




CONSTRUCTION OF GANGCHITPO BAILEY BRIDGE ON SILAMBI-NAGOR GC ROAD, LINGMITHANG REGIONAL OFFICE			
DETAIL DESIGN DRAWINGS			
DATE	OCTOBER., 2017	SPAN	CARRIAGE WAY
		<i>DS 80 ft</i>	<i>3.227m</i>

**DRAWING LIST**

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 <div>ROYAL GOVERNMENT OF BHUTAN Ministry of Works &amp; Human settlement Department of Roads, Bridge Division Thimphu, Bhutan</div>	BAILEY TYPE STEEL TRUSS <b>GANGCHITPO BRIDGE</b> [DS 80 FT SPAN & 3.277 m CARRIAGEWAY] On Silambi-Nagor GC Road under Lingmithang Regional Office	SHEET CONTENTS :  <b>DRAWING LIST</b>	REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
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					CHECKED	RINCHEN KHANDU (EE)	SCALE:	NTS
					APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	

# GENERAL NOTES FOR RCC CONSTRUCTION WORK

## A. GENERAL

1. THE NOTES IN THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWING PERTAINING TO THE BRIDGE.
2. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN MILLIMETER (mm) AND ALL LEVELS ARE IN METER (m). DIMENSIONS ARE NOT TO BE SCALED AND ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
3. THE CONTRACTOR SHALL VERIFY ALL CHAINAGES, REDUCED LEVELS, COORDINATES AND DIMENSIONS BEFORE START OF THE WORK. INCASE OF ANY DISCREPANCY, THE MATTER SHALL BE BROUGHT TO NOTICE OF THE ENGINEER.
4. ABUTMENTS OF THE BRIDGE IS DESIGNED AS PER IRC - 21 & IS 456 USING MIDAS CIVIL.
5. LOADING: **CLASS 24R** AS PER IRC.

## B. CONCRETE

UNLESS OTHERWISE SPECIFICALLY MENTIONED IN THE DRAWINGS OR DIRECTED BY THE ENGINEER, CONCRETE GRADE SHALL BE AS PER THE RELATED SECTION OF CONTRACT DOCUMENT PARTLY REPRODUCED AS BELOW:

APPLICATION LOCATION	SPECIFIED COMPRESSIVE STRENGTH IN CUBE (28 DAYS) IN MPa
REINFORCED CONCRETE (RCC) FOOTING SLAB, ABUTMENT & RETURN WALL.	M25
PLAIN CEMENT CONCRETE (PCC) FOR LEVELING.	M10

\*\*\* UNLESS OTHERWISE MENTIONED IN THE SPECIFICATION,  
THE TRIAL MIX DESIGN STRENGTH SHALL BE 31.6 MPa.

## C. REINFORCEMENT

1. ALL REINFORCEMENT SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS (MIN fy 500 MPa).
2. SCHEDULLING OF BAR IS DONE IN ACCORDANCE WITH ISO 4066:2000.
3. MINIMUM LAP LENGTH OF REINFORCEMENT SHALL BE CONFORM TO AASHTO/2007. IF 50% OF REINFORCEMENT IS TO BE SPLICED PROVIDE CLASS B AND FOR 100% SPLICING PROVIDE CLASS C AS SHOWN BELOW:

BAR DIA mm	DEV. LENGTH, mm	SPLICE LENGTH, mm		
		CLASS A	CLASS B	CLASS C
10	220	300	300	374
12	317	317	412	538
16	563	563	732	957
18	713	713	926	1211
20	880	880	1144	1495
22	1064	1064	1384	1809
25	1374	1374	1787	2337
28	1724	1724	2247	2931
32	2252	2252	2927	3828

4. CLEAR CONCRETE COVER TO REINFORCEMENT IS AS FOLLOW.  
UNLESS OTHERWISE SPECIFIED BY ENGINEER,  
THIS SHALL BE FOLLOWED THROUGHOUT THE CONSTRUCTION.

ABUTMENT (ALL SIDES) (UP TO OUTER FACE OF MAIN REINFORCEMENT)	=	75 MM
RETURN WALL (ALL SIDES)	=	75MM




5. SPECIFICALLY MADE COVER BLOCKS OF SAME STRENGTH AS THAT OF CONCRETE AND DIMENSION AS PROVIDED IN DRAWINGS SHALL BE ONLY USED TO OBTAIN THE UNIFORMITY OF CLEAR COVER THROUGH OUT THE CONSTRUCTION.

## D. WATER

WATER TO BE USED IN THE CONCRETING AND CURING SHALL BE PORTABLE WATER.

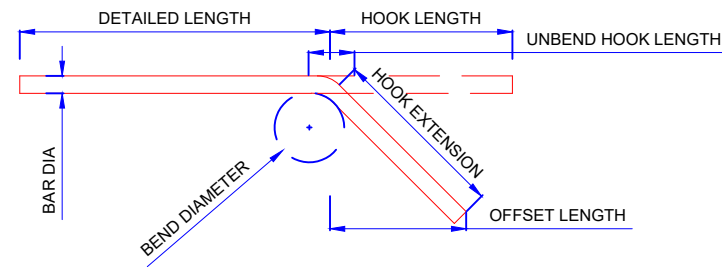
## E. SUPERVISION

CONSTRUCTION WORK MUST BE SUPERVISED BY A COMPETENT SUPERVISION ENGINEER.

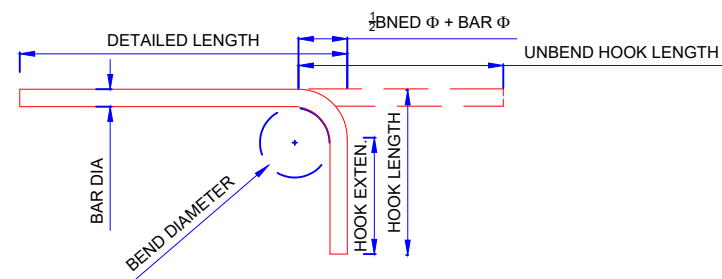
 <div>ROYAL GOVERNMENT OF BHUTAN Ministry of Works &amp; Human settlement Department of Roads, Bridge Division Thimphu, Bhutan</div>	BAILEY TYPE STEEL TRUSS <b>GANGCHITPO BRIDGE</b> [DS 80 FT SPAN & 3.277 m CARRIAGEWAY] On Silambi-Nagor GC Road under Lingmithang Regional Office	SHEET CONTENTS :  <b>GENERAL NOTES</b>	REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
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# REBAR HOOK SPECIFICATION

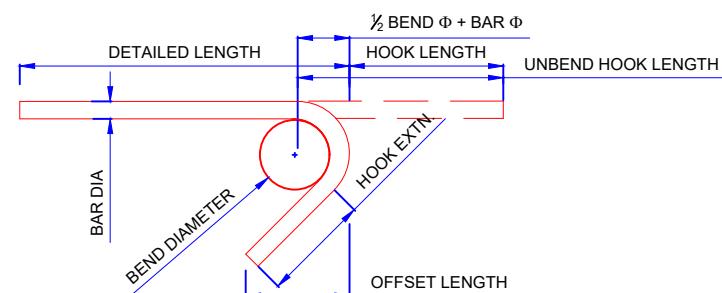
## 45° HOOK



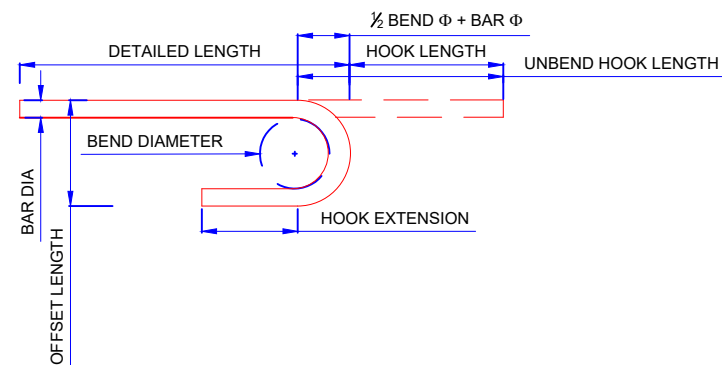
## 90° HOOK



## 135° HOOK



## 180° HOOK



# TABLE 3 : STANDARD RE-BAR PROPERTIES

(UNIT WT. 0.00785 kg / mm<sup>2</sup> / m)

REBAR DESIGNATION	DIA, mm	AREA, mm <sup>2</sup>	UNIT WT., kg/m	REBAR TYPE
T10	10	79	0.617	IS : 1786 GRADE Fe 500
T12	12	113	0.888	IS : 1786 GRADE Fe 500
T16	16	201	1.578	IS : 1786 GRADE Fe 500
T20	20	314	2.466	IS : 1786 GRADE Fe 500
T25	25	491	3.853	IS : 1786 GRADE Fe 500
T28	28	616	4.834	IS : 1786 GRADE Fe 500
T32	32	804	6.313	IS : 1786 GRADE Fe 500

# TABLE 4 : STANDARD HOOK AND BEND REQUIREMENT<sup>1</sup>

(ART. 5.10 AASHTO LRFD 2007)

REBAR DESIGNATION	BENDING DIAMETER		STANDARD HOOK EXTENSION, mm			
			TIE/STIRRUPS		OTHER	
	TIE/STIRRUPS	OTHER	90 <sup>0</sup>	135 <sup>0</sup>	90 <sup>0</sup>	180 <sup>0</sup>
T10	40	60	60	75	120	65
T12	48	72	72	75	144	65
T16	64	96	96	96	192	65
T20	-	120	240	120	240	80
T25	-	150	300	150	300	100
T28	-	168		168	336	112
T32	-	256		192	384	128

<sup>1</sup> ALL REINFORCEMENT SHALL BE COLD BEND

SHAPE CODE AS PER ISO 4066 : 2000

SHAPE CODE	00	11	21	51
SHPAE				
	Total Length : a	Total Length : a+b - 1/2 r-d	Total Length : a+b+c-r-2d	Total Length : 2(a+b)+16d

# NOTES

## A. GENERAL

ALL THE DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.

## B. SHAPE CODE & BAR SHAPE

THE STANDARD SHAPE CODES AND ITS METHOD OF MEASUREMENT HAVE BEEN PREPARED AS PER EUROPEAN STANDARD BS EN ISO 4006 : 2000.

## BAR MARK

BAR MARK  
NOS. OF BAR  
TYPE OF REBAR  
SPACING  
40-01-T20-150-BOTT.  
LOCATION/REMARK  
DIA. OF REBAR

T - HIGH YIELD DEFORMED BAR  
Y - DEFORMED MS BAR  
R - ROUND MS BAR

INDICATES BAR CUT POINT

## LEGEND :

r = BENDING RADIUS AS PER TABLE 4  
d = DIAMETER OF BAR  
a/b/c/d = AS SHOWN



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Ministry of Works & Human settlement  
Department of Roads, Bridge Division  
Thimphu, Bhutan

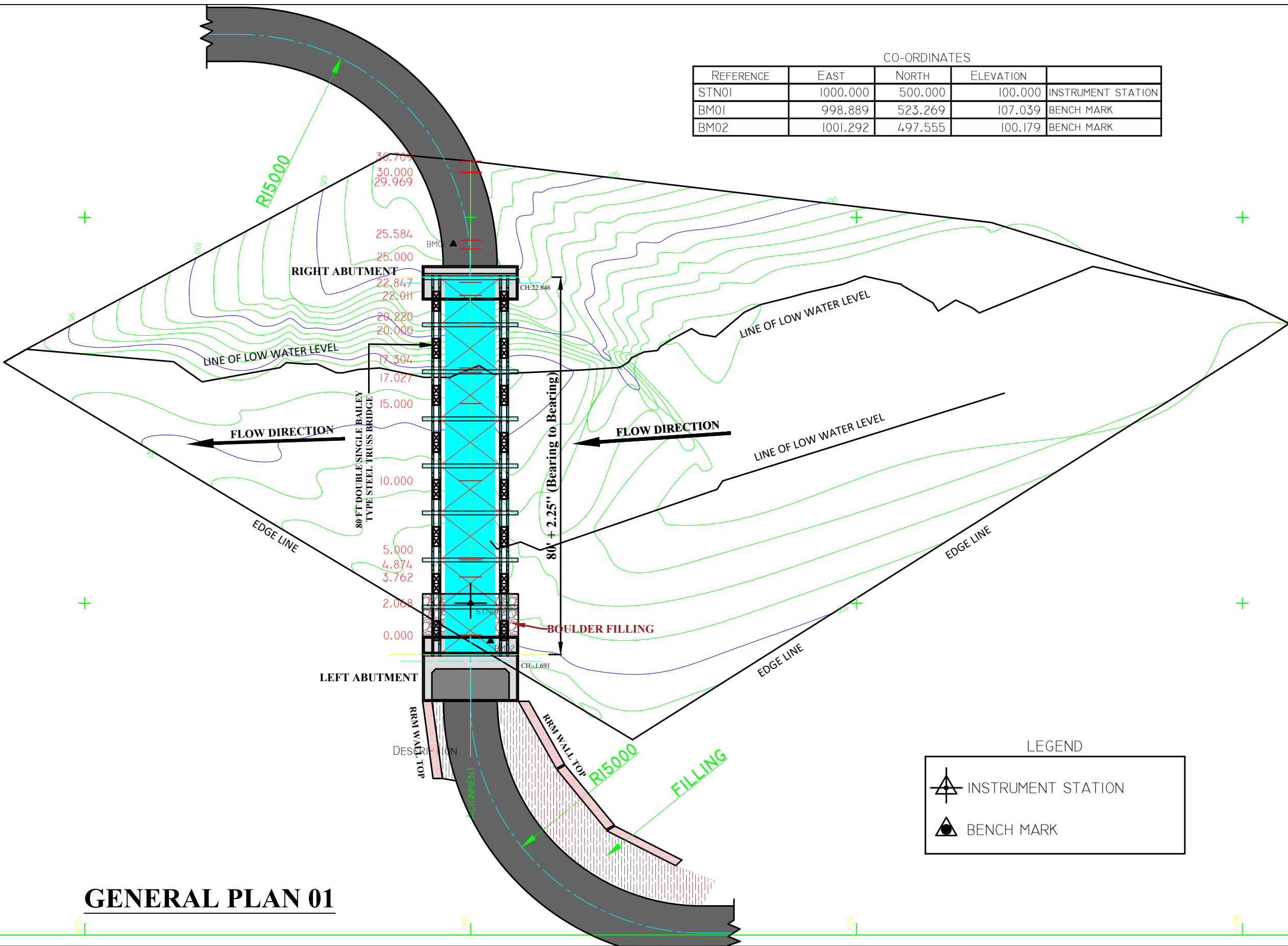
BAILEY TYPE STEEL TRUSS **GANGCHITPO BRIDGE**  
[DS 80 FT SPAN & 3.277 m CARRIAGEWAY]  
On Silambi-Nagor GC Road  
under Lingmithang Regional Office

SHEET CONTENTS :

REBAR CODES &  
SHAPE DETAILS

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		APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	



CO-ORDINATES				
REFERENCE	EAST	NORTH	ELEVATION	
STN01	1000.000	500.000	100.000	INSTRUMENT STATION
BM01	998.889	523.269	107.039	BENCH MARK
BM02	1001.292	497.555	100.179	BENCH MARK

