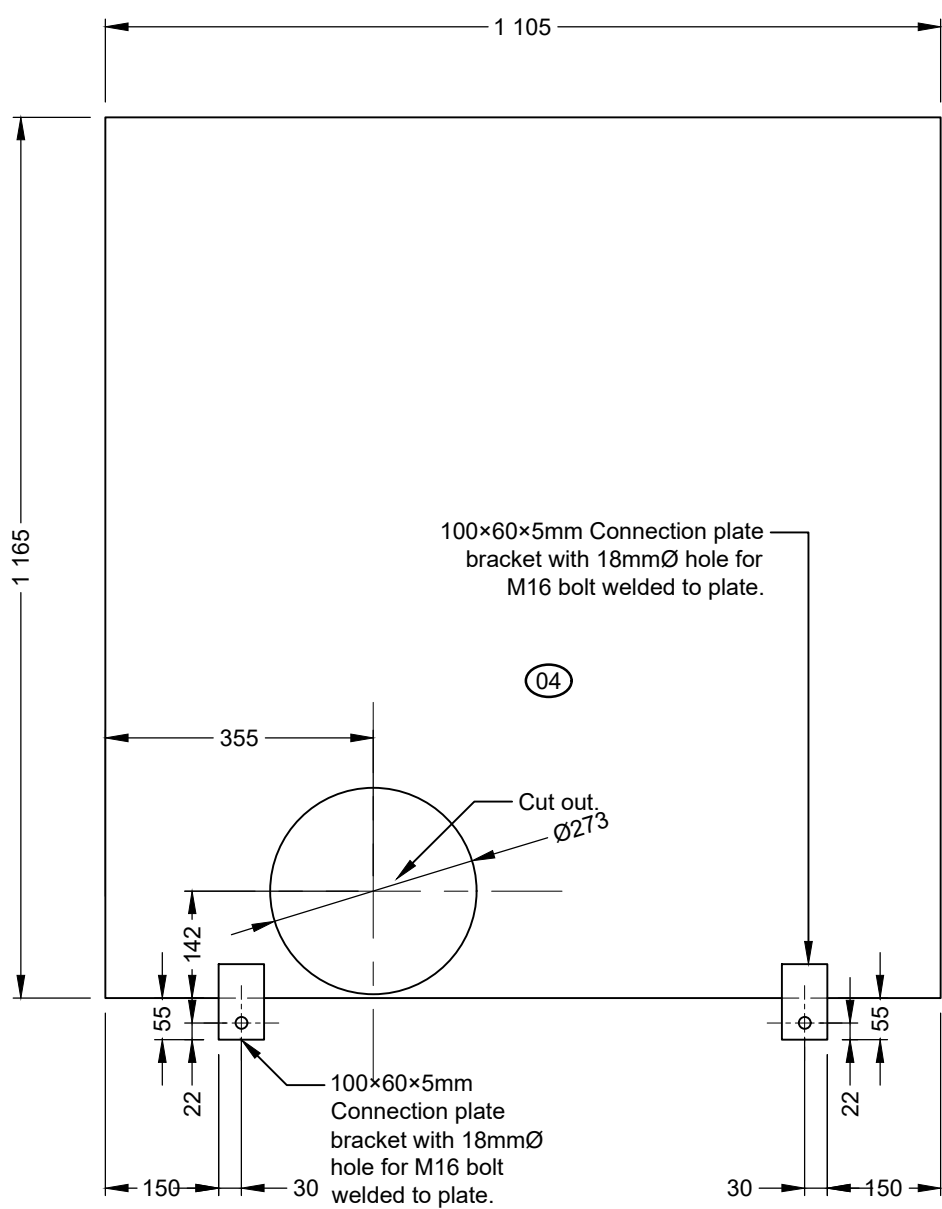
Drawing description:

**RAW WATER RISING MAIN
PLAN & LONG SECTION
SHEET 01**

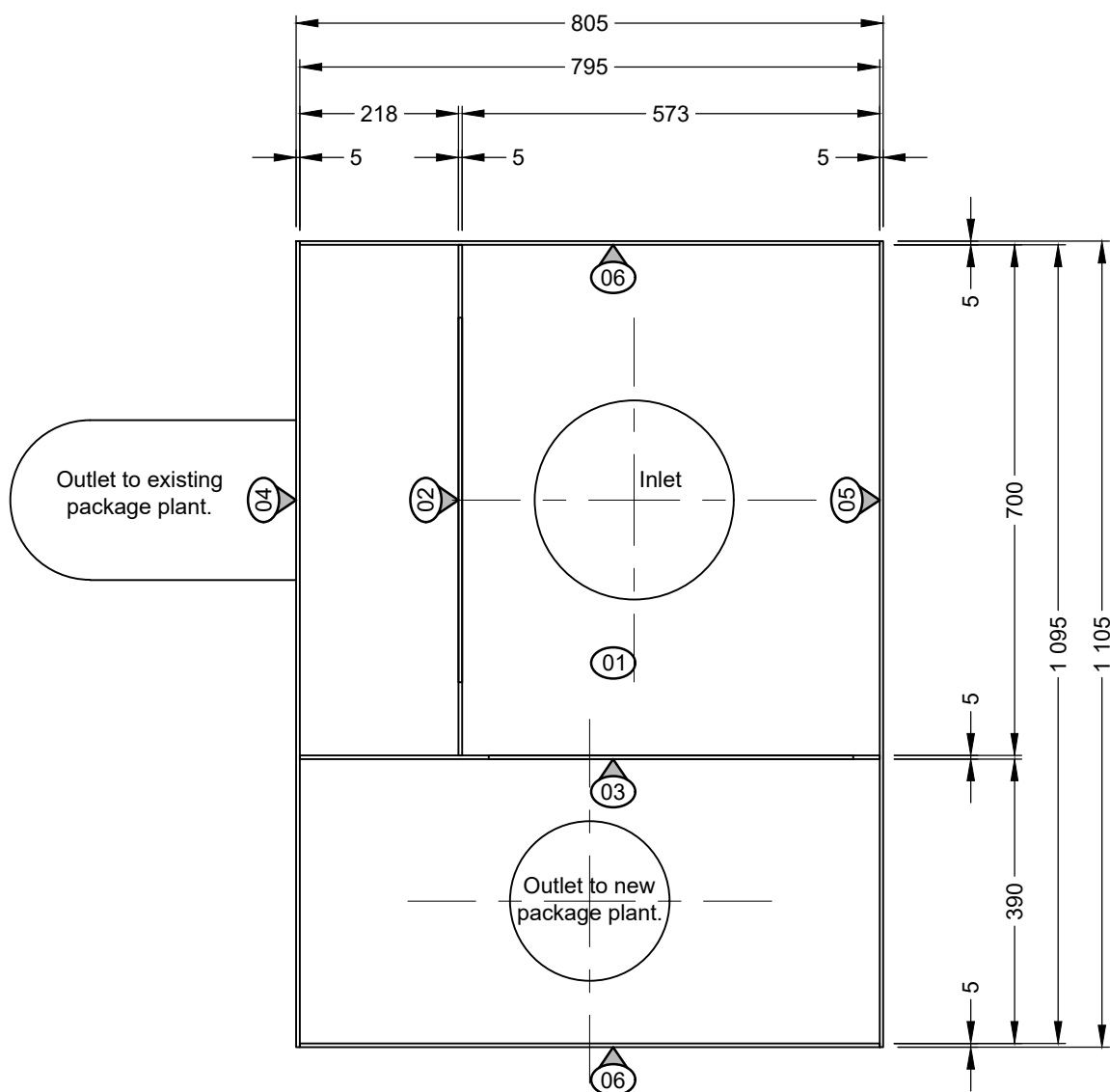
Drawn: G.D Bezuidenhout Date: Jul 2022
Scale/s: As Shown
Drawing number: 22-032-V-PH4-01-06 Rev.: 00



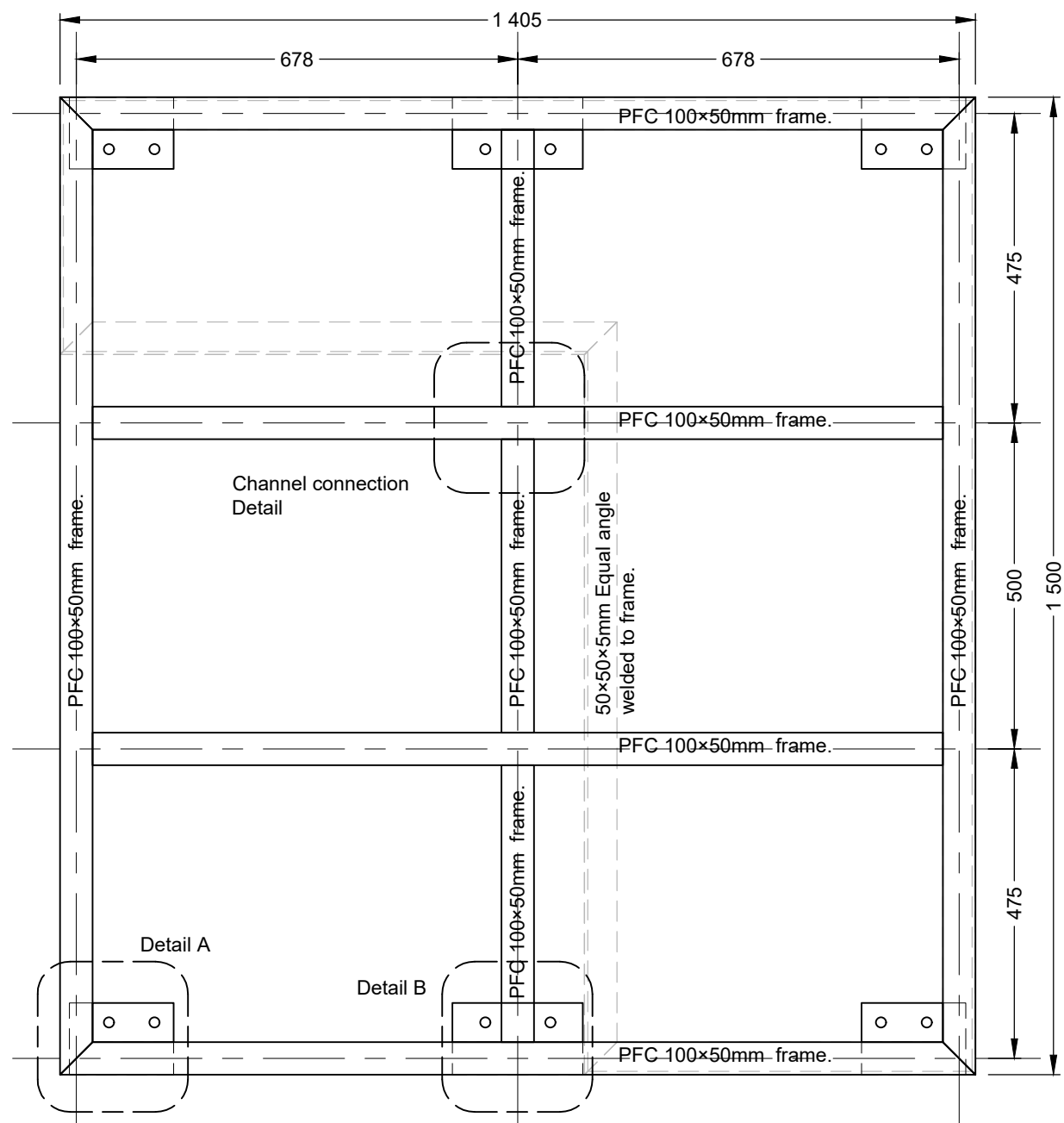
SPLITTER BOX BASE PLATE
Scale 1 : 10



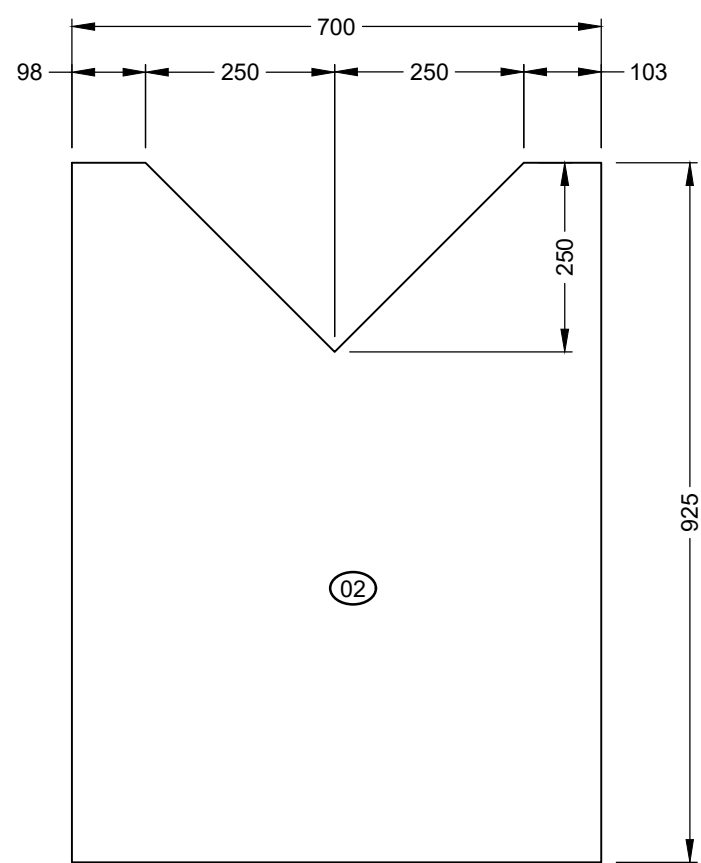
FRONT PLATE
Scale 1 : 10



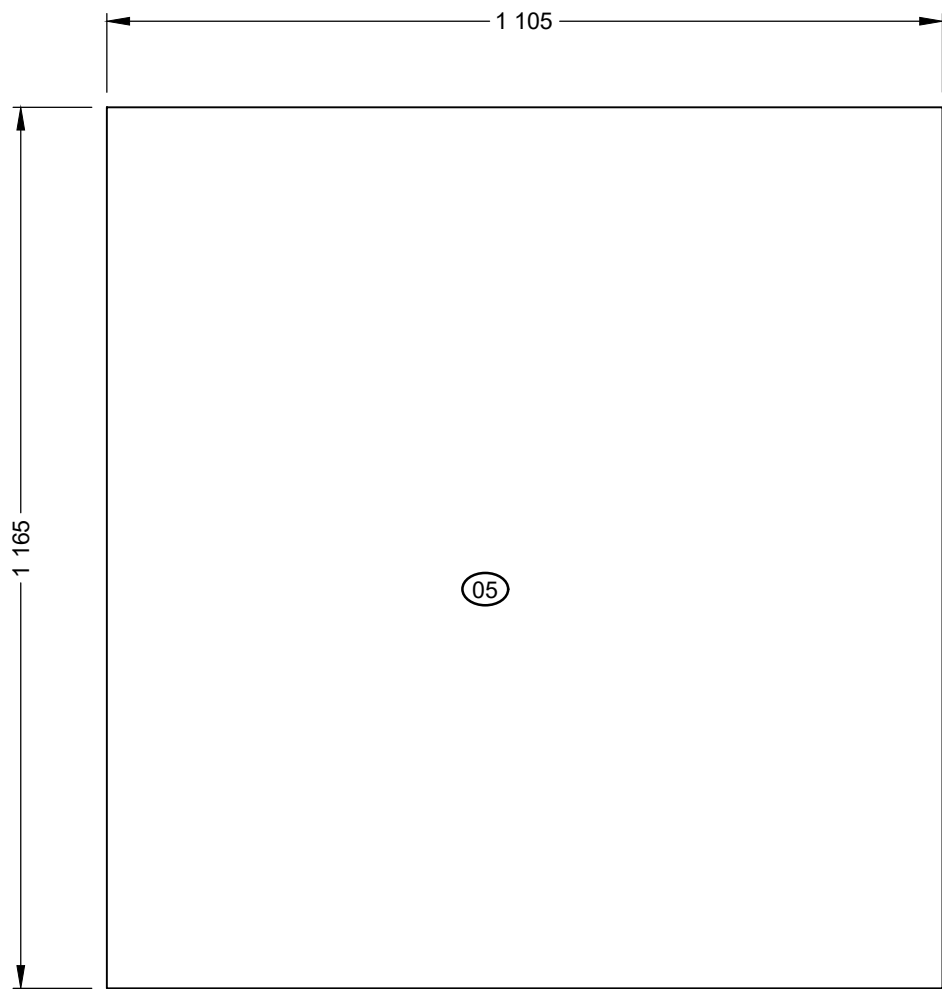
SPLITTER BOX PLAN
Scale 1 : 10



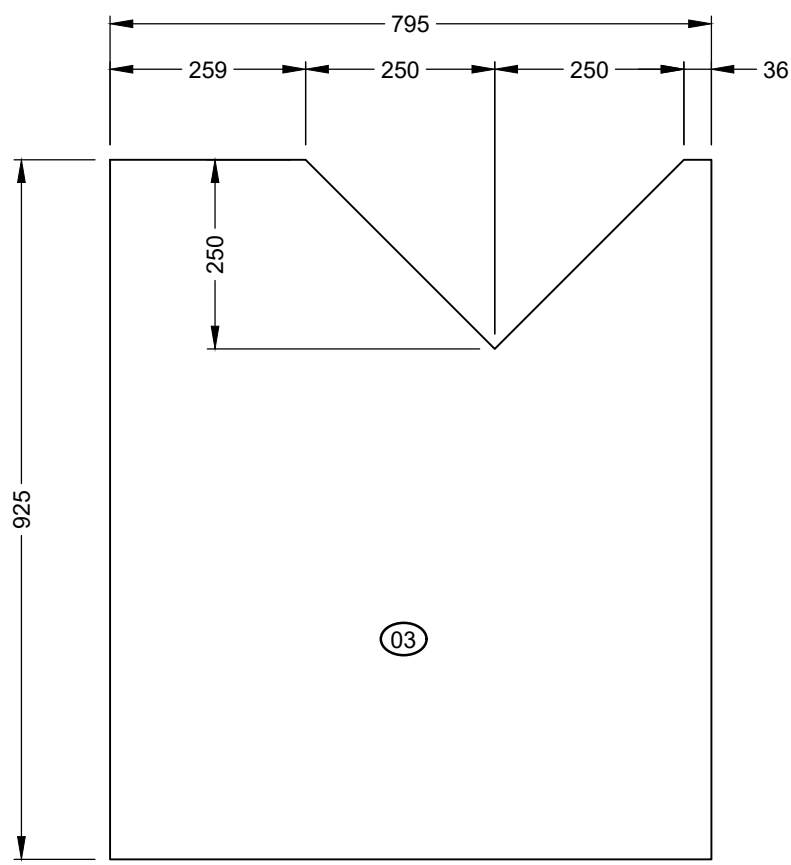
SPLITTER BOX & WALKWAY
FRAME DETAIL PLAN
Scale 1 : 10



