



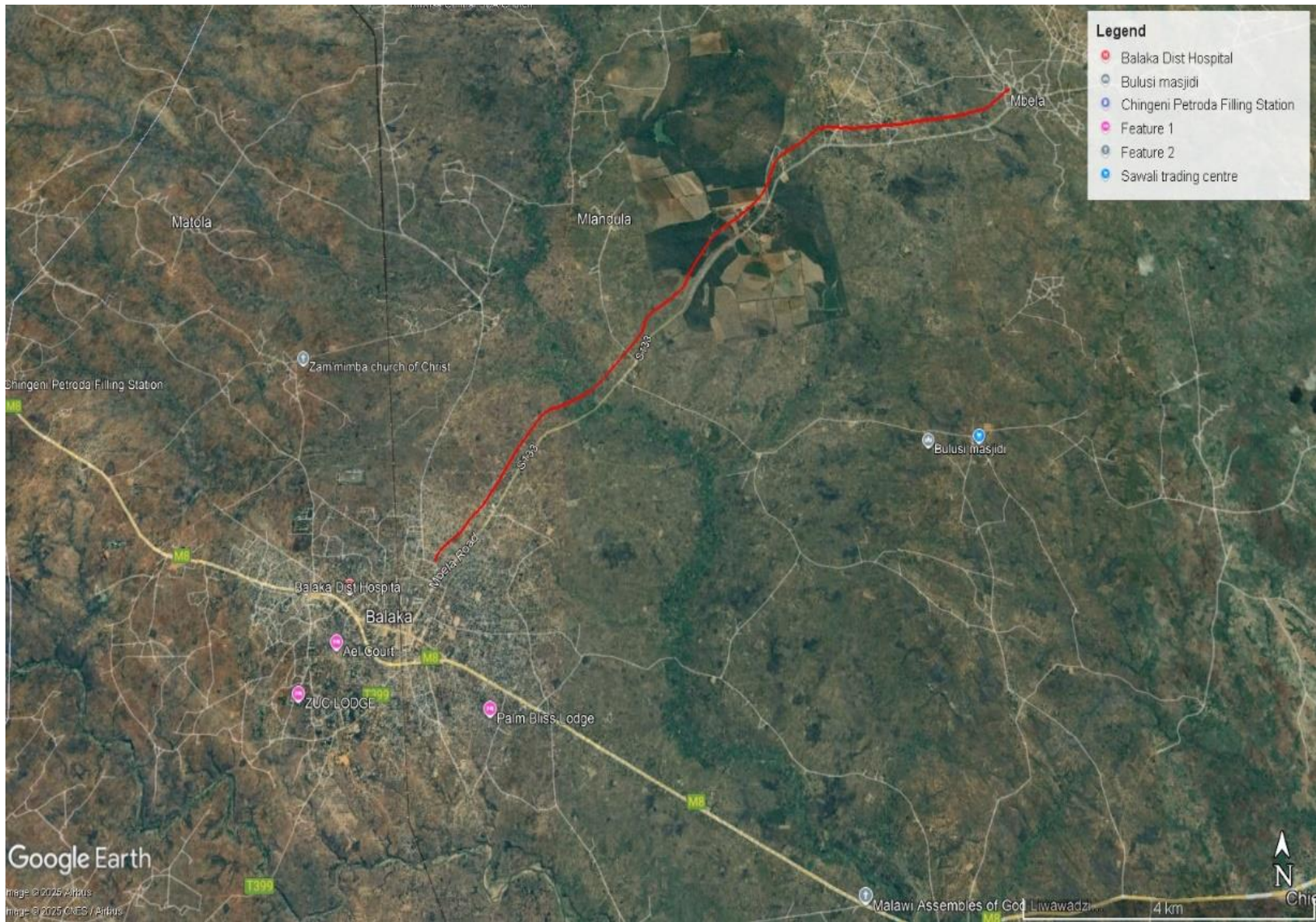
SOUTHERN AFRICA TRADE AND CONNECTIVITY PROJECT
(SATCP)

MINISTRY OF TRANSPORT AND PUBLIC WORKS

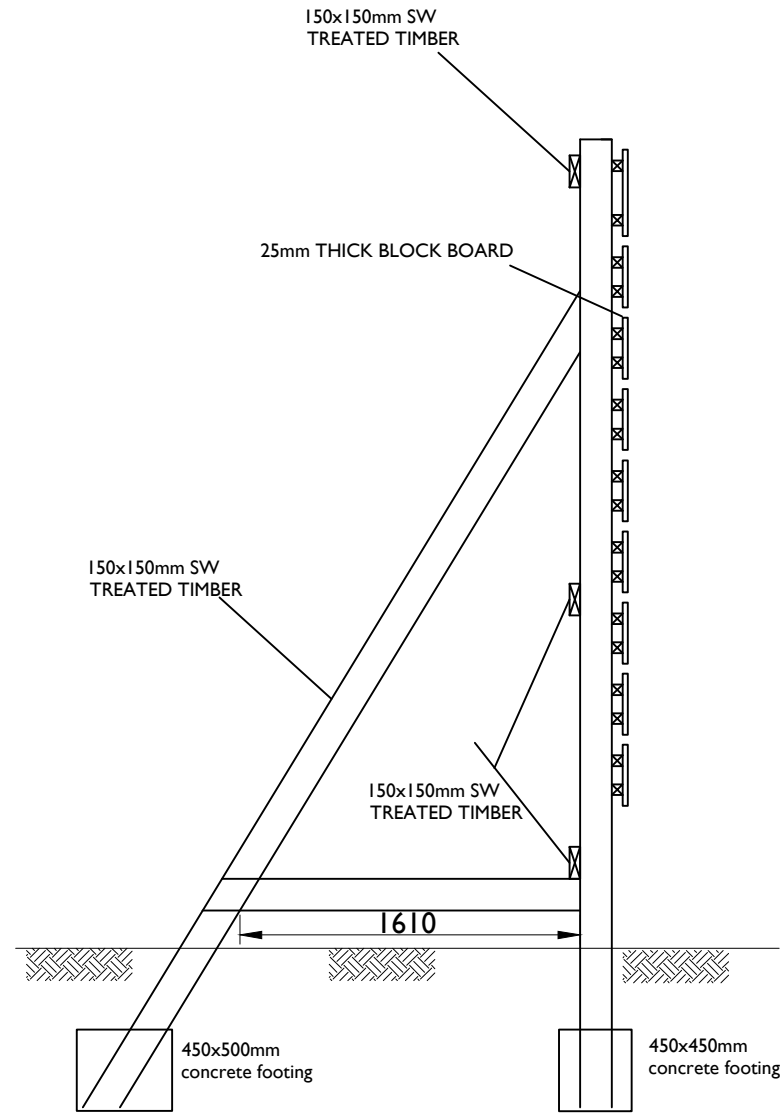
MW-MTPW-544343-CW-RFB/ SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE
STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT

THE BOOK OF DRAWINGS-TENDER PURPOSE

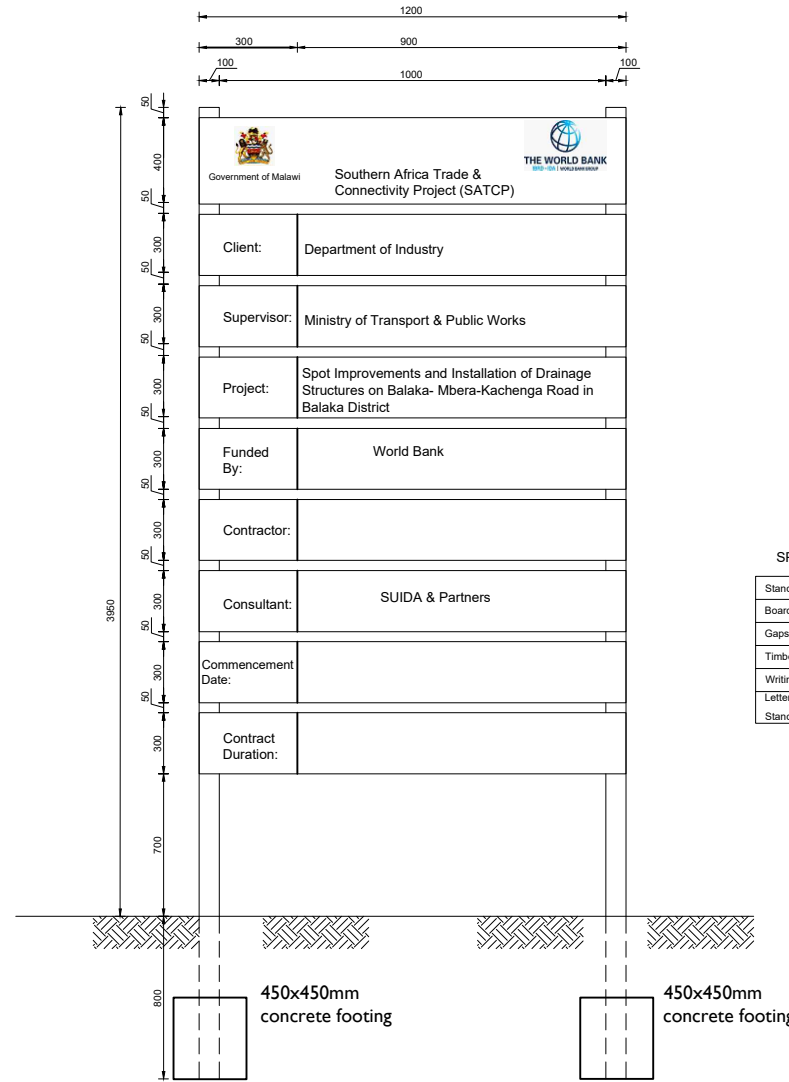
MARCH 2026



LOCATION MAP OF BALAKA -MBERA-KACHENGA ROAD IN BALAKA DISTRICT(RED)



SIDE ELEVATION

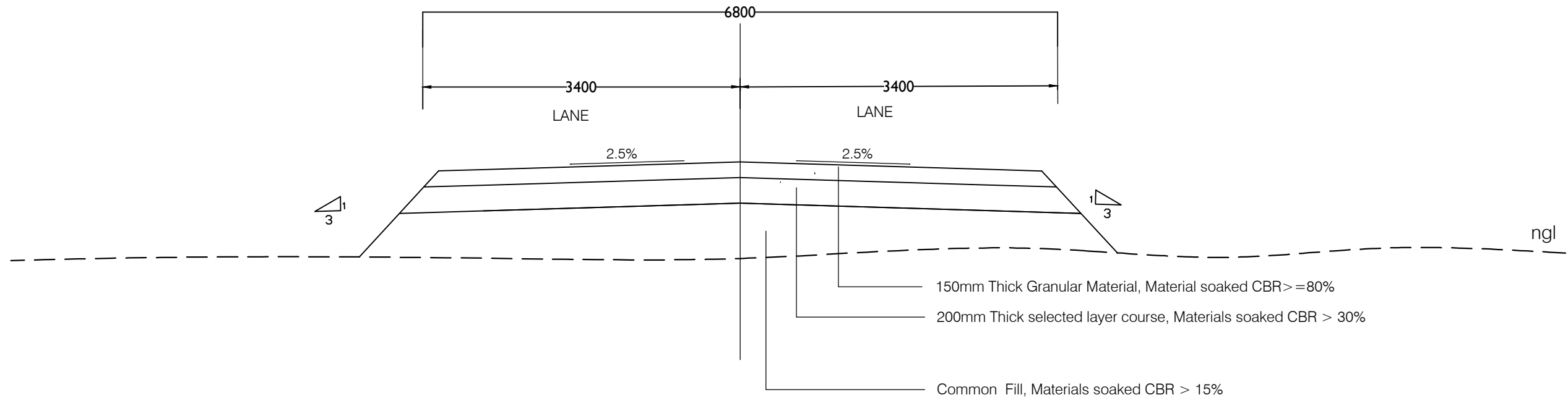


SPECIFICATIONS

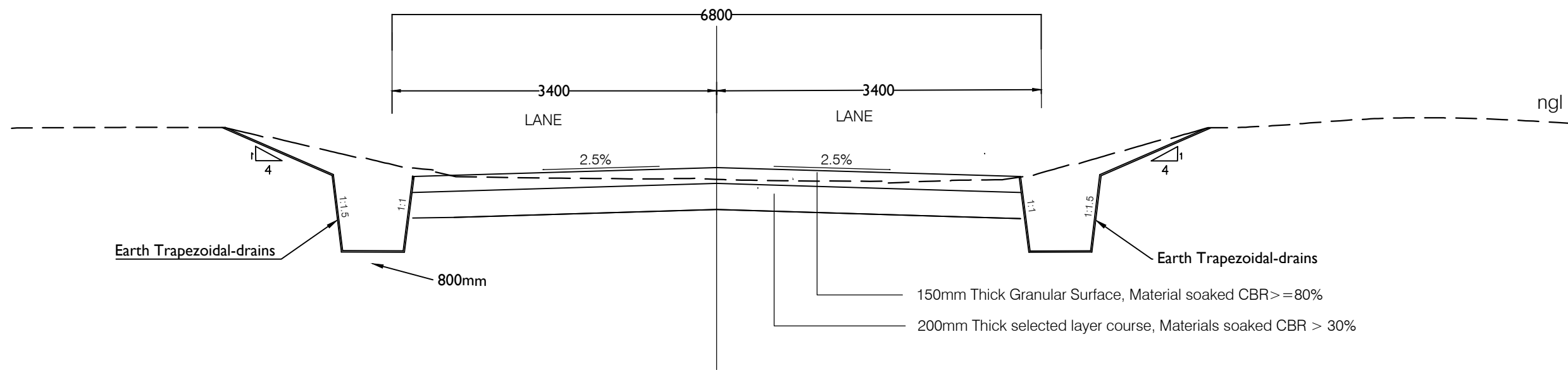
Stands	100mmx50mmx3250mm
Boards	300mmx25mmx1200mm
Gaps between board	= 50mm
Timber to be treated	soft wood
Writings to appear on	one side only
Lettering	
Standard sizes of black colour	on white background.

