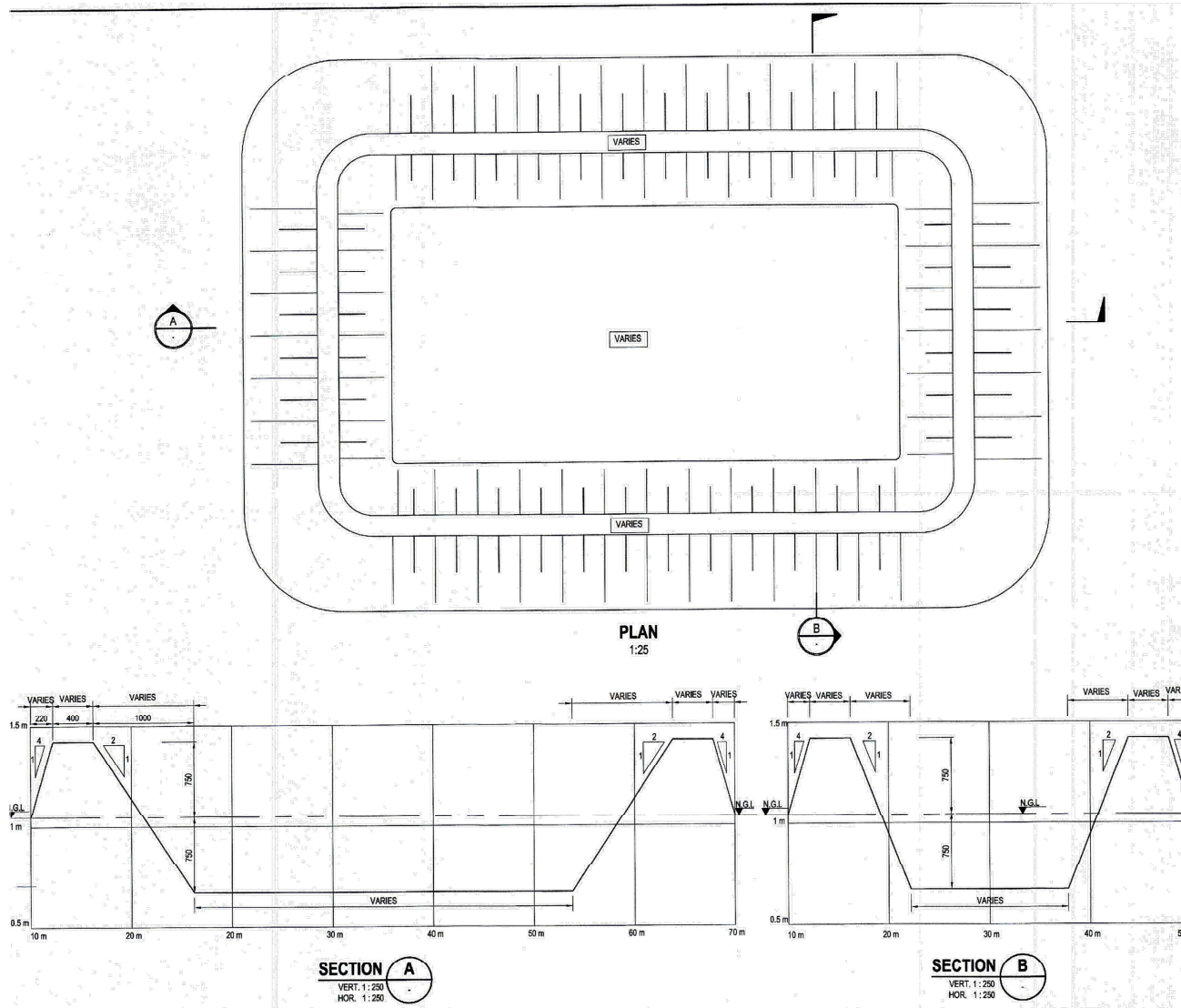




No. Revised By: AMENDMENTS DATE CLIENT				PROJECT: PHANDULWAZI AGRICULTURE HIGH TOWN SCHOOL (CLUSTER 2 PROJECT)		PROJECT NO: SCE-057		DESIGNED: XX		ENGINEER		SCALE AS SHOWN		SHEET 1 OF 1			
				 AMATOLA WATER 6 LANCASTER EAST LONDON 5247 PRETORIA, 0001 TEL: 043 787 3700	DESCRIPTION: PROPOSED POND LAYOUT		CONTRACT NO: AW 2019/2028		DRAWN: XX		 Servinet CONSULTING ENGINEERS	SERVINET CONSULTING ENGINEERS FACTORY No. 39 SIXTH INDUSTRIAL PARK WHITTLESEA 5360 TEL: 076 730 6426		APPROVED CONSULTING ENGINEER DATE: _____			
									CHECKED: XX								
									DATE: AUGUST 2022				DRAWING NO: SCE-PHAN-001		REVISION NO: _____		



No.	Revised By	Amendments	Date	Client	Project	Project No.	Designed	XX	Thinner	Scale	Sheet
					PHANDULWAZI AGRICULTURE HIGH TOWN SCHOOL (CLUSTER 2 PROJECT)	SCE-057	Drawn	XX		AS SHOWN	1 OF 1
					DESCRIPTION:	CONTRACT NO.	Checked	XX		APPROVED CONSULTING ENGINEER	
					STANDARD POND DETAILS	AW 2019/2028	Date	AUGUST 2022		DRAWING No	REVISION No
										SCE-PHAN-002	



AMATOLA WATER
6 LANCASTER
EAST LONDON
5247
PRETORIA, 0001
TEL: 043 787 3700

PROJECT:
PHANDULWAZI AGRICULTURE HIGH TOWN SCHOOL (CLUSTER 2 PROJECT)

