

BLOUBERG MUNICIPALITY



BLOUBERG MUNICIPALITY

CONTRACT NO: BM04/22/23

CONSTRUCTION OF AVON MULTI-PURPOSE CENTRE

C6 DRAWINGS

C5.1

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

BLOUBERG MUNICIPALITY



BLOUBERG MUNICIPALITY

CONTRACT NO: BM04/22/23

FOR

CONSTRUCTION OF AVON MULTI-PURPOSE CENTRE

TENDER DRAWINGS

**PREPARED FOR:
BLOUBERG MUNICIPALITY**



BLOUBERG MUNICIPALITY
P O Box 1593
Senwabarwana
0790

Tel: 015 505 7100
Fax: 015 505 0568

**PREPARED BY:
OLTATECH CONSULTING**

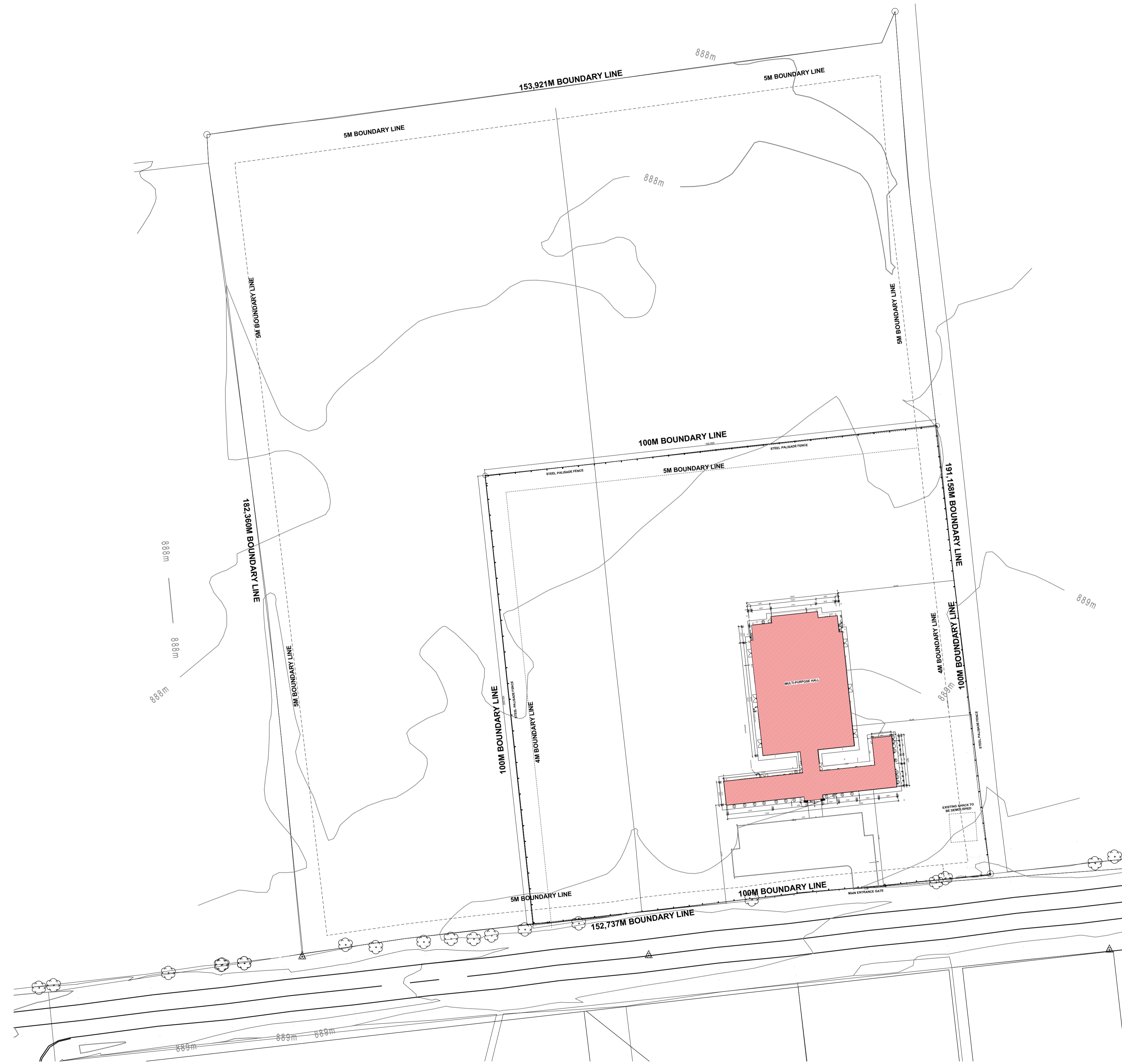


6 Rentco Building
11 Pierre Street
Bendor
Polokwane
0699

Tel: 015 291 0775
Fax: 086 682 2646

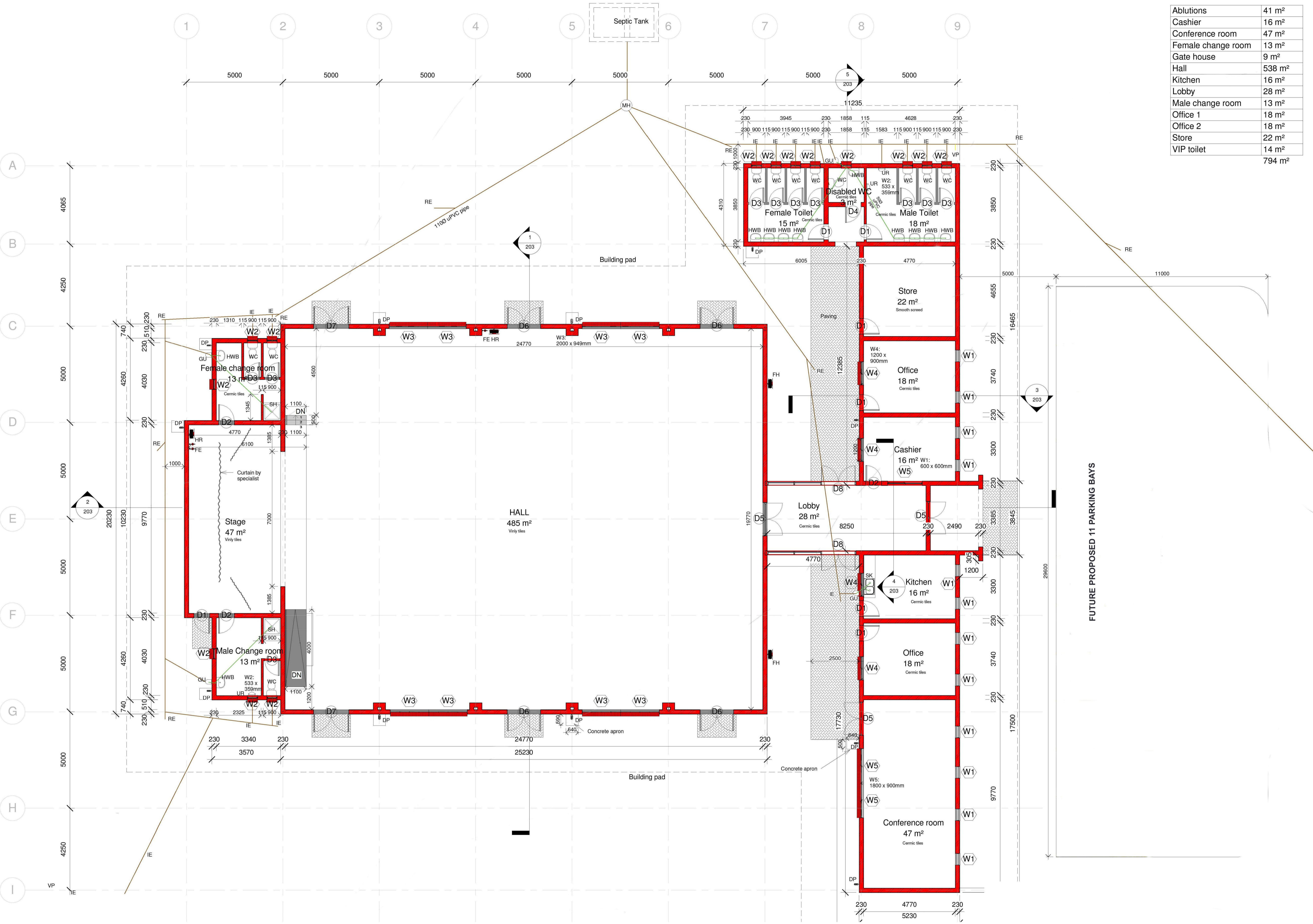
DRAWING LIST

ITEM	DRAWING NO.	DESCRIPTION
	ARCHITECTURAL	
1	AV13/19/22-PLAN-000	SITE PLAN
2	AV13/09/22-PLAN-101	MULTI-PURPOSE CENTRE-FLOOR PLAN
3	AV13/09/22-PLAN-200	MULTI-PURPOSE CENTRE-SECTIONS
4	AV13/09/22-PLAN-300	MULTI-PURPOSE CENTRE-ELEVATIONS
5	AV13/09/22- PLAN- 104	MULTI-PURPOSE CENTRE - ROOF PLAN
6	AV13/09/22- PLAN- 001	MULTI-PURPOSE CENTRE - DOOR & WINDOW SCHEDULE
7	AV13/09/22- PLAN- 003	MULTI-PURPOSE CENTRE - KITCHEN DETAILS
8	AV13/09/22- PLAN- 004	MULTI-PURPOSE CENTRE - BATHROOM DETAIL
9	AV13/09/22- PLAN- 005	MULTI-PURPOSE CENTRE - WARDROBE DETAIL
	CIVIL	
10	AVON-CIV-SR-001	SEWER RETICULATION
11	AVON-CIV-SR-002	SEWER RETICULATION PROFILE
12	AVON-CIV-SR-003	SEPTIC TANK
13	AVON-CIV-SR-004	FIRE HYDRANT PUMP STATION
14	AVON-CIV-WT-001	WATER RETICULATION
15	AVON-CIV-WT-002	FIRE AND DOMESTIC WATER RETICULATION
	STRUCTURAL	
16	AVON-STR-001	STRUCTURAL STEEL LAYOUT, DETAIL AND SECTION
17	AVON-STR-002	STEEL DETAILING AND SECTIONS
18	AVON-STR-003	ELEVATED STEEL TANK
19	AVON-STR-004	SEPTIC TANK ROOF SLAB
20	AVON-STR-005	FOUNDATION LAYOUT
21	AVON-STR-006	BEAM LAYOUT
	ELECTRICAL	
22	AVON-ELCT-001	LIGHTS LAYOUT
23	AVON-ELCT-002	POWER POINTS
24	AVON-ELCT-003	SCHEMATIC LINE DIAGRAM
25	AVON-ELCT-004	TELEPHONE AND DATA LINES
26	AVON-ELCT-005	KIOSK
	STANDARD	
27	AVON-SDD-001	CONTRACT NAMEBOARD
28	AVON-SDD-002	SEWER CONNECTION
29	AVON-SDD-004	SEWER CONNECTION
30	AVON-SDD-005	SEWER MANHOLES
31	AVON-SDD-006	MARKERS AND THRUST BLOCKS
32	AVON-SDD-007	FIRE HYDRANT



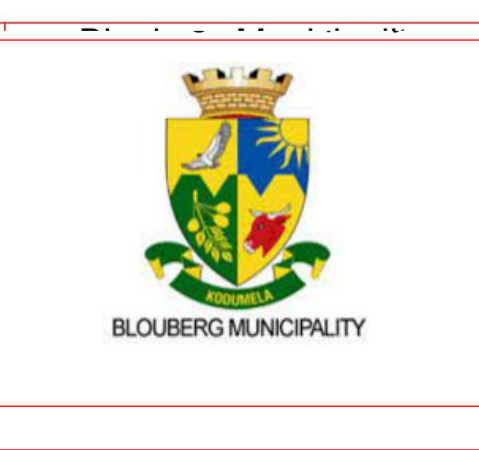
SITE PLAN
SCALE 1:500
AREA

				Blouberg Municipality  Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100		Oltatech Consulting  Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor, Polokwane, 0699 REG: 2012 / 158921 / 07 VAT: 4590291482 Professional Engineering Solutions		<table border="1"> <thead> <tr> <th>PROJECT APPR.</th> <th>DATE</th> <th>BY</th> <th>SIGNATURE</th> </tr> </thead> <tbody> <tr> <td>DESIGNED</td> <td>SEPT 2022</td> <td>LM</td> <td></td> </tr> <tr> <td>CHECKED</td> <td>SEPT 2022</td> <td>RM</td> <td></td> </tr> <tr> <td>DRAWN</td> <td>SEPT 2022</td> <td>RM</td> <td></td> </tr> <tr> <td>PROJECT MNG.</td> <td>....</td> <td>....</td> <td></td> </tr> <tr> <td>APPROVED</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLIENT</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			PROJECT APPR.	DATE	BY	SIGNATURE	DESIGNED	SEPT 2022	LM		CHECKED	SEPT 2022	RM		DRAWN	SEPT 2022	RM		PROJECT MNG.		APPROVED				CLIENT				<table border="1"> <thead> <tr> <th colspan="2">SCALE</th> <th rowspan="2">PROJECT TITLE:</th> </tr> </thead> <tbody> <tr> <td colspan="2">DO NOT SCALE</td> <td>Avon Multi-Purpose Centre</td> </tr> </tbody> </table>		SCALE		PROJECT TITLE:	DO NOT SCALE		Avon Multi-Purpose Centre
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Ablutions	41 m²
Cashier	16 m²
Conference room	47 m²
Female change room	13 m²
Gate house	9 m²
Hall	538 m²
Kitchen	16 m²
Lobby	28 m²
Male change room	13 m²
Office 1	18 m²
Office 2	18 m²
Store	22 m²
VIP toilet	14 m²
Total	794 m²

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REV	DATE	CHK	APP	



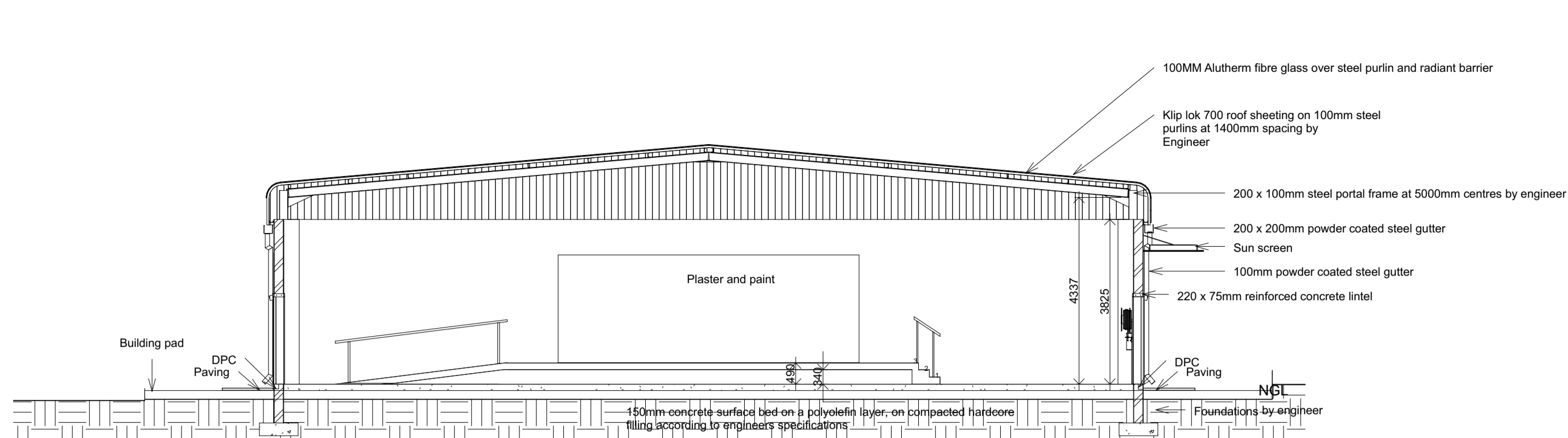
Blouberg Municipality
2nd Building Dendron Road
P.O Box 1593
Senwabarwana
0790
Tel: 015 505 7100

REG: 2012 / 158921 / 07 VAT: 4590291482

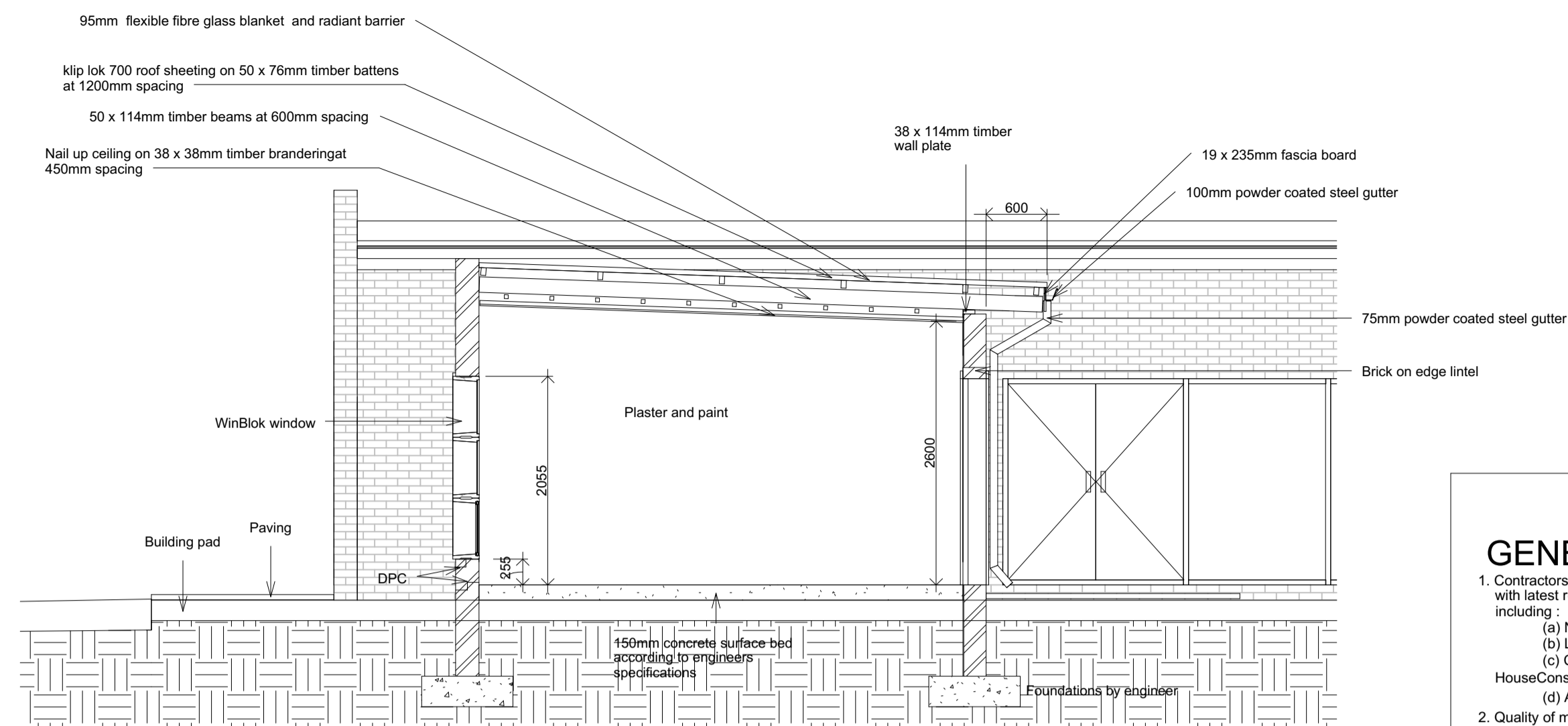
Oltatech Consulting (Pty) Ltd
6 Rentco Building
11 Pierre Street, Bendor.
Polokwane, 0699

DESIGNED	SEPT 2022	LM
CHECKED	SEPT 2022	RM
DRAWN	SEPT 2022	RM
PROJECT MNG.	....	....
APPROVED		
CLIENT		

SCALE	DO NOT SCALE	Avon Multi-Purpose Centre
DRAWING DESCRIPTION:	MULTI-PURPOSE CENTRE - FLOOR PLAN	
PROJECT No.	DRG SIZE A1	DRAWING No. AV13/09/22- PLAN- 101
		Revision No. 0

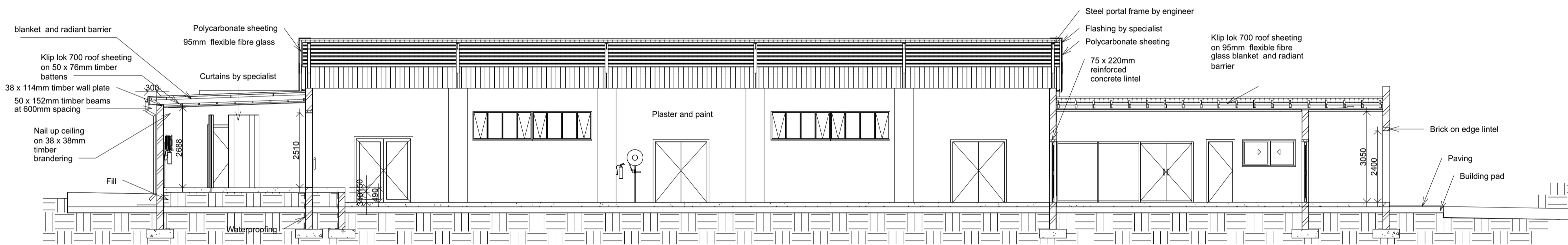


1 Section 1
1 : 100

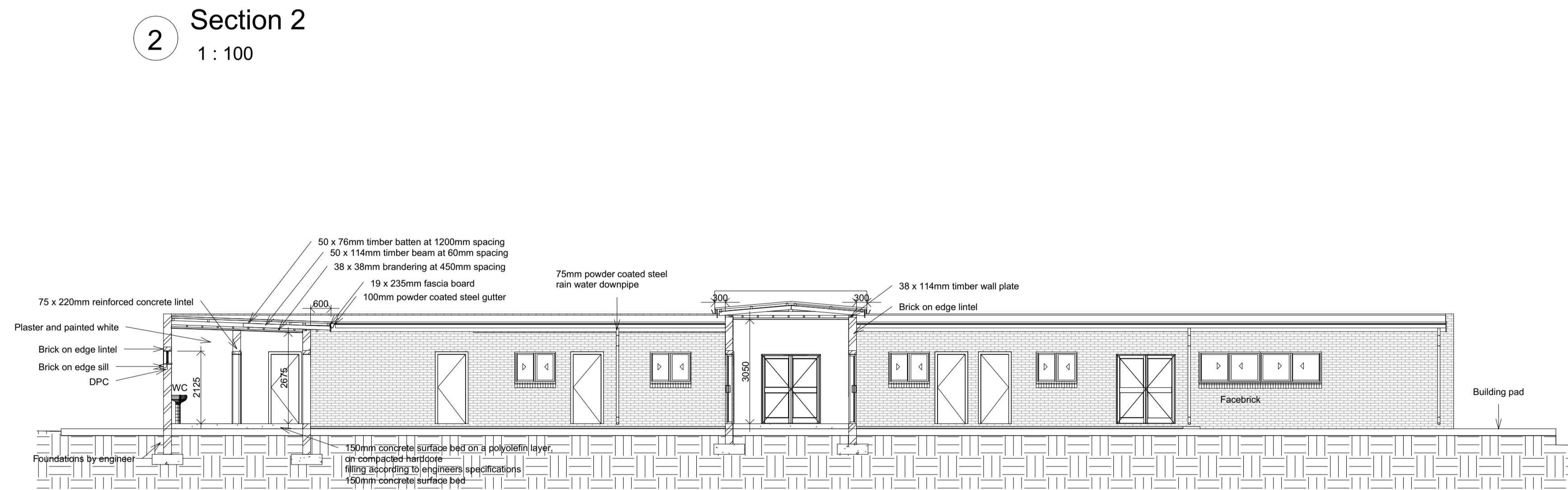


3 Section 4
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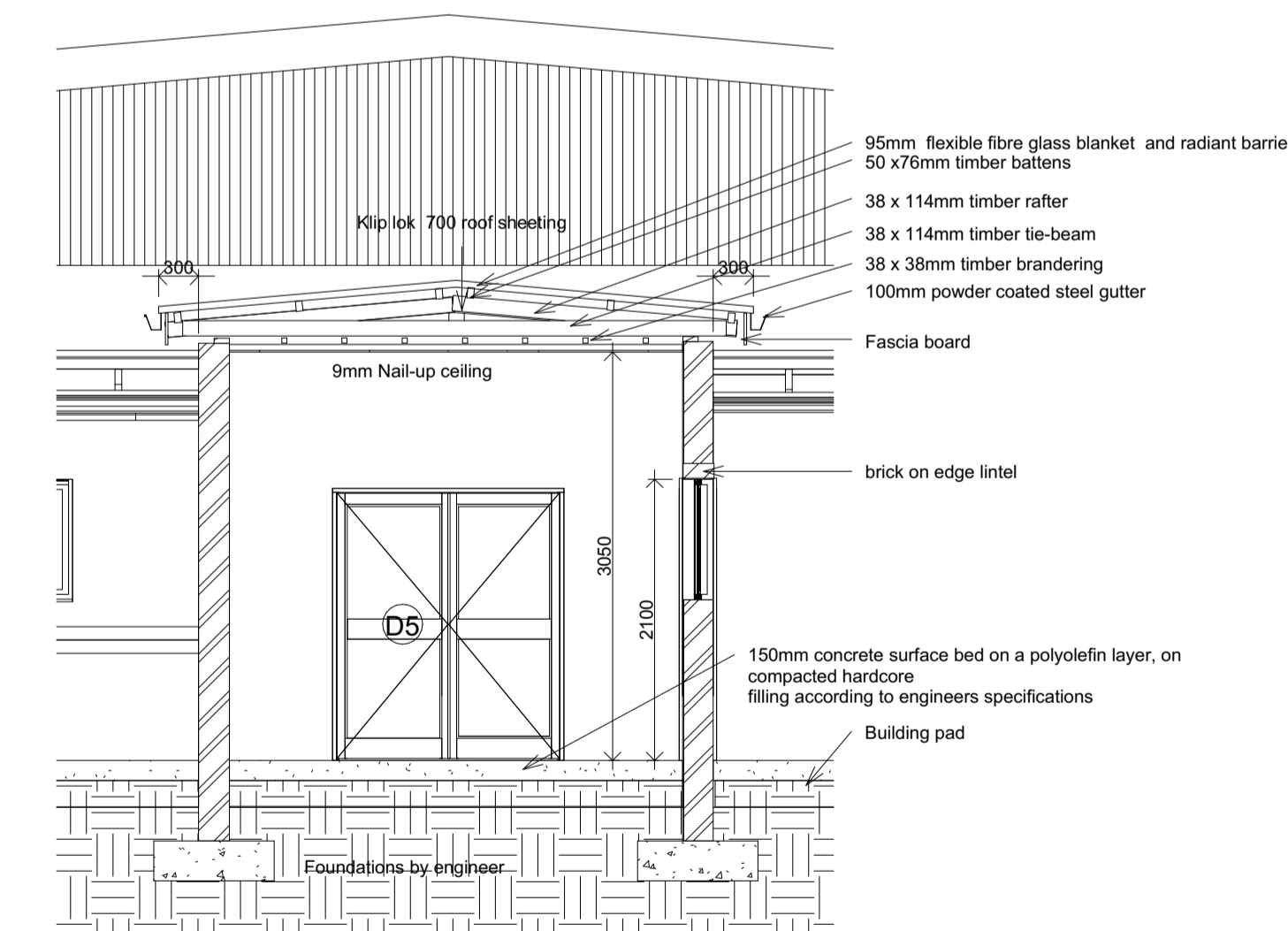
- GENERAL NOTES:**
- Contractors to ensure that all work is done in strict accordance with latest regulations & requirements of applicable Authorities including :
 - National Building Regulations (NBR).
 - Local Municipal Authority.
 - CSIR - "Technical Guide to a Good HouseConstruction" (residential work).
 - All other relevant Authorities.
 - Quality of materials and workmanship to comply with the latest relevant Codes & Specifications of SABS and BSS & the minimum standards of Standard Preliminaries (JBCC) & the Model Preambles for Trades' (1992 - ASAQs) and where applicable Project specifications/Bill of Quantities.
 - This drawing is to be read in conjunction with other Project Drawings, Construction Documentation & Principal Building Contract.
 - Contractors must view site & works & allow for everything necessary to complete the works.
 - Contractors to check the details on this drawing for compliance with standards of good building practice with particular reference to requirements by local &/or site conditions & report any discrepancies to the Architects.
 - No setting out is to commence before site boundary peg positions are verified & pointed out by the Employers Land Surveyor. Correct setting out including that from boundaries & building lines, & verification of services & existing work are the Contractors responsibility.
 - Contractors to verify all levels, heights & dimensions on site & check the same against drawings BEFORE putting any work in hand.
 - Figure dimensions are to be used at all times & large scale details will take preference over small scale. This drawing is not to be scaled.
 - Only the latest construction drawings issued as Architects instruction "A1" as "Authorised for Construction" may be used for the construction of the Works. All superseded & other drawings must be removed from site.
 - Any errors, discrepancies or omissions as well as all queries are to be immediately reported to the Architects for clarification before any work is put in hand.
 - The design & details on this drawings are the property of the Architects. Copyright & right of reproduction therefore are fully reserved.
 - Provide 'MALTHOID' horizontal under all concrete slabs, and provide polystyrene vertical between wall and slab. Provide construction joint to masonry wall along all 'MALTHOID' joints between slab and masonry internal and external.



2 Section 2
1 : 100

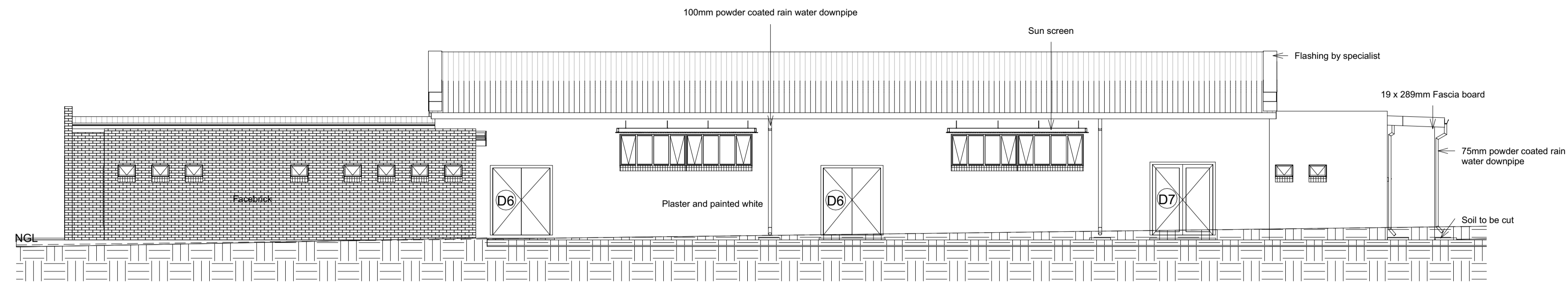


5 Section 3
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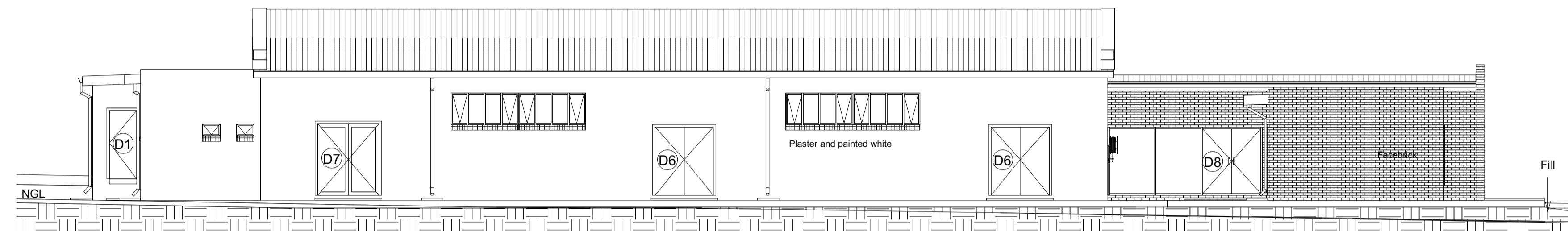


4 Section 5
1 : 50

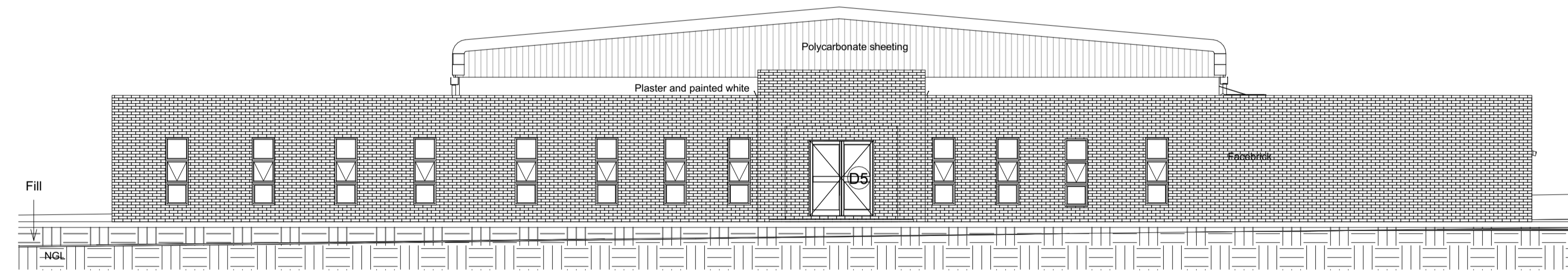
				Blouberg Municipality		Oltatech Consulting		PROJECT APPR.		SCALE		PROJECT TITLE:		
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0 13/09/2022 CHK APP REV DATE CHK APP				DRAWING STATUS: FOR TENDER						PROJECT No. DRG SIZE A1		DRAWING No. AV13/09/22- PLAN- 200		Revision No. 0



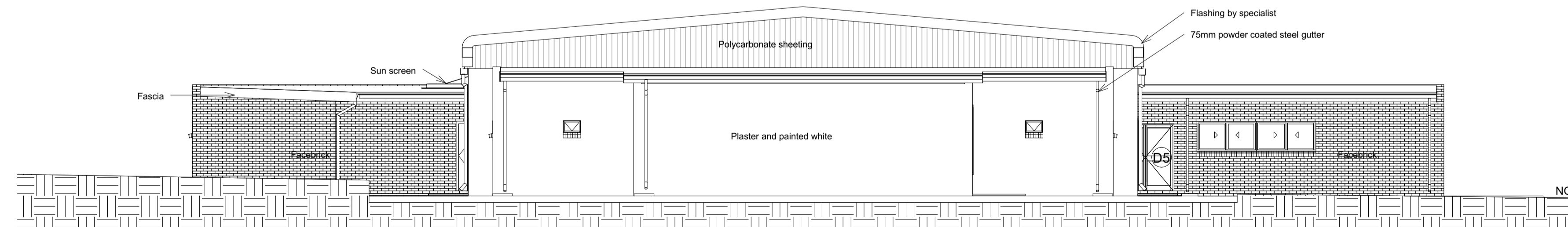
3 North
1 : 100




4 South
1 : 100

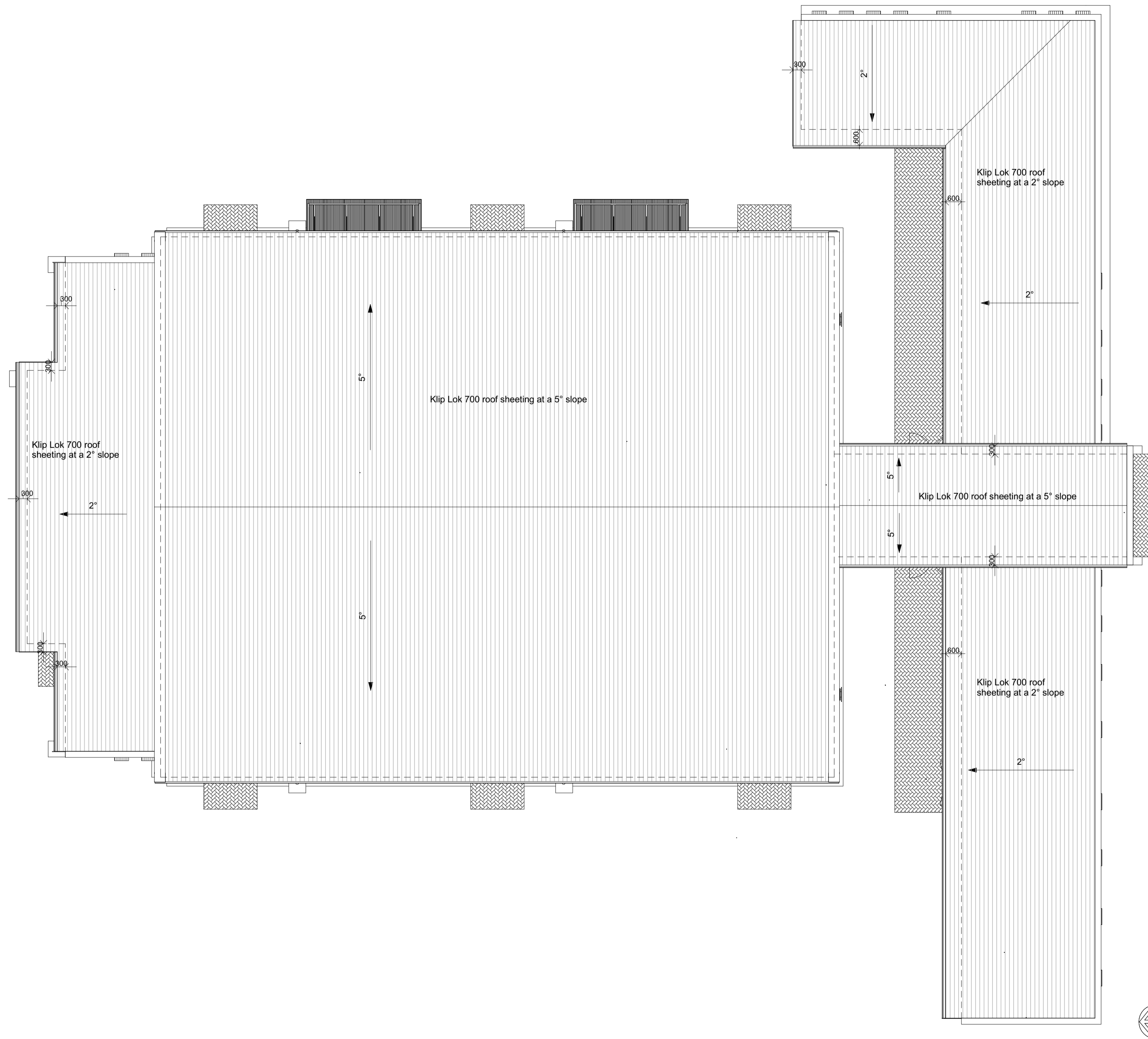


1 East
1 : 100



2 West
1 : 100

				Blouberg Municipality  Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100		Oltatech Consulting  Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699 REG: 2012 / 158921 / 07 VAT: 4590291482 Professional Engineering Solutions		<table border="1"> <thead> <tr> <th>PROJECT APPR.</th> <th>DATE</th> <th>BY</th> <th>SIGNATURE</th> </tr> </thead> <tbody> <tr> <td>DESIGNED</td> <td>SEPT 2022</td> <td>LM</td> <td></td> </tr> <tr> <td>CHECKED</td> <td>SEPT 2022</td> <td>RM</td> <td></td> </tr> <tr> <td>DRAWN</td> <td>SEPT 2022</td> <td>RM</td> <td></td> </tr> <tr> <td>PROJECT MNG.</td> <td>....</td> <td>....</td> <td></td> </tr> <tr> <td>APPROVED</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLIENT</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		PROJECT APPR.	DATE	BY	SIGNATURE	DESIGNED	SEPT 2022	LM		CHECKED	SEPT 2022	RM		DRAWN	SEPT 2022	RM		PROJECT MNG.		APPROVED				CLIENT				<table border="1"> <thead> <tr> <th colspan="2">SCALE</th> <th rowspan="2">PROJECT TITLE:</th> </tr> </thead> <tbody> <tr> <td colspan="2">DO NOT SCALE</td> <td>Avon Multi-Purpose Centre</td> </tr> <tr> <td colspan="2">DRAWING DESCRIPTION:</td> <td>MULTI-PURPOSE CENTRE - ELEVATIONS</td> </tr> <tr> <td>PROJECT No.</td> <td>DRG SIZE</td> <td>DRAWING No.</td> <td>Revision No.</td> </tr> <tr> <td></td> <td>A1</td> <td>AV13/09/22- PLAN- 300</td> <td>0</td> </tr> </tbody> </table>		SCALE		PROJECT TITLE:	DO NOT SCALE		Avon Multi-Purpose Centre	DRAWING DESCRIPTION:		MULTI-PURPOSE CENTRE - ELEVATIONS	PROJECT No.	DRG SIZE	DRAWING No.	Revision No.		A1	AV13/09/22- PLAN- 300	0
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1 Roof plan
1 : 100

				Blouberg Municipality  BLOUBERG MUNICIPALITY		Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100		Oltatech Consulting  OLTATECH CONSULTING Professional Engineering Solutions		Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699		PROJECT APPR. DESIGNED CHECKED DRAWN PROJECT MNG. APPROVED CLIENT	DATE SEPT 2022 SEPT 2022 SEPT 2022 	BY LM RM RM 	SIGNATURE 	SCALE DO NOT SCALE	PROJECT TITLE: Avon Multi-Purpose Centre	DRAWING DESCRIPTION: MULTI-PURPOSE CENTRE - ROOF PLAN	PROJECT No. DRG SIZE A1	DRAWING No. AV13/09/22- PLAN- 104	Revision No. 0
0	13/09/2022	CHK	APP	DRAWING STATUS: FOR TENDER																	
REV	DATE	CHK	APP																		

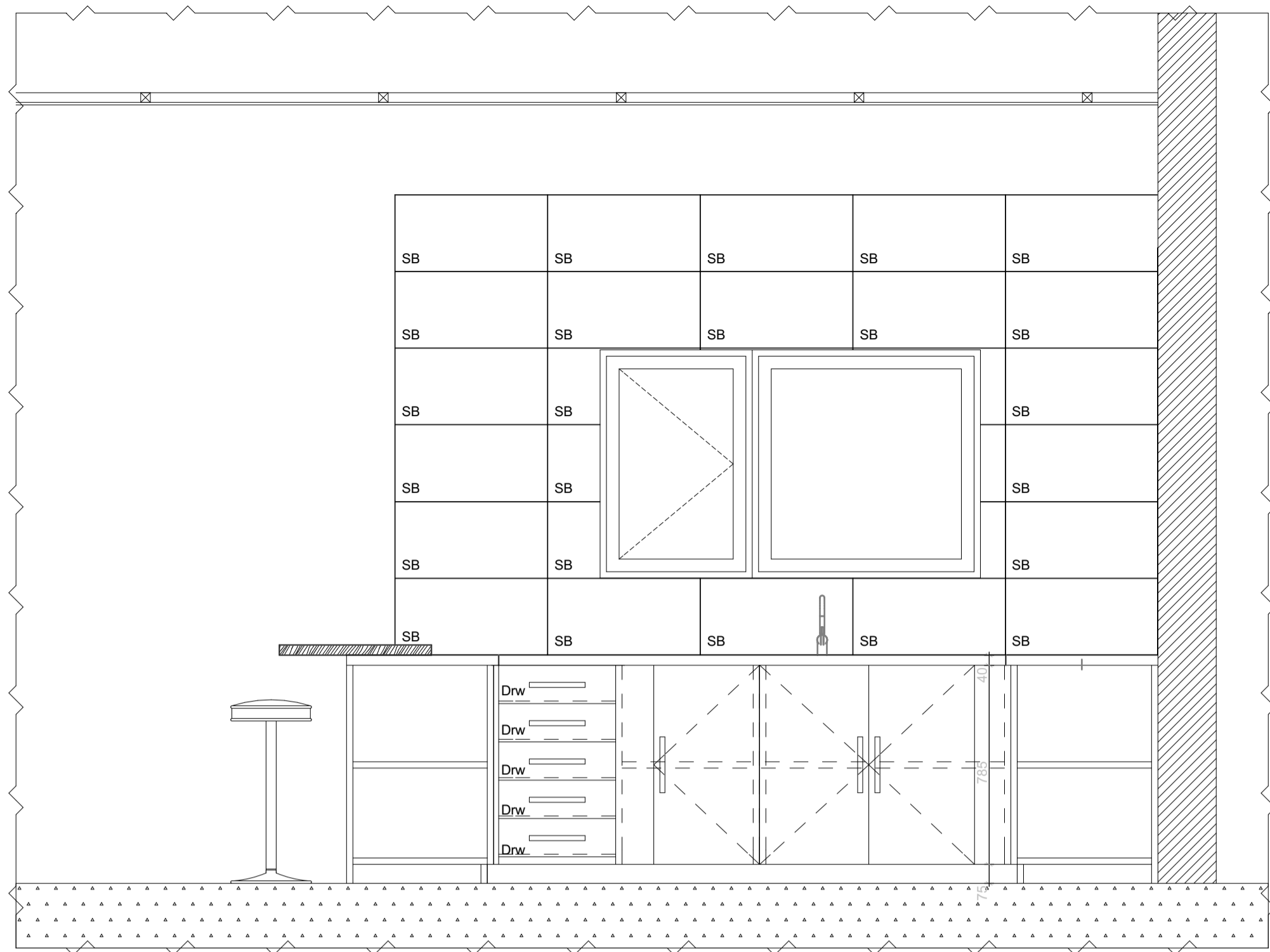
REFERENCE NUMBER	Door Type 1	Door Type 2	Door Type 3	Door Type 4	Door Type 5	Door Type 6	Door Type 7	Door Type 8
SPECIFICATION	813x2032mm HS 15 Horizontal slatted wooden solid door, concealed edge, 1.5 hour fire rating	813x2032mm Sapele Veneer wooden hollow core door, concealed edge	762 x1932mm undercut Wooden hollow core door, concealed edge	813x2032mm Wooden hollow core door, concealed edge, with a kick plate	1730 x 2032mm Aluminium door	1830 x 2134mm Fire escape door with break glass unit, 2 hour fire rating	1830 x 2134mm hardwood door with glass inserts,	Aluminium store front
FRAME	MATERIAL	Double rebated standard steel Fire door frame (1.6mm) from pressed metal. To suit wall thickness of 230mm	Single rebated standard steel heavy duty frame (1.6mm) from pressed metal. To suit wall thickness of 115mm	Single rebate standard steel heavy duty frame (1.6mm) from pressed metal. To suit wall thickness of 115mm	Single rebate standard steel heavy duty frame (1.6mm) from pressed metal. To suit wall thickness of 230mm	Aluminium frame	1,5mm thick double rebated prime coated Grey White galvanised 3 sided steel frame with 3 sided seal,	Aluminium frame
	FINISHES	One shop coat red oxide primer	One shop coat red oxide primer	One shop coat red oxide primer	One shop coat red oxide primer	Powder coating	Prime coated Grey White	One shop coat red oxide primer
DOOR	MATERIAL	40mm thick 1/2 hour solid HS 15 horizontal door, size 813 x 2032mm high, 1.5 hour fire rating with two concealed edges	Di semi-solid 40mm thick medium duty Commercial Veneer flush panel door, size 813 x 2032mm high, with two concealed edges.	Di semi-solid 40mm thick medium duty Commercial Veneer flush panel door, size 762 x 1932mm high, with two concealed edges.	Di semi-solid 40mm thick medium duty Commercial Veneer flush panel door, size 813 x 2032mm high, with two concealed edges. With steel kick plate	Aluminium door with 6.38mm laminated safety glass	60 minutes fire door in equal double leaf, 62mm thick, size 1730 x 2032mm high with 1,0mm galvanised steel sheet	40mm thick BB hardwood door with 6.38mm laminated safety glass, size 1830 x 2134mm high
	FINISHES		Sapele veneer	Painted 2x coats enamel paint, colour to be confirmed	Painted 2x coats enamel paint, colour to be confirmed	Powder coating	Prime coated Grey White	Painted 2x coats enamel paint, colour to be confirmed
IRONMONGERY								

○ Door schedule
1 : 50

REFERENCE NUMBER	Window type 1	Window type 2	Window type 3	Window type 4	Window type 5	Window type 6
New/Existing	New	New	New	New	New	New
FRAME	MATERIAL	Concrete	Standard steel	Standard steel	Aluminium	Aluminium
	FINISHES	Fair faced	Painted	Painted	Powder coated	Powder coated
GLASS	MATERIAL	4mm safety glass	4mm safety glass	4mm safety glass	4mm safety glass	4mm safety glass
	FINISHES	Clear	Frosted	Frosted	Frosted	Clear
IRONMONGERY						
	Concrete winblok with aluminium window glazing inserts					

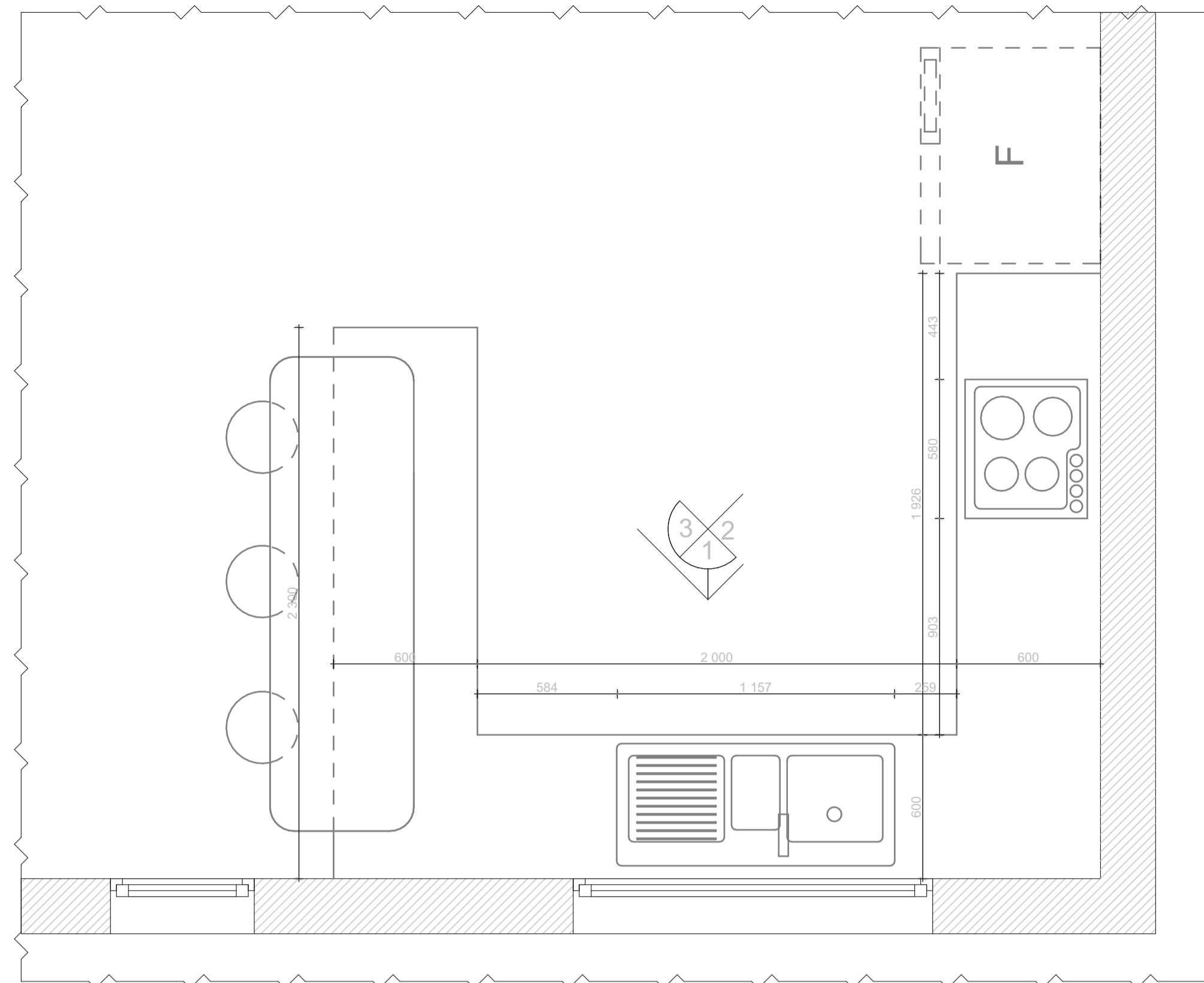
○ Window Schedule
1 : 50

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0	13/09/2022	CHK	APP	DRAWING STATUS: FOR TENDER						
REV	DATE	CHK	APP							



ELEVATION 1

SCALE 1:20



FLOOR LAYOUT

SCALE 1:20

- SB SPLASH BACK
- Drw DRAWER
- FFL FINISHED FLOOR LEVEL
- FS FIXED SHELF

JOINERY UNIT SPECIFICATIONS

Work Tops: 30mm ice White Granite with a 20mm overhang, with Silicone sealant applied at the Back edges to prevent water ingress, fixed to the timber with a polyurethane adhesive to allow for expansion.(or to suppliers recommendation).