AMENDMENTS			LEGEND	CONSULTANT'S DETAIL:	CLIENT'S DETAIL:	DESIGNED:	DRAWING TITLE:	PROJECT STATUS			
NR.	DESCRIPTION	DATE		 SUIDA & PARTNERS 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 BY	DETAILS OF PROJECT SIGN BOARD	<input type="checkbox"/> DESIGNING <input type="checkbox"/> DRAWING <input type="checkbox"/> CHECKING <input type="checkbox"/> APPROVAL			
1	REVISION 1	25-02-206	DESIGN CHECKED BY F. N. RENg DATE: _____ SIGNATURE: _____			DRAWING CHECKED BY Z. B DATE: _____ SIGNATURE: _____		DESCRIPTION OF PROJECT MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT	PLANNING/PROJECT ENGINEER: _____ DATE: _____		
			DRAWING APPROVED BY MINISTRY F. N. RENg DATE: _____ SIGNATURE: _____			CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025	REMARKS: _____ ORIGINAL PAPER SIZE: A1				
						DRAWING NO.: _____ CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025	SHEET NO.: 1 OF 1				
							DRAWING NO.: _____ CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025	SHEET NO.: 1 OF 1			
							DRAWING NO.: _____ CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025	SHEET NO.: 1 OF 1			

TYPICAL SECTIONS



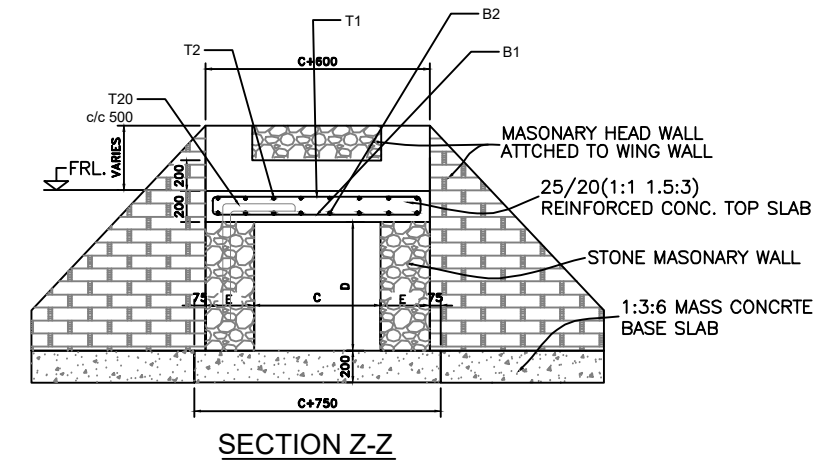
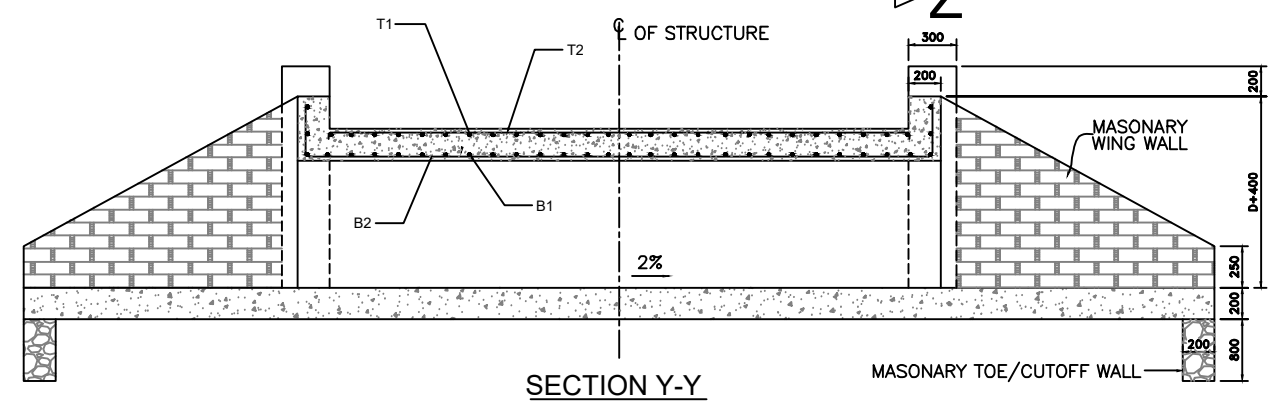
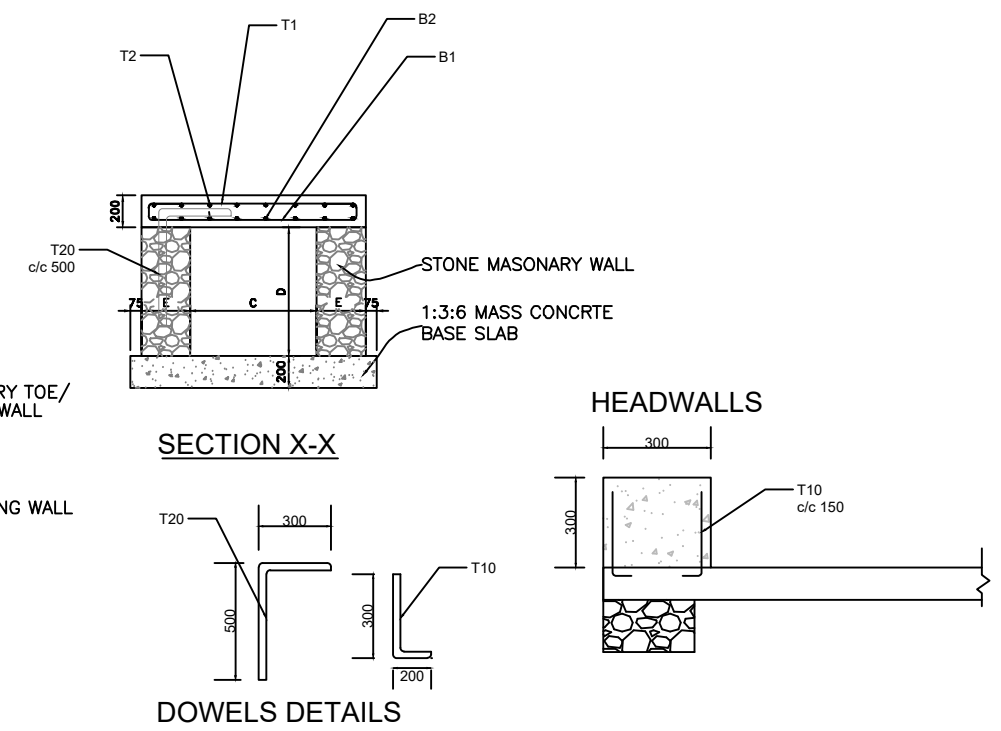
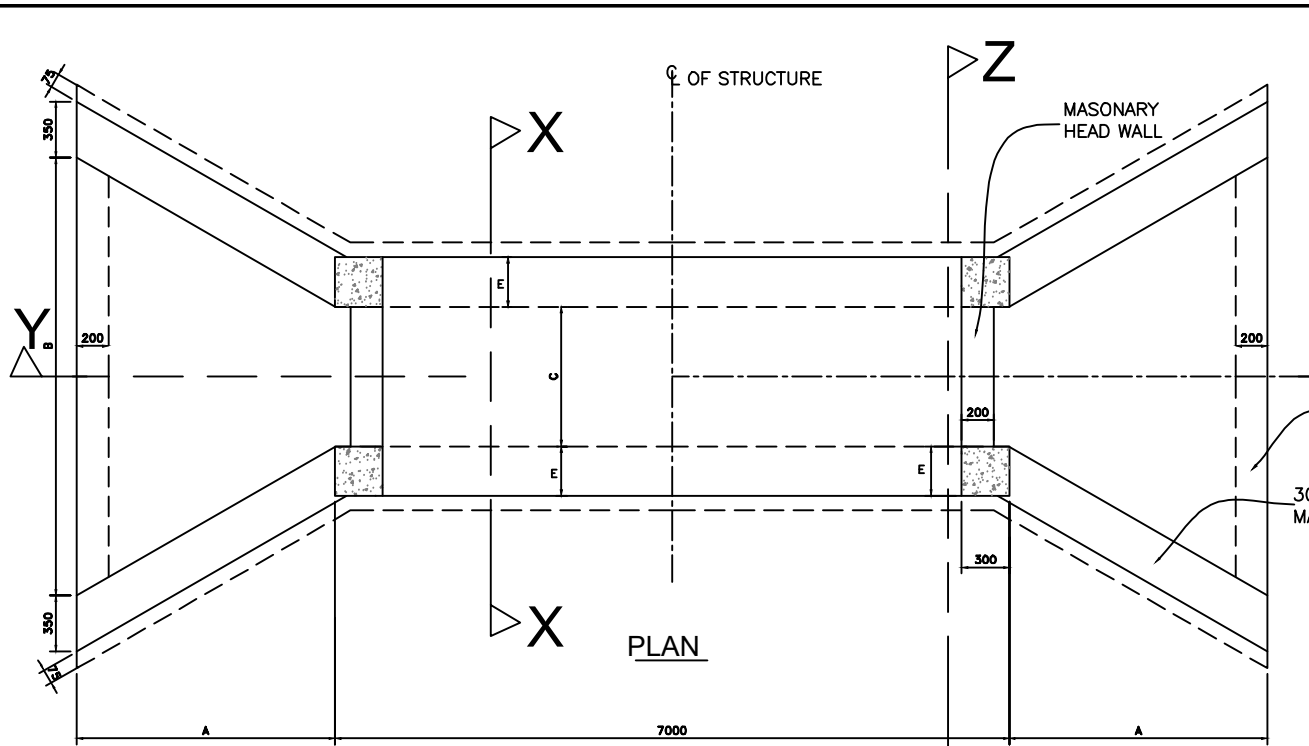
TYPICAL CROSS SECTION IN FILL



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 Africa Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		TYPICAL CROSS SECTION FOR DESIGNATED ROAD		<input type="radio"/> DESIGN DRAWING <input type="radio"/> REVISION <input type="radio"/> CONSTRUCTION DRAWING <input type="radio"/> AS-BUILT DRAWING			
1	REVISION 1	25-02-2026							DESIGN CHECKED BY F. N. RENg DATE: _____ SIGNATURE: _____		DESCRIPTION OF PROJECT MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1			
									DRAWING CHECKED BY F. N. RENg DATE: _____ SIGNATURE: _____		DRAWING APPROVED BY MINISTRY DATE: _____ SIGNATURE: _____		CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025 CON/2025/SP/SATCP-LM/TS-304		DRAWING NO.: _____ SHEET NO.: 1 OF 1 1:1000	

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		
NR.	DESCRIPTION	DATE
1	REVISION 1	25-02-2008


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
 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:
STANDARD SINGLE CELL BOX CULVERT DETAILS

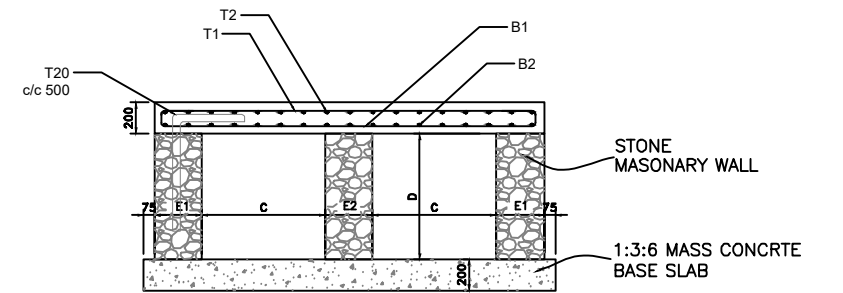
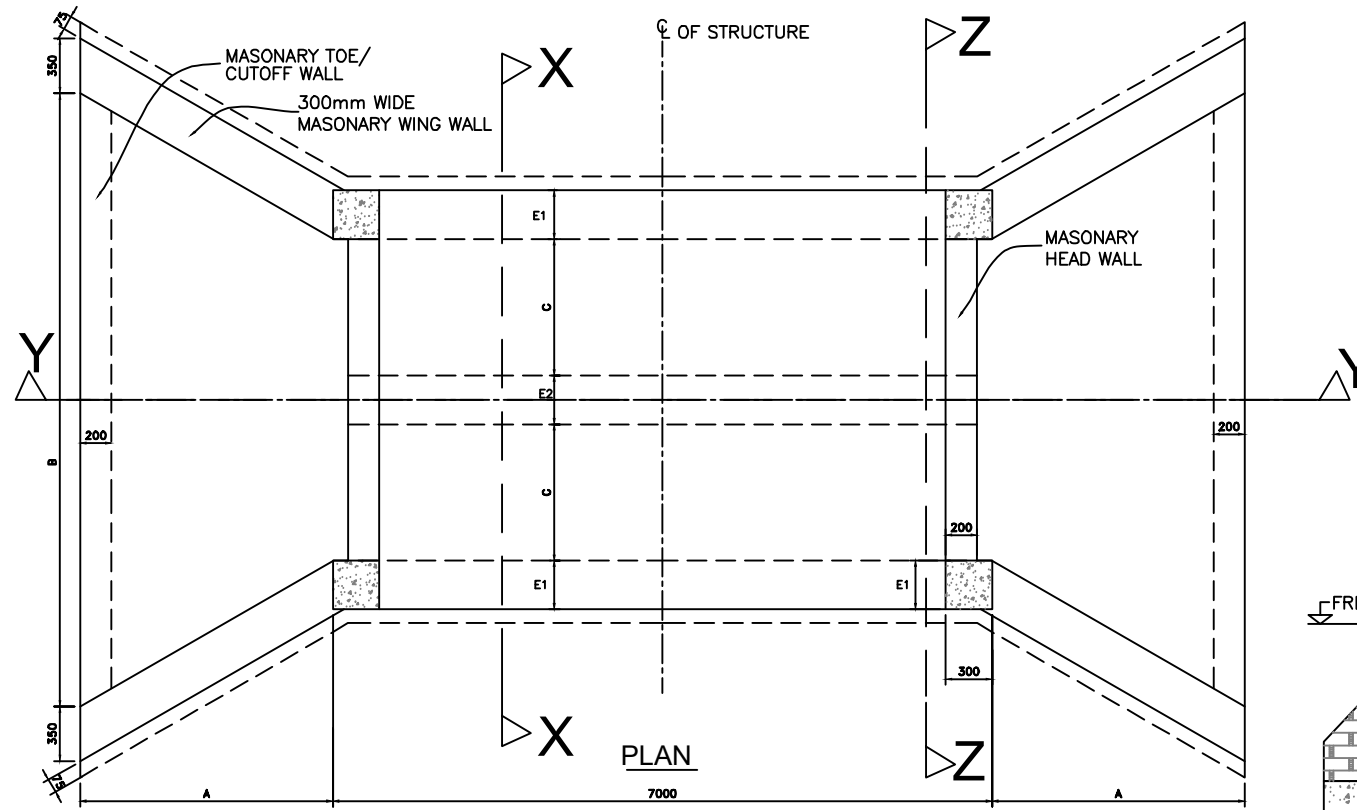
DESCRIPTION OF PROJECT:
MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT

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

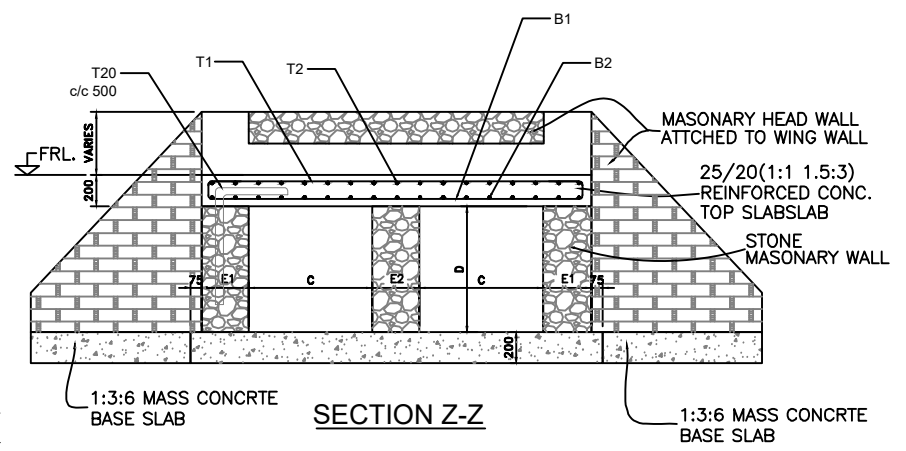
PROJECT STATUS

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

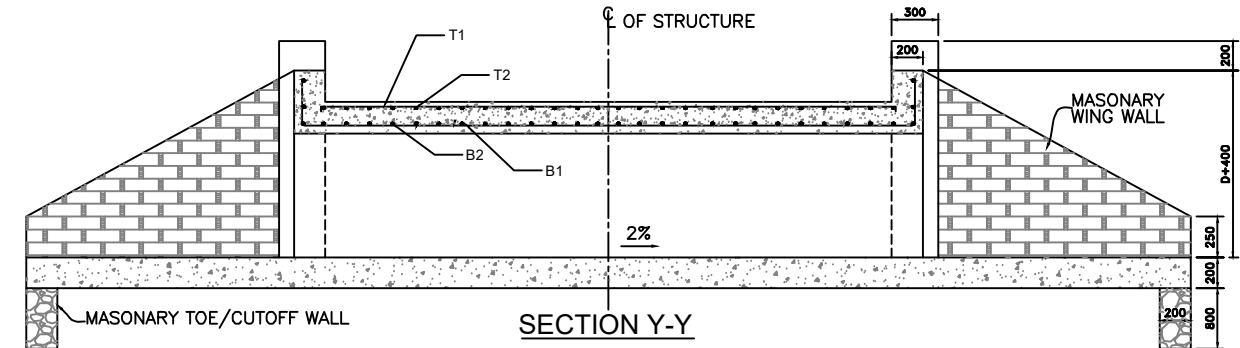
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SECTION X-X