DESCRIPTION:
STANDARD POND DETAILS

PROJECT NO.
SCE-057

CONTRACT NO.
AW 2019/2028

DESIGNED
XX

DRAWN
XX

CHECKED
XX

DATE
AUGUST 2022

THINNER



SERVINET CONSULTING ENGINEERS
FACTORY No. 39
SIDRA INDUSTRIAL PARK
WHITTELESEA
5360
TEL: 076 730 6426

SCALE
AS SHOWN

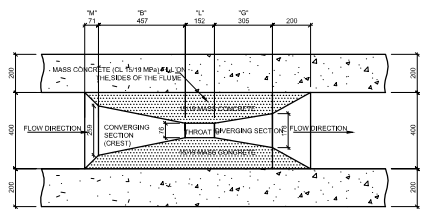
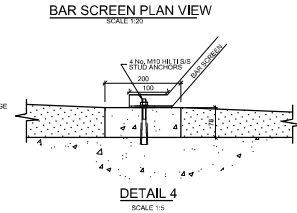
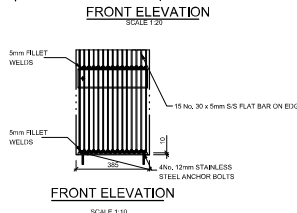
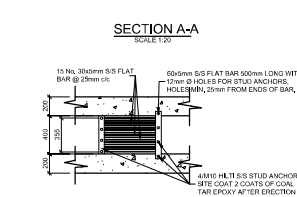
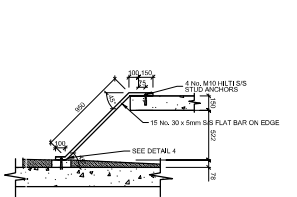
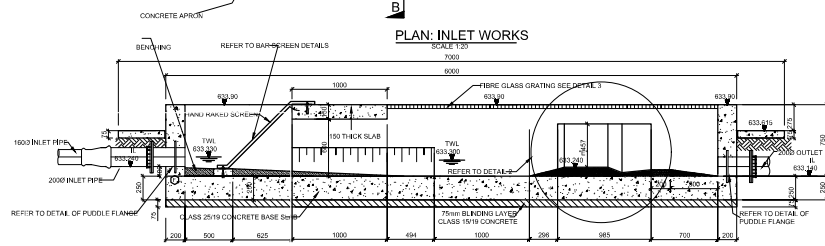
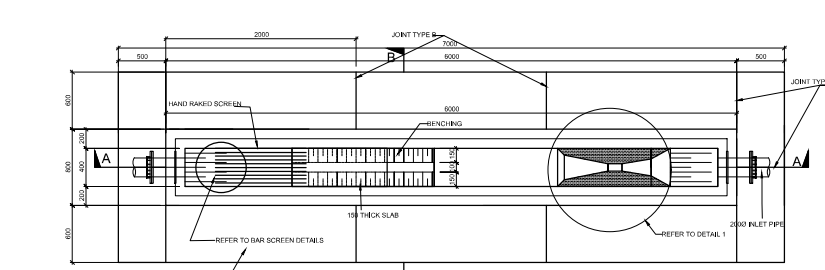
APPROVED CONSULTING ENGINEER

DRAWING No
SCE-PHAN-002

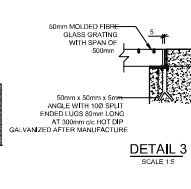
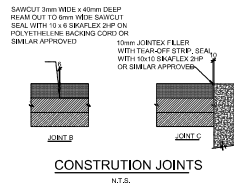
SHEET
1 OF 1

DATE

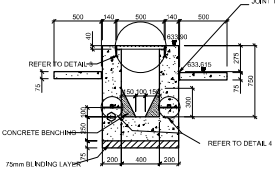
REVISION No



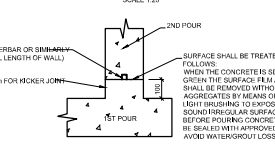
DETAIL 1
SCALE 1:10



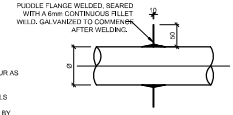
- PARSHALL FLUME NOTES:**
- PARSHALL FLUMES SHALL BE CONSTRUCTED OR PREFABRICATED FROM DURABLE AND CORROSION-RESISTANT MATERIALS.
 - IN THE CASE OF PREFABRICATED FLUMES, GFR MATERIAL IS PREFERRED. PROPOSALS TO USE ALTERNATIVE MATERIALS SHALL BE SUBMITTED TO THE ENGINEER IN WRITING FOR APPROVAL.
 - ALLOWABLE CONSTRUCTION DEVIATION TOLERANCES FOR THE PARSHALL FLUME AS FOLLOWS:
 - ON BOTTOM THROAT WIDTH 1/10, 0.2% OF B WITH ABSOLUTE MAXIMUM OF 3.0mm.
 - ON POINT DEVIATIONS FROM A PLANE SURFACE IN THE THROAT, 0.1% OF "L".
 - ON WIDTH BETWEEN VERTICAL SURFACES IN THE THROAT, 0.2% OF WIDTH WITH A MAXIMUM OF 0.1%.
 - ON AVERAGE LONGITUDINAL AND TRANSVERSE SLOPES OF THE BASE OF THE THROAT, 0.1%.
 - ON SLOPE OF INCLINED SURFACES IN THE THROAT, 0.1%.
 - ON THROAT LENGTH, 1% OF "L".
 - ON POINT DEVIATIONS FROM A PLANE SURFACE IN ENTRANCE TRANSITION TO THE THROAT, 0.1% OF "L".
 - ON POINT DEVIATIONS FROM A PLANE SURFACE IN THE EXIT TRANSITION FROM THE THROAT, 0.2% OF "L".
 - ON DEVIATIONS FROM A PLANE OR CURVE ON OTHER VERTICAL OR INCLINED SURFACES, 1%.
 - ON DEVIATION FROM A PLANE OF THE BED OF THE LINED APPROACH CHANNEL, 0.1% OF "L".
 - THE STRUCTURE TO BE MEASURED ON COMPLETION OF CONSTRUCTION AND AVERAGE VALUES OF RELEVANT DIMENSIONS AND THEIR STANDARD DEVIATIONS AT 95% CONFIDENCE LIMITS SHALL BE COMPUTED.
 - THE AVERAGE VALUES OF DIMENSIONS TO BE USED FOR COMPUTING DISCHARGE OF THEIR STANDARD DEVIATIONS TO OBTAIN THE OVERALL UNCERTAINTY IN THE DETERMINATION OF DISCHARGE.
 - THE Voids BETWEEN THE FLUME AND THE CONCRETE WALLS AND UNDERNEATH TO BE CAREFULLY FILLED WITH CLASS 15/19 MASS CONCRETE.
 - A METHOD STATEMENT FOR CONSTRUCTING AND/OR INSTALLING THE FLUME TO BE SUBMITTED IN WRITING TO THE ENGINEER FOR APPROVAL.