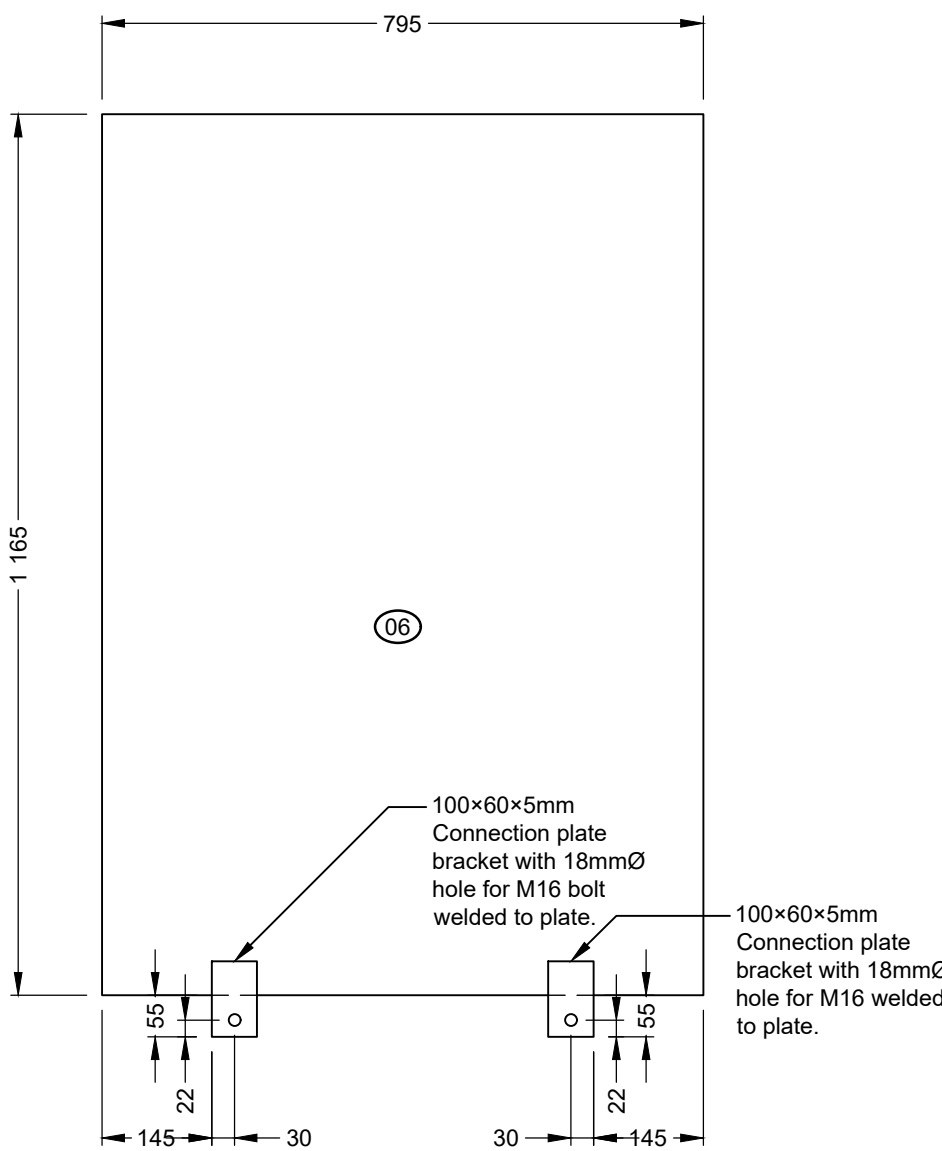
WATER OVERFLOW PLATE
Scale 1 : 10



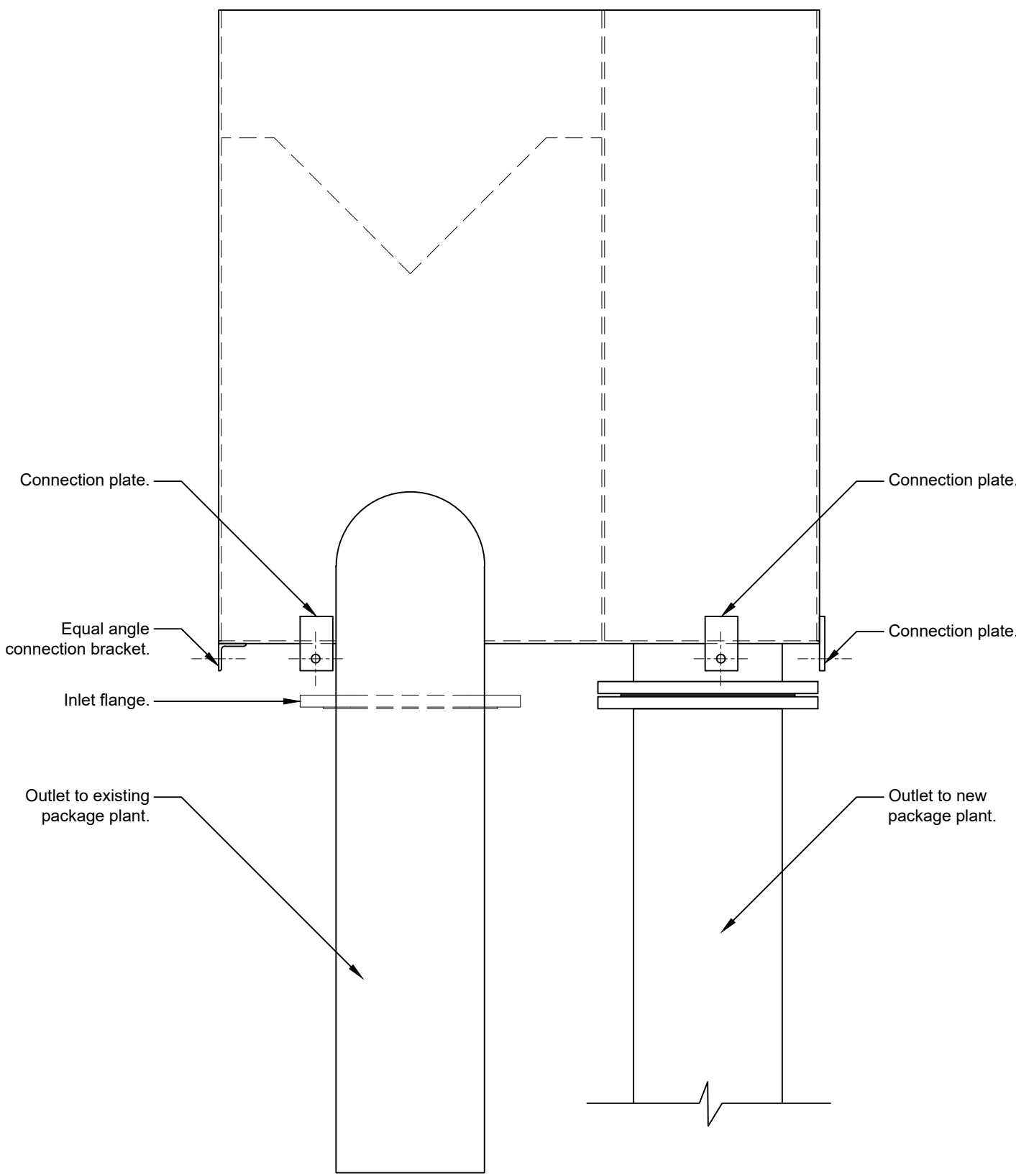
BACK PLATE
Scale 1 : 10



WATER OVERFLOW PLATE
Scale 1 : 10

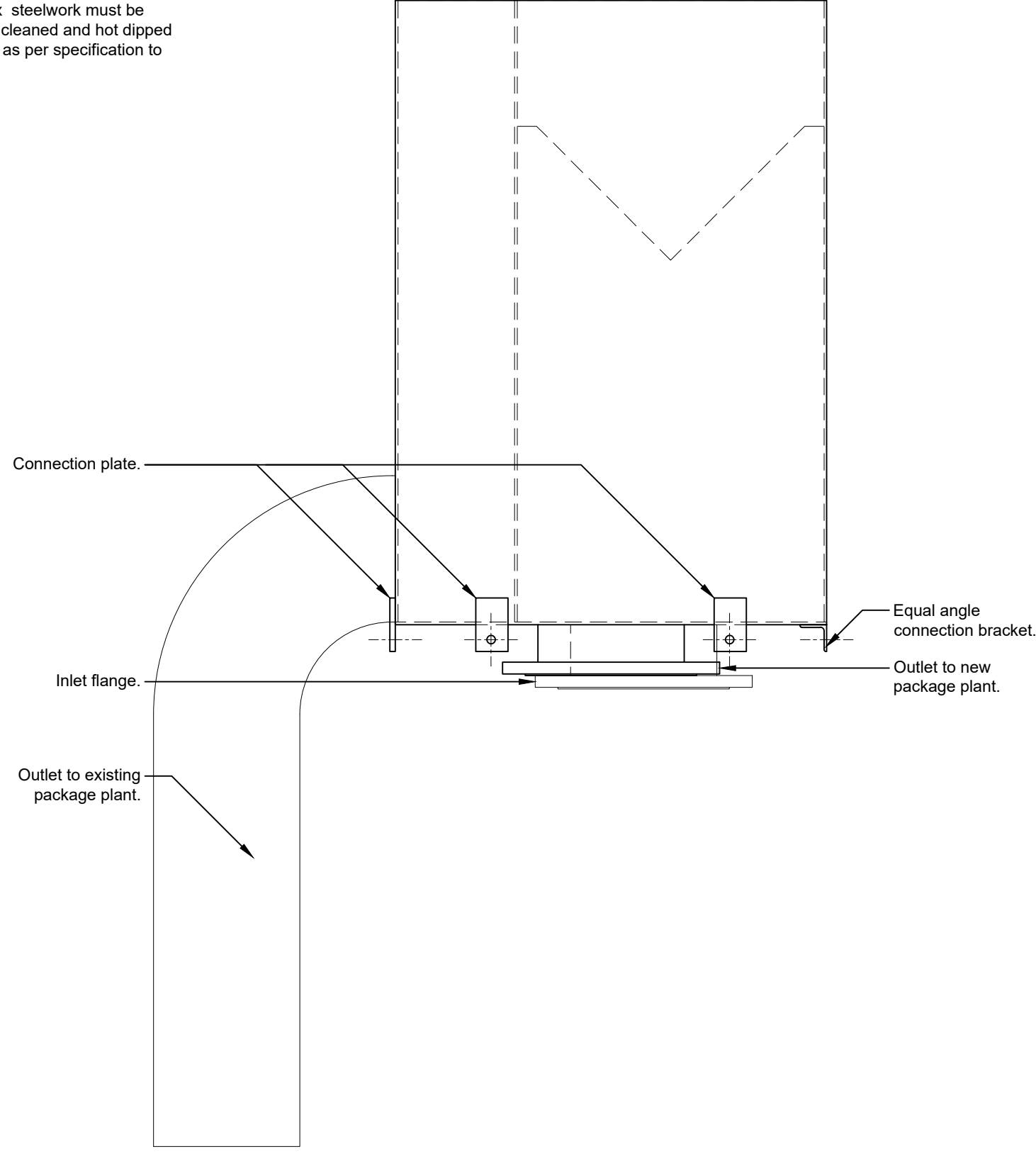


SIDE PLATE (×2)
Scale 1 : 10



SPLITTER BOX FRONT ELEVATION
Scale 1 : 10

NOTE:
1 - All plates to be 5mm Thick
2 - Splitter box steelwork must be
thoroughly cleaned and hot dipped
galvanised as per specification to
SABS 763.



SPLITTER BOX SIDE ELEVATION
Scale 1 : 10

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OFFICE:
161 High Street |
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RSA
vryheid@ecaconsult.co.za
Tel: +27 (0)34 963 2625
www.ecaconsult.co.za
OTHER OFFICES:
MBOMBELA | GAUTENG |
PIETERMARITZBURG |
LADYSMITH

Approved by Engineer:
Name: J.W. Janse v Rensburg
Designation: PrTechEng
ECOSA Reg.: 201070143
Signature: _____
Date: 27 Oct 2022

Project Funder/ Client:
mig
Municipal
Infrastructure
Grant

Project Implementing Agent:
**KING
CETSHWAYO
DISTRICT
MUNICIPALITY**

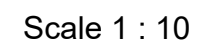
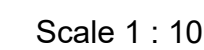
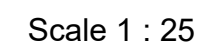
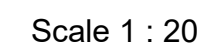
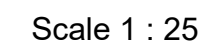
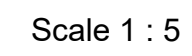
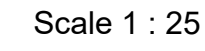
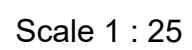
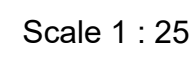
DISTRICT MUNICIPALITY

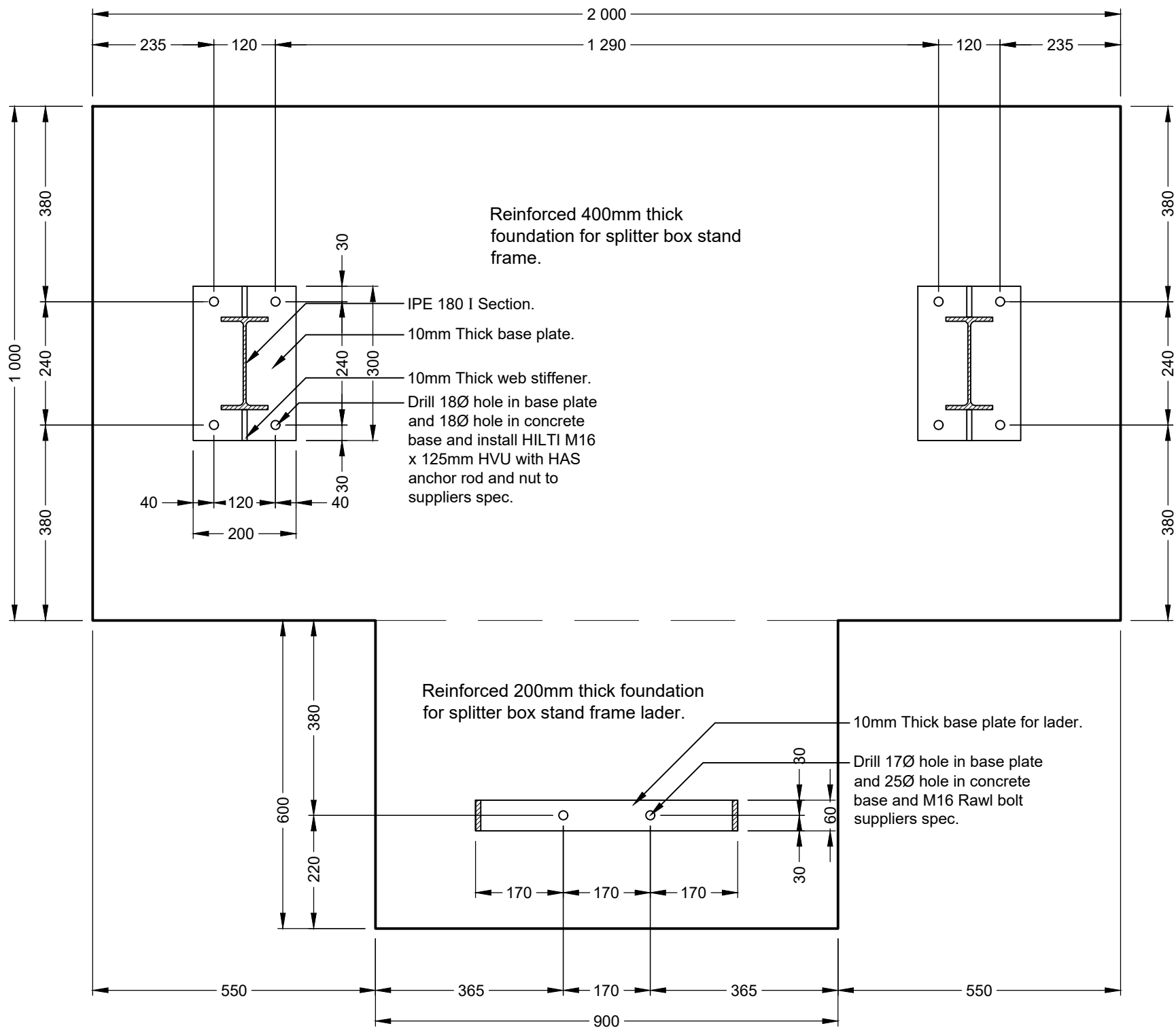
Approved by Client:
Name: _____
Signature: _____ Date: _____

Project:
**KWAHLOKOHLKO SSA5:
PHASE 4 BULK
AUGMENTATION**

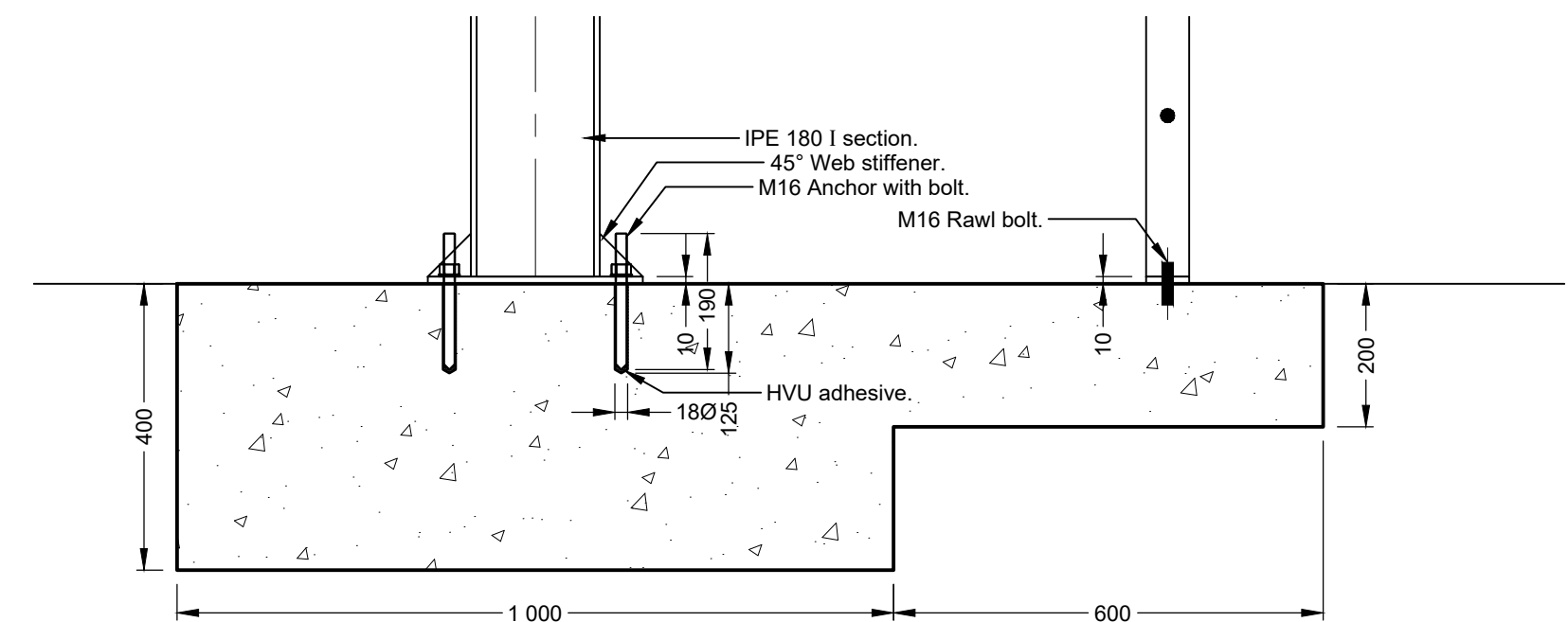
Drawing description:
**SPLITTER BOX
DETAILS**