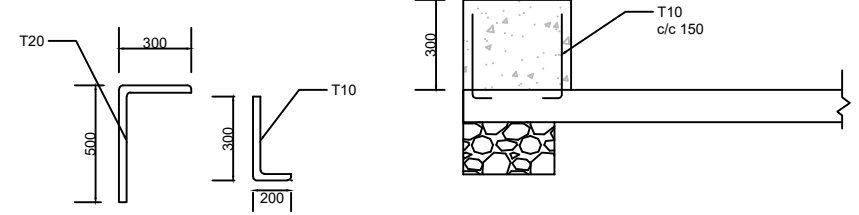


SECTION Z-Z



SECTION Y-Y



HEADWALLS

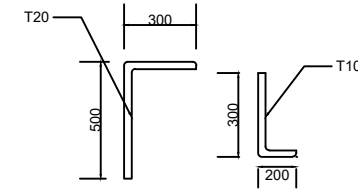
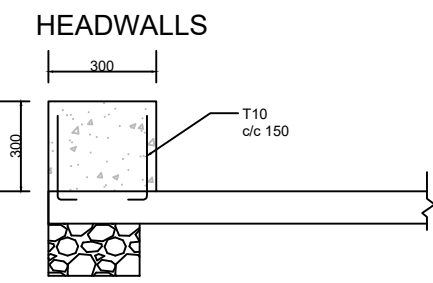
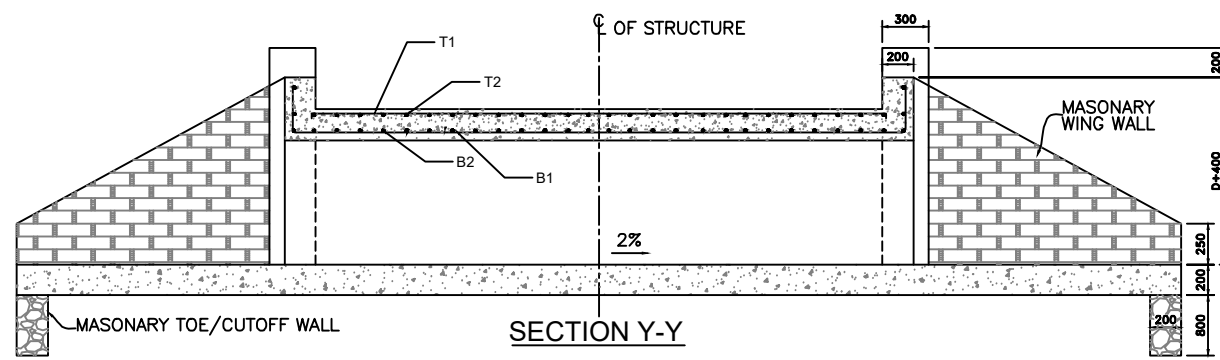
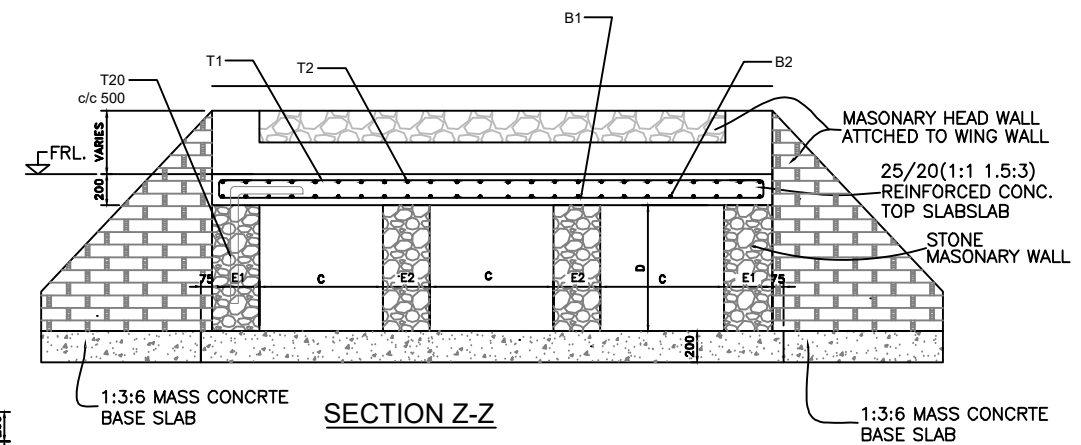
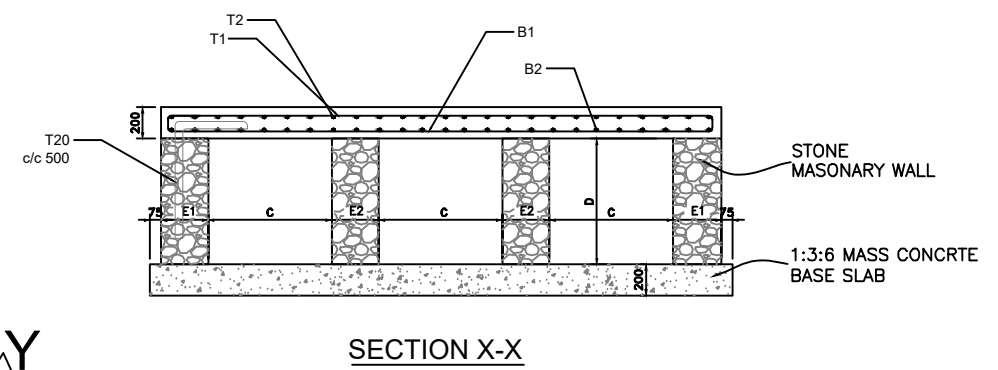
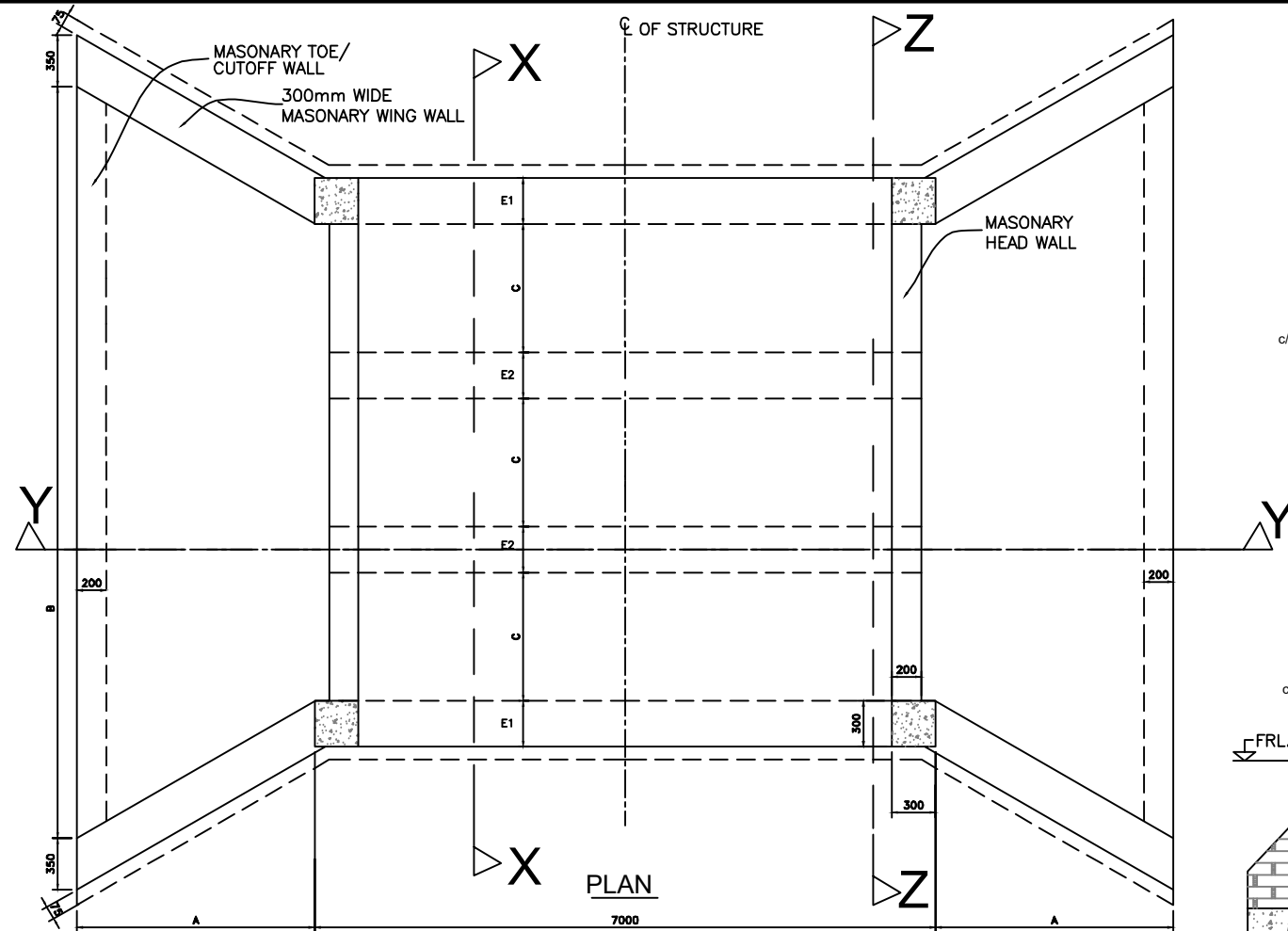


DOWELS DETAILS

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	M1	M2		NO. OF BARS	BAR MARK	M1	M2	NO. OF BARS
	A	B	C	D	E1	E2				(MM)	(MM)				(MM)	(MM)	
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

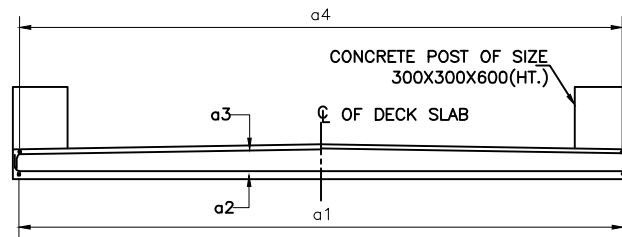
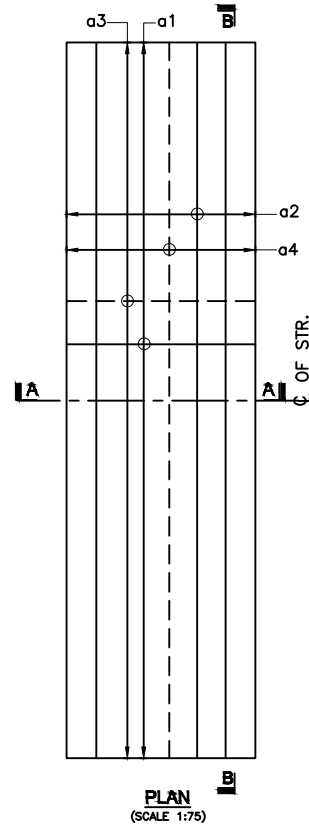
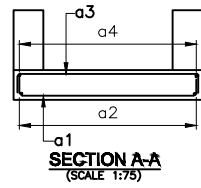
AMENDMENTS NR. DESCRIPTION DATE 1 REVISION 1 25-02-2018			LEGEND			CONSULTANT'S DETAIL:  SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com			CLIENT'S DETAIL:  Southern African Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe			DESIGNED Z. B DESIGN CHECKED BY F. N. RENg DRAWN Z. B DRAWING CHECKED BY F. N. RENg DRAWING APPROVED BY F. N. RENg			DRAWING TITLE: STANDARD DOUBLE CELL BOX CULVERT DETAILS DESCRIPTION OF PROJECT: MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA 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 DRAWING NO: CON/2025/SP/SATCP-LM/SBC-002 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	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)		
	BC7	2800	13600	2000	1000	500				600	3			200	B1		
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-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT		PROJECT STATUS PLANNING PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1	
				CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025 CON/2025/SP/SATCP-LM/SBC-003		DRAWING NO.: _____ SHEET NO.: 1 OF 1							



SECTION B-B
(SCALE 1:75)

LEGEND :

TOP BARS SHOWN THUS
 BOTTOM BARS SHOWN THUS

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

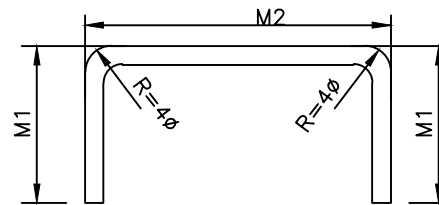
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REIN. SCHEDULE :-