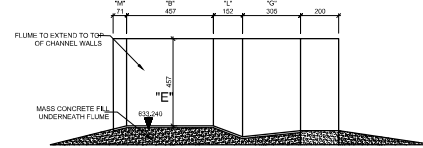
SECTION B-B
SCALE 1:20



DETAIL 4
SCALE 1:10



DETAIL OF PUDDLE FLANGE
SCALE 1:5



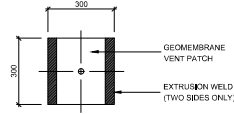
DETAIL 2
SCALE 1:10

BAR SCREEN DETAILS

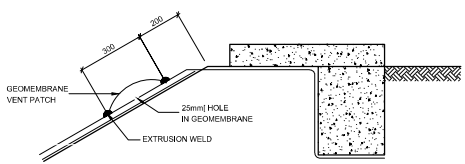
PARSHALL FLUME DETAILS

No. REVISED BY: AMENDMENTS DATE CLIENT	 AMATOLA WATER 6 LANCASTER EAST LONDON 5247 PRETORIA, 0001 TEL: 043 797 3700	PROJECT: PHANDULWAZI AGRICULTURE HIGH SCHOOL (CLUSTER 2 PROJECT) DESCRIPTION: INLET WORKS: PLAN, SECTIONS & DETAILS	PROJECT No: SCE-057 CONTRACT No: AW 2019/2028 DESIGNED: XX DRAWN: XX CHECKED: XX DATE: AUGUST 2022	 SERVINET CONSULTING ENGINEERS FACTORY No. 39 SAND INDUSTRIAL PARK WHITTELESEA 5360 TEL: 076 730 6426	SCALE: AS SHOWN SHEET: 1 OF 1 APPROVED CONSULTING ENGINEER: [Signature] DATE: [Date] DRAWING No: SCE-HEALD-003 REVISION No: [Revision]
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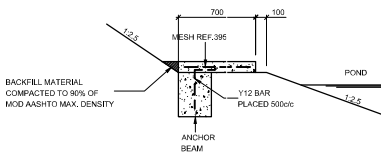
NOTE:
VENTS TO BE LOCATED AT 5m
INTERVALS ALONG PERIMETER
OF PONDS.



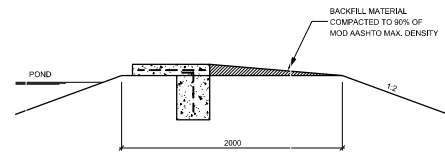
PLAN OF GAS-VENT
1:10



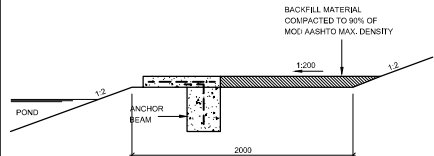
POSITION AND DETAIL OF GAS-VENTS
1:10



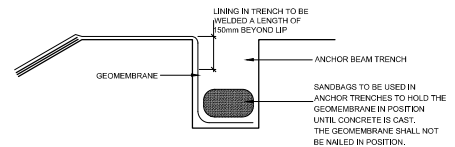
SECTION J-I
1:20



SECTION J-J
1:20

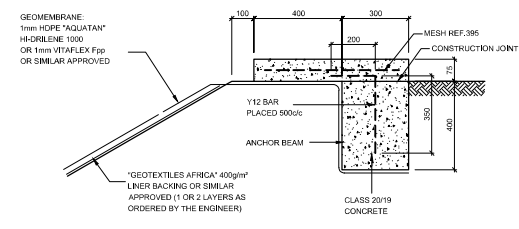


SECTION K-K
1:20

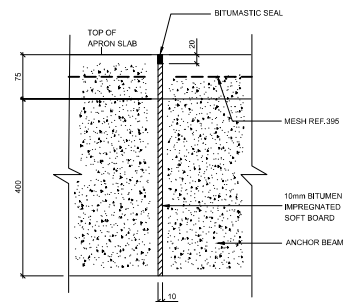


CONSTRUCTION DETAIL
1:10

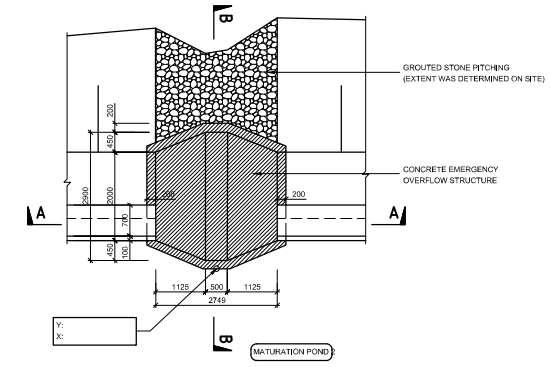
NOTE:
1. CONSTRUCTION JOINTS TO BE CONSTRUCTED
EVERY 5m AND EXPANSION JOINTS EVERY 15m.
2. MESH FOR ALL CONCRETE APRONS AND ANCHOR
BEAMS TO BE REF. 395 AND Laid CONTINUOUS
ACROSS CONSTRUCTION JOINTS.
3. FOR EXPANSION JOINT REFER TO DETAIL
ELSEWHERE.



TYPICAL APRON SLAB AND ANCHOR BEAM DETAIL
1:10

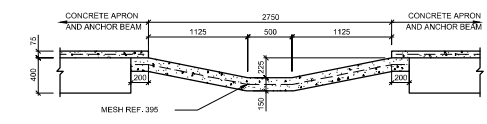


**TYPICAL APRON SLAB AND ANCHOR BEAM
EXPANSION JOINT DETAIL**
1:5

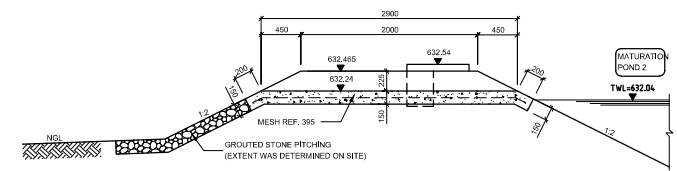


PLAN
SCALE 1:50

NOTES:
1. ALL CONCRETE WERE CLASS 20/18.
2. COVER TO REINFORCEMENT WERE 50mm MIN.
3. ALL CONCRETE CORNERS IN CONTACT WITH THE
GEOMEMBRANE LINING WERE CHAMFERED TO
25mm MINIMUM.