Drawn: G.D Bezuidenhout Date: Jul 2022
Scale/s: As Shown
Drawing number: 22-032-V-PH4-02-01 Rev.: 00

[illegible]



SPLITTER BOX FRAME
BASE FOUNDATION PLAN
Scale 1 : 10



SPLITTER BOX STAND
FOUNDATION SECTION
Scale 1 : 10

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161 High Street |
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PIETERMARITZBURG |
LADYSMITH

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Name: J.W. Janse v Rensburg
Designation: PrTechEng
ECSA Reg.: 201070143 Date: 27 Oct 2022

Project Funder/ Client:
mig
Municipal
Infrastructure
Grant



Project Implementing Agent:
**KING
CETSHWAYO
DISTRICT
MUNICIPALITY**

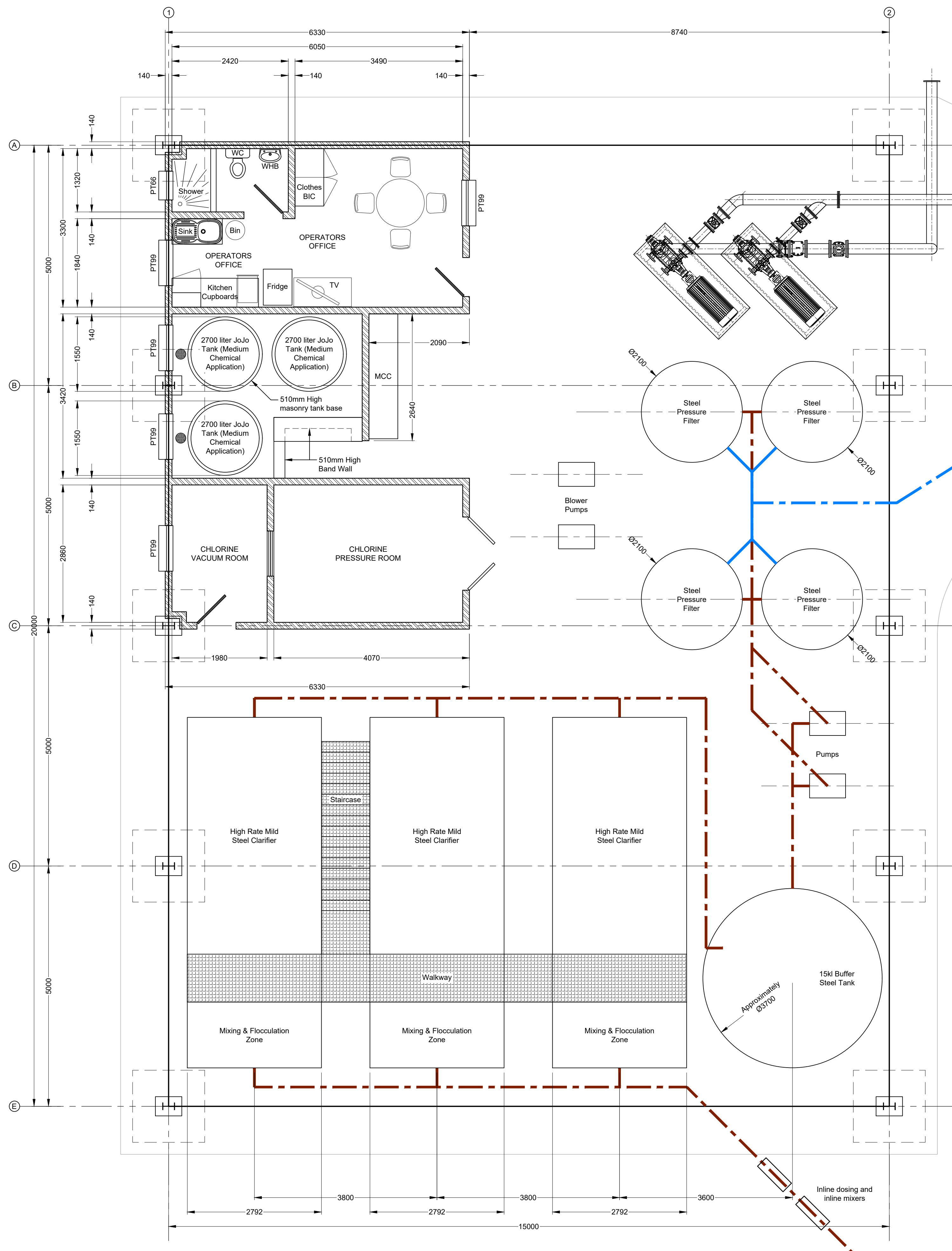

KING CETSHWAYO
DISTRICT MUNICIPALITY

Approved by Client:
Name: _____
Signature: _____ Date: _____

Project:
**KWAHLOKOHLOKO SSA5:
PHASE 4 BULK
AUGMENTATION**

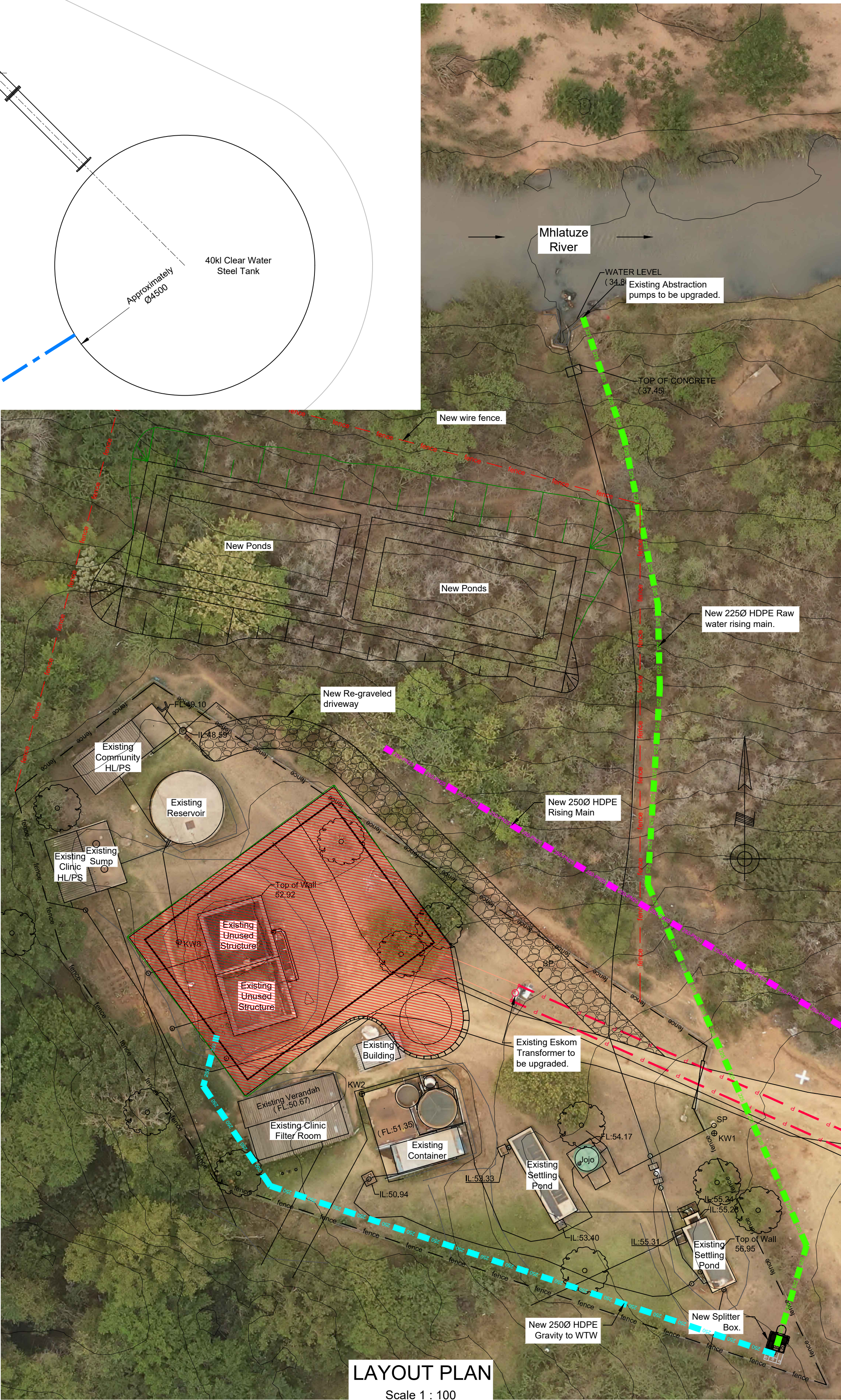
Drawing description:
**SPLITTER BOX STAND
FOUNDATION DETAILS**

Drawn: G.D Bezuidenhout Date: Jul 2022
Scale/s: As Shown
Drawing number: 22-032-V-PH4-02-03 Rev.: 00



FLOOR PLAN
Scale 1 : 50

BENCHMARK DATA (WG 31) - TRIG No.92				
NAME	Y	X	Z	DESCRIPTION
KW1	-73875.80	3184504.06	55.68	12mm Iron Peg 0.6m from fence
KW2	-73845.31	3184500.65	51.36	12mm Iron Peg on corner of concrete slab
KW5	-74334.26	3185212.95	164.23	Centre of Manhole on Chamber
KW8	-73829.48	3184487.52	51.15	Black Cross on Blue PVC Pipe
1190	-74152.44	3185555.31	156.20	Stand Pipe in centre of concrete base



LAYOUT PLAN
Scale 1 : 100

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ECSA Reg.: 201070143 Date: 27 Oct 2022

Project Funder/ Client:
mig
Municipal Infrastructure Grant

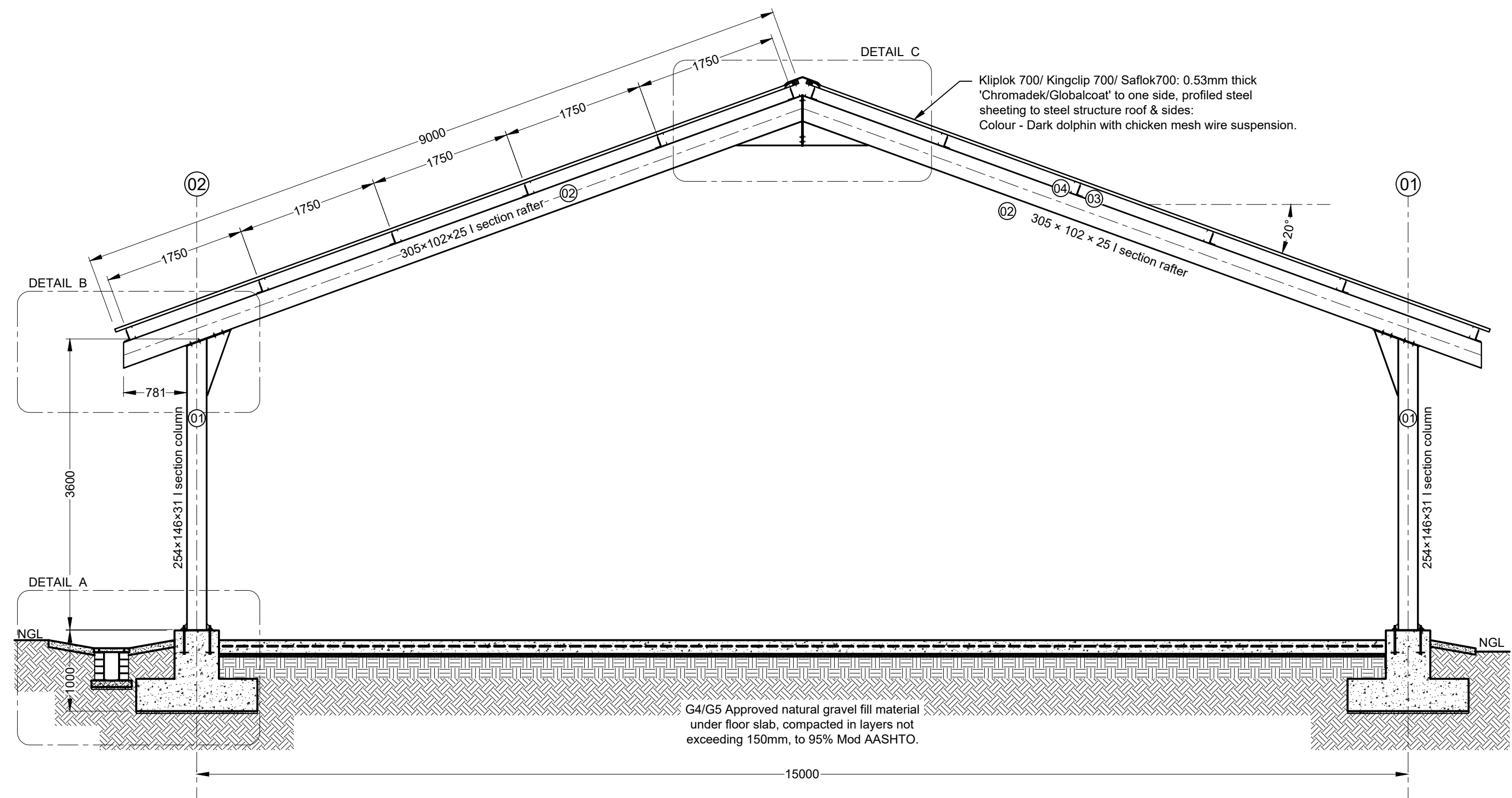
Project Implementing Agent:
KING CETHSWAYO DISTRICT MUNICIPALITY

Approved by Client: _____
Name: _____
Signature: _____ Date: _____

Project:
**KWAHLOKOHLOKO SSA5:
PHASE 4 BULK
AUGMENTATION**

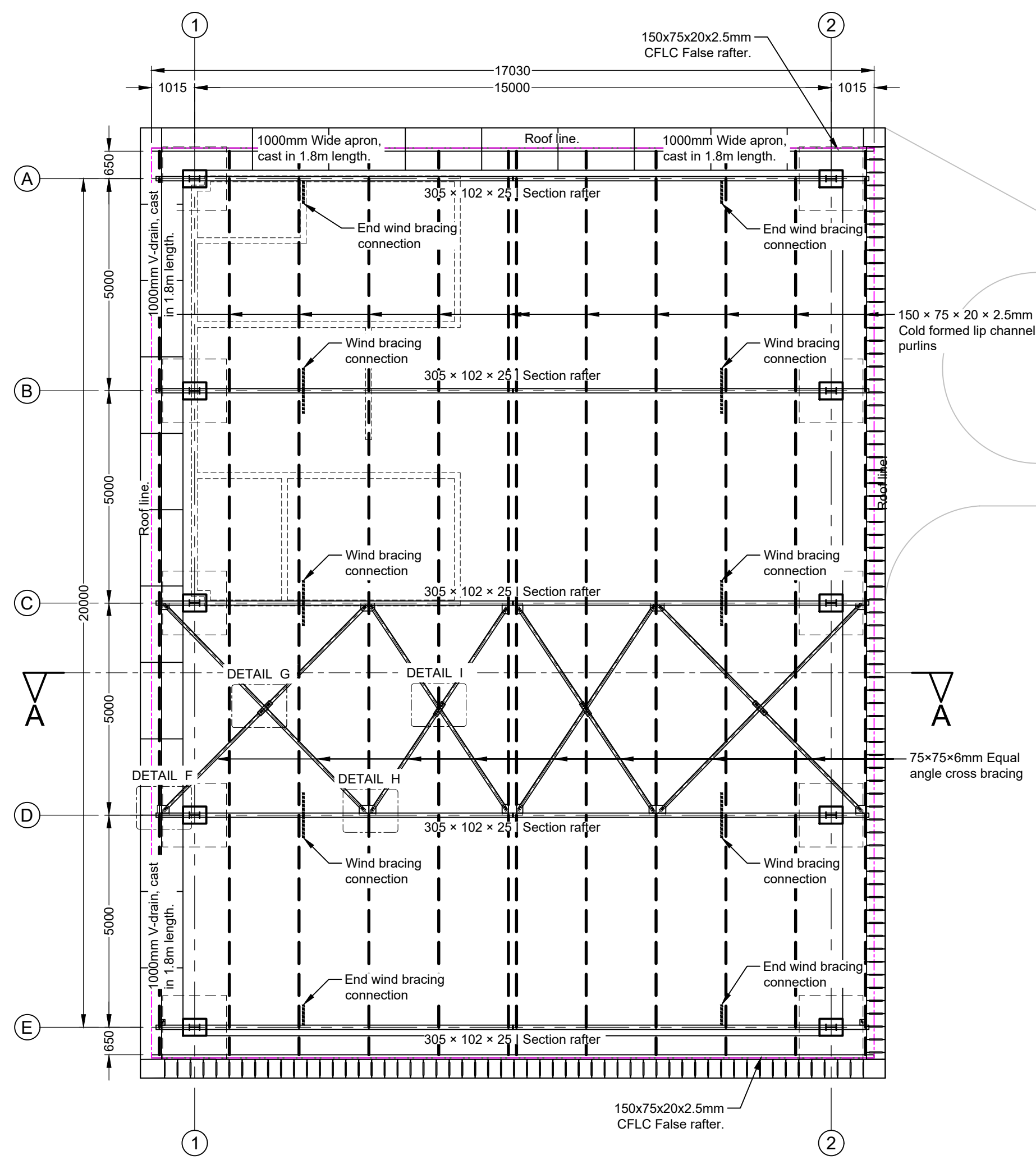
Drawing description:
**PACKAGE PLANT
FLOOR & LAYOUT PLAN**

Drawn: G.D Bezuidenhout	Date: Jul 2022
Scale/s: As Shown	
Drawing number: 22-032-V-PH4-03-01	Rev.: 00

