



SOUTHERN AFRICA TRADE AND CONNECTIVITY PROJECT
(SATCP)

MINISTRY OF TRANSPORT AND PUBLIC WORKS

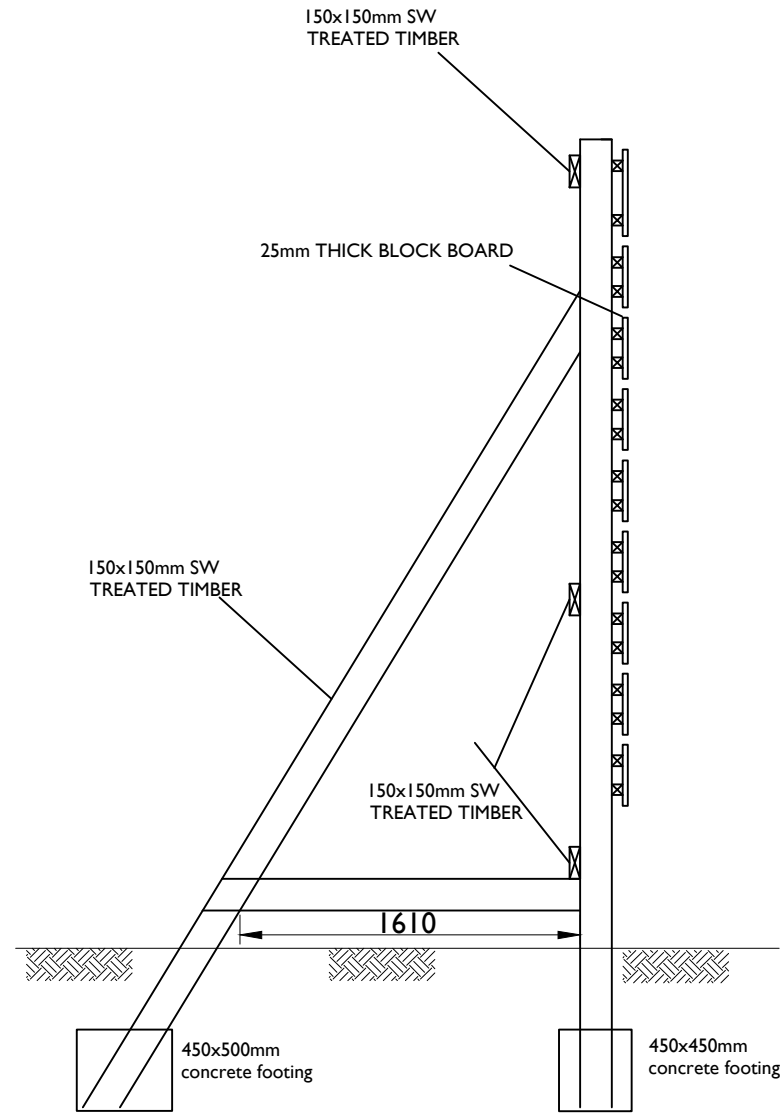
MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF
DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN
ZOMBA DISTRICT

THE BOOK OF DRAWINGS-TENDER PURPOSE

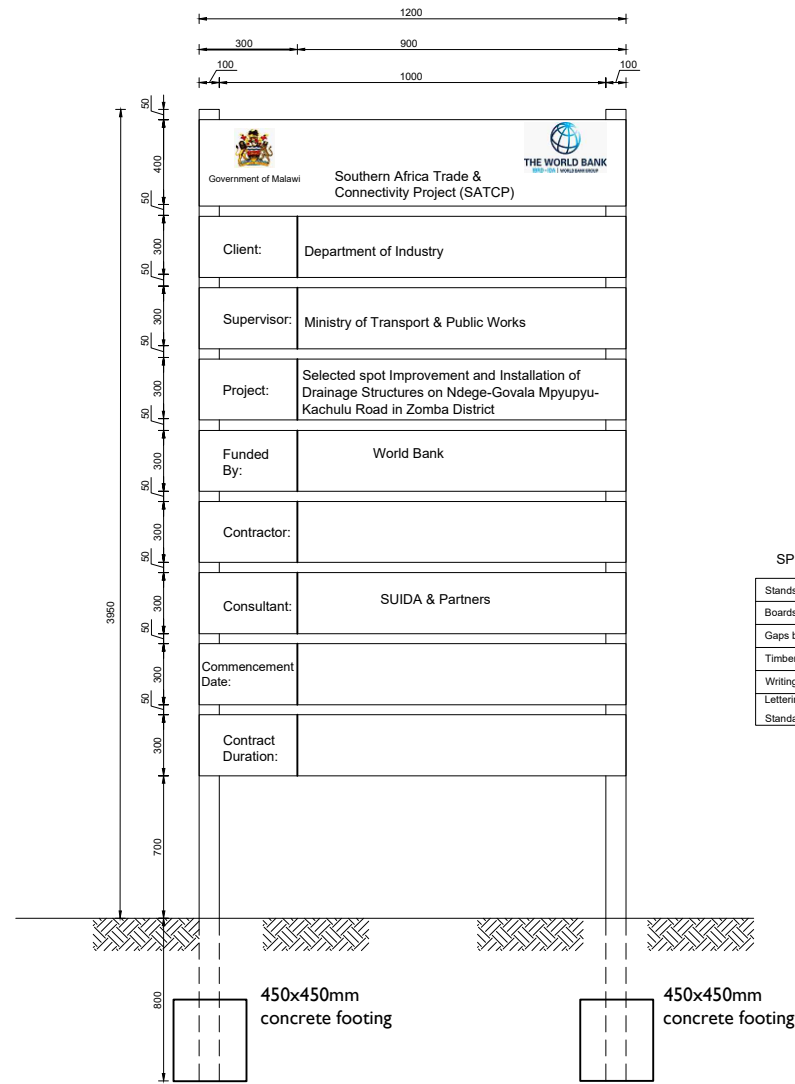
MARCH 2026



LOCATION MAP OF NDEGE-GOVALA-MPYUPYU- KACHULU ROAD IN ZOMBA DISTRICT(RED)



SIDE ELEVATION

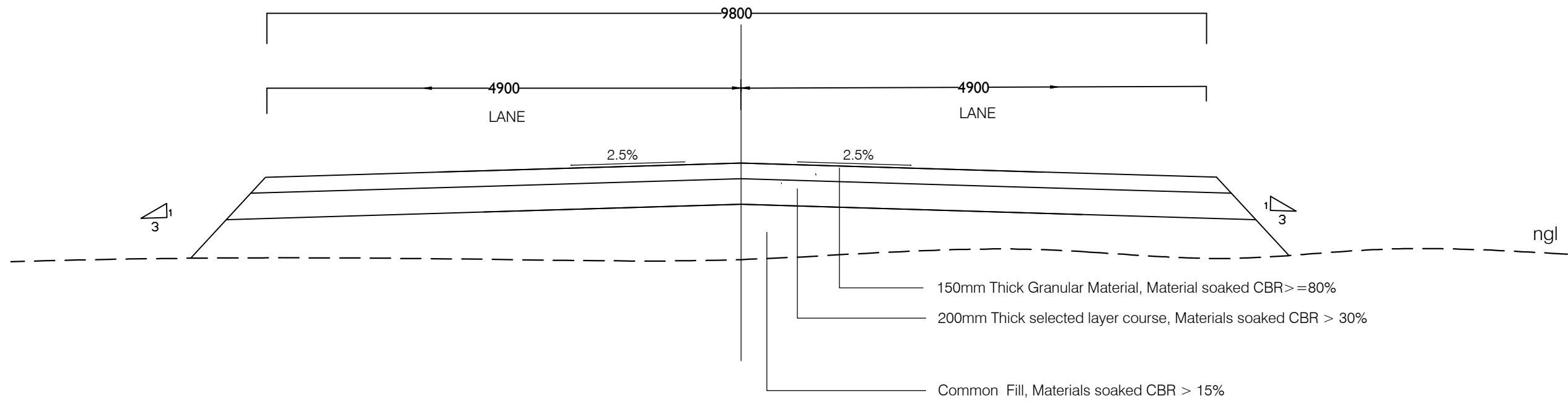


SPECIFICATIONS

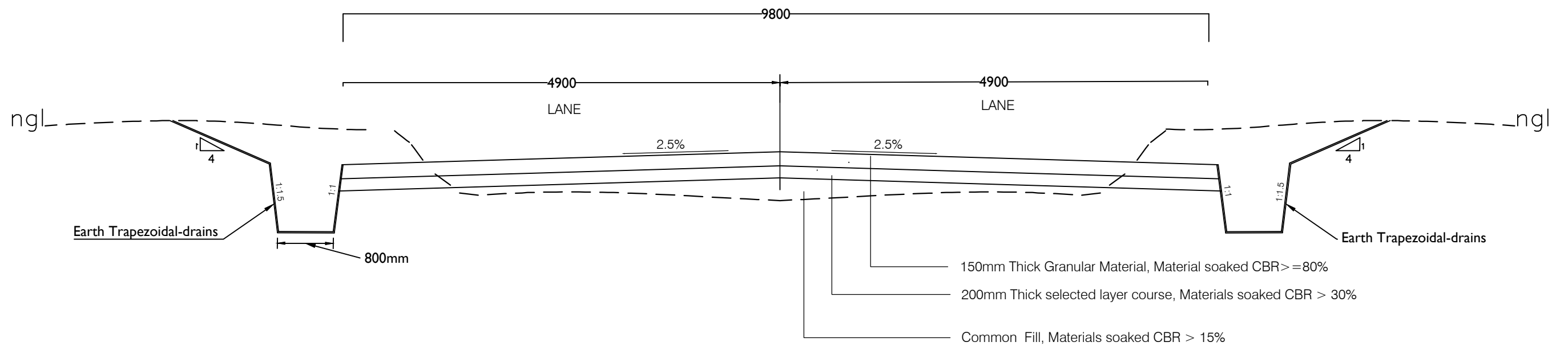
Stands	100mmx50mmx3250mm
Boards	300mmx25mmx1200mm
Gaps between board	= 50mm
Timber to be treated	soft wood
Writings to appear on	one side only
Lettering	
Standard sizes of black colour	on white background.

AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS		Southern Africa Trade Connectivity Project,		Z. B		DETAILS OF PROJECT SIGN BOARD		<input type="radio"/> DESIGN <input type="radio"/> DRAWING <input type="radio"/> CONSTRUCTION <input type="radio"/> AS-BUILT	
1	REVISION 1	25-02-206			 P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		 Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		DESIGN CHECKED BY F. N. RENg DATE: _____ DRAWN Z. B DATE: _____ DRAWING CHECKED BY F. N. RENg DATE: _____ DRAWING APPROVED BY MINISTRY DATE: _____		MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1	
									CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025		DRAWING NO: CON/2025/SP/SATCP-LM/PSB-001 SHEET NO: 1 OF 1		<input type="checkbox"/>	

TYPICAL SECTIONS



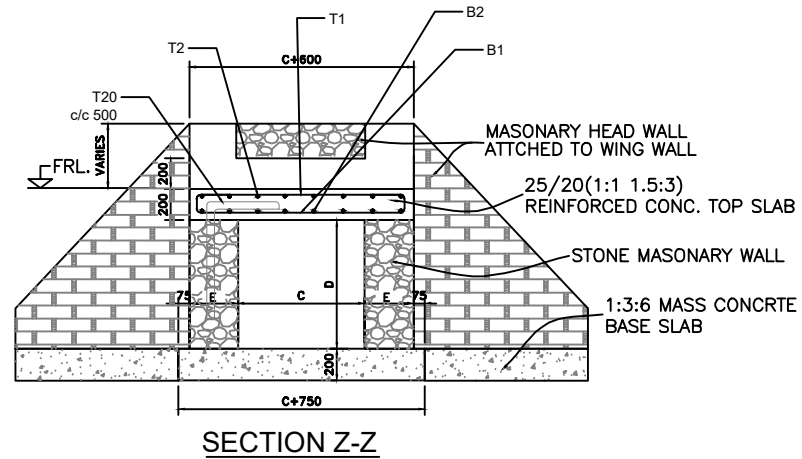
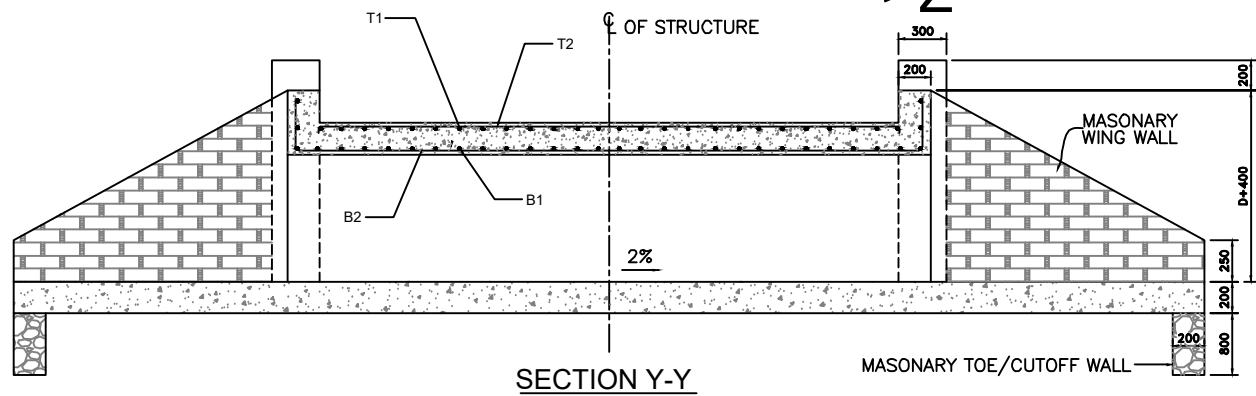
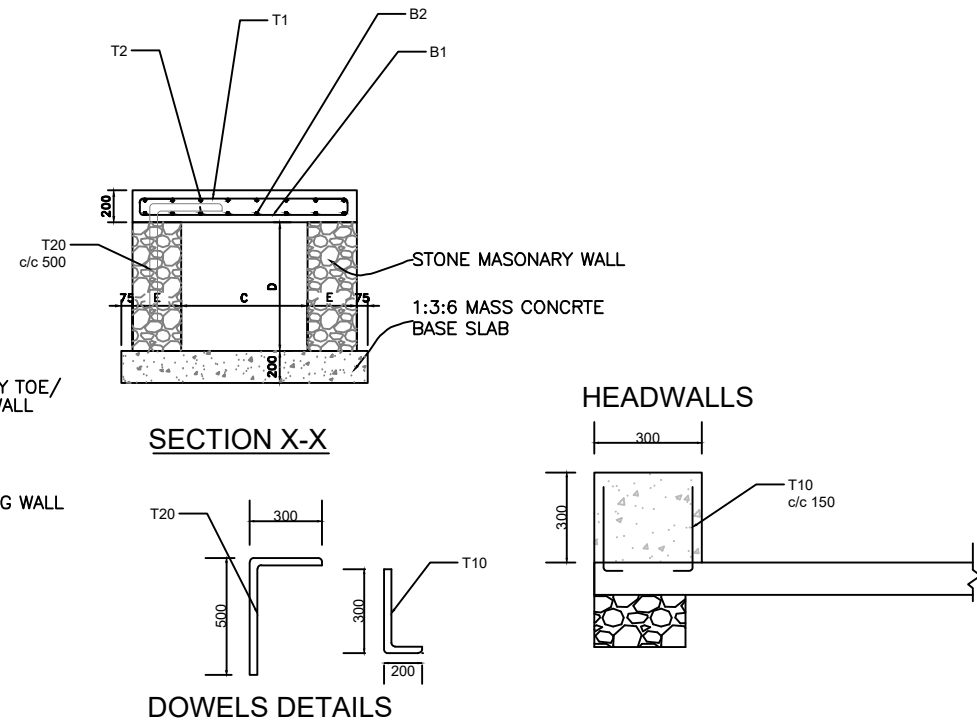
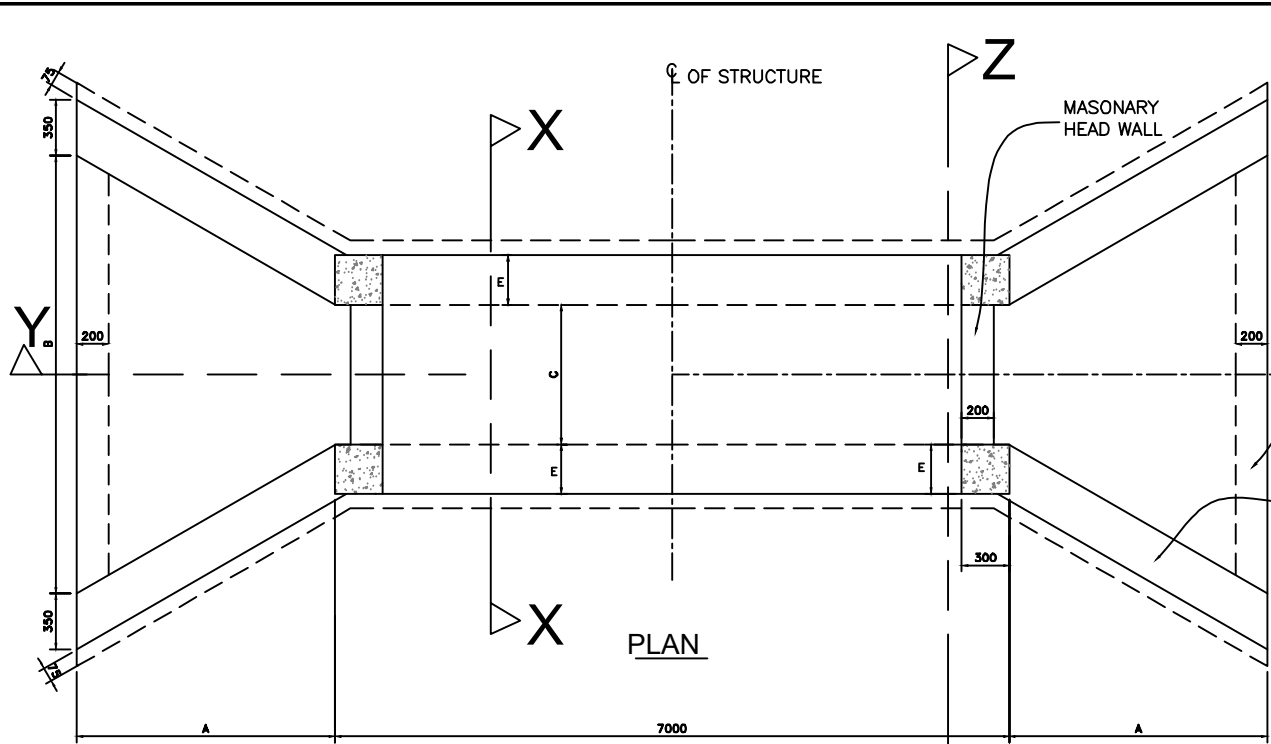
TYPICAL CROSS SECTION IN FILL



