









**GENERAL NOTES:**

**GENERAL NOTES:**

1. THESE NOTES MUST BE READ IN CONNECTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SANS 1200 SPECIFICATIONS.
2. THE CONTRACTOR MUST IMPLEMENT A QUALITY ASSURANCE PROGRAM TO ENSURE THAT ALL WORK IS DONE IN ACCORDANCE WITH THE STANDARDS OF THE SOUTH AFRICAN MANAGEMENT SYSTEMS MUST BE APPROVED BY THE MONITOR PROGRAM OFFICIAL BEFORE THE CONTRACTOR PROCEEDS. THE ENGINEER WILL DO ANY INSPECTIONS.
3. THE CONTRACTOR SHALL CARRY OUT REPAIRS BEFORE COMMENCEMENT OF CONSTRUCTION AT ANY PORTION OF THE WORK. ANY DISCREPANCIES SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER.
4. WORK TO BE DONE TO FIGURED DIMENSIONS ONLY.
5. PRODUCTS IDENTIFIED TO THOSE SPECIFIED MAY ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.

#### FOUNDATION NOTES

1. EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
2. FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
3. THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO ASCERTAIN THE BEARING CAPACITY OF THE FOUNDATION FOUNDING SURFACE.

**CONCRETE NOTES:**

1. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 1200G.
2. CONCRETE CLASS TO BE AS FOLLOWS:

BLINDING	15 MPa/19mm
STANDARD REINFORCED CONCRETE	30 MPa/19mm
3. THE CONTRACTOR MUST COORDINATE ALL SERVICE DRAWINGS FOR DETAILS AND POSITIONS OF OPENINGS AND STEELS ELECTRICAL, MECHANICAL, AND OTHER SERVICES.
4. THE CONCRETE COVER TO REINFORCEMENT IS AS FOLLOWS:

5. FOUNDATIONS FROM TOP STEEL
6. THE CONTRACTOR RESPONSIBILITY TO PREVENT THE  
USE OF CRACKING IN THE CONCRETE
7. CONCRETE SHALL BE CURED TO AN APPROVED SPECIFICATION  
DOES NOT AFFECT CONTRACTORS FINISHES
8. NO BARS WILL BE BUILT ON A LOOK AS BEARS  
WALLS TO BE CONSTRUCTED. THE ELEMENT HAS REACHED THE 28 DAY  
CURE PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE  
ENGINEER
9. 25 TO 35 CEMENTERS TO BE FORMED A ALL EXPOSED CONCRETE  
CORNERS.
10. 250 MINIMUM OPC TO BE PLACED UNDER ALL SURFACE BARS

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE

[illegible]

## REVISIONS

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**PROJECT CONSULTANT**

## PROJECT CONSULTANT

# PROJECTINEERS

**PROJECTNEERS CONSULTING ENGINEERS  
& PROJECT MANAGERS**  
BUILDING 2, 1ST FLOOR, THORNHILL OFFICE PARK  
94 BEKKER ROAD, MIDRAND, 1665

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technical@projectneers.com

DESIGNED BY	DESIGN CHECKED BY	DRAWN BY	DRAWING CHECKED BY
L. NGQUMSHE	S. ZUNGU		M. MTSADU N. MDLALA

B. TSHUMA

DATE	PROJ. REG. NO.	THE MASTER HELD AT THE PROJECTNEERS CONSULTING MIDRAND OFFICE BEARS THE ORIGINAL SIGNATURE OF APPROVAL
2022-09-18		

**PROJECT NAME**  
PROPOSED NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHoyANDOU BOTANICAL GARDEN, THOHoyANDOU

**PROJECT SITE**  
**THOHOYANDOU BOTANICAL GARDEN (TBG) IN THOHOYANDOU**

SHEET TITLE

**DISCIPLINE**  
**STRUCTURAL ENGINEERING**

**CONTRACT NUMBER**

G360/2020-10

FILE NUMBER  
ZA2022 2002

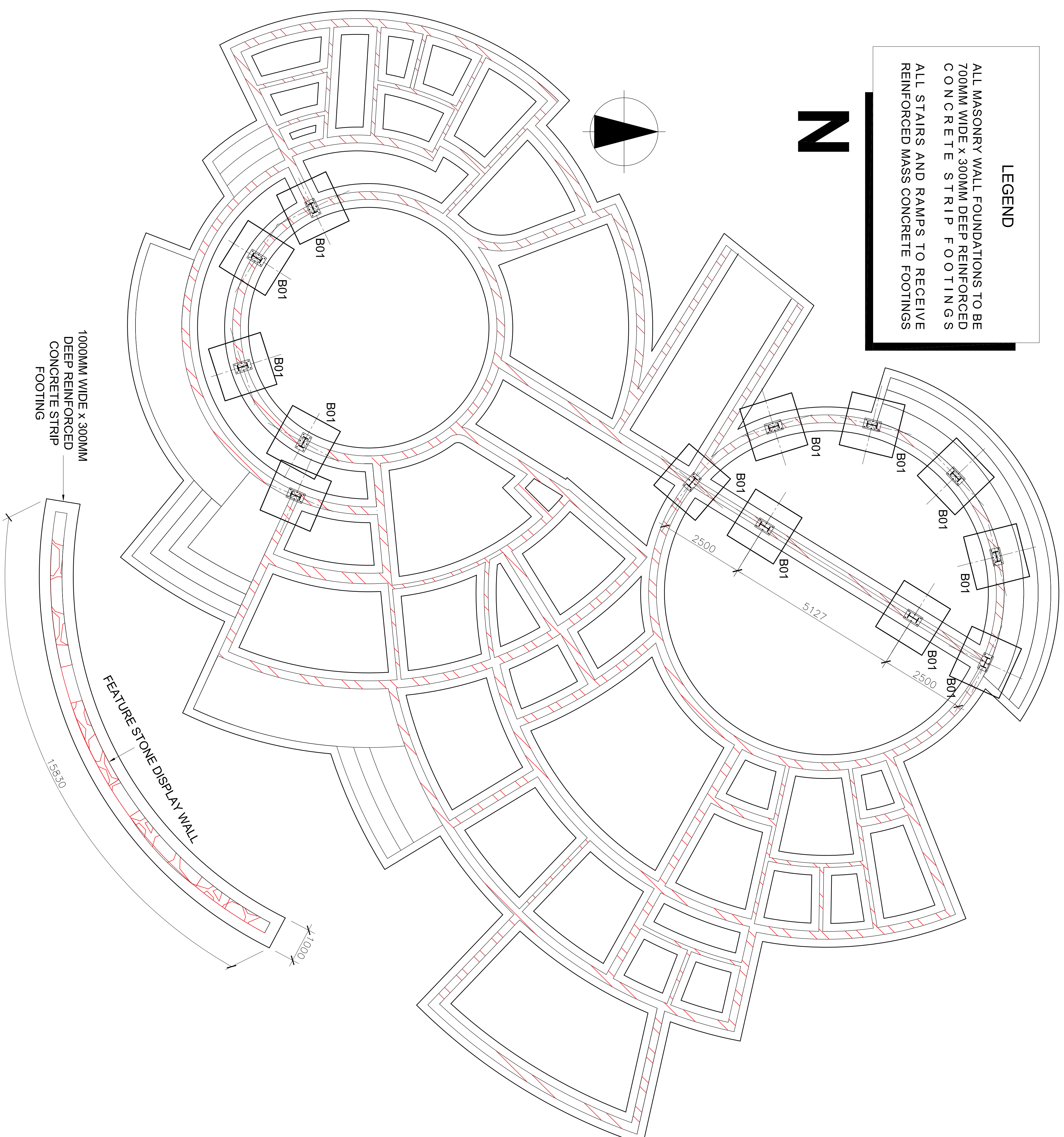
**DRAWING NUMBER**

PUN\_ZA\_2022\_2002\_SANBI\_TBG\_SE\_4002\_R00

**ISSUED FOR  
TENDER**

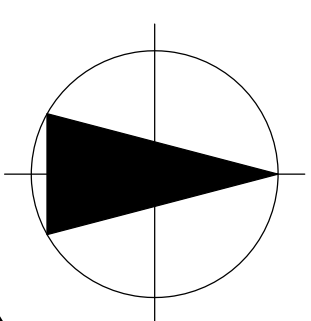
# VISITORS CENTRE FOUNDATION LAYOUT PLAN

1:100



## LEGEND

ALL MASONRY WALL FOUNDATIONS TO BE 700MM WIDE x 300MM DEEP REINFORCED CONCRETE STRIP FOOTINGS





**GENERAL NOTES:**

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1. THESE NOTES MUST BE READ IN CONNECTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SANS 1200 SPECIFICATIONS.
2. THE CONTRACTOR MUST IMPLEMENT A QUALITY ASSURANCE PROGRAM TO ENSURE THE WORK IS COMPLETED IN ACCORDANCE WITH THE PROJECT REQUIREMENTS AND TO THE START OF THE WORK, THE CONTRACTOR MUST SUBMIT A QUALITY ASSURANCE PROGRAM TO THE ENGINEER FOR REVIEW BEFORE THE ENGINEER WILL DO ANY INSPECTIONS.
3. THE CONTRACTOR SHALL CARRY OUT REPAIRS BEFORE COMMENCEMENT OF CONSTRUCTION IN ANY PORTION OF THE WORK. ANY DISCREPANCIES SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER.
4. WORK TO BE DONE TO FIGURED DIMENSIONS ONLY.
5. PRODUCTS IDENTICAL TO THOSE SPECIFIED MAY ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.

#### FOUNDATION NOTES

1. EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
2. FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
3. THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO ASCERTAIN THE BEARING CAPACITY OF THE FOUNDATION FOUNDING SURFACE.
4. ASSUMED SAFE BEARING CAPACITY OF FOUNDING MATERIAL 75 kPa.

**CONCRETE NOTES:**

1. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 2000.
2. CONCRETE CLASS TO BE AS FOLLOWS:  
  
BLINDING  
STANDARD      REINFORCED CONCRETE  
  
15 MPa/19mm      30 MPa/19mm
3. THE CONTRACTOR MUST COORDINATE ALL SERVICE DRAWINGS FOR DETAILS AND POSITIONS OF OPENINGS AND SLEEVES FOR ELECTRICAL, MECHANICAL, AND OTHER SERVICES.
4. THE CONCRETE COVER TO REINFORCEMENT IS AS FOLLOWS:

- [illegible]

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE

[illegible]

## REVISIONS

PROJECT CONSULTANT

# PROJECTINEERS

**PROJECTNEERS CONSULTING ENGINEERS  
& PROJECT MANAGERS**  
BUILDING 2, 1ST FLOOR, THORNHILL OFFICE PARK  
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DRAWING CHECKS			
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**APPROVAL CONSUL**  
**B. TSHUMA**

DATE	PROJ. REG. NO.	THE MASTER HELD AT THE PROJECTEERS CONSULTING MIDRAND OFFICE BEARS THE ORIGINAL SIGNATURE OF APPROVAL
2022-09-18		

PROJECT NAME  
PROPOSED NEW VISITORS' CENTRE, PARKING UPGRADES,  
LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL  
SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY  
INSTITUTE AT THE TPOHOYANDOU BOTANICAL GARDEN,  
TPOHOYANDOU

**PROJECT SITE**  
**THOHOYANDOU BOTANICAL GARDEN (TBG) IN THOHOYANDOU**

SHEET TITLE

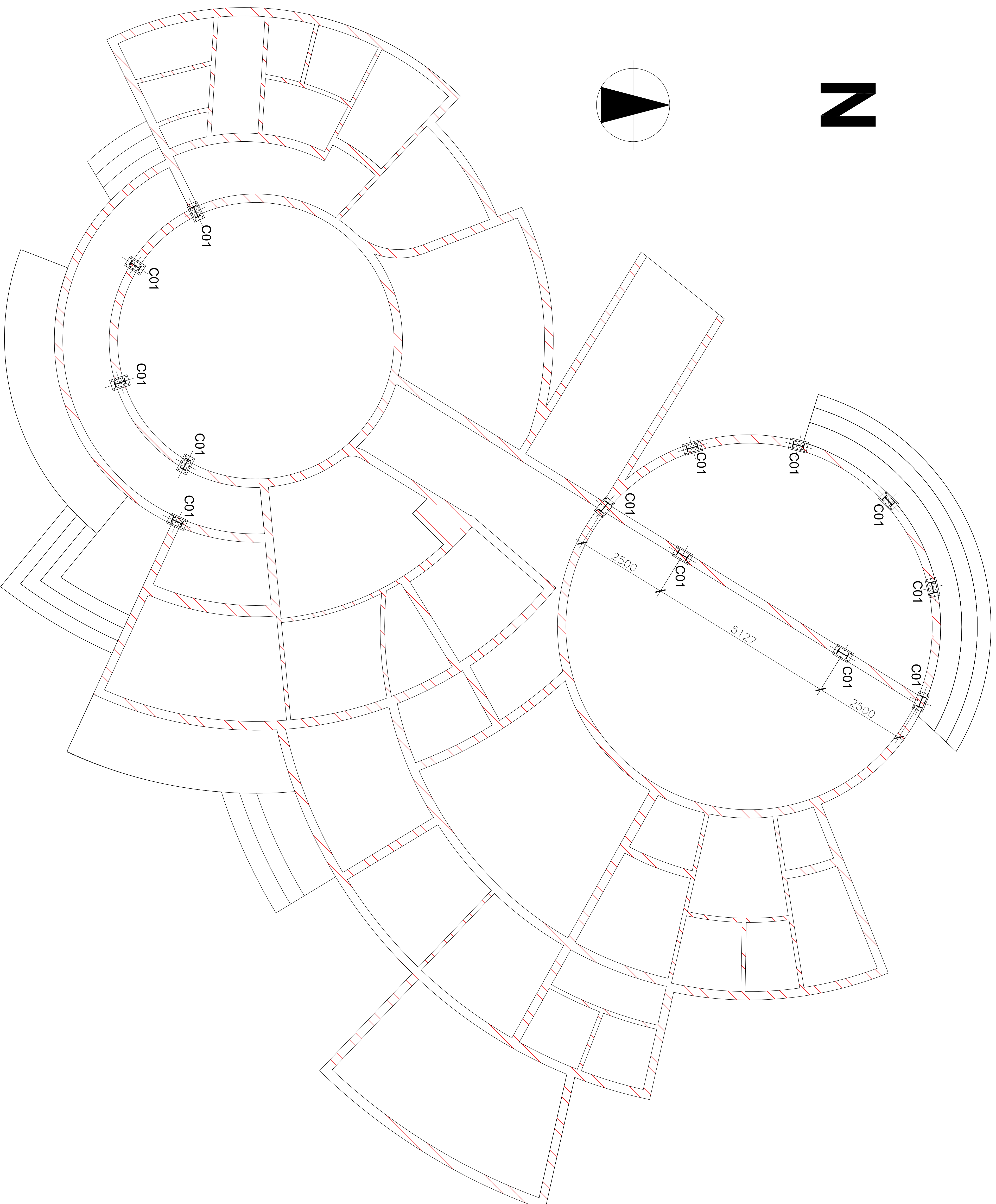
**DISCIPLINE**  
**STRUCTURAL ENGINEERING**

**CONTRACT NUMBER**  
G360/2020-10

**FILE NUMBER** ZA2032 2002

DRAWING NUMBER							
DWG	STATE	YEAR	PROJECT NO.	COUNTY	SITE	ROUTE	SECTION NO.
PJN_ZA_2022_2002_SANBL	TBGS	SE	4003	R00			

**ISSUED FOR  
TENDER**



## VISITORS CENTRE GROUND FLOOR LAYOUT PLAN

1:100



1. THESE NOTES MUST BE READ IN CONJUNCTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SAN

2. THE CONTRACTOR MUST IMPLEMENT A QUALITY ASSURANCE SYSTEM FOR THE EXECUTION OF THE WORK. THE QUALITY ASSURANCE SYSTEM MUST BE DESCRIBED IN THE CONTRACT DOCUMENTS TO THE SATISFACTION OF THE OWNER. THE CONTRACTOR MUST PERFORM A QUALITY CONTROL INSPECTION BEFORE THE BEGINNING OF ANY INSPECTIONS.
3. THE CONTRACTOR MUST CHECK ALL DIMENSIONS BEFORE THE BEGINNING OF THE WORK AND AFTER THE COMPLETION OF THE WORK. ANY DISCREPANCIES SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER.
4. WORK IS TO BE DONE TO PLOTTED DIMENSIONS ONLY.
5. PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.

1. EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.

2. FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
3. THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO ASCERTAIN THE BEARING CAPACITY OF THE FOUNDATION FOUNDING SURFACE.
4. ASSUMED SAFE BEARING CAPACITY OF FOUNDING MATERIAL 7

1. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 1200G.

2. CONCRETE CLASS TO BE AS FOLLOWS:  

BLINDING	15 MPa/11mm
STANDARD REINFORCED CONCRETE	30 MPa/19mm
3. THE CONTRACTOR MUST CO-ORDINATE ALL SERVICE DRAWING FOR DETAILS AND POSITIONS OF OPENINGS AND SLEEVES REQUIRED FOR STORMWATER, SEWERAGE, DRAINAGE, ELECTRICAL, MECHANICAL, AND OTHER SERVICES.
4. THE CONCRETE COVER TO REINFORCING IS AS FOLLOWS:

5. FOUNDATIONS SHALL BE REINFORCED WITH STEEL REINFORCING BARS (REINFORCING BARS SHALL EXCEED THE STRENGTH OF CONCRETE OF THE STRUCTURAL ELEMENT IN WHICH THEY ARE USED).
6. THE CONTRACTOR'S RESPONSIBILITY TO PREVENT THE CONCRETE FROM BEING REMOVED FROM THE FORMS AND CURING OF THE CONCRETE SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
7. CONCRETE SHALL BE CASTED TO AN APPROVED SPECIFICATION AND SHALL BE CURED FOR A MINIMUM OF 28 DAYS. CONCRETE DOES NOT AFFORD PROTECTION TO FINISHERS.
8. NO ROCK WILLS BE PUT IN OR ON ROADS, BEAMS, WALLS, OR OTHER STRUCTURES. ALL ROCKS SHALL BE REMOVED BEFORE STRENGTH, UNLESS APPROVED IN WRITING BY THE ENGINEER.
9. 25 x 25 CHAMBERS TO BE FORMED AT ALL EXPOSED CONCRETE CORNERS.
10. 250 MM DPC TO BE PLACED UNDER ALL SURFACE KEELS.

CLIENT

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE

[illegible]

## PROJECT NEEER

**PROJECTNEERS CONSULTING ENGINE  
& PROJECT MANAGERS**  
BUILDING 2, 1ST FLOOR, THORNHILL OFFICE PARK  
94 BEKKER ROAD, MIDRAND, 1685

053060E37F	053060E3ED3F	053060E37F	053060E37F
L. NGUMSHI	S. ZUNGU		M. NTSADI N.

DATE	PROJECT NO.	THE MASTER HELD AT THE PROJECT NEED CONSULTING MIDRAND OFFICE BEARS T
2022-09-18		

## PROPOSED NEW VISITORS' CENTRE, PARKING UPGRADES

SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY  
INSTITUTE AT THE THOHoyANDOU BOTANICAL GARDEN  
THOHoyANDOU

**PROJECT SITE**  
**THOHAYANDOU BOTANICAL GARDEN (TBG) IN THOHOUA**

**SHEET TITLE**

**VISITORS CENTRE GROUND FLOOR LAYOUT**

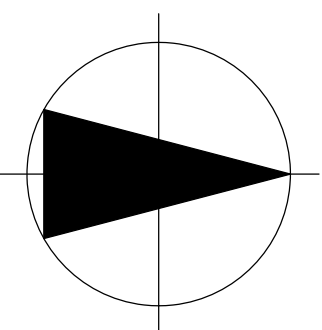
**DISCIPLINE**  
**STRUCTURAL ENGINEERING**

G360/2020-10

FILE NUMBER
ZA2022_2002

Year	Verbs	Light	Light Neg	SOV(PT)	GLE	Focus	SOV(PT) Neg	NS
PJN_ZA_2022_2002_SANBI_TBGS_4004_R00								

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# VISITORS CENTRE GROUND FLOOR REINFORCED CONCRETE SLAB LAYOUT PLAN

1:10C

100MM THICK REINFORCED CONCRETE  
GROUND FLOOR SLAB WITH MESH REF 617  
INSTALLED 40MM BELOW TOP OF SLAB

REINFORCED MASS CONCRETE RAMP WITH  
MESH REF 617 INSTALLED 40MM BELOW TOP  
OF RAMP

REINFORCED MASS CONCRETE STAIRS WITH  
MESH REF 617 INSTALLED 40MM BELOW TOP  
OF STAIRS

COMPOSITE MATERIAL - EVA LAST OR  
SIMILAR APPROVED DECKING

COMPOSITE MATERIAL - EVA LAST OR  
SIMILAR APPROVED STAIRS

## 60MM INTERLOCKING CONCRETE PAVERS

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100	100

	DISCIPLINE	STRUCTURAL ENGINEERING
	CONTRACT NUMBER	G360/2020-10
	FILE NUMBER	ZAD022_2002
	DRAWING NUMBER	PIN_ZA_2002_2002_SANBI_TBG_SE_A004_P00



NOTES

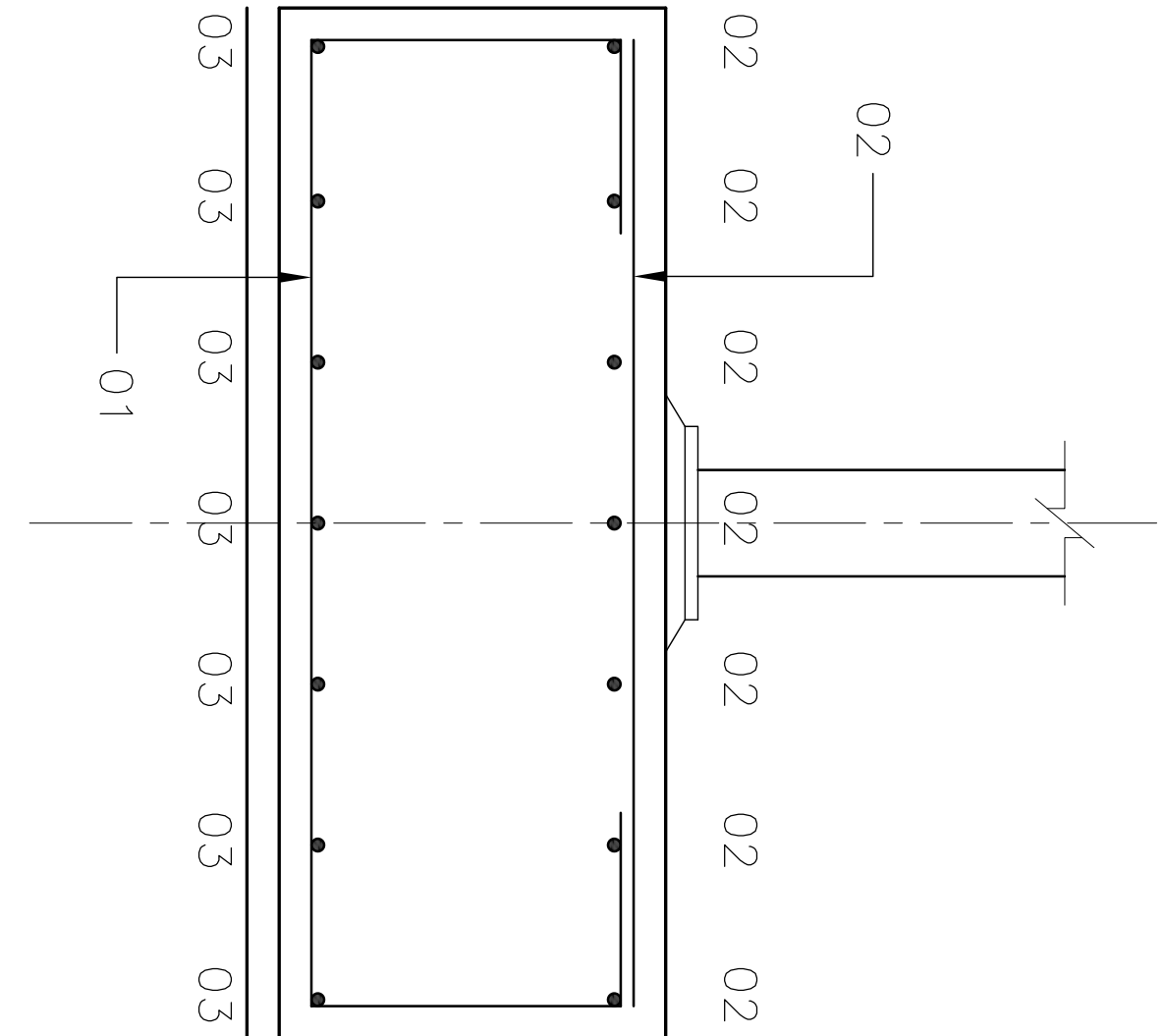
GENERAL NOTES:

- THESE NOTES MUST BE READ IN CONJUNCTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SANBI DIVERSITY FOR LIFE POLICY.
  - THE CONTRACTOR MUST HAVE A QUALITY ASSURANCE SYSTEM FOR THE EXECUTION OF THE WORK. THE QUALITY TO THE START OF THE WORK. THE CONTRACTOR MUST PROVIDE A QUALITY CONTROL INSPECTION BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER'S SERVICES SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER.
  - THE CONTRACTOR SHALL CHECK ALL DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK TO BE DONE TO ENSURE DIMENSIONS ONLY.
  - PRODUCT'S DIFFERENT TO THOSE SPECIFIED MAY ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.
- FOUNDATION NOTES:**
- EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
  - FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
  - THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO DETERMINE THE BEARING CAPACITY OF THE FOUNDATION.
  - ASSIGNED SAFE BEARING CAPACITY OF FOUNDATION MATERIAL: 75 kPa.
- CONCRETE NOTES:**
- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 12000.
  - CONCRETE CLASS TO BE AS FOLLOWS:  
BLINDING: 15 MPa/18mm  
STANDARD: 30 MPa/19mm
  - THE CONTRACTOR MUST COORDINATE ALL SERVICE DRAWINGS FOR DETAILS AND POSITIONS OF OPENINGS AND STEVES, ELECTRICAL, MECHANICAL AND OTHER SERVICES.
  - THE CONCRETE COVER TO REINFORCING IS AS FOLLOWS:  
FOUNDATIONS: 50mm  
SUPERSTRUCTURES (FROM TOP): 30mm
  - THE STRENGTH OF THE CONCRETE COVER ALONGS SHALL EXCEED THE STRENGTH OF CONCRETE OF THE STRUCTURAL ELEMENT.
  - IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT THE FORMATION OF PLASTIC SHRINKAGE CRACKS IN NEWLY LAID CONCRETE.
  - CONCRETE SHALL BE CURED TO AN APPROVED SPECIFICATION.
  - NO BRICK WALLS MAY BE BUILT ON FLOOR SLABS, BEAMS, WALLS, STEPS, OR THE EXISTING HAS NOTING THE RELEVANT STANDARDS. ANY VARIATION SHALL BE APPROVED BY THE ENGINEER.
  - 25-35% CEMENTERS TO BE FORMED AT ALL EXPOSED CONCRETE CORNERS.
  - 250 MICRON DPC TO BE PLACED UNDER ALL SURFACE DECKS.

NOTES

GENERAL NOTES:

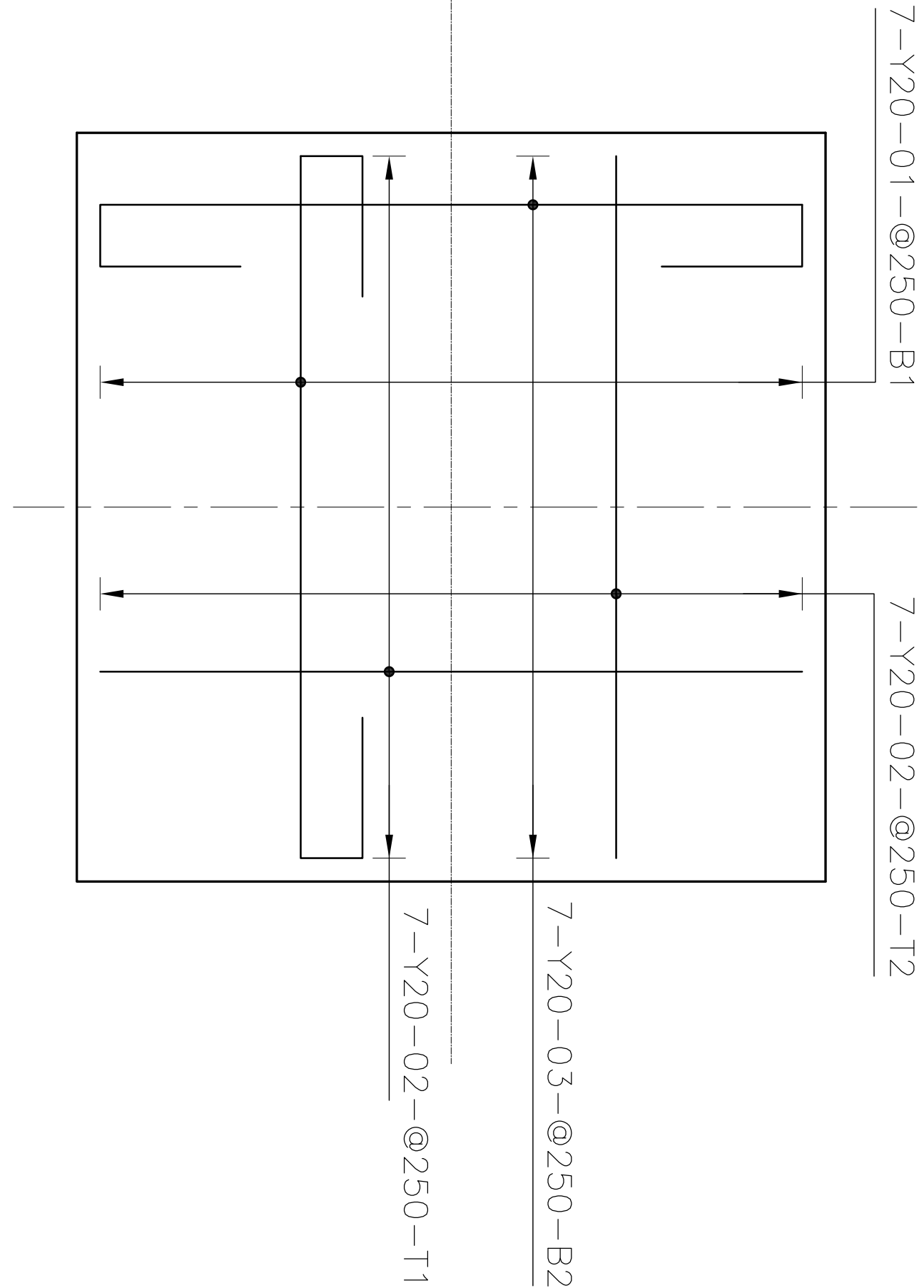
- THESE NOTES MUST BE READ IN CONJUNCTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SANBI DIVERSITY FOR LIFE POLICY.
  - THE CONTRACTOR MUST HAVE A QUALITY ASSURANCE SYSTEM FOR THE EXECUTION OF THE WORK. THE QUALITY TO THE START OF THE WORK. THE CONTRACTOR MUST PROVIDE A QUALITY CONTROL INSPECTION BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER'S SERVICES SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER.
  - THE CONTRACTOR SHALL CHECK ALL DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK TO BE DONE TO ENSURE DIMENSIONS ONLY.
  - PRODUCT'S DIFFERENT TO THOSE SPECIFIED MAY ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.
- FOUNDATION NOTES:**
- EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
  - FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
  - THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO DETERMINE THE BEARING CAPACITY OF THE FOUNDATION.
  - ASSIGNED SAFE BEARING CAPACITY OF FOUNDATION MATERIAL: 75 kPa.
- CONCRETE NOTES:**
- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 12000.
  - CONCRETE CLASS TO BE AS FOLLOWS:  
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STANDARD: 30 MPa/19mm
  - THE CONTRACTOR MUST COORDINATE ALL SERVICE DRAWINGS FOR DETAILS AND POSITIONS OF OPENINGS AND STEVES, ELECTRICAL, MECHANICAL AND OTHER SERVICES.
  - THE CONCRETE COVER TO REINFORCING IS AS FOLLOWS:  
FOUNDATIONS: 50mm  
SUPERSTRUCTURES (FROM TOP): 30mm
  - THE STRENGTH OF THE CONCRETE COVER ALONGS SHALL EXCEED THE STRENGTH OF CONCRETE OF THE STRUCTURAL ELEMENT.
  - IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT THE FORMATION OF PLASTIC SHRINKAGE CRACKS IN NEWLY LAID CONCRETE.
  - CONCRETE SHALL BE CURED TO AN APPROVED SPECIFICATION.
  - NO BRICK WALLS MAY BE BUILT ON FLOOR SLABS, BEAMS, WALLS, STEPS, OR THE EXISTING HAS NOTING THE RELEVANT STANDARDS. ANY VARIATION SHALL BE APPROVED BY THE ENGINEER.
  - 25-35% CEMENTERS TO BE FORMED AT ALL EXPOSED CONCRETE CORNERS.
  - 250 MICRON DPC TO BE PLACED UNDER ALL SURFACE DECKS.



