

TONGBORE LWSC

PLAN & PROFILE OF LWSC AND APPROACH ROAD

LEGEND

BUILDING / STRUCTURE
FOREST
SWAMP
WATER BODY
HUMP
RUBBLE STRIPS
CULVERT (PLAN)
CULVERT (PROFILE)
TREE
GATE

POLE (ELECTRICITY)
DRAIN
BENCH MARK / SURVEY CONTROL
CABLE
STEEL POST
BRIDGE
BONE-HOLE
MAN-HOLE

DESIGN SPEED
50KPH

OPERATION SPEED
30KPH

TYPICAL CROSS SECTIONS

3.2m 3.2m

PAVEMENT DESIGN

LWSC
CONCRETE
HARD CORE
GABION MATTRESS
CRUSHED STONE
GRANULAR FILL

LWSC APPROACH ROAD
GRAVEL WEARING COURSE

CHAINAGE (KM)
FINISHED ROAD LEVEL - CL (m)
EXISTING GROUND LEVEL - CL (m)
FILL (+) / CUT (-) (m)
HORIZONTAL SCHEMATIC
VERTICAL SCHEMATIC
SUPERELEVATION

CONSULTANT:

MBW CONSULTING

P.O. 107 Kira Road, Kampala,
P.O. Box 8493, Kampala Uganda
e: +256 (0)393 740800
0701 740800
Email: mbw@mbw.co.ug

FUNDER:

USAID

FROM THE AMERICAN PEOPLE

CLIENT:

Uganda Wildlife Authority

Department of Biodiversity
P.O. Box 2536, Kampala,
Uganda
Tel: +256-41-255114, 255111,
335116

PROJECT NAME:
USAID / Uganda Architect & Engineering Design and Construction Management Consulting Services

ACTIVITY NAME:
Infrastructure for Biodiversity Conservation in Kidepo Valley NP

DRAWING DESCRIPTION:
PLAN AND LONGITUDINAL PROFILE
TONGBORE LWSC AND APPROACH ROADS

DESIGNED BY:
BK

DRAWN BY:
SND

CHECKED BY:
BK

APPROVED BY:
AT

REV. No DATE DESCRIPTION OF REVISION BY

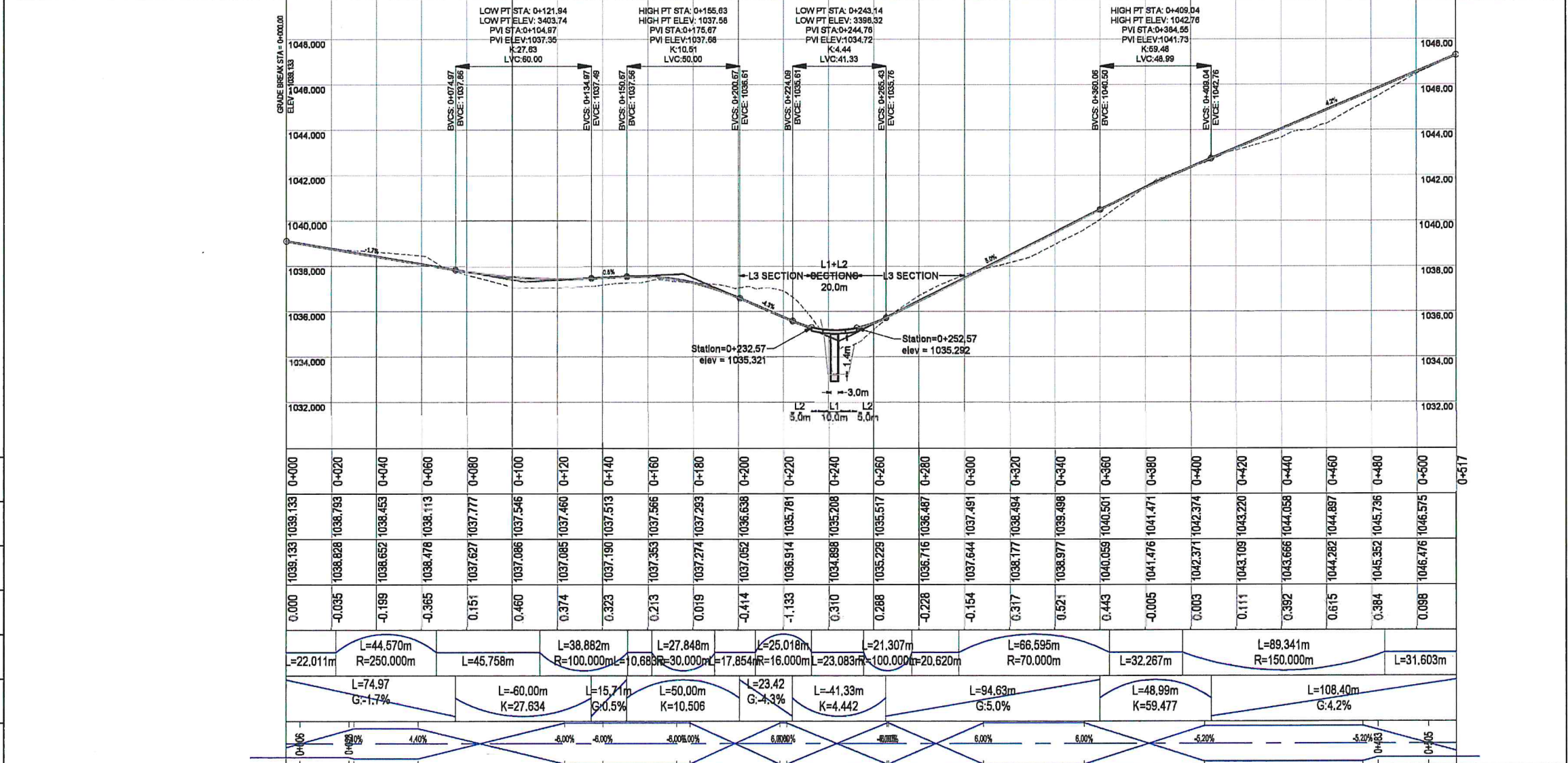
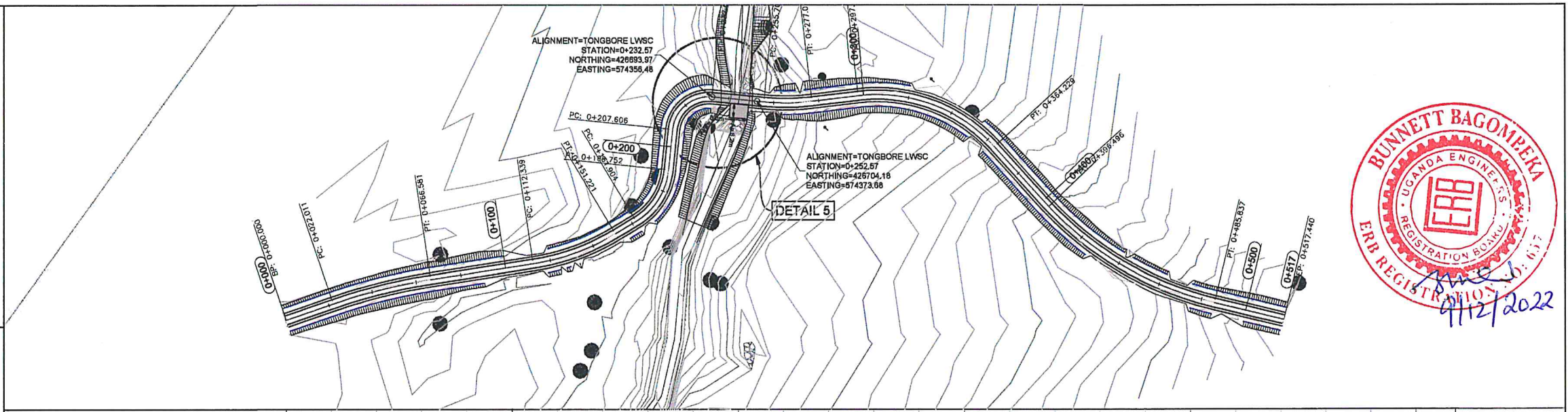
ENGINEER'S SEAL