TYPICAL CROSS SECTION IN CUT

AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africal Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		TYPICAL CROSS SECTION FOR THE NDEGE-GOVALA- KACHULU ROAD		<input type="radio"/> DESIGN <input type="radio"/> CHECKING <input type="radio"/> CONSTRUCTION <input type="radio"/> AS-BUILT	
1	REVISION 1	25-02-206							DESIGN CHECKED BY F. N. RENg		DESCRIPTION OF PROJECT MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE-GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT		PLANNING/PROJECT ENGINEER:	
									DRAWN Z. B				INSPECTOR OF WORKS:	
									DRAWING CHECKED BY F. N. RENg				REMARKS:	
									DRAWING APPROVED BY MINISTRY		CONTRACT No.:		ORIGINAL PAPER SIZE: A1	
									SIGNATURE		PROJECT No.:		SHEET NO. 1 OF 1	
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											DRAWING NO. CON/2025/SP/SATCP-LM/TS-301		DATE	

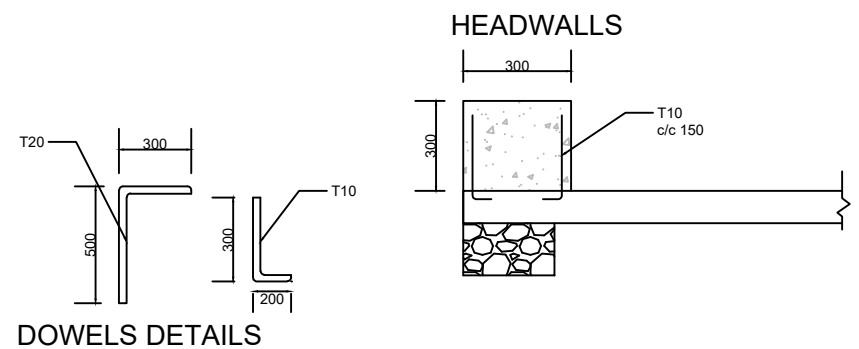
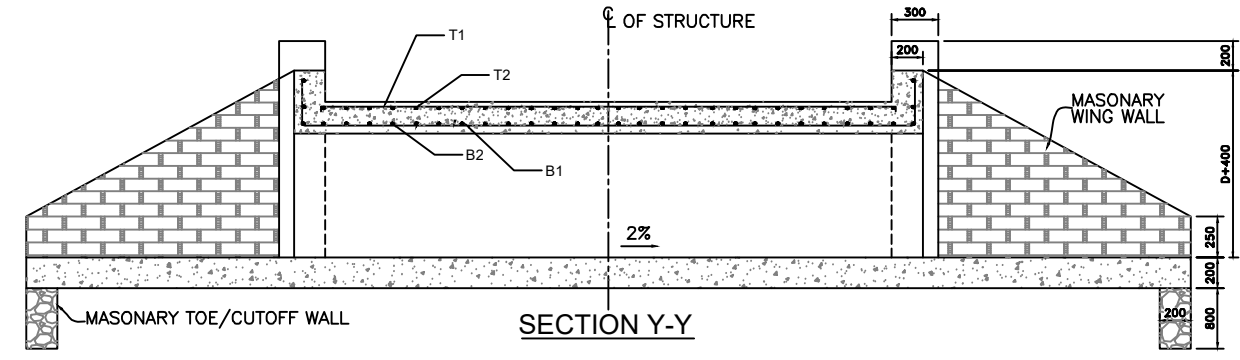
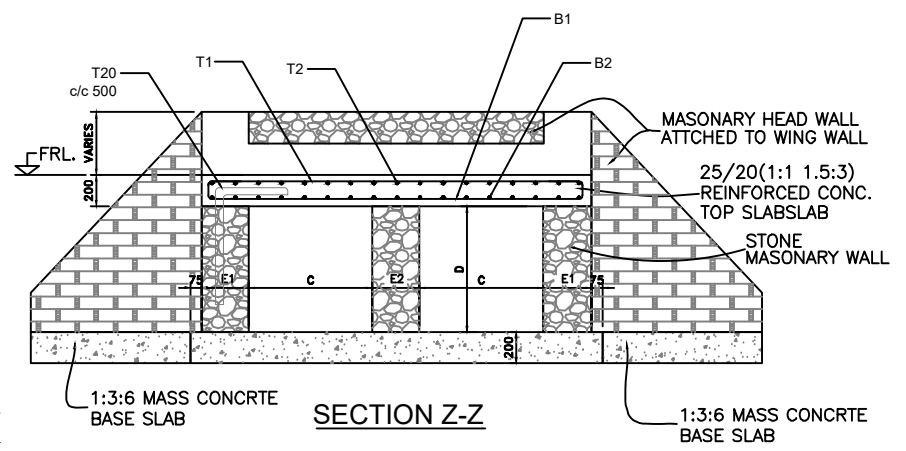
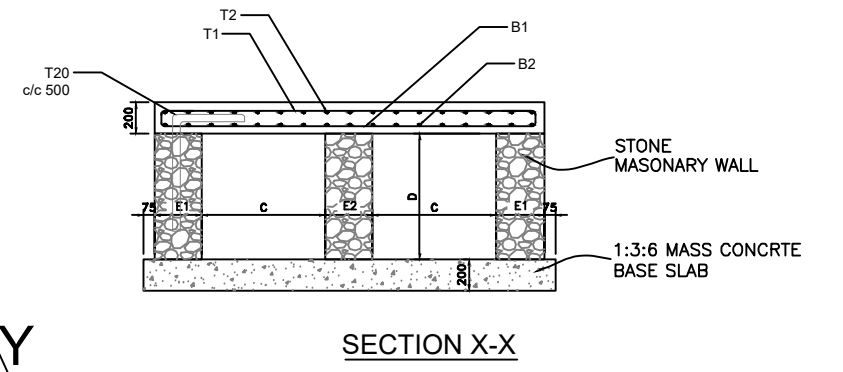
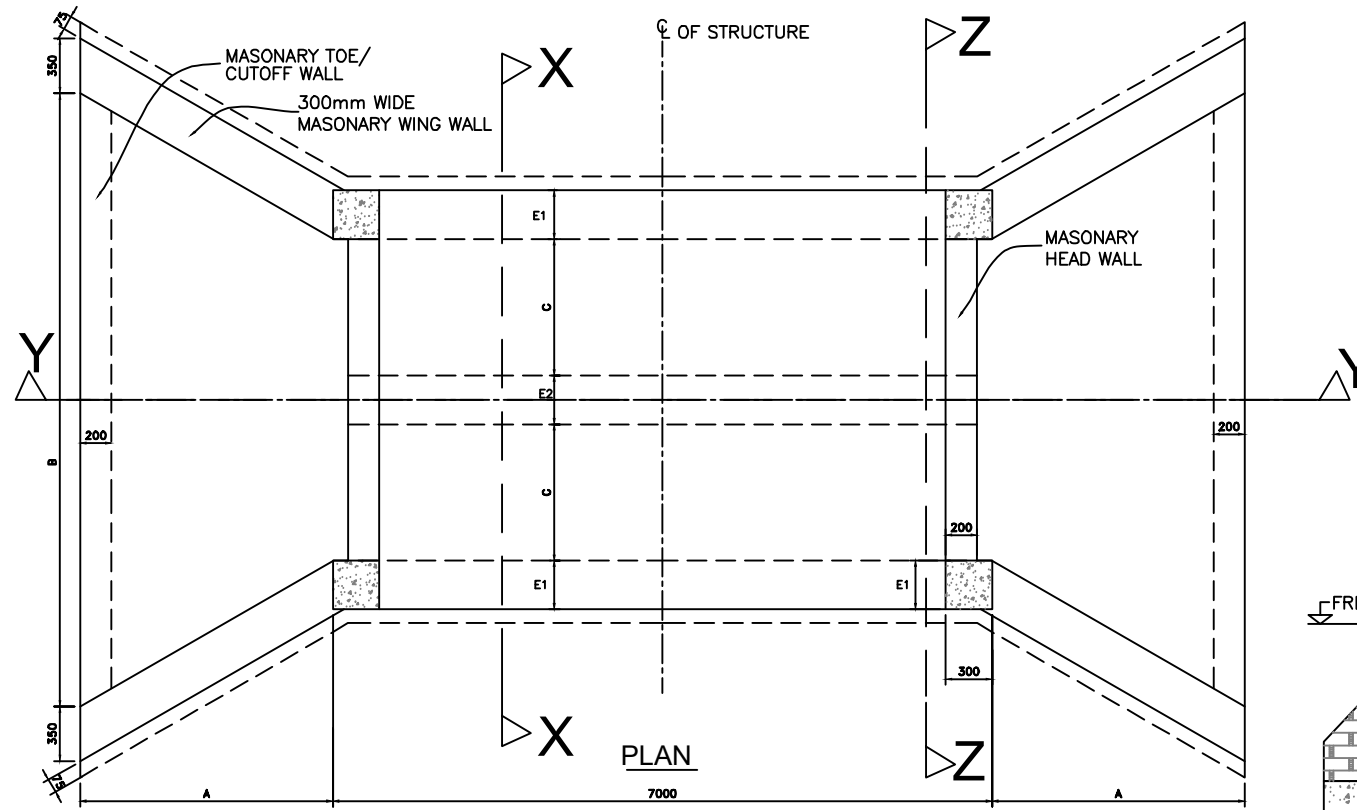
DRAINAGE STRUCTURES



FOR 1M WIDTH SINGLE CELL BOX																
CULVERT TYPE	DIMENSIONS (MM)					NO. OF CELLS	SLAB THK. (MM)	BAR MARK	M1 (MM)	M2 (MM)	NO. OF BARS	BAR MARK	M1 (MM)	M2 (MM)	NO. OF BARS	BAR DESCRIPTION
	A	B	C	D	E											
BC1	2000	5600	1000	1000	300	1	200	B1	120	920	48	B2	120	6920	7	T10-01-150
								T1	120	920	48	T2	120	6920	7	T10-01-150
BC2	2400	6895	1500	1000	300	1	200	B1	120	1420	48	B2	120	6920	11	T12-01-150
								T1	120	1420	48	T2	120	6920	11	T10-01-150
BC3	2400	6895	1500	1500	500	1	200	B1	120	1420	48	B2	120	6920	11	T12-01-150
								T1	120	1420	48	T2	120	6920	11	T10-01-150
BC4	2800	8200	2000	1000	500	1	200	B1	120	1920	48	B2	120	6920	14	T12-01-150
								T1	120	1920	48	T2	120	6920	14	T12-01-150
BC5	2800	8200	2000	2000	600	1	200	B1	120	1920	48	B2	120	6920	14	T12-01-150
								T1	120	1920	48	T2	120	6920	14	T12-01-150

NOTES :-
 . ALL DIMENSIONS ARE IN MILLI METRES UNLESS OTHERWISE SPECIFIED.
 . ARRANGEMENT FOR COMBINATIONS OF MULTIPLE BOX CULVERTS TO BE DETERMINED BY THE

AMENDMENTS			LEGEND			CONSULTANT'S DETAIL:			CLIENT'S DETAIL:			DESIGNED			DRAWING TITLE:			PROJECT STATUS		
NR.	DESCRIPTION	DATE				SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com			Southern Africa Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe			Z. B DESIGN CHECKED BY F. N. REng DRAWN Z. B DRAWING CHECKED BY F. N. REng DRAWING APPROVED BY MINISTRY			STANDARD SINGLE CELL BOX CULVERT DETAILS DESCRIPTION OF PROJECT MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT			PROJECT STATUS PLANNING/PROJECT ENGINEER INSPECTOR OF WORKS REMARKS ORIGINAL PAPER SIZE: A1		
1	REVISION 1	25-02-208										CONTRACT No.: PROJECT No.: SCALE: 1:1000 DATE: NOVEMBER 2025			DRAWING NO: SHEET NO: 1 OF 1					



NOTES :-
 . ALL DIMENSIONS ARE IN MILLI METRES UNLESS OTHERWISE SPECIFIED.
 . ARRANGEMENT FOR COMBINATIONS OF MULTIPLE BOX CULVERTS TO BE DETERMINED BY THE SUPERVISION ENGINEER ON SITE

CULVERT TYPE	FOR 1M WIDTH SINGLE CELL BOX										BAR DESCRIPTION						
	DIMENSIONS (MM)						NO. OF CELLS	SLAB THK. (MM)	BAR MARK	NO. OF BARS		BAR MARK	NO. OF BARS				
	A	B	C	D	E1	E2				M1			M2	M1	M2		
BC6	2400	10200	1500	1500	500	600	2	200	B1	120	4520	48	B2	120	6920	31	T12-01-150
									T1	120	4520	48	T2	120	6920	31	T10-01-150

AMENDMENTS		
NR.	DESCRIPTION	DATE
1	REVISION 1	25-02-2018


LEGEND	

CONSULTANT'S DETAIL:



SUIDA & PARTNERS
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 Malawi
 Tel: + 888 343 523/ 999 343 523
 Email info@suidamw.com

CLIENT'S DETAIL:



Southern African Trade Connectivity Project,
 Ministry of Transport and Public Works
 Capital Hill, Off Chilembwe Road
 private Bag 322, Lilongwe

DESIGNED: Z. B
DESIGN CHECKED BY: F. N. RENg
DRAWN: Z. B
DRAWING CHECKED BY: F. N. RENg
DRAWING APPROVED BY MINISTRY:

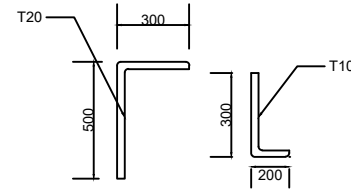
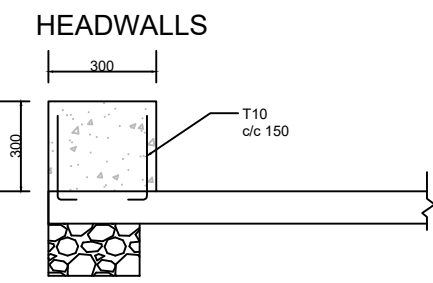
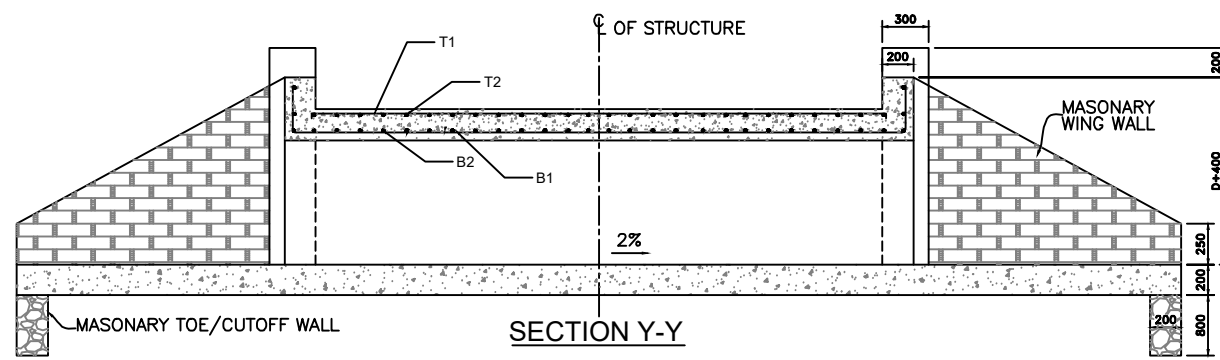
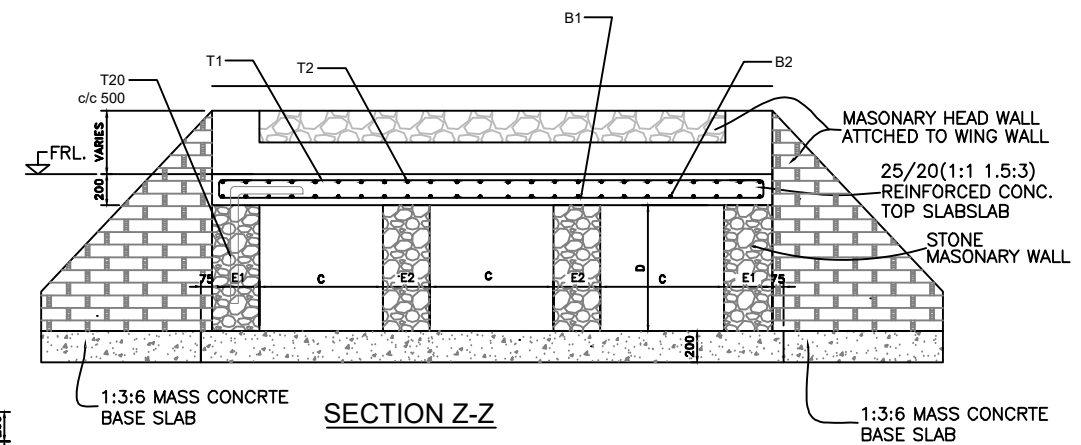
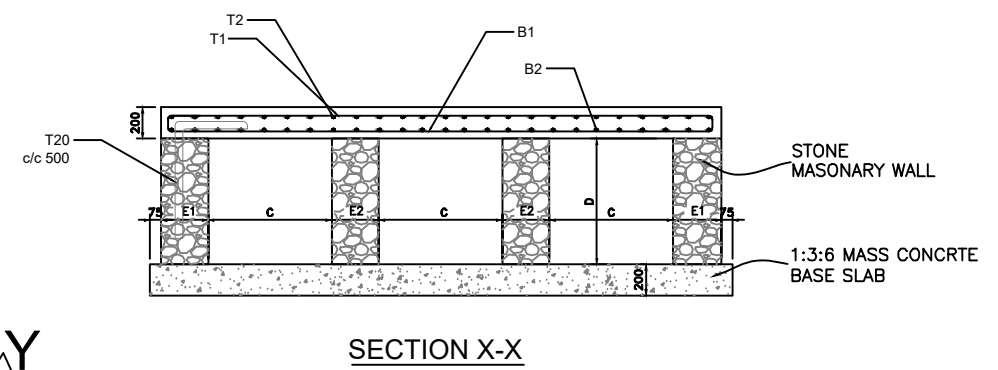
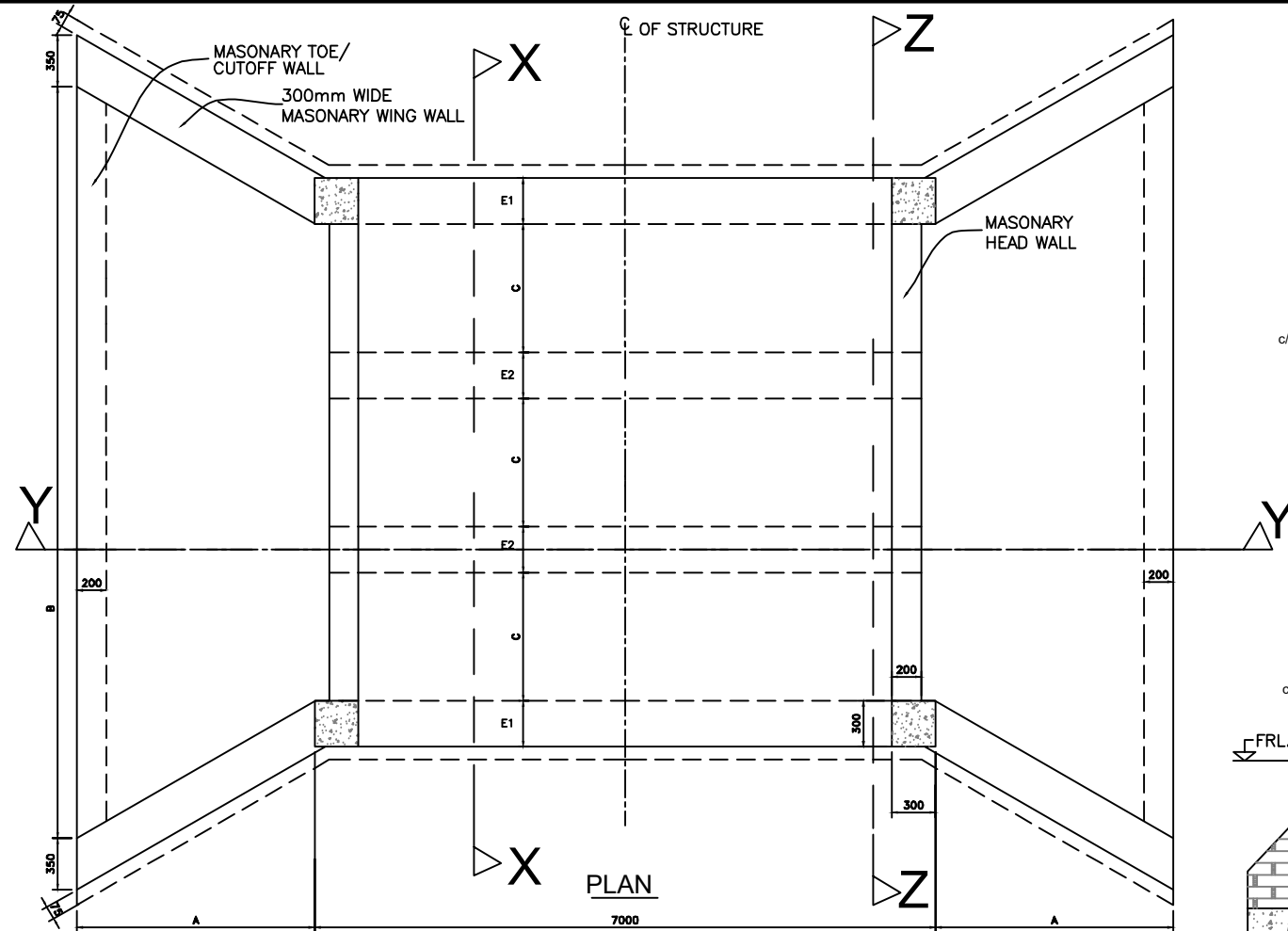
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DESCRIPTION OF PROJECT: MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT

CONTRACT No.:
PROJECT No.:
SCALE: 1:1000
DATE: NOVEMBER 2025
DRAWING NO.: CON/2025/SP/SATCP-LM/SBC-002
SHEET NO.: 1 OF 1

PROJECT STATUS

CONSULTANT DRAWING
 DESIGNER DRAWING
 ARCHITECTURE DRAWING
 CIVIL DRAWING

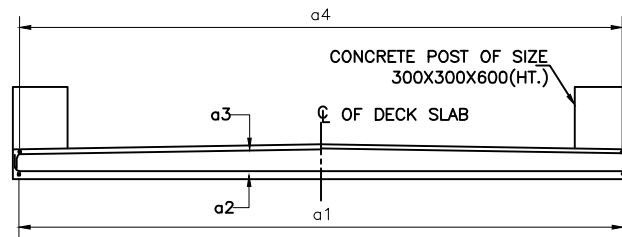
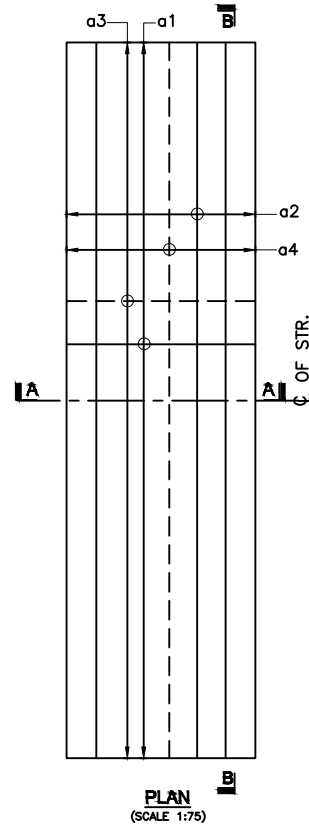
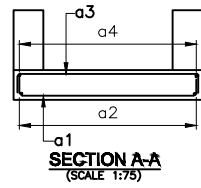
PLANNING/PROJECT ENGINEER: _____
INSPECTOR OF WORKS: _____
REMARKS: _____
ORIGINAL PAPER SIZE: A1



NOTES :-
 . ALL DIMENSIONS ARE IN MILLI METRES UNLESS OTHERWISE SPECIFIED.
 . ARRANGEMENT FOR COMBINATIONS OF MULTIPLE BOX CULVERTS TO BE DETERMINED BY THE SUPERVISION ENGINEER ON SITE

CULVERT TYPE	DIMENSIONS (MM)						NO. OF CELLS	SLAB THK. (MM)	BAR MARK	M1		M2		NO. OF BARS	BAR MARK	M1		M2		NO. OF BARS	BAR DESCRIPTION					
	A	B	C	D	E1	E2				(MM)	(MM)	(MM)	(MM)			(MM)	(MM)	(MM)	(MM)							
	BC7	2800	13600	2000	1000	500				600	3	200	B1			120	7920	48	B2			120	6920	54	T12-01-150	T1
BC8	2800	13600	2000	2000	500	800	3	200	B1	120	7920	48	B2	120	6920	54	T12-01-150	T1	120	7920	48	T2	120	6920	54	T12-01-150

AMENDMENTS NR. DESCRIPTION DATE 1 REVISION 1 25-02-2018			LEGEND			CONSULTANT'S DETAIL: SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com			CLIENT'S DETAIL: Southern Africa Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe			DESIGNED: Z. B DESIGN CHECKED BY: F. N. RENg DRAWN: Z. B DRAWING CHECKED BY: F. N. RENg DRAWING APPROVED BY:			DRAWING TITLE: STANDARD THREE CELL BOX CULVERT DETAILS DESCRIPTION OF PROJECT: MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT			PROJECT STATUS PLANNING PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1 SHEET NO: 1 OF 1		
CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025						CON/2025/SP/SATCP-LM/SBC-003														



LEGEND :
 TOP BARS SHOWN THUS
 BOTTOM BARS SHOWN THUS

TABLE OF BAR BENDING SCHEDULE FOR SLAB HAVING SPAN 2000mm. :-

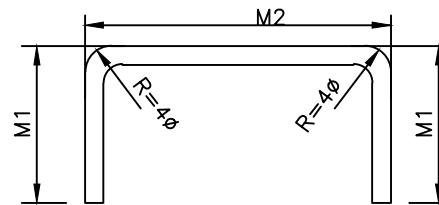
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REIN. SCHEDULE :-

SL. NO.	DESCRIPTION	SHAPE
	FOR SPAN 2000mm.	
a1	16Y @ 150 c/c	
a2	8Y @ 150 c/c	
a3	10Y @ 250 c/c	
a4	10Y @ 250 c/c	

TABLE FOR SLAB :-

SL. NO.	SPAN (mm)	THICKNESS OF SLAB (mm)
1	2000	250 To 300



NOTES :-

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. CONCRETE GRADE FOR RCC PRECAST GIRDER SHALL BE CLASS 40/20.
4. GRADE OF STEEL SHALL BE H.Y.S.D. GRADE 460
5. THE CONCRETE COVER FOR REINFORCEMENT SHALL BE 40mm.
6. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER SHEETS OF THIS DRAWING.
7. FOR ALL OTHER NOTES REFER 'GENERAL NOTES' DRAWING.

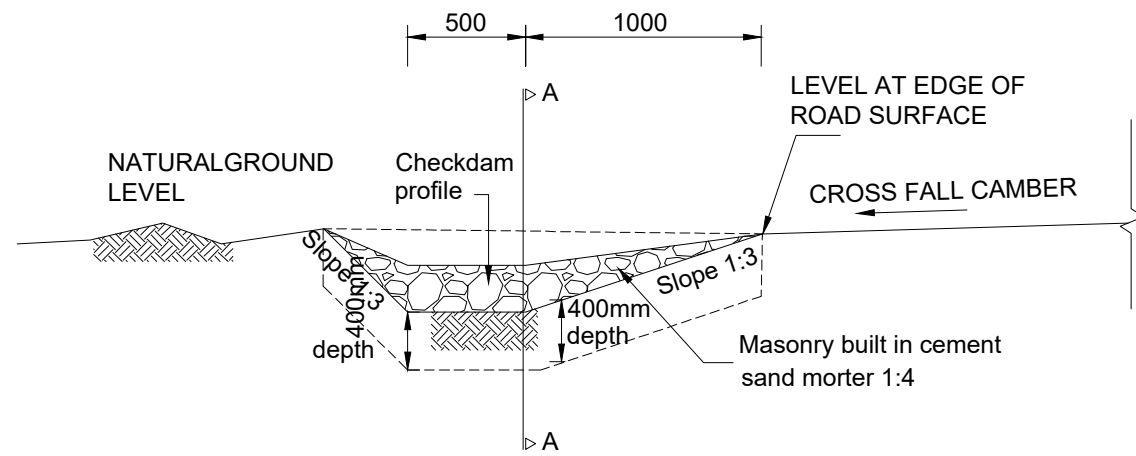
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africal Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		REINFORCEMENT DETAIL OF TOPSLAB OF MASONRY WALL BOX CULVERT		<input type="radio"/> CONSULTANT DRAWING <input type="radio"/> DESIGNER DRAWING <input type="radio"/> PROJECT ENGINEER DRAWING <input type="radio"/> ASSEMBLY DRAWING	
1	REVISION 1	25-02-2008							DESIGN CHECKED BY F. N. REING		DESCRIPTION OF PROJECT MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1	
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STANDARD DRAWINGS