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 :-

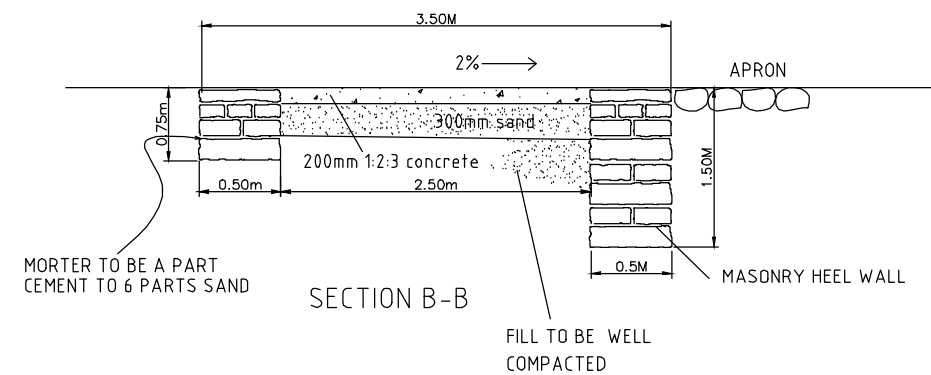
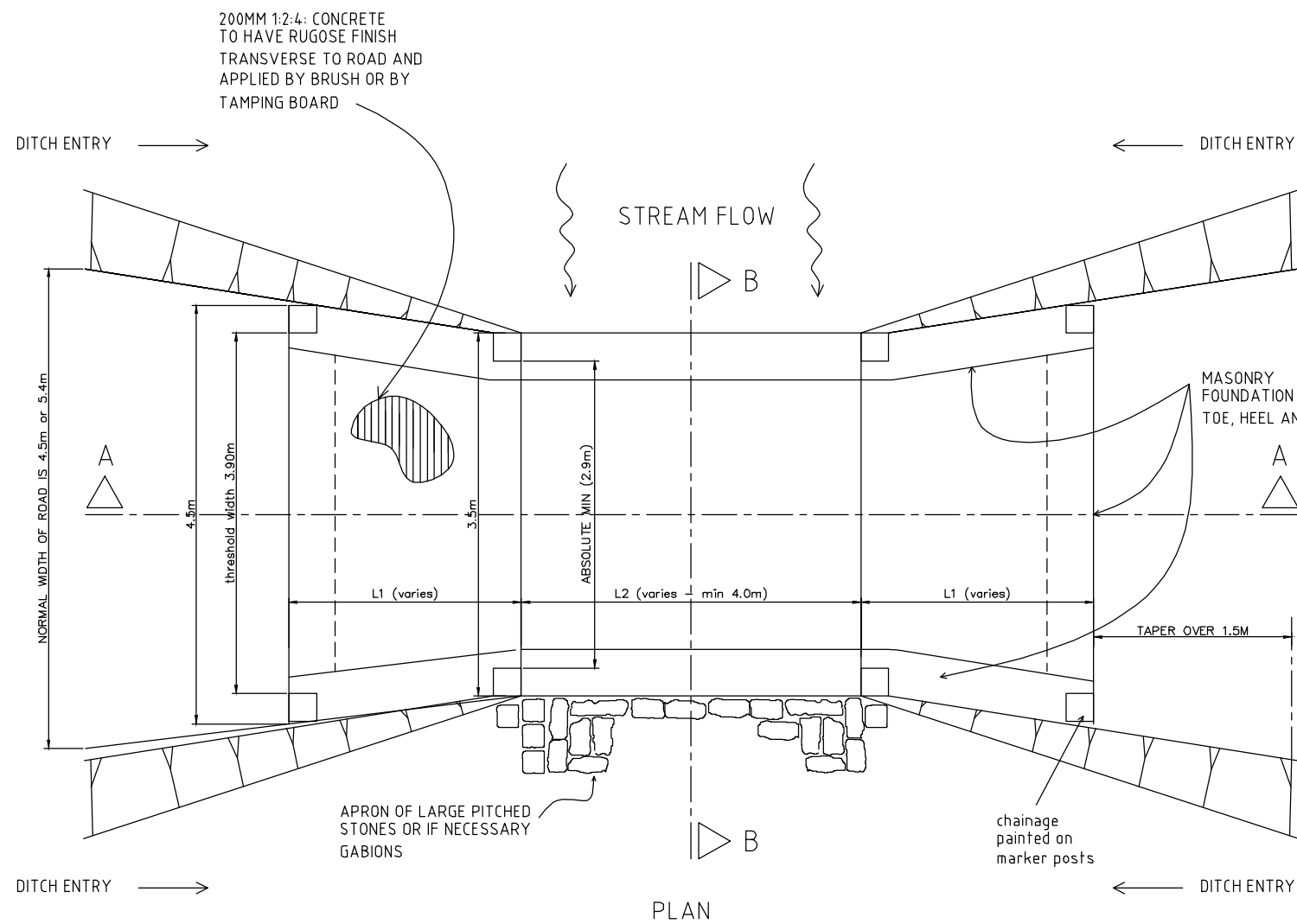
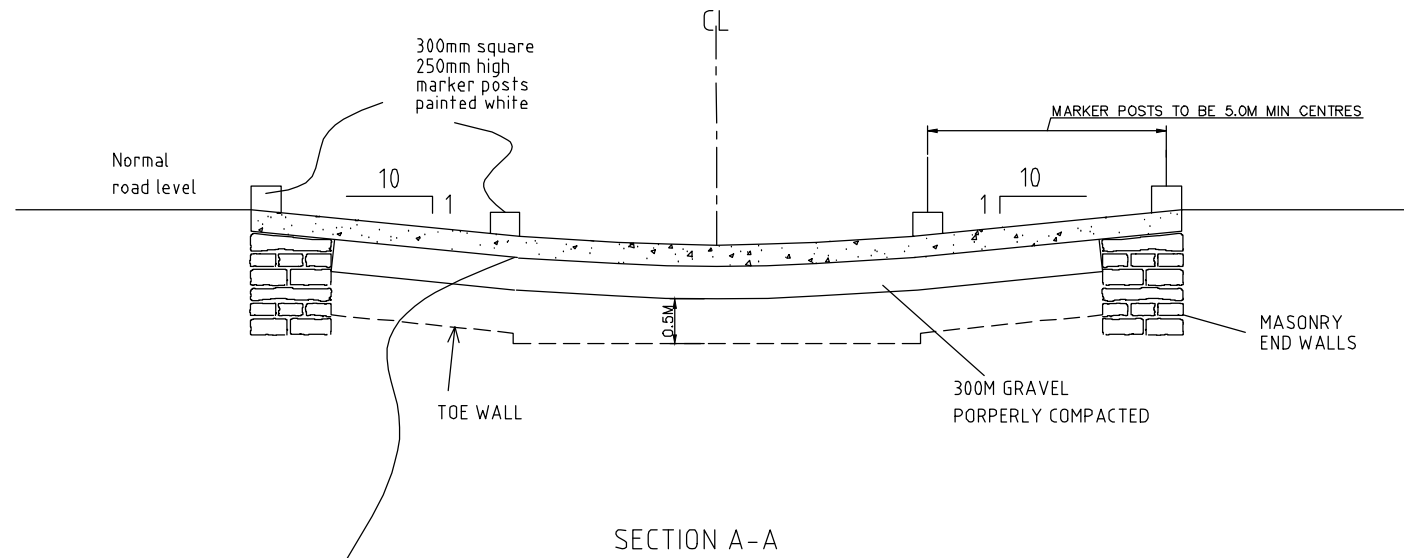
SL. NO.	SPAN (mm)	THICKNESS OF SLAB (mm)
1	2000	250 To 300



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.

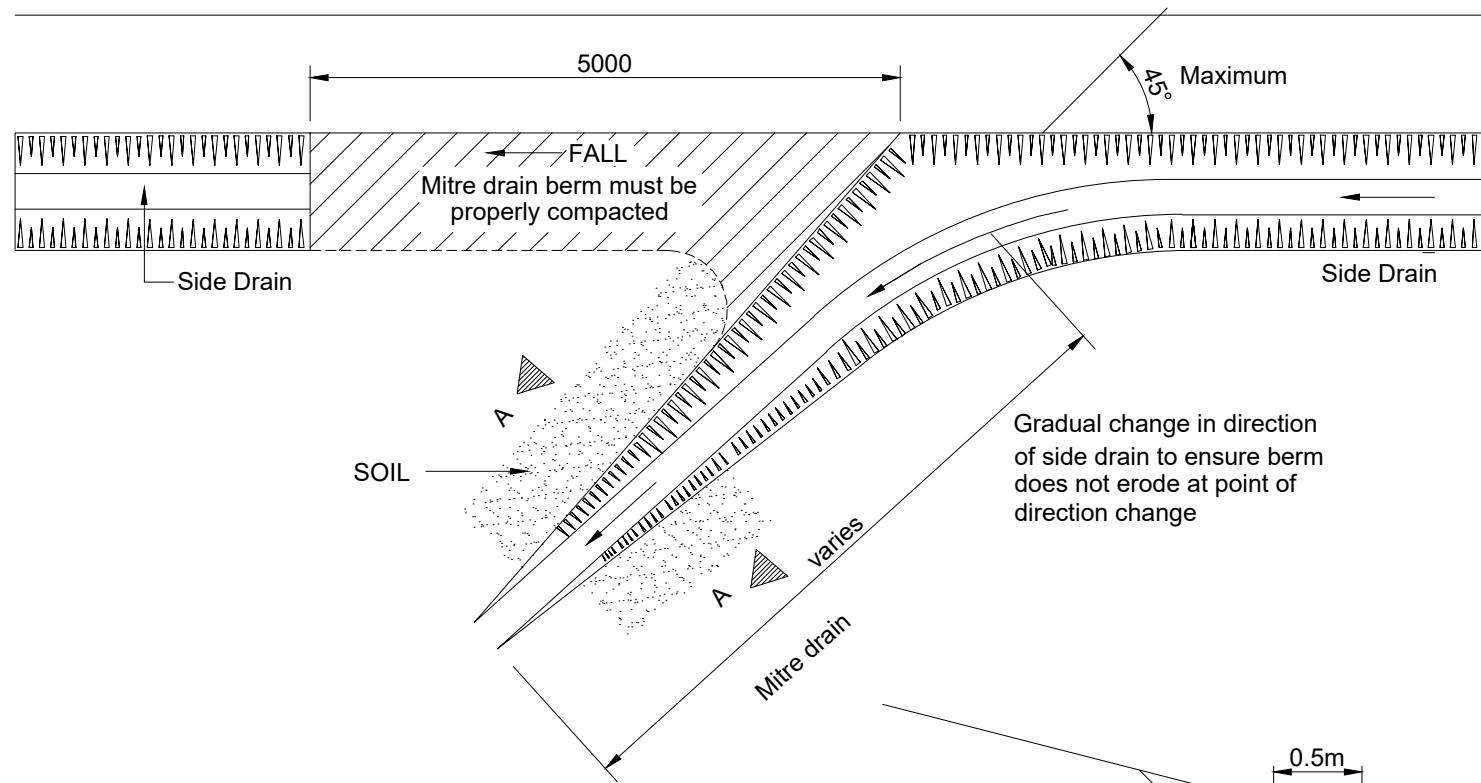
AMENDMENTS			LEGEND	CONSULTANT'S DETAIL:	CLIENT'S DETAIL:	DESIGNED	DRAWING TITLE:	PROJECT STATUS			
NR.	DESCRIPTION	DATE		SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com	Southern Africal Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe	DESIGNED BY	REINFORCEMENT DETAIL OF TOPSLAB OF MASONRY WALL BOX CULVERT	<input type="radio"/> CONSULTANT DRAWING <input type="radio"/> DESIGN DRAWING <input type="radio"/> PRODUCTION DRAWING <input type="radio"/> AS-BUILT DRAWING			
1	REVISION 1	25-02-2018				DESIGN CHECKED BY	DESCRIPTION OF PROJECT	PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1			
						DRAWN	MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT	SHEET NO: 1 OF 1 CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025 DRAWING NO: CON/2025/SP/SATCP-LM/SBC-004			
						CHECKED BY		SHEET NO: 1 OF 1			
						DRAWING APPROVED BY		SHEET NO: 1 OF 1			



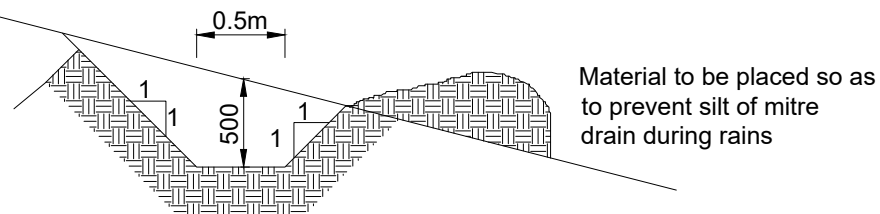
1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES UNLESS NOTED OTHERWISE.
2. DIMENSIONS ARE NOT TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. CONCRETE GRADE FOR RCC PRECAST GIRDER SHALL BE CLASS 40/20.
4. GRADE OF STEEL SHALL BE H.Y.S.D. GRADE 460
5. THE CONCRETE COVER FOR REINFORCEMENT 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		Southern Africa Trade Connectivity Project,		Z. B		TYPICAL DETAILS OF CONCRETE DRIFT		<input type="radio"/> CONSULTING <input type="radio"/> DESIGN <input type="radio"/> CHECKING <input type="radio"/> APPROVAL	
1	REVISION 1	25-02-2018			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		F. N. RENG F. N. RENG		MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT		PLANNING/PROJECT ENGINEER: INSPECTOR OF WORKS: REMARKS: ORIGINAL PAPER SIZE: A1	
									DRAWING APPROVED BY MINISTRY: SIGNATURE: _____ DATE: _____		CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025		DRAWING NO.: _____ SHEET NO.: 1 OF 1	