SCALE: HORIZONTAL 1:1000 VERTICAL 1:1000 REF FILE

STATUS: 18-Apr-20 DATE: 18-Apr-20

908-01-DWG-C-PP-003

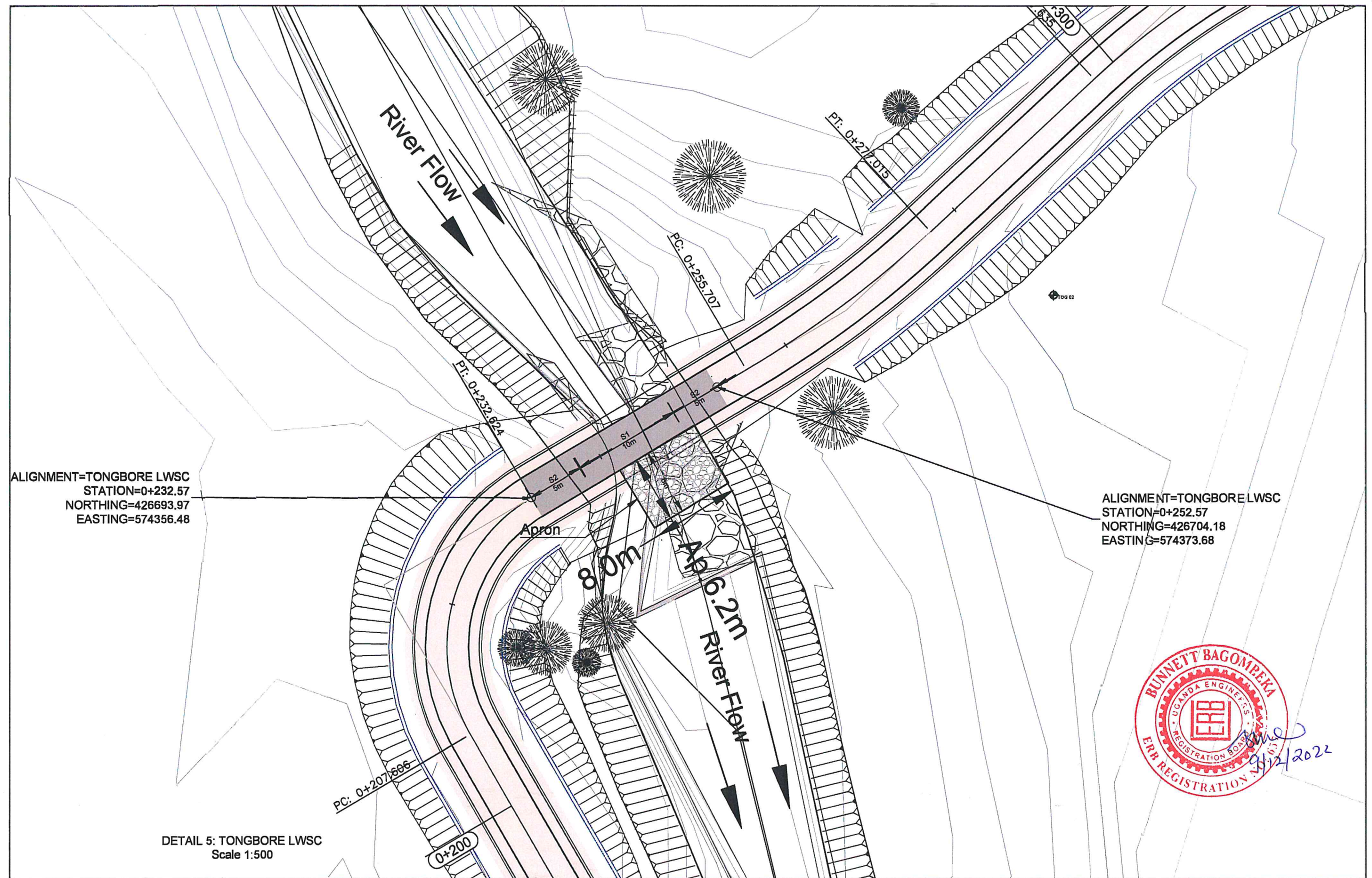
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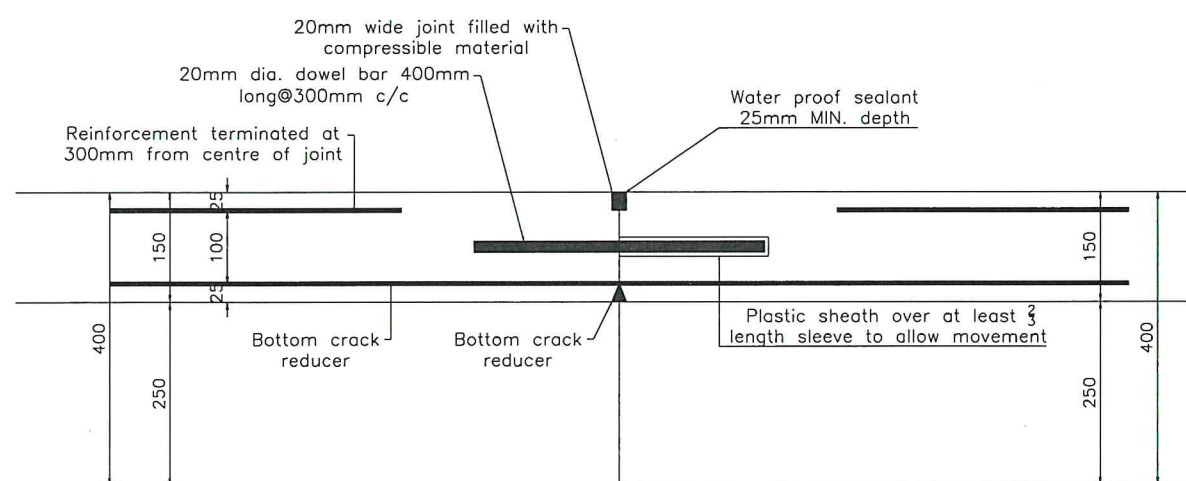
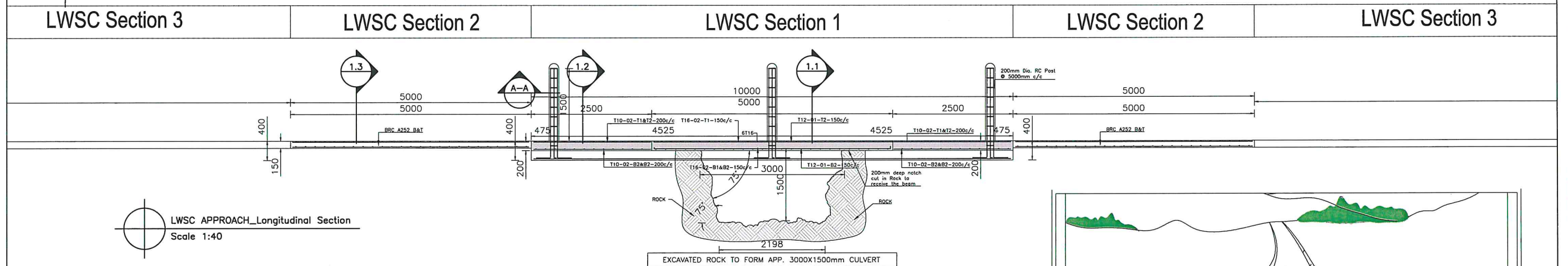
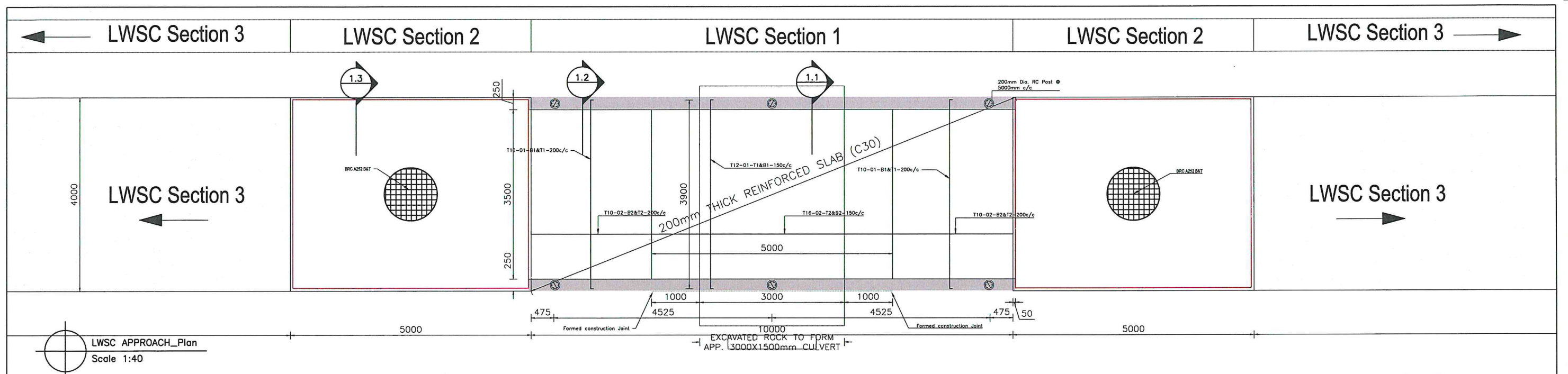
BUNNETT BAGOMBEKA

UGANDA ENGINEERS
REGISTRATION BOARD
REG. NO. 017

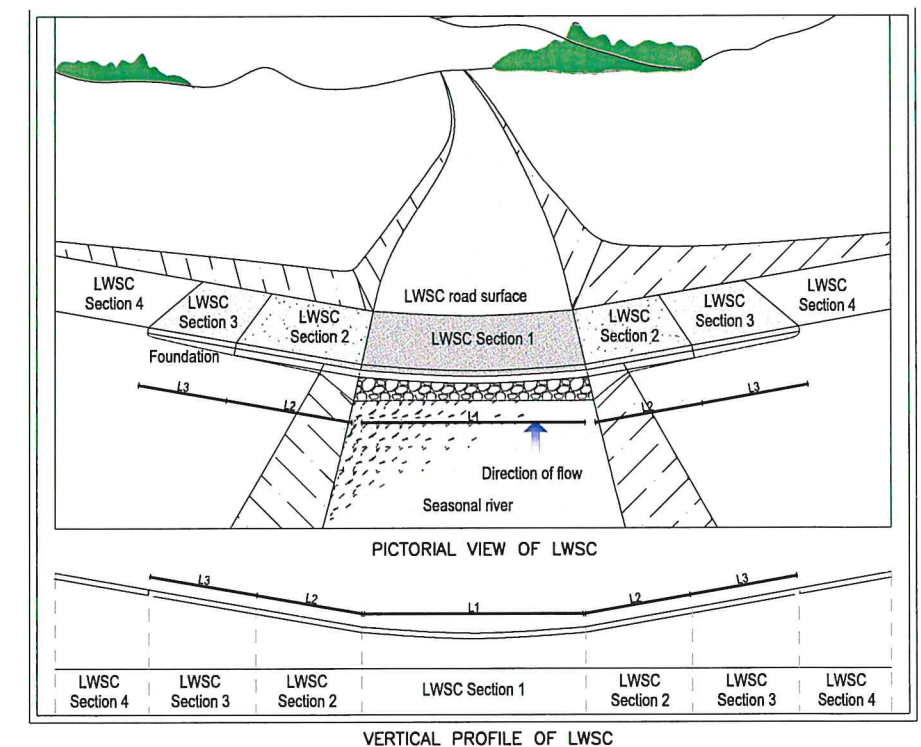
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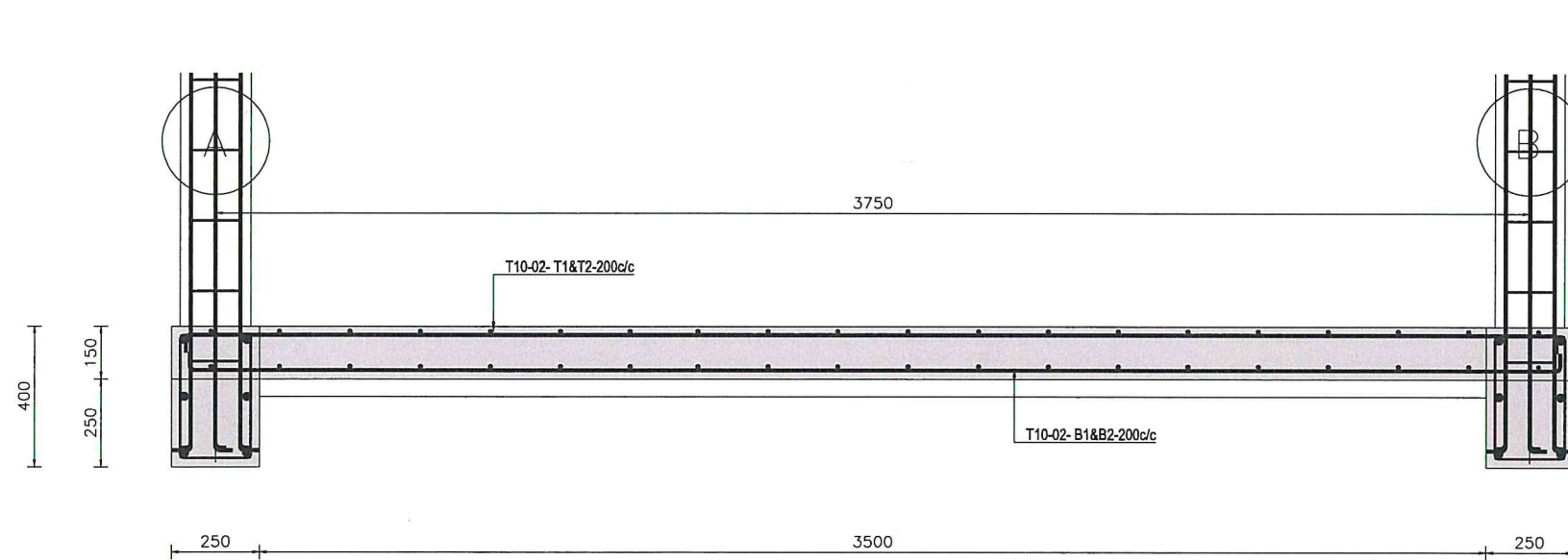
CONSULTANT:		FUNDER:		CLIENT:		PROJECT NAME:		DESIGNED BY:		ENGINEER'S SEAL	
 Plot 107 Kira Road, Kamukya, P.O.Box 8493, Kampala-Uganda Tel: +256 (0)393 740800 / 0701 740800 Email: mbw@mbw.co.ug		 USAID FROM THE AMERICAN PEOPLE		 Uganda Wildlife Authority <i>Department of Biodiversity</i> PO Box 3536, Kampala, Uganda Tel: +256-45-355111, 355111, 355118		USAID / Uganda Architect & Engineering Design and Construction Management Consulting Services		REVISED		SCALE AS NOTED STATUS Tender DATE 23-Apr-20 PAPER A3 COPYRIGHT RESERVED	
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						Infrastructure for Biodiversity Conservation in Kidepo Valley NP		SK			
						DRAWING DESCRIPTION:		CHECKED BY:			
Low Water Stream Crossings and Approach Roads Detail 5: Tongbore LWSC		WF		REV No		DATE		DESCRIPTION OF REVISION		BY	