BASE TYPE B01 REINFORCEMENT

ELEVATION (11 NO. OFF)

1:10



BASE TYPE B01 REINFORCEMENT

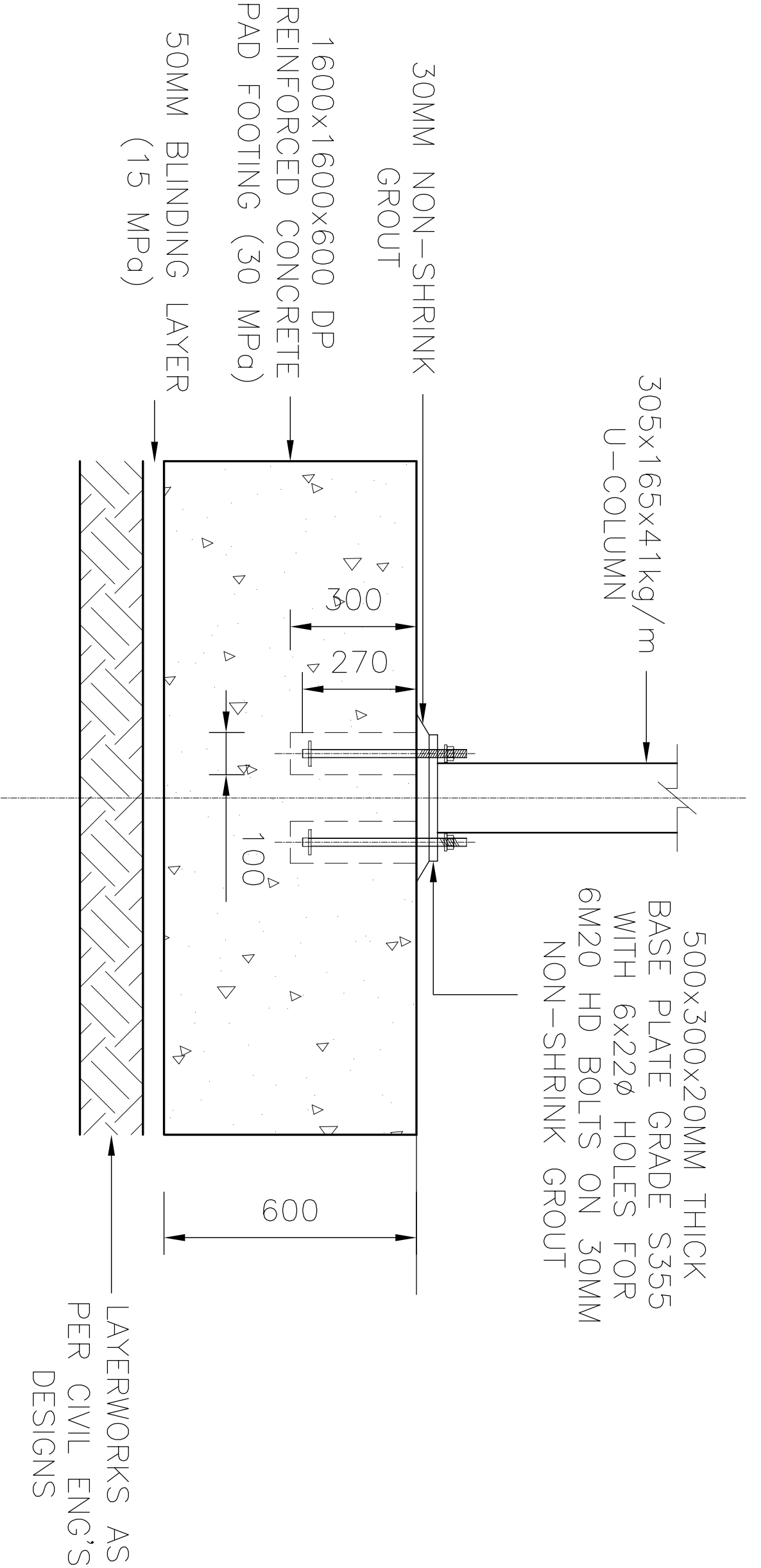
LAYOUT PLAN (11 NO. OFF)

NOTES

COVER: 50MM ALL ROUND  
Fy = 450 MPa  
Fcu = 30 MPa

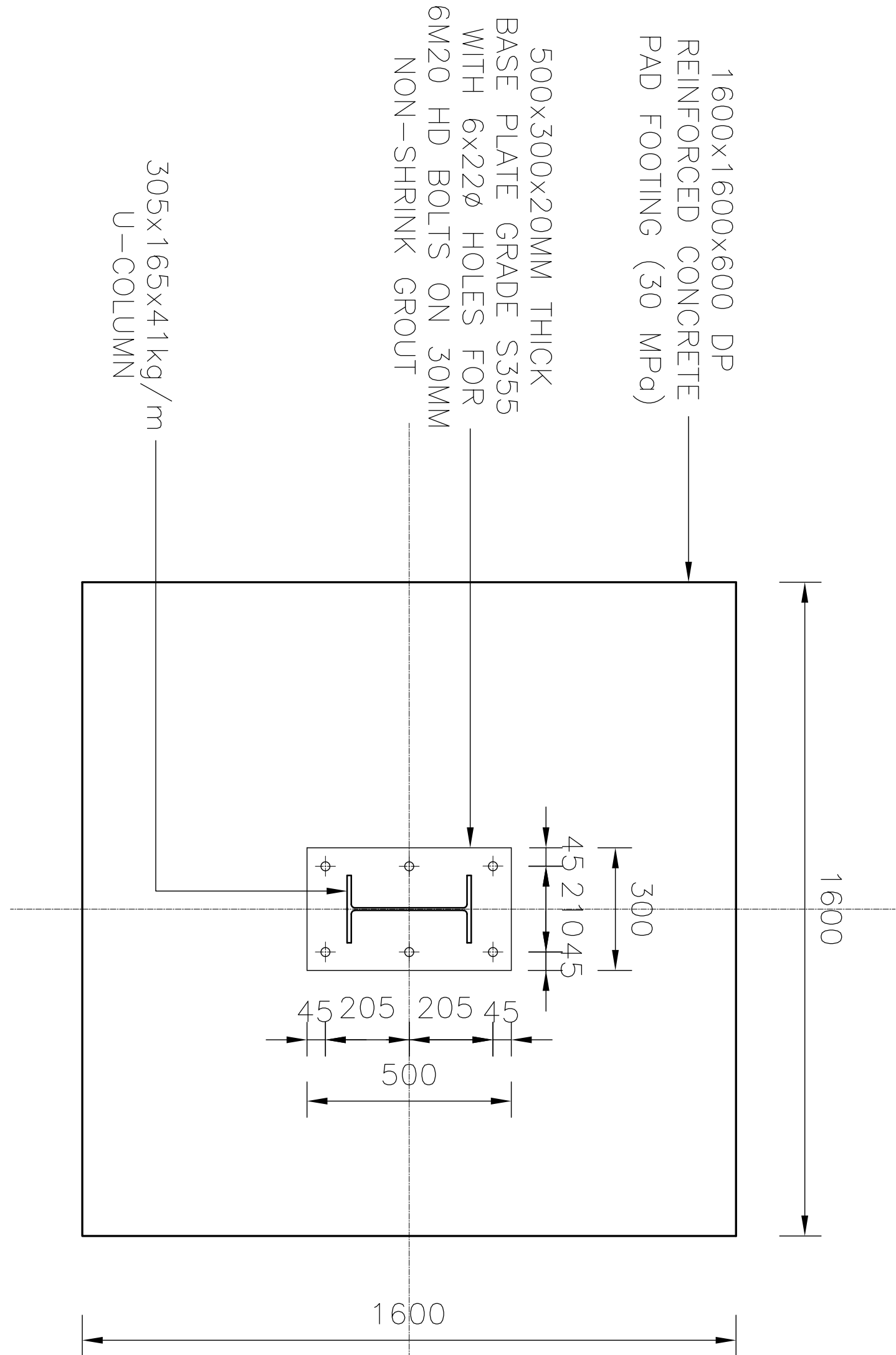
NOTES :

- CONCRETE MIX FOR BASES 30MPa/19.
- CONCRETE MIX FOR FLOOR 30MPa/19.
- CONCRETE BASES AND FLOOR TO BE CURED FOR MIN. 21 DAYS BEFORE ERECTING STEEL OR LOADING THE FLOOR.
- KEEP CONCRETE FLOOR WET FOR MINIMUM PERIOD OF 5 DAYS.
- PREFERABLE - CONCRETE FLOOR TO BE CASTED AFTER ERECTION OF ROOF SHEETING.
- SAW CUT JOINTS ARE TO BE DONE AS SOON AS THE CONCRETE IS FIRM ENOUGH NOT TO BE TORN OR DAMAGED BY SAW BLADE. (USUALLY BETWEEN 8 AND 12 HOURS AFTER CONCRETE IS CAST).
- ALL CONCRETE WORK TO COMPLY WITH SANS 2001 C01.
- BACKFILLING TO BE OF GRADE A AND FREE OF ANY VEGETATIVE OBJECTS.
- 63 OR BETTER MATERIAL TO BE USED FOR BACKFILLING PURPOSES AND COMPACTED TO 95% MOD AASHTO.



BASE TYPE B01 ELEVATION

1:10



BASE TYPE B01 PLAN

1:10

NOTES : (UNLESS OTHERWISE NOTED)

- STEELWORK TO COMPLY WITH SABS 1200H.
- ALL WELDS TO BE 6mm CONT. FILLET WELDS.
- ALL HOLES Ø22 FOR M20 BOLTS.
- BOLT MATERIAL AS PER SABS 136 Gr. 8.8.
- ALL GUSSET PLATES 8mm THICK.
- MIN. 2 BOLTS REQUIRED AT ALL BRACING CONNECTIONS.
- STEELWORK TO BE WIRE BRUSHED, GIVEN ONE COAT OF RED OXIDE PRIMER, ONE COAT OF INDUSTRIAL GREY, AND ONE COAT OF APPROVED ENAMEL (COLOUR TO OWNERS CHOICE).

PROJECTNEERS

PROJECTNEERS CONSULTING ENGINEERS  
& PROJECT MANAGERS  
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**APPROVAL CONSULTANT**  
B. TSHUJIA  
2022-09-18  
THE MASTER SET AT THE PROJECTING  
ORIGINAL SIGNATURE OF APPROVAL

**PROJECT NAME**  
PROPOSED NEW VISITORS CENTRE, PARKING UPGRADES,  
LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL  
INSTITUTE AT THE THOHoyANDOU BOTANICAL GARDEN,  
THOHoyANDOU

**PROJECT SITE**  
THOHoyANDOU BOTANICAL GARDEN (TBG) IN THOHoyANDOU

**SHEET TITLE**  
PAD FOUNDATION LAYOUT PLAN AND DETAILS

**DESIGN NAME**  
STRUCTURAL ENGINEERING

**CONTRACT NUMBER**  
GS00/2020-10

**THE NUMBER**  
ZK02/22\_2002

**DRAWING NUMBER**  
P\_A1\_ZA\_2022\_2002\_SANBI\_TBG\_SE\_4005\_R00

ISSUED FOR  
TENDER

A1



NOTES

GENERAL NOTES:

- THESE NOTES MUST BE READ IN CONJUNCTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SANBI DIVERSITY FOR LIFE POLICY AND THE SANBI DIVERSITY FOR LIFE POLICY IMPLEMENTATION PLAN.
- THE CONTRACTOR MUST HAVE A QUALITY ASSURANCE SYSTEM FOR THE EXECUTION OF THE WORK. THE QUALITY ASSURANCE SYSTEM MUST BE APPROVED BY THE ENGINEER PRIOR TO THE START OF THE WORK. THE CONTRACTOR MUST PROVIDE A QUALITY CONTROL INSPECTION BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK.
- THE CONTRACTOR SHALL CHECK ALL DIMENSIONS BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER'S APPROVAL SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER.
- WORK TO BE DONE TO FINISHED DIMENSIONS ONLY.
- PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.

FOUNDATION NOTES:

- EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
- FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
- THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO ASCERTAIN THE BEARING CAPACITY OF THE FOUNDATION.
- ASSIGNED SAFE BEARING CAPACITY OF FOUNDATION MATERIAL: 75 kPa.

CONCRETE NOTES:

- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 12005.
- CONCRETE CLASS TO BE AS FOLLOWS:  
BLINDING: 15 MPa/18mm  
STANDARD: REINFORCED CONCRETE: 30 MPa/19mm
- THE CONTRACTOR MUST CO-ORDINATE ALL SERVICE DRAWINGS FOR DETAILS AND POSITIONS OF OPENINGS AND STEVES ELECTRICAL, MECHANICAL AND OTHER SERVICES.
- THE CONCRETE COVER TO REINFORCING IS AS FOLLOWS:  
FOUNDATIONS: 50mm  
SURFACEDORS (FROM TOP): 30mm
- THE STRENGTH OF THE CONCRETE COVER ALONGS SHALL EXCEED THE STRENGTH OF CONCRETE OF THE STRUCTURAL ELEMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT THE FORMATION OF PLASTIC SHRINKAGE CRACKS IN NEWLY Laid CONCRETE.
- CONCRETE SHALL BE CURED TO AN APPROVED SPECIFICATION DOES NOT AFFECT ADHESION OR FINISHES.
- NO BRICK WALLS MAY BE BUILT ON FLOOR SLABS, BEAMS, WALLS ETC. BEFORE THE SLAB HAS REACHED THE 28 DAY CURE PERIOD. ANY VIOLATION WILL BE REPORTED TO THE ENGINEER.
- 25-35% CONCRETE TO BE FORMED AT ALL EXPOSED CONCRETE CORNERS.
- 250 MICRON DPM TO BE PLACED UNDER ALL SURFACE REBES.