Doors:Doors are 16mm particle board post formed on both vertical sides and foiled wrapped in Walnut colour in renolit PVC foil on both sides. Doors are pre drilled for hinges.

Side Fillers: 25mm particle board post formed on both vertical sides and foiled wrapped in Walnut colour in renolit PVC foil on both sides.

Side and Divisions: Hollowcore finished in white renolit all around.

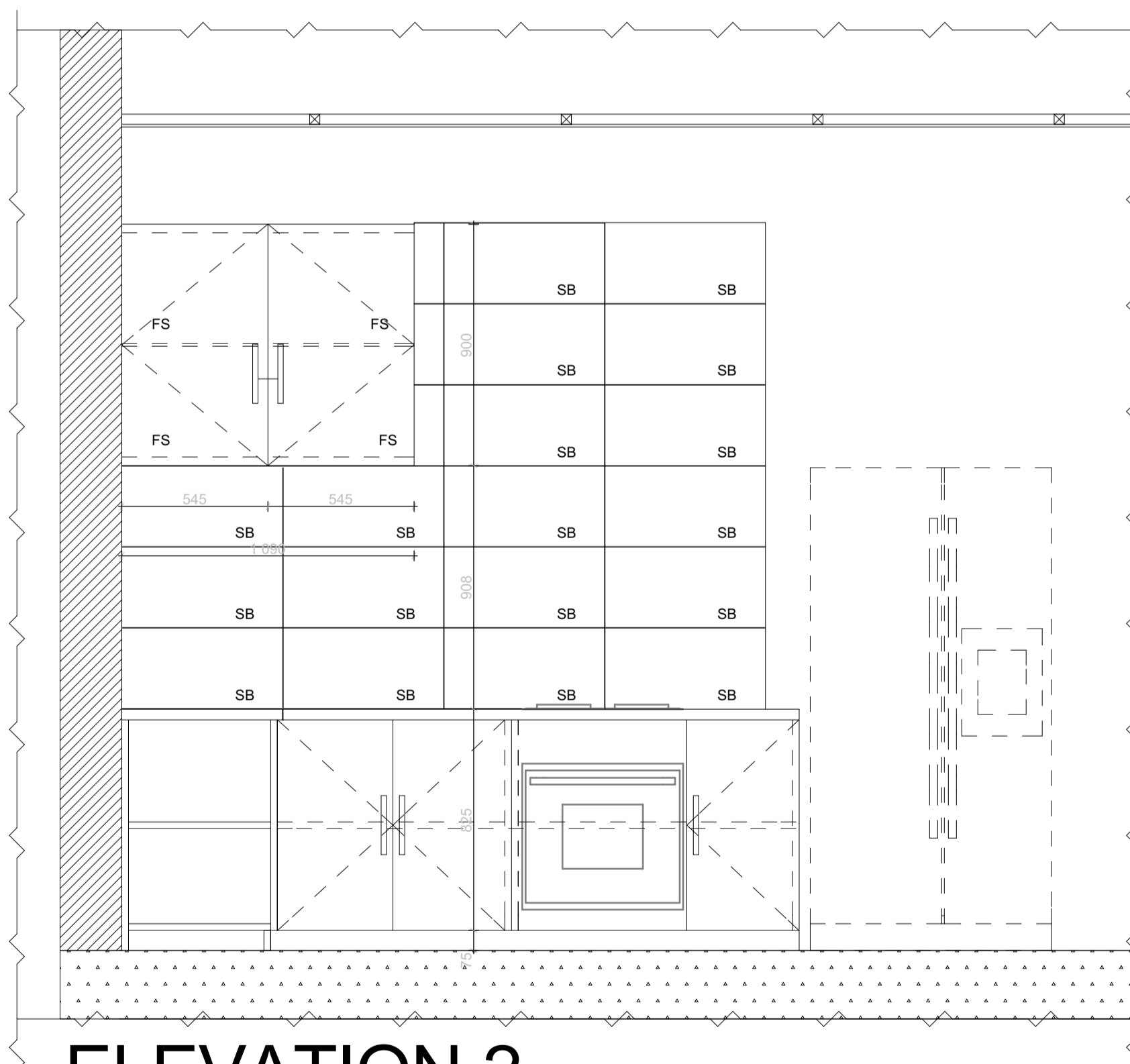
Kickplates:These shall be continuous along floor plinths in 16mm x 75mm particle board foiled in white renolit PVC foil. to be installed as per the drawings. kick plates to be recessed by 40mm from door edges.

Carcass:Carcasses shall be of 16mm particle board foiled and edged on all faces with 6mm hardboard back foiled walnut melamine on exposed face in white renolit PVC foil.Sides are predrilled and grooved for assembly.

Handles:Handles shall be of the "D" type in selected colors and finishes ,fixed with screws to door and drawer fronts after hinging.

Hinges:Hinges shall be of the concealed type fitted to pre drilled floor and wall and units.units to be fitted with 95° hinges and piano hinges to adjoining doors.

Splash Backs
600mm x 300mm x 9mm thick porcelain tiles in matt finish laid to approved pattern using approved adhesive and grout. All to be manufactured and installed in strict compliance to the latest SABS approved standards. Colour and end finish to architects approval.WHITE NANO SP6200T FLOOR or equal and approved colour

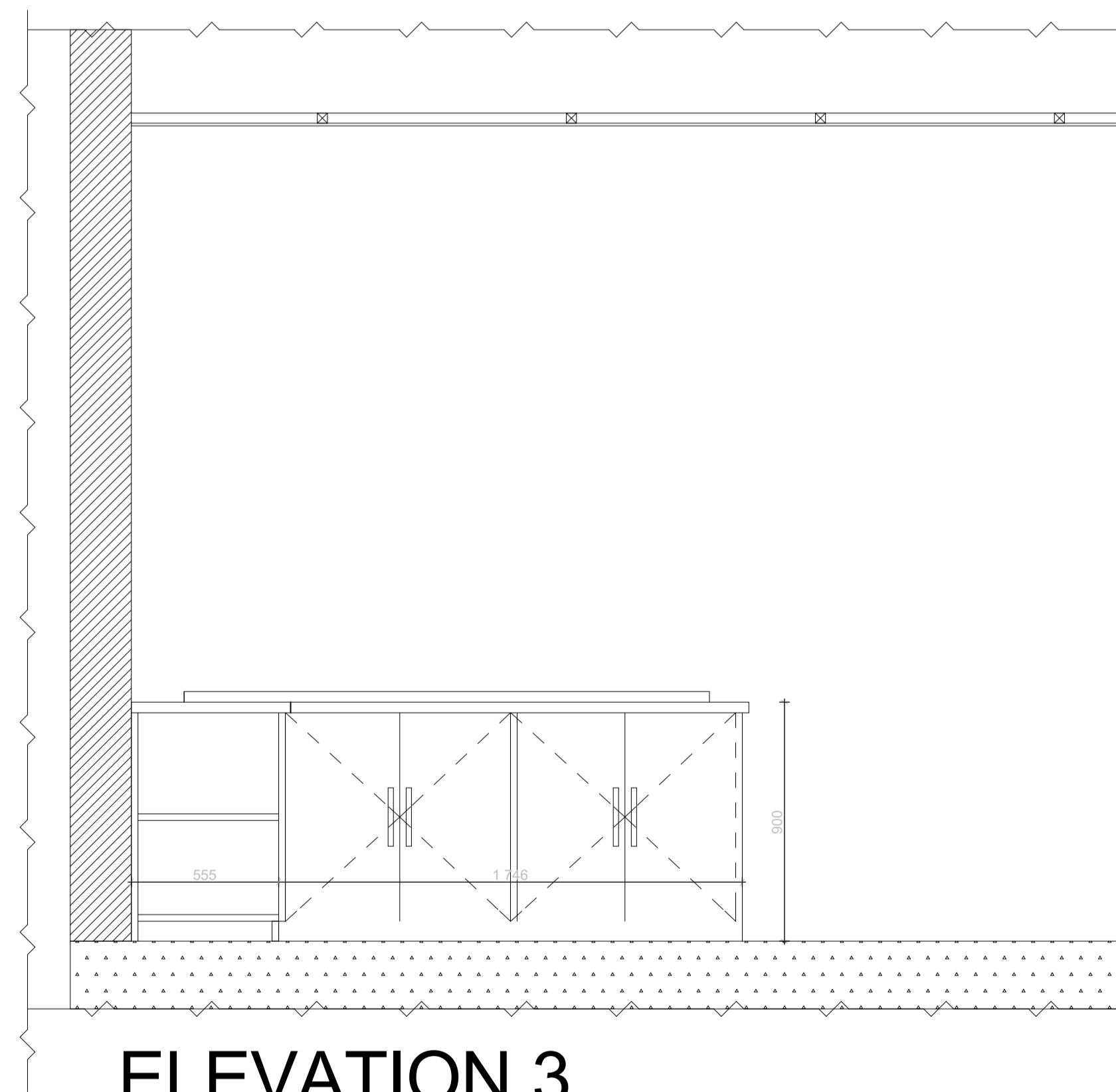


ELEVATION 2

SCALE 1:20

KITCHEN DETAIL

SCALE 1:20



ELEVATION 3

SCALE 1:20

REV	DATE	CHK	APP
0	13/09/2022	CHK	APP

DRAWING STATUS:
FOR TENDER



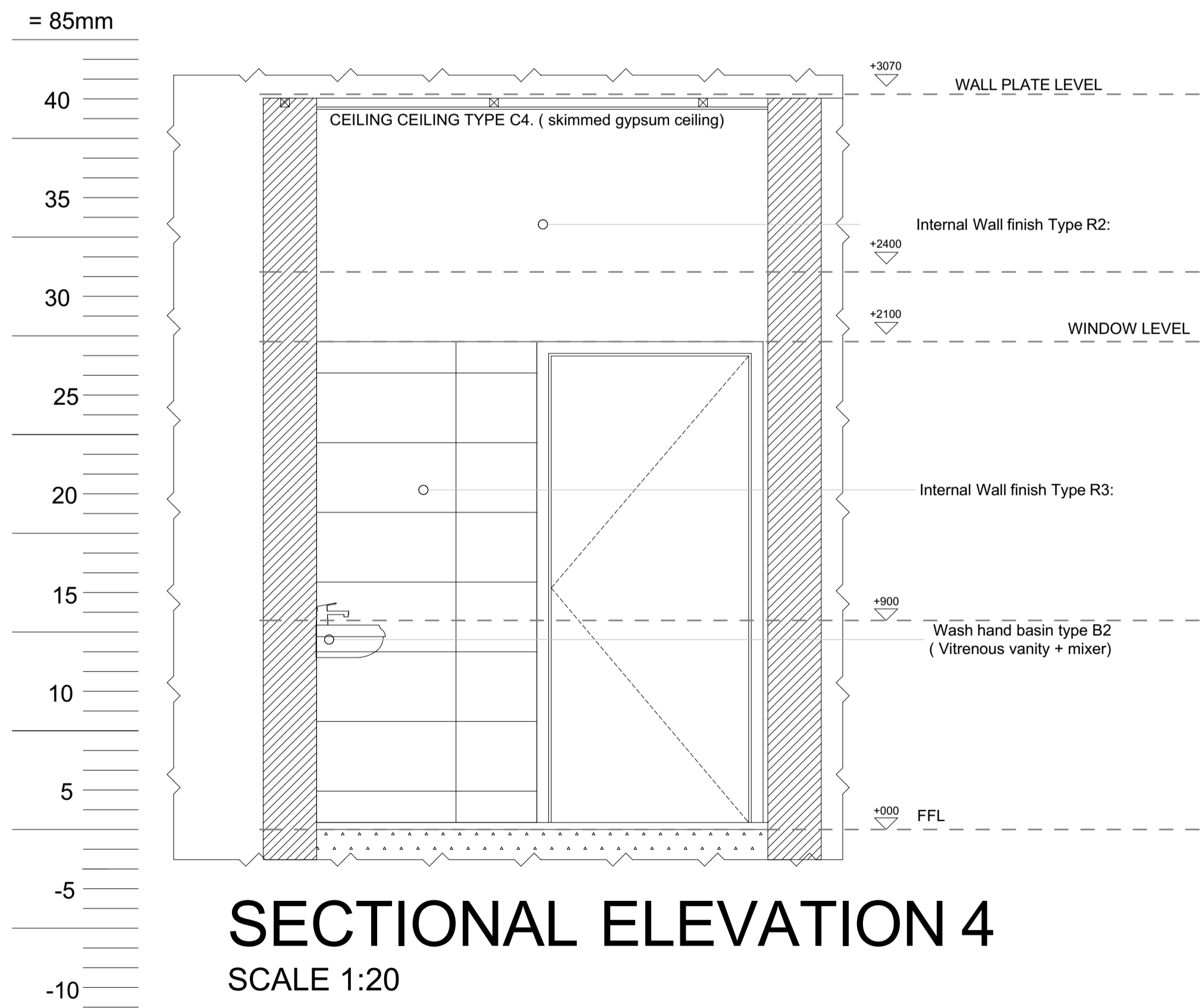
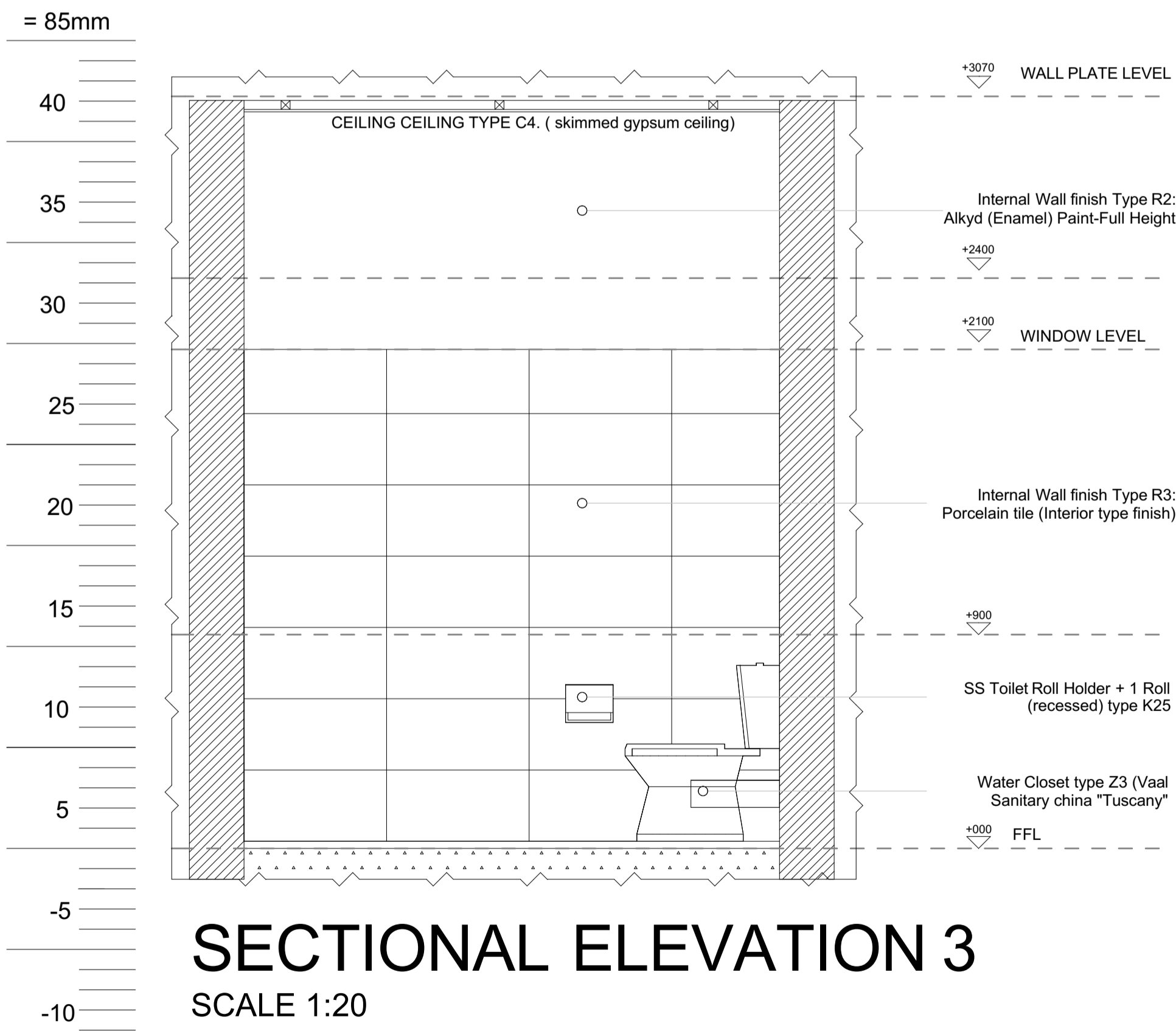
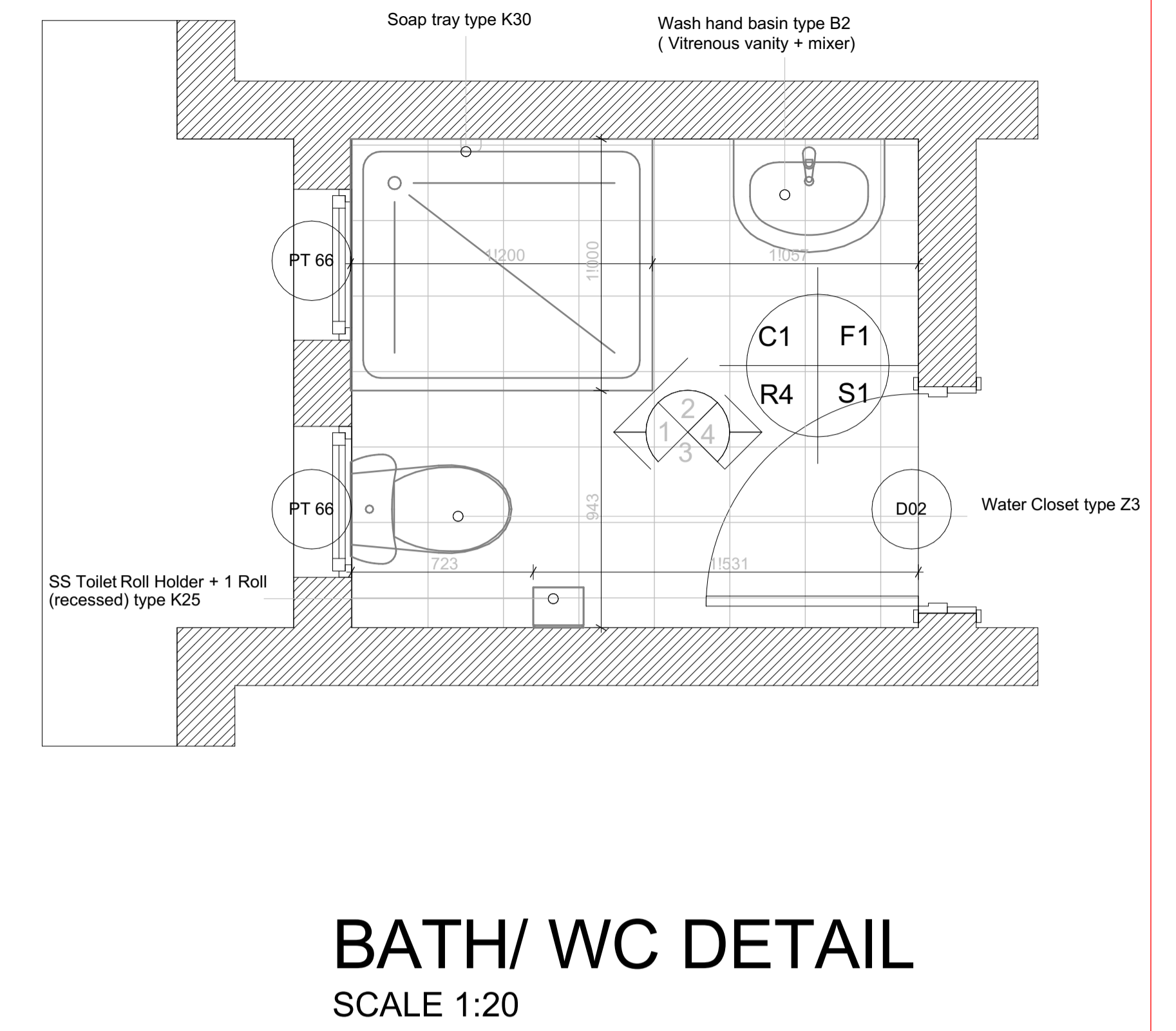
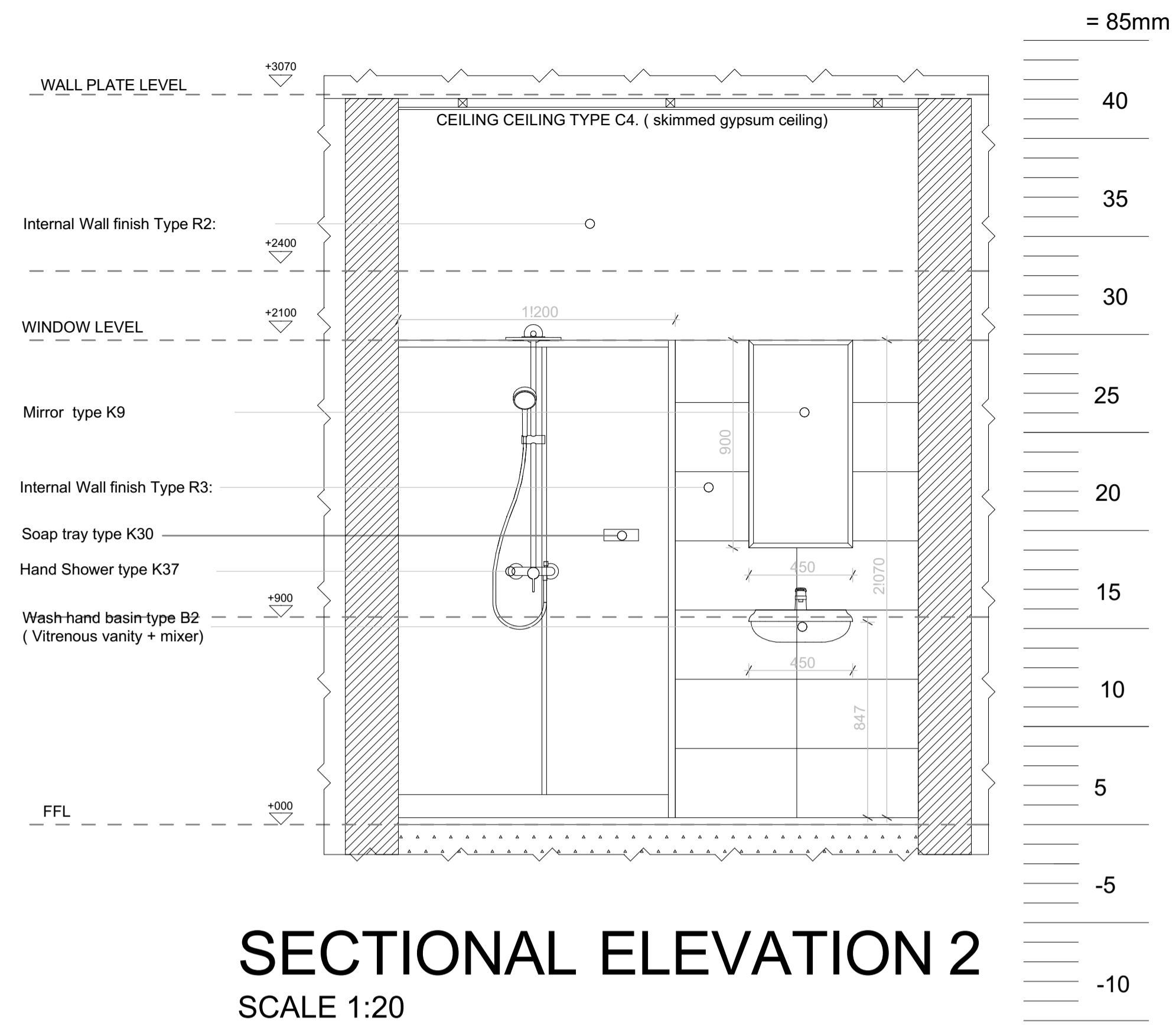
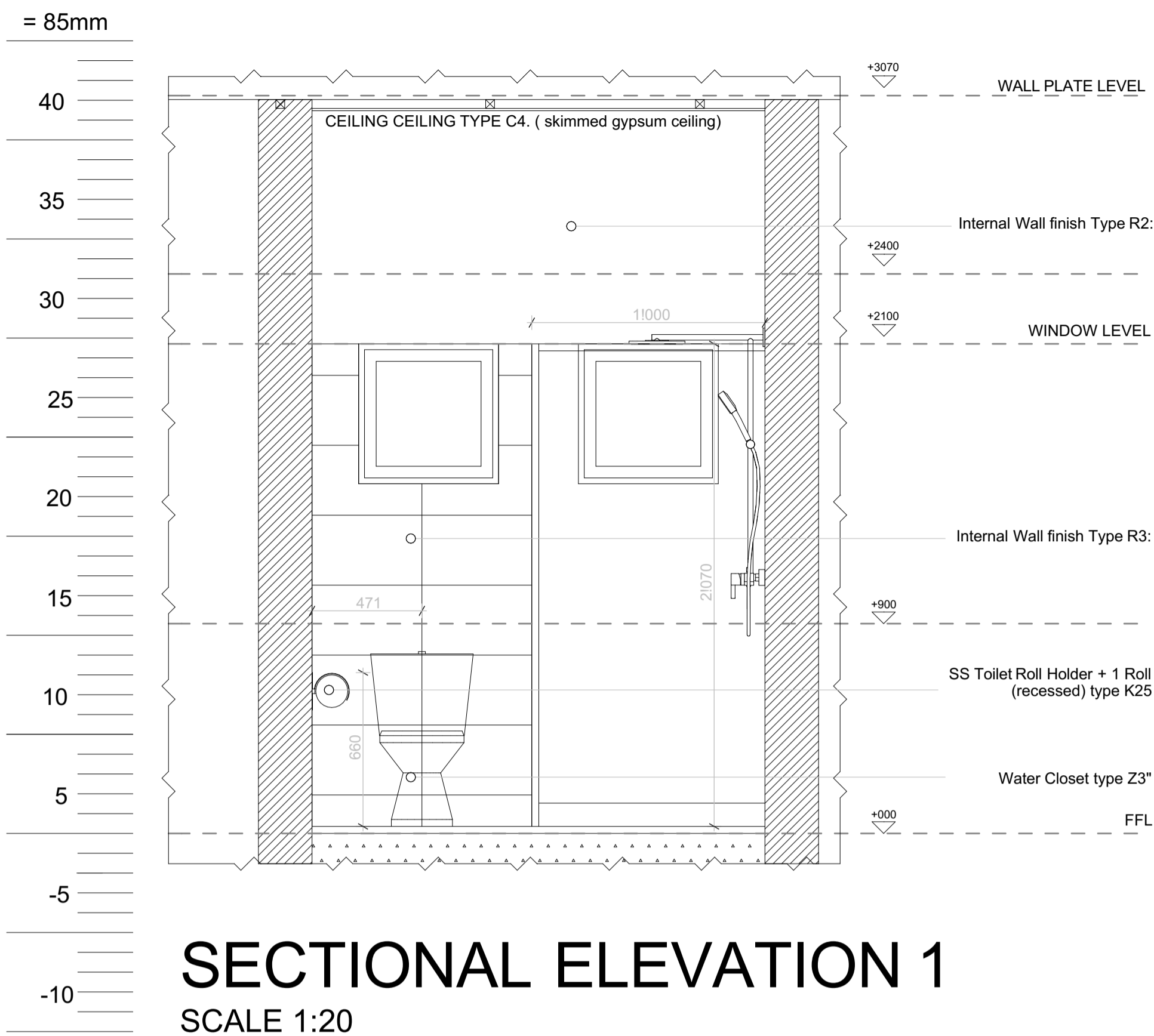
Blouberg Municipality
2nd Building Dendron Road
P.O Box 1593
Senwabarwana
0790
Tel: 015 505 7100



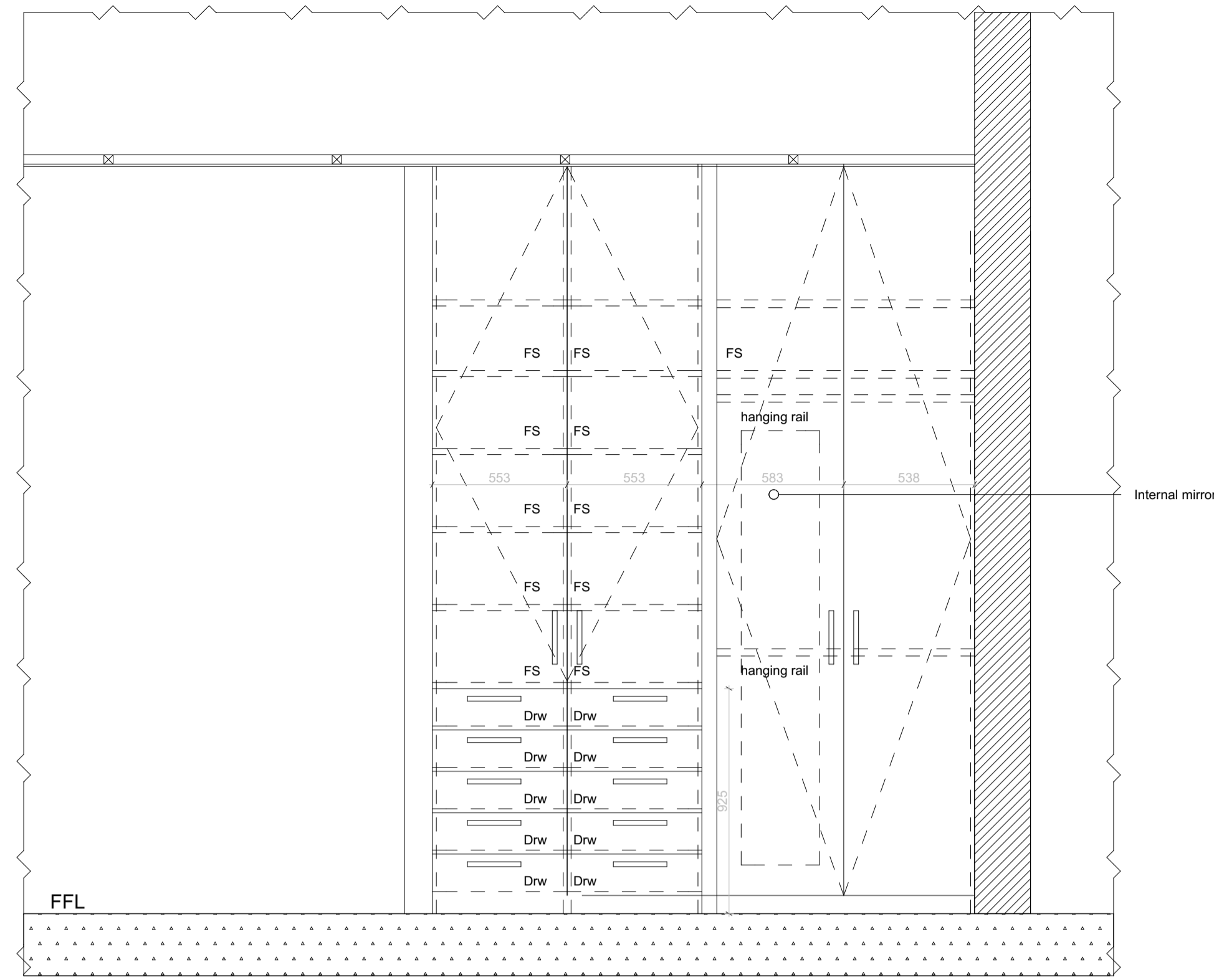
Oltatech Consulting (Pty) Ltd
6 Rentco Building
11 Pierre Street, Bendor.
Polokwane, 0699

PROJECT APPR.	DATE	BY	SIGNATURE
DESIGNED	SEPT 2022	LM	
CHECKED	SEPT 2022	RM	
DRAWN	SEPT 2022	RM	
PROJECT MNG.	
APPROVED			
CLIENT			

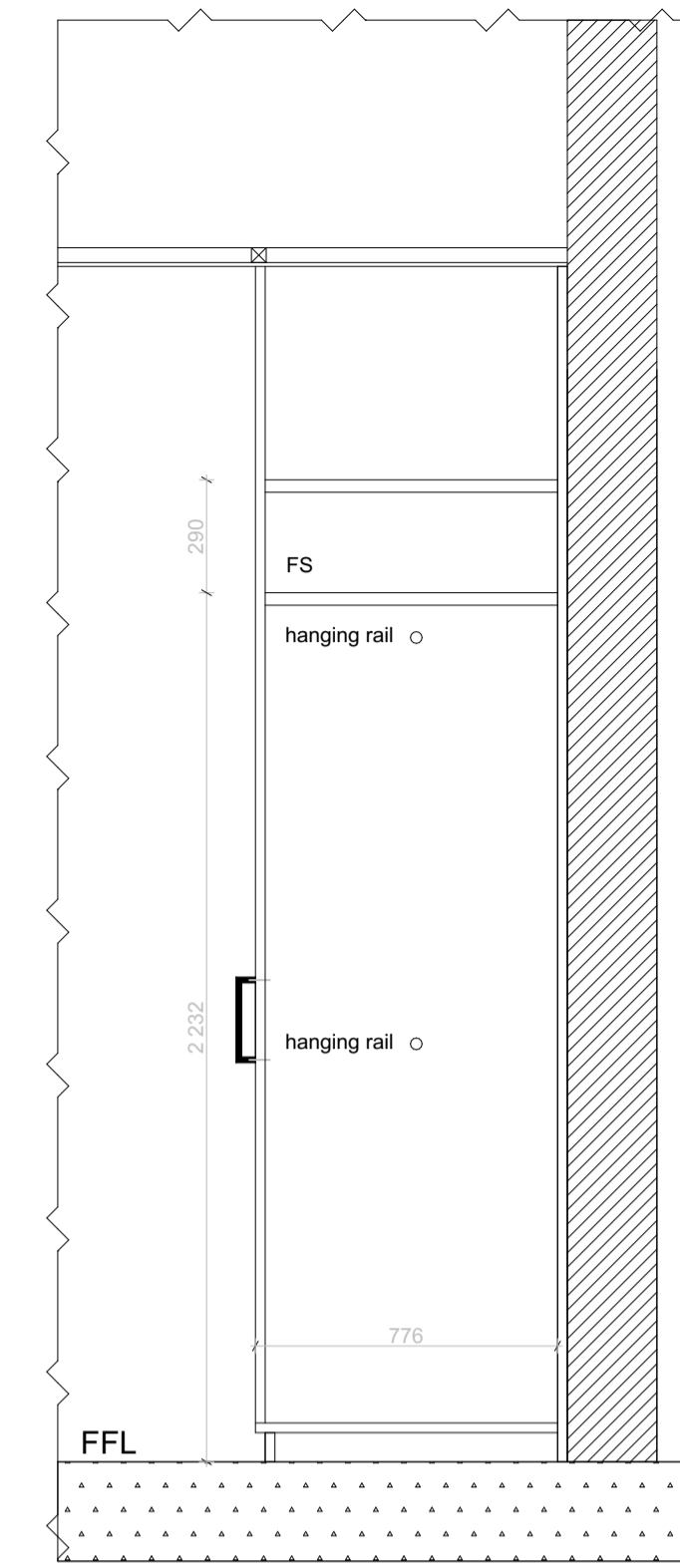
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DO NOT SCALE		Avon Multi-Purpose Centre	
DRAWING DESCRIPTION:		MULTI-PURPOSE CENTRE - KITCHEN DETAILS	
PROJECT No.	DRG SIZE	DRAWING No.	Revision No.
	A1	AV13/09/22- PLAN- 003	0



		Blouberg Municipality		Oltatech Consulting		PROJECT APPR.		DATE		BY		SIGNATURE		SCALE		PROJECT TITLE:	
		 Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100		 Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699		DESIGNED		SEPT 2022		LM				DO NOT SCALE		Avon Multi-Purpose Centre	
						DRAWING DESCRIPTION:		CHECKED		SEPT 2022		RM						MULTI-PURPOSE CENTRE - BATHROOM DETAIL
						DRAWN		SEPT 2022		RM							
						PROJECT MNG.		....		....				
						APPROVED											
						CLIENT											
0 13/09/2022 CHK APP REV DATE CHK APP		DRAWING STATUS: FOR TENDER												DRAWING No. AV13/09/22- PLAN- 004		Revision No. 0	



ELEVATION
SCALE 1:20



SECTION
SCALE 1:20

- SB | SPLASH BACK
- Drw | DRAWER
- FFL | FINISHED FLOOR LEVEL
- FS | FIXED SHELF

JOINERY UNIT SPECIFICATIONS

Doors:Doors are 16mm particle board post formed on both vertical sides and foiled wrapped in Walnut colour in renolit PVC foil on both sides. Doors are pre drilled for hinges.

Side Fillers: 25mm particle board post formed on both vertical sides and foiled wrapped in Walnut colour in renolit PVC foil on both sides.

Side and Divisions: Hollowcore finished in white renolit all around.

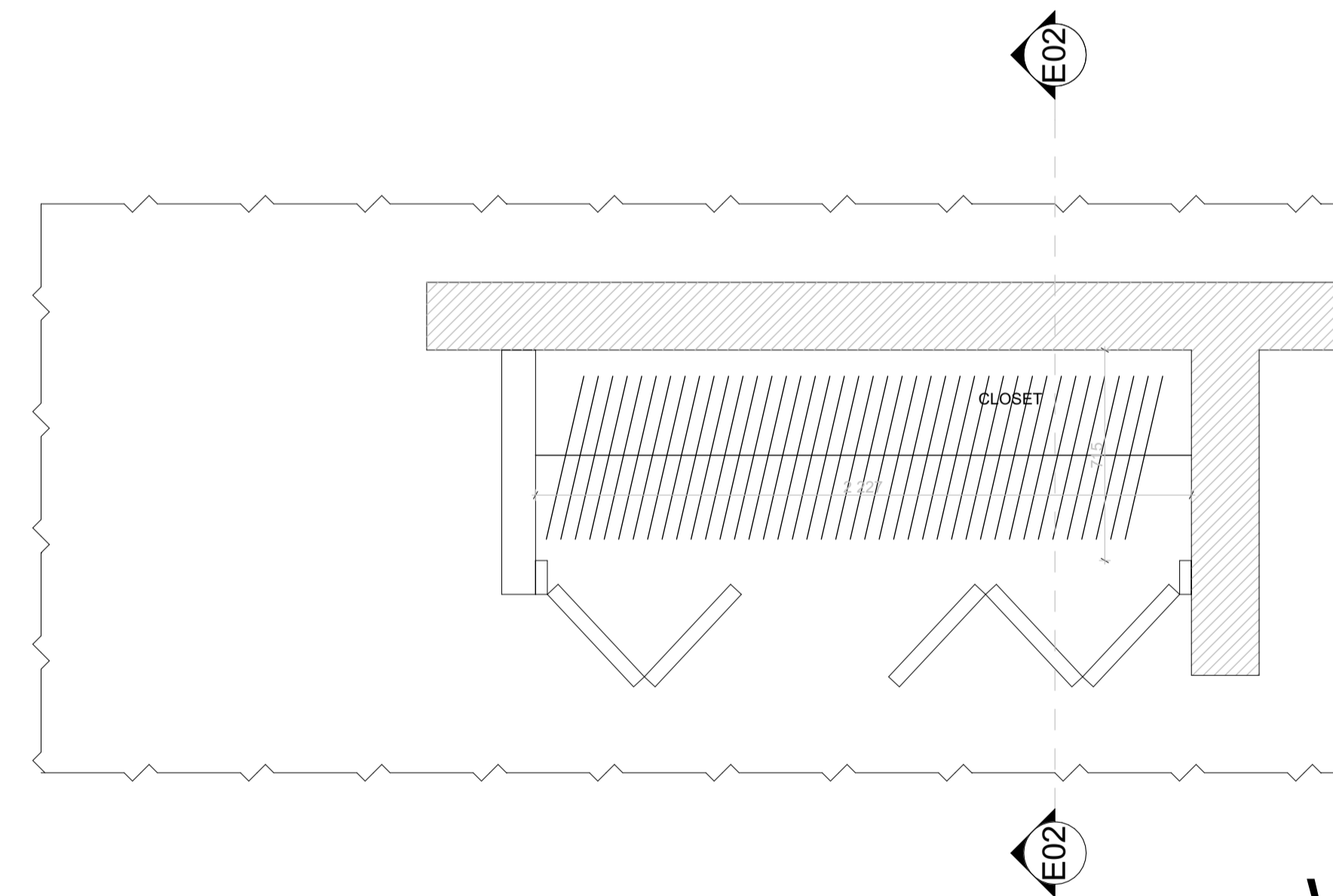
Kickplates:These shall be continuous along floor plinths in 16mm x 75mm particle board foiled in white renolit PVC foil. to be installed as per the drawings. kick plates to be recessed by 40mm from door edges.

Carcass:Carcasses shall be of 16mm particle board foiled and edged on all faces with 6mm hardboard back foiled walnut melamine on exposed face in white renolit PVC foil.Sides are predrilled and grooved for assembly.

Handles:Handles shall be of the "D" type in selected colors and finishes ,fixed with screws to door and drawer fronts after hinging.



Hinges:Hinges shall be of the concealed type fitted to pre drilled floor and wall and wall units.units to be fitted with 95° hinges and piano hinges to adjoining doors.