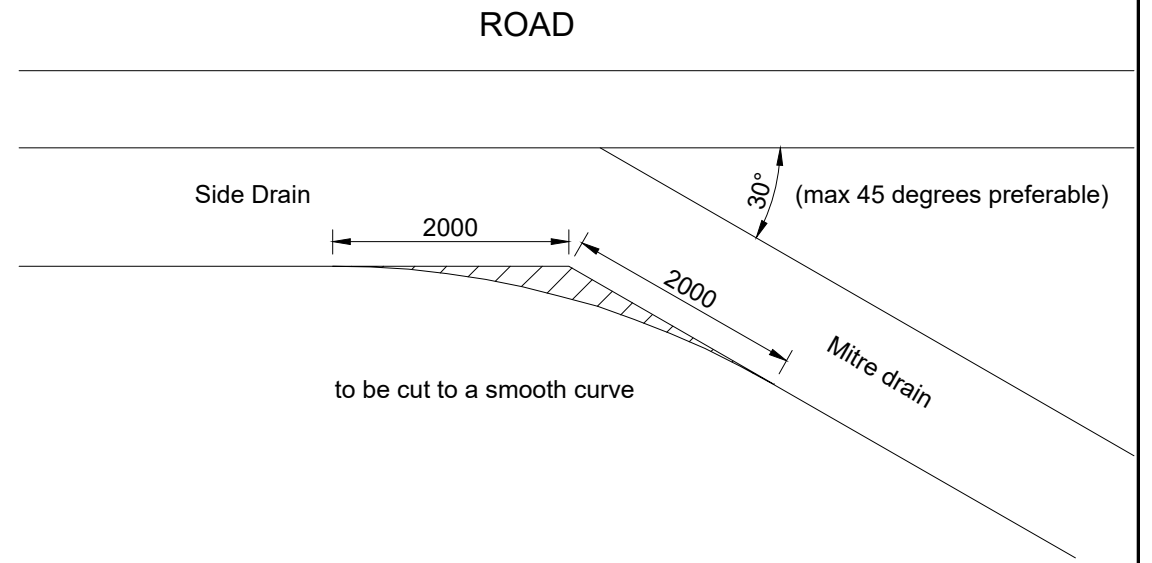
STANDARD DRAWINGS



PLAN OF COMPLETED MITRE DRAIN

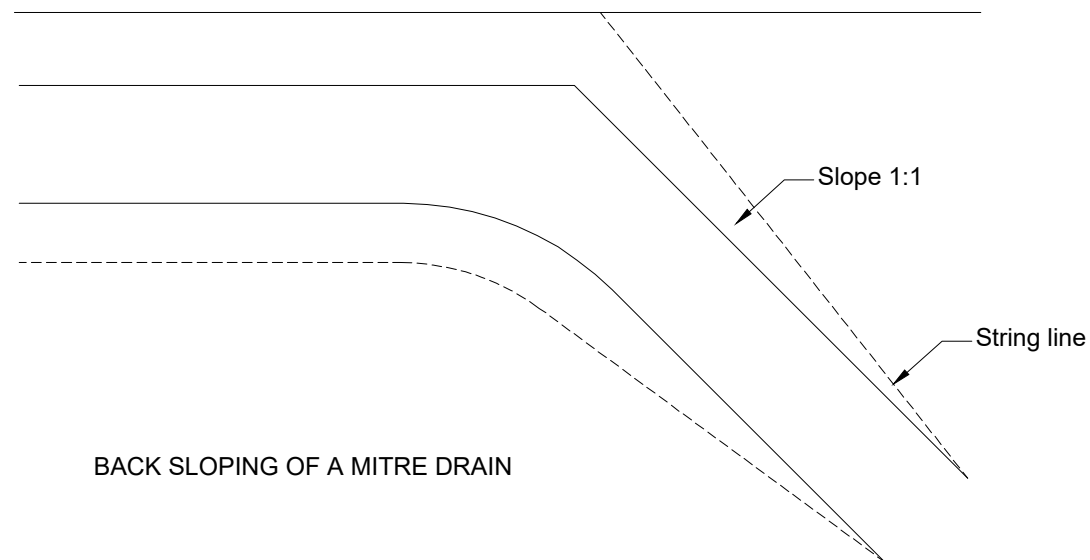


SECTION A-A



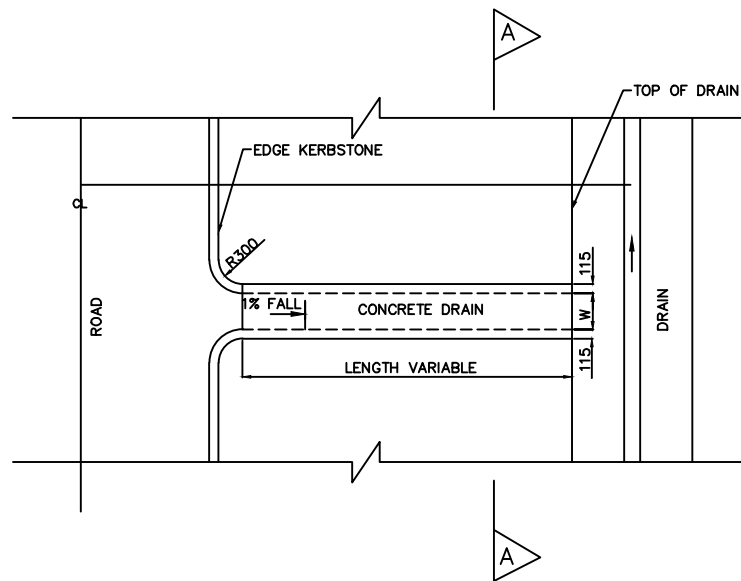
SPACING OF MITRES

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

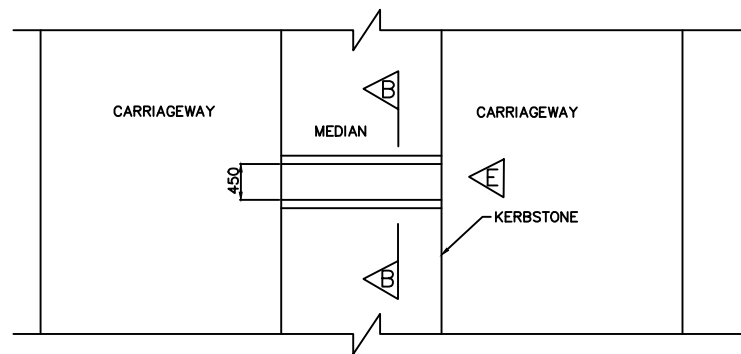


BACK SLOPING OF A MITRE DRAIN

AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS			
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS		Southern Africa Trade Connectivity Project,		Z. B		TYPICAL DETAILS OF MASONRY MITRE DRAIN		<input type="radio"/> CONCEPT DRAWING <input type="radio"/> PRELIMINARY DRAWING <input type="radio"/> PROPOSED FOR CONSTRUCTION DRAWING <input type="radio"/> AS-BUILT DRAWING			
1	REVISION 1	25-02-2018			 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-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT		PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1 DRAWING NO: _____ CONTRACT No.: _____ PROJECT No.: _____ SCALE: 1:1000 DATE: NOVEMBER 2025 CON/2025/SP/SATCP-LM/DRN-02 SHEET NO: 1 OF 1			

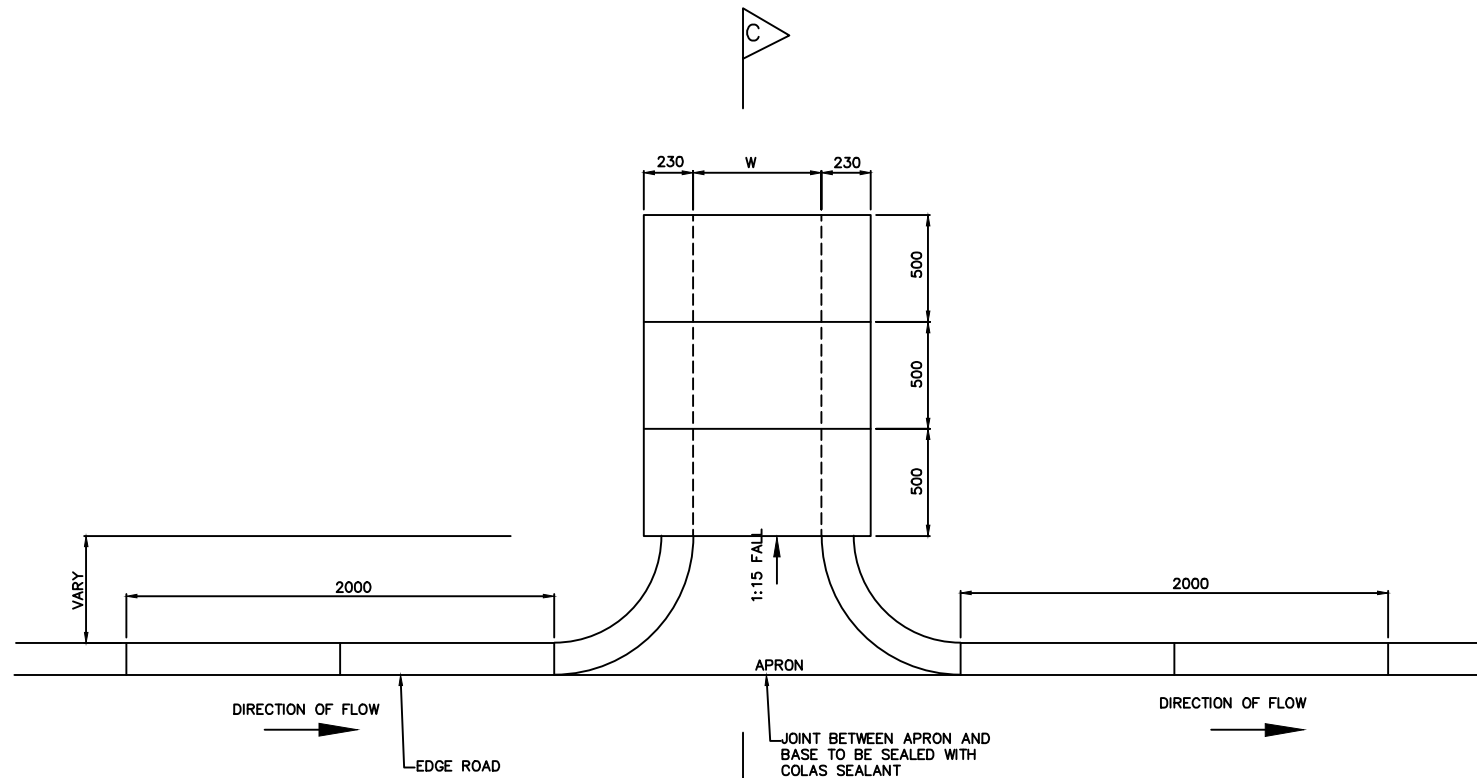


TYPICAL CONCRETE OUTLETS AND CHUTE PLANE



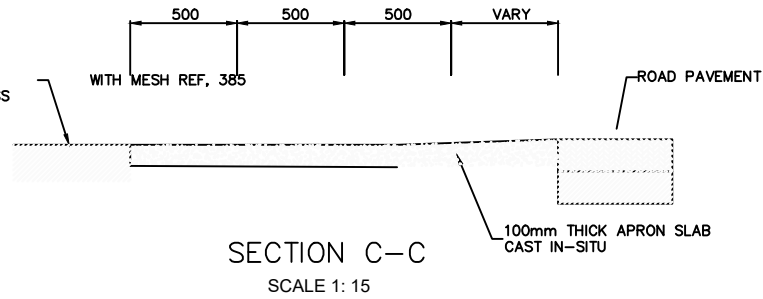
DUAL CARRIAGE ROAD PLAN

SCALE 1: 40



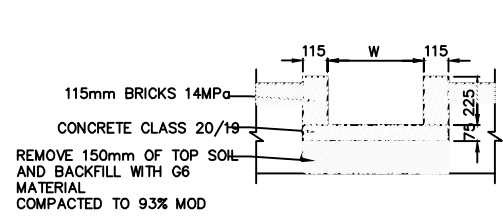
TYPICAL PLAN AT OUTLETS
SCALE 1: 15

COVER TO OUTLET AT
WALKWAY CONCRETE CLASS
20/19

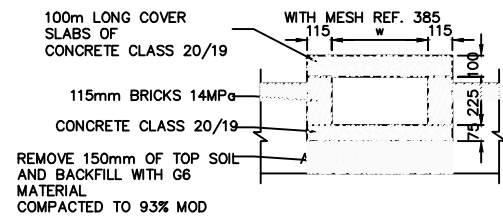


SECTION C-C
SCALE 1: 15

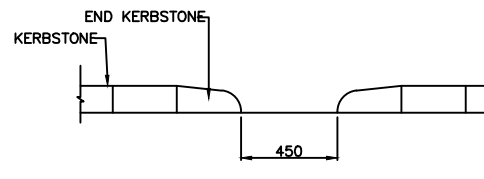
CHUTE	COVER	W
TYPE 1	OPEN	W=450
TYPE 2	COVERED	W=450
TYPE 3	COVERED	W=600



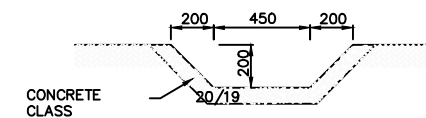
SECTION A-A OPEN CHUTES



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	25-02-2008


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:



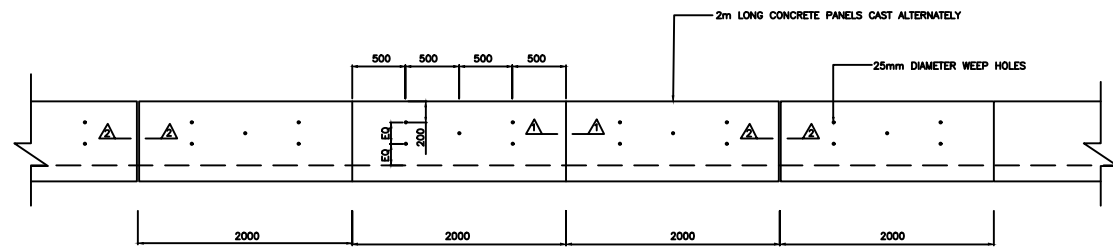
Southern African Trade Connectivity Project,
Ministry of Transport and Public Works
Capital Hill, Off Chilembwe Road
private Bag 322, Lilongwe

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

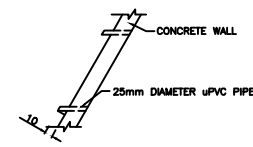
DRAWING TITLE: STANDARD DRAWINGS: STORMWATER DRAINAGE DETAILS INLETS, OUTLETS AND CHUTES
DESCRIPTION OF PROJECT: MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT
CONTRACT No.: _____
PROJECT No.: _____
SCALE: 1:1000
DATE: NOVEMBER 2025

PROJECT STATUS	
<input type="radio"/> CONSULTING <input type="radio"/> DESIGN <input type="radio"/> PRELIMINARY DESIGN <input type="radio"/> CONSTRUCTION DRAWING <input type="radio"/> AS-BUILT DRAWING	PLANNING/PROJECT ENGINEER: _____ INSPECTOR OF WORKS: _____ REMARKS: _____ ORIGINAL PAPER SIZE: A1
DRAWING NO: CON/2025/SP/SATCP-LM/DRN-03	SHEET NO: 1 OF 1

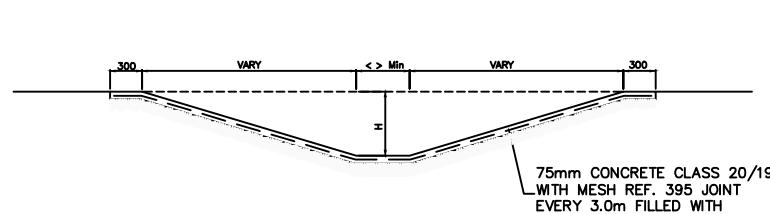
DEPTH H(m)	DEPTH H(m)
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0.8<H<0.9	1:3
0.9<H<1.5	1:2
H>1.5	1:1.5



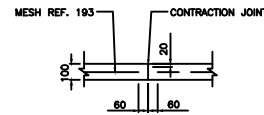
VEE OR TRAPEZOIDAL LINED DRAIN SIDE WALL ELEVATION
SCALE 1: 300



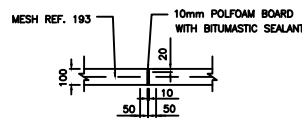
SECTION THROUGH SIDE PANEL



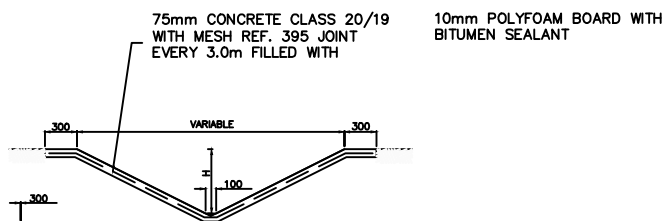
TYPICAL SECTION OF LINED TRAPEZOIDAL DRAIN
SIDE SLOVES VARY 'H' Min 300mm
SCALE 1: 300



SECTION 2-2
EXPANSION JOINT SECTION THROUGH SIDE PANEL



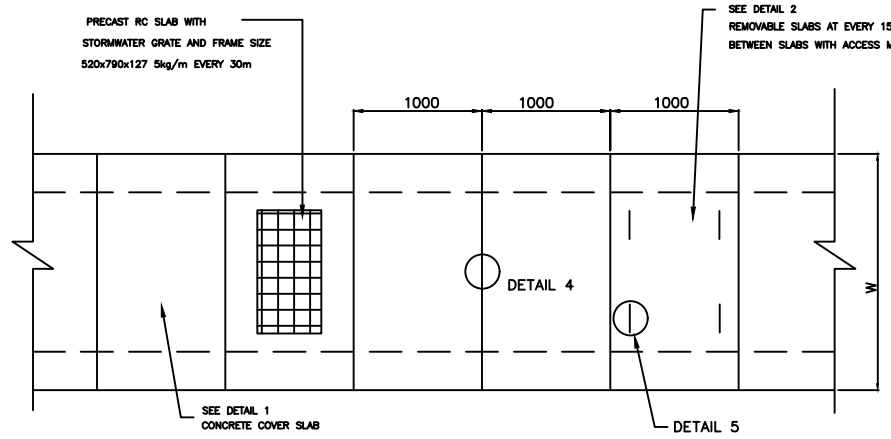
SECTION 2-2
EXPANSION JOINT



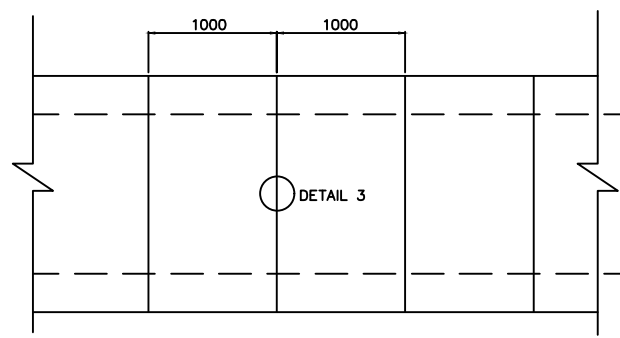
TYPICAL SECTION OF LINED VEE DRAIN
SIDE SLOVES VARY 'H' Min 300mm
SCALE 1: 300