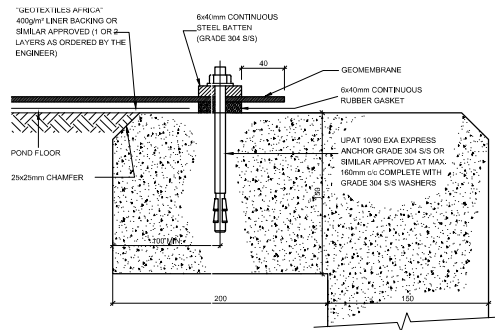
SECTION A-A
SCALE 1:25



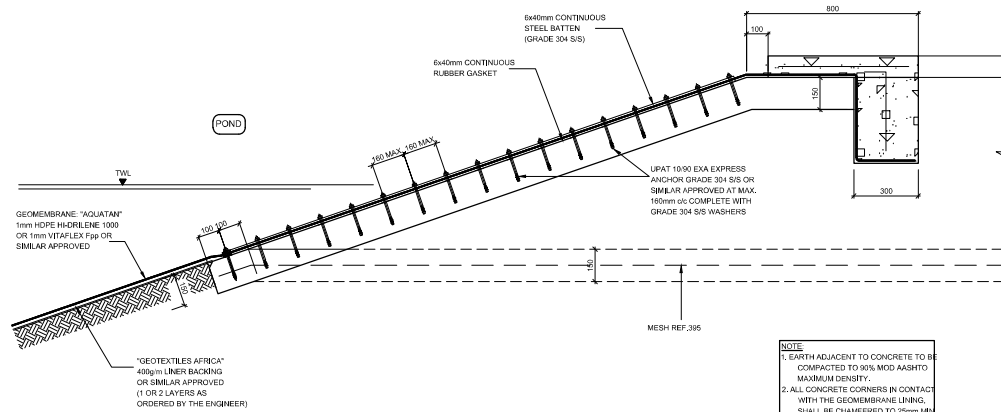
SECTION B-B
SCALE 1:25

EMERGENCY OVERFLOW STRUCTURE

No	REVISED BY	AMENDMENTS	DATE	CLIENT		PROJECT:	PROJECT No.	DESIGNED	XX	ENGINEER		SERVINET CONSULTING ENGINEERS FACTORY No. 39 SADA INDUSTRIAL PARK WHITTLESEA 5360 TEL: 076 730 6426	SCALE	SHEET						
						PHANDULWAZI AGRICULTURE HIGH SCHOOL (CLUSTER 2 PROJECT)	SCE-057	DRAWN	XX				AS SHOWN	1 OF 2						
															DESCRIPTION:	CONTRACT No.	CHECKED	XX	APPROVED CONSULTING ENGINEER	DATE
															POND LINING AND EMERGENCY OVERFLOW STRUCTURE	AW 2019/2028	DATE	AUGUST 2022		

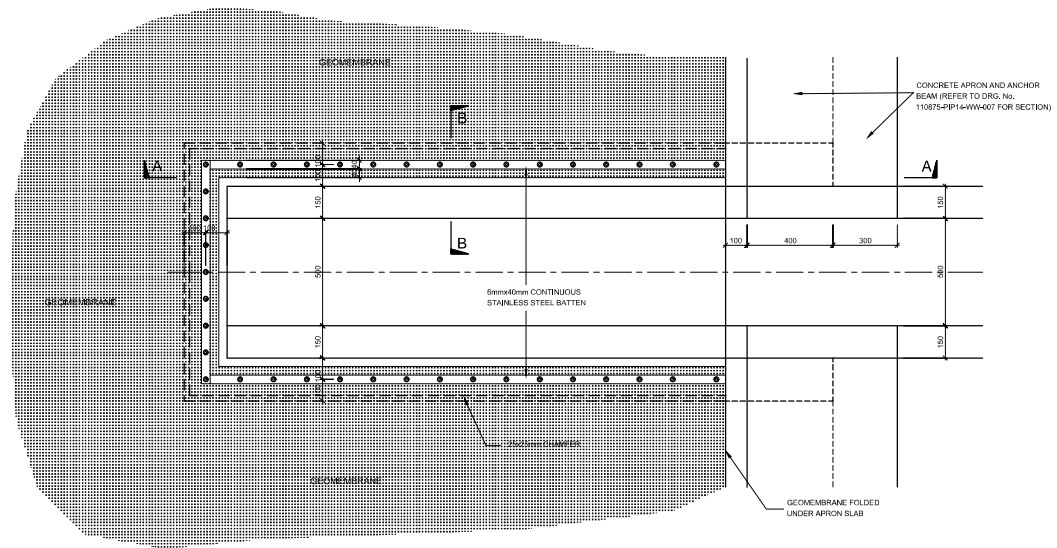


SECTION B-B
1:2



SECTION A-A
1:10

NOTE
1. EARTH ADJACENT TO CONCRETE TO BE COMPACTED TO 95% MOD AASHTO MAXIMUM DENSITY.
2. ALL CONCRETE CORNERS IN CONTACT WITH THE GEOMEMBRANE LINING, SHALL BE CHAMFERED TO 25mm MIN.



DETAIL AT OVERFLOW WEIR STRUCTURES
1:10

No.	Revised By	Amendments	Date	Client	Project	Project No.	Designed	XX	Engineer	Scale	Sheet
					PHANDULWAZI AGRICULTURE HIGH SCHOOL (CLUSTER 2 PROJECT)	SCE-057	Drawn	XX		AS SHOWN	2 OF 2
							Checked	XX		APPROVED CONSULTING ENGINEER	
							Date	AUGUST 2022		DRAWING No	REVISION No
					POND LINING DETAILS	AW 2019/2028				SCE-PHAND-006	

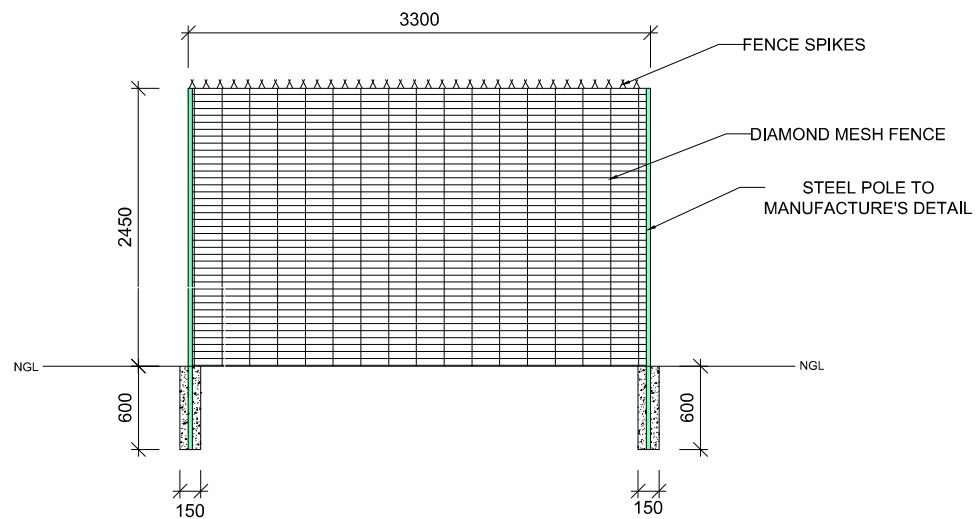


AMATOLA WATER
6 LANCASTER
EAST LONDON
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PRETORIA, 0001
TEL: 043 797 3700