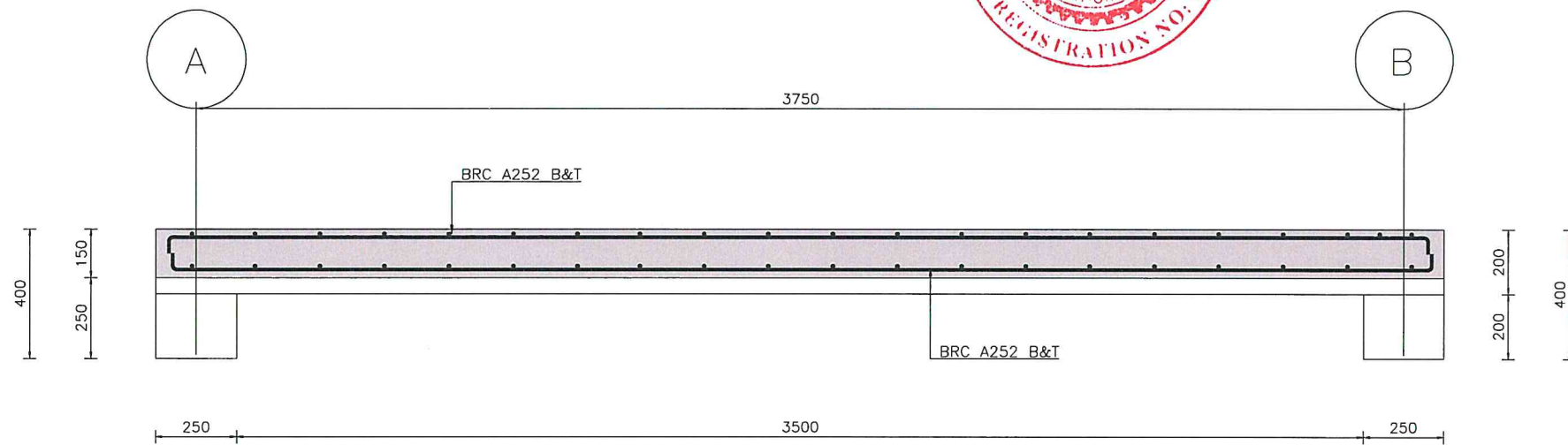
LWSC	Splash apron (m)	L1 (m)	L2 (m)	L3 (m)
Tongobore	6.20	10.00	5.00	20.00



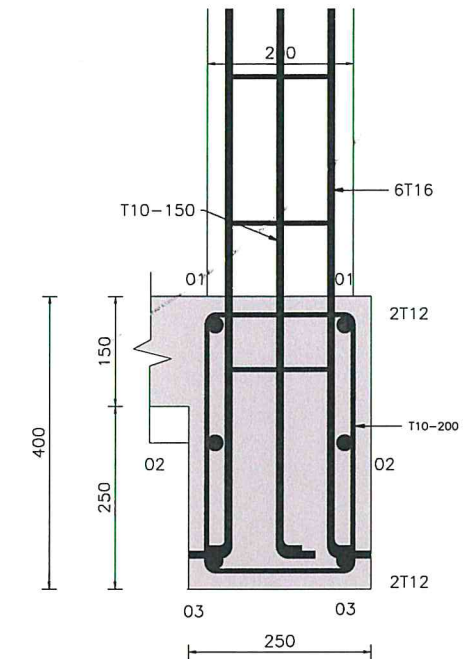
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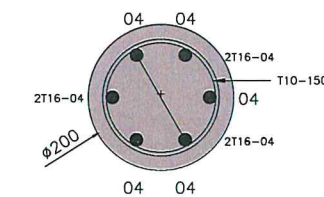
Section 2-2
Scale 1:10



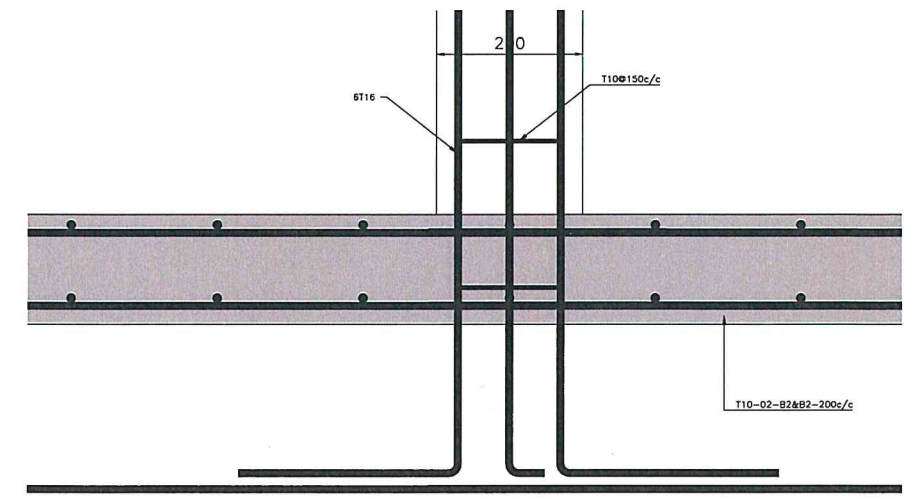
Section 3-3
Scale 1:10



Beam Section 1-1
Scale 1:5

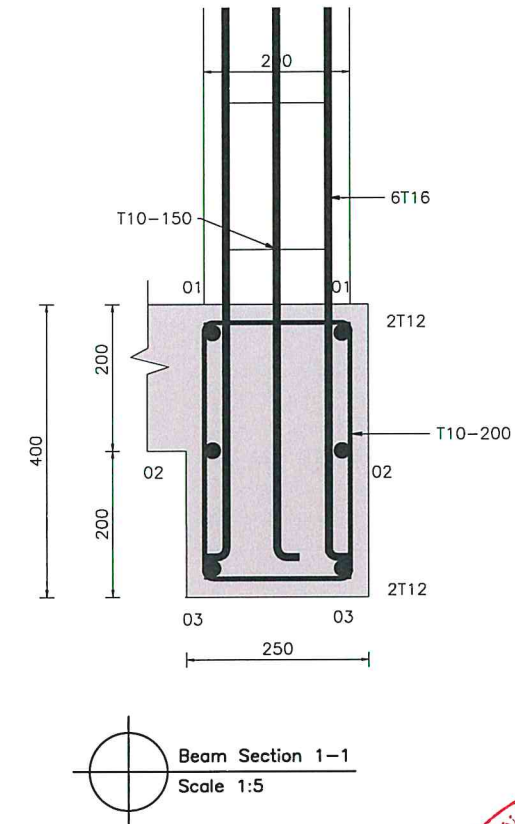
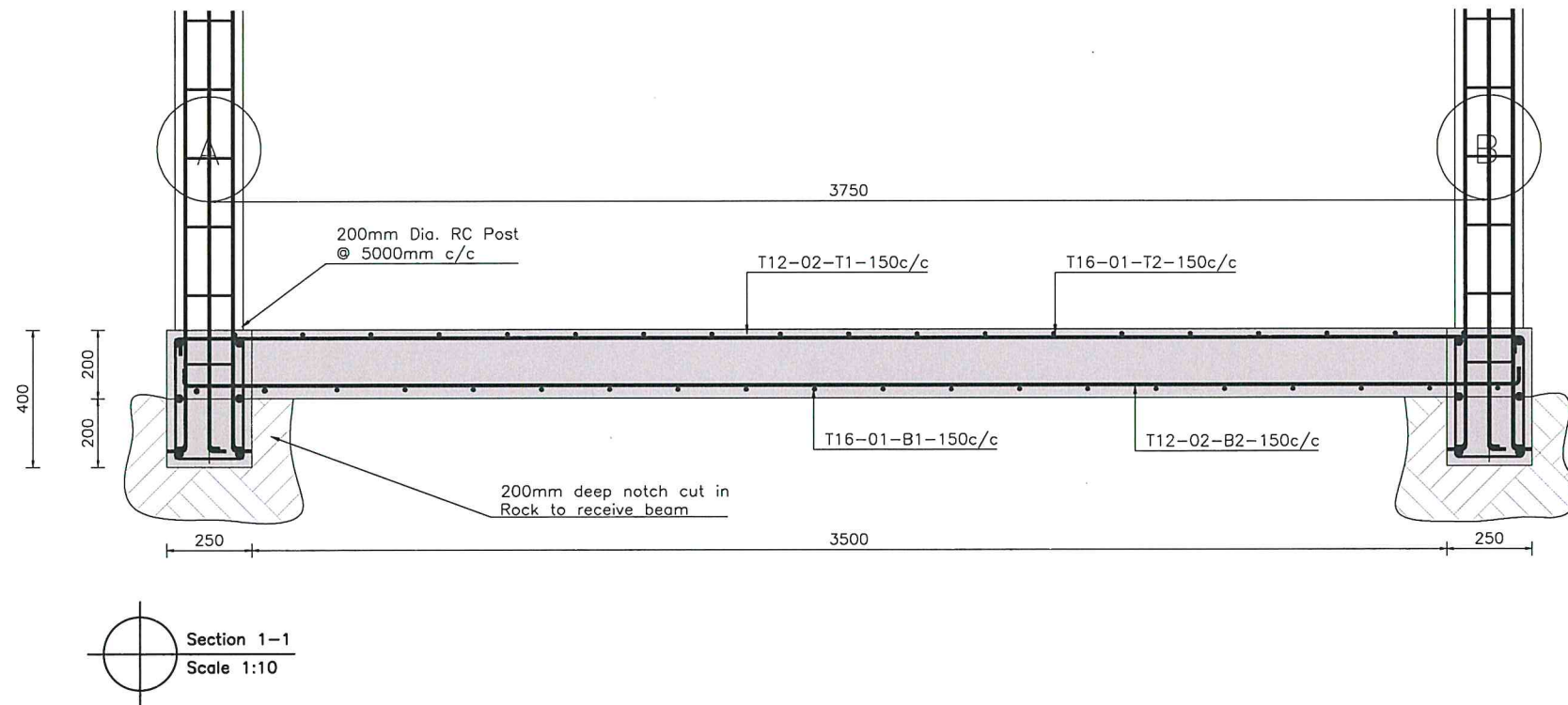