Splash Backs
35mm diameter stainless steel hanging rail to be provided as shown on the drawing



FLOOR LAYOUT
SCALE 1:20

WARDROBE DETAIL
SCALE 1:20

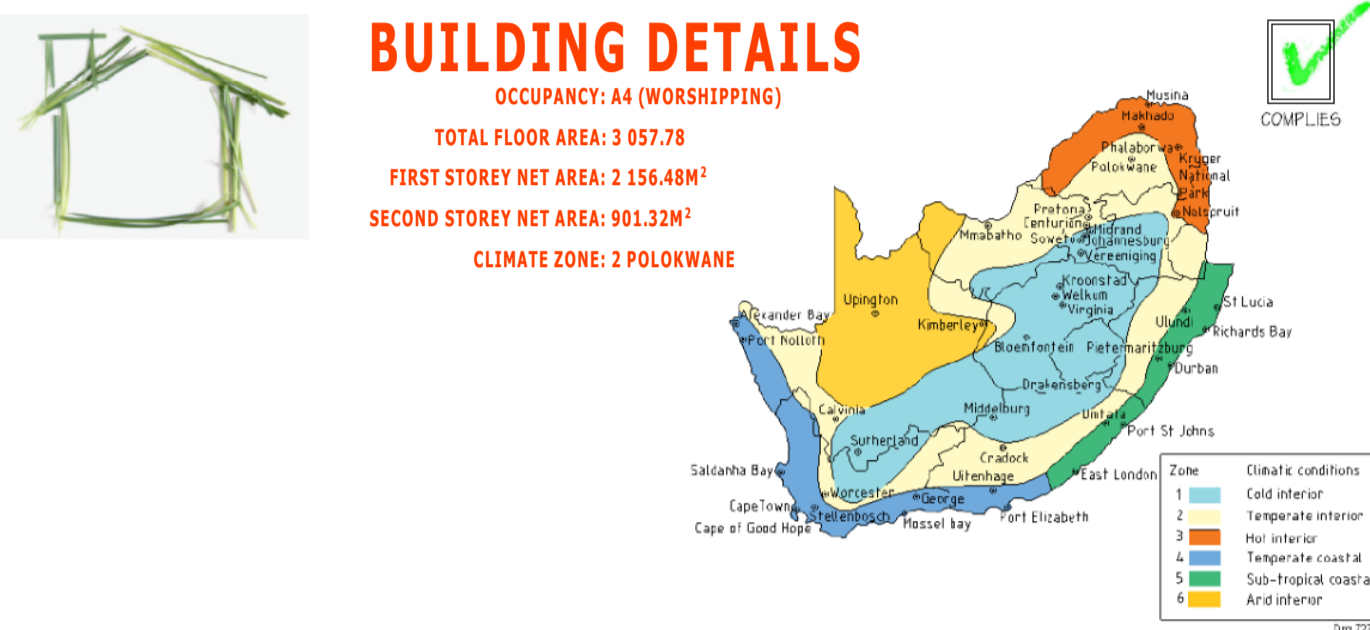
				Blouberg Municipality	Oltatech Consulting		PROJECT APPR. DATE BY SIGNATURE		SCALE	PROJECT TITLE:		
				 BLOUBERG MUNICIPALITY	 Professional Engineering Solutions		OltaTech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699		DO NOT SCALE	Avon Multi-Purpose Centre		
				DRAWING STATUS: FOR TENDER				DRAWING DESCRIPTION:		MULTI-PURPOSE CENTRE - WARDROBE DETAIL		
0	13/09/2022	CHK	APP					PROJECT No.	DRG SIZE	DRAWING No.		Revision No.
REV	DATE	CHK	APP					A1	AV13/09/22- PLAN- 005	0		0

REQUIREMENTS FOR PART XA OF THE NATIONAL BUILDING REGULATIONS

SANS 10400-XA:2011 4.2

The functional regulations contained in part XA of the National Building Regulations shall be deemed to be satisfied where in any building of occupancy classified in terms of Regulations A20 as A1, A2, A3, A4, C1, C2, E1, E2, E3, E4, F1, F2, F3, G1, H1, H2, H3, H4 and H5 :

- 1 The orientation and shading are in accordance with the requirements of SANS 204
2 External walls are in accordance with the requirements of 4.4.3 of SANS 10400-XA:2011
3 Fenestration is in accordance with the requirements of 4.4.4 of SANS 10400-XA:2011
4 Roof assembly construction is in accordance with the requirements of 4.4.5 of SANS 10400-XA:2011
5 If in-slab heating is installed, it is in accordance with the requirements of 4.4.2 of SANS 10400-XA:2011



CLIMATIC ZONES OF SOUTH AFRICA

Energy measures will vary from location to location. The deemed-to-satisfy provisions are based on climate zones, including dry bulb temperatures, thermal neutrality, humidity and southern coastal condensation risk. The climatic zone map has six climatic zones as follows:

Climate Zone	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Description	Cold Interior	Temperate Interior	Hot Interior	Temperate Coastal	Sub-Tropical Coastal	Arid Interior
Climate	Warm summer Cold winter	Warm summer Cool winter	Hot dry summer Temperate winter	Warm humid summer Cold wet winter	High humidity summer Warm winter	Hot dry summer Moderate winter
Average January maximum temperature°C	30.7	30.7	31.9	26.1	27.8	35.5
Average July mean temperature°C	7.8	12.2	17.4	12.2	16.6	12.5
Average July minimum temperature°C	-1.8	3.6	10.2	7.0	10.5	4.1

Reference: G. Hain, H.M. Murray, C.J. Paauw, A.S. van Niekerk (Temperatures obtained from Nova Project - climatic information)

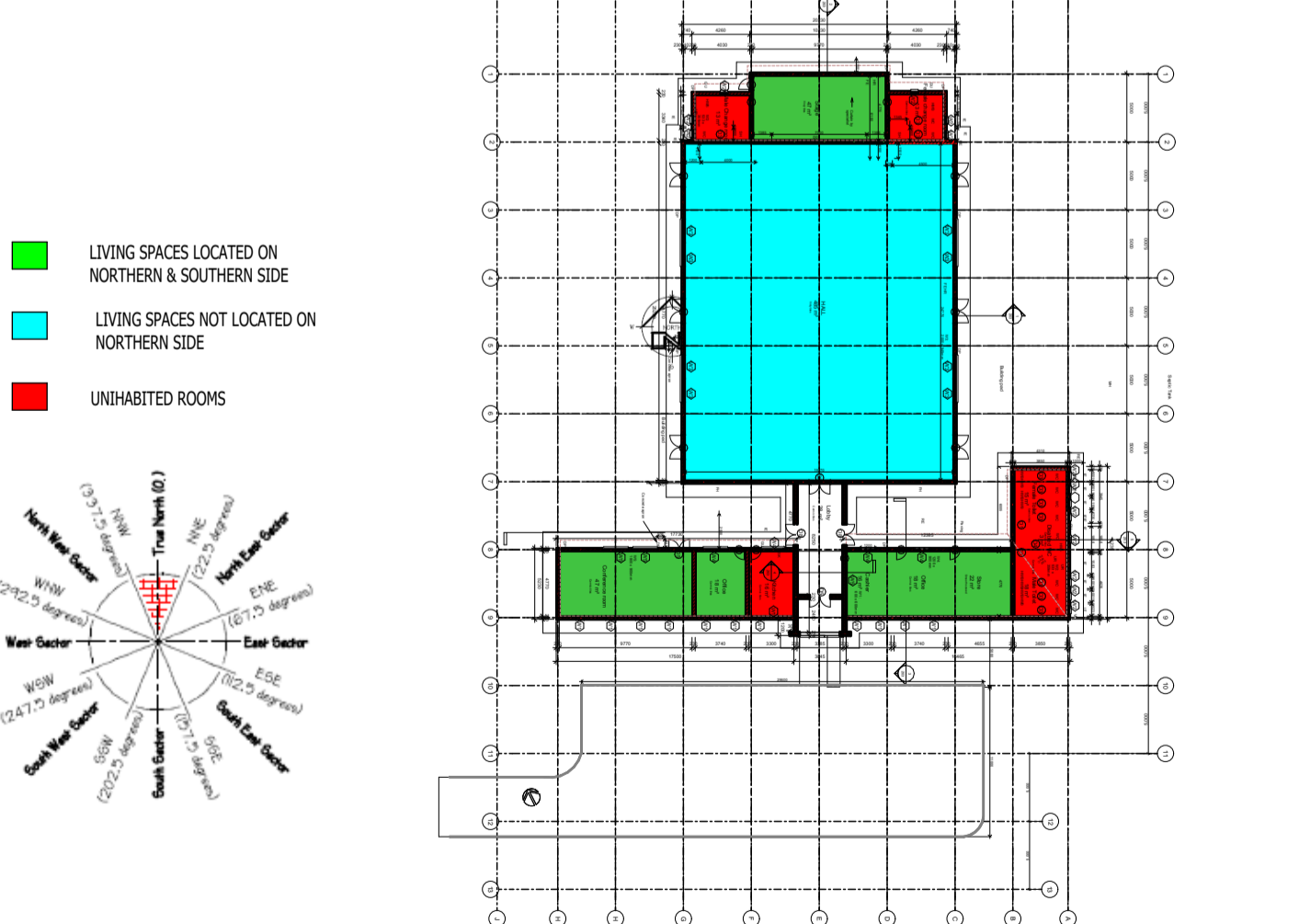
1 ORIENTATION AND SHADING

a ORIENTATION

In accordance with the requirements of SANS 204:2011-4.2

SANS 204:2011 4.1 Site layouts shall enable buildings to be for optional orientation given in figures

Buildings should be orientated in accordance with figures B1 to B6 approximately true north. If buildings cannot be thus orientated, they shall be orientated to achieve the lowest net energy use.



REV	DATE	CHK	APP	DRAWING STATUS:
0	13/09/2022	CHK	APP	FOR TENDER

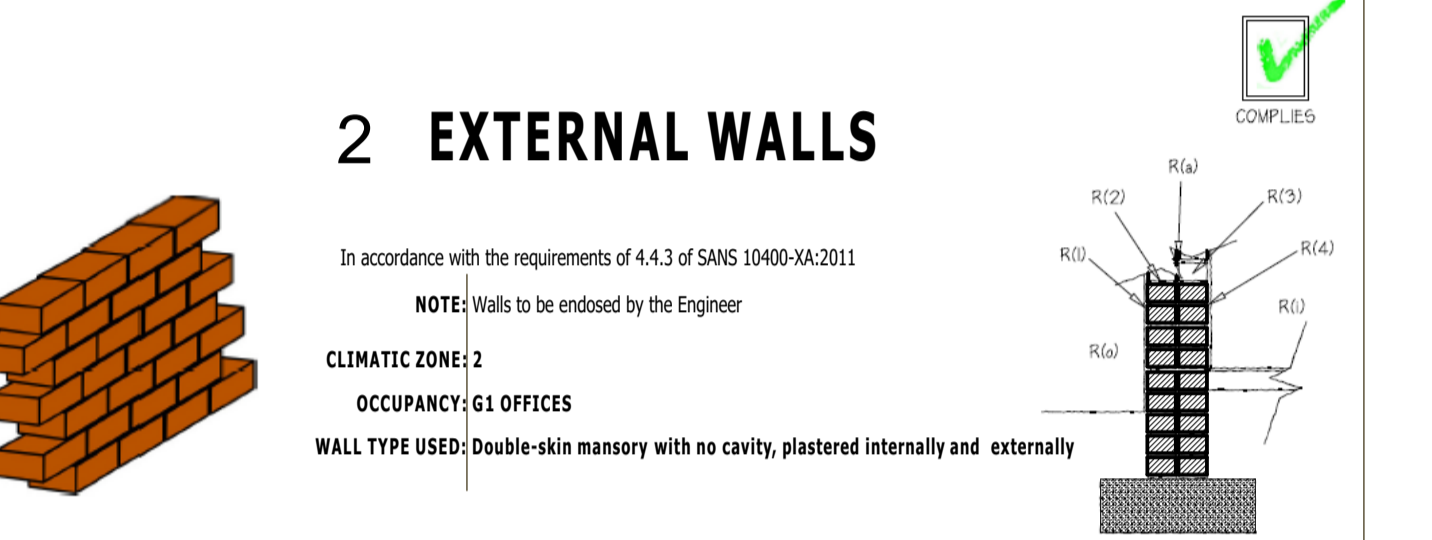
b SHADING

In accordance with the requirements of SANS 204:2011-4.3.5

SANS 204:2011 4.5.1 Where shading is used, the building shall

- a) have a permanent feature such as a veranda, balcony, fixed canopy, eaves or shading hood, which 1.) extends horizontally on both sides of the glazing for the same projection distance P (see figure 3 on page 1) 2) provides the equivalent shading with a reveal or other shading element
b) have an external shading device, such as a shutter, blind, vertical or horizontal building screen with blades, battens or slats, which 1) is capable of restricting at least 80% of summer solar radiation, and 2) if adjustable, is really operated either manually, mechanically or electronically by building occupants

NOTE: Windows on east and west facade to be shaded according to SANS 2004:201-4.3.5



SYMBOL	MATERIAL	R-VALUE	THICKNESS(m)	R-VALUE/THICKNESS
EXTERNAL R(0)	Outside Air Space	0.05	n/a	0.05
R(1)	Plaster	0.5	0.015	0.03
R(2)	Brick (1 skin)	0.62	0.105	0.17
R(a)	Cement Filling	0.16	n/a	0.16
R(3)	Brick (1 skin)	0.62	0.105	0.17
R(4)	Plaster	0.5	0.015	0.03
R(1)	Inside Air Space	0.16	n/a	0.16
TOTAL R-VALUE(m².K/W)				0.77

Double skin masonry with no cavity

SANS 10400-XA:2011 4.4.3.2: The following types of masonry walling comply with the R-value requirements: a) double-skin masonry with no cavity, plastered internally, or rendered externally

3 FENESTRATIONS

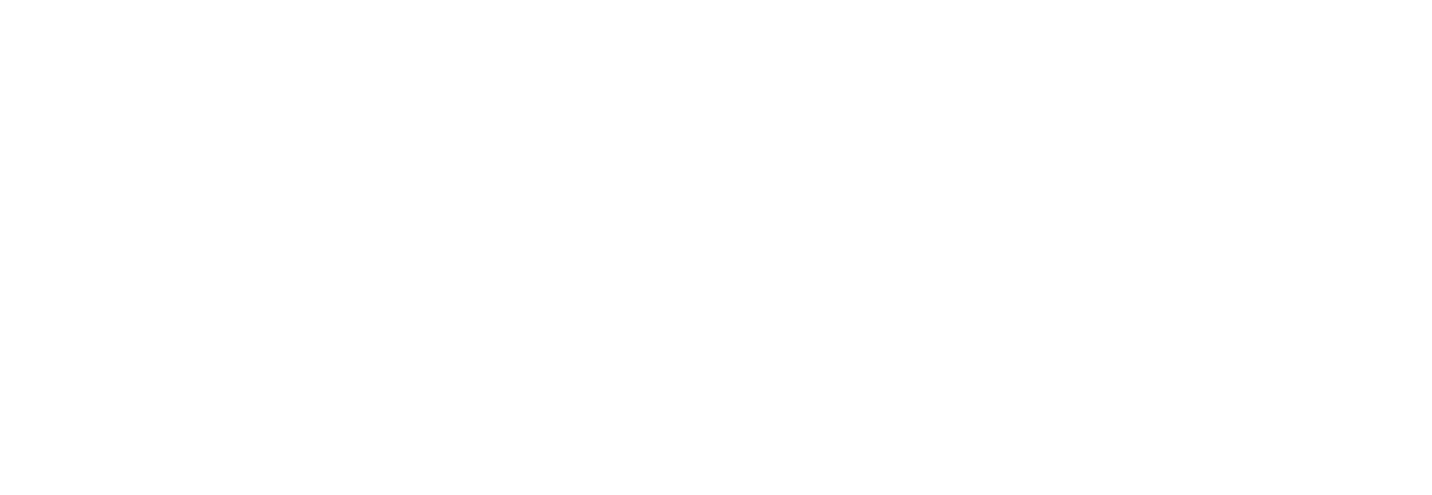
In accordance with the requirements of 4.4.3 of SANS 10400-XA:2011

SANS 204:2011 4.1 4.4.4.1 Building with up to 15% fenestrations area to nett floor area storey comply with the minimum performance requirements.

4.4.4.2 Buildings with a fenestration area to nett floor area per storey that exceeds 15% shall comply with the requirements for fenestration in accordance with SANS 204

4.4.4.3 All fenestration air infiltration shall be in accordance with SANS 613

NOTE: Walls to be endorsed by the Engineer



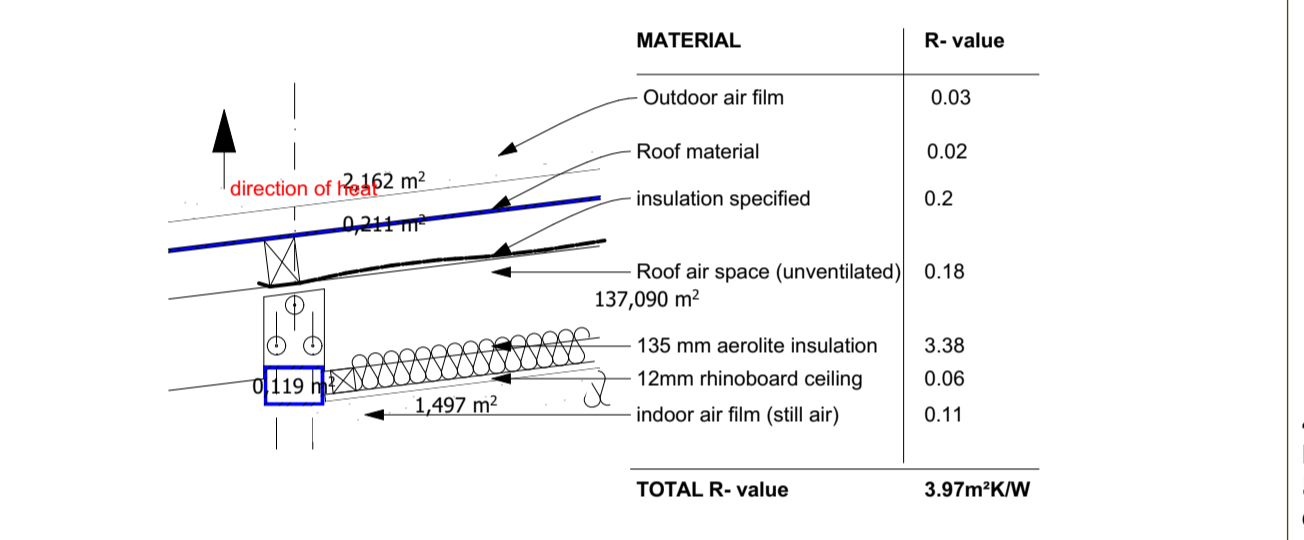
4 ROOF ASSEMBLY CONSTRUCTION

In accordance with the requirements of 4.4.3 of SANS 10400-XA:2011

SANS 10400-XA:2011 4.4.5 4.4.5.1 a roof assembly shall achieve the minimum total R-value specified in table 7 for the direction of heat flow

DESCRIPTION	CLIMATIC ZONES					
	1	2	3	4	5	6
MINIMUM REQUIRED TOTAL R-VALUE (m².K/W)	3.7	3.2	2.7	3.7	2.7	3.5
DIRECTION OF HEAT FLOW	up	up	down & up	up	down	up

SYMBOL	MATERIAL	R-VALUE (UP)
EXTERNAL R(0)	Outside Air Film (7ms⁻¹)	0.03
R(1)	Waterproof membrane, rubber synthetic (4mm, 961kg/m³)	0.03
CORE R(2)	Metal cladding	0
INSULATION R(n)	Insulation as specified	2.9
INTERNAL R(3)	Plasterboard, gypsum (10mm, 880kg/m³)	0.06
R(i)	Indoor air film (still air)	0.11
TOTAL R-VALUE (m².K/W)		



To achieve the resistivity above the following is recommended: 1. Pink Aerolite, Glasswoolthermal and acoustic ceiling insulation with a minimum thickness of 115mm which have an R-value of 2.9 2. A combination of Pink Aerolite and reflective foil can be used provided that the R-value of the combination is greater than 2.9 is achieved. 3. Eco insulation's cellulose fibre ceiling insulation with a minimum thickness of 100mm

Conclusion: THE DESIGN COMPLIES WITH SANS 10400-XA:2011 IF THE ABOVE CONDITION IS MET.

7 SERVICES

In accordance with SANS 204:2011-4.5.2

NOTE: HOT WATER SYSTEM TO BE ENDORSED BY SPECIALIST

SANS 10400-XA:2011 4.5.2 4.5.2.1 A minimum of 50% by volume of the average hot water heating requirement shall be provided by means other than electrical resistance heating, including, but not limited to, solar heating, heat pumps, heat recovery from other systems or processes

HOT WATER SUPPLY (as per SANS 10400-XA:2011) 1) In order to comply with functional regulations XA2, contained in part XA of the National Building Regulations, the following guidance is provided:

- a) the volume of the annual average hot water heating requirements shall be calculated in accordance with tables 2 and 5 of SANS 10252-1:2004; and
b) If solar water heating systems are used, these shall comply with SANS 1307, SANS 10106, SANS 10254 and SANS 10252-1 and based on the performance determined in accordance with provisions of SANS 6211-1 and SANS 6211-2. Hot water usage shall be minimized and the system maintained in accordance with the requirements given in SANS 10252-1
2) Requirements for water installations in buildings shall be in accordance with SANS 10252-1 and SANS 10254.
3) All hot water service pipes shall be clad with insulation with minimum R-value in accordance with table 1.
4) Thermal insulation, if any, shall be installed in accordance with the manufacturer's instructions.

THERMAL INSULATION (as per SANS 10400-XA:2011)

- 1) Pipes, fittings and components shall, when necessary, be protected against freezing. The insulation provided shall be appropriate to the minimum temperatures that can be expected in that geographical area.
2) All expose pipes to and from the hot water cylinders and central heating systems shall be insulated with pipe insulation material with a thermal resistance (R-value) measuring unit (m².K/W) in accordance with table 10, meaning an R-value of 1.00 for 15mm pipe.
3) Insulation shall:
a) be protected against the effects of weather and sunlight,
b) be able to withstand the temperatures within the piping,
c) and achieve the minimum R-value given in table 10

INTERNAL DIAMETER OF PIPE mm	MINIMUM R-VALUE * m².K/W
≤ 80	1.00
> 80	1.50

* Determined with a hot surface temperature of 60 deg C and ambient temperature of 15 deg C

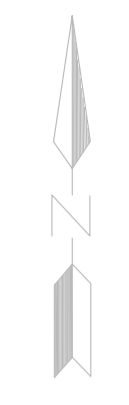
4) Hot water vessels and tanks shall be insulated with a material that achieves a minimum R-value of 2. NOTE: To achieve this value, insulation in addition to the manufacturer's installed insulation might be required.

- 5) Insulation on vessels, tanks and piping containing cooling water shall be protected by a vapour barrier on the outside of the insulation.
6) The piping insulation requirements do not apply to space heating or piping
a) located within the space being heated where the piping is to provide the heating to that space, or
b) enclosed within a concrete floor slab or in masonry
Such piping shall comply with this part of SANS 10252.
7) Piping to be insulated includes all flow and return piping, cold water supply piping within connection to the heating or cooling system. Where possible lengths of pipe runs shall be minimized.
8) After thermal insulation material has been installed, the outer surface of any insulation material shall be made as smooth as possible, to minimise the exposed surface area. The ingress of moisture into such material shall be prevented.

Note: Roughness increases the effective surface area of insulation material and consequently, heat losses and moisture increases the thermal conductivity of the material.

Primador Energy Efficiency Calculation software interface showing a Glazing Calculator for a naturally-ventilated building. It displays parameters like floor area, net floor area, and a table of window descriptions with their respective energy performance metrics (SHGC, U-Value, etc.).

Blouberg Municipality	Oltatech Consulting	PROJECT APPR.	DATE	BY	SIGNATURE	SCALE	PROJECT TITLE:
 Blouberg Municipality 2nd Building Dendron Road P.O. Box 1593 Sowabawana 0790 Tel: 015 505 7100	 Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699 REG: 2012 / 158921 / 07 VAT: 4590291482 Professional Engineering Solutions	DESIGNED	SEPT 2022	LM		DO NOT SCALE	Avon Multi-Purpose Centre
		CHECKED	SEPT 2022	RM			
		DRAWN	SEPT 2022	RM			
		PROJECT MNG.	....	....	
APPROVED	....	....	DRAWING DESCRIPTION:	MULTI-PURPOSE ENERGY CALCULATIONS			
CLIENT	....	....	PROJECT No.	DRG SIZE	DRAWING No.	Revision No.	
			A1	AV13/09/22- PLAN- 002	0		



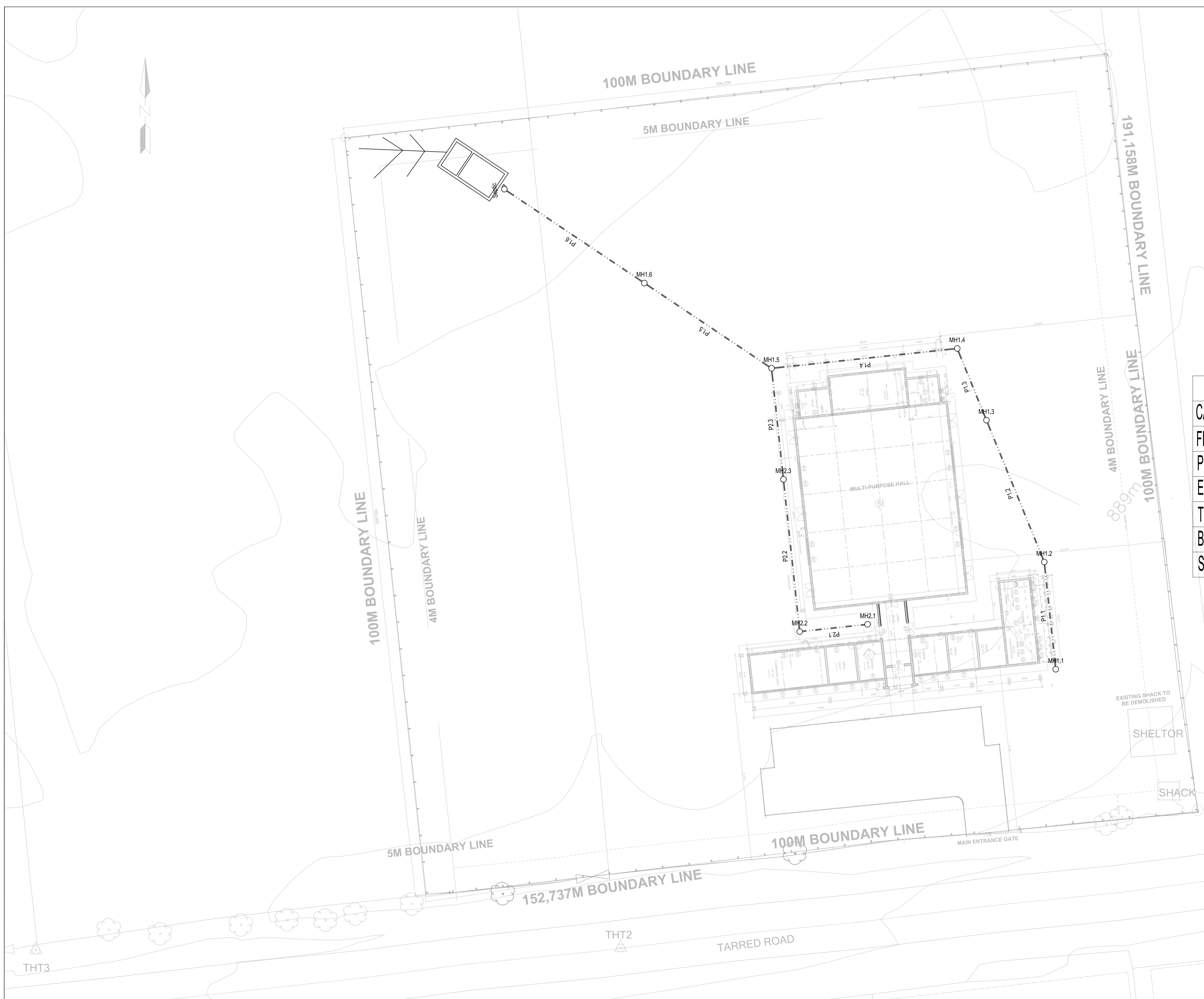
- NOTES**
1. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ONSITE AND NOTIFY THE ENGINEER OF ANY VARIATIONS BEFORE CONSTRUCTION.
 2. IDENTIFY ALL KNOWN EXISTING SERVICES PRIOR TO CONSTRUCTION.
 3. THE COORDINATES ARE BASED ON WGS84 LO29.
 4. MANHOLES SHALL BE 1.5M DIAMETER PRECAST CONCRETE WITH DOLOMITIC AGGREGATE.
 5. MAXIMUM SPACING OF MANHOLES IS 40M.
 6. TRENCH EXCAVATIONS TO BE MADE SAFE AT ALL TIMES.
 7. SEWERS LAID AT GRADIENTS STEEPER THAN 1:12 (8.3%) SHALL BE ANCHORED AT THE JOINTS WITH 15MPA CONCRETE ANCHOR BLOCKS.
 8. AIR OR WATER TESTS TO BE DONE AS SPECIFIED IN THE SANS 1200.
 9. CCTV INSPECTIONS ARE TO BE DONE ON ALL SECTIONS OF THE PIPE. THE CCTV VIDEO AND REPORTS TO BE SUBMITTED.
 10. THE BEDDINGS AND MAIN FILL SHALL BE COMPACTED IN LAYERS OF THICKNESS NOT EXCEEDING 150mm TO AT LEAST 90% MOD AASHTO.
 11. COMPACTION TESTS TO BE CONDUCTED ON ALL LAYERS.
 12. ALL MANHOLE TO MANHOLE LAYERS SECTIONS TO BE TESTED FOR COMPACTION.
 13. COMPACTION OF LAYERS TO BE CONSECUTIVELY APPROVED BY THE ENGINEER.





LEGEND

CADASTRAL	_____
FENCE	_____
POWERLINE	.....
ELECTRIC POLE	⊙
TREE	☼
BENCH MARK	△
STAY WIRE	↗

BENCH MARKS

NAME	Y	X	Z
THT1	-9850.873	2559896.909	889.933
THT2	-9749.272	2559898.152	888.752
THT3	-9672.874	2559898.419	888.942



Blouberg Municipality  Blouberg Municipality 2nd Building Dendron Road P.O. Box 1593 Senwabarwana 0790 Tel: 015 505 7100				Oltatech Consulting  Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor, Polokwane, 0699		PROJECT APPR.	DATE	BY	SIGNATURE	SCALE	PROJECT TITLE:
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DRAWING STATUS: FOR TENDER								DRAWING DESCRIPTION: SEWER RETICULATION		DRAWING No. AVON-CIV-SR-001	
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REV	DATE	CHK	APP								

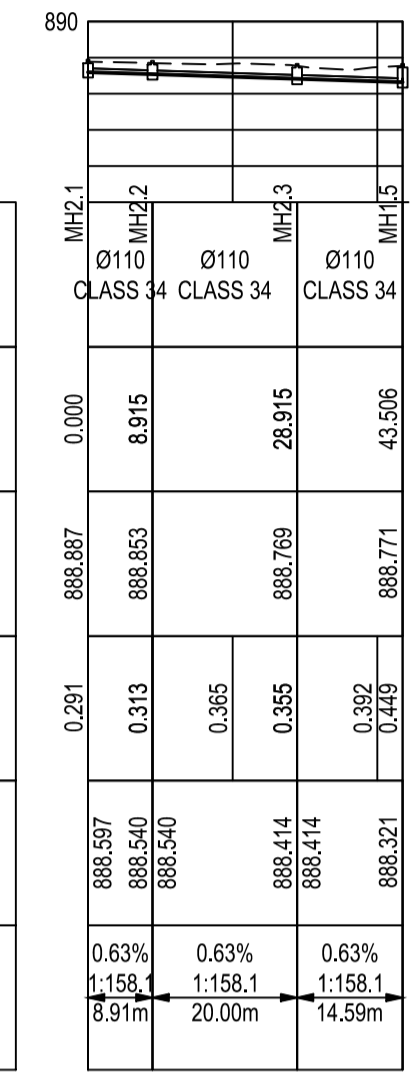
NOTES

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13. COMPACTION OF LAYERS TO BE CONSECUTIVELY APPROVED BY THE ENGINEER.

NGL -----
 EGL -----
 HGL -----
 SCALES:
 Horizontal 1:1000
 Vertical 1:200

DATUM 885.000

REFERENCE
DISTANCE (m)
GROUND LEVEL
DEPTH TO INVERT
PIPE INVERT LEVEL
SLOPE / LENGTH



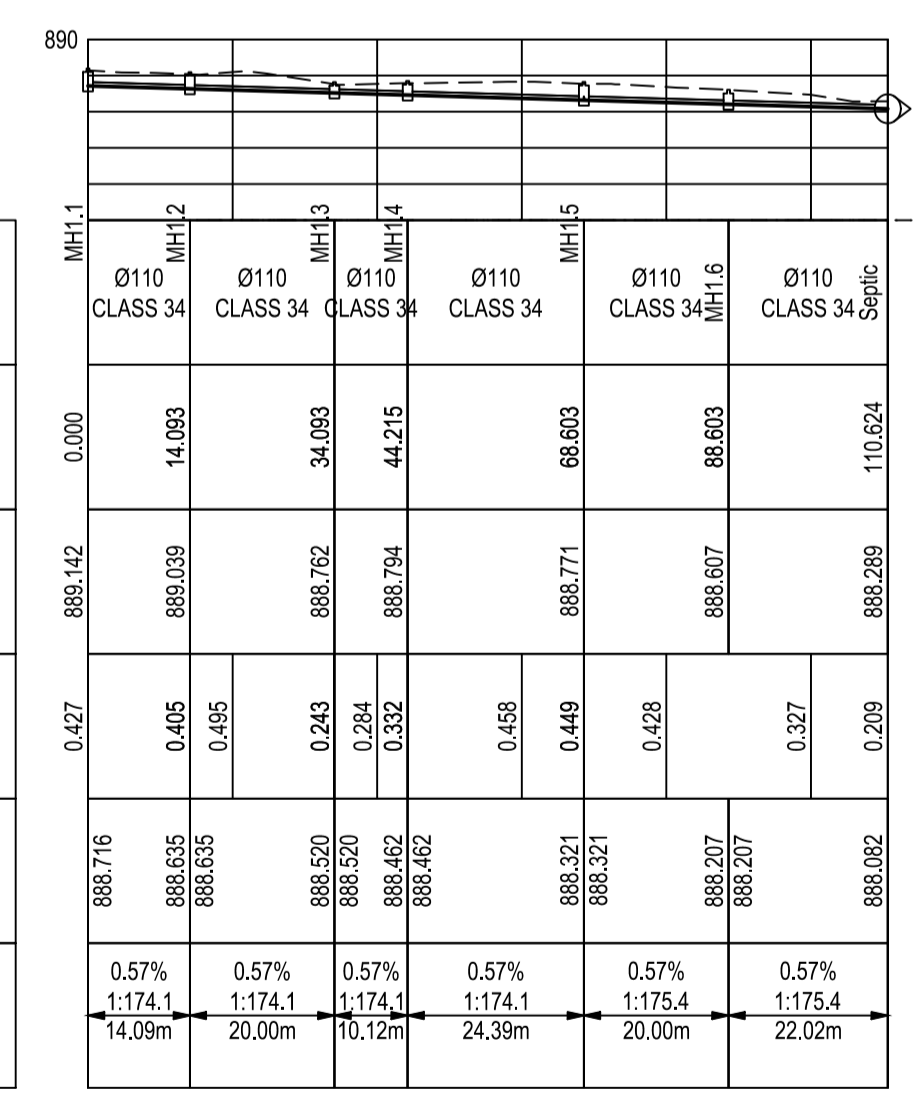
LONGSECTION BRANCH2
 FROM 0.000 TO 43.506

PIPE LIST-Sewer					
PIPE NAME	START INVERT LEVEL	END INVERT LEVEL	3D LENGTH TO INSIDE EDGES	SLOPE	DIAMETER AND CLASS
P1.1	888.716	888.635	12.843	0.574%	110 mm Class 34
P1.2	888.635	888.520	18.751	0.574%	110 mm Class 34
P1.3	888.520	888.462	8.873	0.574%	110 mm Class 34
P1.4	888.462	888.321	23.139	0.574%	110 mm Class 34
P1.5	888.321	888.207	18.751	0.570%	110 mm Class 34
P1.6	888.207	888.082	21.097	0.570%	110 mm Class 34
P2.1	888.597	888.540	7.666	0.633%	110 mm Class 34
P2.2	888.540	888.414	18.751	0.633%	110 mm Class 34
P2.3	888.414	888.321	13.342	0.633%	110 mm Class 34

NGL -----
 EGL -----
 HGL -----
 SCALES:
 Horizontal 1:1000
 Vertical 1:200

DATUM 885.000



REFERENCE
DISTANCE (m)
GROUND LEVEL
DEPTH TO INVERT
PIPE INVERT LEVEL
SLOPE / LENGTH



LONGSECTION BRANCH1
 FROM 0.000 TO 110.624

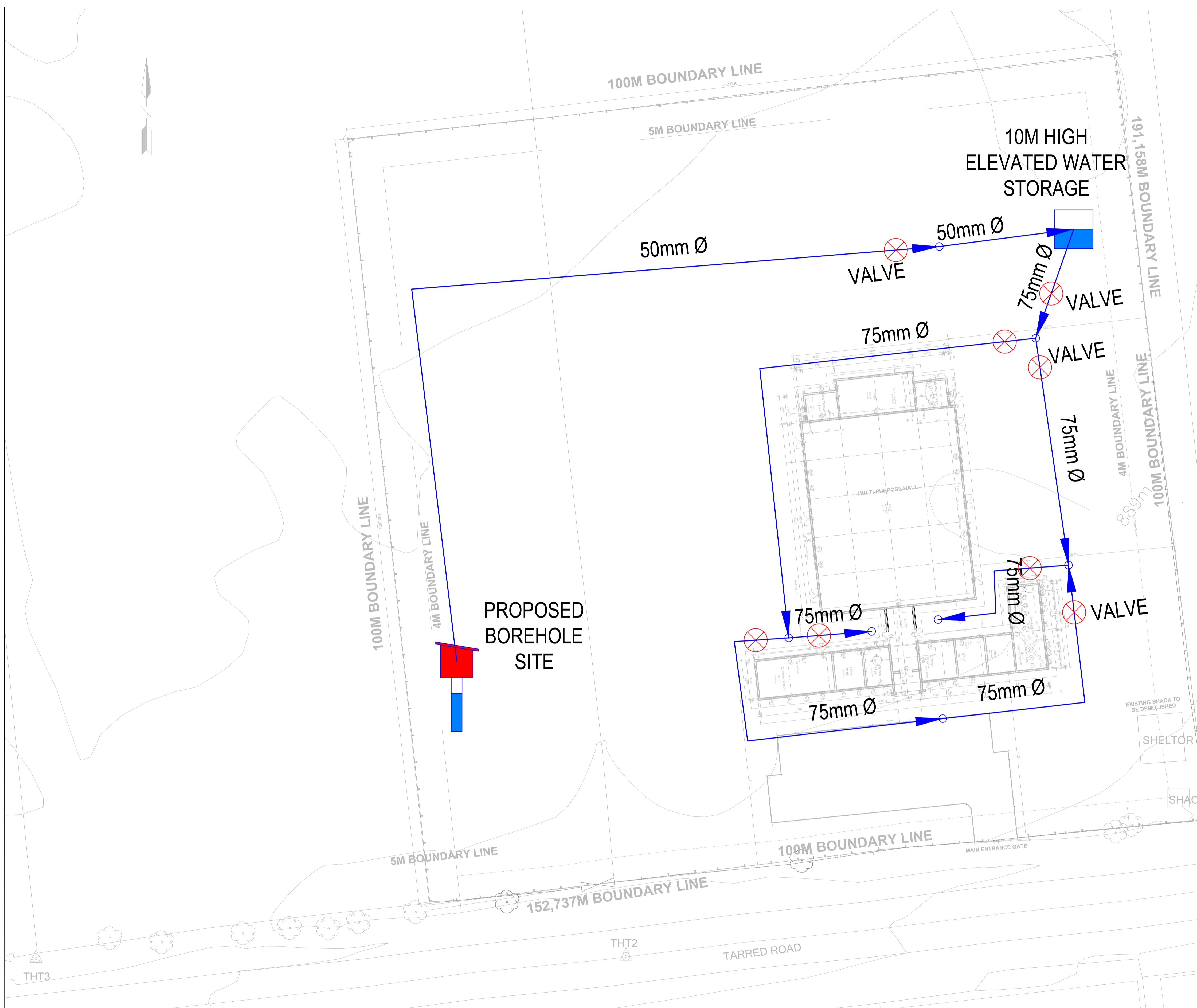
MANHOLE LIST-Sewer						
STRUCTURE NAME	Y	X	RIM ELEVATION	SUMP ELEVATION SUMP DEPTH	INVERT ELEVATION	MATERIAL
MH1.1	-9 806.095	2 559 861.746	889.198	888.716 0.483	P1.1-INV OUT 888.716	Upvc
MH1.2	-9 804.597	2 559 847.733	889.095	888.635 0.461	P1.1-INV IN 888.635 P1.2-INV OUT 888.635	Upvc Upvc
MH1.3	-9 797.048	2 559 829.213	888.818	888.520 0.299	P1.2-INV IN 888.520 P1.3-INV OUT 888.520	Upvc Upvc
MH1.4	-9 793.226	2 559 819.839	888.850	888.462 0.388	P1.3-INV IN 888.462 P1.4-INV OUT 888.462	Upvc Upvc
MH1.5	-9 768.977	2 559 822.431	888.827	888.321 0.505	P2.3-INV IN 888.321 P1.4-INV IN 888.321 P1.5-INV OUT 888.321	Upvc Upvc Upvc
MH1.6	-9 752.364	2 559 811.294	888.607	888.207 0.400	P1.5-INV IN 888.207 P1.6-INV OUT 888.207	Upvc Upvc
MH2.1	-9 781.518	2 559 855.879	888.943	888.597 0.347	P2.1-INV OUT 888.597	Upvc
MH2.2	-9 772.653	2 559 856.826	888.909	888.540 0.369	P2.1-INV IN 888.540 P2.2-INV OUT 888.540	Upvc Upvc
MH2.3	-9 770.528	2 559 836.940	888.825	888.414 0.411	P2.2-INV IN 888.414 P2.3-INV OUT 888.414	Upvc Upvc
Septic	-9 734.073	2 559 799.032	889.056	888.082 0.974	P1.6-INV IN 888.082	Upvc

SCALE #####

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PROJECT MNG.			DRAWING DESCRIPTION: SEWER RETICULATION PROFILE																											
APPROVED																																
CLIENT					PROJECT No. DRG SIZE A1 DRAWING No. AVON-CIV-SR-002 Revision No. A																											

DRAWING STATUS:
 FOR TENDER

- NOTES**
1. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ONSITE AND NOTIFY THE ENGINEER OF ANY VARIATIONS BEFORE CONSTRUCTION.
 2. IDENTIFY ALL KNOWN EXISTING SERVICES PRIOR TO CONSTRUCTION.
 3. THE COORDINATES ARE BASED ON WGS84 LO29.
 4. TRENCH EXCAVATIONS TO BE MADE SAFE AT ALL TIMES.
 5. AIR OR WATER TESTS TO BE DONE AS SPECIFIED IN THE SANS 1200.
 6. THE BEDDINGS AND MAIN FILL SHALL BE COMPACTED IN LAYERS OF THICKNESS NOT EXCEEDING 150mm TO AT LEAST 90% MOD AASHTO.
 7. COMPACTION TESTS TO BE CONDUCTED ON ALL LAYERS.
 8. COMPACTION OF LAYERS TO BE CONSECUTIVELY APPROVED BY THE ENGINEER.
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 10. ALL JOINTS SHALL BE CLAPPED WITH A HEAVY DUTY BOLTED CLAMPS.
 11. ALL PIPES AND FITTINGS SHALL COMPLY WITH SANS 4427 AND SHALL BE ONE OF THE FOLLOWING:
PE 100 PN16 FOR MAX. POTENTIAL STATIC PRESSURE OF BETWEEN 1200kPa AND 1600kPa.
PE 100 PN16 FOR MAX. POTENTIAL STATIC PRESSURE < 1600kPa.





LEGEND

CADASTRAL	_____
FENCE	_____
POWERLINE	_____
ELECTRIC POLE	⊙
TREE	⊙
BENCH MARK	⊙
STAY WIRE	↗

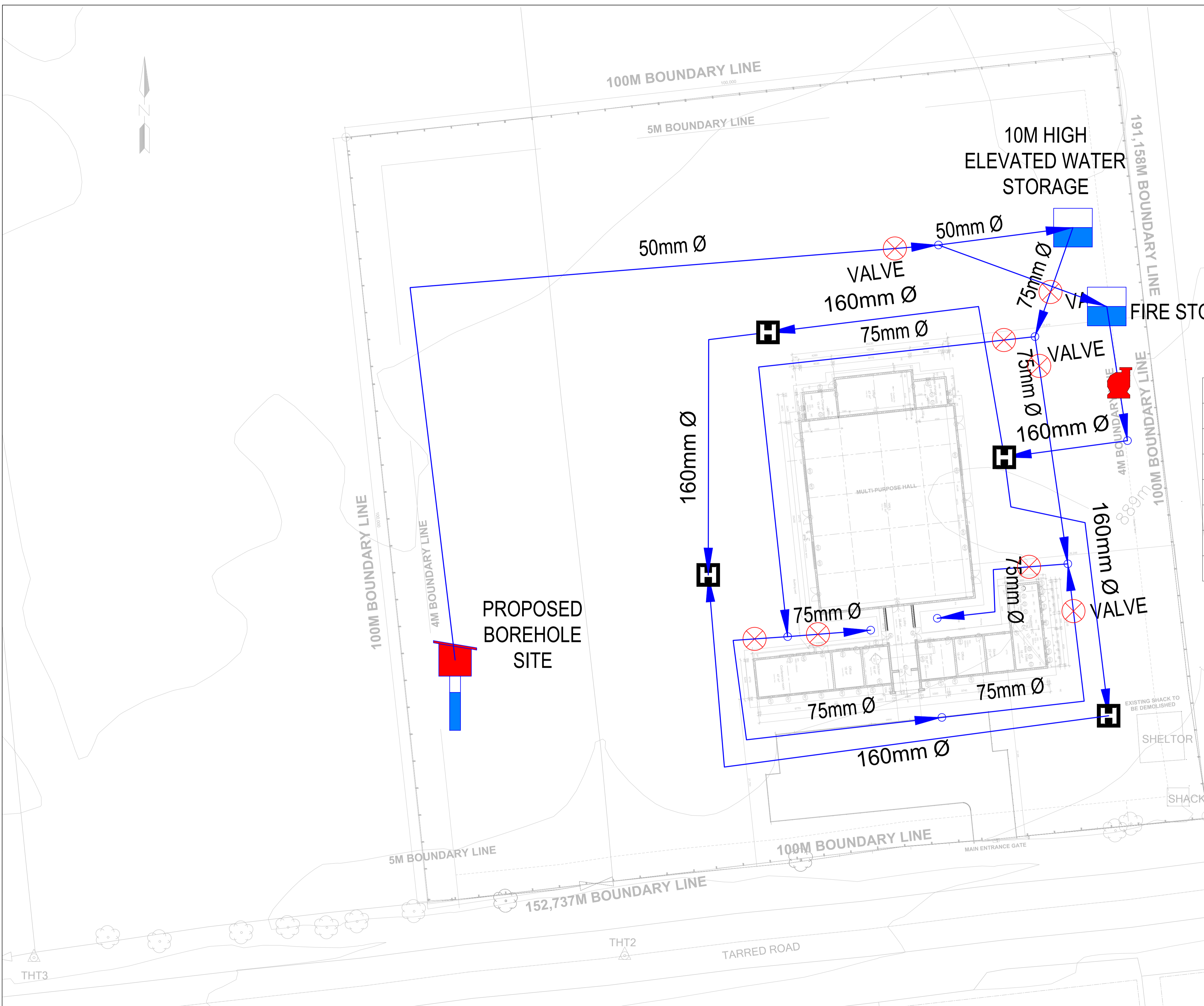
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THT2	-9749.272	2559898.152	888.752
THT3	-9672.874	2559898.419	888.942