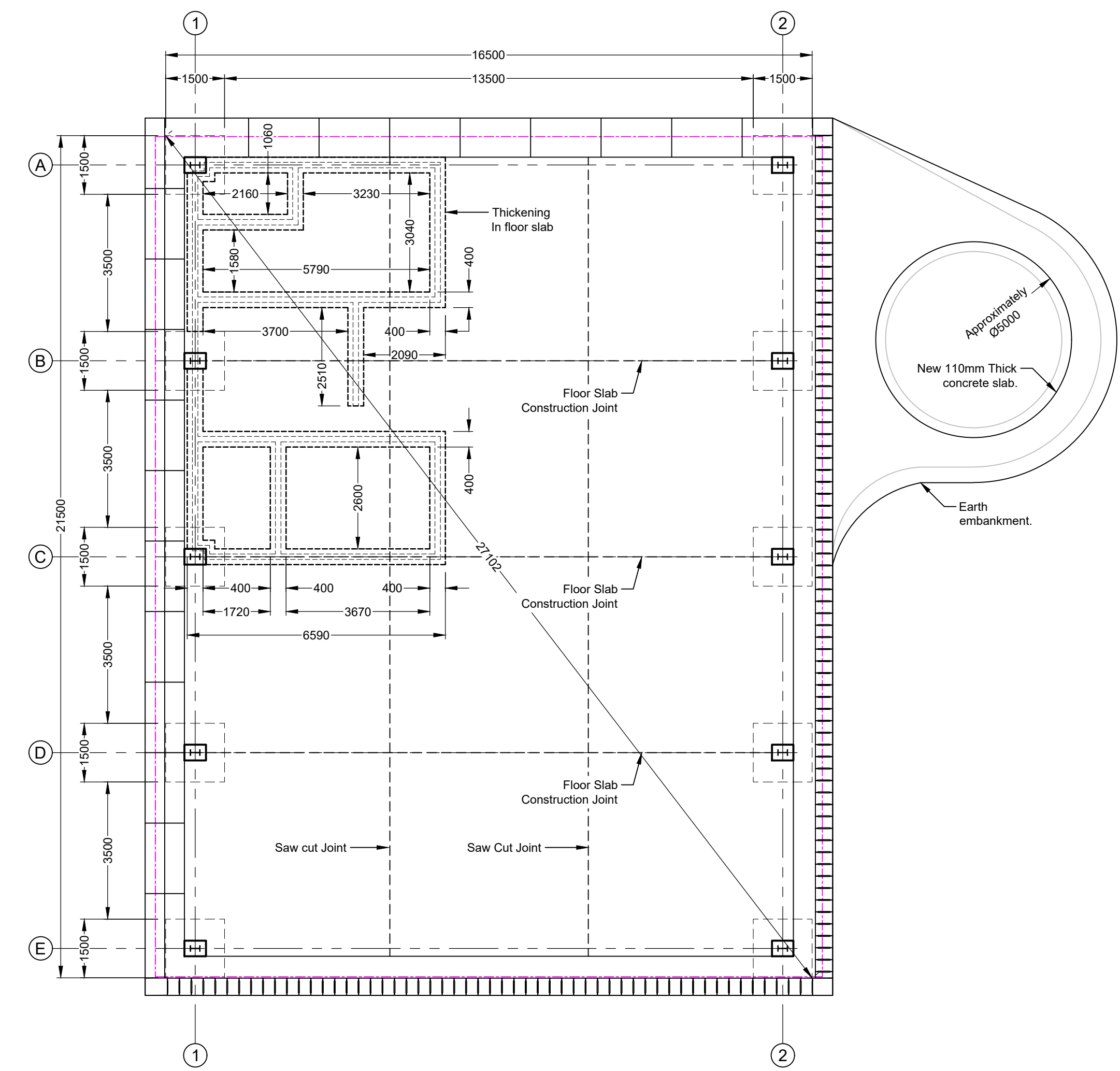


SECTION A-A
Scale 1:50

- LEGEND**
- 1. 254 x 146 x 31 I section column.
 - 2. 305 x 102 x 25 I section rafter.
 - 3. 125 x 75 x 8 mm Cleat
 - 4. 150 x 75 x 20 x 2.5 mm Purlins
 - 5. 50 x 50 x 5 mm Equal angle cross bracing
 - 6. 60 x 60 x 5mm Equal Angle (Cross Bracing)



PACKAGE PLANT FLOOR PLAN
Scale 1:100



PACKAGE PLANT FLOOR PLAN
Scale 1:100

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LADYSMITH

Approved by Engineer: Signature: _____
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Designation: PrTechEng
ECSA Reg.: 201070143 Date: 27 Oct 2022

Project Funder/ Client:

mig
Municipal
Infrastructure
Grant

Project Implementing Agent:

**KING
CETSHWAYO
DISTRICT
MUNICIPALITY**

Approved by Client: _____
Name: _____
Signature: _____ Date: _____

Project:
**KWAHLOKOHLOKO SSA5:
PHASE 4 BULK
AUGMENTATION**

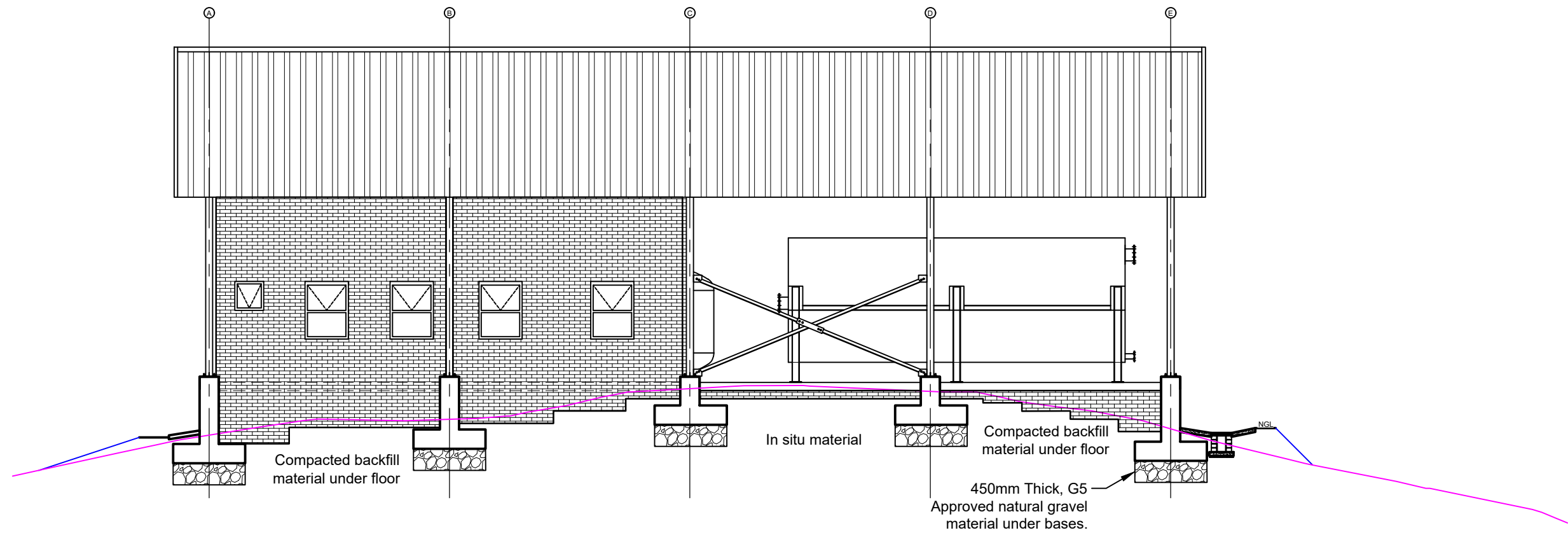
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**PACKAGE PLANT
PLANS & SECTION**

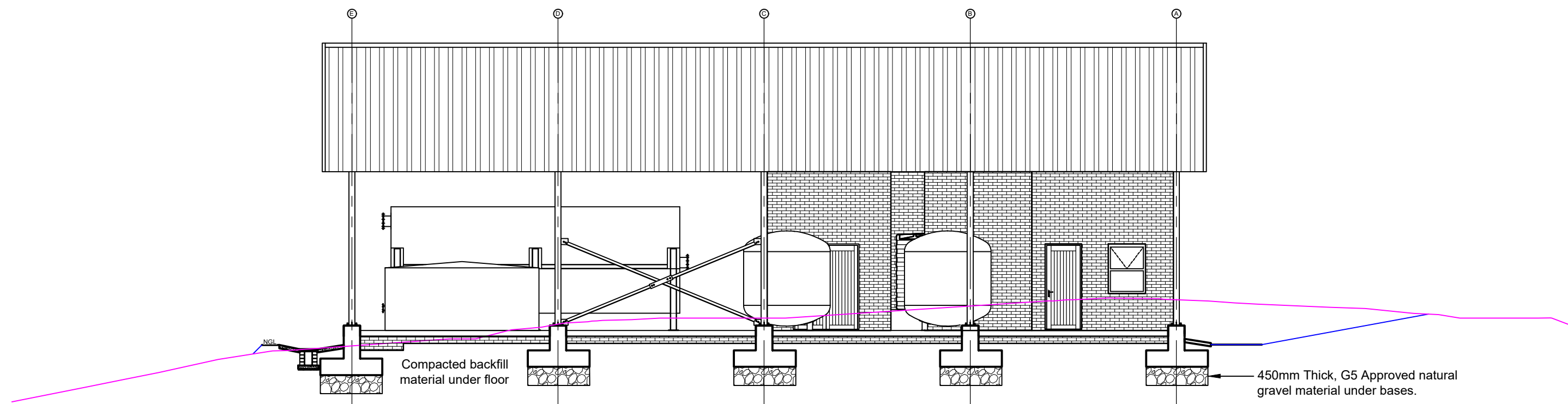
Drawn: G.D Bezuidenhout Date: Jul 2022

Scale/s: As Shown

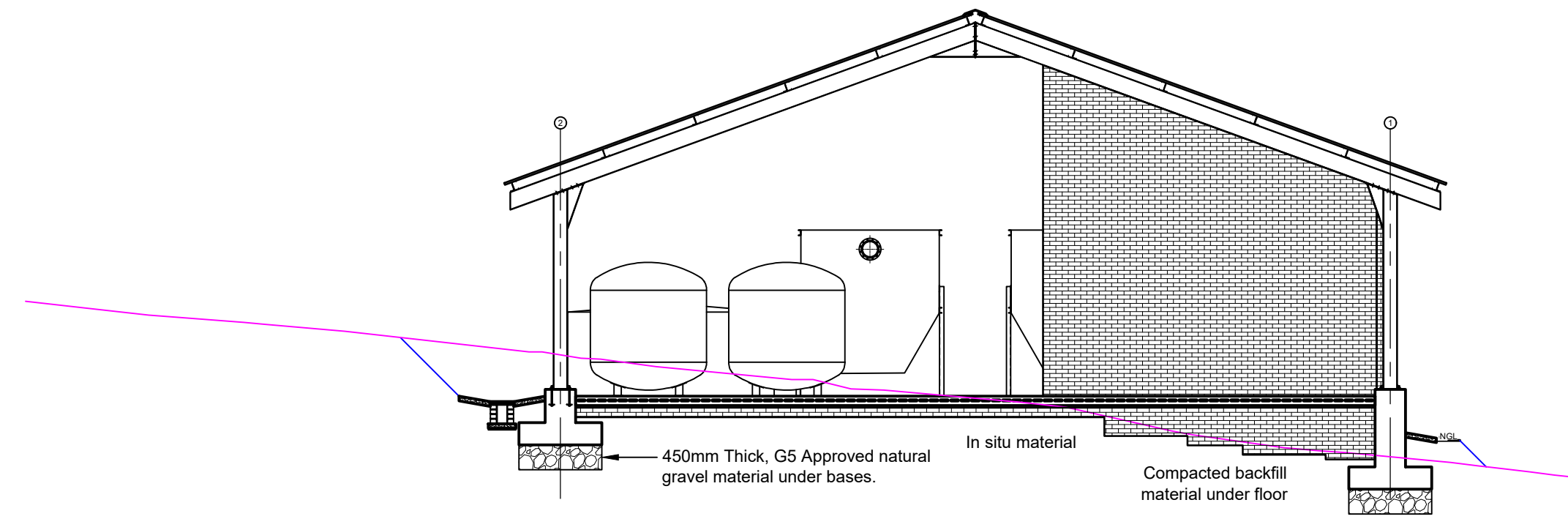
Drawing number: 22-032-V-PH4-03-02 Rev.: 00



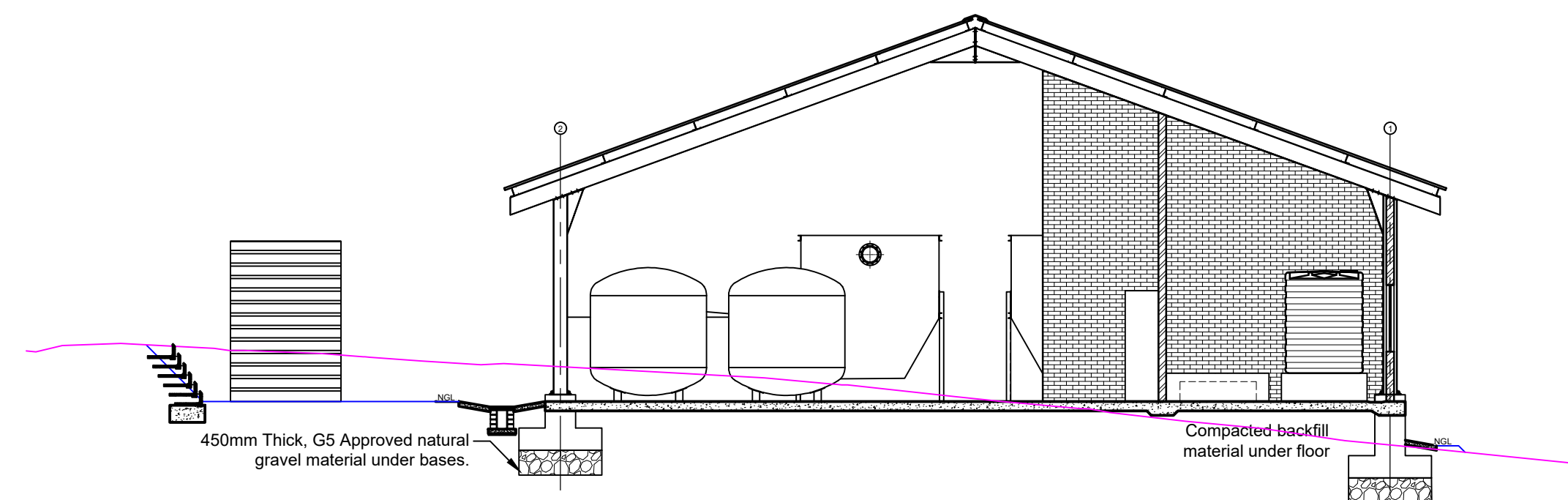
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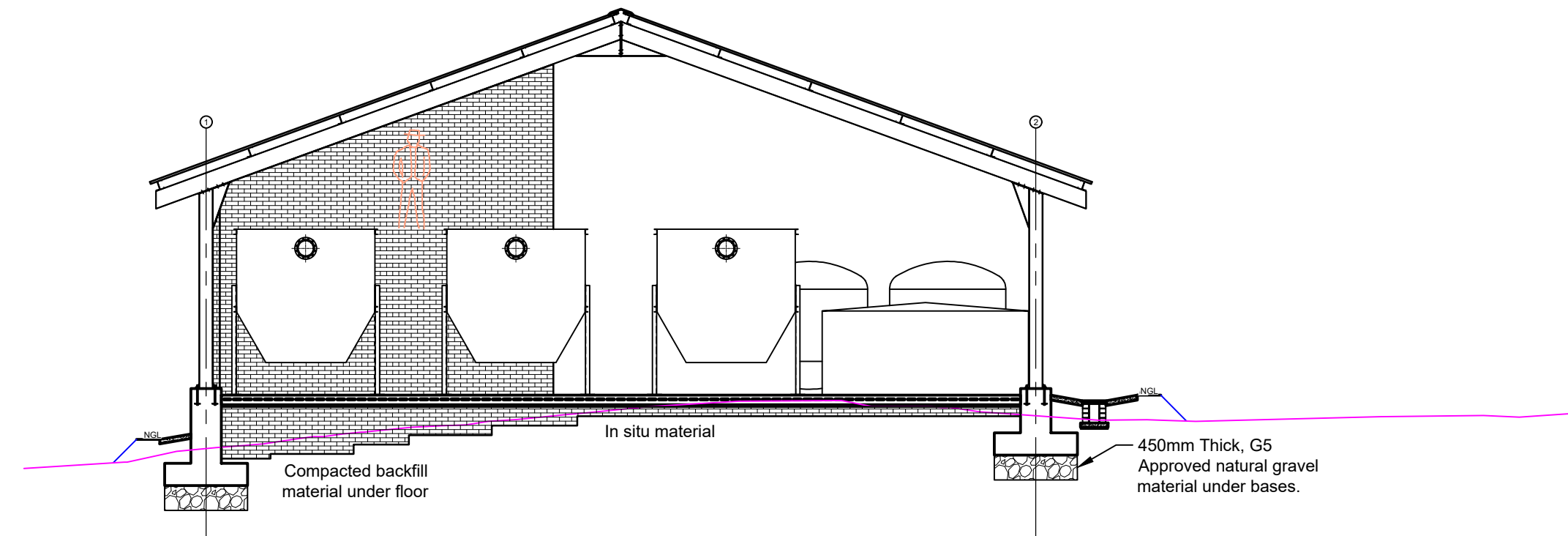
SECTION A2-A2
Scale 1 : 10



SECTION B1-B1
Scale 1 : 10



SECTION B2-B2
Scale 1 : 10



SECTION B3-B3
Scale 1 : 10

Legend:
Existing Ground Level
Proposed Ground Level

Do not scale off drawing - ASK THE ENGINEER IF UNCERTAIN!
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FOR TENDER
PURPOSES ONLY

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AMENDMENTS

Rev.	Date	Description

ECA CONSULTING

Civil and Structural Engineers

VRVHEID OFFICE:
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Vryheid | Kwa Zulu Natal |
RSA
vryheid@ecaconsult.co.za
Tel: +27 (0)34 983 2825
www.ecaconsult.co.za
OTHER OFFICES:
MBOMBELA | GAUTENG |
PIETERMARITZBURG |
LADYSMITH

Approved by Engineer: Signature: _____
Name: J.W. Janse v Rensburg
Designation: PrTechEng
ECSA Reg.: 201070143 Date: 27 Oct 2022

Project Funder/ Client:
mig
Municipal Infrastructure Grant



Project Implementing Agent:
KING CETHSWAYO DISTRICT MUNICIPALITY



Approved by Client: _____
Name: _____
Signature: _____ Date: _____

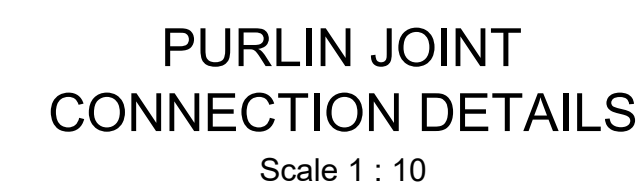
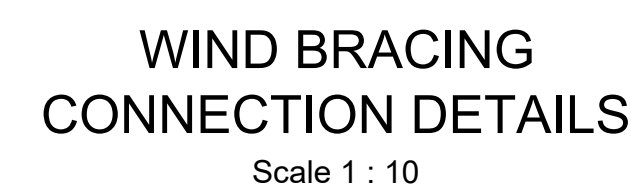
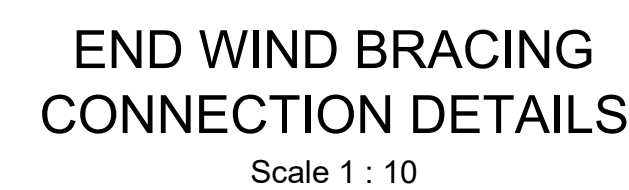
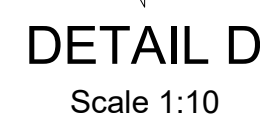
Project:
**KWAHLOKOHLOKO SSA5:
PHASE 4 BULK
AUGMENTATION**

Drawing description:
**PACKAGE PLANT
ELEVATIONS**

Drawn: G.D Bezuidenhout Date: Jul 2022

Scale/s: As Shown

Drawing number: 22-032-V-PH4-03-03 Rev.: 00



**FOR TENDER
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Drawing Number	Drawing Description

[illegible]



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 LADYSMITH

Company Reg.: 2004/019299/07
 ISO Registered 9001:2015

Approved by Engineer:	Signature:
Name: J.W. Janse v Rensburg	
Designation: PrTechEng	
ECSA Reg.: 201070143	Date: 27 Oct 2022

Project Funder/ Client:

mig

Municipal
Infrastructure
Grant

The seal of the City of Los Angeles, featuring an eagle with spread wings perched atop a shield. The shield contains a sunburst and a ship. The entire emblem is encircled by a border with the words "CITY OF LOS ANGELES" and "1850".

