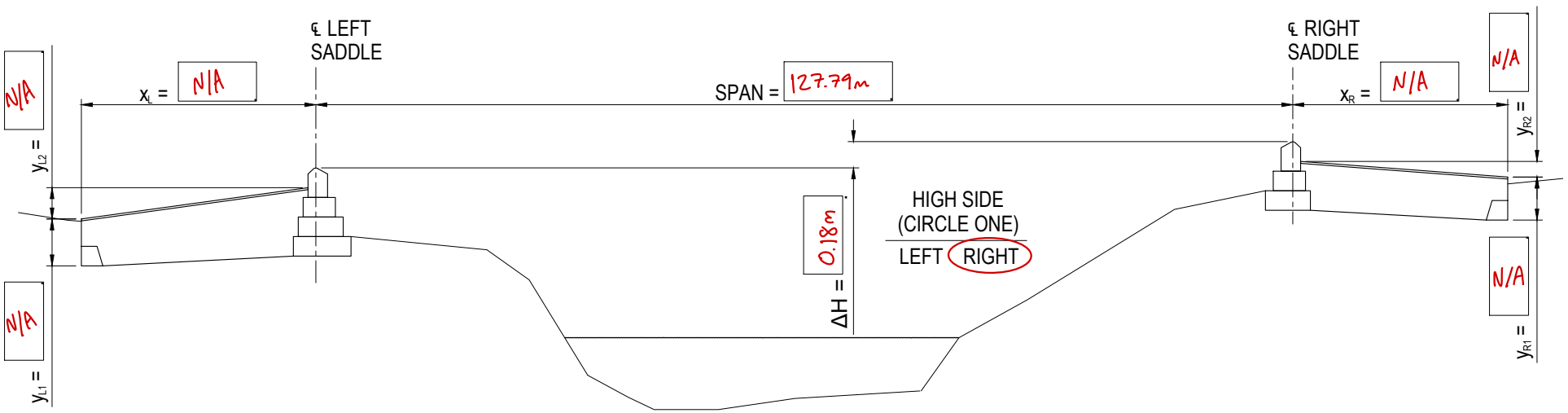
ASBUILT 08/09/2025 Nemy

SOME SURVEYING MEASUREMENTS NOT TAKEN WHILE STUDENT TEAM WAS ON-SITE



ELEVATION

LEGEND:

SPAN	=	HORIZONTAL DISTANCE FROM CENTERLINE OF SADDLE (L) TO CENTERLINE OF SADDLE (R)
ΔH	=	VERTICAL DISTANCE FROM TOP OF TOWER (L) TO TOP OF TOWER (R)
x_L	=	HORIZONTAL DISTANCE FROM CENTERLINE OF SADDLE (L) TO BACK OF ABUTMENT/ANCHOR (L)
y_{L1}	=	VERTICAL DISTANCE FROM TOP OF END OF RAMP (L) TO BOTTOM OF ANCHOR (L)
y_{L2}	=	VERTICAL DISTANCE FROM TOWER WALKWAY (L) TO TOP OF END OF RAMP (L)
x_R	=	HORIZONTAL DISTANCE FROM CENTERLINE OF SADDLE (R) TO BACK OF ABUTMENT/ANCHOR (R)
y_{R1}	=	VERTICAL DISTANCE FROM TOP OF END OF RAMP (R) TO BOTTOM OF ANCHOR (R)
y_{R2}	=	VERTICAL DISTANCE FROM TOWER WALKWAY (R) TO TOP OF END OF RAMP (R)

f VALUE CALCULATION

		HOIST	DEAD LOAD
SPAN		127.79m	127.79m
SAG PERCENTAGE (FROM DRAWINGS)	X	3.97%	4.55%
h	=	5.07m	5.81m
$f_{LOW} = \frac{(4 * h - \Delta H)^2}{16 * h}$	=	4.99m	5.73m
ACTUAL f_{LOW} (SURVEYED)	=	N/A	5.38 m

EIA

Produced by:
Bridges to Prosperity
1031 33rd Street, Suite 170
Denver, CO 80205
Revision : July 2019

SUSPENDED BRIDGE
AS-BUILT SURVEY

DRAWING NUMBER

ASBUILT 08/09/2025 Nenny

NYAKUZA SUSPENDED BRIDGE

GPS COORDINATES	27°07'41.46"S, 31°28'35.62"E
COUNTRY	ESWATINI
REGION	SHISELWENI
INKHUNDLA	HOSEA
COMMUNITY	EMANYONYANENI, NSIZATJE
SPAN	127.84 METERS

GENERAL NOTES:

BRIDGE CONSTRUCTION SHALL BE EXECUTED BY THE MEANS AND METHODS STATED IN THE ENGINEERS IN ACTION, 2024 BRIDGE BINDER VOLUME 3.

.

CONCRETE:
PORTLAND CEMENT (ASTM C150, TYPE I OR TYPE II) SHALL BE USED. CEMENT MUST BE USED WITHIN 60 DAYS OF PURCHASE.
WATER SHALL BE CLEAN, CLEAR, AND FREE OF HARMFUL MATERIAL.
COARSE AGGREGATE SHALL BE COMPRISED OF GRAVEL (CRUSHED LIMESTONE, GRANITE, OR GRAVEL), NO GREATER THAN 2.5 cm IN DIAMETER. MATERIAL SHALL BE CLEAN AND FREE OF DEBRIS.
FINE AGGREGATE SHALL BE CLEAN, DRY SAND GRADED WITH A 4mm SIEVE BEFORE MIXING WITH CEMENT.

REINFORCEMENT:
ALL REINFORCEMENT SHALL BE MINIMUM GRADE 280 (GRADE 40) WITH A YIELD STRENGTH OF 275 MPa (40 ksi).
RIBBED STEEL SHALL BE USED FOR ALL REINFORCING BARS INCLUDING SUSPENDERS.
ALL REINFORCEMENT SHALL BE SUPPORTED BY CONCRETE BLOCKS OR STEEL CHAIRS TO AVOID CONTACT WITH GROUND OR FORMS.

MASONRY:
BLOCKS SHALL BE FREE OF CRACKS AND CHIPS. THERE SHALL BE NO DEFORMATIONS. USED BLOCK IS NOT PERMITTED.
MASONRY UNITS SHALL BE WET BEFORE APPLYING MORTAR.
MAINTAIN A CONSISTENT JOINT THICKNESS OF 15mm+/- 5mm. JOINTS BETWEEN BLOCKS SHALL BE COMPLETELY FILLED.
STAGGER BLOCKS IN RUNNING BOND PATTERN.

CABLE:
CABLE IN PERMANENT CONTACT WITH THE GROUND SHALL BE COVERED WITH PLASTIC PIPE AND FILLED WITH GROUT OR COATED WITH TAR.
CLAMPS SHALL BE DROP FORGED AND NOT MALLEABLE.

TIMBER:
TIMBER SHALL BE FREE OF KNOTS, HOLES, AND SPLITS.
WOOD SCREWS AND NAILS SHALL BE GALVANIZED.

DESIGN DATA:

ENGINEERS IN ACTION, 2024 BRIDGE BINDER VOLUME 2.

DESIGN LOADS:

DEAD LOAD	=	0.795	kN/m^2
$LIVE\ LOAD_{PRIMARY}$	=	3.27	kN/m^2
$LIVE\ LOAD_{SECONDARY}$	=	4.27	kN/m^2
WIND LOAD	=	0.43	kN/m

MATERIAL PROPERTIES:

CONCRETE	f'c	=	15	MPa	(2200 psi)
REINFORCING	F_y	=	275	MPa	(40 ksi)
TIMBER	F_b	=	3.96	MPa	(574 psi)
TIMBER	F_v	=	1.44	MPa	(210 psi)
SOIL	q_a	=	144	kPa	(3000 psf)
FRICTION ANGLE	Ø	=	30	degrees	
CABLE	Pn	=	604	kN	(136 kips)
CROSSBEAM STEEL	F_y	=	355	MPa	(50 ksi)

UNIT WEIGHTS:

STEEL	=	7850	kg/m^3 (490 lb/ft^3)
CONCRETE	=	2400	kg/m^3 (150 lb/ft^3)
TIMBER	=	900	kg/m^3 (56 lb/ft^3)
BROKEN ROCK	=	2000	kg/m^3 (125 lb/ft^3)
MASONRY	=	2100	kg/m^3 (131 lb/ft^3)
SOIL	=	1800	kg/m^3 (112 lb/ft^3)

FACTOR OF SAFETY FOR SLIDING AND UPLIFT = 1.5
FACTOR OF SAFETY FOR CABLE CAPACITY = 3.0

DECK SHALL CLEAR FREEBOARD ENVELOPE WITH A MINIMUM FREEBOARD OF 2.5 METERS.

PROVIDE 7 DROP FORGED CABLE CLAMPS SPACED AT 16 cm OC.
MAX TORQUE TO 360 ft-lb. PER HANDRAIL CABLE AT EACH ANCHOR.
PROVIDE 7 DROP FORGED CABLE CLAMPS SPACED AT 16 cm OC.
MAX TORQUE TO 360 ft-lb. FOR THE WALKWAY CABLE AT EACH ANCHOR.