SERVINET CONSULTING ENGINEERS
FACTORY No. 39
5304 INDUSTRIAL PARK
WHITTELESEA
5380
TEL: 076 730 6426

APPROVED CONSULTING ENGINEER
DATE
DRAWING No
REVISION No



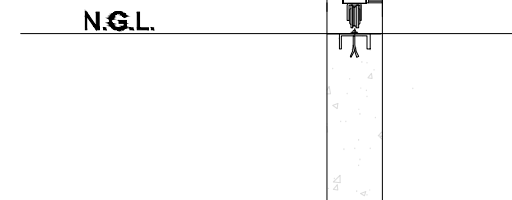
FRONT CLEARVU

SCALE : 1:10



PLAN VIEW

SCALE : 1:10



SECTION B-B

No.	Revised By	Amendments	Date	Client	Project	Project No.	Designed	XX	Engineer	Scale	Sheet
					PHANDULWAZI AGRICULTURE HIGH SCHOOL (CLUSTER 2 PROJECT)	SCE-057	Drawn	XX		AS SHOWN	1 OF 1
					DESCRIPTION: 2.4M CONCRETE PALISADE FENCE DETAILS	CONTRACT NO. AW 2019/2028	Checked	XX		APPROVED CONSULTING ENGINEER	
							DATE	AUGUST 2022		DATE	REVISION No
										SCE-PHAND-007	



AMATOLA WATER
6 LANCASTER
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5247
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PROJECT: PHANDULWAZI AGRICULTURE HIGH SCHOOL (CLUSTER 2 PROJECT)
DESCRIPTION: 2.4M CONCRETE PALISADE FENCE DETAILS

PROJECT No. SCE-057
CONTRACT No. AW 2019/2028

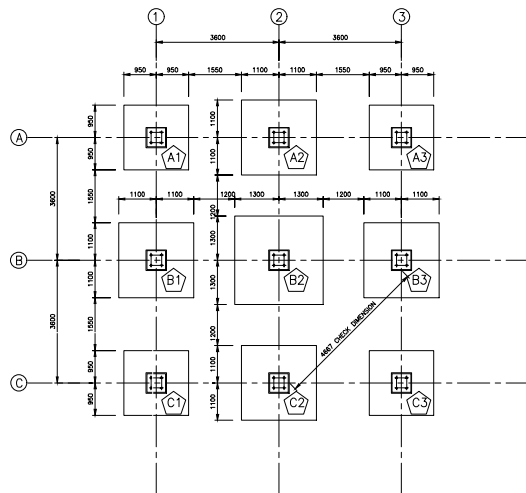
DESIGNED XX
DRAWN XX
CHECKED XX
DATE AUGUST 2022

ENGINEER



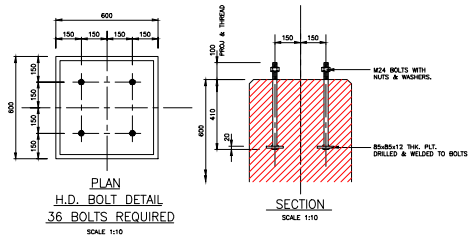
SERVINET CONSULTING ENGINEERS
FACTORY No. 39
SIDDA INDUSTRIAL PARK
WHITTESEA
5360
TEL: 076 730 6426

SCALE: AS SHOWN
SHEET: 1 OF 1
APPROVED CONSULTING ENGINEER
DATE: _____
DRAWING No: _____
REVISION No: _____

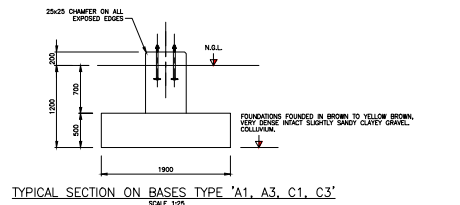


PLAN ON FOUNDATIONS
SCALE 1:50

BASE No.	BASE SIZE	PIEDestal SIZE
A1, A3, C1, C3	1900x1900x600 D.P.	600x600x400 HIGH
A2, B1, B3, C2	2200x2200x600 D.P.	600x600x400 HIGH
B2	2600x2600x600 C.P.	600x600x400 HIGH

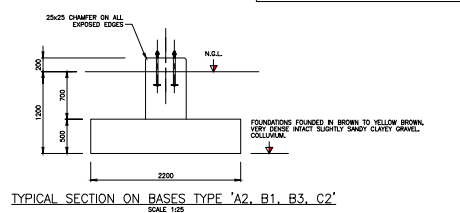


PLAN
H.D. BOLT DETAIL
36 BOLTS REQUIRED
SCALE 1:10



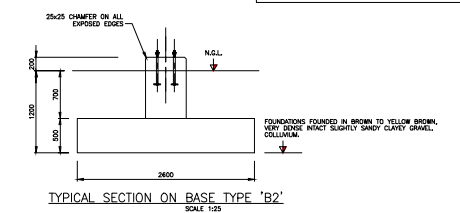
TYPICAL SECTION ON BASES TYPE 'A1, A3, C1, C3'
SCALE 1:25

Note: FOUNDATIONS DESIGNED FOR MAXIMUM 150kPa ALLOWABLE GROUND BEARING PRESSURE WHICH SHOULD BE APPROVED ON SITE BY A COMPETENT PERSON.



TYPICAL SECTION ON BASES TYPE 'A2, B1, B3, C2'
SCALE 1:25

Note: FOUNDATIONS DESIGNED FOR MAXIMUM 150kPa ALLOWABLE GROUND BEARING PRESSURE WHICH SHOULD BE APPROVED ON SITE BY A COMPETENT PERSON.



TYPICAL SECTION ON BASE TYPE 'B2'
SCALE 1:25

Note: FOUNDATIONS DESIGNED FOR MAXIMUM 150kPa ALLOWABLE GROUND BEARING PRESSURE WHICH SHOULD BE APPROVED ON SITE BY A COMPETENT PERSON.