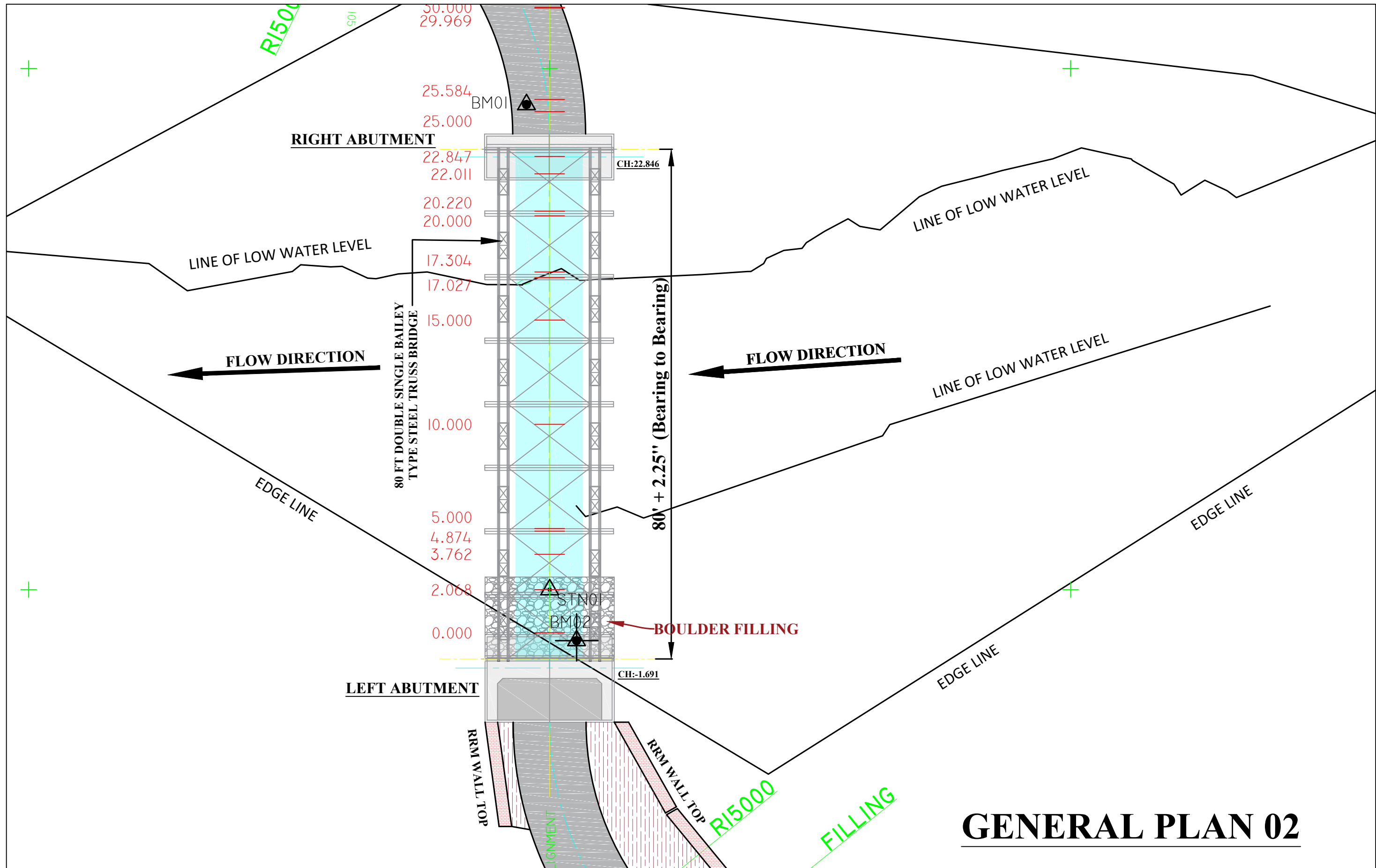


GENERAL PLAN 01

SHEET CONTENTS :

GENERAL PLAN 01

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## GENERAL PLAN 02



ROYAL GOVERNMENT OF BHUTAN  
Ministry of Works & Human settlement  
Department of Roads, Bridge Division  
Thimphu, Bhutan

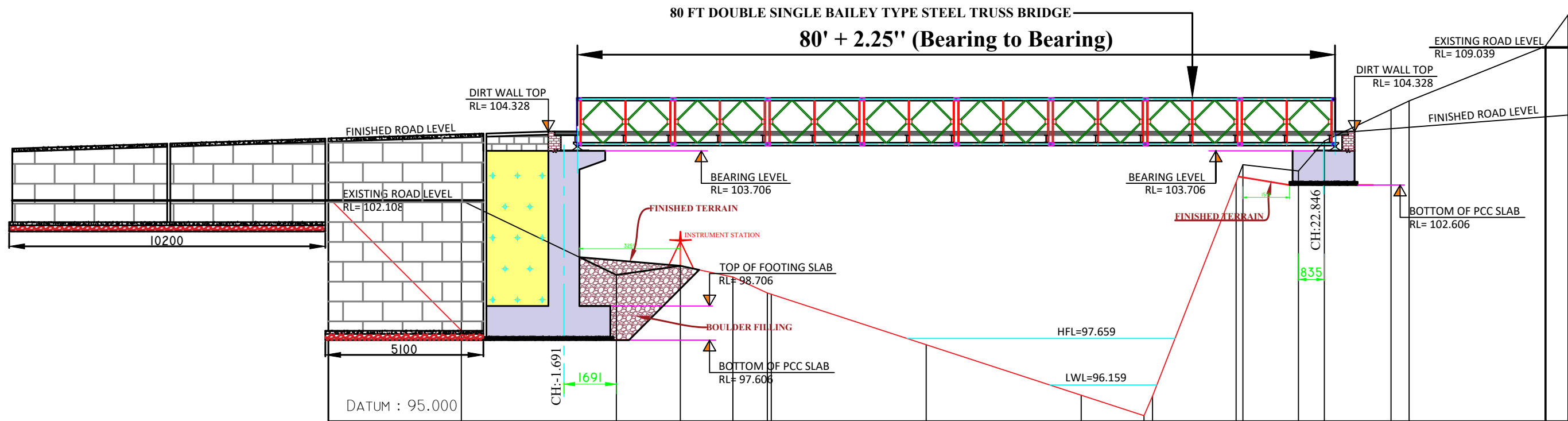
BAILEY TYPE STEEL TRUSS **GANGCHITPO BRIDGE**  
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SHEET CONTENTS :

GENERAL PLAN 02

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		APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	





CHAINAGE	0.000	2.068	3.762	4.874	5.000	10.000	15.000	17.027	17.304	20.000	20.220	22.011	22.847	25.000	25.584	29.969	30.000	30.709
ELEVATION	99.706	100.000	99.639	99.126	99.085	97.458	95.831	95.171	95.803	102.697	103.261	103.059	104.024	105.040	105.315	107.070	107.113	108.083

HORIZONTAL SCALE 1 : 400  
VERTICAL SCALE 1 : 400

## GENERAL ELEVATION 01



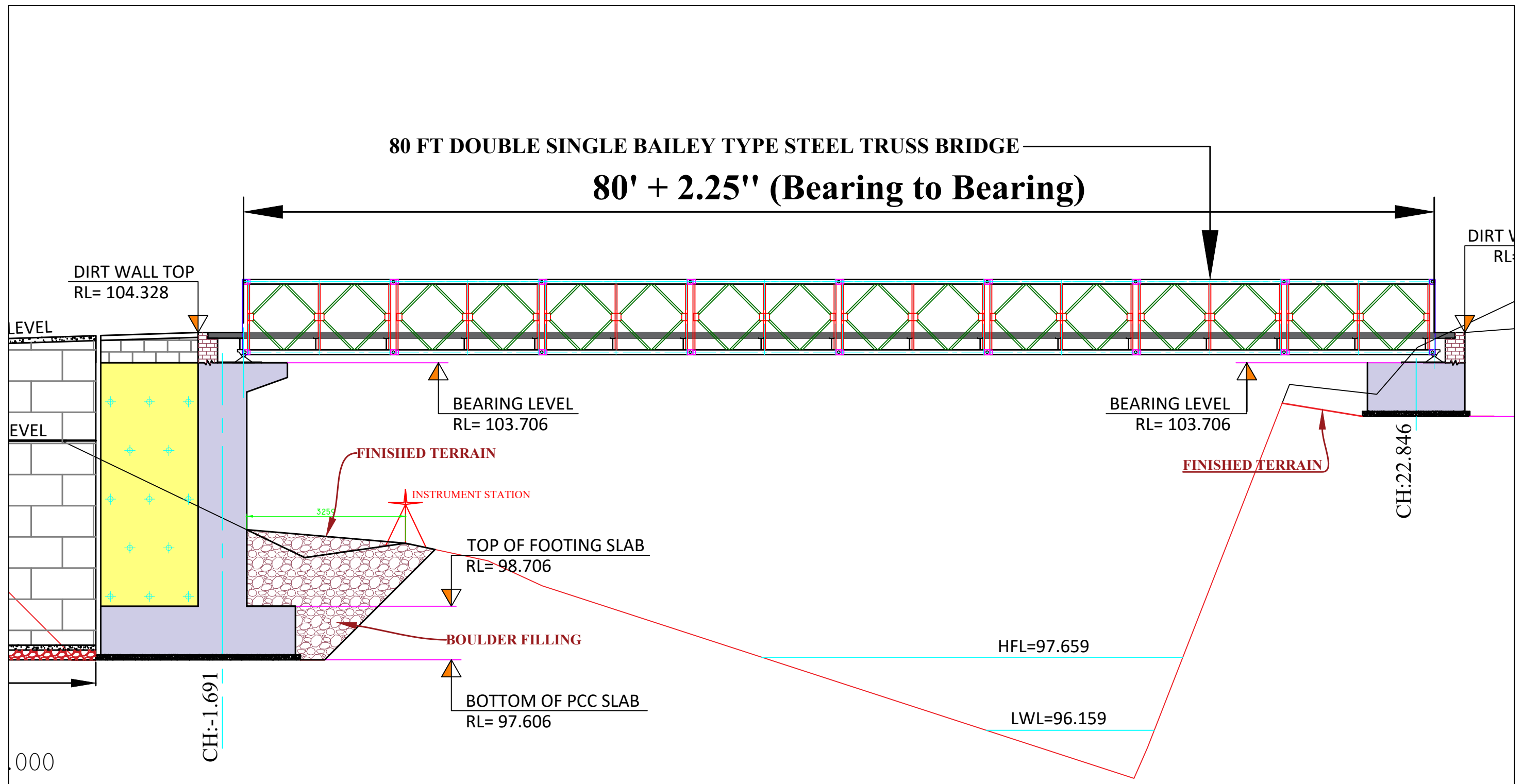
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## GENERAL ELEVATION 02



ROYAL GOVERNMENT OF BHUTAN  
Ministry of Works & Human settlement  
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Thimphu, Bhutan

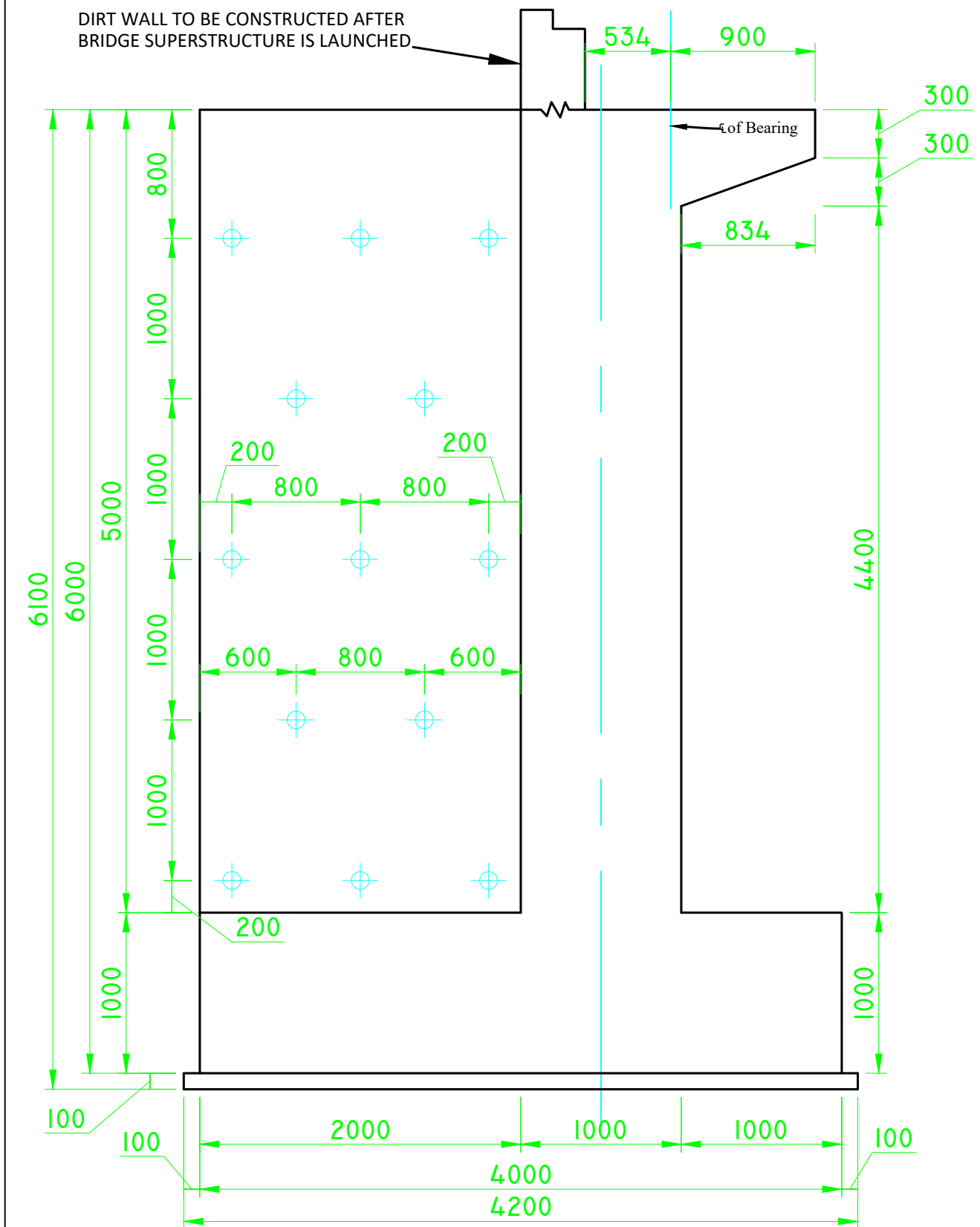
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SHEET CONTENTS :