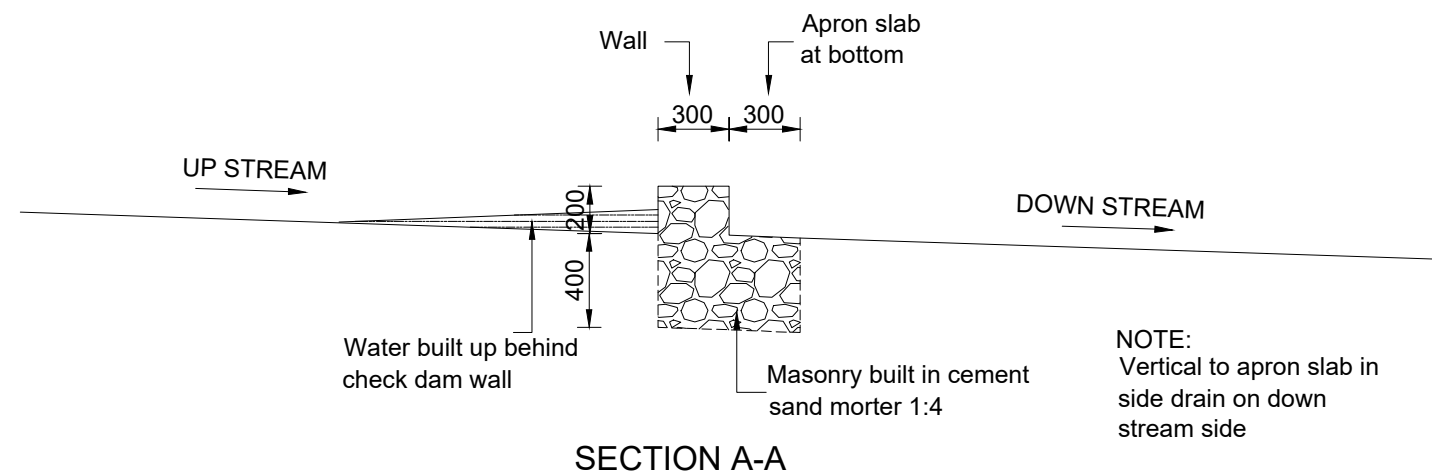
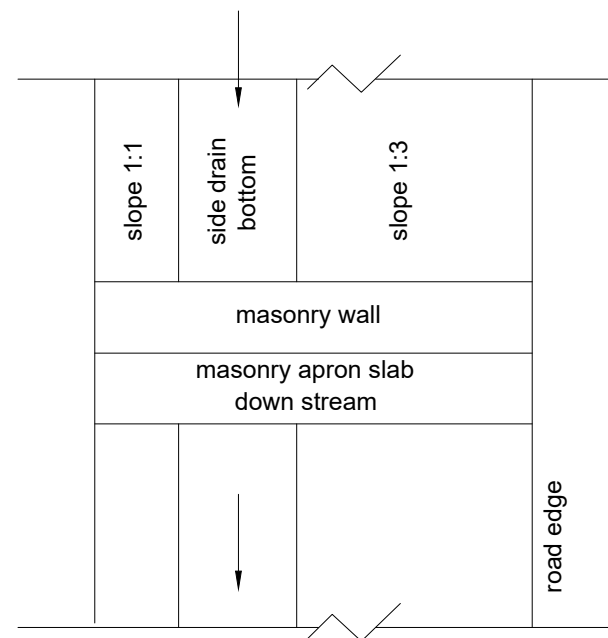
NOTE: Check dam to be used where soil is erodable and as indicated in the table below

TABLE SCOUR CHECK SPACING

GRADIENT OF ROAD (%)	SCOUR CHECK INTERNAL (m)
3	Not Required
4	17
5	13
6	10
7	8
8	7
9	6
10	5
12	4



SIDE DRAIN ELEVATION WITH CHECK DAM CONSTRUCTED



NOTE: Vertical to apron slab in side drain on down stream side

AMENDMENTS		
NR.	DESCRIPTION	DATE
1	REVISION 1	25-02-2018


LEGEND	

CONSULTANT'S DETAIL:



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Email info@suidamw.com

CLIENT'S DETAIL:



Southern African Trade Connectivity Project,
Ministry of Transport and Public Works
Capital Hill, Off Chilembwe Road
private Bag 322, Lilongwe

DESIGNED
Z. B
SIGNATURE: _____ DATE: _____
DESIGN CHECKED BY
F. N. RENg
SIGNATURE: _____ DATE: _____
DRAWN
Z. B
SIGNATURE: _____ DATE: _____
DRAWING CHECKED BY
F. N. RENg
SIGNATURE: _____ DATE: _____
DRAWING APPROVED BY MINISTRY
SIGNATURE: _____ DATE: _____

DRAWING TITLE:
TYPICAL DETAILS OF MASONRY CHECK DAMS

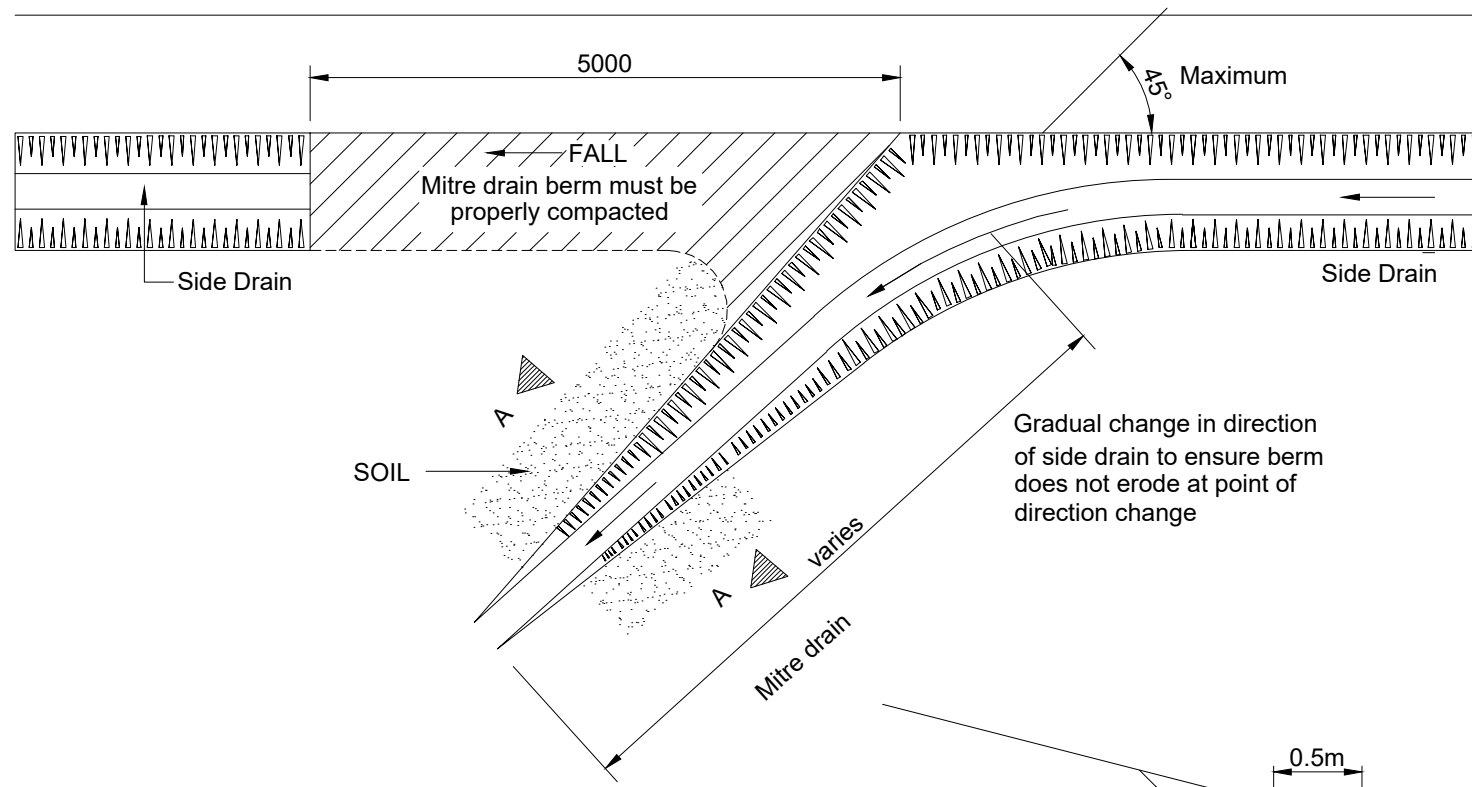
DESCRIPTION OF PROJECT:
**MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND
INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU-
KACHULU (S143) ROAD IN ZOMBA DISTRICT**

CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025

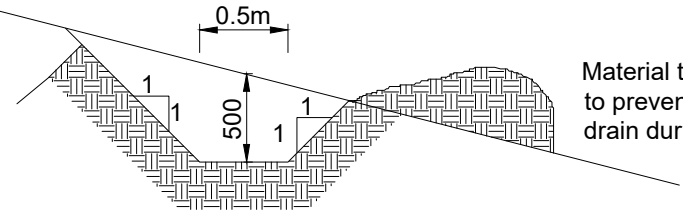
PROJECT STATUS

PLANNING/PROJECT ENGINEER: _____
INSPECTOR OF WORKS: _____
REMARKS: _____ ORIGINAL PAPER SIZE: A1

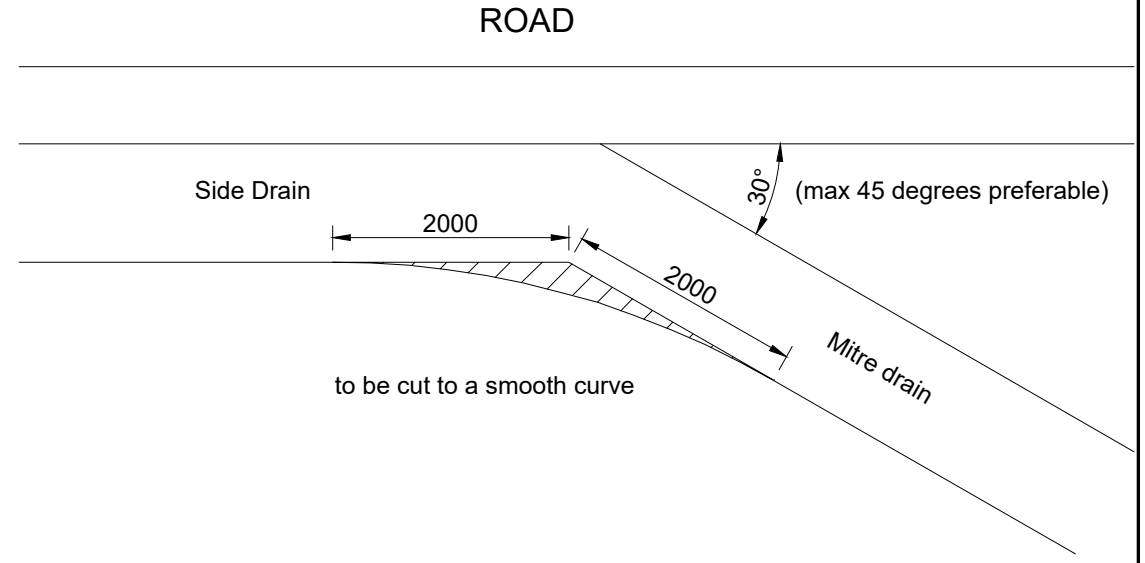
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PLAN OF COMPLETED MITRE DRAIN

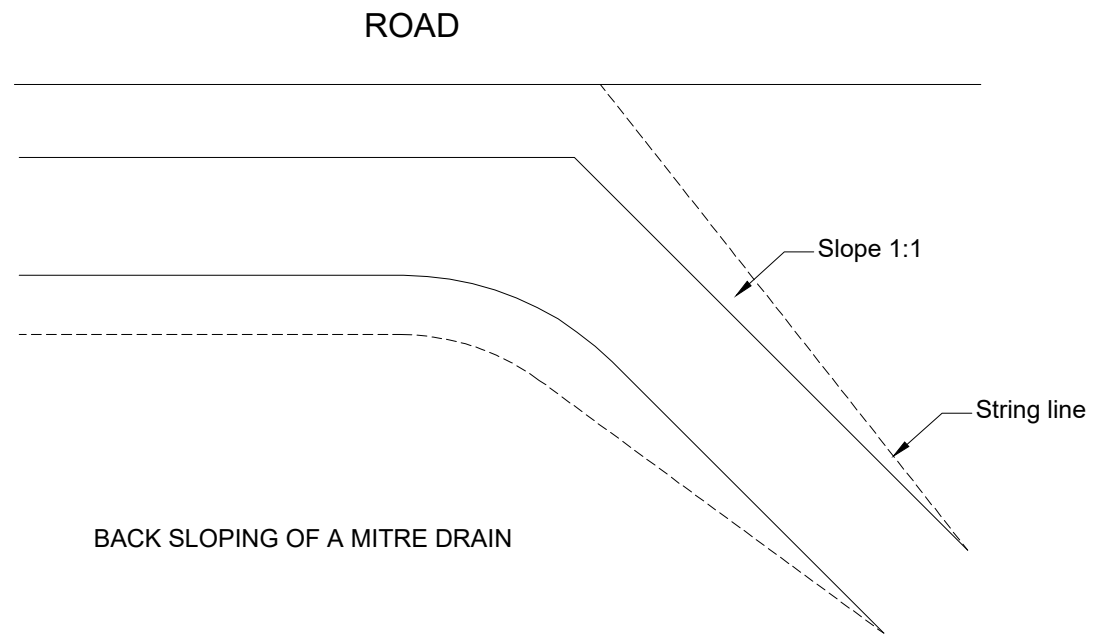


SECTION A-A



SPACING OF MITRES

Longitudinal Road Gradient (%)	Maximum Mitre Drain Interval (M)
12	40
10	80
8	120
6	150
4	200



BACK SLOPING OF A MITRE DRAIN

AMENDMENTS		
NR.	DESCRIPTION	DATE
1	REVISION 1	25-02-2018


LEGEND

CONSULTANT'S DETAIL:



SUIDA & PARTNERS
 P.O Box 32345, Chichiri, Blantyre 3
 Malawi
 Tel: + 888 343 523/ 999 343 523
 Email info@suidamw.com

CLIENT'S DETAIL:



Southern Africa Trade Connectivity Project,
 Ministry of Transport and Public Works
 Capital Hill, Off Chilembwe Road
 private Bag 322, Lilongwe

DESIGNED BY Z. B	DATE
DESIGN CHECKED BY F. N. RENg	DATE
DRAWN BY Z. B	DATE
DRAWING CHECKED BY F. N. RENg	DATE
DRAWING APPROVED BY MINISTRY	DATE
SIGNATURE	DATE

DRAWING TITLE:
TYPICAL DETAILS OF MASONRY MITRE DRAIN

DESCRIPTION OF PROJECT:
 MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND
 INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU-
 KACHULU (S143) ROAD IN ZOMBA DISTRICT

CONTRACT No.: *****

PROJECT No.: *****

SCALE: 1:1000

DATE: NOVEMBER 2025

PROJECT STATUS

PLANNING PROJECT ENGINEER: _____

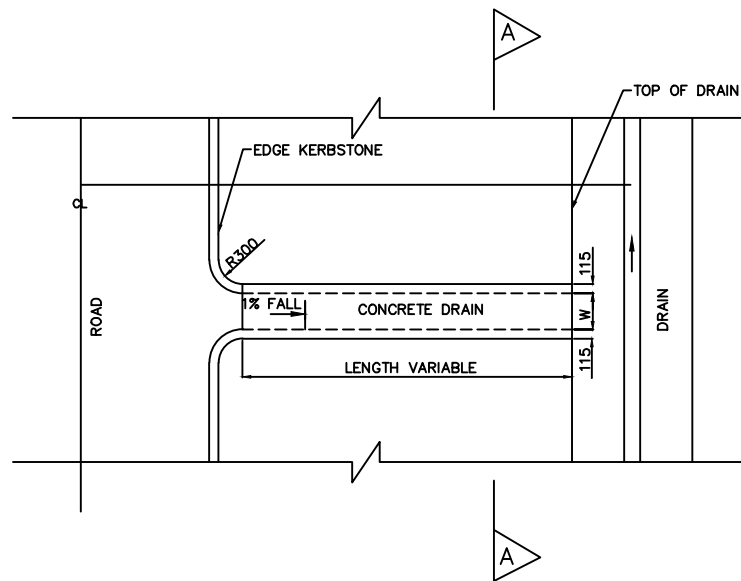
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REMARKS: _____