R.C Pillar Section A-A
Scale 1:5



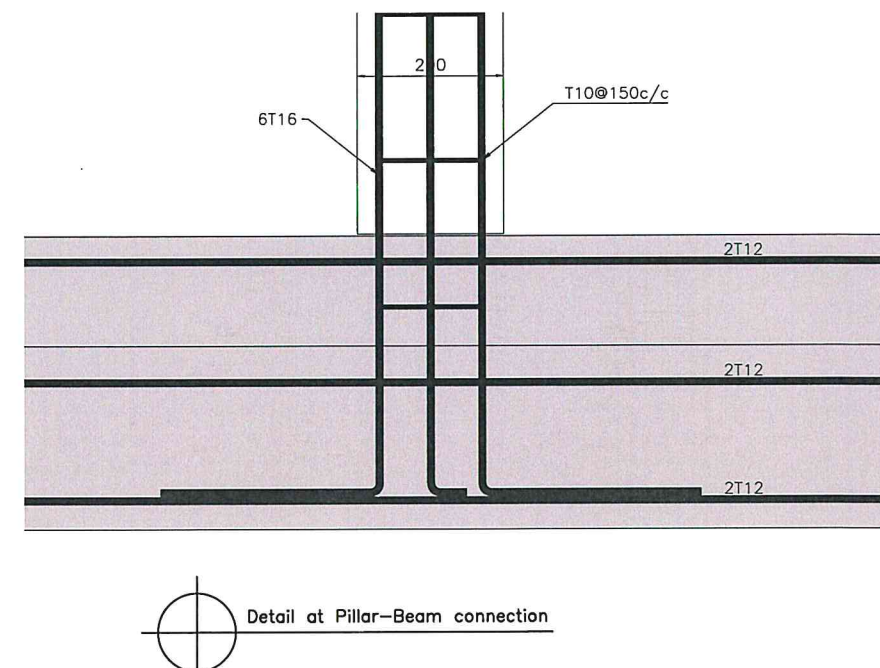
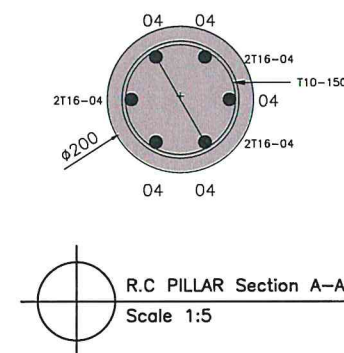
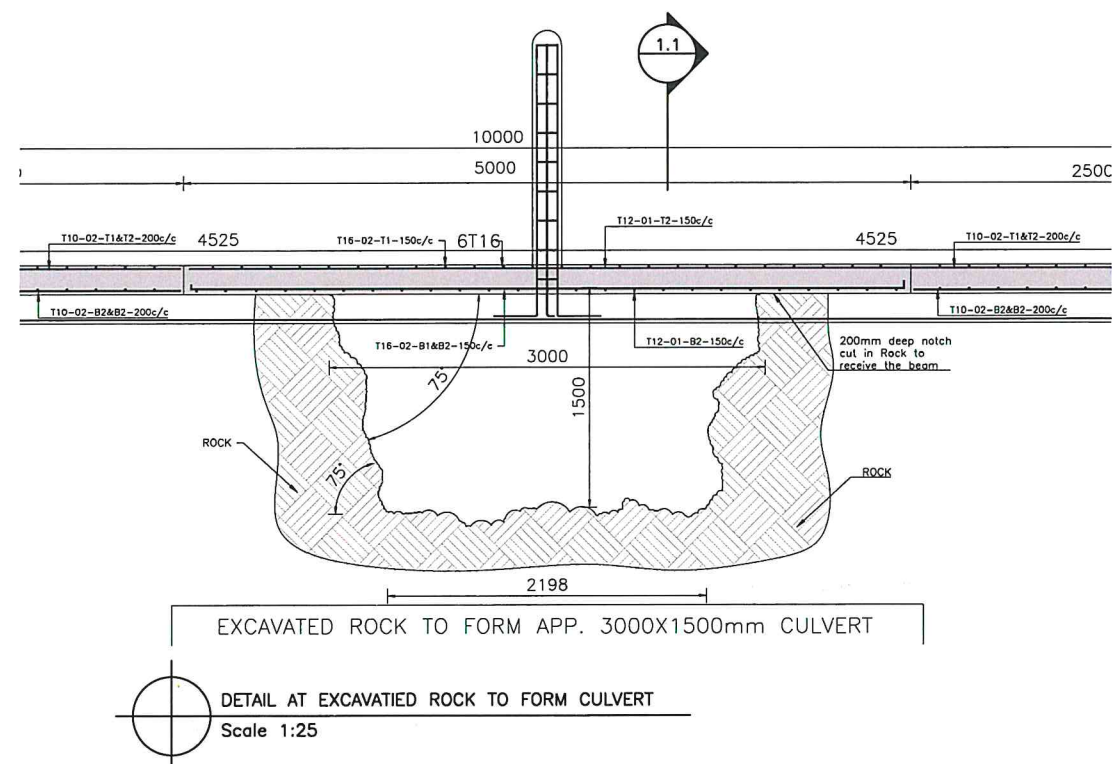
Detail at Pillar-Beam connection

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 Plot 107 Kira Road, Kamwokya, P.O.Box 8493, Kampala-Uganda Tel: +256 (0)392 740900 / 0701 740900 Email: mbw@mbw.co.ug		 USAID FROM THE AMERICAN PEOPLE		 Uganda Wildlife Authority @ugandawildlifeauthority PO Box 3530, Kampala, Uganda Tel: +256-41-355114, 355111, 355118		USAID / Uganda Architect & Engineering Design and Construction Management Services		BB									SCALE: As Noted STATUS: Construction DATE: SEP. 2022 PAPER: A3 DRAWING NUMBER: 906-01-DWG-C-TS-005.4 COPYRIGHT RESERVED			
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						DRAWING DESCRIPTION:		BB												
						LWSC AND APPROACH ROADS STRUCTURAL SECTIONAL DETAILS FOR TONGBORE		WF												
								REV.No.		DATE		DESCRIPTION OF REVISION		BY						



LWSC Section 1

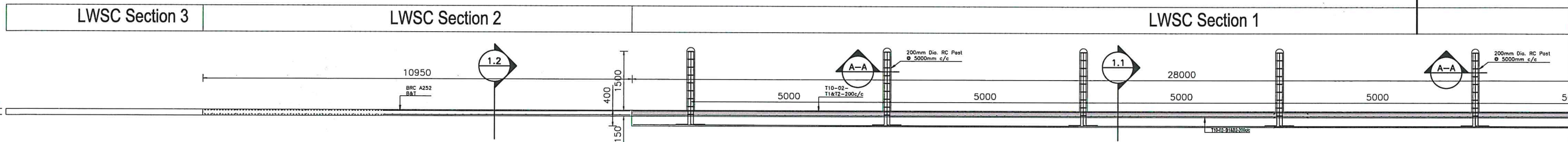
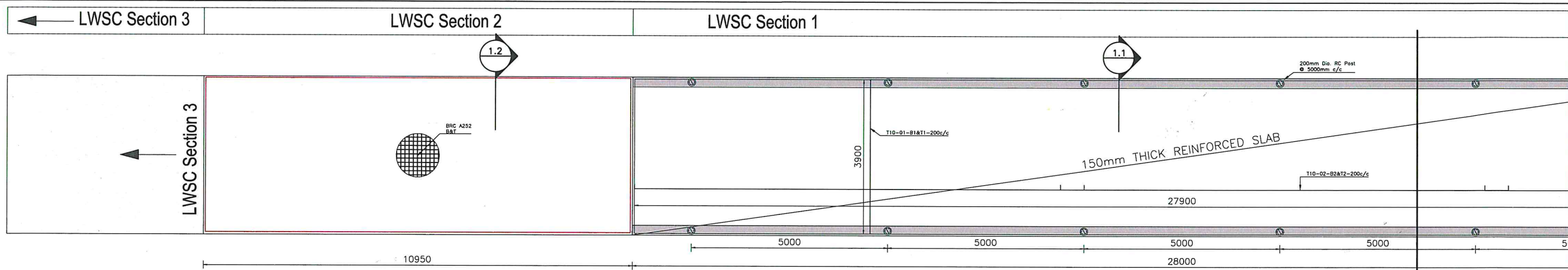
LWSC	Splash apron (m)	L1 (m)	L2 (m)	L3 (m)
Tongobore	6.20	10.00	5.00	20.00