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

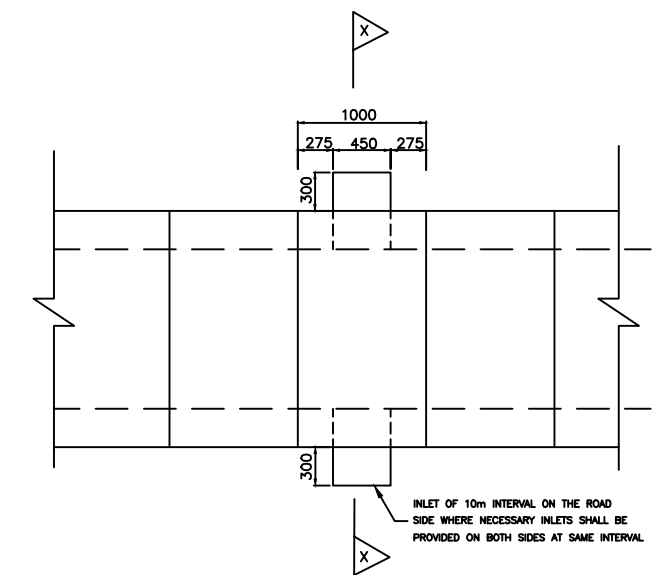
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africal Trade Connectivity Project, Ministry of Transport 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 DRAWN Z. B DRAWING CHECKED BY F. N. RENg DRAWING APPROVED BY MINISTRY		DESCRIPTION OF PROJECT MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA 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/DRN-06 SHEET NO: 1 OF 1		<input type="checkbox"/>	



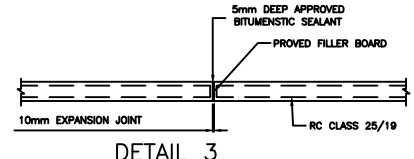
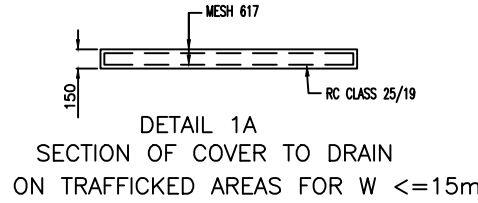
PLAN OF RECTANGULAR DRAIN COVERED WITH PRECAST SLABS



RECTANGULAR DRAIN INVERT SLAB OR CAST IN-SITU CONCRETE

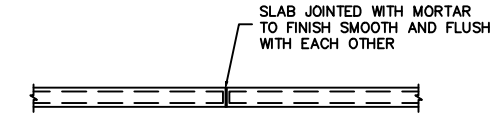
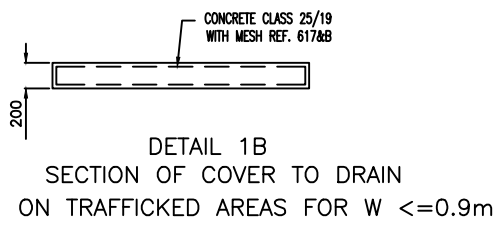


RECTANGULAR ROAD SIDE DRAIN PLAN

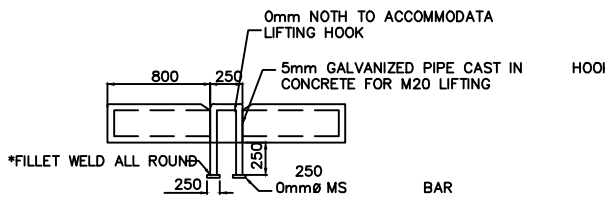
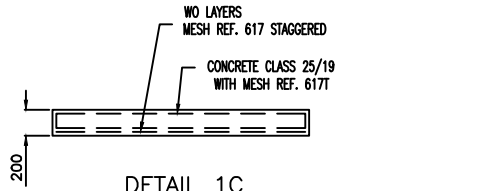


EXPANSION JOINT DETAIL ON WALLS AND BASE SLAB OF DRAIN AT 30m INTERVAL

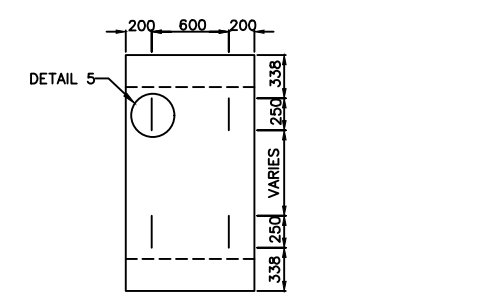
W	Varies (as specified)
B	150 mm for H less than 0.6m Y= Hollow block min 5.0MPa filled with concrete class 20/19 and reinforced with Y12 bars vertically in each hole 230mm for H greater than 0.6m less than 1.5m Y= Hollow block min 5MPa with Y12mm per hole and filled with concrete class 20/19 150 mm 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)



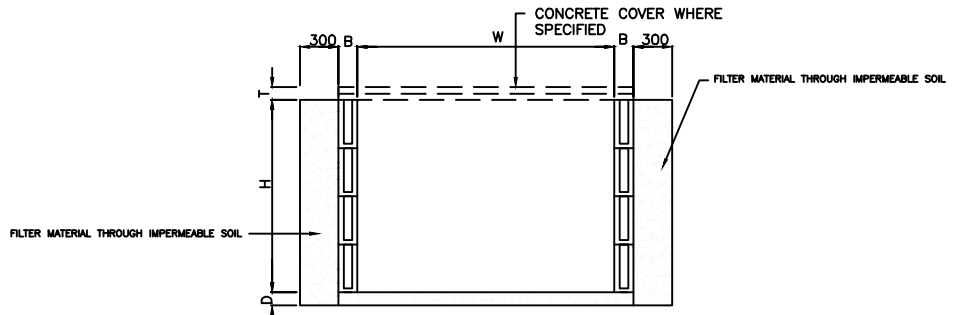
JOINT IN COVER SLAB TO DRAIN



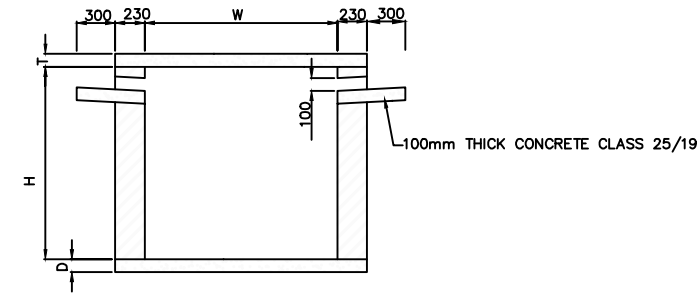
LIFTING HOOK FOR REMOVABLE SLABS



REMOVABLE PRECAST SLAB



HOLLOW BLOCK RECTANGULAR DRAIN(OUTFALL)



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
DESIGN CHECKED BY: F. N. REng
DRAWN: Z. B
DRAWING CHECKED BY: F. N. REng
DRAWING APPROVED BY: F. N. REng

DRAWING TITLE: STANDARD DRAWINGS: COVERED RECTANGULAR DRAIN DETAILS

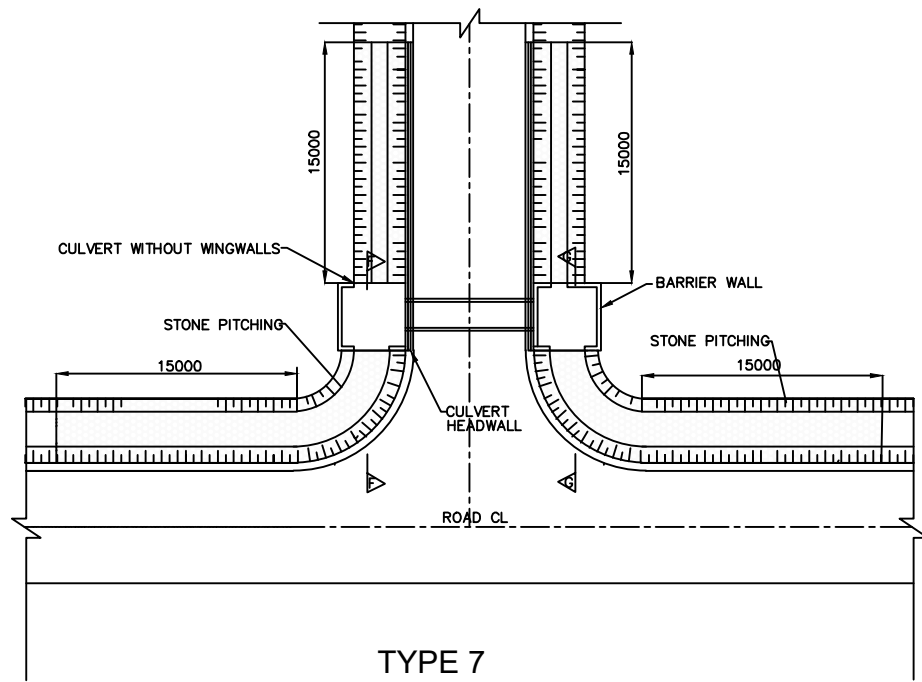
DESCRIPTION OF PROJECT: MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT

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

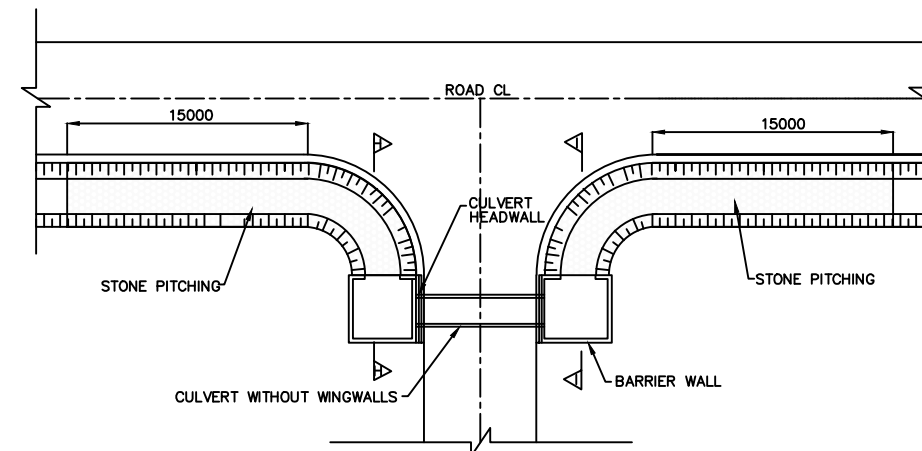
PROJECT STATUS

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

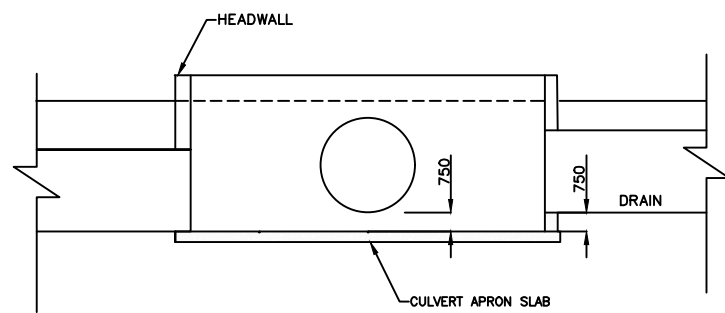
DRAWING NO: SHEET NO: 1 OF 1



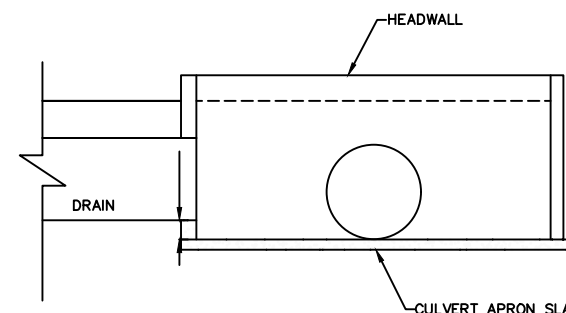
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SCALE 1 : 200



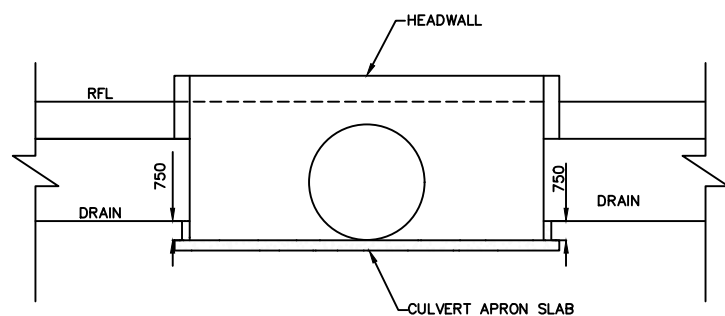
TYPE 8



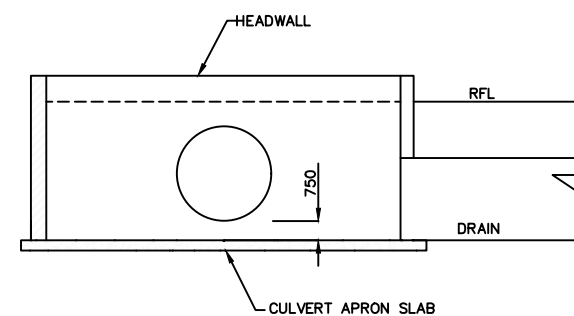
SECTION G-G
SCALE 1 : 250



SCALE 1 : 250

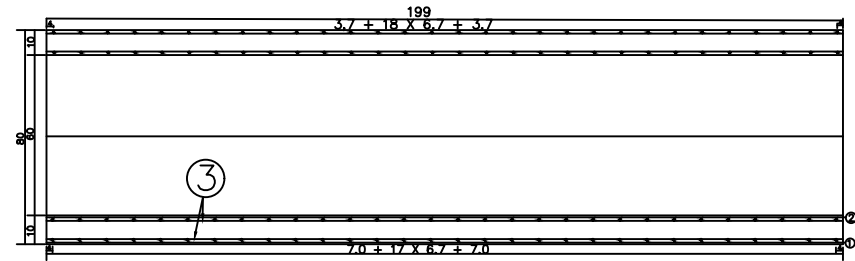


SECTION F-F

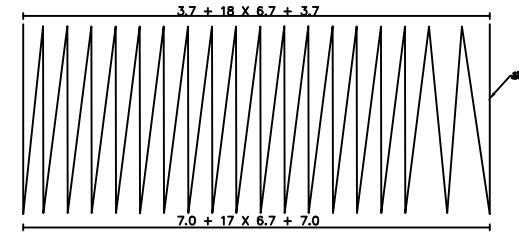


SECTION I-I

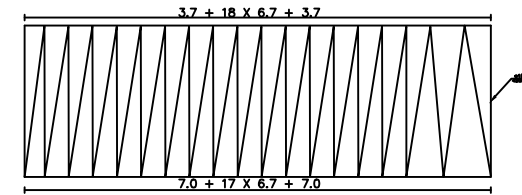
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS		Southern Africa Trade Connectivity Project,		Z. B		STANDARD DRAWINGS: DRAIN INLET AND OUTLET DETAILS		<input type="radio"/> CONSULTING <input type="radio"/> DESIGN <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		SIGNATURE: _____ DATE: _____ DESIGN CHECKED BY: F. N. REng DATE: _____ DRAWN: Z. B DATE: _____ DRAWING CHECKED BY: F. N. REng DATE: _____ DRAWING APPROVED BY: _____ DATE: _____		DESCRIPTION OF PROJECT: MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA 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/DRN-08 SHEET NO: 1 OF 1		<input type="checkbox"/>	