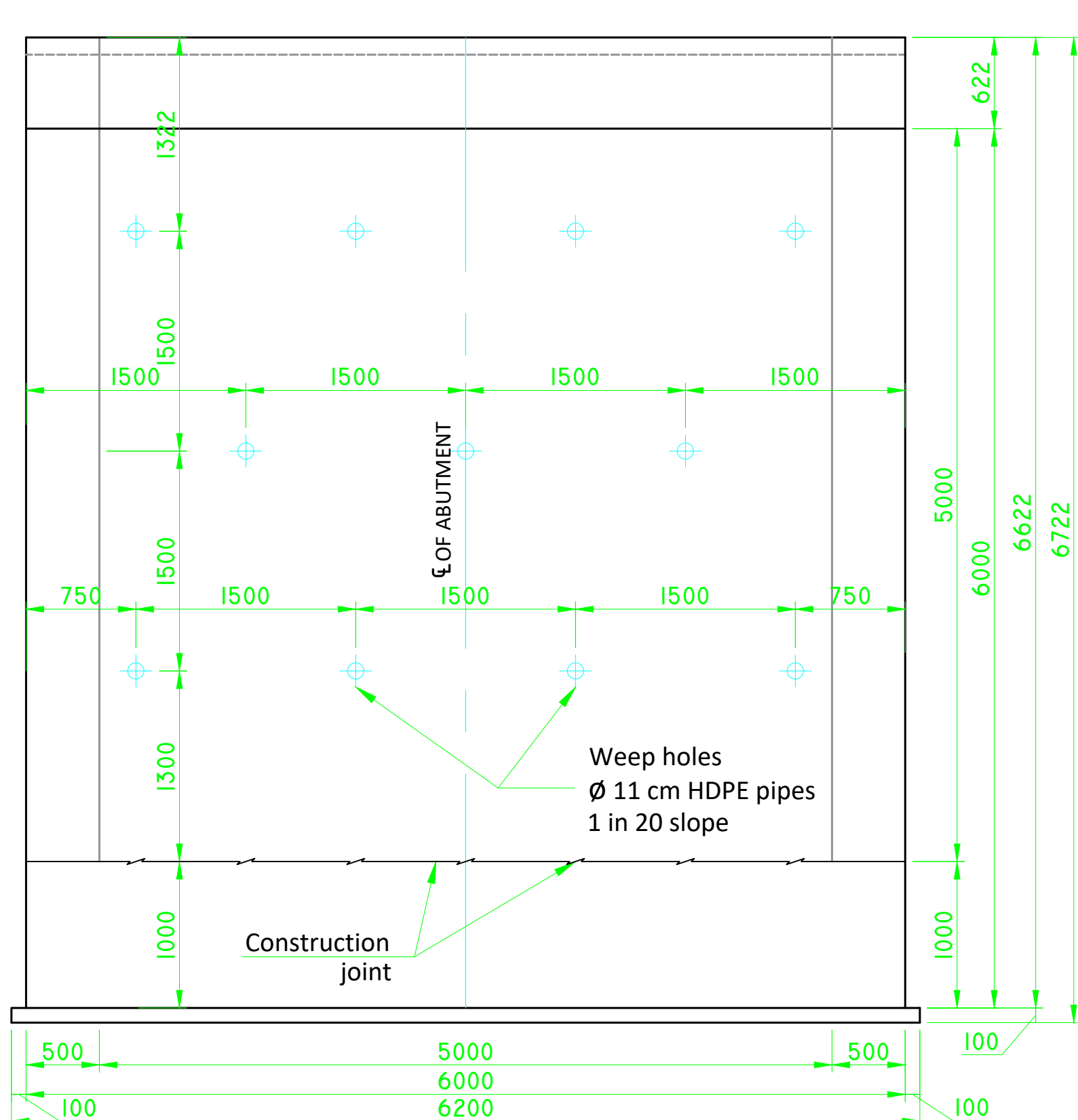
GENERAL ELEVATION 02

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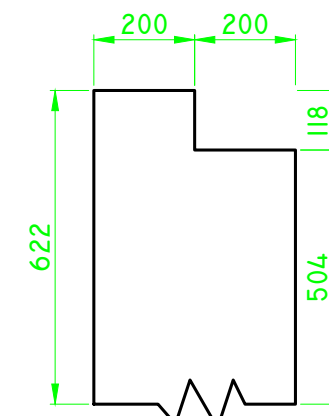
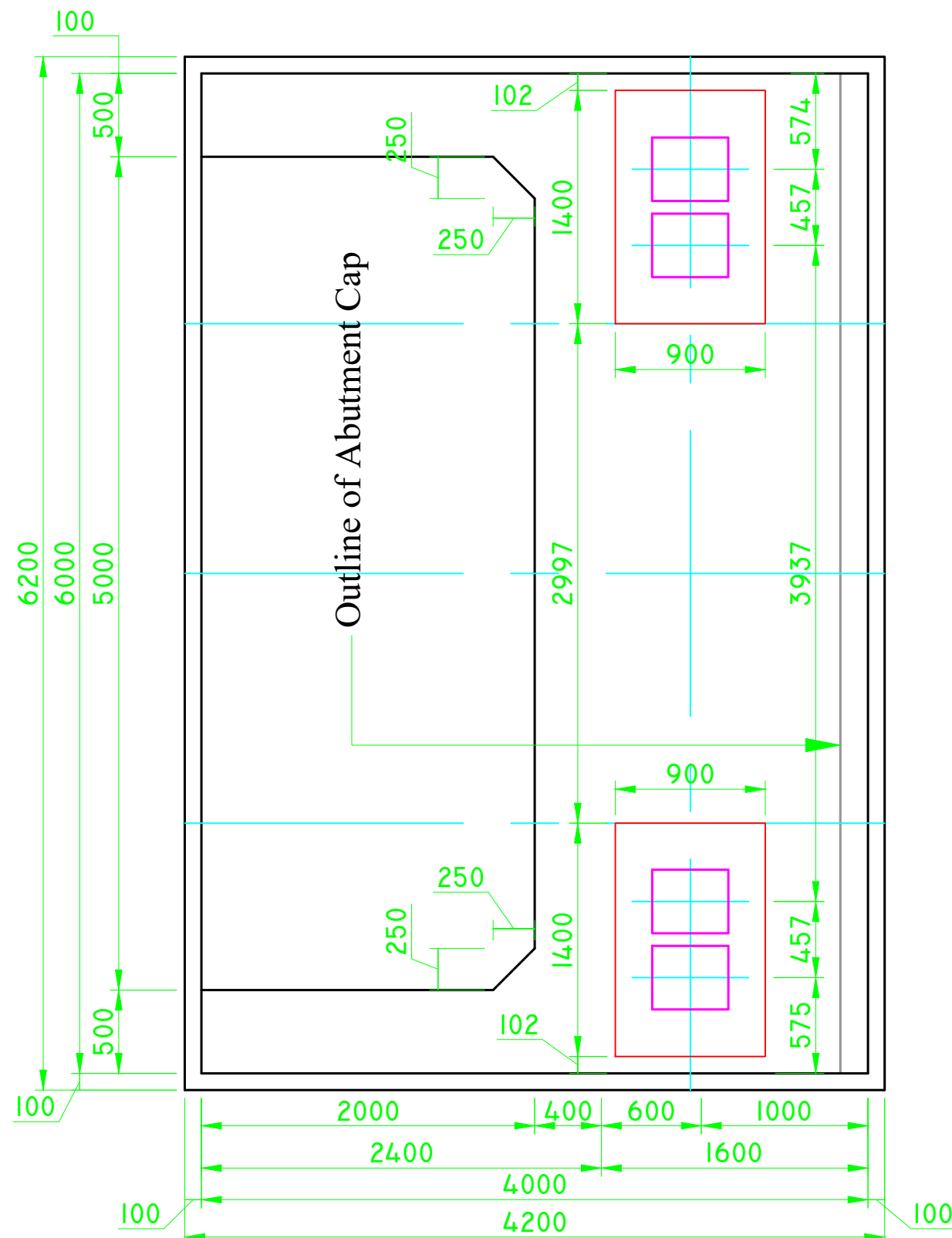
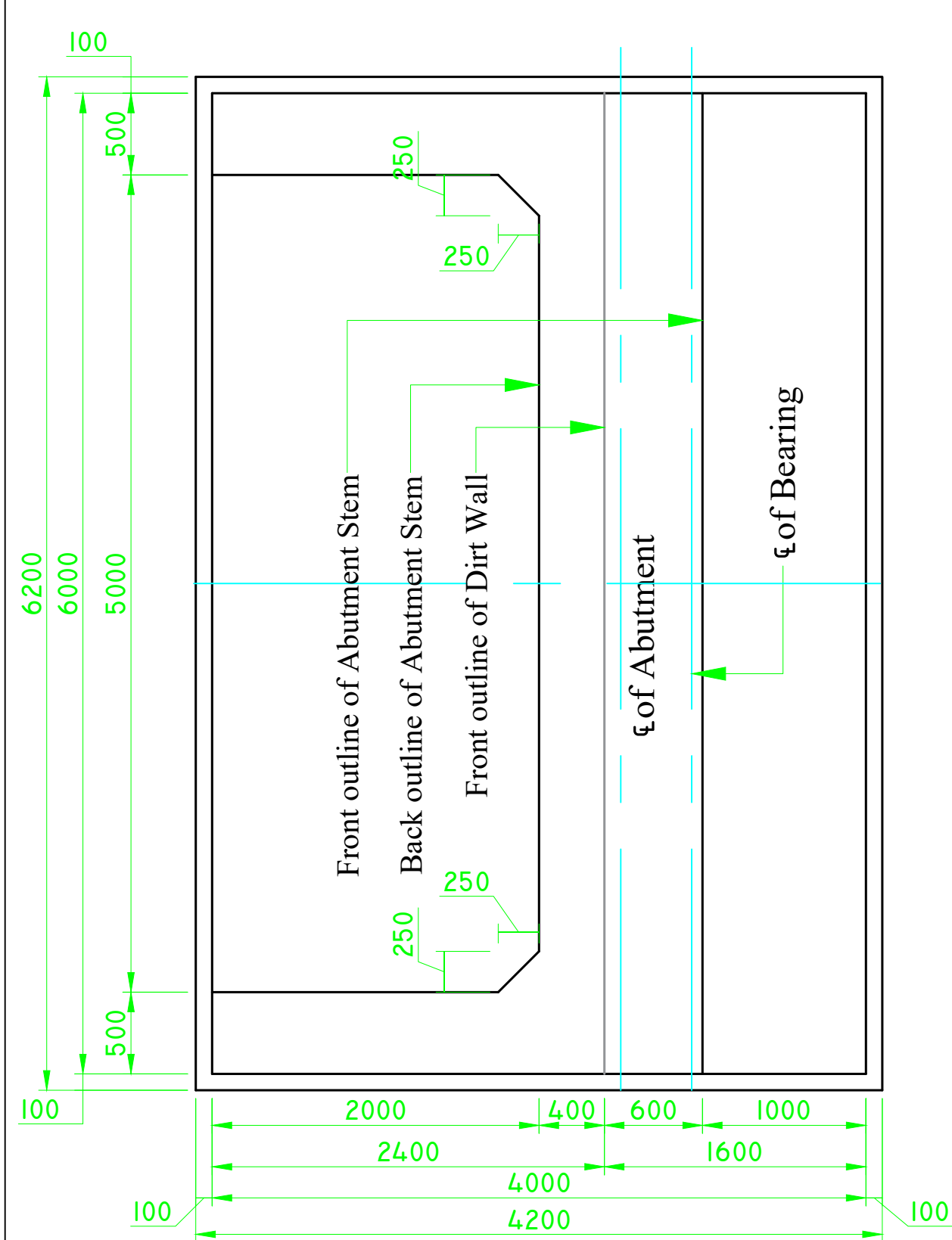


**SIDE ELEVATION**  
**Scale:1:35**



**FRONT ELEVATION**  
**Scale:1:35**

 <p>ROYAL GOVERNMENT OF BHUTAN Ministry of Works &amp; Human settlement Department of Roads, Bridge Division Thimphu, Bhutan</p>	<p><b>BAILEY TYPE STEEL TRUSS <b>GANGCHITPO BRIDGE</b></b> [DS 80 FT SPAN &amp; 3.277 m CARRIAGEWAY] On Silambi-Nagor GC Road under Lingmithang Regional Office</p>	<p>SHEET CONTENTS :</p> <p><b>SIDE ELEVATION &amp; FRONT ELEVATION OF LEFT ABUTMENT</b></p>	REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
			△ FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	<b>GB-ABT-08</b>	
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#### NOTES

##### GENERAL

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- DO NOT SCALE THIS DRAWINGS. USE GIVEN DIMENSIONS ONLY.
- DURING THE CONSTRUCTION, THE CONTRACTOR MUST CHECK THE DIMENSIONS, LEVELS AND MEASUREMENTS. DISCREPANCY IF ANY TO BE REPORTED TO THE ENGINEER BEFORE EXECUTION.

##### MATERIALS

- CONCRETE 28 DAYS STRENGTH IN CUBE,  $f_{ck} = 25 \text{ MPa}$ , [UNLESS OTHERWISE MENTIONED IN THE SPECIFICATION, THE TRIAL MIX DESIGN STRENGTH SHALL BE  $31.6 \text{ MPa}$ ]
- YIELD STRENGTH OF STEEL,  $f_y = 500 \text{ MPa}$  (GRADE Fe 500, IS 1786).
- DETAILS OF STEEL IS MENTIONED IN THE DRAWING AND ITS QUANTITY IN THE BAR BENDING SCHEDULE.

##### COVERING

ABUTMENT WALL (ALL SIDES) = 75 MM  
(UP TO OUTER FACE OF MAIN BAR)

##### BAR MARK

BAR MARK: 40-01-T 20-150-BOTT.  
NOS. OF BAR: 40  
TYPE OF REBAR: T  
SPACING: 150  
LOCATION / REMARK: BOTT.  
DIA. OF REBAR: 20

T - HIGH YIELD DEFORMED BAR  
Y - DEFORMED MS BAR  
R - ROUND MS BAR

INDICATES BAR CUT POINT



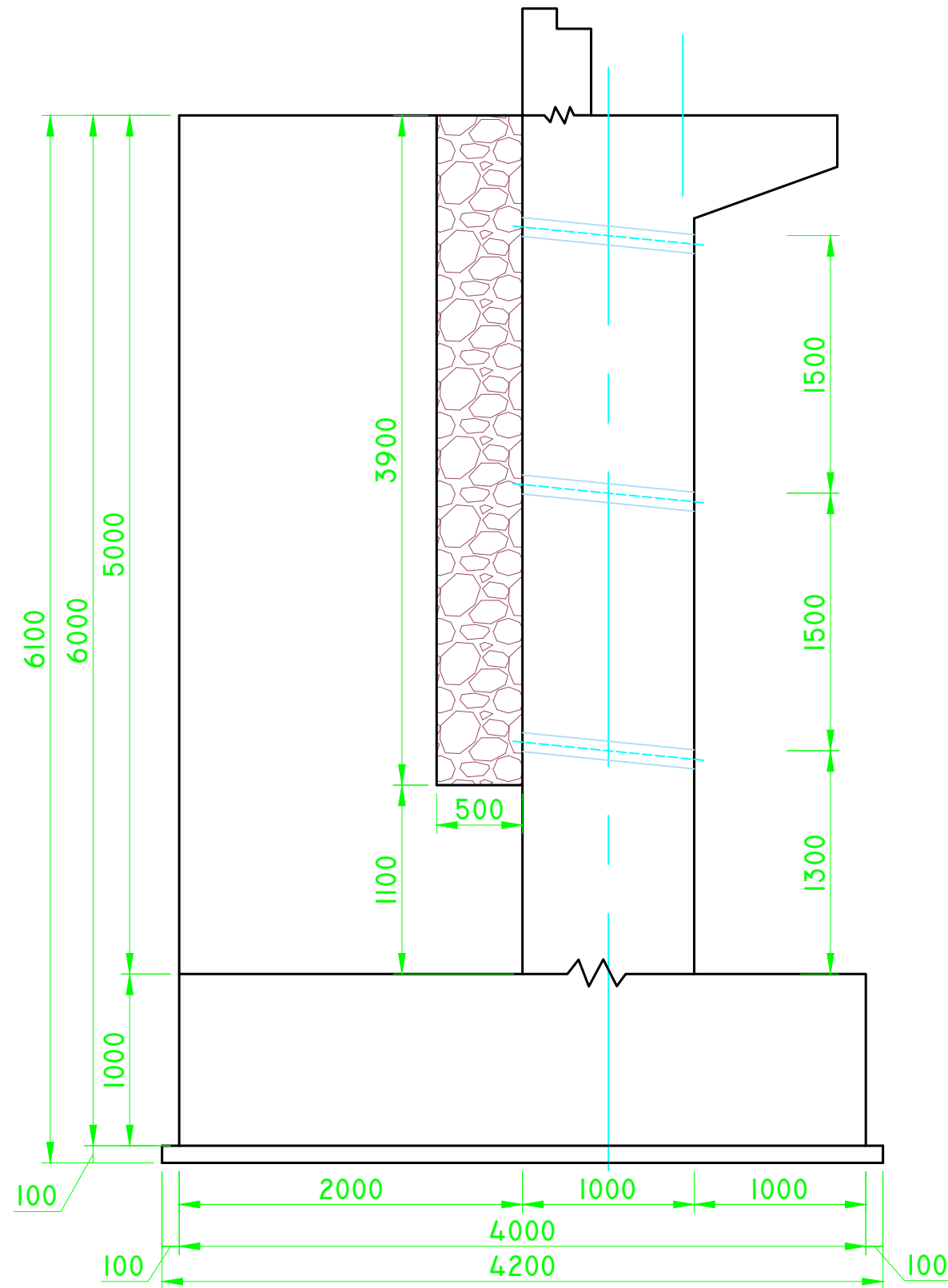
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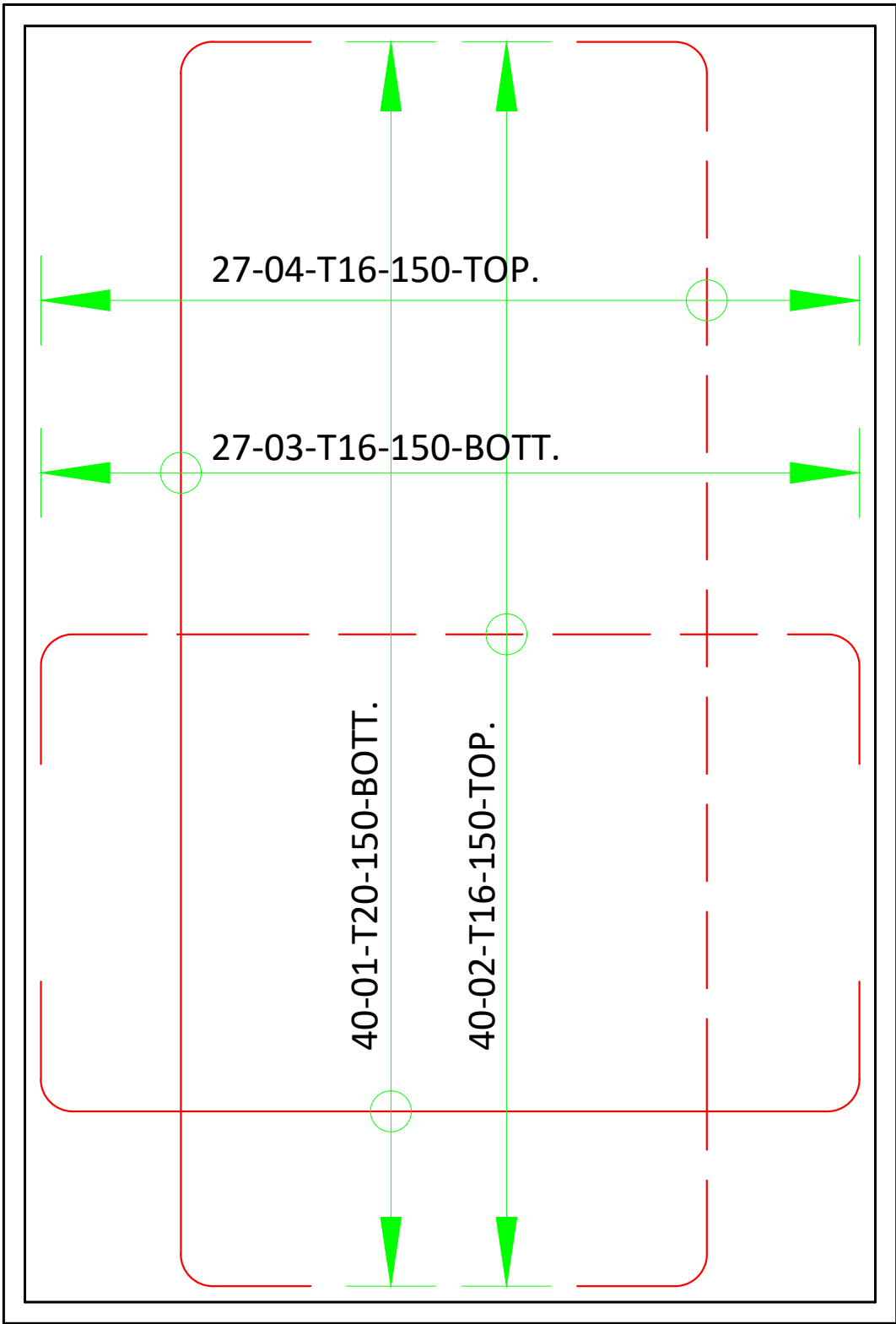
SHEET CONTENTS :

