

SCHEDULE OF REINFORCEMENT (DECK SLAB) PER SPAN

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Nos. of Bars	Spacing of Bars
1	a		12	-	110
2	b		12	-	220
3	c		10	-	200
4	d		10	-	200
5	e		12	-	220
6	f		12	-	220
7	g		20	-	220
8	h		12	-	220
9	i		10	-	200
10	j		10	-	200
11	k		20	-	200
12	l		12	-	200
13	m		12	2 NOS	-
14	q		8	-	200

M.S. BARS (MESH REINFORCEMENT IN LONGITUDINAL GIRDER)

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Nos. of Bars
1	u		8	-
2	v		8	16 NOS

SCHEDULE OF REINFORCEMENT FOR LONGITUDINAL GIRDERS (PER SPAN)

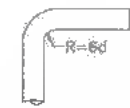
Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Spacing of Bars	Nos. of Bars
1	d1		16	250	-
2	e2		16	100	-
3	b4		16	100	-
4	c1		16	-	5
5	d1		16	-	5
6	m1		10	-	-
7	f1		-	-	94
8	g1		-	-	20
9	g2		32	-	20
10	g3		32	-	20
11	g4		32	-	12
12	f1		10	-	10
13	j1		16	250	-
14	j2		16	100	-
15	k1		12	100	-

SCHEDULE OF REINFORCEMENT (CROSS GIRDERS) PER SPAN

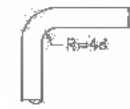
Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Spacing of Bars	Nos. of Bars/Girder	Nos. of Bars/SPAN
1	b1		8	-	3	6
2	b2		8	-	2	4
3	c2		8	-	2	4
4	e2		16	-	3	6
5	f2		16	-	2	4
6	h3		16	-	2	4
7	i2		10	-	2	4
8	j3		12	-	-	150
9	k2		25	-	3	3
10	h1		25	-	2	2
11	m1		25	-	2	2
12	m4		25	-	2	2
13	p1		25	-	2	2
14	q1		25	-	3	3
15	s1		12	200	-	-
17	t1		10	-	-	-

NOTES:

- THE EXACT LENGTH OF THE BARS WILL BE DETERMINED BY THE ACTUAL LAPS WITH SPLICES ADOPTED AT SITE.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:
 - a. GENERAL NOTES: DRG. NO. SA-213007/DPR/C/B/TYP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE: DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER: DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUP-02
 - d. REINFORCEMENT DETAILS FOR CROSS GIRDER: DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUP-03
 - e. REINFORCEMENT DETAILS OF DECK SLAB: DRG. NO. SA-213007/DPR/C/B/MAJ/13.178/SUP-04



d = Dia of bar
For bar above 25mm dia



d = Dia of bar
For bar upto 25mm dia

M.S. BARS (MESH REINFORCEMENT IN CROSS GIRDERS)

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Spacing of Bars	Nos. of Bars/Girder	Nos. of Bars/SPAN
1	u1		8	-	24	24
2	v1		8	-	24	24

DATE: 20/07/19 10:44:40m PATH: I:\CAD\TAD\2007 BHAR\REVISED DPR\CV\PACKAGE-1\MAJOR BRIDGE\01 L13+178\SUPER STR\20.5m span\05 SCHEDULE 20.5m.dwg

CLIENT: Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

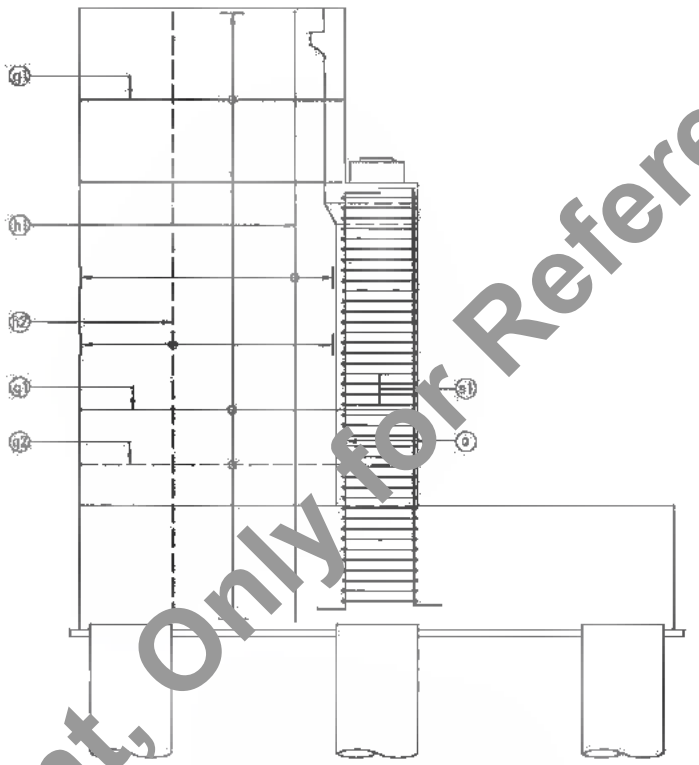
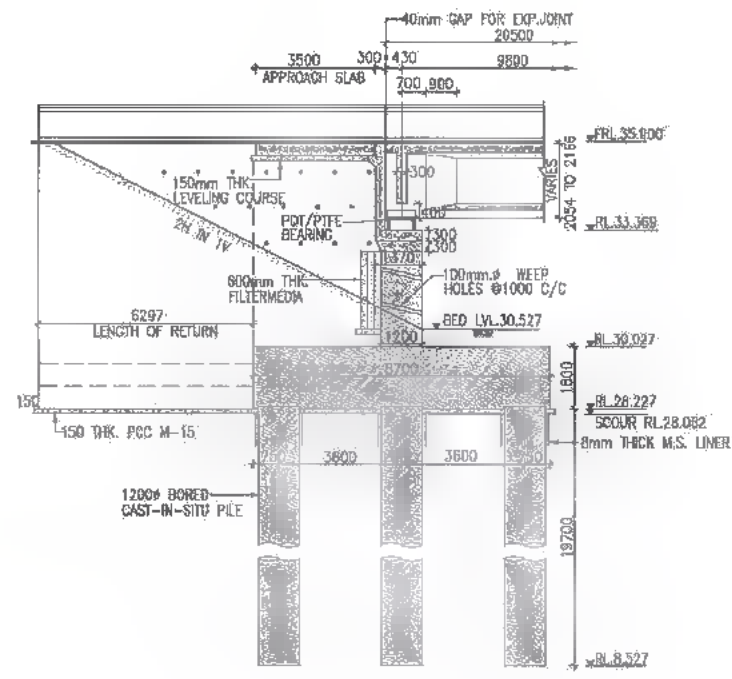
PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

PE: 31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRWN BY: G.M.G.	TITLE: BAYSI - RAUTA (PACKAGE-I)
PD: 17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY: A.K.R.	REINFORCEMENT SCHEDULE FOR RCC T-BEAM SUPER STRU. AT EXL CH.13/197 & PROP. CH. 13+178
PC: 10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY: B.R.V.	DRG. NO.: SA-213007/DPR/C/MAJ/13.178/SUP-05
PA: 20/02/14	ISSUED WITH FINAL DPR	ISSUED BY: B.S.	REVISION: PE
PA: 13/11/13	ISSUED WITH DPR		

SCALE: AS SHOWN





REINF. SCHEDULE FOR RIDING RETURN

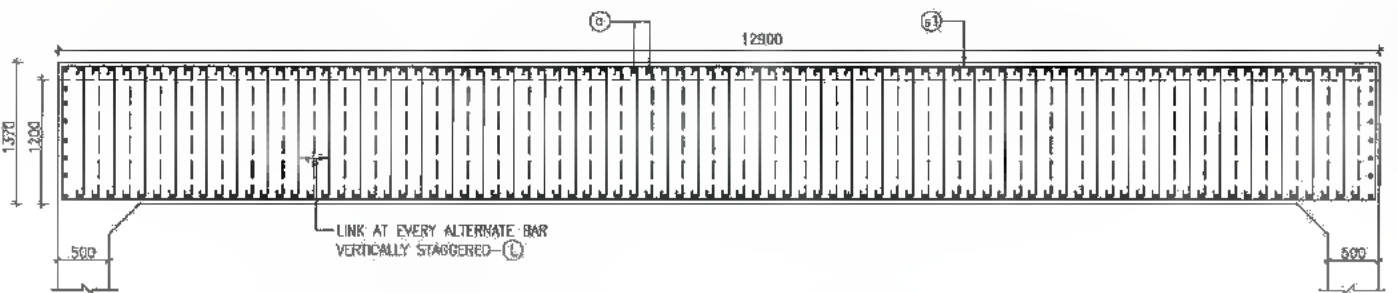
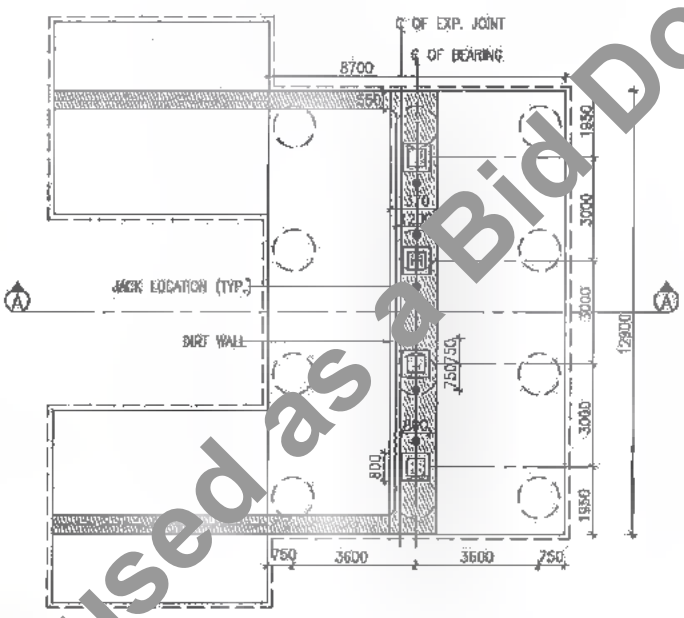
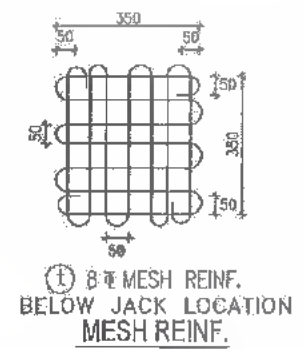
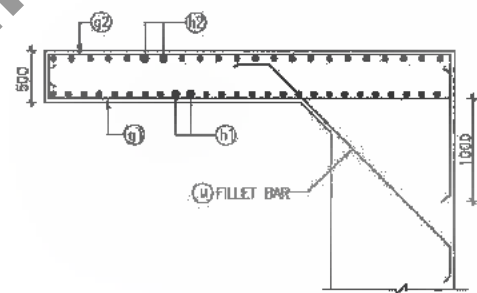
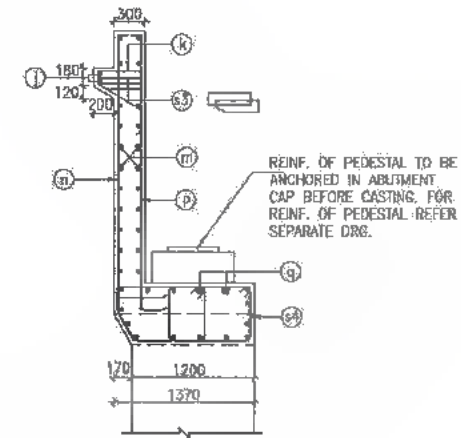
TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIA OF BARS (mm.)	SPACING / NOS OF BARS (mm.)
g1	450	16	180 C/C
g2	1800	10	180 C/C
h1	350	16	100 C/C
h2	350	12	180 C/C
u		8	150 C/C

REINF. SCHEDULE FOR ABUTMENT

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIA OF BARS (mm.)	SPACING / NOS OF BARS (mm.)
p	900	25	150 C/C
L		8	300 C/C
s1		16	130 C/C

REINF. SCHEDULE FOR ABUTMENT CAP

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIA OF BARS (mm.)	SPACING / NOS OF BARS (mm.)
J		12	2 NOS
k		12	170 C/C
m		10	170 C/C
n		16	170 C/C
P		16	170 C/C
q		16	14 NOS
s3		10	170 C/C
s4		12	150 C/C



- NOTES:-
- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHAINAGES & LEVELS ARE IN METERS.
 - ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
 - GRADE OF CONCRETE : M-30
 - GRADE OF HYSD REINFORCEMENT : Fe-500
 - MINIMUM COVER TO ANY REINFORCEMENT SHALL BE (i) 50mm IN ABUTMENT (ii) 75mm IN FOOTING
 - MINIMUM COVER TO MESH REINF. SHALL BE 20mm UNLESS OTHERWISE SHOWN IN THE DRAWING.
 - IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.5.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 87 TIMES BAR DIAMETER. LAPPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY
 - THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE TO REPLACE BEARING etc. IS SHOWN THIS ●. THESE SHOULD BE DISTINCTLY ETCHED ON THE CROSS GIRDERS AND PIER/ABUTMENT CAPS.

DATE: 20/10/2019 12:19:09pm
PATH: I:\CAD\TAO\2017\BIHAR\REVISED DPR\CB\PACKAGE-1\MAJOR BRIDGE\01 CH.13\17B\SUB STRUCT\01 ABUTMENT & ABUTMENT CAP.dwg

CLIENT :
Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :
SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRWN BY : G.M.C.
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : H.K.S.
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : B.R.V.
PR	26/02/14	ISSUED WITH FINAL DPR	ISSUED BY : B.S.
PA	13/11/13	ISSUED WITH DPR	

SCALE : AS SHOWN

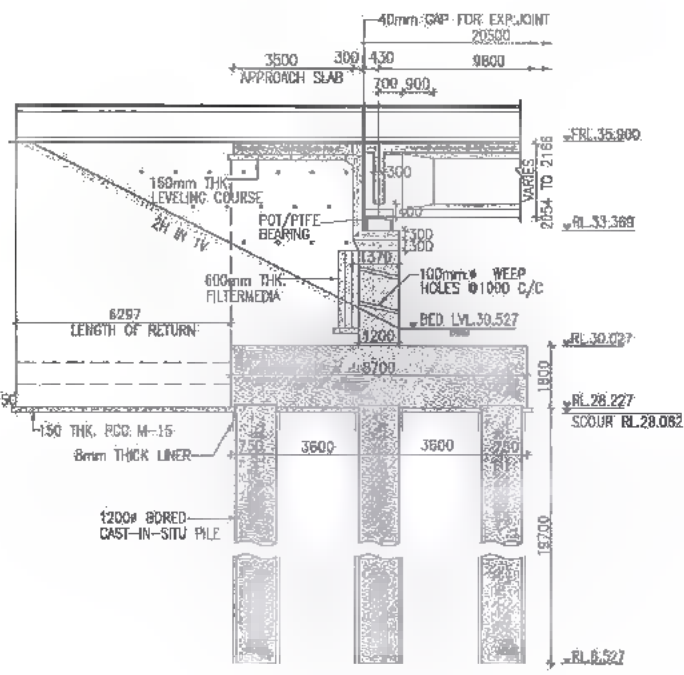
TITLE: Baysi - RAUTA (PACKAGE-9) REINFORCEMENT DETAILS OF ABUTMENT ABUTMENT CAP & DIRTWALL MAJOR BRIDGE AT EXIS. CH.13/187 & PROP.CH.13x178

DRG. NO.: SAI-213007DPR/CB/MAJ/13.178/SUB-01

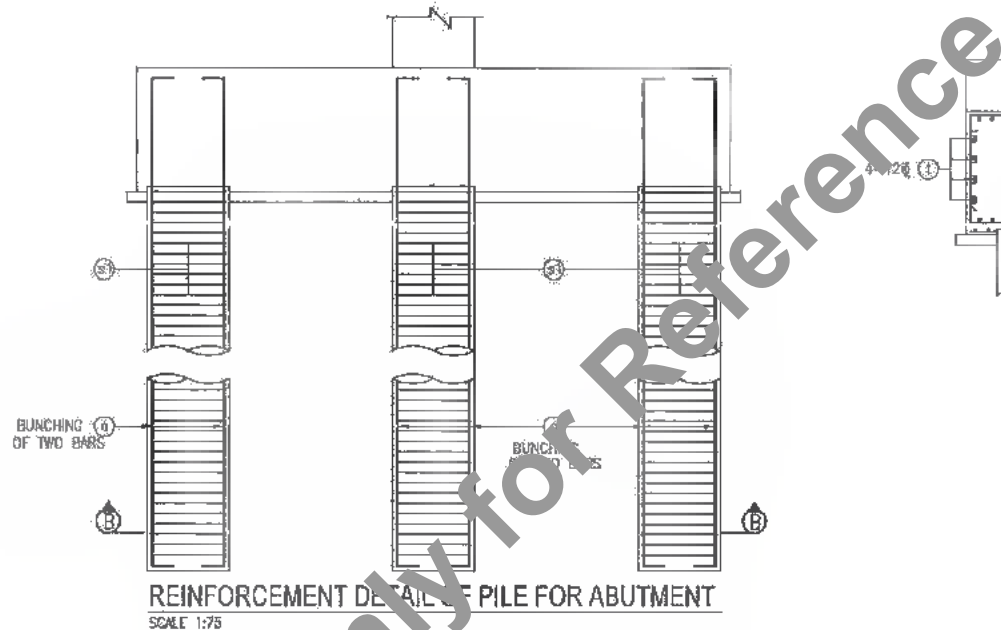
REVISION : PE



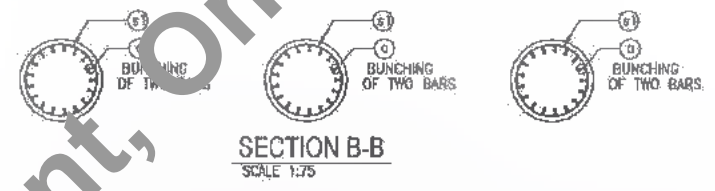
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508



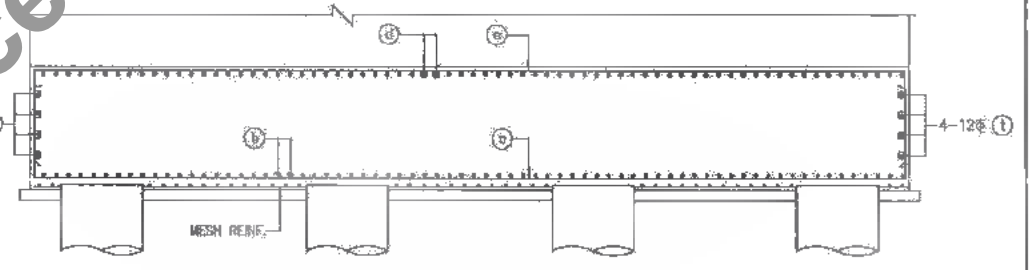
SECTION OF ABUTMENT A-A
SCALE 1:150 (DIMENSION DETAILS)



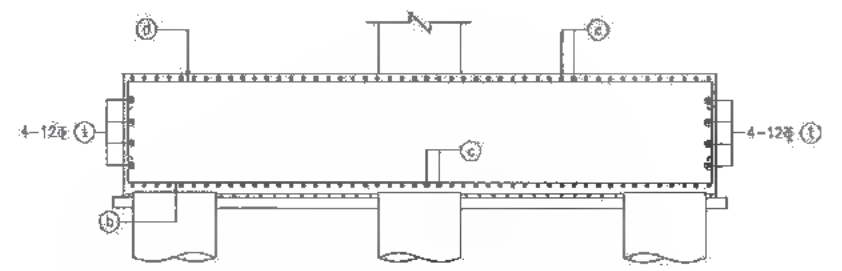
REINFORCEMENT DETAIL OF PILE FOR ABUTMENT
SCALE 1:75



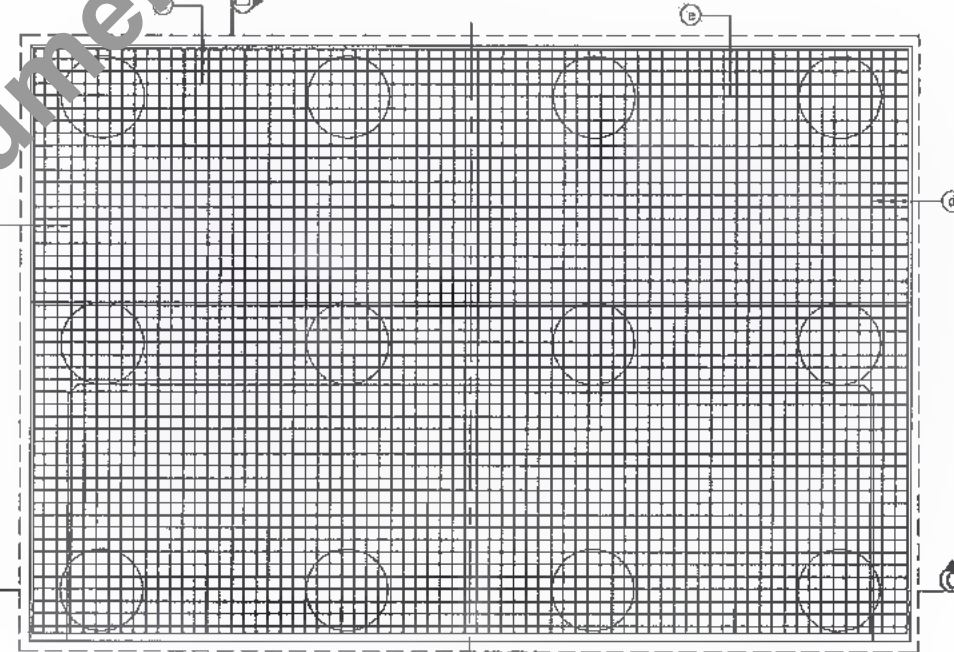
SECTION B-B
SCALE 1:75



SECTION C-C
SCALE 1:75



SECTION D-D
SCALE 1:75



PLAN FOR PILECAP OF ABUTMENT
SCALE 1:75

SCHEDULE OF REINFORCEMENT PER PILE

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MM)	DIA OF BARS (mm.)	SPACING / NO. OF BARS
a	VARIES	32	34 NOS. BUNCHING OF TWO BARS
b1	200	B	150 C/C

SCHEDULE OF REINF. FOR PILE CAP

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MM)	DIA OF BARS (mm.)	SPACING / NO. OF BARS
b	900	25	200 C/C
c	900	16	180 C/C
d	900	16	180 C/C
e	900	16	180 C/C
t		12	16 NOS.

NOTES:-

- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHAINAGES & LEVELS ARE IN METERS.
- ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
- IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.6.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 87 TIMES BAR DIAMETER FOR PIER & SHALL NOT BE LESS THAN 77 TIMES BAR DIAMETER FOR PILE & PILE CAP. LAPPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
- MINIMUM COVER TO ANY REINFORCEMENT SHALL BE (i) IN ABUTMENT 50mm (ii) IN FOUNDATION 75mm
- GRADE OF CONCRETE (a) PILE : M-35 (b) PILE CAP : M-35
- GRADE OF NYSD REINFORCEMENT : Fe-500

Table Showing Various Parameters of Piles

Existing Chainage	Proposed Chainage	Abutment	Ground Level (m)	Founding Level, FRL (m)	Length of Pile (m)	Top of Pile Cap (m)	Bottom of Pile Cap (m)	Formation Level (m)	Top of Abutment Cap (m)	Top of Abutment (m)	Height of Abutment (m)	Max. Vertical Load		Horizontal Load on Pile			
												Normal (Mton)	Seismic (Mton)	Normal (i) Seismic (i)	Normal (j) Seismic (j)		
13/197	13+178	A1 A2	30.527 31.384	8.527 8.527	18.700 19.700	30.027	28.227	35.600	33.388	32.569	2.642	210.10	246.85	40.77	40.77	39.45	14.04

DATE: 20/07/29 4:00pm PATR: TACADYAD 0007 BIHARREVISED DPR(C)B PACKAGE-TWAIJOR BRIDGE/01 CH:13+178/SUB STRUA/02 ABUTMENT PILE & PILE CAP.dwg

CLIENT : Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS : SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

REV. DATE: DESCRIPTION: SIGN: ISSUED BY: S.S. 20/07/19

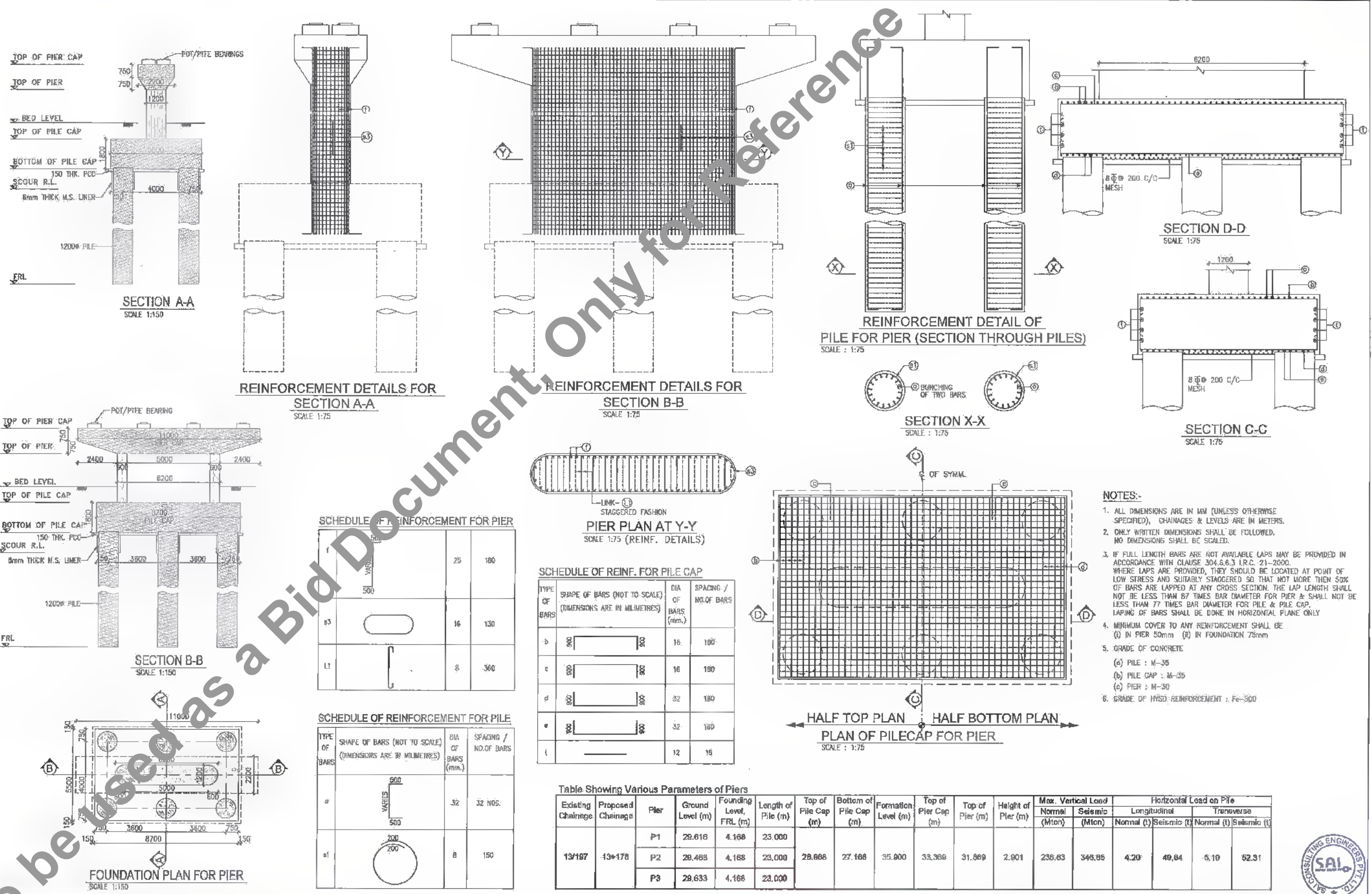
SCALE : AS SHOWN

TITLE: BAYSI - RAJTA (PACKAGE-I) REINFORCEMENT DETAILS OF ABUTMENT PILE & PILE CAP ABUTMENT FOR MAJOR BRIDGE AT EXHS. CH:13/197 & PROP.CH:13+178

DRG. NO.: SAI-213607/DPR/C/BHMA/13.178/SUB-02

REVISION: PE





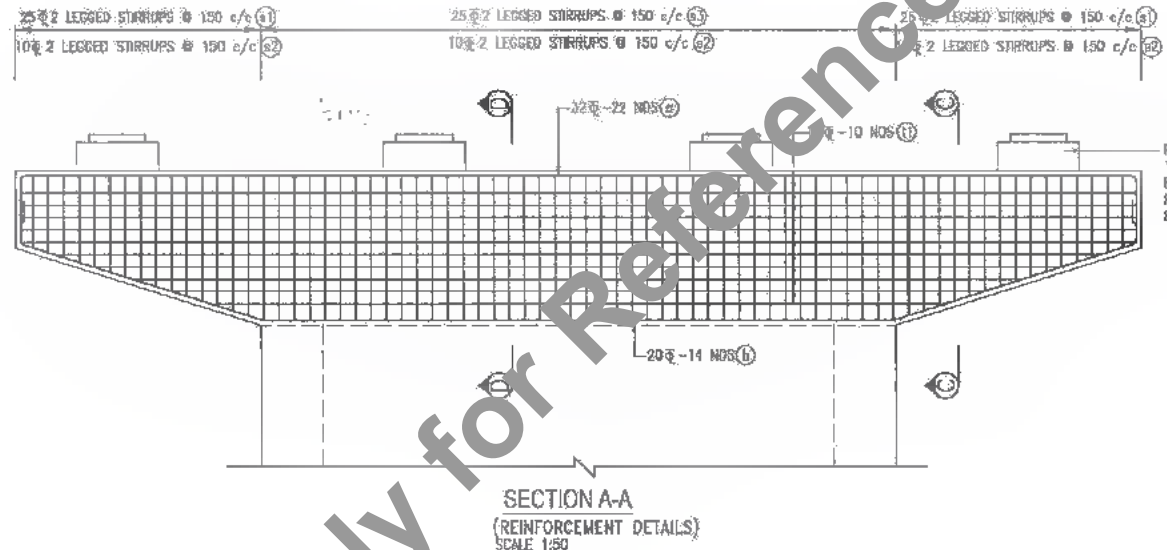
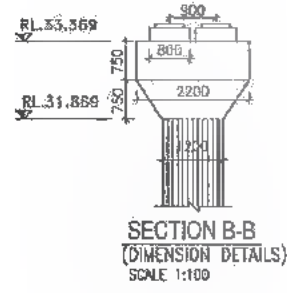
- NOTES:-**
- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHAINAGES & LEVELS ARE IN METERS.
 - ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
 - IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.6.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 87 TIMES BAR DIAMETER FOR PIER & PILE CAP. LAPPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
 - MINIMUM COVER TO ANY REINFORCEMENT SHALL BE (i) IN PIER 50mm (ii) IN FOUNDATION 75mm
 - GRADE OF CONCRETE
(a) PILE : M-35
(b) PILE CAP : M-35
(c) PIER : M-30
 - GRADE OF HYSD. REINFORCEMENT : Fe-500

Table Showing Various Parameters of Piers

Existing Chainage	Proposed Chainage	Pier	Ground Level (m)	Founding Level, FRL (m)	Length of Pile (m)	Top of Pile Cap (m)	Bottom of Pile Cap (m)	Formation Level (m)	Top of Pier Cap (m)	Top of Pier (m)	Height of Pier (m)	Max. Vertical Load		Horizontal Load on Pile			
												Normal (Mton)	Seismic (Mton)	Longitudinal Normal (t)	Seismic (t)	Transverse Normal (t)	Seismic (t)
13/187	13+178	P1	29.616	4.168	23.000												
		P2	28.488	4.168	23.000	28.666	27.166	35.900	33.368	31.869	2.901	235.63	346.85	4.20	49.84	-5.10	52.31
		P3	29.633	4.168	23.000												

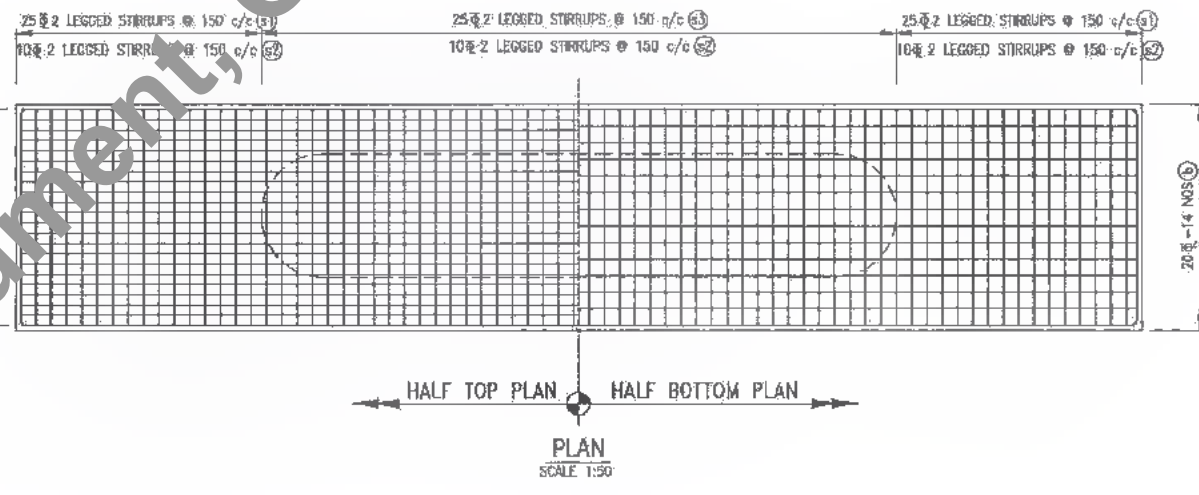
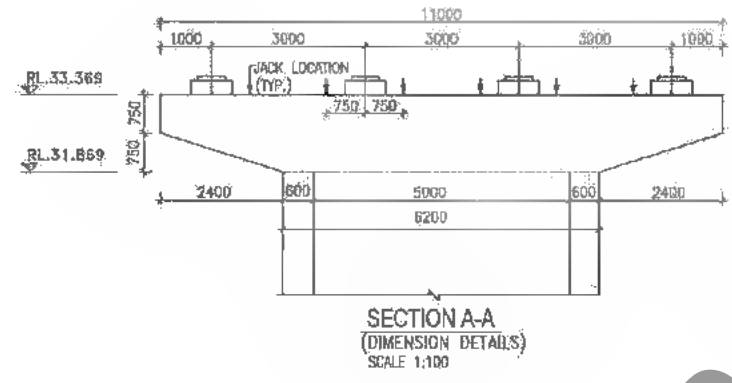
DATE: 2019/02/29 - 12:45pm
PATH: I:\CANTIDAD\2017 BHABHAREVISED DRRNC\PACKAGE-1\MAJOR BRIDGE\01 CH.13+178\SUB STRUCT\PIER, PILE & PILE CAP.dwg

<p>Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar <i>Baysi - Bahadurganj - Dighalbank (SH-99)</i></p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Head-A "SAI House" Setyan Corporate Square, 8th Bldg, 8th Floor, Bhubaneswar, Odisha-751005, India Phone : +91-76-6693130/301/304 -91-76-6612808 Email : mail@saiindia.com</p>	<p>PE 31/07/19 GOOD FOR CONSTRUCTION (REVISED DRR)</p> <p>PD 17/12/18 GOOD FOR CONSTRUCTION (DRR)</p> <p>PC 10/04/14 GOOD FOR CONSTRUCTION (DRR)</p> <p>PA 25/02/14 ISSUED WITH FINAL DRR</p> <p>PA 13/11/13 ISSUED WITH DRR</p>	<p>DRWN BY : K.P.A.</p> <p>CHECKED BY : N.K.S.</p> <p>APPROVED BY : B.K.V.</p>	<p>TITLE: BAYSI - RAUTA (PACKAGE-II) REINFORCEMENT DETAILS OF R.C.C. PIER WITH PILE FOUNDATION FOR MAJOR BRIDGE AT EXL CH.13/187 & PROP. CH.13+178</p>
			<p>REV. DATE DESCRIPTION SIGN ISSUED BY : B.S.</p>	<p>DRG. NO.: SAI-213007/DRAC/B/MA/13.178/SUB-08</p> <p>REVISION: PE</p>	



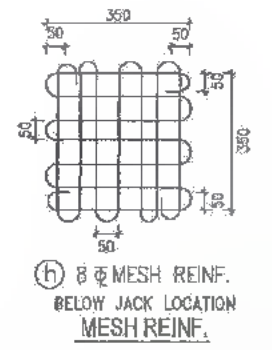
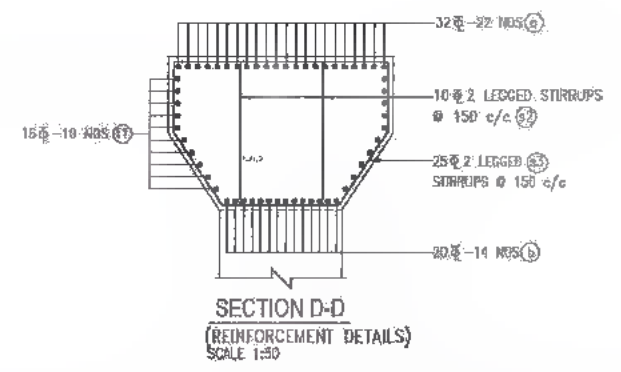
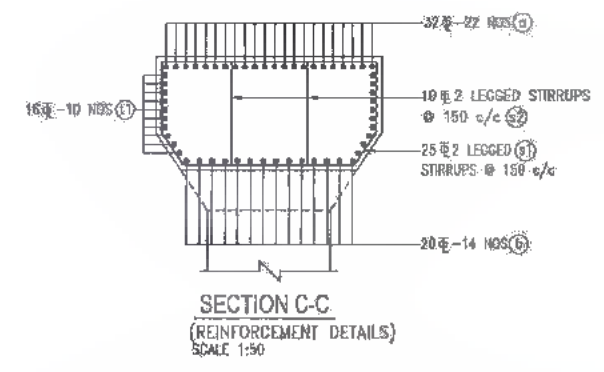
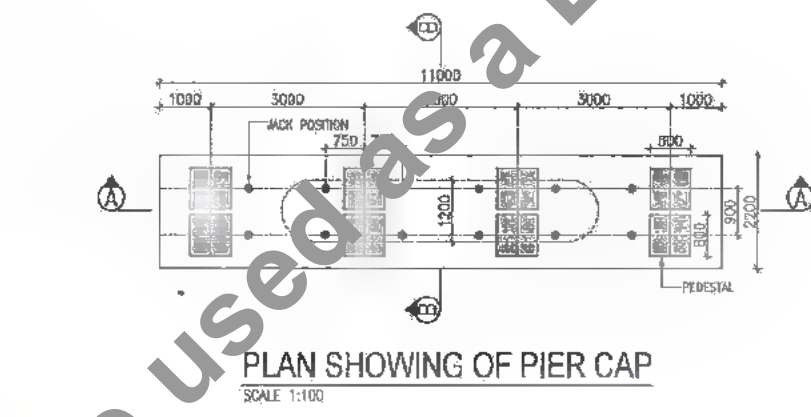
REINFORCEMENT OF PEDESTAL TO BE ANCHORED IN PIERCAP BEFORE CASTING. FOR RESPECTIVE REINF. DETAIL REFER DRG.

- NOTES:-**
- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED). CHANGES & LEVELS ARE IN METERS.
 - ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
 - IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.6.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 76 TIMES BAR DIAMETER. LAPPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
 - MINIMUM COVER TO ANY REINFORCEMENT SHALL BE 40mm
 - MINIMUM COVER TO MESH REINF. SHALL BE 20mm UNLESS OTHERWISE SHOWN IN THE DRAWING.
 - THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE TO REPLACE BEARING etc. IS SHOWN THUS THESE SHOULD BE DISTINCTLY ETCHED ON THE CROSS ORDERS AND PIER/ABUTMENT CAPS.
 - GRADE OF CONCRETE : M-30
 - GRADE OF HYSD REINFORCEMENT : Fe-500



SCHEDULE OF REINFORCEMENT FOR PIERCAP

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MILLIMETRES)	DIA. OF BARS (mm)	SPACING / NO. OF BARS
a		32	22 NOS.
b		20	14 NOS.
c1		16	10 NOS.
c2		25	150 c/c
c3		10	150 c/c
c4		25	150 c/c



DATE: 20/07/23 14:46pm PATH: F:\CAD\TAD\2007 BIHAR\REVISED DPR\CI\B\PACKAGE-MAJOR BRIDGE\01 CH.13+178\SUB STRU\104 PIERCAP.dwg

CLIENT:
 Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)
 D. O. S. (Tech.)
 PIU, Katihar

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
 SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A "SAI House", Solgan, Corporate Square, 8th Bypass, Katihar, Bihar, India. Phone: +91-91-668-2229/9070 Fax: +91-91-668-2229 Email: saiconsulting@gmail.com

REV.	DATE	DESCRIPTION	SIGN.	ISSUED BY
PE	31/07/19	GOOD FOR CONSTRUCTION (NEVERED DPR)		
PD	17/12/19	GOOD FOR CONSTRUCTION (DPR)		
PC	16/04/14	GOOD FOR CONSTRUCTION (DPR)		
PA	25/02/14	ISSUED WITH FINAL DPR		
PA	13/11/13	ISSUED WITH DPR		

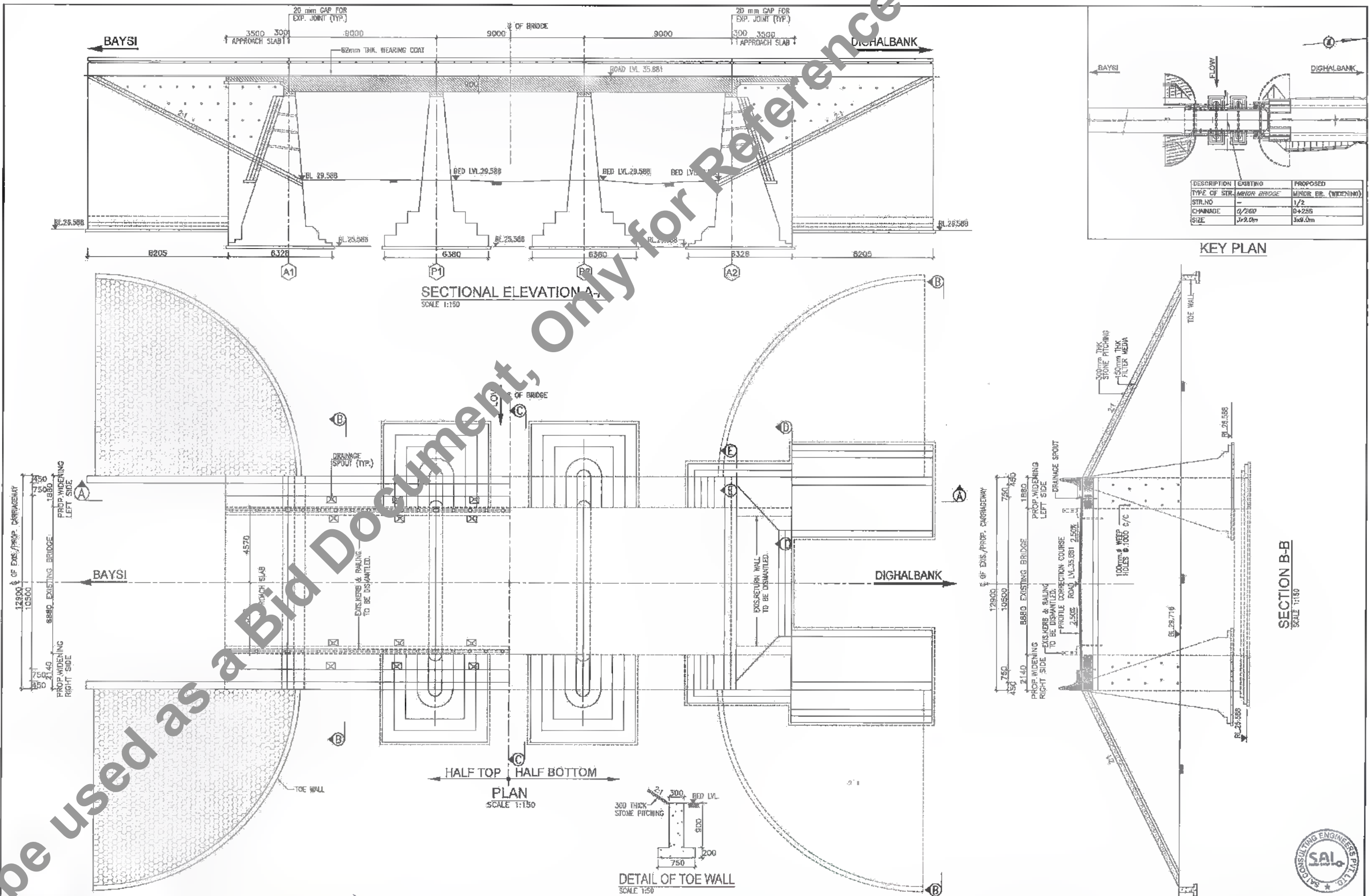
SCALE : AS SHOWN

TITLE:
 BAYSI - RAUTA (PACKAGE-II)
 REINFORCEMENT DETAILS OF PIER CAP FOR MAJOR BRIDGE AT EXI, CH. 13/197 & PROP. CH. 13+178

DRG. NO.:
 SAI-213007/DPR/CI/B/MAJ/13.178SUB-04

REVISION: PE





DESCRIPTION	EXISTING	PROPOSED
TYPE OF STR.	MINOR BRIDGE	MINOR BR. (WIDENING)
STR. NO.	-	1/2
CH. WID.	Q/260	D+255
SIZE	3x9.0m	3x9.0m