NOTES:

- 25x25 CAMFER ON ALL CORNERS.
- FOUNDATION BEDDING TO BE HORIZONTAL AND FIRM WITH ALL LOOSE OR WATERLOGGED MATERIAL REMOVED. ENGINEER TO BE CONTACTED IMMEDIATELY IF UNFORSEEN FOUNDING CONDITIONS ARE ENCOUNTERED.
- CONCRETE TO BE 25 MPa CUBE STRENGTH AT 28 DAYS. IF NOT READY MIX, THEN ENGINEER OR HIS INSPECTOR TO BE PRESENT DURING MIXING AND MAY REQUIRE CUBE TESTS AT HIS DISCRETION.
- GROUND BEARING PRESSURE = 150 kPa. Max.
- TOLERANCES:
MAXIMUM ALLOWABLE DEVIATIONS OF 5mm TO H.D. BOLT LEVELS AND 3mm FOR PLAN POSITIONS OF BOLTS.
- H.D. BOLTS TO BE FABRICATED IN ACCORDANCE WITH SABS 135 WITH 3 NUTS AND 2 WASHERS EACH.

NO. REVISED BY:	AMENDMENTS	DATE	CLIENT	PROJECT:	PROJECT NO.:	DESIGNED	XX	THIRMEER	SCALE:	SHEET
				PHANDULWAZI AGRICULTURE HIGH SCHOOL (CLUSTER 2 PROJECT)	SCE-057	DRAWN	XX		AS SHOWN	1 OF 1
				DESCRIPTION:	CONTRACT NO.:	CHECKED	XX		APPROVED CONSULTING ENGINEER	
				FOUNDATIONS A 8.4 X 7.2 X 4.8M PRESTANK ON A 10M STAND	AW 2019/2028	DATE	AUGUST 2022		DRAWING NO.	REVISION NO.
									SCE-PHAND-008	



AMATOLA WATER
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PROJECT:
PHANDULWAZI AGRICULTURE HIGH SCHOOL (CLUSTER 2 PROJECT)
DESCRIPTION:
FOUNDATIONS A 8.4 X 7.2 X 4.8M PRESTANK ON A 10M STAND

PROJECT NO. SCE-057
CONTRACT NO. AW 2019/2028

DESIGNED XX
DRAWN XX
CHECKED XX
DATE AUGUST 2022

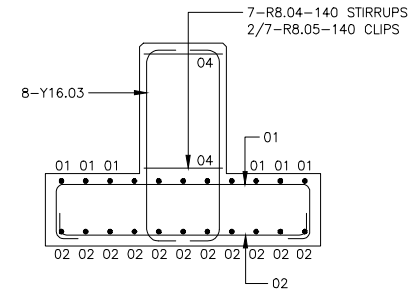
THIRMEER



SERVINET CONSULTING ENGINEERS
FACTORY No. 39
SIDRA INDUSTRIAL PARK
WHITTESEA
5360
TEL: 076 730 6426

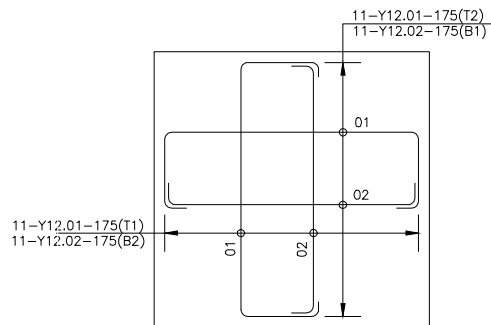
SCALE: AS SHOWN
SHEET 1 OF 1
APPROVED CONSULTING ENGINEER
DATE: _____
DRAWING NO. SCE-PHAND-008
REVISION NO. _____

No. OFF	REINFORCEMENT					SHAPE CODE (SABS 82)	DIMENSIONS					MASS kg
	Type Size	Bar Mark	No in each	Total No.	Length mm		A mm	B mm	C mm	D mm	E / R	
4/1900x1900x500 BASES 4/600x600x900 PEDESTALS	Y12	01	22	88	2700	55	150	350	1750	350		
	Y12	02	22	88	2000	38	150	1750				
	Y16	03	8	32	1550	38	200	1250				
	R8	04	7	28	2200	60	500	500				
	R8	05	14	56	750	35	500					



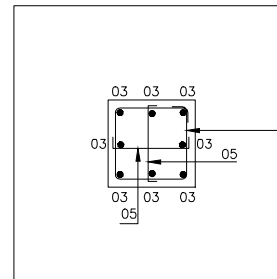
TYPICAL SECTION ON BASES
TYPE 'A1, A3, C1, C3'

SCALE 1:25



PLAN ON BASE

SCALE 1:25



PLAN ON PEDESTAL

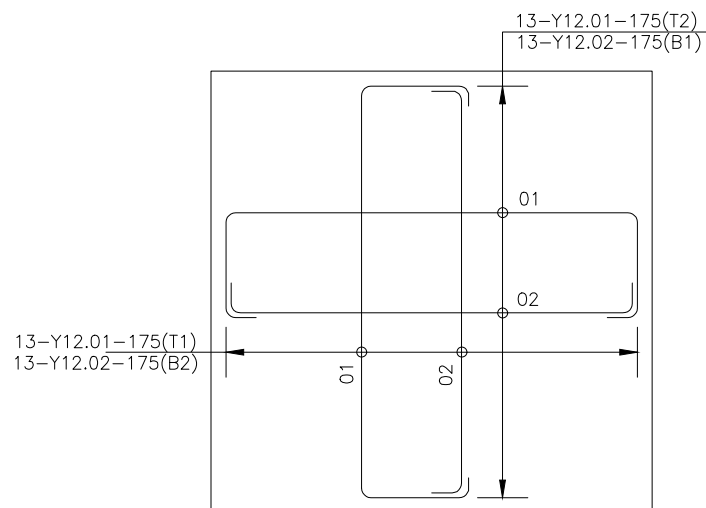
SCALE 1:25

COVER:
BASE BOTTOM = 75mm
BASE SIDES = 75mm
BASE TOP = 50mm
PEDESTALS = 50mm

No. REVISIONS		AMENDMENTS	DATE	CLIENT	 AMATOLA WATER 6 LANCASTER EAST LONDON S247 PRETORIA, 0001 TEL: 043 787 3700	PROJECT: PHANDULWAZI AGRICULTURE HIGH SCHOOL (CLUSTER 2 PROJECT)		PROJECT No: SCE-057		DESIGNED XX	 SERVINET CONSULTING ENGINEERS FACTORY No. 39 SIDA INDUSTRIAL PARK WHITTESEA 5360 TEL: 076 730 6426	SCALE AS SHOWN	SHEET 1 OF 1
						DESCRIPTION: FOUNDATIONS A1, A3, C1, C3 REINFORCEMENT		CONTRACT No: AW 2019/2028		DRAWN XX		APPROVED CONSULTING ENGINEER	
										CHECKED XX		DATE	REVISION No
										DATE			
										AUGUST 2022			