CLIENT

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE  
**SANBI**  
Biodiversity for Life  
South African National Biodiversity Institute

REV. NO.	DATE	DESCRIPTION
R00	2022-09-18	ISSUED FOR TENDER
REVISIONS		

PROJECT CONSULTANT

PROJECT MANAGERS

PROJECT MANAGERS  
&  
BUILDING 2, 1ST FLOOR, THORNTON OFFICE PARK  
94 BEKKER ROAD, MIDRAND, 1685

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APPROVAL CONSULTANT

B. TSHUJWA  
THE MASTER SEAL AT THE SIGNING OFFICIAL SIGNATURE OF APPROVAL

PROJECT NAME  
PROPOSED NEW VISITORS CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL WORKS AT THE THOHOYANDOU BOTANICAL GARDEN, THOHOYANDOU

PROJECT SITE  
THOHOYANDOU BOTANICAL GARDEN (TBG) IN THOHOYANDOU

SHEET TITLE  
VISITORS CENTRE FOUNDATION CONSTRUCTION DETAILS

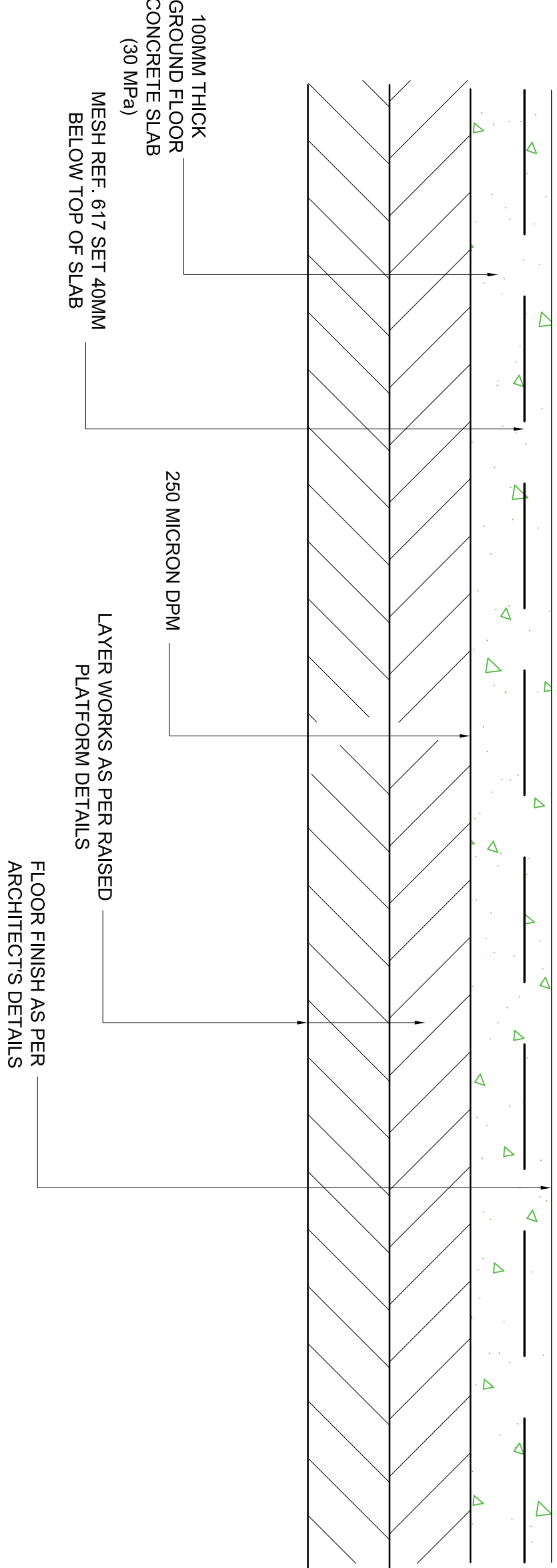
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STRUCTURAL ENGINEERING

CONTRACT NUMBER  
G500/2020-10

THE NUMBER  
ZV02022\_2002

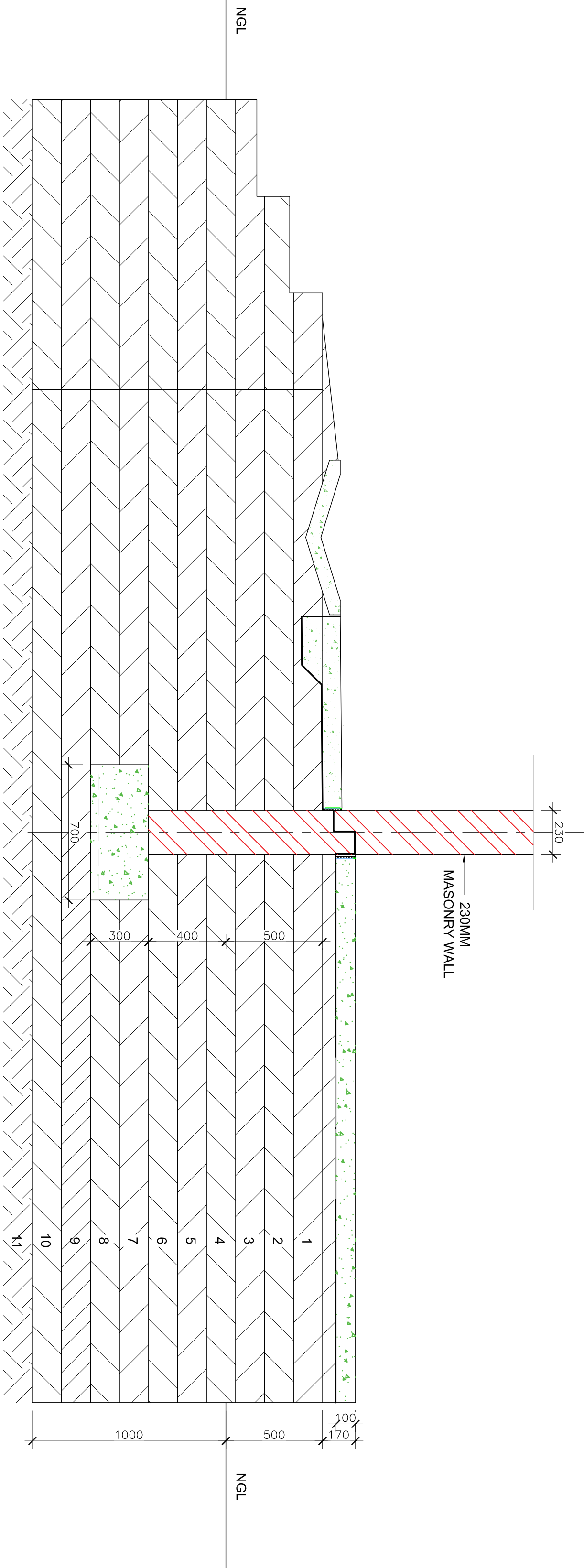
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P\_A1\_ZA\_2022\_2002\_SANBI\_TBG\_SE\_4096\_R00

ISSUED FOR  
TENDER



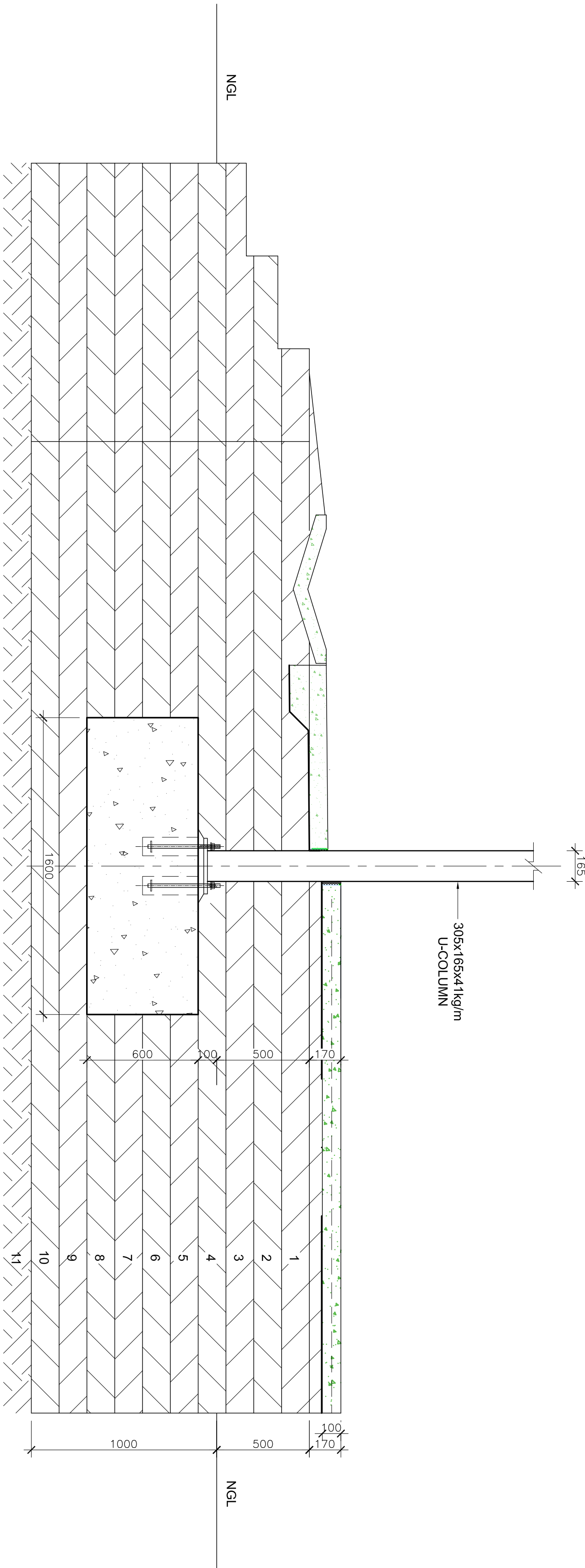
TYPICAL GROUND FLOOR SLAB CONSTRUCTION DETAIL

125



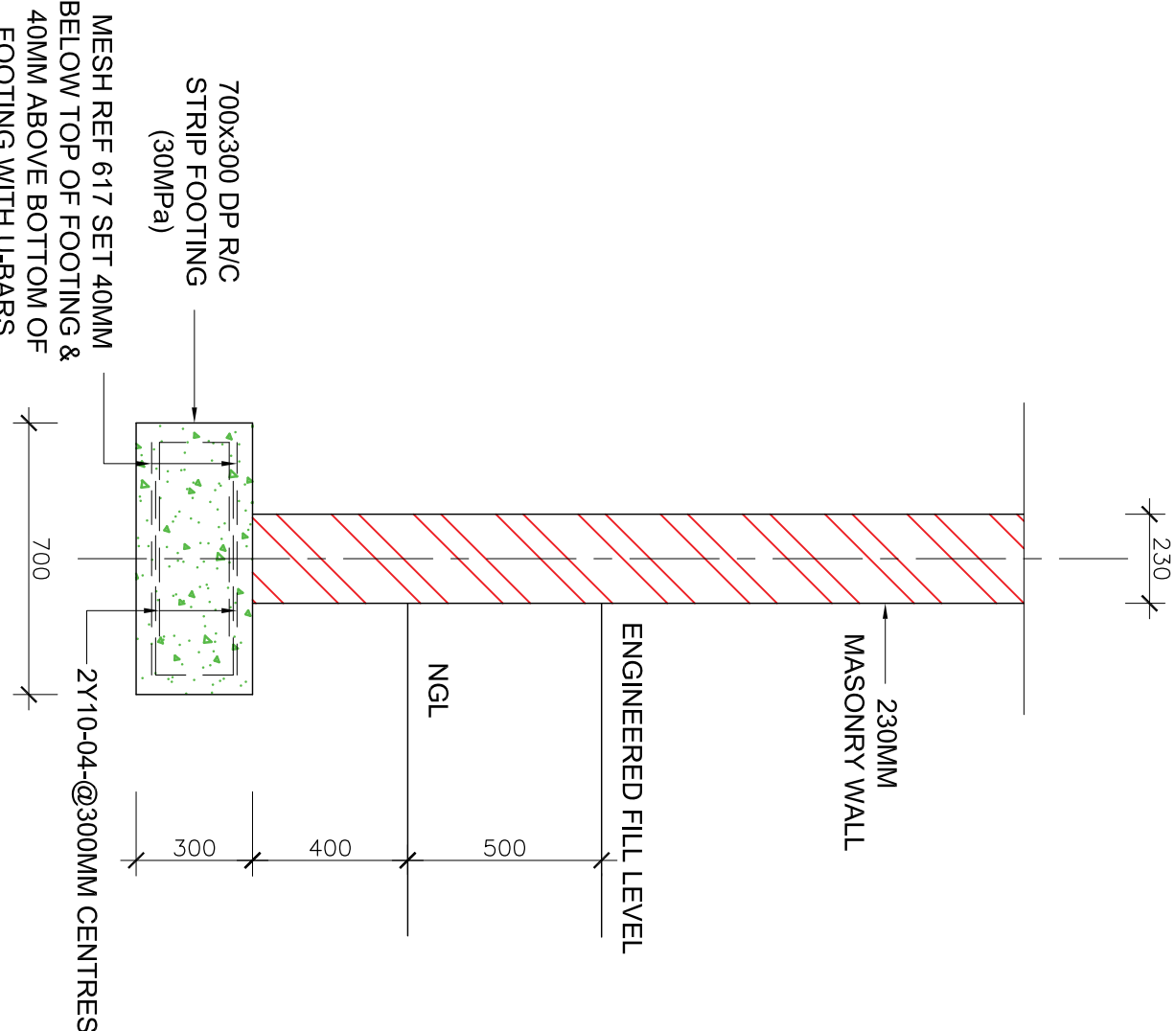
TYPICAL MASONRY WALL FOUNDATION SECTION

120



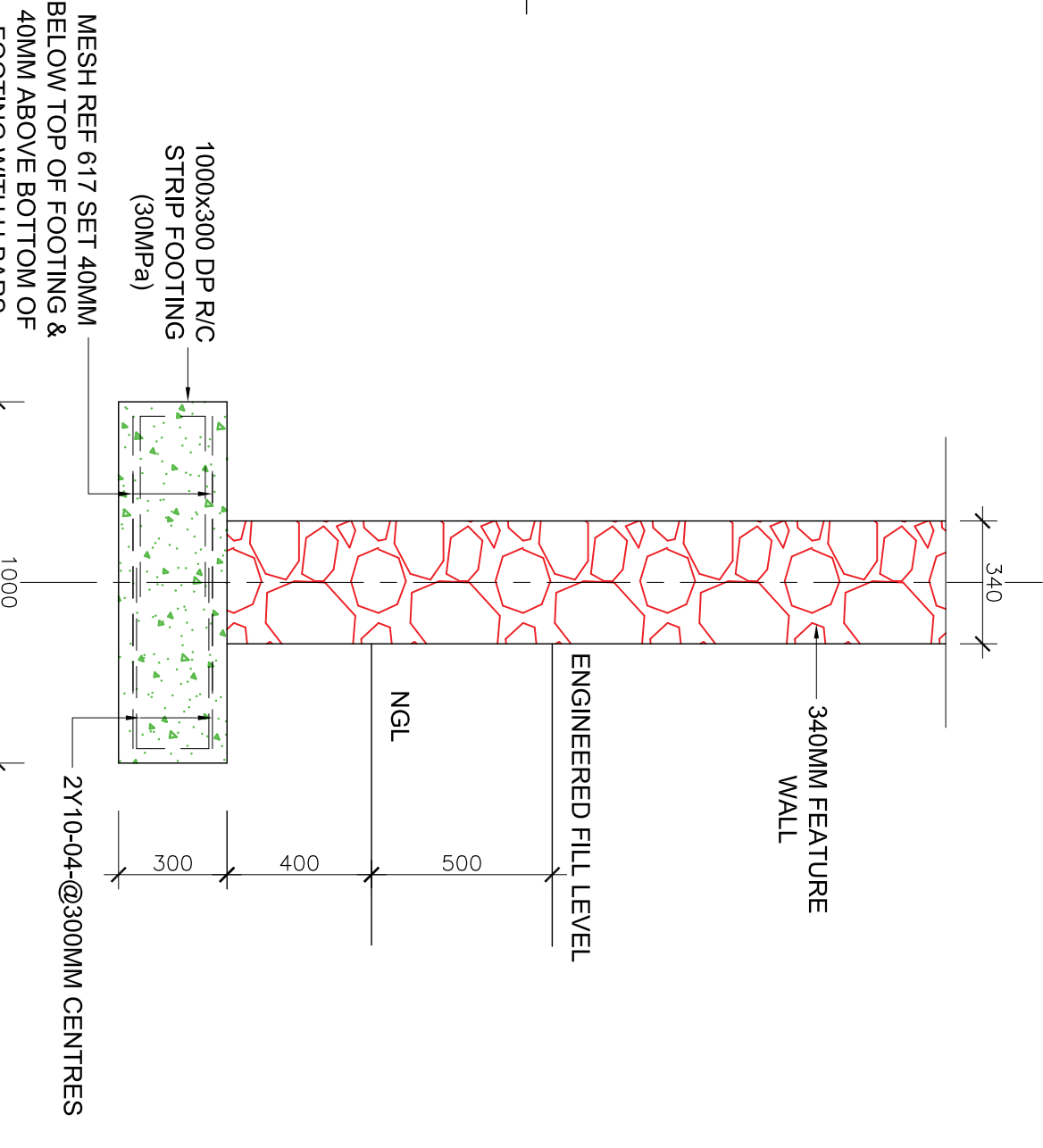
TYPICAL STRUCTURAL STEEL COLUMN FOUNDATION SECTION