KEY PLAN

SECTIONAL ELEVATION A-A
SCALE 1:150

PLAN
SCALE 1:150

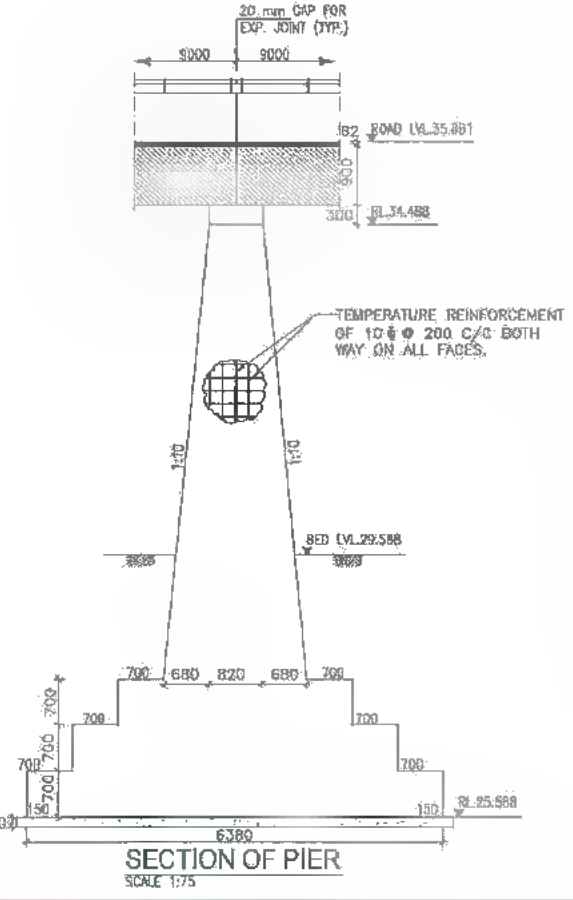
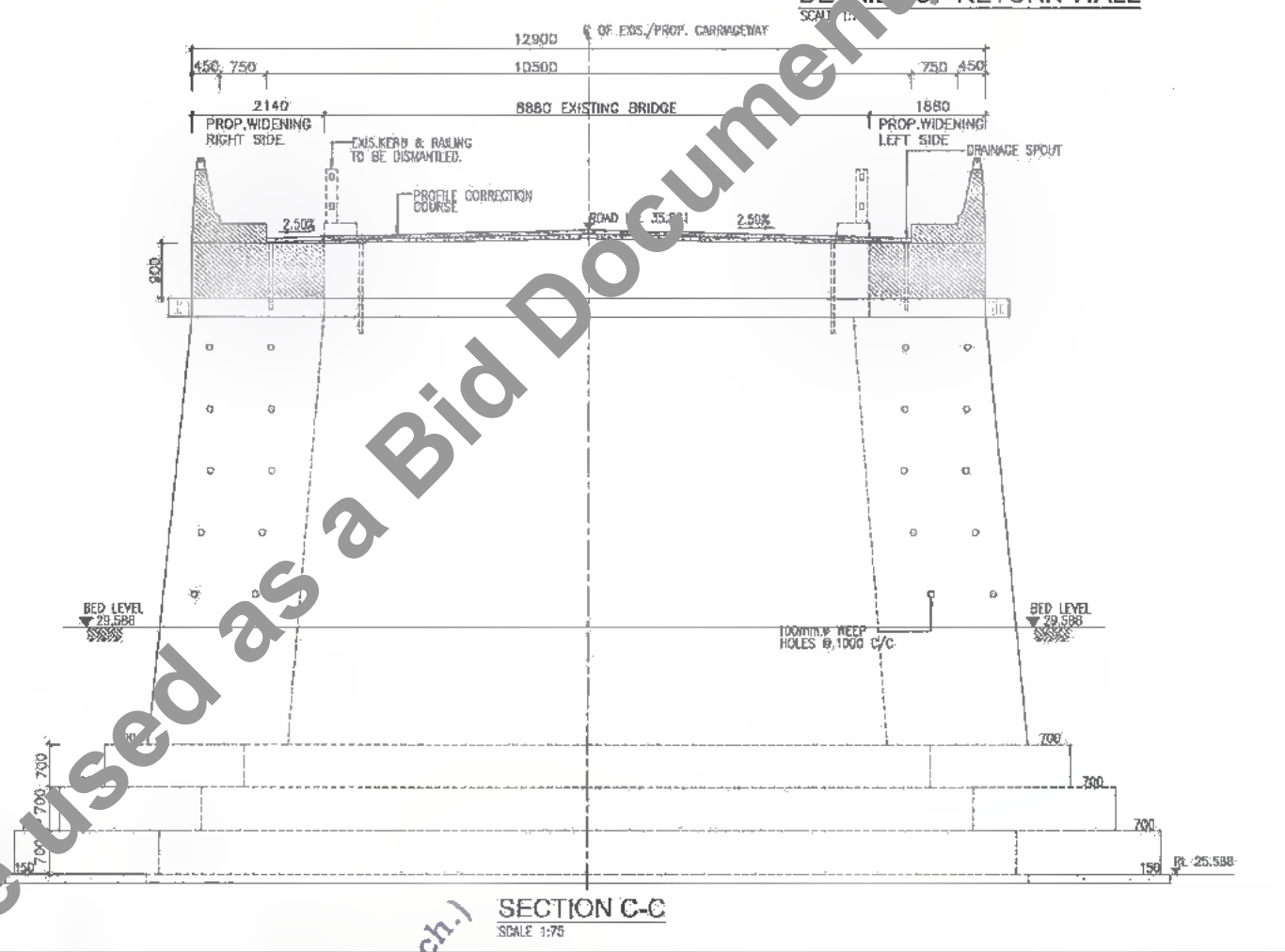
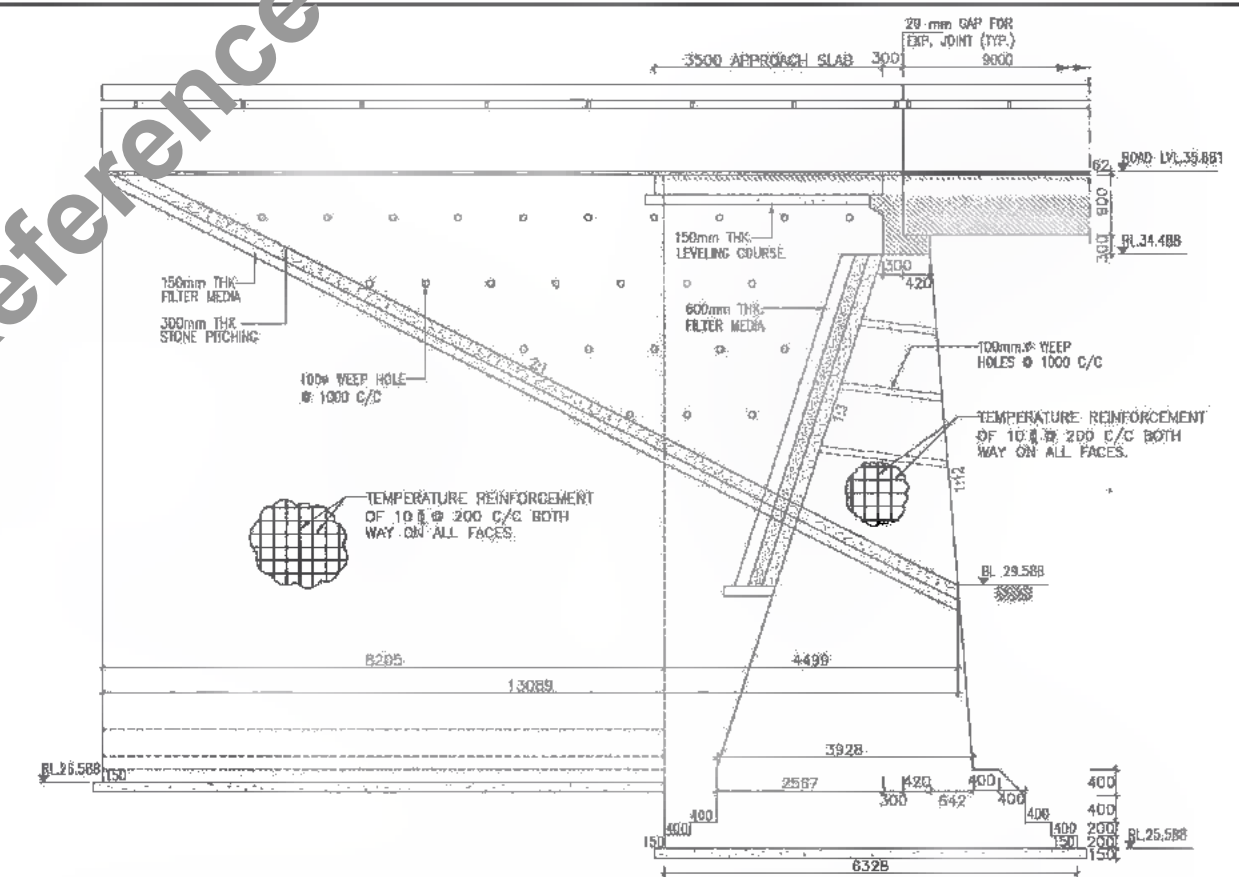
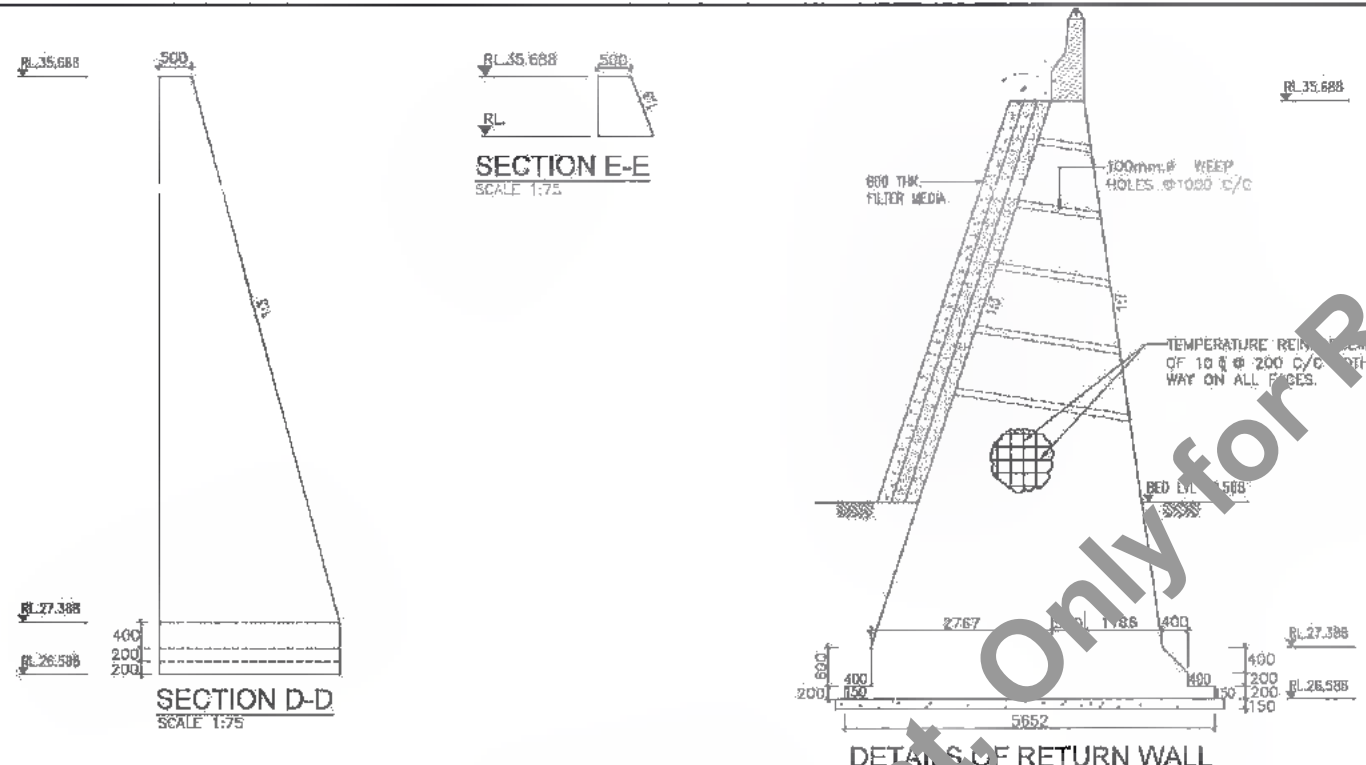
DETAIL OF TOE WALL
SCALE 1:50

SECTION B-B
SCALE 1:150



DATE: 2019/07/29
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CLIENT :  Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)	PROJECT : Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)	CONSULTANTS :  SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Block-A "SAI House", Sanyal Enterprise Square, Bih. Rajnagar Plot No. 10, Sector-10, GATEWAY, Patna-800009 Phone : +91-91-6611240/999, Fax : +91-91-6611299 Email : saic@saiconsulting.com	PF 31/07/19 PC 17/12/16 PD 10/04/14 PC 26/02/14 PD 01/01/14	GOOD FOR CONSTRUCTION (REVISED DWP) GOOD FOR CONSTRUCTION (DWP) GOOD FOR CONSTRUCTION (DWP) ISSUED WITH FINAL BDRP AMENDMENT OF DWP	DRAWN BY : GADG CHECKED BY : M.K.C. APPROVED BY : B.S.	TITLE : BAYSI - RAUTA (PACKAGE-1) GAD FOR WIDENING OF MINOR BRIDGE AT EXL CH.0260 & PROP. CH. D-255
			DRG. NO. : SAL-213007/0PRC/08/MIN/GAD-01 REVISION : PF	(SHEET 1 OF 2)		

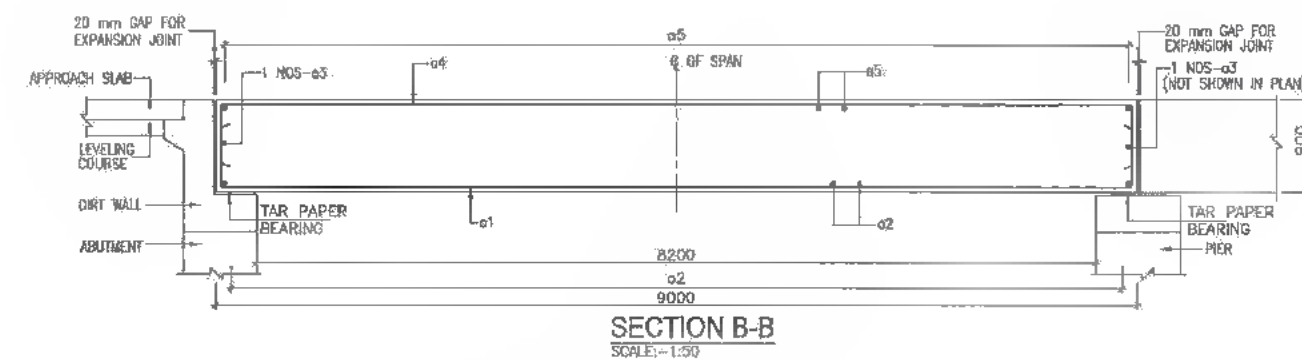
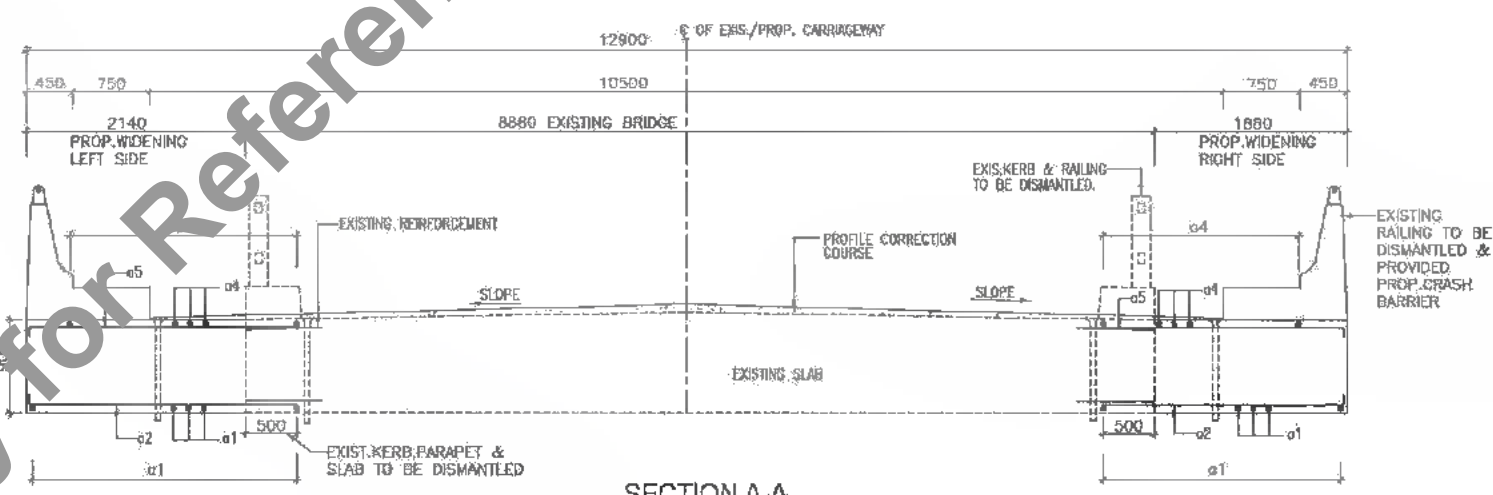
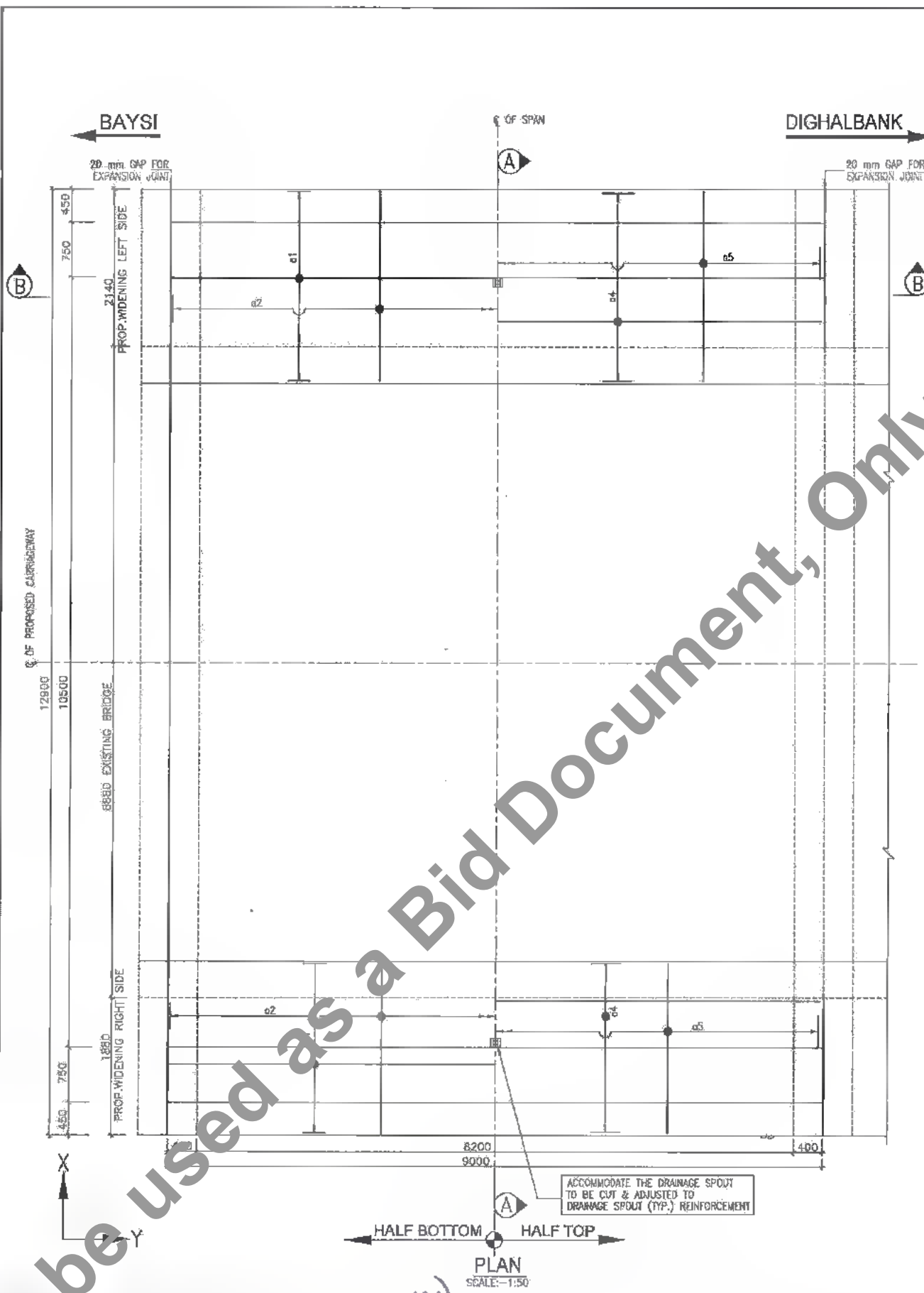


- REFERENCE DRAWINGS**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:
 - (a) GENERAL NOTES REFER DRG NO. SAI-213007/DPR/C/B/GEN
 - (b) DETAILS OF FILLER TYPE EXPANSION JOINT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-01
 - (c) APPROACH SLAB & DRAINAGE SPOUT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-02
 - (d) TYPICAL DRAWING FOR RCC CRASH BARRIER REFER DRG. NO. SAI-213007/DPR/C/B/TYP-03
 - (e) TYP. DETAILS OF WIDENING OF PCC SUB STRUCTURE REFER DRG. NO. SAI-213007/DPR/C/B/TYP-04
 - (f) REINF. DETAILS OF R.C.C. SOLID SLAB SUPERSTRU. FOR WIDENING OF MINOR BRIDGE AT PROP. CH. Q+256 (9.0M SPAN) REFER DRG. NO. SAI-213007/DPR/C/B/MIN/SUP-01
 - GRADE OF HYSD REINFORCEMENT - FE-500.
 - TYPE OF BEARING-TAR PAPER
 - GRADE OF CONCRETE
 - ABUTMENT CAP/PIER CAP RCC-M20
 - SOLID SLAB RCC-M25
 - APPROACH SLAB RCC-M30
 - CRASH BARRIER RCC-M40
 - SAFETY KERB RCC-M20
 - ABUTMENT/PIER RCC-M20
 - RETURN WALL RCC-M20
 - TOE WALL RCC-M15
 - LEVELING COURSE FCC-M15
 - THE FOUNDING LEVEL (RL) OF WIDENING PORTION SHOULD NOT BE HIGHER THAN FOUNDING LEVEL (RL) OF EXISTING BRIDGE.



DATE: 2019/07/23 11:52am
PATH: C:\Users\rautaur\Temp\AcPublish\2860\1\01_GAD_CH_Q+256_(WIDENING).dwg

<p>CLIENT: Bihar State Road Development Corporation Limited (BSRIDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar <i>Baysi - Bahadurganj - Dighalbank (SH-99)</i></p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Block-A "SAI House" Sector-4 Corporate Square, 16th Rajpath (Indira Park, New Delhi-110059) (Gurgaon) India Phone : +91-11-4352489/789, Fax : +91-11-4352489 Email : nar@saiconsulting.com</p>	<p>PF 31/07/19 GOOD FOR CONSTRUCTION (REVISED DPR)</p>	<p>DRWN BY : C.H.C.</p>	<p>TITLE: BAYSI - RAUTA (PACKAGE-I) GAD FOR WIDENING OF MINOR BRIDGE AT EXL. CH.Q+260 & PROP. CH. Q+256</p>
			<p>PE 17/12/15 GOOD FOR CONSTRUCTION (DPR)</p>	<p>CHECKED BY : H.K.S.</p>	
<p>PA 10/04/14 GOOD FOR CONSTRUCTION (DPR)</p>	<p>APPROVED BY : B.V. RAUT</p>	<p>SCALE : AS SHOWN</p>	<p>REV. DATE DESCRIPTION</p>	<p>ISSUED BY : B.S. RAUT</p>	<p>REVISION : PF</p>



SCHEDULE OF REINFORCEMENT (PER SPAN)

SR. NO.	LOCATION	BAR MKD.	SHAPE	DIA. (mm)	SPACING (mm)
1	SLAB-BOTTOM ALONG-X	a1		25	100
2	SLAB-BOTTOM ALONG-Y	a2		10	150
3	SLAB-SIDE ALONG-Y	a3		10	2 Nos
4	SLAB-TOP ALONG-X	a4		10	300
5	SLAB-TOP ALONG-Y	a5		10	300

REFERENCE DRAWINGS

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS
- (a) GENERAL NOTES REFER DRG NO. SAI-213007/DPR/C/B/GEN
- (b) DETAILS OF FILLER TYPE EXPANSION JOINT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-01
- (c) APPROACH SLAB & DRAINAGE SPOUT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-02
- (d) TYPICAL DRAWING FOR RCC CRASH BARRIER REFER DRG. NO. SAI-213007/DPR/C/B/TYP-03
- (e) SAD FOR WIDENING OF MINOR BRIDGES PROP. CH-0+256 REFER DRG. NO. SAI-213007/DPR/C/B/MIN/SAD-01



DATE: 20/09/19
 PATH: FACADTAD 2017 BHARREVISED DPR/CB/PACKAGE-1/MINOR BRIDGE/01 CH-0+256 W/1/01 WIDENING RCC SOLID 9.Dm.dwg

Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

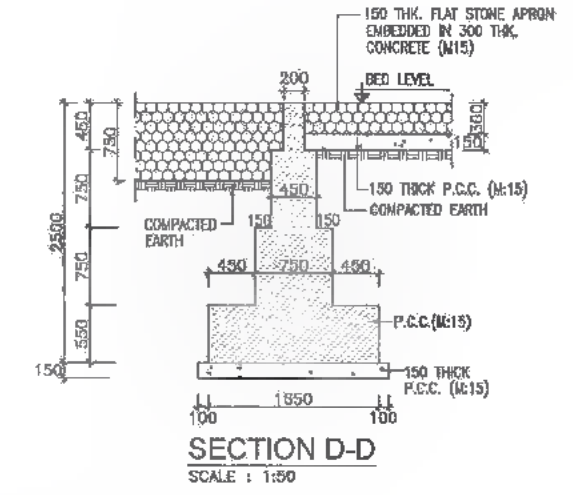
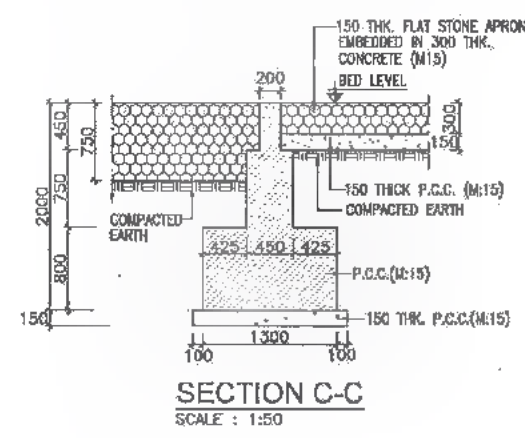
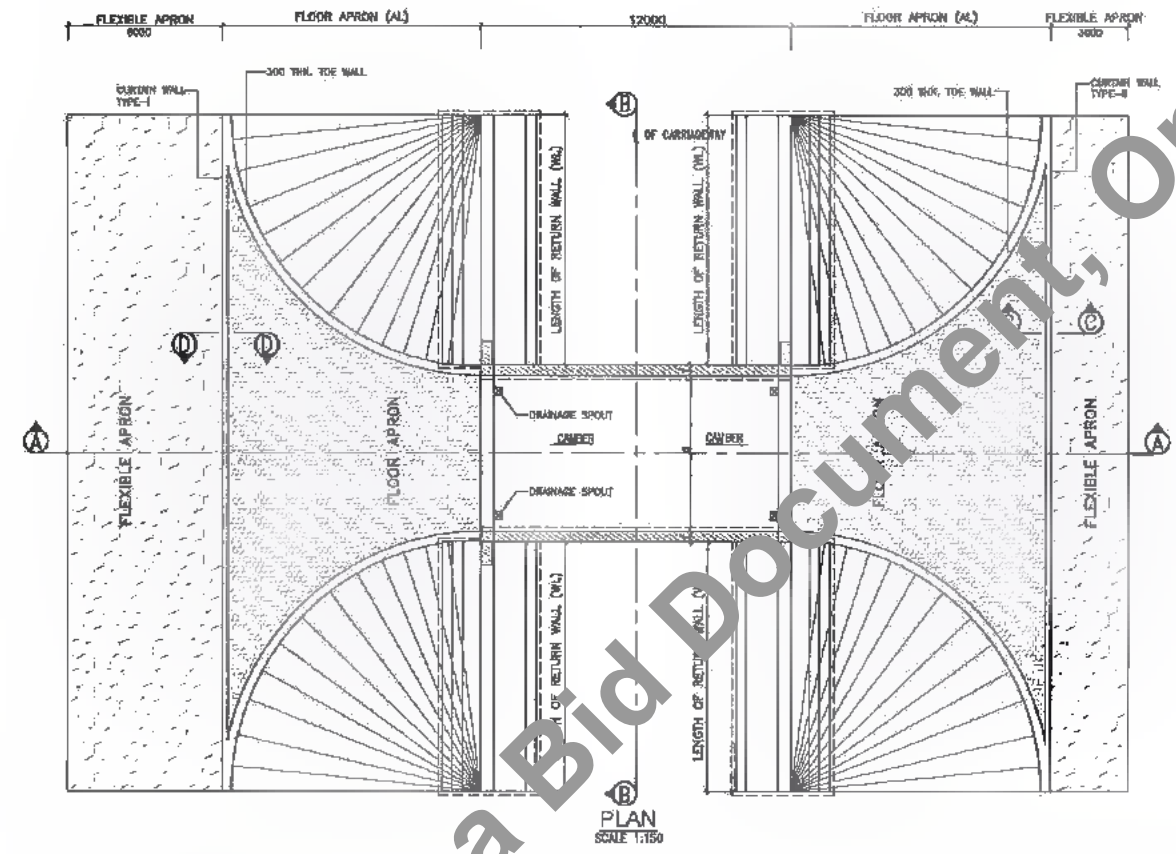
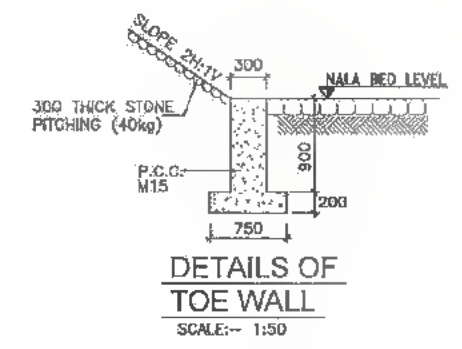
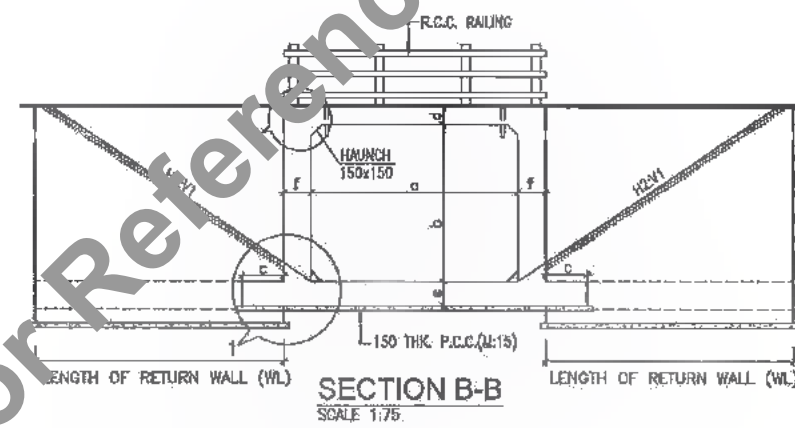
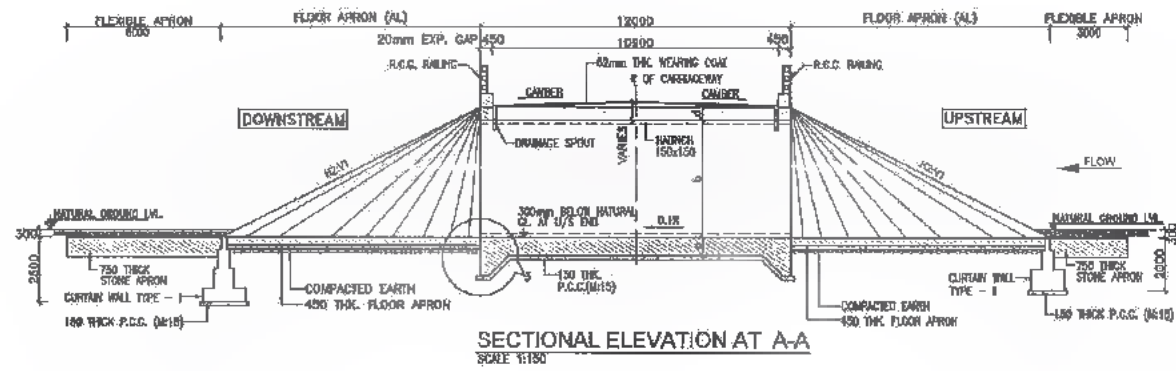
PROJECT: **Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)**

CONSULTANTS : **SAI Consulting Engineers Pvt. Ltd.**
 An ISO 9001 Certified Company

 SYSTRA GROUP

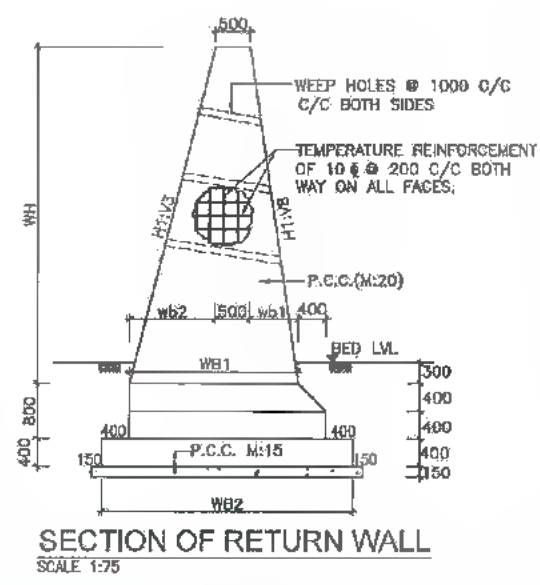
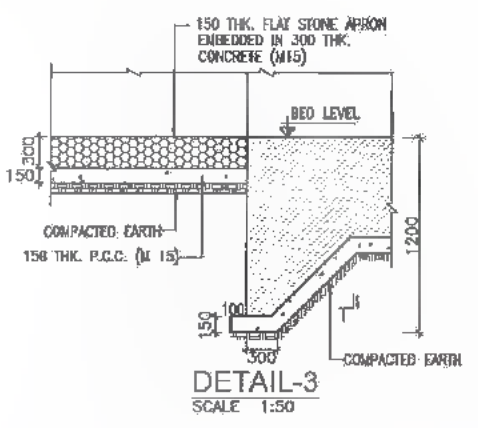
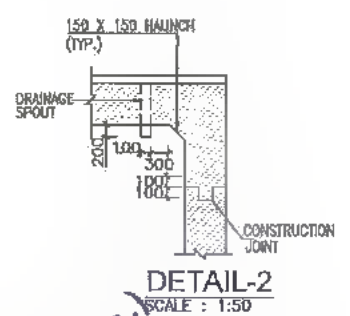
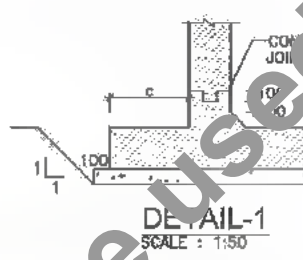
REV.	DATE	DESCRIPTION	ISSN	ISSUED BY
PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)		
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PD	26/02/14	ISSUED WITH FINAL DPR		
PD	13/11/13	ISSUED WITH DPR		

TITLE: **BAYSI - RAUTA (PACKAGE-I) REINF. DETAILS OF R.C.C. SOLID SLAB SUPER STRU. FOR WIDENING OF MINOR BRIDGE AT EX.CH.0+256 & PROP. CH. 0+256**
 DRG. NO.: **SAI-213007/DPR/C/BS/MIN/SUP-01**
 REVISION: PE



NOTES:

- (1) ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METRES UNLESS OTHERWISE MENTIONED ON DRAWING
- (2) NO DIMENSION SHALL BE SCALED FROM THIS DRAWING. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
- (3) THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:
 - (a) FOR GENERAL NOTES REFER DRG. NO. SAI-213007/DPR/C/B/GEN
 - (b) TYP. REINF. DETAILS OF SINGLE CELL BOX CULVERT FOR REFER DRG. NO. SAI-213007/DPR/C/B/BOX/STR-01 (SHEET 1 OF 2 & 2 OF 2)
 - (c) DETAILS OF FILLER TYPE EXPANSION JOINT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-01
 - (d) APPROACH SLAB & DRAINAGE SPOUT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-02
 - (e) TYPICAL DRAWING FOR R.C.C. RAILING REFER DRG. NO. SAI-213007/DPR/C/B/TYP-08
 - (f) TABLE SHOWING VARIOUS PARAMETER OF BOX CULVERT REFER DRG. NO. SAI-213007/DPR/C/B/BOX/GAD-01 (SHEET 2 OF 2)
- (4) d DECK SLAB THICKNESS AT INNER EDGE OF KERB AS SHOWN IN SECTIONAL ELEVATION AT A-A
- (5) CONCRETE GRADE OF RCC BOX-M20
- (6) REINFORCEMENT GRADE- FE500
- (7) UPSTREAM AND DOWNSTREAM SHOWN IN DRAWING ARE INDICATIVE, THE SAME SHALL BE DECIDED AS PER SITE CONDITION OF EACH BALANCEING CULVERT AND AS DIRECTED BY ENGINEER IN CHARGE.



DATE: 20/07/14 12:22pm
PATH: C:\Users\stasoft\AppData\Local\Temp\1\Temp1\Pub\12860\1\01_TYP_SINGLE_CELL.dwg

Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS: SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

REV.	DATE	DESCRIPTION	ISSUED BY
PA	13/11/13	ISSUED WITH DPR	
PE	26/02/14	ISSUED WITH FINAL DPR	
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)	
PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	

TITLE: BAYSI - RAUTA (PACKAGE-I)
TYP. GAD FOR RECONSTRUCTION NEW CONSTRUCTION OF BOX CULVERTS (SINGLE CELL)

DRG. NO.: SAI-213007/DPR/C/B/BOX/GAD-01 (SHEET 1 OF 2)
REVISION: PE



TABLE SHOWING VARIOUS PARAMETERS FOR BOX CULVERTS (Single Span) - New/Reconstruction


Sr. No.	Existing Chainage "km"	Proposed Chainage "km"	Proposal	Proposed Width of Culvert, m.	Existing Ground Level, m	Formation Level		Culvert Height, m.	Details of Span Arrangement		Total Length of New Parapets m.	slab thickness		Angle of Skew	Super Elevation / Camber		Proposed Widening		Remarks
						Existing m.	Proposed m.		Nos. of Spans	Span Length, L m.		Centre	Edge		Left Carriage (%)	Right Carriage (%)	LHS m.	RHS m.	
1	-	10+181	New	12.00	31.138	34.473	34.473	-	1	2.00	6.000	-	-	0	-2.50	-2.50	-	-	Existing protection work on LHS

Table Showing Various Parameter for Return Wall of Single Cell Box Culvert (New/Reconstruction)

Sr.No.	Proposed Chainage	Existing Chainage	WH IN "MT"	wb1 IN "MT"	wb2 IN "MT"	WB1 IN "MT"	WB2 IN "MT"	Length of Return Wall WL IN "MT"	WH Top IN "MT"	Foundation Level of Return Wall
1	10+181	-	3.27	4.1	1.09	2.00	3.20	6.32	0.30	29.838

DATE: 2015/07/17 12:22pm
PATH: C:\Users\casalor\appdata\local\temp\AcPublish_128601\01 TYP_SINGLE_CELL.dwg

CLIENT:



Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:



SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House", Salyan Corporate Square, 8th Floor
(1st, 2nd & 3rd Floor) Bhubaneswar-751019, Odisha, India
Phone : +91-674-6612650/7106788 +91-91-43112888
Email : saic@saiconsulting.com

FE	31/07/13	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : G.M.G.
PD	17/12/13	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : N.K.S.
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : S.K.V.
PA	26/02/14	ISSUED WITH FINAL DPR	ISSUED BY : B.S.
EA	13/11/13	ISSUED WITH DPR	
REV.	DATE	DESCRIPTION	SIGN
SCALE : AS SHOWN			

TITLE: **BAYSI - RAUTA (PACKAGE-I)**
TYP. GAD FOR RECONSTRUCTION NEW CONSTRUCTION OF BOX CULVERTS (SINGLE CELL)

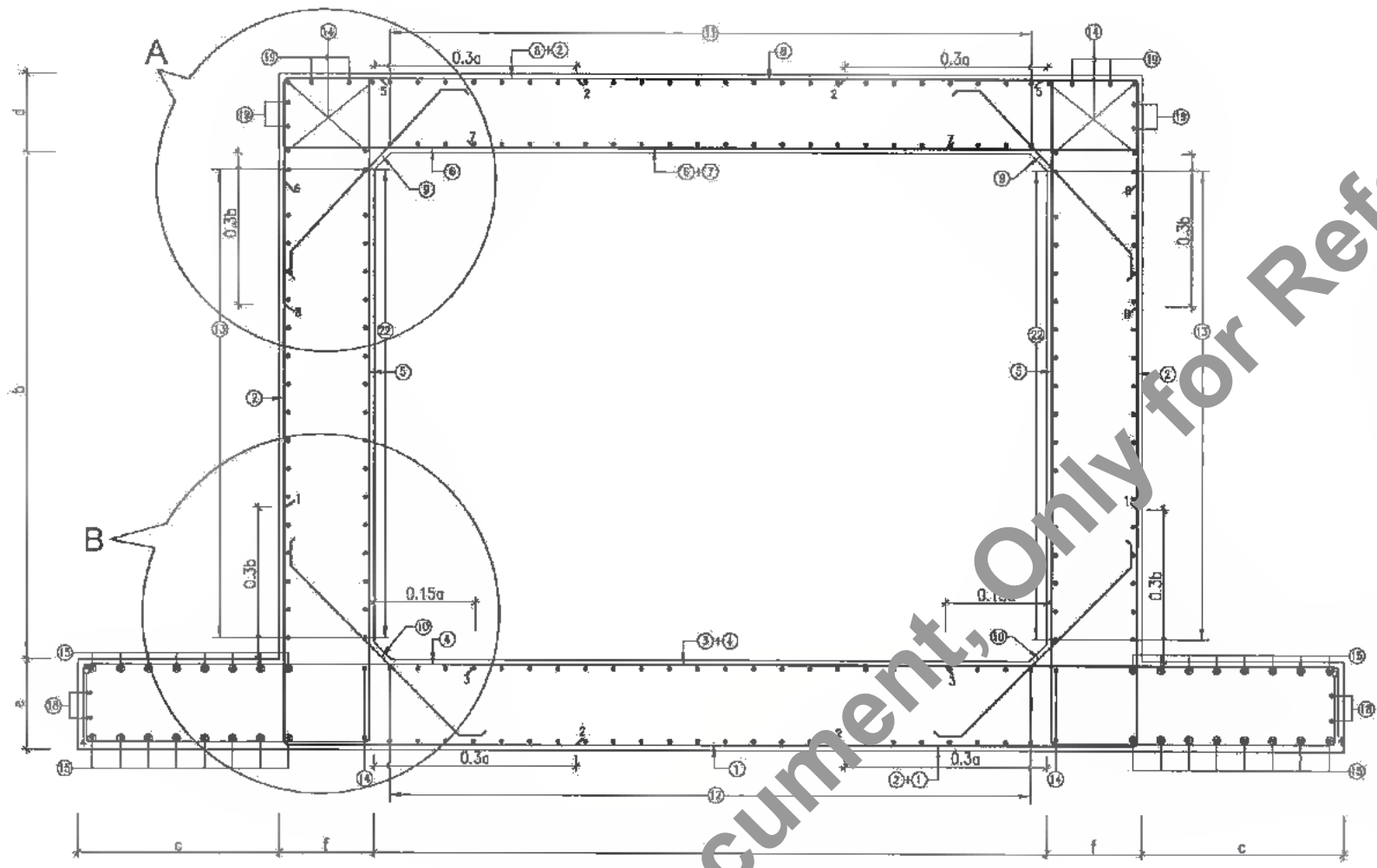
DRG. NO. : (SHEET 2 OF 2)
SAI-21308/DPR/C/B/BOGA-01

REVISION : PE

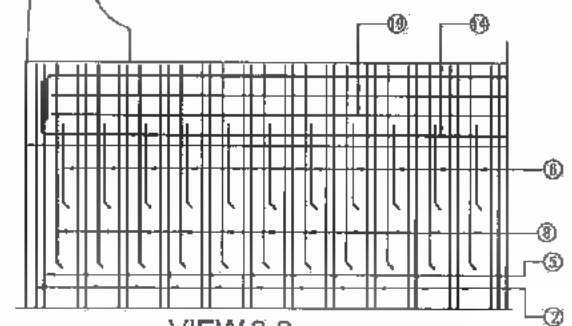


Not to be used as a Bid Document, Only for Reference

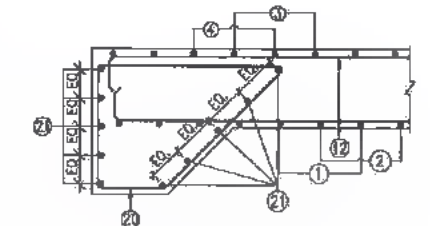
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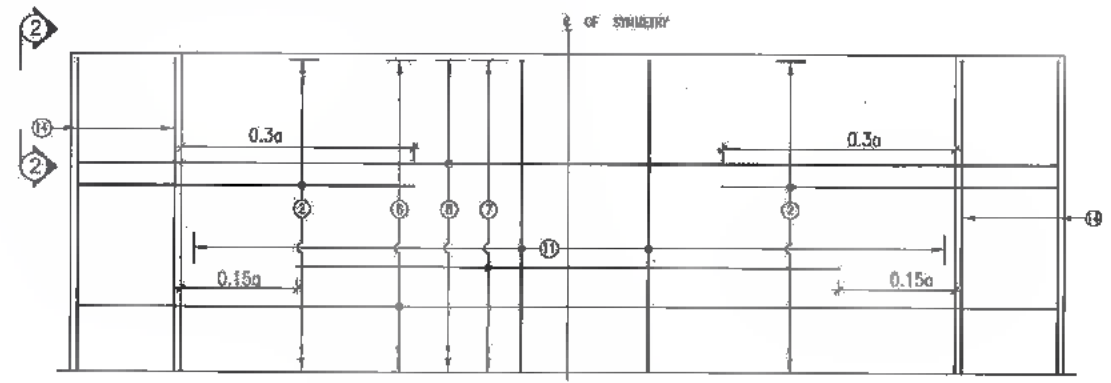
REINFORCEMENT DETAILS OF SINGLE CELL BOX CULVERT
SCALE 1:40



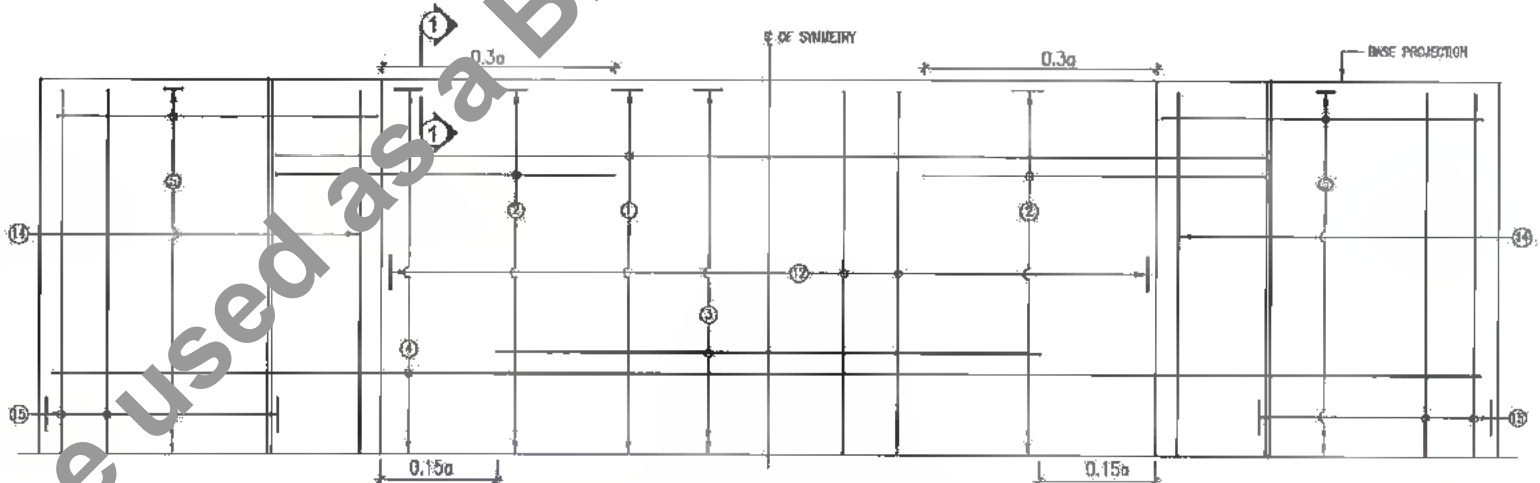
VIEW 2-2
SCALE 1:25
(HATCH LINES NOT SHOWN)



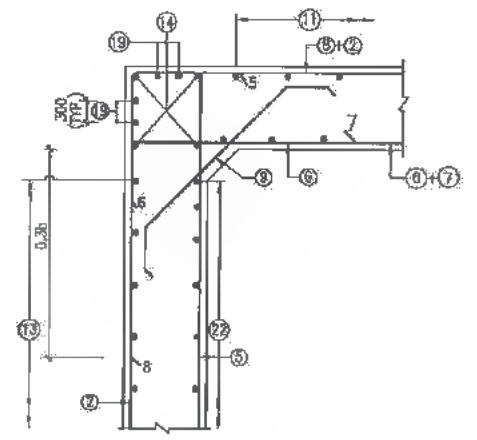
SECTION 1-1
SCALE 1:25



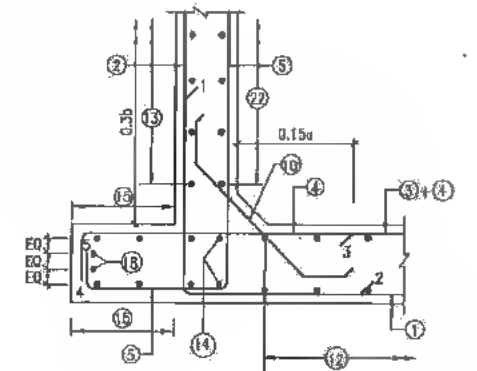
TOP SLAB R/F PLAN
(BAR MARK S, 19 HERS, BRACKET & HATCH LINES NOT SHOWN IN PLAN)



BOTTOM SLAB R/F PLAN
(HATCH LINES NOT SHOWN IN PLAN)