Project Implementing Agent:

**KING
CETSHWAYO
DISTRICT
MUNICIPALITY**



KING CETSHWAYO
DISTRICT MUNICIPALITY

Approved by Client: _____

Name: _____

Signature: _____ Date: _____

Project:

**KWAHLOKOHLOKO SSA5:
PHASE 4 BULK
AUGMENTATION**

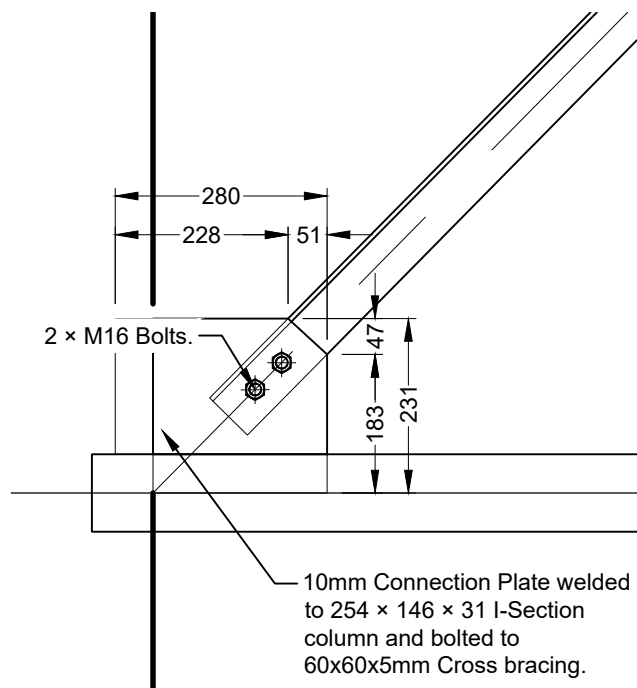
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**PACKAGE PLANT
DETAILS 01**

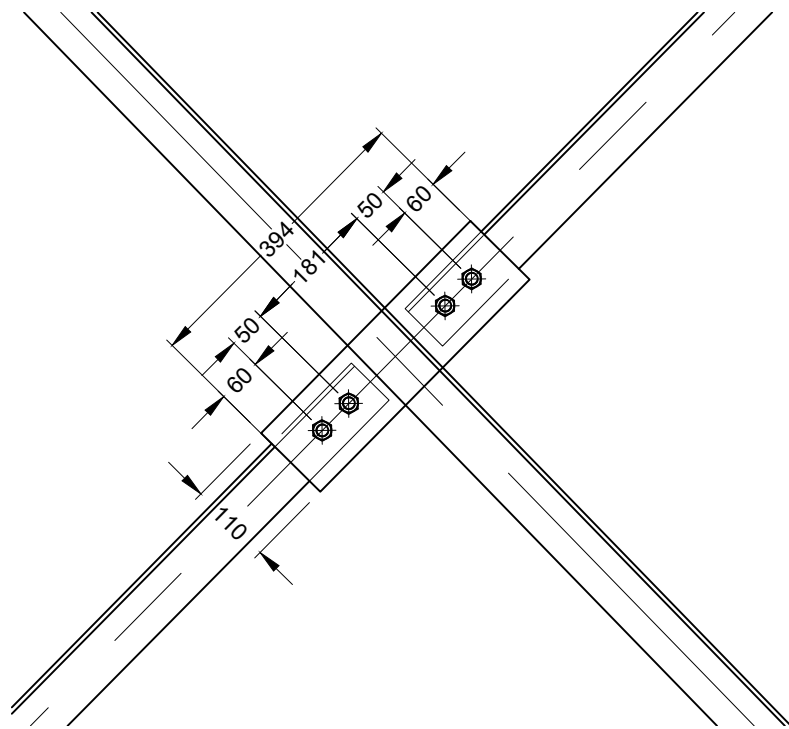
Drawn: G.D Bezuidenhout Date: Jul 2022

Scale/s: As Shown

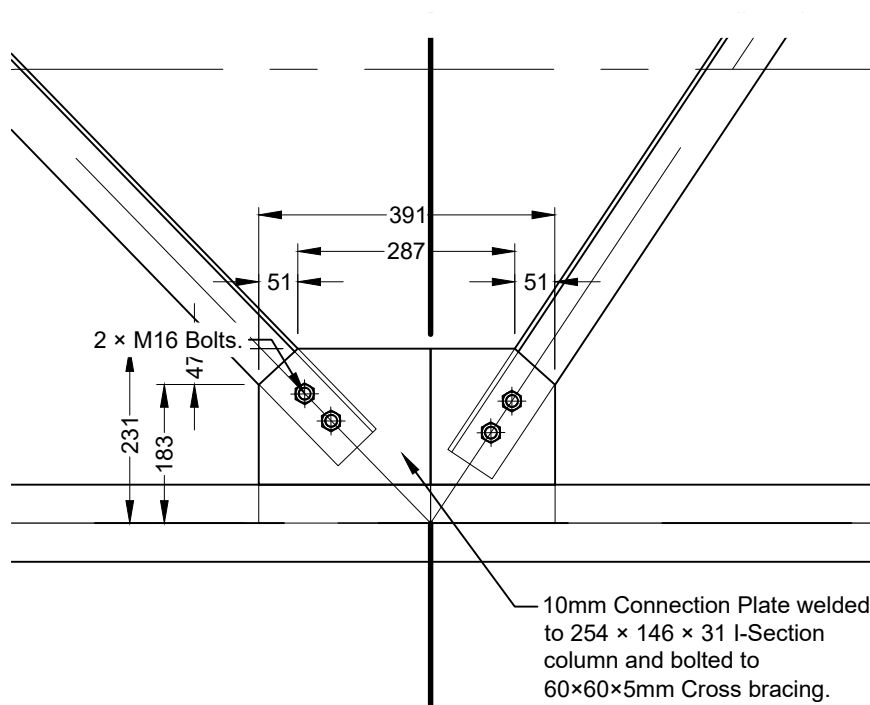
Drawing number:	Rev.:
22-032-V-PH4-03-04	00



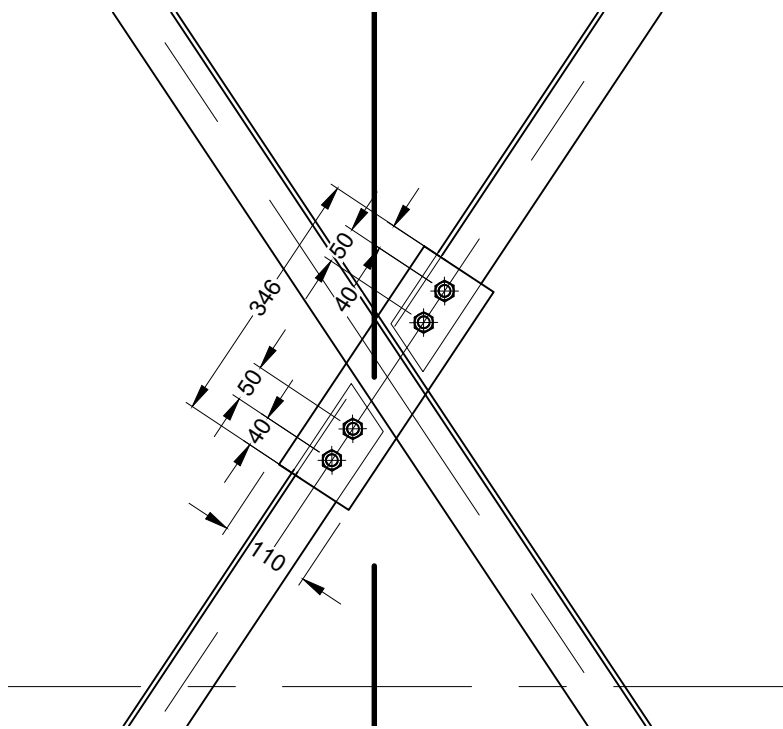
CROSS BRACING
CONNECTION DETAIL F
Scale 1 : 10



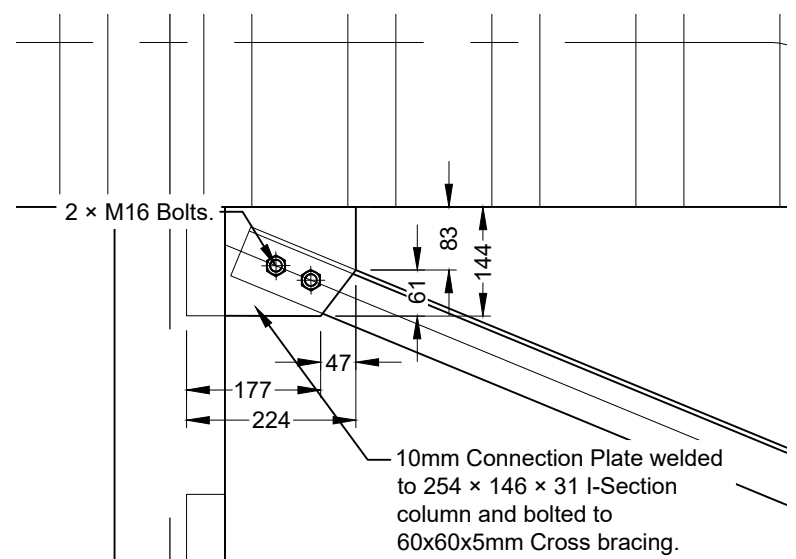
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CONNECTION DETAIL G
Scale 1 : 10



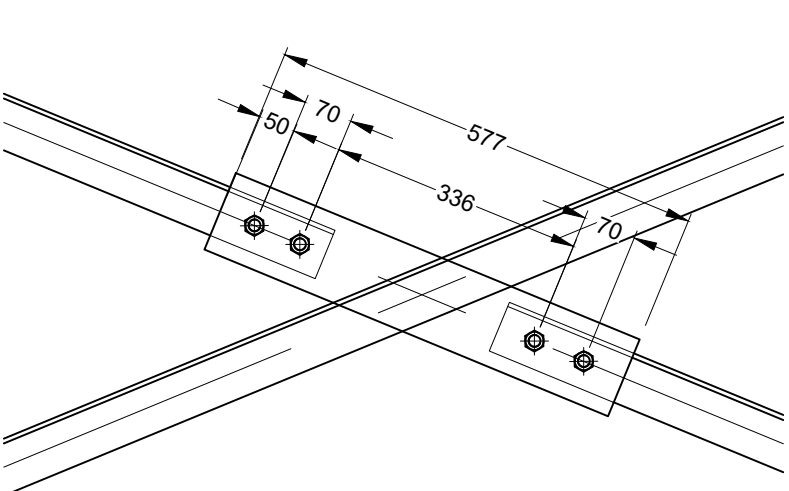
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CONNECTION DETAIL H
Scale 1 : 10



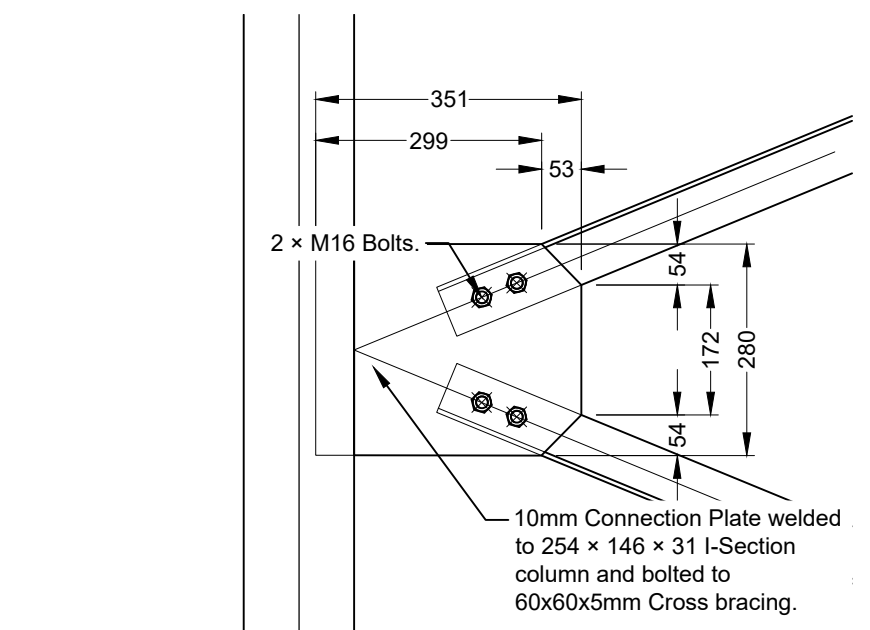
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CONNECTION DETAIL I
Scale 1 : 10



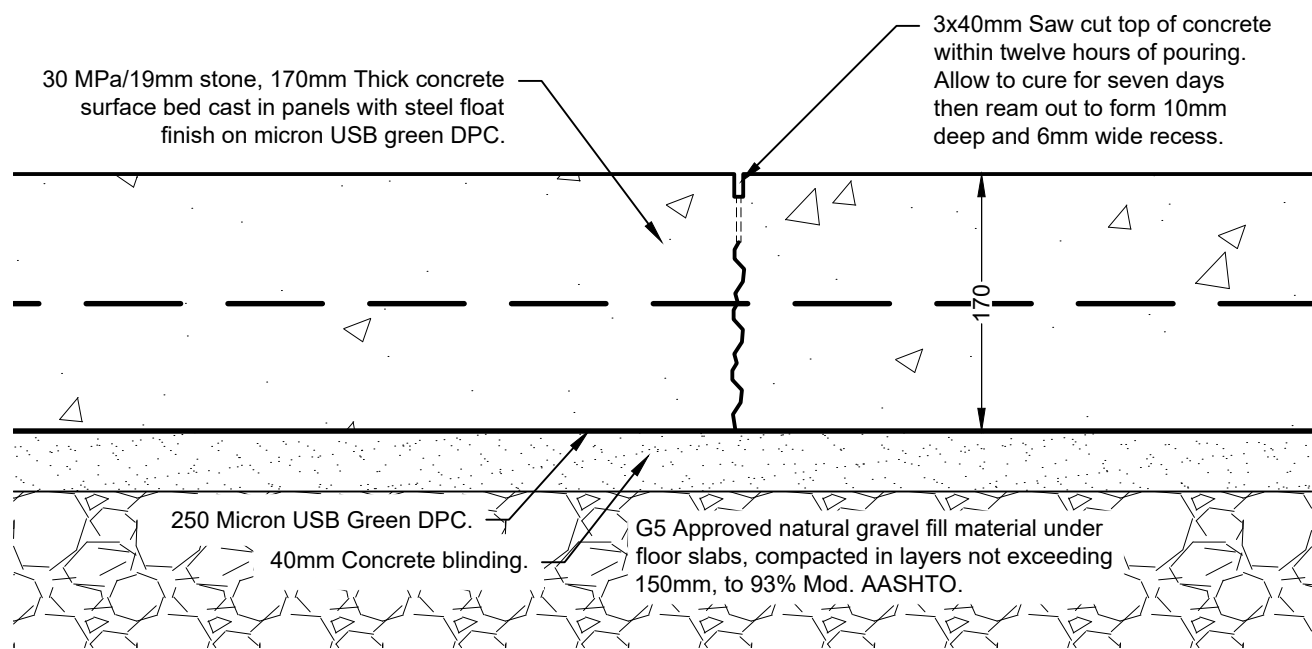
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CONNECTION DETAIL J
Scale 1 : 10



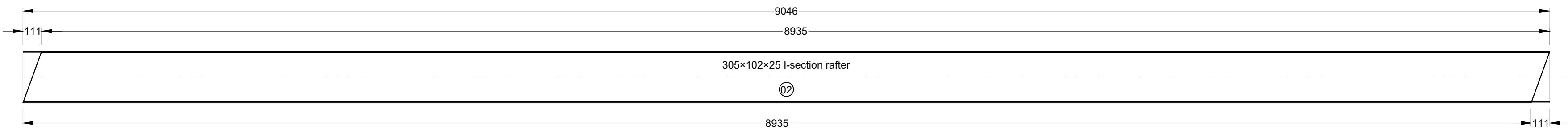
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CONNECTION DETAIL K
Scale 1 : 10



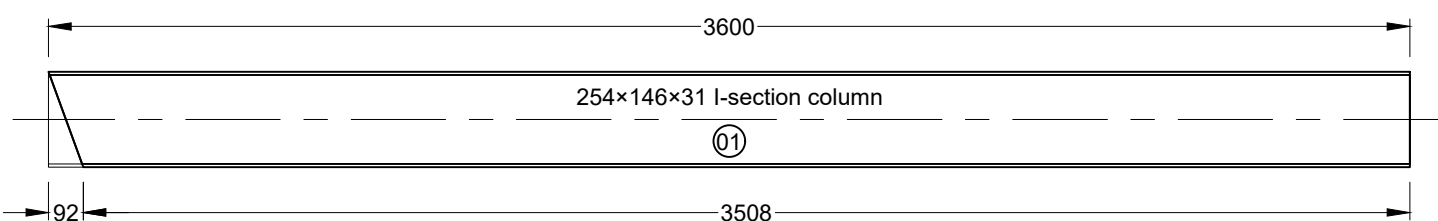
CROSS BRACING
CONNECTION DETAIL L
Scale 1 : 10



TYPICAL SAW CUT JOINT DETAIL
Scale 1:10



RAFTER DETAIL
Scale 1:20



COLUMN DETAIL
Scale 1:20

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LADYSMITH

Approved by Engineer: Signature: _____
Name: J.W. Janse v Rensburg
Designation: PrTechEng
ECSA Reg.: 201070143 Date: 27 Oct 2022

Project Funder/ Client:

mig
Municipal
Infrastructure
Grant



Project Implementing Agent:

**KING
CETSHWAYO
DISTRICT
MUNICIPALITY**


KING CETSHWAYO
DISTRICT MUNICIPALITY

Approved by Client:

Name: _____

Signature: _____ Date: _____

Project:

**KWAHLOKOHLOKO SSA5:
PHASE 4 BULK
AUGMENTATION**

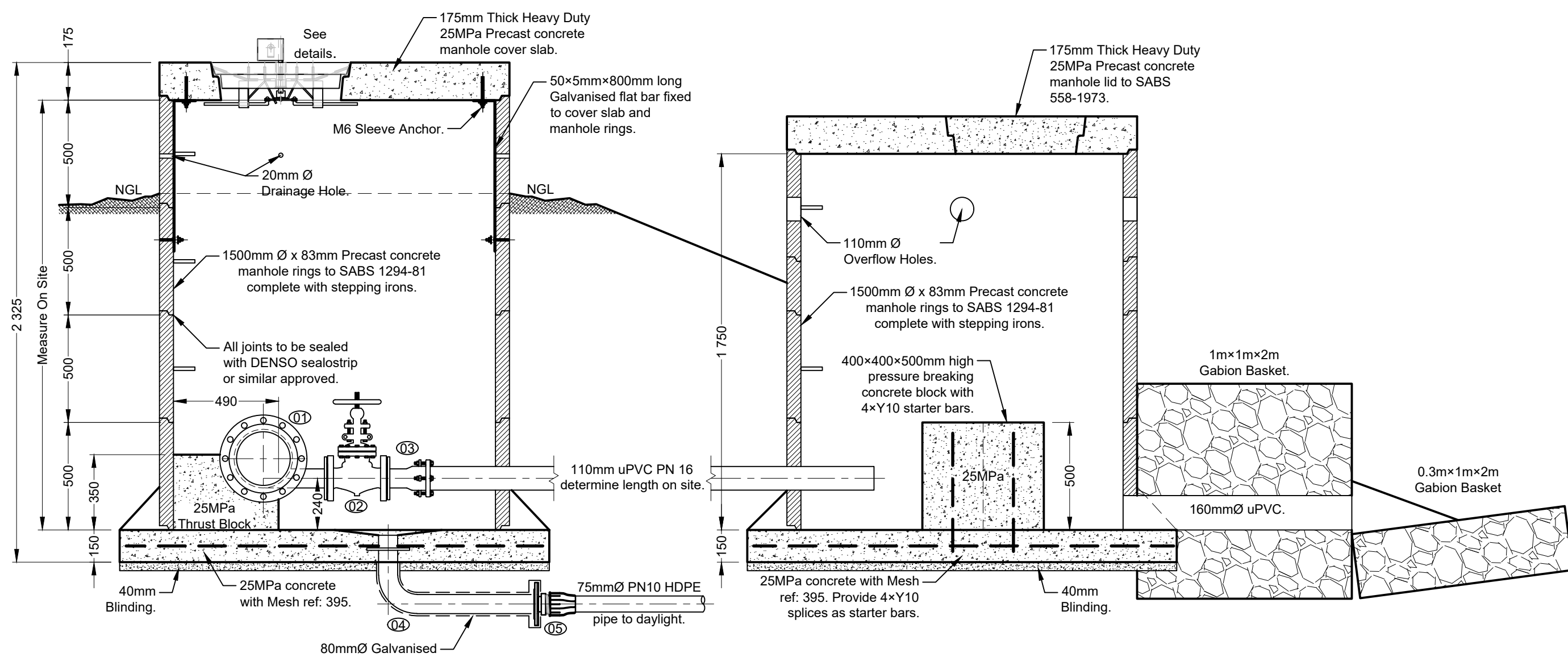
Drawing description:

**PACKAGE PLANT
DETAILS 02**

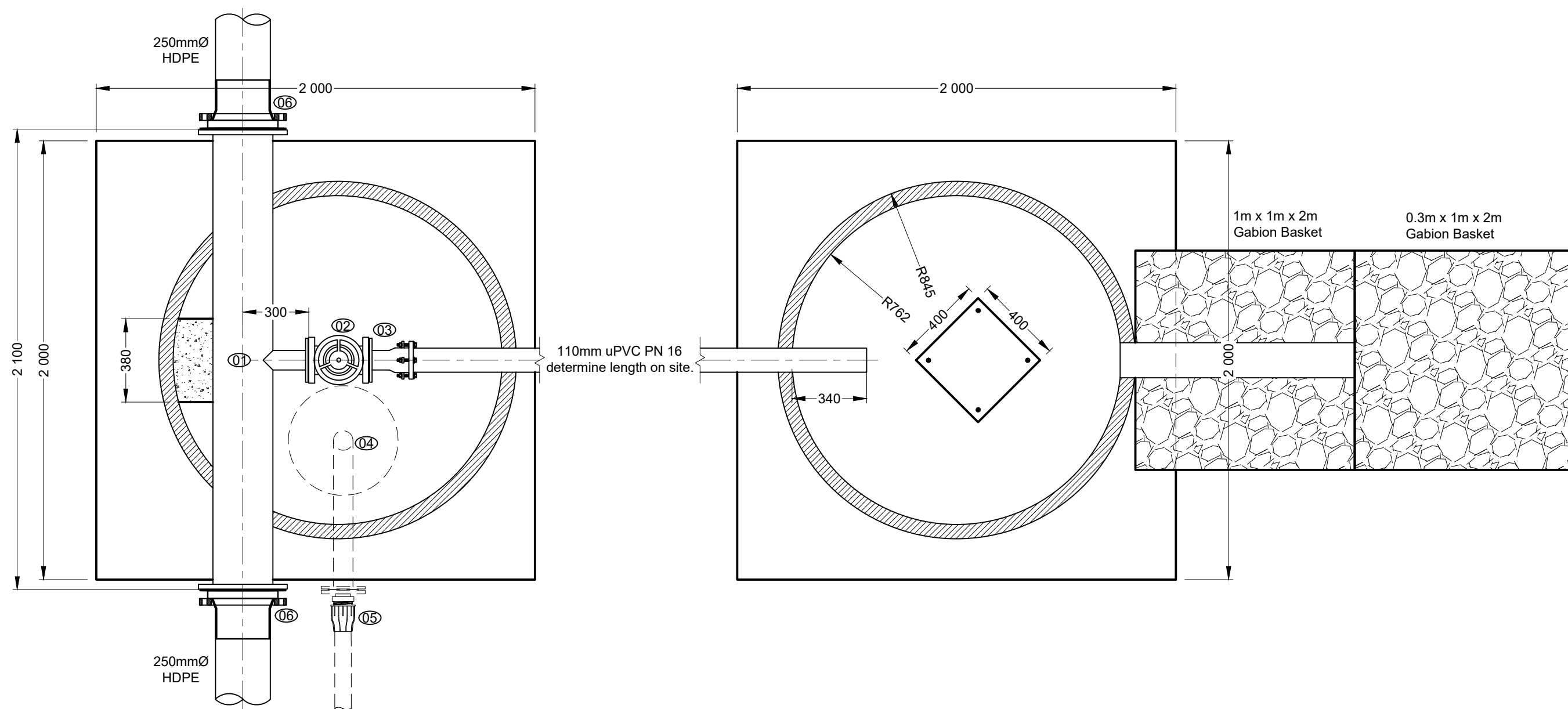
Drawn: G.D Bezuidenhout Date: Jul 2022

Scale/s: As Shown

Drawing number: Rev.:
22-032-V-PH4-03-05 **00**



(S225:25) SCOUR CHAMBER SECTION
(25 BAR RATED)
Scale 1:20

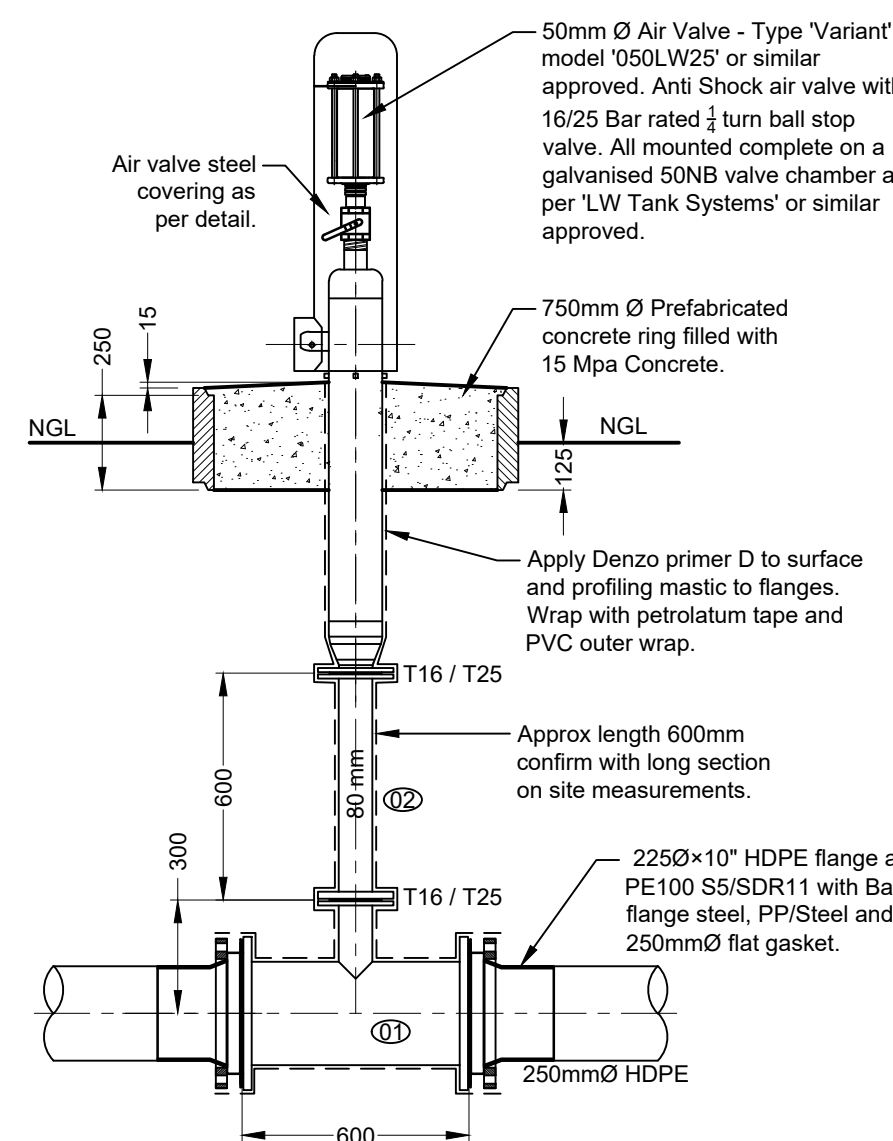


(S250:25) SCOUR VALVE CHAMBER PLAN
(25 BAR RATED)
Scale 1:20

A-250 FITTINGS (T16/25)

- 01 - 250mmØ Galvanized Steel straight pipe (600mm long) with 80mmØ branch (300mm long), T16/25 flanged.
02 - 80mmØ Straight pipe (600mm long), T16/25 flanged.

NOTE: ALL FITTINGS TO BE HOT DIPPED GALVANISED

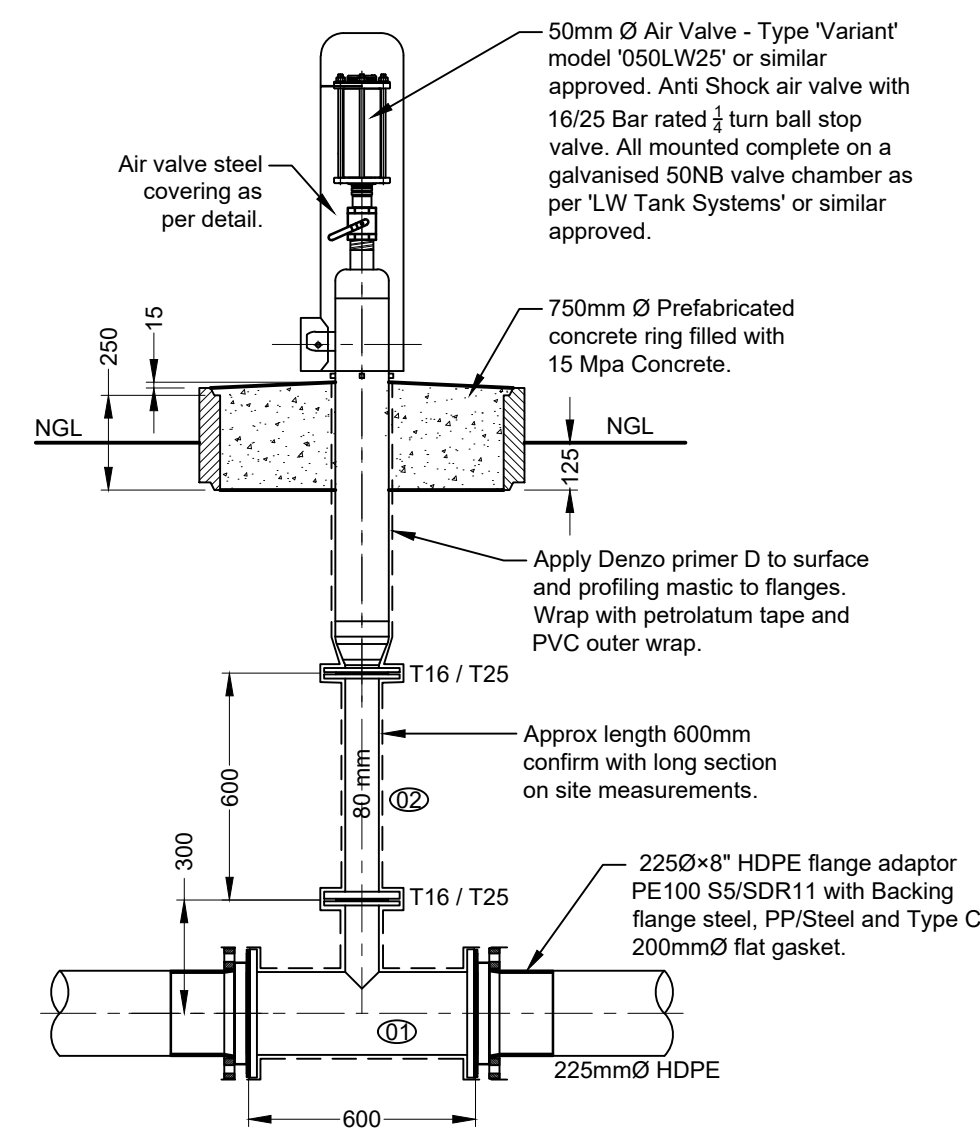


AIR VALVE DETAILS
(A-250)
Scale 1:20

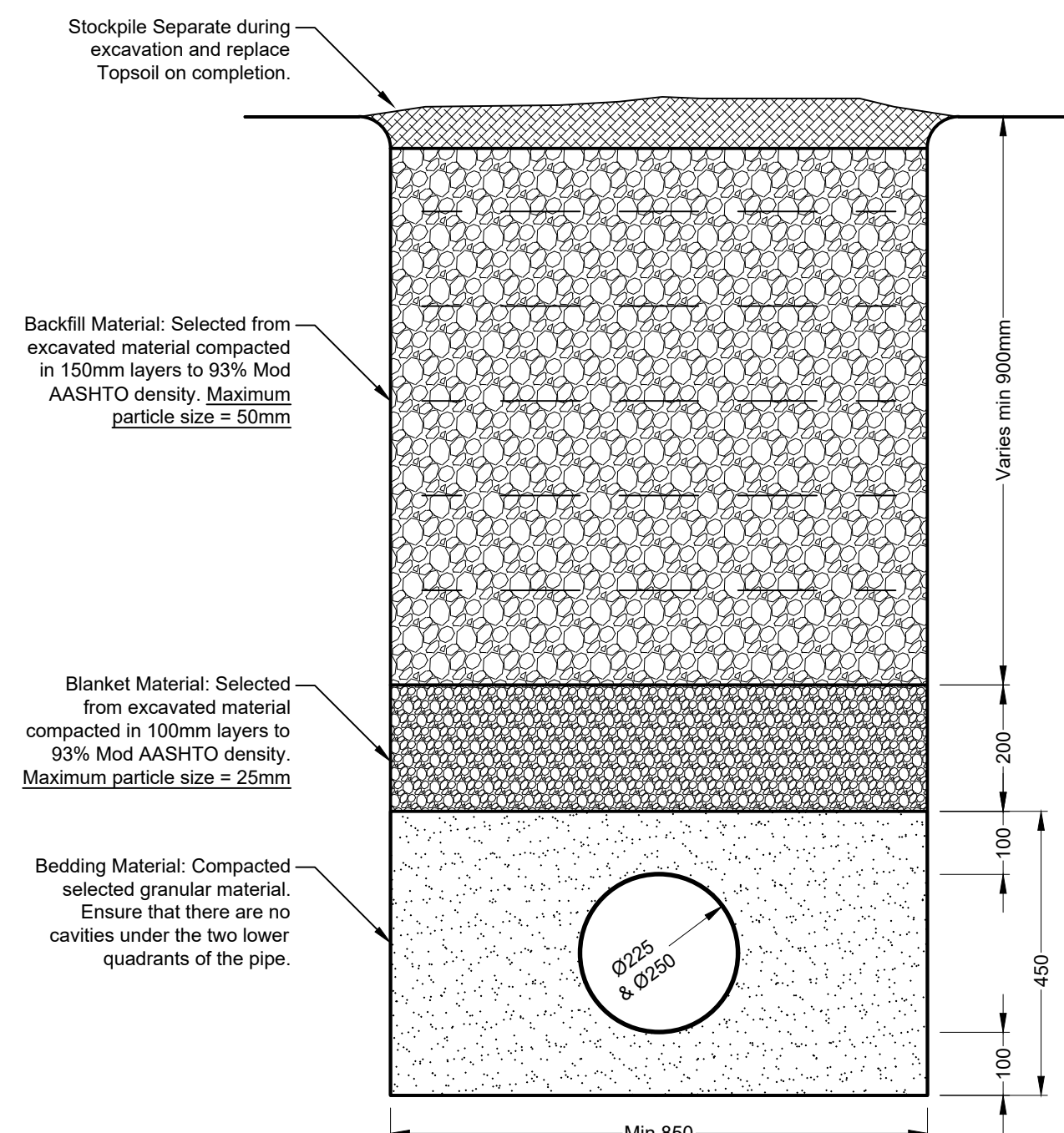
A-225 FITTINGS (T16/25)

- 01 - 200mmØ Galvanized Steel straight pipe (600mm long) with 80mmØ branch (300mm long), T16/25 flanged.
02 - 80mmØ Straight pipe (600mm long), T16/25 flanged.