CONSULTANT:		FUNDER:		CLIENT:		PROJECT NAME:		DESIGNED BY:		ENGINEER'S SEAL									
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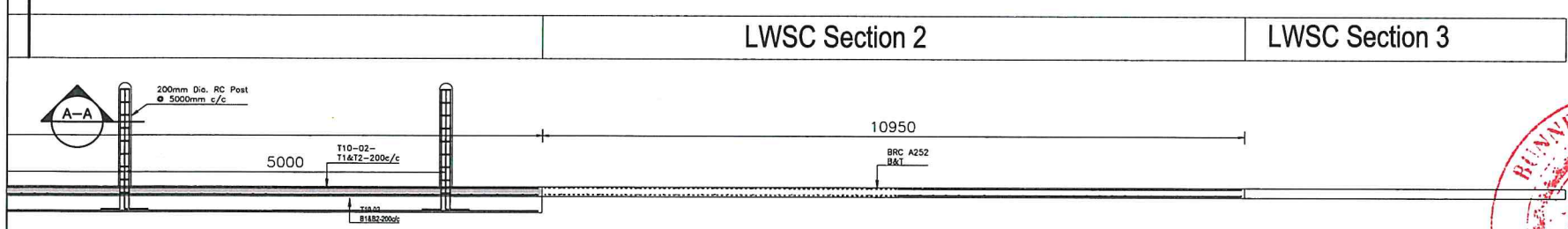
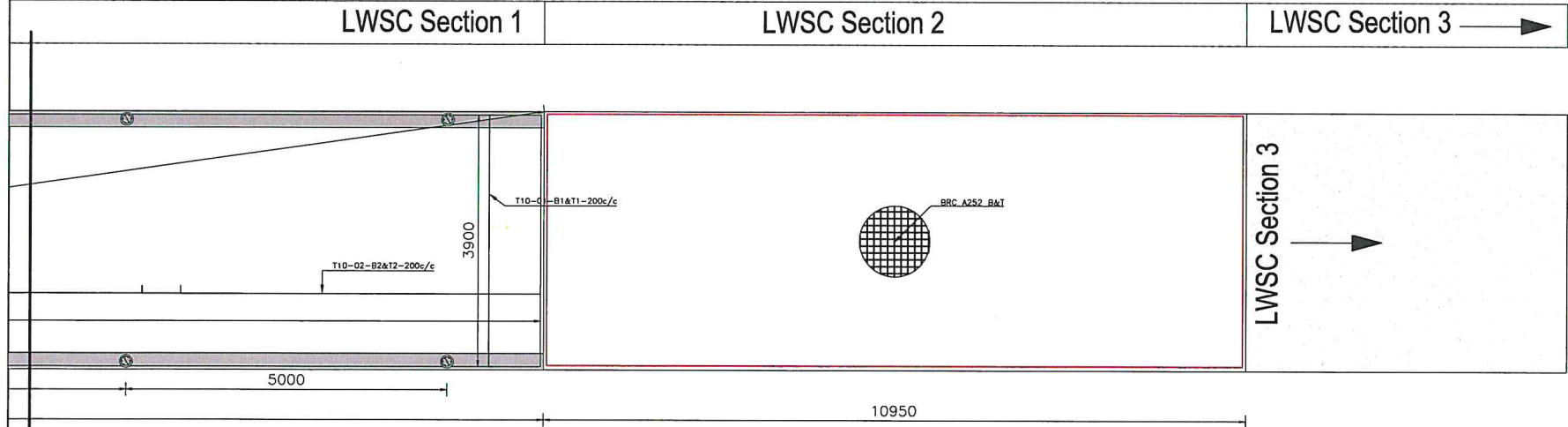
LOPIRIPIR LWSC

PLAN & PROFILE OF LWSC AND APPROACH ROAD

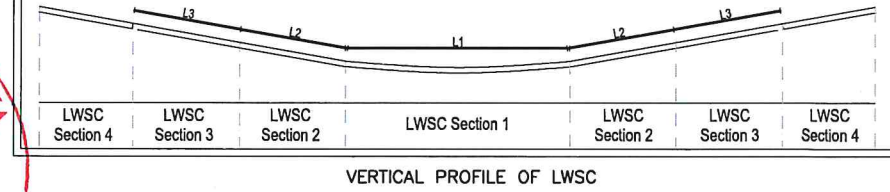
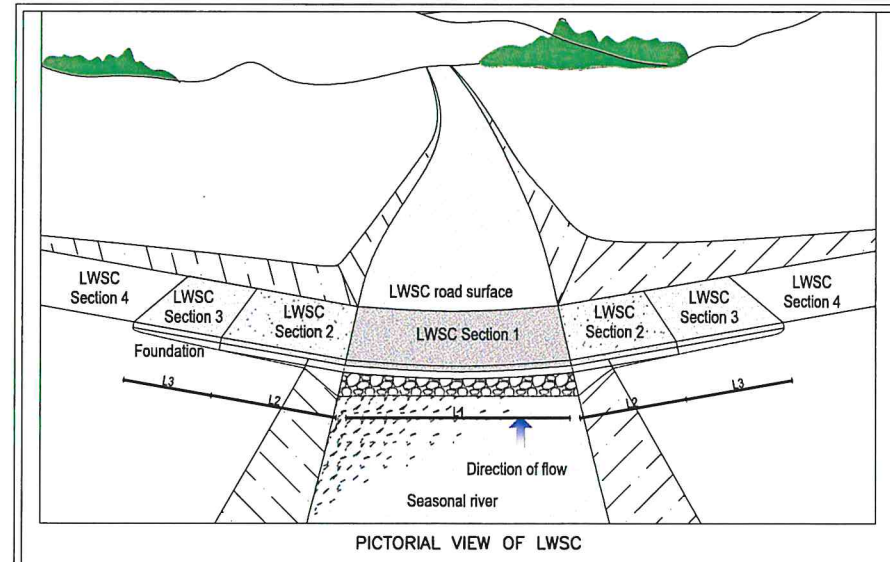