SCALE 1:250

<p>Blouberg Municipality</p>  <p>Blouberg Municipality 2nd Building Dendron Road P.O. Box 1593 Senwabarwana 0790 Tel: 015 505 7100</p>				<p>Oltatech Consulting</p>  <p>Oltatech Consulting (Pty) Ltd 6 Rentoo Building 11 Pierre Street, Bendor, Polokwane, 0699</p>				<table border="1"> <tr> <th>PROJECT APPR.</th> <th>DATE</th> <th>BY</th> <th>SIGNATURE</th> </tr> <tr> <td>DESIGNED</td> <td>SEPT 2022</td> <td>LM</td> <td></td> </tr> <tr> <td>CHECKED</td> <td>SEPT 2022</td> <td>LR</td> <td></td> </tr> <tr> <td>DRAWN</td> <td>SEPT 2022</td> <td>KN</td> <td></td> </tr> <tr> <td>PROJECT MNG.</td> <td>....</td> <td>....</td> <td></td> </tr> <tr> <td>APPROVED</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLIENT</td> <td></td> <td></td> <td></td> </tr> </table>				PROJECT APPR.	DATE	BY	SIGNATURE	DESIGNED	SEPT 2022	LM		CHECKED	SEPT 2022	LR		DRAWN	SEPT 2022	KN		PROJECT MNG.		APPROVED				CLIENT				<p>PROJECT TITLE: Avon Multi-Purpose Centre</p> <p>SCALE: DO NOT SCALE</p> <p>DRAWING DESCRIPTION: WATER RETICULATION</p> <p>PROJECT No. DRG SIZE: A1 DRAWING No. AVON-CIV-WT-001 Revision No. A</p>			
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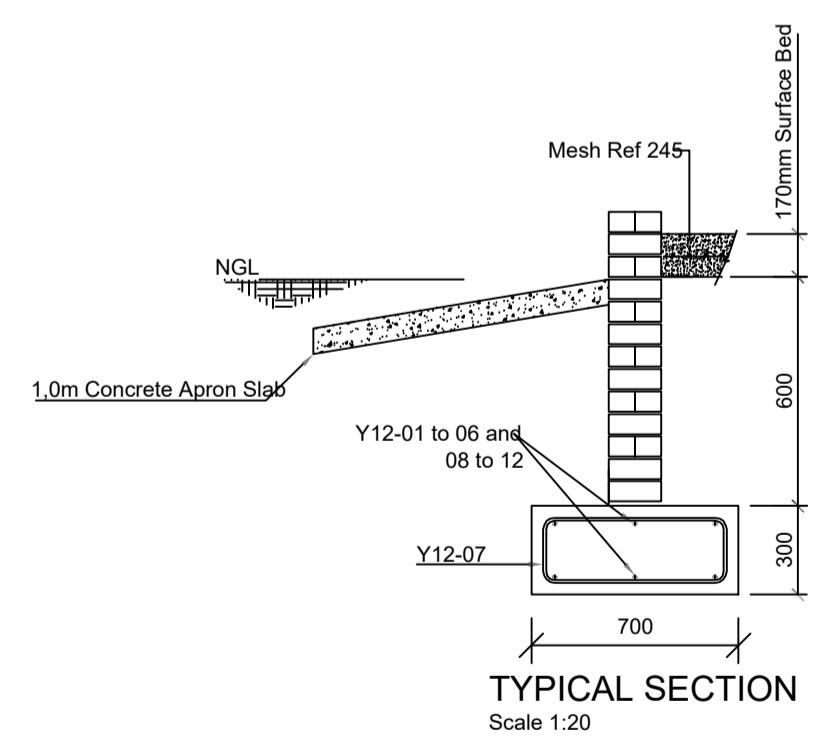
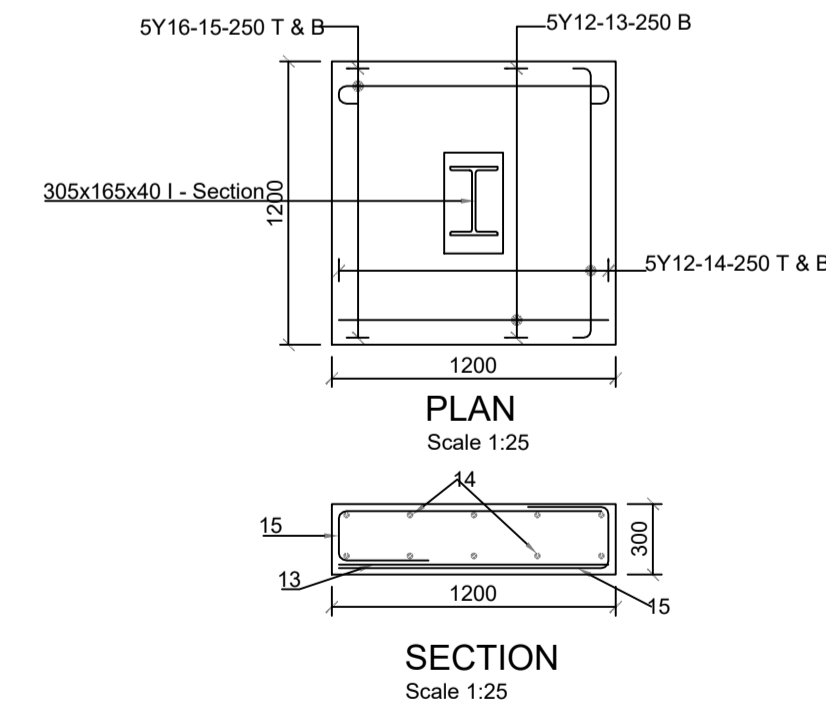
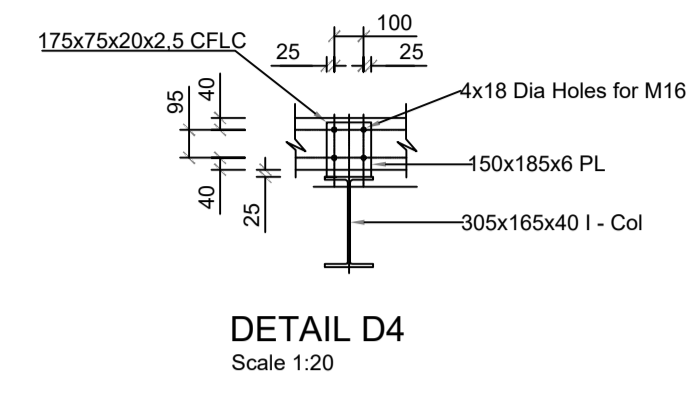
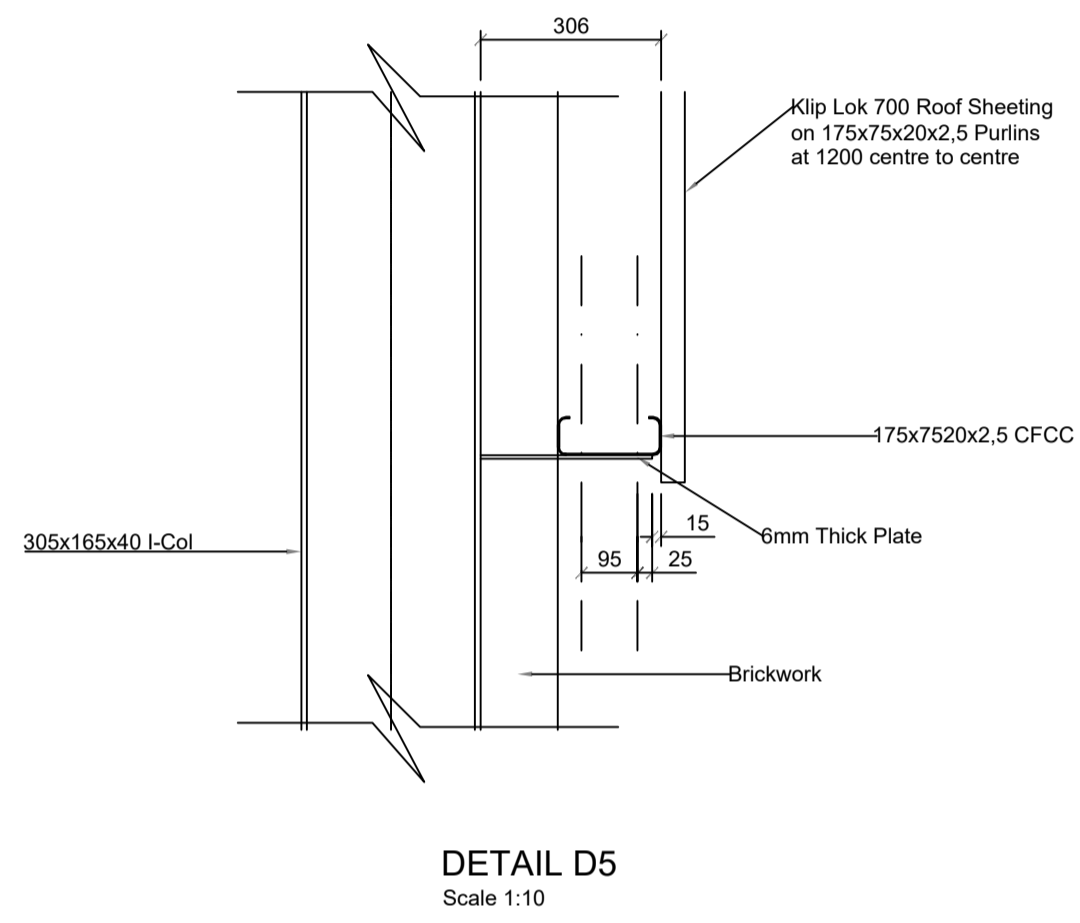
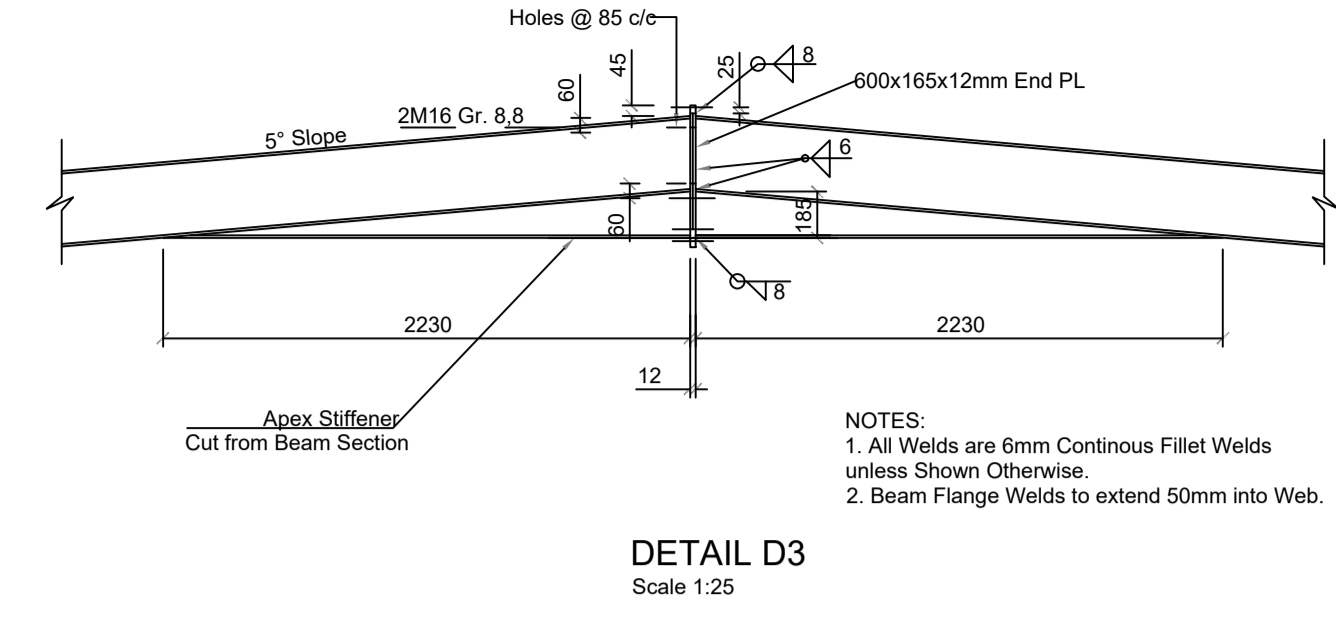
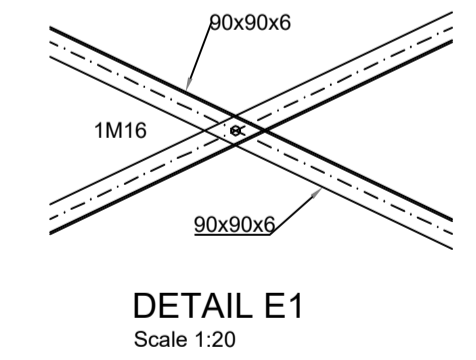
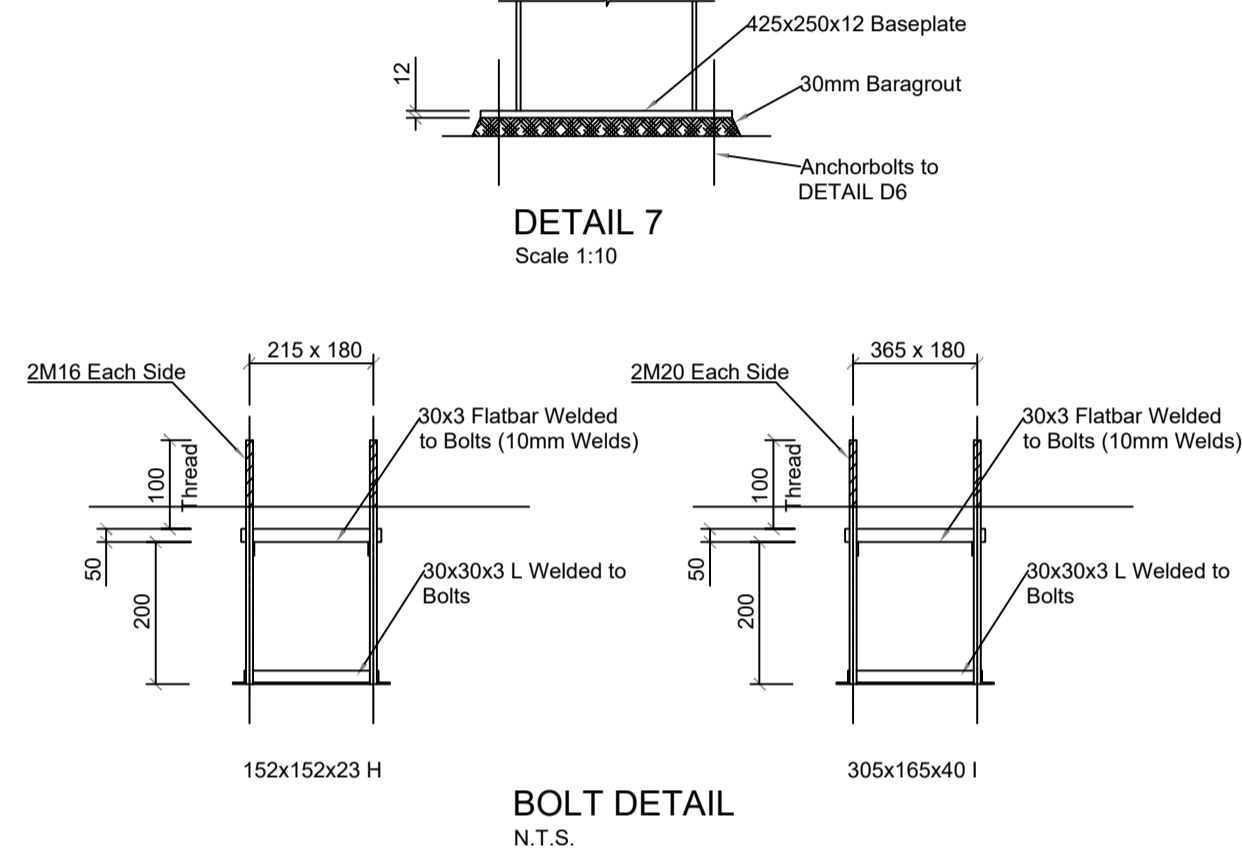
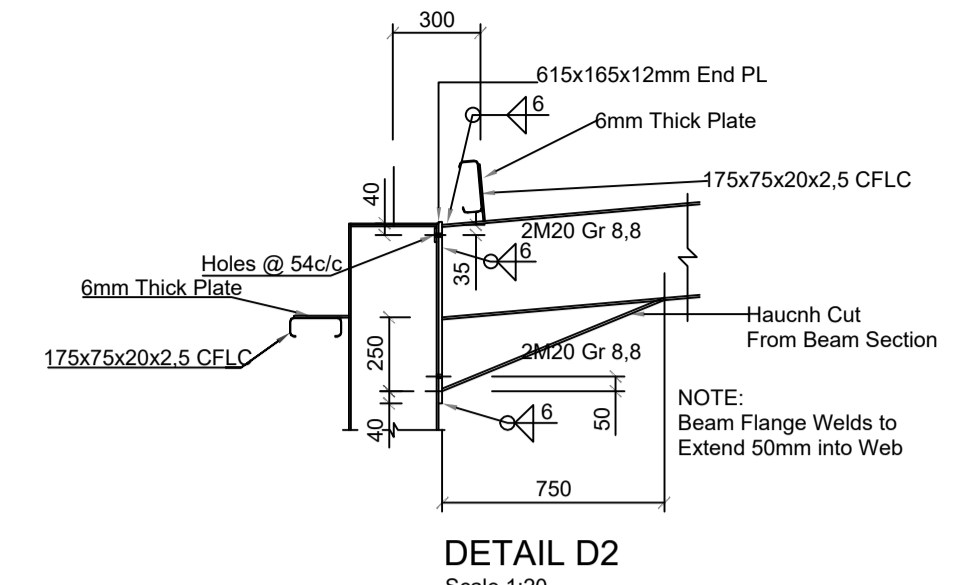
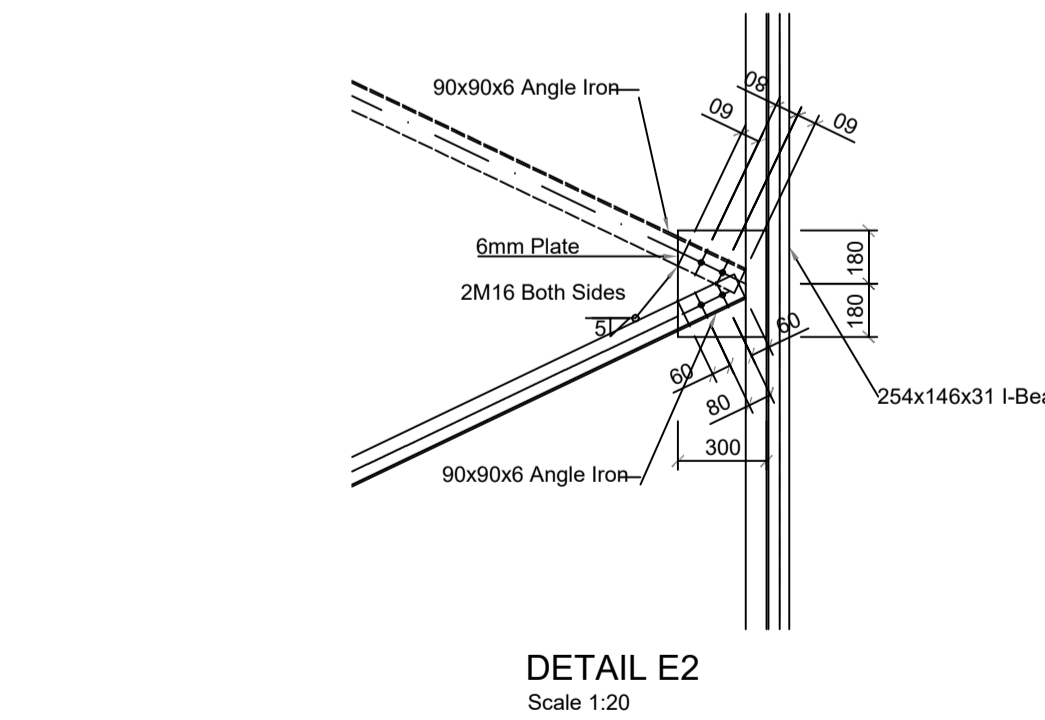
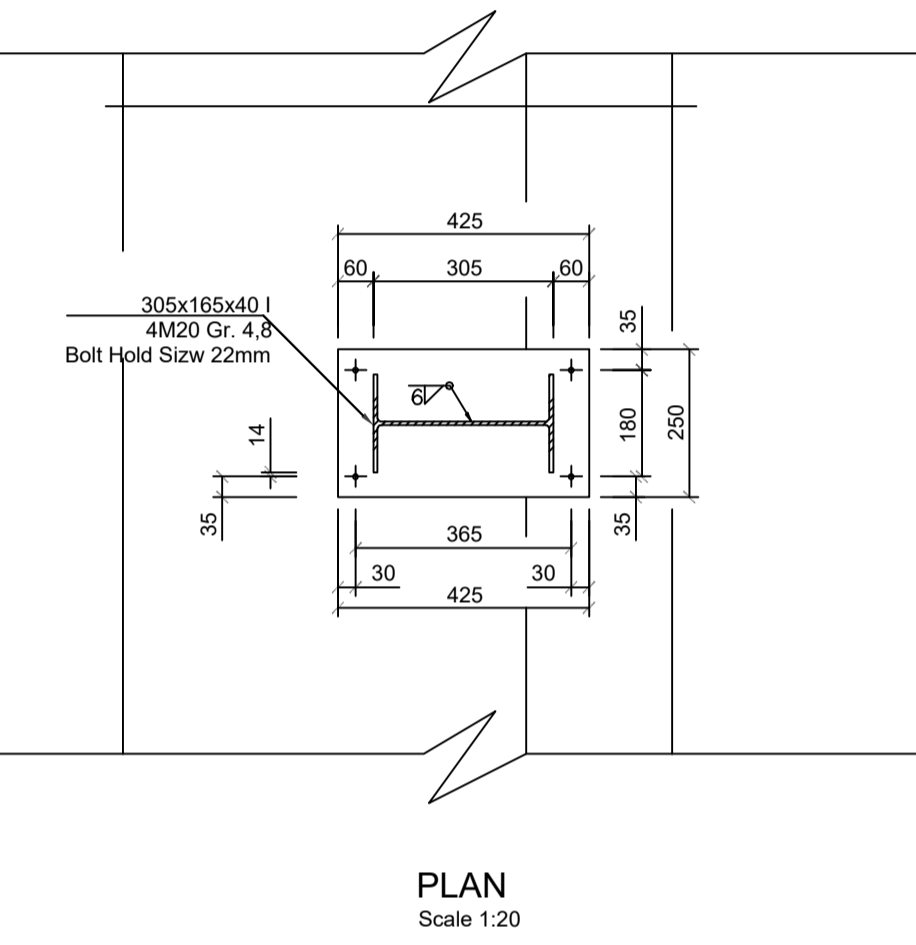
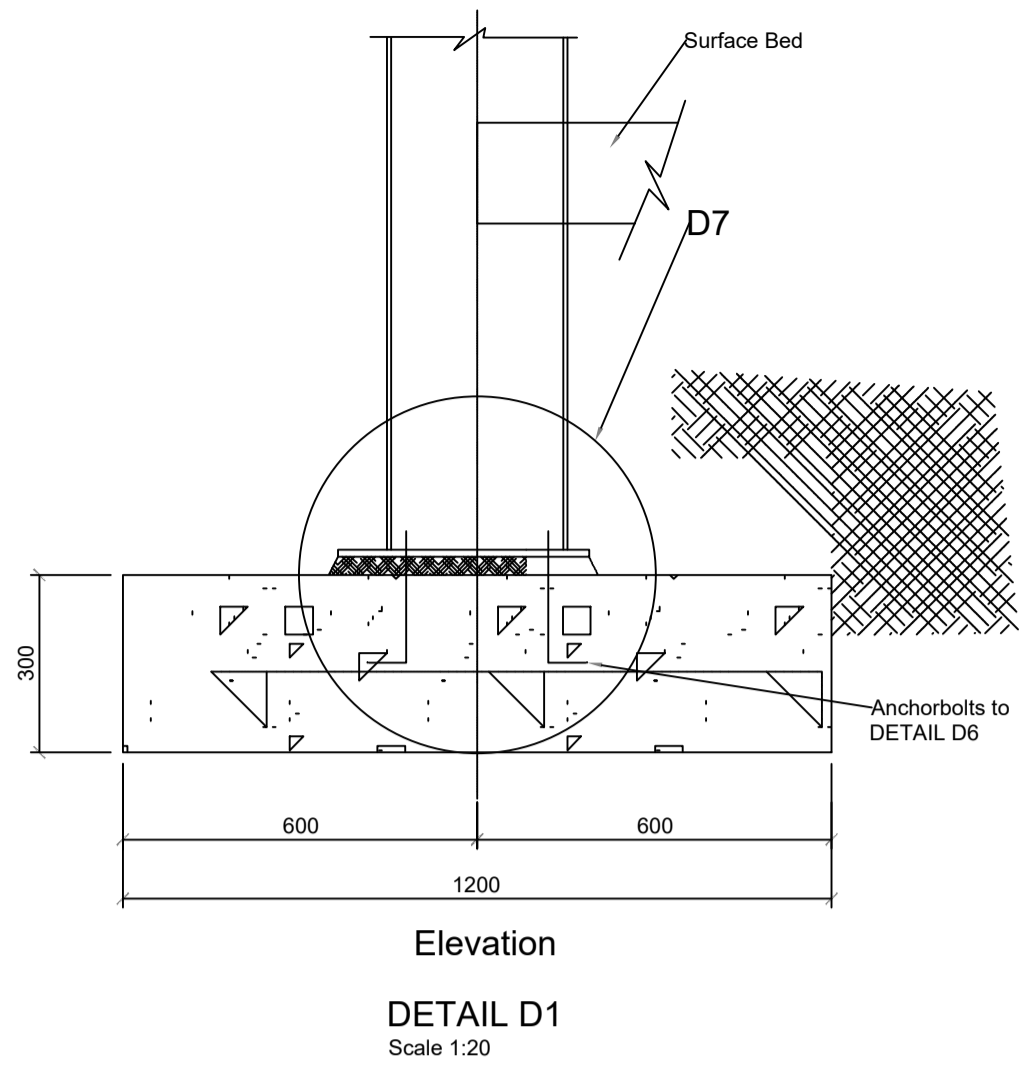
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REV	DATE	CHK	APP																																								



THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTS AND ANY DISCREPANCY POINTED TO THE ENGINEER.

1.1 THE CONTRACTOR SHALL CHECK ALL DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. ANY DISCREPANCIES SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER.

1.2 ALL INSTRUCTIONS FROM THE ENGINEER SHALL BE WRITTEN IN THE SITE INSTRUCTION BOOK. VERBAL INSTRUCTIONS MUST BE RECORDED AND SIGNED BY THE ENGINEER.

1.3 PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY BE USED ONLY WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.

1.4 ALL PRODUCTS MUST BE APPLIED AND THEIR SUBSTRATES PREPARED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

1.5 THESE NOTES MUST BE READ IN CONJUNCTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS, INCLUDING THE SABS 1200 STANDARDISED SPECIFICATIONS.

1.6 THE CONTRACTOR MUST IMPLEMENT A QUALITY CONTROL SYSTEM. QUALITY CONTROL MUST BE DONE BY THE CONTRACTOR BEFORE THE ENGINEER DO ANY INSPECTIONS.

2. STRUCTURAL STEELWORK

2.1 ALL STRUCTURAL STEELWORK SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH SABS 1200H-1990. CLADDING AND SHEETING SHALL BE IN ACCORDANCE WITH SABS 1200HB-1985.

2.2 ALL DIMENSIONS SHALL BE CHECKED ON SITE BEFORE PREPARATION OF SHOP DRAWINGS COMMENCES. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

2.3 ALL STRUCTURAL STEELWORK SHALL BE GRADE 300W.

2.4 A CERTIFICATE FROM THE STEEL MANUFACTURER IN WHICH THE GRADE OF THE STRUCTURAL STEEL IS VERIFIED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

2.5 STABILITY DURING ERECTION REMAINS THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL TEMPORARY BRACING OR PROPPING.

2.6 CORROSION PROTECTION OF STRUCTURAL STEEL IS AS FOLLOWS:

2.7 WHERE APPLICABLE, GROUT SHALL BE PROVIDED UNDER BEARING PLATES BEFORE HC-1988 AND THE MANUFACTURER'S INSTRUCTIONS.

2.8 WELDING SHALL BE DONE BY OFFICIALLY CODED WELDERS ONLY. CURRENT WELDING WITH SABS 1200 HC-1988 AND SABS 0120 PART 3 SECTION HC

A) ALL PAINT SHALL BE APPLIED STRICTLY IN ACCORDANCE WITH SABS 1200 TO REMOVE ALL SLAG, DIRT, RUST, ETC. AFTER ALL WELDING HAD BEEN COMPLETED, IF THE STEEL IS CONTAMINATED BY OIL, IT SHALL BE CLEANED BY MEANS OF A SUITABLE DETERGENT BEFORE WIRE BRUSHING.

B) REPAIR OF DAMAGED PAINT AND SITE PAINTING SHALL BE IN ACCORDANCE TO A THICKNESS OF 30 MICRONS. A SECOND COAT OF GENERAL PURPOSE UNDERCOAT TYPE II (TO SABS 881) SHALL BE APPLIED TO A THICKNESS OF 30 MICRONS. TWO COATS HIGH GLOSS ENAMEL TO SABS 0120 SHALL BE APPLIED TO 35 MICRONS ea. ALL COLOURS SHALL BE TO THE ARCHITECT'S SPECIFICATION.

C) THE STEELWORK SHALL BE CLEANED BY MEANS OF A MECHANICAL WIRE BRUSH THE DIFFERENT COATS OF PAINT SHALL BE VERIFIED ACCORDING TO SABS

D) A FIRST COAT OF ZINC CHROMATE PRIMER (TO SABS 679) SHALL BE APPLIED ANY PRIMARY LOADS ARE APPLIED TO THE STRUCTURE.

E) THE STANDARD OF PREPARATION OF THE STEELWORK AND THE THICKNESSES OF CERTIFICATES FOR ALL WELDERS TO BE USED ON THIS PROJECT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE COMMENCEMENT OF WORK.

3. CONCRETE

3.1 CONCRETE TO FOUNDATIONS AND SURFACE BED SLAB TO BE GRADE 25 MPa.

3.2 CONCRETE CUBE STRENGTH MUST BE 25 MPa - AFTER 28 DAYS.

3.3 COVER TO REINFORCEMENT TO BE : - EVERYWHERE 50mm.

3.4 CONCRETE TESTS TO BE TAKEN AS AGREED WITH AND UNDER THE ENGINEER'S SUPERVISION.

3.5 ALL REINFORCEMENT TO BE INSPECTED AND APPROVED BY THE ENGINEER BEFORE CONCRETING COMMENCES AND ARRANGEMENT MUST BE MADE 24 HOURS PRIOR THAT.

3.6 TEST MIXES WILL BE REQUIRED BEFORE CONCRETING COMMENCES.

4. BRICKWORK

4.1 ALL BRICKWORK BELOW GROUND LEVEL TO BE LOTI RUST / HEART OR ENGINEERING BRICK.

4.2 LOADBEARING BRICKWORK MUST HAVE A CRUSHING STRENGTH OF 10 MPa AND WATER ABSORPTION OF LESS THAN 10%. CRACKED BRICK MUST NOT BE USED.

REV	DATE	CHK	APP
0	13/09/2022	CHK	APP

DRAWING STATUS:

Blouberg Municipality



Blouberg Municipality
2nd Building Dendron Road
P.O Box 1593
Semiwabarwana
0790
Tel: 015 505 7100

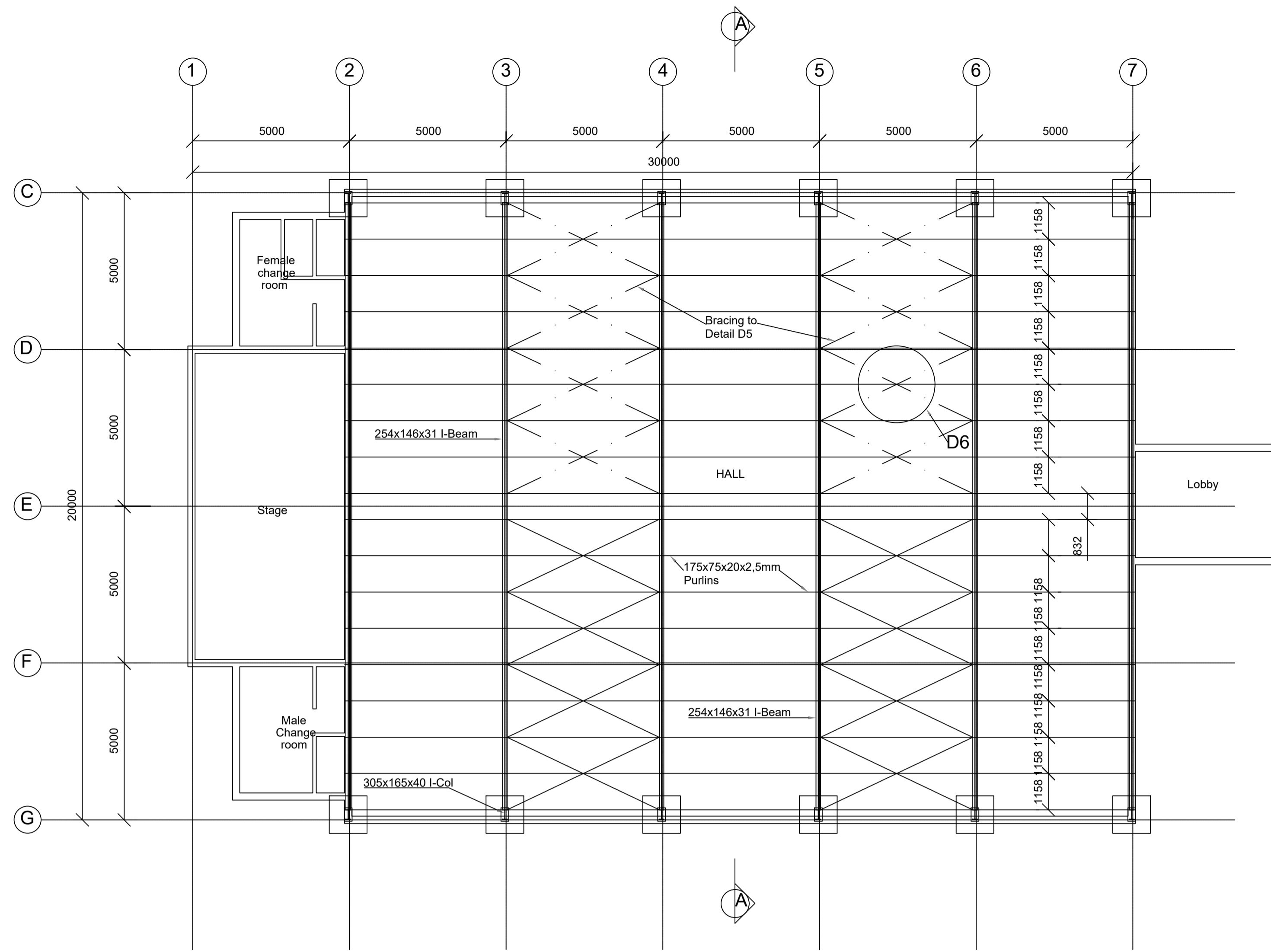
Oltatech Consulting



Oltatech Consulting (Pty) Ltd
6 Rentco Building
11 Pierre Street, Bendor.
Polokwane, 0699

PROJECT APPR.	DATE	BY	SIGNATURE
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CHECKED	SEPT 2022	RM	
DRAWN	SEPT 2022	WK	
PROJECT MNG.	
APPROVED			
CLIENT			

SCALE	PROJECT TITLE:
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	DRAWING DESCRIPTION: STEEL DETAILING AND SECTIONS
PROJECT No.	DRAWING No.
DRG SIZE	AVON-STR-002
A1	Revision No.
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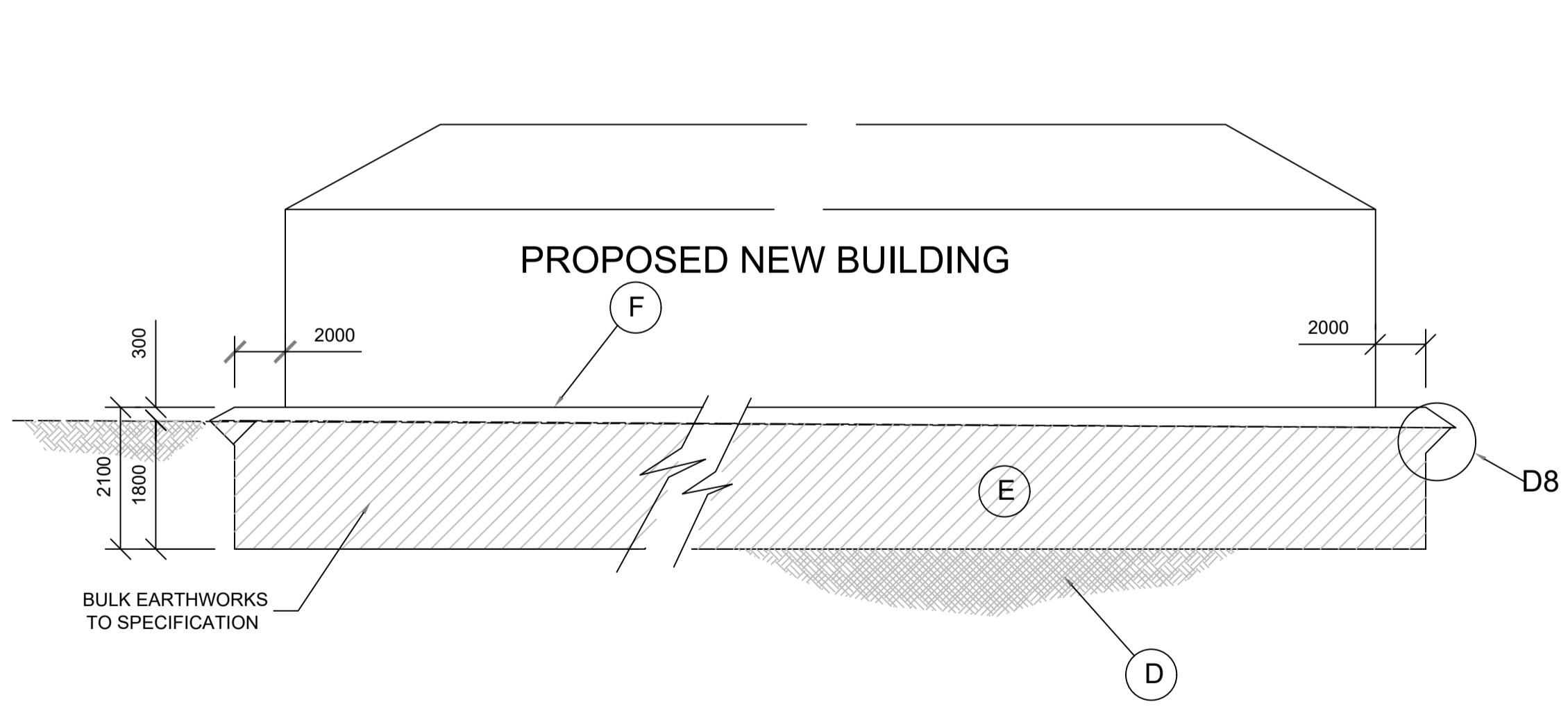
STRUCTURAL STEEL LAYOUT
Scale 1:100

PROCEDURE: BUILDING PLATFORM

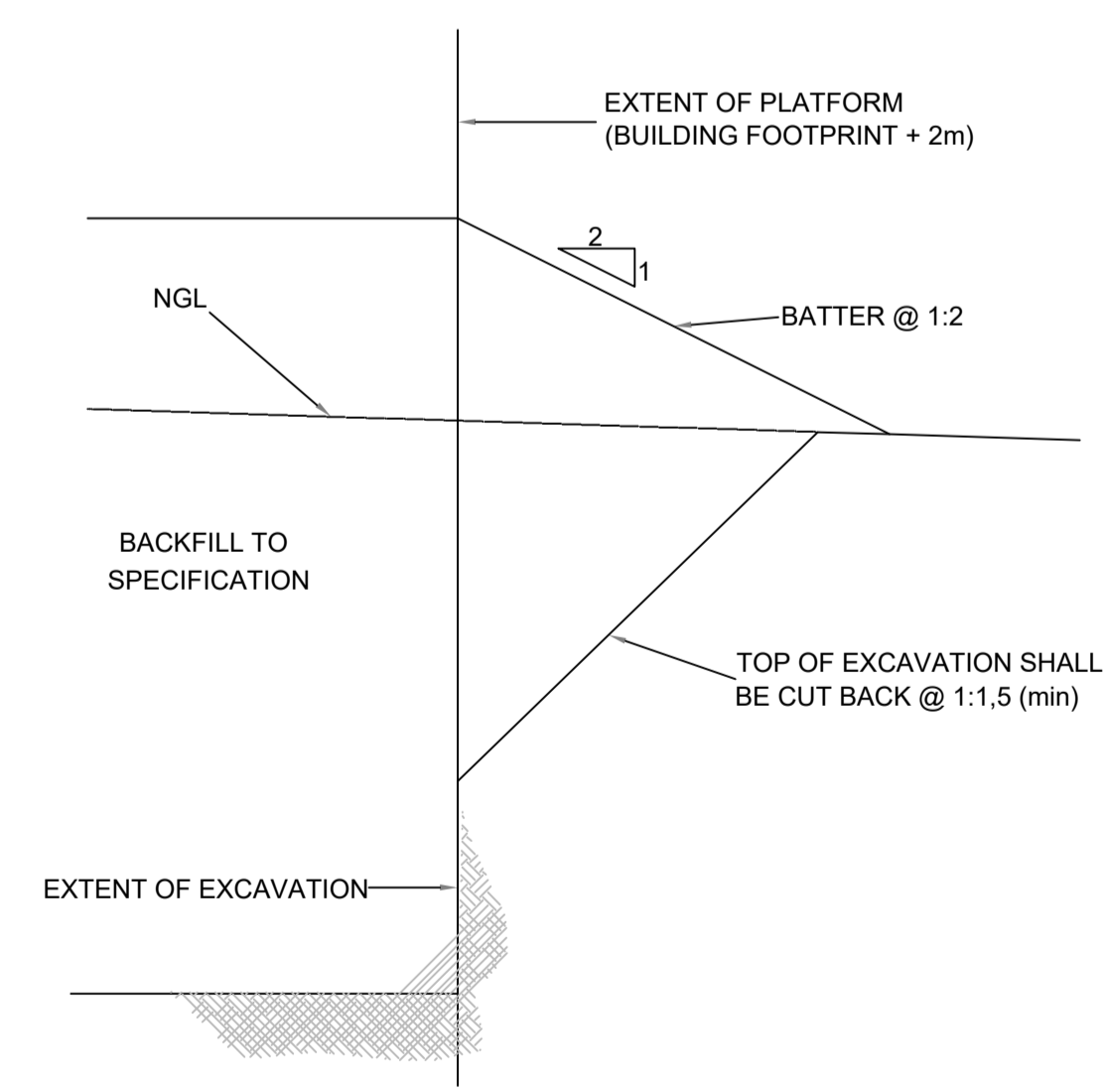
- A) REMOVE TOPSOIL AND EXCAVATE TO A DEPTH OF AT LEAST 1m BELOW THE CURRENT GROUND LEVEL FOR AN AREA EQUAL TO THE PLANNED FOOTPRINT OF THE BUILDING PLUS 2.0m AROUND. EXCAVATED MATERIAL MUST BE STOCKPILED SEPARATELY FOR LATER USE. TOPSOIL MUST BE STORED SEPARATELY FOR LANDSCAPING PURPOSES AND MUST NOT BE USED AS BACKFILL MATERIAL.
- B) THE DEPTH OF THE EXCAVATION MUST BE SUCH THAT THE OVERALL THICKNESS OF THE FINISHED PLATFORM IS NOT LESS THAN 1.8m.
- C) REFER TO THE PAVEMENT DESIGN FOR DETAILS AND SPECIFICATIONS FOR THE LAYERWORKS WATER WILL NOT FLOW INTO THE EXCAVATION.
- D) WATER THE INSITU LAYER. LET DRY TO A DAMP STATE AND COMPACT WITH AT LEAST 15 PASSES OF A VIBRATORY ROLLER OF AT LEAST 6 TONNE STATIC DRUM MASS OPERATING IN VIBRATORY MODE (BOMAG BW 212 D OR PD OR SIMILAR).
- E) BACKFILL THE BULK EXCAVATION TO A LEVEL OF AT LEAST 150mm ABOVE THE SURROUNDING GROUND LEVEL WITH MATERIAL FROM THE EXCAVATION. SHORTFALL MUST BE SUPPLEMENTED WITH IMPORTED G7 QUALITY MATERIAL. PLACE AND COMPACT THE MATERIAL IN LAYERS NOT EXCEEDING 150mm THICK TO A DENSITY OF 95% MOD AASHTO AT OMC.
- F) A FINAL LAYER OF 150mm THICK MATERIAL TYPE G5 SHALL BE PLACED ON TOP OF THE G7 MATERIAL, COMPACTED TO 98% MOD AASHTO AT OMC. THE TOTAL THICKNESS OF THE MATRESS SHALL THEREFORE NOT BE LESS THAN 1.8m AND IT SHALL BE NOT LESS THAN 300mm HIGHER THAN THE SURROUNDING GROUND LEVEL.
- G) THE SURROUNDING AREA SHALL BE SHAPED TO ENSURE THAT RAINWATER DOES NOT POND ANYWHERE BUT IS CHANNELLED AWAY FROM THE SITE

PROCEDURE: PAVING AREA PLATFORM

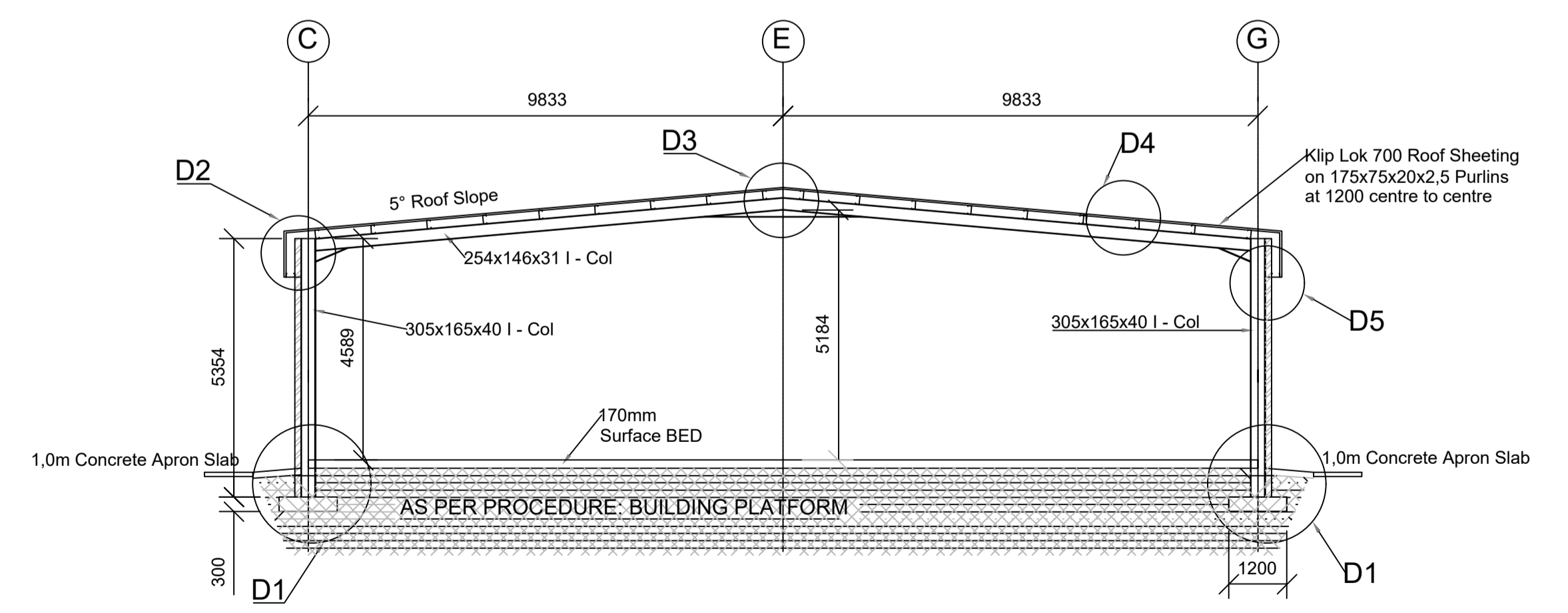
- REPEAT THE PROCEDURE FOR THE BUILDING PLATFORM, BUT WITH THE FOLLOWING CHANGES:
- GROUND LEVEL FOR AN AREA EQUAL TO THE PLANNED FOOTPRINT OF THE BUILDING PLUS 1.0m AROUND.
 - FINISHED PLATFORM IS NOT LESS THAN 0.6m BELOW FINAL LEVELS OF THE PAVING.
 - FOR THE PAVING.





TYPICAL SECTION
N.T.S

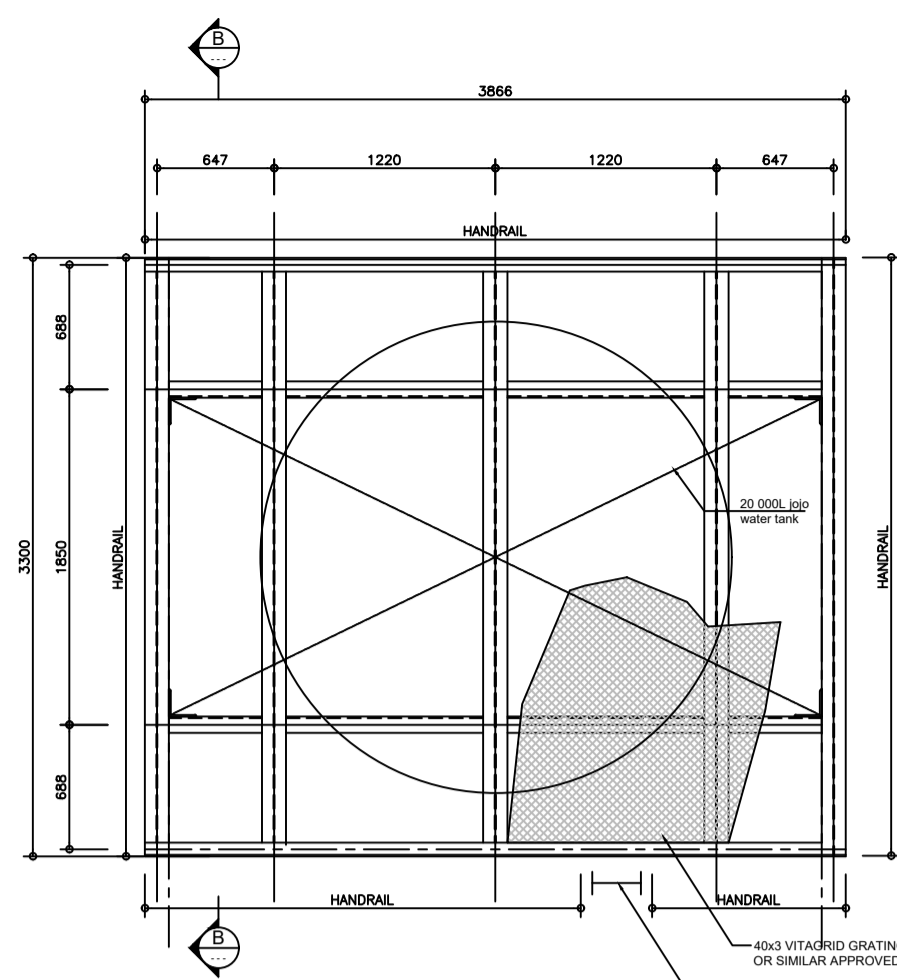


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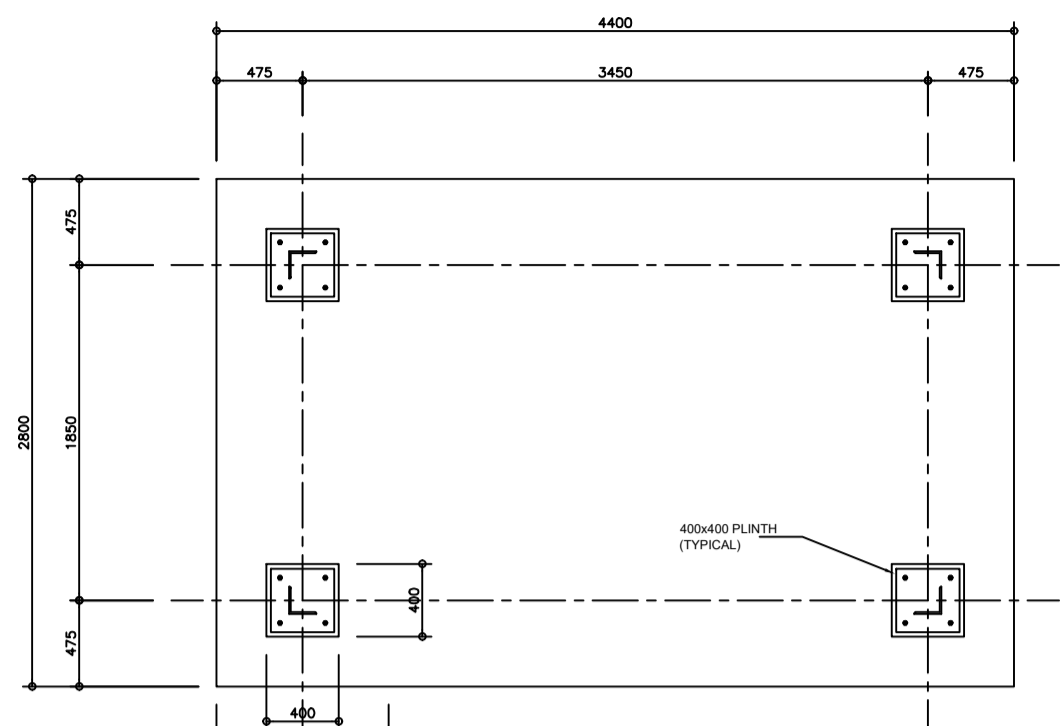


SECTION A-A
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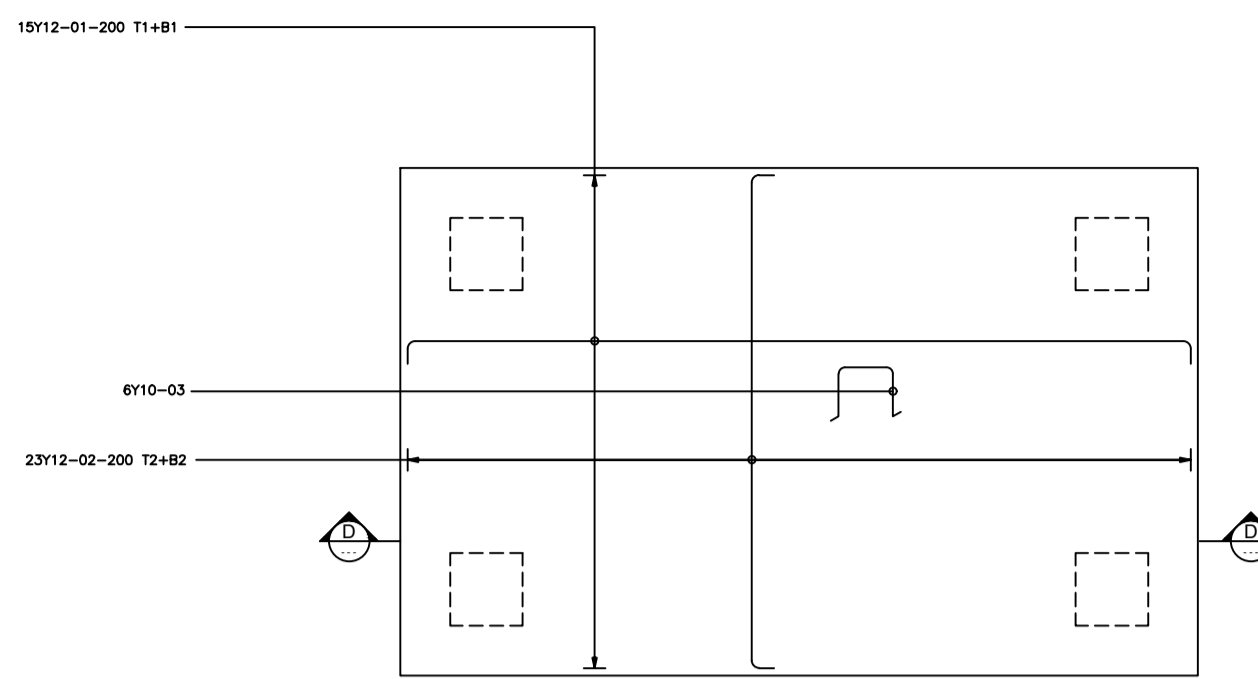
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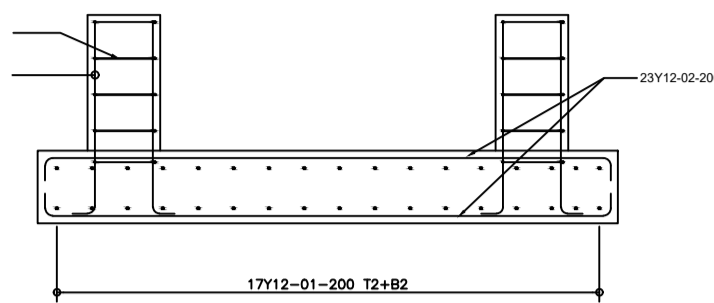
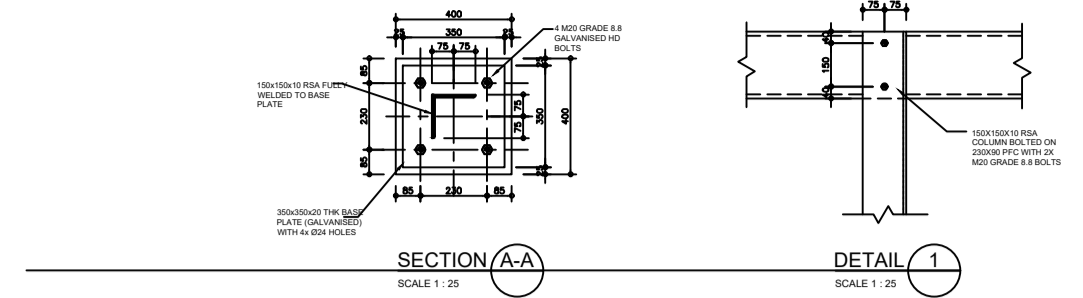
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SCALE 1:40



FOUNDATIONLAYOUT
SCALE 1:40



FOUNDATIONREINFORCEMENTLAYOUT
SCALE 1:40



SECTION A-A
SCALE 1:40

CONCRETE NOTES:

FOUNDATIONS

- 1.1 EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
- 1.2 ALL FOUNDATIONS TO BE BUILT ON FIRM IN-SITU SOIL (NOT ON FILL).
- 1.3 PILING LOGS TO BE USED TO RECORD DEPTH, DIAMETER, REINFORCING, DATE CAST, CUT OFF LEVEL, CONCRETE STRENGTH AND REFERENCE TO RELEVANT CUBES MADE FOR TESTING.