DETAIL - A
SCALE 1:25



DETAIL - B
SCALE 1:25

- NOTES:-
- FOR GENERAL NOTES REFER DRG NO. SAI-213007/OPR/C/B/GEN
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS
 - TYP. GAD FOR RECONSTRUCTION/NEW CONSTRUCTION OF BOX CULVERT FOR REFER DRG NO. SAI-213007/OPR/C/B/BOX/GAD-01
 - DETAILS OF FILLER TYPE EXPANSION JOINT REFER DRG. NO. SAI-213007/OPR/C/B/TYP-01
 - APPROACH SLAB & DRAINAGE SPOUT REFER DRG. NO. SAI-213007/OPR/C/B/TYP-02
 - TYPICAL DRAWING FOR RCC CRASH BARRIER REFER DRG. NO. SAI-213007/OPR/C/B/TYP-03
 - SCHEDULE OF REINFORCEMENT REFER DRG. NO. SAI-213007/OPR/C/B/BOX/STR-01 (SHEET 02 OF 02)

LEGEND:
 — LINE FOR TOP BAR
 - - - LINE FOR BOTTOM BAR



DATE: 20/07/18 - 12:23pm
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Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI CONSULTING ENGINEERS PVT. LTD.
 An ISO 9001-Certified Company
 Head-A "SAI House", Sanyam Corporate Square, 8th Rajbhoj
 City, Bhubaneswar, Odisha-751001, India
 Phone : +91-674-251581/2/3 Fax : +91-674-251599
 Email : sai@saiconsulting.com

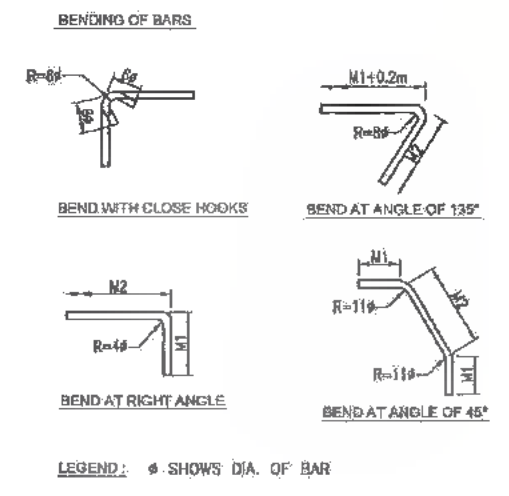
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PF	31/07/18	GOOD FOR CONSTRUCTION (REVISED DPH)		
PE	17/12/18	GOOD FOR CONSTRUCTION (DPH)		
PD	23/09/14	REVISED AS PER OBSERVATION ON FDPH		
PC	10/04/14	GOOD FOR CONSTRUCTION (DPH)		
PB	26/02/14	ISSUED WITH FINAL BOPH		

TITLE:
 BAYSI - RAJITA (PACKAGE-I)
 TYPICAL REINFORCEMENT DETAILS OF SINGLE CELL R.C.C. BOX CULVERT

DRG. NO.: (SHEET 1 OF 2)
 SAI-213007/OPR/C/B/BOX/STR-01

REVISION : PF

SCHEDULE OF REINFORCEMENT FOR BOX					
BAR MARK.	BOX - CELL DESIGNATION	10*191			
		BAR DIA in mm	SPACING in mm/ Nos.	M1 in mm	M2 in mm
1	M1 [M2] M1	10	200	1270	3740
2	M2 [M1] M1	16	200	1270	3740
3	M1	12	200	2100	-
4	M1 [M2] M1	16	200	320	5540
5	M1 [M2] M1 M1+0.2m 0.2m M2	12	150	3740	1220
6	M1 [M2] M1	16	200	260	3740
7	M1	BAR IS NOT USED			
8	M1 [M2] M1	10	200	1270	3740
9	M1 [M2] M1	10	200	200	1158
10	M1 [M2] M1	10	200	200	1158
11	M1 [M2] M1	10	200	260	11900
12	M1 [M2] M1	12	200	210	11900
13	M1 [M2] M1	10	200	210	11900
14	M1 [M2] M1	10	12	160	11900
15	M1 [M2] M1	10	200	210	11900
18	M1 [M2] M1	10	4	160	11900
19	M1 [M2] M1	10	8	16	11900
20	M1 [M2] M1 M1+0.2m 0.2m M2	10	200	1100	1556
21	M1 [M2] M1	10	20	160	5540
22	M1 [M2] M1	10	250	210	11900



DATE: 20/07/19 12:23pm
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CLIENT :
 Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)
 BSRDC (Tech.)
 BSRDC
 Patna

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
 SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A "SAI House", Sanyal Corporate Square, 14th Bellary Road, Badli, New Delhi-110028
 Phone : +91-11-41133070 Fax : +91-11-41133086
 Email : saiconsulting@gmail.com

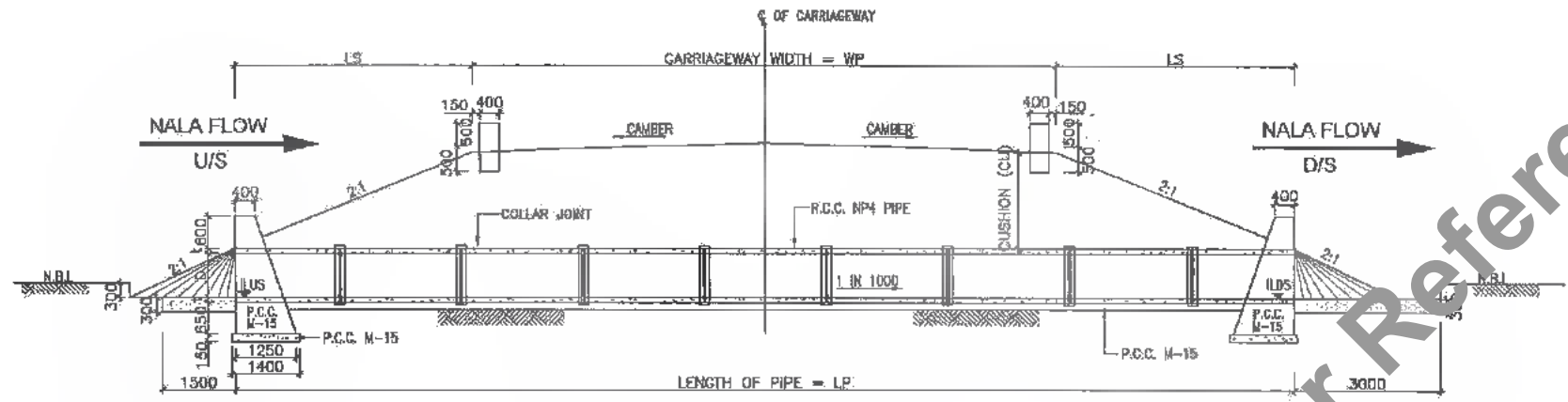
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PF	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	BY : H.K.M.	
PE	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : H.K.S.	
PD	23/05/14	REVISED AS PER OBSERVATION ON FBRP	APPROVED BY : B.S.	
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PB	26/02/14	ISSUED WITH FINAL DPR		

SCALE : AS SHOWN

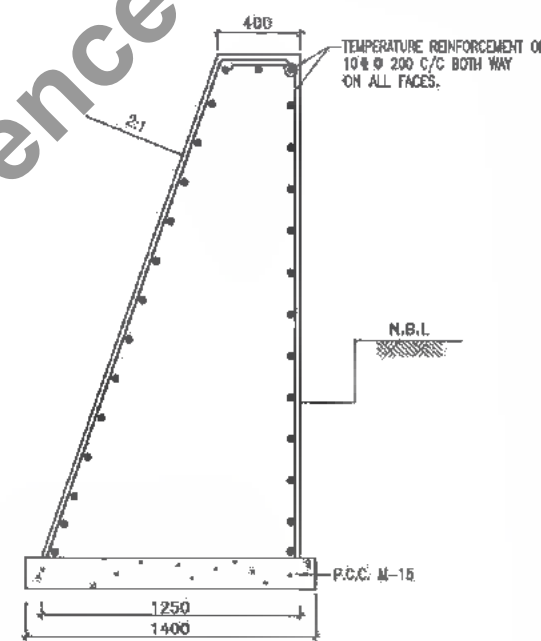
TITLE : BAYSI - RAUTA (PACKAGE-I)
 TYPICAL REINFORCEMENT DETAILS OF SINGLE CELL R.C.C. BOX CULVERT
 DRG. NO. : (SHEET 2 OF 2)
 SAI-213007/DPR/C/B/BOX/STR-01
 REVISION : PF



279
498

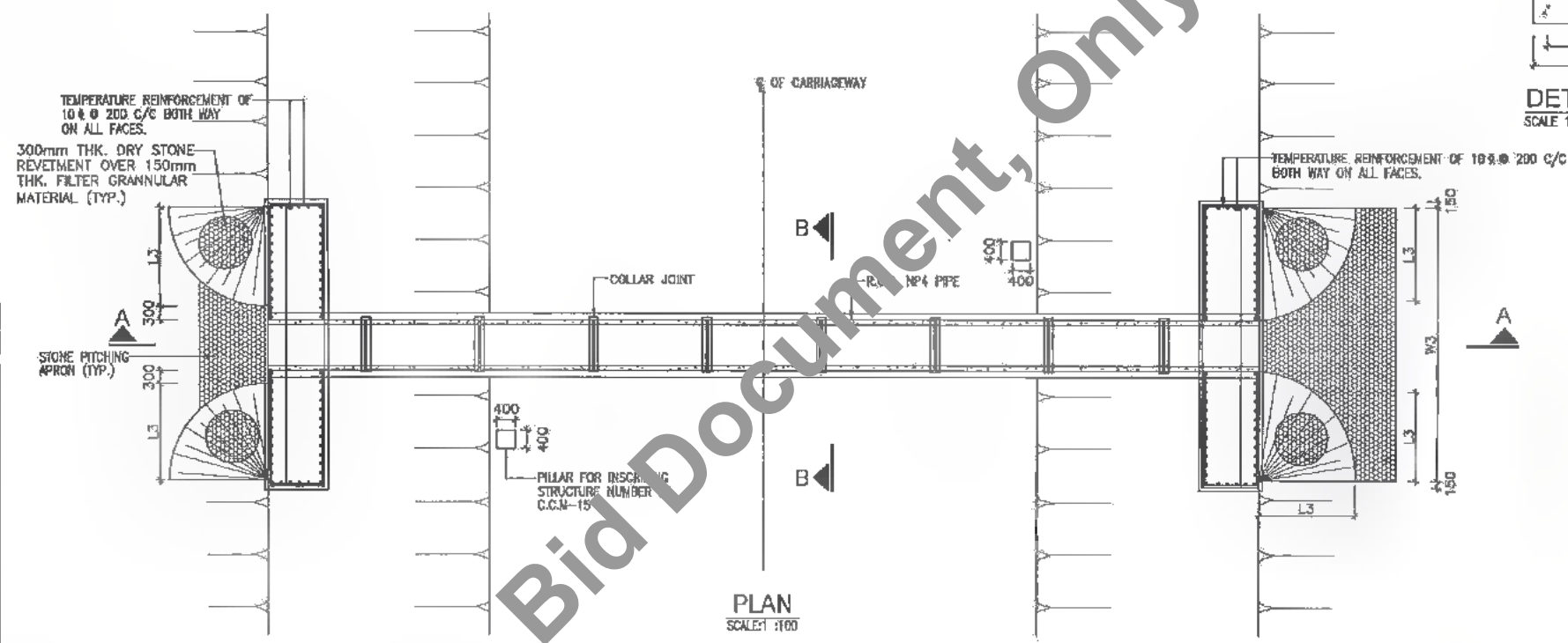


SECTIONAL ELEVATION AT A-A
SCALE: 1:100

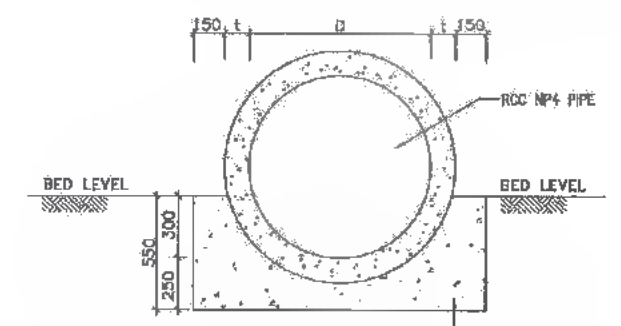


DETAILS OF HEAD WALL
SCALE: 1:50

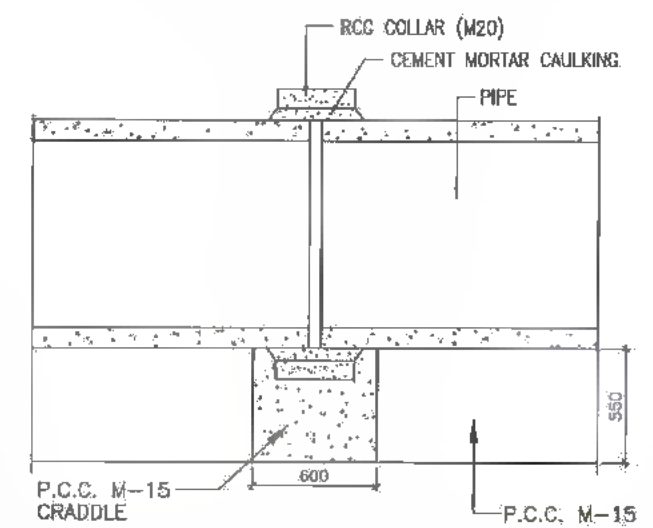
- NOTES:**
- (1) ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METRES UNLESS OTHERWISE MENTIONED ON DRAWING
 - (2) LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000
 - (3) DRAWING SHALL NOT BE SCALED.
 - (4) FOUNDATION R.L. OF HEAD WALL SHALL BE MINIMUM 0.9M BELOW NATURAL BED LEVELS AS PER SP-13.
 - (5) ALL R.C.C. PIPE OF NP4 TYPE CONFORMING TO I.S. 458.
 - (6) PROVIDE 300mm THICK STONE REVETMENT OVER GRANULAR MATERIAL BACKING 150mm THICK IN ENVELOPE PORTION.
 - (7) ABBREVIATIONS USED
 - (i) LP = LENGTH OF PIPE
 - (ii) D = DIA OF NP4 CLASS PIPE.
 - (iii) t = THICKNESS OF PIPE.
 - (iv) W3 = LENGTH OF HEAD WALL.
 - (v) L3 = ENVELOPE LENGTH.
 - (vi) ILUS = INVERT LVL. OF U/S
 - (vii) ILDS = INVERT LVL. OF D/S
 - (viii) LS = EXTRA LENGTH
 - (8) TEMPERATURE REINFORCEMENT OF 10# 200 C/C BOTH WAY SHALL BE PROVIDED ON ALL FACES OF HEAD WALL
 - (9) TABLE SHOWING VARIOUS PARAMETERS FOR PIPE CULVERT REFER DWG. NO. SAI-213007/DPR/C/B/PC/GAD-01 (SHEET 02 OF 02)
 - (10) UPSTREAM AND DOWNSTREAM SHOWN IN DRAWING ARE INDICATIVE, THE SAME SHALL BE DECIDED AS PER SITE CONDITION OF EACH BALANCING CULVERT AND AS DIRECTED BY ENGINEER IN CHARGE.



PLAN
SCALE: 1:100



SECTION B-B
SCALE: 1:50



TYPICAL DETAILS OF COLLAR JOINT
SCALE: 1:50

Details of Pipe Culvert - New/Reconstruction (Single Row)																											
Sr. No.	Proposed Structure No.	Existing Ch. km	Proposed Ch. km	Existing Ground Level in m.				Proposed Formation Level				Existing Width in m. "WE"	Proposed Carriageway in m. "WP"	Brick Cushion, m.	Pipe			Super Elevation/Camber (%)		Extra Length in m. "LS"	Length of Head Wall in m. "L3"	Invert Level, "m"		Ht. of Head Wall in m.	Skew Angle	Length of pipe (Rounding to 2.5m)	Proposal
				U/S	Left In "m"	Right In "m"	U/S	Left In "m"	Right In "m"	No.	Dia. in m. "D"				Thk. in m. "t"	Envelope Length in m. "L3"	Left Carriage %	Right Carriage %	ILUS			ILDS					
1	1/1	-	0+100	31.750	32.750	34.625	34.625	0.00	12.00	0.658	1	1.20	0.120	2.740	-2.500%	-2.500%	1.256	7.520	32.462	32.460	2.690	0	15.000	New			
2	1/3	-	0+500	31.99	31.099	34.342	34.342	0.00	12.00	1.996	1	1.20	0.120	2.740	-2.500%	-2.500%	1.992	7.520	30.811	30.789	2.690	0	20.000	New			
3	2/1	-	1+100	32.190	32.150	34.358	34.358	0.00	12.00	0.961	1	1.20	0.120	2.740	-2.500%	-2.600%	1.922	7.520	31.862	31.850	2.690	0	17.600	New			
4	2/2	-	1+200	32.100	32.100	34.254	34.254	0.00	12.00	0.907	1	1.20	0.120	2.740	-2.500%	-2.500%	1.814	7.520	31.812	31.800	2.690	0	17.500	New			
5	12/2	-	1+200	30.801	30.801	34.171	34.171	0.00	12.00	2.123	1	1.20	0.120	2.740	-2.500%	-2.500%	5.340	7.520	30.513	30.501	2.690	0	15.000	New			
6	13/4	-	1+427	30.012	30.012	33.466	33.466	0.00	12.00	2.207	1	1.20	0.120	2.740	-2.500%	-2.500%	6.810	7.520	29.724	29.712	2.690	0	25.000	New			
7	15/2	-	1+994	31.036	31.036	33.256	33.256	0.00	12.00	0.973	1	1.20	0.120	2.740	-2.500%	-2.500%	1.948	7.520	30.748	30.756	2.690	0	17.500	New			
8	17/1	-	16+202	31.260	31.260	33.574	33.574	0.00	12.00	1.089	1	1.20	0.120	2.740	-2.500%	-2.500%	2.136	7.520	30.963	30.960	2.690	0	17.500	New			
9	18/2	-	17+177	30.517	30.517	33.338	33.338	0.00	12.00	1.574	1	1.20	0.120	2.740	-2.500%	-2.500%	3.148	7.520	30.229	30.217	2.690	0	20.000	New			
10	21	-	20+277	31.925	31.925	33.795	33.795	0.00	12.00	0.623	1	1.20	0.120	2.740	-2.500%	-2.500%	1.256	7.520	31.637	31.625	2.690	0	15.000	New			
11	21/5	-	20+784	30.077	30.077	34.422	34.422	0.00	12.00	3.098	1	1.20	0.120	2.740	-2.500%	-2.500%	6.568	7.520	29.789	29.777	2.690	0	27.500	New			
12	21/5	-	21+328	31.684	31.684	39.856	39.856	0.00	12.00	6.927	1	1.20	0.120	2.740	-2.500%	-2.500%	5.708	7.520	31.395	31.384	2.690	0	25.000	New			

DATE: 2019/07/29 - 12:57pm
PATH: T:\CADD\AD 2017\BIHAR\REVISED DPR\CV\PACKAGE-1\PIPE CULVERT\01 PIPE CUL-SINGLE ROW (New Construction).dwg

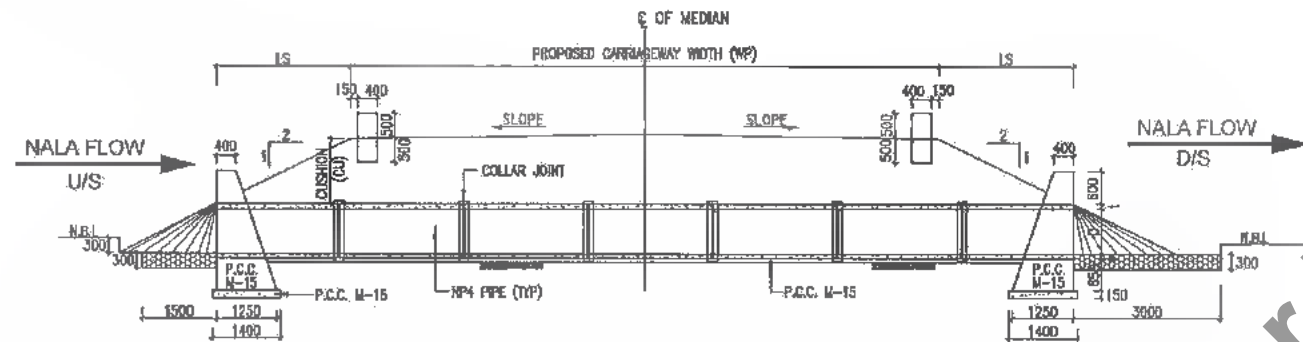
BSRDC
Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

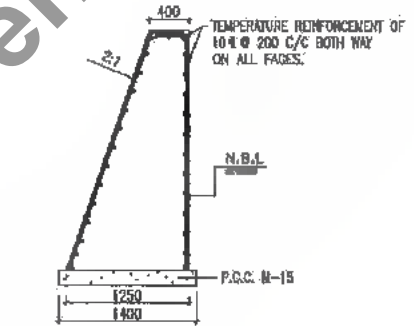
CONSULTANTS:
SAI SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

PF	31/07/19	6000 FOR CONSTRUCTION (REVISED DPR)	DRAWN BY: G.M.O.	TITLE:	BAYSI - RAUTA (PACKAGE-I)
PE	17/12/18	6000 FOR CONSTRUCTION (DPR)	CHECKED BY: H.A.S.		TYP. SAD FOR PIPE CULVERT (SINGLE ROW)
PD	10/04/14	6000 FOR CONSTRUCTION (DPR)	APPROVED BY: B.R.V.		
PC	26/02/14	ISSUED WITH FINAL DPR			
PR	01/01/14	ADDENDUM OF DPR			
REV.	DATE	DESCRIPTION	SIGN	ISSUED BY: H.S.	
SCALE: AS SHOWN					
DRG. NO.: SAI-213007/DPR/CB/PC/GAD-01					
REVISION: PF					



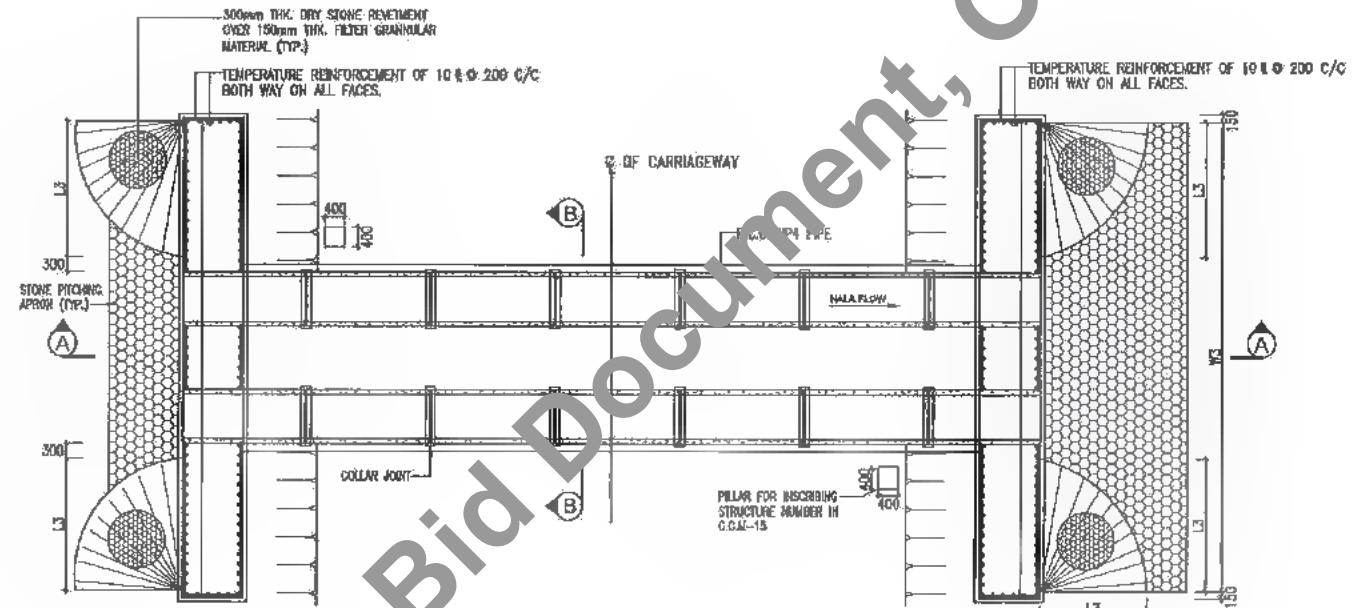


SECTIONAL ELEVATION AT A-A
SCALE: 1:100

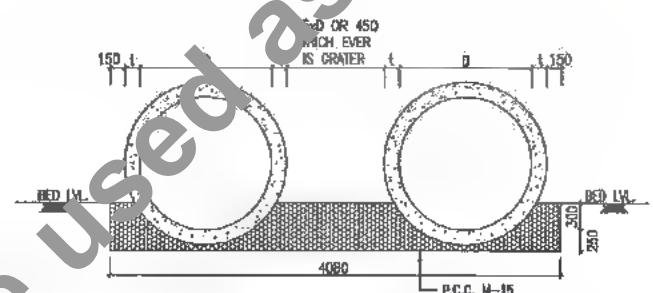


DETAILS OF HEAD WALL
SCALE: 1:50

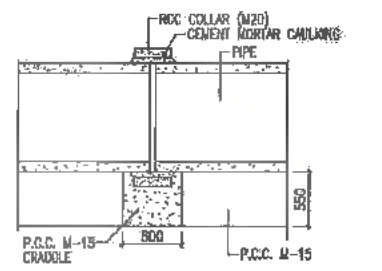
- NOTES:**
- (1) ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METRES UNLESS OTHERWISE MENTIONED ON DRAWING.
 - (2) LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000.
 - (3) DRAWING SHALL NOT BE SCALED.
 - (4) FOUNDATION R.L. OF HEAD WALL SHALL BE MINIMUM 0.9M BELOW NATURAL BED LEVEL AS PER SP-13.
 - (5) ALL R.C.C. PIPE OF NP4 TYPE CONFORMING TO I.S. 458.
 - (6) PROVIDE 300mm THICK STONE REVETMENT OVER GRANULAR MATERIAL BACKING 150mm THICK IN ENVELOPE PORTION.
 - (7) ABBREVIATIONS USED:
 - (i) LP = LENGTH OF PIPE
 - (ii) D = DIA OF NP4 GLASS PIPE
 - (iii) t = THICKNESS OF PIPE
 - (iv) W3 = LENGTH OF HEAD WALL
 - (v) L3 = ENVELOPE LENGTH.
 - (8) TEMPERATURE REINFORCEMENT OF 10# @ 200 C/C BOTH WAY SHALL BE PROVIDED ON ALL FACES OF HEAD WALL.
 - (9) TABLE SHOWING VARIOUS PARAMETERS FOR PIPE CULVERT REFER DWG. NO. SAI-213007/DPR/C/B/PC/GAD-02 (SHEET 02 OF 02)
 - (10) UPSTREAM AND DOWNSTREAM SHOWN IN DRAWING ARE INDICATIVE, THE SAME SHALL BE DECIDED AS PER SITE CONDITION OF EACH BALANCING CULVERT AND AS DIRECTED BY ENGINEER IN CHARGE.



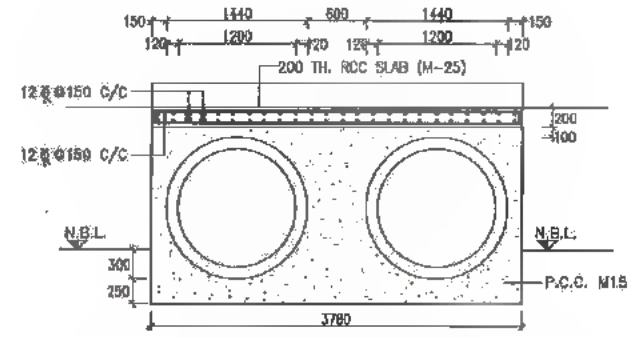
PLAN
SCALE: 1:100



SECTION B-B
SCALE: 1:50



TYPICAL DETAILS OF COLLAR JOINT
SCALE: 1:50



ENCASING DETAILS OF PIPE
SCALE: 1:50



DATE: 2019/07/29 11:30 AM
PATH: C:\Users\saikat\appdata\local\temp\284\102 MULTI PIPE-NEW CONST.dwg

CLIENT:




Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:

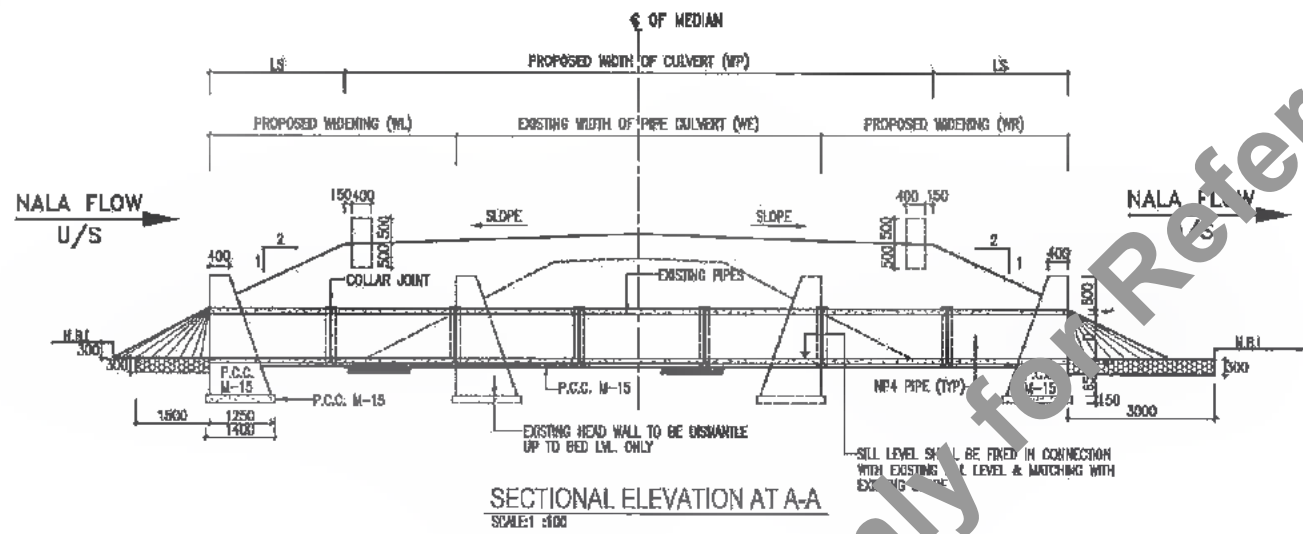


SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY : S.S. S...
PF	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DESIGN BY : C.M.G. S...
PE	17/12/19	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : H.K.S. S...
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : H.A.V. S...
PC	28/02/14	ISSUED WITH FINAL DOPR		
PD	01/01/14	ADDITION OF DOPR		

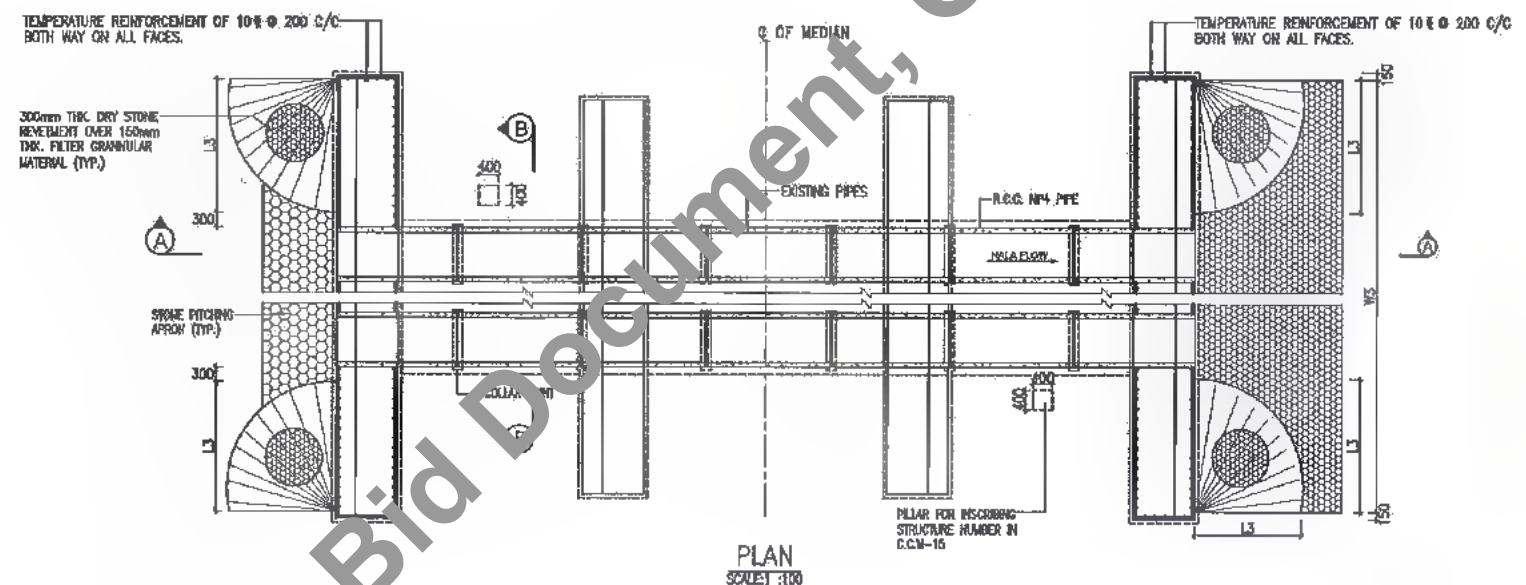
TITLE: **BAYSI - RAUTA (PACKAGE-I) TYPICAL GAD FOR PIPE CULVERT HAVING MULTI ROW**

DWG. NO.: (SHEET-1 OF 2)
SAI-213007/DPR/C/B/PC/GAD-02
REVISION: PF

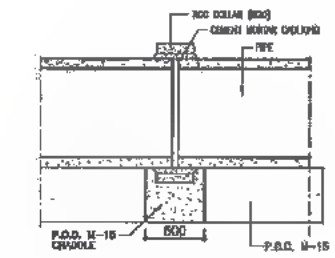


SECTIONAL ELEVATION AT A-A
SCALE: 1:50

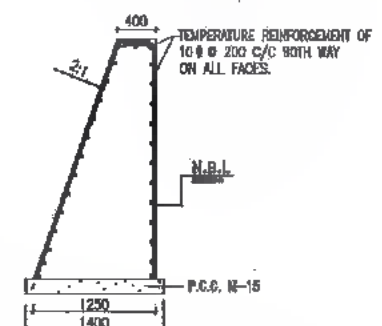
- NOTES:**
- (1) ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METRES UNLESS OTHERWISE MENTIONED ON DRAWING
 - (2) LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000
 - (3) DRAWING SHALL NOT BE SCALED.
 - (4) FOUNDATION R.L. OF HEAD WALL SHALL BE MINIMUM 0.9M BELOW NATURAL BED LEVEL AS PER SP-13.
 - (5) ALL R.C.C. PIPE OF NP4 TYPE CONFORMING TO I.S. 458.
 - (6) PROVIDE 300mm THICK STONE REVETMENT OVER GRANULAR MATERIAL BACKING 150mm THICK IN ENVELOPE PORTION.
 - (7) ABBREVIATIONS USED
 - (i) LP = LENGTH OF PIPE
 - (ii) D = DIA OF NP4 CLASS PIPE
 - (iii) t = THICKNESS OF PIPE
 - (iv) W3 = LENGTH OF HEAD WALL
 - (v) L3 = ENVELOPE LENGTH
 - (8) TEMPERATURE REINFORCEMENT OF 10# @ 200 C/C BOTH WAY SHALL BE PROVIDED ON ALL FACES OF HEAD WALL
 - (10) UPSTREAM AND DOWNSTREAM SHOWN IN DRAWING ARE INDICATIVE. THE SAME SHALL BE DECIDED AS PER SITE CONDITION OF EACH BALANCING CULVERT AND AS DIRECTED BY ENGINEER IN CHARGE.



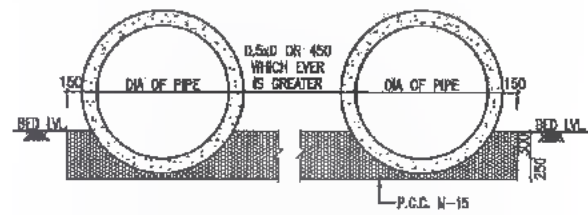
PLAN
SCALE: 1:50



TYPICAL DETAILS OF COLLAR JOINT
SCALE: 1:50



DETAILS OF HEAD WALL
SCALE: 1:50



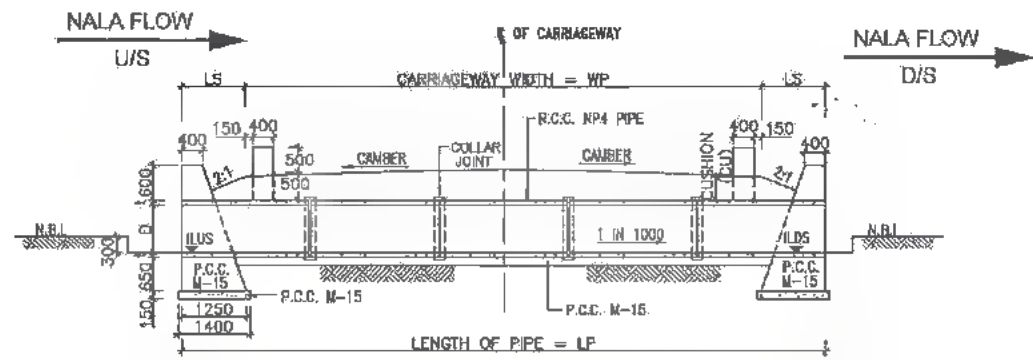
SECTION B-B
SCALE: 1:50

Details of the Culvert - Widening (Multi Row)																								
Sr. No.	Proposed Structure No.	Existing Ch. km	Proposed Ch. km	Existing Ground Level In m.		Proposed Formation Level		Existing Width In m. "WE"	Proposed Carriageway in m. "WP"	Earth Cushion, m.	Pipes			Envelope Length in m. "L3"	Super Elevation/Camber (%)		Extra Length in m. "LS"	Length of Head Wall in m. "W3"	Invert Level, "m"		Ht. of Head Wall in m.	Skew Angle	Length of pipe (Rounding to 2.5m)	Proposal
				D/S	U/S	Left in "mt"	Right in "mt"				Nos.	Dia. in m. "D"	Thik. in m. "t"		Left Carriage %	Right Carriage %			ILUS	ILDS				
1	13/7	12/845	12836	30.378	30.378	33.578	33.578	10.000	12.000	2.158	2.000	1.000	0.115	2.330	-2.500%	-2.500%	4.314	8.220	30.090	30.078	2.480	0.000	7.500	One side Widening

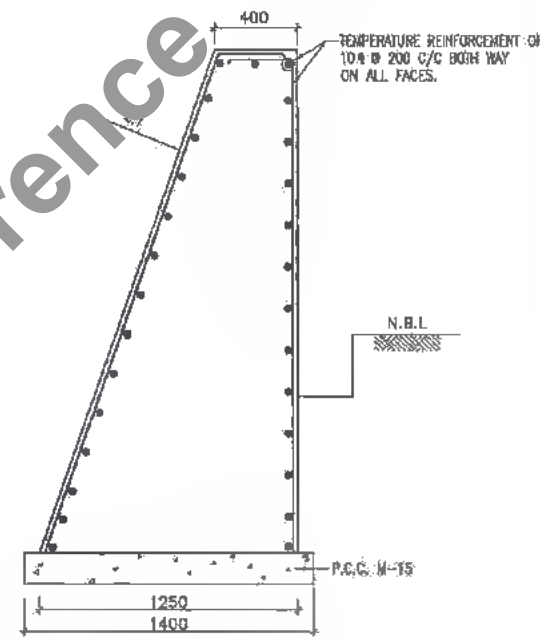


DATE: 20/07/23 11:25 AM PATH: T:\CAD\TAD 2\2007 BHAR REVISED_DPR\CTB\PACKAGE-1\PIPE_CULVERT\1\03 MULTI PIPE WIDENING.dwg

<p>CLIENT: Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Block-A, "SOU House" Sahayon, Compahele, Sec-6, Bk Rajpath G.D., Indhitary, Bhubaneswar-751029, Odisha, India Phone : +91-76-6612881/718 Fax : +91-76-6616991 Email : mail@saiconsulting.com</p>	<table border="1"> <tr> <td>RF</td> <td>31/07/18</td> <td>GOOD FOR CONSTRUCTION (REVISED DPR)</td> <td>DRAWN BY : D.M.G.</td> <td rowspan="4"> <p>TITLE: BAYSIL - RAUTA (PACKAGE-I) TYPICAL CAD FOR WIDENING OF PIPE CULVERTS (MULTI ROW)</p> </td> </tr> <tr> <td>PE</td> <td>17/12/18</td> <td>GOOD FOR CONSTRUCTION (DWP)</td> <td>CHECKED BY : R.K.S.</td> </tr> <tr> <td>PD</td> <td>10/04/14</td> <td>GOOD FOR CONSTRUCTION (DWP)</td> <td>APPROVED BY : R.K.S.</td> </tr> <tr> <td>PD</td> <td>26/02/14</td> <td>ISSUED WITH FINAL DWP</td> <td></td> </tr> <tr> <td>PD</td> <td>01/01/14</td> <td>ADDENDUM OF DWP</td> <td></td> <td></td> </tr> </table>	RF	31/07/18	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : D.M.G.	<p>TITLE: BAYSIL - RAUTA (PACKAGE-I) TYPICAL CAD FOR WIDENING OF PIPE CULVERTS (MULTI ROW)</p>	PE	17/12/18	GOOD FOR CONSTRUCTION (DWP)	CHECKED BY : R.K.S.	PD	10/04/14	GOOD FOR CONSTRUCTION (DWP)	APPROVED BY : R.K.S.	PD	26/02/14	ISSUED WITH FINAL DWP		PD	01/01/14	ADDENDUM OF DWP			<p>DRG. NO.: SAI-213007DPR/CB/PCIGAD-03 REVISION: .PF</p>
RF	31/07/18	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : D.M.G.	<p>TITLE: BAYSIL - RAUTA (PACKAGE-I) TYPICAL CAD FOR WIDENING OF PIPE CULVERTS (MULTI ROW)</p>																						
PE	17/12/18	GOOD FOR CONSTRUCTION (DWP)	CHECKED BY : R.K.S.																							
PD	10/04/14	GOOD FOR CONSTRUCTION (DWP)	APPROVED BY : R.K.S.																							
PD	26/02/14	ISSUED WITH FINAL DWP																								
PD	01/01/14	ADDENDUM OF DWP																								

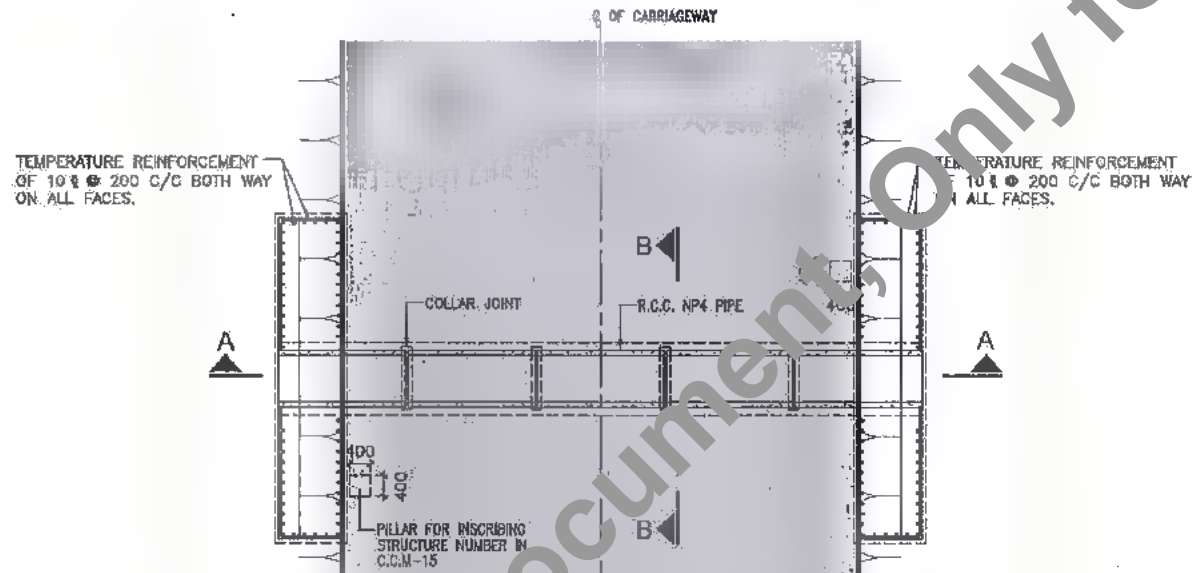


SECTIONAL ELEVATION AT A-A
SCALE: 1:100

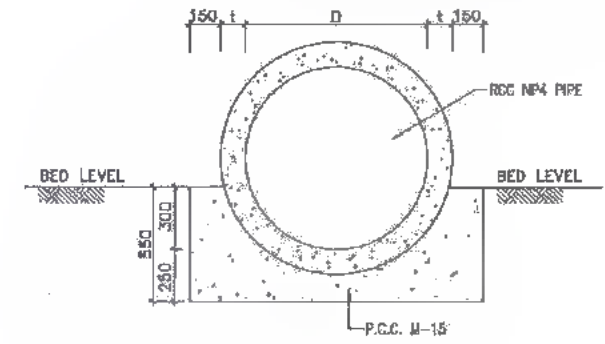


DETAILS OF HEAD WALL
SCALE 1:50

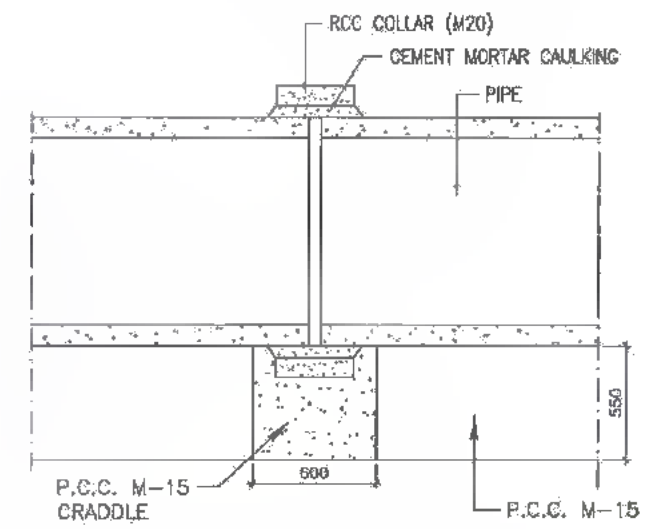
- NOTES:**
- (1) ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METRES UNLESS OTHERWISE MENTIONED ON DRAWING
 - (2) LONGITUDINAL SLOPE OF PIPE SHOULD BE MINIMUM OF 1 IN 1000
 - (3) DRAWING SHALL NOT BE SCALED.
 - (4) FOUNDATION R.L. OF HEAD WALL SHALL BE MINIMUM 0.8M BELOW NATURAL BED LEVEL AS PER SP-13.
 - (5) ALL R.C.C. PIPE OF NP4 TYPE CONFORMING TO I.S. 458.
 - (6) PROVIDE 300mm THICK STONE REVETMENT OVER GRANULAR MATERIAL BACKING 150mm THICK IN ENVELOPE PORTION.
 - (7) ABBREVIATIONS USED
 - (i) LP = LENGTH OF PIPE
 - (ii) D = DIA OF NP4 CLASS PIPE.
 - (iii) t = THICKNESS OF PIPE.
 - (iv) W3 = LENGTH OF HEAD WALL.
 - (v) L3 = ENVELOPE LENGTH.
 - (vi) ILUS = INVERT LVL. OF U/S
 - (vii) ILDS = INVERT LVL. OF D/S
 - (viii) LS = EXTRA LENGTH
 - (8) TEMPERATURE REINFORCEMENT OF 10 ϕ 200 C/C BOTH WAY SHALL BE PROVIDED ON ALL FACES OF HEAD WALL.
 - (9) TABLE SHOWING VARIOUS PARAMETERS FOR PIPE CULVERT REFER DWG. NO. SAJ-213007/DPR/C/B/PC/GAD-04 (SHEET 02 OF 02)
 - (10) UPSTREAM AND DOWNSTREAM SHOWN IN DRAWING ARE INDICATIVE. THE SAME SHALL BE DECIDED AS PER SITE CONDITION OF EACH BALANCING CULVERT AND AS DIRECTED BY ENGINEER IN CHARGE.