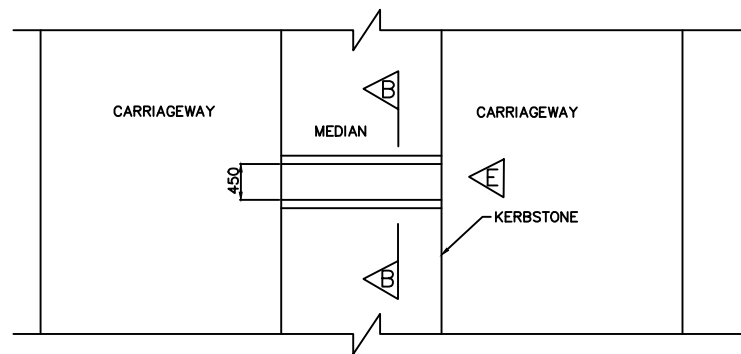
ORIGINAL PAPER SIZE: A1

DRAWING NO: CON/2025/SP/SATCP-LM/DRN-02

SHEET NO: 1 OF 1

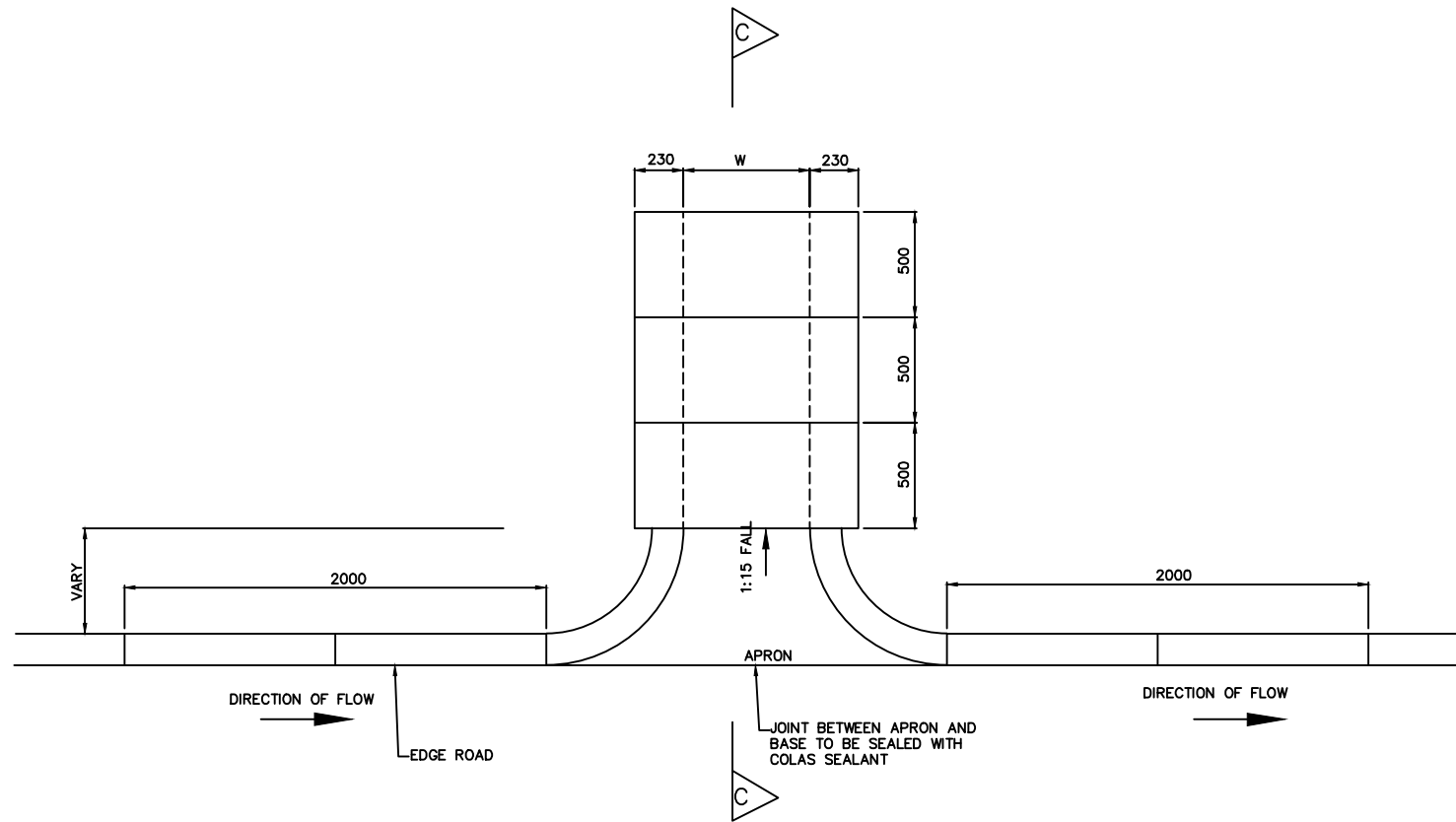


TYPICAL CONCRETE OUTLETS AND CHUTE PLANE



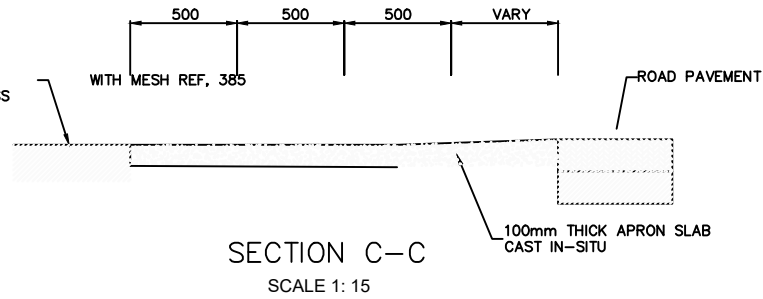
DUAL CARRIAGE ROAD PLAN

SCALE 1: 40



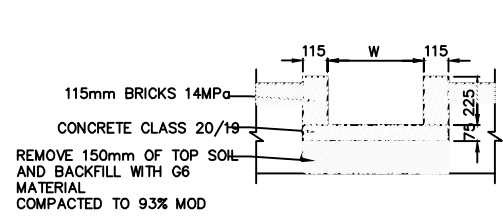
TYPICAL PLAN AT OUTLETS
SCALE 1: 15

COVER TO OUTLET AT WALKWAY CONCRETE CLASS 20/19

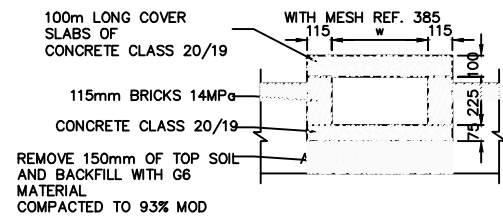


SECTION C-C
SCALE 1: 15

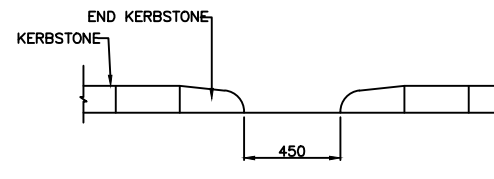
CHUTE	COVER	W
TYPE 1	OPEN	W=450
TYPE 2	COVERED	W=450
TYPE 3	COVERED	W=600



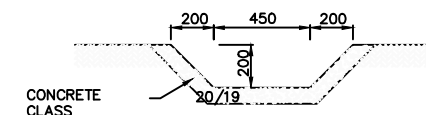
SECTION A-A OPEN CHUTES



SECTION A-A COVERED CHUTE
IN WALKWAYS
SCALE 1: 15



ELEVATION E
SCALE 1: 15



SECTION B-B

AMENDMENTS		
NR.	DESCRIPTION	DATE
1	REVISION 1	25-02-2006


LEGEND	

CONSULTANT'S DETAIL:



SUIDA & PARTNERS
P.O Box 32345, Chichiri, Blantyre 3
Malawi
Tel: + 888 343 523/ 999 343 523
Email info@suidamw.com

CLIENT'S DETAIL:



Southern African Trade Connectivity Project,
Ministry of Transport and Public Works
Capital Hill, Off Chilembwe Road
private Bag 322, Lilongwe

DESIGNED
Z. B

DESIGN CHECKED BY
F. N. RENg

DRAWN
Z. B. NDOLo

DRAWING CHECKED BY
F. N. RENg

DRAWING APPROVED BY MINISTRY

DRAWING TITLE:
STANDARD DRAWINGS: STORMWATER DRAINAGE DETAILS INLETS, OUTLETS AND CHUTES

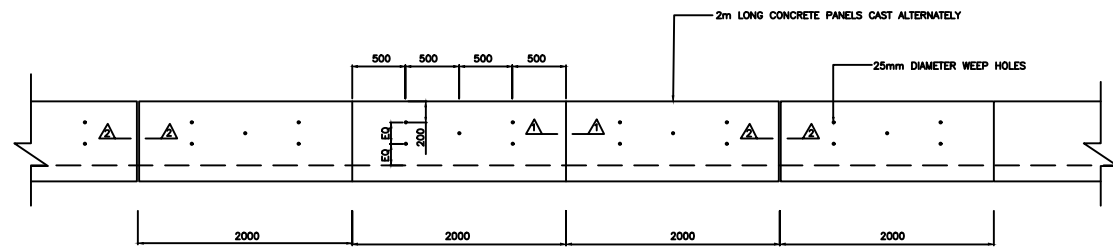
DESCRIPTION OF PROJECT:
MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT

CONTRACT No.:
PROJECT No.:
SCALE: 1:1000
DATE: NOVEMBER 2025

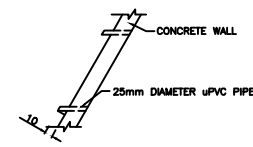
PROJECT STATUS

PLANNING/PROJECT ENGINEER:
INSPECTOR OF WORKS:
REMARKS:
ORIGINAL PAPER SIZE: A1
DRAWING NO.:
SHEET NO.: 1 OF 1

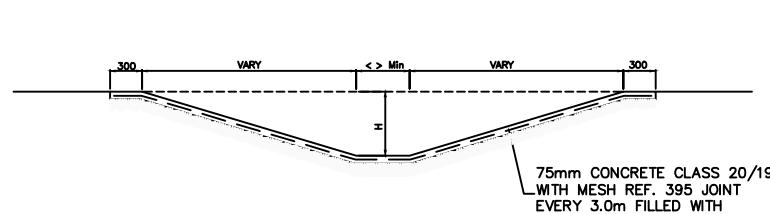
DEPTH H(m)	DEPTH H(m)
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0.8<H<0.9	1:3
0.9<H<1.5	1:2
H>1.5	1:1.5



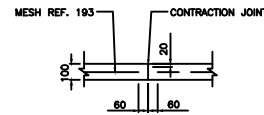
VEE OR TRAPEZOIDAL LINED DRAIN SIDE WALL ELEVATION
SCALE 1: 300



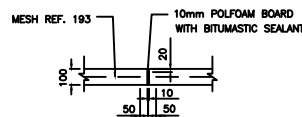
SECTION THROUGH SIDE PANEL



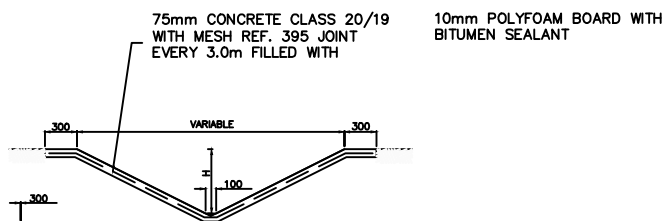
TYPICAL SECTION OF LINED TRAPEZOIDAL DRAIN
SIDE SLOVES VARY 'H' Min 300mm
SCALE 1: 300



SECTION 2-2
EXPANSION JOINT SECTION THROUGH SIDE PANEL



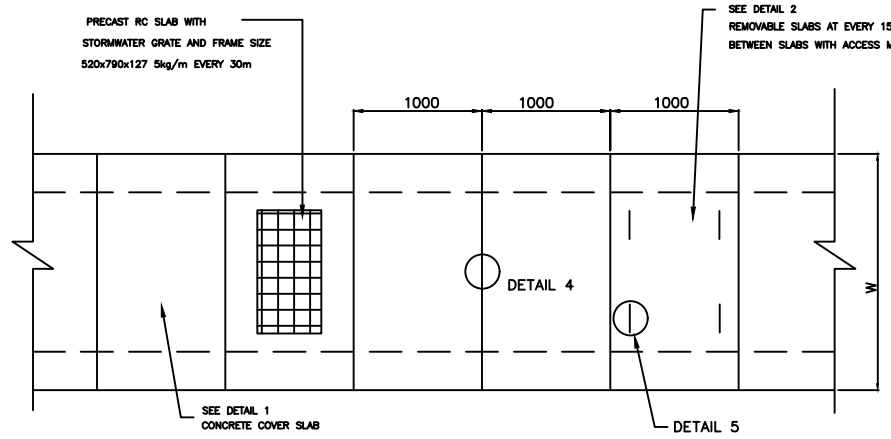
SECTION 2-2
EXPANSION JOINT



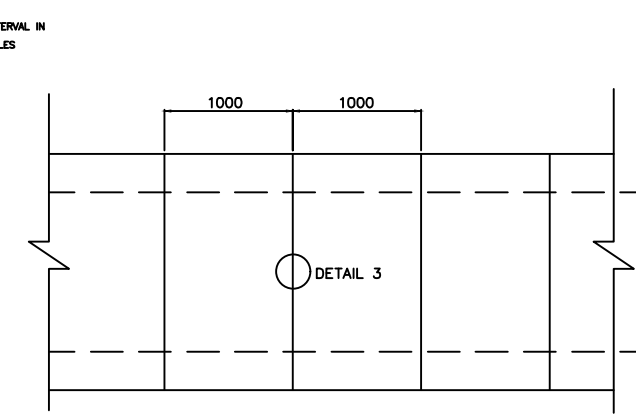
TYPICAL SECTION OF LINED VEE DRAIN
SIDE SLOVES VARY 'H' Min 300mm
SCALE 1: 300

REFERENCE CODE	WIRE/BAR DIAMETER	MESH APERTURE	SHEET WEIGHT
REF 100	4.00 mm	200 x 200mm	14.4 kgs
REF 156	3.55 mm	100 x 100mm	22.5 kgs
REF 193	5.6 mm	200 x 200mm	27.8 kgs
REF 245	6.3 mm	200 x 200mm	35.3 kgs
REF 311	7.1 mm	200 x 200mm	44.8 kgs
REF 395	8.00 mm	200 x 200mm	56.9 kgs
REF 500	9.00 mm	200 x 200mm	72.0 kgs
REF 617	10.00 mm	200 x 200mm	88.9 kgs
REF 888	12.00 mm	200 x 200mm	127.9 kgs

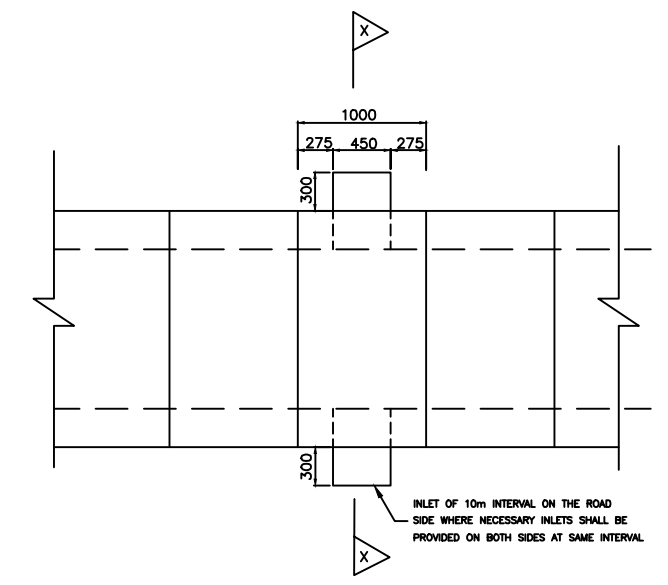
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africal Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		STANDARD DRAWINGS: TRAPEZOIDAL AND VEE DRAINS DETAILS AT ROAD CROSSING		<input type="radio"/> DESIGN <input type="radio"/> CHECKED <input type="radio"/> APPROVED FOR CONSTRUCTION <input type="radio"/> AS BUILT	
1	REVISION 1	25-02-206							DESIGN CHECKED BY F. N. RENg		DESCRIPTION OF PROJECT MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1	
									DRAWING CHECKED BY F. N. RENg		CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025		DRAWING NO: CON/2025/SP/SATCP-LM/DRN-06 SHEET NO: 1 OF 1	