INDEX:

EIA

REV.	DESCRIPTION	DATE	ISSUED BY
1	ISSUED FOR REVIEW	30-01-2025	MAS
2	ISSUED FOR RC2		MAS

COUNTRY: ESWATINI
REGION: SHISELWENI
INKHUNDLA: HOSEA

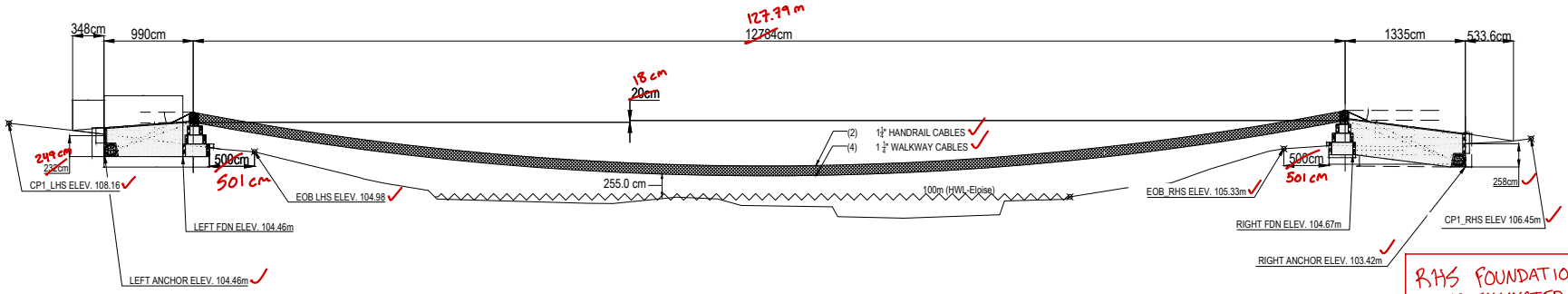
PROJECT: NYAKUZA
PROGRAM MANAGER: ANA JOVANOVIC

ENGINEERING RECORD
DATE: 14/01/2025
DRAWN BY: MAS
CHECKED BY: XXX
APPROVED BY: XXX
REVIEWED BY: XXX

NYAKUZA SUSPENDED BRIDGE TITLE

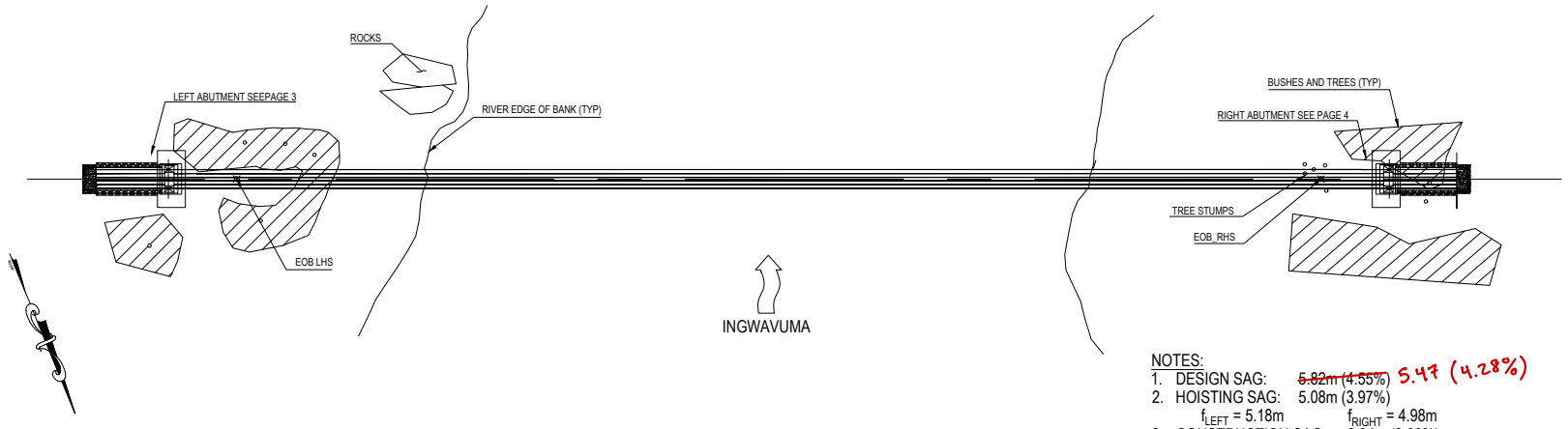
PROJECT NUMBER	DRAWING NUMBER
BSZ-BP117	1

ASBUILT 08/09/2025 Newy



RHS FOUNDATION OVER-EXCAVATED & FILLED WITH 50cm COMPACTED COARSE AGGREGATE

ELEVATION



PLAN

NOTES:
1. DESIGN SAG: ~~5.82m (4.55%)~~ 5.47 (4.28%)
2. HOISTING SAG: 5.08m (3.97%)
   f_{LEFT} = 5.18m f_{RIGHT} = 4.98m
3. CONSTRUCTION SAG: 3.84m (3.00%)
   f_{LEFT} = 3.94m f_{RIGHT} = 3.73m
4. LIVE LOAD SAG: 7.40m (5.79%)
5. SURVEY INFORMATION PROVIDED BY SIBO ET AL. ON 25/3/2025.
6. LANDMARKS INCLUDED IN PLAN VIEW ARE FOR INFORMATION ONLY, ARE NOT DRAWN TO SCALE, AND IN APPROXIMATE LOCATIONS.

EIA | KINGDOM OF ESWATINI MICROPROJECTS Ministry of Economic Planning & Development

REV.	DESCRIPTION	DATE	ISSUED BY
1	ISSUED FOR REVIEW	30-01-2025	MAS
2	ISSUED FOR RC2	3-8-2025	MAS

COUNTRY: ESWATINI
REGION: SHISELWENI
INKHUNDLA: HOISEA

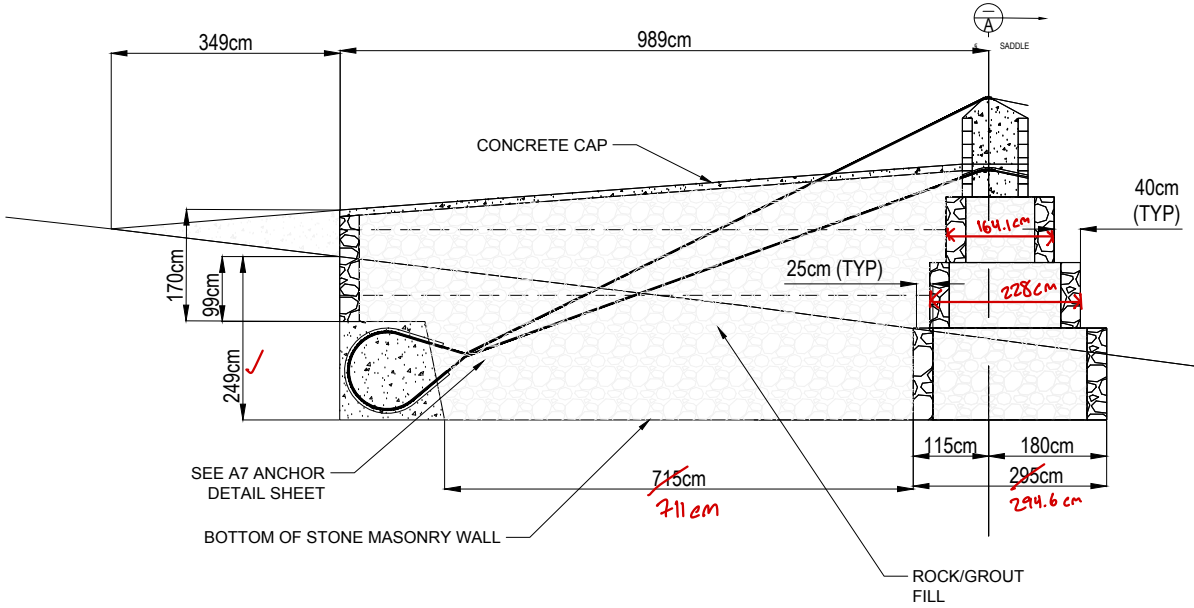
PROJECT: NYAKUZA
PROGRAM MANAGER: ANA JOVANOVIC

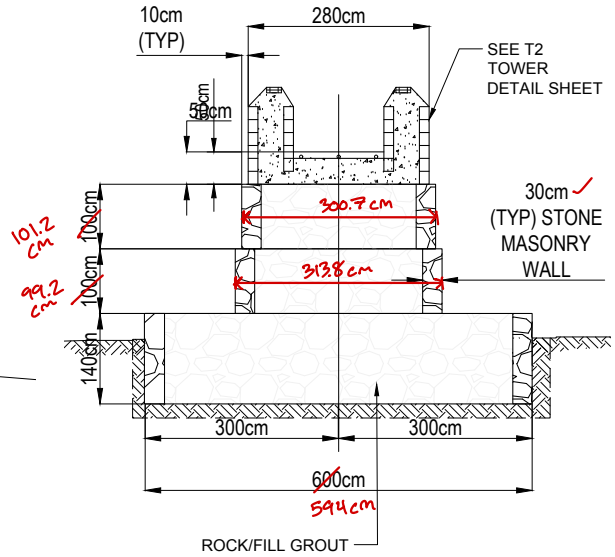
ENGINEERING RECORD	
DATE: 3/8/2025	
DRAWN BY: MAS	
CHECKED BY: EB	
APPROVED BY: XXX	
REVIEWED BY: XXX	