PLAN
SCALE: 1:100



SECTION B-B
SCALE 1:50



TYPICAL DETAILS OF COLLAR JOINT
SCALE 1:50



DATE: 2019/04/24 - 12:57pm
PATH: C:\Users\svasali\appdata\local\temp\AcP\dwtsh_2860\1\04 CROSS ROAD PIPE CUL_SINGLE ROW (New Construction).dwg

BSRDCL
Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A, "Sai House", Sakinaka Corporate Square, 8th Ring Road, Dighalbank, Patna-800014, Bihar, India
Phone: +91-91-4682487007 Fax: +91-91-46193400
Email: mail@saiindia.com

RF	31/07/18	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : G.M.G.	TITLE :	BAYSI - RAUTA (PACKAGE-I)
FE	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : H.K.S.		TYP. GAD FOR CROSS ROAD PIPE CULVERT (SINGLE ROW)
FO	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : B.V.		DRG. NO. : (SHEET 01 OF 02)
PC	26/02/14	ISSUED WITH FINAL DOPR			SAI-213007/DPR/C/B/PC/GAD-04
PB	01/01/14	ADDENDUM OF DOPR			REVISION : PF

SCALE : AS SHOWN

Details of Cross Road Pipe Culvert - New/Reconstruction

St. No.	Prop. Str. No.	Culvert Chainage in "km" Proposed	Type of Junction	Left/Right/Both	Existing Ground Level in m.		Proposed Formation Level		Existing Width in m. "WE"	Proposed Carriageway in m. "WP"	Earth Cushion, m.	Pipes			Envelope Length in m. "L3"	Extra Length in m. "L5"	Length of End Wall in "W3"	Invert Level, "m"		Ht. of Head Wall in m.	Skew Angle	Length of pipe (Rounding to 2.5m)	Proposal	Junction connecting To
					DS	US	Left in "m"	Right in "m"				No.	Dia. in m. "D"	Thk. in m. "T"				ILUS	ILDS					
1	-	0+000	Major	Left	41.650	41.650	42.873	42.873	0.00	10.00	0.003	1	1.20	0.120	2.74	0.00	7.52	41.360	41.350	21.250	0.00	12.50	New	L-Purnia
2	-	0+000	Major	Right	41.650	41.650	42.873	42.873	0.00	10.00	0.003	1	1.20	0.120	2.74	0.00	7.52	41.360	41.350	21.250	0.00	12.50	New	R-Kishanganj
3	-	0+400	Minor	Left	33.050	33.050	34.239	34.239	0.00	7.50	0.003	1	1.20	0.120	2.74	0.005	7.52	32.758	32.750	16.250	0.00	10.00	New	L-Hathibancha
4	-	1+810	Minor	Left	32.095	32.095	34.190	34.190	0.00	7.50	0.909	1	1.20	0.120	2.74	1.818	7.52	31.803	31.795	16.250	0.00	12.50	New	L-Hathibandha
5	-	2+545	Minor	Left	32.259	32.259	34.428	34.428	0.00	7.50	0.983	1	1.20	0.120	2.74	1.966	7.52	31.967	31.959	16.250	0.00	12.50	New	L-Chopara
6	-	5+150	Minor	Left	32.249	32.249	34.378	34.378	0.00	7.50	0.941	1	1.20	0.120	2.74	1.882	7.52	31.957	31.949	16.250	0.00	12.50	New	L-Jalal Pundale
7	-	6+100	Minor	Left	32.440	32.440	34.325	34.325	0.00	7.50	0.689	1	1.20	0.120	2.74	1.398	7.52	32.148	32.140	16.250	0.00	12.50	New	L-Rehua
8	-	6+590	Minor	Left	32.547	32.547	33.742	33.742	0.00	7.50	0.009	1	1.20	0.120	2.74	0.017	7.52	32.255	32.247	16.250	0.00	10.00	New	L-Gadiya
9	-	7+530	Minor	Right	32.498	32.498	33.844	33.844	0.00	7.50	0.160	1	1.20	0.120	2.74	0.320	7.52	32.206	32.198	16.250	0.00	10.00	New	R-Surjapur
10	-	8+630	Minor	Left	31.304	31.304	33.607	33.607	0.00	7.50	1.117	1	1.20	0.120	2.74	2.234	7.52	31.012	31.004	16.250	0.00	12.50	New	L-Village
11	-	11+525	Minor	Left	31.861	31.861	34.523	34.523	0.00	7.50	1.478	1	1.20	0.120	2.74	2.952	7.52	31.569	31.561	16.250	0.00	15.00	New	L-Gadiya
12	-	13+125	Minor	Right	30.839	30.839	35.892	35.892	0.00	7.50	3.867	1	1.20	0.120	2.74	7.734	7.52	30.547	30.539	16.250	0.00	25.00	New	R-Kojatuli
13	-	13+700	Minor	Left	31.659	31.659	33.480	33.480	0.00	7.50	0.635	1	1.20	0.120	2.74	1.269	7.52	31.367	31.359	16.250	0.00	12.50	New	L-Singiya
14	-	13+700	Minor	Right	31.659	31.659	33.480	33.480	0.00	7.50	0.635	1	1.20	0.120	2.74	1.269	7.52	31.367	31.359	16.250	0.00	12.50	New	R-Badarpur
15	-	16+300	Minor	Left	31.659	31.659	33.480	33.480	0.00	7.50	0.635	1	1.20	0.120	2.74	1.269	7.52	31.367	31.359	16.250	0.00	12.50	New	L-Dharla
16	-	16+300	Minor	Right	31.659	31.659	33.480	33.480	0.00	7.50	0.635	1	1.20	0.120	2.74	1.269	7.52	31.367	31.359	16.250	0.00	12.50	New	R-Haletpur
17	-	19+148	Minor	Left	31.958	31.958	33.145	33.145	0.00	7.50	0.001	1	1.20	0.120	2.74	0.002	7.52	31.688	31.680	16.250	0.00	10.00	New	L-Sahalo

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Not to be used as a Bid Document, Only for Reference

CLIENT:



Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:

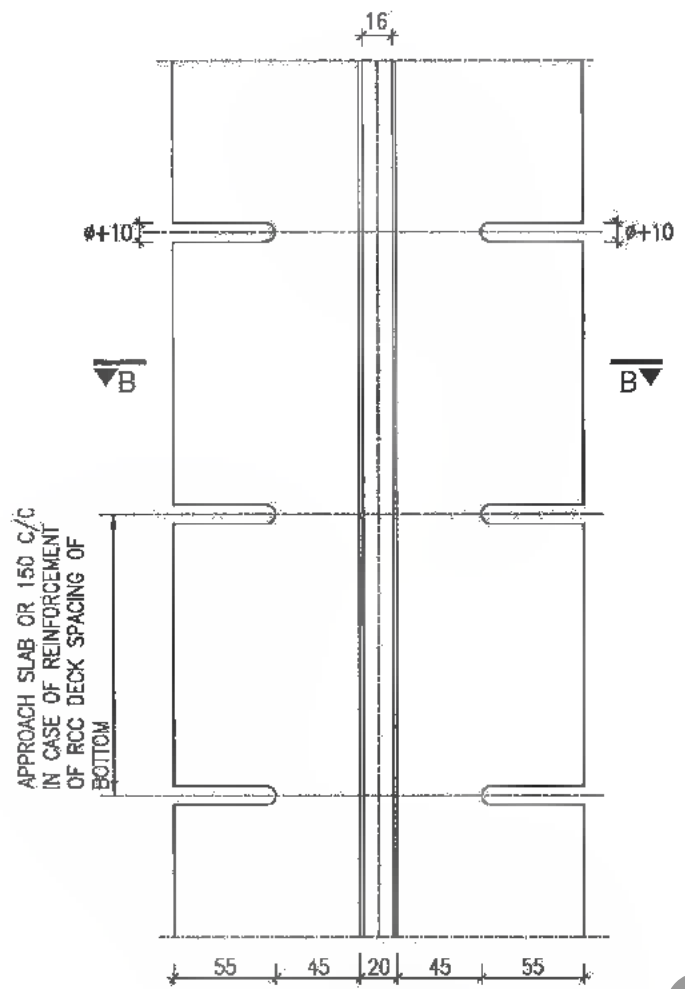


SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company

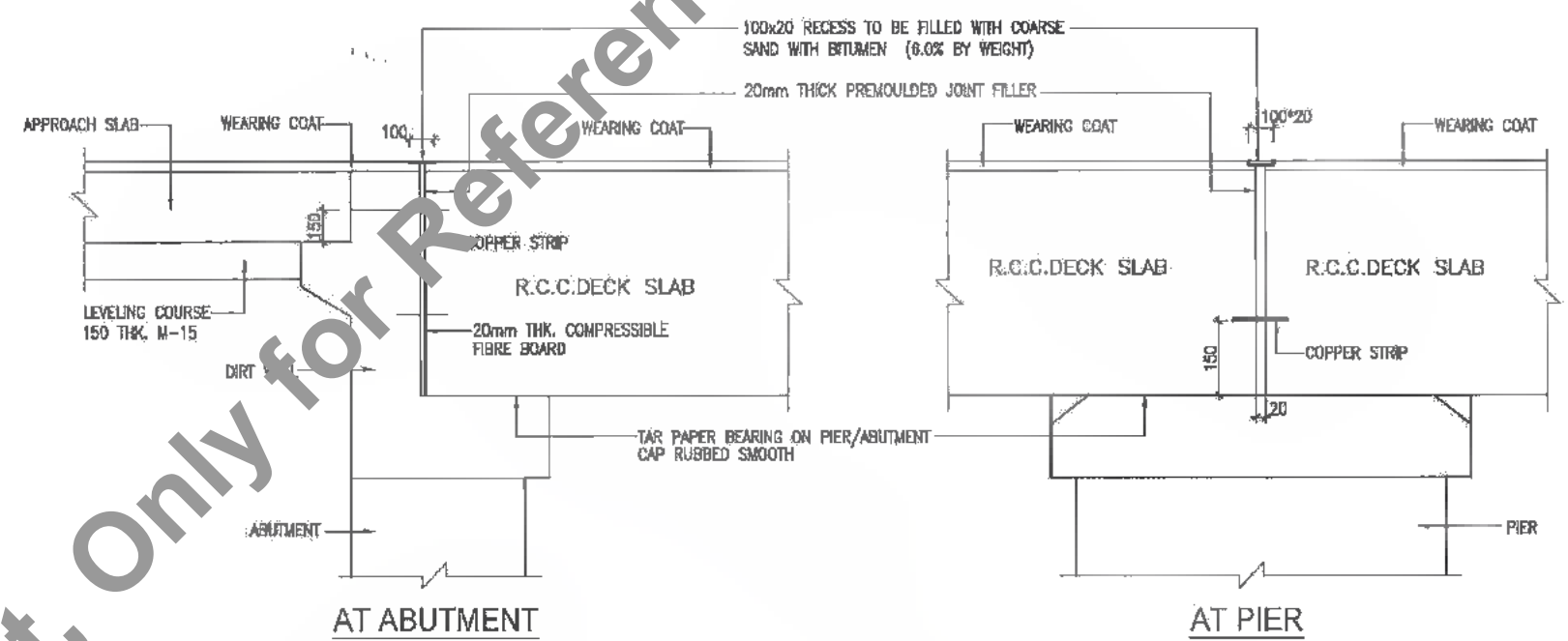
SAI Group
 Block-A "SAI House" Solapur Corporate Towers, 8th Floor
 C/o: Jyoti Kulkarni, Akshar Road - 413005, Solapur, India
 Phone : +91-20-6512802/80266 Fax : +91-20-6514280
 Email : mail@saiindia.com

PF 31/07/18 PE 17/12/18 PD 10/04/14 PC 28/02/14 PB 01/01/14	GOOD FOR CONSTRUCTION (REVISED DPR) GOOD FOR CONSTRUCTION (DPR) GOOD FOR CONSTRUCTION (DPR) ISSUED WITH FINAL DPR ADDENDUM OF DPR	DRAWN BY : D.M.G. CHECKED BY : H.K.S. APPROVED BY : B.V.V.	TITLE: BAYSI - RAUTA (PACKAGE-I) TYP. GAD FOR CROSS ROAD PIPE CULVERT (SINGLE ROW)
REV.	DATE	DESCRIPTION	ISSUED BY : B.S.
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DRG. NO. : (SHEET 02 OF 02)			
SAI-213007/DPR/C/B/PCGAD-04			
REVISION : PF			

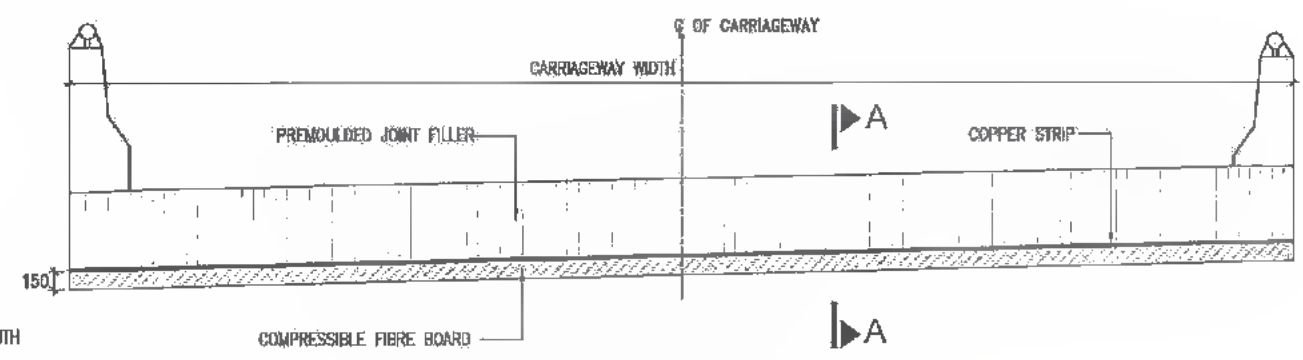




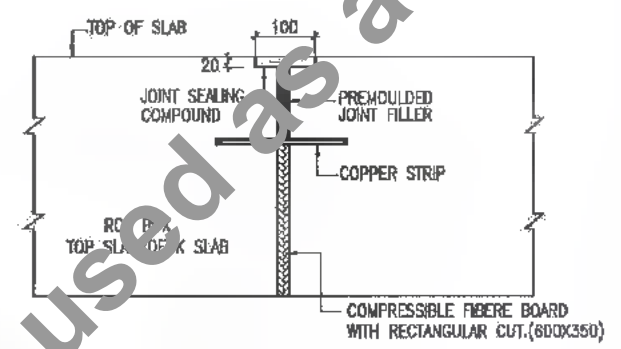
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SCALE N.T.S.



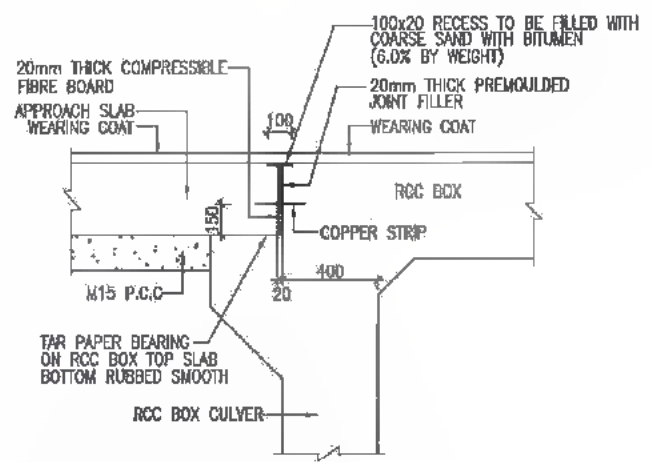
AT ABUTMENT
AT PIER
DETAILS OF EXPANSION JOINT FOR NEW CONSTRUCTION OF SOLID SLAB
SCALE 1 : 25



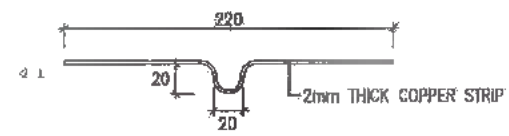
LAYOUT OF COPPER STRIP AT PIER
SCALE 1 : 50



SECTION A-A
SCALE 1 : 10



DETAIL OF EXPANSION JOINT FOR BOX CULVERT
SCALE 1 : 25



SECTION B-B
SCALE N.T.S.

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 2. JOINT FILLER SHALL CONFORM TO I.S. 1836. PRODUCTS WITH I.S.I. CERTIFICATION MARK SHALL ONLY BE USED.

DATE: 2019/07/29 10:50 AM
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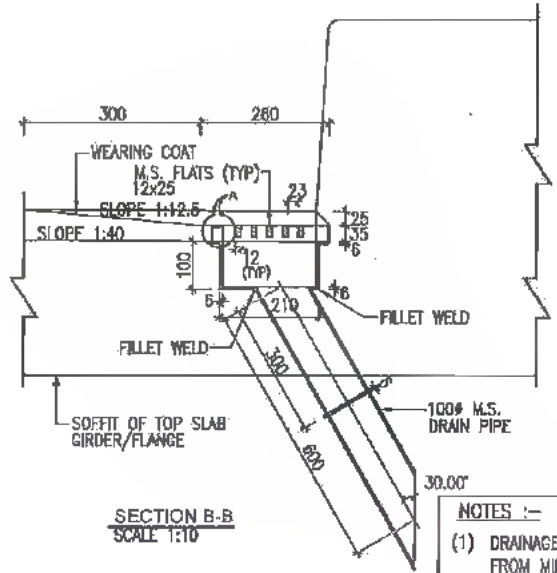
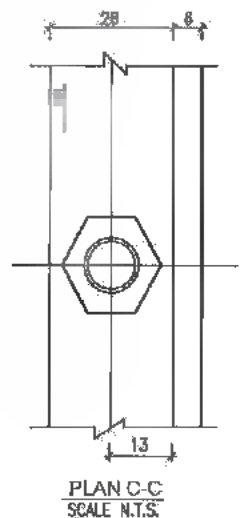
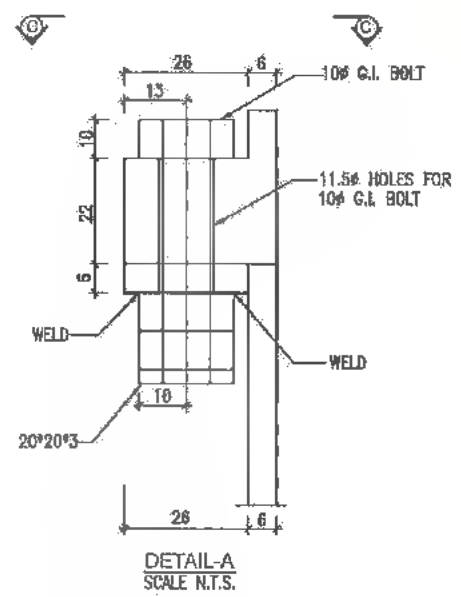
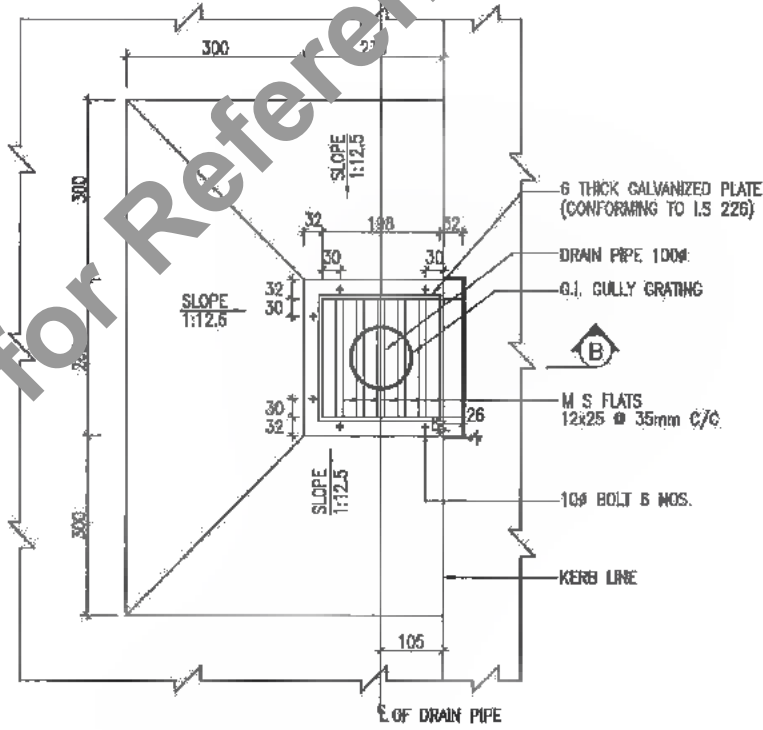
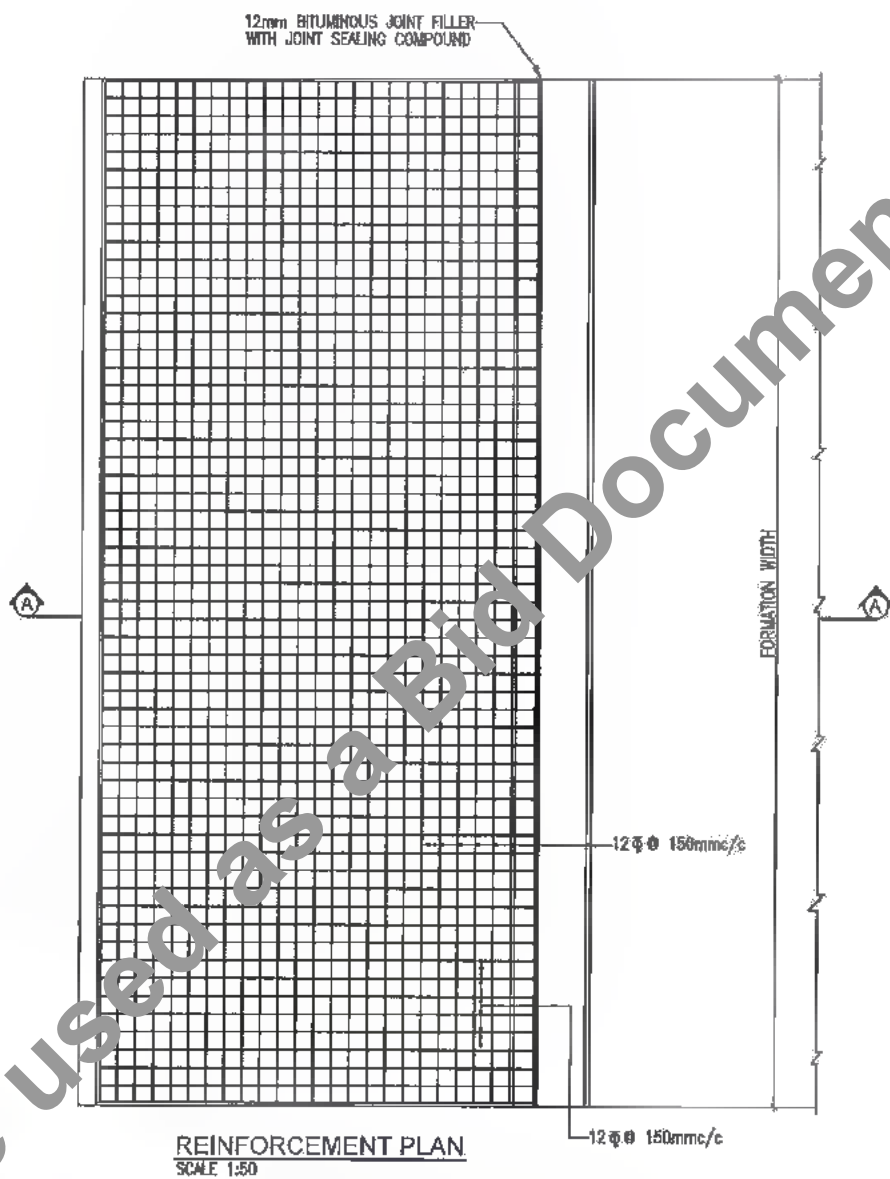
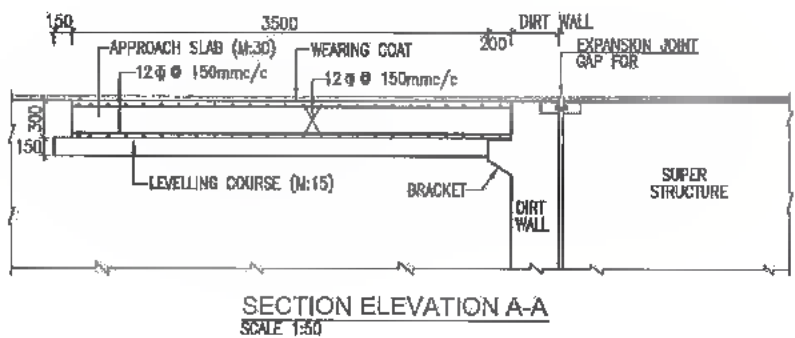
CLIENT :
 Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :
 SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Plot-A, "SAI House", Scheme Corporate Square, 3rd Rajpath, Club Road, New Delhi-110011, India
 Phone : +91-11-44624467/11 Fax : +91-11-44624468
 Email : mail@saiconsultants.com


PC	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DESIGN BY : R.H.M.	TITLE: BAYSI - RAUTA (PACKAGE-I)
PD	17/12/19	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : M.K.S.	DETAILS OF FILLER TYPE EXPANSION JOINT
PE	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : M.K.S.	DRG. NO. : SAI-213007(DPR)/B/PYP-01
PF	28/02/14	ISSUED WITH FINAL DPR		REVISION : PE
PA	13/11/13	ISSUED WITH DPR		

SAI CONSULTING ENGINEERS PVT. LTD.
 SCALE : AS SHOWN




NOTES :-
(1) DRAINAGE SPOUT ASSEMBLY SHALL BE FABRICATED FROM MILD STEEL AND AFTER FABRICATION THE COMPLETE ASSEMBLY EXCEPT GRATING SHALL BE GIVEN A HOT DIPPED GALVANIZED COATING

DATE: 2019/07/29
PATH: TACAD\TAD 2007 BHAR (REVISED) DPR\CV\PACKAGE-1\TYPICAL DRAWING\02 Drain_Approach.dwg

CLIENT:
 Bihar State Road Development Corporation Limited (BSRDC)
 (A Government of Bihar Undertaking)

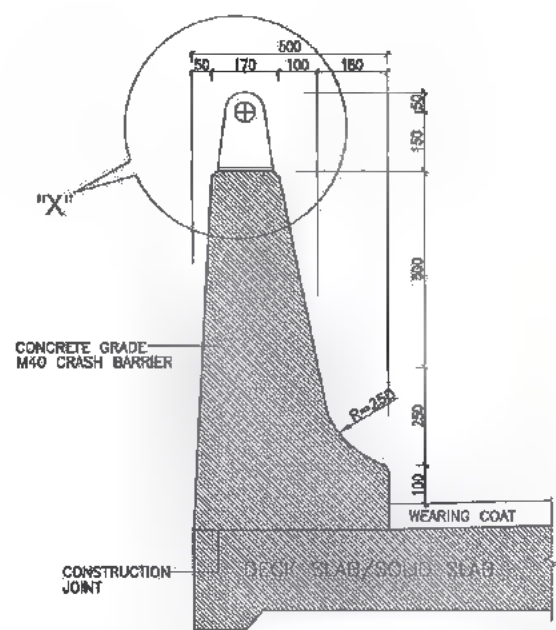
PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
 SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 B-4, 7th Floor, Surya Dey's Square, 5th Block, U.S. Industrial Estate, Gurgaon, India
 Phone: +91-79-64424471/72 Fax: +91-79-6442440
 Email: saiconsulting@gmail.com

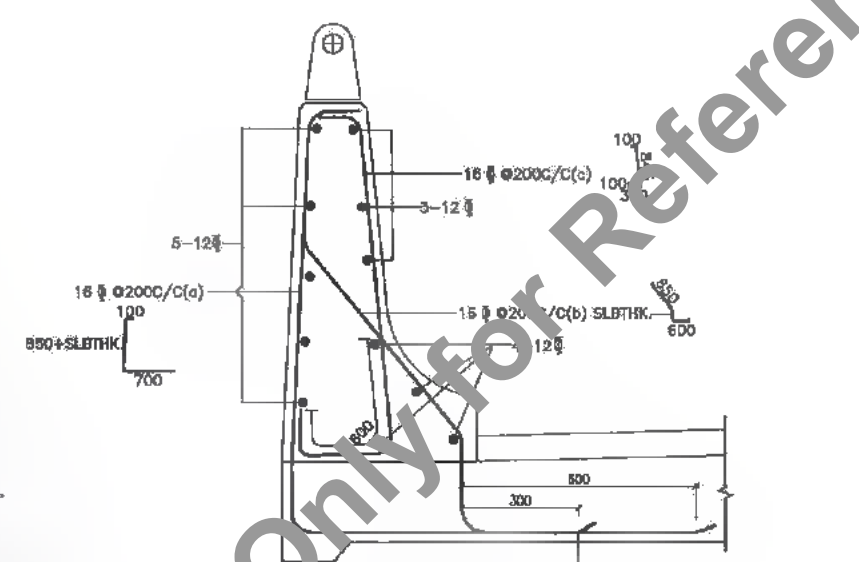
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PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY: H.K.S.	
PI	28/02/14	ISSUED WITH FINAL DOPR	ISSUED BY: A.S. G.	
PA	13/11/13	ISSUED WITH DOPR		

REV.	DATE	DESCRIPTION	SNR	ISSUED BY	DRG. NO.: SAI-213007/DPR/CI/TYP-02
SCALE: AS SHOWN					REVISION: PE



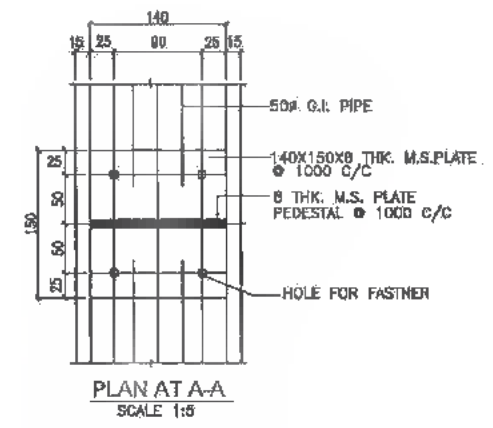


SECTION FOR CRASH BARRIER (DIMENSIONS ONLY)

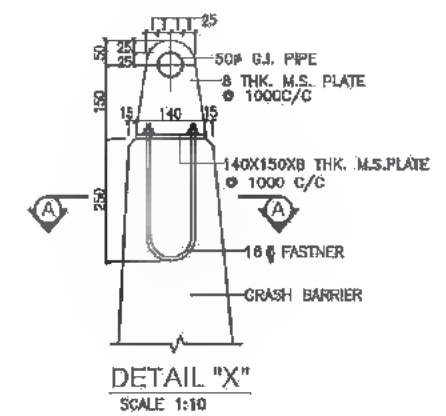


SECTION FOR CRASH BARRIER (REINFORCEMENT ONLY)

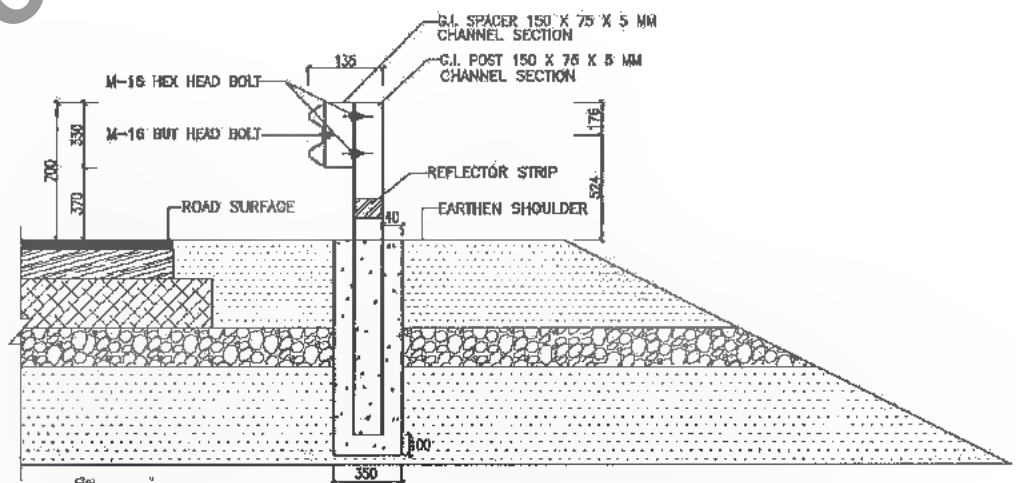
DETAILS OF CRASH BARRIER FOR DECK SLAB / RCC BOX SCALE 1:12.5



PLAN AT A-A SCALE 1:5



DETAIL "X" SCALE 1:10




DETAILS OF CRASH BARRIER FOR DECK WITH EARTH CUSHION SCALE 1:12.5

NOTES:
1. EXPANSION JOINT IN CRASH BARRIER SHALL BE PROVIDED AT THE LOCATION OF EXPANSION JOINT OF DECK SLAB.



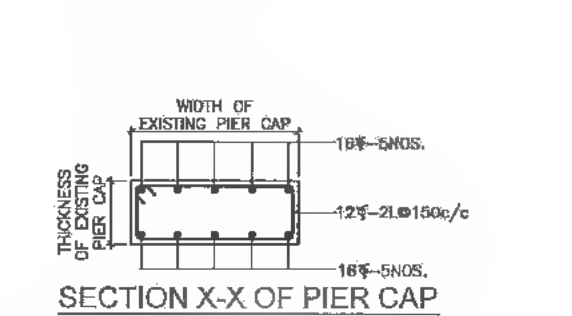
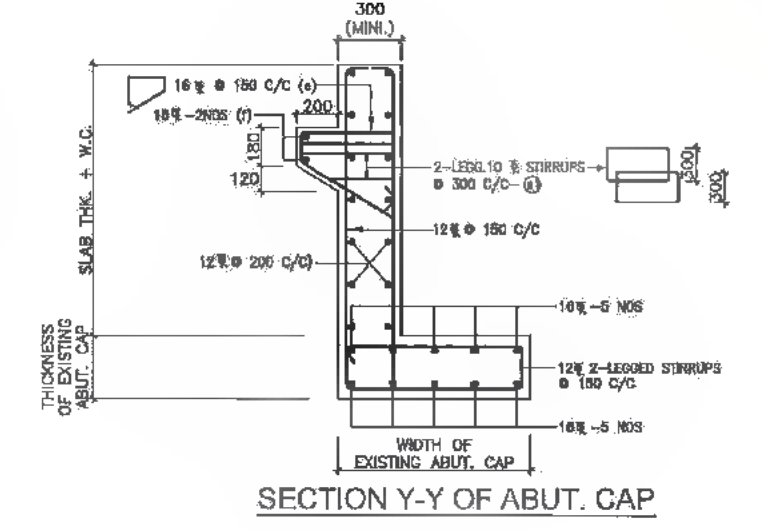
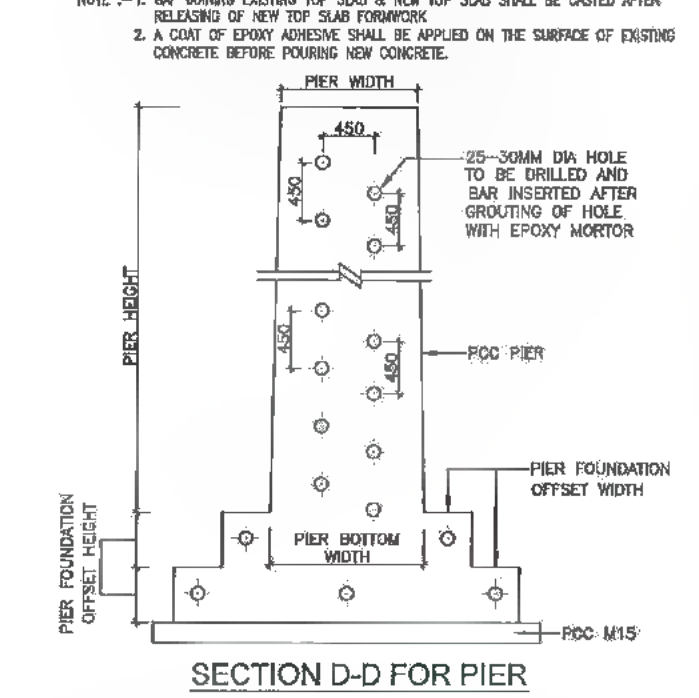
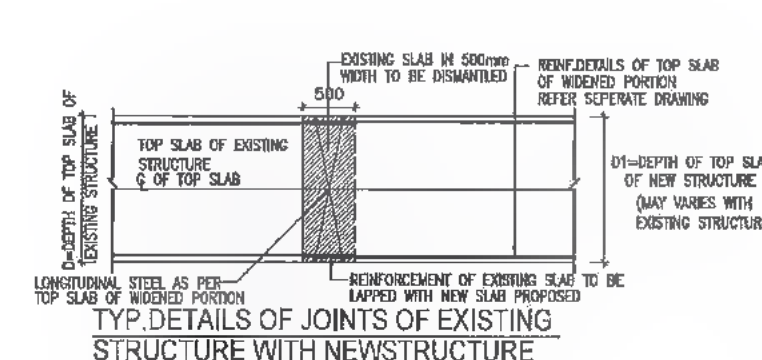
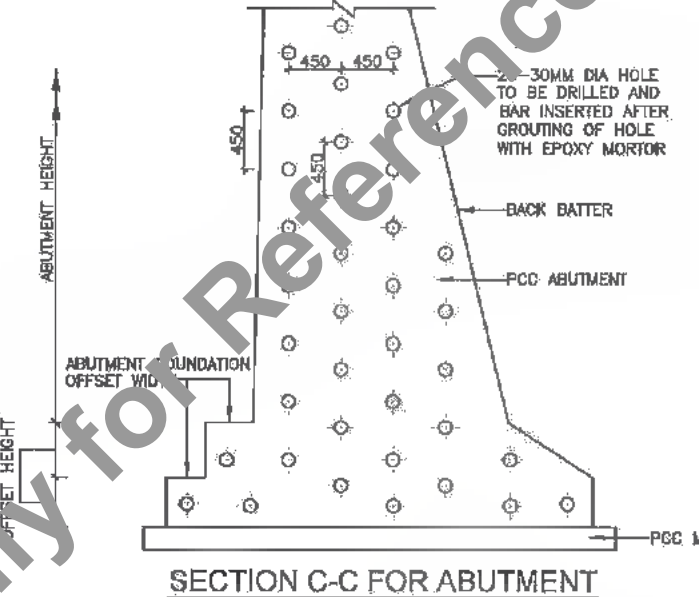
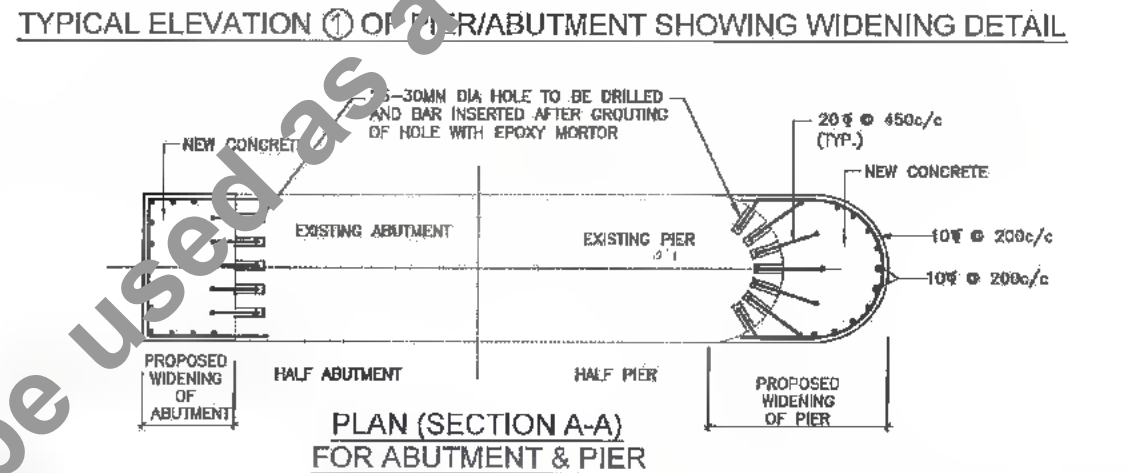
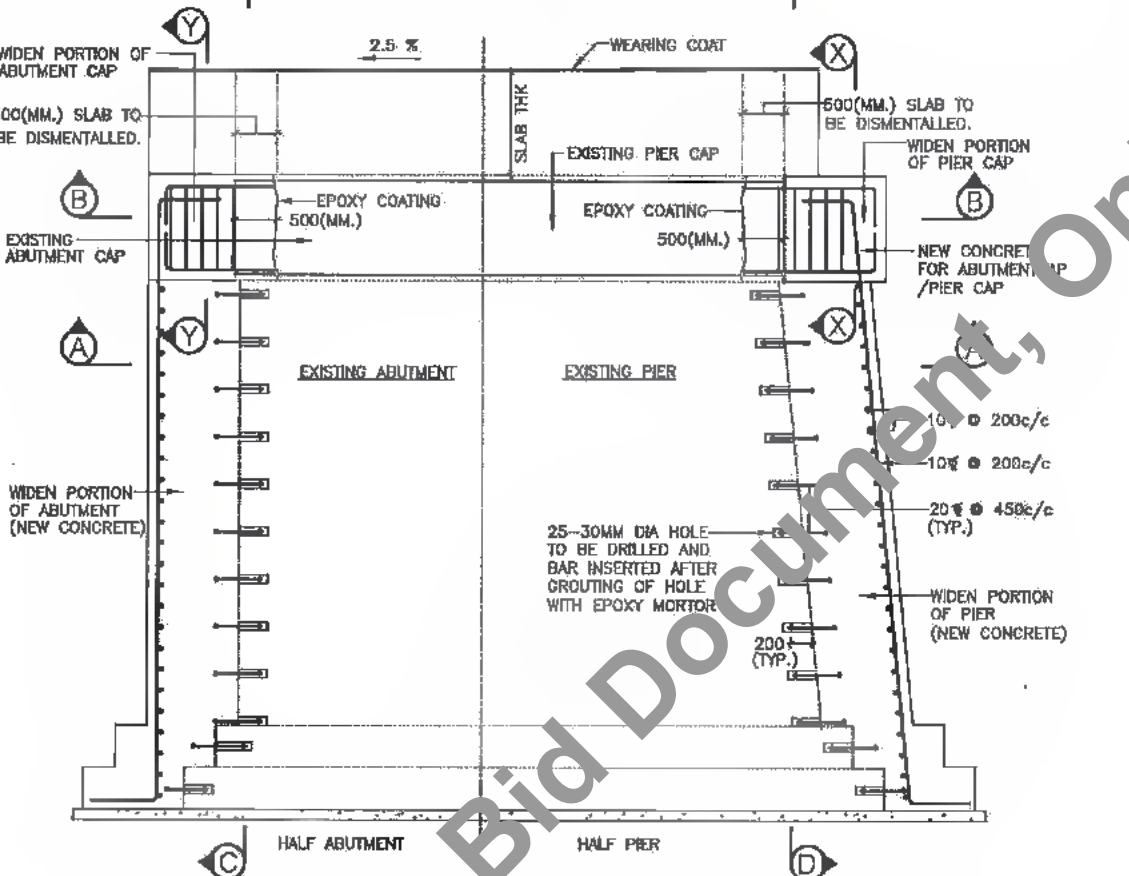
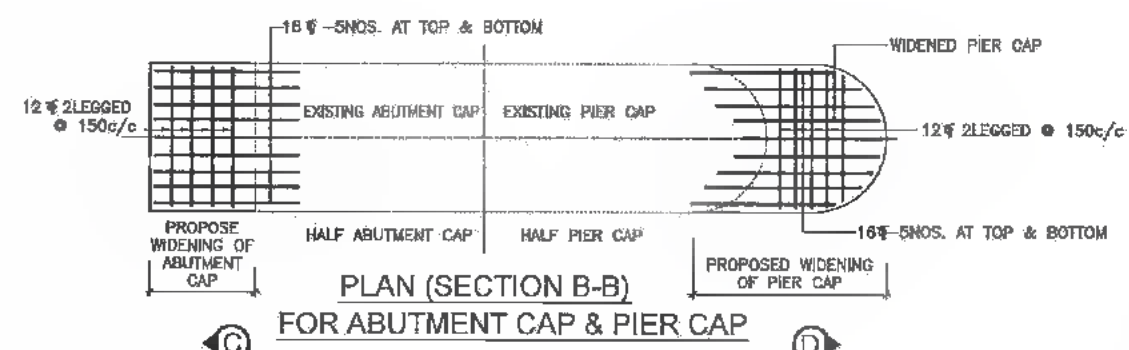
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CLIENT :
 Bihar State Road Development Corporation Limited (BSRDE) (A Government of Bihar Undertaking)

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :
 SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Head-A "SAI House" Sayam Corporate Square, Bih Rajpath
 Patna-1, PIN-800004, Bihar, India
 Phone : +91-79-4616364/791, Fax : +91-79-4616399
 Email : mail@saicons.com

PC	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DESIGN BY : H.H.L. G.	TITLE : BAYSI - RAUTA (PACKAGE-I) TYPICAL DRAWING FOR RCC CRASH BARRIER. DRG. NO. : SAI-213007/DPR/C/B/TYP-03 REVISION : PE
PD	17/10/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : H.H.L. G.	
PR	16/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : B.K.V. P.	
PA	26/02/14	ISSUED WITH FINAL DPR	ISSUED BY : B.S. S.	
REV.	DATE	DESCRIPTION	SIGN	SCALE : AS SHOWN



- NOTES**
1. ALL DIMENSIONS ARE IN mm. AND LEVELS IN METERS UNLESS MENTIONED OTHERWISE.
 2. DISMANTLE EXISTING PIER CAP, ABUTMENT CAP AT LOCATION UP TO EXISTING SLAB DISMANTLED FOR WIDENING I.e. 500mm AS SHOWN IN TYPICAL ELEVATION (1) BY APPROPRIATE METHOD WITH SPECIAL CARE, NOT TO DAMAGE THE EXISTING BARS.
 3. EXPOSE REINFORCEMENT OF PIER CAP ABUTMENT CAP UP TO EXISTING SLAB DISMANTLED FOR WIDENING I.e. 500mm AS SHOWN IN TYPICAL ELEVATION (1).
 4. REMOVE LOOSE MATERIAL/DUST OF ABUTMENT CAP PIER CAP BY SAND BLASTING FOR EXPOSED CONCRETE SURFACE AND REINFORCEMENT PORTION.
 5. APPLY EPOXY BOND COAT OF APPROVED QUALITY ON EXISTING REINFORCEMENT AS PER SPECIFICATION.
 6. APPLY PRIMER SLURRY ON PREPARED CONCRETE SURFACE.
 7. REPLACE IF ABUTMENT/PIER CAP REINFORCEMENT CORRODED BADLY OR MISSING.
 8. INSTALL DOWELS EMBEDDED WITH EPOXY MORTAR TO LAP WITH NEW BARS WHERE REQUIRED DOWELS SHALL MATCH WITH EXISTING REINFORCEMENT.
 9. FORM AND CONCRETE THE DISMANTLED PORTION OF ABUTMENT CAP/PIER CAP/ RETURN WALL AS PER CONCRETE GRADE SHOWN IN THE GAP OF RESPECTIVE MINOR BRIDGE / SLAB CULVERT TO BE WIDEN.
 10. DRILL 20-30 MM DIA. HOLE IN EXISTING ABUTMENT/PIER @ 450 MM C/C AS SHOWN IN SECTION C-C AND D-D. 20 MM DIA. BARS HAVE TO BE INSERTED AFTER GROUTING OF HOLE WITH EPOXY MORTAR AS SHOWN IN TYPICAL ELEVATION 1.
 11. POUR NEW CONCRETE FOR WIDEN PORTION OF ABUTMENT CAP/ABUTMENT AND PIER CAP/PIER WITH SURFACE REINFORCEMENT OF 10 DIA @ 200 C/C BOTHWAYS AS SHOWN IN TYPICAL ELEVATION 1.