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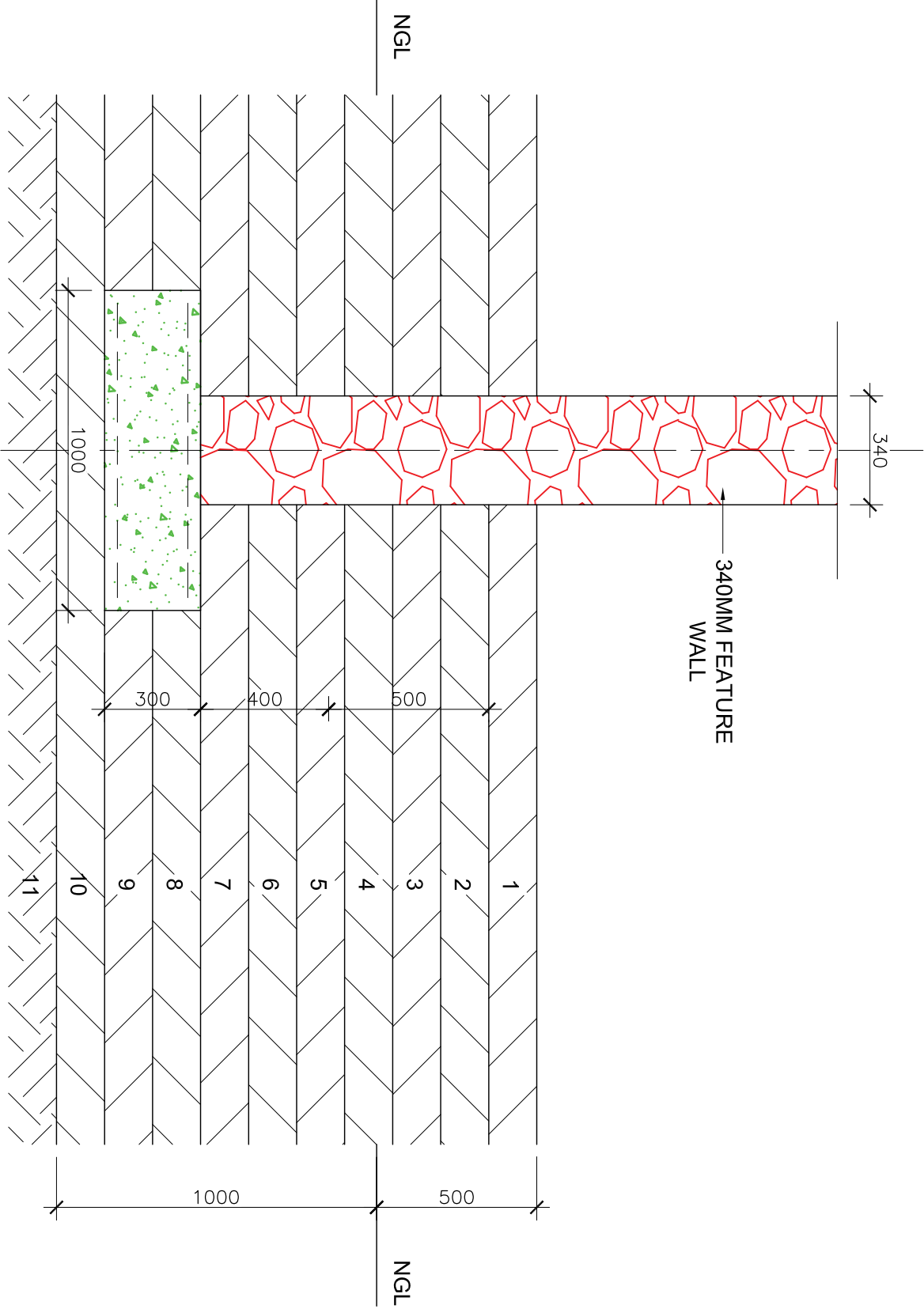
TYPICAL MASONRY WALL FOUNDATION REINFORCEMENT SECTION

120



FEATURE WALL FOUNDATION REINFORCEMENT SECTION

120



FEATURE WALL FOUNDATION SECTION

120



NOTES

GENERAL NOTES:

- THESE NOTES MUST BE READ IN CONJUNCTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SANBI DESIGN AND CONSTRUCTION STANDARDS.
- THE CONTRACTOR MUST HAVE A QUALITY ASSURANCE SYSTEM FOR THE EXECUTION OF THE WORK. THE QUALITY ASSURANCE SYSTEM MUST BE APPROVED BY THE ENGINEER PRIOR TO THE START OF THE WORK. THE CONTRACTOR MUST PROVIDE A QUALITY CONTROL INSPECTION BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER'S SIGNATURE SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER'S SIGNATURE.
- THE CONTRACTOR SHALL CHECK ALL DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER'S SIGNATURE SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER'S SIGNATURE.
- WORK TO BE DONE TO FINISHED DIMENSIONS ONLY.
- PRODUCT'S DIFFERENT TO THOSE SPECIFIED MAY ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.

FOUNDATION NOTES:

- EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
- FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
- THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO DETERMINE THE BEARING CAPACITY OF THE FOUNDATION.
- ASSUMED SOIL BEARING CAPACITY OF FOUNDATION MATERIAL: 75 kPa.

CONCRETE NOTES:

- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 12000.
- CONCRETE CLASS TO BE AS FOLLOWS:  
BLINDING 15 MPa 18mm  
STANDARD REINFORCED CONCRETE 30 MPa 18mm
- THE CONTRACTOR MUST COORDINATE ALL SERVICE DRAWINGS FOR DETAILS AND POSITIONS OF OPENINGS AND STEVES ELECTRICAL, MECHANICAL AND OTHER SERVICES.
- THE CONCRETE COVER TO REINFORCING IS AS FOLLOWS:  
FOUNDATIONS 40mm  
SUPERFLOORS (FROM TOP) 30mm
- THE STRENGTH OF THE CONCRETE COVER BLOCKS SHALL EXCEED THE STRENGTH OF CONCRETE OF THE STRUCTURAL ELEMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT THE FORMATION OF PLASTIC SHRINKAGE CRACKS IN NEWLY Laid CONCRETE.
- CONCRETE SHALL BE CURED TO AN APPROVED SPECIFICATION DOES NOT AFFECT ADHESION OR FINISHES.
- NO BRICK WALLS MAY BE BUILT ON FLOOR SLABS, BEAMS, WALLS, STEPS, ETC. THE ENGINEER HAS NOTIFIED THE RELEVANT AUTHORITIES AND APPROVED BY THE RELEVANT ENGINEER.
- 25-35% CEMENTERS TO BE FORMED AT ALL EXPOSED CONCRETE CORNERS.
- 250 MICRON PFC TO BE PLACED UNDER ALL SURFACE REBES.

CLIENT

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE



South African National Biodiversity Institute

REV. NO.	DATE	DESCRIPTION
R00	2022-09-16	ISSUED FOR TENDER.
REVISIONS		

PROJECT CONSULTANT

PROJECTNEERS

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& PROJECT MANAGERS  
BUILDING 2, 1ST FLOOR, THORNTON OFFICE PARK  
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APPROVAL CONSULTANT

B. TSHUMA

2022-09-16

THE MASTER SEAL AT THE SIGNATURE OF THE PROJECT CONSULTANT

ORIGINAL SIGNATURE OF APPROVAL

PROPOSED NEW VISITORS CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL INFRASTRUCTURE AT THE THOHoyANDOU BOTANICAL GARDEN, THOHoyANDOU

PROJECT SITE

THOHoyANDOU BOTANICAL GARDEN (TBG) IN THOHoyANDOU

SHEET TITLE

CULTURAL HUTS FOUNDATION CONSTRUCTION DETAILS & BAR BENDING SCHEDULE

DESIGN LINE

STRUCTURAL ENGINEERING

CONTRACT NUMBER

GS00/2020-10

FILE NUMBER

ZK022\_2002

DRAWING NUMBER

PAN\_ZA\_2022\_2002\_SANBI\_TB6\_SE\_4007\_R00

ISSUED FOR TENDER

A1

SCHEDULE NO.:

REVISION:

R00

PROJECT NUMBER:

ZK2022\_2002\_SANBI

DATE:

SEPTEMBER 2022

CHECKED BY:

B. TSHUMA

S. ZUNGU

MEMBER	NO. OFF	BAR MARK	TYPE & SIZE	NO. OF BARS	LENGTH OF EACH BAR	TOTAL NO. OF BARS	TOTAL LENGTH	SHAPE CODE	A (MM)	B (MM)	C (MM)	D (MM)	E/R (MM)
BASE TYPE B01	11	01	Y20	7	3075	77	236775	55	300	480	1500	480	
	11	02	Y20	14	1500	154	231000	20	STR				
	11	03	Y20	7	3000	77	231000	55	300	440	1500	440	
STRIP FOOTINGS	1	04	Y10	3628	1200	3628	4353600	38	500	200			
R/C WALL	2	05	Y10	18	1150	36	41400	38	500	150			
RAMP & LANDING TO CULTURAL YARD	1	06	Y10	100	1200	100	120000	83	500	100	250		
BRIDGE OVER GABIONS	1	06	Y10	160	1420	160	227200	83	500	210	250		
	2	10	Y20	52	1450	104	150800	38	300	850			
R/C BEAM 01	1	07	Y16	2	5650	2	11300	38	4660	385			
	1	08	Y12	2	5650	2	11300	38	4660	385			
	1	09	Y10	20	1350	20	27000	60	385	190			
R/C ROOF SLAB	1	11	Y12	120	1320	120	156400	83	500	160	250		
	1	12	Y12	120	6000	120	720000	20	STR				

FOUNDATION COVER = 50MM

$f_{cu} = 30 \text{ MPa}$

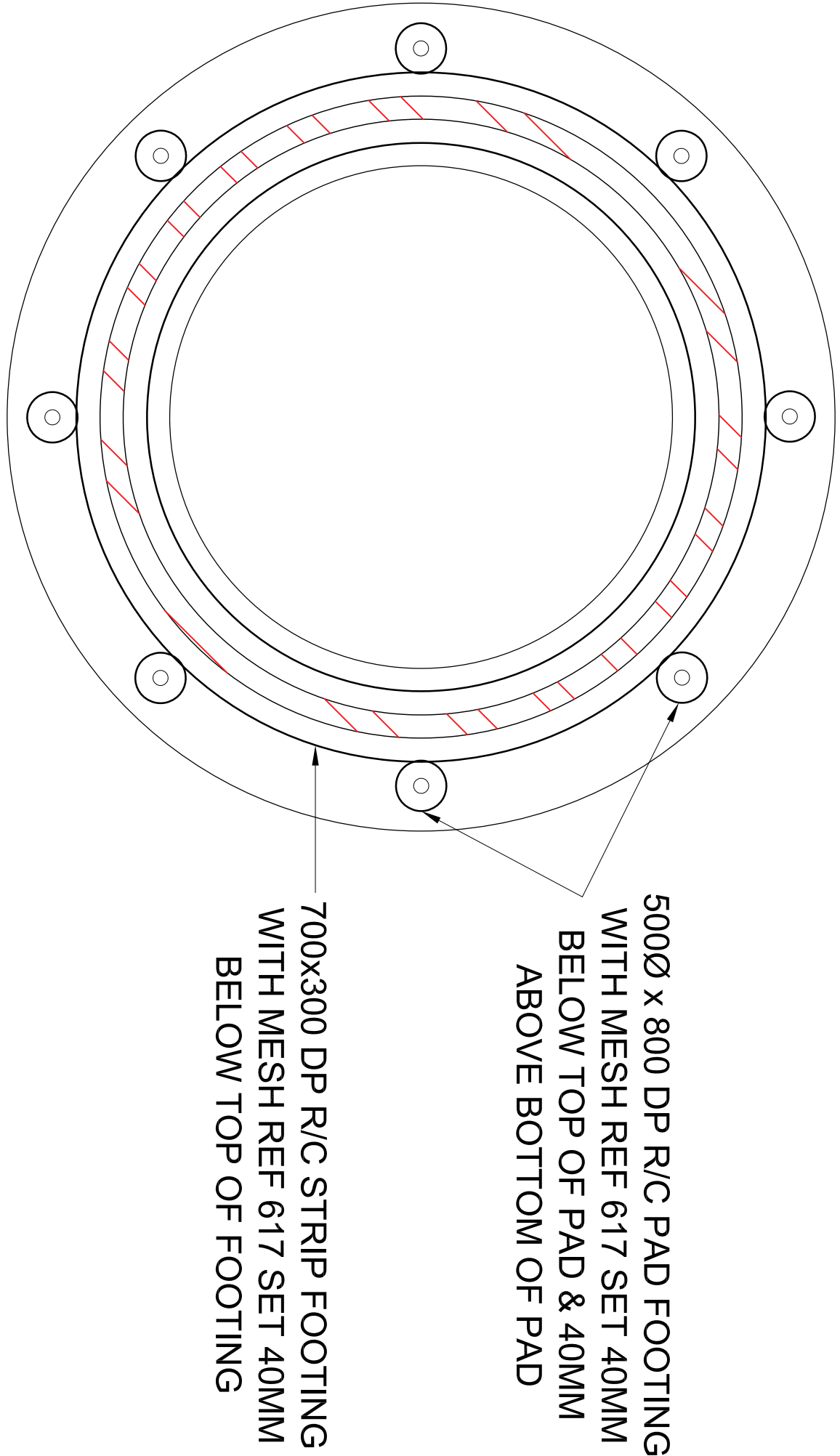
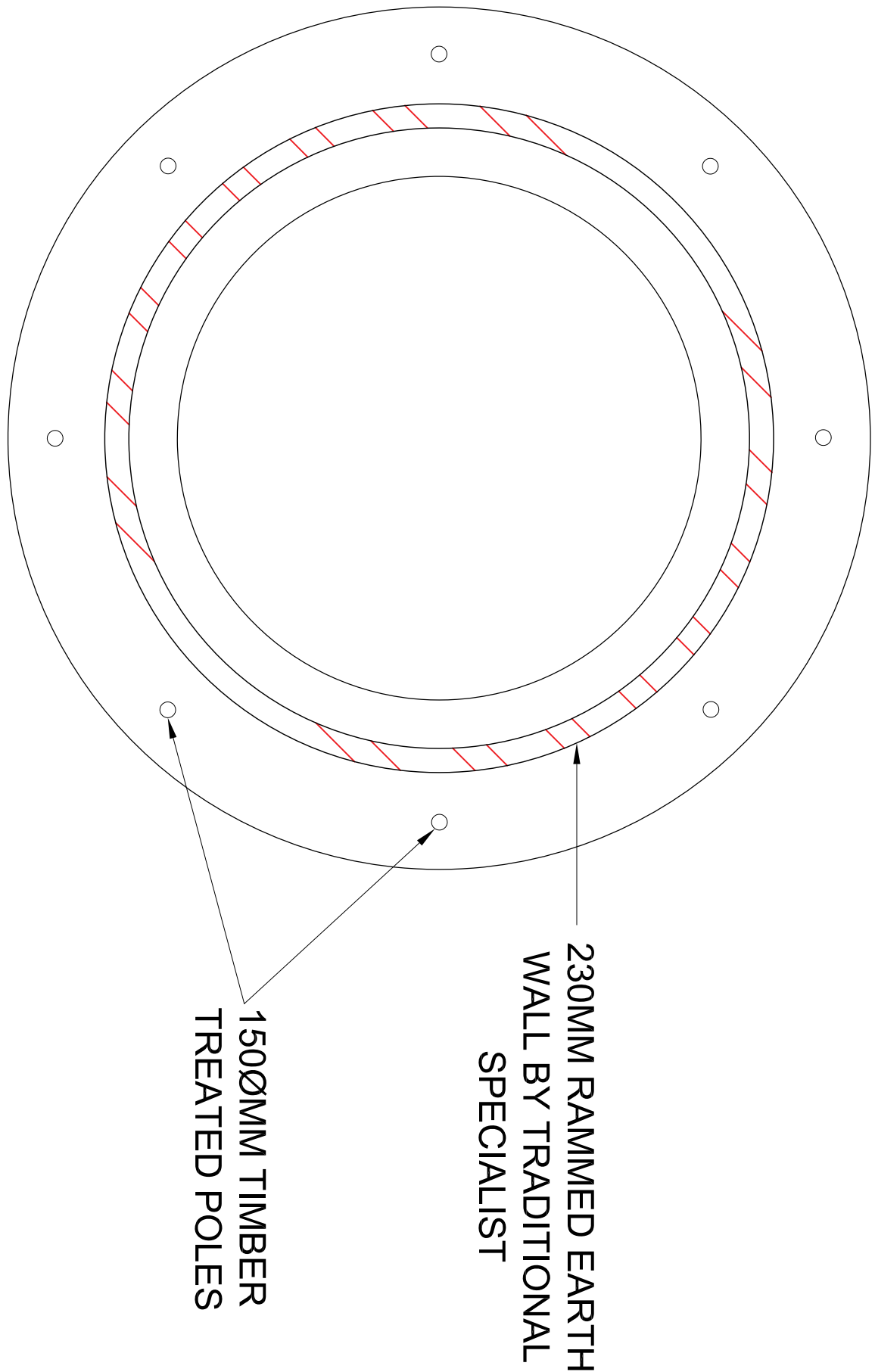
$f_y = 450 \text{ MPa}$