FOOTING & BEARING  
PLAN OF LEFT  
ABUTMENT

REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
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**SECTIONAL ELEVATION**  
**Scale:1:35**



**REINFORCEMENT VIEW "1-1"**  
**Scale:1:30**

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**BAR MARK**

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40-01-T 20-150-BOTT.  
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TYPE OF REBAR ——— DIA. OF REBAR

T - HIGH YIELD DEFORMED BAR  
Y - DEFORMED MS BAR  
R - ROUND MS BAR

INDICATES BAR CUT POINT

**LEGEND**

————— BOTTOM BAR  
----- TOP BAR

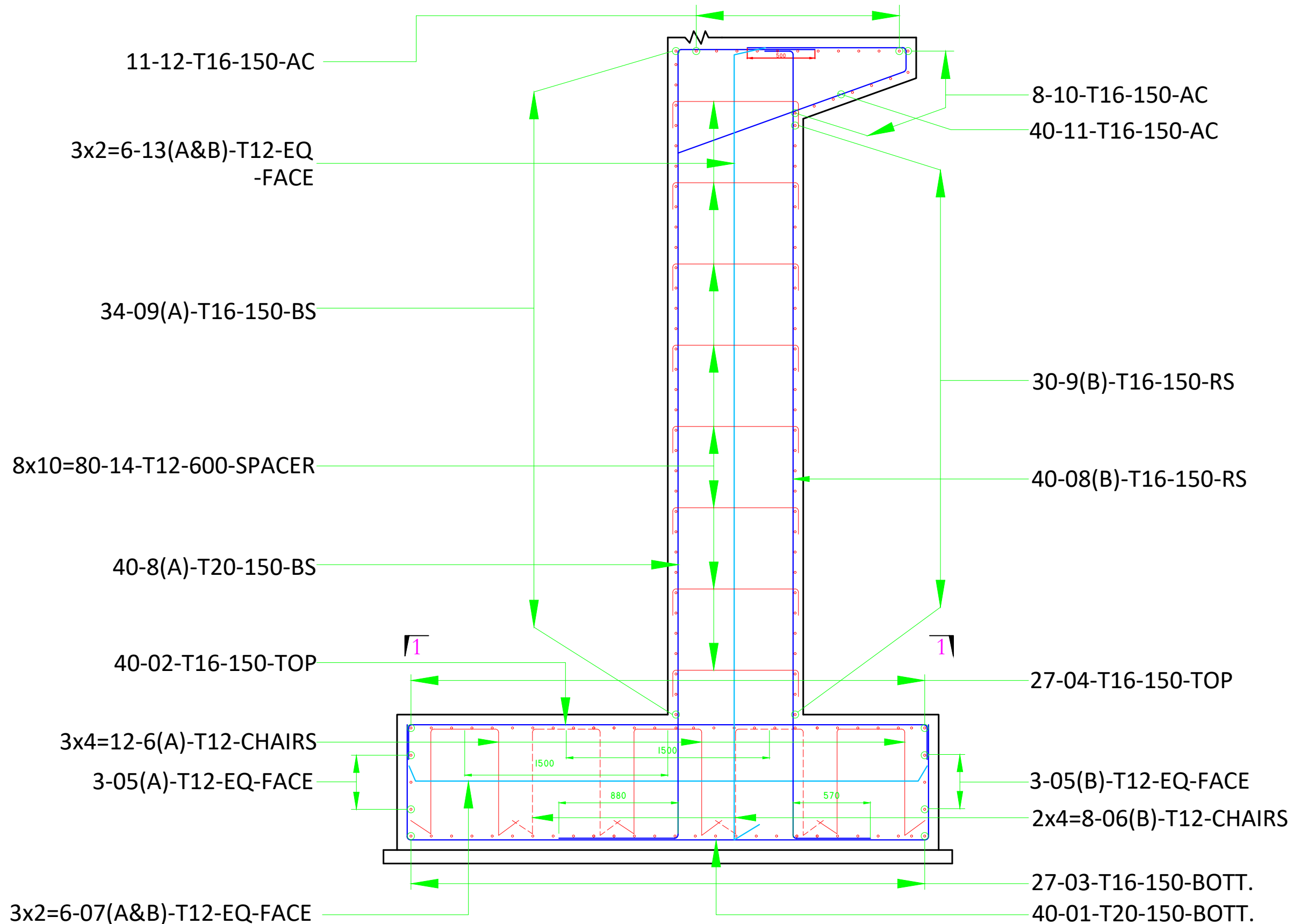


ROYAL GOVERNMENT OF BHUTAN  
Ministry of Works & Human settlement  
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BAILEY TYPE STEEL TRUSS **GANGCHITPO BRIDGE**  
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SHEET CONTENTS :  
**SECTIONAL ELEVATION  
& REINFORCEMENT  
VIEW "1-1" OF LEFT  
ABUTMENT**

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**REINFORCEMENT DETAILS**  
**Scale:1:30**



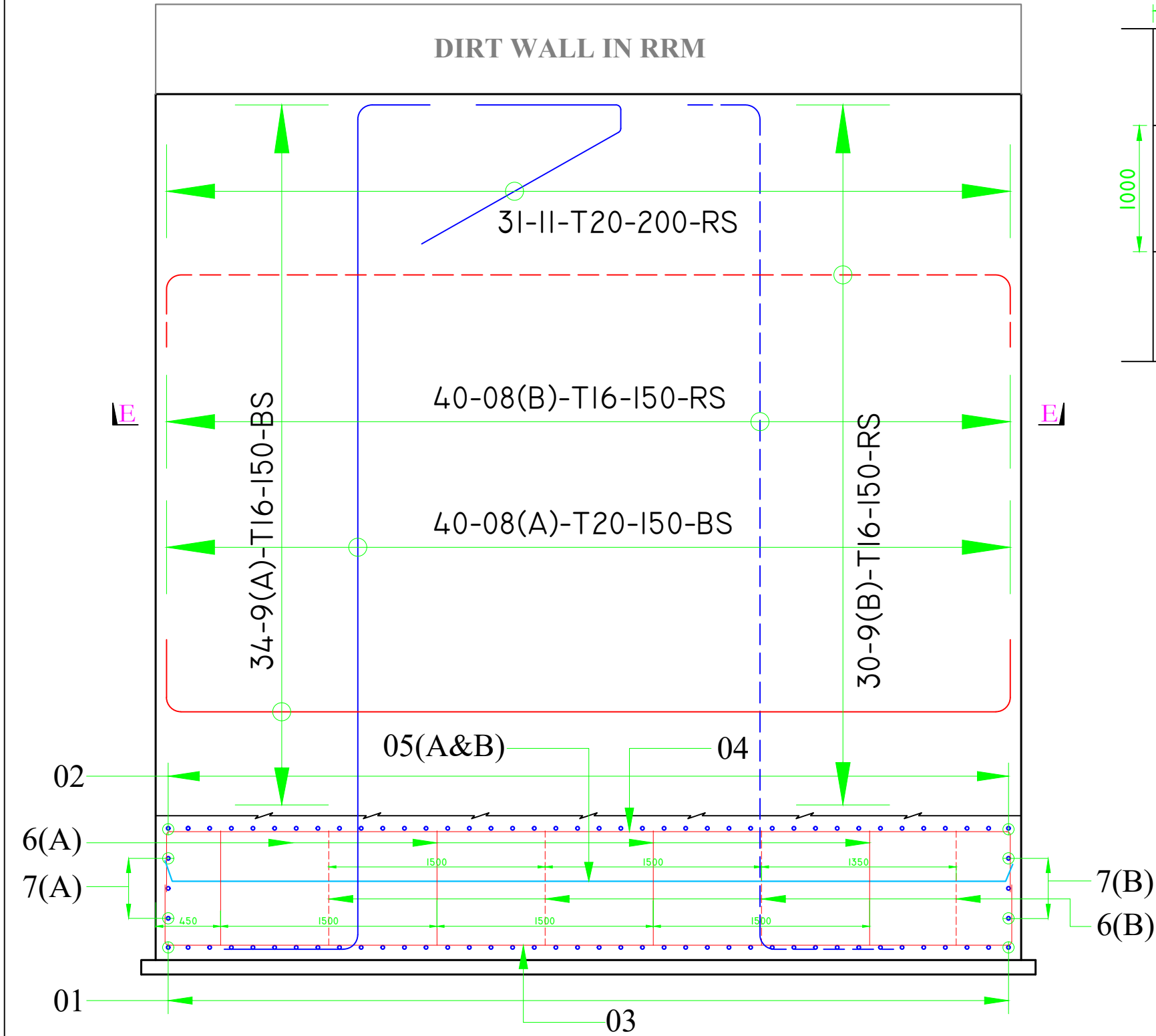
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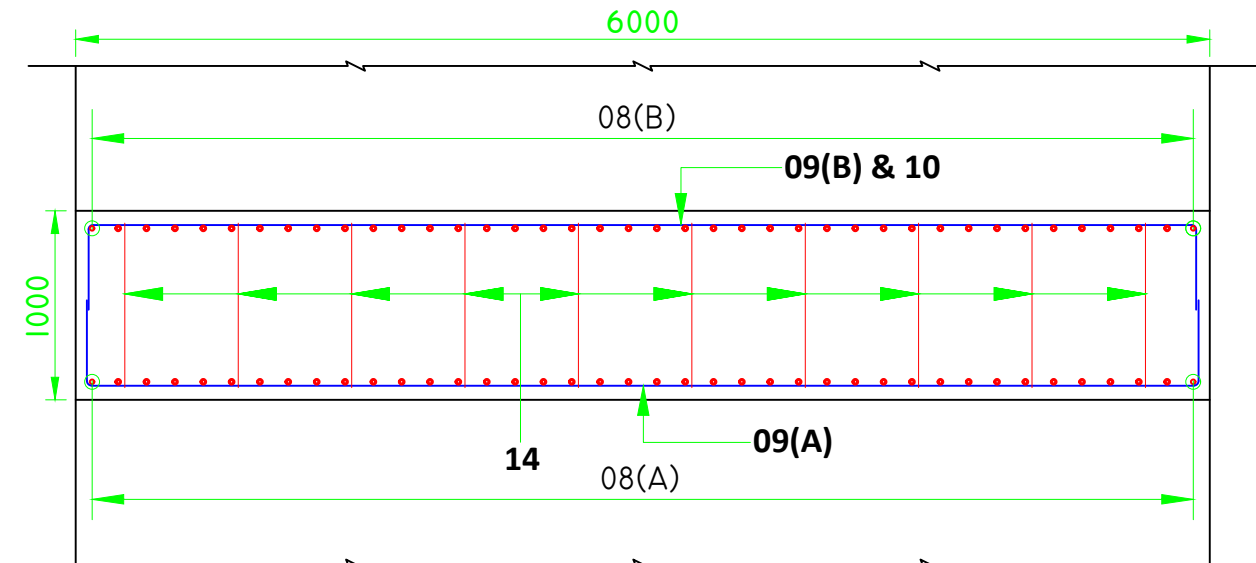
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**REINFORCEMENT  
 DETAILS OF LEFT  
 ABUTMENT**

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**FRONT REINFORCEMENT VIEW**  
**Scale:1:35**