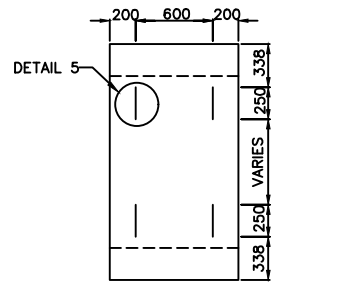
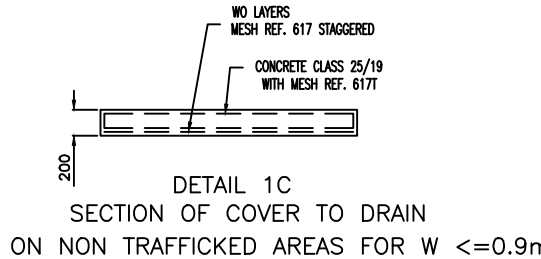
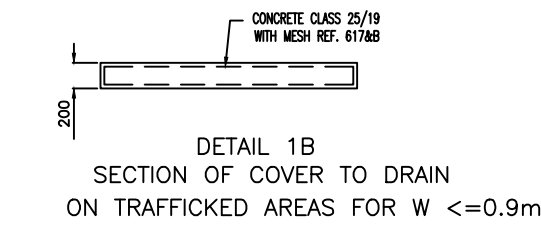
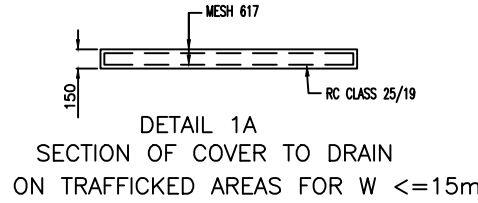
PLAN OF RECTANGULAR DRAIN COVERED WITH PRECAST SLABS



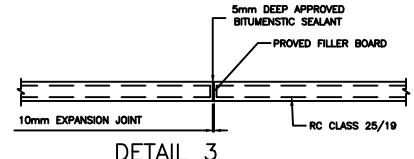
RECTANGULAR DRAIN INVERT SLAB OR CAST IN-SITU CONCRETE



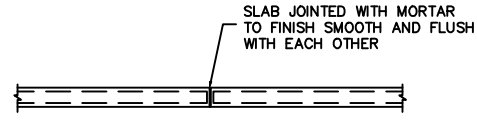
RECTANGULAR ROAD SIDE DRAIN PLAN



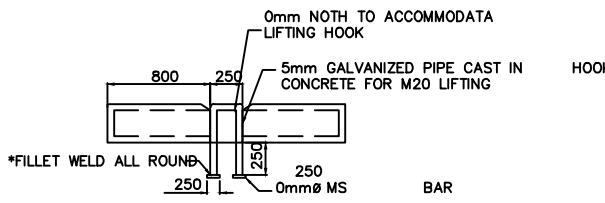
DETAIL 2 REMOVABLE PRECAST SLAB



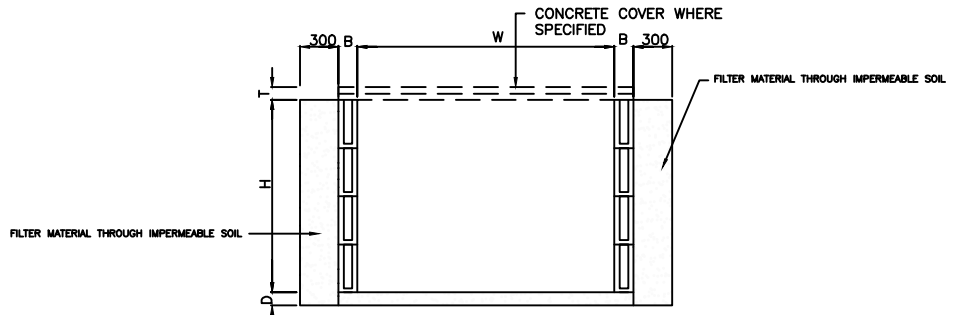
DETAIL 3 EXPANSION JOINT DETAIL ON WALLS AND BASE SLAB OF DRAIN AT 30m INTERVAL



DETAIL 4 JOINT IN COVER SLAB TO DRAIN

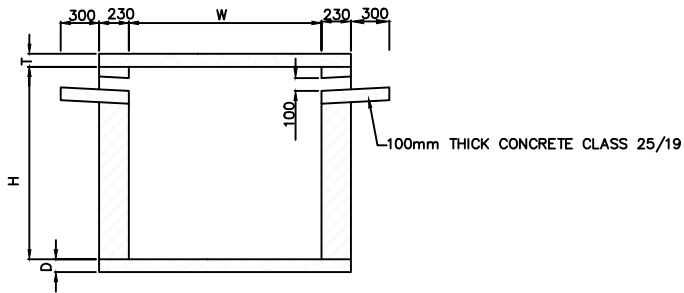


DETAIL 5 LIFTING HOOK FOR REMOVABLE SLABS



HOLLOW BLOCK RECTANGULAR DRAIN(OUTFALL)

W	Varies (as specified)
B	150 mm for H less than 0.6m Y= Hollow block min 5.0MPa filled with concrete class 20/19 and reinforced with Y12 bars vertically in each hole 230mm for H greater than 0.6m less than 1.5m Y= Hollow block min 5MPa with Y12mm per hole and filled with concrete class 20/19 150 mm for H greater than 1.5m and less than 1.8 Y= class 25/19 reinforced with mesh REF. 617 each face 150 mm for H greater than 1.8m and less than 2.5m Y= class 25/19 reinforced with double layer mesh REF. 617 each face for one thirds of height and single layer for rest of height
D	100mm concrete class 25/19 reinforced with mesh Ref. 395 top face
T	Varies (as specified)



SECTION X-X ROAD SIDE DRAIN

AMENDMENTS		
NR.	DESCRIPTION	DATE
1	REVISION 1	25-02-206


LEGEND	

CONSULTANT'S DETAIL:



SUIDA & PARTNERS
P.O Box 32345, Chichiri, Blantyre 3
Malawi
Tel: + 888 343 523/ 999 343 523
Email info@suidamw.com

CLIENT'S DETAIL:

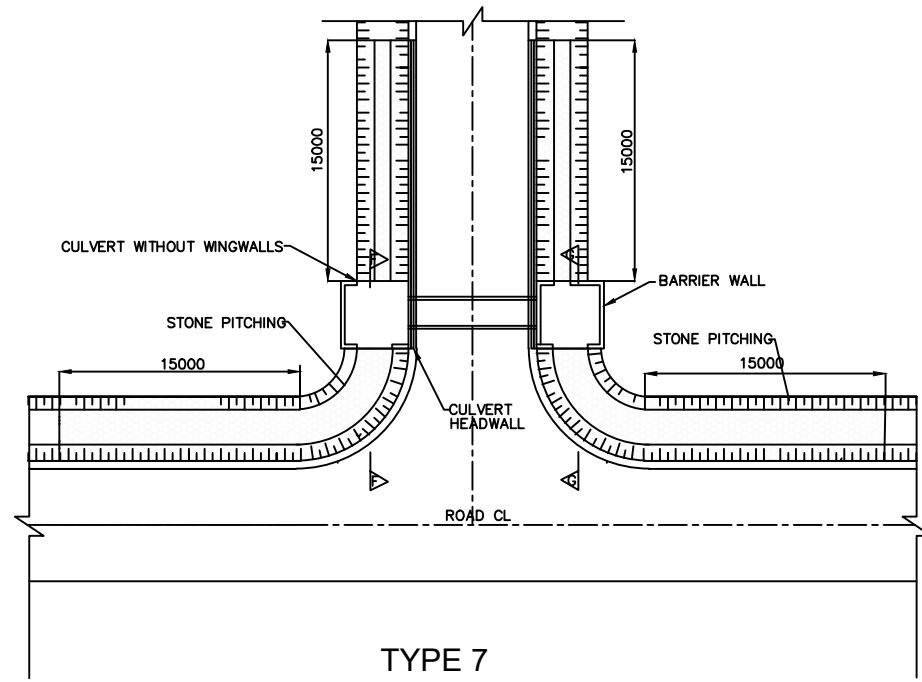


Southern African Trade Connectivity Project,
Ministry of Transport and Public Works
Capital Hill, Off Chilembwe Road
private Bag 322, Lilongwe

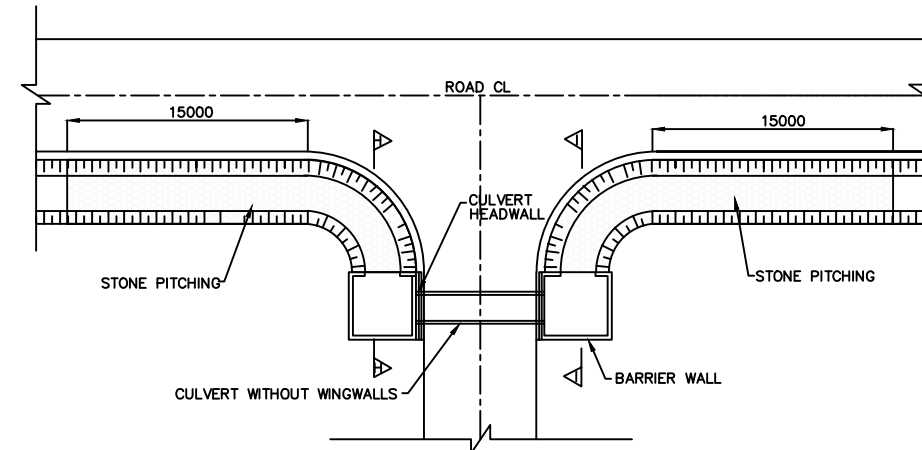
DESIGNED Z. B	DATE
DESIGN CHECKED BY F. N. REng	DATE
DRAWN Z. B	DATE
DRAWING CHECKED BY F. N. REng	DATE
DRAWING APPROVED BY MINISTRY	DATE
SIGNATURE	DATE

DRAWING TITLE: STANDARD DRAWINGS: COVERED RECTANGULAR DRAIN DETAILS	
DESCRIPTION OF PROJECT: MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT	
CONTRACT No.:	PROJECT No.:
SCALE: 1:1000	DATE: NOVEMBER 2025

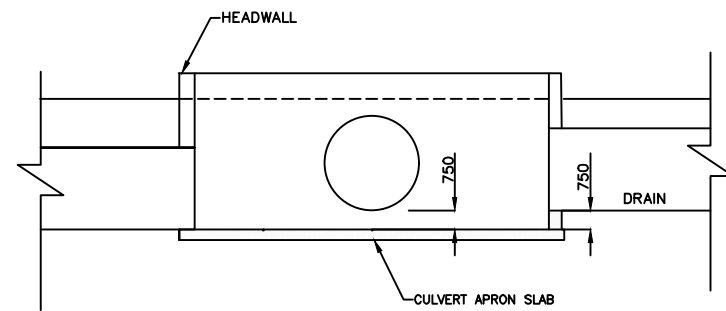
PROJECT STATUS	
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DRAWING NO. CON/2025/SP/SATCP-LM/DRN-07	SHEET NO. 1 OF 1



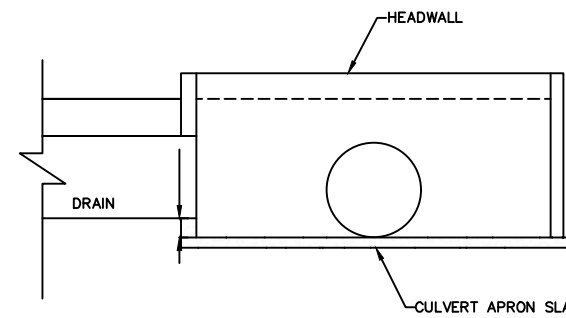
TYPE 7
SCALE 1 : 200



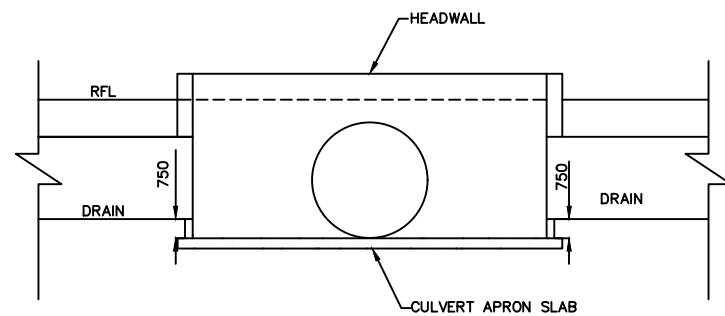
TYPE 8



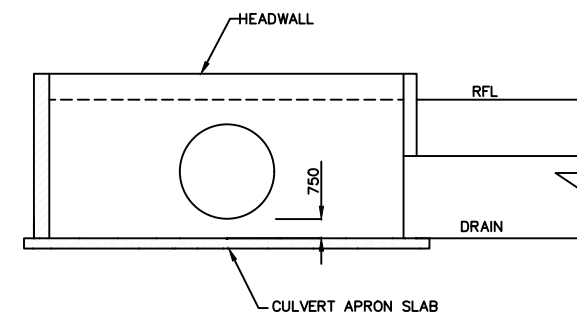
SECTION G-G
SCALE 1 : 250



SCALE 1 : 250

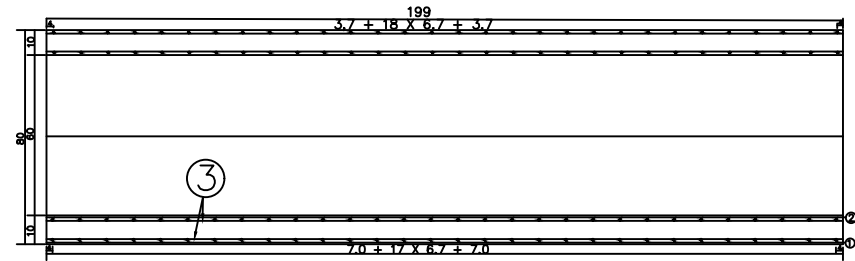


SECTION F-F

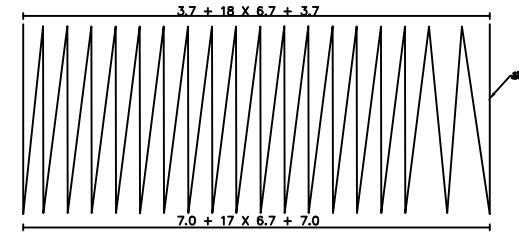


SECTION I-I

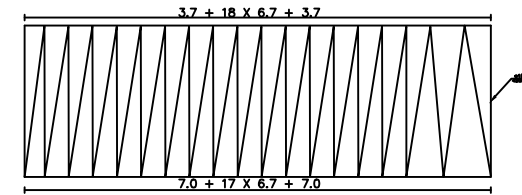
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NR.	DESCRIPTION	DATE			SUIDA & PARTNERS		Southern Africa Trade Connectivity Project,		Z. B		STANDARD DRAWINGS: DRAIN INLET AND OUTLET DETAILS		<input type="radio"/> COMPLETE DRAWING <input type="radio"/> DESIGN CHECKED <input type="radio"/> APPROVED FOR CONSTRUCTION <input type="radio"/> AS-BUILT DRAWING	
1	REVISION 1	25-02-206			P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		SIGNATURE: _____ DATE: _____ DESIGN CHECKED BY: F. N. RENg SIGNATURE: _____ DATE: _____ DRAWING CHECKED BY: F. N. RENg SIGNATURE: _____ DATE: _____ DRAWING APPROVED BY: _____ SIGNATURE: _____ DATE: _____		DESCRIPTION OF PROJECT: MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE-GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1	
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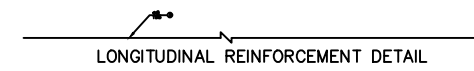
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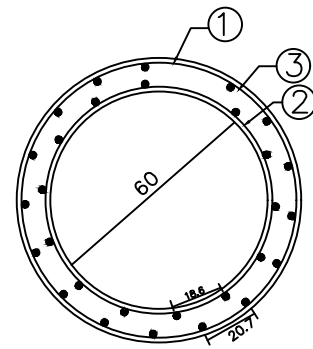
OUTER RING RIBS PROFILE