RIP AND COMPACT INSITU BOTTOM OF BASE TO 93% MOD AASHTO OR IMPORT 150MM G5 LAYER AND COMPACT TO 95% MOD AASHTO (WHEN INSTRUCTED BY ENGINEER) BEFORE BLINDING

		kg/m	LENGTH	KG	TONNES								
		R 6	0.395	0.00	0.00								
		Y10	0.617	4769.20	2942.60	2.94							
		Y12	0.888	889.70	790.05	0.79							
		Y16	1.58	11.30	17.85	0.02							
		Y20	2.47	849.58	2098.45	2.10							
		TOTAL				5.85							

3 x CULTURAL HUTS GROUND FLOOR LAYOUT PLAN

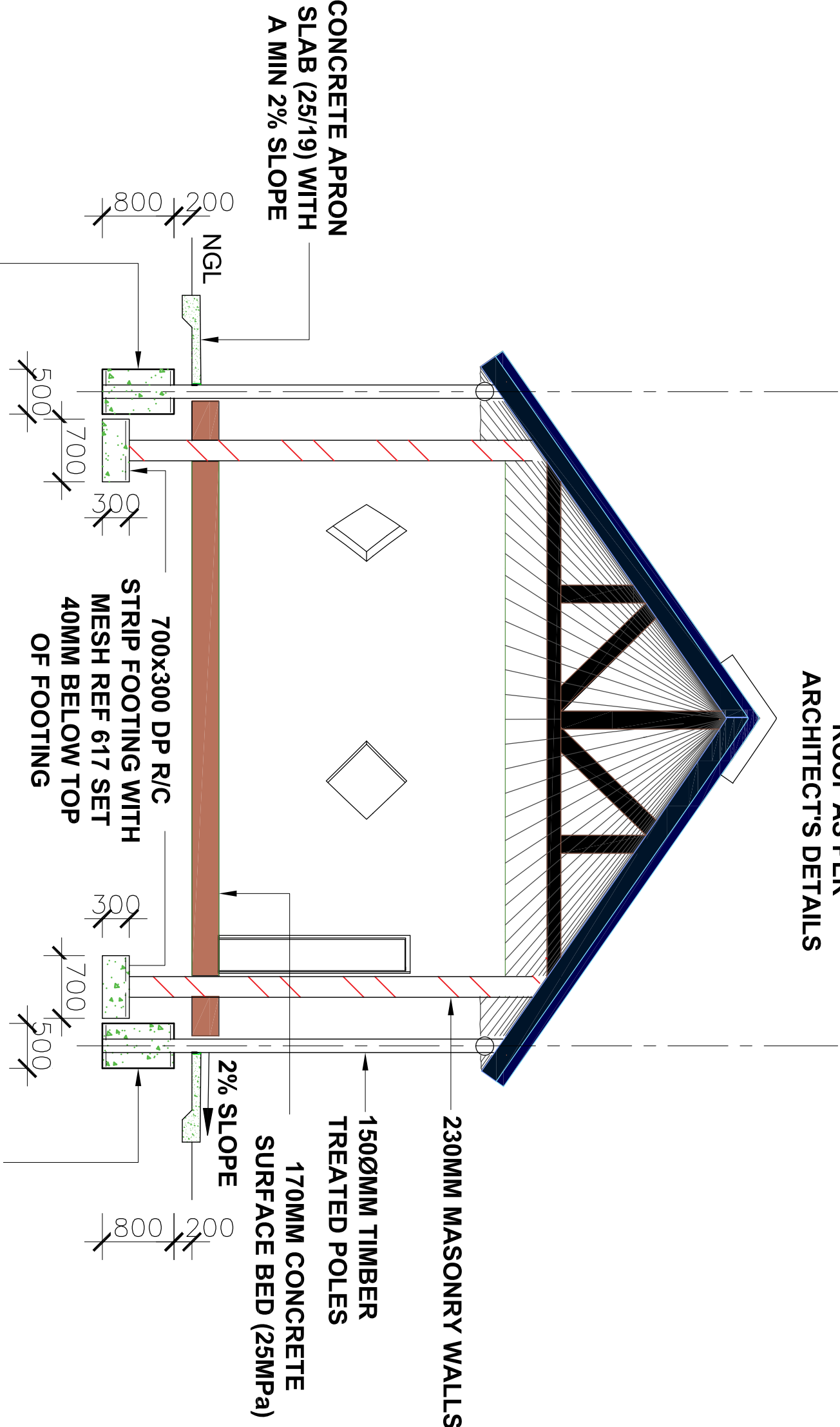
1:100



3 x CULTURAL HUTS FOUNDATION LAYOUT PLAN

1:100

ROOF AS PER ARCHITECT'S DETAILS



3 x CULTURAL HUTS FOUNDATION TYPICAL SECTION

1:100

EARTHWORKS AS PER VISITORS CENTRE PLATFORM LAYERWORKS TYPICAL SECTION



NOTES

GENERAL NOTES:

- THESE NOTES MUST BE READ IN CONJUNCTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SANBI DIVERSITY FOR LIFE PROJECT SPECIFICATIONS.
- THE CONTRACTOR MUST HAVE A QUALITY ASSURANCE SYSTEM FOR THE EXECUTION OF THE WORK. THE QUALITY ASSURANCE SYSTEM MUST BE SUBMITTED TO THE ENGINEER PRIOR TO THE START OF THE WORK. THE CONTRACTOR MUST PROVIDE A QUALITY CONTROL INSPECTION BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER'S SUPERVISOR SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER'S SUPERVISOR.
- THE CONTRACTOR SHALL CHECK ALL DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER'S SUPERVISOR SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER'S SUPERVISOR.
- WORK TO BE DONE TO REPAIR DEFECTS SHALL ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.

FOUNDATION NOTES:

- EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
- FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
- THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO ASSESS THE BEARING CAPACITY OF THE FOUNDATION.
- ASSUMED SOLE BEARING CAPACITY OF FOUNDING MATERIAL: 75 kPa.

CONCRETE NOTES:

- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 12000.
- CONCRETE CLASS TO BE AS FOLLOWS:  

BLINDING	STANDARD	REINFORCED CONCRETE
15 MPa/18mm	30 MPa/19mm	30 MPa/19mm
- THE CONTRACTOR MUST COORDINATE ALL SERVICE DRAWINGS FOR DETAILS AND POSITIONS OF OPENINGS AND STEELS. ELECTRICAL, MECHANICAL AND OTHER SERVICES.
- THE CONCRETE COVER TO REINFORCING IS AS FOLLOWS:  

FOUNDATIONS	30mm
SUPERCOLUMNS (FROM TOP)	30mm
- THE STRENGTH OF THE CONCRETE COVER ALONGS SHALL EXCEED THE STRENGTH OF CONCRETE OF THE STRUCTURAL ELEMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT THE FORMATION OF PLASTIC SHRINKAGE CRACKS IN NEWLY CAST CONCRETE.
- CONCRETE SHALL BE CURED TO AN APPROVED SPECIFICATION DOES NOT AFFECT ADHESION OR FINISHES.
- NO BRICK WALLS MAY BE BUILT ON FLOOR SLABS, BEAMS, WALLS, ETC. BEFORE THE ENGINEER HAS REVIEWED THE SLAB LAYOUT AND APPROVED THE WALLS AND BEAMS TO BE BUILT ON THE SLAB.
- 25-35% CHANGERS TO BE FORMED AT ALL EXPOSED CONCRETE CORNERS.
- 250 MICRON PFC TO BE PLACED UNDER ALL SURFACE DEFS.

CULTURAL HUT 1

CULTURAL HUT 2

CULTURAL HUT 3

CULTURAL HUT 4

CULTURAL HUT 5

CULTURAL HUT 6

CULTURAL HUT 7

CULTURAL HUT 8

CULTURAL HUT 9

CULTURAL HUT 10

CULTURAL HUT 11

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CULTURAL HUT 281

CULTURAL HUT 282

CULTURAL HUT 283

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CULTURAL HUT 287







NOTES

GENERAL NOTES:

- THESE NOTES MUST BE READ IN CONJUNCTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SANBI BIODIVERSITY ACT AND THE NATIONAL BIODIVERSITY INSTITUTE ACT.
- THE CONTRACTOR MUST HAVE A QUALITY ASSURANCE SYSTEM FOR THE EXECUTION OF THE WORK. THE QUALITY OF THE WORK SHALL BE MONITORED BY THE ENGINEER PRIOR TO THE START OF THE WORK. THE CONTRACTOR MUST PREPARE A QUALITY CONTROL INSPECTION BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK.
- THE CONTRACTOR SHALL CHECK ALL DIMENSIONS BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER'S APPROVAL SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER.
- WORK TO BE DONE TO FIGURED DIMENSIONS ONLY.
- PRODUCT'S DIFFERENT TO THOSE SPECIFIED MAY ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.

FOUNDATION NOTES:

- EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
- FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
- THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO ASCERTAIN THE BEARING CAPACITY OF THE FOUNDATION.
- ASSIGNED SAFE BEARING CAPACITY OF FOUNDING MATERIAL: 75 kPa.

CONCRETE NOTES:

- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 12000.
- CONCRETE CLASS TO BE AS FOLLOWS:  
BLINDING 15 MPa/18mm  
STANDARD REINFORCED CONCRETE 30 MPa/19mm
- THE CONTRACTOR MUST COORDINATE ALL SERVICE DRAWINGS FOR DETAILS AND POSITIONS OF OPENINGS AND STEELS ELECTRICAL, MECHANICAL AND OTHER SERVICES.
- THE CONCRETE COVER TO REINFORCING IS AS FOLLOWS:  
FOUNDATIONS 40mm  
SUPERFLOORS (FROM TOP) 30mm
- THE STRENGTH OF THE CONCRETE COVER ALONGS SHALL EXCEED THE STRENGTH OF THE CONCRETE OF THE STRUCTURAL ELEMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT THE FORMATION OF PLASTIC SHRINKAGE CRACKS IN NEWLY Laid CONCRETE.
- CONCRETE SHALL BE CURED TO AN APPROVED SPECIFICATION.
- NO BRICK WALLS MAY BE BUILT ON FLOOR SLABS, BEAMS, WALLS, ETC. BEFORE THE SLAB/BEAM HAS REACHED THE 28 DAY CURE PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENGINEER'S APPROVAL.
- 25-35% CHANGERS TO BE FORMED AT ALL EXPOSED CONCRETE CORNERS.
- 250 MICRON DPC TO BE PLACED UNDER ALL SURFACE DECKS.

CLIENT

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE  
**SANBI**  
Biodiversity for Life  
South African National Biodiversity Institute

REV. NO.	DATE	DESCRIPTION
R00	2022-09-18	ISSUED FOR TENDER.
REVISIONS		

PROJECT CONSULTANT

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& PROJECT MANAGERS  
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technical@projectneers.com  
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L. NGQUMBE S. ZINCU  
B. TSHUMA  
APPROVAL CONSULTANT

THE MASTER SET OF THE PROJECT DRAWINGS SHALL BE KEPT AT THE PROJECT SITE. THE ORIGINAL SIGNATURE OF APPROVAL.

PROJECT NAME  
PROPOSED NEW VISITORS CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL INFRASTRUCTURE AT THE THOHoyANDOU BOTANICAL GARDEN, THOHoyANDOU

PROJECT SITE  
THOHoyANDOU BOTANICAL GARDEN (TBG) IN THOHoyANDOU

SHEET TITLE  
STRUCTURAL STEEL AND REINFORCED CONCRETE BEAMS LAYOUT AND DETAILS

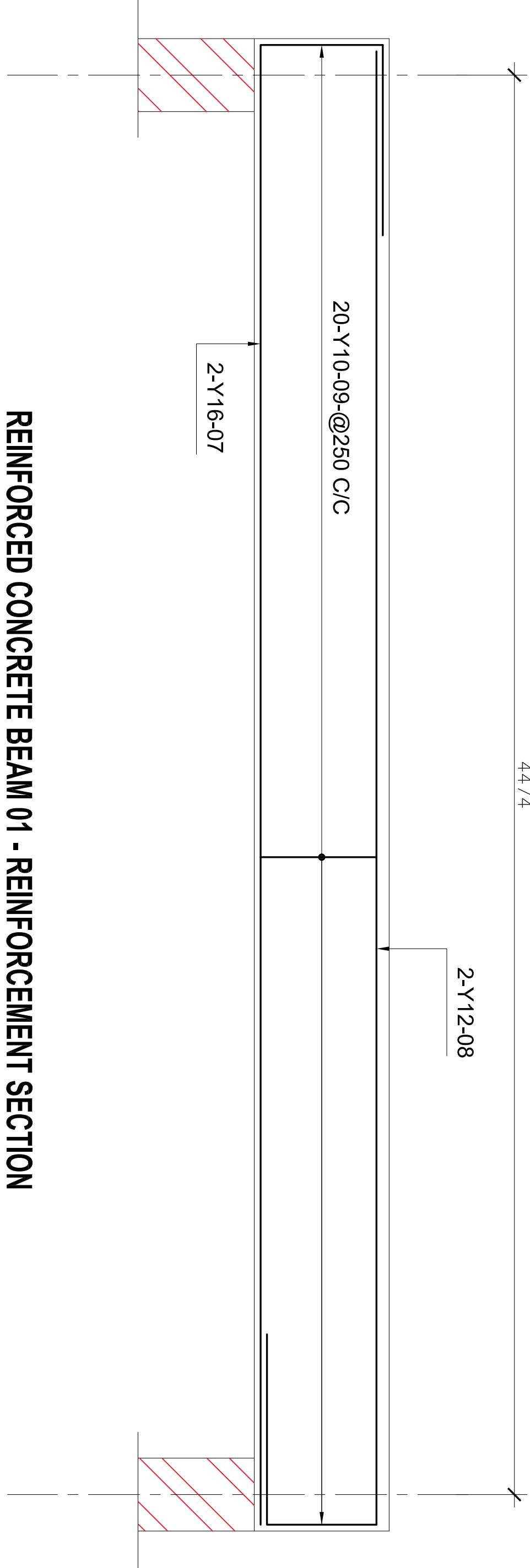
DRAWING NAME  
STRUCTURAL ENGINEERING

CONTRACT NUMBER  
G560/2020-10

THE NUMBER  
ZK2022\_2002

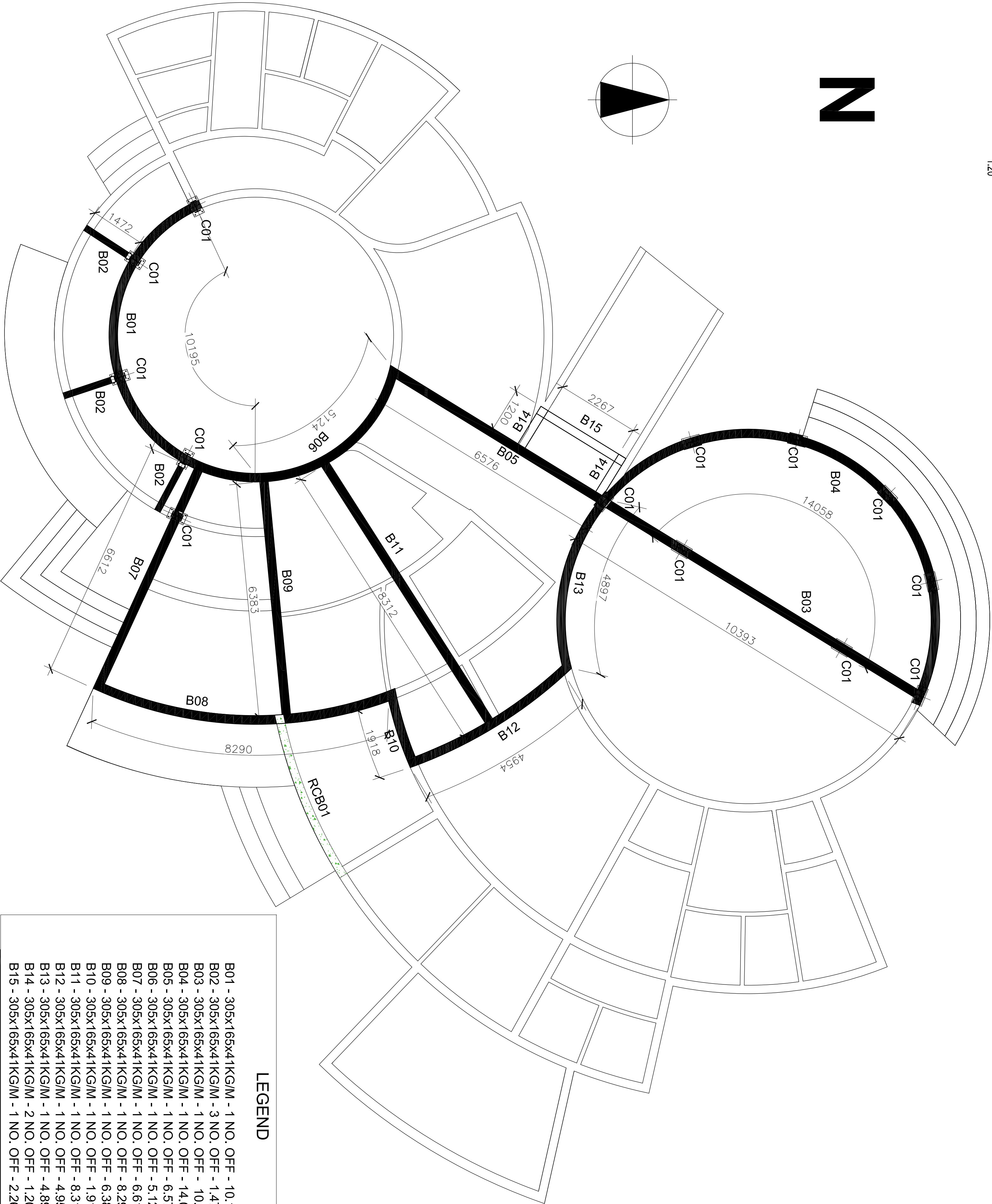
DRAWING NUMBER  
P\N\_ZA\_2022\_2002\_SANBI\_TB6\_SE\_4010\_R00