CONCRETE

- 2.1 CONCRETE CHARACTERISTIC 28-DAY STRENGTH:
 PILE CAPS 30 MPa
 GROUND BEAMS 30 MPa
 COLUMNS & WALLS 30 MPa
 SURFACE BEDS (INTERNAL) 30 MPa
 SURFACE BEDS (EXTERNAL) 30 MPa
 SUSPENDED SLABS 30 MPa
- 2.2 NOMINAL CONCRETE AGGREGATE SIZE 19mm
- 2.3 ALL CONCRETE TO BE PROPERLY CURED BY KEEPING SURFACES CONTINUOUSLY DAMP FOR AT LEAST 5 DAYS AFTER CASTING.
- 2.4 ALL CONCRETE TO BE CONSTRUCTED TO THE SABS 1200 G PERMISSIBLE DEVIATION DEGREE OF ACCURACY CLASS II UNLESS OTHERWISE SPECIFIED.
- 2.5 CONCRETE CUBE TESTS TO BE SUBMITTED TO ENGINEER FOR APPROVAL.

REINFORCEMENT

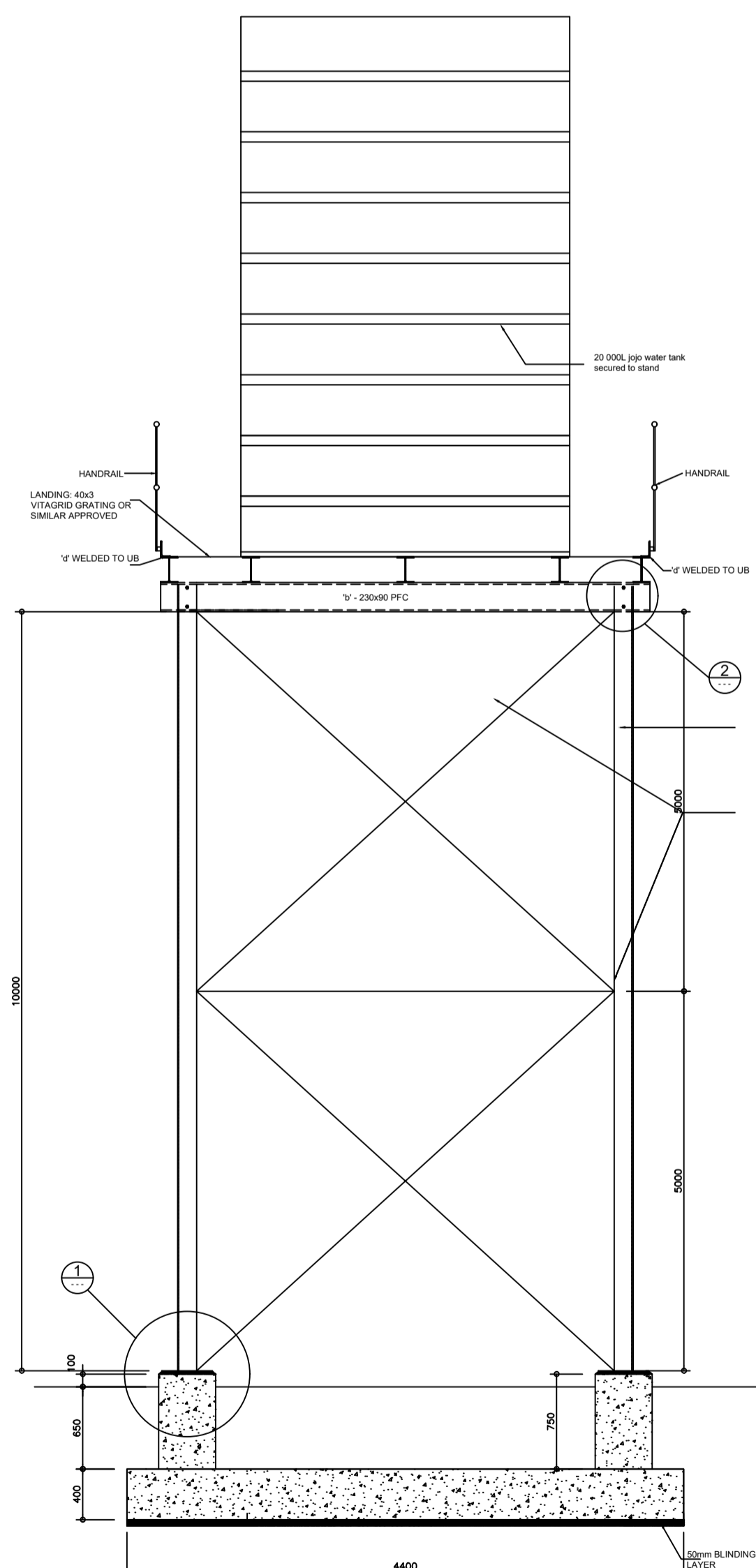
- 3.1 ALL REINFORCEMENT TO BE CHECKED AND APPROVED BY THE ENGINEER BEFORE ANY CONCRETE IS CAST.
- 3.2 LAP LENGTH TO REINFORCING TO BE MIN. 50 x SMALLER DIAMETER, UNLESS OTHERWISE NOTED.
- 3.3 MINIMUM COVER TO REINFORCING:
 PILE CAPS & GROUND BEAMS 50mm
 COLUMNS & WALLS 30mm
 STRIP & PAD FOUNDATIONS 50mm
 SUSPENDED SLABS 30mm
 BEAMS TO SLABS 30mm
- 3.4 THE CONTRACTOR MUST TAKE PARTICULAR CARE TO ENSURE THAT THE SPECIFIED COVER TO ALL REINFORCEMENT HAS BEEN ATTAINED THROUGHOUT BEFORE THE ENGINEER IS CALLED TO SITE.
- 3.5 REINFORCING YIELD STRENGTH:
 HIGH TENSILE 'Y' 450 MPa
 MILD STEEL 'R' 250 MPa
 WELDED STEEL WIRE MESH 485 MPa

FORMWORK

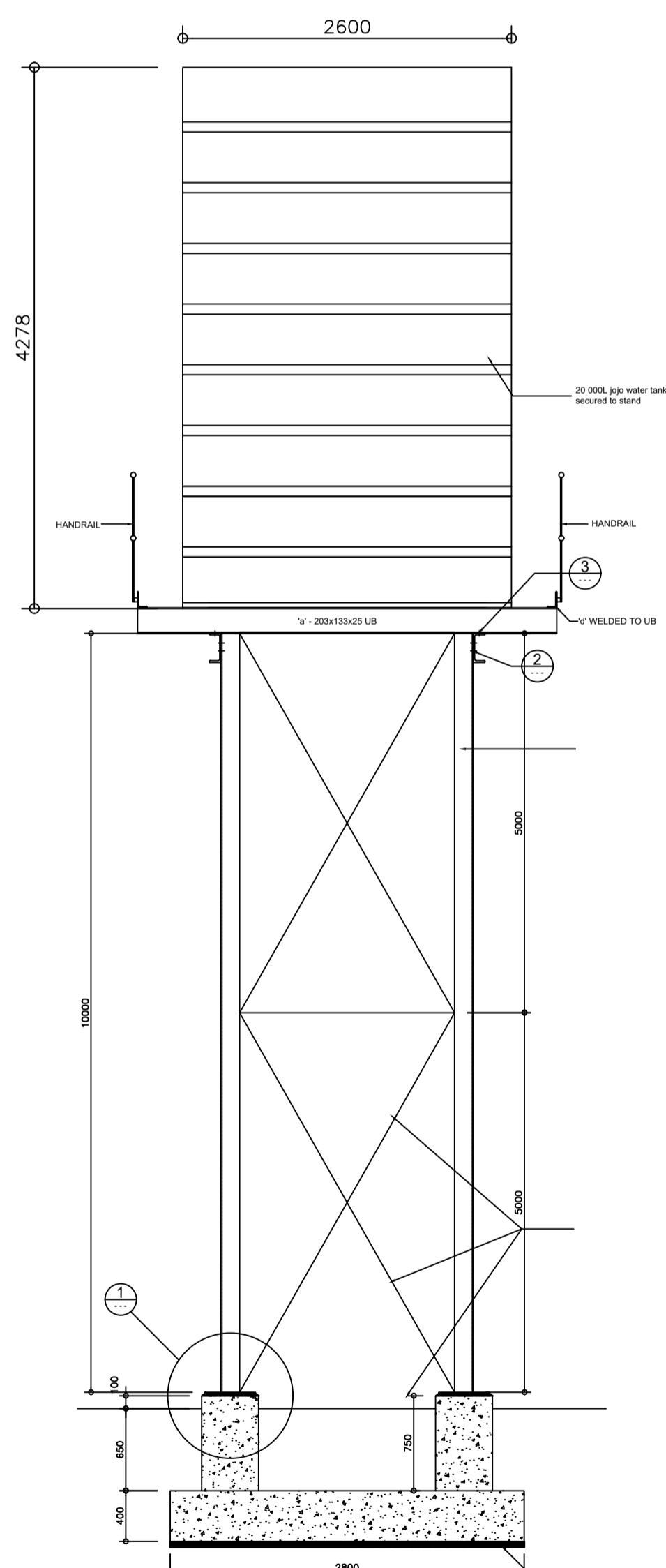
- 4.1 STRIPPING TIMES FOR:
 COLUMN AND WALL SHUTTERING 1.5 DAYS
 SLAB PROPS 14 DAYS
 BEAM PROPS 21 DAYS
- 4.2 CONCRETE FINISHES:
 SURFACE BEDS POWER FLOAT
 SUSPENDED SLABS WOOD FLOAT
 COLUMNS & WALLS OFF SHUTTER
 BEAMS OFF SHUTTER
 SLAB SOFFIT OFF SHUTTER

STEEL NOTES:

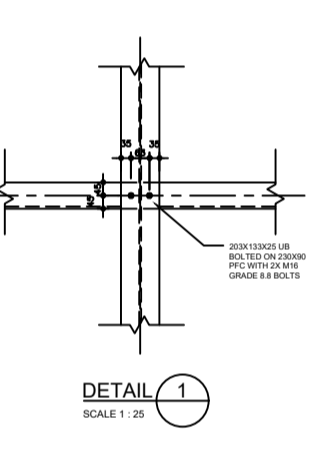
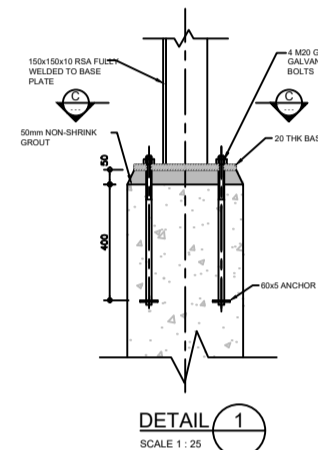
1. READ THIS DRAWING IN CONJUNCTION WITH ARCHITECT'S AND OTHER SPECIALIST'S DRAWINGS.
2. ALL STRUCTURAL STEEL TO BE GRADE 350W UNLESS COLD FORMED.
3. SURFACE PREPARATION OF STRUCTURAL STEELWORK (S.A.N.S 1200-1988)
 - WIRE BRUSH ALL NEW STEELWORK TO A MIN. ST 2.0 IN ACCORDANCE WITH SWEDISH SIS 055900 - 1967.
 - THE TREATMENT MUST REMOVE LOOSE MILL SCALE, RUST AND FOREIGN MATTER.
4. APPLICATION OF PAINT COATINGS (ALL NEW STEELWORK)
 - PRIMER: STEELWORK TO BE PAINTED ONE COAT OF ZINC PHOSPHATE ALKALYD PRIMER, (35 microns DTF)
 - INTERMEDIATE COAT: STEELWORK TO BE PAINTED WITH ONE COAT OF UNIVERSAL UNDERCOAT, (30 microns DTF)
 - TOP COAT: STEELWORK TO BE PAINTED WITH TWO FINAL COATS ENAMEL (ALKALYD ENAMEL) (30 microns DTF EACH)
 ALL PAINTWORK DAMAGED DURING ERECTION & TRANSPORTATION TO BE TOUCHED UP TO ABOVE SPEC. FINAL COLOR TO ARCHITECTURAL SPEC.
5. ALL PURLINS & GIRTS TO BE DOUBLE SPAN OR TO BE CONTINUOUS OVER 2 BAYS.
6. NO SERVICES SHALL BE SUSPENDED FROM THE LIP OF OFLC PURLINS OR GIRTS. ALL SERVICES TO BE SUSPENDED FROM BACK WEB OF OFLC PURLINS AND GIRTS.
7. THE CONTRACTOR SHALL SATISFY HIMSELF THAT THE ENGINEER'S DRAWINGS CONTAIN ALL THE INFORMATION REQUIRED FOR THE PREPARATION OF SHOP DRAWINGS AS SOON AS POSSIBLE.
8. CONTRACTOR TO SUPPLY TWO SETS OF SHOP DRAWINGS TOGETHER WITH SUPPORTING CALCULATIONS TO ENGINEER FOR APPROVAL BEFORE COMMENCING WITH FABRICATION.
9. ALL BOLTS TO BE GRADE 8.8 UNLESS OTHERWISE SPECIFIED.
10. ALL BOLTED CONNECTIONS TO CONSIST OF MINIMUM 2-M16 GRD. 8.8 BOLTS UNLESS OTHERWISE SPECIFIED.
11. ALL WELDING TO SABS 044.
12. ALL WELDS TO BE 6mm FILLET WELDS TO GRADE E70XX UNLESS OTHERWISE NOTED. WELDS TO BE CONTINUOUS ROUND ALL INTERSECTIONS.
13. ALL CONNECTIONS NOT DETAILED SHALL BE WELDED TO FULL STRENGTH USING GRADE E70XX ELECTRODES.
14. NO SITE WELDING IS PERMITTED.
15. FABRICATION AND ERECTION TO BE DONE TO SABS 1200.
16. ALL RUNNERS AND BRACING TO BE FULLY FIXED IN POSITION BEFORE SHEETING COMMENCES.
17. ALL STRUCTURAL STEEL BELOW GROUND LEVEL, CAST INTO CONCRETE OR BUILT INTO BRICKWORK, SHALL BE PAINTED WITH TWO COATS OF BITUMEN BEFORE BACKFILLING.



SECTION A-A
SCALE 1:40





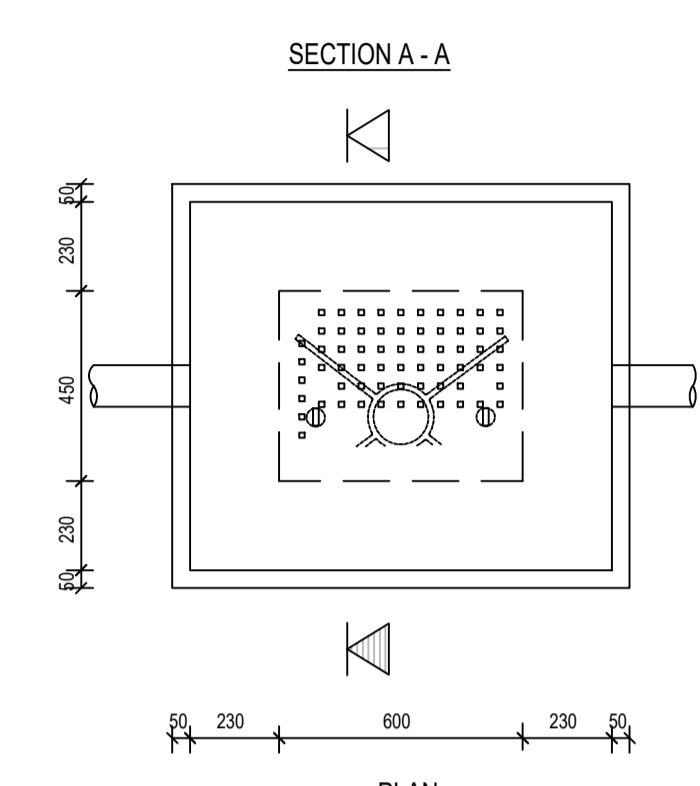
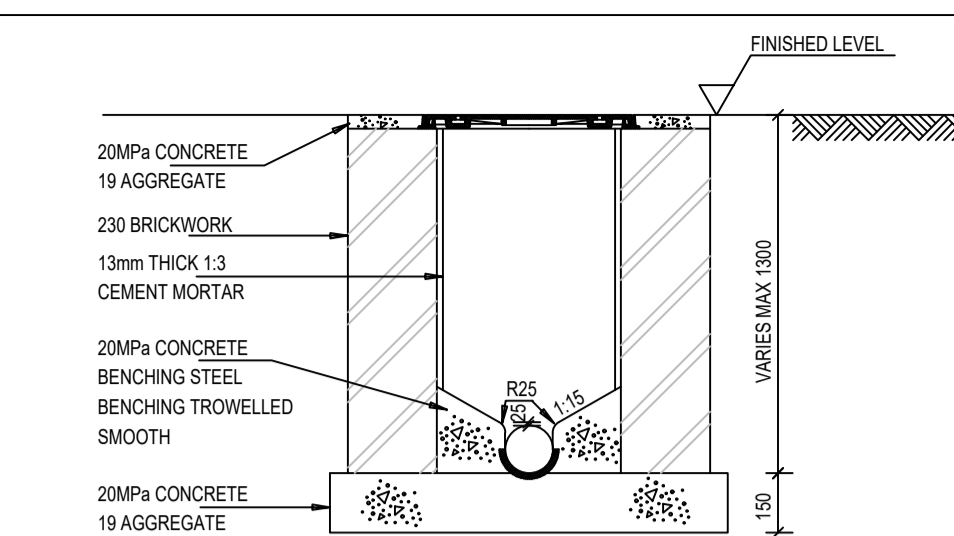
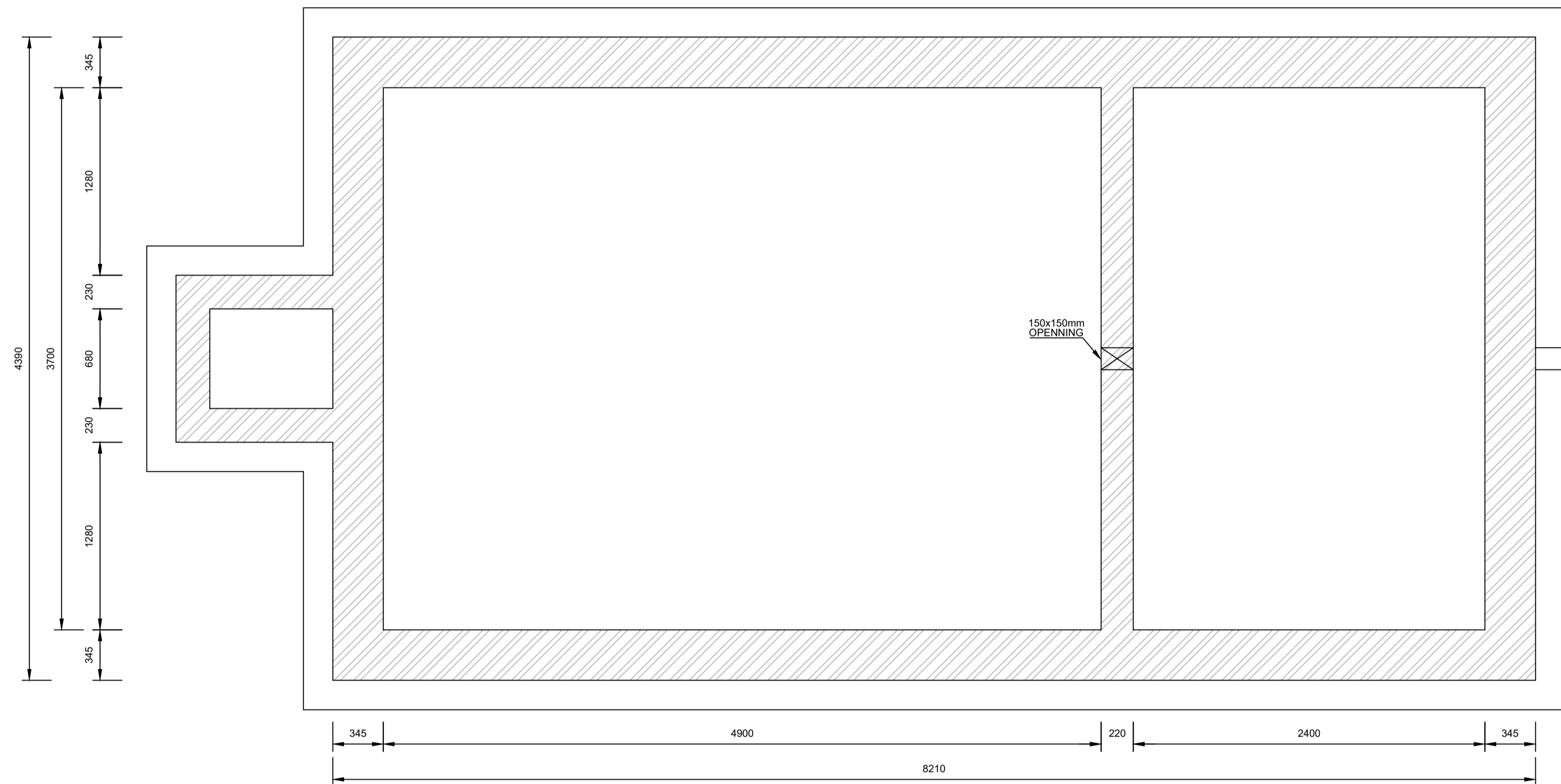
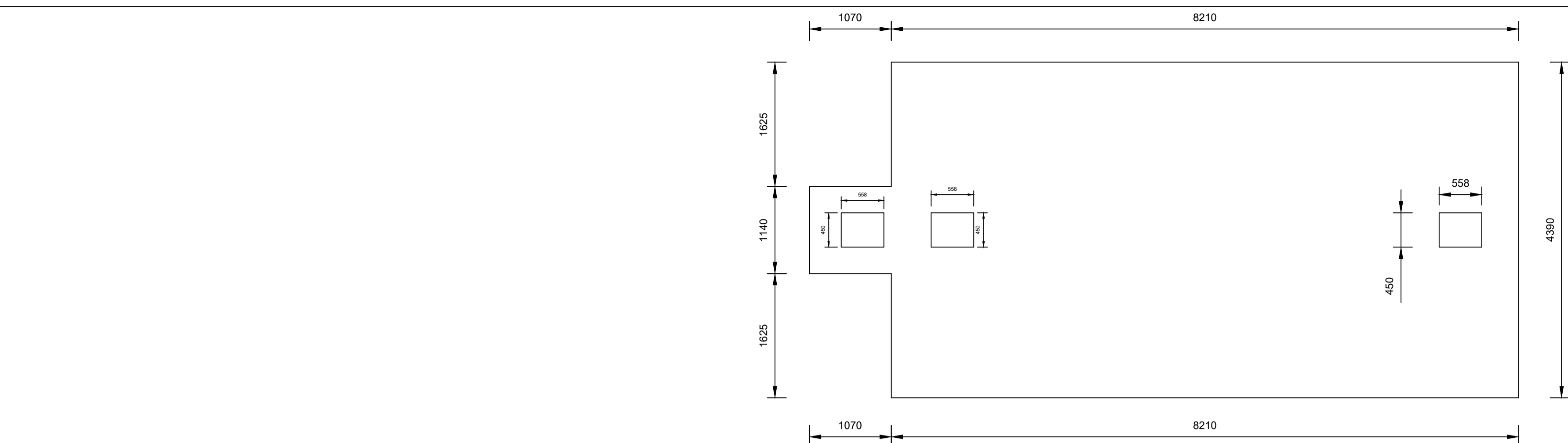
SECTION A-A
SCALE 1:40



STEEL LEGEND			
Mark	Size	Description	Unit Weight (kg/m)
a	203x133x25 UB	BEAM	25.1
b	230x90 PFC	BEAM	32.2
c	150x150x10 L	COLUMN	23
d	125x75x8 RSA	BEAM	12.2
e	90x90x8 RSA	CROSS BRACING	11
e	90x90x8 RSA	CROSS BRACING	11
e	90x90x8 RSA	CROSS BRACING	11
f	90x90x8 RSA	HORIZONTAL BRACING	11

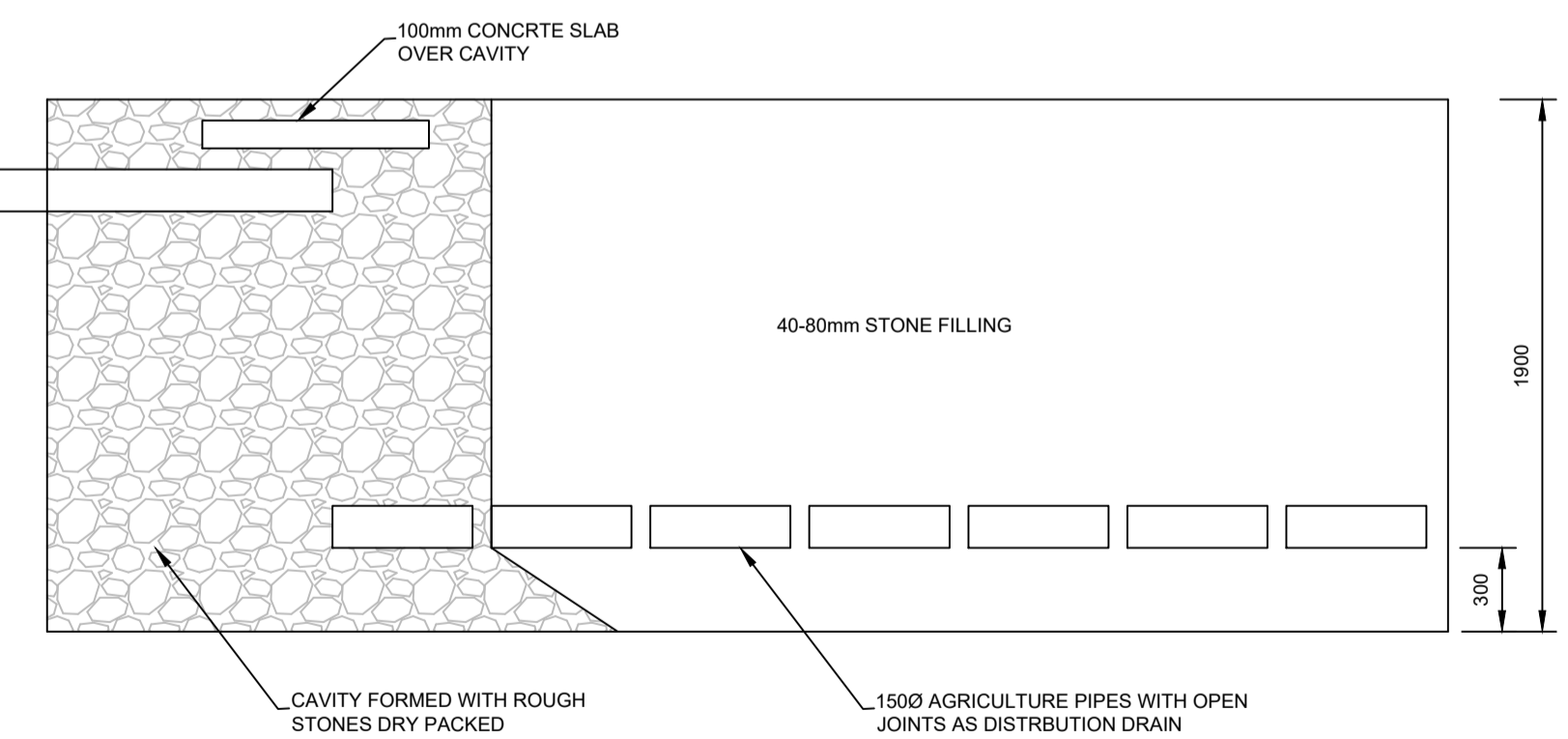
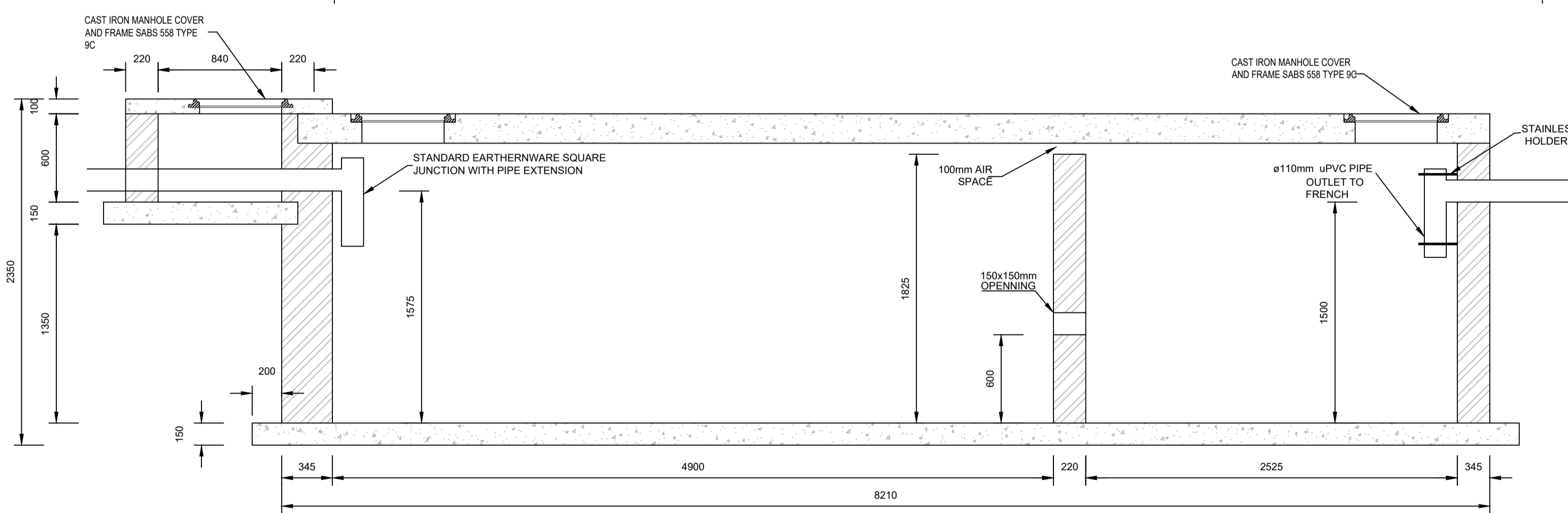
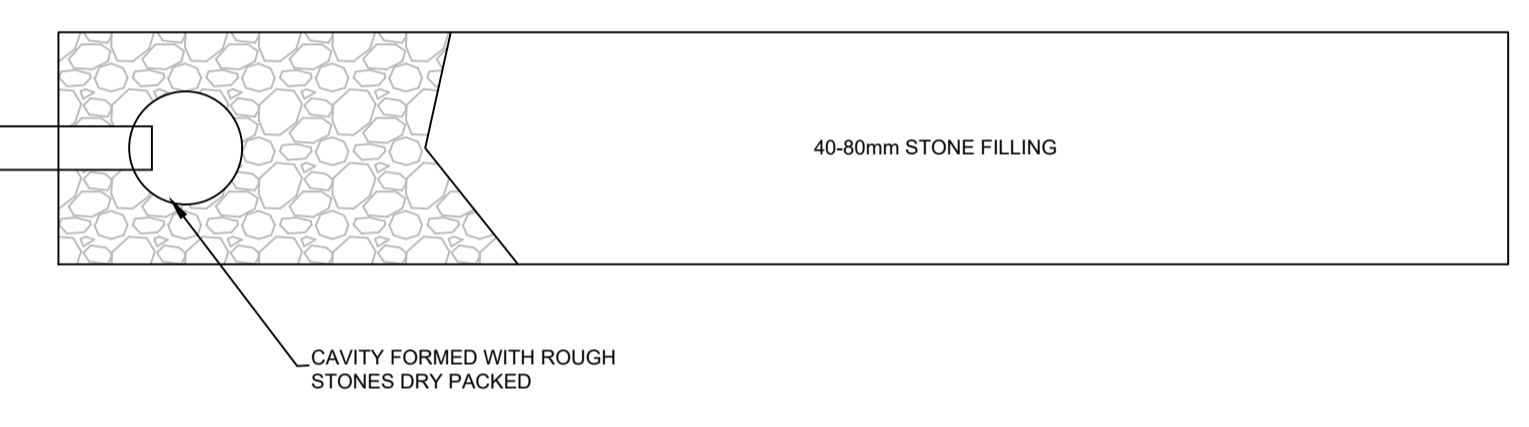
MEMBER	BAR MARK	TYPE & SIZE	No OFF MEMBERS	No OFF BARS IN EACH	TOTAL No.	CUT LENGTH OF BAR=mm	SHAPE CODE	A mm	B mm	C mm	D mm	E/R mm				
FOUNDATION 4400 X 2800	01	Y12	2	15	30	2840	35	2640								
	02	Y12	2	23	46	4450	35	4250								
	03	Y10	1	13	13	1360	83	400	230	400	200					
	04	Y12	1	64	64	1300	34	1200								
	05	Y10	1	20	20	1330	60	300	300							
STEEL TO COMPLY WITH : SANS 282-2003								STOOLS SIT ON B1 AND SUPPORT T2 LAYER								
TOTAL MASS (kg)	Y10	Y12	Y16	Y20	Y25	Y32	Y40	R8	R10	R12	R16	R20	R25	R32	R40	TOTAL
	27	331														359
ABBREVIATIONS: T top B bottom ABR alternate bars reversed B1 1st lowest layer T1 1st top most layer T2 2nd layer EF each face FF far face NF near face EW each way STG stagger ALT alternate																

				Blouberg Municipality  Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100		Oltatech Consulting  Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699		PROJECT APPR. DATE BY SIGNATURE DESIGNED SEPT 2022 LM CHECKED SEPT 2022 LR DRAWN SEPT 2022 WK PROJECT MNG. APPROVED CLIENT		SCALE PROJECT TITLE: DO NOT SCALE Avon Multi-Purpose Centre	
DRAWING STATUS: FOR TENDER								DRAWING DESCRIPTION: ELEVATED STEEL TANK			
REV	DATE	CHK	APP					PROJECT No. DRG SIZE AVON-STR-003 A1		Drawing No. AVON-STR-003	Revision No. 0



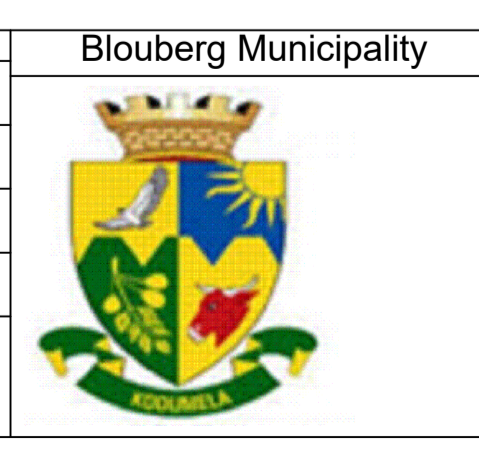
DOMESTIC SEWER INSPECTION CHAMBER
1000 OR 1500 PIPE

- NOTES**
1. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DIMENSIONS AND LEVELS ONSITE AND NOTIFY THE ENGINEER OF ANY VARIATIONS BEFORE CONSTRUCTION.
 2. IDENTIFY ALL KNOWN EXISTING SERVICES PRIOR TO CONSTRUCTION.
 3. THE COORDINATES ARE BASED ON WGS84 L029.
 4. MANHOLES SHALL BE 1.5M DIAMETER PRECAST CONCRETE WITH DOLOMITIC AGGREGATE.
 5. MAXIMUM SPACING OF MANHOLES IS 40M.
 6. TRENCH EXCAVATIONS TO BE MADE SAFE AT ALL TIMES.
 7. SEWERS LAID AT GRADIENTS STEEPER THAN 1:12 (8.3%) SHALL BE ANCHORED AT THE JOINTS WITH 15MPA CONCRETE ANCHOR BLOCKS.
 8. AIR OR WATER TESTS TO BE DONE AS SPECIFIED IN THE SANS 1200.
 9. CCTV INSPECTIONS ARE TO BE DONE ON ALL SECTIONS OF THE PIPE. THE CCTV VIDEO AND REPORTS TO BE SUBMITTED.
 10. THE BEDDING AND MAIN FILL SHALL BE COMPACTED IN LAYERS OF THICKNESS NOT EXCEEDING 150mm TO AT LEAST 90% MOD ASHTO.
 11. COMPACTION TESTS TO BE CONDUCTED ON ALL LAYERS.
 12. ALL MANHOLE TO MANHOLE LAYERS SECTIONS TO BE TESTED FOR COMPACTION.
 13. COMPACTION OF LAYERS TO BE CONSECUTIVELY APPROVED BY THE ENGINEER.



REV	DATE	CHK	APP

DRAWING STATUS:
FOR TENDER



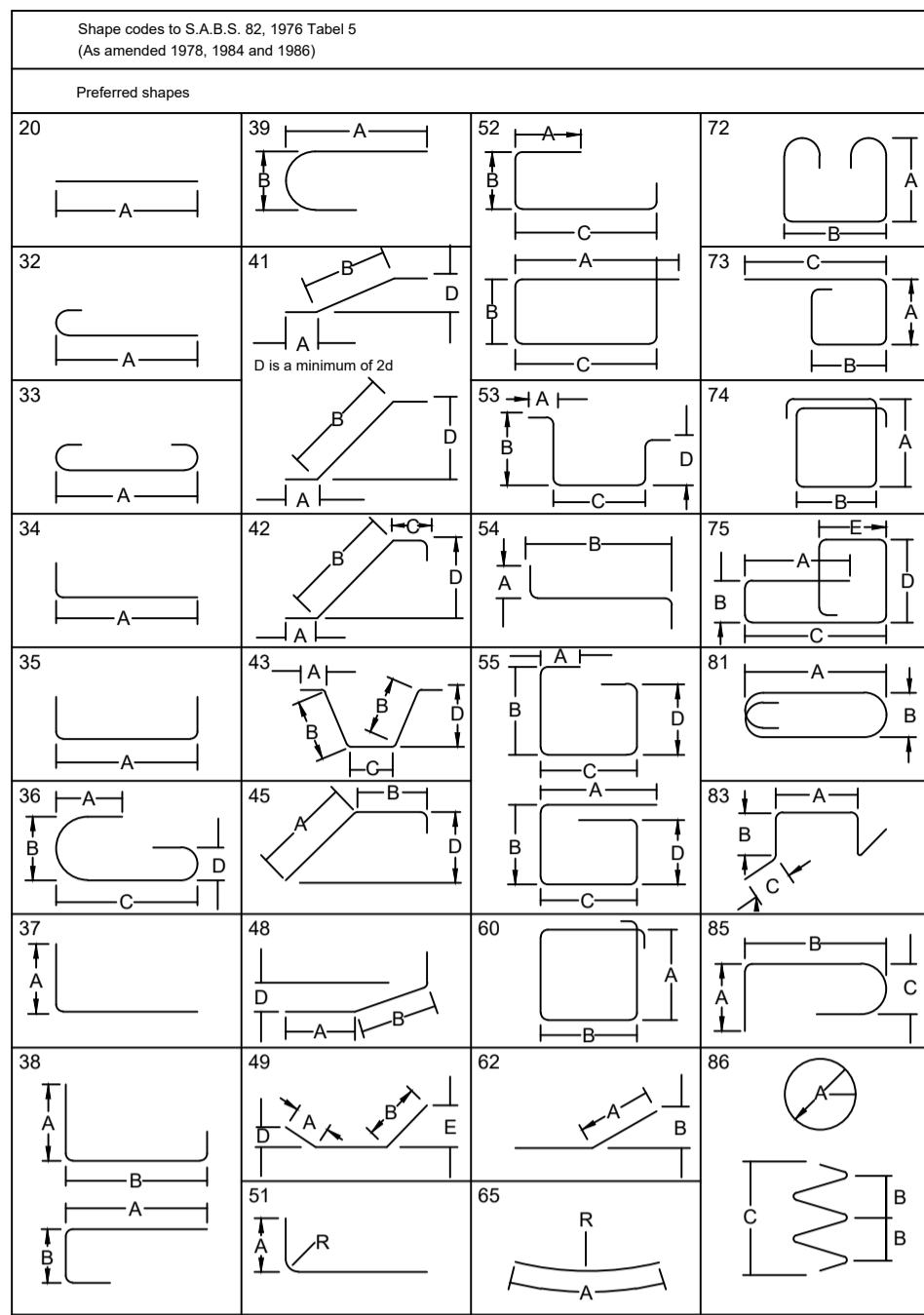
Blouberg Municipality
Blouberg Municipality
2nd Building Dendron Road
P.O Box 1593
Senwabarwana
0790
Tel: 015 505 7100



Oltatech Consulting
Oltatech Consulting (Pty) Ltd
6 Rentco Building
11 Pierre Street, Bendor.
Polokwane, 0699

PROJECT APPR.	DATE	BY	SIGNATURE
DESIGNED	SEPT 2022	LM	
CHECKED	SEPT 2022	LR	
DRAWN	SEPT 2022	KN	
PROJECT MNG.	....	....
APPROVED			
CLIENT			

SCALE	PROJECT TITLE:
DO NOT SCALE	Avon Multi-Purpose Centre
DRAWING DESCRIPTION:	SEPTIC TANK
PROJECT No. DRG SIZE	DRAWING No.
A1	AVON-CIV-SR-003
Revision No.	A



DIMENSIONS ARE GIVEN IN mm AND m.
DIMENSIONS OF BARS ARE OVERALL
OUTSIDE DIMENSIONS.

UNDER CERTAIN CIRCUMSTANCES WHERE HIGH YIELD
STRESSES MIGHT BE INDUCED, THE STANDARD
RADIUS
(i.e. 2d FOR MILD STEEL AND 3d FOR HIGH YIELD
STEEL) MAY BE INCREASED TO 7.5d BUT THIS SHALL
NOT APPLY TO END ANCHORAGES DENOTED BY h OR n.
THIS CHANGE SHOULD BE INDICATED BY ADDING THE
LETTER S AFTER THE SHAPE CODE NUMBER.

FOR WELDED MESH FABRIC, DIMENSIONS A & B DEFINE
THE NET OVERALL AREA OF MESH. NO ALLOWANCE HAS
BEEN MADE FOR LAPS.

NOTES

1. ALTHOUGH THE BENDING SCHEDULES WERE PREPARED WITH CARE, MISTAKES MAY HAVE BEEN MADE THEREFORE, BEFORE ORDERING AND BEFORE CUTTING AND BENDING OF REINFORCEMENT COMMENCES THE CONTRACTOR MUST CHECK ALL SCHEDULES TO ENSURE CORRECTNESS OF TYPE OF REINFORCEMENT AND BENDING DIMENSIONS.

IN CASE CHANGES ARE NECESSARY, THEY SHOULD CONFORM TO THE REQUIREMENTS SHOWN ON THE DRAWINGS AND BE IN ACCORDANCE WITH SABS 0144 (WITH THE LATEST AMENDMENTS).

ALL BENDING SHALL BE DONE IN ACCORDANCE WITH SABS 82 (WITH THE LATEST AMENDMENTS).

2. FOUR TYPES OF REINFORCING STEEL CAN BE SPECIFIED ON REINFORCEMENT DRAWINGS AND BENDING SCHEDULES (IN ACCORDANCE WITH SABS 920 AND SABS 1024 WITH THE LATEST AMENDMENTS) viz.

R REINFORCEMENT SHALL BE TYPE A: HOT ROLLED MILD STEEL BARS OF PLAIN ROUND CROSS-SECTION HAVING A MINIMUM YIELD STRESS OF 250 MPa FOR BARS OF DIAMETER UP TO AND INCLUDING 20 mm AND HAVING A MINIMUM YIELD STRESS OF 230 MPa FOR BARS WITH DIAMETER GREATER THAN OR EQUAL TO 25 mm.

Z REINFORCEMENT SHALL BE TYPE B: GRADE 1: HOT ROLLED DEFORMED MILD STEEL BARS HAVING A MINIMUM YIELD STRESS AS FOR TYPE A.