NYAKUZA SUSPENDED BRIDGE LAYOUT

PROJECT NUMBER	DRAWING NUMBER
BSZ-BP117	2

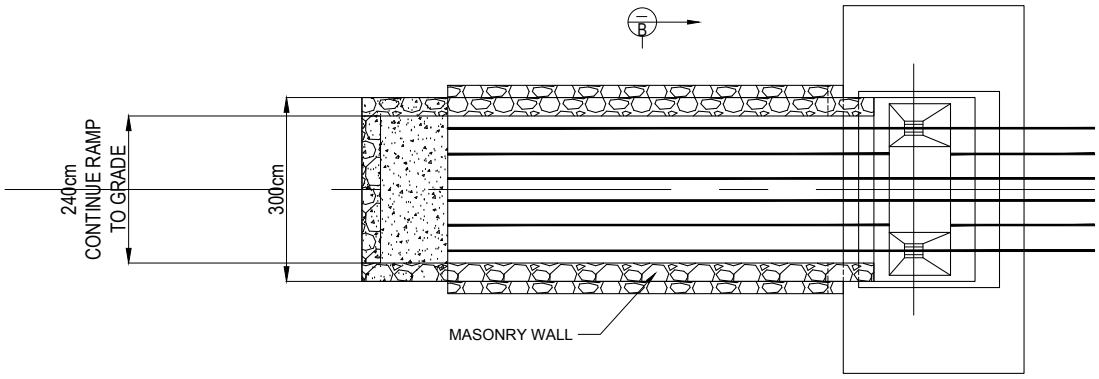
ASBUILT 08/09/2025 Nenny



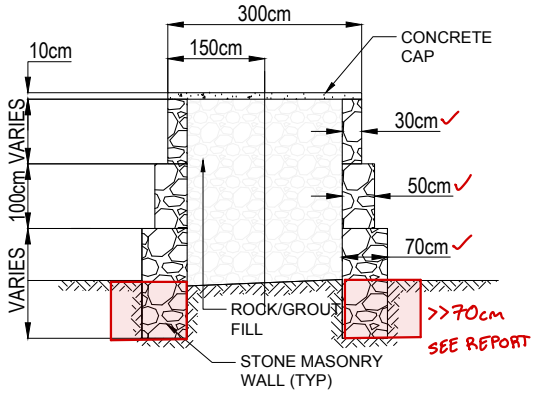


SECTION A

ELEVATION



PLAN



SECTION B

EIA

KINGDOM OF ESWATINI
MICROPROJECTS
Ministry of Economic Planning & Development

REV.	DESCRIPTION	DATE	ISSUED BY
1	ISSUED FOR RC2	3-08-2025	MAS

COUNTRY: ESWATINI
REGION: SHISELWENI
INKHUNDLA: HOISEA

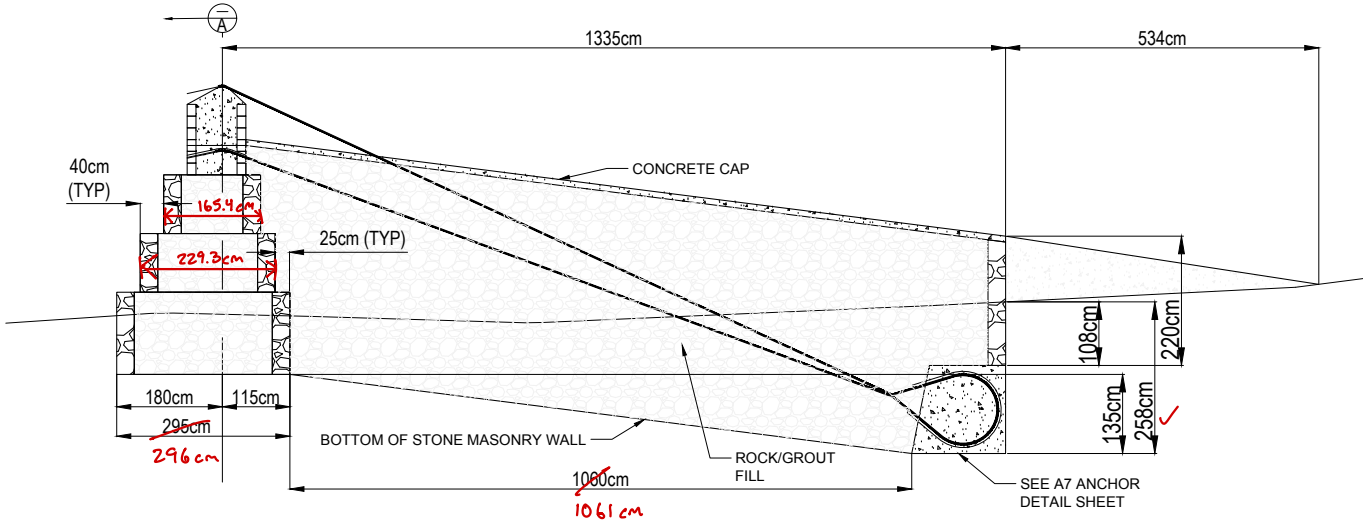
PROJECT: NYAKUZA
PROGRAM MANAGER: ANA JOVANOVIC

ENGINEERING RECORD
DATE: 3/08/2025
DRAWN BY: MAS
CHECKED BY: EB
APPROVED BY: XXX
REVIEWED BY: XXX

NYAKUZA SUSPENDED BRIDGE LEFT ABUTMENT

PROJECT NUMBER	DRAWING NUMBER
BSZ-BP117	3

ASBUILT 08/09/2025 Nenry



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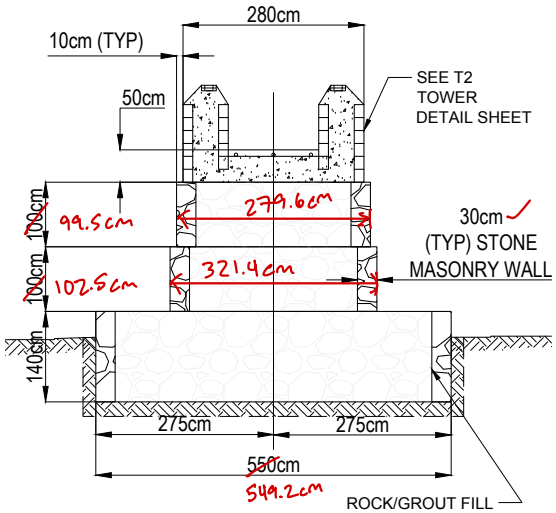
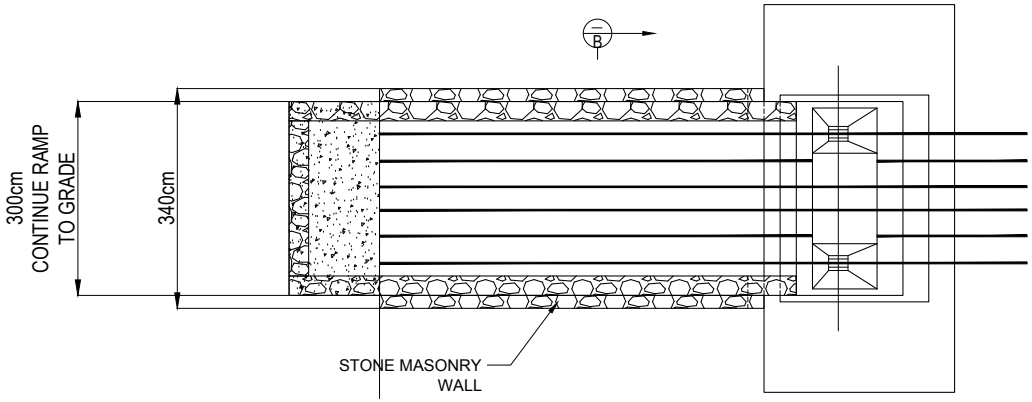
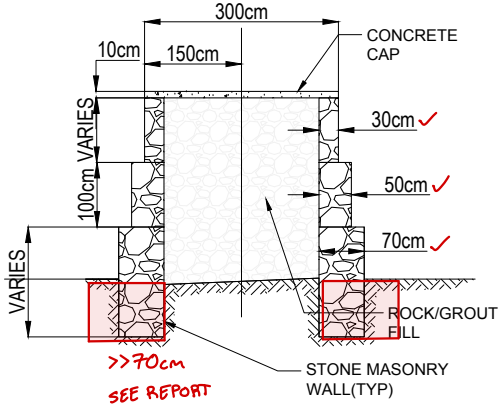


SECTION A



PLAN



SECTION B

REV.	DESCRIPTION	DATE	ISSUED BY
1	ISSUED FOR RC2	3-08-2025	MAS

DISCLAIMER:
THESE DRAWINGS ARE PRODUCED FOR THE STATED BRIDGE PROJECT. ANY CONDITIONS THAT REQUIRE CHANGES FROM THE PLANS MUST BE COMMUNICATED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. ANYONE USING THIS PLAN SHOULD VERIFY THE CALCULATIONS ACCORDING TO SITE SPECIFIC CONDITIONS AND LOCAL STANDARDS.

USE OF THESE PLANS FOR ANY OTHER PURPOSE SHALL NOT BE ATTRIBUTABLE TO ENGINEERS IN ACTION AND USERS AGREE TO HOLD ENGINEERS IN ACTION HARMLESS TO ANY AND ALL LIABILITY.