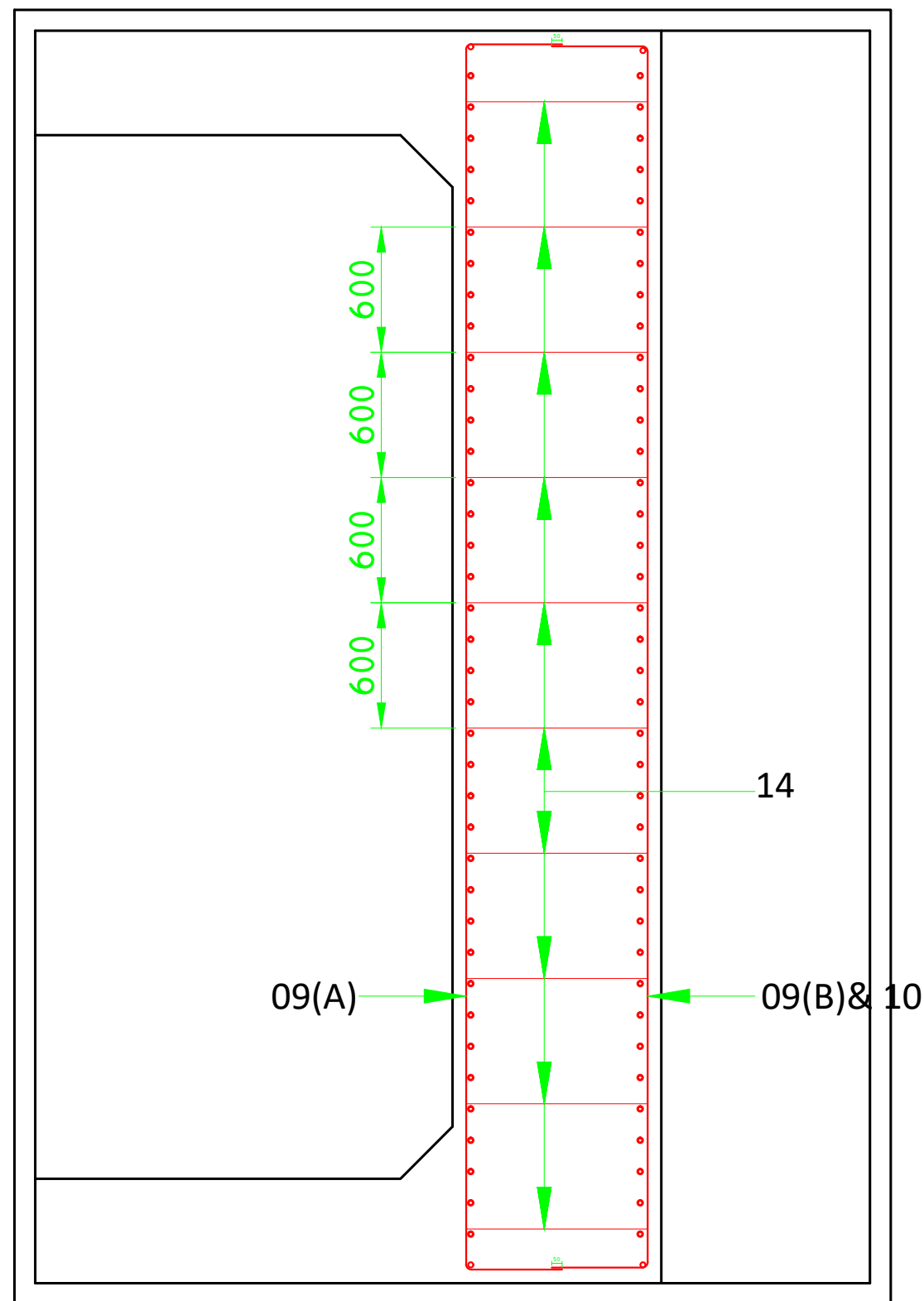


**SECTION "E-E"**  
**Scale: 1:40**

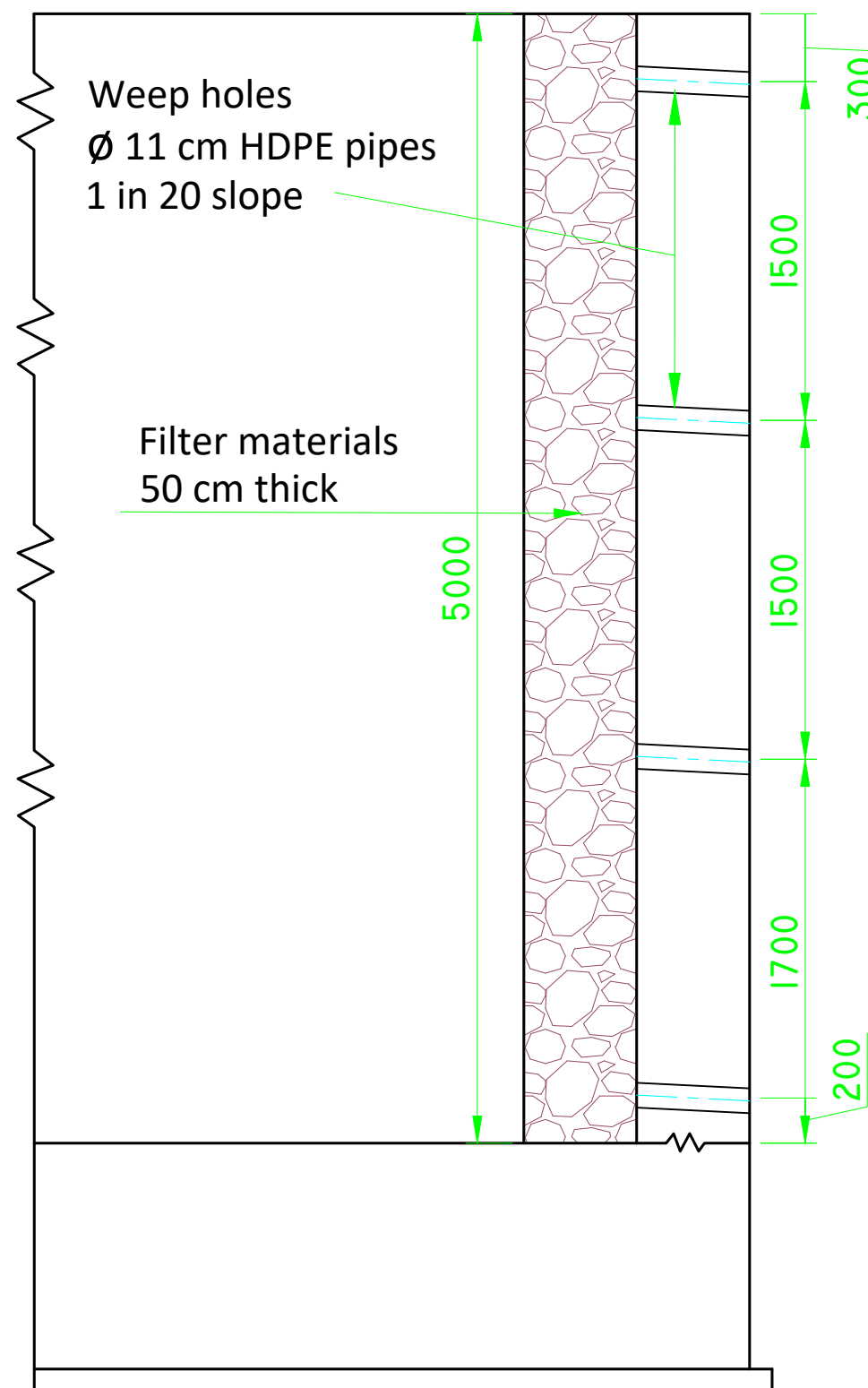
**LEGEND**

- BACKFILL SIDE BAR
- RIVER SIDE BAR

 <p>ROYAL GOVERNMENT OF BHUTAN  Ministry of Works &amp; Human settlement  Department of Roads, Bridge Division  Thimphu, Bhutan</p>	<p>BAILEY TYPE STEEL TRUSS <b>GANGCHITPO BRIDGE</b>  [DS 80 FT SPAN &amp; 3.277 m CARRIAGEWAY]  On Silambi-Nagor GC Road  under Lingmithang Regional Office</p>	<p>SHEET CONTENTS :  <b>FRONT REINFORCEMENT VIEW &amp; SECTION "E-E" OF LEFT ABUTMENT</b></p>	REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
			△ FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	<b>GB-ABT-12</b>	
			△ REVISED		DRAWN	TSHEWANG RINZIN (E)		
					CHECKED	RINCHEN KHANDU (EE)	SCALE:	AS SHOWN
					APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	



**SPACER PLAN**  
**Scale:1:30**



**SECTION OF RETURN WALL**  
**Scale:1:30**

## NOTES

### GENERAL

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3. DURING THE CONSTRUCTION, THE CONTRACTOR MUST CHECK THE DIMENSIONS, LEVELS AND MEASUREMENTS. DISCREPANCY IF ANY TO BE REPORTED TO THE ENGINEER BEFORE EXECUTION.

### MATERIALS

1. CONCRETE 28 DAYS STRENGTH IN CUBE,  $f_{ck} = 25$  MPa. [UNLESS OTHERWISE MENTIONED IN THE SPECIFICATION, THE TRIAL MIX DESIGN STRENGTH SHALL BE 31.6 MPa]
2. YIELD STRENGTH OF STEEL,  $f_y = 500$  MPa (GRADE Fe 500, IS 1786).
3. DETAILS OF STEEL IS MENTIONED IN THE DRAWING AND ITS QUANTITY IN THE BAR BENDING SCHEDULE.

### COVERING

ABUTMENT WALL (ALL SIDES) = 75 MM  
(UP TO OUTER FACE OF MAIN BAR)

RETURN WALL = 75MM

### BAR MARK

BAR MARK 40-01-T 20-150-BACK.

NOS. OF BAR 40-01-T 20-150-BACK.

TYPE OF REBAR T 20-150-BACK.

SPACING 20-150-BACK.

LOCATION / REMARK 20-150-BACK.

DIA. OF REBAR 20-150-BACK.

T - HIGH YIELD DEFORMED BAR  
Y - DEFORMED MS BAR  
R - ROUND MS BAR

INDICATES BAR CUT POINT



ROYAL GOVERNMENT OF BHUTAN  
Ministry of Works & Human settlement  
Department of Roads, Bridge Division  
Thimphu, Bhutan

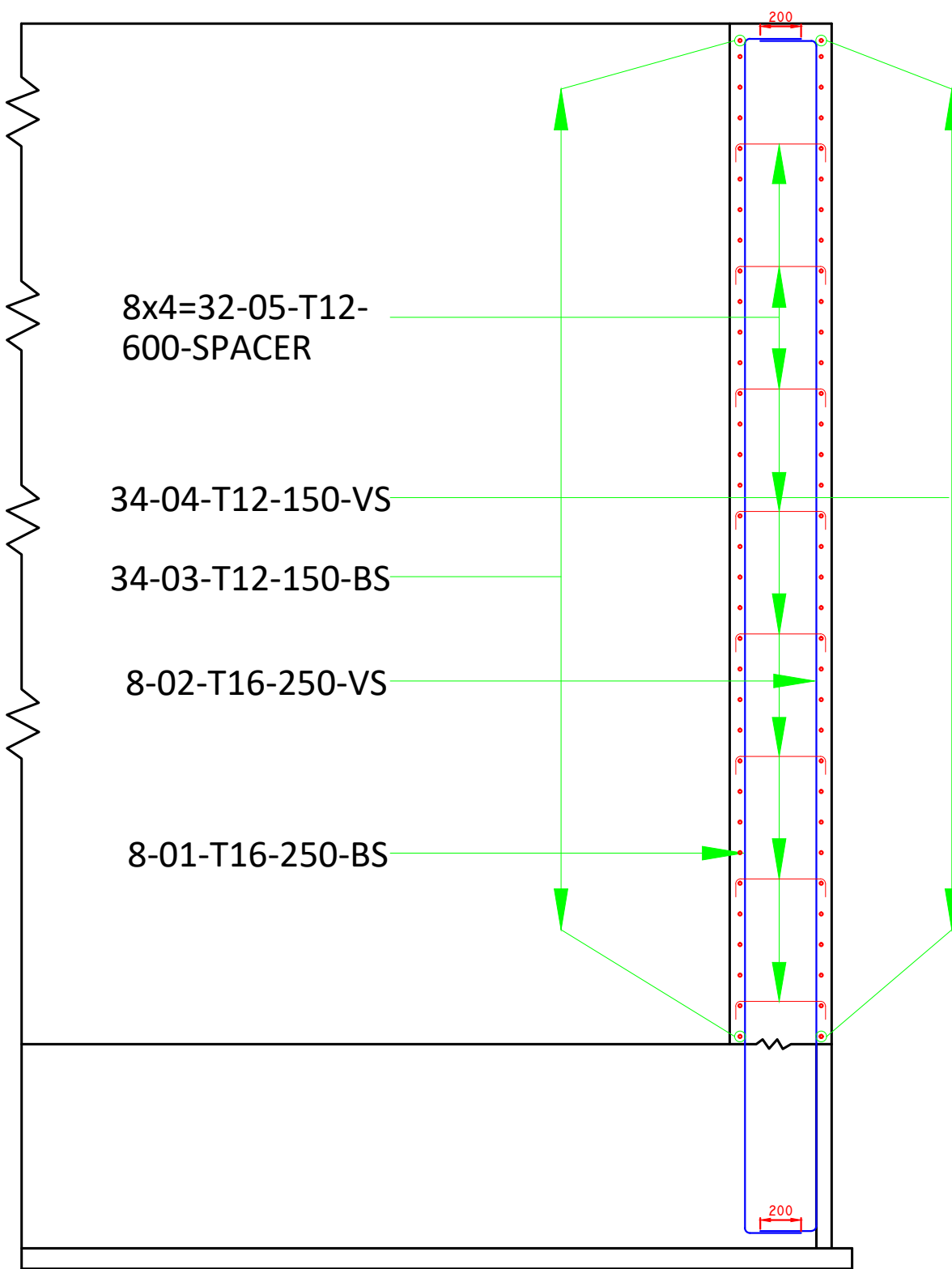
BAILEY TYPE STEEL TRUSS **GANGCHITPO BRIDGE**  
[DS 80 FT SPAN & 3.277 m CARRIAGEWAY]  
On Silambi-Nagor GC Road  
under Lingmithang Regional Office

SHEET CONTENTS :

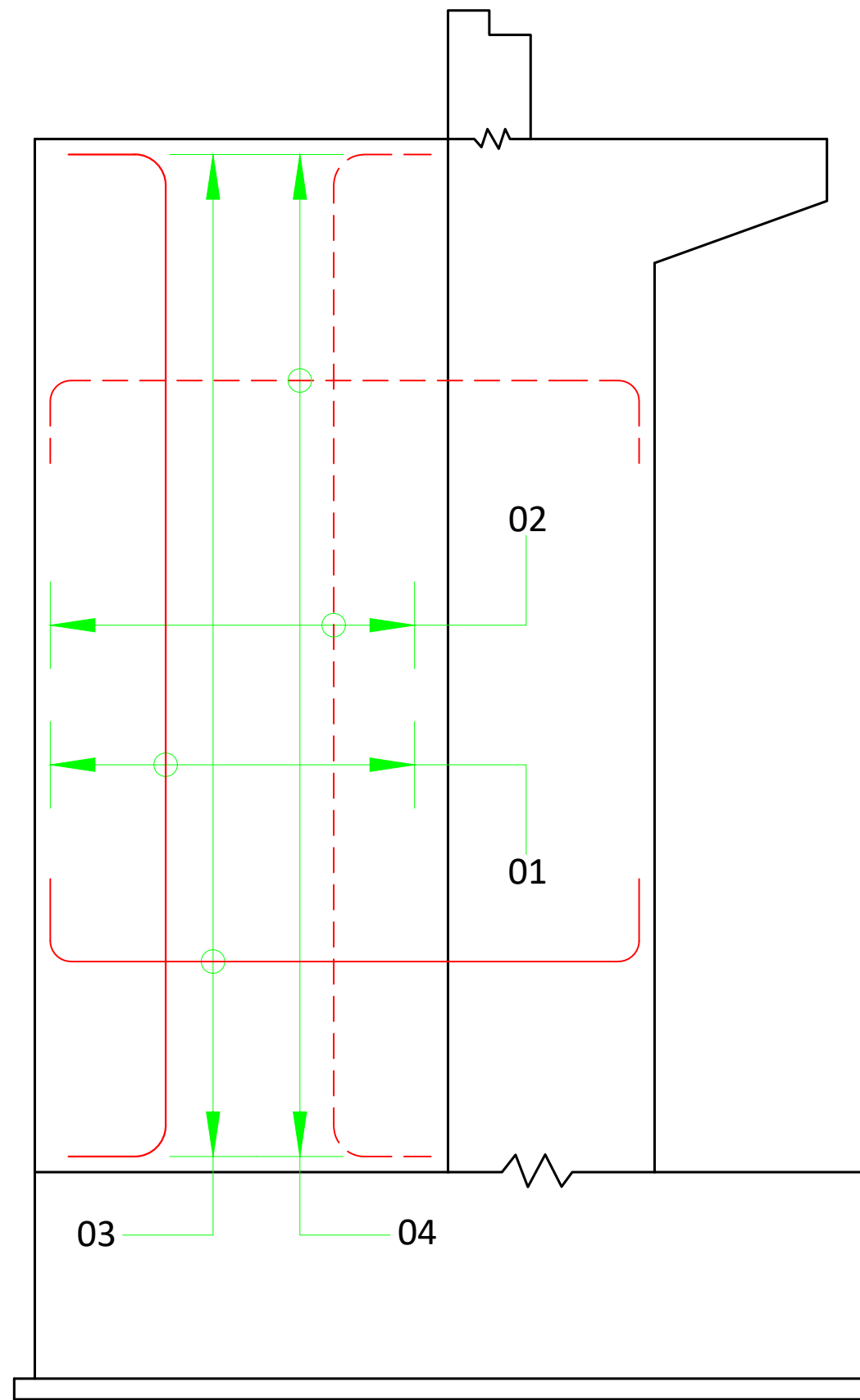
SPACER PLAN &  
SECTION OF RETURN  
WALL

REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
△ FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	GB-ABT-13	
△ REVISED		DRAWN	TSHEWANG RINZIN (E)		
		CHECKED	RINCHEN KHANDU (EE)	SCALE:	AS SHOWN
		APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	





**REINFORCEMENT SECTION OF RETURN WALL**  
**Scale:1:30**



**REINFORCEMENT SIDE VIEW OF RETURN WALL**  
**Scale:1:30**

**NOTES**

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**MATERIALS**

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2. YIELD STRENGTH OF STEEL,  $f_y = 500 \text{ MPa}$  (GRADE Fe 500, IS 1786).
3. DETAILS OF STEEL IS MENTIONED IN THE DRAWING AND ITS QUANTITY IN THE BAR BENDING SCHEDULE.

**COVERING**

ABUTMENT WALL (ALL SIDES) = 75 MM  
 (UP TO OUTER FACE OF MAIN BAR)

RETURN WALL = 75MM

**BAR MARK**

BAR MARK — SPACING  
**40-01-T 20-150-BACK.**  
 NOS. OF BAR — LOCATION / REMARK  
 TYPE OF REBAR — DIA. OF REBAR

T - HIGH YIELD DEFORMED BAR  
 Y - DEFORMED MS BAR  
 R - ROUND MS BAR

INDICATES BAR CUT POINT

**LEGEND**

———— BACKFILL SIDE BAR  
 - - - - - VALLEY SIDE BAR



ROYAL GOVERNMENT OF BHUTAN  
 Ministry of Works & Human settlement  
 Department of Roads, Bridge Division  
 Thimphu, Bhutan

BAILEY TYPE STEEL TRUSS **GANGCHITPO BRIDGE**  
 [DS 80 FT SPAN & 3.277 m CARRIAGEWAY]  
 On Silambi-Nagor GC Road  
 under Lingmithang Regional Office

SHEET CONTENTS :

**REINFORCEMENT  
 SECTION &  
 REINFORCEMENT SIDE  
 VIEW OF RETURN WALL**

REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
△ FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	<b>GB-ABT-14</b>	
△ REVISED		DRAWN	TSHEWANG RINZIN (E)		
		CHECKED	RINCHEN KHANDU (EE)	SCALE:	AS SHOWN
		APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	

NOTES

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USE GIVEN DIMENSIONS ONLY.
3. DURING THE CONSTRUCTION, THE  
CONTRACTOR MUST CHECK THE  
DIMENSIONS, LEVELS AND  
MEASUREMENTS. DISCREPANCY  
IF ANY TO BE REPORTED TO THE  
ENGINEER BEFORE EXECUTION.

MATERIALS

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IN CUBE, fck = 25 MPa. [UNLESS  
OTHERWISE MENTIONED IN THE  
SPECIFICATION, THE TRIAL MIX  
DESIGN STRENGTH SHALL BE 31.6 MPa]
2. YIELD STRENGTH OF STEEL,  
fy = 500 MPa (GRADE Fe 500, IS 1786).
3. DETAILS OF STEEL IS MENTIONED  
IN THE DRAWING AND ITS QUANTITY  
IN THE BAR BENDING SCHEDULE.