LWSC APPROACH - Plan & Longitudinal Section
Scale 1:50

LWSC	Splash apron (m)	L1 (m)	L2 (m)	L3 (m)
Lopiripiri	3.30	28.00	11.00	11.00

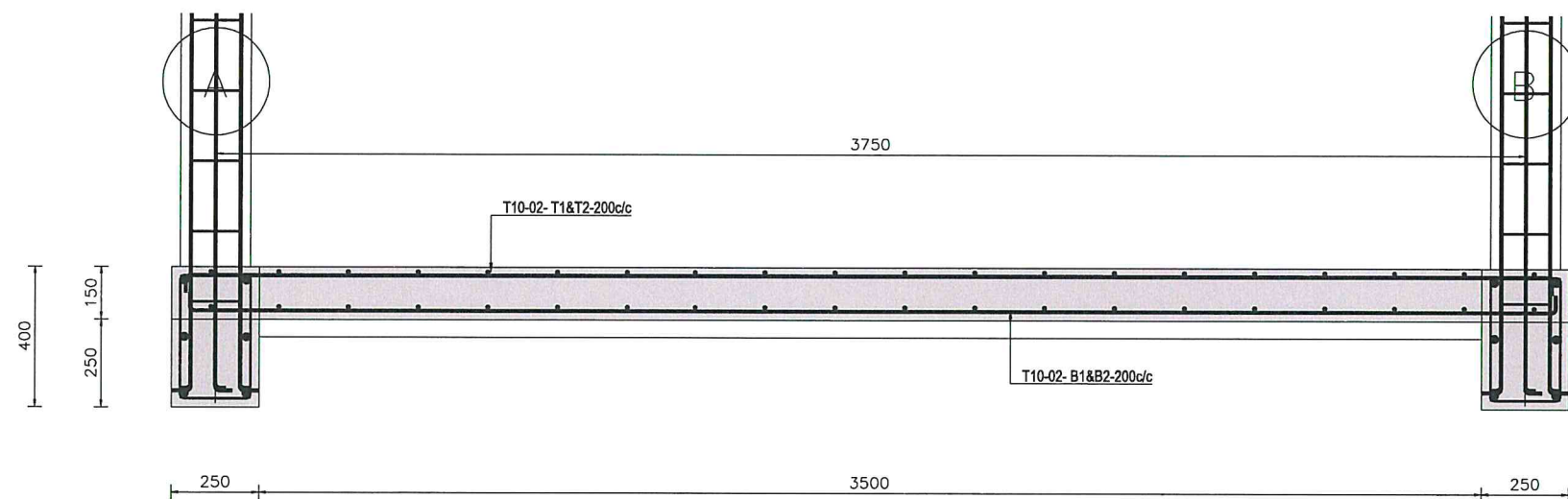


LWSC APPROACH - Plan & Longitudinal Section {continued}
Scale 1:50

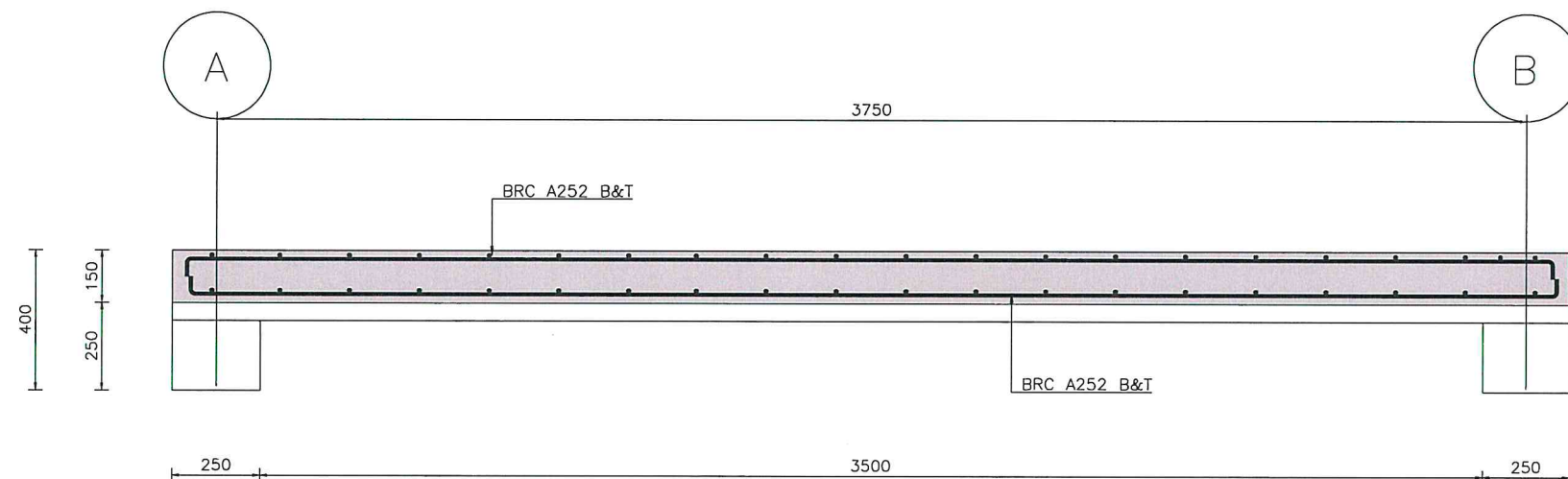


SCHEMATIC DIAGRAM OF LWSC

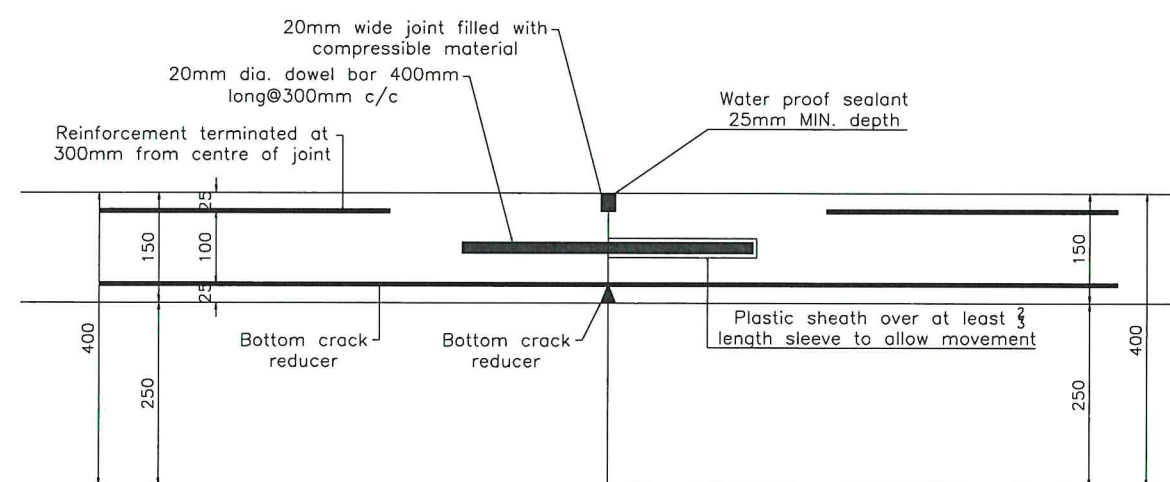
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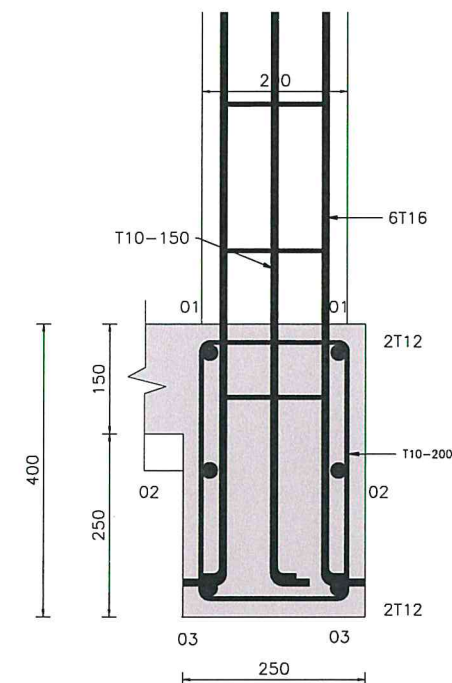
Section 1-1
Scale 1:10



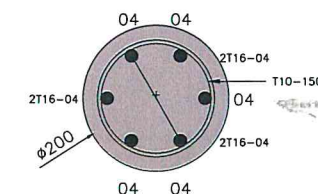
Section 2-2
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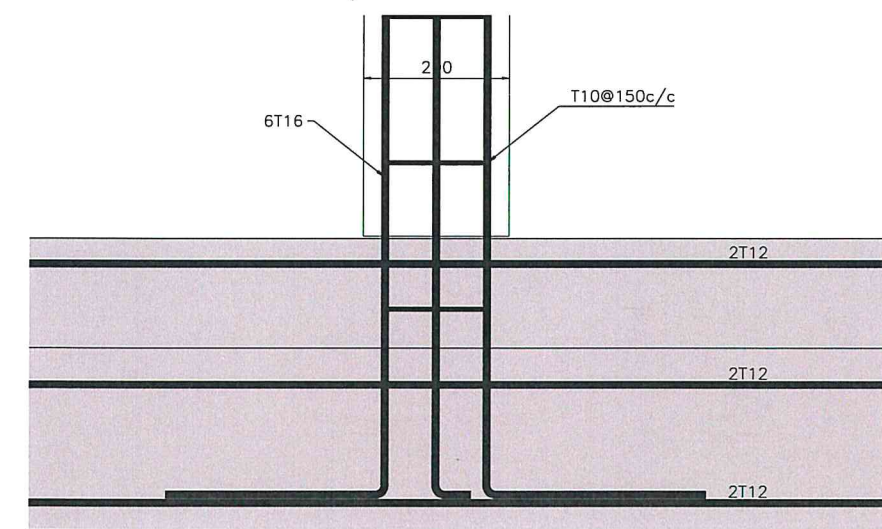
FORMED DOWELED CONNECTION Joint Detail (@4.0m only in LWSC section 2)
Scale 1:5



Beam Section 1-1
Scale 1:5



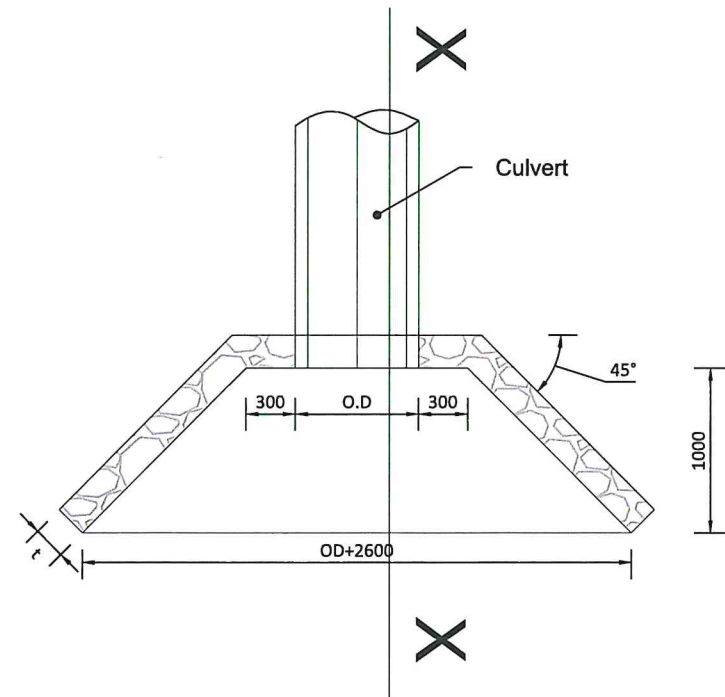
REINFORCED CONCRETE PILLAR Section A-A
Scale 1:5



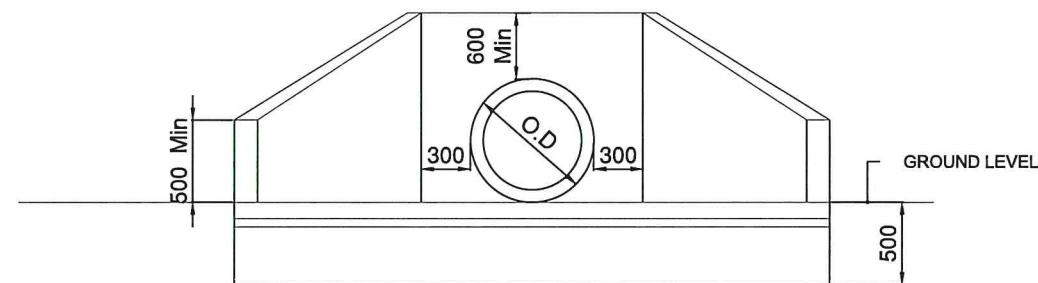
Detail at Pillar-Beam connection
Scale 1:5

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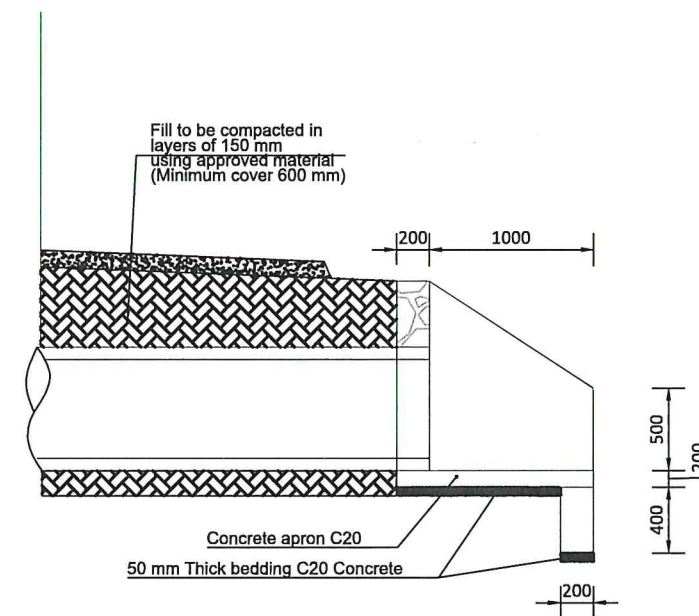
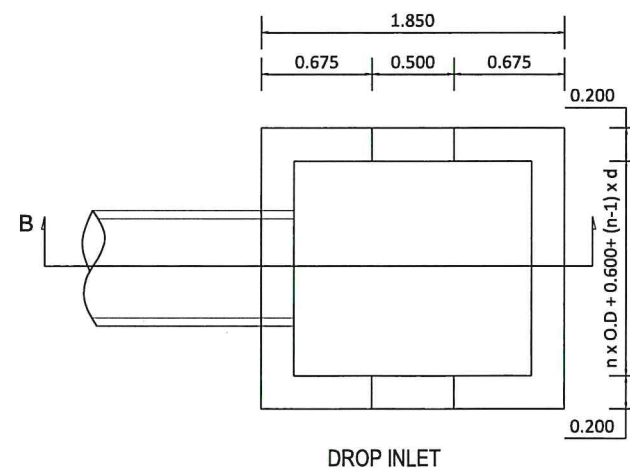
STANDARD DRAWINGS