COUNTRY: ESWATINI
REGION: SHISELWENI
INKHUNDLA: HOISEA

PROJECT: NYAKUZA
PROGRAM MANAGER: ANA JOVANOVIC

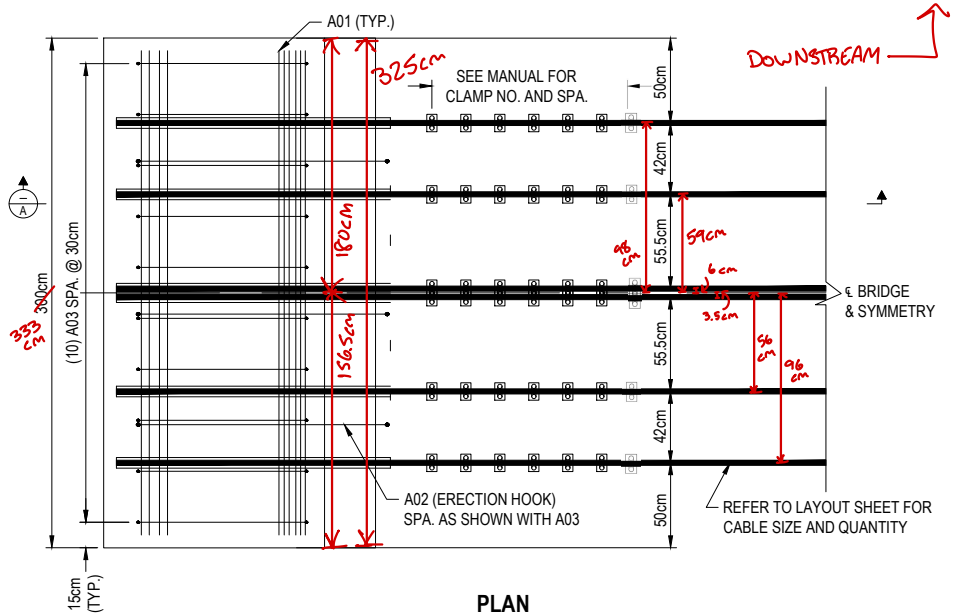
ENGINEERING RECORD
DATE: 3/08/2025
DRAWN BY: MAS
CHECKED BY: EB
APPROVED BY: XXX
REVIEWED BY: XXX

NYAKUZA SUSPENDED BRIDGE RIGHT ABUTMENT

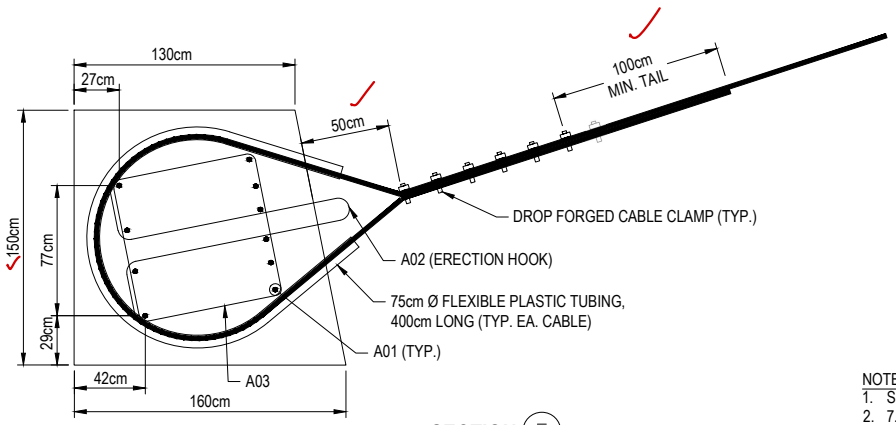
PROJECT NUMBER	DRAWING NUMBER
BSZ-BP117	4

ASBUILT 08/09/2025 Remy

LEFT ANCHOR



PLAN



SECTION (A)

BILL OF MATERIALS

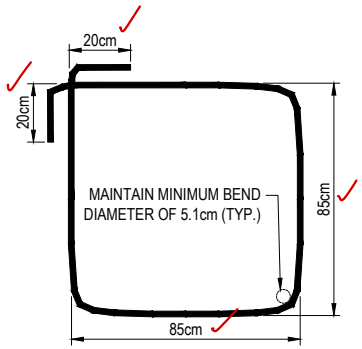
REINFORCING BARS (PER ANCHOR)

NAME	BAR SIZE (mm)	LENGTH (cm)	QUANTITY	LENGTH (m)
A01	19 (#6)	285	10	28.5
A02	16 (#5)	326	3	9.8
A03	13 (#4)	365	10	36.5

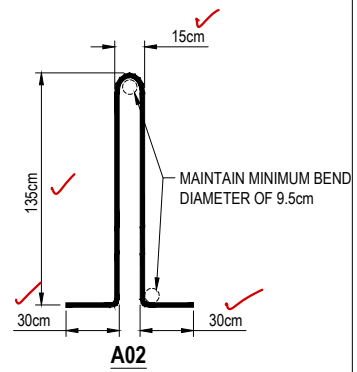
ITEM	QUANTITY
CONCRETE	6.53m^3
FLEXIBLE PLASTIC TUBING x 400cm	VARIES

CLAMP SPACING AND TORQUE REQUIREMENTS

CABLE SIZE (in.)	CABLE SIZE (mm)	NUMBER OF CLAMPS	SPACING (in.)	SPACING (cm)	TORQUE REQUIREMENTS (ft-lb)
1	25	5	6	14	225
1-1/8	29	6	6	15	225
1-1/4	32	7	6	16	360
1-3/8	35	7	6	16	360



A03



A02

NOTES:
1. SEE ENGINEERS IN ACTION BRIDGE BINDER FOR CONSTRUCTION GUIDELINES.
2. 7.5cm CLEAR COVER SHALL BE PROVIDED FOR ALL REINFORCING AND PLASTIC TUBING.
3. ERECTION HOOK AND TUBING OPTIONAL FOR ANCHOR DETERMINED TO BE NON-ADJUSTABLE OR FIXED.
4. REINFORCING BAR DIMENSIONS ARE TAKEN TO OUTSIDE.OF BAR.
5. IF USING GREATER THAN 4 WALKWAY CABLES, FOLLOW CABLE GEOMETRY ON TOWER DETAILS.

ENGINEERS IN ACTION

REV.	DESCRIPTION	DATE	ISSUED BY
0	ISSUED FOR CONSTRUCTION	04/11/2022	BKK
1	UPDATED BEND DIM.	10/7/2023	BKK
2	ADDED CLAMP TABLE	13/11/2023	BKK

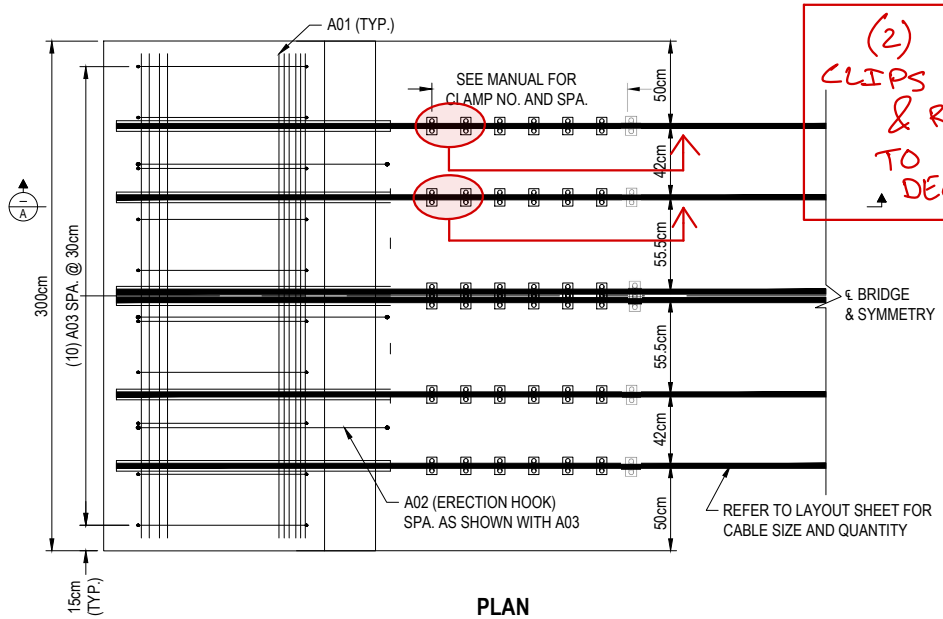
ENGINEERING RECORD	
DATE:	13/11/2023
DRAWN BY:	BKK
CHECKED BY:	
APPROVED BY:	
REVIEWED BY:	

ANCHOR DETAILS
100-120 METER SPAN
4 WALKWAY CABLES

PROJECT NUMBER	DRAWING NUMBER
	A7

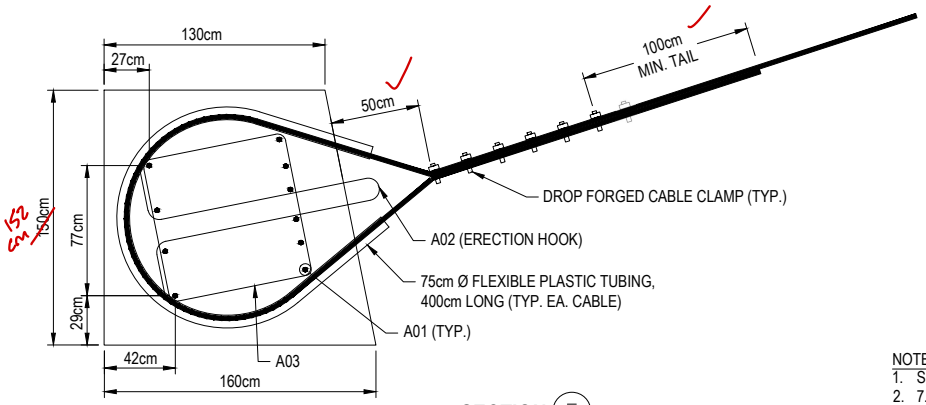
ASBUILT 08/09/2025 Remy

RIGHT ANCHOR



(2) CROSBY CLIPS REMOVED & REPLACED TO ADDRESS DECK TILT

PLAN



SECTION (A)