NOTE: ALL FITTINGS TO BE HOT DIPPED GALVANISED



AIR VALVE DETAILS
(A-225)
Scale 1:20



TRENCH DETAILS
Scale 1:10

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www.ecaconsult.co.za
Civil and Structural Engineers
Company Reg.: 2004/019299/07
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OTHER OFFICES:
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Signature: _____
Date: 27 Oct 2022

Project Funder/ Client:
mig Municipal Infrastructure Grant

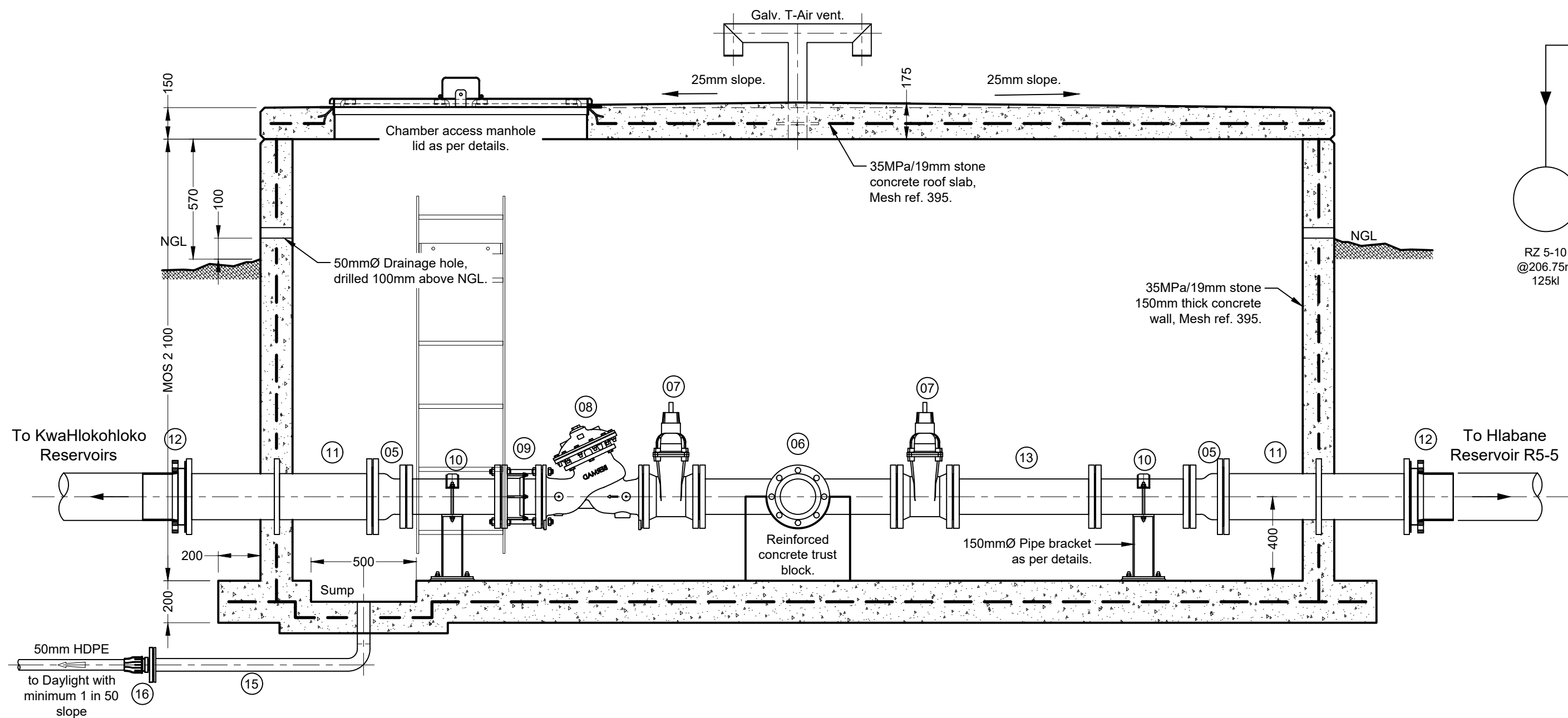
Project Implementing Agent:
KING CETSHWAYO DISTRICT MUNICIPALITY

Approved by Client: _____
Name: _____
Signature: _____ Date: _____

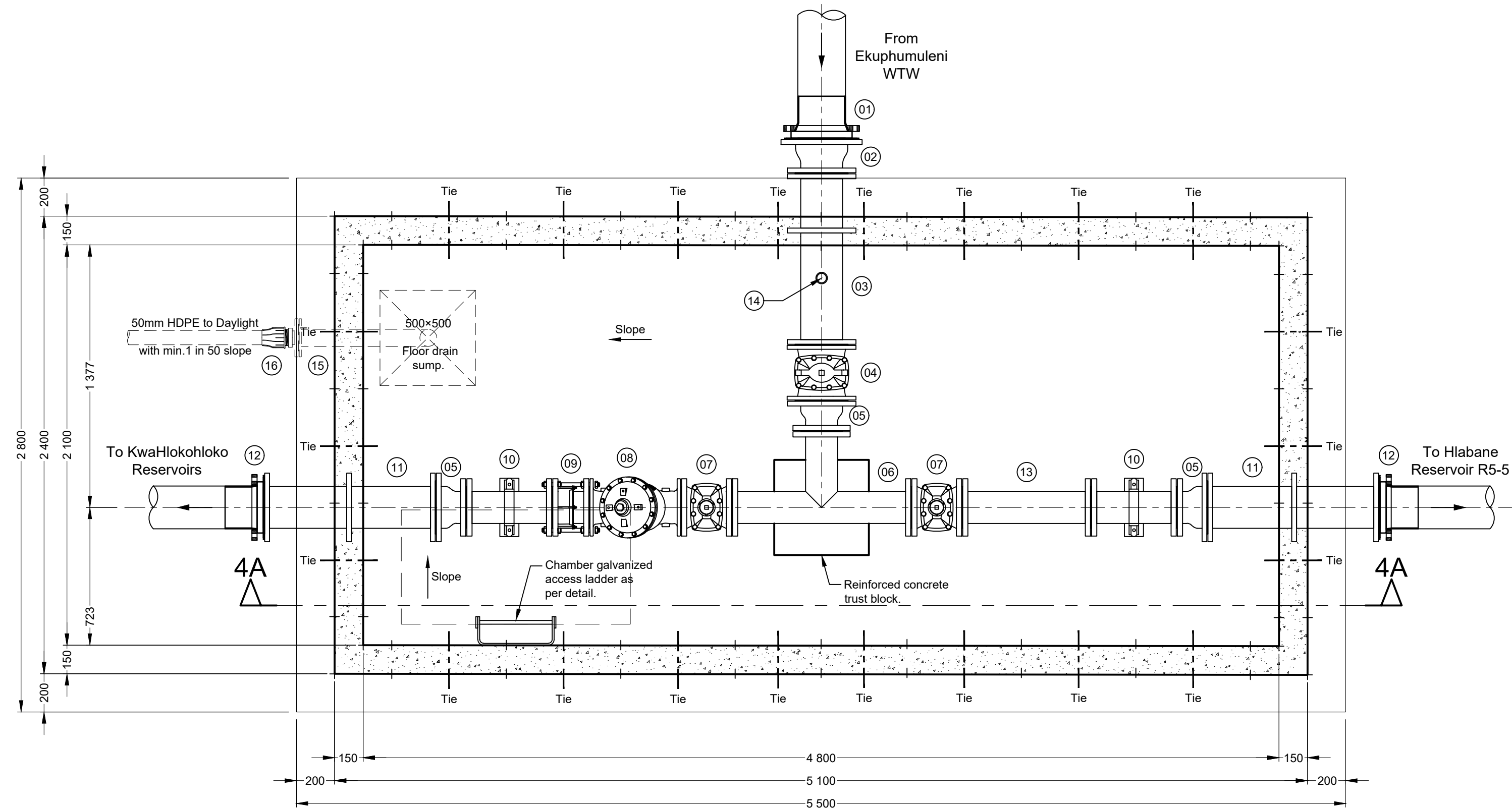
Project:
KWAHLOKOHLOKO SSA5: PHASE 4 BULK AUGMENTATION

Drawing description:
250mm HDPE GENERAL DETAILS

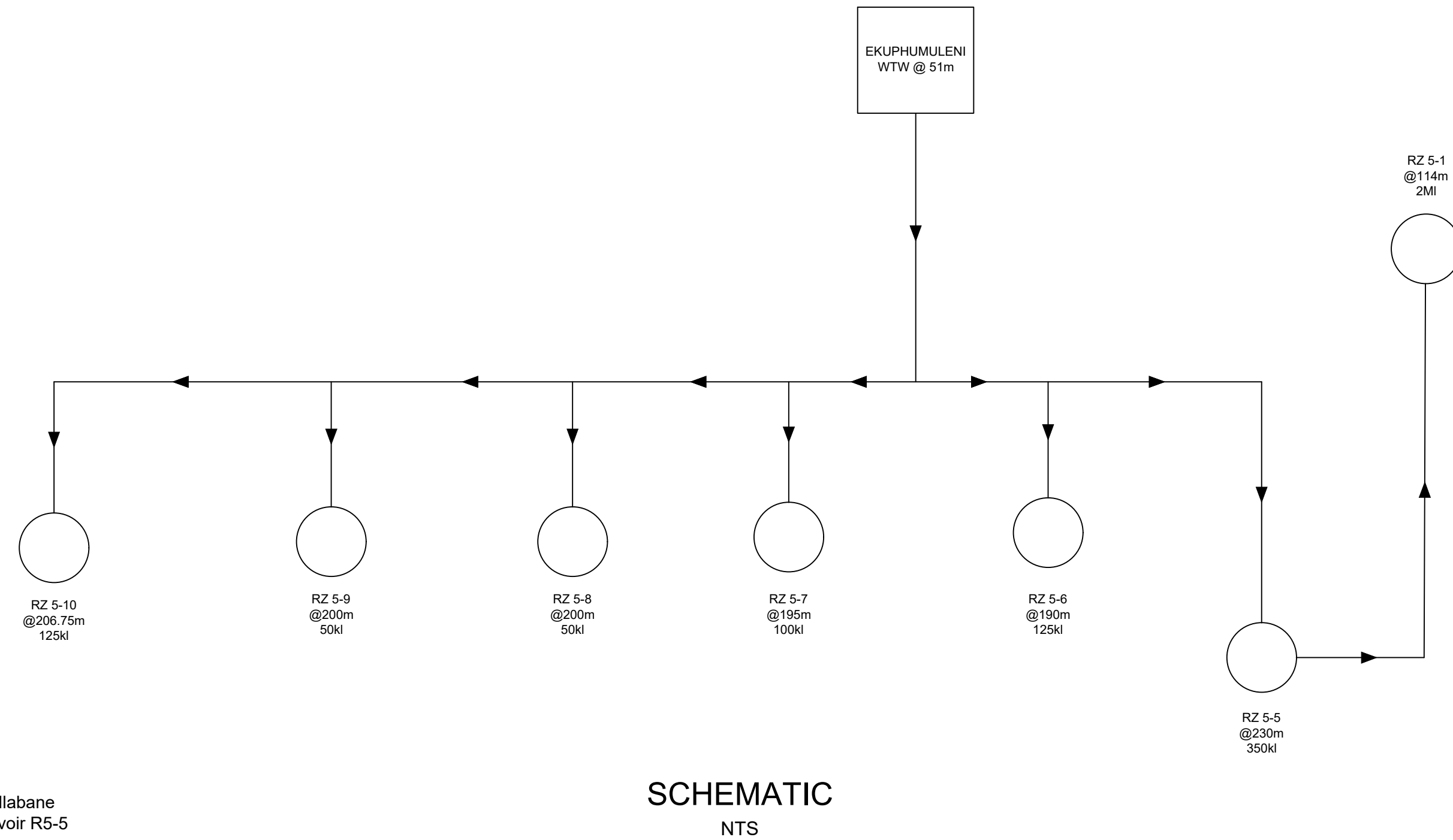
Drawn: G.D Bezuidenhout Date: Jul 2022
Scale/s: As Shown
Drawing number: 22-032-V-PH4-04-01 Rev.: 00



SECTION 4A-4A
Scale 1:20



250-225 TIE-IN / TEE OFF CHAMBER PLAN
Scale 1:20



SCHEMATIC
NTS

NEW TIE IN CHAMBER FITTINGS

- 01 - 250Ø×10" HDPE flange adaptor PE100 S5/SDR11 with Backing flange steel, PP/Steel and Type C 250mmØ flat gasket.
- 02 - 250mmØ - 200mmØ reducer, T25 flanged.
- 03 - 200mmØ Straight (900mm long) with puddle flange, 50mmØ steam socket, T25 flanged.
- 04 - 200mmØ RS Gate Valve to SANS 664, T25 flanged or similar approved.
- 05 - 200mmØ - 150mmØ reducer, T25 flanged.
- 06 - 150mmØ Straight (940mm long) with 150mmØ Tee (400mm long), T25 flanged.
- 07 - 150mmØ RS Gate Valve to SANS 664, T25 flanged or similar approved.
- 08 - 150mmØ 'Bermaid, Model No. WW-6"-773-50, Y-C-25-EB-NN-UVNT Level control valve, T25 flanged.
- 09 - 150mmØ dismantling joint, T25 flanged.
- 10 - 150mmØ Straight (450mm long), T25 flanged.
- 11 - 200mmØ Straight (900mm long) with puddle flange, T25 flanged.
- 12 - 225Ø×8" HDPE flange adaptor PE100 S5/SDR11 with Backing flange steel, PP/Steel and Type C 200mmØ flat gasket.
- 13 - 150mmØ Straight (675mm long), T25 flanged.
- 14 - 50mm Variant air valve, model: 050LW25 with 50mmØ turn ball cock valve and 1000mm long male threaded extension pipe or similar approved. Fixed with 50mmØ HILTI Light fixed point pipe ring.
- 15 - 50Ø Straight with 90° bend, 1×T16 flange.
- 16 - 50Ø HDPE T16 flange adaptor.

NOTE: ALL FITTINGS TO BE HOT DIPPED GALVANISED

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Project Funder/ Client:
mig Municipal Infrastructure Grant

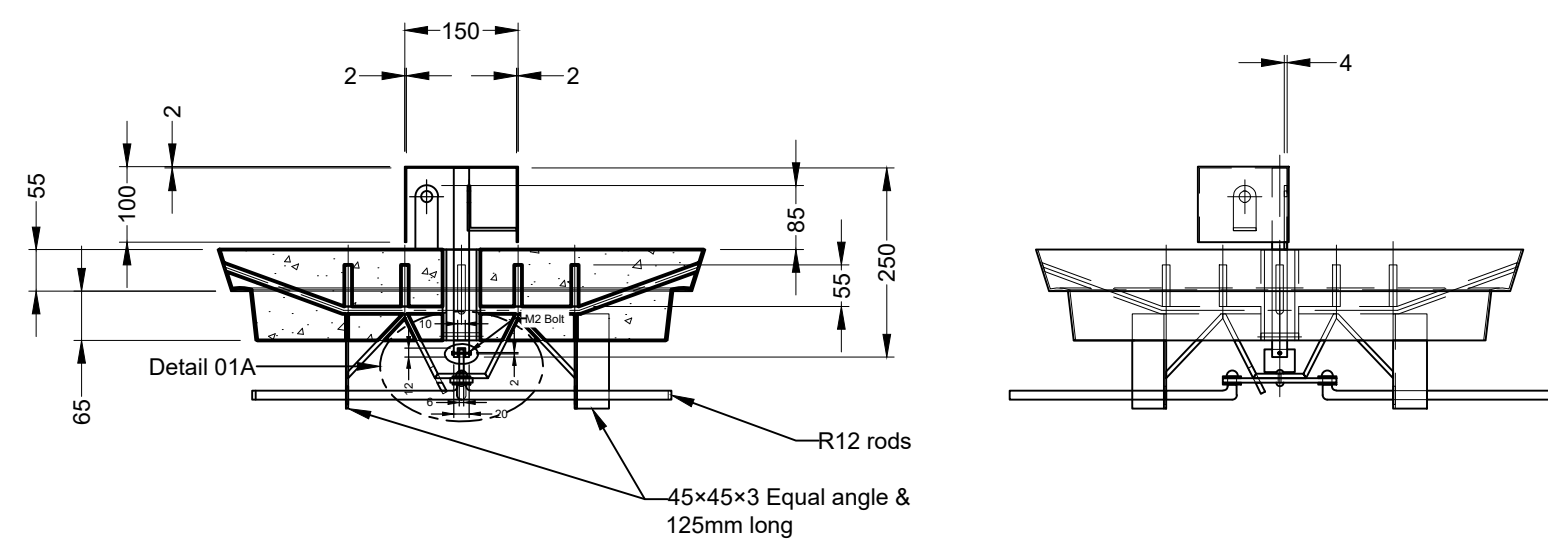
Project Implementing Agent:
KING CETSHWAYO DISTRICT MUNICIPALITY

Approved by Client:
Name: _____
Signature: _____ Date: _____

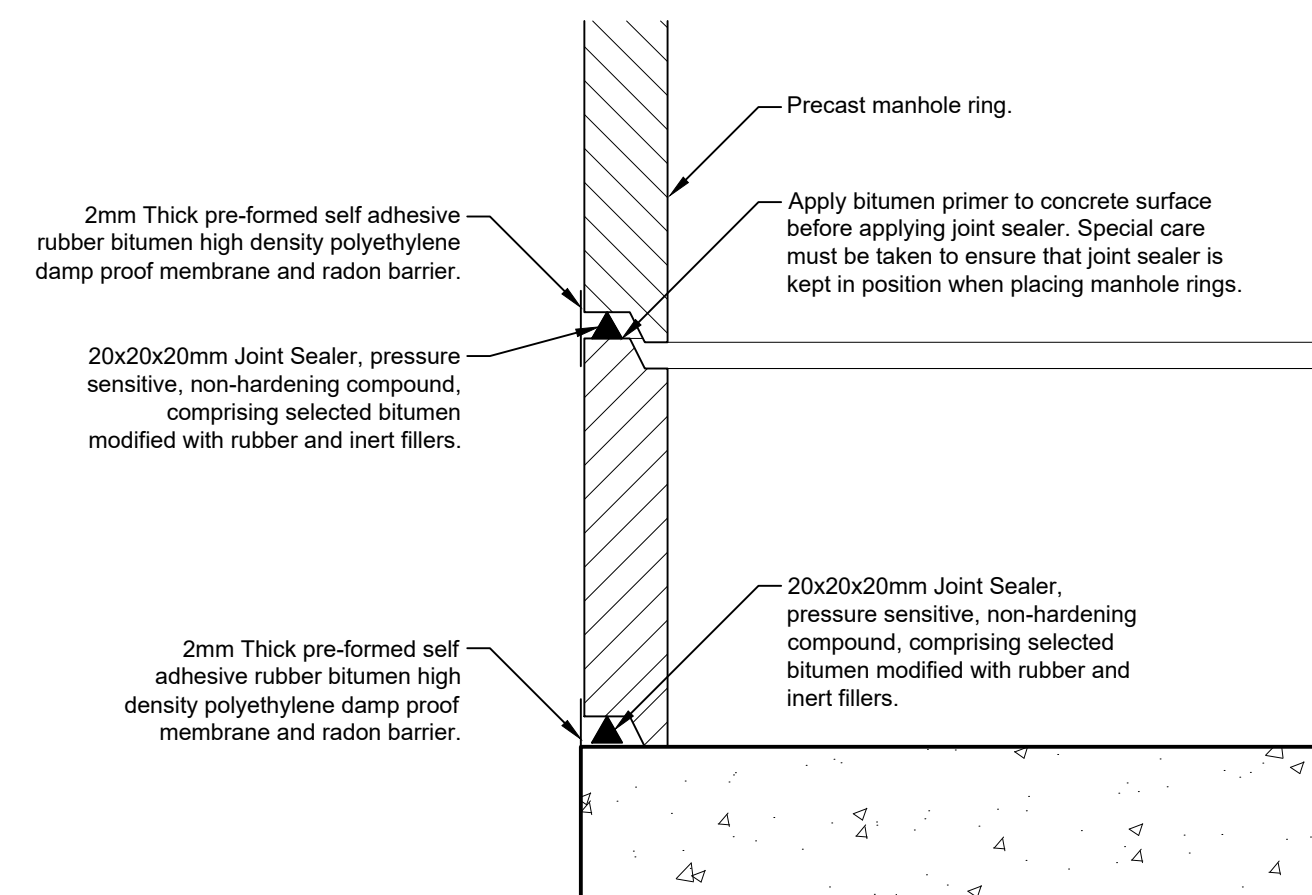
Project:
KWAHLOKOHEKO SSA5: PHASE 4 BULK AUGMENTATION

Drawing description:
NEW TIE IN CHAMBER DETAILS

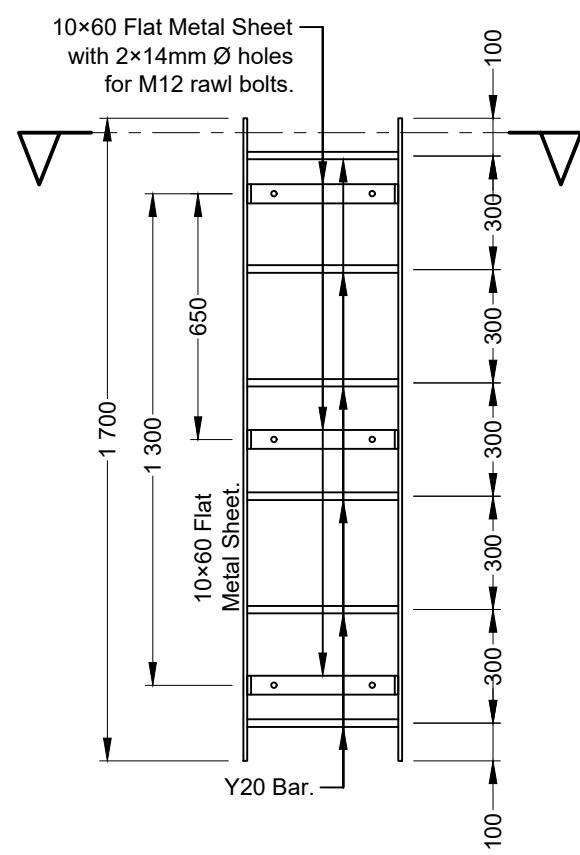
Drawn: G.D Bezuidenhout Date: Jul 2022
Scale/s: As Shown
Drawing number: 22-032-V-PH4-04-02 Rev.: 00