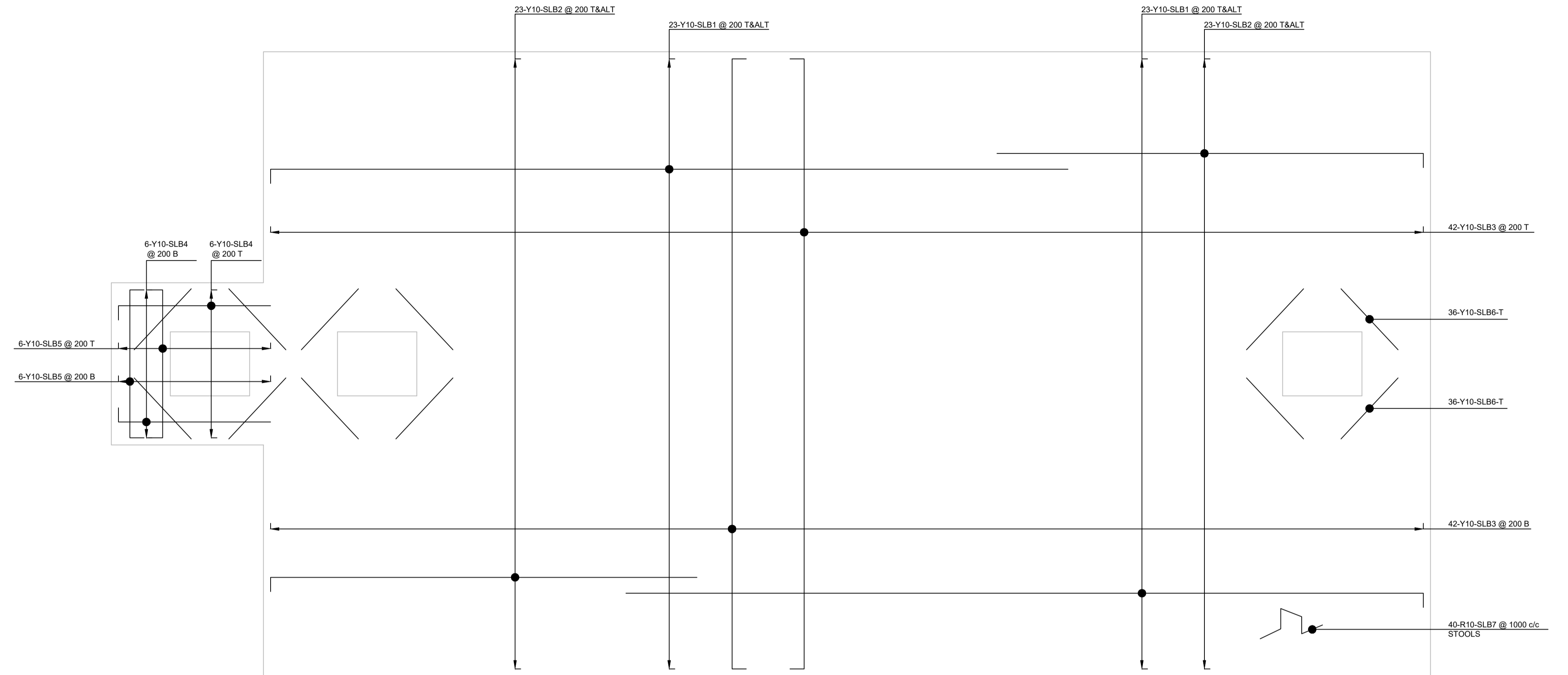
Y REINFORCEMENT SHALL BE TYPE C: CLASS 2: GRADE 1: HOT ROLLED DEFORMED HIGH YIELD STRESS STEEL BARS HAVING A MINIMUM YIELD STRESS OR A MINIMUM 0.25% PROOF STRESS OF 450 MPa.

REF. ALL STEEL FABRIC SHALL BE IN ACCORDANCE WITH SABS 1024-1974 WITH THE LATEST AMENDMENTS HAVING A MINIMUM 0.2% PROOF STRESS OF 480 MPa.

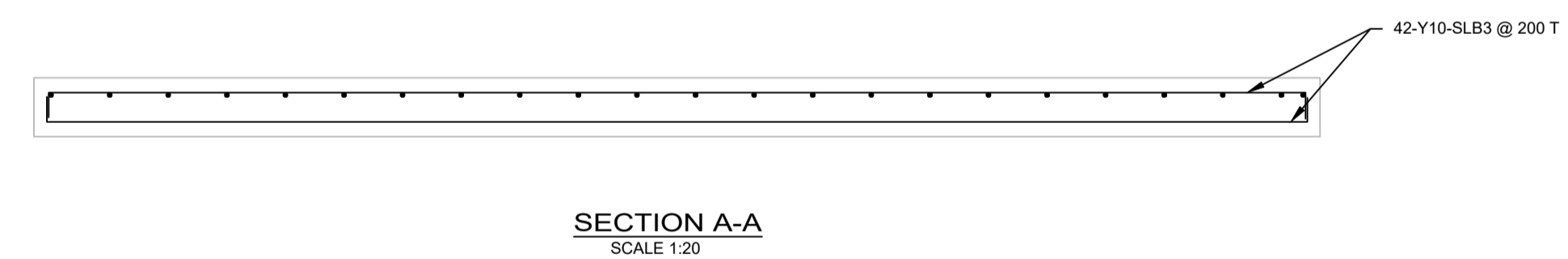
FOR EXAMPLE: R20 DENOTES A 20 mm DIAMETER PLAIN ROUND BAR OF MILD STEEL.
Z12 DENOTES A 12 mm DIAMETER DEFORMED BAR OF MILD STEEL.
Y25 DENOTES A 25 mm DIAMETER DEFORMED BAR OF HIGH TENSILE STEEL.
REF. 655 DENOTES FABRIC REFERENCE 655 (MESH).

BENDING SCHEDULE OF FOUNDATION

MEMBER	NO.	TYPE & MARK	CUT LENGTH	TOTAL NO.	SHAPE CODE	BENDING				
						A	B	C	D	MASS (KG)
FOUNDATION	23	Y10-SLB1	5710	46	34	5610	100			162
	23	Y10-SLB2	3100	46	34	3000	100			88
	42	Y10-SLB3	4440	84	38	100	4290	100		230
	6	Y10-SLB4	1170	12	34	1070	100			9
	6	Y10-SLB5	1190	84	38	100	1040	100		9
	36	Y10-SLB6	1200	72	20	1200				53
	40	R10-SLB7	940	40	83	300	70	300		23
	SUB TOTAL: R: 23kg ; Y: 551kg									



SEPTIC TANK ROOF SLAB REINFORCEMENT
SCALE 1:20



Blouberg Municipality



Blouberg Municipality
2nd Building Dendron Road
P.O Box 1593
Senwabarwana
0790
Tel: 015 505 7100

Oltatech Consulting JV



Oltatech Consulting (Pty) Ltd
6 Rentco Building
11 Pierre Street, Bendor.
Polokwane, 0699

PROJECT APPR.	DATE	BY	SIGNATURE	SCALE	PROJECT TITLE:		
DESIGNED	SEPT 2022	LM		DO NOT SCALE	Avon Multi-Purpose Centre		
CHECKED	SEPT 2022	LR					
DRAWN	SEPT 2022	WK		DRAWING DESCRIPTION:	SEPTIC TANK ROOF SLAB		
PROJECT MNG.	....	....			
APPROVED							
CLIENT				PROJECT No.	DRG SIZE	DRAWING No.	Revision No.
				A1	A1	AVON-STR-004	0

REV	DATE	CHK	APP	DRAWING STATUS:
0		CHK	APP	FOR TENDER

Shape codes to S.A.B.S. 82, 1976 Table 5
(As amended 1978, 1984 and 1986)

Preferred shapes

DIMENSIONS ARE GIVEN IN mm AND m.
DIMENSIONS OF BARS ARE OVERALL
OUTSIDE DIMENSIONS.

UNDER CERTAIN CIRCUMSTANCES WHERE HIGH YIELD
STRESSES MIGHT BE INDUCED, THE STANDARD
RADIUS
(i.e. 2d FOR MILD STEEL AND 3d FOR HIGH YIELD
STEEL) MAY BE INCREASED TO 7.5d BUT THIS SHALL
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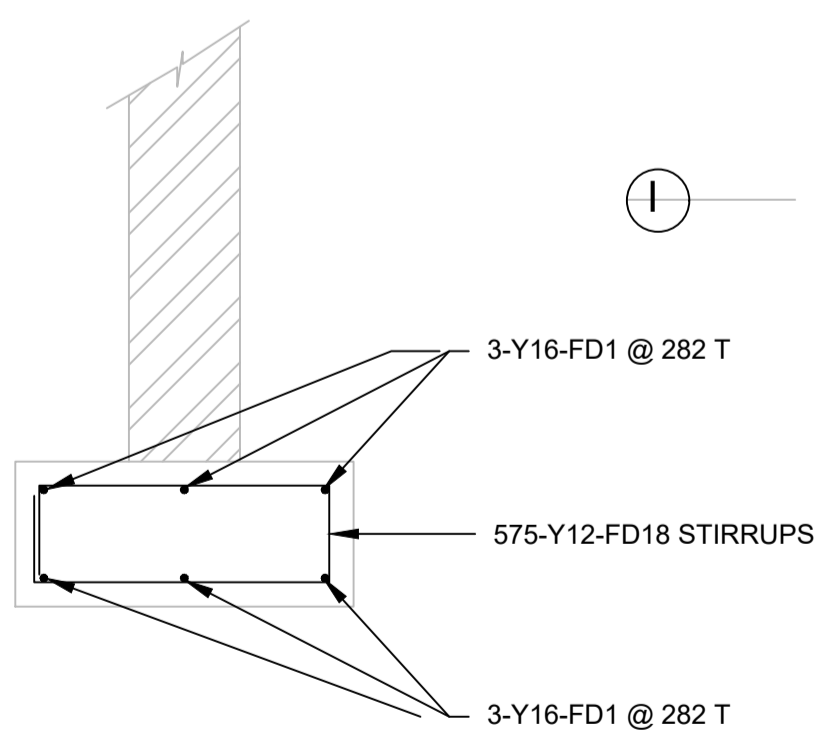
FOR WELDED MESH FABRIC, DIMENSIONS A & B DEFINE
THE NET OVERALL AREA OF MESH. NO ALLOWANCE HAS
BEEN MADE FOR LAPS.

NOTES

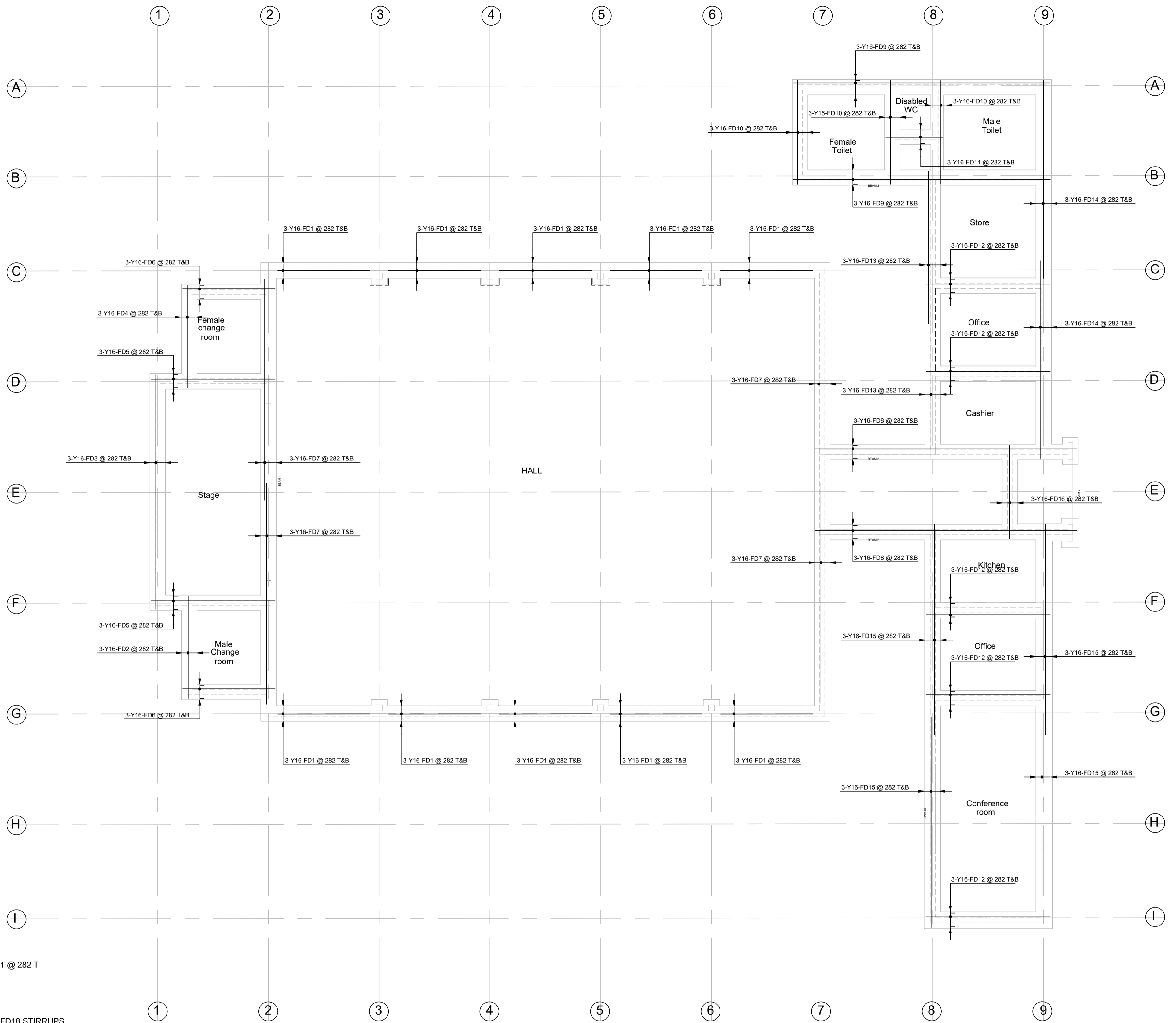
- ALTHOUGH THE BENDING SCHEDULES WERE PREPARED WITH CARE, MISTAKES MAY HAVE BEEN MADE THEREFORE, BEFORE ORDERING AND BEFORE CUTTING AND BENDING OF REINFORCEMENT COMMENCES THE CONTRACTOR MUST CHECK ALL SCHEDULES TO ENSURE CORRECTNESS OF TYPE OF REINFORCEMENT AND BENDING DIMENSIONS.
IN CASE CHANGES ARE NECESSARY, THEY SHOULD CONFORM TO THE REQUIREMENTS SHOWN ON THE DRAWINGS AND BE IN ACCORDANCE WITH SABS 0144 (WITH THE LATEST AMENDMENTS).
ALL BENDING SHALL BE DONE IN ACCORDANCE WITH SABS 82 (WITH THE LATEST AMENDMENTS).
 - FOUR TYPES OF REINFORCING STEEL CAN BE SPECIFIED ON REINFORCEMENT DRAWINGS AND BENDING SCHEDULES (IN ACCORDANCE WITH SABS 920 AND SABS 1024 WITH THE LATEST AMENDMENTS) viz.
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Z REINFORCEMENT SHALL BE TYPE B: GRADE 1: HOT ROLLED DEFORMED MILD STEEL BARS HAVING A MINIMUM YIELD STRESS AS FOR TYPE A.
Y REINFORCEMENT SHALL BE TYPE C: CLASS 2: GRADE 1: HOT ROLLED DEFORMED HIGH YIELD STRESS STEEL BARS HAVING A MINIMUM YIELD STRESS OR A MINIMUM 0.25% PROOF STRESS OF 450 MPa.
REF. ALL STEEL FABRIC SHALL BE IN ACCORDANCE WITH SABS 1024-1974 WITH THE LATEST AMENDMENTS HAVING A MINIMUM 0.2% PROOF STRESS OF 480 MPa.
- FOR EXAMPLE: R20 DENOTES A 20 mm DIAMETER PLAIN ROUND BAR OF MILD STEEL.
Z12 DENOTES A 12 mm DIAMETER DEFORMED BAR OF MILD STEEL.
Y25 DENOTES A 25 mm DIAMETER DEFORMED BAR OF HIGH TENSILE STEEL.
REF. 655 DENOTES FABRIC REFERENCE 655 (MESH).

BENDING SCHEDULE OF FOUNDATION

MEMBER	NO.	TYPE & MARK	CUT LENGTH	TOTAL NO.	SHAPE CODE	BENDING				MASS (KG)
						A	B	C	D	
FOUNDATION	3	Y16-FD1	4160	60	20	4160				394
	3	Y16-FD2	4630	6	20	4630				44
	3	Y16-FD3	10600	6	20	10600				100
	3	Y16-FD4	4630	6	20	4630				44
	3	Y16-FD5	5600	12	20	5600				106
	3	Y16-FD6	4170	12	20	4170				79
	3	Y16-FD7	9980	24	20	9980				378
	3	Y16-FD8	11800	12	20	11800				224
	3	Y16-FD9	11610	12	20	11610				220
	3	Y16-FD10	4680	18	20	4680				133
	3	Y16-FD11	2570	6	20	2570				24
	3	Y16-FD12	5600	30	20	5600				265
	3	Y16-FD13	6890	12	20	6890				131
	3	Y16-FD14	8930	12	20	8930				169
	3	Y16-FD15	9500	12	20	9500				360
	3	Y16-FD17	4220	6	20	4220				160
	3	Y16-FD18	1860	575	60	200	600			950
	SUB TOTAL: R: 0kg ; Y: 3781kg									



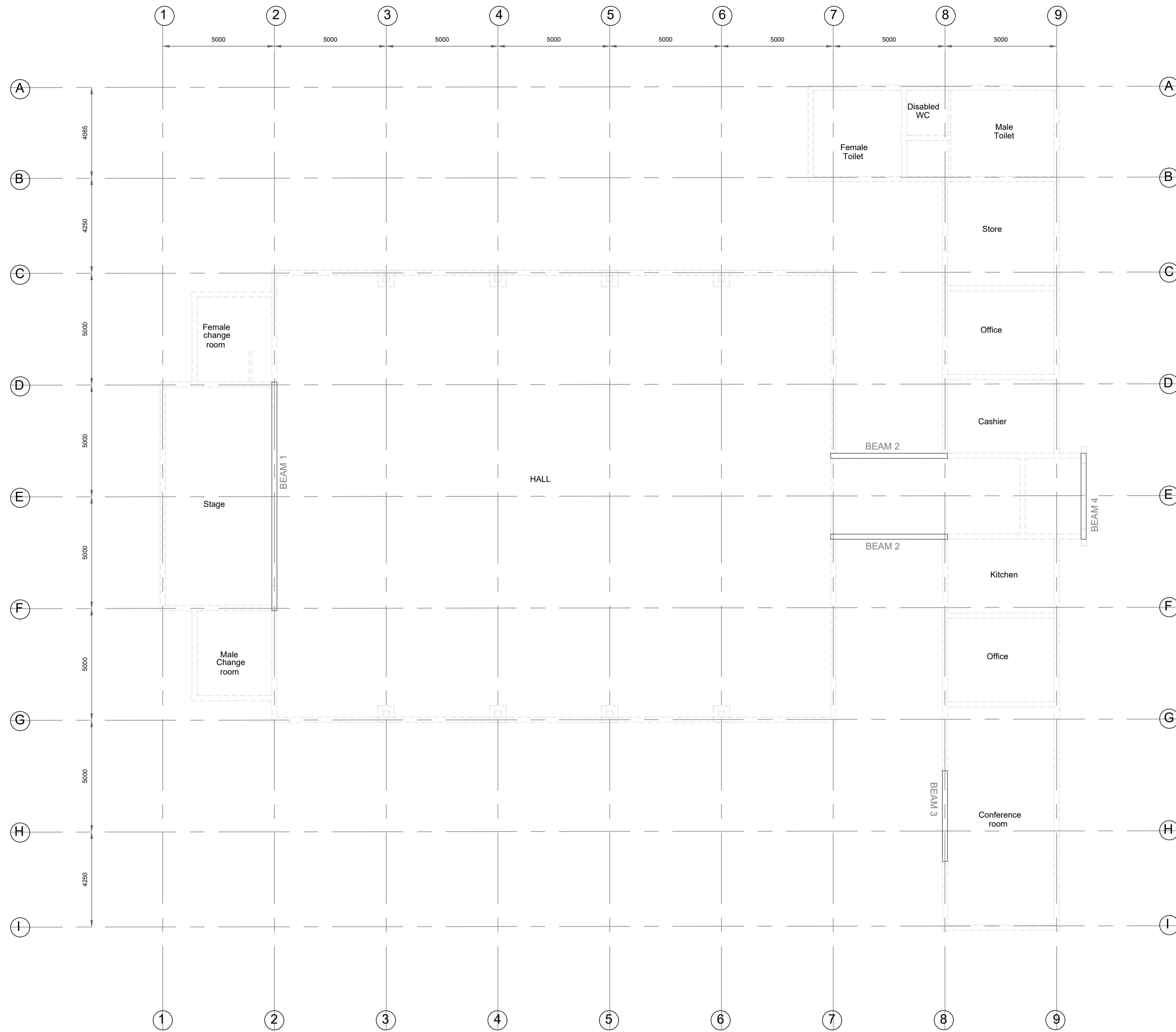
TYPICAL FOUNDATION SECTION
SCALE 1:20



BEAM LAYOUT
SCALE 1 : 100



SCALE 1:100

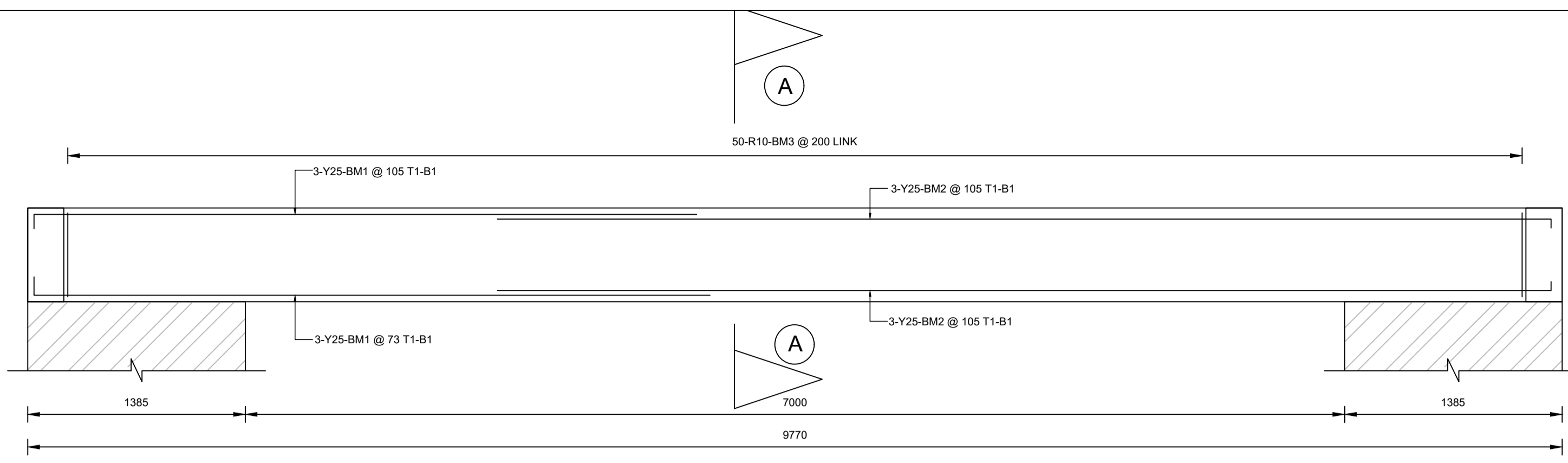
Blouberg Municipality				Oltatech Consulting				PROJECT APPR. DATE BY SIGNATURE				SCALE		PROJECT TITLE:	
<p>Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100</p>				<p>Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699</p>				DESIGNED SEPT 2022 LM				DO NOT SCALE		Avon Multi-Purpose Centre	
								CHECKED SEPT 2022 LR				DRAWN SEPT 2022 WK				DRAWING DESCRIPTION: FOUNDATION LAYOUT
DRAWING STATUS:								PROJECT MNG.				PROJECT No. DRG SIZE		DRAWING No. AVON-STR-005	
0 3/09/2022 CHK APP								APPROVED				A1		Revision No. 0	
REV DATE CHK APP								CLIENT							



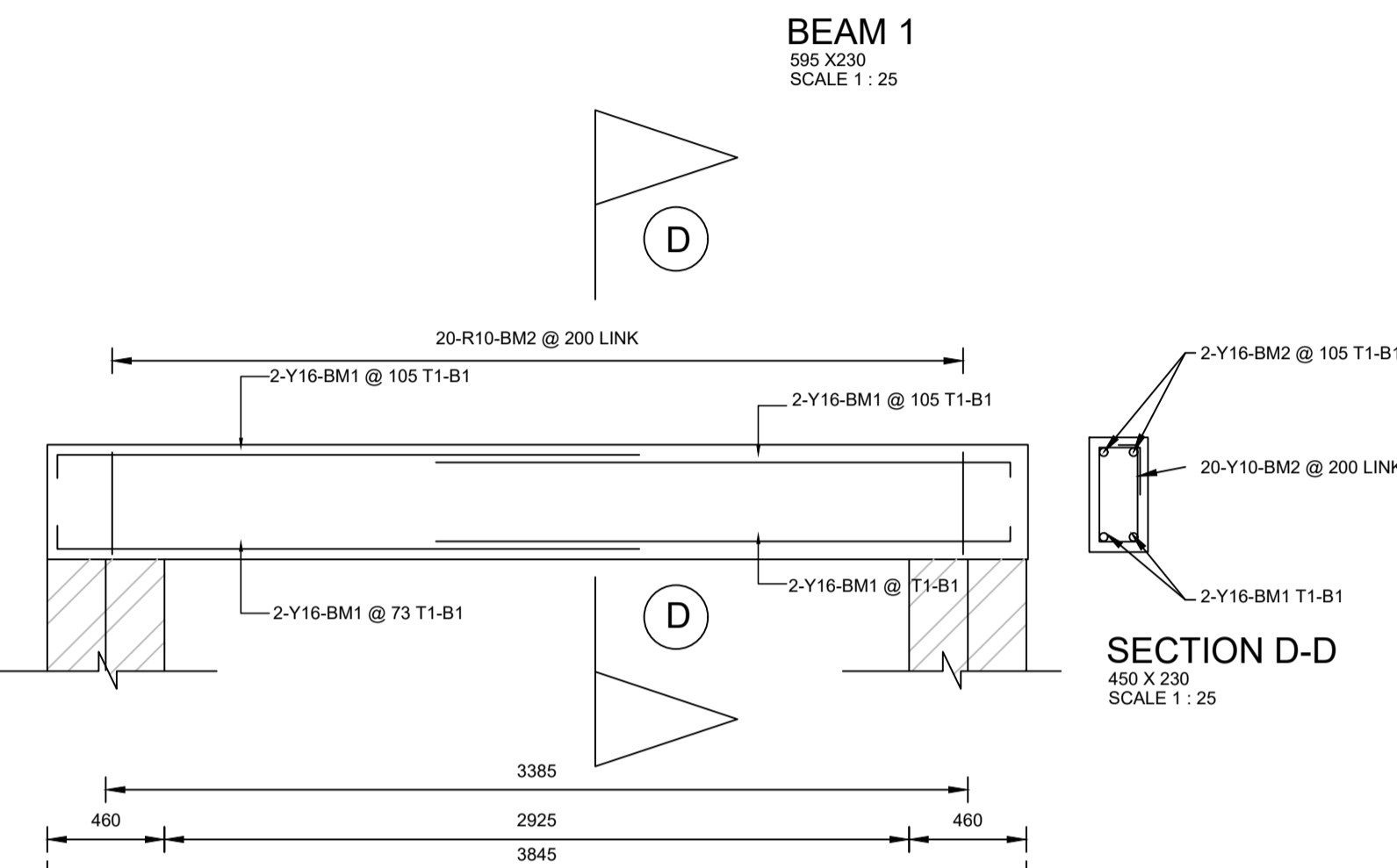
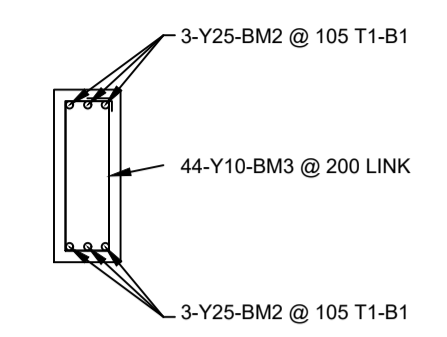
BEAM LAYOUT
SCALE 1:100

SCALE 1:100

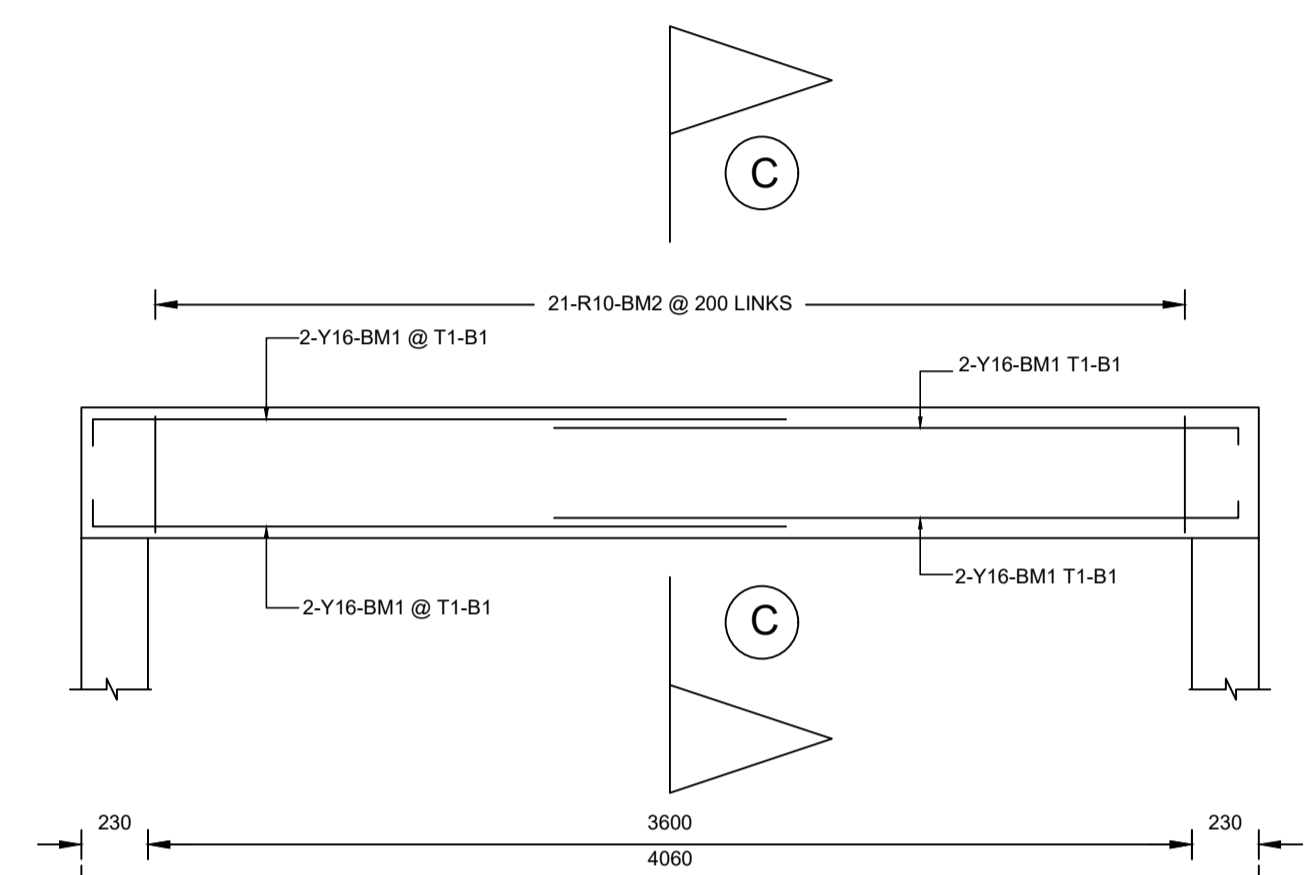
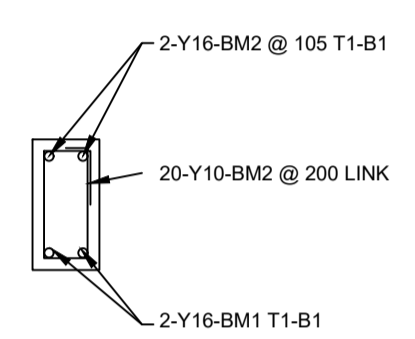
				 Blouberg Municipality Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100		1650 Oltatech Consulting  Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699		<table border="1"> <tr> <td>PROJECT APPR.</td> <td>DATE</td> <td>BY</td> <td>SIGNATURE</td> </tr> <tr> <td>DESIGNED</td> <td>SEPT 2022</td> <td>LM</td> <td></td> </tr> <tr> <td>CHECKED</td> <td>SEPT 2022</td> <td>LR</td> <td></td> </tr> <tr> <td>DRAWN</td> <td>SEPT 2022</td> <td>KN</td> <td></td> </tr> <tr> <td>PROJECT MNG.</td> <td>....</td> <td>....</td> <td></td> </tr> <tr> <td>APPROVED</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLIENT</td> <td></td> <td></td> <td></td> </tr> </table>		PROJECT APPR.	DATE	BY	SIGNATURE	DESIGNED	SEPT 2022	LM		CHECKED	SEPT 2022	LR		DRAWN	SEPT 2022	KN		PROJECT MNG.		APPROVED				CLIENT				<table border="1"> <tr> <td colspan="2">SCALE</td> <td rowspan="2">PROJECT TITLE: Avon Multi-Purpose Centre</td> </tr> <tr> <td colspan="2">DO NOT SCALE</td> </tr> <tr> <td colspan="2">DRAWING DESCRIPTION:</td> <td>BEAM LAYOUT</td> </tr> <tr> <td>PROJECT No.</td> <td>DRG SIZE</td> <td>DRAWING No.</td> <td>Revision No.</td> </tr> <tr> <td></td> <td>A1</td> <td>AVON-STR-006</td> <td>0</td> </tr> </table>		SCALE		PROJECT TITLE: Avon Multi-Purpose Centre	DO NOT SCALE		DRAWING DESCRIPTION:		BEAM LAYOUT	PROJECT No.	DRG SIZE	DRAWING No.	Revision No.		A1	AVON-STR-006	0
PROJECT APPR.	DATE	BY	SIGNATURE																																																				
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PROJECT No.	DRG SIZE	DRAWING No.	Revision No.																																																				
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0	3/09/2022	CHK	APP																																																				
REV	DATE	CHK	APP																																																				



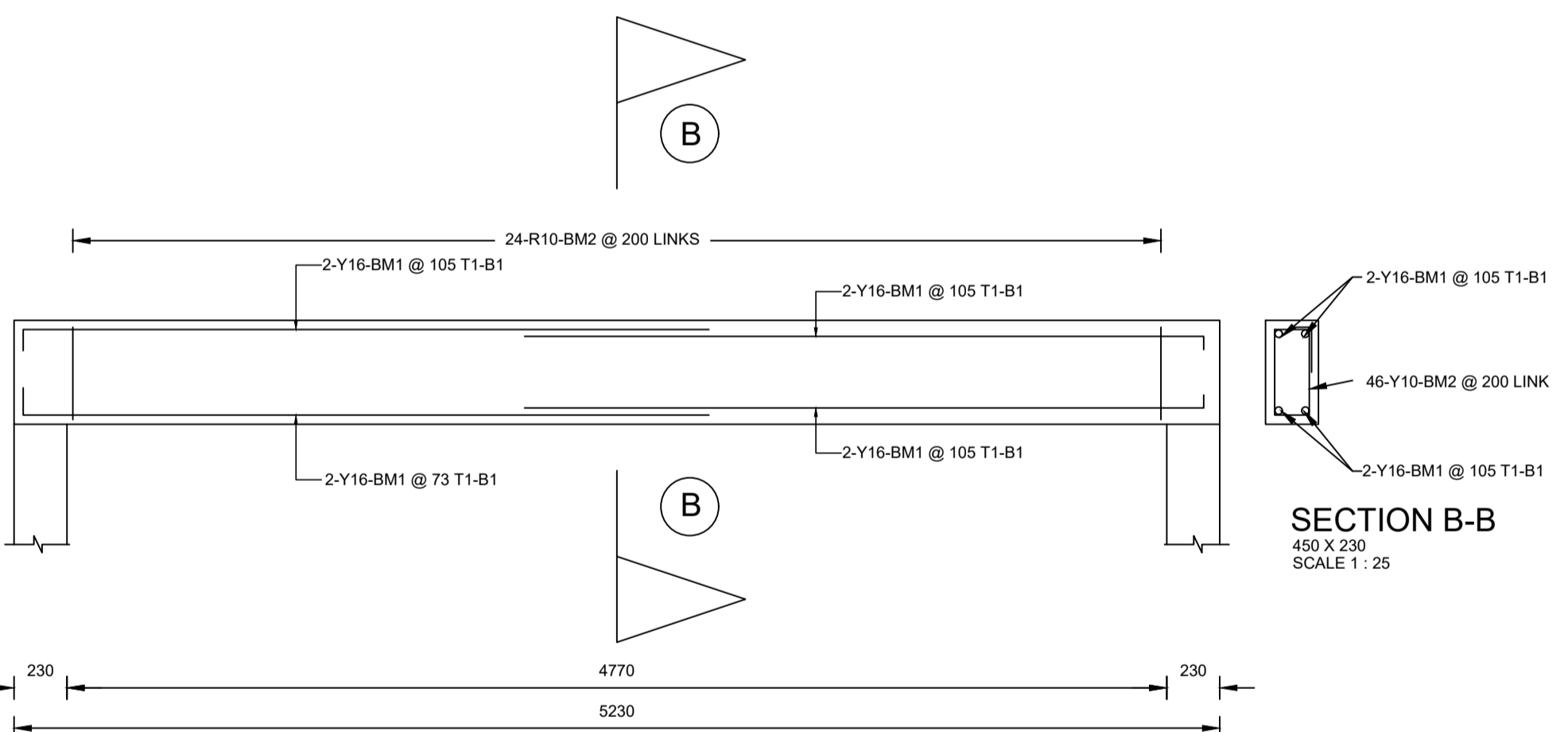
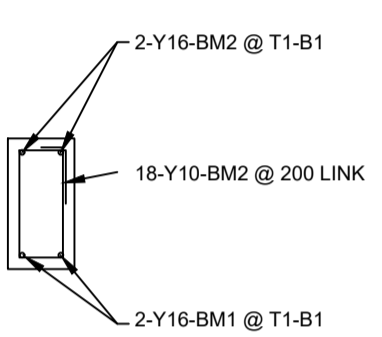
SECTION A-A
595 X 230
SCALE 1 : 25



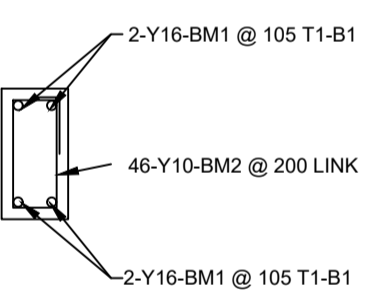
SECTION D-D
450 X 230
SCALE 1 : 25



SECTION C-C
450 X 230
SCALE 1 : 25



SECTION B-B
450 X 230
SCALE 1 : 25



Shape codes to S.A.B.S. 82: 1976 Table 5 (As amended 1978, 1984 and 1986)			
Preferred shapes			
20	39	52	72
32	41	65	73
33	42	53	74
34	43	54	75
35	44	55	81
36	45	56	83
37	48	60	85
38	49	62	86
51	65		

DIMENSIONS ARE GIVEN IN mm AND m.
DIMENSIONS OF BARS ARE OVERALL
OUTSIDE DIMENSIONS.

UNDER CERTAIN CIRCUMSTANCES WHERE HIGH YIELD STRESSES MIGHT BE INDUCED, THE STANDARD RADIUS (i.e. 2d FOR MILD STEEL AND 3d FOR HIGH YIELD STEEL) MAY BE INCREASED TO 7.5d BUT THIS SHALL NOT APPLY TO END ANCHORAGES DENOTED BY h OR n. THIS CHANGE SHOULD BE INDICATED BY ADDING THE LETTER S AFTER THE SHAPE CODE NUMBER.

FOR WELDED MESH FABRIC, DIMENSIONS A & B DEFINE THE NET OVERALL AREA OF MESH. NO ALLOWANCE HAS BEEN MADE FOR LAPS.

- NOTES**
- ALTHOUGH THE BENDING SCHEDULES WERE PREPARED WITH CARE, MISTAKES MAY HAVE BEEN MADE THEREFORE, BEFORE ORDERING AND BEFORE CUTTING AND BENDING OF REINFORCEMENT COMMENCES THE CONTRACTOR MUST CHECK ALL SCHEDULES TO ENSURE CORRECTNESS OF TYPE OF REINFORCEMENT AND BENDING DIMENSIONS.
 - IN CASE CHANGES ARE NECESSARY, THEY SHOULD CONFORM TO THE REQUIREMENTS SHOWN ON THE DRAWINGS AND BE IN ACCORDANCE WITH SABS 0144 (WITH THE LATEST AMENDMENTS).
 - ALL BENDING SHALL BE DONE IN ACCORDANCE WITH SABS 82 (WITH THE LATEST AMENDMENTS).
 - FOUR TYPES OF REINFORCING STEEL CAN BE SPECIFIED ON REINFORCEMENT DRAWINGS AND BENDING SCHEDULES (IN ACCORDANCE WITH SABS 920 AND SABS 1024 WITH THE LATEST AMENDMENTS) viz:
 - R REINFORCEMENT SHALL BE TYPE A: HOT ROLLED MILD STEEL BARS OF PLAIN ROUND CROSS-SECTION HAVING A MINIMUM YIELD STRESS OF 250 MPa FOR BARS OF DIAMETER UP TO AND INCLUDING 20 mm AND HAVING A MINIMUM YIELD STRESS OF 230 MPa FOR BARS WITH DIAMETER GREATER THAN OR EQUAL TO 25 mm.
 - Z REINFORCEMENT SHALL BE TYPE B: GRADE 1: HOT ROLLED DEFORMED MILD STEEL BARS HAVING A MINIMUM YIELD STRESS AS FOR TYPE A.
 - Y REINFORCEMENT SHALL BE TYPE C: CLASS 2: GRADE 1: HOT ROLLED DEFORMED HIGH YIELD STRESS STEEL BARS HAVING A MINIMUM YIELD STRESS OR A MINIMUM 0.25% PROOF STRESS OF 450 MPa.
 - REF. ALL STEEL FABRIC SHALL BE IN ACCORDANCE WITH SABS 1024-1974 WITH THE LATEST AMENDMENTS HAVING A MINIMUM 0.2% PROOF STRESS OF 480 MPa.
- FOR EXAMPLE: R20 DENOTES A 20 mm DIAMETER PLAIN ROUND BAR OF MILD STEEL.
Z12 DENOTES A 12 mm DIAMETER DEFORMED BAR OF MILD STEEL.
Y25 DENOTES A 25 mm DIAMETER DEFORMED BAR OF HIGH TENSILE STEEL.
REF. 655 DENOTES FABRIC REFERENCE 655 (MESH).