BILL OF MATERIALS

REINFORCING BARS (PER ANCHOR)

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A03	13 (#4)	365	10	36.5

ITEM	QUANTITY
CONCRETE	6.53m^3
FLEXIBLE PLASTIC TUBING x 400cm	VARIES

CLAMP SPACING AND TORQUE REQUIREMENTS

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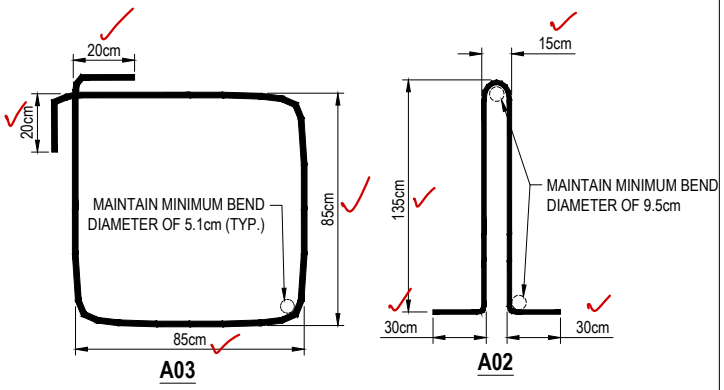
1-1/8	29	6	6	15	225
1-1/4	32	7	6	16	360
1-3/8	35	7	6	16	360



NOTES:
1. SEE ENGINEERS IN ACTION BRIDGE BINDER FOR CONSTRUCTION GUIDELINES.
2. 7.5cm CLEAR COVER SHALL BE PROVIDED FOR ALL REINFORCING AND PLASTIC TUBING.
3. ERECTION HOOK AND TUBING OPTIONAL FOR ANCHOR DETERMINED TO BE NON-ADJUSTABLE OR FIXED.
4. REINFORCING BAR DIMENSIONS ARE TAKEN TO OUTSIDE.OF BAR.
5. IF USING GREATER THAN 4 WALKWAY CABLES, FOLLOW CABLE GEOMETRY ON TOWER DETAILS.

ENGINEERS IN ACTION

REV.	DESCRIPTION	DATE	ISSUED BY
0	ISSUED FOR CONSTRUCTION	04/11/2022	BKK
1	UPDATED BEND DIM.	10/7/2023	BKK
2	ADDED CLAMP TABLE	13/11/2023	BKK

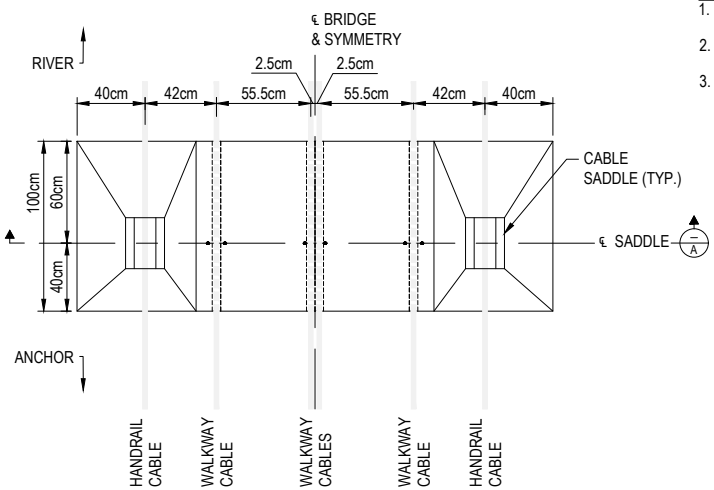
ENGINEERING RECORD	
DATE:	13/11/2023
DRAWN BY:	BKK
CHECKED BY:	
APPROVED BY:	
REVIEWED BY:	

ANCHOR DETAILS
100-120 METER SPAN
4 WALKWAY CABLES

PROJECT NUMBER	DRAWING NUMBER
	A7

ASBUILT 08/09/2025 Jenny

LEFT TOWER



PLAN

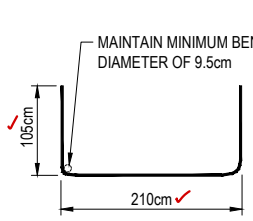
NOTES:
1. SEE ENGINEERS IN ACTION BRIDGE BINDER FOR CONSTRUCTION GUIDELINES.
2. 7.5cm CLEAR COVER SHALL BE PROVIDED FOR ALL REINFORCING AND PLASTIC TUBING.
3. CONSTRUCTION STAGES:
   STAGE 1 - BASE LEVEL MASONRY PERIMETER FILLED WITH CONCRETE.
   STAGE 2 - CONSTRUCT TOWERS IN LIFTS OF 20-40cm.
   STAGE 3 - CAST WALKWAY HUMP AND STAB T03 CABLE GUIDE BARS.
   STAGE 4 - CAST WALKWAY TOPPING SLAB OVER SLEEVED CABLES.

BILL OF MATERIALS

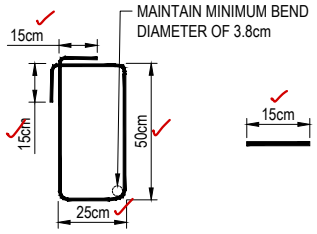
REINFORCING BARS (PER TOWER)

NAME	BAR SIZE (mm)	LENGTH (cm)	QUANTITY	LENGTH (m)
T01	16 (#5)	413	4	16.5
T02	10 (#3)	170	8	13.6
T03	10 (#3)	15	6	0.9

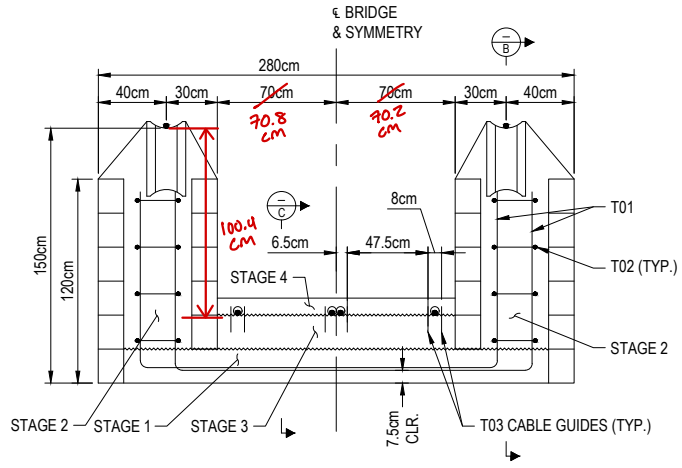
ITEM	QUANTITY
CONCRETE	1.08m^3
FLEXIBLE PLASTIC TUBING x 110cm	4



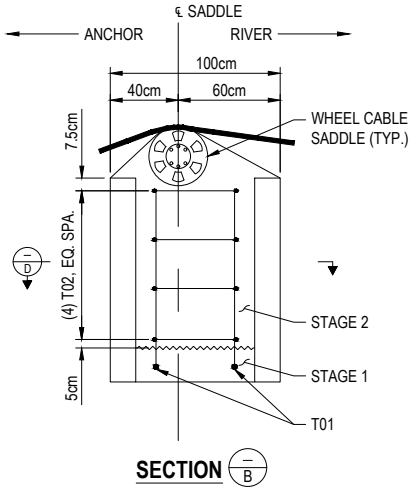
T01



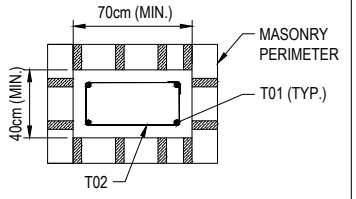
T02 **T03**



SECTION A



SECTION B



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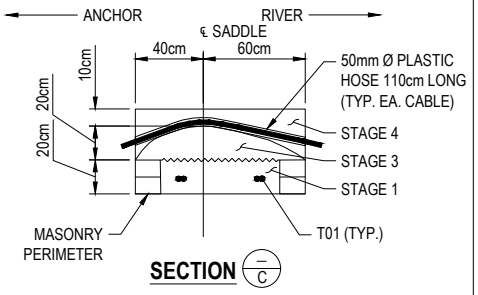


SECTION C

ENGINEERS IN ACTION

REV.	DESCRIPTION	DATE	ISSUED BY
0	ISSUED FOR CONSTRUCTION	04/11/2022	BKK
1	UPDATED BEND DIM.	10/7/2023	BKK

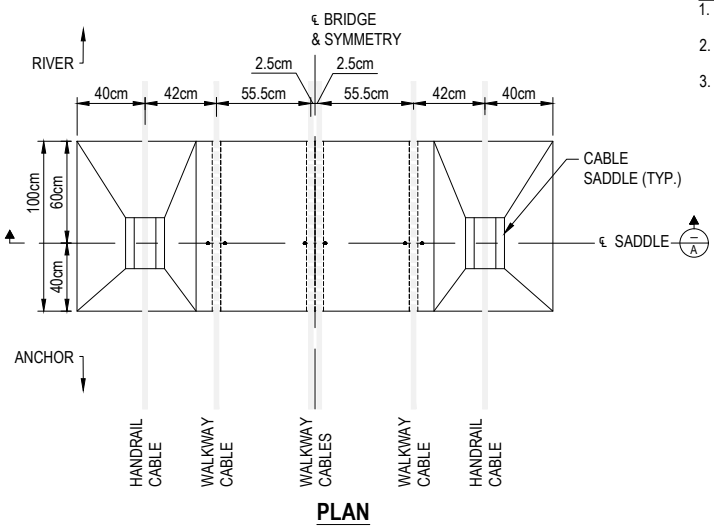
ENGINEERING RECORD	
DATE: 10/7/2023	
DRAWN BY: BKK	
CHECKED BY:	
APPROVED BY:	
REVIEWED BY:	

TOWER DETAILS
FOUR WALKWAY CABLES

DRAWING NUMBER
T2

ASBUILT 08/09/2025 Newy

RIGHT TOWER



PLAN

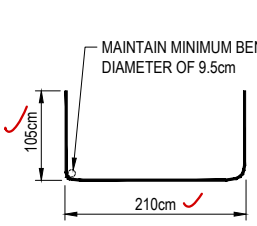
NOTES:
1. SEE ENGINEERS IN ACTION BRIDGE BINDER FOR CONSTRUCTION GUIDELINES.
2. 7.5cm CLEAR COVER SHALL BE PROVIDED FOR ALL REINFORCING AND PLASTIC TUBING.
3. CONSTRUCTION STAGES:
   STAGE 1 - BASE LEVEL MASONRY PERIMETER FILLED WITH CONCRETE.
   STAGE 2 - CONSTRUCT TOWERS IN LIFTS OF 20-40cm.
   STAGE 3 - CAST WALKWAY HUMP AND STAB T03 CABLE GUIDE BARS.
   STAGE 4 - CAST WALKWAY TOPPING SLAB OVER SLEEVED CABLES.