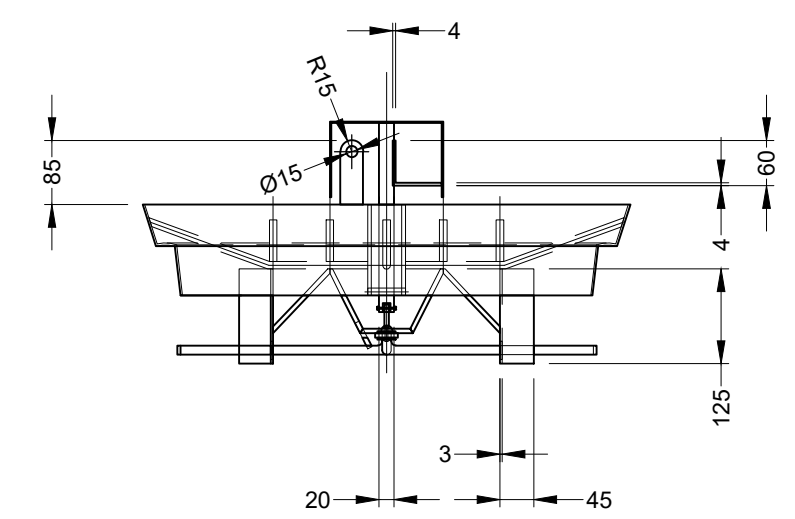
LOCKABLE / GALVANISED & CONCRETE FILLED CHAMBER LID DETAILS
Scale 1:10



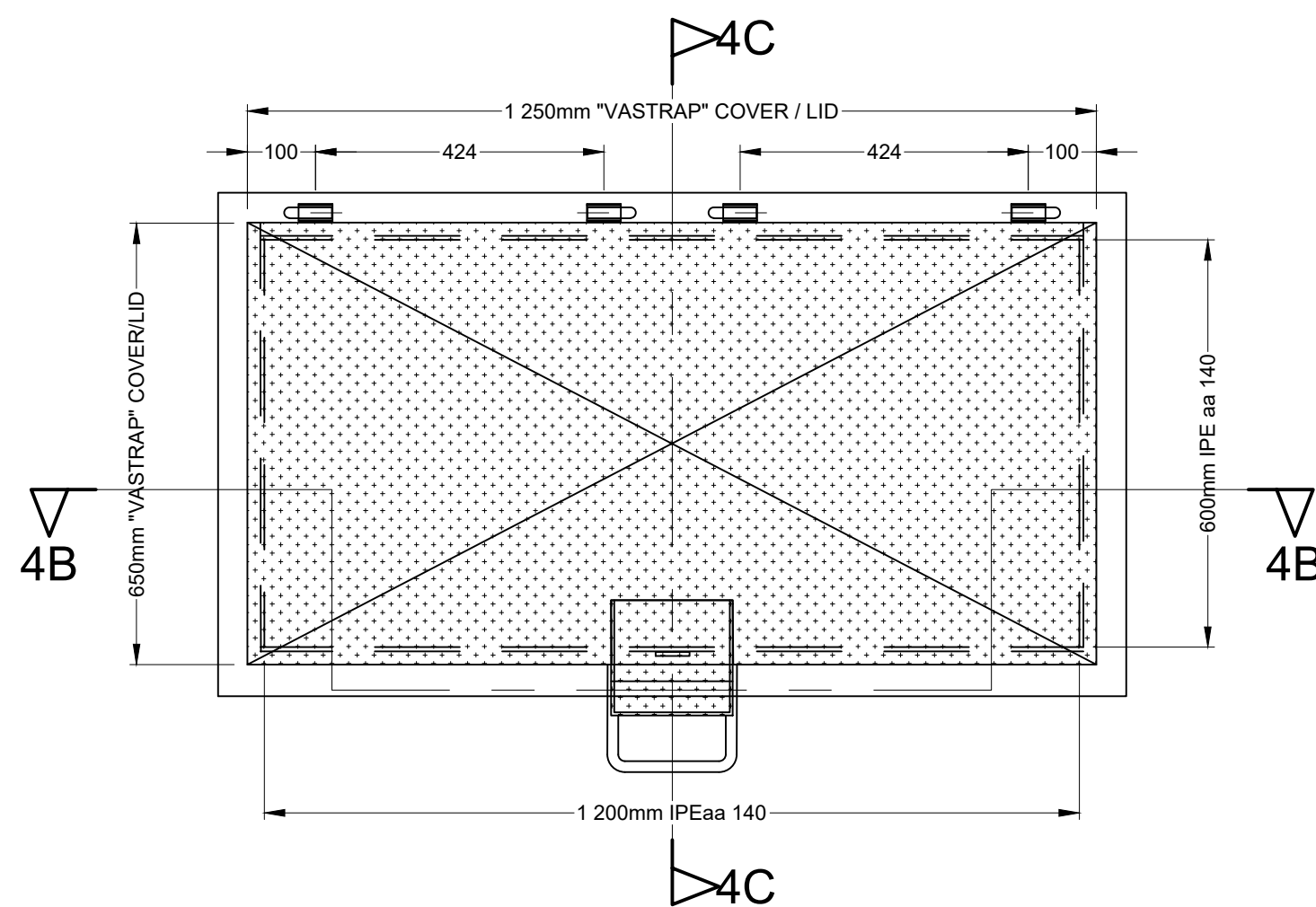
TYPICAL MANHOLE SEALING DETAIL
Scale 1:5



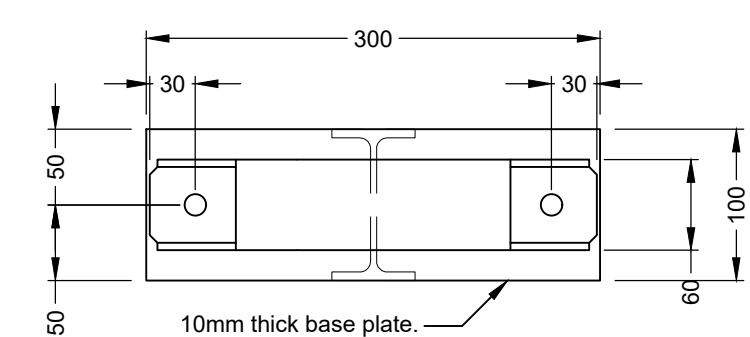
CHAMBER GALVANISED
ACCESS LADDER DETAIL
Scale 1:20



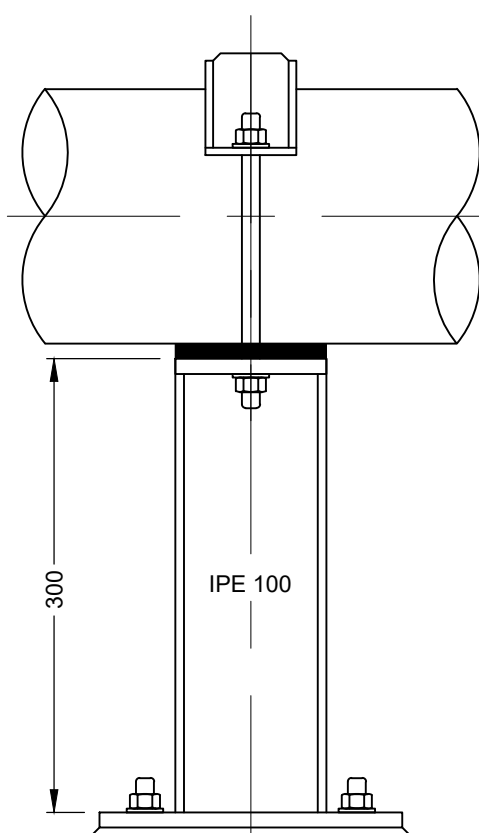
AIR VALVE COVER DETAILS
Scale 1:10



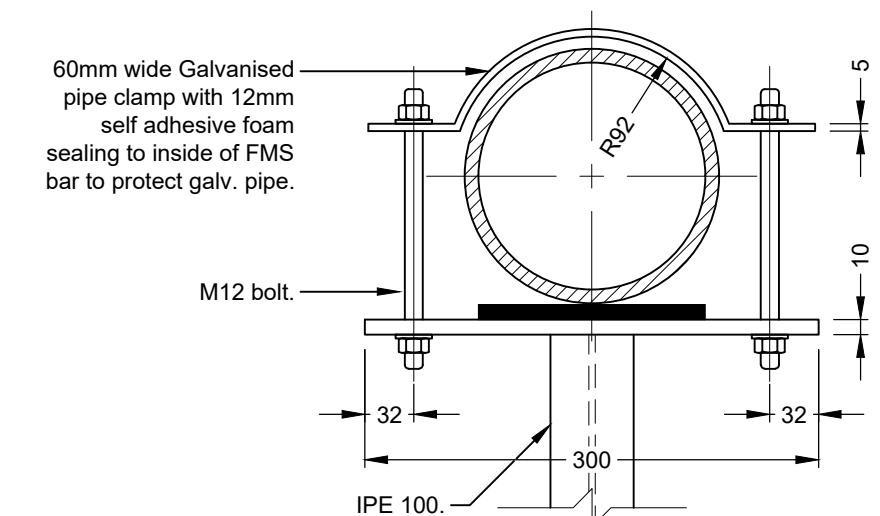
CHAMBER ACCESS MANHOLE
Scale 1:10



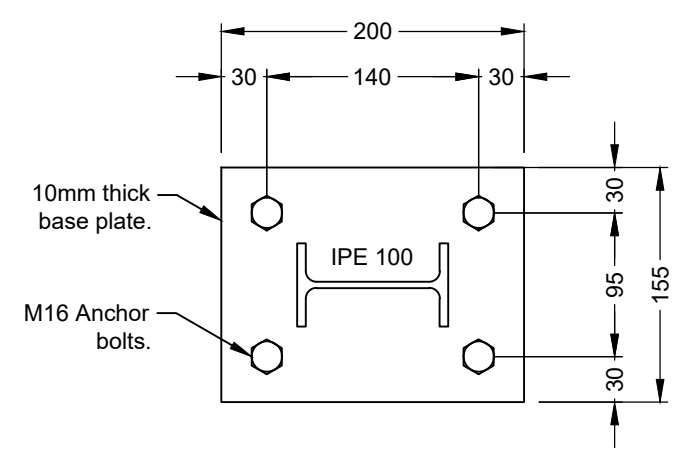
150mmØ PIPE BRACKET PLAN
Scale 1:5



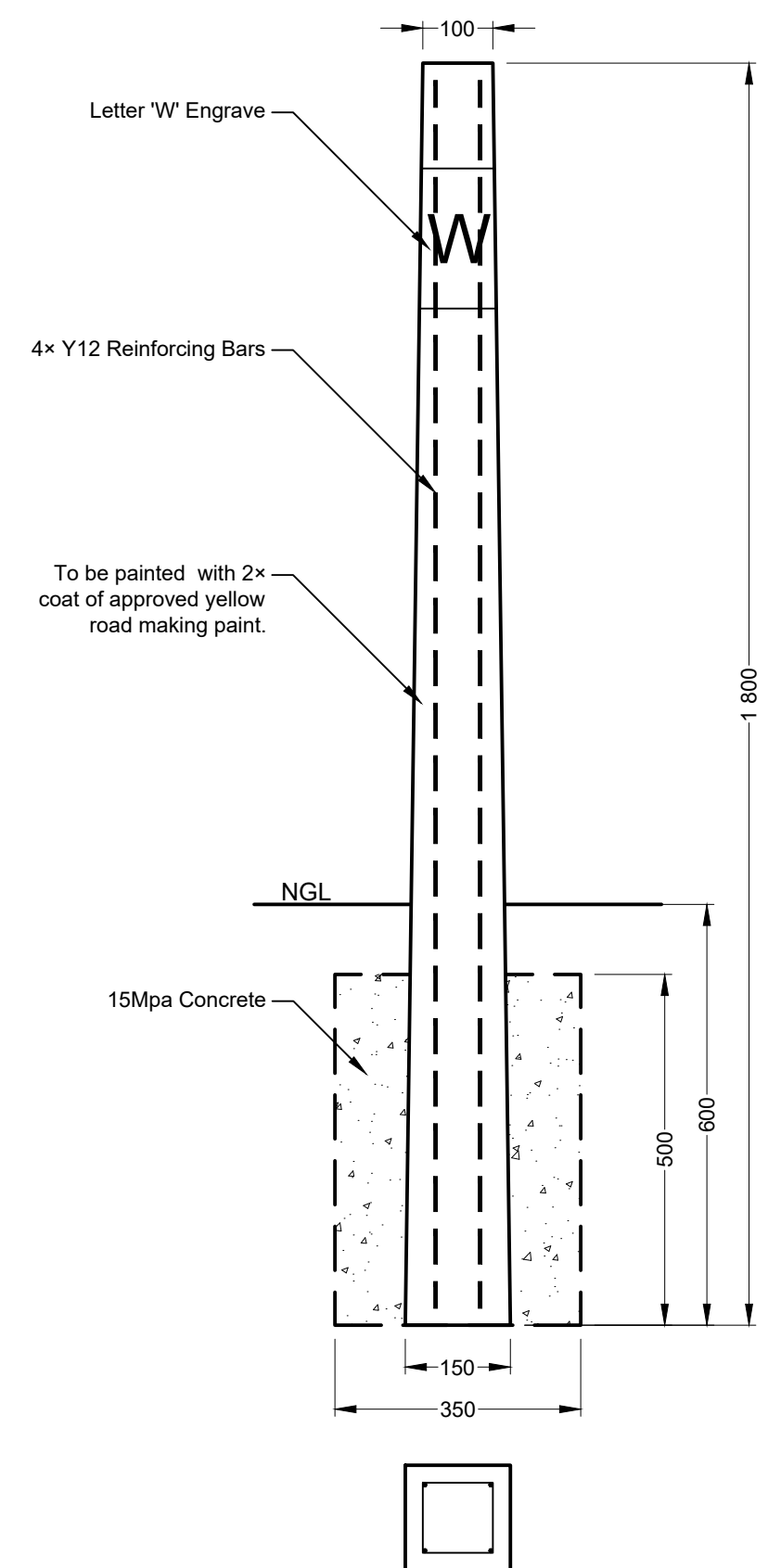
150mmØ PIPE BRACKET
ELEVATION
Scale 1:5



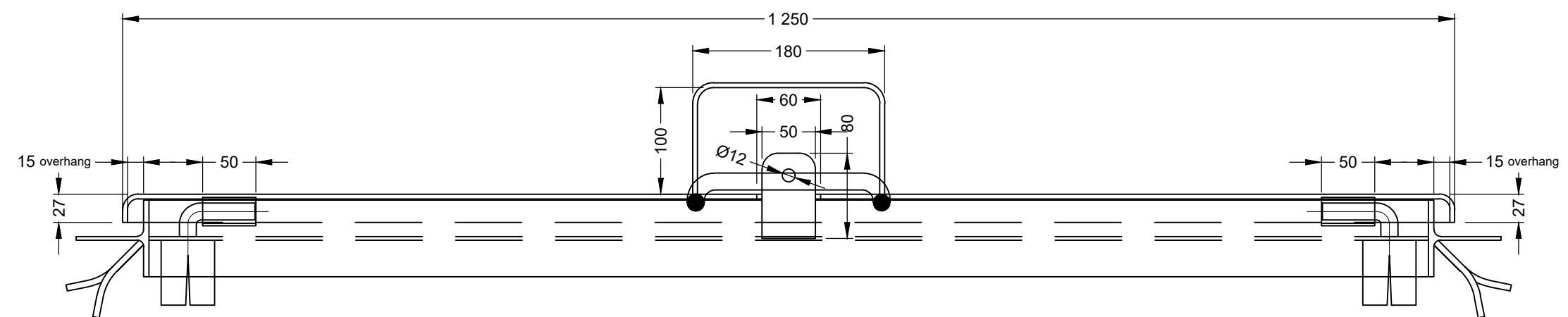
150mmØ PIPE BRACKET DETAILS
Scale 1:5



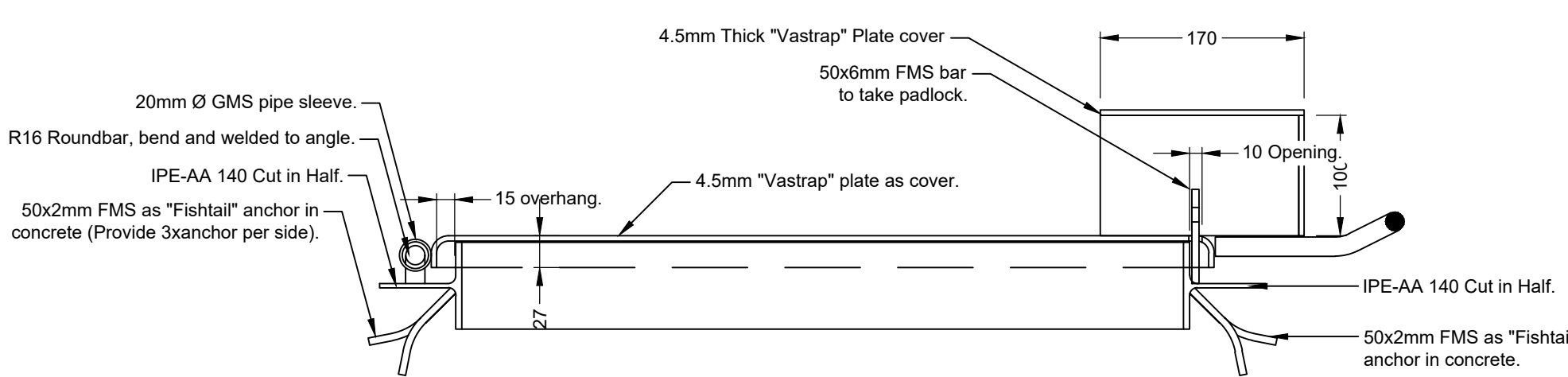
PIPE BRACKETS BASE
PLATE
Scale 1:5



WATER MARKER DETAIL
Scale 1:10



SECTION 4B-4B
Scale 1:5



SECTION 4C-4C
Scale 1:5

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mig Municipal Infrastructure Grant

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KING CETSHWAYO DISTRICT MUNICIPALITY KING CETSHWAYO DISTRICT MUNICIPALITY

Approved by Client: Name: Signature: Date:

Project:
KWAHLOKOHLOKO SSA5: PHASE 4 BULK AUGMENTATION

Drawing description:
CHAMBERS GENERAL DETAILS

Drawn: G.D Bezuidenhout Date: Jul 2022
Scale/s: As Shown
Drawing number: 22-032-V-PH4-04-03 Rev.: 00