DATE: 2019/07/29 15:50:00 PATH: FACAD\TAD 21007 BHM REVISED DPR\REV PACKAGE-TYPICAL DRAWINGS\04 Widening Sub-stru.dwg

CLIENT: **Bihar State Road Development Corporation Limited (BSRDC)**
(A Government of Bihar Undertaking)

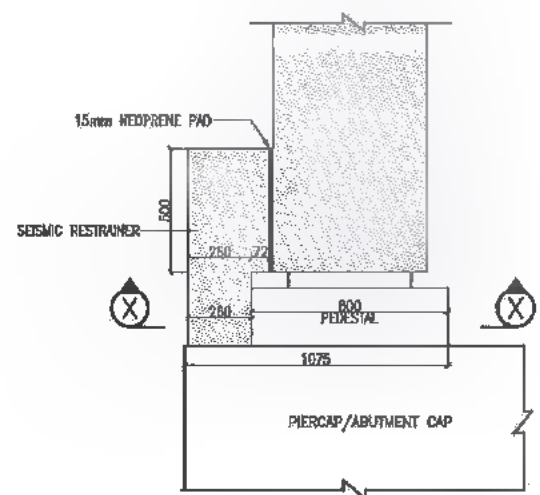
PROJECT: **Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar**
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS: **SAI Consulting Engineers Pvt. Ltd.**
An ISO 9001 Certified Company

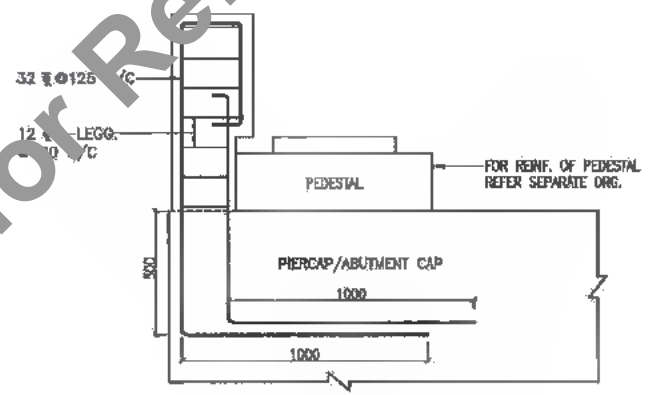
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PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)
PD	26/02/14	ISSUED WITH FINAL DPR
PA	13/11/13	ISSUED WITH DPR

DESIGNED BY: RALU. R.	CHECKED BY: N.K.S.	APPROVED BY: S.B.S.
ISSUED BY: S.B.S.	SCALE: AS SHOWN	DRG. NO.: SAI-213007DPR/PC/INTYP-04
REVISION: PE		

2-87
488



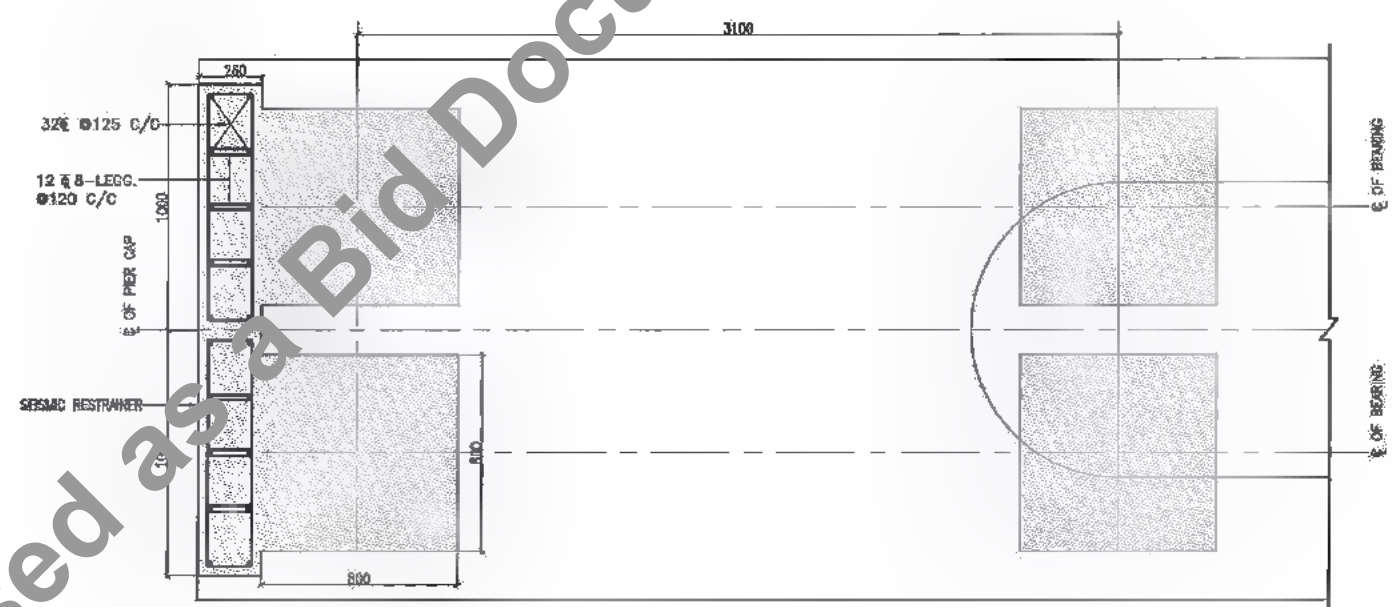
CONNECTION DETAILS OF SEISMIC RESTRAINER WITH PEDESTAL
SCALE 1:20



REINFORCEMENT DETAILS OF SEISMIC RESTRAINER
SCALE 1:20

NOTES:-

1. ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHANGES & LEVELS ARE IN METERS.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
3. GRADE OF CONCRETE : M-40
4. GRADE OF M/S/D REINFORCEMENT : Fe-500
5. MINIMUM COVER TO ANY REINFORCEMENT SHALL BE 40mm



PLAN (SECTION X - X)
SCALE 1:20

DATE: 2019/07/25
PATH: T:\CAD\TAD_213007_BHSR\REVISED DPR\CAD\PACKAGE-1\TYPICAL DRAWING\105_SHSMICRESTRAINER.dwg

CLIENT:




Bihar State Road Development Corporation Limited (BSRDL)
(A Government of Bihar Undertaking)

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

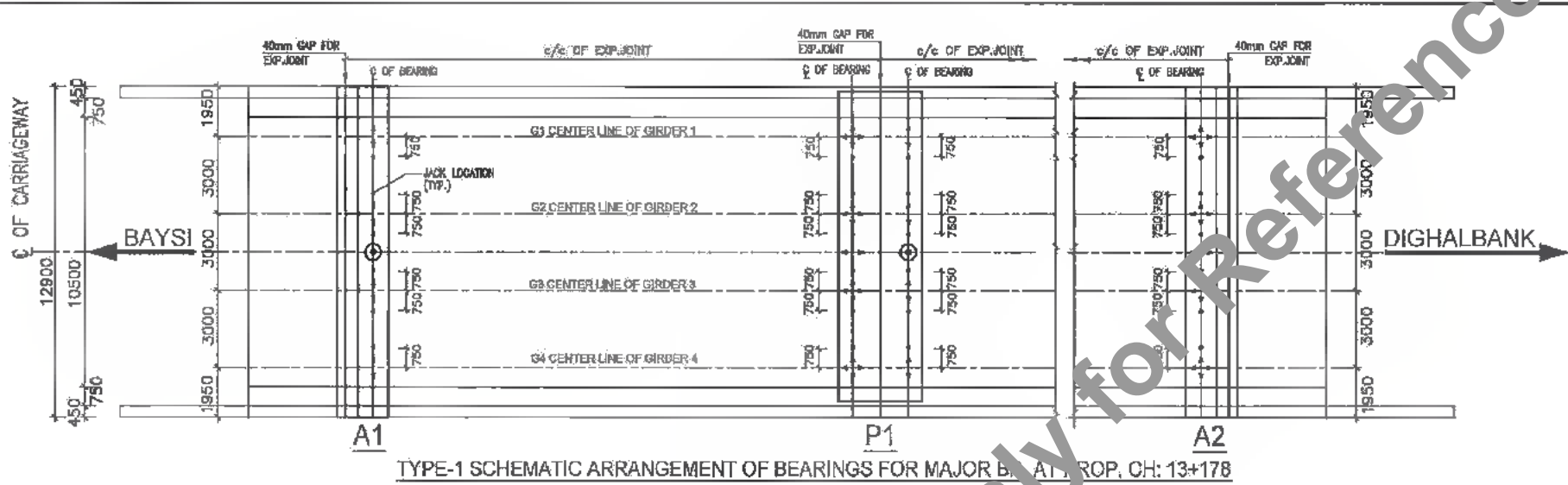
CONSULTANTS:



SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House", Patna Express Square, Bih Rajpath
Bihar, Patna-800001, India
Phone : +91-91-4411988/714, Fax : 91-91-44112913
Email : mail@saiconsulting.com

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : S.S.R.	TITLE: BAYSIL - RAUTA (PACKAGE-1) TYPICAL DETAILS OF SEISMIC RESTRAINER
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : M.K.S.	
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : S.S.R.	
PS	28/02/14	ISSUED WITH FINAL DPR		
PA	13/11/13	ISSUED WITH DPR		
REV.	DATE	DESCRIPTION	BY	ISSUED BY : S.S.R.
SCALE : AS SHOWN				
DRG. NO. : SAI-213007/DPR/CB/TYP-05				REVISION : PE

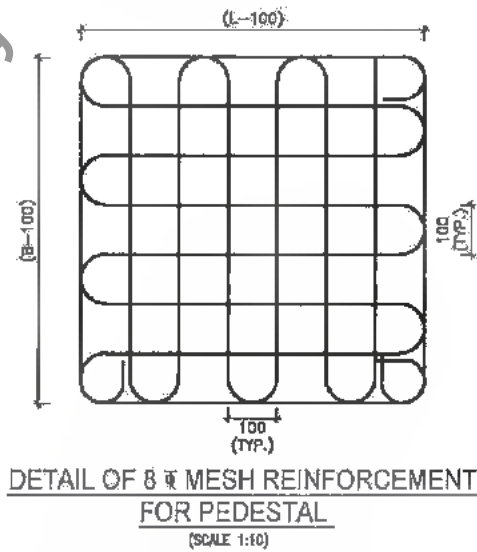
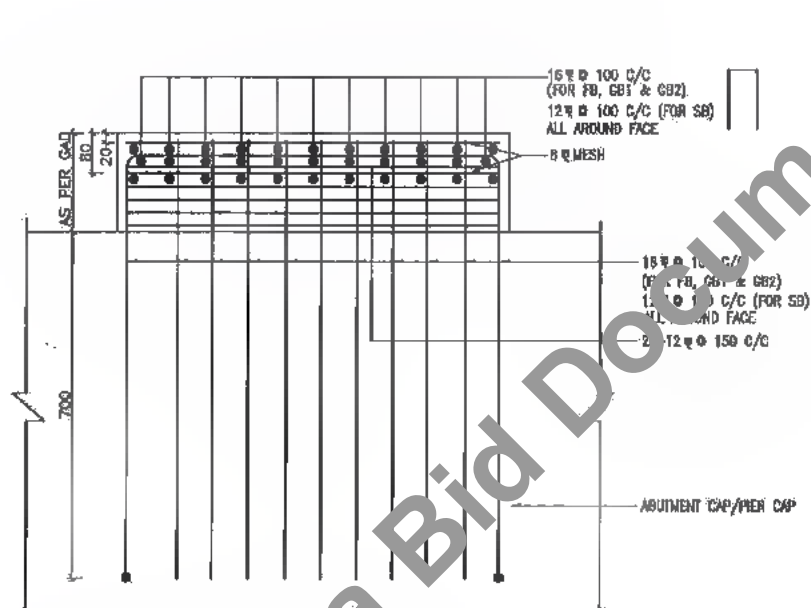




- NOTES :**
- THE CONTRACTOR SHALL SUBMIT DESIGN/DRAWING OF INDIVIDUAL BEARINGS BASED ON FORCES, TRANSLATIONS & ROTATIONS AS GIVEN IN THIS DRAWING FOR APPROVAL OF THE ENGINEER.
 - BEARINGS SHALL BE PROCURED FROM THE LIST OF APPROVED MANUFACTURER'S GIVEN BY MORT & H.
 - DESIGN & INSTALLATION OF BEARINGS SHALL CONFORM TO LATEST MORT & H SPECIFICATIONS & IRC : 83 (PART II) - 2002.
 - THE TESTING OF RAW MATERIALS, METALLIC COMPONENTS, ELASTOMER & PTFE AND ACCEPTANCE TESTS ON BEARINGS SHALL CONFORM TO MORT & H SPECIFICATIONS.
 - MANUFACTURER SHALL SUBMIT THE CERTIFICATES FOR LOAD TESTING AND DIMENSIONS OF BEARINGS.
 - SUITABLE ERECTION CLAMPS FOR SAFE TRANSPORTATION AND HANDLING ALONG WITH TEMPLATE FOR ALIGNMENT SHALL BE PROVIDED BY THE MANUFACTURER.
 - PEDESTAL PLAN SIZE GIVEN HERE IN ARE TENTATIVE ONLY. THE PLAN SIZE AND HEIGHT OF PEDESTALS SHALL BE ADJUSTED TO SUIT THE FINALISED SIZE OF BEARINGS AT THE TIME OF EXECUTION. THE MINIMUM PLAN DIMENSIONS OF PEDESTAL SHALL BE BEARING SIZE + 300mm.
 - THE GROUT/BEDDING MORTAR SHALL BE OF HIGH STRENGTH FREE FLOWING AND NON SHRINK TYPE.
 - ANCHORING ARRANGEMENT SHALL BE AS PER CLAUSE 923.13 OF IRC : 83 (PART II) - 2002 TO BE THE BEARING TO THE STRUCTURE.
 - ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED) & CHAINAGES ARE IN METRES. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
 - THE FOLLOWING LIVE LOADS HAVE BEEN CONSIDERED
 - ONE LANE OF IRC CLASS 70R OR TWO LANES OF IRC CLASS A PLUS FOOTPATH.
 - ONE LANE OF 70R PLUS ONE LANE OF CLASS A OR THREE LANES OF CLASS A.
 - SEISMIC ZONE V HAS BEEN CONSIDERED FOR ALL BRIDGES.

REFERENCE DRAWING
SCHEMATIC ARRANGEMENT AND DESIGN FORCES OF POT PTFE BEARINGS. SAI-213007/DPR/C/B/TYP-06 (SHEET 1 OF 2)

- LEGEND**
- ⊙ PIN BEARING
 - ↑ GUIDED BEARING IN TRANSVERSE DIRECTION
 - ⊕ FREE BEARING
 - ↔ GUIDED BEARING IN LONGITUDINAL DIRECTION
 - JACK LOCATION



R.C. DETAIL OF PEDESTAL
(SCALE 1:10)
DIMENSIONS MARKED WITH (*) ARE TENTATIVE AND TO BE ADJUSTED AT SITE

Summary of Loads and Forces on POT/PTFE Bearings :-

Sr. No.	Bridge No. At km	Span of Bridge	Skew Angle	Type of Bearing	Nos. of Bearing	Normal Condition				Normal + Seismic Condition				Movement in mm		Rotation in all directions (Rad)	Prestress "x"
						Vertical Load in Ton	Horizontal Load in Ton	Vertical Load in Ton	Horizontal Load in Ton	Longl.	Trans.	Longl.	Trans.	Longl.	Trans.		
1	13+178	30.000	0	Pin Bearing	4	-	-	7.00	12.50	-	-	29.00	74.50	-	-	0.01	0
				Guided (T)	16	140.00	50.00	7.00	0.00	105.00	40.00	28.00	0.00	-	5.00	0.01	0
				Free	16	140.00	50.00	20.00	20.00	105.00	40.00	20.00	20.00	20.00	5.00	0.01	0
				Metallic long guide bearing	4	-	-	0.00	12.50	-	-	0.00	74.50	28.00	-	0.01	0

CLIENT :
Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT :
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Head Office: SAI House, Debraj Corporate Square, 8th Floor, 2nd Phase, Patna - 800 001, Bihar, India
Phone: +91-91-4411418/711, Fax: +91-91-4411880
Email: mail@saiconsulting.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
PE	31/07/18	GOOD FOR CONSTRUCTION (REVISED DPR)		ISSUED BY : A.R.G.
PD	17/12/16	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY : H.K.S.
FB	10/04/14	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY : B.A.V.
PA	20/02/14	ISSUED WITH FINAL GORP		
PA	13/11/13	ISSUED WITH DPR		

TITLE : BAYSI - RAUTA (PACKAGE-3)
SCHEMATIC ARRANGEMENT AND DESIGN FORCES OF POT PTFE BEARINGS & PEDESTAL

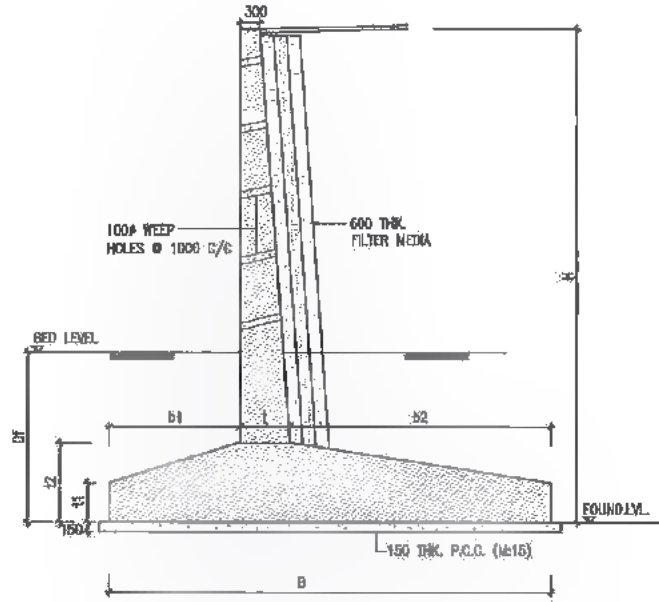
DRG. NO. : SAI-213007/DPR/C/B/TYP-06

REVISION : PE

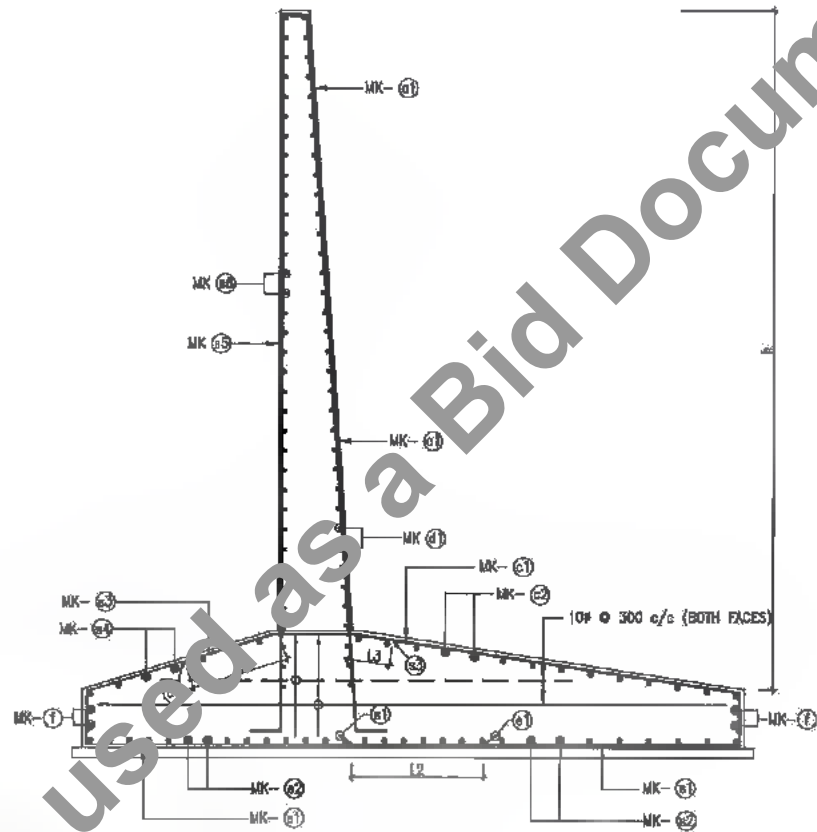


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291
486



SECTION OF RETURN WALL
AT APPROACH PORTION
SCALE-1:75



SECTION OF RETURN WALL
SCALE 1:50 (REINF. DETAILS)

PARAMETERS OF RCC RETURN WALL
ALL DIMENSIONS ARE IN m

SR NO.	PARAMETERS	Proposed Chainage	
		13+178	7.0 TO 8.0
	HEIGHT H		m
1	B	6.400	
2	b1	2.700	
3	b2	2.700	
4	t	1.000	
5	t1	0.600	
6	t2	1.200	
7	L1	1.500	
8	L2	0.900	
9	L3	1.050	
10	DF	2.000	
11	Maximum base pressure T/m ²	14.320	

REINF. SCHEDULE FOR RETURN WALL

SR. NO.	TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE)	HEIGHT (H) 7.0m TO 8.0m	
			DIA OF BARS (mm)	SPACING / NO. OF BARS (mm)
1	a1		25	150
2	c1		20	160
3	c2		10	140
4	d1		12	120
5	a1'		20	130
6	a2		10	140
7	f		10	4 NOS
8	s1		10	300
9	s2		10	300
10	s3		10	300
11	s4		10	300
12	s5		10	300
13	s6		10	300

NOTES:-

- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED) & CHANGES ARE IN METRES. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
- BACKFILL MATERIAL BEHIND ABUTMENT SHALL BE SELECTED, SOIL HAVING PROPERTIES AS C = 0 KG/SQ.CM., φ > 30°, r = 1800 TO 2000 KG/CUM.
- GRADE OF CONCRETE - M30
GRADE OF STEEL - FE-500
- MINIMUM COVER TO ANY REINFORCEMENT SHALL BE 75mm.
- LAP LENGTH FOR M-30 GRADE OF CONCRETE SHALL BE:
a. 87 x BAR DIA.
b. AT PARTICULAR LOCATION LAPPING OF BAR SHALL NOT BE GREATER THAN 60x.



DATE: 2019/07/29 11:07 AM
PATH: T:\CAD\TAD 215007 BHAR REVISED D:\PROJECTS\PACKAGE-1\TYPICAL DRAWING\107_RCC RETURN TYP.dwg

CLIENT :
 Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

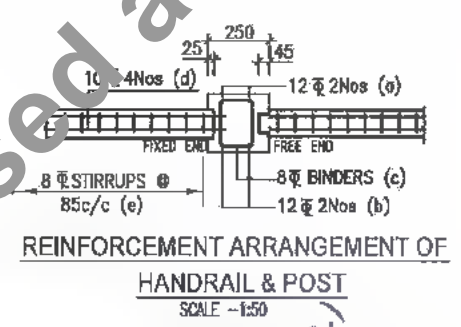
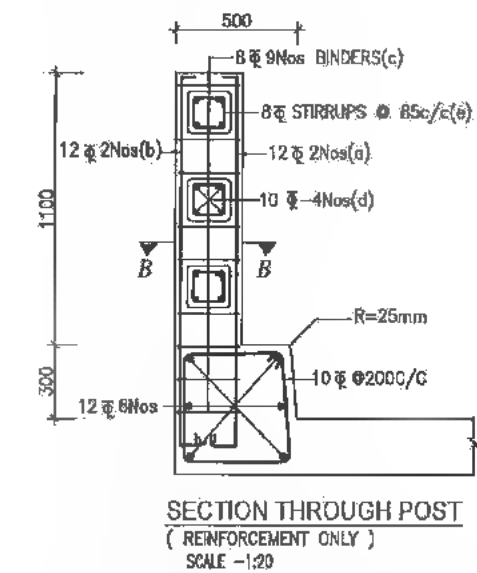
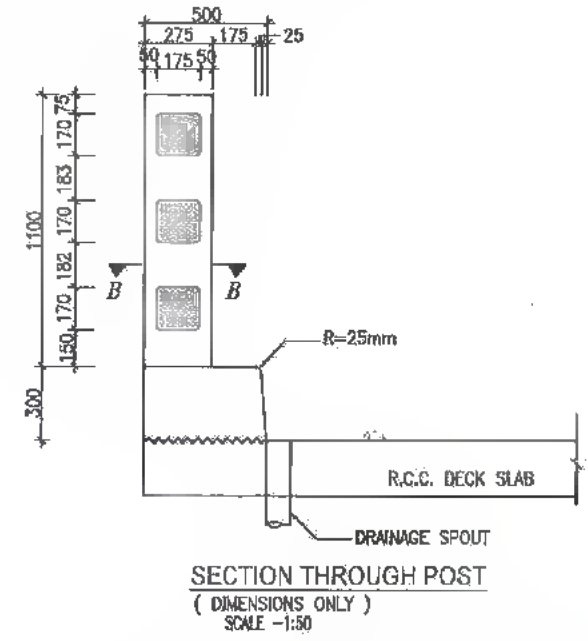
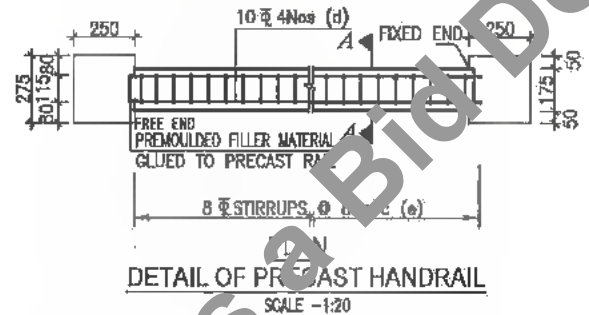
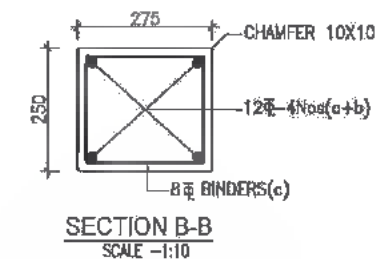
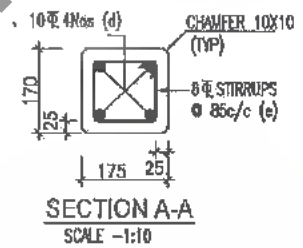
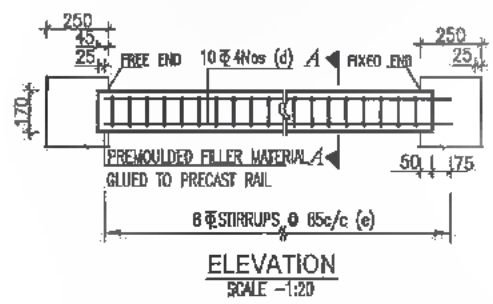
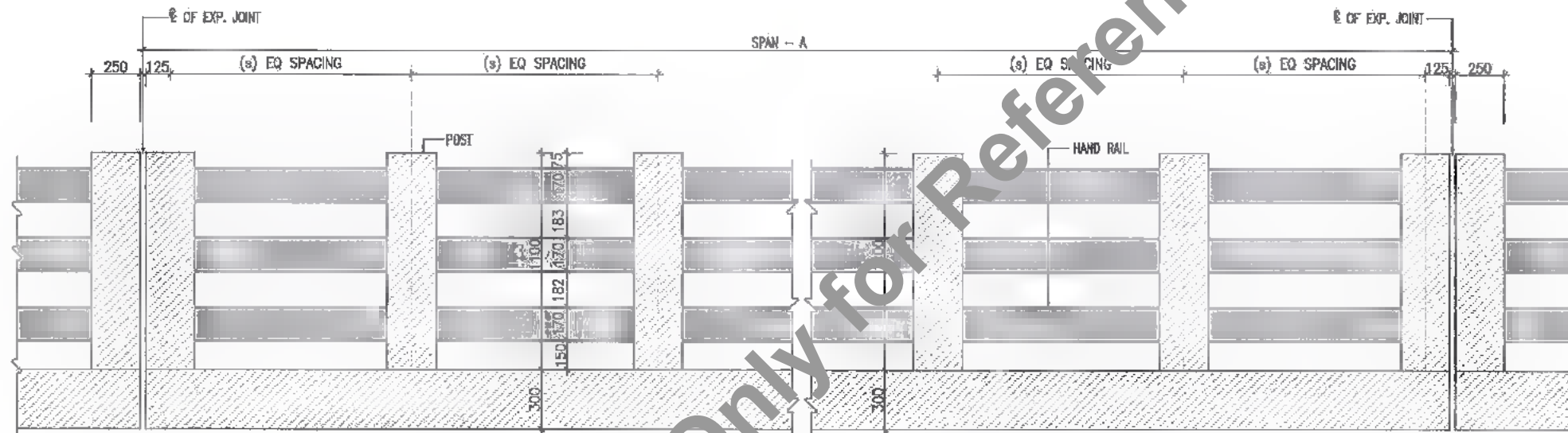
PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :
 SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House" Sector-10, Gurgaon, Haryana
Dist. Gurgaon, Haryana-122009
Phone : +91-12-6612587/781/782 Fax : +91-12-6612588
Email : sai@saiconsulting.com

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPRO)	DRAWN BY : A.M.G.	TITLE : BAYSI - RAUTA (PACKAGE-I)
PD	17/12/18	GOOD FOR CONSTRUCTION (DPRO)	CHECKED BY : N.K.R.	TYPICAL REINFORCEMENT DETAILS OF RETURN WALL
PO	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : N.K.V.	
PR	26/02/14	ISSUED WITH DPRO		
PA	13/11/13	ISSUED WITH DPR		
REV.	DATE	DESCRIPTION	BY	ISSUED BY

SCALE : AS SHOWN

DRG. NO. :
SAI-215007DPR/CB/TYP-07
REVISION : PE



- NOTES :
1. REINFORCEMENT OF RAILING POST SHOULD BE SUITABLY ANCHORED IN DECK SLAB.
 2. CASTING OF POST SHALL BE DONE IN SINGLE POUR AFTER ACCURATELY POSITIONING THE PRECAST HANDRAIL.
 3. EXPANSION GAPS IN RAILING SHALL BE PROVIDED AT THE SAME LOCATIONS AS SHOWN IN DRAWING.
 4. GRADE OF CONCRETE : M30
 5. GRADE OF HYSD REINFORCEMENT : Fe-500



DATE: 2019/07/29 9:00 AM
PATH: TACADYAD 25007 BHM REVISED DPR(CB)PACKAGE-TYPICAL DRAWING\08 PARAPET.dwg

CLIENT :
 Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :
 SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A, "SAI House", Surya Corporate Square, 8th Rd, Rajpath
 Giza, Helwan Governorate, 23519, Egypt
 Phone : +91-11-6263347/711/712 Fax : +91-11-6263348
 Email : mcr@saiconsulting.com

PE	31/07/16	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : ANJ	TITLE :	BAYSI-RAUTA (PACKAGE-I)
PD	17/12/16	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : M.K.S		DIMENSIONS & REINFORCEMENT
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : B.S.		DETAILS OF RCC PARAPET WALL & RCC RAILING FOR BOX CULVERTS
PI	28/02/14	ISSUED WITH FINAL DPR	ISSUED BY : B.S.		
PA	12/11/13	ISSUED WITH DPR			
REV.	DATE	DESCRIPTION	SIGN	ISSUED BY	B.S.

SCALE : AS SHOWN

DRG. NO. :
SAJ-213607/DPR/CB/TYP-08
REVISION : PE

LIST OF DRAWINGS (PACKAGE - II)

DRAWINGS TITLE	DRAWING NO.
01. IMPROVEMENT PROPOSAL FOR BRIDGES & CULVERTS	SAI-213007/DPR/C/B/IP-01
02. GENERAL NOTES	SAI-213007/DPR/C/B/GEN
03. GAD FOR RECONSTRUCTION OF MAJOR BRIDGE AT EXL.CH.24/205 PROP. CH. 24+097	SAI-213007/DPR/C/B/MAJ/GAD-01 (SHEET 1 OF 2 TO 2 OF 2)
04. GAD FOR SUPER STRUCTURE	SAI-213007/DPR/C/B/MAJ/24.097/SUP-01
05. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER	SAI-213007/DPR/C/B/MAJ/24.097/SUP-02
06. REINFORCEMENT DETAILS FOR CROSS GIRDER	SAI-213007/DPR/C/B/MAJ/24.097/SUP-03
07. REINFORCEMENT DETAILS OF DECK SLAB	SAI-213007/DPR/C/B/MAJ/24.097/SUP-04
08. SCHEDULE OF REINFORCEMENT	SAI-213007/DPR/C/B/MAJ/24.097/SUP-05
09. DIMENSIONS & REINF. DETAILS FOR ABUTMENT & ABUTMENT CAP FOR MAJOR BRIDGE AT PROP. CH. 24+097	SAI-213007/DPR/C/B/MAJ/24.097/SUB-01
10. DIMENSIONS & REINF. DETAILS FOR PILE & PILE CAP OF ABUTMENT FOR MAJOR BRIDGE AT PROP. CH. 24+097	SAI-213007/DPR/C/B/MAJ/24.097/SUB-02
11. DIMENSIONS & REINF. OF R.C.C. PIER WITH PILE FOUNDATION FOR MAJOR BRIDGE AT PROP. CH. 24+097	SAI-213007/DPR/C/B/MAJ/24.097/SUB-03
12. DIMENSIONS & REINF. DETAILS OF PIER CAP FOR PIER OF MAJOR BRIDGE AT CH. 24+097	SAI-213007/DPR/C/B/MAJ/24.097/SUB-04
13. GAD FOR RECONSTRUCTION OF MINOR BRIDGE AT EXL.CH.25/292 PROP. CH. 25+180	SAI-213007/DPR/C/B/MIN/GAD-01
14. GAD FOR SUPER STRUCTURE	SAI-213007/DPR/C/B/MIN/25.180/SUP-01
15. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER	SAI-213007/DPR/C/B/MIN/25.180/SUP-02
16. REINFORCEMENT DETAILS FOR CROSS GIRDER	SAI-213007/DPR/C/B/MIN/25.180/SUP-03
17. REINFORCEMENT DETAILS OF DECK SLAB	SAI-213007/DPR/C/B/MIN/25.180/SUP-04
18. SCHEDULE OF REINFORCEMENT	SAI-213007/DPR/C/B/MIN/25.180/SUP-05
19. DIMENSIONS & REINF. DETAILS FOR ABUTMENT & ABUTMENT CAP FOR MINOR BRIDGE AT PROP. CH. 25+180	SAI-213007/DPR/C/B/MIN/25.180/SUB-01
20. DIMENSIONS & REINF. DETAILS FOR PILE & PILE CAP OF ABUTMENT FOR MINOR BRIDGE AT PROP. CH. 25+180	SAI-213007/DPR/C/B/MIN/25.180/SUB-02
21. GAD FOR WIDENING OF MINOR BRIDGE AT EXL.CH.30/083 PROP. CH. 29+826	SAI-213007/DPR/C/B/MIN/GAD-02 (SHEET 1 OF 2 TO 2 OF 2)
22. REINF. DETAILS OF R.C.C. SOLID SLAB SUPER STRU. FOR WIDENING OF MINOR BRIDGE AT EXL.CH.30/083 PROP. CH. 29+826	SAI-213007/DPR/C/B/MIN/SUP-02
23. GAD FOR RECONSTRUCTION OF MINOR BRIDGE AT EXL.CH.35/980 PROP. CH. 35+755	SAI-213007/DPR/C/B/MIN/GAD-03

DRAWINGS TITLE	DRAWING NO.
24. GAD FOR SUPER STRUCTURE	SAI-213007/DPR/C/B/MIN/35.755/SUP-01
25. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER	SAI-213007/DPR/C/B/MIN/35.755/SUP-02
26. REINFORCEMENT DETAILS FOR CROSS GIRDER	SAI-213007/DPR/C/B/MIN/35.755/SUP-03
27. REINFORCEMENT DETAILS OF DECK SLAB	SAI-213007/DPR/C/B/MIN/35.755/SUP-04
28. SCHEDULE OF REINFORCEMENT	SAI-213007/DPR/C/B/MIN/35.755/SUP-05
29. DIMENSIONS & REINF. DETAILS FOR ABUTMENT & ABUTMENT CAP FOR MINOR BRIDGE AT PROP. CH. 35+755	SAI-213007/DPR/C/B/MIN/35.755/SUB-01
30. DIMENSIONS & REINF. DETAILS FOR PILE & PILE CAP OF ABUTMENT FOR MINOR BRIDGE AT PROP. CH. 35+755	SAI-213007/DPR/C/B/MIN/35.755/SUB-02
31. TYP. GAD FOR WIDENING OF SLAB CULVERT (SINGLE SPAN)	SAI-213007/DPR/C/B/SC/GAD-01 (SHEET 1 OF 2)
32. TABLE SHOWING VARIOUS PARAMETERS OF WIDENING OF SLAB CULVERT (SINGLE SPAN)	SAI-213007/DPR/C/B/SC/GAD-01 (SHEET 2 OF 2)
33. TYP. GAD FOR PIPE CULVERT (SINGLE ROW)	SAI-213007/DPR/C/B/PC/GAD-01 (SHEET 1 OF 2 TO 2 OF 2)
34. TYPICAL GAD FOR PIPE CULVERT HAVING MULTI ROW	SAI-213007/DPR/C/B/PC/GAD-02
35. TYPICAL GAD FOR WIDENING OF PIPE CULVERTS (MULTI ROW)	SAI-213007/DPR/C/B/PC/GAD-03
36. TYP. GAD FOR CROSS ROAD PIPE CULVERT (SINGLE ROW)	SAI-213007/DPR/C/B/PC/GAD-04 (SHEET 1 OF 2 TO 2 OF 2)
37. DETAILS OF FILLER TYPE EXPANSION JOINT	SAI-213007/DPR/C/B/TYP-01
38. DETAILS OF APPROACH SLAB & DRAINAGE SPOUT	SAI-213007/DPR/C/B/TYP-02
39. TYPICAL DRAWING FOR RCC CRASH BARRIER	SAI-213007/DPR/C/B/TYP-03
40. TYP. DETAILS OF WIDENING OF PCC SUB STRUCTURE	SAI-213007/DPR/C/B/TYP-04
41. TYPICAL DETAILS OF SEISMIC RESTRAINER	SAI-213007/DPR/C/B/TYP-05
42. SCHEMATIC ARRANGEMENT AND DESIGN FORCES OF POT PTFE BEARINGS & PEDESTAL	SAI-213007/DPR/C/B/TYP-06
43. TYPICAL REINFORCEMENT DETAILS OF RETURN WALL	SAI-213007/DPR/C/B/TYP-07
44. DIMENSIONS & REINFORCEMENT DETAILS OF RCC PARAPET WALL & RCC RAILING FOR BOX CULVERTS	SAI-213007/DPR/C/B/TYP-08

A
D. G. M. (Tech.)
BSRDCL
PIU-Katihar

Improvement Proposal for Bridges

Sr. No.	Existing Chainage km	Proposed Chainage km	Type of Bridge	Improvement Proposal in Existing	Improvement Proposal for Existing bridge	Proposal of Widening of existing bridge / New Bridge		
						Retained / Widening / Reconstruction	Total Proposed Width	No
STATE HIGHWAY-99								
1	24/205	24+093	Major	Reconstruction	12.90	3	21.00	63.00
2	24/976	24+863	Minor	Retained without widening	8.50			Retained without widening
3	25/292	25+180	Minor	Reconstruction	12.90	1	16.50	16.50
4	27/179	28+923	Major	Retained without widening	8.50			Retained without widening
5	30/663	29+825	Minor	Widening	12.90	2	7.80	15.60
6	35/980	35+755	Minor	Reconstruction	12.90	1	21.00	21.00
7	37/880	37+755	Major	Retained without widening	7.50			Retained without widening

Improvement Proposal for Culverts

Sr. No.	Existing Ch. km	Proposed Ch. km	Improvement proposal (Widening / Retained / Reconstruction / New)	Details of Proposed Culverts			
				Type of Structure (Pipe/ Slab/Box)	Span arrangement No.	Total Width of Culvert (m)	
STATE HIGHWAY-99							
1	22/751	22+640	Reconstruction	Pipe	2	1.20	12.00
2	-	23+356	New	Pipe	2	1.20	12.00
3	-	23+790	New	Pipe	1	1.20	12.00
4	-	24+230	New	Pipe	2	1.20	12.00
5	-	24+666	New	Pipe	2	1.20	12.00
6	-	25+090	New	Pipe	2	1.20	12.00
7	-	25+265	New	Pipe	2	1.20	12.00
8	-	25+740	New	Pipe	2	1.20	12.00
9	-	26+790	New	Pipe	2	1.20	12.00
10	-	26+465	New	Pipe	2	1.20	12.00
11	-	26+565	New	Pipe	1	1.20	12.00
12	-	27+225	New	Pipe	1	1.20	12.00
13	-	27+400	New	Pipe	1	1.20	12.00
14	-	27+620	New	Pipe	1	1.20	12.00
15	-	27+850	New	Pipe	2	1.20	12.00
16	-	28+025	New	Pipe	1	1.20	12.00
17	-	28+240	New	Pipe	1	1.20	12.00
18	28/684	28+427	Widening	Pipe	2	1.00	12.00
19	-	28+790	New	Pipe	2	1.20	12.00
20	-	29+065	New	Pipe	2	1.20	12.00
21	-	29+690	New	Pipe	1	1.20	12.00
22	-	29+782	New	Pipe	2	1.20	12.00
23	-	29+782	New	Pipe	2	1.20	12.00
24	-	30+165	New	Pipe	2	1.20	12.00
25	-	30+390	New	Pipe	2	1.20	12.00
26	-	30+390	New	Pipe	2	1.20	12.00
27	-	31+190	New	Pipe	2	1.20	12.00
28	-	31+267	New	Pipe	1	1.20	12.00
29	-	31+715	New	Pipe	2	1.20	12.00
30	-	32+043	New	Pipe	2	1.20	12.00
31	-	32+740	New	Pipe	1	1.20	12.00
32	-	32+990	New	Pipe	1	1.20	12.00
33	34/110	33+851	Reconstruction	Pipe	2	1.20	12.00
34	-	33+991	New	Pipe	1	1.20	12.00
35	-	34+230	New	Pipe	2	1.20	12.00
36	-	34+778	New	Pipe	2	1.20	12.00
37	-	34+991	New	Pipe	2	1.20	12.00
38	-	35+091	New	Pipe	2	1.20	12.00
39	-	35+191	New	Pipe	2	1.20	12.00
40	-	35+292	New	Pipe	2	1.20	12.00

Improvement Proposal for Culverts

Sr. No.	Existing Chainage km	Proposed Chainage km	Improvement proposal (Widening / Retained / Reconstruction / New)	Details of Proposed Culverts			
				Type of Structure (Pipe/ Slab/Box)	Span arrangement No.	Total Width of Culvert (m)	
41	-	35+650	New	Pipe	2	1.20	12.00
42	-	36+025	New	Pipe	2	1.20	12.00
43	-	36+215	New	Pipe	2	1.20	12.00
44	-	36+391	New	Pipe	1	1.20	12.00
45	-	36+491	New	Pipe	2	1.20	12.00
46	-	37+340	New	Pipe	1	1.20	12.00
47	-	37+915	New	Pipe	1	1.20	12.00
48	-	38+180	New	Pipe	1	1.20	12.00
49	-	38+240	New	Pipe	2	1.20	12.00
50	-	38+580	New	Pipe	1	1.20	12.00
51	-	39+125	New	Pipe	1	1.20	12.00
52	-	39+640	New	Pipe	1	1.20	12.00
53	-	40+025	New	Pipe	1	1.20	12.00
54	-	40+190	New	Pipe	1	1.20	12.00
55	-	40+653	New	Pipe	2	1.20	12.00
56	-	40+753	New	Pipe	1	1.20	12.00
57	-	41+300	New	Pipe	2	1.20	12.00
58	-	41+548	New	Pipe	2	1.20	12.00
59	-	41+785	New	Pipe	2	1.20	12.00
60	-	42+052	New	Pipe	1	1.20	12.00
61	-	43+050	New	Pipe	1	1.20	12.00
62	-	43+515	New	Pipe	1	1.20	12.00
63	-	43+740	New	Pipe	1	1.20	12.00
64	44/105	43+837	Widening	Slab	1	2.00	12.00
65	-	44+090	New	Pipe	1	1.20	12.00
66	-	44+315	New	Pipe	1	1.20	12.00
67	44/800	44+633	Widening	Slab	1	2.50	12.00
68	-	44+750	New	Pipe	1	1.20	12.00

DATE: 2019/07/29 - 9.03.2019
PATH: T:\CAD\TAD 213007 BHM\REVISED DPR\CAD\PACKAGE-2\IMPROVEMENT PROPOSAL.dwg

CLIENT : Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS : SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

REV. DATE DESCRIPTION SIGN

DRG. NO.: SAI-213007/DPR/CR/HP - 01
REVISION: PE



Not to be used as a Bid Document ONLY FOR Reference

(A) GENERAL

- All dimensions are in millimeters unless otherwise mentioned. Only written dimensions shall be followed. No drawing shall be sealed. Dimensions in bracket indicates skew dimensions.
- Design criteria :
 - The design is according to the following codes :
 - IRC : 5 - 2000
 - IRC : 8 - 2000
 - IRC : 112 - 2011
 - IRC : 22 - 1986
 - IRC : 78 - 2000.
 - IRC : 83 - 1998 Part-I, 1997 Part-II & 2002 Part-III.
 - The following loads have been considered in the design:-
 - For two lane carriageway one lane of IRC class 70r or Two lanes of IRC class a plus footpath, whichever governs.
 - For three lane carriageway one lane of 70r plus one lane of class a or three lanes of class a which ever governs.
 - Wearing coat load of 2.00 KN/sq.m.
 - Temperature variation = $\pm 25^{\circ}C$
- The designs are applicable for 'NORMAL' conditions of exposure.
- Wearing coat shall consist of the following. For Major and Minor Bridges.
 - A coat of mastic asphalt 12mm thick with a prime coat over the top of deck is to be provided before the wearing coat is laid.
 - 50mm thick asphaltic concrete wearing coat as per Clause 512 of MORTH's Specifications for Roads and Bridge Works (Fourth Revision-2001). For Culvert and Underpass.
 - 40mm thick asphaltic concrete wearing coat as per Clause 512 of MORTH's Specifications for Roads and Bridge Works (Fourth Revision-2001).

(B) MATERIALS SPECIFICATIONS

(a) For Major bridge With Pile

(i) Superstructure

R.C.C. T-BEAM & DECK SLAB	=	M25
R.C.C. CRASH BARRIER	=	M40

(ii) Substructure and Foundations

RCC PILE CAP	=	M35
RCC PILE	=	M35
R.C.C. PIER & PIER CAP	=	M30
R.C.C. ABUTMENT & ABUTMENT CAP	=	M30
R.C.C. RETURN WALL	=	M30
P.C.C. LEAN CONCRETE	=	M15

(b) For Minor bridge With Pile

(i) Superstructure

R.C.C. T-BEAM & DECK SLAB	=	M25
R.C.C. CRASH BARRIER	=	M40

(ii) Substructure and Foundations

R.C.C. PILE CAP	=	M35
R.C.C. PILE	=	M35
R.C.C. PIER & PIER CAP	=	M30
R.C.C. ABUTMENT & ABUTMENT CAP	=	M30
R.C.C. RETURN WALL	=	M30
P.C.C. LEAN CONCRETE	=	M15
P.C.C. ABUTMENT & RETURN WALL	=	M20

(c) CLIFFS

R.C.C. SOLID SLAB & R.C.C. BOX	=	M25
R.C.C. PIER CAP & ABUTMENT CAP	=	M20
R.C.C. PIER ABUTMENT & RETURN WALL	=	M20
P.C.C. LEAN CONCRETE	=	M15

Watermark: Only for Reference

2. High strength ordinary portland cement conforming to IS : 8112 or ordinary portland cement conforming to IS : 269 capable of achieving the required design concrete strength shall only be used.

3. To improve workability of concrete admixtures conforming to IS : 6925 and IS : 9103 may be permitted subject to satisfactory proven use. Admixtures generating hydrogen, nitrogen etc. should not be used.

4. Cement content in concrete

Structural member	Cement content (Kg/cu.mt.)	
	minimum	maximum
P.C.C.	360	540
R.C.C.	380	540
P.S.C.	400	540

5. Maximum water cement ratio shall be 40 for R.C.C. member.

Reinforcement :

A. All reinforcing steel shall be of high yield strength Deformed TMT Bars (Grade designation S 500) conforming to IS:1786(except for mesh reinforcement which shall be MS bars Grade designation S 240 conforming to IS :432 part-I mild steel).

B. GENERAL NOTE FOR QUALITY OF STEEL:

- All structural steel shall before fabrication comply with the requirements the Indian standards code. As prescribed in IS-24 unless specifically mentioned in the drawings.
- All types of other steel castings forgings, welding consumables and fasteners shall comply with the Indian standard codes as specified in IS-24.
- All structural steel plates shall be of S 260 (Fe 410 W) grade & conforming to IS:2062(weldable quality).
- All materials should have test certificate (tc) of the main properties. If required all the structural steel shall be tested for mechanical and chemical properties as per various IS code as may be applicable. All shall confirm to the requirements specified in IS-2062.
- Rolling and cutting tolerances shall be as per IS:1852 the thickness tolerance check measurements for the plates and rolled sections shall be taken at not less than 15mm from the edge.
- Lamination check in plates shall be carried out by ultrasonic testing or any other approved methods or Should have the mill test certificate for the testing.

Water :
Water to be used in concreting and curing shall conform to Clause 302.4 of IRC : 21 - 2000.

Bearings & Expansion joints

6. For Paper Bearing / PGT-PTFE Bearing shall be used.

7. Expansion joint

(a) Elastomeric Strip Seal type - for movement + 40mm and above

(b) Filler type joint for R.C.C. solid slab & R.C.C. Box.

8. Fabricated steel parts of expansion joints shall be positioned accurately before the concreting of that portion of the deck slab.

9. Presence of manufacture's representative at the time of positioning of embedded parts & installation of expansion joint is mandatory.

10. Marginal modifications in the structure details, e.g. Pedestal etc. for compatibility with the Bearing & Expansion joint detail shall be permitted subject to approval of the Engineer.