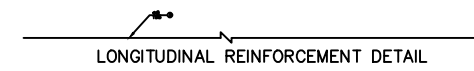
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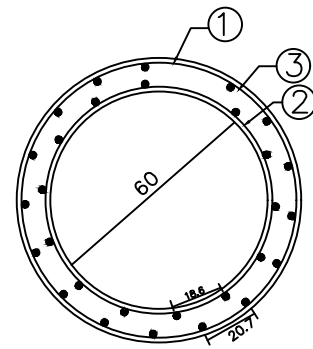
OUTER RING RIBS PROFILE



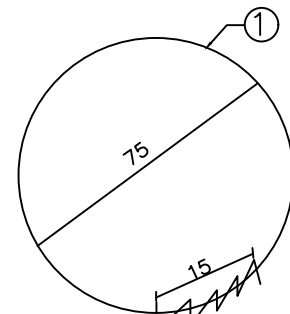
INNER RING RIBS PROFILE



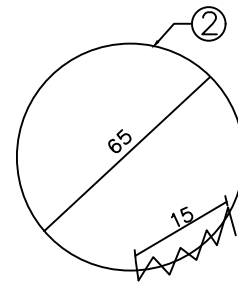
LONGITUDINAL REINFORCEMENT DETAIL



CROSS-SECTION



OUTER RING RIBS DETAILS



INNER RING RIBS DETAILS

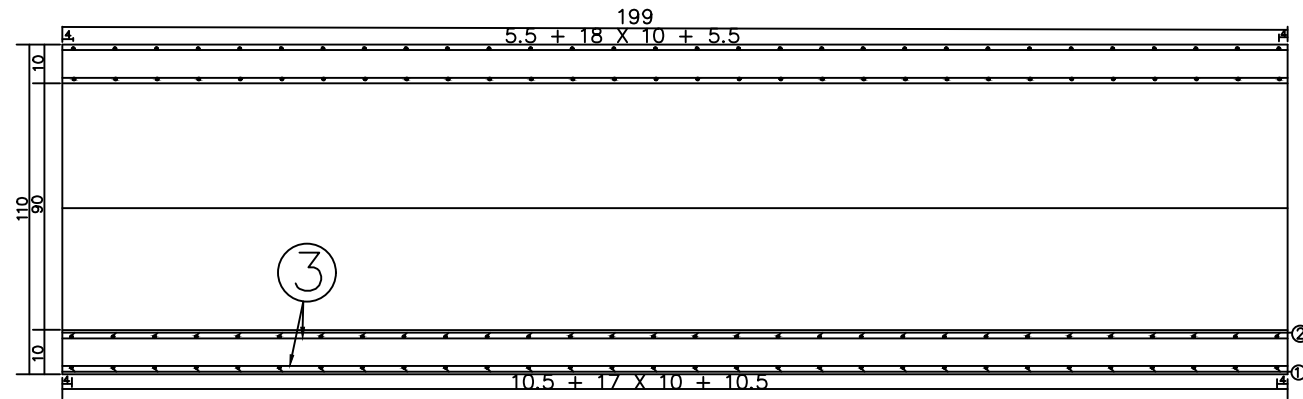
ENGINEERING QUANTITIES LIST

NUMBER	DIAMETER	EACH LENGTH	THE NUMBER	TOTAL	WEIGHT PER METER	WEIGHT	SERIAL NUMBER
Unit	mm	cm	Radius	m	kg/m	kg	
1	15	18.3	1	18.3	0.88	16.1	01
2	15	18.3	1	18.3	0.88	16.1	02
3	15	18.3	1	18.3	0.88	16.1	03

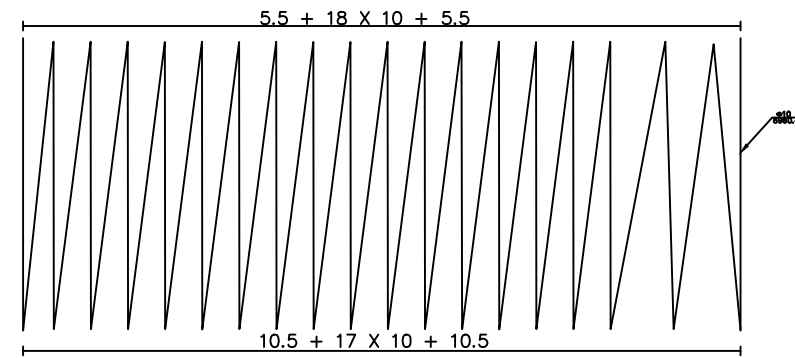
SUMMATION C20 concrete: 0.4m³ HPB235: 67.7KG

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

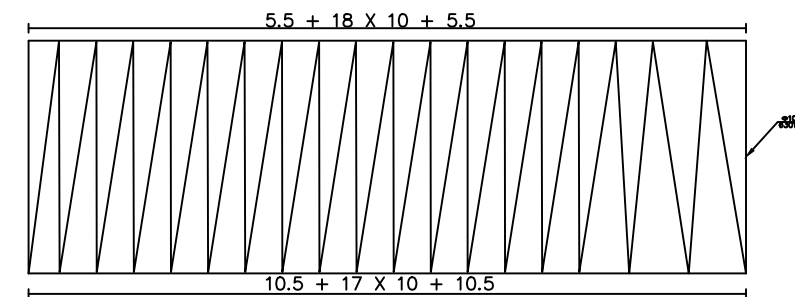
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africal Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		STANDARD DRAWINGS: 900MM DIAMETER CONCRETE DETAILS		<input type="checkbox"/> CONSULTANT DRAWING <input type="checkbox"/> DESIGNER DRAWING <input type="checkbox"/> APPROVED FOR CONSTRUCTION DRAWING <input type="checkbox"/> AS-BUILT DRAWING	
1	REVISION 1	25-02-2026							DESIGN CHECKED BY F. N. RENIG		DESCRIPTION OF PROJECT MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT		PLANNING/PROJECT ENGINEER: INSPECTOR OF WORKS: REMARKS: DATE: ORIGINAL PAPER SIZE: A1	
									DRAWN Z. B		CONTRACT No.:		DRAWING NO.:	
									DRAWING CHECKED BY F. N. RENIG		PROJECT No.:		SHEET NO.:	
									DRAWING APPROVED BY MINISTRY		SCALE: 1:1000		NOVEMBER 2025	
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											1 OF 1		1 OF 1	



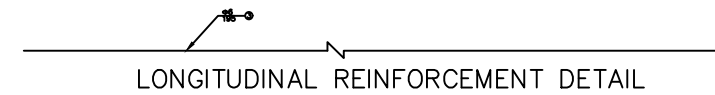
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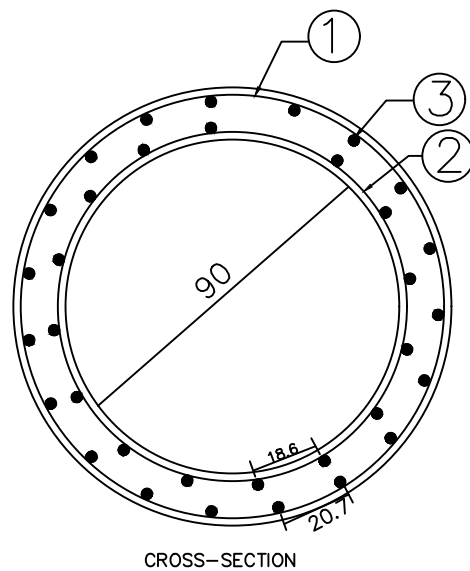
OUTER RING RIBS PROFILE



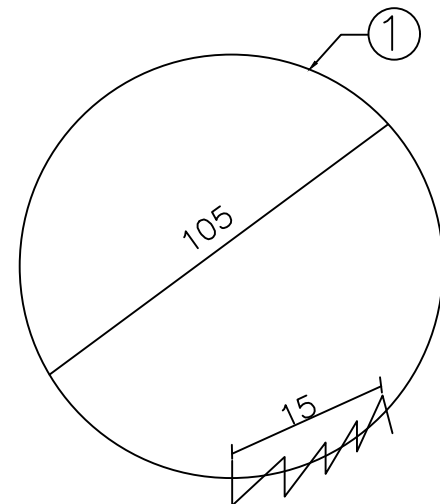
INNER RING RIBS PROFILE



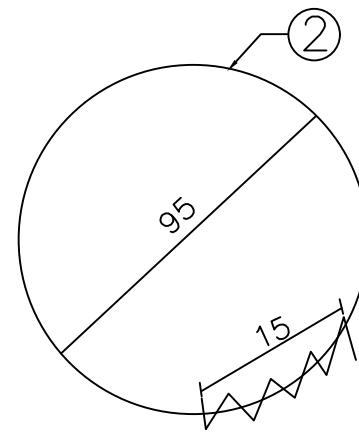
LONGITUDINAL REINFORCEMENT DETAIL



CROSS-SECTION



OUTER RING RIBS DETAILS



INNER RING RIBS DETAILS

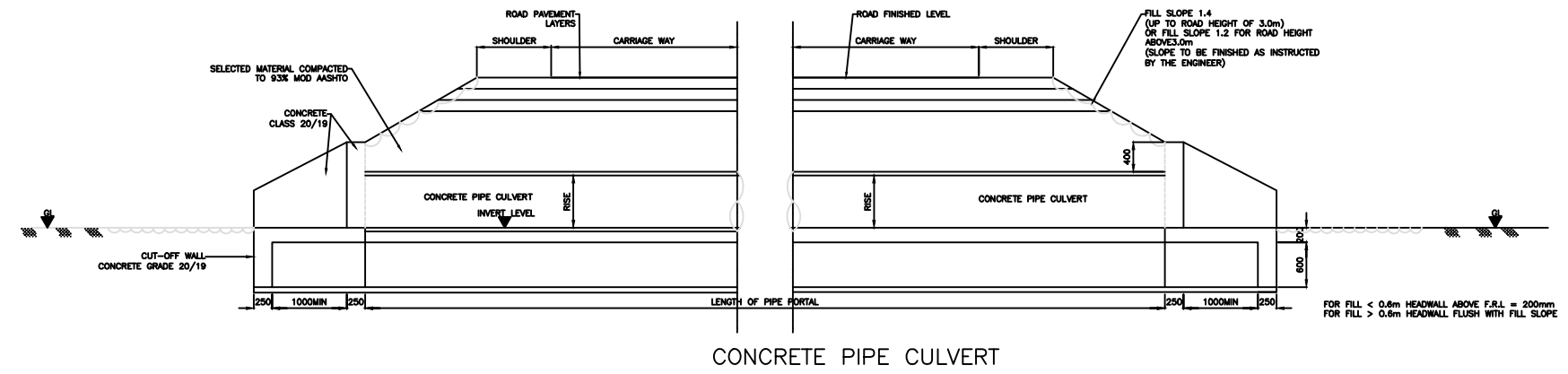
ENGINEERING QUANTITIES LIST

NUMBER	DIAMETER	EACH LENGTH	THE NUMBER	TOTAL	WEIGHT PER METER	WEIGHT	SERIAL NUMBER
Unit	mm	cm	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							

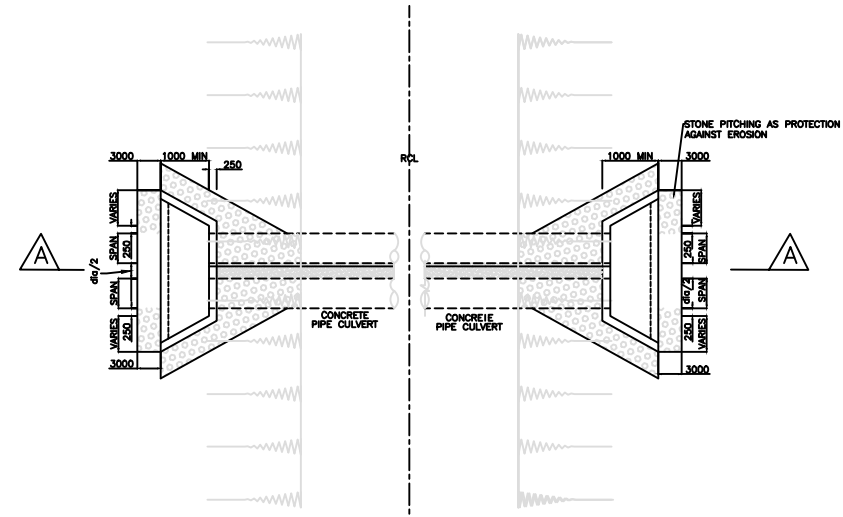
NOTES:

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

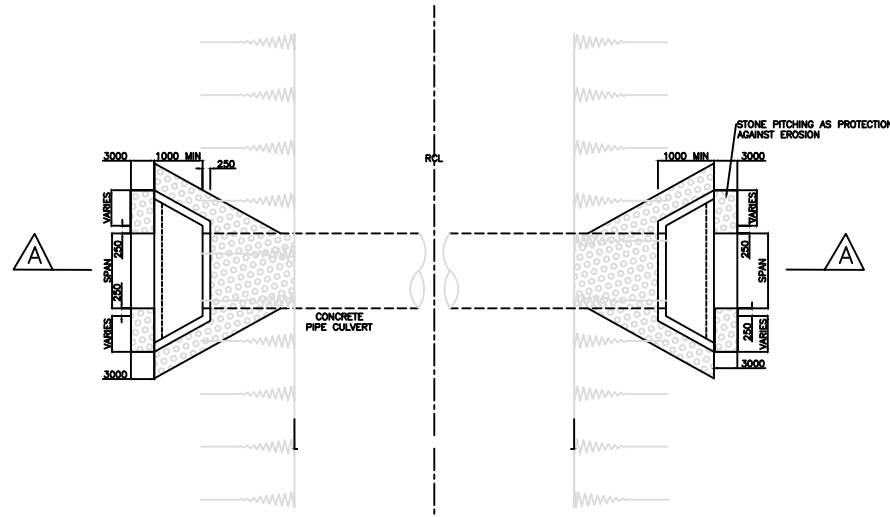
AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		DESIGNED		DRAWING TITLE:		PROJECT STATUS	
NR.	DESCRIPTION	DATE			SUIDA & PARTNERS P.O Box 32345, Chichiri, Blantyre 3 Malawi Tel: + 888 343 523/ 999 343 523 Email info@suidamw.com		Southern Africa Trade Connectivity Project, Ministry of Transport and Public Works Capital Hill, Off Chilembwe Road private Bag 322, Lilongwe		Z. B		STANDARD DRAWINGS: 900MM DIAMETER CONCRETE DETAILS		<input type="radio"/> DESIGN <input type="radio"/> CHECKING <input type="radio"/> DRAWING <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-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT		PLANNING/PROJECT ENGINEER: INSPECTOR OF WORKS: REMARKS: ORIGINAL PAPER SIZE: A1	
									DRAWING APPROVED BY MINISTRY		CONTRACT No.: PROJECT No.: SCALE: 1:1000 DATE: NOVEMBER 2025		DRAWING NO: CON/2025/SP/SATCP-LM/DRN-10 SHEET NO: 1 OF 1	