[illegible]

TYPICAL SECTION ON BASES
TYPE 'A2, B1, B3, C2'

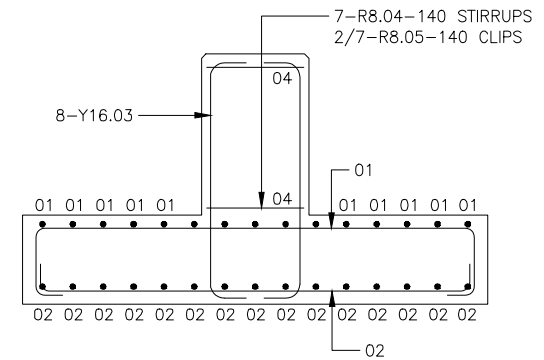


PLAN ON BASE
SCALE 1:25

COVER:
BASE BOTTOM = 75mm
BASE SIDES = 75mm
BASE TOP = 50mm
PEDESTALS = 50mm

No		Received By:		AMENDMENTS		DATE		CLIENT		PROJECT		PROJECT NO.		DESIGNED		XX		ENGINEER		SCALE		SHEET			
										PHANDULWAZI AGRICULTURE HIGH SCHOOL (CLUSTER 2 PROJECT)		SCE-057		DRAWN		XX		 SERNET CONSULTING ENGINEERS FACTORY NO. 39 SAPA INDUSTRIAL PARK WHITTELEA 5380 TEL: 078 730 6426		APPROVED CONSULTING ENGINEER		DATE		REVISOR NO	
										DESCRIPTION:		CONTRACT NO.		CHECKED		XX				DRAWING No		DRAWING-010			
										FOUNDATIONS A2, B1, B3, C2 REINFORCEMENT		AW 2019/02/08		DATE		AGUST 2022									
								 AMATOLA WATER 6 LANCASTER EAST LONDON 5247 PRETORIA, 0001 TEL: 043 787 3700																	

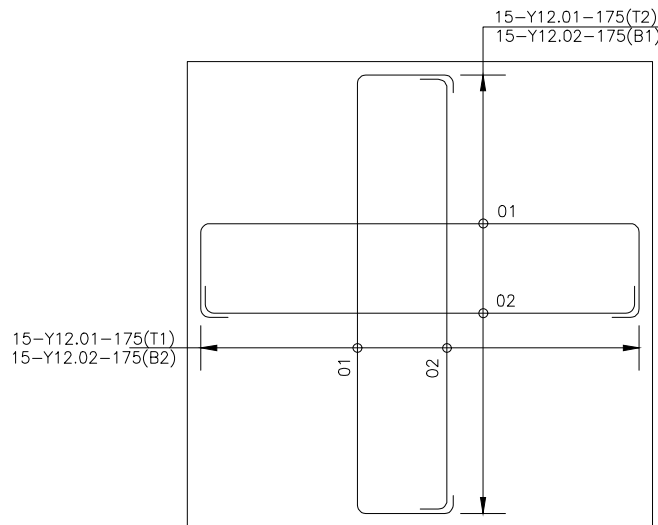
No. OFF	REINFORCEMENT					SHAPE CODE (SABS 82)	DIMENSIONS					MASS kg
	Type Size	Bar Mark	No in each	Total No.	Length mm		A mm	B mm	C mm	D mm	E / R	
1/2600x2600x500 BASE 1/600x600x900 PEDESTAL	Y12	01	30	30	3400	55	150	350	2450	350		
	Y12	02	30	30	2700	38	150	2450				
	Y16	03	8	8	1550	38	200	1250				
	R8	04	7	7	2200	60	500	500				
	R8	05	14	14	750	35	500					



TYPICAL SECTION ON BASES
TYPE 'B2'

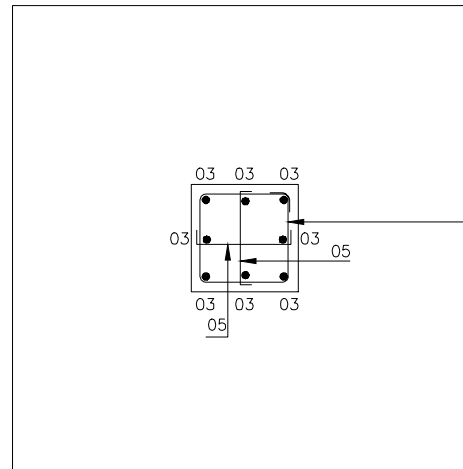
SCALE 1:25

COVER:
BASE BOTTOM = 75mm
BASE SIDES = 75mm
BASE TOP = 50mm
PEDESTALS = 50mm



PLAN ON BASE

SCALE 1:25



PLAN ON PEDESTAL

SCALE 1:25

No.	Revised By	AMENDMENTS	DATE	CLIENT	PROJECT	PROJECT No.	DESIGNED	XX	ENGINEER	SCALE	SHEET 1 OF 1
					PHANDULWAZI AGRICULTURE HIGH SCHOOL (CLUSTER 2 PROJECT)	SCE-057	DRAWN	XX		AS SHOWN	
					DESCRIPTION: FOUNDATIONS B2 REINFORCEMENT	CONTRACT No. AW 2019/2028	CHECKED	XX		APPROVED CONSULTING ENGINEER	
							DATE	AUGUST 2022		DRAWING No. SCE-PHAND-011	REVISION No.