BILL OF MATERIALS

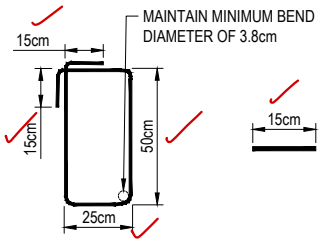
REINFORCING BARS (PER TOWER)

NAME	BAR SIZE (mm)	LENGTH (cm)	QUANTITY	LENGTH (m)
T01	16 (#5)	413	4	16.5
T02	10 (#3)	170	8	13.6
T03	10 (#3)	15	6	0.9

ITEM	QUANTITY
CONCRETE	1.08m^3
FLEXIBLE PLASTIC TUBING x 110cm	4

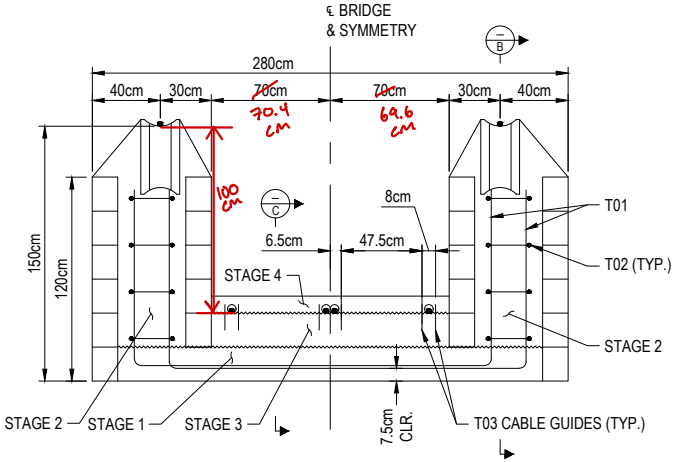


T01

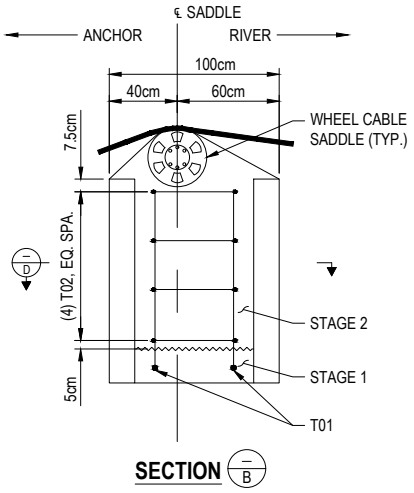


T02

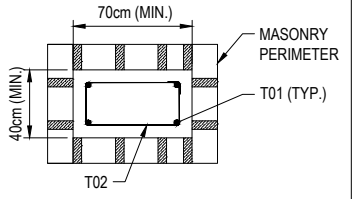
T03



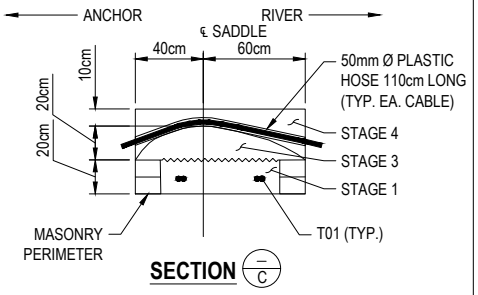
SECTION A



SECTION B



SECTION D



SECTION C

ENGINEERS IN ACTION

REV.	DESCRIPTION	DATE	ISSUED BY
0	ISSUED FOR CONSTRUCTION	04/11/2022	BKK
1	UPDATED BEND DIM.	10/7/2023	BKK

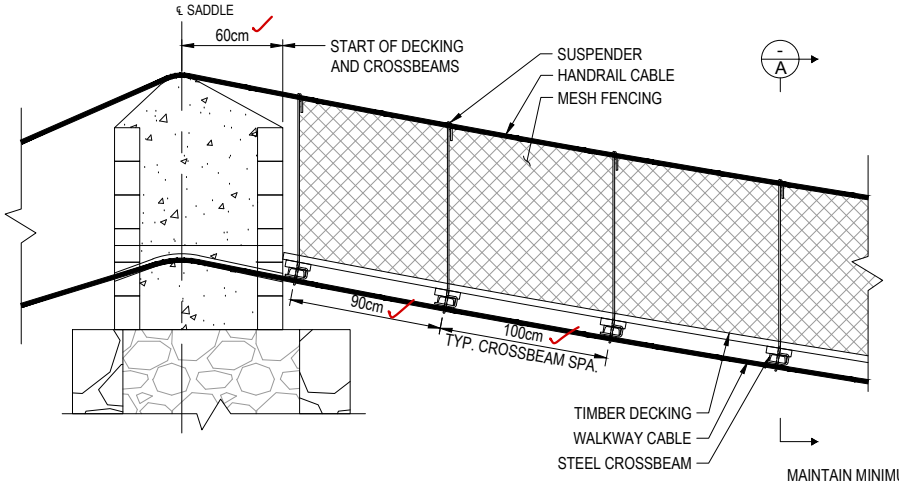
ENGINEERING RECORD	
DATE: 10/7/2023	
DRAWN BY: BKK	
CHECKED BY:	
APPROVED BY:	
REVIEWED BY:	