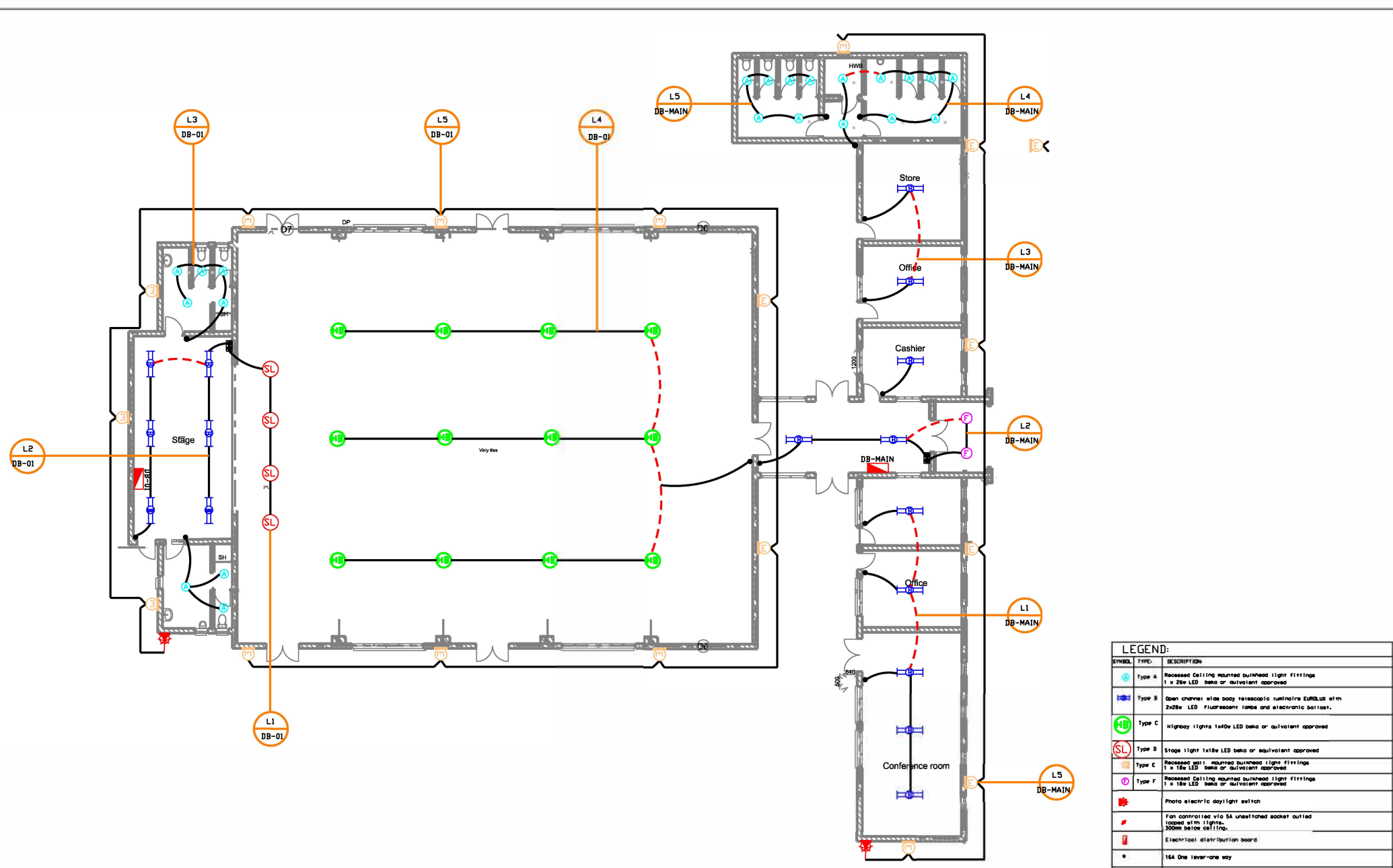
BENDING SCHEDULE OF BEAM 1										
MEMBER	NO.	TYPE & MARK	CUT LENGTH	TOTAL NO.	SHAPE CODE	BENDING				MASS (KG)
						A	B	C	D	
BEAM 1	3	Y25-BM1	4700	6	34	4200	500			109
	3	Y25-BM2	6440	6	34	5940	500			149
	44	Y10-BM3	1570	44	60	520	150			43
SUB TOTAL: R: 0kg ; Y: 301kg										

BENDING SCHEDULE OF BEAM 2										
MEMBER	NO.	TYPE & MARK	CUT LENGTH	TOTAL NO.	SHAPE CODE	BENDING				MASS (KG)
						A	B	C	D	
BEAM 2	2	Y16-BM1	3300	8	34	2950	350			42
	24	Y10-BM3	1570	24	60	520	150			23
	SUB TOTAL: R: 0kg ; Y: 65kg									

BENDING SCHEDULE OF BEAM 3										
MEMBER	NO.	TYPE & MARK	CUT LENGTH	TOTAL NO.	SHAPE CODE	BENDING				MASS (KG)
						A	B	C	D	
BEAM 3	2	Y16-BM1	2710	8	34	2360	350			34
	20	Y10-BM3	1570	20	60	520	150			19
SUB TOTAL: R: 0kg ; Y: 53kg										

BENDING SCHEDULE OF BEAM 4										
MEMBER	NO.	TYPE & MARK	CUT LENGTH	TOTAL NO.	SHAPE CODE	BENDING				MASS (KG)
						A	B	C	D	
BEAM 4	2	Y16-BM1	2640	8	34	2290	350			33
	18	Y10-BM3	1570	18	60	520	150			17
SUB TOTAL: R: 0kg ; Y: 50kg										

		Blouberg Municipality		Oltatech Consulting		Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699		PROJECT APPR. DATE BY SIGNATURE	SCALE	PROJECT TITLE:	
									DO NOT SCALE	Avon Multi-Purpose Centre	
								CHECKED DATE LR		DRAWING DESCRIPTION: BEAM DETAIL AND SECTION	
								DRAWN DATE WK		PROJECT No. DRG SIZE DRAWING No.	
								PROJECT MNG.		AVON-STR-007	
								APPROVED		Revision No.	
								CLIENT		0	
DRAWING STATUS: FOR TENDER											



LEGEND:		
SYMBOL	TYPE	DESCRIPTION
	Type A	Recessed Ceiling mounted bulkhead light fittings 1 x 26w LED bema or equivalent approved
	Type B	Open channel wide body telescopic luminaire EURLUX with 2x26w LED fluorescent lamps and electronic ballast.
	Type C	Highbay lights 1x40w LED bema or equivalent approved
	Type D	Stage light 1x18w LED bema or equivalent approved
	Type E	Recessed wall mounted bulkhead light fittings 1 x 18w LED bema or equivalent approved
	Type F	Recessed Ceiling mounted bulkhead light fittings 1 x 18w LED bema or equivalent approved
		Photo electric daylight switch
		Fan controlled via SA unswitched socket outlet lamps w/ m lights. 300mm below ceiling.
		Electrical distribution board
		16A One lever-one way
		16A Two lever-one way

REV	DATE	CHK	APP
0	3/09/2022	CHK	APP

**DRAWING STATUS:
FOR TENDER**



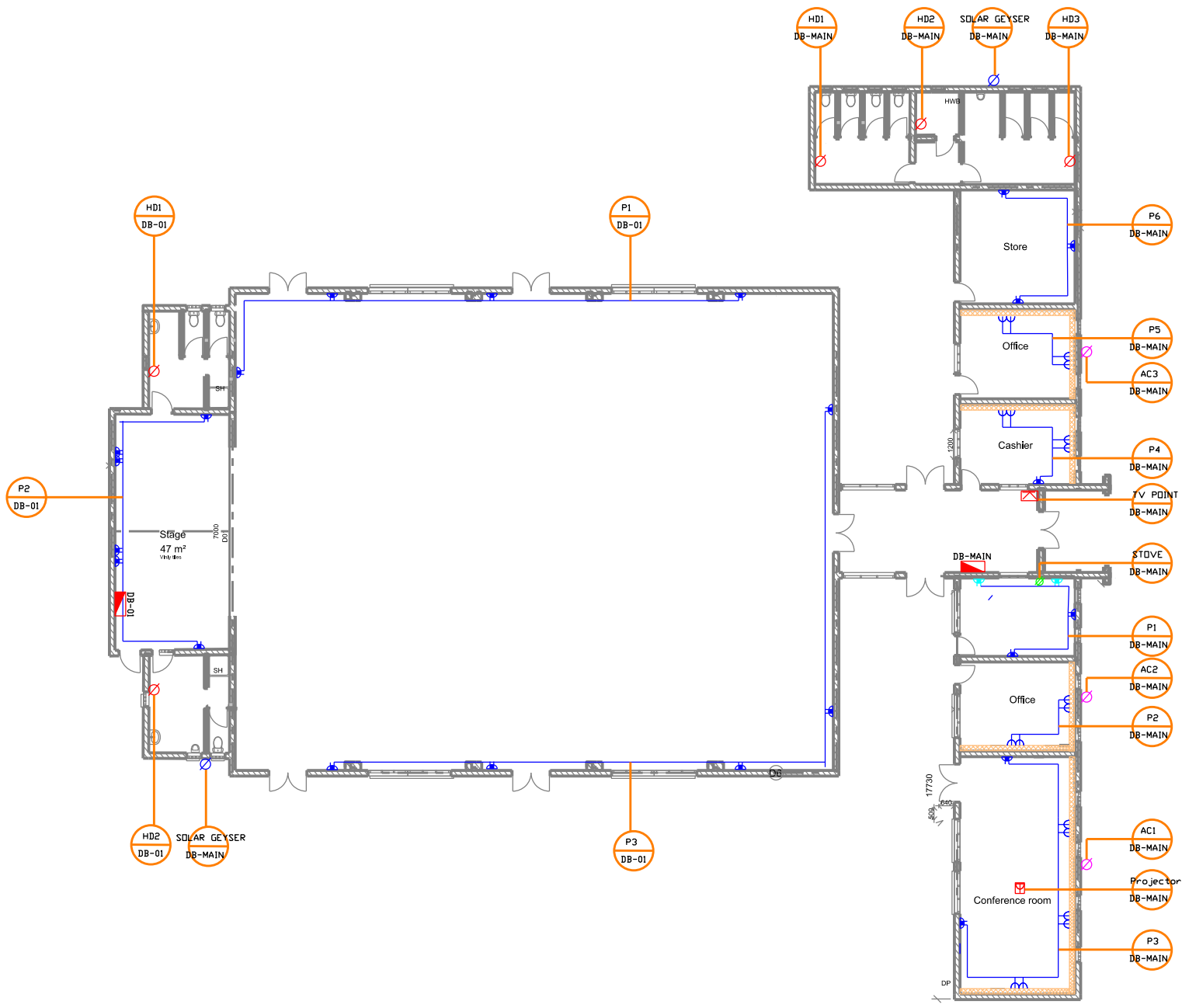
Blouberg Municipality
2nd Building Dendron Road
P.O. Box 1058
Stellenbosch
7780
Tel: 021 885 7100



Oltatech Consulting (Pty) Ltd
8 Rietbos Building
11 Pierre Street, Bendor,
Polokwane, 0699

PROJECT APPR.	DATE	BY	SIGNATURE
DESIGNED	SEPT 2022	LM	
CHECKED	SEPT 2022	RT	
DRAWN	SEPT 2022	RT	
PROJECT MNG.			
APPROVED			
CLIENT			

SCALE	PROJECT TITLE
DO NOT SCALE	Avon Multi-Purpose Centre
DRAWING DESCRIPTION:	ELECTRICAL LIGHT LAYOUT
PROJECT No.	BM/AVON/ELCT/01
DRG SIZE	A1
DRAWING No.	
Revision No.	1



LEGEND:	
SYMBOL	DESCRIPTION:
	16A 3 pin D.S.O (0.3m Affl) (Normal supply)
	16A 3 pin D.S.O (1.2m Affl) (Normal supply)
	15A 3 pin S.S.O (On Power Skirting) (Normal supply)
	Ceiling Mounted Projector Point
	2 Compartments Power Skirting
	TV POINT
	Two pole Isolator for stove 30A (1.2m Affl)
	Single phase Isolator for Handrier
	Single phase Isolator for Airccondition
	Single phase Isolator for Solar Geyser
	Electrical distribution board

0	3/09/2022	CHK	APP	DRAWING STATUS: FOR TENDER

Blouberg Municipality



Blouberg Municipality
2nd Building Dendron Road
P.O. Box 1593
Sembaburwa
0780
Tel: 015 505 7100

Oltatech Consulting JV

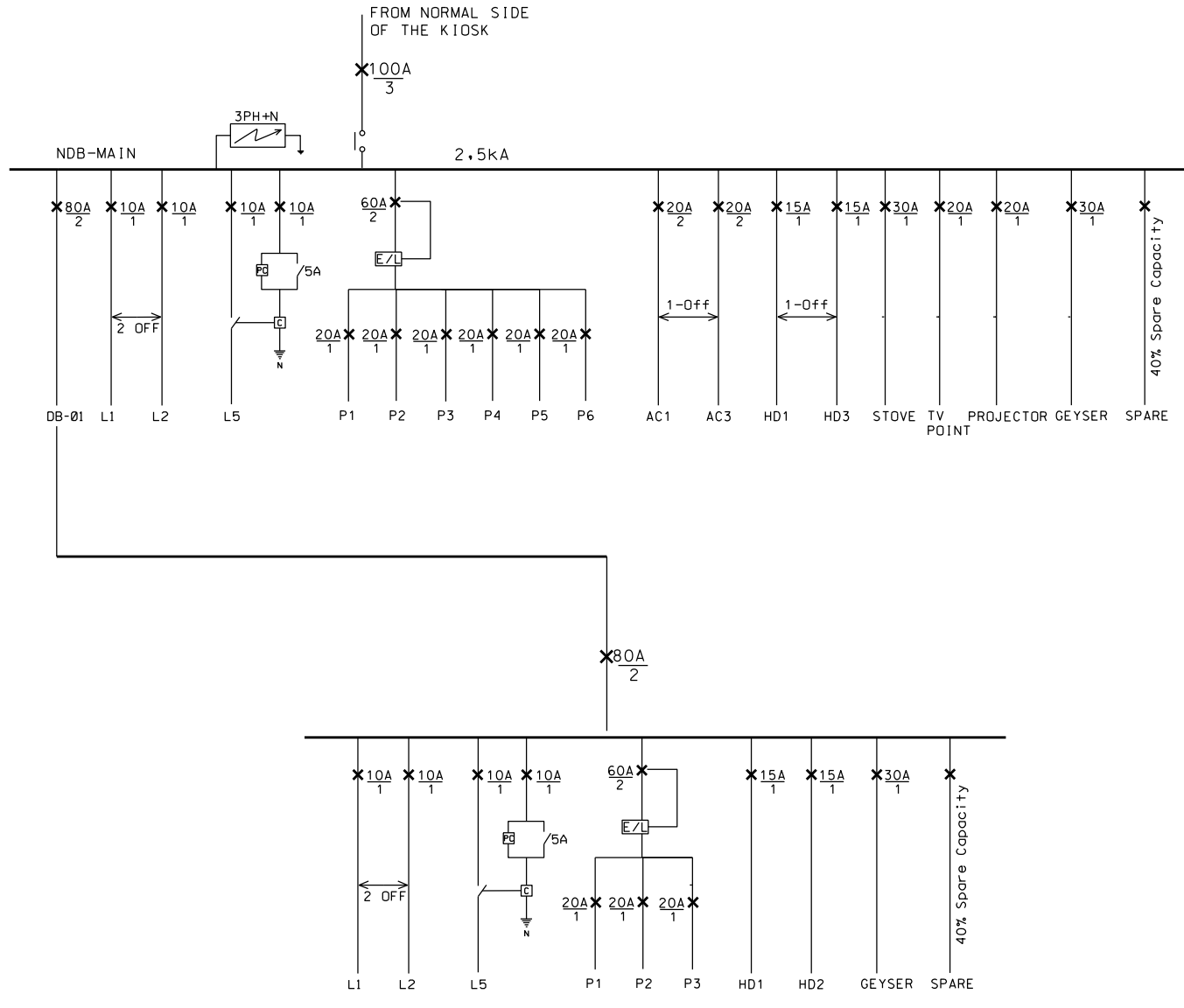


OLTATECH CONSULTING
Professional Engineering Solutions

Oltatech Consulting (Pty) Ltd
6 Rentoo Building
11 Pterre Street, Bendor,
Polokwane, 0699


PROJECT APPR:	DATE	BY	SIGNATURE
DESIGNED	SEPT 2022	LM	
CHECKED	SEPT 2022	RT	
DRAWN	SEPT 2022	RT	
PROJECT MNG.			
APPROVED			
CLIENT			

SCALE	PROJECT TITLE:
DO NOT SCALE	Avon Multi-Purpose Centre
DRAWING DESCRIPTION:	ELECTRICAL POINT POINT
PROJECT No	DRAWING No:
DRG SIZE	BM/AVON/ELCT/02
A1	Revision No:
	0



0	3/09/2022	CHK	APP	DRAWING STATUS: FOR TENDER
REV	DATE	CHK	APP	

Blouberg Municipality



Blouberg Municipality
2nd Building Dendron Road
P.O Box 1593
Senwabarwana
0790
Tel: 015 565 7100

Oltatech Consulting JV



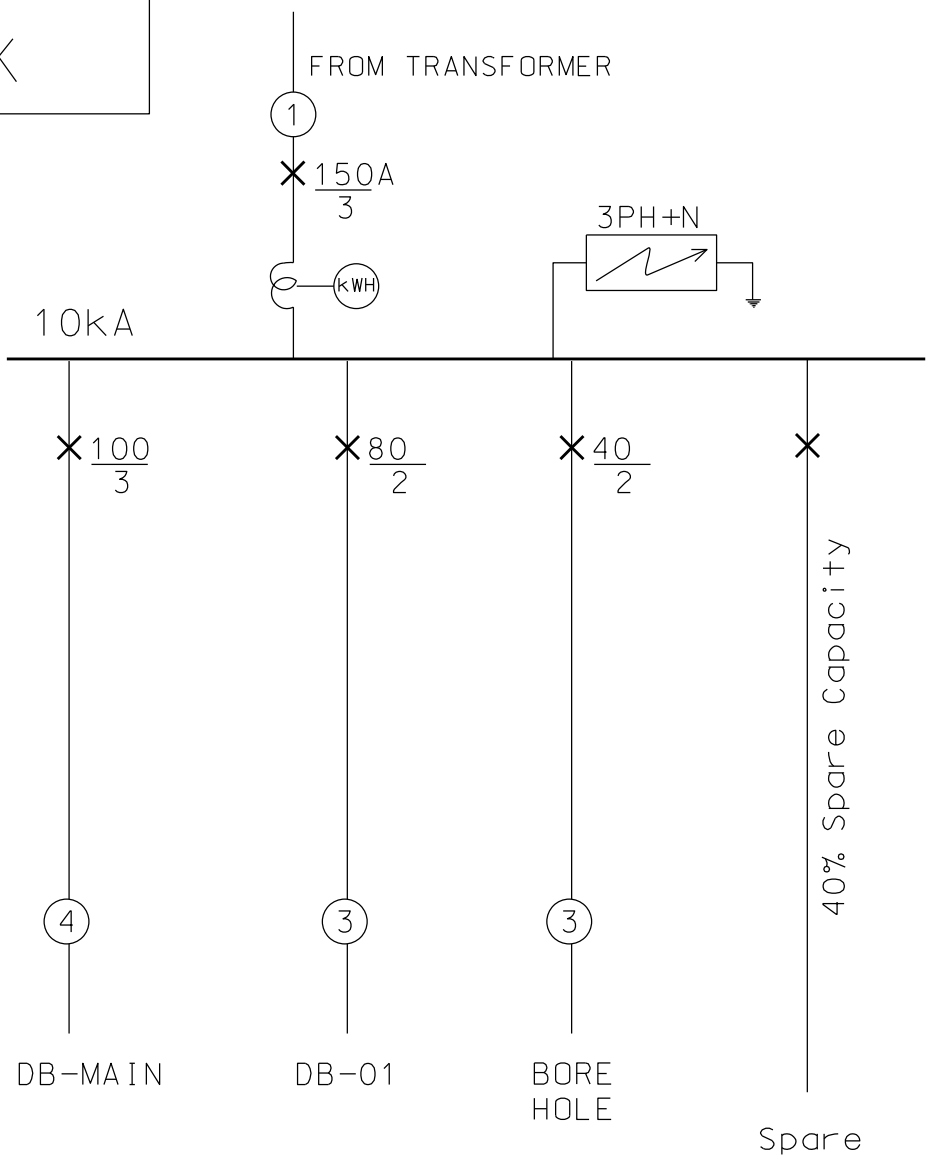
OLTATECH CONSULTING
REG. 2012 / 151921 / 87 VAT: 4590291482
Professional Engineering Solutions

Oltatech Consulting (Pty) Ltd
16 Rentco Building
11 Flame Street, Bendor,
Potlouwane, 0699

PROJECT APPR.	DATE	BY	SIGNATURE
DESIGNED	SEPT 2022	LM	
CHECKED	SEPT 2022	RT	
DRAWN	SEPT 2022	RT	
PROJECT MNG.	---	---	
APPROVED			
CLIENT			

SCALE	PROJECT TITLE:		
DO NOT SCALE	Avon Multi-Purpose Centre		
DRAWING DESCRIPTION:	SCHEMATIC DRAWING LAYOUT		
PROJECT No.	DWG SIZE	DRAWING No.	Revision No.
Δ1		BM/AVON/ELCT/04	0

KIOSK



0	3/09/2022	CHK	APP
REV	DATE	CHK	APP

**DRAWING STATUS:
FOR TENDER**



Blouberg Municipality
2nd Building Dendron Road
P.O. Box 1593
Sembabane
0790
Tel: 015 505 7100



Olatech Consulting (Pty) Ltd
6 Renteso Building
11 Plemo Street, Bendor.
Polokwane, 0699

PROJECT APPR.	DATE	BY	SIGNATURE
DESIGNED	SEPT 2022	LM	
CHECKED	SEPT 2022	RT	
DRAWN	SEPT 2022	RT	
PROJECT MNG.	....	....
APPROVED			
CLIENT			

SCALE		PROJECT TITLE:
DO NOT SCALE		Avon Multi-Purpose Centre
DRAWING DESCRIPTION: KIOSK		
PROJECT No.	DRG SIZE	DRAWING No.
	A1	BM/AVON/ELCT/05
Revision No.		0



LEGEND:	
SYMBOL	DESCRIPTION:
	Telephone Point on power skirting
	Telephone and Data Panel
	Telephone Main Hole
	50mm pvc sleeves
	15A 3 pin S.S.O (On Power Skirting)

REV	DATE	CHK	APP
0	3/09/2022	CHK	APP

**DRAWING STATUS:
FOR TENDER**



Blouberg Municipality
2nd Building Dendron Road
P.O Box 1293
Somersetburg
0700
Tel: 015 505 7100



Oltatech Consulting (Pty) Ltd
6 Rentoo Building
11 Pierre Street, Bendor.
Potokwane, 0699

PROJECT APPR.	DATE	BY	SIGNATURE
DESIGNED	SEPT 2022	LM	
CHECKED	SEPT 2022	RT	
DRAWN	SEPT 2022	RT	
PROJECT MNG.	---	---	
APPROVED			
CLIENT			

SCALE	PROJECT TITLE:
DO NOT SCALE	Avon Multi-Purpose Centre
DRAWING DESCRIPTION:	ELECTRICAL TEL AND DATA
PROJECT NO:	DRAWING NO:
DRG SIZE:	BM/AVON/ELCT/03
REVISION NO:	0

INFORMATION BOARD




BLOUBERG LOCAL MUNICIPALITY

PROJECT DESCRIPTION
CONSTRUCTION OF AVON MULTI PURPOSE CENTRE
PROJECT NO: BM04/22/23

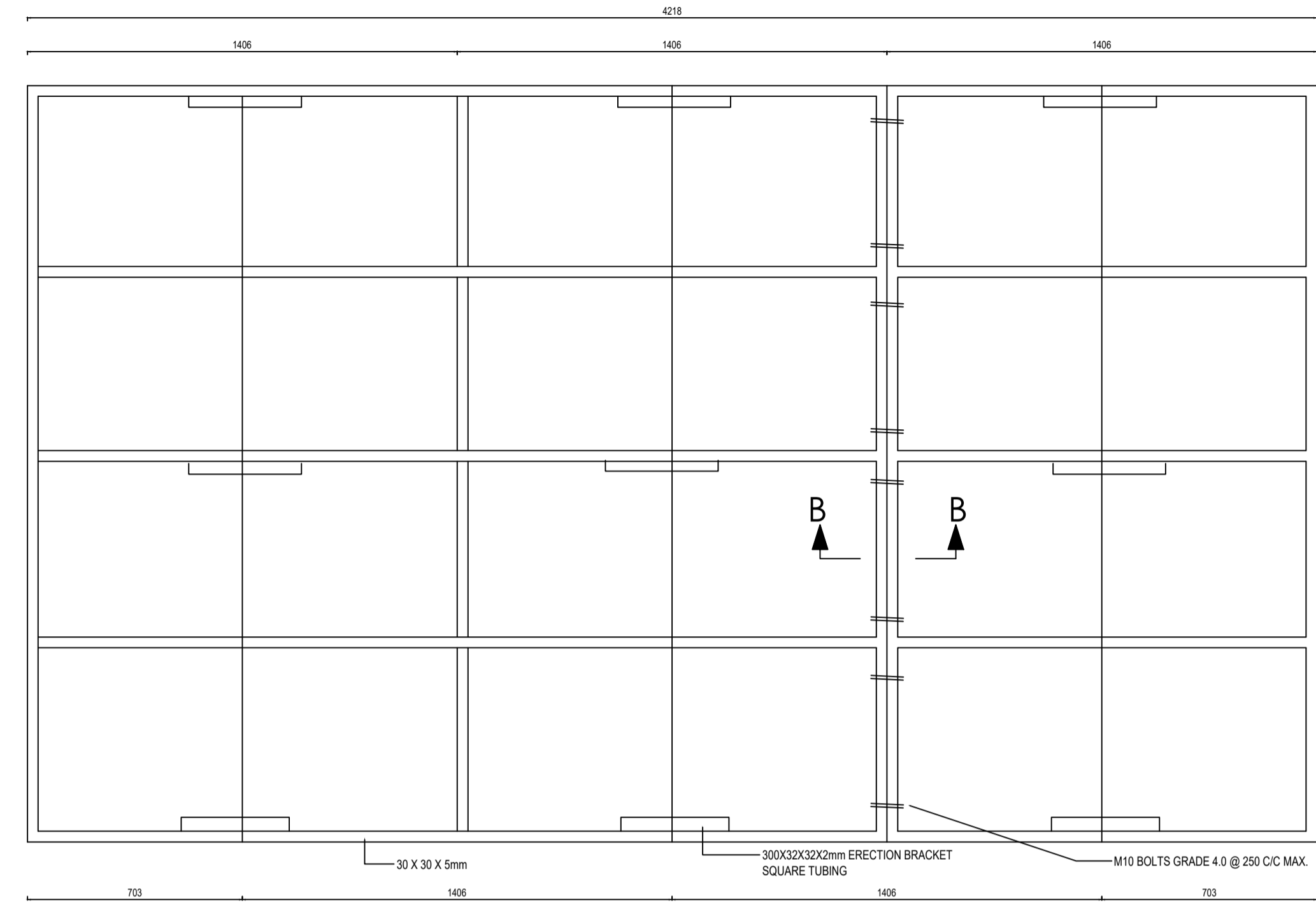


OLTATECH CONSULTING ENGINEERS:
TEL. (015) 291 0775

CONTRACTORS INFORMATION AS PER APPOINTMENT

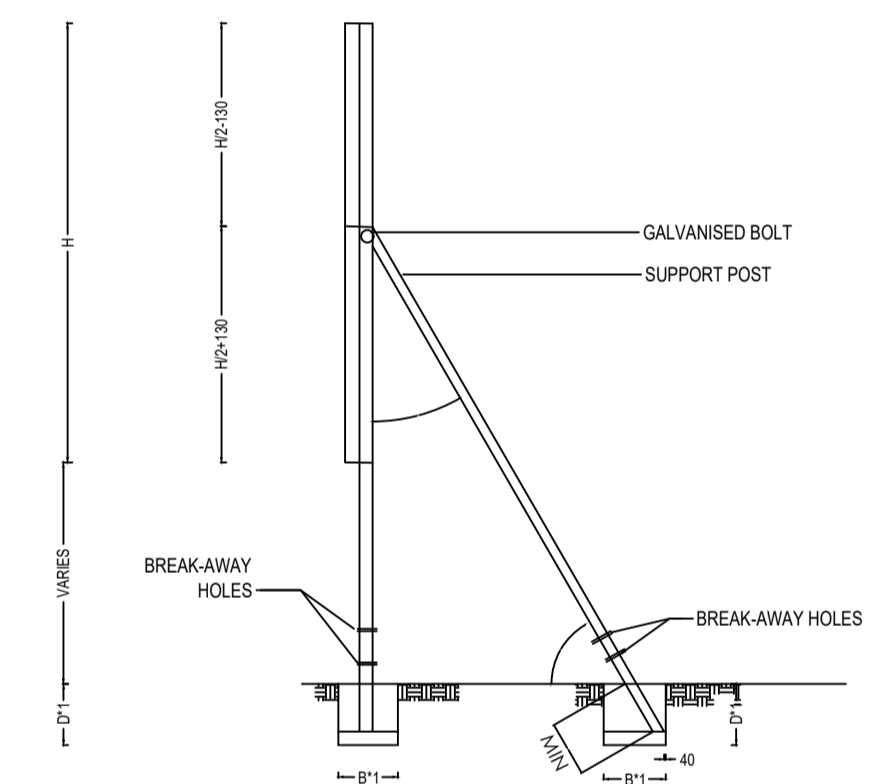
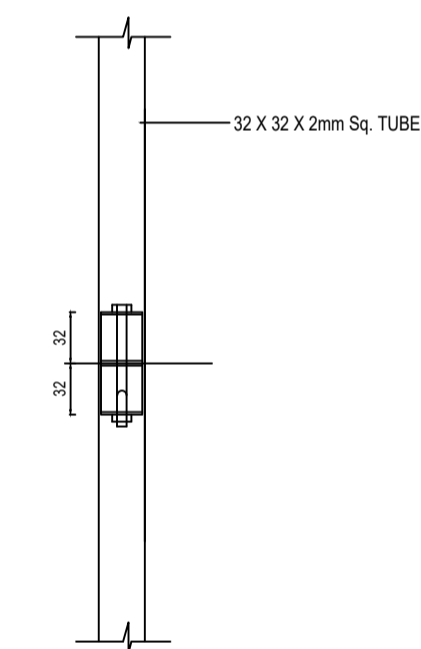
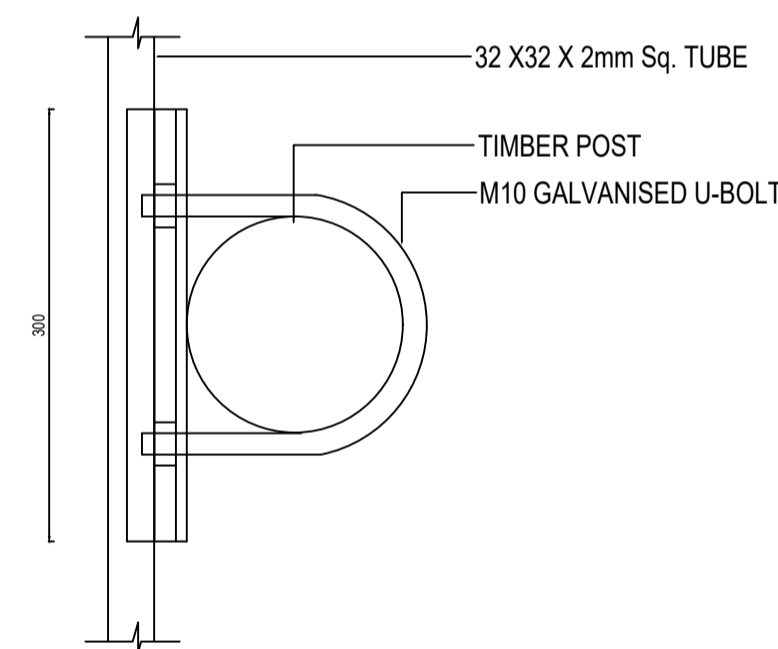
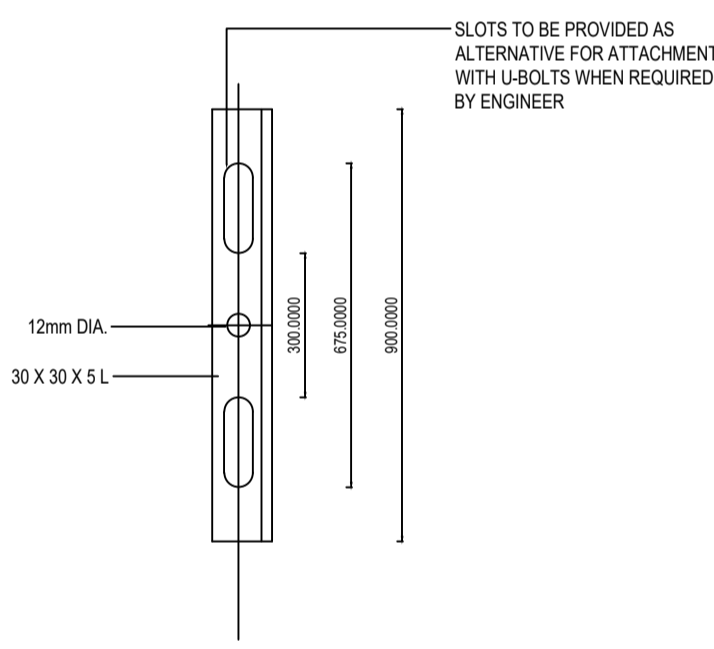
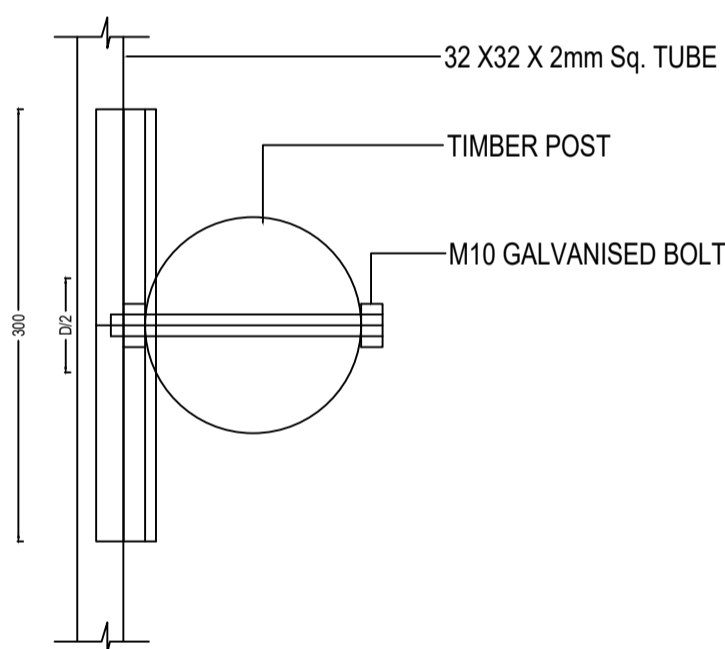
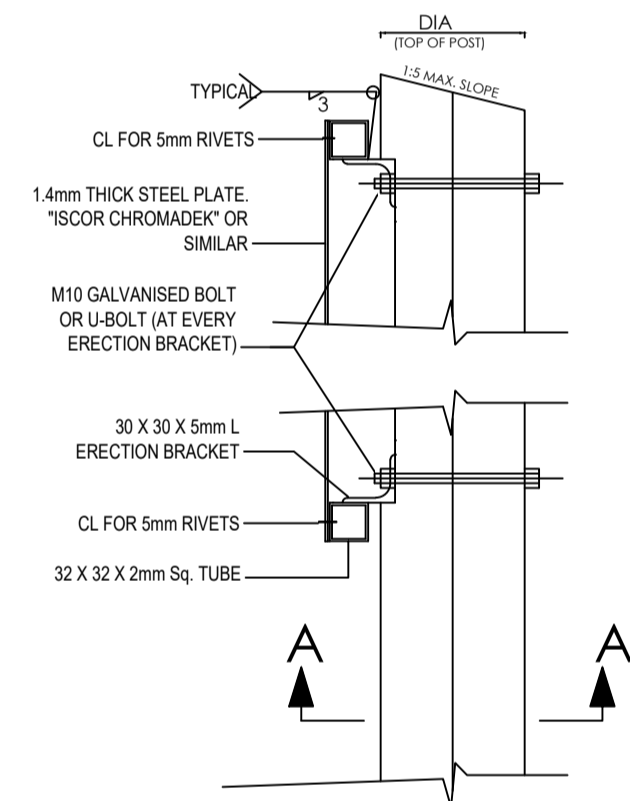


EXPANDED PUBLIC WORKS PROGRAMME
CONTRIBUTING TO A NATION AT WORK



FRONT ELEVATION
1:10

REAR SIDE BRACING
1:10



SIDE ELEVATION
NTS

SECTION A-A
NTS

ELEVATION OF
ERECTION BRACKET
NTS

SECTION A-A
(WITH U-BOLT)
NTS

SECTION B-B (AT JOINT OF SIGN)
NTS

SIDE ELEVATION OF ROAD SIGN
NTS

TABLE 1: DETERMINATION OF POSTS AND FOOTINGS				
ERECTION DETAILS				
TYPE OF POST	UPRIGHT STAY D	B(DIA)		
TIMBER POST AND STAY	100mm	80mm	800mm	850mm
TIMBER POST	180mm	-	1000mm	1450mm
HOLLOW SECTION STEEL POST	100mm x 4mm	-	1000mm	1450mm

NOTES:

EMBLEM:
1. ALL EMBLEMS TO BE DISPLAYED IN FULL COLOUR ON A SEMI MATT BACKGROUND.

LETTERS AND NUMBERS:
2. DESCRIPTION: MATT-BLACK, SERIES DIN 8 LETTERS AND NUMBERS ON A SEMI MATT SMOKE-GREY BACKGROUND.

BORDERS:
3. BORDER: GREEN NON REFLECTORIZED.

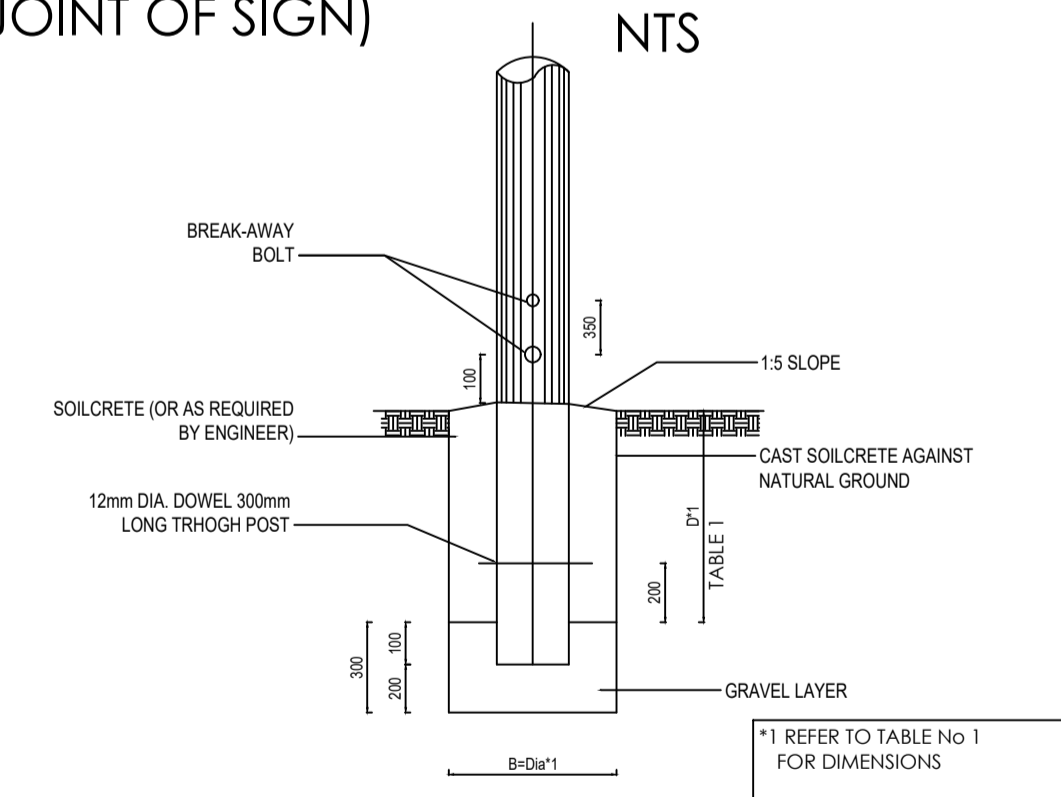
QUANTITY:
4. TWO SIGN BOARDS, SHALL BE ERECTED AT POSITIONS AS DETERMINED BY THE ENGINEER.

DESCRIPTION:
5. DESCRIPTION OF WORK (NUMBER OF KILOMETRES AND TYPE OF WORK, eg. "13.5 km RECONSTRUCTION OF ROAD 2654," DESCRIPTION START CENTERED ON THE LEFT-HAND SIDE AND THE FIRST 105mm-DIMENSION BELOW "NORTHERN"



6. SAFCCE EBLEM ONLY IF CONTRACTOR IS A MEMBER OTHERWISE BLANK.

7. NEW SAACE LOGO TO BE OBTAINED FROM SAACE, JOHANNESBURG.

DETERMINATION OF BREAK-AWAY HOLES	
POLE DIA (mm)	HOLE DIA (mm)
< 140	NONE
141 - 170	40
171 - 200	50
201 - 225	65

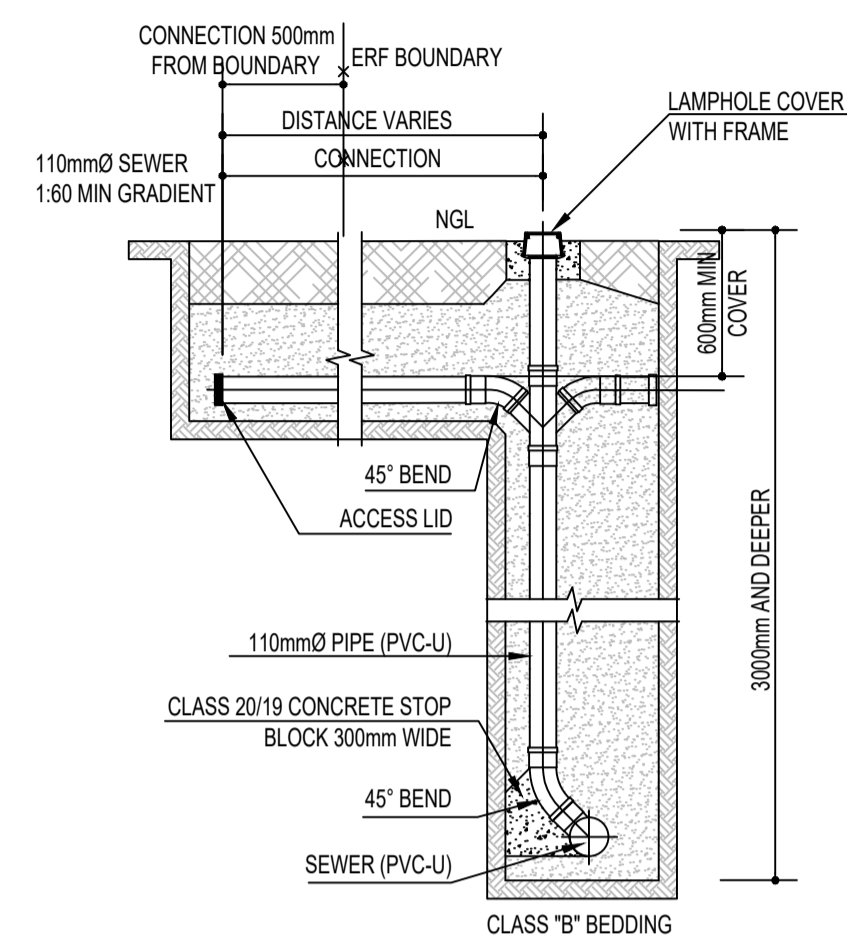


FOUNDATION DETAIL
NTS

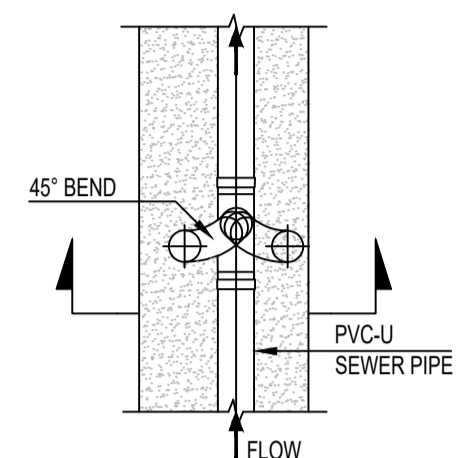
				Blouberg Municipality		Oltatech Consulting		PROJECT APPR. DATE BY SIGNATURE		SCALE		PROJECT TITLE:	
				 <p>Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100</p>		 <p>Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699</p>		DESIGNED SEPT 2022 LM		DO NOT SCALE		Avon Multi-Purpose Centre	
								CHECKED SEPT 2022 LR					
								DRAWN SEPT 2022 WK		DRAWING DESCRIPTION: SIGN BOARD			
								PROJECT MNG.					
								APPROVED				PROJECT No. DRG SIZE	
								CLIENT				DRAWING No. AVON-SDD-001	
REV	DATE	CHK	APP	DRAWING STATUS: FOR TENDER								Revision No. 0	

NOTES:

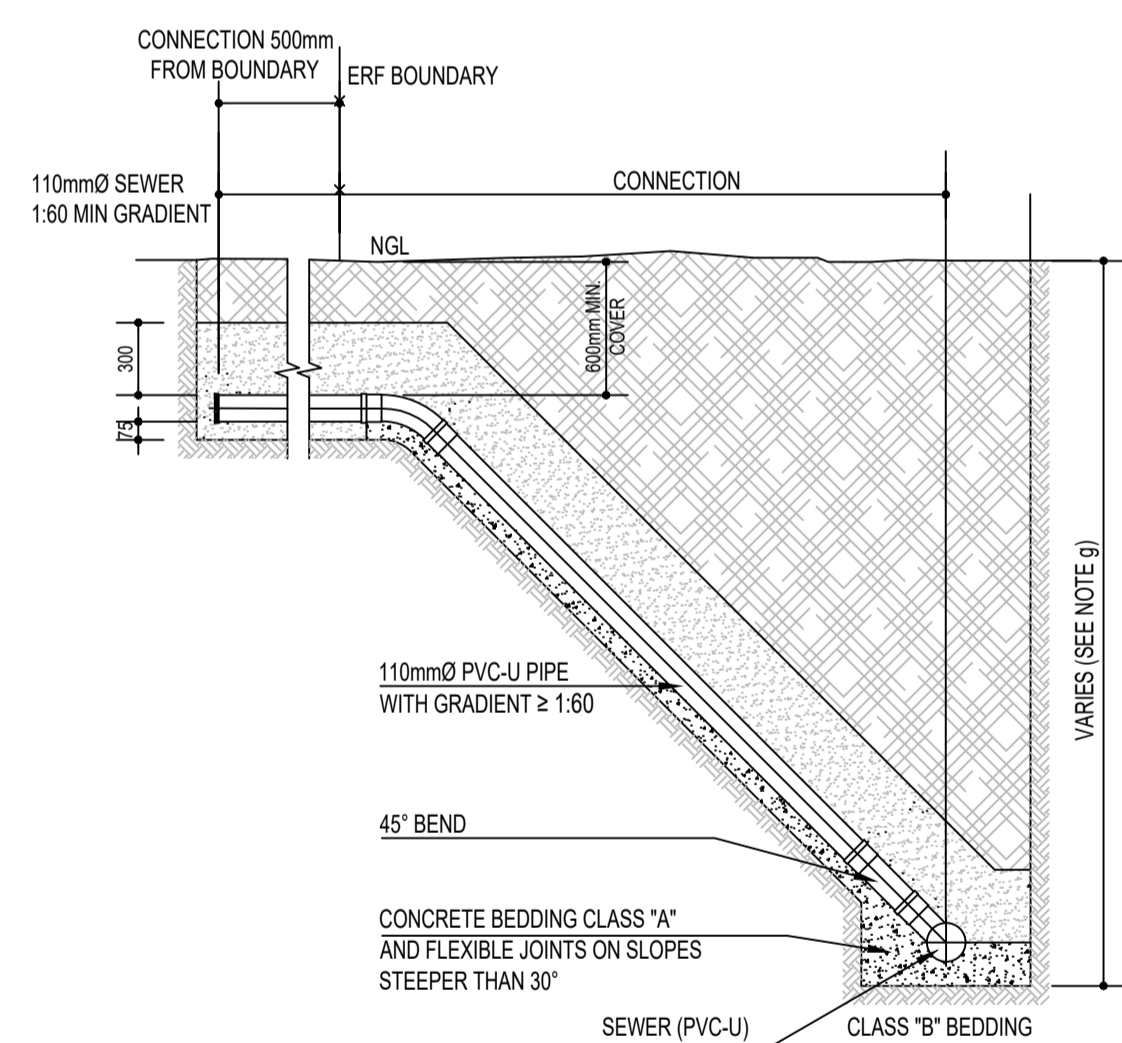
- a) HOUSE CONNECTION TYPE A IS BUILT WHERE SEWER IS SHALLOWER THAN 3,0m AND IS GENERALLY USED.
- b) HOUSE CONNECTION TYPE B IS BUILT WHERE SEWER IS DEEPER THAN 3,0m.
- c) HOUSE CONNECTION TYPE C IS ONLY TO BE BUILT ON WRITTEN INSTRUCTION FROM THE ENGINEER.
- d) HOUSE CONNECTION TYPE B IS ALSO BUILT WHERE SEWER IS SITUATED UNDER CARRIAGEWAY AND DEEPER THAN 3,0m.
- e) IN CASES WHERE SEWER UNDER CARRIAGEWAY IS SHALLOWER THAN 3,0m, TYPE A OR C HOUSE CONNECTION IS TO BE BUILT.
- f) HOUSE CONNECTION TYPE D IS BUILT WHERE HOUSE CONNECTION AND MANHOLE POSITION COINCIDE.
- g) MINIMUM COVER FOR MAIN SEWER IS 1 000mm.
- h) PVC PIPES AND FITTINGS SHALL COMPLY WITH SANS1601 FOR STIFFNESS CLASS 400 PIPES.
- i) LAMPHOLE COVER AND FRAME IN ACCORDANCE WITH SANS 558.