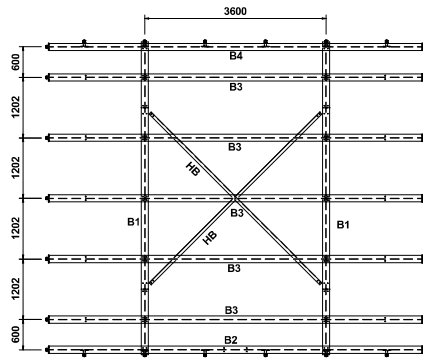


AMATOLA WATER
6 LANCASTER
EAST LONDON
5247
PRETORIA, 0001
TEL: 043 797 3700

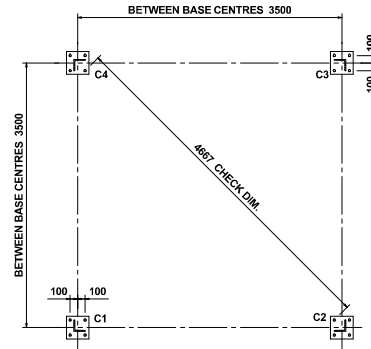


SERVINET CONSULTING ENGINEERS
FACTORY No. 39
SIDA INDUSTRIAL PARK
WHITTESEA
5360
TEL: 076 730 6426

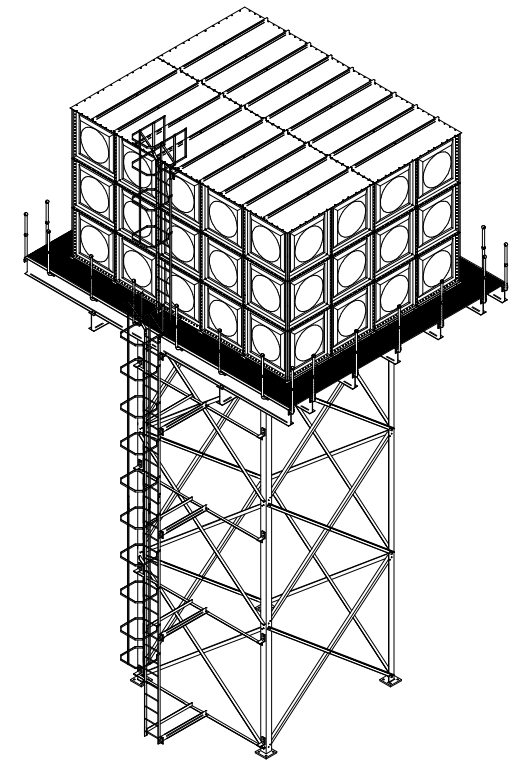
APPROVED CONSULTING ENGINEER
DATE: _____
REVISION No.



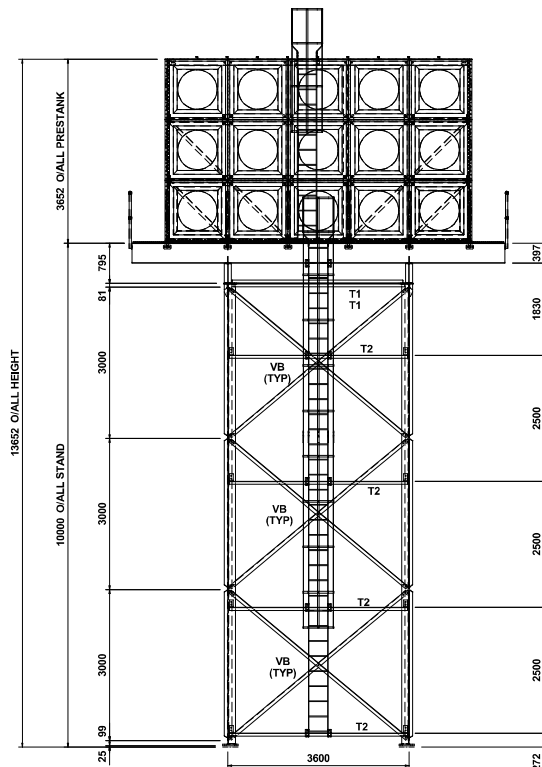
PLAN ON GRILLAGE



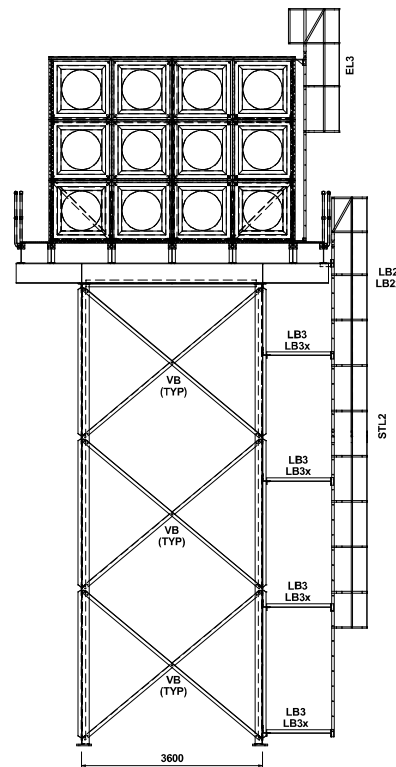
H.D. BOLTS LAYOUT



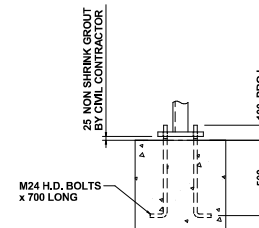
ISO VIEW



FRONT ELEVATION



SIDE ELEVATION



STAND BASE DETAIL

FOUNDATION LOADS PER BASE (kN)				
COLUMN	VERTICAL		HORIZONTAL	
	DEAD	LIVE	WIND	WIND --
C1, C2, C3 & C4	26	255	133	25

NOTE: LOADS ARE UNFACTORED HORIZONTAL LOADS CAN ACT IN ANY DIRECTION ± MEANS "UP" OR "DOWN"

MATERIALS	
STAND	S355JR
BASE PLATE	S355JR
BOLTS - STAND	GRADE 4.8
H.D. BOLTS	GRADE 4.8
UNLESS OTHERWISE NOTED	
WELDING TERMS AND SYMBOLS	ANSI A2.1-10
WELDING SPECIFICATION TO	ANSI A2.1-10 AND OR TO
ENGINEERING SPECIFICATIONS:	SANS 2011 - CSI 2005
SHOP PAINT	
BLAST CLEAN	
SITE PAINT	

2 DUTTON STREET MEYERTON, GAUTENG SOUTH AFRICA	
TEL: +27 (16) 362 9100 FAX: +27 (16) 362 9116	
PROJECT: AMATOLA WATER 6.0 x 4.8 x 3.6 PRESTANK ON 10m STAND c/w WALKWAY	
TITLE: GENERAL ARRANGEMENT & DETAILS	
THIS DRAWING IS THE PROPERTY OF STRUCTA TECHNOLOGY AND IS NOT TO BE COPIED OR USED WITHOUT THEIR PERMISSION	
DATE: & SIGNATURE	SCALE:
DRAWN: _____	N.T.S.
CHECKED: _____	
CONTRACT NO:	REVISION
DRAWING NO: 4	0