ISSUED FOR  
TENDER



REINFORCED CONCRETE BEAM 01 - REINFORCEMENT SECTION

1:20



VISITORS CENTRE STEEL & RC BEAMS LAYOUT PLAN

1:100

LEGEND

- B01 - 305x165x41KG/M - 1 NO. OFF - 10.195M
- B02 - 305x165x41KG/M - 3 NO. OFF - 1.472M
- B03 - 305x165x41KG/M - 1 NO. OFF - 10.393M
- B04 - 305x165x41KG/M - 1 NO. OFF - 14.058M
- B05 - 305x165x41KG/M - 1 NO. OFF - 6.576M
- B06 - 305x165x41KG/M - 1 NO. OFF - 5.124M
- B07 - 305x165x41KG/M - 1 NO. OFF - 6.612M
- B08 - 305x165x41KG/M - 1 NO. OFF - 8.290M
- B09 - 305x165x41KG/M - 1 NO. OFF - 6.383M
- B10 - 305x165x41KG/M - 1 NO. OFF - 8.312M
- B11 - 305x165x41KG/M - 1 NO. OFF - 1.918M
- B12 - 305x165x41KG/M - 1 NO. OFF - 4.954M
- B13 - 305x165x41KG/M - 1 NO. OFF - 4.897M
- B14 - 305x165x41KG/M - 2 NO. OFF - 1.200M
- B15 - 305x165x41KG/M - 1 NO. OFF - 2.267M



NOTES

GENERAL NOTES:

- THESE NOTES MUST BE READ IN CONJUNCTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SANBI DIVERSITY FOR LIFE POLICY AND THE SANBI DIVERSITY FOR LIFE POLICY IMPLEMENTATION PLAN.
- THE CONTRACTOR MUST HAVE A QUALITY ASSURANCE SYSTEM FOR THE EXECUTION OF THE WORK. THE QUALITY ASSURANCE SYSTEM MUST BE APPROVED BY THE ENGINEER PRIOR TO THE START OF THE WORK. THE CONTRACTOR MUST PROVIDE A QUALITY CONTROL INSPECTION BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER SHALL CHECK ALL DIMENSIONS BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER'S SUPERVISOR.
- THE CONTRACTOR SHALL CHECK ALL DIMENSIONS BEFORE THE COMMENCEMENT OF CONSTRUCTION OF ANY PORTION OF THE WORK. THE ENGINEER SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER'S SUPERVISOR.
- WORK TO BE DONE TO FINISHED DIMENSIONS ONLY.
- PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.

FOUNDATION NOTES:

- EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
- FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
- THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO ASCERTAIN THE BEARING CAPACITY OF THE FOUNDATION.
- ASSIGNED SAFE BEARING CAPACITY OF FOUNDATION MAY VARY 75%.

CONCRETE NOTES:

- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 12005.
- CONCRETE CLASS TO BE AS FOLLOWS:  
BLINDING 15 MPa/18mm  
STANDARD REINFORCED CONCRETE 30 MPa/19mm
- THE CONTRACTOR MUST COORDINATE ALL SERVICE DRAWINGS FOR DETAILS AND POSITIONS OF OPENINGS AND STEVES ELECTRICAL, MECHANICAL AND OTHER SERVICES.
- THE CONCRETE COVER TO REINFORCING IS AS FOLLOWS:  
FOUNDATIONS 50mm  
SUPERSTRUCTURES (FROM TOP) 30mm
- THE STRENGTH OF THE CONCRETE COVER ALONGS SHALL EXCEED THE STRENGTH OF THE CONCRETE OF THE STRUCTURAL ELEMENT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT THE FORMATION OF PLASTIC SHRINKAGE CRACKS IN NEWLY Laid CONCRETE.
- CONCRETE SHALL BE CURED TO AN APPROVED SPECIFICATION.
- NO BRICK WALLS MAY BE BUILT ON FLOOR SLABS, BEAMS, WALLS ETC. BEFORE THE ENGINEER HAS NOTIFIED THE RELEVANT ENGINEER.
- 25% OF CORNERS TO BE FORMED AT ALL EXPOSED CONCRETE CORNERS.
- 250 MICRON DPC TO BE PLACED UNDER ALL SURFACE DECKS.

CLIENT

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE



South African National Biodiversity Institute

REV/NO	DATE	DESCRIPTION
R00	2022-09-18	ISSUED FOR TENDER
REVISIONS		

PROJECT CONSULTANT

PROJECTNEERS

PROJECTNEERS CONSULTING ENGINEERS  
& PROJECT MANAGERS

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APPROVAL CONSULTANT

B. TSHUJWA

2022-09-18

THE MASTER SET OF THE PROJECT DRAWINGS

ORIGINAL SIGNATURE OF APPROVAL

PROJECT NAME

PROPOSED NEW VISITORS CENTRE, PARKING UPGRADES,

LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL

INSTITUTE AT THE THOHYANDOU BOTANICAL GARDEN,

THOHYANDOU

PROJECT SITE

THOHYANDOU BOTANICAL GARDEN (TBG) IN THOHYANDOU

SHEET TITLE

COVERED PARKING LAYOUT & DETAILS

DISCIPLINE

STRUCTURAL ENGINEERING

CONTRACT NUMBER

GS00/2020-10

FILE NUMBER

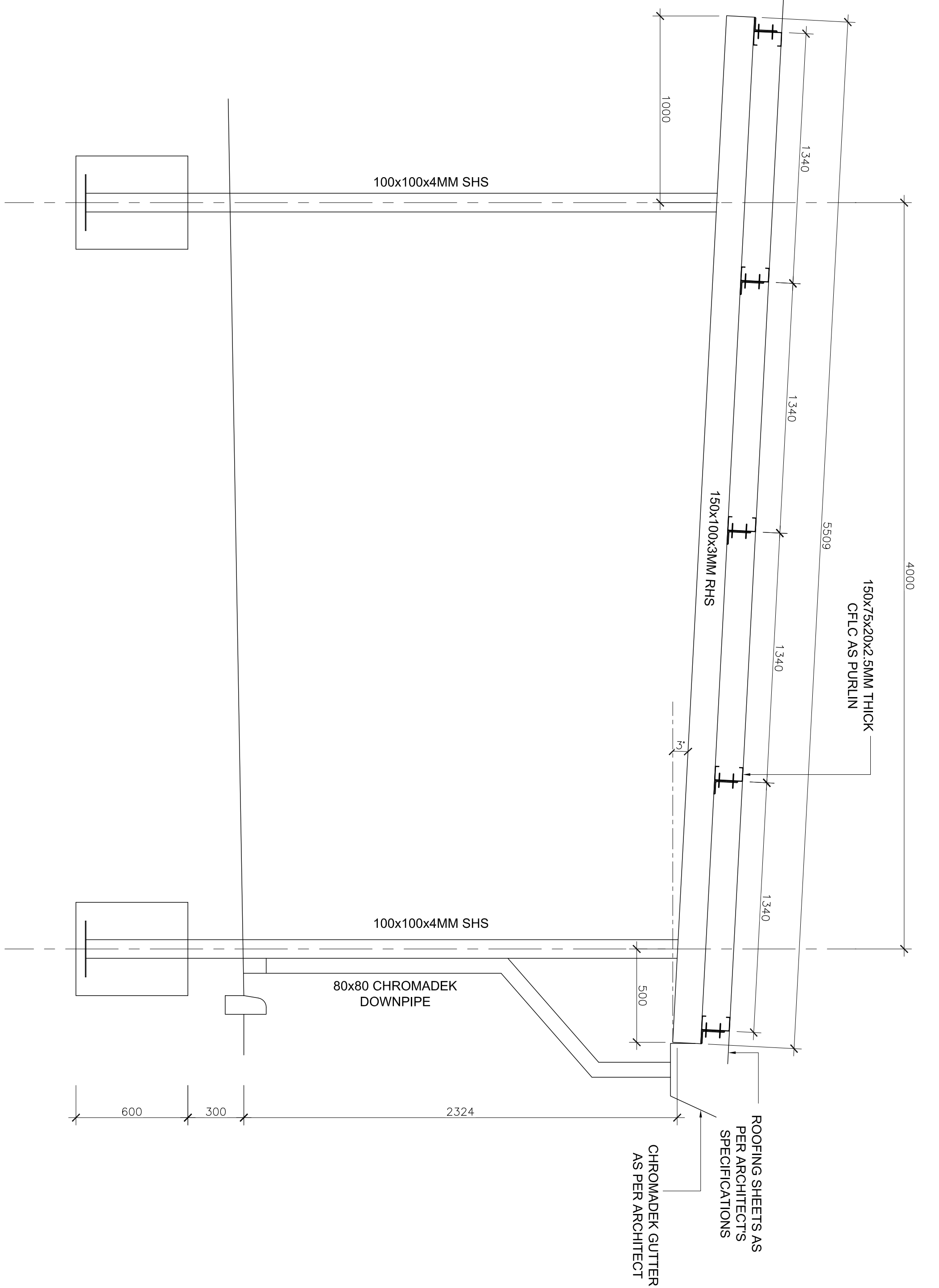
ZK022\_2002

DRAWING NUMBER

PAN\_ZA\_2022\_2002\_SANBI\_TBG\_SE\_4011\_R00

ISSUED FOR TENDER

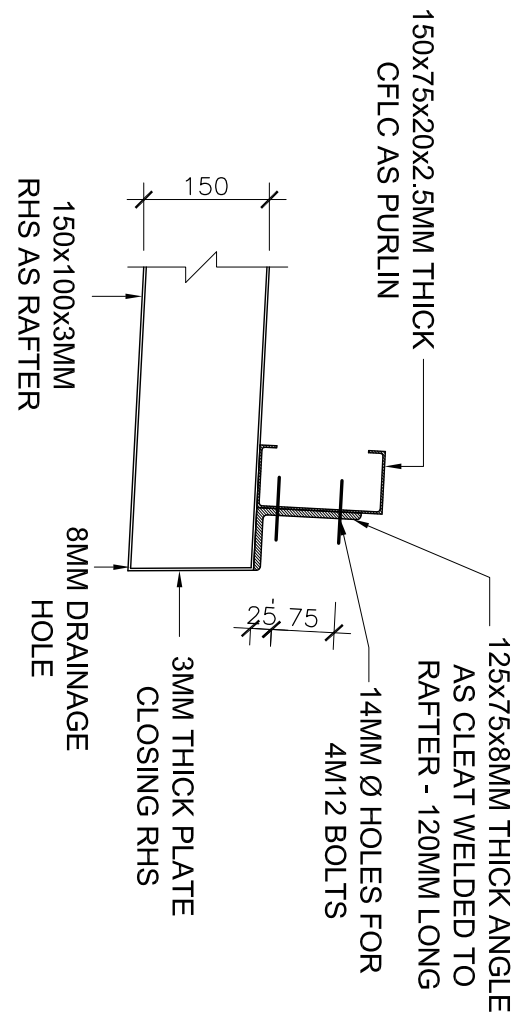
A1



TYPICAL CAR PARK SECTION

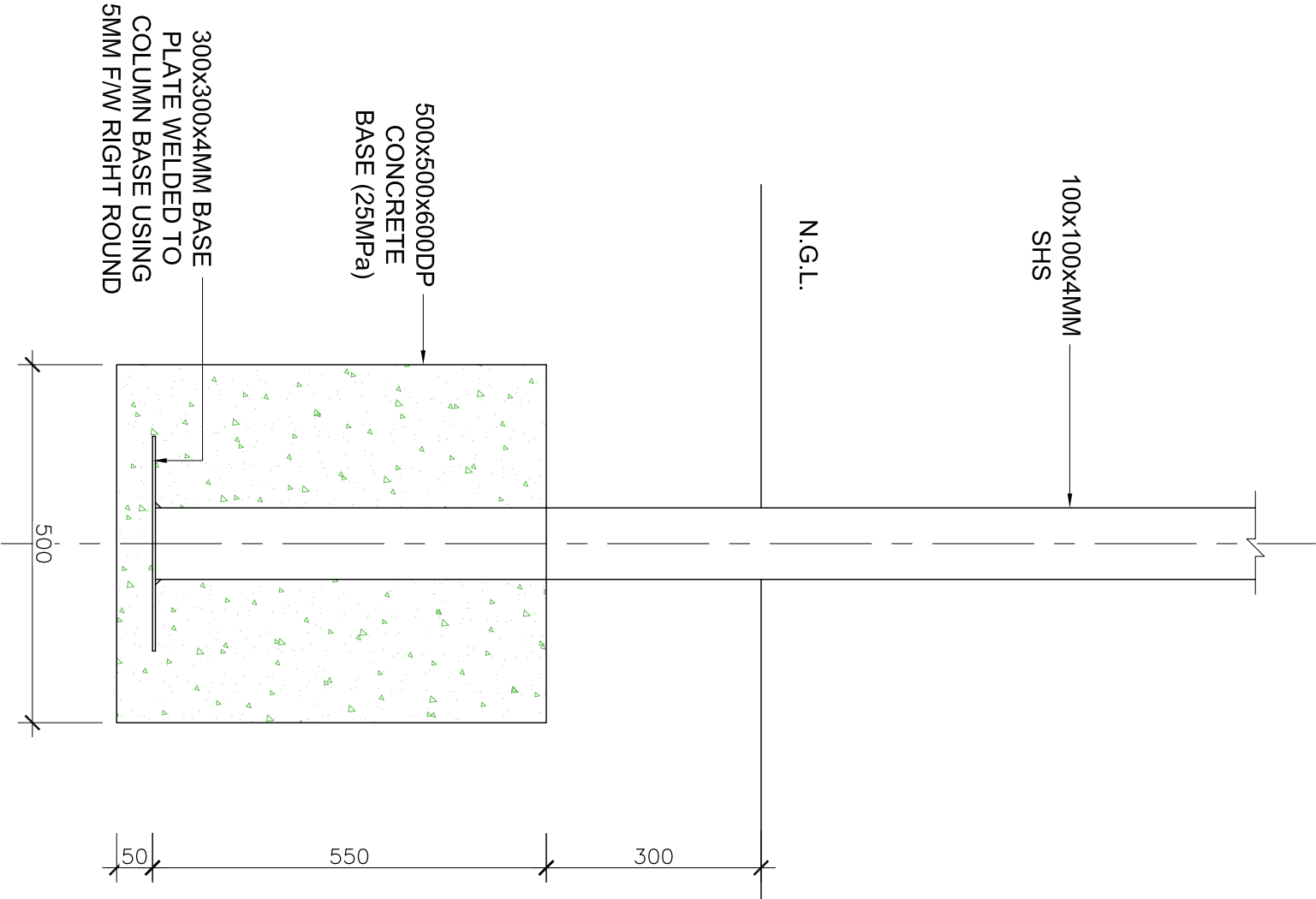
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LEGEND		
CONCRETE BASES		
TYPE	SIZES	DEPTH
B1	500 500	600
COLUMNS		
TYPE	SIZES	
C1	100x100x4MM SHS	