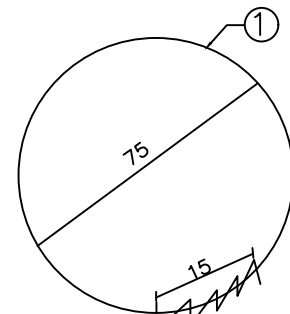
INNER RING RIBS PROFILE



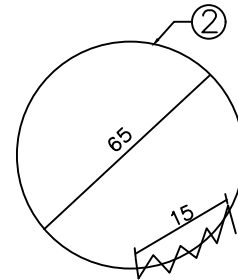
LONGITUDINAL REINFORCEMENT DETAIL



CROSS-SECTION



OUTER RING RIBS DETAILS



INNER RING RIBS DETAILS

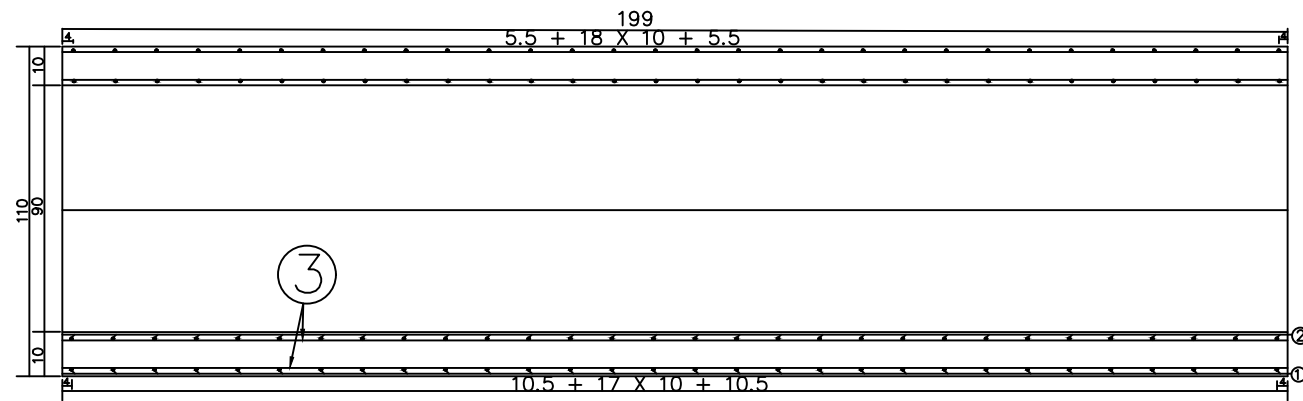
ENGINEERING QUANTITIES LIST

NUMBER	DIAMETER	EACH LENGTH	THE NUMBER	TOTAL	WEIGHT PER METER	WEIGHT	SERIAL NUMBER
Unit	mm	cm	Radius	m	kg/m	kg	
1	10	1000	1	1000	0.008	8.00	001
2	10	1000	1	1000	0.008	8.00	002
3	10	1000	1	1000	0.008	8.00	003

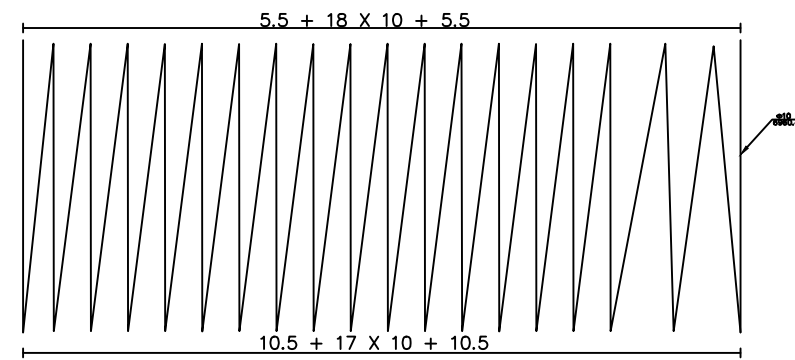
SUMMATION C20 concrete: 0.4m3 HPB235: 67.7KG

NOTES:
1. Figures in addition to the steel bar diameter in millimeters in size and indicated, the rest are in centimeters

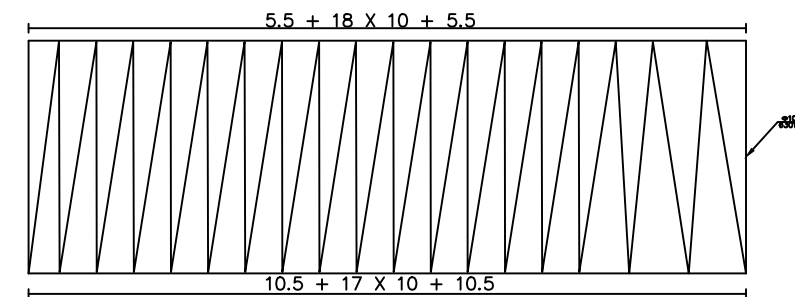
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africa Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		STANDARD DRAWINGS: 900MM DIAMETER CONCRETE DETAILS		<input type="checkbox"/> CONSULTANT <input type="checkbox"/> DESIGNER <input type="checkbox"/> CHECKED <input type="checkbox"/> APPROVED	
1	REVISION 1	25-02-2026							DESIGN CHECKED BY F. N. RENJ		DESCRIPTION OF PROJECT MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT		PLANNING/PROJECT ENGINEER: INSPECTOR OF WORKS: REMARKS: ORIGINAL PAPER SIZE: A1	
									DRAWING CHECKED BY Z. B		CONTRACT No.:		PROJECT No.:	
									DRAWING APPROVED BY F. N. RENJ		SCALE: 1:1000		DATE: NOVEMBER 2025	
									DRAWING APPROVED BY MINISTRY		CONTRACT No.:		PROJECT No.:	
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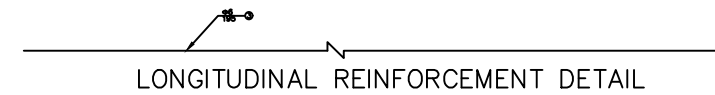
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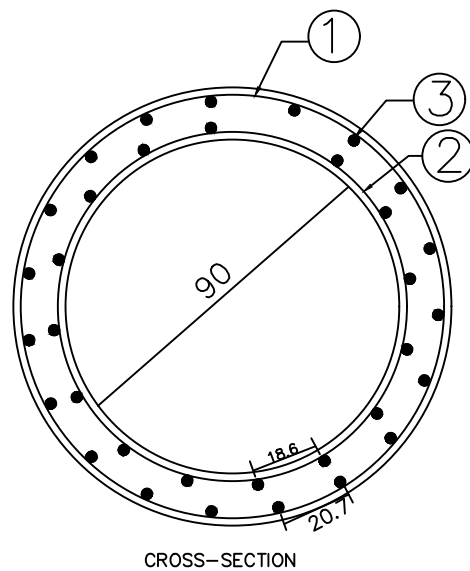
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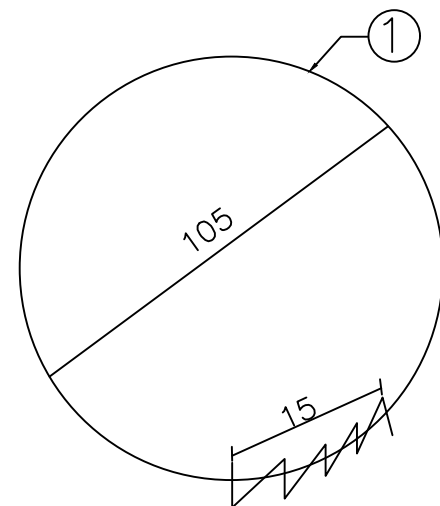
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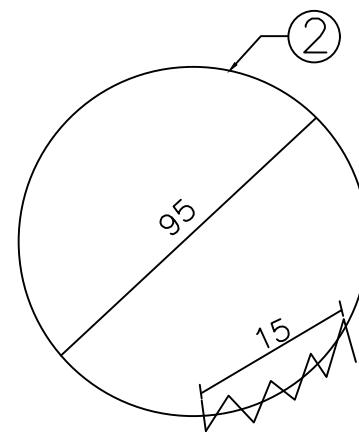
LONGITUDINAL REINFORCEMENT DETAIL



CROSS-SECTION



OUTER RING RIBS DETAILS



INNER RING RIBS DETAILS

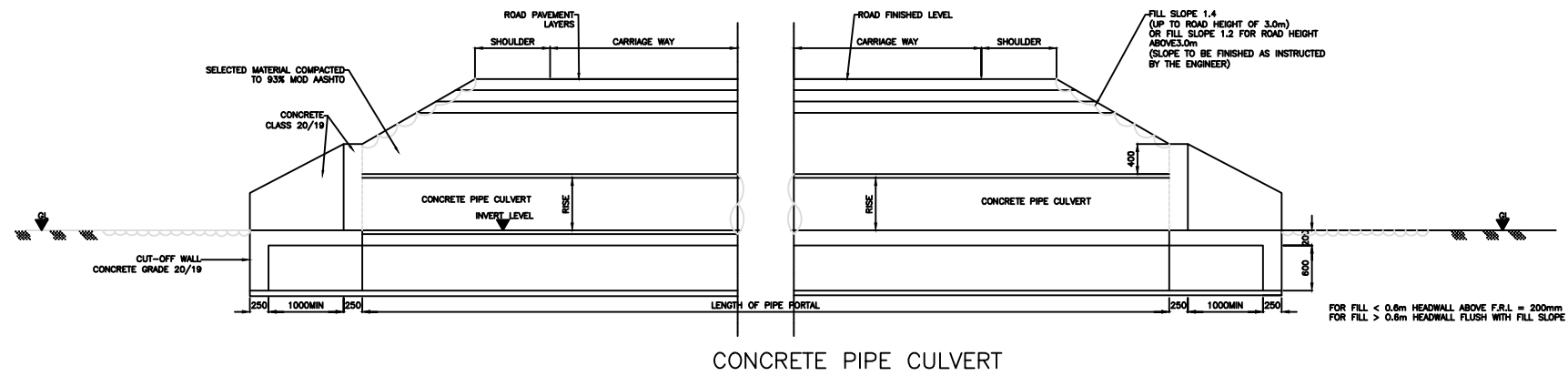
ENGINEERING QUANTITIES LIST

NUMBER	DIAMETER	EACH LENGTH	THE NUMBER	TOTAL	WEIGHT PER METER	WEIGHT	SERIAL NUMBER
Unit	mm	cm	Radical	m	kg/m	kg	
1	ø10	6003.30	1	60.0	0.62	42.98	HPB 235
2	ø10	6300.80	1	63.0	0.62	38.88	HPB 235
3	ø6	195	32	62.4	0.22	13.85	HPB 235
SUMMATION C20 concrete: 0.6m ³ HPB235: 95.7KG							

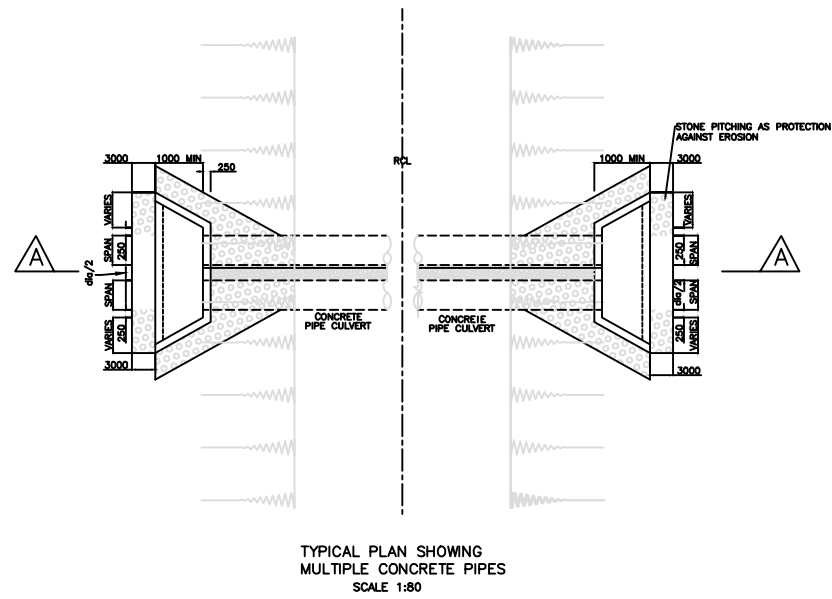
NOTES:

1. Figures in addition to the steel bar diameter in millimeters in size and indicated, the rest are in centimeters

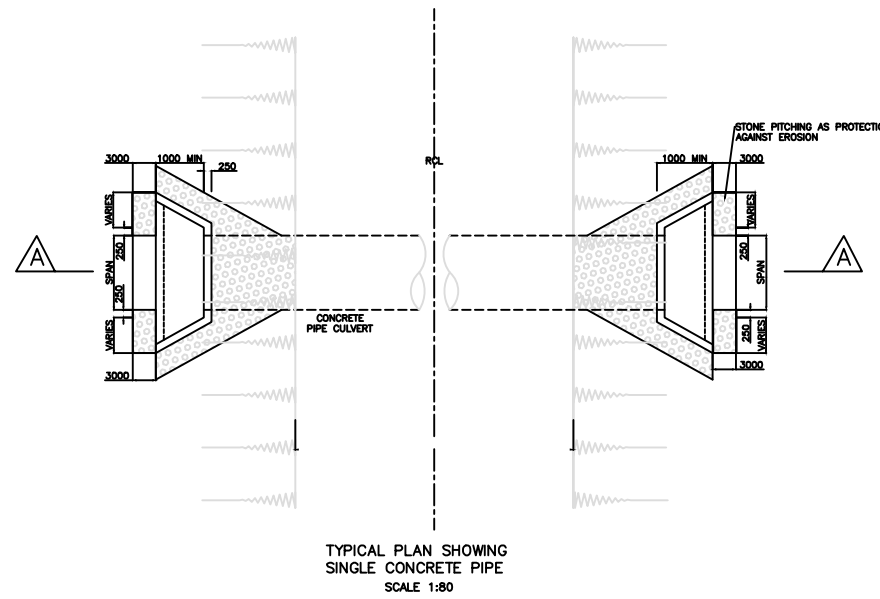
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NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africal Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		STANDARD DRAWINGS: 900MM DIAMETER CONCRETE DETAILS		<input type="checkbox"/> DESIGN DRAWING <input type="checkbox"/> REVISION <input type="checkbox"/> APPROVAL FOR CONSTRUCTION <input type="checkbox"/> AS-BUILT DRAWING	
1	REVISION 1	25-02-206							DESIGN CHECKED BY F. N. REng		DESCRIPTION OF PROJECT MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT		PLANNING/PROJECT ENGINEER: INSPECTOR OF WORKS: REMARKS: ORIGINAL PAPER SIZE: A1	
									DRAWING CHECKED BY F. N. REng		CONTRACT No.: PROJECT No.: SCALE: 1:1000 DATE: NOVEMBER 2025		DRAWING NO: CON/2025/SP/SATCP-LM/DRN-10 SHEET NO: 1 OF 1	