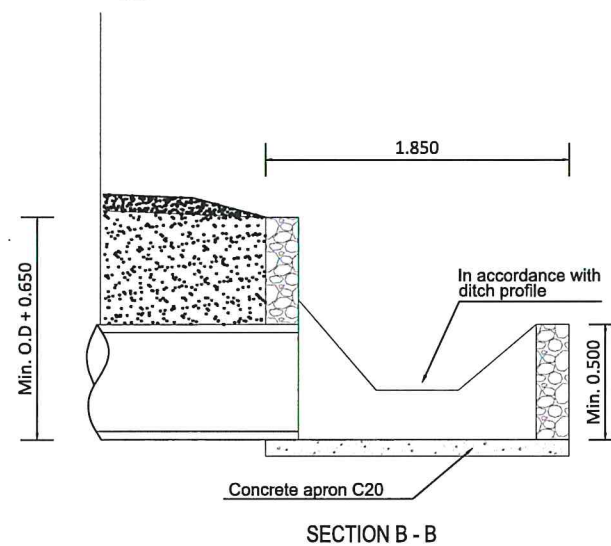
STONE MASONRY CULVERT
(FOR SINGLE BARREL)



STONE MASONRY CULVERT
END ELEVATION
(SINGLE BARREL)



TYPICAL SECTION X-X

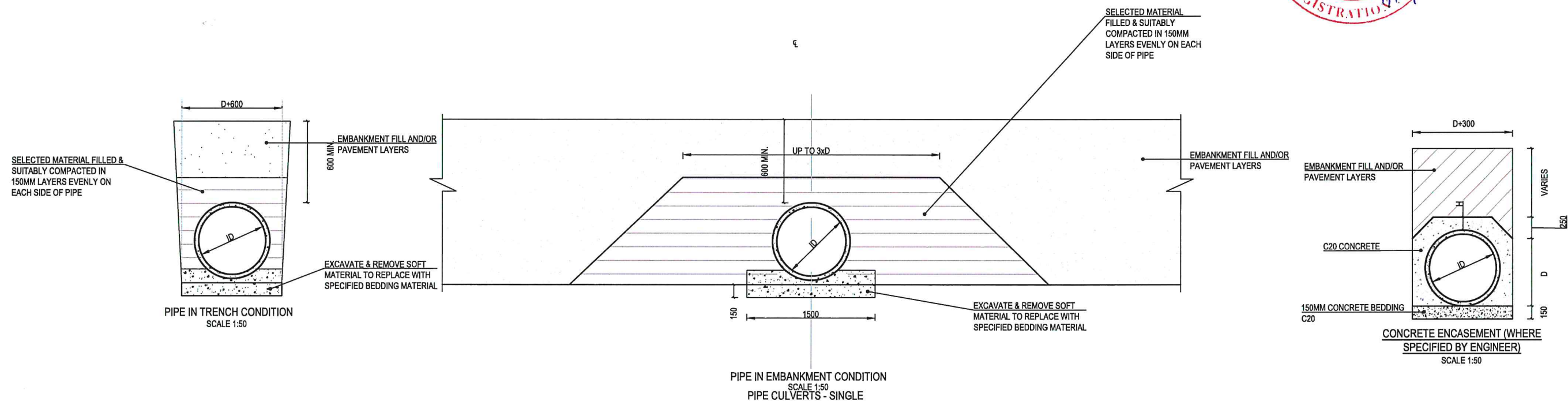


SECTION B - B



CULVERT INSTALLATION SPECIFICATIONS FOR CONCRETE CULVERT						
S/No	Culvert Dia (mm)	Excavation Depth	Space Between Multiple Culvert-d (mm)		Min Fill Cover (mm)	Bedding Materials
			Gravel Backfill	Concrete Surround		
1	600	Varries	300	100	600	Gravel Sand Class lane Concrete
2	900	Varries	450	100	600	Gravel Sand Class lane Concrete
3	1200	Varries	600	100	600	Gravel Sand Class lane Concrete

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			ACTIVITY NAME: Infrastructure for Biodiversity Conservation in Kidepo Valley NP		DRAWN BY: SRO			STATUS: Tender		DATE: JUNE 2020	
DRAWING DESCRIPTION: Low Water Stream Crossings and Approach Roads Culvert Installation Details			CHECKED BY: BK		APPROVED BY: WF		DRAWING NUMBER: 008-01-000-0-00-002		COPYRIGHT RESERVED		
			REV. No DATE DESCRIPTION OF REVISION BY								



NOTES:

1. ALL DIMENSION ARE IN MM AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED. ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
2. MINIMUM CLEAR COVER TO REINFORCEMENT IS 25 MM
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS. DISCREPANCY, IF ANY, IS TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF ENGINEER FOR NECESSARY MODIFICATION.
4. THE MATERIAL FOR A DEPTH OF 150MM UNDER THE APRON SLAB MUST BE COMPACTED TO A MINIMUM DENSITY OF 90% OF BS.
5. COVER ABOVE PIPES SHOULD BE 300mm ABSOLUTE MINIMUM.

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 Plot 107 Kira Road, Kamukya, P.O.Box 6493, Kampala-Uganda Tel: +256 (0)393 740900 / 0701 740900 Email: mbw@mbw.co.ug		 USAID FROM THE AMERICAN PEOPLE		 Uganda Wildlife Authority @ugandawildlifeauthority PO Box 3536, Kampala, Uganda Tel +256-41-355114, 355111, 355118		USAID / Uganda Architect & Engineering Design and Construction Management Consulting Services		SRO					
						ACTIVITY NAME:		DRAWN BY:					
						Infrastructure for Biodiversity Conservation in Kidepo Valley NP		SRO					
						DRAWING DESCRIPTION:		CHECKED BY:					
						Low Water Stream Crossings and Approach Roads Culvert Bedding and Backfill Details		BK					
						APPROVED BY:		REV. No		DATE	DESCRIPTION OF REVISION	BY	
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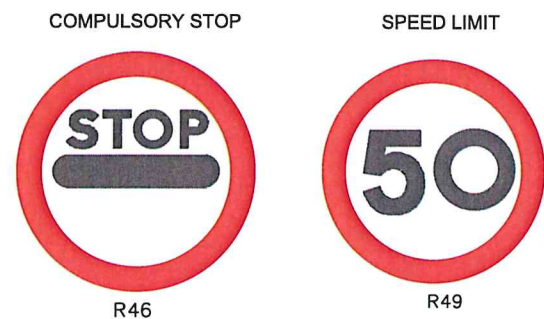
WARNING SIGNS



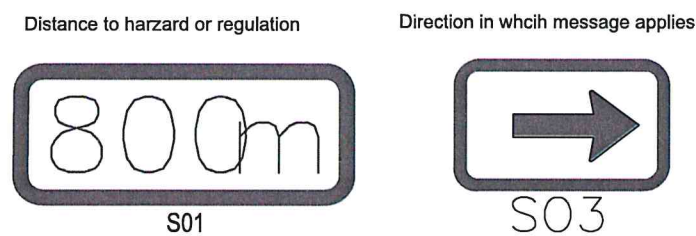
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
2. THE SIGN FACE SHALL BE REFLECTIVE TO A STANDARD ACHIEVED BY "HIGH INTENSITY" REFLECTIVE COATING. REFLECTORISATION ON ALL SIGNS SHALL BE WHOLE AREA EXCEPT ANY PORTION COLOURED BLACK.
3. ALL SIGN FACES SHALL BE LOCATED IN A POSITION NOT OBSCURED BY ANY OBSTACLE. THE LOCATION AND CONTENT OF EACH SIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO START OF INSTALLATION.
4. ALL STEEL POSTS TO BE TO BS 3049 CLASS 'A' (HOT ROLLED).
5. THE FINISH TO BE HOT DIP GALVANIZED TO BS 729.
6. ALL BOLTS SHALL BE BUTT-HEADED AND GALVANISED.
7. THE EXACT LOCATION, TYPE AND SIZE OF TRAFFIC SIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO ERECTION. THE CONTRACTOR SHALL SUBMIT SHOPDRAWINGS FOR ENGINEER'S APPROVAL.
8. SIGN SHEETING SHALL BE PRISMATIC WITH MINIMUM RETROREFLECTIVITY LEVELS AS ASTM D4958-04