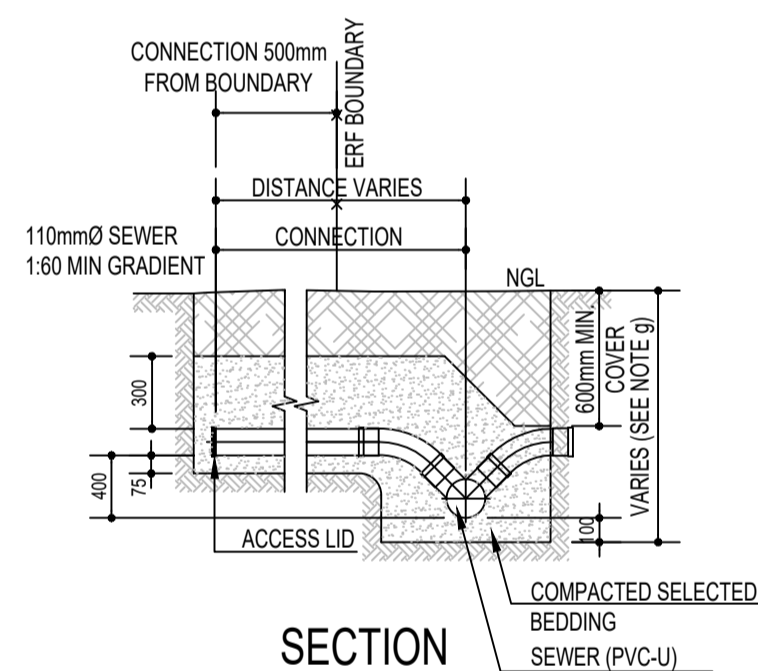
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SCALE 1:30



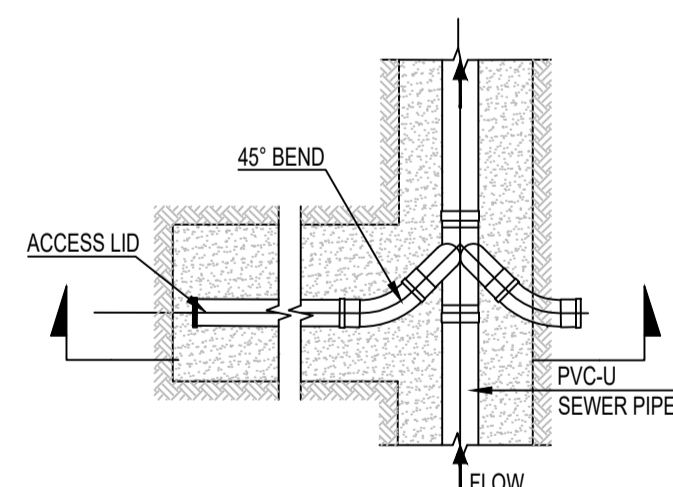
DETAIL
HOUSE CONNECTION TYPE B
SCALE 1:30



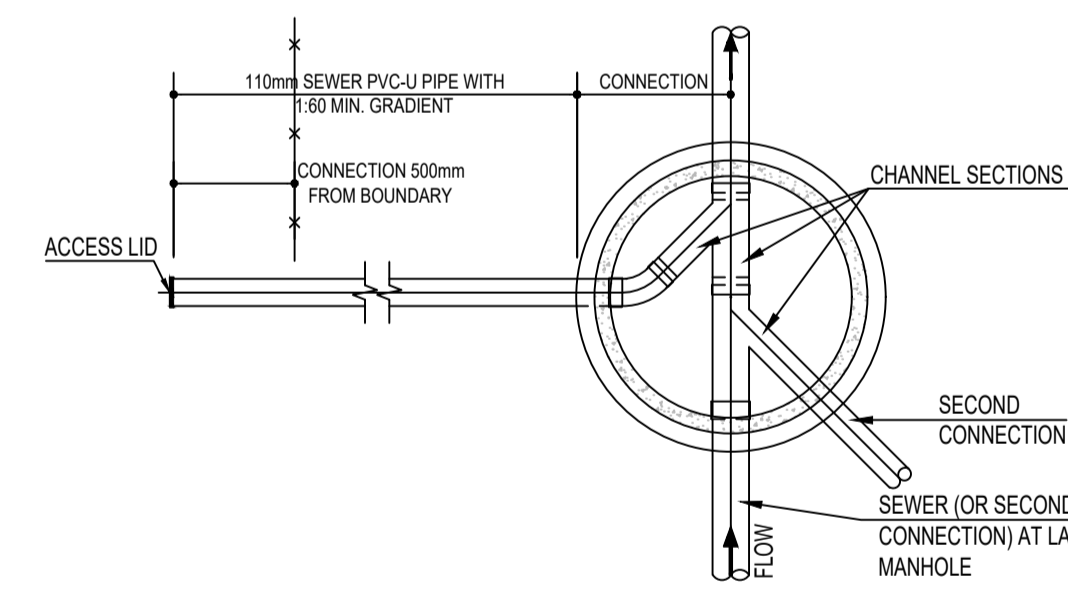
SECTION
HOUSE CONNECTION TYPE C
SCALE 1:30



SECTION
SCALE 1:30



PLAN
HOUSE CONNECTION TYPE A
SCALE 1:30

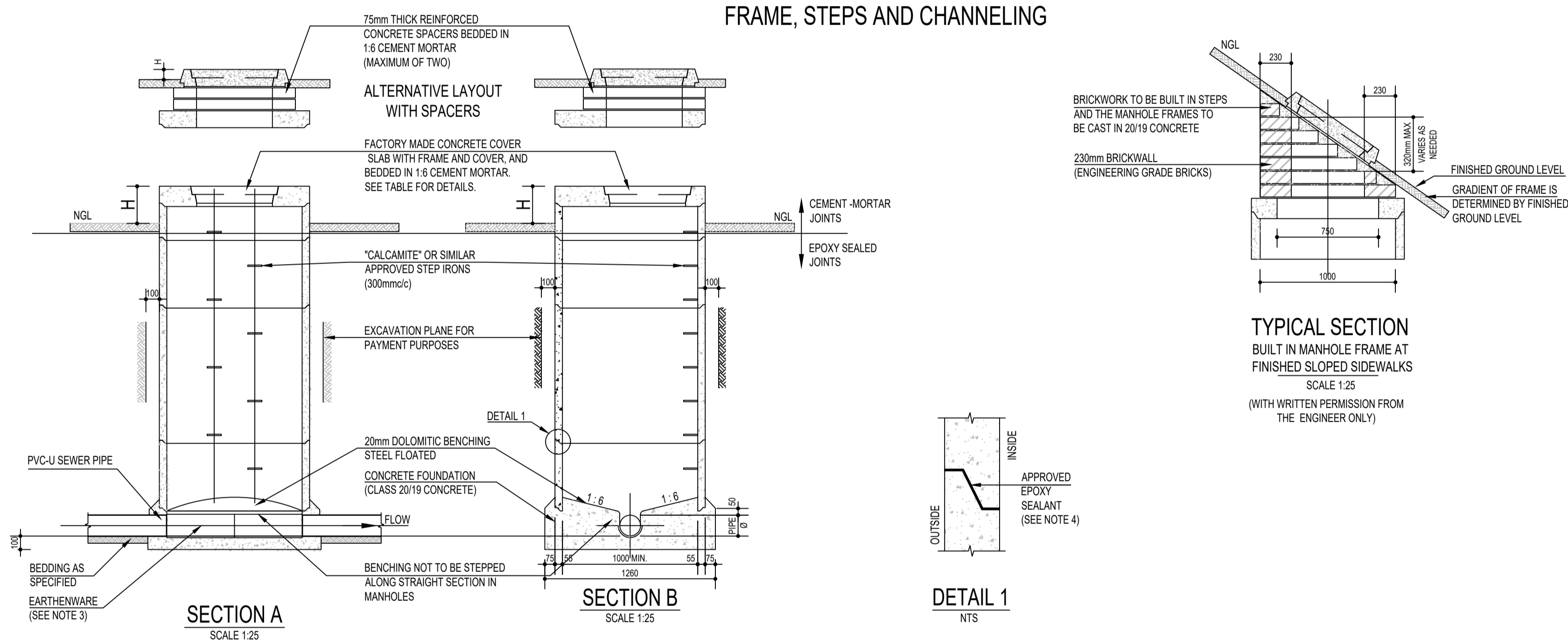
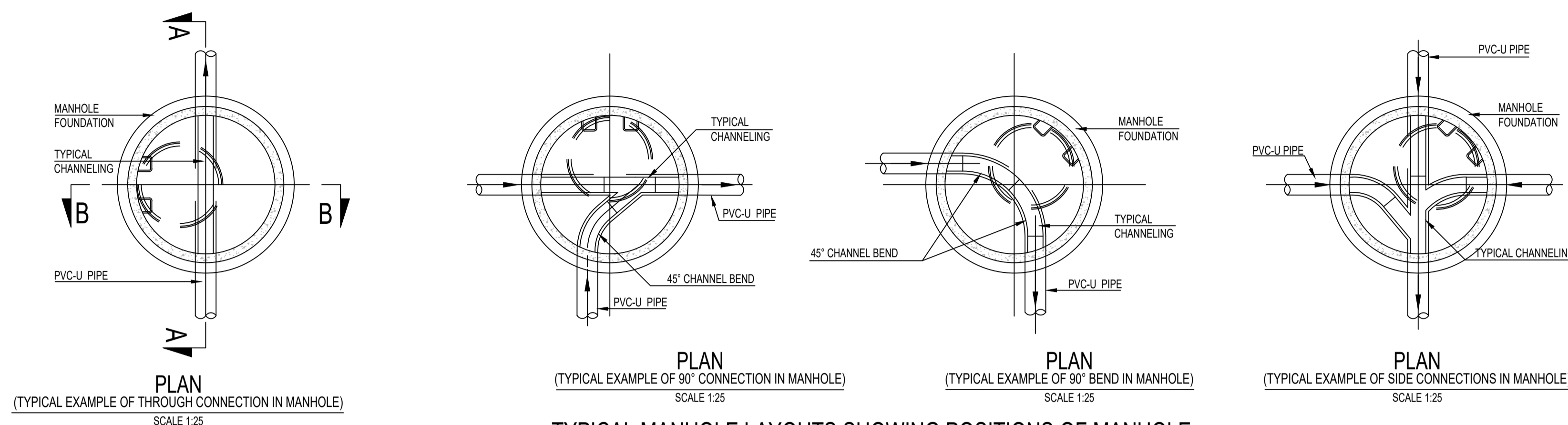


PLAN
HOUSE CONNECTION TYPE D
SCALE 1:30
(CONNECTION AT MANHOLE)

				Blouberg Municipality  Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100		Oltatech Consulting  Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699		PROJECT APPR. DATE BY SIGNATURE DESIGNED SEPT 2022 LM CHECKED SEPT 2022 LR DRAWN SEPT 2022 WK PROJECT MNG. APPROVED CLIENT	SCALE PROJECT TITLE: DO NOT SCALE Avon Multi-Purpose Centre DRAWING DESCRIPTION: SEWER CONNECTION PROJECT No. DRG SIZE DRAWING No. Revision No. A1 AAVON-SDD-004 0
REV	DATE	CHK	APP	DRAWING STATUS: FOR TENDER					

NOTES:

- 1) CONCRETE FOR MANHOLES MUST BE OF DOLOMITIC ORIGIN.
- 2) TYPICAL VALUES FOR H.
 H = 50 - 75mm WITHIN ERVEN AND ROAD RESERVES
 = 250mm LOW COST HOUSING DEVELOPMENTS AND UNDEFINED ROADWAYS.
 = 500mm OPEN VELD OR ROAD RESERVES WHERE POSITION OF MANHOLES CAN BE CONCEALED BY LONG GRASS OR OTHER GROWTH.
- 3) CHANNELLING :
 NOMINAL DIAMETERS.
 $\varnothing \leq 300\text{mm}$ CLAY OR DOLOMITIC CONCRETE OR NUTEC CEMENT.
 $\varnothing > 300\text{mm}$ INSITU CAST DOLOMITIC CONCRETE
- 4) CONCRETE MANHOLE SECTIONS MUST BE FIXED WITH AN EPOXY SEALER SUCH AS EPIDERMIX 344 OR PRO-STRUCT 687 OR SIMILAR APPROVED.
- 5) FACTORY MADE MANHOLE SECTIONS MUST BE IN ACCORDANCE WITH SANS 1294.
- 6) MANHOLE FRAMES MAY ONLY BE BUILT IN ON SLOPED FINISHED SIDEWALKS ON A WRITTEN INSTRUCTION BY THE ENGINEER.
- 7) OVER EXCAVATION MAY ONLY BE FILLED AFTER APPROVAL BY THE ENGINEER WITH GRADE 20/19 CONCRETE OR SUITABLE MATERIAL AS DIRECTED BY THE ENGINEER.
- 8) NO PART OF THE MANHOLE MAY BE FINISHED OFF WITH CEMENT-WASH OR MORTAR.



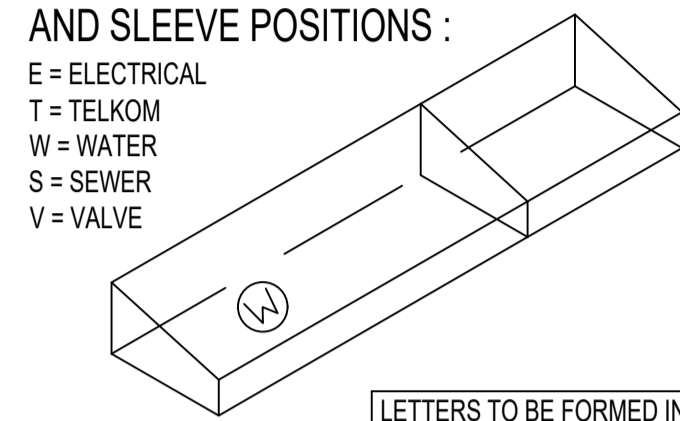
MANHOLE COVERS AND FRAMES (SANS 558)	
POSITION OF MANHOLE	TYPE OF COVER
CARRIAGE WAY	TYPE 2A CAST IRON FRAME AND COVER
STREET RESERVE	TYPE 4 CAST IRON OR CONCRETE FRAME AND CONCRETE COVER
ERVEN	TYPE 4 CAST IRON OR CONCRETE FRAME AND CONCRETE COVER
GENERAL	ONLY TYPE 2A MANHOLE COVERS MAY BE USED FOR SEWERS 300mmØ AND GREATER

NOTE : CI COVERS ARE USED ONLY WITH WRITTEN INSTRUCTION FROM THE ENGINEER.

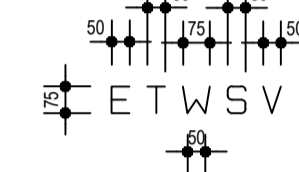
				Blouberg Municipality  Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100	Oltatech Consulting  Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699	PROJECT APPR. DATE BY SIGNATURE DESIGNED SEPT 2022 LM CHECKED SEPT 2022 LR DRAWN SEPT 2022 WK PROJECT MNG. APPROVED CLIENT	SCALE: DO NOT SCALE DRAWING DESCRIPTION: SEWER MANHOLES PROJECT No. DRG SIZE: AVON-SDD-005 A1	PROJECT TITLE: Avon Multi-Purpose Centre DRAWING No. AVON-SDD-005 Revision No. 0
REV	DATE	CHK	APP	DRAWING STATUS: FOR TENDER				

IDENTIFICATION OF PIPE AND SLEEVE POSITIONS :

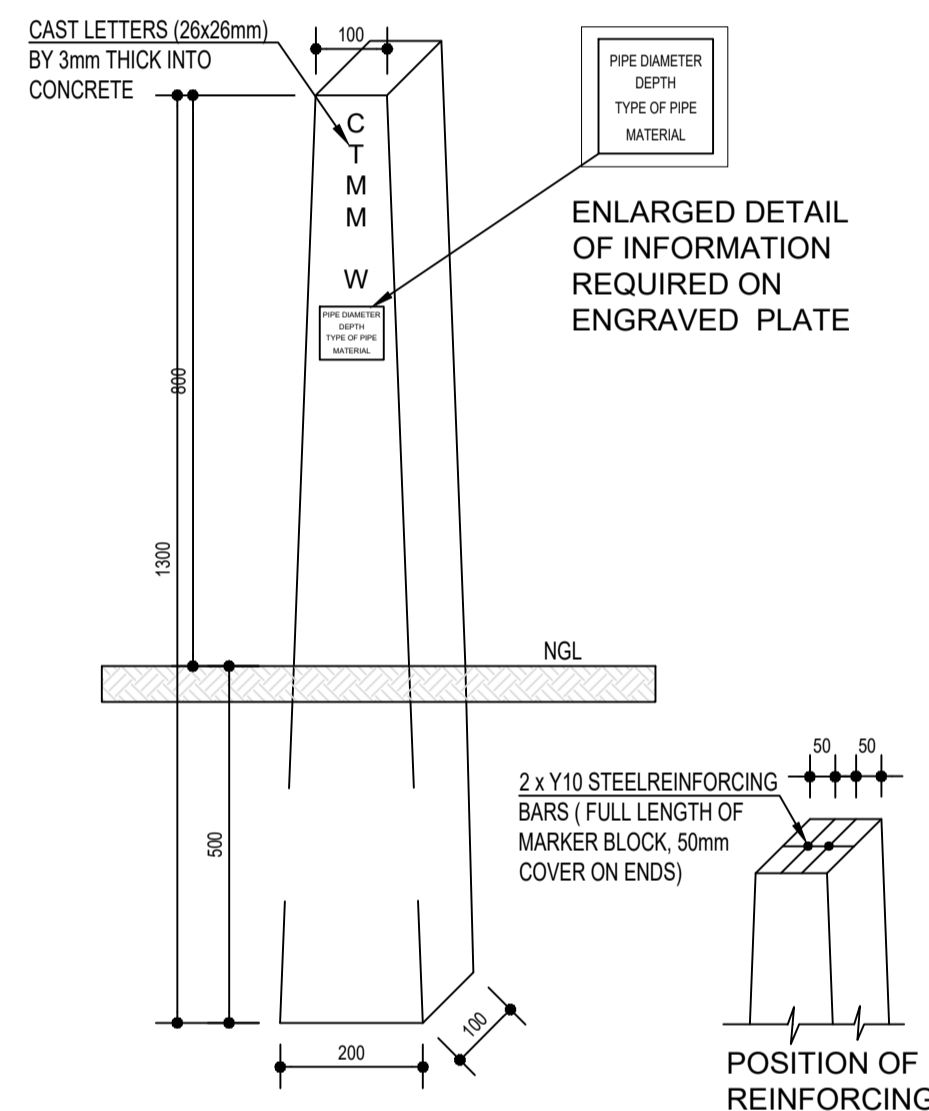
E = ELECTRICAL
T = TELKOM
W = WATER
S = SEWER
V = VALVE



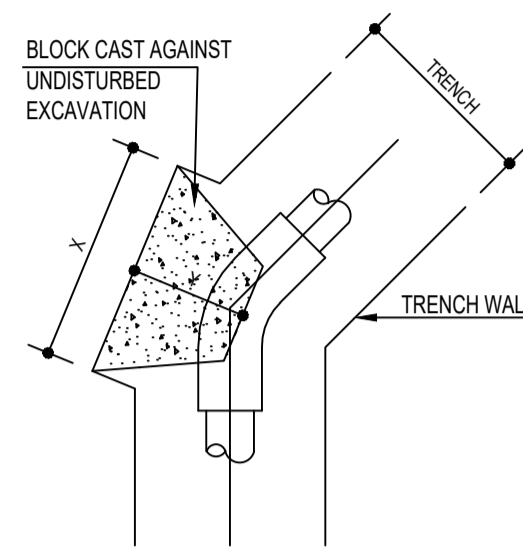
LETTERS TO BE FORMED IN CONCRETE BEFORE IT SETS.
LETTERS TO BE 5mm WIDE AND DEEP



MARKERS ON CONCRETE KERBS
SCALE 1:10

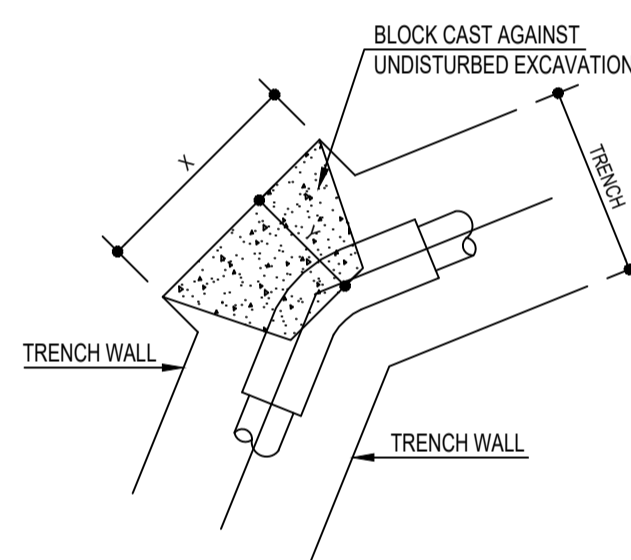


CONCRETE MARKER BLOCK
SCALE 1:10



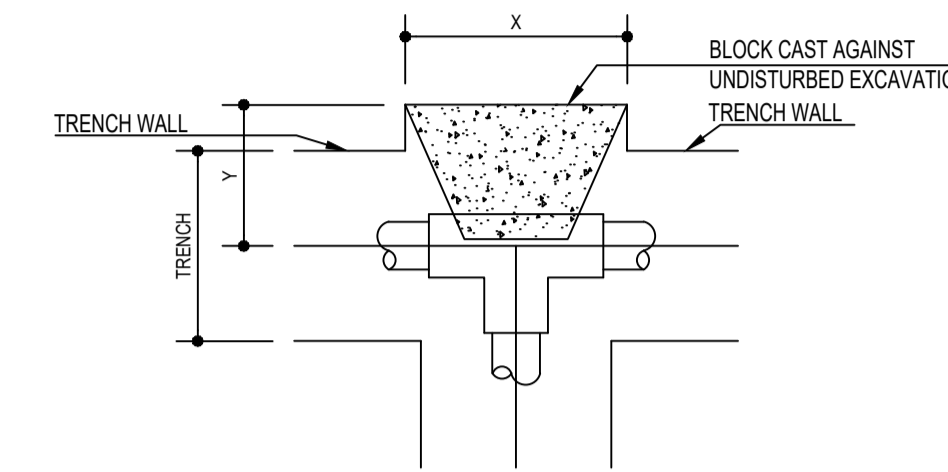
THRUST BLOCK FOR 45° BEND
SCALE 1:30

NOMINAL PIPE DIAMETER ø (mm)	AREA REQUIRED m ²	DIMENSIONS (mm)				AREA PROVIDED m ²	VOL (m ³)	
		D	Z	X	Y			
75	0.061	800	400	450	225	0.180	0.040	
100	0.109	1000	500	500	250	0.250	0.060	
150	0.245	1000	500	1000	500	0.500	0.250	
200	0.435	1200	600	1400	700	0.840	0.390	
250	0.680	1300	650	2000	1000	1.300	1.300	
300	0.979	1400	700	2600	1300	1.820	2.370	
300+		SEE NOTE 5						



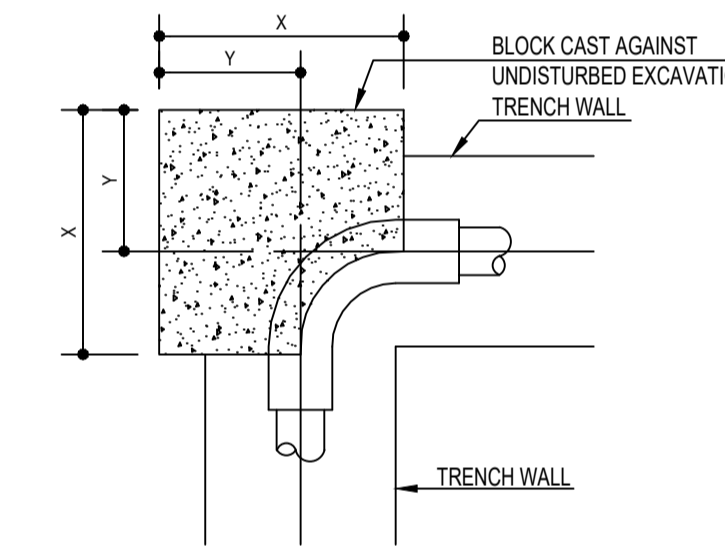
THRUST BLOCK FOR 22½° BEND
SCALE 1:10

NOMINAL PIPE DIAMETER ø (mm)	AREA REQUIRED m ²	DIMENSIONS (mm)				AREA PROVIDED m ²	VOL (m ³)	
		D	Z	X	Y			
75	0.031	800	400	400	200	0.1600	0.032	
100	0.055	1000	500	500	250	0.2500	0.063	
150	0.124	1000	500	500	250	0.2500	0.063	
200	0.220	1200	600	600	300	0.3600	0.108	
250	0.344	1300	650	650	325	0.4225	0.137	
300	0.496	1400	700	800	400	0.5600	0.224	
300+		SEE NOTE 5						



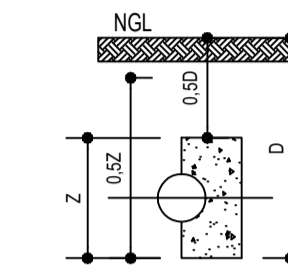
THRUST BLOCK FOR TEE-PIECE
SCALE 1:30

NOMINAL PIPE DIAMETER ø (mm)	AREA REQUIRED m ²	DIMENSIONS (mm)				AREA PROVIDED m ²	VOL (m ³)	
		D	Z	X	Y			
75	0.080	800	400	400	200	0.160	0.032	
100	0.141	1000	500	500	250	0.250	0.063	
150	0.318	1000	500	700	350	0.350	0.123	
200	0.565	1200	600	1000	500	0.600	0.390	
250	0.883	1300	650	1400	700	0.910	0.637	
300	1.272	1400	700	1900	950	1.330	1.264	
300+		SEE NOTE 5						



THRUST BLOCK FOR 90° BEND
SCALE 1:30

NOMINAL PIPE DIAMETER ø (mm)	AREA REQUIRED m ²	DIMENSIONS (mm)				AREA PROVIDED m ²	VOL (m ³)	
		D	Z	X	Y			
75	0.113	800	400	450	225	0.18	0.065	
100	0.201	1000	500	500	250	0.25	0.100	
150	0.451	1000	500	1000	500	0.50	0.402	
200	0.803	1200	600	1400	700	0.84	0.945	
250	1.254	1300	650	2000	1000	1.30	2.089	
300	1.806	1400	700	2600	1300	1.82	3.803	
300+		SEE NOTE 5						





TYPICAL SECTION
SCALE 1:30

NOTES :
CONCRETE THRUST BLOCKS

- THRUST BLOCK DIMENSIONS ON THIS DRAWING ARE ONLY APPLICABLE UNDER THE FOLLOWING CONDITIONS:
* UNDISTURBED SAND-GROUND MIXTURES OR DENSE UNIFORM SAND WITH A BEARING CAPACITY OF AT LEAST 150KPa.
* UNSUBMERGED CONDITIONS.
* MAXIMUM INTERNAL PIPE PRESSURE OF 18 Bar.
IF THE CONTRACTOR IS NOT IN A POSITION TO IDENTIFY THE ABOVE CONDITIONS, USE SHALL BE MADE OF AN ENGINEERING GEOLOGIST OR ENGINEER.
IN ALL OTHER CONDITIONS THE ACTUAL INSITU BEARING PRESSURE SHALL BE CALCULATED AND THE THRUST BLOCK DESIGNED BY THE ENGINEER.
- USE 10 MPa CONCRETE.
- HALF THE DEPTH OF THE THRUST BLOCK TO BE PLACED BELOW THE PIPE AXIS.
- KEEP CONCRETE AWAY FROM THE COUPLINGS & THE PIPE JOINTS.
- THRUST BLOCKS FOR PIPE Ø LARGER THAN 300mm & HIGHER TEST PRESSURES THAN 18 BAR SHALL BE DESIGNED BY THE ENGINEER.
- THRUST BLOCKS AT PUDDLE FLANGES SHALL BE REINFORCED & DESIGNED BY THE ENGINEER.

CONCRETE MARKER BLOCKS

- PLATE TYPE AND SIZE TO BE USED:
80 x 80 x 2mm ALUMINIUM PLATE.
- CONCRETE STRENGTH TO BE 25 MPa.

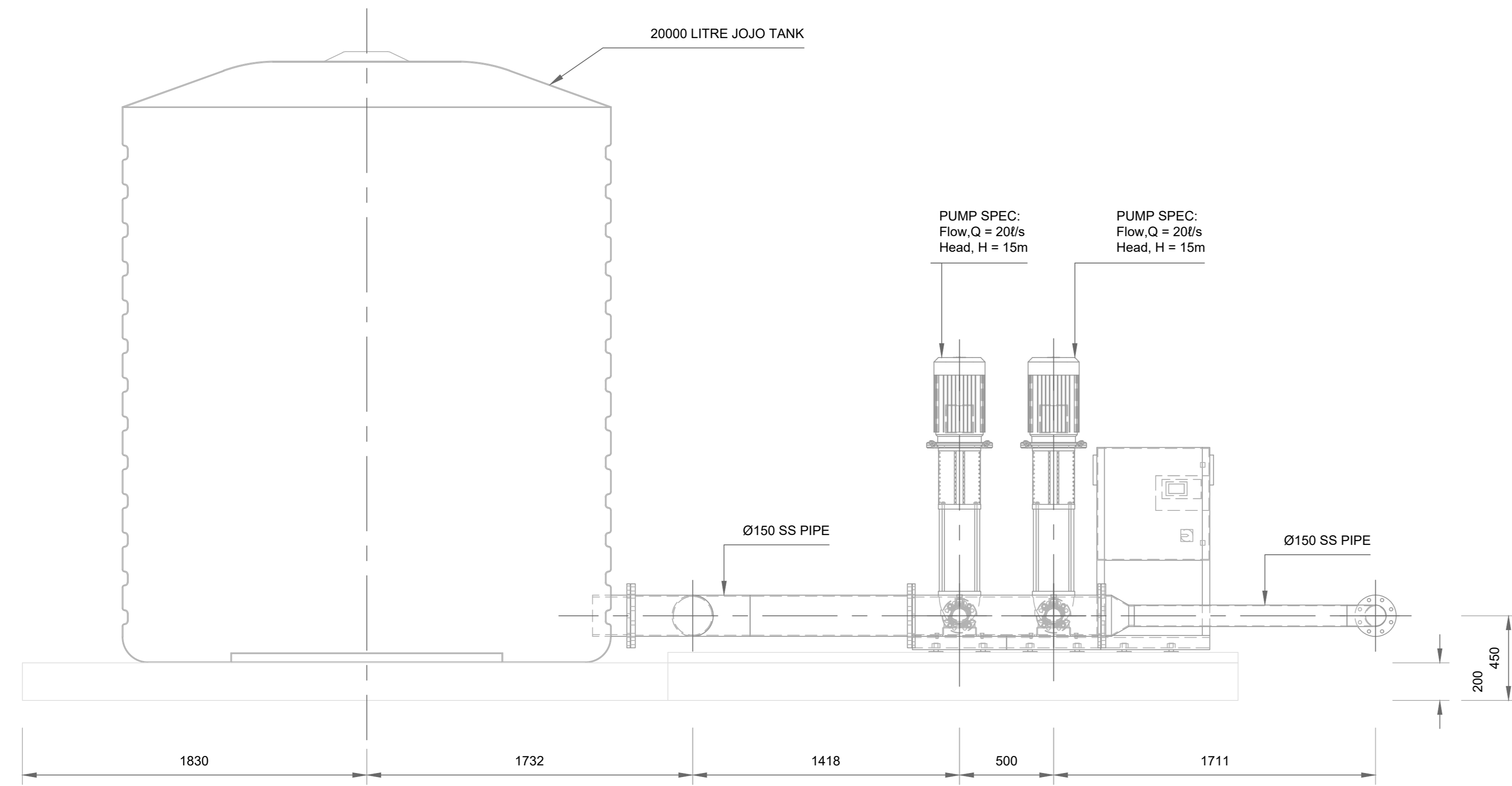
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				 Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Serwabarwana 0790 Tel: 015 505 7100		 Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699		DESIGNED SEPT 2022 LM		SCALE DO NOT SCALE		PROJECT TITLE: Avon Multi-Purpose Centre	
								CHECKED SEPT 2022 LR		DRAWING DESCRIPTION: MARKERS AND THRUST BLOCKS			
								DRAWN SEPT 2022 WK		PROJECT No. DRG SIZE			
								PROJECT MNG.		A1			
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								CLIENT		Revision No. 0			
REV	DATE	CHK	APP	DRAWING STATUS: FOR TENDER									

NOTES

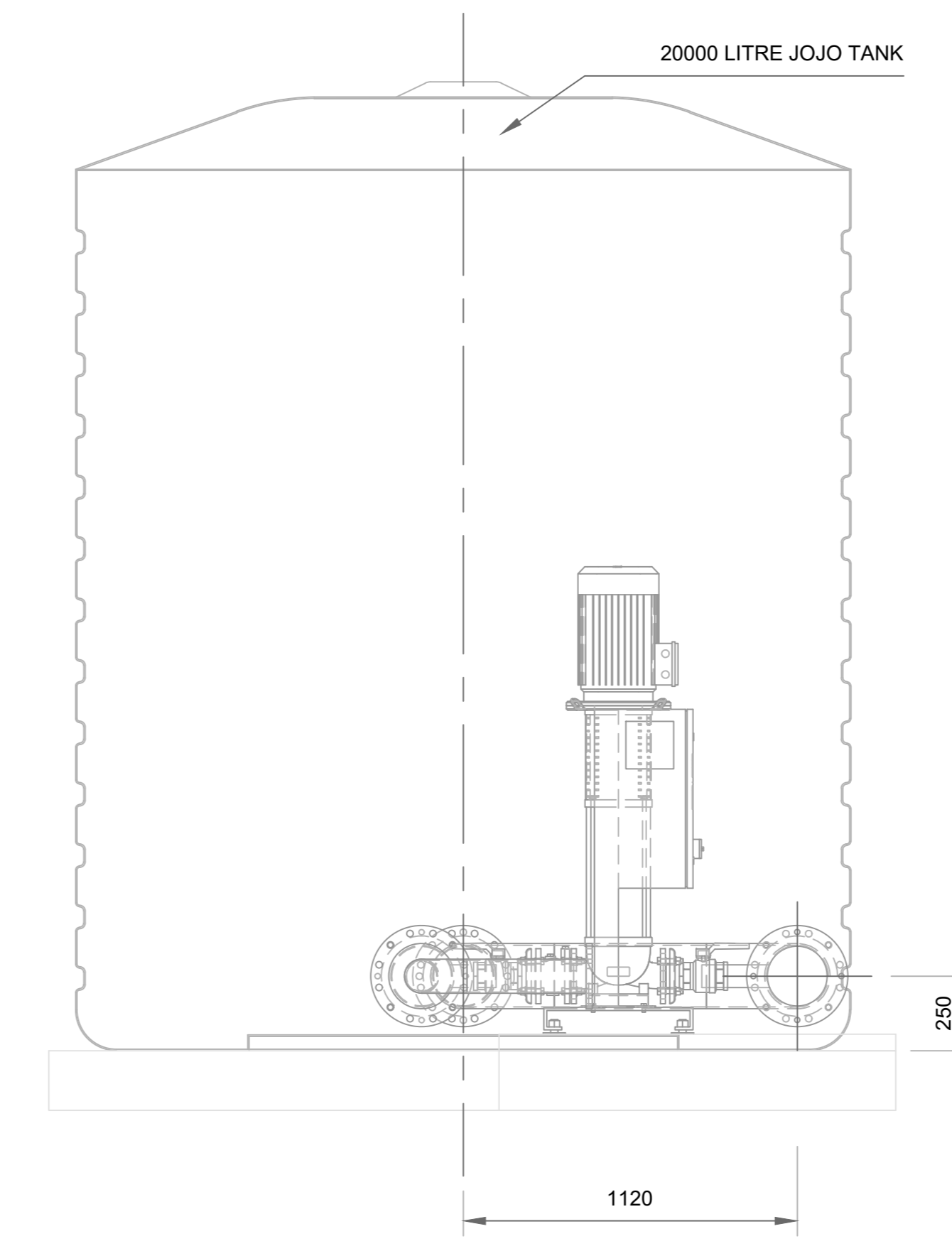
GENERAL CIVIL NOTES :

ALL WORK IS TO BE EXECUTED IN ACCORDANCE WITH THE PROVISIONS OF SABS 1200.

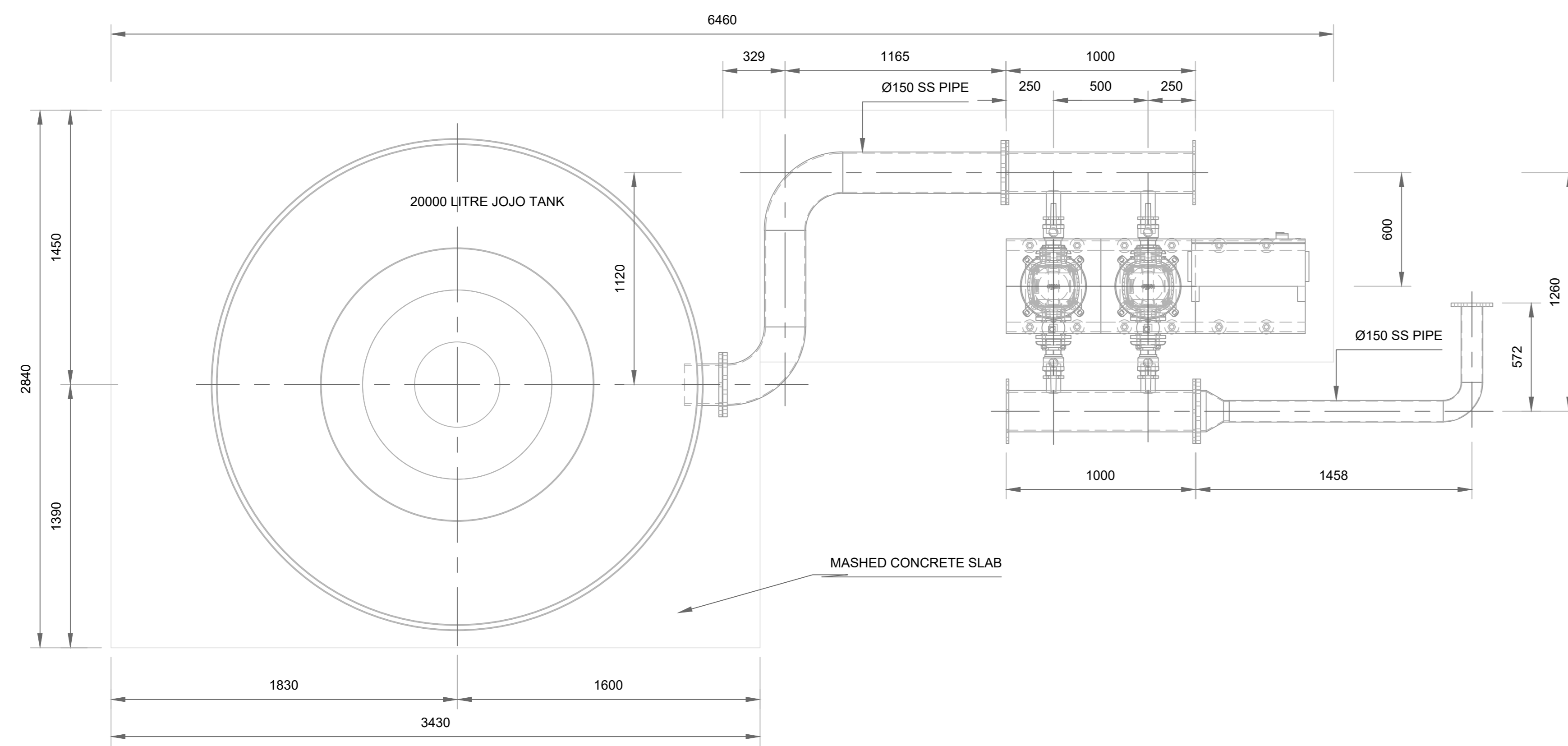
1. DESIGN PARAMETERS.
 - 1.1 SAFE GROUND BEARING PRESSURE: 150 kPa.
 - 1.2 NOMINAL FLOOR LOADS: 10 kPa.
2. EARTHWORKS.
 - 2.1 FOUNDING MATERIAL TO BE APPROVED BY THE ENGINEER.
 - 2.2 BACKFILL IS TO COMPRISE SELECTED APPROVED GRANULAR MATERIAL.
 - 2.3 BACKFILL IS TO BE COMPACTED TO 93% MOD AASHTO AT ± 2% OMC.
 - 2.4 BACKFILL LAYERS NOT TO EXCEED 150mm IN THICKNESS.
 - 2.5 WHERE POSSIBLE FOUNDATIONS ARE TO BE EXCAVATED NEAT AND TRIMMED AND CONCRETE CAST AGAINST THE EARTH FACE.
3. CONCRETE.
 - 3.1 BLINDING: GRADE 10 MPa MINIMUM THICKNESS 50mm.
 - 3.2 MASS: GRADE 10 MPa.
 - 3.3 STRENGTH: GRADE 30 MPa.
 - 3.4 CURING: CONCRETE SURFACES ARE TO BE CURED TO SABS 1200G.
4. FORMWORK.
 - 4.1 ALL CORNERS ARE TO BE PROVIDED WITH 20x20 CHAMFERS
 - 4.2 EXPOSED SURFACE FINISH: SMOOTH
 - 4.3 HIDDEN SURFACE FINISH : ROUGH
 - 4.4 UNFORMED SURFACE FINISHES.
 - 5.1 SURFACES COVERED BY EARTH: STRIKE OFF.
 - 5.2 EXPOSED SURFACES: WOOD FLOAT.
6. GROUTING.
 - 6.1 ALL POCKETS AND BASE PLATES ARE TO BE GROUTED. USE AN APPROVED NON SHRINK CEMENTITIOUS GROUT. GROUT TO BE USED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS DETAILS.
7. CAST-IN ITEMS.
 - 7.1 CAST-IN ITEMS TO BE FABRICATED FROM GRADE 350W STEEL.
 - 7.2 HD BOLTS TO COMPLY WITH SABS 135.



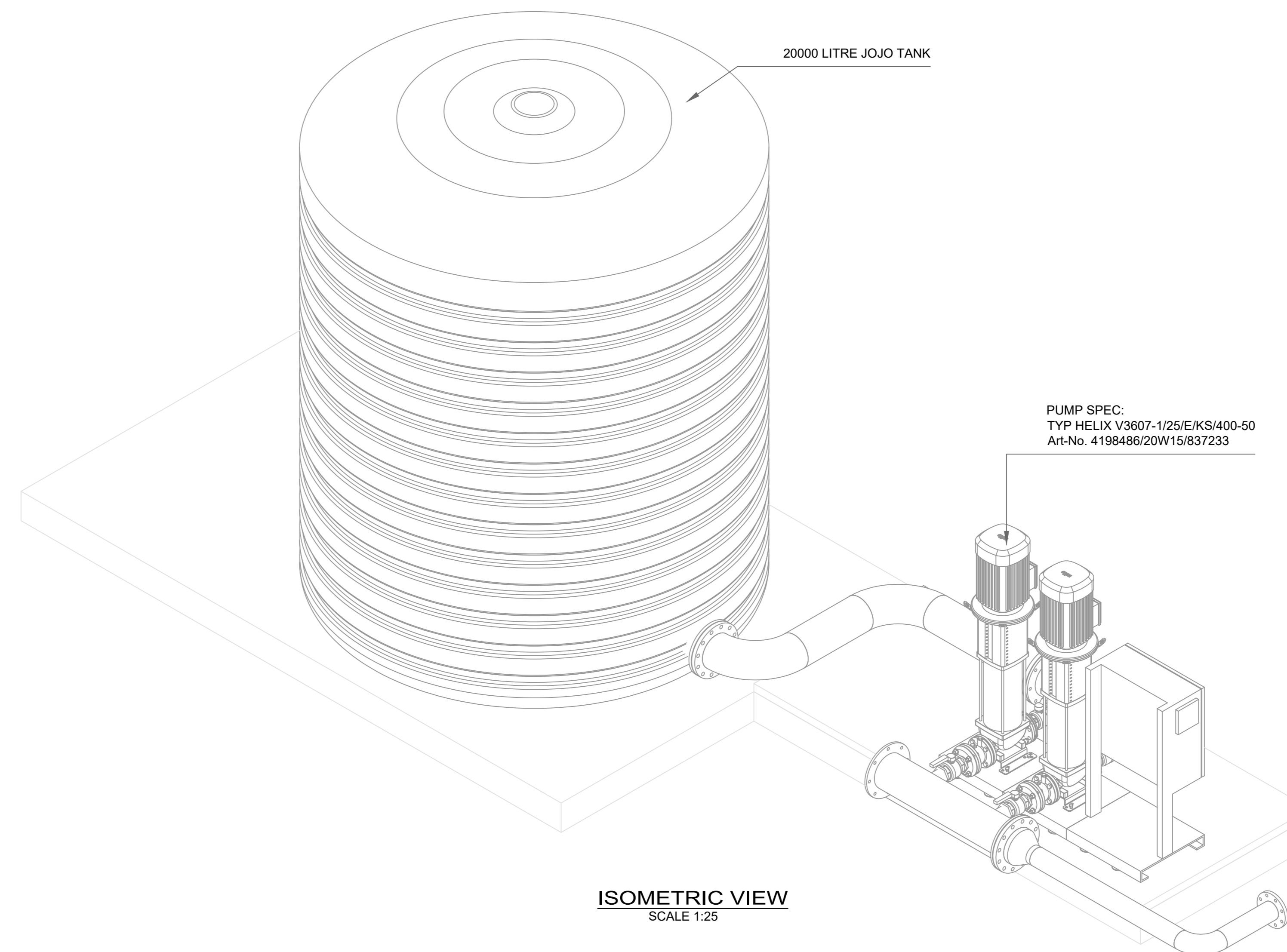
MAIN ELEVATION
SCALE 1:25



SIDE ELEVATION
SCALE 1:25



FIRE HYDRANT PUMP STATION
SCALE 1:25

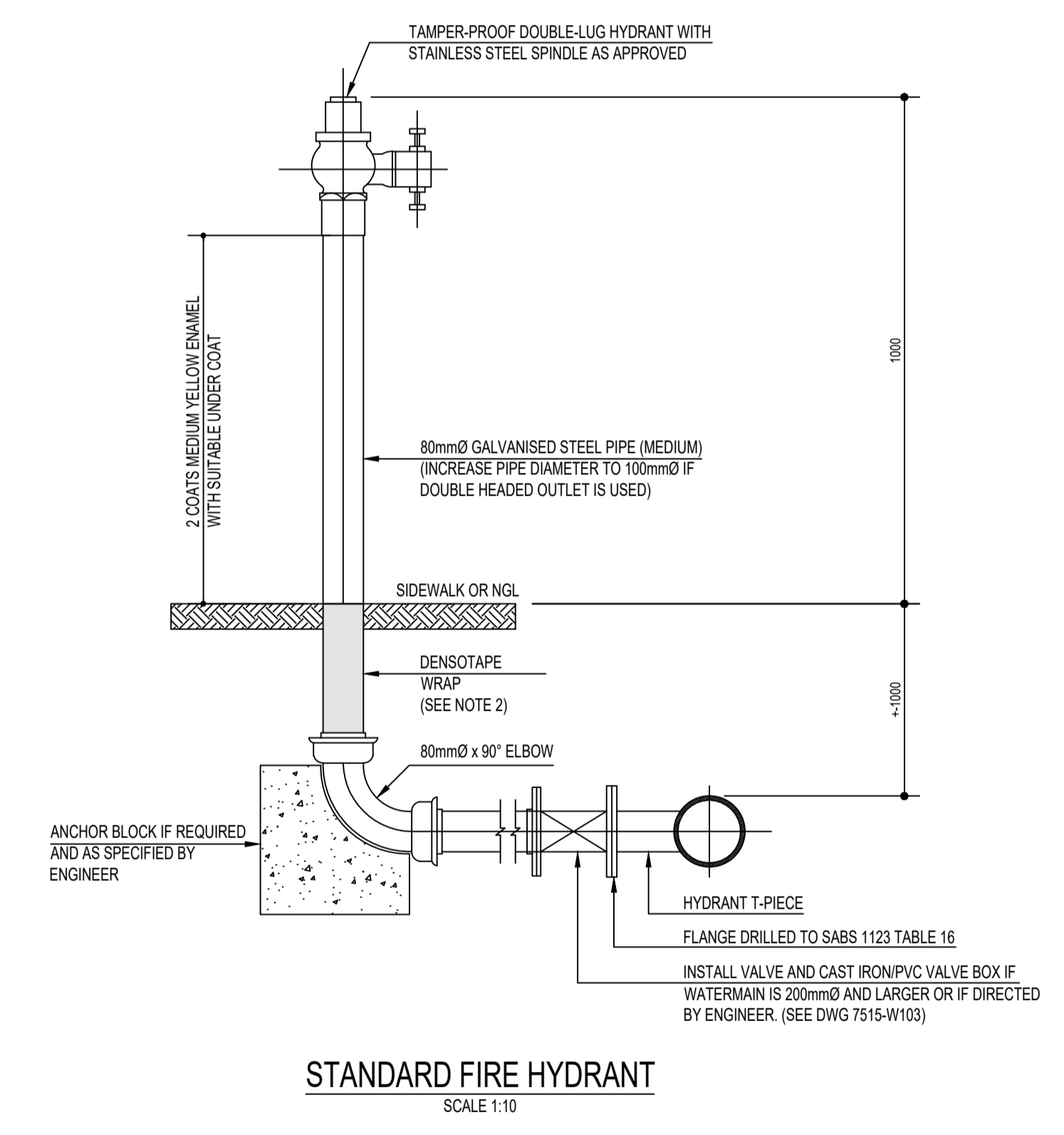
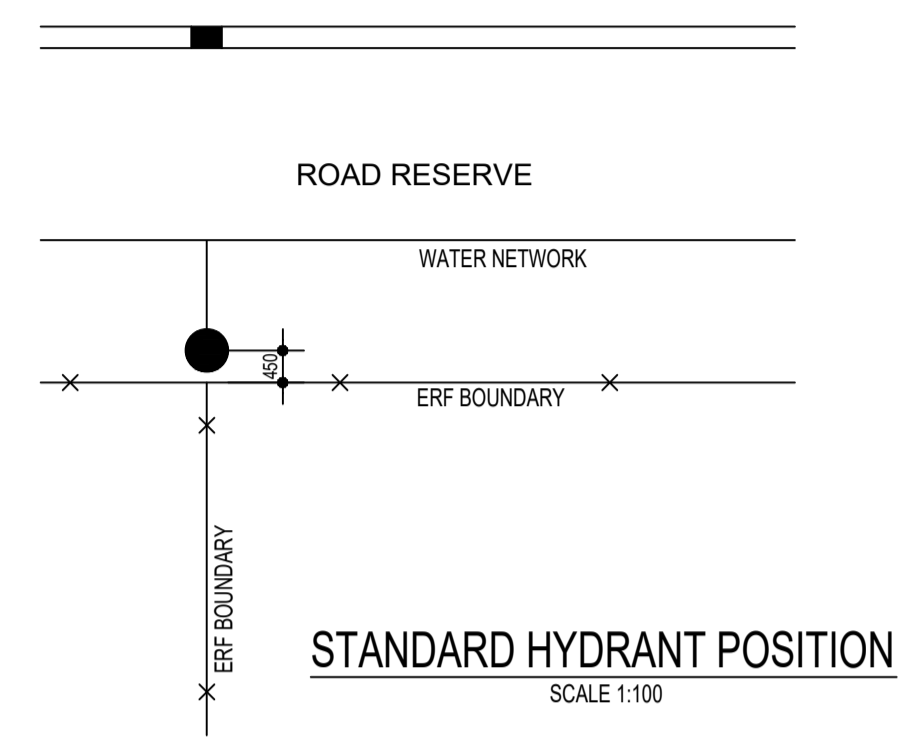


ISOMETRIC VIEW
SCALE 1:25

				<p>Blouberg Municipality</p>  <p>Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel. 015 505 7100</p>	<p>Oltatech Consulting</p>  <p>Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699</p>	<table border="1"> <tr><td>PROJECT APPR.</td><td>DATE</td><td>BY</td><td>SIGNATURE</td></tr> <tr><td>DESIGNED</td><td>SEPT 2022</td><td>LM</td><td></td></tr> <tr><td>CHECKED</td><td>SEPT 2022</td><td>LR</td><td></td></tr> <tr><td>DRAWN</td><td>SEPT 2022</td><td>KN</td><td></td></tr> <tr><td>PROJECT MNG.</td><td>....</td><td>....</td><td></td></tr> <tr><td>APPROVED</td><td></td><td></td><td></td></tr> <tr><td>CLIENT</td><td></td><td></td><td></td></tr> </table>	PROJECT APPR.	DATE	BY	SIGNATURE	DESIGNED	SEPT 2022	LM		CHECKED	SEPT 2022	LR		DRAWN	SEPT 2022	KN		PROJECT MNG.		APPROVED				CLIENT				<table border="1"> <tr><td colspan="2">SCALE</td><td>PROJECT TITLE:</td></tr> <tr><td colspan="2">DO NOT SCALE</td><td>Avon Multi-Purpose Centre</td></tr> <tr><td colspan="2">DRAWING DESCRIPTION:</td><td>FIRE HYDRANT PUMP STATION</td></tr> <tr><td>PROJECT No.</td><td>DRG SIZE</td><td>DRAWING No.</td><td>Revision No.</td></tr> <tr><td></td><td>A1</td><td>AVON-CIV-SR-004</td><td>A</td></tr> </table>	SCALE		PROJECT TITLE:	DO NOT SCALE		Avon Multi-Purpose Centre	DRAWING DESCRIPTION:		FIRE HYDRANT PUMP STATION	PROJECT No.	DRG SIZE	DRAWING No.	Revision No.		A1	AVON-CIV-SR-004	A
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NOTES :

1. HYDRANTS MUST BE LOCATED IN COLLABORATION WITH THE CITY ELECTRICAL ENGINEER'S DEPT. TO PRECLUDE CLASHES WITH ELECTRICAL HOUSE CONNECTION BOXES.
2. STEEL PIPES AND FITTINGS BELOW GROUND SHALL BE WRAPPED WITH DENSOTAPE OR SIMILAR, 30% OVERLAP.
3. POSITION OF REFLECTOR CAN VARY TO AFFORD BEST VISIBILITY.



					Blouberg Municipality Blouberg Municipality 2nd Building Dendron Road P.O Box 1593 Senwabarwana 0790 Tel: 015 505 7100	Oltatech Consulting Oltatech Consulting (Pty) Ltd 6 Rentco Building 11 Pierre Street, Bendor. Polokwane, 0699	PROJECT APPR. DESIGNED CHECKED DRAWN PROJECT MNG. APPROVED CLIENT	DATE SEPT 2022 SEPT 2022 SEPT 2022	BY LM LR WK	SIGNATURE 	SCALE DO NOT SCALE	PROJECT TITLE: Avon Multi-Purpose Centre DRAWING DESCRIPTION: FIRE HYDRANT	
REV	DATE	CHK	APP	DRAWING STATUS: FOR TENDER									
											PROJECT No. DRG SIZE A1	DRAWING No. AVON-SDD-007	Revision No. 0