Backfill Material behind Abutment/ Return wall

- Backfill Granular soil material behind abutment shall have the properties $ds = c = 0.2 \text{ kg/cm}^2$, $\phi \geq 30^{\circ}$, $r = 1800 \text{ Kg/M}^3$
- 600mm Thick Filter Material behind Abutment / Return wall shall be laid as per appendix 9 of IRC : 78-2000
- 100mm dia PVC pipe shall be provided in weep holes.

(C) EXCAVATION FOR OPEN FOUNDATION

- Excavation for open foundations shall be done after taking necessary safety precautions for which guidance may be taken from IS : 3764.
- Minimum embedment of the open foundation in rock shall be ensured as follows.
 - Soft Rock - 1500mm (B) Hard Rock - 600mm
- For footing in rock, the annular space around the footing shall be filled with m-15 grade concrete up to top of rock.

(D) WORKMANSHIP / DETAILING

- Minimum clear cover to all reinforcement including stirrups as follows

	Normal Exposure
Slab	40mm.
Web/Column	40mm.
Footing/Raft slab.	75mm.

- For Ensuring Proper Cover Of Concrete To Reinforcement, Specially Made Concrete Cover Blocks Having Strength Not Less Than Corresponding Members Shall Only Be Used.
- Construction Joints :
 - Construction joints shall be provided only at locations shown on the drawings. Concreting operation shall be carried out continuously up to the construction joints.
 - The concrete surface at the joint shall be brushed with a stiff brush after casting while the concrete is still fresh and it has only slightly hardened.
 - Before new concrete is poured, the surface of old concrete shall be prepared as under :
 - For hardened concrete, the surface shall be thoroughly cleaned to remove debris and laitance and made rough so that 1/4 of the size of aggregate is exposed but without dislodging the aggregate or structurally damaging the concrete.
 - For partially hardened concrete, the surface shall be treated by wire brush followed by an air jet. The old surface shall be soaked with water, without leaving puddles, immediately before starting concreting to prevent absorption of water from new concrete.
 - New concrete shall be thoroughly compacted in the region of the joint.
- Welding of reinforcement bars shall not be permitted.
- Laps in reinforcement :

Concrete Grade	Lap length
M-40	63d
M-35	63d
M-30	72d
M-25	83d

 - Not more than 50% & of reinforcement shall be lapped at any one location.
 - For closely spaced bars, lapping may be avoided by providing suitable type of mechanical splices.
- Bending of reinforcement bars shall be as per IS : 2502.
- Supporting chairs of 12mm diameter shall be provided at suitable intervals at per IS : 2502.
- Proper compaction of concrete shall be ensured by use of form and/or needle vibrators. Use of full width screed vibrators for compaction of concrete in deck slab shall be ensured.
- Shuttering plates shall suitably be stiffened to enable the compaction by form vibrators.
- Sharp edges of concrete shall be chamfered.
- The location of jacks for lifting up the superstructure to replace bearings etc. is shown & thus, this shall be distinctly etched on end cross girders and pier/abutment caps.

(E) SPECIFICATIONS

The work shall be executed in accordance with M O R T H specifications for Road & Bridge Works (4th revision, 2001) except where ever otherwise mentioned.

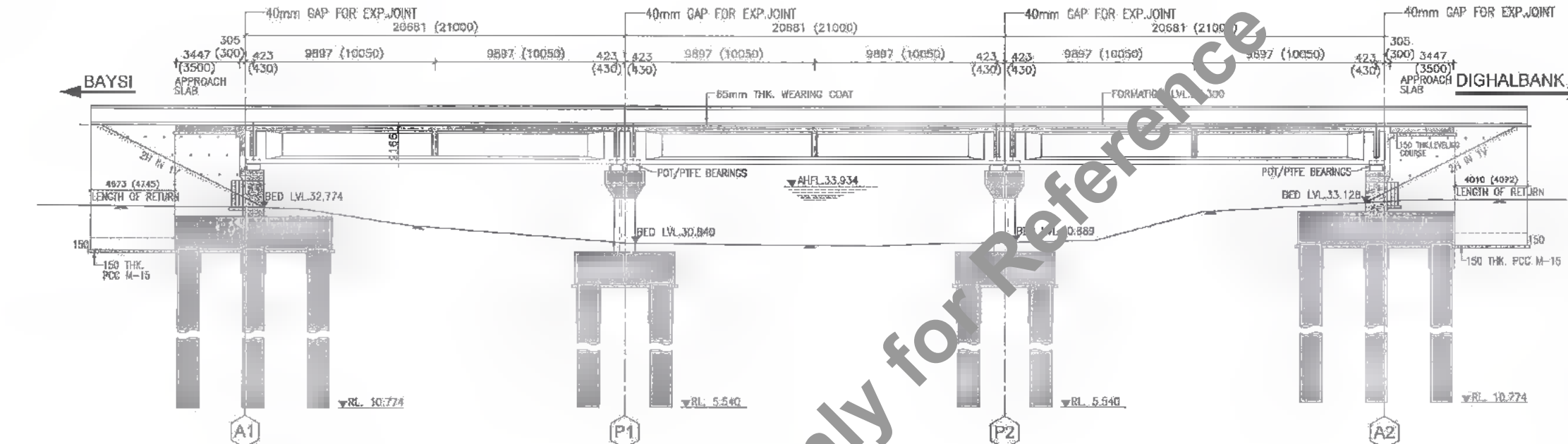
(F) SHOP DRAWINGS

- The contractor shall submit shop drawings for all segments, showing complete details of reinforcement, concrete dimensions, block outs, recesses, openings, inserts, scaffolding, etc. for approval of the Engineer.
- These notes shall be read along with Specifications and Bid document. In case an argument takes place in the matter that is not specified in the above document, MORTH specifications for road and Bridge works, Indian standard, IS codes should be referred and shall subject to approval of the Engineer.



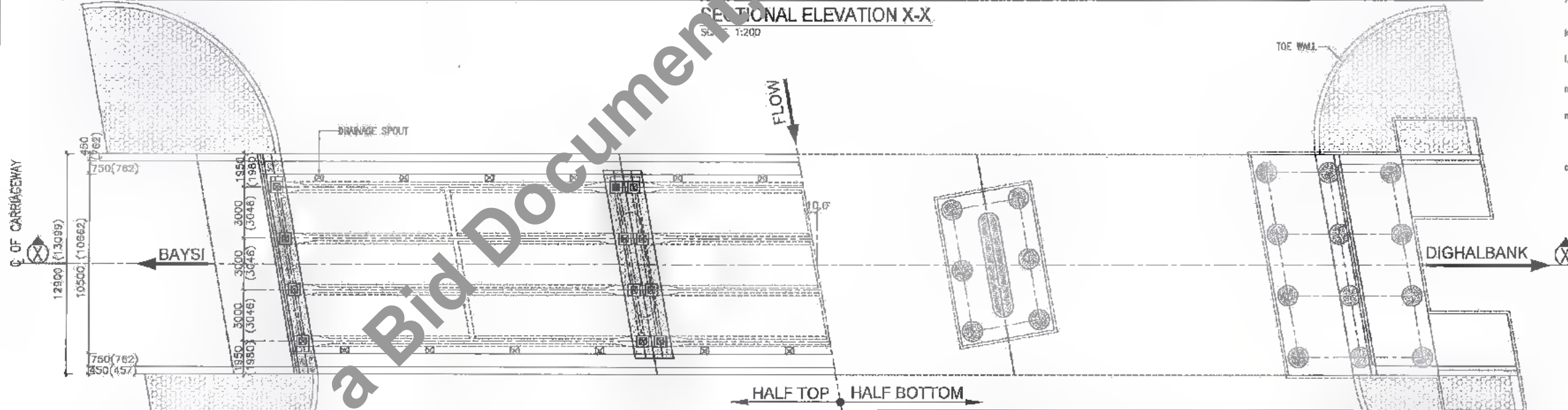
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<p>CLIENT : Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS : SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company</p>	<p>PE 31/02/19 GOOD FOR CONSTRUCTION (REVISED DPR)</p>	<p>DRWN BY : H.H.M. (R)</p>	<p>TITLE : RAJTA-MAHADEV DIGHI CHOWNI (PACKAGE-II)</p>
			<p>PD 17/12/18 GOOD FOR CONSTRUCTION (DPR)</p>	<p>CHECKED BY : K.S.S. (R)</p>	
<p>SAI SYSTRA GROUP</p>			<p>PC 10/06/14 GOOD FOR CONSTRUCTION (DPR)</p>	<p>APPROVED BY : B.V. (R)</p>	<p>DRG. NO. : SA-213007(DPR)/B/GEN</p>
<p>Block-A "SAI House" Systra Corporate Square, 9th-10th floor, Plot, Indira Nagar, Ahmednagar-431009, Gujarat, India. Phone : +91-79-42934697/88 Fax : +91-79-42934698 Email : saicon@saiconsulting.com</p>			<p>PA 28/02/14 ISSUED WITH FINAL DPR</p>	<p>REVISION : PE</p>	

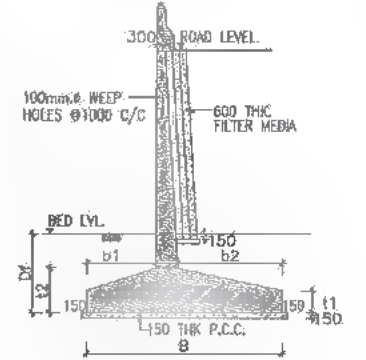


DATUM=19	GROUND LEVEL AT (m)	CHAINAGE (m)
	32.843	24059
	32.774	24057
	32.706	24058
	32.253	24070
	31.782	24076
	31.359	24081
	30.840	24088
	30.765	24084
	30.6	24097
	30.665	24100
	30.785	24103
	30.880	24108
	30.893	24113
	30.376	24118
	33.128	24128
	33.197	24130
	33.228	24135

SECTIONAL ELEVATION X-X
SCALE: 1:200

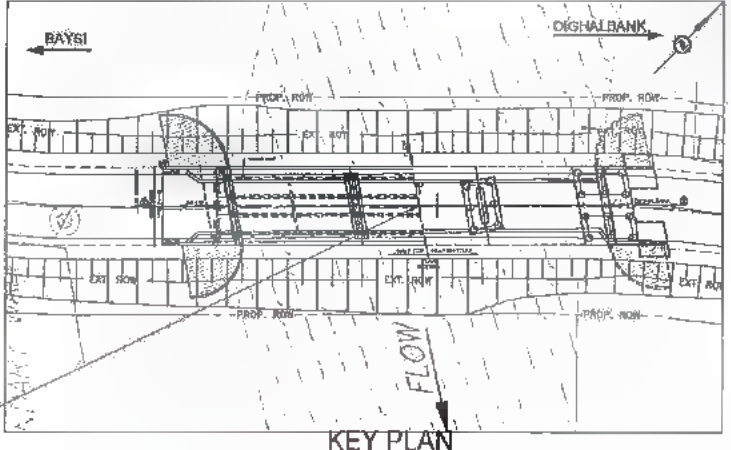


PLAN
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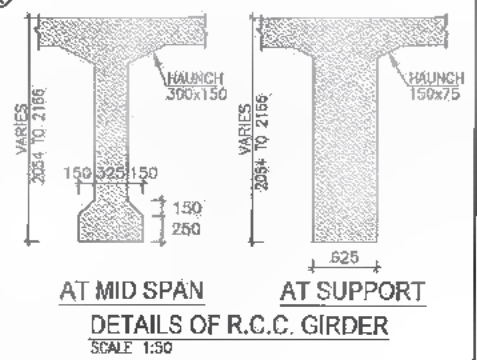
SECTION OF RETURN WALL
SCALE: 1:150

DESCRIPTION	EXISTING	PROPOSED
TYPE OF BRIDGE	MAJOR BRIDGE	MAJOR BRIDGE
STR. NO.	25/1	25/1
CH. NO.	24+097	24+097
SP. NO.	100/100	100/100

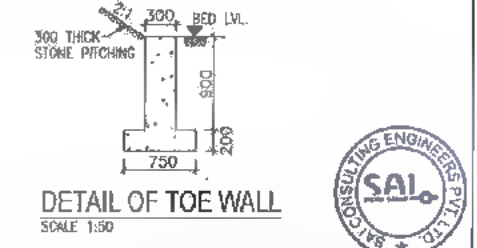


KEY PLAN

- NOTES:-**
- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED) & CHANGES ARE IN METRES. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
 - THE FOLLOWING LOADS HAVE BEEN CONSIDERED IN THE DESIGN:-
 - FOR TWO LANE CARRIAGEWAY ONE LANE OF IRC CLASS 70R OR TWO LANES OF IRC CLASS A PLUS FOOTPATH, WHICHEVER GOVERNS.
 - FOR THREE LANE CARRIAGEWAY ONE LANE OF 70R PLUS ONE LANE OF CLASS A OR THREE LANES OF CLASS A WHICHEVER GOVERNS.
 - ELASTOMERIC STRIP SEAL TYPE JOINT SHALL BE PROVIDED. DETAILS SHALL BE AS PER MANUFACTURERS DRAWING.
 - BACKFILL MATERIAL BEHIND ABUTMENT SHALL BE SELECTED, SOIL HAVING PROPERTIES AS $C = 0.05 \text{ KG/SQ.CM.}$, $\phi \geq 30^\circ$, $\gamma = 1750 \text{ KG/CUM.}$
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - GENERAL NOTES DRG. NO. SA-213007/DPR/C/B/TYP/GEN
 - GAP FOR SUPER STRUCTURE SA-213007/DPR/C/B/MAJ/24.097/SUP-01
 - REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO. SA-213007/DPR/C/B/MAJ/24.097/SUP-02
 - REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO. SA-213007/DPR/C/B/MAJ/24.097/SUP-03
 - REINFORCEMENT DETAILS OF DECK SLAB DRG. NO. SA-213007/DPR/C/B/MAJ/24.097/SUP-04
 - SCHEDULE OF REINFORCEMENT DRG. NO. SA-213007/DPR/C/B/MAJ/24.097/SUP-05
 - DIMENSIONS & REINF. DETAILS FOR ABUTMENT & ABUTMENT CAP FOR MAJOR BRIDGE AT PROP. CH. 24+097 DRG. NO. SA-213007/DPR/C/B/MAJ/24.097/SUB-01
 - DIMENSIONS & REINF. DETAILS FOR PILE & PILE CAP OF ABUTMENT FOR MAJOR BRIDGE AT PROP. CH. 24+097 DRG. NO. SA-213007/DPR/C/B/MAJ/24.097/SUB-02
 - DIMENSIONS & REINF. OF R.C.C. PIER WITH PILE FOUNDATION FOR MAJOR BRIDGE AT PROP. CH. 24+097 DRG. NO. SA-213007/DPR/C/B/MAJ/24.097/SUB-03
 - DIMENSIONS & REINF. DETAILS OF PIER CAP FOR MAJOR BRIDGE AT CH. 24+097 DRG. NO. SA-213007/DPR/C/B/MAJ/24.097/SUB-04
 - DETAILS OF APPROACH SLAB & DRAINAGE SPOUT DRG. NO. SA-213007/DPR/C/B/TYP-02
 - TYP. DETAILS OF R.C.C. CRASH BARRIER DRG. NO. SA-213007/DPR/C/B/TYP-03
 - TYPICAL DETAILS OF SEISMIC RESTRAINER DRG. NO. SA-213007/DPR/C/B/TYP-05
 - DETAILS OF SCHEMATIC ARRANGEMENT AND DESIGN FORCES OF POT PILE BEARINGS OF REC T-BEAM SUP.STRU. DRG. NO. SA-213007/DPR/C/B/TYP-06
 - DIMENSIONS & REINF. DETAILS OF RCC RETURN WALL DRG. NO. SA-213007/DPR/C/B/TYP-07



AT MID SPAN AT SUPPORT
DETAILS OF R.C.C. GIRDER
SCALE: 1:50



DETAIL OF TOE WALL
SCALE: 1:50



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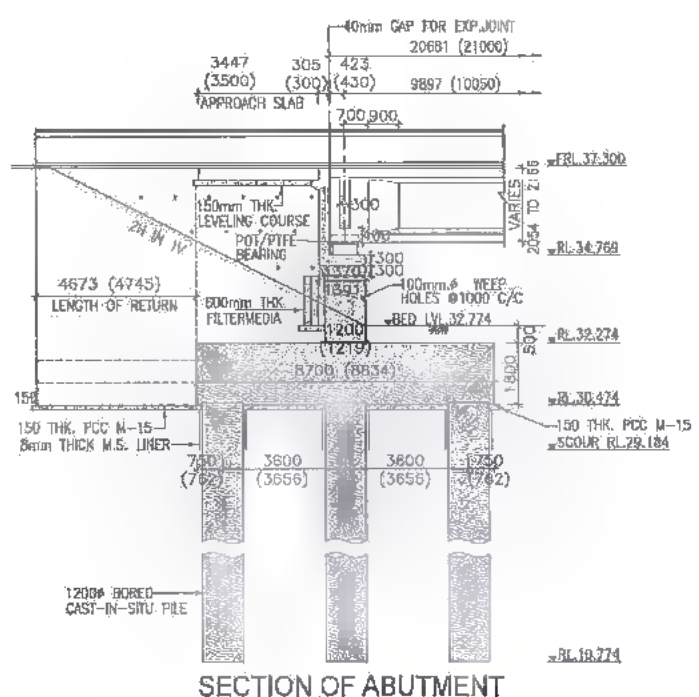
Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

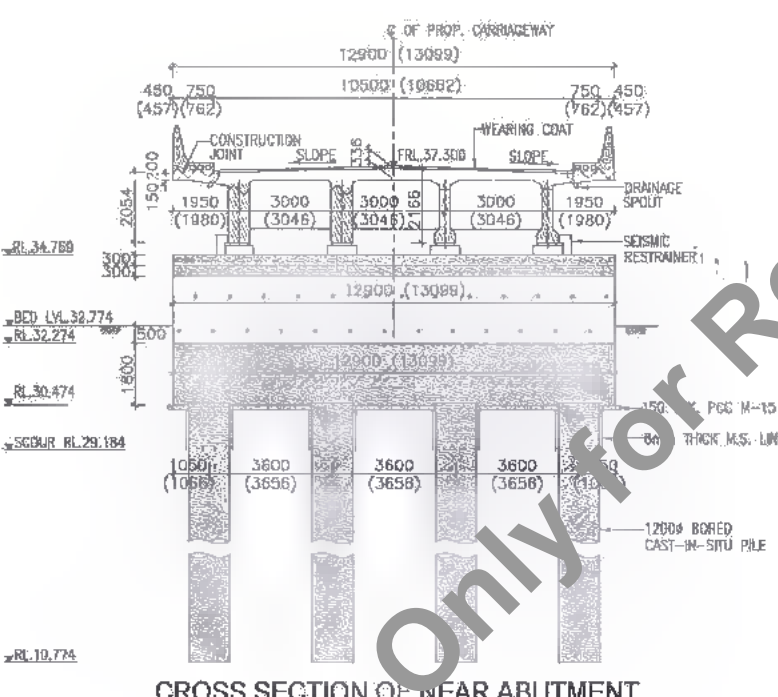
CONSULTANTS:
SAL CONSULTING ENGINEERS PVT. LTD.
An ISO 9001 Certified Company
SAL SYSTRA GROUP

REV.	DATE	DESCRIPTION	SKN	ISSUED BY
01	31/07/19	GOOD FOR CONSTRUCTION (REVISED TYPE)		
02	11/12/18	GOOD FOR CONSTRUCTION (DPR)		
03	25/05/14	REVISED AS PER OBSERVATION ON P&P		
04	19/04/14	GOOD FOR CONSTRUCTION (DPR)		
05	25/02/14	ISSUED WITH FINAL DPR		

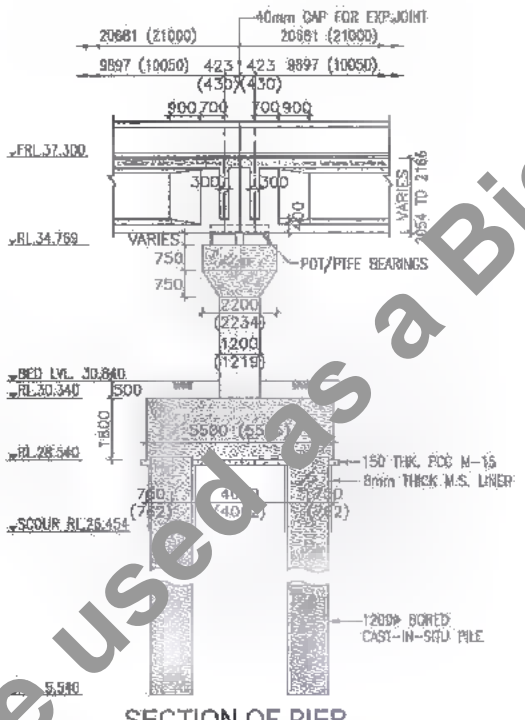
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GAD FOR RECONSTRUCTION OF MAJOR BRIDGE AT EXI.CH.24/205 & PROP. CH. 24+097
DRG. NO.: (SHEET 1 OF 2)
SAI-213007/DPR/C/B/MAJ/GAD-01
REVISION: PF



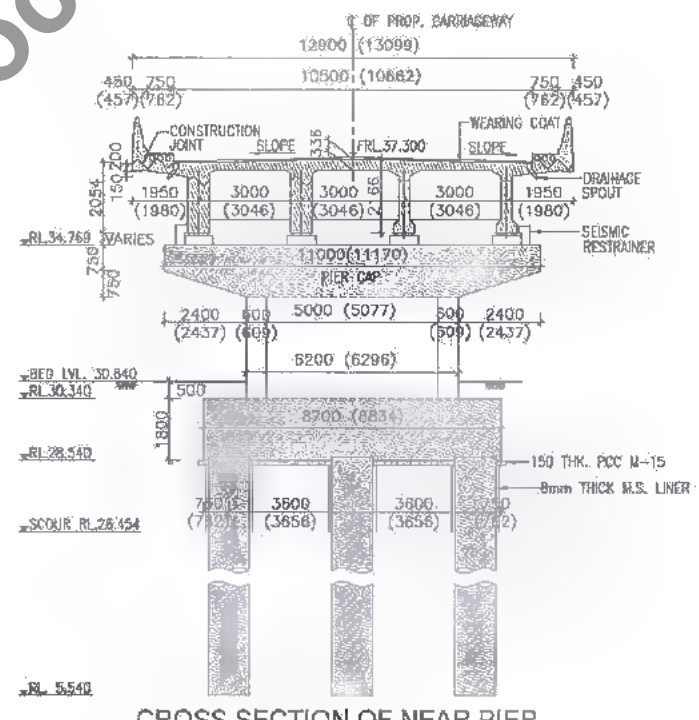
SECTION OF ABUTMENT SCALE 1:150



CROSS SECTION OF NEAR ABUTMENT SCALE 1:150



SECTION OF PIER SCALE 1:150



CROSS SECTION OF NEAR PIER SCALE 1:150

RL.32.774 BORE HOLE NO. A-						RL.33.128 BORE HOLE NO. A-2					
DEPTH (m)	NOTATION	SOIL DESCRIPTION	SPT N VALUE	CORE RECOVERY %	RDD %	DEPTH (m)	NOTATION	SOIL DESCRIPTION	SPT N VALUE	CORE RECOVERY %	RDD %
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34.274			N=7			32.428			N=7		
34.774			N=7			31.828			N=7		
29.774			N=7			32.128			N=7		
28.774			N=8			29.198			N=9		
27.774			N=14			28.128					
26.774			N=16			27.128					
25.774			N=32			26.128					
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23.774			N=63			24.128					
22.774			N=65			23.128					
21.774			N=69			22.128					
20.774			N=66			21.128					
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15.774			N=78			16.128					
14.774			N=83			15.128					
13.774			N=92			14.128					
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CLIENT: Bihar State Road Development Corporation Limited (BSTRDC) (A Government of Bihar Undertaking)

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

TITLE: RAJITA-MAHADEV DIGHI CHOWK (PACKAGE-II) GAD FOR RECONSTRUCTION OF MAJOR BRIDGE AT EXLCH.24/205 & PROP. CH. 24+097

DRG. NO.: (SHEET 2 OF 2)
SAJ-213007/CP/CR/MAJGAD-01

REVISION: PF

SCALE: AS SHOWN

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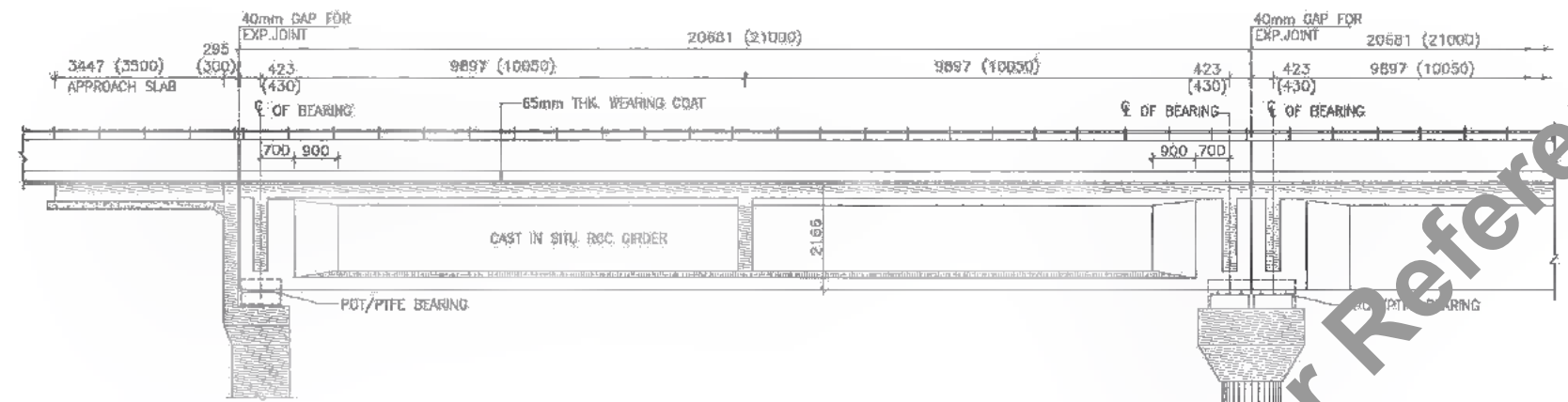
DRAWN BY: G.M.C.

CHECKED BY: H.K.S.

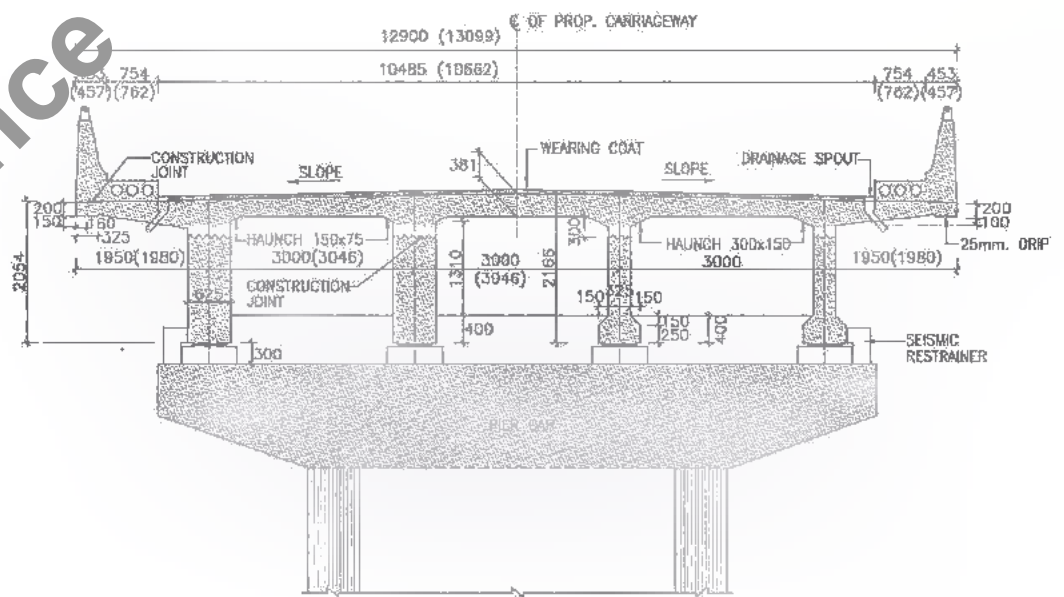
APPROVED BY: B.A.V.

ISSUED BY: S.S.

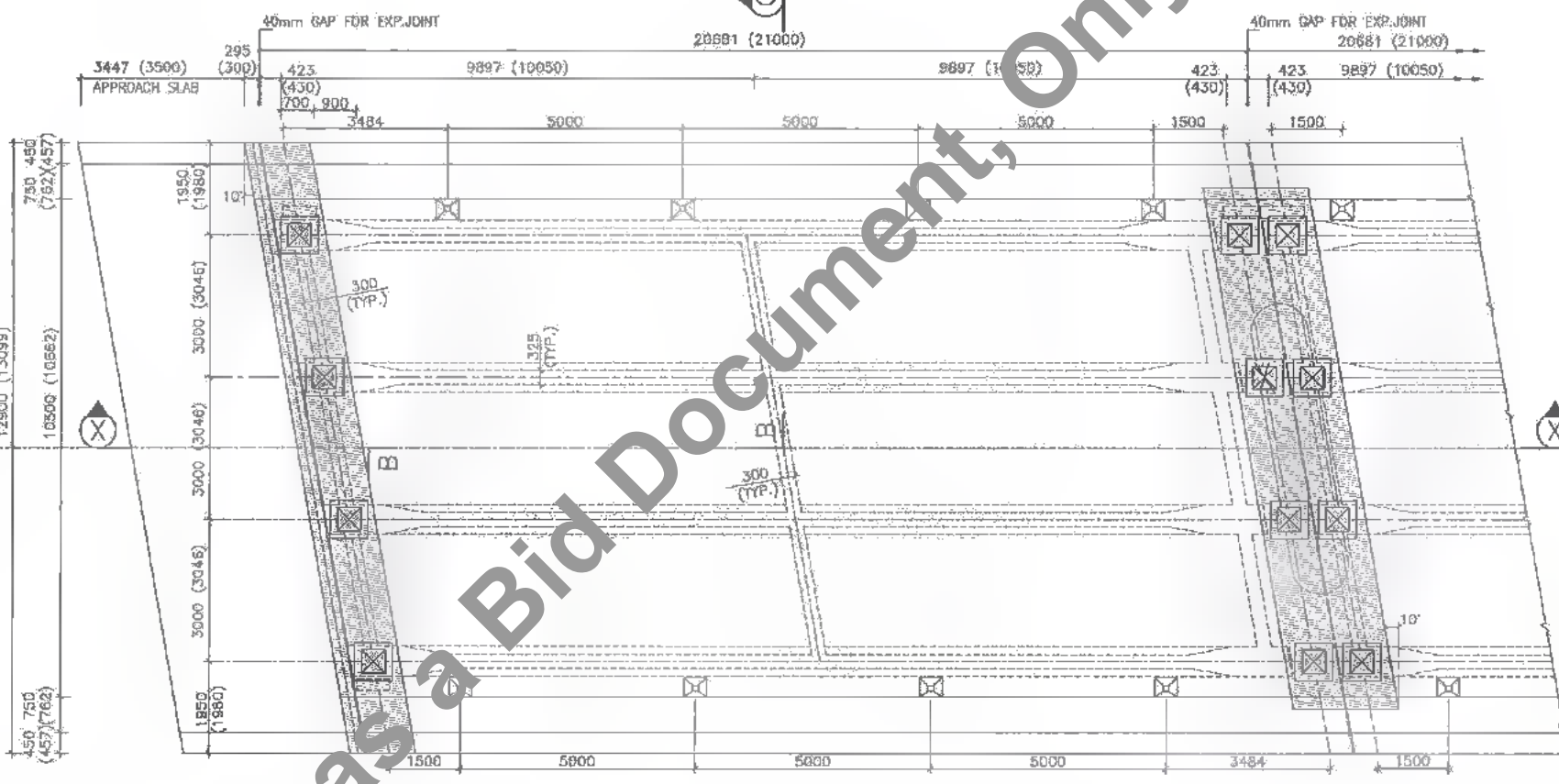
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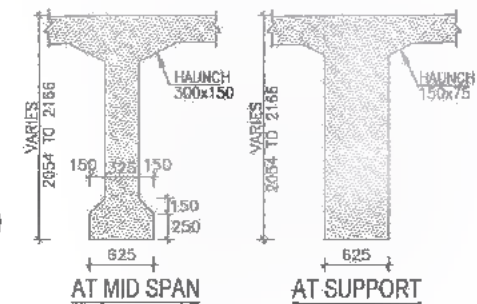
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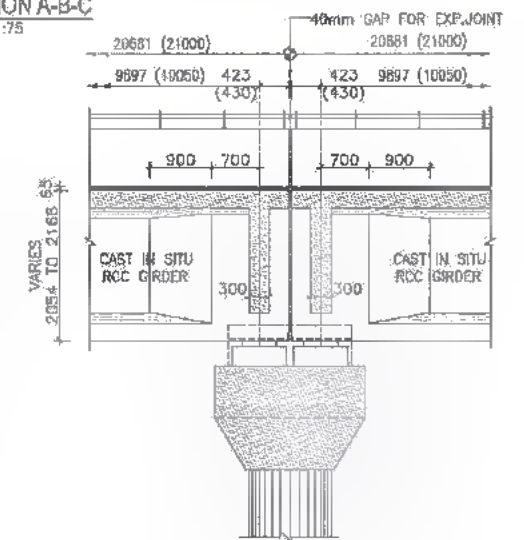
SECTION A-B-C
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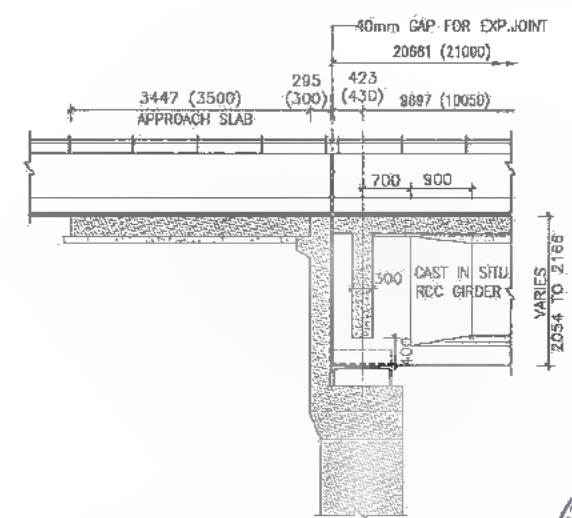
PLAN
SCALE 1:100



DETAILS OF R.C.C. GIRDER
SCALE 1:50



DETAIL OF SUPERSTRUCTURE AT PIER LOCATION
SCALE 1:75



DETAIL OF SUPERSTRUCTURE AT ABUTMENT LOCATION
SCALE 1:75

- NOTES :**
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER.
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - b. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO.SAI-213007/DPR/C/B/MAJ/24.097/SUP-02
 - c. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO.SAI-213007/DPR/C/B/MAJ/24.097/SUP-03
 - d. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO.SAI-213007/DPR/C/B/MAJ/24.097/SUP-04
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MAJ/24.097/SUP-05

DATE: 2019/02/29 - 2:45pm
PATH: T:\CAD\TAD 2017\BIMAR\REVISED DPR\PACKAGE-2\MAJOR BRIDGE\01 CH. 24-097\SUPER STRU.ZI.dwg
GAD SUP 21.00m.dwg

CLIENT :

Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT :

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

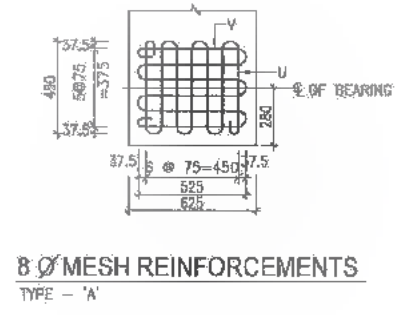
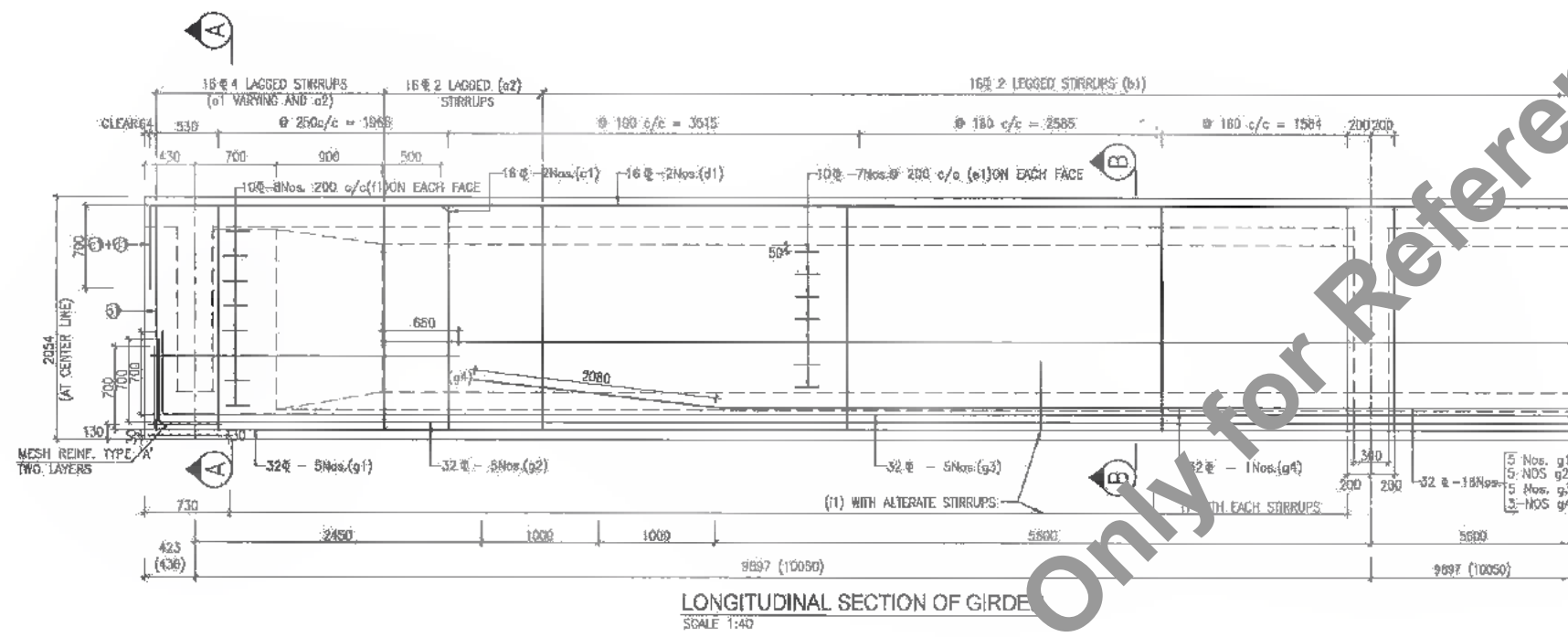
CONSULTANTS :

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

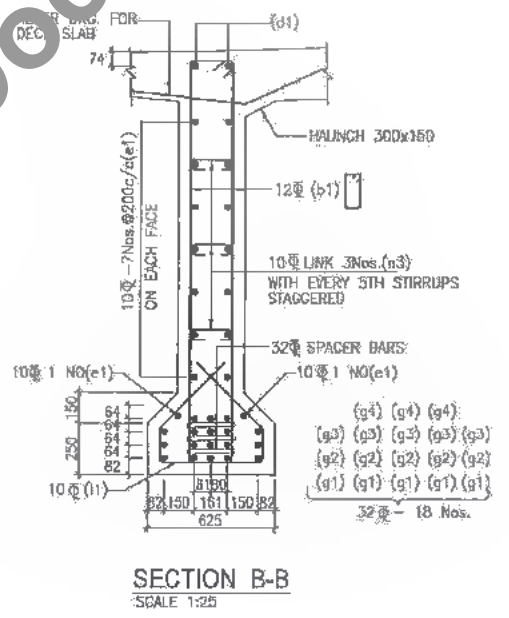
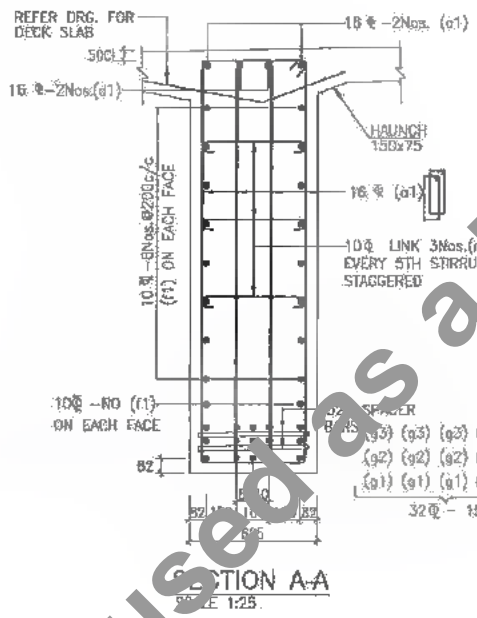
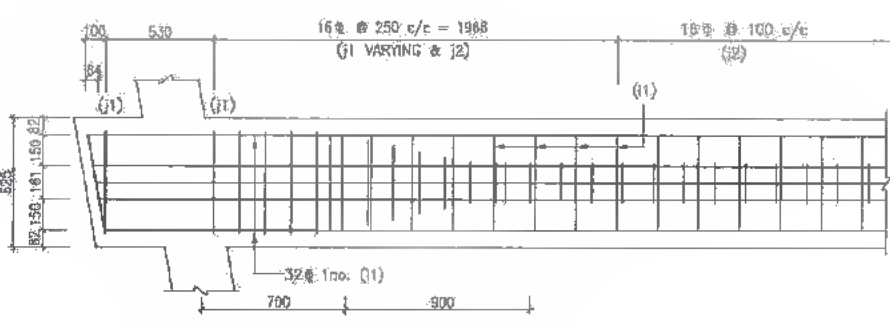
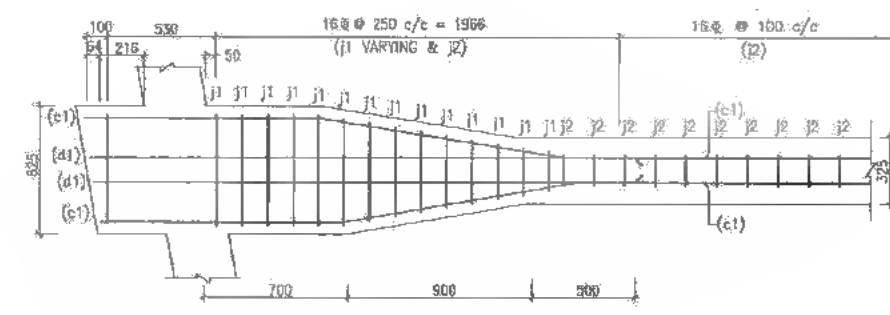
PC	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : G.M.G.	TITLE RAUTA-MAHADEY DIGHI CHOWR (PACKAGE-II)
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : M.K.S.	GAD FOR RCC T-BEAM SUPER
PE	19/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : B.R.V.	STRU. AT EXL CH.24/205 &
PR	26/02/14	ISSUED WITH FINAL DPR	ISSUED BY : B.S.	PRDP. CH. 24-097
PA	13/11/13	ISSUED WITH DPR		

DRG. NO. :
SAI-213007/DPR/C/B/MAJ/24.097/SUP-01
REVISION : PE

2.97
478



- NOTES:**
- ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER.
 - 32 # SPACER BARS SHALL BE PROVIDED @ 1.00m c/c BETWEEN TWO TIERS OF LONGITUDINAL BARS OF GIRDERS.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES. DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MAJ/24.097/SUP-01
 - c. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO.SAI-213007/GPR/C/B/MAJ/24.097/SUP-03
 - d. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO.SAI-213007/OPR/C/B/MAJ/24.097/SUP-04
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MAJ/24.097/SUP-05



DATE: 20/07/23 - 24/07/23
PATH: C:\CAD\24007 BIHARREVISED OPR\BYPACKAGE-MAJOR BRIDGE\01 CH. 24-097\SUPER STR.24.09m span\02 LONGITUDINAL GIR. 21.00m.dwg

Not to be used as a Bid Document, Only for Reference



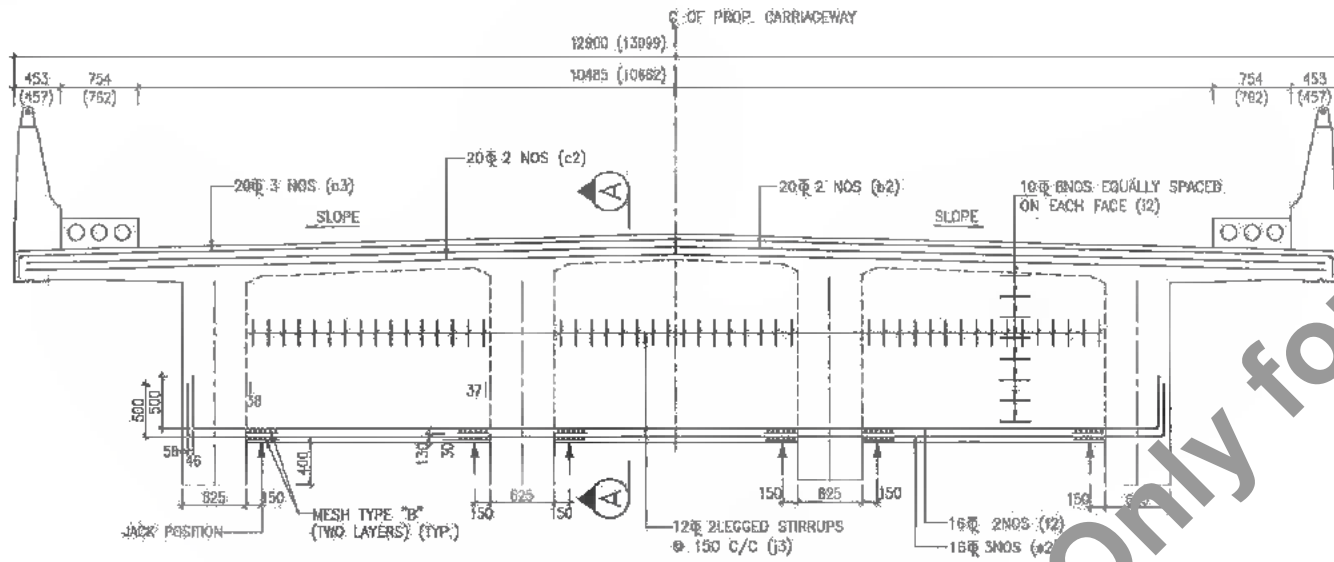
Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

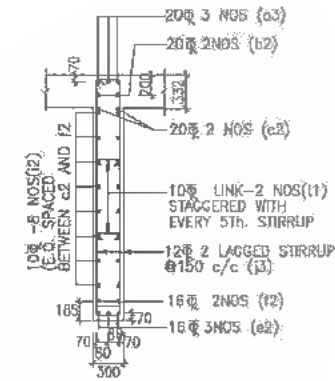
CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
SYSTRA GROUP

REV.	DATE	DESCRIPTION	SDN	ISSUED BY
#E	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
#D	17/12/18	GOOD FOR CONSTRUCTION (DPR)		
#C	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
#B	28/02/14	ISSUED WITH FINAL DPR		
#A	12/11/13	ISSUED WITH DPR		

SAI CONSULTING ENGINEERS PVT. LTD.
DRAWN BY: G.M.C.
CHECKED BY: N.K.S.
APPROVED BY: B.K.K.
TITLE: RAUTA-MAHADEV DEEHI CHOWKI (PACKAGE-II)
REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER FOR ROC T-BEAM SUPER STR. AT EXL CH. 24/206 & PROP. CH. 24+097
DRG. NO.: SAI-213007/DPR/C/B/MAJ/24.097/SUP-02
REVISION: PE



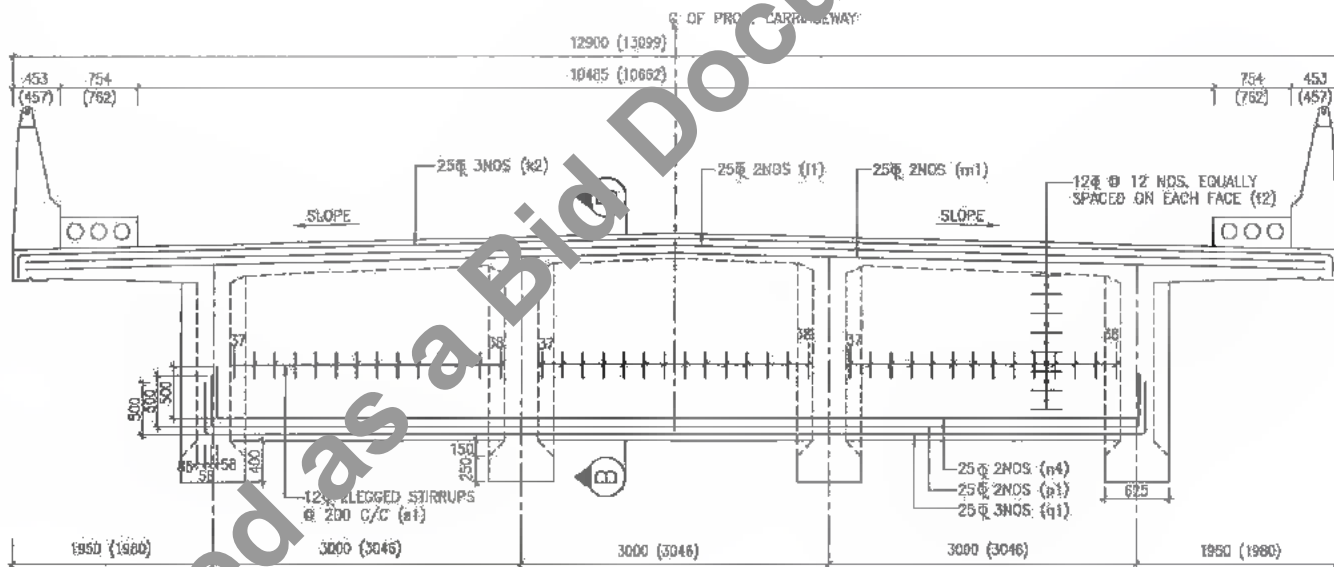
LONGITUDINAL SECTION OF END CROSS GIRDER
SCALE - 1:50



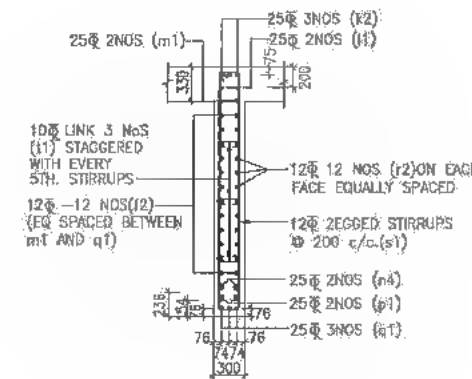
SECTION A-A
SCALE - 1:50

NOTES:

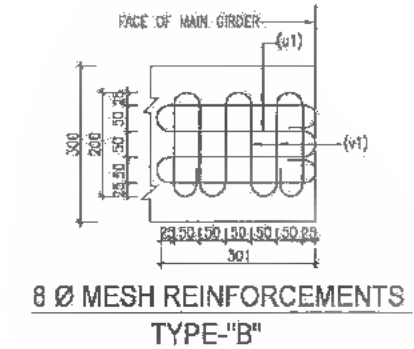
1. THE LOCATIONS OF THE JACK FOR LIFTING OF SUPERSTRUCTURE IS SHOWN & THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END CROSS GIRDER AND PIERCAP / ABUTMENT CAPS
2. DURING THE LIFTING OPERATION ALL THE SIX JACKS PLACED UNDER THE END CROSS GIRDER IN THE LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATION CONSOLE GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL SIX JACKS ARE EQUAL AT ALL TIMES.
3. CAPACITY OF EACH JACK SHALL NOT BE LESS THAN 50 TON.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS:
 - a. GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MAJ/24.097/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO.SAI-213007/DPR/C/B/MAJ/24.097/SUP-02
 - d. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO.SAI-213007/DPR/C/B/MAJ/24.097/SUP-04
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MAJ/24.097/SUP-05



LONGITUDINAL SECTION OF INTERMEDIATE CROSS GIRDER
SCALE - 1:50



SECTION B-B
SCALE - 1:50



DATE: 2019/06/29 - 2:10 PM
PATH: T:\CAD\TAO\7\17 BIHAR\REVISED DPR\CAD\PACKAGE-2\MAJOR BRIDGE\01 CH. 24+097\SUPER STR.21.0m span\03 CROSS GIRDER 21.00m.dwg



Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block 'A' 'SAI House', Subham Corporate Square, 8th Rd, Indira Park, Bhubaneswar, Odisha-751005, India
Phone: +91-76-6642340100, Fax: +91-76-66423402
Email: sai@saiconsulting.com

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)
PS	17/12/18	GOOD FOR CONSTRUCTION (DPR)
SE	10/04/14	GOOD FOR CONSTRUCTION (DPR)
FB	28/02/14	ISSUED WITH FINAL DPR
PA	12/11/13	ISSUED WITH DPR

DRAWN BY:	G.M.C.
CHECKED BY:	N.K.S.
APPROVED BY:	B.A.Y.