CONCRETE PIPE CULVERT
TYPICAL SECTION A-A
SCALE 1:30

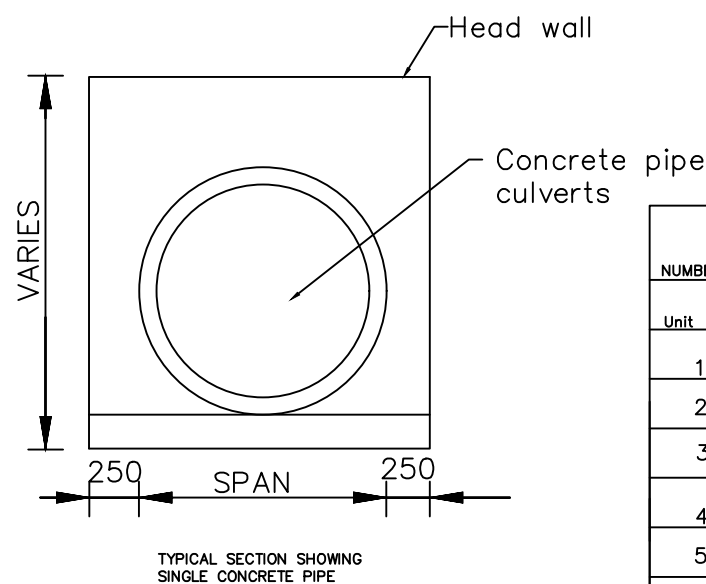
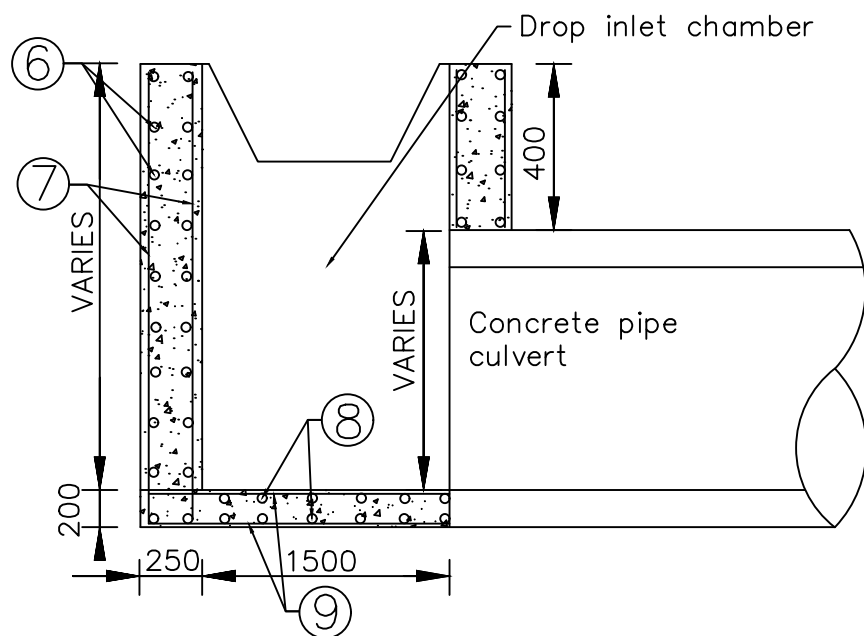
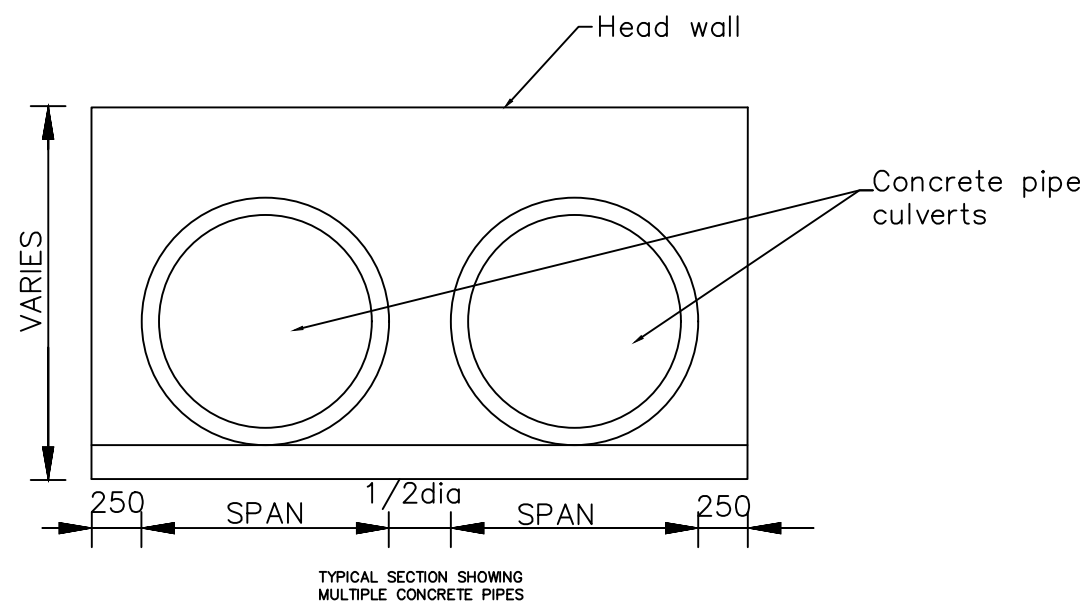
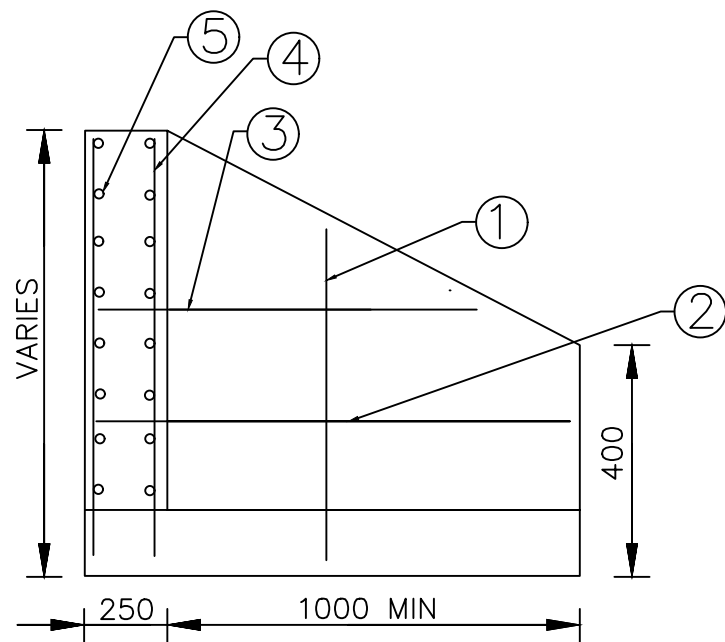


TYPICAL PLAN SHOWING MULTIPLE CONCRETE PIPES
SCALE 1:80



TYPICAL PLAN SHOWING SINGLE CONCRETE PIPE
SCALE 1:80

AMENDMENTS			LEGEND		CONSULTANT'S DETAIL:		CLIENT'S DETAIL:		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: GENERAL ARRANGEMENT OF REINFORCED CONCRETE RING		<input type="radio"/> PROJECT <input type="radio"/> DESIGN <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-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT		PLANNING/PROJECT ENGINEER											
									DRAWN Z. B				RESPECTOR OF WORKS											
									DRAWING CHECKED BY F. N. REng				REMARKS											
									DRAWING APPROVED BY MINISTRY		CONTRACT No.:		PROJECT No.:		SCALE: 1:1000		DATE: NOVEMBER 2025		DRAWING NO. CON/2025/SP/SATCP-LM/DRN-11		SHEET NO. 1 OF 1		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			DESIGNED BY	DATE	STANDARD DRAWINGS: REINFORCED CONCRETE RING AND DROP INLET CHAMBER DETAILS DESCRIPTION OF PROJECT MW-MTPW-544343-CW-RFB/SPOT IMPROVEMENTS AND INSTALLATION OF DRAINAGE STRUCTURES ON BALAKA-MBERA-KACHENGA(S133/T381) ROAD IN BALAKA DISTRICT			<input type="checkbox"/> CONSULTANT DRAWING <input type="checkbox"/> DESIGN DRAWING <input type="checkbox"/> PROPOSED FOR CONSTRUCTION DRAWING <input type="checkbox"/> AS-BUILT DRAWING	PLANNING/PROJECT ENGINEER:		DATE						
1	REVISION 1	25-02-206							SIGNATURE					DATE		INSPECTOR OF WORKS:		DATE		REMARKS:		ORIGINAL PAPER SIZE: A1	
									SIGNATURE					DATE		DRAWING APPROVED BY MINISTRY:		DATE		DRAWING NO:		SHEET NO:	
									SIGNATURE					DATE		CONTRACT No.:		PROJECT No.:		SCALE: 1:1000		DATE: NOVEMBER 2025	
									SIGNATURE					DATE		CONTRACT No.:		PROJECT No.:		SCALE: 1:1000		DATE: NOVEMBER 2025	

ROAD INVENTORY

LIST OF STRUCTURES		
DISTRICT - BALAKA		
DATA COLLECTED ON: 05/OCT/2025		
UPDATED ON:		
	BALAKA - MBERA - KACHENGA S133/T381	
Chainage	DESCRIPTION	ACTION
0+000	BALAKA	
0+500	Existing Box Culvert - 1.5m x 1m	provide 1No. Head wall and clean the culvert
0+580	Existing Armco Culvert (600mm Dia - 2 lines)	Repair masonry wall and Excavate outlet drain
0+600	Existing Armco Culvert (600mm Dia - 2 lines)	Provide 2No. Headwalls and Excavate inlet & outlet drains
0+680	Existing Box Culvert 1.5m x 1m	Demolish and replace with Box Culvert - 1m x 1m
1+070	Existing Box Culvert 1.5m x 1m	Repair and Clean the culvert
2+000	Existing concrete pipe Culvert (600mm Dia 1 line)	Provide 1 No. Head wall and clean the culvert
3+280	Luwawadzi Bridge	Fill approaches, repair wing walls and provide 6No. Marker posts
3+380	Existing Box Culvert 2m x 1.2m	Provide 2no. Head walls, Repair wing walls and provide erosion protection works
3+410	Existing Box Culvert 4.8m x 3.2m	Provide 2no. Head walls, Repair wing walls and provide erosion protection works
3+515	Existing Box Culvert 2m x 1.5m	Demolish top slab, raise the walls by 300mm, cast reinforced slab, Provide 4no. Head walls, Provide 4No. Wing walls
3+600	Existing Armco Culvert (2 lines)	Remove and replace with 2 Box culverts. 2m x 2m 3 Cells and 2m x 2m 1 cell. Provide flood protection works
4+900	Existing concrete pipe Culvert (600mm Dia 1 line)	Demolish and replace with a Box culvert 1.5m x 1m
7+800	Existing concrete pipe Culvert (600mm Dia 1 line)	Requires 1No. Headwalls, Excavate outlet and inlet drain
9+020	Existing concrete pipe Culvert (600mm Dia 1 line)	Requires 2No. Headwalls, Excavate outlet drain and Extend wing wall
9+300	Existing Box Culvert	
9+700	Existing concrete pipe Culvert (600mm Dia 1 line)	Requires 2No. Headwalls and Excavate outlet drain
10+800	Existing concrete pipe Culvert (600mm Dia 3 lines)	
11+600	Existing concrete pipe Culvert (600mm Dia 1 lines)	requires cleaning, Provide 1 No. Head wall, Fill eroded sections
12+670	Existing Box Culvert -	Demolish and re-construct

DISTRICT - BALAKA**DATA COLLECTED ON: 05/OCT/2025****UPDATED ON:****BALAKA -MBERA - KACHENGA S133/T381**

Chainage		DESCRIPTION
FROM	TO	
0+000		BALAKA
0+000	0+500	Do nothing
0+500		Existing Box Culvert - 1.5m x 1m
0+500	0+580	Do nothing
0+580		Existing Armco Culvert (600mm Dia - 2 lines)
0+600		Existing Armco Culvert (600mm Dia - 2 lines)
0+680		Existing Concrete Pipe Culvert - 600mm Dia
1+070		Existing Box Culvert 1.5m x 1m
2+000		Existing concrete pipe Culvert (600mm Dia 1 line)
2+030		Existing Drift
2+800	3+000	Do nothing
3+100		Provide mitre drain - LHS
3+280		Luwawadzi Bridge - Fill approaches and provide 6No. Marker posts
2+380	3+640	Section Requires Gravelling
3+380		Existing Box Culvert 2m x 1.2m - Provide 2no. Head walls
3+410		Existing Box Culvert 4.8m x 3.2m - Provide 2no. Head walls
3+410	3+510	Do nothing
3+515		Existing Box Culvert 2m x 1.5m - 3 Cells - Provide 4no. Head walls
3+600		Existing Armco Culvert (2 lines) - Remove and replace with a Box culverts - 2m x 2m 3 Cells
3+640	4+100	Section requires Grading in
3+700		Provide mitre drain - RHS
4+020		Provide mitre drain - LHS
4+100	4+700	Do nothing
4+200	4+250	Do nothing
4+900		Existing concrete pipe Culvert (600mm Dia 1 line)
4+980	5+020	Do nothing
5+100		Provide mitre drain - RHS
5+100	5+800	Do nothing
5+200		Provide mitre drain - RHS
5+800	11+100	Do nothing
6+100		Provide mitre drain - LHS
6+200		Provide mitre drain - RHS
6+300		Provide mitre drain - RHS
6+380		Provide mitre drain - RHS
6+380		Provide mitre drain - LHS
6+420		Provide mitre drain - RHS
6+500		Provide mitre drain - RHS
6+900		Provide mitre drain - RHS
7+000		Provide mitre drain - RHS
7+020		Provide mitre drain - RHS
7+100		Provide mitre drain - RHS
7+200		Provide mitre drain - RHS
7+800		Existing concrete pipe Culvert (600mm Dia 1 line)
8+400		Provide mitre drain - LHS & RHS
8+600		Provide mitre drain - RHS
8+900		Provide mitre drain - RHS
9+000		Provide mitre drain - RHS
9+020		Existing concrete pipe Culvert (600mm Dia 1 line)
9+035		Provide mitre drain - LHS
9+300		Existing Box Culvert
9+400	9+600	Do nothing
9+700		Existing concrete pipe Culvert (600mm Dia 1 line)
10+100		Provide mitre drain - LHS
10+200		Provide mitre drain - LHS
10+400		Provide mitre drain - LHS

10+700		Provide mitre drain - RHS
10+700	10+800	Embankment Formation
10+800		Existing concrete pipe Culvert (600mm Dia 1 lines)
11+100	11+200	Embankment Formation
11+500		Provide mitre drain - RHS
11+600		Existing concrete pipe Culvert (600mm Dia 1 line)
12+540		Provide mitre drain - RHS
12+670	13+300	Embankment Formation
13+200		Provide mitre drain - RHS
15+000		KACHENGA