COVERING

ABUTMENT WALL (ALL SIDES) = 75 MM  
(UP TO OUTER FACE OF MAIN BAR)

RETURN WALL = 75MM

BAR MARK

BAR MARK

NOS. OF BAR

TYPE OF REBAR

SPACING

LOCATION / REMARK

DIA. OF REBAR

40-01-T 20-150-BACK.

T - HIGH YIELD DEFORMED BAR  
Y - DEFORMED MS BAR  
R - ROUND MS BAR

INDICATES BAR CUT POINT

20-06-T16-250-HAUNCH

01

03

05

02

04

REINFORCEMENT PLAN OF RETURN WALL

Scale:1:15



ROYAL GOVERNMENT OF BHUTAN  
Ministry of Works & Human settlement  
Department of Roads, Bridge Division  
Thimphu, Bhutan

BAILEY TYPE STEEL TRUSS **GANGCHITPO BRIDGE**  
[DS 80 FT SPAN & 3.277 m CARRIAGEWAY]  
On Silambi-Nagor GC Road  
under Lingmithang Regional Office




SHEET CONTENTS :

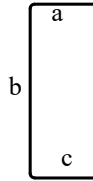
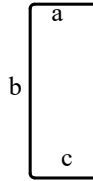
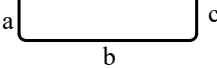
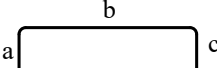
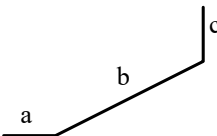
REINFORCEMENT PLAN  
OF RETURN WALL

REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	GB-ABT-15	
REVISED		DRAWN	TSHEWANG RINZIN (E)		
		CHECKED	RINCHEN KHANDU (EE)	SCALE:	AS SHOWN
		APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	

REBAR SCHEDULE OF LEFT ABUTMENT WALL.																			
Member	Bar Mark	Type & Size	Length of each bar	Number of members	Number of bar in each members	Total number	Total length	Shape code	Shape	BENDING DIMENSION					ADDITIONAL INFROMATION				
										a	b	c	d	e	HOOK		TOTAL WEIGHT Kgs	LOCATION/REMARKS	
															START	END			
FOOTING SLAB	01	T20	5450	1	40	40	218000	21		850	3850	850			90 Degree	90 Degree	537.59	BOTTOM BAR IN LONGITUDINAL DIRECTION	
FOOTING SLAB	02	T16	4282	1	40	40	171280	21		256	3850	256			90 Degree	90 Degree	270.28	TOP BAR IN LONGITUDINAL DIRECTION	
FOOTING SLAB	03	T16	6720	1	27	27	181440	21		475	5850	475			90 Degree	90 Degree	286.31	BOTTOM BAR IN TRANSVERSE DIRECTION	
FOOTING SLAB	04	T16	6720	1	27	27	181440	21		475	5850	475			90 Degree	90 Degree	286.31	TOP BAR IN TRANSVERSE DIRECTION	
FOOTING SLAB	5(A&B)	T12	6174	1	6	6	37044	21		192	5850	192			90 Degree	90 Degree	32.90	FACE BAR IN TRANSVERSE DIRECTION	
FOOTING SLAB	6(A&B)	T12	2410	1	20	20	48200	99		180	775	500	775	180	90 Degree	90 Degree	42.80	CHAIRS	
FOOTING SLAB	7(A&B)	T12	4174	1	6	6	25044	21		192	3850	192			90 Degree	90 Degree	22.24	FACE BAR IN LONGITUDINAL DIRECTION	
ABUTMENT STEM	08(A)	T20	7641	1	40	40	305640	21		880	5850	1011			90 Degree	90 Degree	753.71	VERTICAL BAR AT BACK SIDE OF ABUTMENT	
ABUTMENT STEM	08(B)	T16	6570	1	40	40	262800	21			600	5850	200			90 Degree	90 Degree	414.70	VERTICAL BAR AT RIVER SIDE OF ABUTMENT
ABUTMENT STEM	09(A)	T16	6720	1	34	34	228480	21		475	5850	475			90 Degree	90 Degree	360.54	TRANSVERSE BAR AT BACK SIDE OF ABUTMENT	
ABUTMENT STEM	09(B)	T16	6720	1	30	30	201600	21			475	5850	475			90 Degree	90 Degree	318.12	TRANSVERSE BAR AT RIVER SIDE OF ABUTMENT
ABUTMENT STEM	10	T16	6720	1	8	8	53760	21			475	5850	475			90 Degree	90 Degree	84.83	TRANSVERSE BAR AT ABUTMENT CAP (RIVER SIDE)
ABUTMENT STEM	11	T16	3055	1	31	31	94705	21		1175	170	1790			90 Degree	135 Degree	233.54	INCLINED TOP BAR AT ABUTMENT CAP	
ABUTMENT STEM	12	T16	6282	1	11	11	69102	21		256	5850	256			90 Degree	90 Degree	109.04	TRANSVERSE BAR AT TOP OF ABUTMENT CAP	
ABUTMENT STEM	13	T12	6302	1	6	6	37812	21			256	5850	256			90 Degree	90 Degree	33.58	VERTICAL FACE BAR AT ABUTMENT STEM
ABUTMENT STEM	14	T12	6740	1	80	80	539200	99		475	5850	475			90 Degree	90 Degree	478.81	SPACER	
THIS SCHEDULE HAS BEEN PREPARED IN ACCORDANCE WITH ISO 4066:2000															TOTAL:		4265.31		




Note:  
Bar Bending Schedule prepared is just for reference and estimation purpose only. The Contractor has to prepare separate Bar Bending Schedule before bar bending starts.

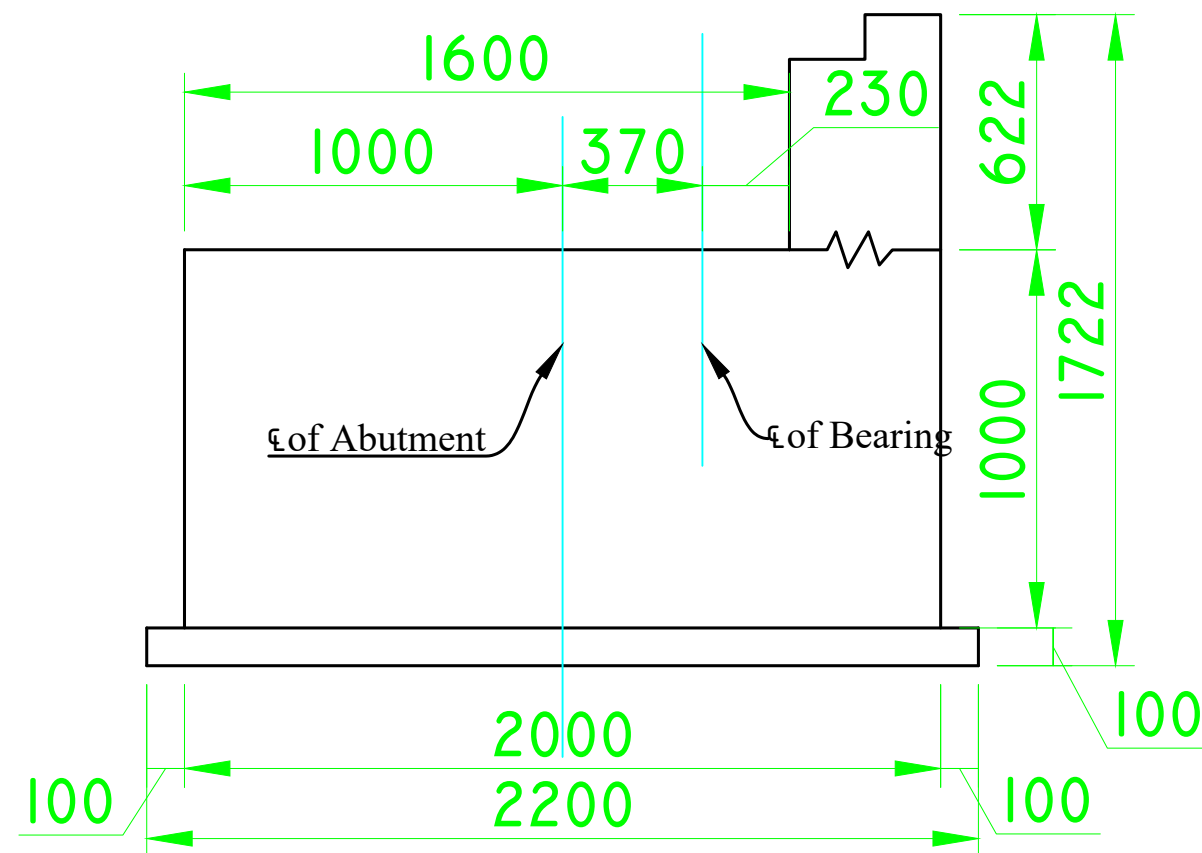
	ROYAL GOVERNMENT OF BHUTAN Ministry of Works & Human settlement Department of Roads, Bridge Division Thimphu, Bhutan	BAILEY TYPE STEEL TRUSS <b>GANGCHITPO BRIDGE</b> [DS 80 FT SPAN & 3.277 m CARRIAGEWAY] On Silambi-Nagor GC Road under Lingmithang Regional Office	SHEET CONTENTS :  <b>REBAR SCHEDULE OF LEFT ABUTMENT</b>	REVISION	DATE	NAME & SIGNATURE			DRAWING NO.	
				 FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)		<b>GB-ABT-16</b>	
				 REVISED		DRAWN	TSHEWANG RINZIN (E)			
						CHECKED	RINCHEN KHANDU (EE)		SCALE:	NTS
						APPROVED	KARMA WANGDI (CE)		(as Sheet A3 size)	

REBAR SCHEDULE OF LEFT RETURN WALL																			
Member	Bar Mark	Type & Size	Length of each bar	Number of members	Number of bar in each members	Total number	Total length	Shape code		BENDING DIMENSION					ADDITIONAL INFROMATION				
										a	b	c	d	e	HOOK		TOTAL WEIGHT Kgs	LOCATION/REMARKS	
															START	END			
RETURN WALL	01	T16	6470	2	8	16	103520	21		350	5850	350			90 Degree	None	163.35	VERTICAL BAR AT BACK SIDE OF RETURN WALL	
RETURN WALL	02	T16	6170	2	8	16	98720	21		200	5850	200			90 Degree	None	155.78	VERTICAL BAR AT VALLEY SIDE OF RETURN WALL	
RETURN WALL	03	T12	6280	2	34	68	427040	21		240	5850	250			90 Degree	90 Degree	673.87	TRANSVERSE BAR AT BACK SIDE OF RETURN WALL	
RETURN WALL	04	T12	6270	2	34	68	426360	21		240	5850	240			90 Degree	90 Degree	378.61	TRANSVERSE BAR AT VALLEY SIDE OF RETURN WALL	
RETURN WALL	5	T12	586	2	32	64	37504	99		120	406	120			90 Degree	90 Degree	33.30	SPACER	
RETURN WALL	6	T16	2552	2	20	40	102080	21		256	2120	256			90 Degree	90 Degree	161.08	HAUNCH BAR	
THIS SCHEDULE HAS BEEN PREPARED IN ACCORDANCE WITH ISO 4066:2000																TOTAL:		1566.00	

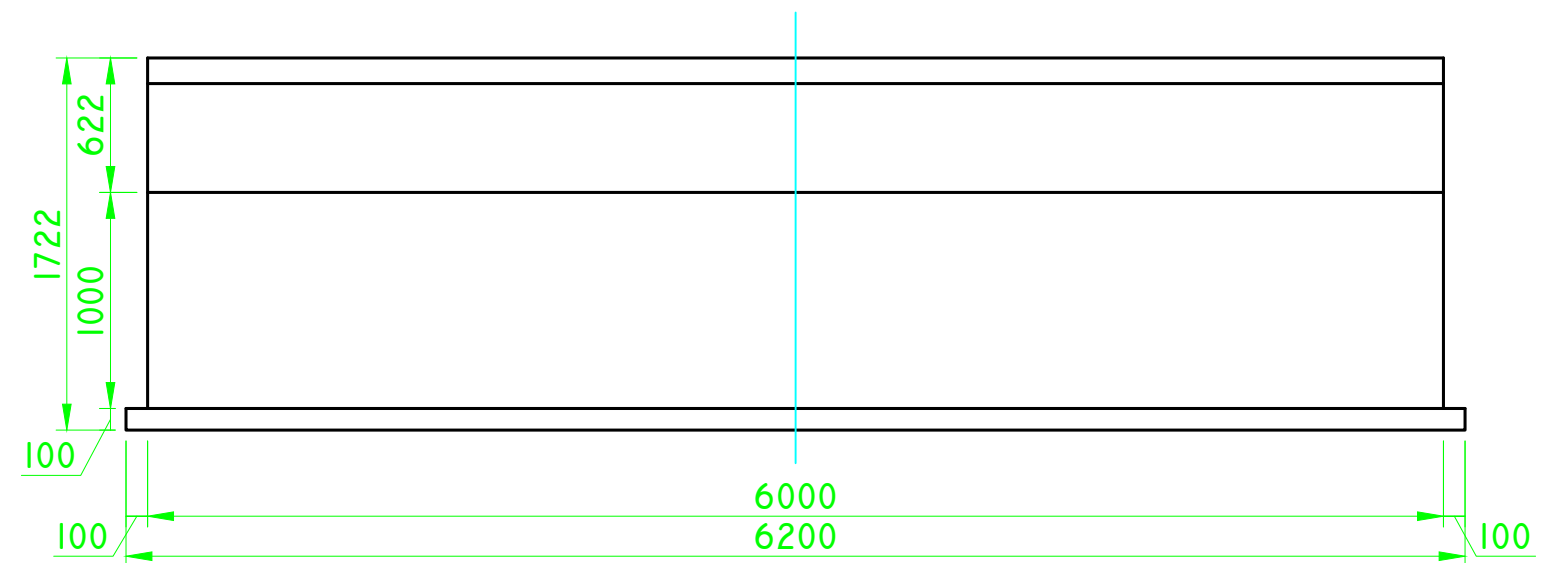
Note:

Bar Bending Schedule prepared is just for reference and estimation purpose only. The Contractor has to prepare separate Bar Bending Schedule before bar bending starts.

	ROYAL GOVERNMENT OF BHUTAN Ministry of Works & Human settlement Department of Roads, Bridge Division Thimphu, Bhutan	BAILEY TYPE STEEL TRUSS <b>GANGCHITPO BRIDGE</b> [DS 80 FT SPAN & 3.277 m CARRIAGEWAY] On Silambi-Nagor GC Road under Lingmithang Regional Office	SHEET CONTENTS :  <b>REBAR SCHEDULE OF LEFT RETURN WALL</b>	REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
				 FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	<b>GB-ABT-17</b>	
				 REVISED		DRAWN	TSHEWANG RINZIN (E)		
						CHECKED	RINCHEN KHANDU (EE)	SCALE:	NTS
						APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	



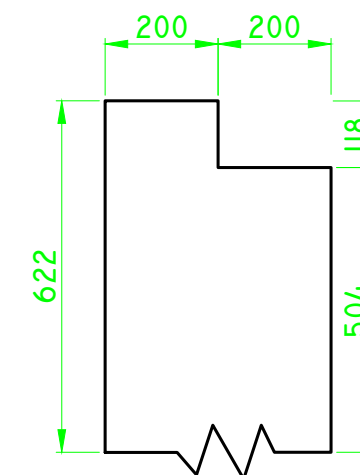
**SIDE ELEVATION**  
**Scale:1:20**



**FRONT ELEVATION**  
**Scale:1:35**

**Note:**

Dirt Wall to be constructed only after  
Bridge Superstructure is launched.