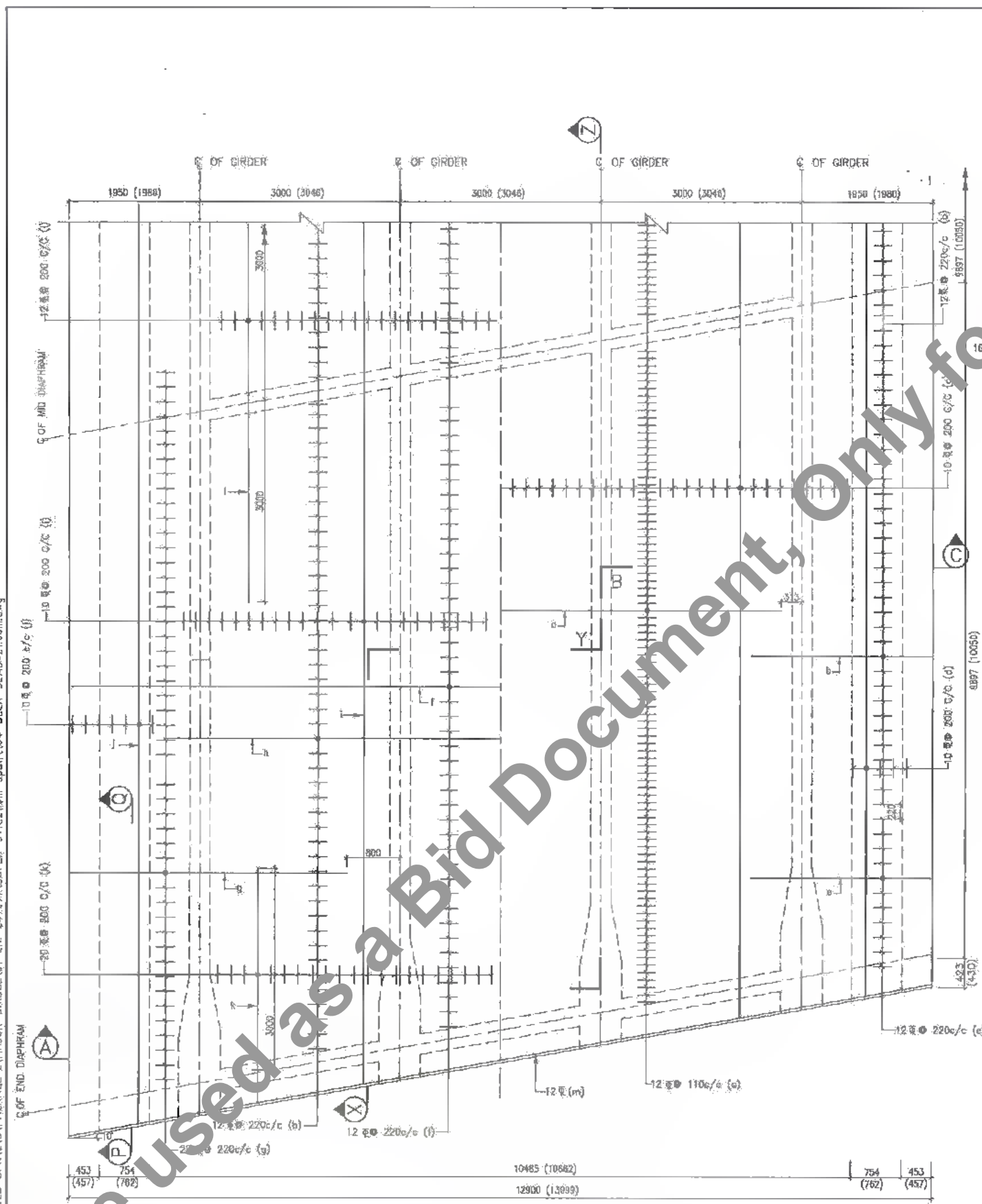
TITLE: RAJTA-MAHADEV (DPR) HIGHWAY (PACKAGE-0)
REINFORCEMENT DETAIL OF CROSS GIRDER FOR RCC T-BEAM SUPER STRU. AT EXL. CH. 24+05 & PROP. CH. 24+097

REV.	DATE	DESCRIPTION	SIGN.

DRG. NO.:
SAI-213007/DPR/C/B/MAJ/24.097/SUP-03
REVISION: PE

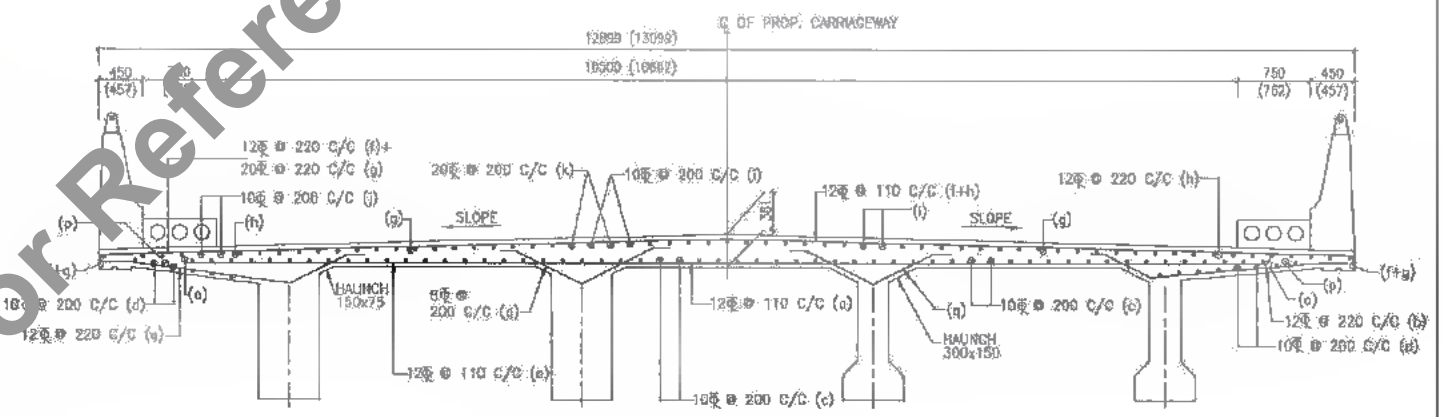


301
476

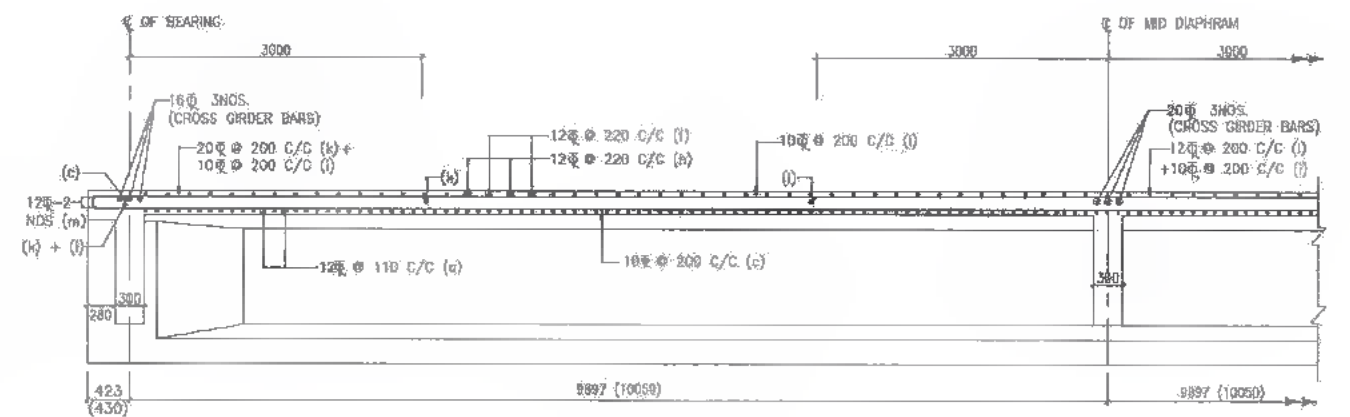


HALF TOP REINFORCEMENT HALF BOTTOM REINFORCEMENT

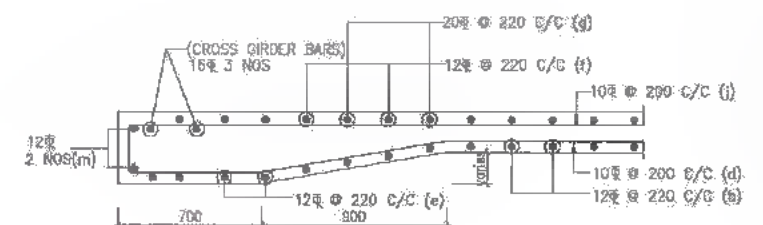
PLAN
SCALE-1:50



CROSS SECTION A-B-C
SCALE - 1:50



SECTION X-Y-Z
SCALE-1:50



SECTION P-Q
SCALE-1:25. (EXTRA REINF. NOT SHOWN)

- NOTES :**
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER.
 2. THE REINFORCEMENT FOR CRASH BARRIER SHOULD BE PROPERLY ANCHORED IN THE DECK SLAB BEFORE CASTING THE SLAB.
 3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TPP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MAJ/24.087/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO.SAI-213007/DPR/C/B/MAJ/24.087/SUP-02
 - d. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO.SAI-213007/DPR/C/B/MAJ/24.087/SUP-03
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MAJ/24.087/SUP-05



DATE: 20/07/2019 - 2:57pm
PATH: T:\CADD\TAD - 2007 BIHARREVISED_OPREVEINPACKAGE-2\MAJOR BRIDGE\01 CH. 24+497\1\SUPER STR\21.0m span\104 DECK SLAB-21.0m.dwg

Bihar State Road Development Corporation Limited (BSRDL)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighabank (SH-99)

CONSULTANTS:
SAL SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A 'SAI House' Salyan Corporate Square, 5th Floor
Chap. Boudhaha, Abhaneshahd, 800509, Bhopal, India
Phone : +91-77-6642100/194 Fax : +91-77-6642100
Email : aec@saiconsulting.com

PE	21/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		DRAWN BY :	G.M.G.
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)		CHECKED BY :	N.K.S.
PC	10/08/14	GOOD FOR CONSTRUCTION (DPR)		APPROVED BY :	SURY
PS	26/02/14	ISSUED WITH FINAL DPR		ISSUED BY :	B.S.
PA	13/11/12	ISSUED WITH DPR			
REV.	DATE	DESCRIPTION	ISSN	ISSUED BY :	B.S.

SCALE : AS SHOWN

TITLE : RAJITA MAHADEV DIGHI CHOWK (PACKAGE-II)
REINFORCEMENT DETAILS OF DECK SLAB FOR RCC T-BEAM SUPER STRU. AT EXL CH. 24+295 & PROP. CH. 24+097

DRG. NO. :
SAI-213007/DPR/C/B/MAJ/24.087/SUP-04

REVISION : PE

SCHEDULE OF REINFORCEMENT (DECK SLAB) PER SPAN

SRL NO.	TYPE OF BARS	SHAPE OF BARS (DIMENSIONS ARE IN MM) (NOT TO SCALE)	DIA OF BARS (mm.)	NOS. OF BARS	SPACING OF BARS
1	a		12	-	139
2	b		12	-	220
3	c		10	-	200
4	d		10	-	200
5	e		12	-	220
6	f		12	-	220
7	g		20	-	220
8	h		12	-	220
9	i		10	-	200
10	j		10	-	200
11	k		20	-	200
12	l		12	-	200
13	m		12	2 NOS	-
14	n		8	-	200

SCHEDULE OF REINFORCEMENT FOR LONGITUDINAL GIRDERS (PER SPAN)

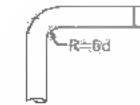
SRL NO.	TYPE OF BARS	SHAPE OF BARS (DIMENSIONS ARE IN MM) (NOT TO SCALE)	DIA OF BARS (mm.)	SPACING OF BARS	NOS. OF BARS
1	o1		16	250	-
2	o2		16	100	-
3	o3		16	180	-
4	c1		16	-	6
5	d1		16	-	6
6	o4		10	-	-
7	f1		-	-	64
8	q1		32	-	20
9	q2		32	-	20
10	q3		32	-	20
11	q4		32	-	12
12	o5		10	-	10
13	j1		16	250	-
14	o6		16	100	-
15	k1		12	100	-

SCHEDULE OF REINFORCEMENT (CROSS GIRDERS) PER SPAN

SRL NO.	TYPE OF BARS	SHAPE OF BARS (DIMENSIONS ARE IN MM) (NOT TO SCALE)	DIA OF BARS (mm.)	SPACING OF BARS	NOS. OF BARS/GIRDER	NOS. OF BARS/SPAN
1	o7		20	-	3	6
2	b2		20	-	2	4
3	c2		20	-	2	4
4	e2		16	-	3	6
5	l2		16	-	2	4
6	h3		16	-	2	4
7	o8		10	-	2	4
8	j3		12	-	-	150
9	k2		25	-	3	3
10	l1		25	-	2	2
11	m1		25	-	2	2
12	n4		25	-	2	2
13	p1		25	-	2	2
14	q1		25	-	3	3
16	o9		12	200	-	-
17	l1		10	-	-	-

NOTES:

- THE EXACT LENGTH OF THE BARS WILL BE DETERMINED BY THE ACTUAL LAPS WITH SPICES ADOPTED AT SITE.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO. SAI-213007/DPR/C/B/MP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO. SAI-213007/DPR/C/B/MAJ/24.097/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO. SAI-213007/DPR/C/B/MAJ/24.097/SUP-02
 - d. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO. SAI-213007/DPR/C/B/MAJ/24.097/SUP-03
 - e. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO. SAI-213007/DPR/C/B/MAJ/24.097/SUP-04



d = Dia of bar
For bar above 25mm dia



d = Dia of bar
For bar upto 25mm dia

M.S. BARS (MESH REINFORCEMENT IN LONGITUDINAL GIRDERS)

SRL NO.	TYPE OF BARS	SHAPE OF BARS (DIMENSIONS ARE IN MM) (NOT TO SCALE)	DIA OF BARS (mm.)	NOS. OF BARS
1	u		8	24 NOS
2	v		8	16 NOS

M.S. BARS (MESH REINFORCEMENT IN CROSS GIRDERS)

SRL NO.	TYPE OF BARS	SHAPE OF BARS (DIMENSIONS ARE IN MM) (NOT TO SCALE)	DIA OF BARS (mm.)	SPACING OF BARS	NOS. OF BARS/GIRDER	NOS. OF BARS/SPAN
1	u1		8	-	24	24
2	v1		8	-	24	24

DATE: 2018/02/24 - 2:52pm
PATH: T:\CAD\TAD 2017\BHAR\REVISED\PRICE\PACKAGE-2\MAJOR BRIDGE\01 CH. 24+097\SUPER STR\21.0m span\105 SCHEDULE 21.00m.dwg

CLIENT: Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS: SAL Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

REV. DATE DESCRIPTION
 PF 31/07/19 GOOD FOR CONSTRUCTION (REVISED DPR)
 PE 17/12/18 GOOD FOR CONSTRUCTION (DPR)
 PD 23/05/14 REVISED AS PER OBSERVATION ON RFR
 PG 10/04/14 GOOD FOR CONSTRUCTION (DPR)
 PR 26/02/14 ISSUED WITH FINAL DPR

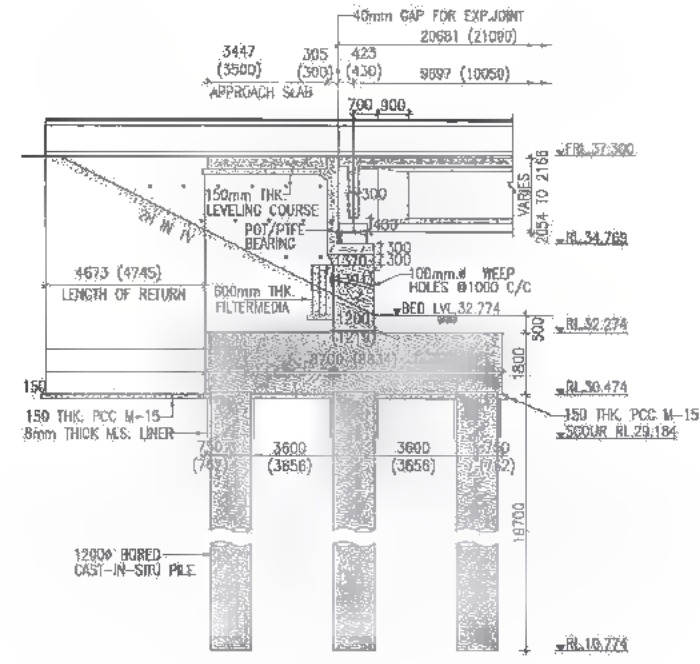
SCALE: AS SHOWN

TITLE: MAUTA-MAHADEV DIHRI CHOKKI (PACKAGE-II) REINFORCEMENT SCHEDULE FOR RCG T-BEAM SUPER STRU. AT EXL. CH. 24+205 & PROP. CH. 24+097

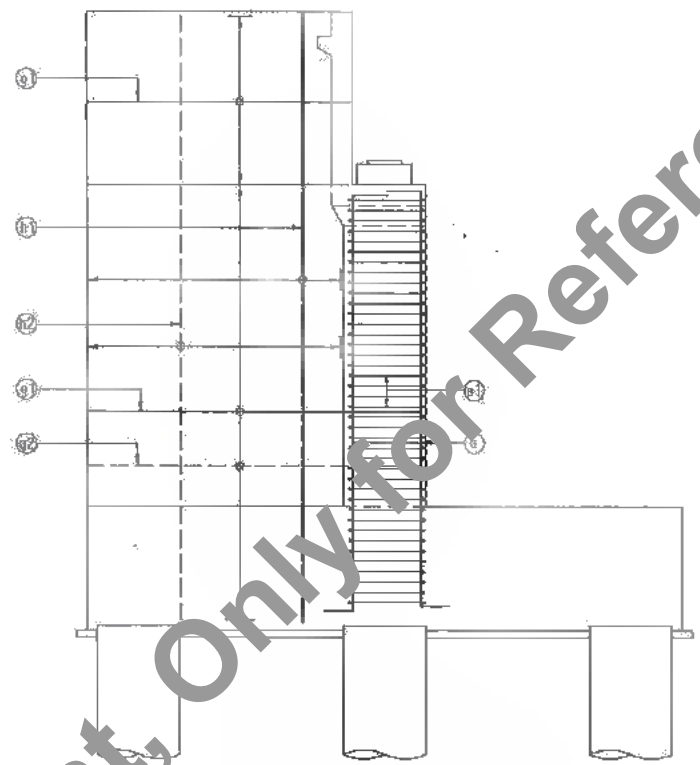
DRG. NO.: SAI-213007/DPR/C/B/MAJ/24.097/SUP-05
 REVISION: PF



303
474



SECTION OF ABUTMENT A-A
SCALE 1:150 (DIMENSION DETAILS)



SECTION OF ABUTMENT A-A
SCALE 1:75 (REINF. DETAILS)

REINF. SCHEDULE FOR RIDING RETURN

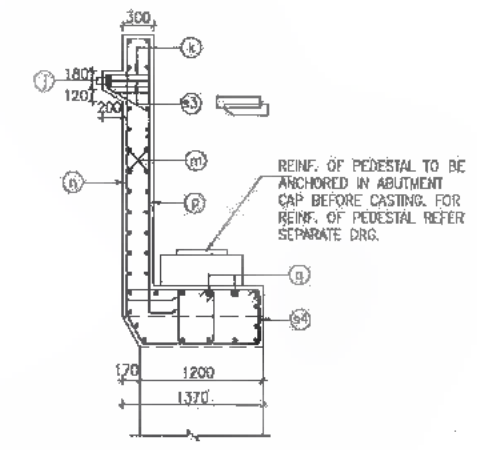
TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIA OF BARS (mm.)	SPACING / NOS OF BARS (mm.)
g1		16	180 C/C
g2		10	180 C/C
A1		16	100 C/C
h2		12	180 C/C
u		8	150 C/C

REINF. SCHEDULE FOR ABUTMENT

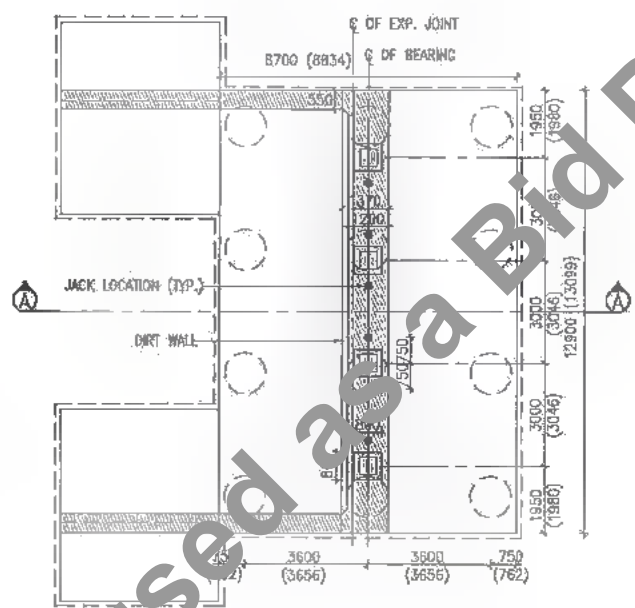
TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIA OF BARS (mm.)	SPACING / NOS OF BARS (mm.)
a		25	150 C/C
L		8	300 C/C
s1		16	130 C/C

REINF. SCHEDULE FOR ABUTMENT CAP

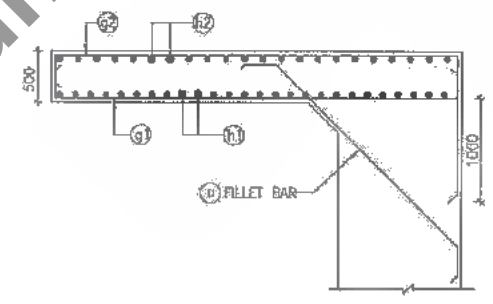
TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIA OF BARS (mm.)	SPACING / NOS OF BARS (mm.)
j		12	2 NOS
k		12	170 C/C
m		10	170 C/C
n		18	170 C/C
p		16	170 C/C
q		16	14 NOS
s2		10	170 C/C
s4		12	160 C/C



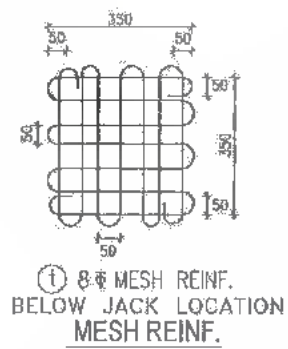
REINF. DETAIL OF ABUTMENT CAP & DIRT WALL
SCALE 1:50



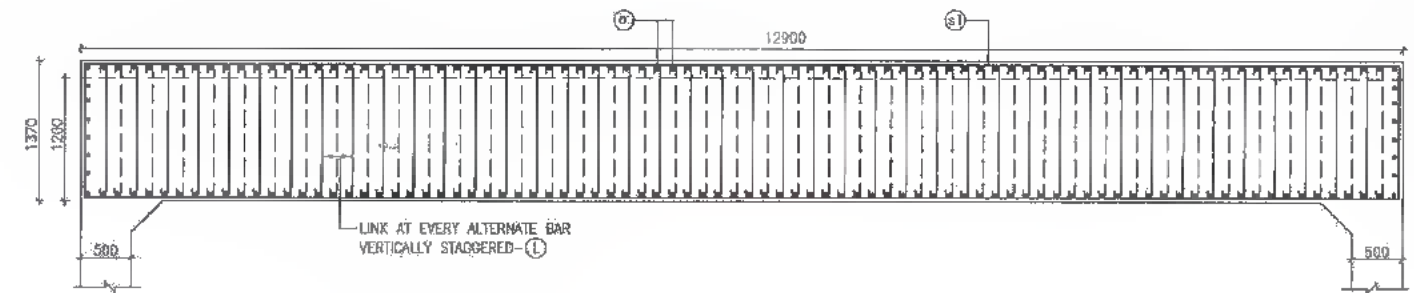
PLAN FOR ABUTMENT
SCALE 1:150 (DIMENSION DETAILS)



REINF. DETAIL OF RIDING RETURN
SCALE 1:50



8-φ MESH REINF. BELOW JACK LOCATION MESH REINF.



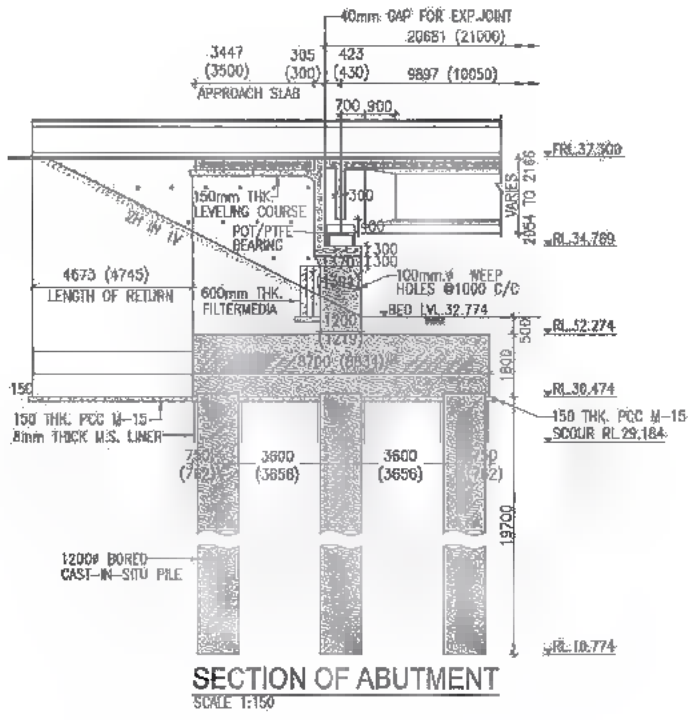
REINFORCEMENT DETAIL IN PLAN OF ABUTMENT @ BASE OF STEM
SCALE 1:50

- NOTES:-
- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHANGES & LEVELS ARE IN METERS.
 - ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NO DIMENSIONS SHALL BE SCALED.
 - GRADE OF CONCRETE : M-30
 - GRADE OF HYSD REINFORCEMENT : Fe-500
 - MINIMUM COVER TO ANY REINFORCEMENT SHALL BE (i) 50mm IN ABUTMENT (ii) 75mm IN FOOTING
 - MINIMUM COVER TO MESH REINF. SHALL BE 20mm UNLESS OTHERWISE SHOWN IN THE DRAWING.
 - IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.6.6.3 (I.R.C. 21-2000). WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 87 TIMES BAR DIAMETER. LAPPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
 - THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE TO REPLACE BEARING etc. IS SHOWN THUS ●. THESE SHOULD BE DISTINCTLY ETCHED ON THE CROSS GIRDERS AND PIER/ABUTMENT CAPS.

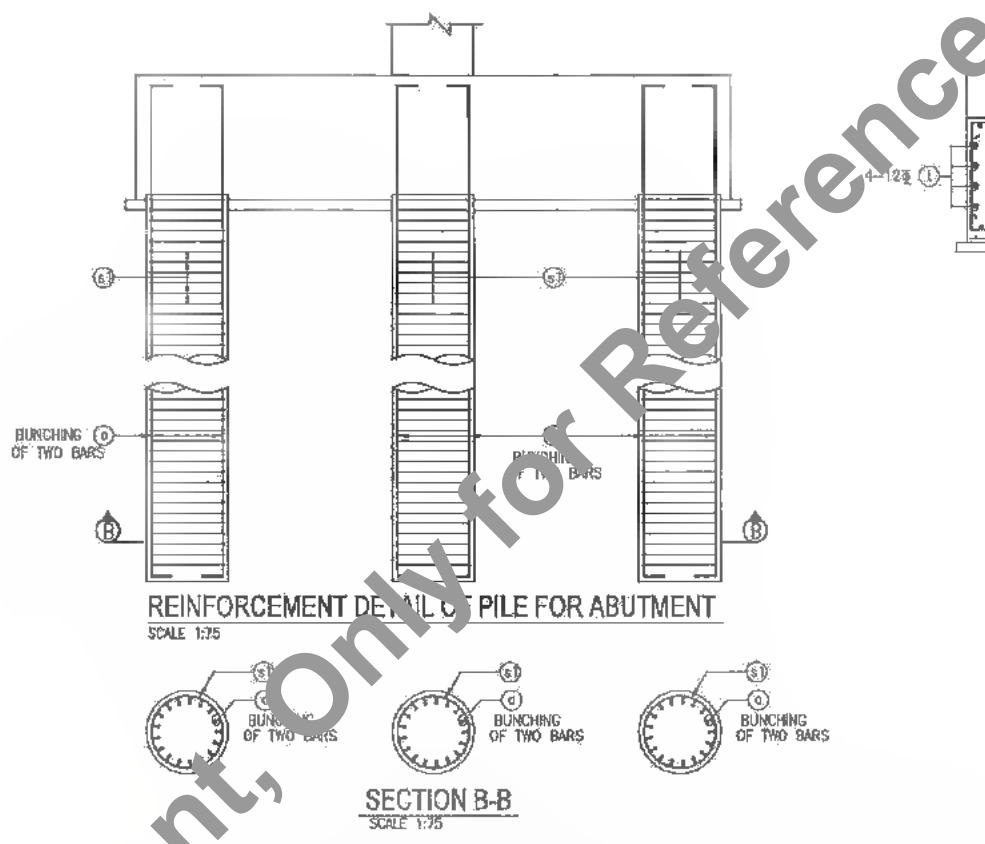


DATE: 2019/07/29 - 2:50pm PROJECT: BIHAR REVISOR: DPR/CB/MAJ24.007/2019/CH. 24-097/SUB STRAIGHT ABUTMENT & ABUTMENT CAPS.dwg

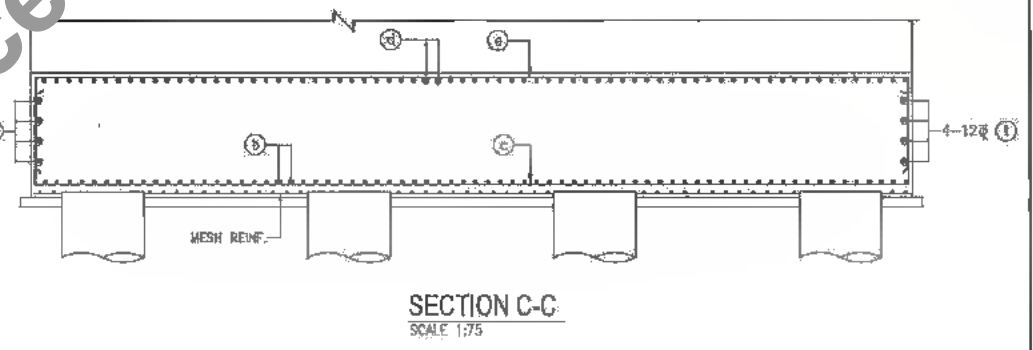
<p>Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company</p>	<p>PE 31/07/19 GOOD FOR CONSTRUCTION (REVISED DPR)</p>	<p>DRAWN BY: C.A.C.</p>	<p>TITLE: RAJTA-MAHADEV DIGHI CHOWK (PACKAGE-11) REINFORCEMENT DETAILS OF ABUTMENT ABUTMENT CAP & DIRTWALL MAJOR BRIDGE AT EXLCH.24/205 & PROP. CH. 24/007.</p>
			<p>PD 17/12/18 GOOD FOR CONSTRUCTION (DPR)</p>	<p>CHECKED BY: N.K.S.</p>	
<p>SYSTRA GROUP</p>	<p>REV. DATE DESCRIPTION SIGN</p>	<p>PC 10/04/14 GOOD FOR CONSTRUCTION (DPR)</p>	<p>APPROVED BY: S.R.V.</p>	<p>DRG. NO.: SAJ-213007/DPR/CB/MAJ24.007/SUB-01</p>	
		<p>PS 28/02/14 ISSUED WITH FINAL DPR</p>	<p>ISSUED BY: S.S.</p>		
<p>REVISION: PE</p>			<p>SCALE: AS SHOWN</p>		<p>REVISION: PE</p>



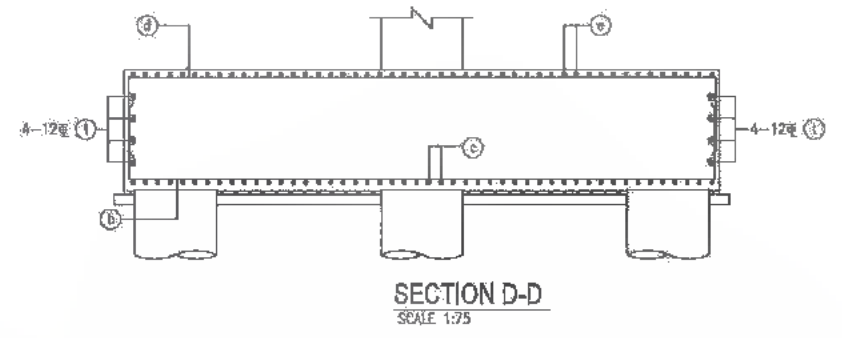
SECTION OF ABUTMENT
SCALE 1:150



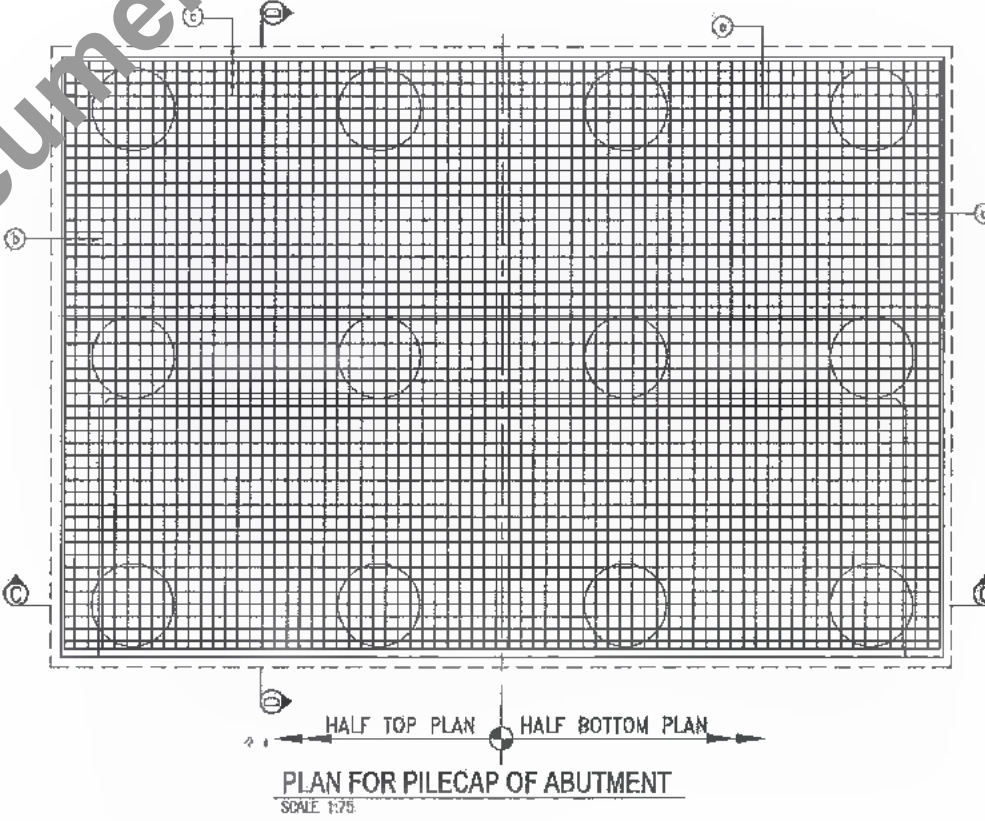
REINFORCEMENT DETAIL OF PILE FOR ABUTMENT
SCALE 1:75



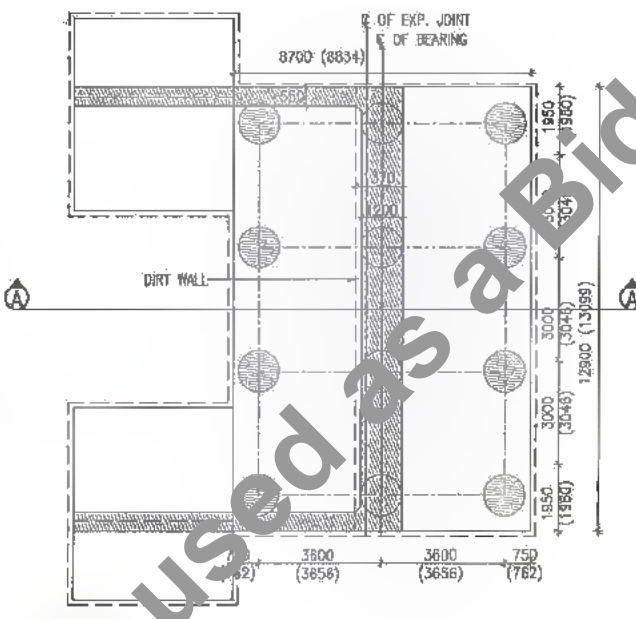
SECTION C-C
SCALE 1:75



SECTION D-D
SCALE 1:75



PLAN FOR PILECAP OF ABUTMENT
SCALE 1:75



PLAN FOR ABUTMENT
SCALE 1:150 (DIMENSION DETAILS)

SCHEDULE OF REINFORCEMENT PER PILE

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MM)	DIA OF BARS (mm.)	SPACING / NO. OF BARS
o	VARIES 300 300	32	34 NOS. BUNCHING OF TWO BARS
s1	200 200	8	150 C/C

SCHEDULE OF REINF. FOR PILE CAP

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MM)	DIA OF BARS (mm.)	SPACING / NO. OF BARS
b	900 900	25	300 C/C
c	900 900	16	180 C/C
d	900 900	16	180 C/C
e	900 900	16	180 C/C
t		12	16 NOS.