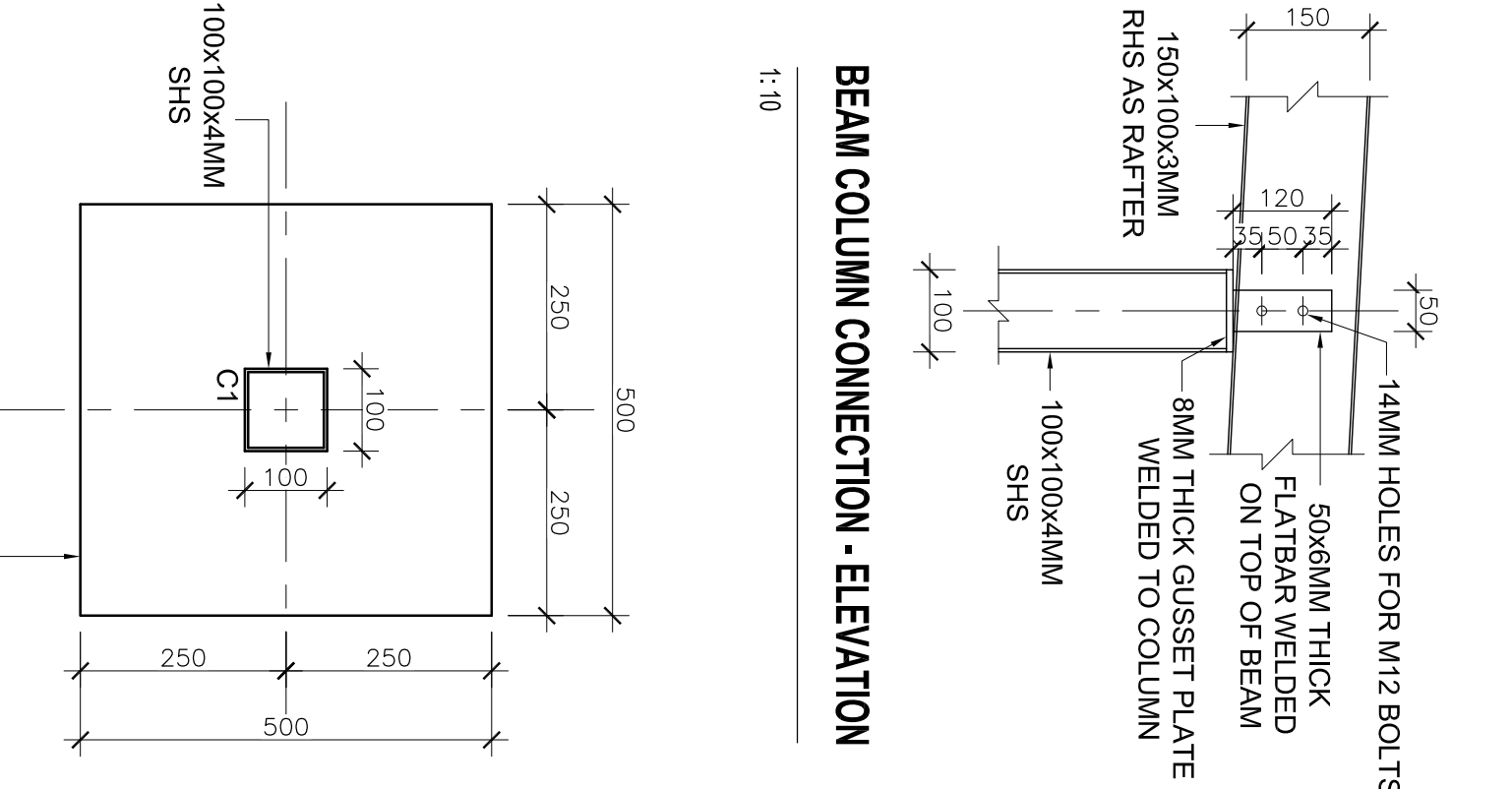
RAFTER-PURLIN CONNECTION - ELEVATION

1:10



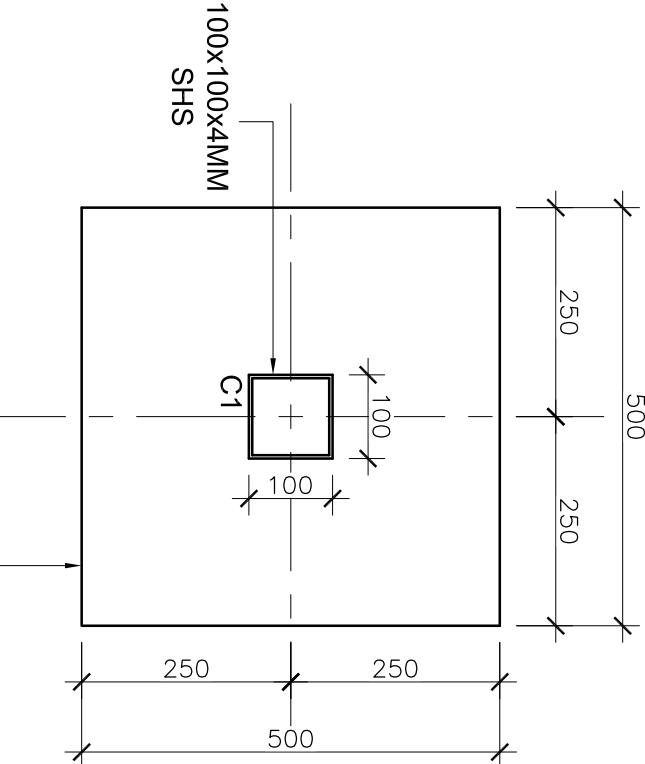
COLUMN BASE ELEVATION

1:10



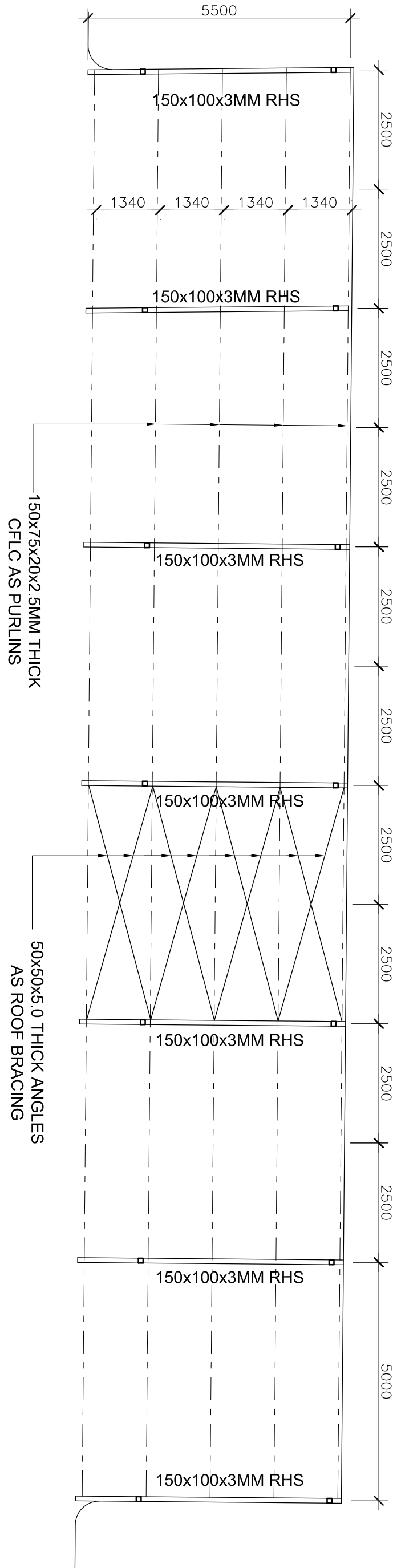
BEAM COLUMN CONNECTION - ELEVATION

1:10



COLUMN BASE PLAN

1:10

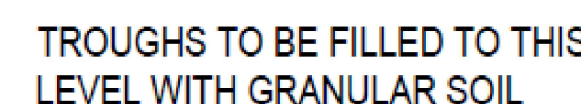


COVERED PARKING LAYOUT PLAN

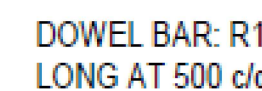
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ISSUED FOR TENDER





NTS



NTS

RETAINING WALL SCHEDULE				
WALL No.	1	2	3	
LÖFFELSTEIN TYPE	"500"	"500"	"500"	
MAX. HEIGHT "H"	5,000	1,200	0,550	
ANGLE OF TILT	70 <sup>0</sup>	70 <sup>0</sup>	70 <sup>0</sup>	
OFF-SET "	50mm	50mm	50mm	
MAX. ANGLE OF BANK	30 <sup>0</sup>	30 <sup>0</sup>	30 <sup>0</sup>	
FOUNDATION TYPE	2	2	1	
	A	700	700	700
	B	150	150	150
	C	225	225	-
	D	100	100	-
	E	100	100	-

1. RETAINING WALL TO BE CONSTRUCTED OF LOFFELSTEIN PRECAST CONCRETE BLOCKS.
2. BLOCKS PLACED AS SHOWN AND TO BE FILLED WITH TAMPED GRANULAR SOIL.
3. FOR WALLS RETAINING CLAY OR SHALE, PROVIDE A 300 WIDE PERVIOUS SOIL FILLING BEHIND WALL. BACKFILL TO BE WELL RAMMED IN 150mm LAYERS.
4. WHERE CONCRETE NIB IS NOT CAST INTEGRALLY WITH THE BASE, DOWEL BARS ARE TO BE ADDED, AS SHOWN.
5. GROUND UNDER ALL BASES TO BE WELL COMPACTED, PRIOR TO CONSTRUCTING BASE.
6. THE ENGINEER IS TO BE NOTIFIED OF ANY VARIATIONS OF LEVELS OR DIMENSIONS SHOWN.
7. MINIMUM CONCRETE STRENGTH FOR CONCRETE FOUNDATION TO BE 25 MPa AT 28 DAYS.
8. NO WALLS TO ENCROACH OVER BOUNDARY.
9. NO SERVICES OR TRENCHES PERMITTED IMMEDIATELY IN FRONT OF THE RETAINING WALL.
10. PRECAUTIONS TO BE TAKEN TO PREVENT COLLAPSE OF EXCAVATED BANK. REFER TO LOCAL AUTHORITY REQUIREMENTS.
11. NO SUPERIMPOSED LOADING PERMITTED BEHIND WALL, WITHIN A DISTANCE EQUAL TO THE WALL HEIGHT, UNLESS STATED OTHERWISE.
12. FOR FOUNDATION TYPES 2 AND 3 FOUNDED IN CLAY/SHALE IN SITU MATERIAL TO BE EXCAVATED AND REPLACED WITH APPROVED GRANULAR MATERIAL TO A DEPTH OF 300mm BELOW UNDERSIDE OF BASE.

1. THESE NOTES MUST BE READ IN CONJUNCTION WITH THE DRAWINGS AND PROJECT SPECIFICATIONS INCLUDING THE SANS 1200 STANDARD SPECIFICATIONS.
2. THE CONTRACTOR MUST IMPLEMENT A QUALITY ASSURANCE SYSTEM FOR THE EXECUTION OF THE WORK. THE QUALITY MANAGEMENT SYSTEM MUST BE APPROVED BY THE ENGINEER PRIOR TO THE START OF THE WORK. THE CONTRACTOR MUST PERFORM A QUALITY CONTROL INSPECTION BEFORE THE ENGINEER WILL DO ANY INSPECTIONS.
3. 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.
4. WORK TO BE DONE TO FIGURED DIMENSIONS ONLY.
5. PRODUCTS DIFFERENT TO THOSE SPECIFIED MAY ONLY BE USED WITH THE ENGINEER'S PRIOR WRITTEN APPROVAL.

1. EXCAVATIONS FOR FOUNDATIONS TO BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS CAST.
2. FOUNDATIONS TO BE BUILT ON FIRM, WELL COMPACTED SOIL.
3. THE ENGINEER MAY ORDER PLATE LOAD TESTS TO BE DONE TO ASCERTAIN THE BEARING CAPACITY OF THE FOUNDATION FOUNDING SURFACE.
4. ASSUMED SAFE BEARING CAPACITY OF FOUNDING MATERIAL 75 kPa.

1. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH SABS 12006.
2. CONCRETE CLASS TO BE AS FOLLOWS:

BLINDING STANDARD	REINFORCED CONCRETE 30 MPa/15mm 30 MPa/15mm
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3. THE CONTRACTOR MUST CO-ORDINATE ALL SERVICE DRAWINGS FOR DETAILS AND POSITIONS OF OPENINGS AND SERVICES REQUIRED FOR STORMWATER, SEWERAGE, DRAINAGE, ELECTRICAL, MECHANICAL, AND OTHER SERVICES.
4. THE CONCRETE COVER TO REINFORCING IS AS FOLLOWS:

FOUNDATIONS SURFACECEDS (FROM TOC)	40mm 30mm
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5. THE STRENGTH OF THE CONCRETE COVER BLOCKS SHALL EXCEED THE STRENGTH OF CONCRETE OF THE STRUCTURAL ELEMENT IN WHICH THEY ARE USED.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT THE FORMATION OF PLASTIC SHRINKAGE CRACKS IN NEWLY LAID CONCRETE.
7. CONCRETE SHALL BE CURED TO AN APPROVED SPECIFICATION USING MEMBRANES, MIST SPRAY OR CURING COMPOUND THAT DOES NOT AFFECT ADORNMENTS OR FINISHES.
8. NO BRICK WALLS MAY BE BUILT ON FLOOR SLABS, BEAMS, WALLS, ETC. BEFORE THE ELEMENT HAS REACHED THE 28 DAY FLOOR STRENGTH, UNLESS APPROVED IN WRITING BY THE ENGINEER.
9. 25 x 25 CHAMFERS TO BE FORMED AT ALL EXPOSED CONCRETE CORNERS.
10. 250 MICRON DPC TO BE PLACED UNDER ALL SURFACE BEDS.

SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE

**SANBI**  
Biodiversity for Life  
South African National Biodiversity Institute

R00	2022-09-18	ISSUED FOR TENDER.
REV NO.	DATE	DESCRIPTION

## PROJECT CONSULTANT

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L. NGQUMSHE	S. ZUNGU		M. NTSADU	N. MDLA	

APPROVAL CONSULTANT  
B. TSHUMA

DATE	PROJ. RES. NO.	THE MASTER HELD AT THE PROJECTNEERS CONSULTING MIDRAND OFFICE BEARS THE ORIGINAL SIGNATURE OF APPROVAL
2022-09-18		

PROJECT NAME	PROPOSED NEW VISITORS' CENTRE, PARKING UPGRADES, LANDSCAPING, SECURITY UPGRADES AND ASSOCIATED CIVIL SERVICES FOR THE SOUTH AFRICAN NATIONAL BIODIVERSITY INSTITUTE AT THE THOHOYANDOU BOTANICAL GARDEN, THOHOYANDOU
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PROJECT SITE	THOHYANDOU BOTANICAL GARDEN (TBG) IN THOHYANDOU
--------------	---

SHEET TITLE
RETAINING WALL DETAILS

DISCIPLINE  
STRUCTURAL ENGINEERING

CONTRACT NUMBER  
G360/2020-10

FILE NUMBER  
ZA2022 2002

DRAWING NUMBER								
ORG	STATE	YEAR	PROJ. NO.	CLIENT	SITE	ROLE	SERIAL NO.	REV
PJN	ZA	2022	2002	SANBI	TBG	SE	4012	R00

**ISSUED FOR  
TENDER**