PROHIBITORY SIGNS

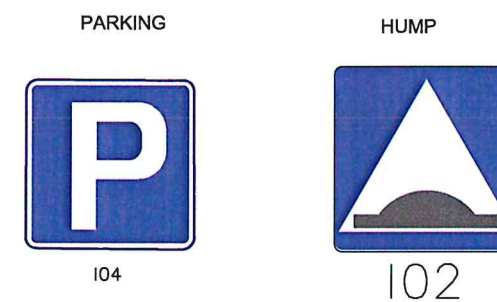


SUPPLEMENTARY PLATES

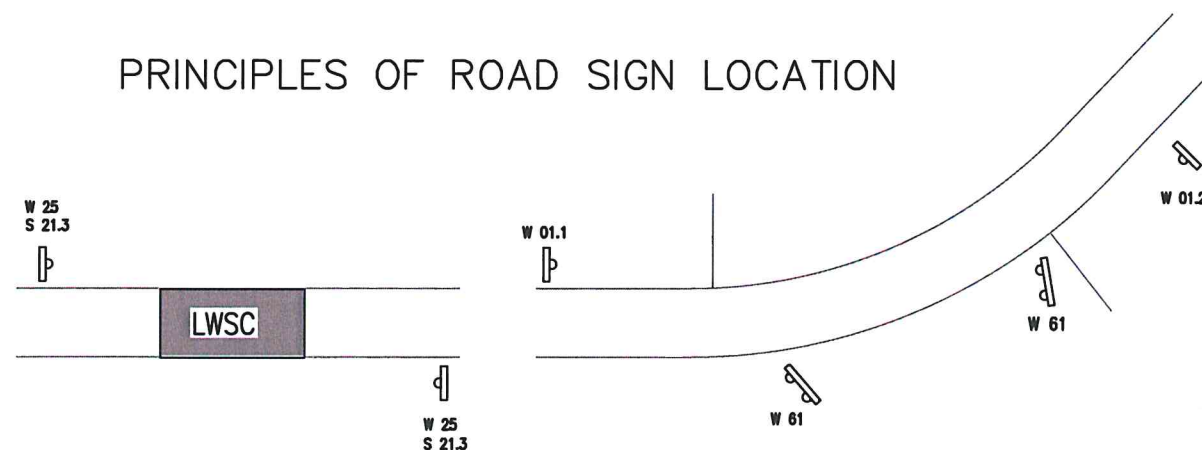


S21.3 - Sign to be placed 0.5 Km from the turn

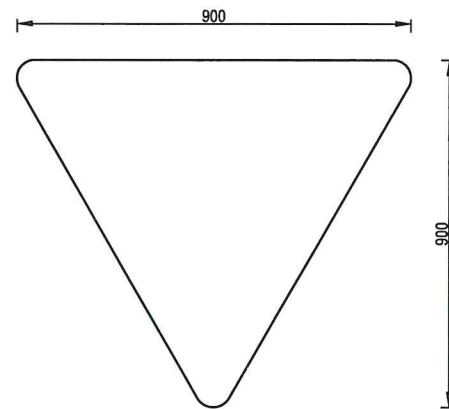
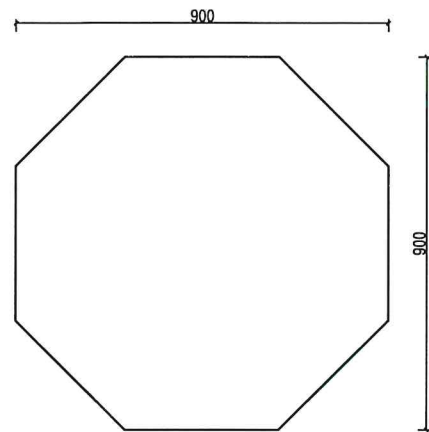
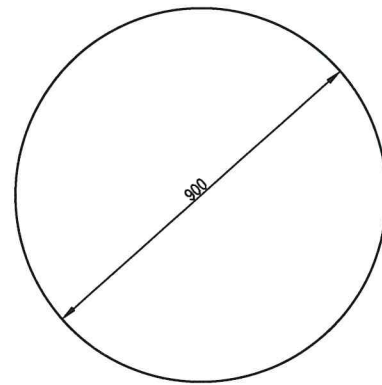
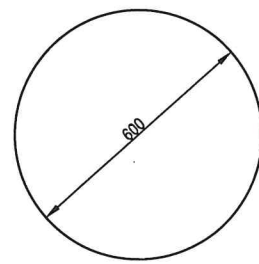
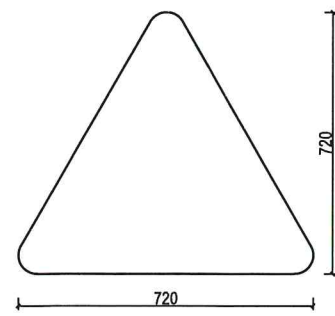
INFORMATION SIGNS



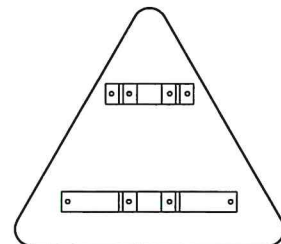
PRINCIPLES OF ROAD SIGN LOCATION



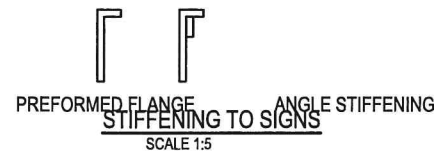
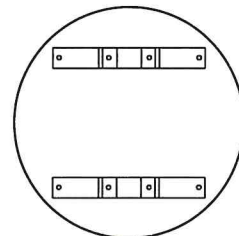
CONSULTANT:		FUNDER:		CLIENT:		PROJECT NAME:		DESIGNED BY:						ENGINEER'S SEAL					
MBW CONSULTING Plot 107 Kira Road, Kamukoya, P.O.Box 8493, Kampala-Uganda Tel: +256 (0)393 740800 / 0701 740800 Email: mbw@mbw.co.ug USAID FROM THE AMERICAN PEOPLE UWA Conserving for Generations Uganda Wildlife Authority @ugandawildlifeauthority PO Box 3530, Kampala, Uganda Tel +256-41-355114, 355111, 355118		USAID FROM THE AMERICAN PEOPLE UWA Conserving for Generations Uganda Wildlife Authority @ugandawildlifeauthority PO Box 3530, Kampala, Uganda Tel +256-41-355114, 355111, 355118		USAID / Uganda Architect & Engineering Design and Construction Management Consulting Services		SRO													
				ACTIVITY NAME: Infrastructure for Biodiversity Conservation in Kidepo Valley NP		SRO													
				DRAWING DESCRIPTION: Low Water Stream Crossings and Approach Roads Standard Roads Signs		BK													
						APPROVED BY: WF				REV. No.		DATE		DESCRIPTION OF REVISION		BY			
</																			



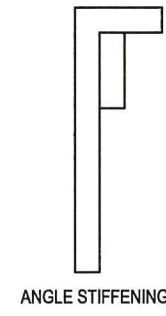
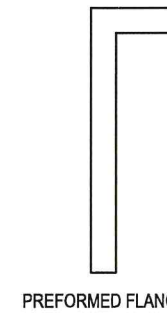
SIGN DIMENSIONS
SCALE 1:10



TYPICAL FIXING DETAILS
SCALE 1:5



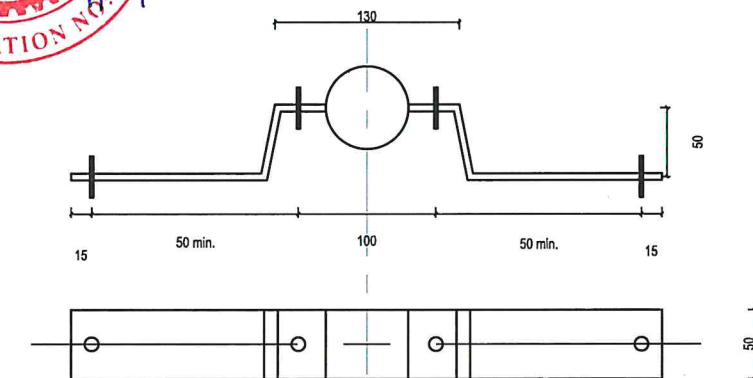
PREFORMED FLANGE
STIFFENING TO SIGNS
SCALE 1:5



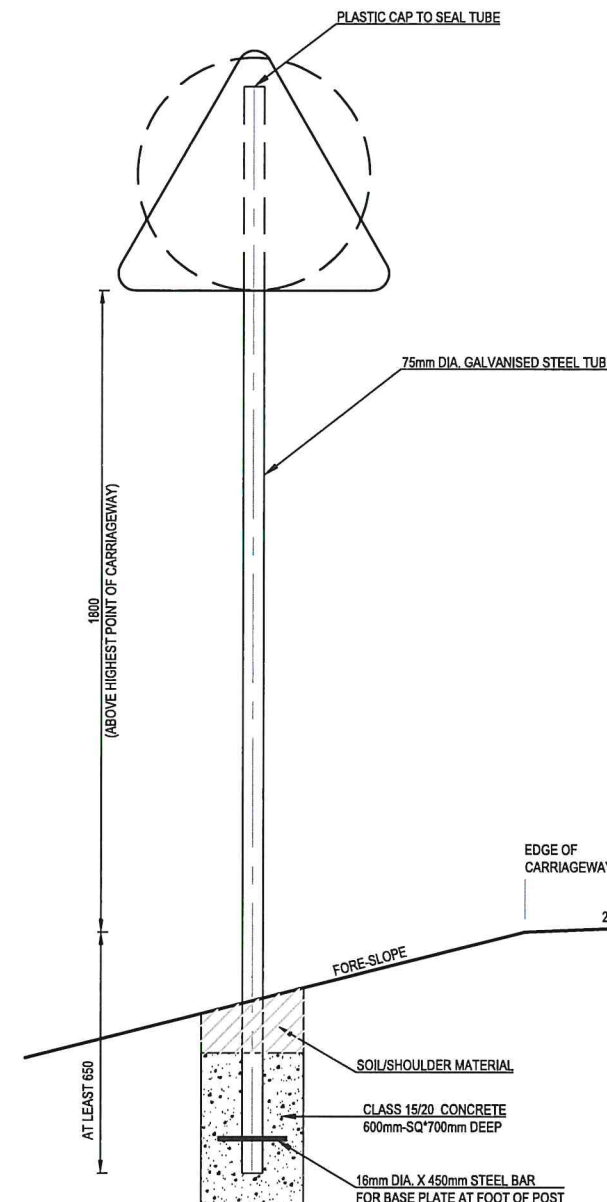
PREFORMED FLANGE

ANGLE STIFFENING

STIFFENING TO SIGNS
SCALE 1:5



FIXING BRACKET DETAIL
SCALE 1:2.5



SIGN PLACEMENT
SCALE 1:10

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL ROAD SIGNS ARE 3mm ALUMINIUM PLATES WITH REFLECTIVE MATERIALS.
3. PLASTIC WASHERS TO BE PLACED BETWEEN ALUMINIUM SIGNS AND STEEL BRACKETS.
4. ALL SIGN SUPPORTS AND FITTINGS TO BE GALVANISED MILD STEEL.
5. THE ENDS OF BOLTS TO BE HAMMERED OR SPOT WELDED.
6. ALL WHITE, RED, BLUE AND YELLOW PARTS ON SIGNS TO BE MADE OF RETRO-REFLECTIVE MATERIAL.
7. THE WIDTHS OF SIGN MARKINGS TO BE AS FOLLOWS;
 - RED BORDERS TO STANDARD SIGNS - 75mm
 - RED STRIPES ON COUNT DOWN SIGNS - 75mm
 - RED BORDER TO PRIORITY TRIANGLE SIGNS - 100mm
 - RED BORDER TO PROHIBITORY SIGNS - 50mm
 - RED BORDERS TO CRUCIFORM LEVEL "X" - 60mm
 - WHITE BORDER TO PRIORITY (OCTAGON) - 50mm
 - YELLOW STRIPES ON HAZARD SIGNS - 100mm.
 - BLACK STRIPES ON HAZARD SIGNS - 200mm.

CONSULTANT:



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355118

PROJECT NAME:

USAID / Uganda Architect & Engineering Design and Construction
Management Consulting Services

ACTIVITY NAME:

Infrastructure for Biodiversity Conservation in Kidepo Valley NP

DRAWING DESCRIPTION:

Low Water Stream Crossings and Approach Roads
Road Sign Mounting Details

DESIGNED BY:

SRO

DRAWN BY:

SRO

CHECKED BY:

BK

APPROVED BY:

WF

REV. No	DATE	DESCRIPTION OF REVISION	BY

ENGINEER'S SEAL

SCALE:

AS NOTED

REF FILE:

STATUS:

Tender

DATE:

JUN. 2020

PAPER:

A3

DRAWING NUMBER:

908-01-DWS-C-80-005

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