TOWER DETAILS
FOUR WALKWAY CABLES

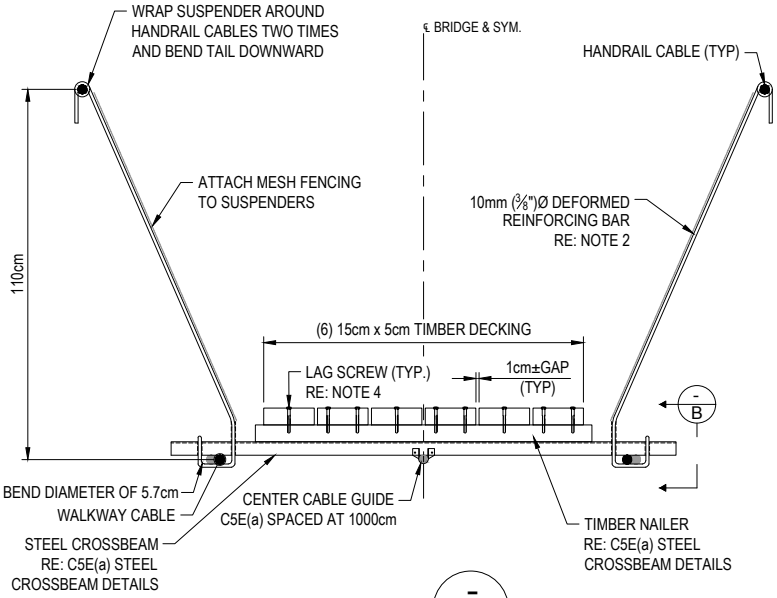
DRAWING NUMBER
T2

ASBUILT 08/09/2025 Nenry

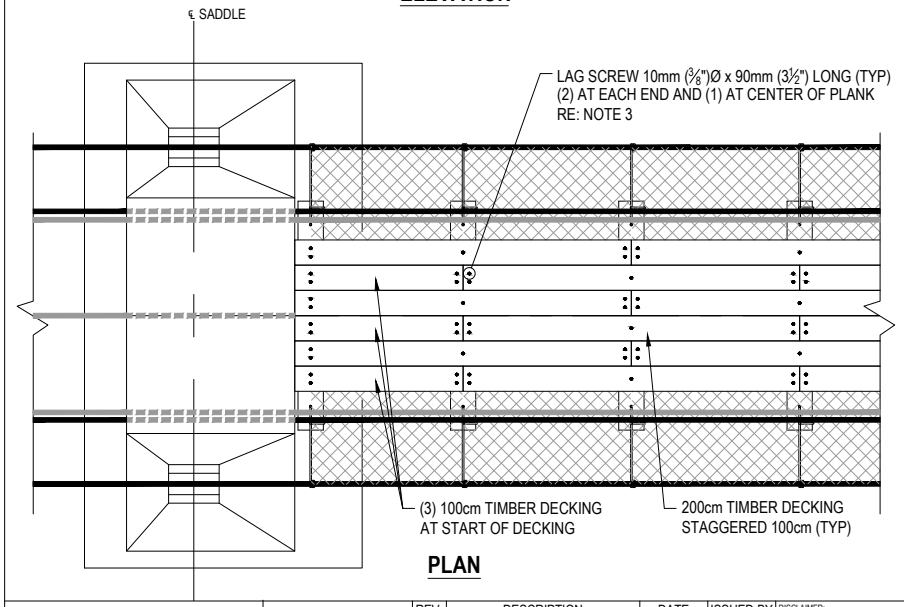
NO CHANGE THIS SHEET



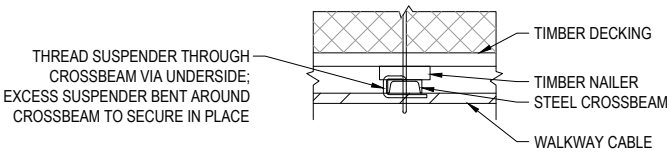
ELEVATION



SECTION - A



PLAN



SECTION - B

NOTES:
1. SEE ENGINEERS IN ACTION BRIDGE BINDER FOR CONSTRUCTION GUIDELINES.
2. CUT REBAR TO 200cm. BEND IN U TO FIT CROSSBEAMAT 40cm SO THAT STRAIGHT LEG IS 160cm
3. USE 8mm (5/16") PILOT HOLE IN NAILER AND 10mm (3/8") PILOT HOLE IN DECKING.
4. LEAVE LAG SCREW HEAD PARTIALLY EXPOSED FOR REPLACEMENT AND MOISTURE ISSUES.

EIA

KINGDOM OF SWAZILAND MICROPROJECTS

REV.	DESCRIPTION	DATE	ISSUED BY
0	ISSUED FOR CONSTRUCTION	22/11/2022	KNW
1	ADDED BEND DIM.	9/7/2023	BKK

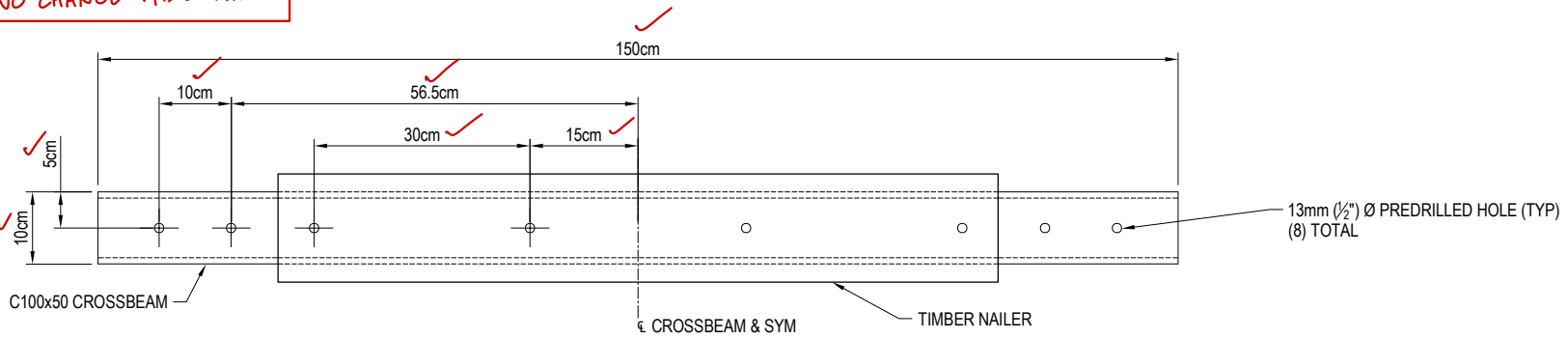
ENGINEERING RECORD	
DATE: 9/7/2023	
DRAWN BY: KNW	
CHECKED BY: KNW	
APPROVED BY: KNW	
REVIEWED BY: KNW	

WALKWAY DETAILS STEEL CROSSBEAMS - ESWATINI PROJECTS - 6 BOARDS W/ NAILER

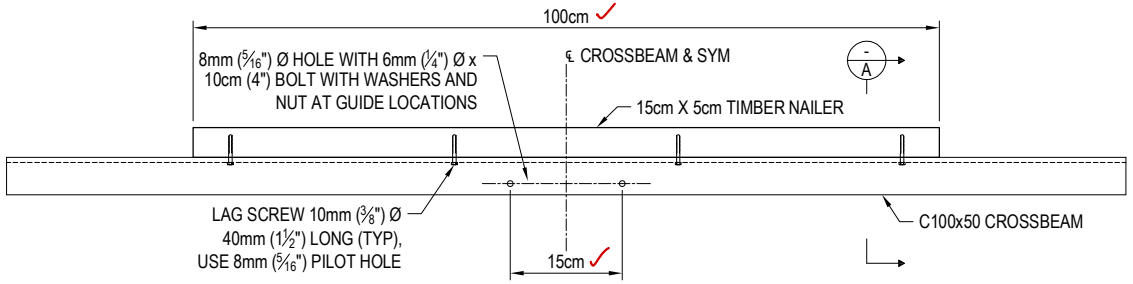
PROJECT NUMBER	DRAWING NUMBER
	W3E

ASBUILT 08/09/2025 Kenny

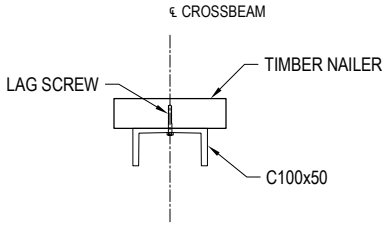
NO CHANGE THIS SHEET



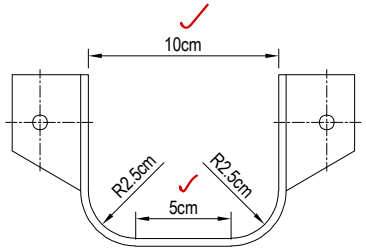
PLAN



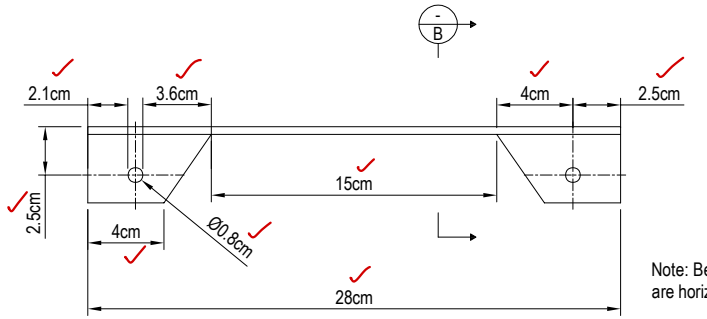
ELEVATION



SECTION -A

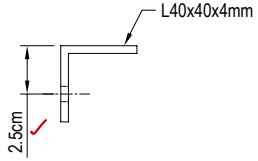


CENTER CABLE GUIDE



PRE-BEND GUIDE DETAILS

Note: Bent and Pre-Bent Guide are horizontally symmetrical.



SECTION -B

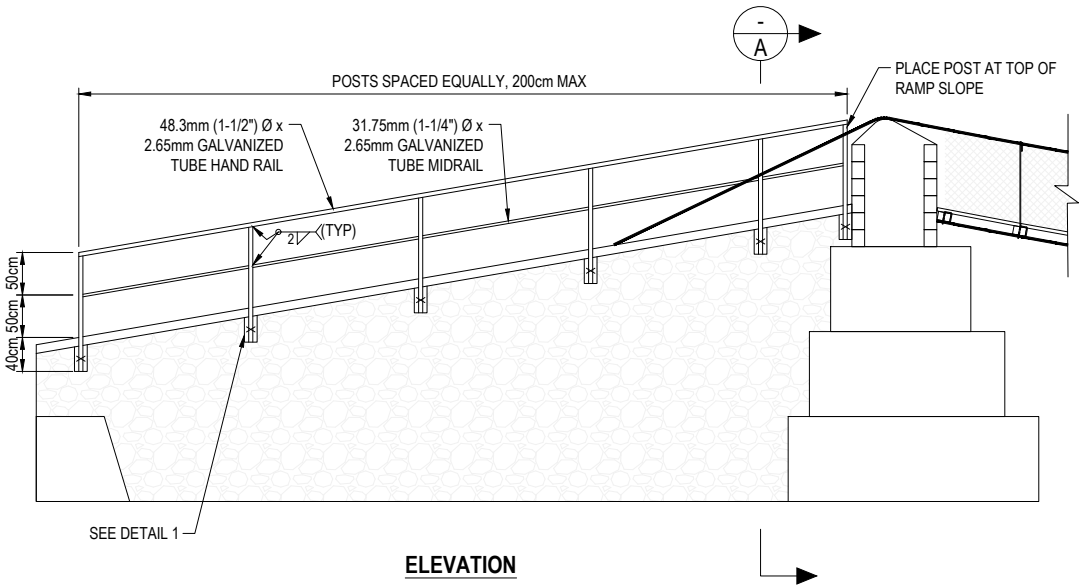
REV.	DESCRIPTION	DATE	ISSUED BY
0	ISSUED FOR CONSTRUCTION	22/11/2022	KNW
1	LAG SCREW PATTERN UPDATED	01/11/2023	BKK
2	TWO CENTER CABLES UPDATE	13/06/2025	RCS