TYPICAL SECTION A-A
SCALE 1:30

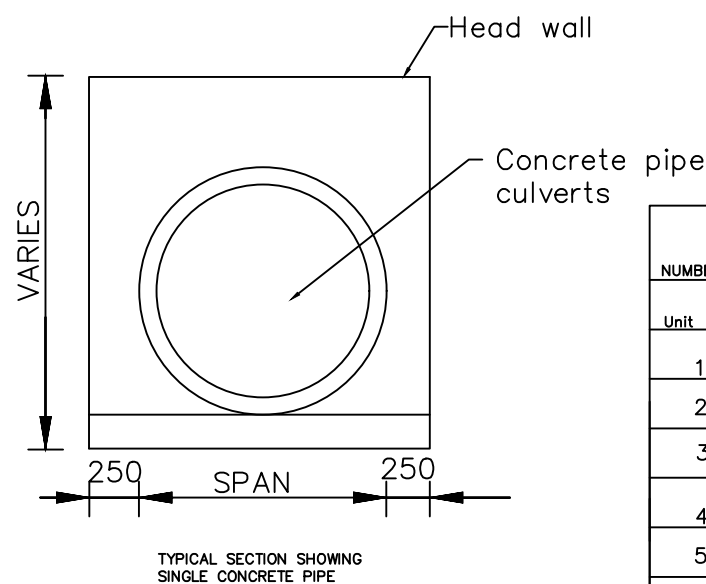
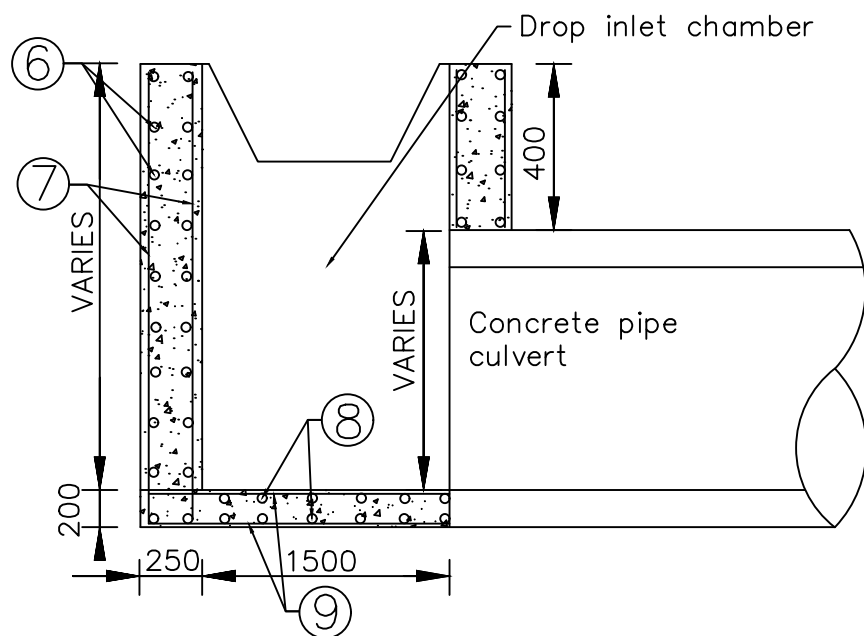
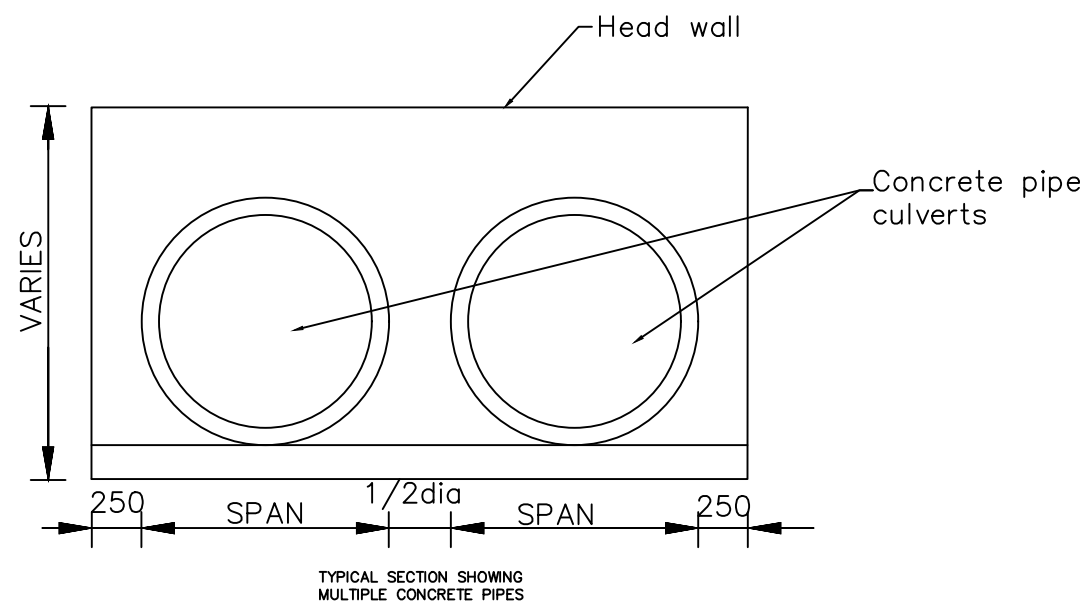
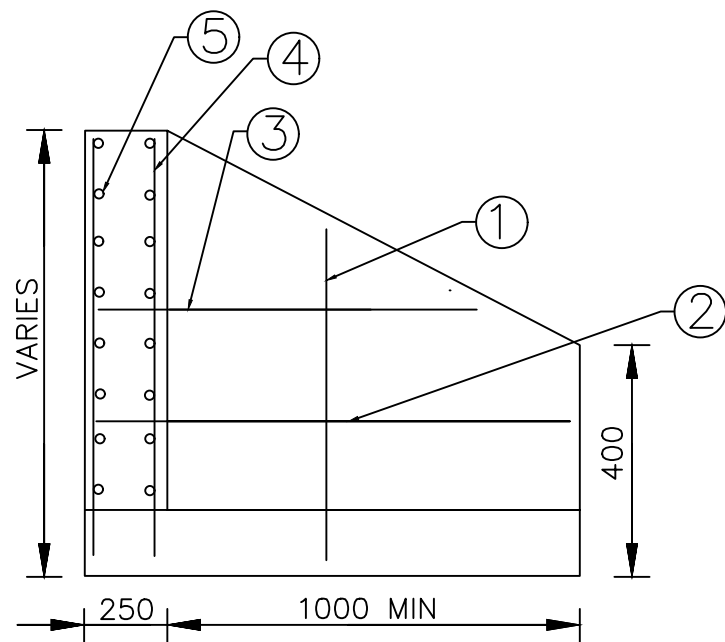


TYPICAL PLAN SHOWING
MULTIPLE CONCRETE PIPES
SCALE 1:80



TYPICAL PLAN SHOWING
SINGLE CONCRETE PIPE
SCALE 1:80

AMENDMENTS			LEGEND	CONSULTANT'S DETAIL:	CLIENT'S DETAIL:	PROJECT STATUS							
NR.	DESCRIPTION	DATE		 SUIDA & PARTNERS CONSULTANTS AND ENGINEERS P.O. Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com	 Southern Africa Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe	DESIGNED Z. B	DRAWING TITLE: STANDARD DRAWINGS: GENERAL ARRANGEMENT OF REINFORCED CONCRETE RING						
1	REVISION 1	25-02-206				DESIGN CHECKED BY F. N. REng	DESCRIPTION OF PROJECT: MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT						
						DRAWN Z. B	DRAWING APPROVED BY MINISTRY						
						DRAWING CHECKED BY F. N. REng	CONTRACT NO.:	PROJECT NO.:	SCALE: 1:1000	DATE: NOVEMBER 2025	DRAWING NO. CON/2025/SP/SATCP-LMI/DRN-11	SHEET NO. 1 OF 1	REVISIONS
							PROJECT STATUS Legend: <input type="radio"/> CONCEPT DESIGN <input type="radio"/> SCHEMATIC DESIGN <input type="radio"/> ARCHITECTURAL CONSTRUCTION DRAWING <input type="radio"/> AS-BUILT DRAWING PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1						



REINFORCEMENT DETAILS
(TO BE CUT AND BENT ON SITE)

NUMBER	DIAMETER	SPACING	WEIGHT PER METER	SERIAL NUMBER
Unit	mm	mm	kg/m	
1	φ12	150	0.89	HPB 235
2	φ10	150	0.62	HPB 235
3	φ10	150	0.62	HPB 235
4	φ12	150	0.89	HPB 235
5	φ10	150	0.62	HPB 235
6	φ10	225	0.62	HPB 235
7	φ10	225	0.62	HPB 235
8	φ10	225	0.62	HPB 235
9	φ10	225	0.62	HPB 235

Concrete class: C20/19

AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africa Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		STANDARD DRAWINGS: REINFORCED CONCRETE RING AND DROP INLET CHAMBER DETAILS		<input type="radio"/> DESIGN <input type="radio"/> CHECKING <input type="radio"/> APPROVAL FOR CONSTRUCTION <input type="radio"/> AS-BUILT DRAWING	
1	REVISION 1	25-02-206							DESIGN CHECKED BY F. N. RENg DATE: _____ SIGNATURE: _____ DRAWING APPROVED BY F. N. RENg DATE: _____ SIGNATURE: _____		DESCRIPTION OF PROJECT MW-MTPW-544347-CW-RFB/SELECTED SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURE ON NDEGE- GOVALA- MPYUPYU- KACHULU (S143) ROAD IN ZOMBA DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1	
									DRAWING APPROVED BY MINISTRY DATE: _____ SIGNATURE: _____		CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025		DRAWING NO: CON/2025/SP/SATCP-LM/DRN-12 SHEET NO: 1 OF 1	

ROAD INVENTORY

DISTRICT - ZOMBA

DATA COLLECTED ON: 04/OCT/2025

UPDATED ON:

NDEGE - GOVALA - MPYUPYU - KACHULU _S143 ROAD

Chainage		DESCRIPTION
FROM	TO	
0+000		NDEGE
0+500		Provide mitre drain - RHS
0+700		Provide mitre drain - RHS
0+900		Provide mitre drain - RHS
1+300		Existing Concrete Pipe culvert (600mm Dia 1 line)
1+430		Provide mitre drain - RHS
1+500		Provide mitre drain - LHS & RHS
1+570		Provide mitre drain - RHS
1+650		Provide mitre drain - RHS
1+660		Provide mitre drain - LHS
1+700		Provide mitre drain - RHS
1+770		Existing Concrete Pipe culvert (600mm Dia 2 lines)
1+800		Provide mitre drain - LHS
1+900		Existing Concrete Pipe culvert (600mm Dia 2 lines)
1+960		Existing Concrete Pipe culvert (600mm Dia 2 lines)
2+100		Provide mitre drain - LHS & RHS
2+200		Provide mitre drain - LHS & RHS
2+300		Provide mitre drain - LHS & RHS
2+540		Provide mitre drain - LHS & RHS
2+560		Existing Concrete Pipe culvert (600mm Dia 1 line)
2+590		Provide mitre drain - RHS
2+600		Provide mitre drain - LHS
2+680		Provide mitre drain - LHS
2+700		Provide mitre drain - LHS
2+900		Provide Mitre drain - LHS & RHS
3+000		Provide Mitre drain - LHS & RHS
3+100		Provide mitre drain - RHS
3+160		Provide Mitre drain - LHS & RHS
3+200		Provide mitre drain - LHS
3+280		Provide mitre drain - LHS
3+330		Provide Mitre drain - LHS & RHS
3+400		Provide mitre drain - LHS
3+500		Provide mitre drain - RHS
3+520		Provide Mitre drain - LHS & RHS
3+610		Existing Concrete Pipe culvert (600mm Dia 2 lines)
3+700		Provide mitre drain - RHS
3+750		Provide mitre drain - LHS
3+850		Provide mitre drain - LHS
3+980		Provide mitre drain - LHS
4+000		Provide mitre drain - LHS
4+230		Provide Mitre drain - LHS & RHS
4+300		Provide mitre drain - LHS
4+340		Provide Mitre drain - LHS & RHS
4+400		Provide mitre drain - LHS
4+490		Provide mitre drain - LHS
4+550		Provide mitre drain - LHS
4+600		Provide mitre drain - LHS
4+640		Provide mitre drain - LHS
4+700		Provide Mitre drain - LHS & RHS
4+740		Existing Concrete Pipe culvert (600mm Dia 2 lines)
4+980	5+300	GOVALA TRADING CENTRE - DO NOTHING
6+670		Dambolanyanga Bridge
6+700		Existing Concrete Pipe culvert (600mm Dia 2 lines)
6+200		Provide mitre drain - LHS
7+200		Provide mitre drain - LHS
7+300		Provide mitre drain - RHS
7+600		Existing Concrete Pipe culvert (600mm Dia 3 lines)
7+700		Provide mitre drain - LHS
7+730		Provide mitre drain - LHS
7+800		Provide mitre drain - RHS
7+900		Existing concrete Pipe culvert (600mm Dia 2 lines)
8+100		Provide Mitre drain - LHS & RHS
8+200		Provide mitre drain - LHS
8+300		Provide mitre drain - LHS
8+400		Provide mitre drain - LHS
8+410		Existing Concrete Pipe culvert (600mm Dia 2 lines)
8+480		Provide mitre drain - LHS

8+600		Provide mitre drain - LHS
8+640		Provide mitre drain - LHS
8+700		Provide mitre drain - LHS
8+800		Provide mitre drain - LHS
8+840		Provide mitre drain - RHS
8+860		Provide mitre drain - LHS
8+920		Provide mitre drain - RHS
9+000		Provide mitre drain - RHS
9+080		Provide mitre drain - LHS
9+200		Provide mitre drain - LHS
9+240		Provide mitre drain - LHS
9+300	9+520	Embankment Formation, Provide earth drains - LHS & RHS
9+300		Existing Concrete Pipe Culvert - (600mm Dia 1 Line) - remove and replace with a Box culvert 1.5 x 1m - 1 Cells, provide erosion protection works at the approaches
9+300	9+380	Masonry retaining wall
9+380		Existing Concrete Pipe Culvert - (600mm Dia 1 Line) - remove and replace with a Box culvert 1.5 x 1m - 1 Cell, provide erosion protection works at the approaches
9+520	10+000	Section requires grading in (heavy grading)
9+900		Provide mitre drain - LHS
10+000	12+500	Embankment Formation
10+300		Provide mitre drain - LHS
10+350		Existing Concrete Pipe Culvert - (600mm Dia 2 Line)
11+000		Provide mitre drain - LHS
11+100		Existing Concrete Pipe Culvert - (600mm Dia 2 Line)
12+100		Provide mitre drain - RHS
12+200	12+400	Embankment Formation and Lined drains required
12+460		Katanda Bridge
12+860		Existing Concrete Pipe Culvert - (600mm Dia 2 Line) - requires 2No. Head walls, cleaning and erosion protection works -
12+930		Existing Concrete Pipe Culvert - (600mm Dia 2 Line) - requires 2No. Head walls, cleaning and erosion protection works -
13+060		Existing Concrete Pipe Culvert - (600mm Dia 2 Line) - requires 2No. Head walls, and cleaning
13+180	13+220	Provide earth drains - LHS, Fill eroded section
13+220	13+240	Provide earth drains - LHS
13+220		Existing Concrete Pipe Culvert - (600mm Dia 1 Line) - requires 2No. Head walls, Repair inlet structure cleaning and provide erosion protection works -
14+000		KACHULU

LIST OF STRUCTURES		
DISTRICT - ZOMBA		
DATA COLLECTED ON: 04/OCT/2025		
UPDATED ON:		
NDEGE - GOVALA - MPYUPYU - KACHULU _S143 ROAD		
Chainage	DESCRIPTION	ACTION
0+000	NDEGE	
1+300	Existing Concrete Pipe culvert (600mm Dia 1 line)	Requires 2no. Head wall, Cleaning and Excavation of outlet drain
1+770	Existing Concrete Pipe culvert (600mm Dia 2 lines)	Requires Cleaning and Excavation of outlet drain
1+900	Existing Concrete Pipe culvert (600mm Dia 2 lines)-	Requires 2no. Head walls, Cleaning and Excavation of outlet drain
1+960	Existing Concrete Pipe culvert (600mm Dia 2 lines)-	Requires 2no. Head walls, outlet structure, Cleaning and Excavation of outlet drain
2+560	Existing Concrete Pipe culvert (600mm Dia 1 line)	Requires inlet & outlet structures, Cleaning and Excavation of outlet drain
3+610	Existing Concrete Pipe culvert (600mm Dia 2 lines)	Requires 2no. Head walls, Cleaning and Excavation of outlet drain
4+740	Existing Concrete Pipe culvert (600mm Dia 2 lines)-	Requires 2no. Head walls,Outlet structure, and Cleaning
4+980	GOVALA TRADING CENTRE - DO NOTHING	
5+300	Section requires grading in (heavy grading)	
6+670	Dambolanyanga Bridge,	Demolish Pier, provide weepholes(masonry wall)
6+700	Existing Concrete Pipe culvert (600mm Dia 2 lines)	
7+600	Existing Concrete Pipe culvert (600mm Dia 3 lines)-	Requires Cleaning and Excavation of inlet & outlet drain
7+900	Existing concrete Pipe culvert (600mm Dia 2 lines)-	Requires 2no. Head walls, Excavation of outlet drain, and Cleaning
8+410	Existing Concrete Pipe culvert (600mm Dia 2 lines)-	Requires 2no. Head walls, Excavation of outlet drain, and Cleaning
9+300	Existing Concrete Pipe Culvert - (600mm Dia 1 Line)	Remove and replace with a Box culvert 1.5 x 1m - 2 Cells, provide erosion protection works at the approaches
9+380	Existing Concrete Pipe Culvert - (600mm Dia 1 Line)	Remove and replace with a Box culvert 1.5 x 1m - 2 Cells, provide erosion protection works at the approaches
10+350	Existing Concrete Pipe Culvert - (600mm Dia 2 Line)	Remove and replace with a Box culvert 1.5 x 1m - 1 Cell, provide erosion protection works at the approaches
11+100	Existing Concrete Pipe Culvert - (600mm Dia 2 Line) -	Remove and replace with a Box culvert 1.5 x 1m - 1 Cell, provide erosion protection works at the approaches, Fill
12+860	Existing Concrete Pipe Culvert - (600mm Dia 2 Line) -	Requires 2No. Head walls, cleaning and erosion protection works -
12+930	Existing Concrete Pipe Culvert - (600mm Dia 2 Line)	Requires 2No. Head walls, cleaning and erosion protection works -
13+060	Existing Concrete Pipe Culvert - (600mm Dia 2 Line)	Requires 2No. Head walls, and cleaning
13+220	Existing Concrete Pipe Culvert - (600mm Dia 1 Line) -	Requires 2No. Head walls, Repair inlet structure cleaning and provide erosion protection works -
13+220	Do Nothing	
14+000	Mpyupyu	
TOTAL		