**DIRT WALL DETAILS**  
**Scale: 1:15**



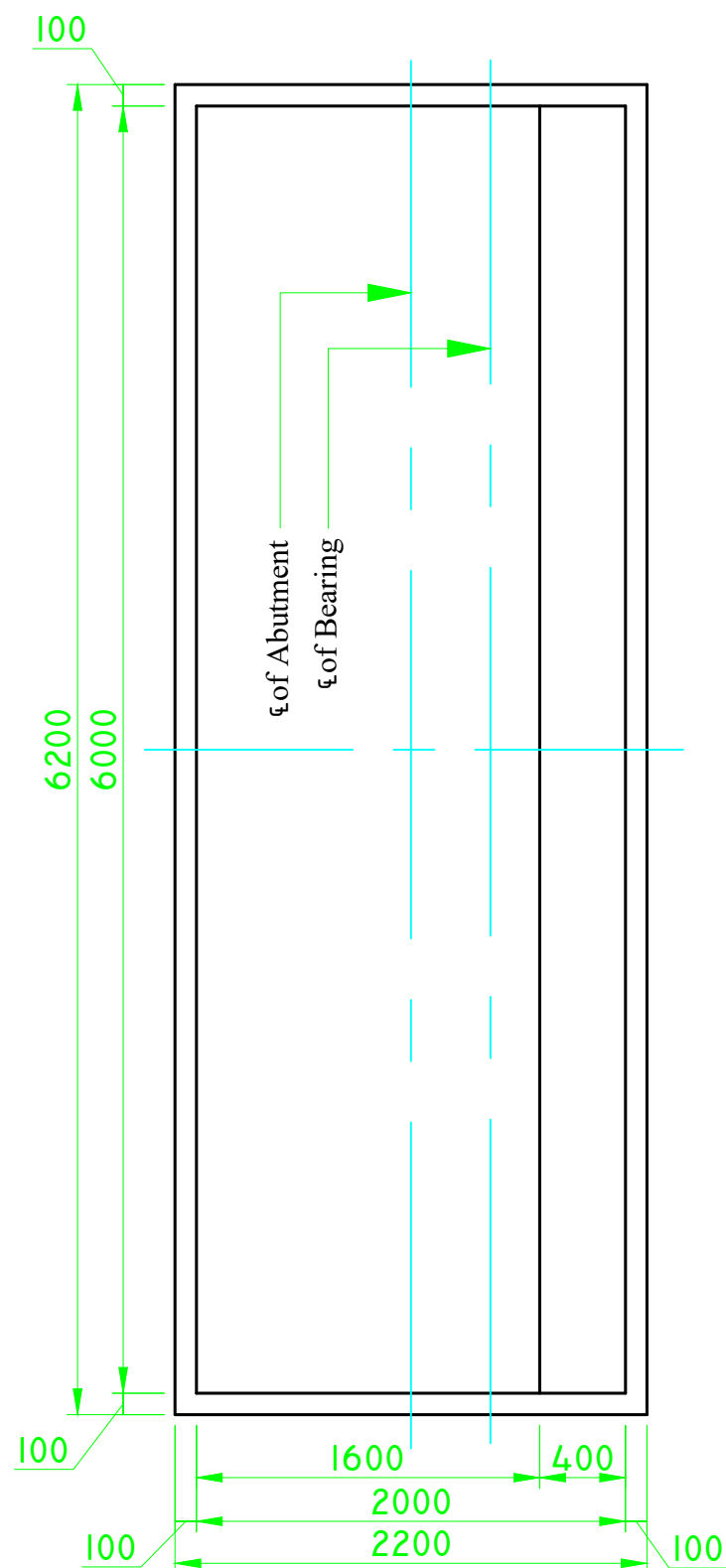
ROYAL GOVERNMENT OF BHUTAN  
Ministry of Works & Human settlement  
Department of Roads, Bridge Division  
Thimphu, Bhutan

BAILEY TYPE STEEL TRUSS **GANGCHITPO BRIDGE**  
[DS 80 FT SPAN & 3.277 m CARRIAGEWAY]  
On Silambi-Nagor GC Road  
under Lingmithang Regional Office

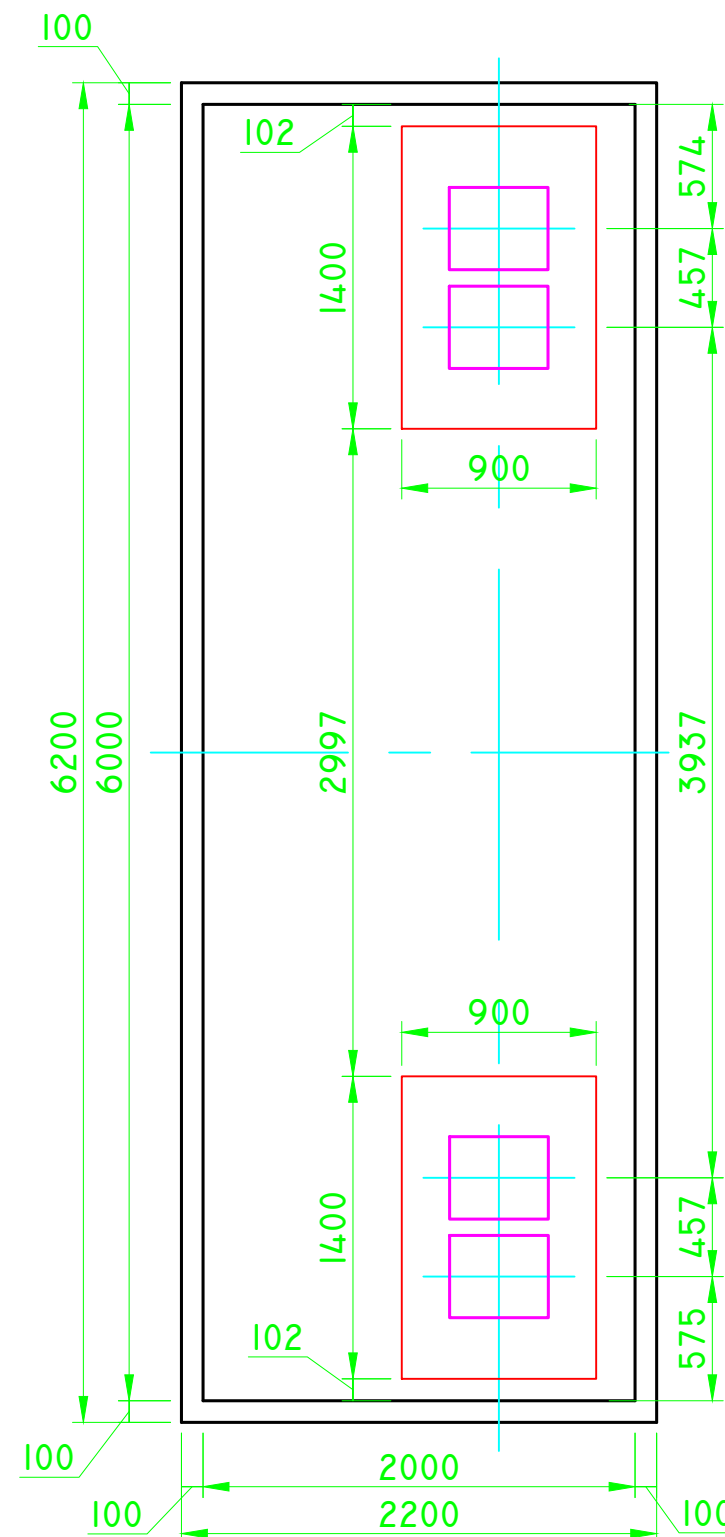
SHEET CONTENTS :

**SIDE ELEVATION &  
FRONT ELEVATION OF  
RIGHT ABUTMENT**

REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
△ FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	<b>GB-ABT-18</b>	
△ REVISED		DRAWN	TSHEWANG RINZIN (E)		
		CHECKED	RINCHEN KHANDU (EE)	SCALE:	AS SHOWN
		APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	



**FOOTING PLAN**  
**Scale:1:35**



**BEARING PLAN**  
**Scale:1:35**

## NOTES

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### COVERING

ABUTMENT WALL (ALL SIDES) = 75 MM  
(UP TO OUTER FACE OF MAIN BAR)

RETURN WALL = 75MM

### BAR MARK

BAR MARK ——— SPACING  
**40-01-T 20-150-BACK.**  
NOS. OF BAR ——— LOCATION / REMARK  
TYPE OF REBAR ——— DIA. OF REBAR

T - HIGH YIELD DEFORMED BAR  
Y - DEFORMED MS BAR  
R - ROUND MS BAR

INDICATES BAR CUT POINT



ROYAL GOVERNMENT OF BHUTAN  
Ministry of Works & Human settlement  
Department of Roads, Bridge Division  
Thimphu, Bhutan

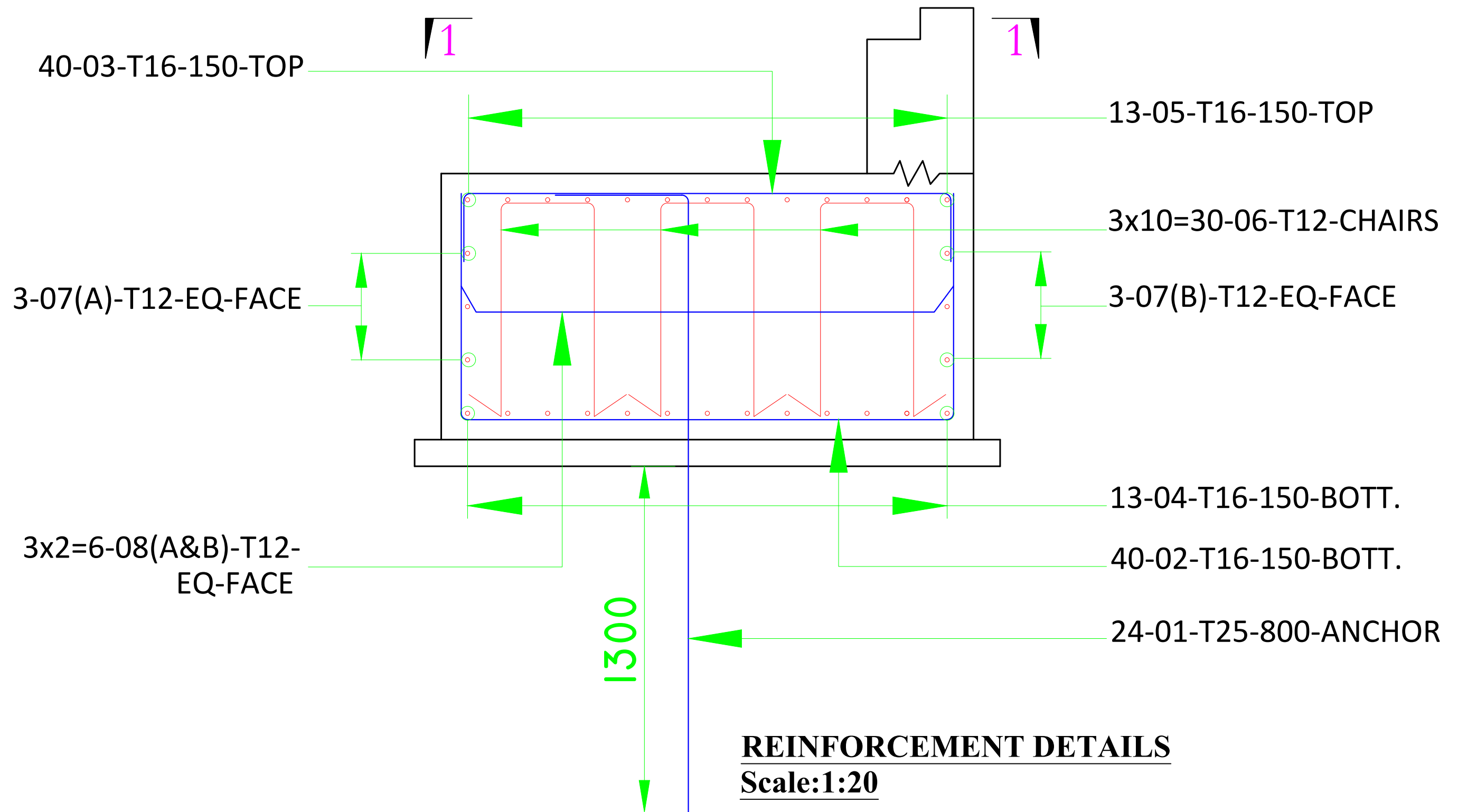
BAILEY TYPE STEEL TRUSS **GANGCHITPO BRIDGE**  
[DS 80 FT SPAN & 3.277 m CARRIAGEWAY]  
On Silambi-Nagor GC Road  
under Lingmithang Regional Office

SHEET CONTENTS :

FOOTING & BEARING  
PLAN OF RIGHT  
ABUTMENT

REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
△ FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	<b>GB-ABT-19</b>	
△ REVISED		DRAWN	TSHEWANG RINZIN (E)		
		CHECKED	RINCHEN KHANDU (EE)	SCALE:	AS SHOWN
		APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	





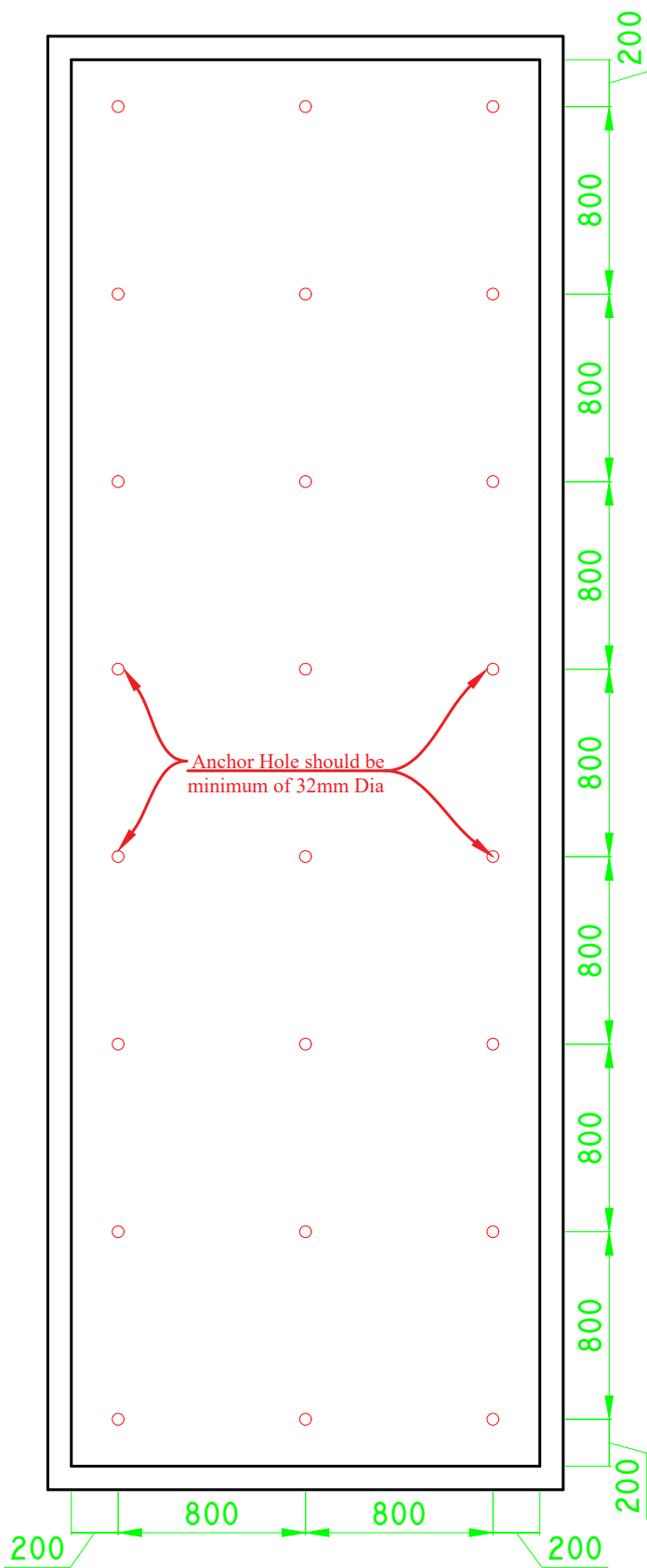
ROYAL GOVERNMENT OF BHUTAN  
 Ministry of Works & Human settlement  
 Department of Roads, Bridge Division  
 Thimphu, Bhutan

**BAILEY TYPE STEEL TRUSS GANGCHITPO BRIDGE**  
 [DS 80 FT SPAN & 3.277 m CARRIAGEWAY]  
 On Silambi-Nagor GC Road  
 under Lingmithang Regional Office

SHEET CONTENTS :

**REINFORCEMENT  
 DETAILS OF RIGHT  
 ABUTMENT**

REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
△ FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	<b>GB-ABT-20</b>	
△ REVISED		DRAWN	TSHEWANG RINZIN (E)		
		CHECKED	RINCHEN KHANDU (EE)	SCALE:	AS SHOWN
		APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	



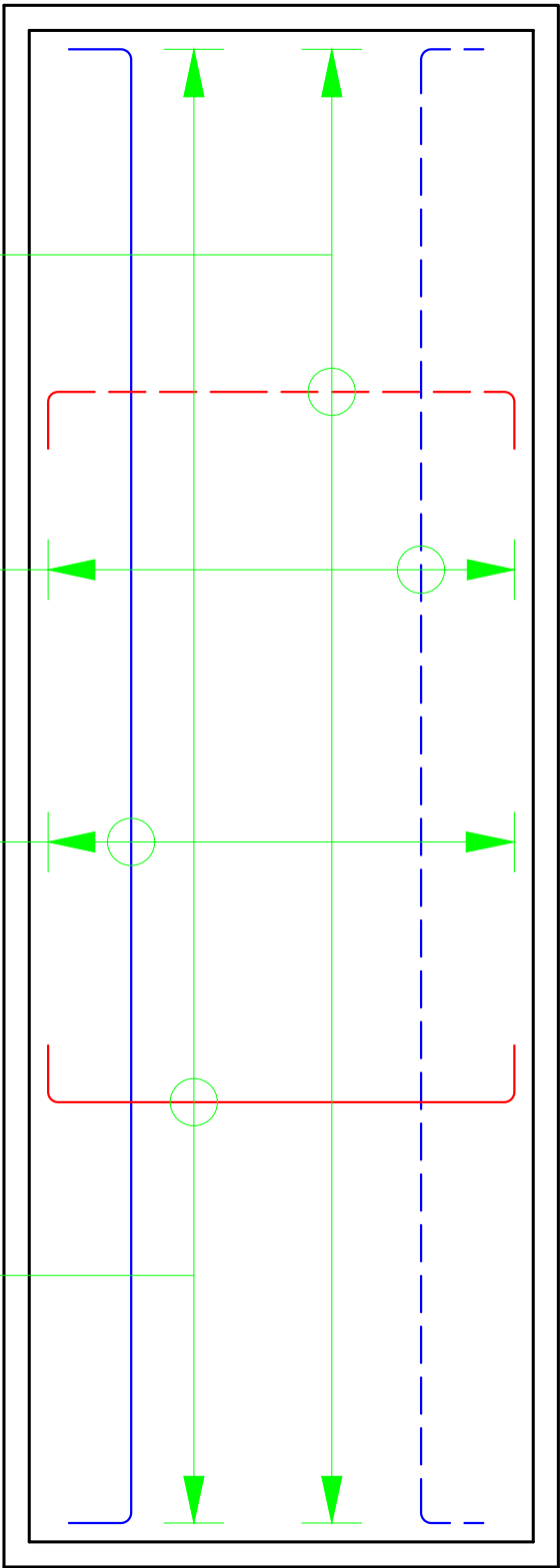
**PLAN OF ANCHORAGE BAR**  
**Scale:1:30**

40-03-T16-150-TOP

13-05-T16-150-TOP

13-04-T16-150-BOTT.