ENGINEERING RECORD
DATE: 22/11/2022
DRAWN BY: KNW
CHECKED BY: KNW
APPROVED BY: KNW
REVIEWED BY: KNW

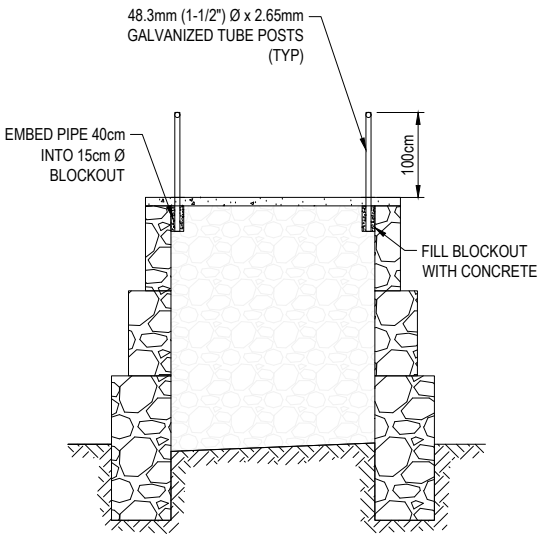
STEEL CROSSBEAM DETAILS C100x50 - ESWATINI PROJECTS W/ CENTER CABLE GUIDE

PROJECT NUMBER	DRAWING NUMBER
	C5Ea

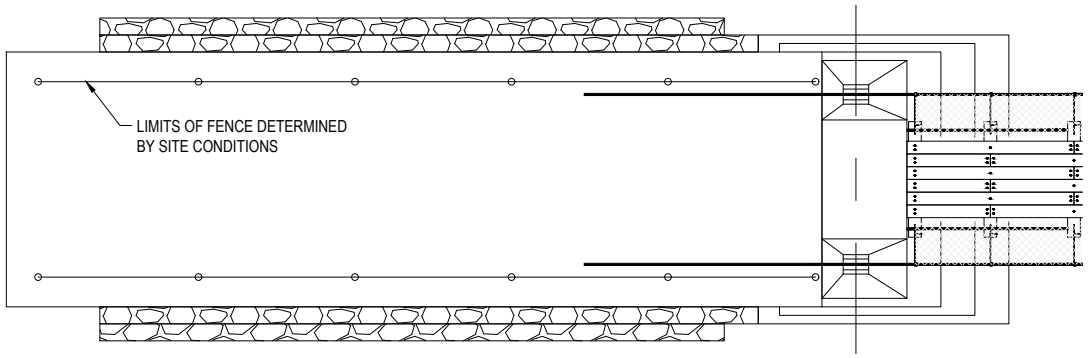
ASBUILT 08/09/2025 Nancy



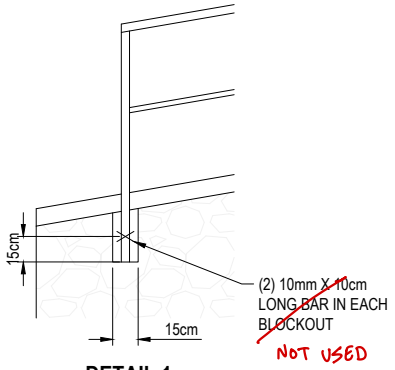
ELEVATION



SECTION A



PLAN



DETAIL 1

NOTES:
1. PROVIDE APPROACH RAMP RAIL SYSTEM WHEN THE DISTANCE FROM GRADE TO THE TOP OF THE RAMP CAP EXCEEDS 1.8m (6ft).
2. APPROACH RAMP RAIL SYSTEM IS NOT REQUIRED WHERE THE VERTICAL DISTANCE IS LESS THAN 1.8m, SUBJECT TO THE PREFERENCE OF COUNTRY MANAGER AND/OR COMMUNITY.
3. WELD THROAT SIZE IS mm.

ENGINEERS IN ACTION

REV.	DESCRIPTION	DATE	ISSUED BY
0	ISSUED FOR CONSTRUCTION	18/10/2022	KNW

ENGINEERING RECORD	
DATE: 28/03/2022	
DRAWN BY: KNW	
CHECKED BY: KNW	
APPROVED BY: KNW	
REVIEWED BY: KNW	

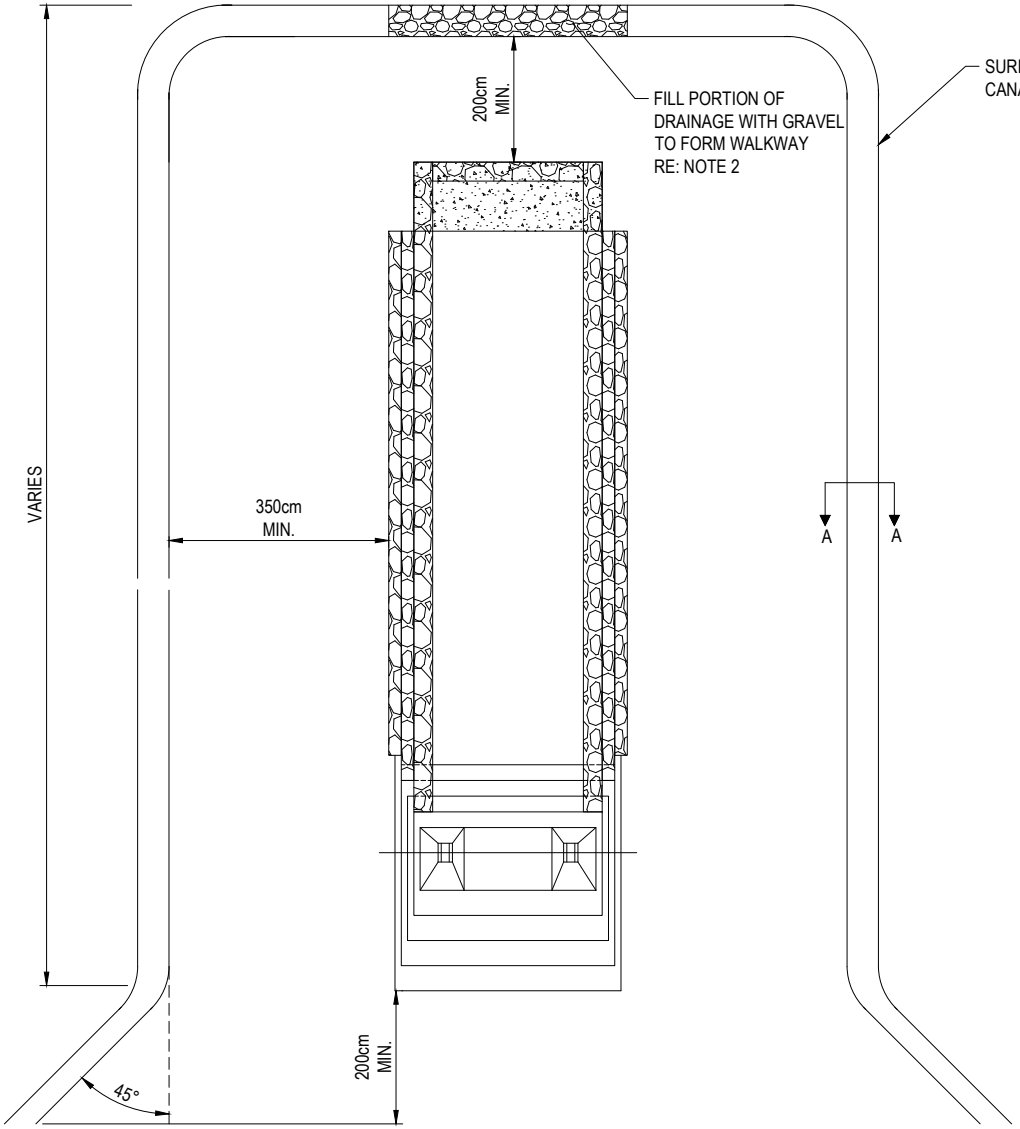
APPROACH RAMP DETAILS WELDED TUBES BOLIVIA PROJECTS

PROJECT NUMBER	DRAWING NUMBER
	F3

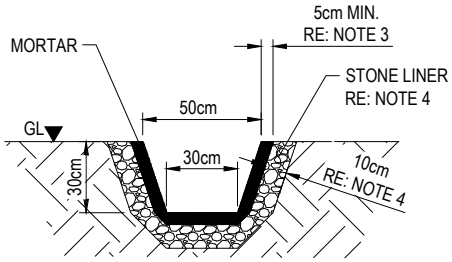
ASBUILT 08/09/2025 Remy

NO CHANGE THIS SHEET

CONSTRUCTED AFTER STUDENT TRAVEL



PLAN



SECTION A-A

NOTES:
1. DRAINAGE CONSTRUCTION SHOULD BE COMPLETED WITH LEFTOVER MATERIALS WHEN POSSIBLE.
2. DO NOT FILL DRAINAGE WITH SOIL.
3. DRAINAGE THICKNESS SHOULD BE A MINIMUM OF 5cm.
4. LINE CHANNEL WITH SMALL STONES APPROXIMATELY 10cm THICK.
5. THIS DETAIL IS FOR PLANNING PURPOSES AND USES STANDARD, MINIMUM DIMENSIONS. FIELD CHANGES ARE ACCEPTABLE TO BETTER FIT SITE TOPOGRAPHY.

ENGINEERS IN ACTION

REV.	DESCRIPTION	DATE	ISSUED BY
0	ISSUED FOR CONSTRUCTION	11/12/2023	BKK

ENGINEERING RECORD	SURFACE DRAINAGE STEEP BACKSLOPES >10°	
DATE: 01/11/2023		
DRAWN BY: BKK		
CHECKED BY: BEM	PROJECT NUMBER	DRAWING NUMBER
APPROVED BY: BEM		D4
REVIEWED BY: BKK		