40-02-T16-150-BOTT.



**REINFORCEMENT VIEW "1-1"**  
**Scale:1:30**

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**COVERING**

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(UP TO OUTER FACE OF MAIN BAR)
- RETURN WALL = 75MM




**BAR MARK**

- BAR MARK — SPACING
- 40-01-T 20-150-BACK.
- NOS. OF BAR — LOCATION / REMARK
- TYPE OF REBAR — DIA. OF REBAR
- T - HIGH YIELD DEFORMED BAR  
Y - DEFORMED MS BAR  
R - ROUND MS BAR

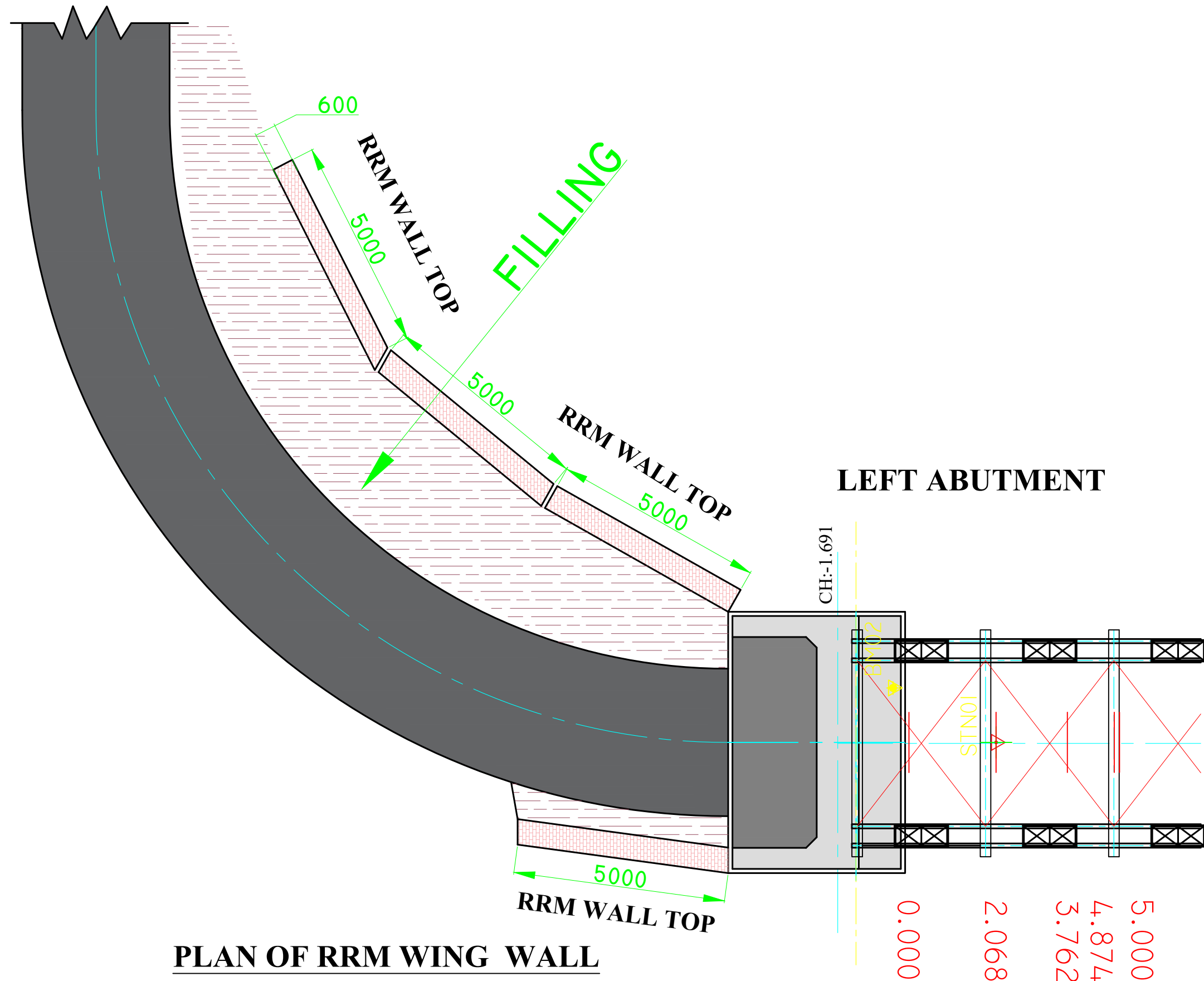
INDICATES BAR CUT POINT

**LEGEND**


- BOTTOM BAR
- TOP BAR

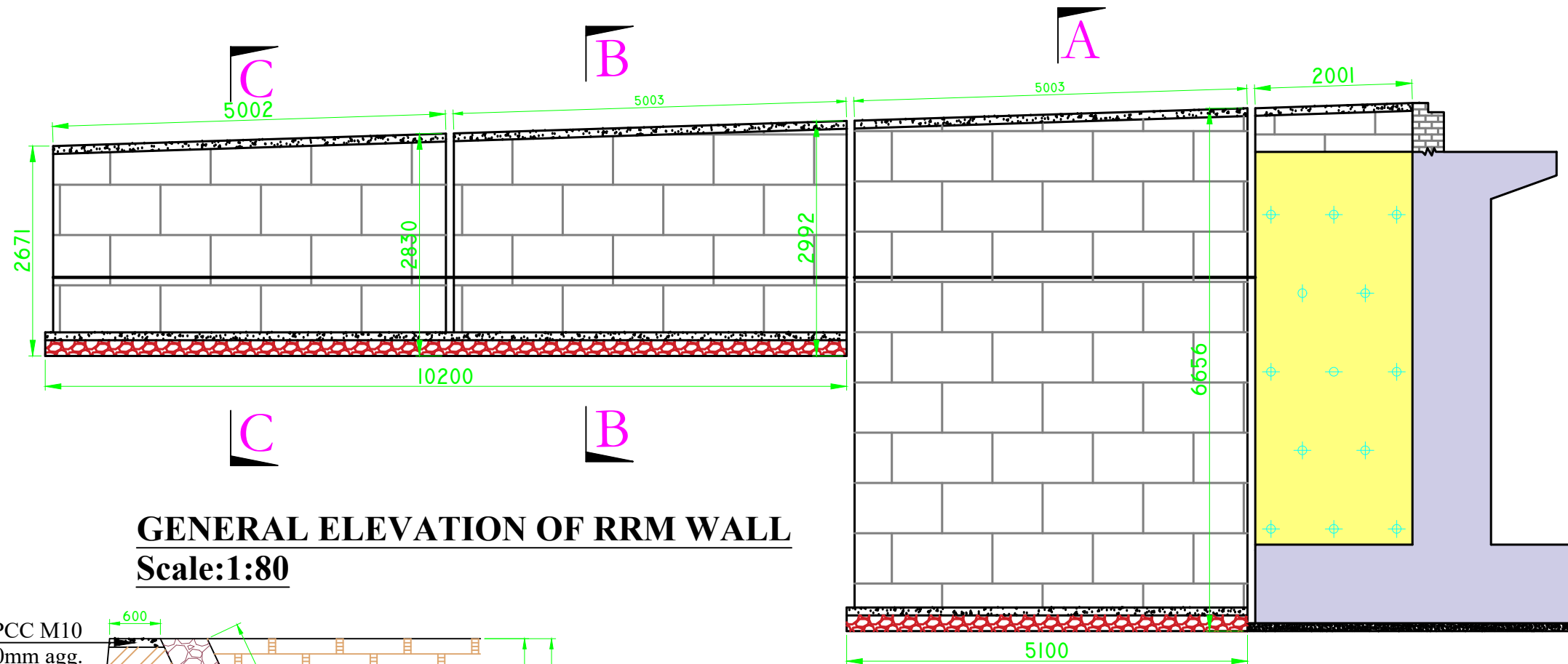
	ROYAL GOVERNMENT OF BHUTAN Ministry of Works & Human settlement Department of Roads, Bridge Division Thimphu, Bhutan	BAILEY TYPE STEEL TRUSS <b>GANGCHITPO BRIDGE</b> [DS 80 FT SPAN & 3.277 m CARRIAGEWAY] On Silambi-Nagor GC Road under Lingmithang Regional Office	SHEET CONTENTS : PLAN OF ANCHORAGE BAR & REINFORCEMENT VIEW "1-1" OF RIGHT ABUTMENT	REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
				 FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	<b>GB-ABT-21</b>	
				 REVISED		DRAWN	TSHEWANG RINZIN (E)		
						CHECKED	RINCHEN KHANDU (EE)	SCALE:	AS SHOWN
						APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	



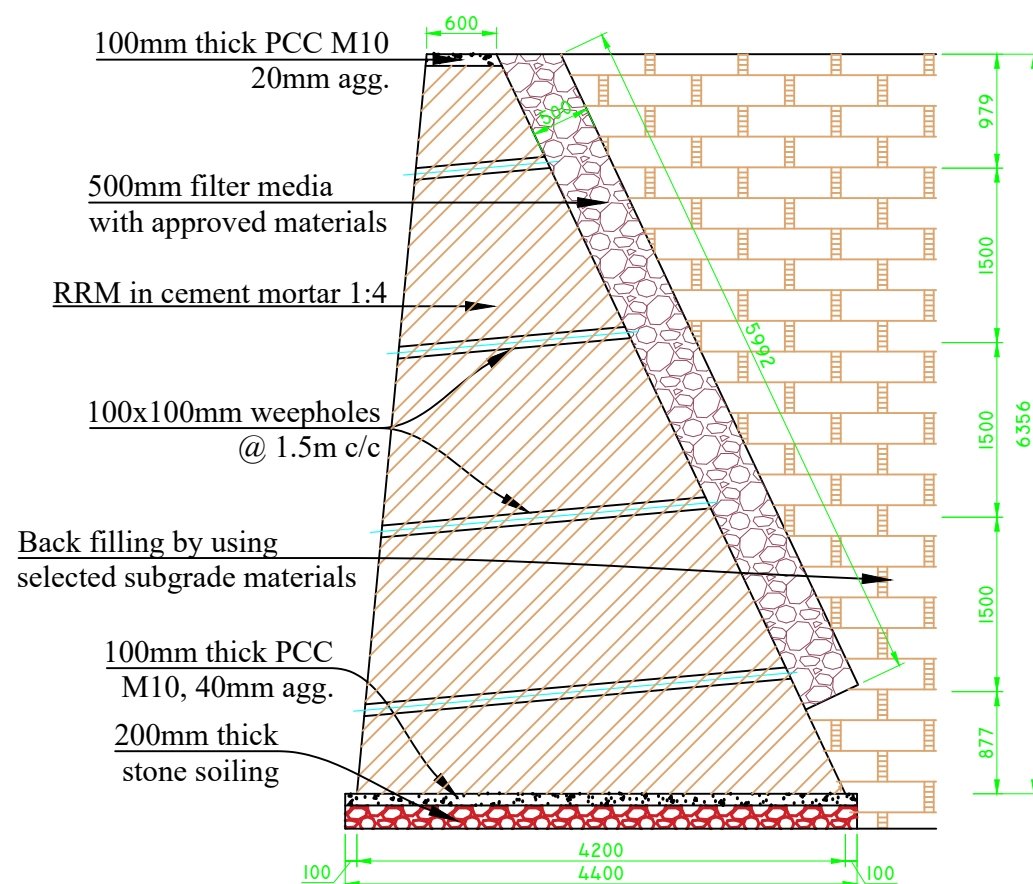


**PLAN OF RRM WING WALL**

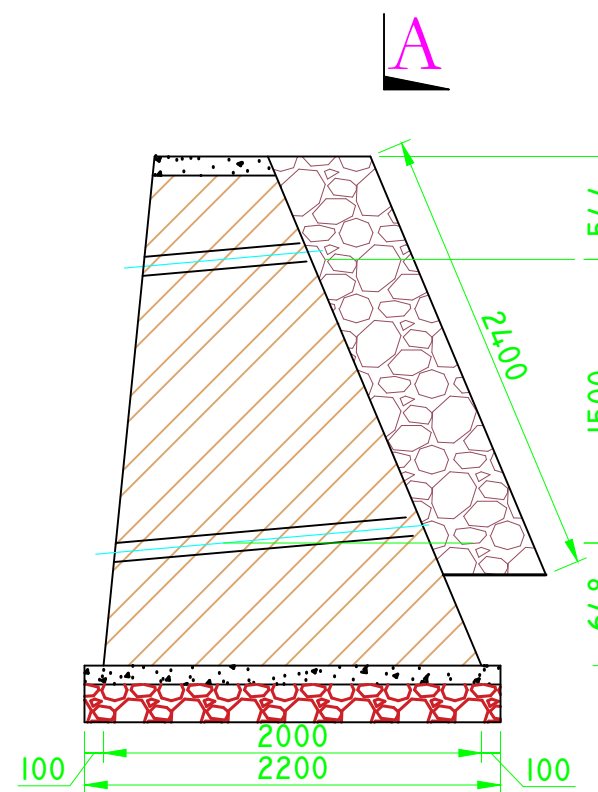
 <p>ROYAL GOVERNMENT OF BHUTAN Ministry of Works &amp; Human settlement Department of Roads, Bridge Division Thimphu, Bhutan</p>	<p><b>BAILEY TYPE STEEL TRUSS GANGCHITPO BRIDGE</b> [DS 80 FT SPAN &amp; 3.277 m CARRIAGEWAY] On Silambi-Nagor GC Road under Lingmithang Regional Office</p>	<p>SHEET CONTENTS :  <b>PLAN OF RRM WING WALL</b></p>	REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
			△ FIRST ISSUE	Oct., 2017	DESIGN	TSHEWANG RINZIN (E)	<b>GB-ABT-23</b>	
			△ REVISED		DRAWN	TSHEWANG RINZIN (E)		
					CHECKED	RINCHEN KHANDU (EE)	SCALE:	1:100
					APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	



**GENERAL ELEVATION OF RRM WALL**  
**Scale:1:80**



**SECTION "A-A"**  
**Scale:1:65**



**SECTION "B-B" & "C-C"**  
**Scale:1:40**



ROYAL GOVERNMENT OF BHUTAN  
 Ministry of Works & Human settlement  
 Department of Roads, Bridge Division  
 Thimphu, Bhutan

BAILEY TYPE STEEL TRUSS **GANGCHITPO BRIDGE**  
 [DS 80 FT SPAN & 3.277 m CARRIAGEWAY]  
 On Silambi-Nagor GC Road  
 under Lingmithang Regional Office

SHEET CONTENTS :

ELEVATION & SECTION  
 OF WING WALL

REVISION	DATE	NAME & SIGNATURE		DRAWING NO.	
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		APPROVED	KARMA WANGDI (CE)	(as Sheet A3 size)	