NOTES:-

- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHAINAGES & LEVELS ARE IN METERS.
- ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
- IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.6.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 87 TIMES BAR DIAMETER FOR PIER & SHALL NOT BE LESS THAN 77 TIMES BAR DIAMETER FOR PILE & PILE CAP. LAPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
- MINIMUM COVER TO ANY REINFORCEMENT SHALL BE (i) IN ABUTMENT 50mm (ii) IN FOUNDATION 75mm
- GRADE OF CONCRETE
(a) PILE : M-35
(b) PILE CAP : M-35
- GRADE OF HYSD REINFORCEMENT : Fe-500

Table Showing Various Parameters of Piles

Existing Chainage	Proposed Chainage	Abutment	Ground Level (m)	Founding Level, FRL (m)	Length of Pile (m)	Top of Pile Cap (m)	Bottom of Pile Cap (m)	Formation Level (m)	Top of Abutment Cap (m)	Top of Abutment (m)	Height of Abutment (m)	Max. Vertical Load (Mton)	Horizontal Load on Pile			
													Normal (Mton)	Seismic (Mton)	Normal (k)	Seismic (k)
24/206	24+097	A1 A2	32.774 33.128	10.774 10.774	19.700 19.700	32.274 30.474	37.300 37.300	54.789 54.789	33.869 33.869	1.695 1.695	210.10 248.85	40.77 40.77	40.77 40.77	38.45 14.04		

DATE: 2019/06/29 - 2:14pm
PATH: T:\CAD\TAD 7\2017 BHARREVISED DPR\BIPACKAGE-2\MAJOR BRIDGE\01 CH. 24+097\SUB STR\102 ABUTMENT PILE & PILE CAP.dwg



Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

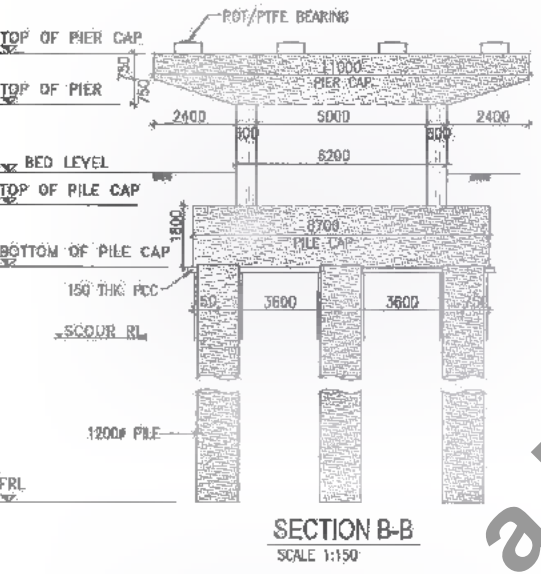
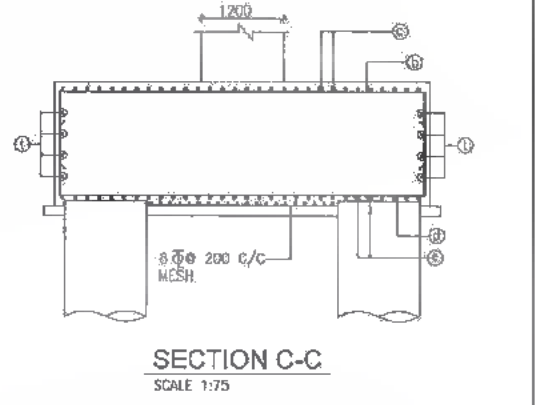
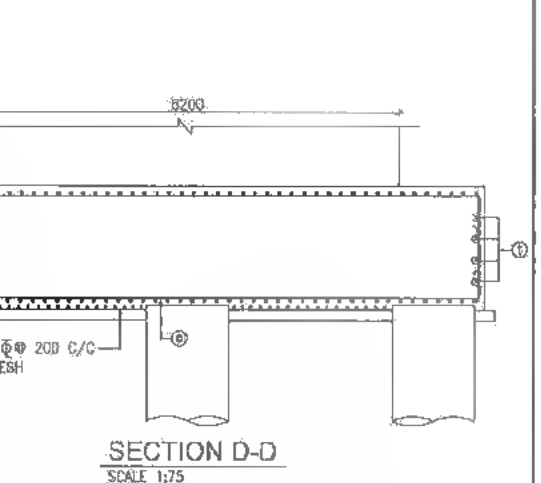
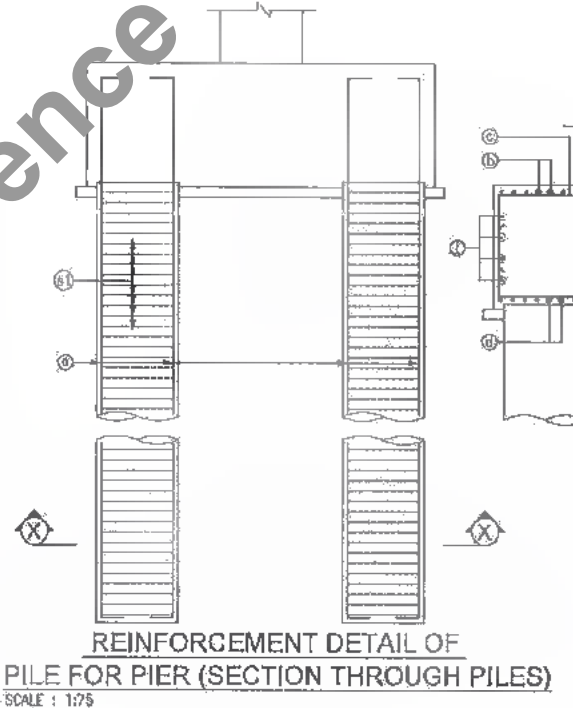
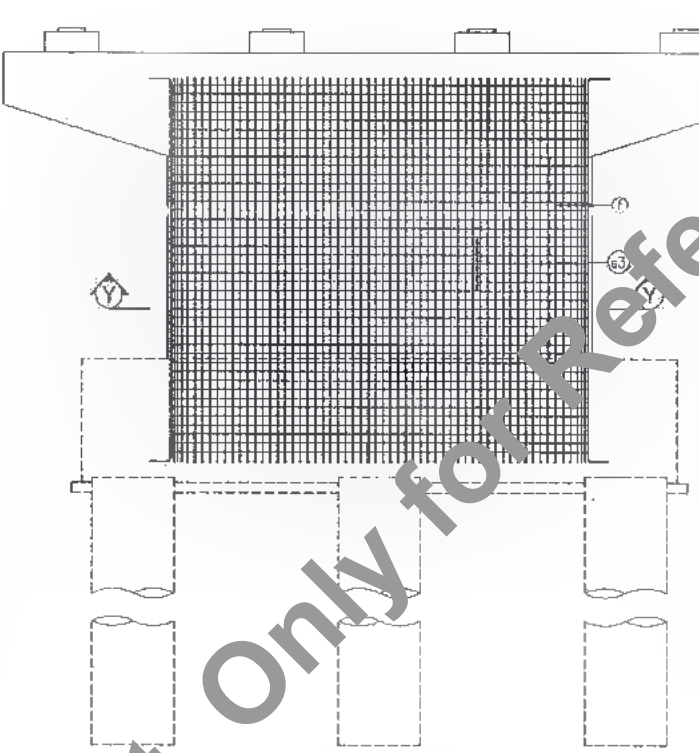
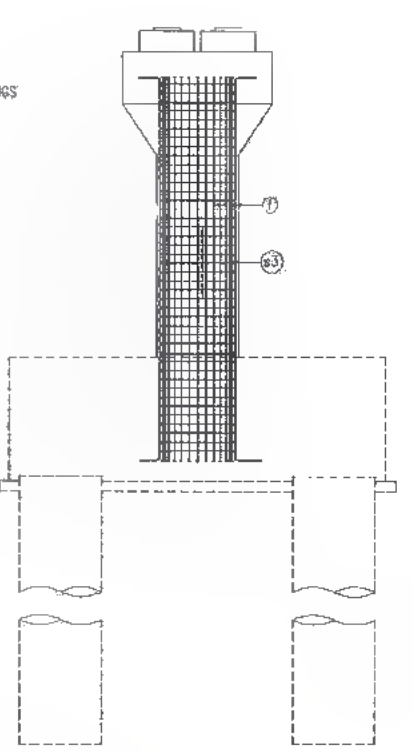
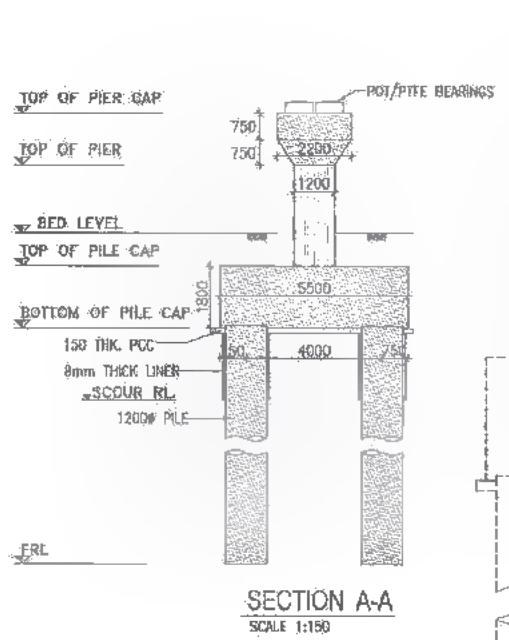
CONSULTANTS : SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

REV.	DATE	DESCRIPTION	IGN
PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	
PE	17/12/19	GOOD FOR CONSTRUCTION (DPR)	
PC	19/04/14	GOOD FOR CONSTRUCTION (DPR)	
PR	26/02/14	ISSUED WITH FINAL DPR	
PA	13/11/13	ISSUED WITH DPR	

TITLE RAUTA-MAHADEV DIGHI CHOWK (PACKAGE-II)
REINFORCEMENT DETAILS OF ABUTMENT PILE & PILE CAP
ABUTMENT FOR MAJOR BRIDGE AT EXL.CH.24/206 & PROP. CH. 24+097
DRG. NO. : SAI-213007DPR/C/BSRMAJ24.0879UB-02
REVISION : PE



365
472

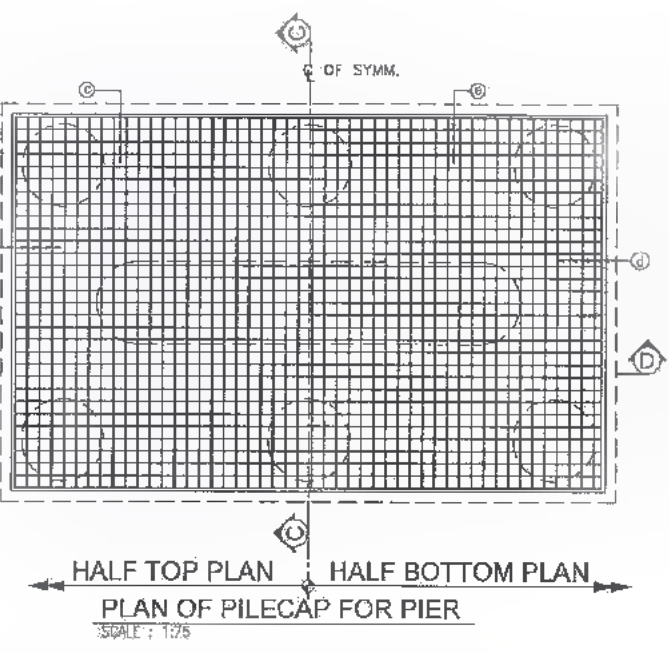
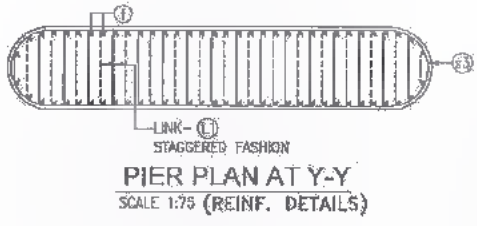


REINFORCEMENT DETAILS FOR SECTION A-A SCALE 1:75

REINFORCEMENT DETAILS FOR SECTION B-B SCALE 1:75

SECTION X-X SCALE 1:75

SECTION C-C SCALE 1:75



SCHEDULE OF REINFORCEMENT FOR PIER

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MILLIMETRES)	DIA OF BARS (mm.)	SPACING / NO. OF BARS
f	[Diagram]	25	180
g	[Diagram]	16	130
h	[Diagram]	8	380

SCHEDULE OF REINF. FOR PILE CAP

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MILLIMETRES)	DIA OF BARS (mm.)	SPACING / NO. OF BARS
a	[Diagram]	16	180
b	[Diagram]	16	180
c	[Diagram]	16	180
d	[Diagram]	32	180
e	[Diagram]	32	180
t	[Diagram]	12	16

SCHEDULE OF REINFORCEMENT FOR PILE

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MILLIMETRES)	DIA OF BARS (mm.)	SPACING / NO. OF BARS
o	[Diagram]	32	32 NOS.
s1	[Diagram]	8	150

- NOTES:-
- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHAINAGES & LEVELS ARE IN METERS.
 - ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
 - IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.6.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THEN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 87 TIMES BAR DIAMETER FOR PIER & SHALL NOT BE LESS THAN 77 TIMES BAR DIAMETER FOR PILE & PILE CAP. LAPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
 - MINIMUM COVER TO ANY REINFORCEMENT SHALL BE (i) IN PIER 50mm (ii) IN FOUNDATION 75mm
 - GRADE OF CONCRETE
(a) PILE : M-35
(b) PILE CAP : M-35
(c) PIER : M-30
 - GRADE OF HYSD REINFORCEMENT : Fe-500

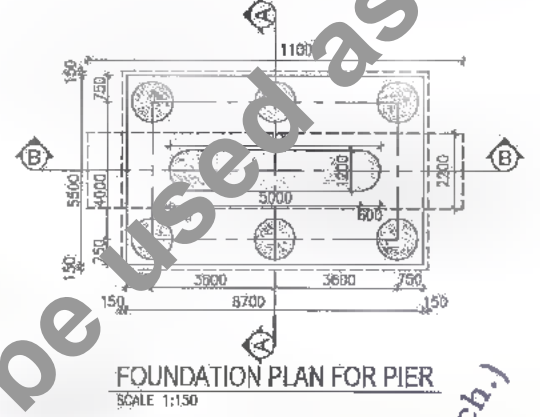


Table Showing Various Parameters of Piers

Existing Chainage	Proposed Chainage	Pier	Ground Level (m)	Founding Level, FRL (m)	Length of Pile (m)	Top of Pile Cap (m)	Bottom of Pile Cap (m)	Formation Level (m)	Top of Pier Cap (m)	Top of Pier (m)	Height of Pier (m)	Max. Vertical Load		Horizontal Load on Pile			
												Normal (Mton)	Seismic (Mton)	Longitudinal		Transverse	
												Normal (t)	Seismic (t)	Normal (t)	Seismic (t)		
24/206	24+087	P1	30.840	5.540	23.000	30.340	28.540	37.300	34.799	33.269	2.828	236.63	346.85	4.20	49.84	5.10	52.31
		P2	30.889	5.540	23.000												

DATE: 20/07/2019 - 25/07/2019
PATH: T:\CALCUTAD\24007 BIHAR REVISD DP\PC\BYPACKAGE-2\MAJOR BRIDGE\01 CH. 24+087\SUB STRAY\03 PIER PILE & PILE CAP.DWG

PROJECT: Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

SAI CONSULTING ENGINEERS PVT. LTD. SYSTRA GROUP

CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

SAI CONSULTING ENGINEERS PVT. LTD. SYSTRA GROUP

REV. DATE DESCRIPTION SIGN

PE 31/07/18 GOOD FOR CONSTRUCTION (REVISED DPR)

PD 17/12/18 GOOD FOR CONSTRUCTION (DPR)

PC 10/04/14 GOOD FOR CONSTRUCTION (DPR)

PP 28/02/14 ISSUED WITH FINAL DOPR

PA 13/11/13 ISSUED WITH DEPI

SCALE: AS SHOWN

DRWN BY: R.P.A.

CHECKED BY: N.K.S.

APPROVED BY: B.R.V.

ISSUED BY: B.S.

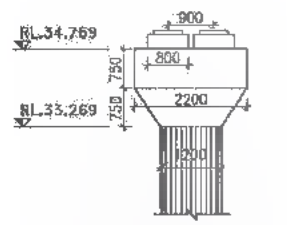
SCALE: AS SHOWN

TITLE: RAUTA-MAHADEV DIGHI CHOWK (PACKAGE-II) REINFORCEMENT DETAILS OF R.C.C. PIER WITH PILE FOUNDATION FOR MAJOR BRIDGE AT EXL.CH.24/206 & PROP. CH.24+087

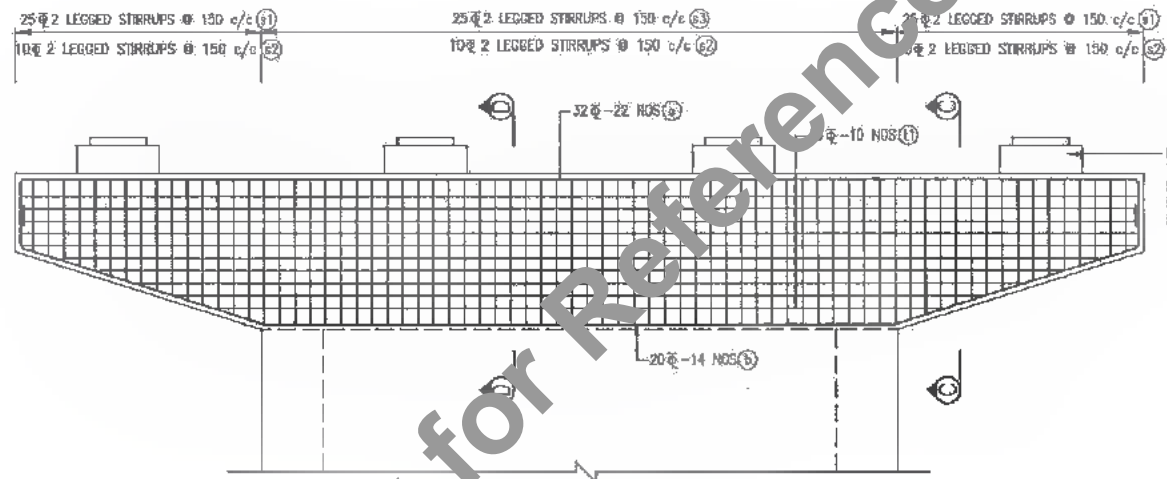
DRG. NO.: SAI-213007(DPR/CI/MAJ24.097)BLU-03

REVISION: PE





SECTION B-B
(DIMENSION DETAILS)
SCALE 1:100

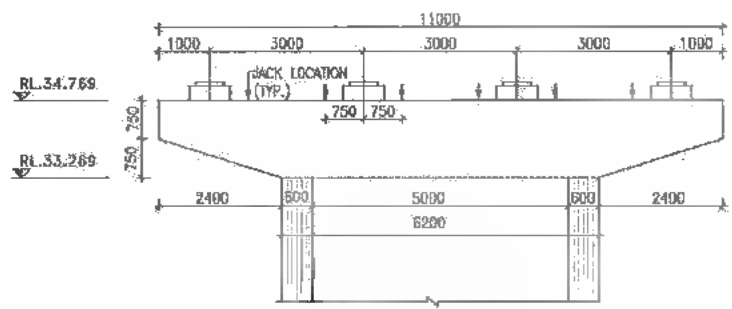


SECTION A-A
(REINFORCEMENT DETAILS)
SCALE 1:50

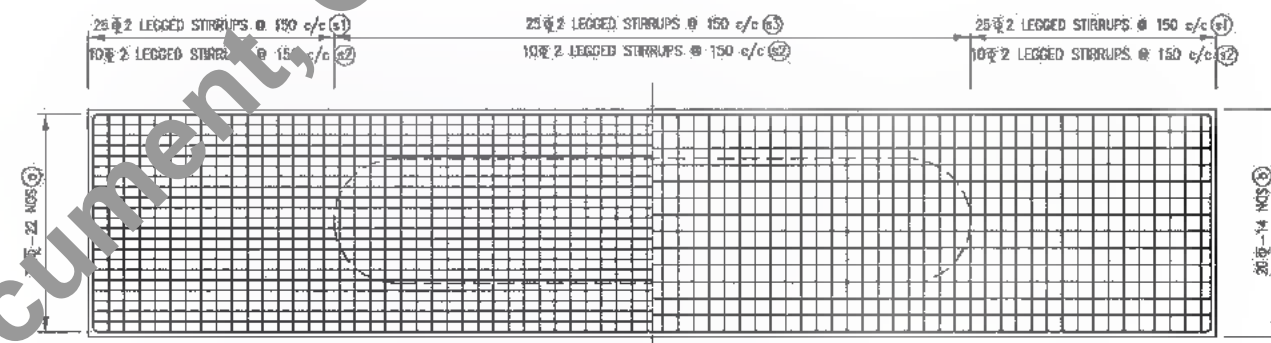
REINFORCEMENT OF PEDESTAL TO BE ANCHORED IN PIERCAP BEFORE CASTING. FOR RESPECTIVE REINF. DETAIL REFER DRG.

NOTES:-

1. ALL DIMENSIONS ARE IN MM. (UNLESS OTHERWISE SPECIFIED). CHAIRAGES & LEVELS ARE IN METERS.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
3. IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.6.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 76 TIMES BAR DIAMETER. LAPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
4. MINIMUM COVER TO ANY REINFORCEMENT SHALL BE 40mm
5. MINIMUM COVER TO MESH REINF. SHALL BE 20mm UNLESS OTHERWISE SHOWN IN THE DRAWING.
6. THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE TO REPLACE BEARING etc. IS SHOWN THUS ↓. THESE SHOULD BE DISTINCTLY ETCHED ON THE CROSS ORDERS AND PIER/ABUTMENT CAPS.
7. GRADE OF CONCRETE : M-30
8. GRADE OF HYSD REINFORCEMENT : Fe-500



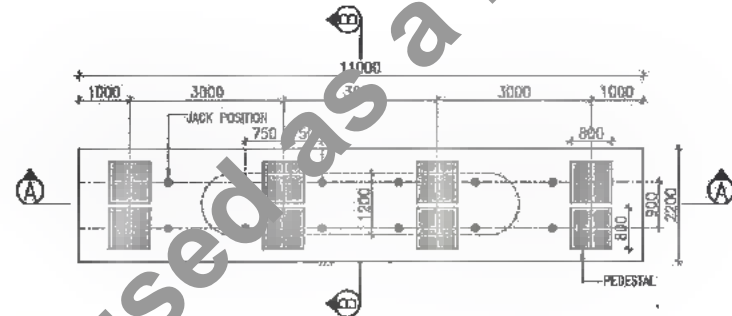
SECTION A-A
(DIMENSION DETAILS)
SCALE 1:100



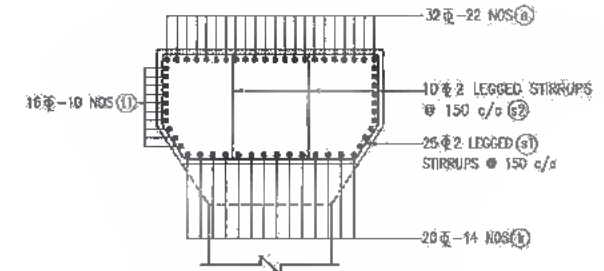
PLAN
SCALE 1:50

SCHEDULE OF REINFORCEMENT FOR PIERCAP

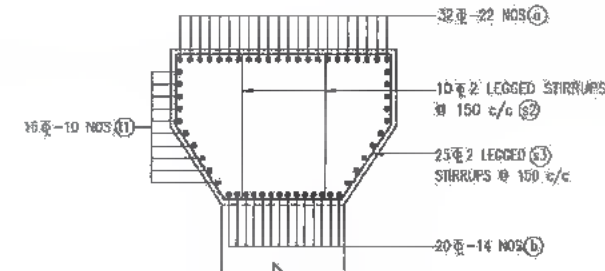
TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MILLIMETRES)	DIA OF BARS (mm.)	SPACING / NO. OF BARS
s	400	32	22 NOS.
a	400	20	14 NOS.
t1	VARIES	18	10 NOS.
s1	VARIES 2100	25	150 c/c
s2	ADJUST BET. 800 TO 900	10	150 c/c
s3	VARIES 1400	25	150 c/c



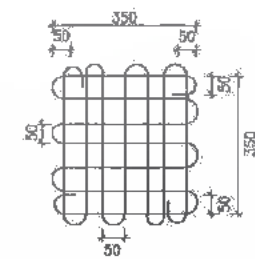
PLAN SHOWING OF PIER CAP
SCALE 1:100



SECTION C-C
(REINFORCEMENT DETAILS)
SCALE 1:50



SECTION D-D
(REINFORCEMENT DETAILS)
SCALE 1:50



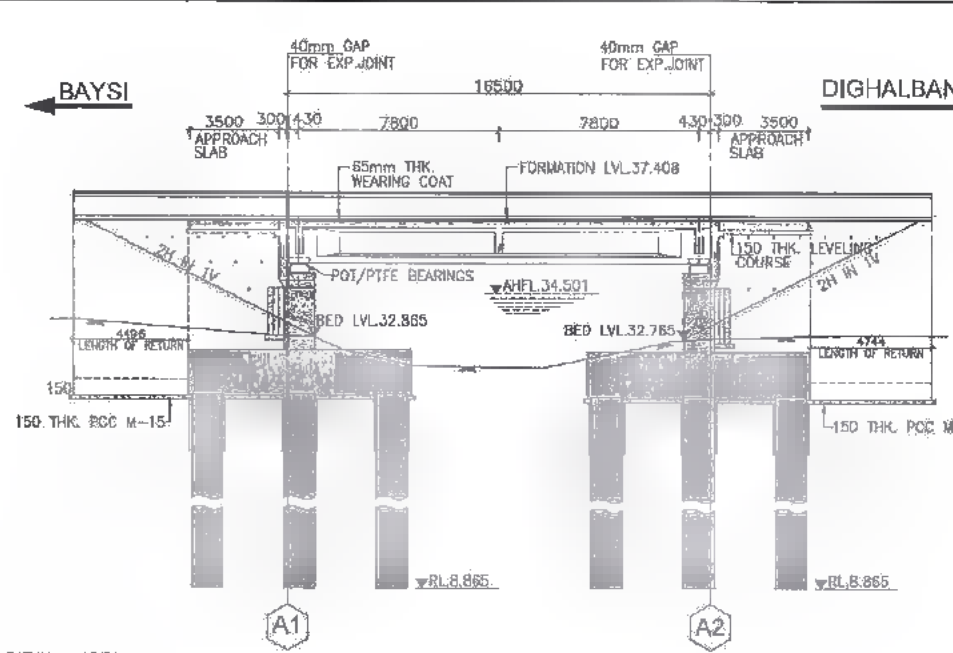
(h) 8 # MESH REINF. BELOW JACK LOCATION MESH REINF.



DATE: 2019/07/29 - 2:15pm
PATH: T:\ACT\14072019\BID\REVISED DPR\CB\PACKAGE-2\MAJOR BRIDGE\01 CH. 24+087\SUB STR\104 PIERCAP.dwg

<p>Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company</p>	<p>PE 31/07/19 GOOD FOR CONSTRUCTION (REVISED DPR)</p>	<p>DRAWN BY : CLM.S.</p>	<p>TITLE: SAUTA-MAHADEV DIGHI CHOWK (PACKAGE-II) REINFORCEMENT DETAILS OF PIER CAP FOR MAJOR BRIDGE AT EXL CH: 24205 & PROP. CH: 24+087</p>
			<p>PD 17/12/18 GOOD FOR CONSTRUCTION (DPR)</p>	<p>CHECKED BY : N.R.S.</p>	
<p>DATE: 2019/07/29 - 2:15pm PATH: T:\ACT\14072019\BID\REVISED DPR\CB\PACKAGE-2\MAJOR BRIDGE\01 CH. 24+087\SUB STR\104 PIERCAP.dwg</p>			<p>PS 10/01/14 GOOD FOR CONSTRUCTION (DPR)</p>	<p>APPROVED BY : S.R.V.</p>	<p>DRG. NO. : SAI-218097/DPR/CB/MA/24.087/SUB-04</p>
<p>DATE: 2019/07/29 - 2:15pm PATH: T:\ACT\14072019\BID\REVISED DPR\CB\PACKAGE-2\MAJOR BRIDGE\01 CH. 24+087\SUB STR\104 PIERCAP.dwg</p>			<p>PA 25/02/14 ISSUED WITH FINAL DPR</p>	<p>ISSUED BY : B.S.</p>	
<p>DATE: 2019/07/29 - 2:15pm PATH: T:\ACT\14072019\BID\REVISED DPR\CB\PACKAGE-2\MAJOR BRIDGE\01 CH. 24+087\SUB STR\104 PIERCAP.dwg</p>			<p>PA 13/11/13 ISSUED WITH DPR</p>	<p>SCALE : AS SHOWN</p>	

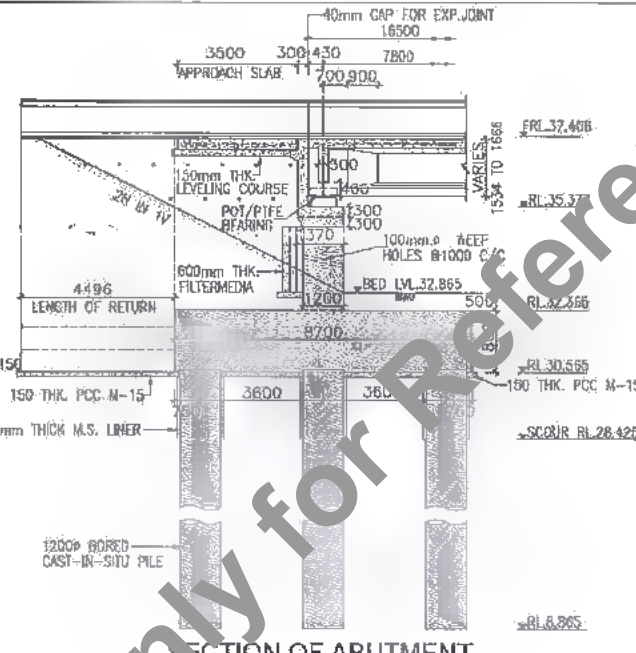
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470



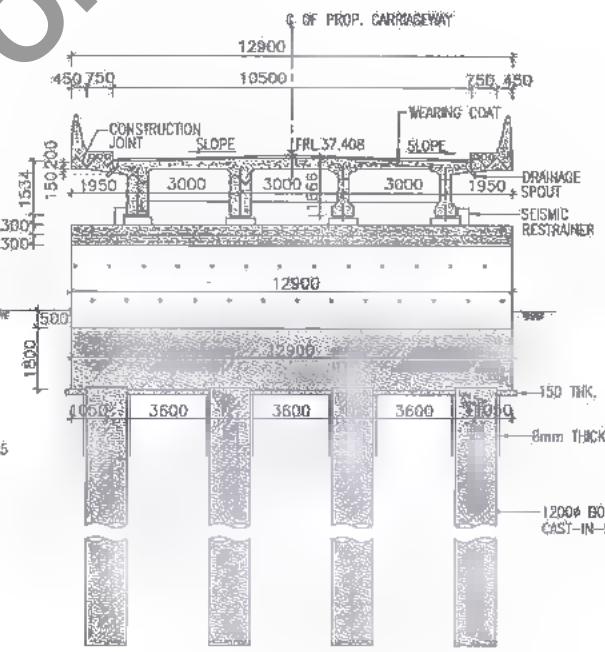
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25170.00	25170.00
25172.00	25172.00
25177.00	25177.00
25180.00	25180.00
25182.00	25182.00
25187.00	25187.00
25188.50	25188.50
25192.00	25192.00
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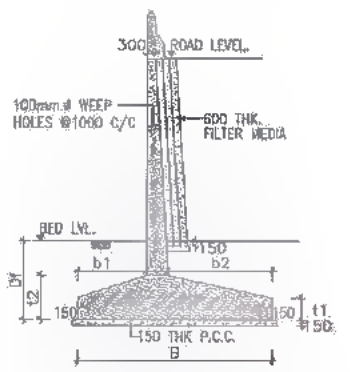
SECTIONAL ELEVATION X-X
SCALE 1:200



SECTION OF ABUTMENT
SCALE 1:150



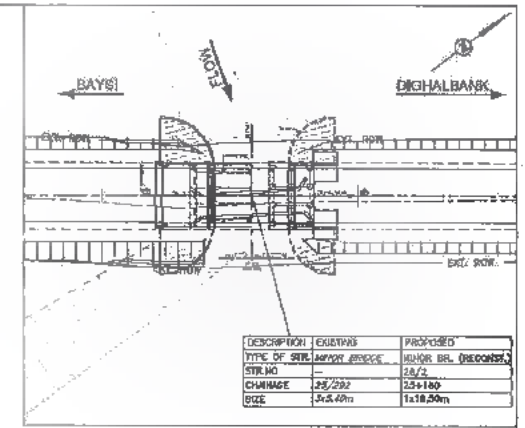
CROSS SECTION OF NEAR ABUTMENT
SCALE 1:150



SECTION OF RETURN WALL
SCALE 1:150

RL.32.865
BORE HOLE NO. A-1

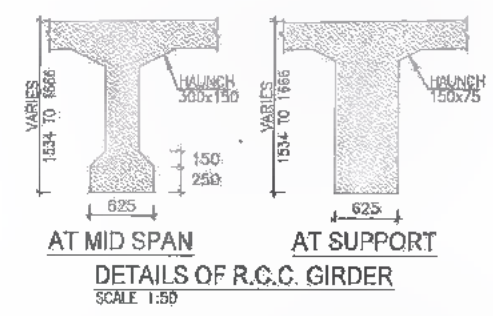
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30.865			N=8		
29.865			N=9		
28.865			N=13		
27.865			N=15		
26.865			N=16		
25.865			N=19		
24.865			N=25		
23.865			N=24		
22.865			N=27		
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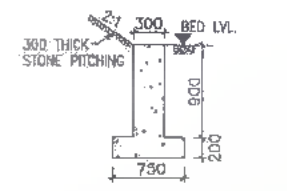
KEY PLAN

NOTES:-

- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED) & CHANGES ARE IN METRES. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
- THE FOLLOWING LOADS HAVE BEEN CONSIDERED IN THE DESIGN:-
 - FOR TWO LANE CARRIAGEWAY ONE LANE OF IRC CLASS 70R OR TWO LANES OF IRC CLASS A PLUS FOOTPATH, WHICHEVER GOVERNS.
 - FOR THREE LANE CARRIAGEWAY ONE LANE OF 70R PLUS ONE LANE OF CLASS A OR THREE LANES OF CLASS A WHICH EVER GOVERNS.
- ELASTOMERIC STRIP SEAL TYPE JOINT SHALL BE PROVIDED. DETAILS SHALL BE AS PER MANUFACTURES DRAWING.
- BACKFILL MATERIAL BEHIND ABUTMENT SHALL BE SELECTED, SOIL HAVING PROPERTIES AS C = 0.05 KG/SQ.CM., $\phi \geq 30^\circ$, $r = 1750$ KG/CUM.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - GENERAL NOTES DRG. NO. SAI-213007/DPR/C/B/TYP/GEN
 - GAD FOR SUPER STRUCTURE SAI-213007/DPR/C/B/MIN/25.180/SUP-01
 - REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-02
 - REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-03
 - REINFORCEMENT DETAILS OF DECK SLAB DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-04
 - SCHEDULE OF REINFORCEMENT DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-05
 - DIMENSIONS & REINF. DETAILS FOR ABUTMENT & ABUTMENT CAP FOR MINOR BRIDGE AT PROP. CH. 25+180 DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUB-01
 - DIMENSIONS & REINF. DETAILS FOR PILE & PILE CAP OF ABUTMENT FOR MINOR BRIDGE AT PROP. CH. 25+180 DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUB-02
 - DETAILS OF APPROACH SLAB & DRAINAGE SPOUT DRG. NO. SAI-213007/DPR/C/B/TYP-02
 - TYP. DETAILS OF R.C.C. CRASH BARRIER DRG. NO. SAI-213007/DPR/C/B/TYP-03
 - TYPICAL DETAILS OF SEISMIC RESTRAINER DRG. NO. SAI-213007/DPR/C/B/TYP-05
 - DETAILS OF SCHEMATIC ARRANGEMENT AND DESIGN FORCES OF POT PITE BEARINGS OF RCC T-BEAM SUP. STRU. DRG. NO. SAI-213007/DPR/C/B/TYP-06
 - DIMENSIONS & REINF. DETAILS OF RCC RETURN WALL DRG. NO. SAI-213007/DPR/C/B/TYP-07



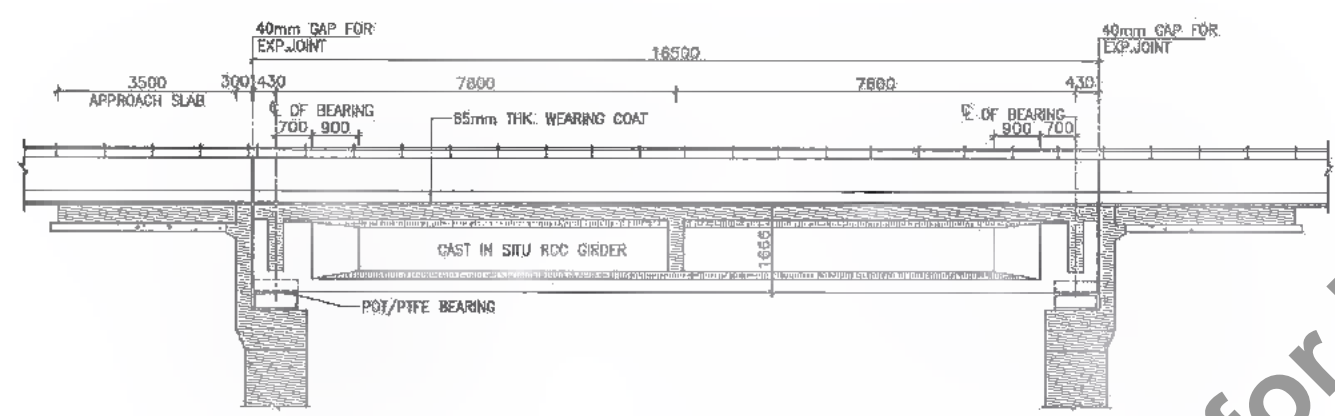
DETAILS OF R.C.C. GIRDER
SCALE 1:50



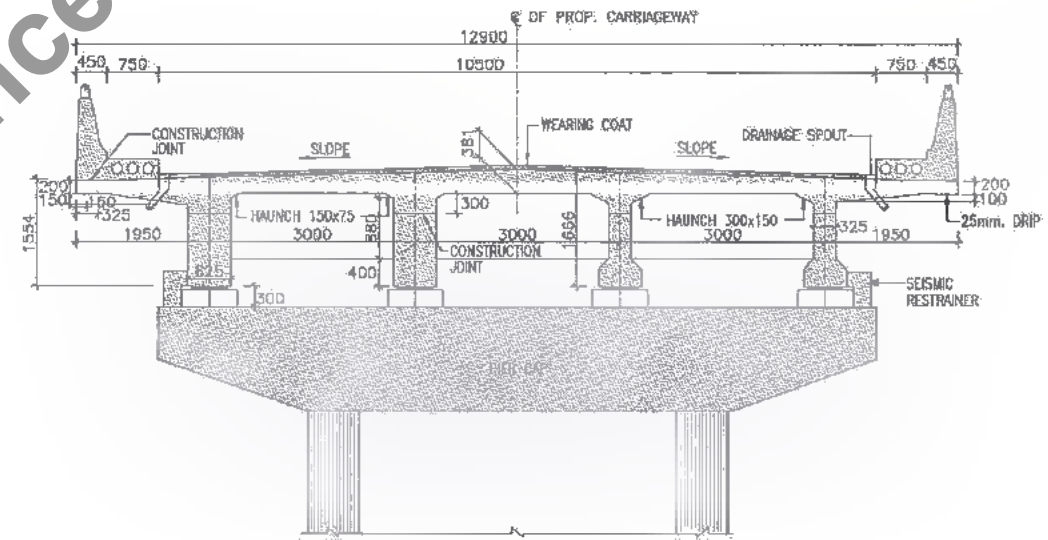
DETAIL OF TOE WALL
SCALE 1:50

DATE: 20/07/2019 TIME: 11:59am
PATH: T:\CAD\TAD\2007 BHARATREVISID DPR\BY PACKAGE-2\MINOR BRIDGE\01.CH.25+180\101.GAD.CH.25+180.dwg

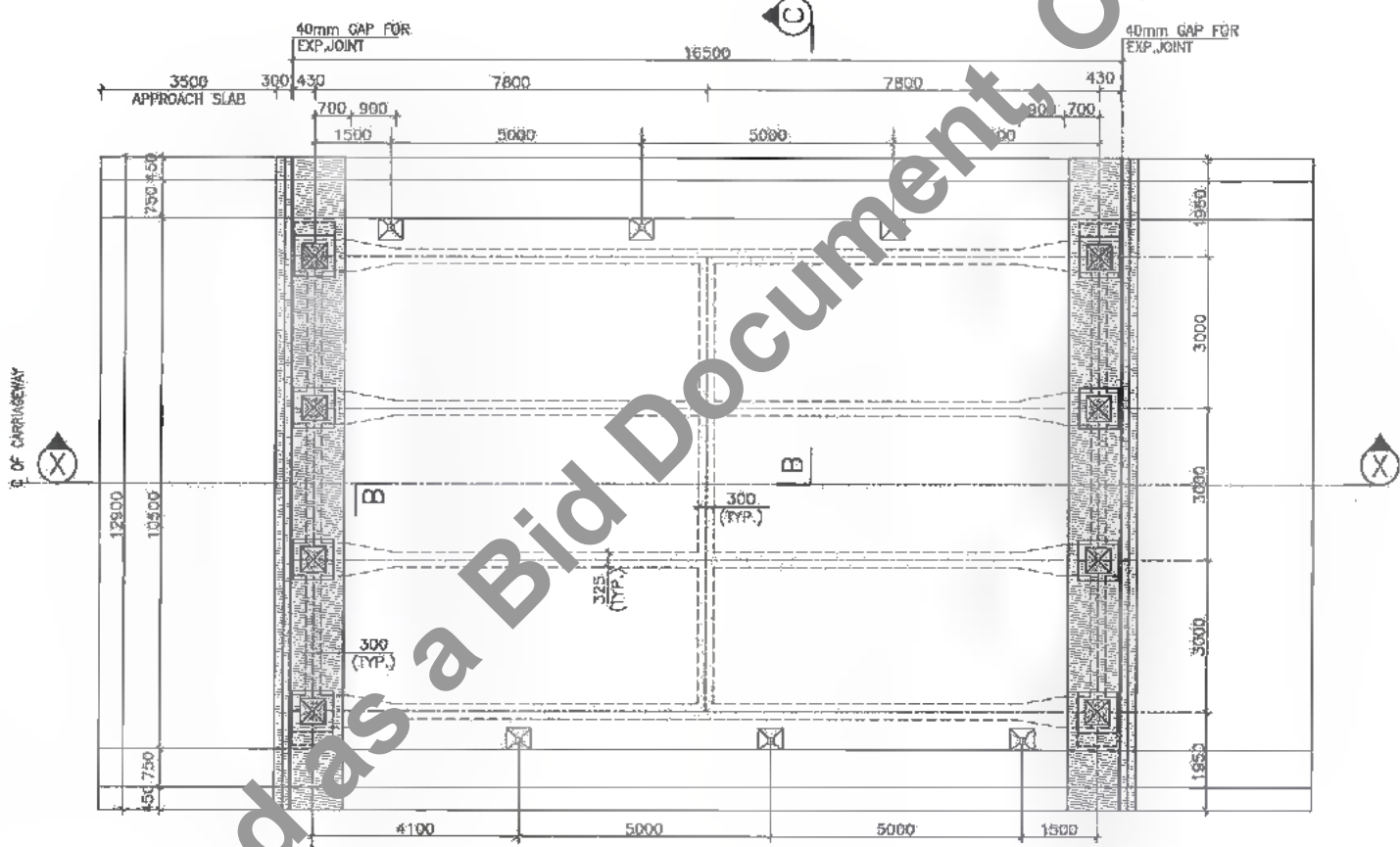
<p>Bihar State Road Development Corporation Limited (BSRDLG) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company Block-A 'SAI House', Solihatta Industrial Estate, Bih Rajpatti, Dha, Bahadurganj, Patna-801009, Bihar, India. Phone: +91-91-8614249/190, Fax: +91-91-29-6492809 Email: saicad@saiconsulting.com</p>	<table border="1"> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>ISSN</th> <th>ISSUED BY</th> </tr> <tr> <td>PE</td> <td>31/07/19</td> <td>GOOD FOR CONSTRUCTION (REVISED DPR)</td> <td></td> <td></td> </tr> <tr> <td>PD</td> <td>17/12/18</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td></td> <td></td> </tr> <tr> <td>PC</td> <td>10/04/14</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td></td> <td></td> </tr> <tr> <td>PB</td> <td>25/02/14</td> <td>ISSUED WITH FINAL DPR</td> <td></td> <td></td> </tr> <tr> <td>PA</td> <td>13/11/13</td> <td>ISSUED WITH DPR</td> <td></td> <td></td> </tr> </table>	REV.	DATE	DESCRIPTION	ISSN	ISSUED BY	PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)			PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)			PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)			PB	25/02/14	ISSUED WITH FINAL DPR			PA	13/11/13	ISSUED WITH DPR			<p>TITLE: RAJTA-MAHADEV DIGHI GHORWA (PACKAGE-II) GAD FOR RECONSTRUCTION OF MINOR BRIDGE AT EXI, CH.25+292 & PROP. CH. 25+180.</p> <p>DRG. NO.: SAI-213007/DPR/C/B/MIN/GAD-01 REVISION: PE</p>
REV.	DATE	DESCRIPTION	ISSN	ISSUED BY																														
PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)																																
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)																																
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)																																
PB	25/02/14	ISSUED WITH FINAL DPR																																
PA	13/11/13	ISSUED WITH DPR																																



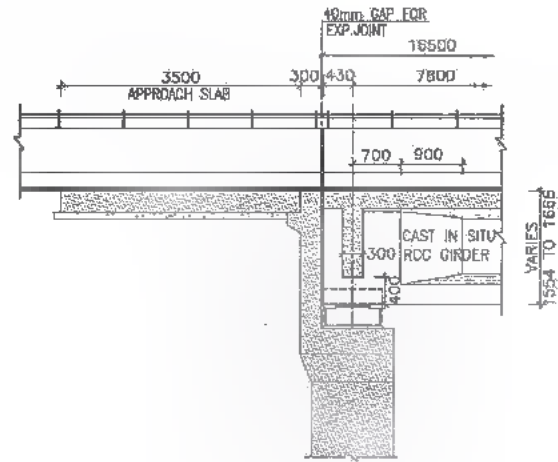
SECTIONAL ELEVATION X-X
SCALE 1:100



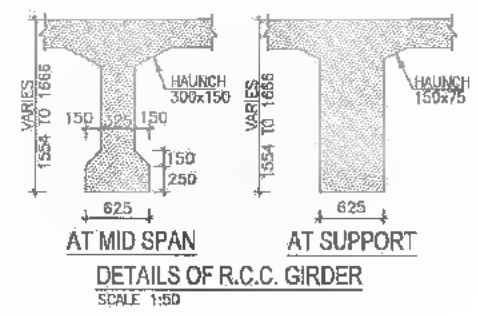
SECTION A-B-C
SCALE 1:75



PLAN
SCALE 1:100



DETAIL OF SUPERSTRUCTURE AT ABUTMENT LOCATION
SCALE 1:75



DETAILS OF R.C.C. GIRDER
SCALE 1:50

NOTES :

1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO. SAI-213007/DPR/C/B/TYP/GEN
 - b. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-02
 - c. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-03
 - d. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-04
 - e. SCHEDULE OF REINFORCEMENT DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-05



DATE: 2019/07/29 - 2:20pm
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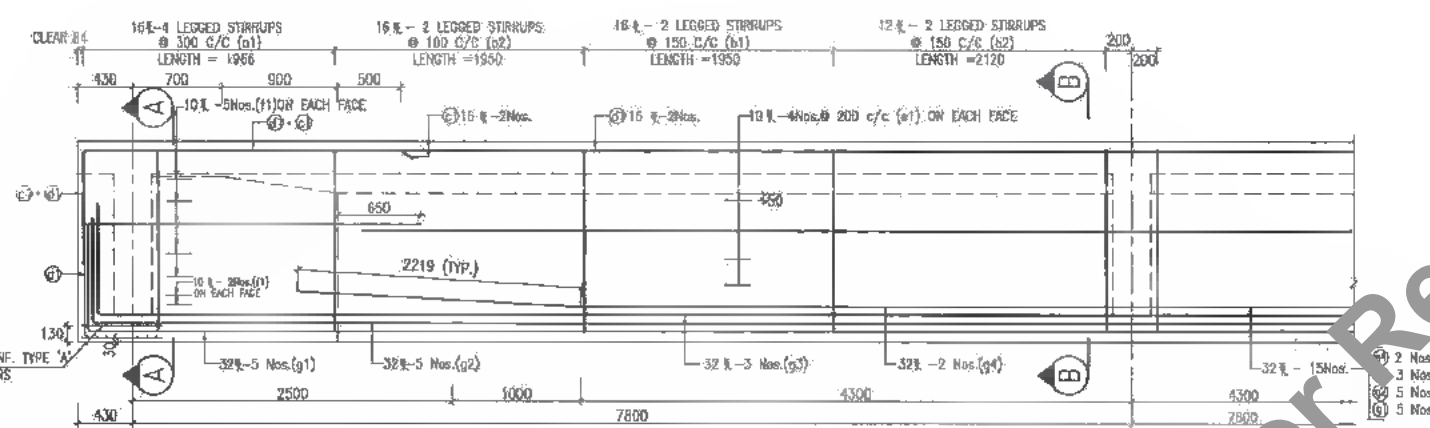
Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

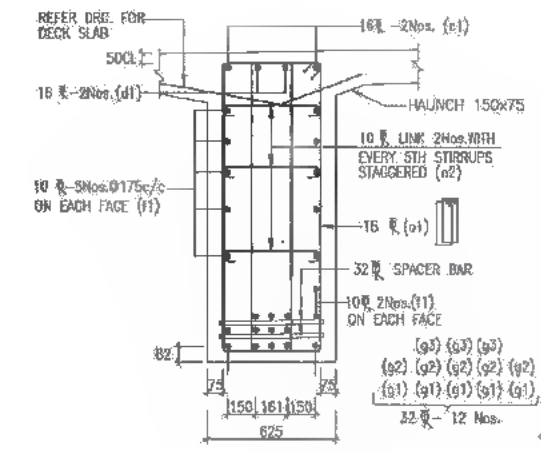
CONSULTANTS :
SAL Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "Sai House", Solapur Corporate Square, B/6, Rajpeth, Dist. Solapur, Maharashtra-413005, India
Phone : +91-20-8512998/300, Fax : +91-20-6694200
Email : sacl@saiconsulting.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)		
PS	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PA	26/02/14	ISSUED WITH FINAL DPR		
PA	13/11/13	ISSUED WITH BIDPR		

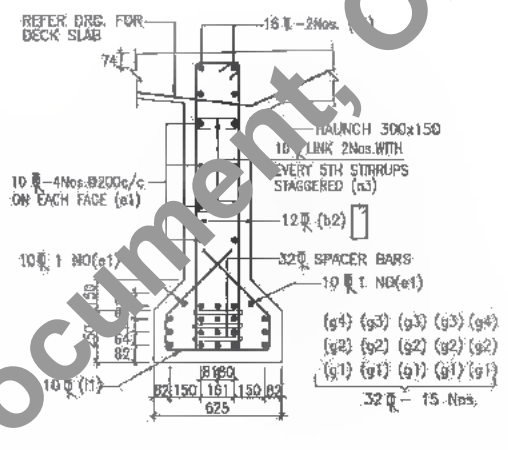
TITLE: RAUTA-MAHADEV DIGHI CHOWK (PACKAGE-II)
GAD FOR RCC T-BEAM SUPER STRU. AT EXI. CH. 25+180 & PROP. CH. 25+180
DRG. NO.:
SAI-213007/DPR/C/B/MIN/25.180/SUP-01
REVISION: PE



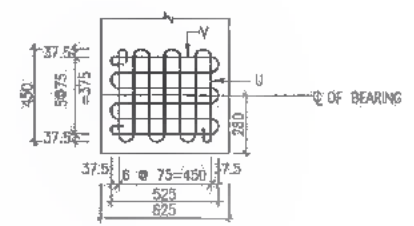
LONGITUDINAL SECTION OF GIRDER
SCALE 1:40



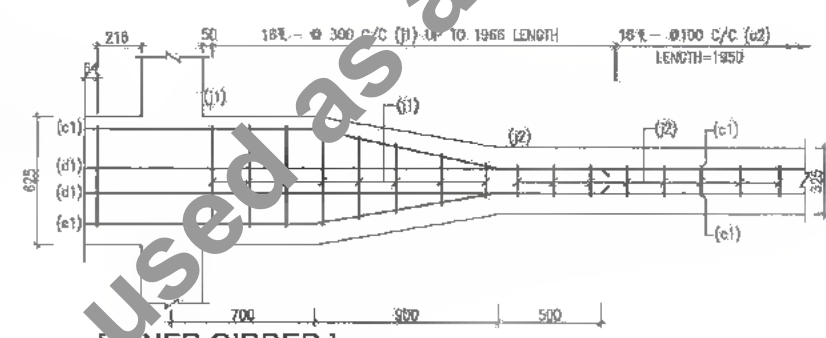
SECTION A-A
SCALE 1:25



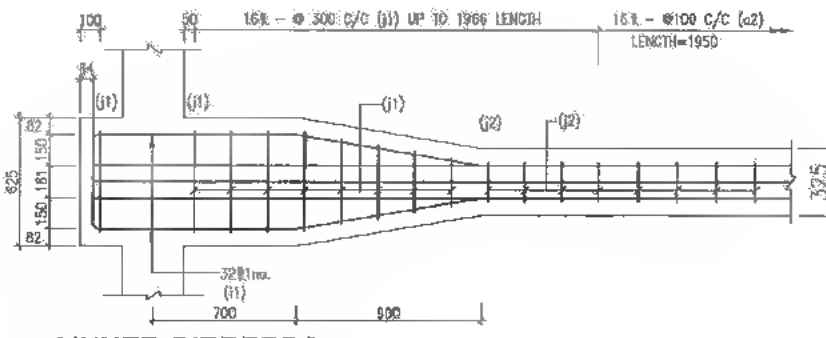
SECTION B-B
SCALE 1:25



8 Ø MESH REINFORCEMENTS
TYPE - 'A'



[INNER GIRDER]
PLAN SHOWING WEB REINF. (TOP) AT THE END
SCALE 1:25



[INNER GIRDERS]
PLAN SHOWING WEB REINF. (BOTTOM) AT THE END
SCALE 1:40

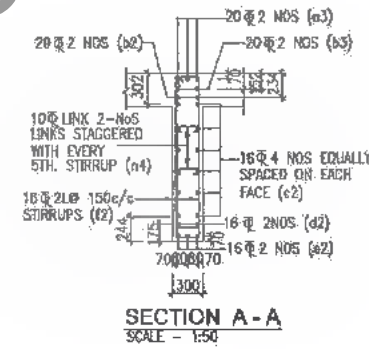
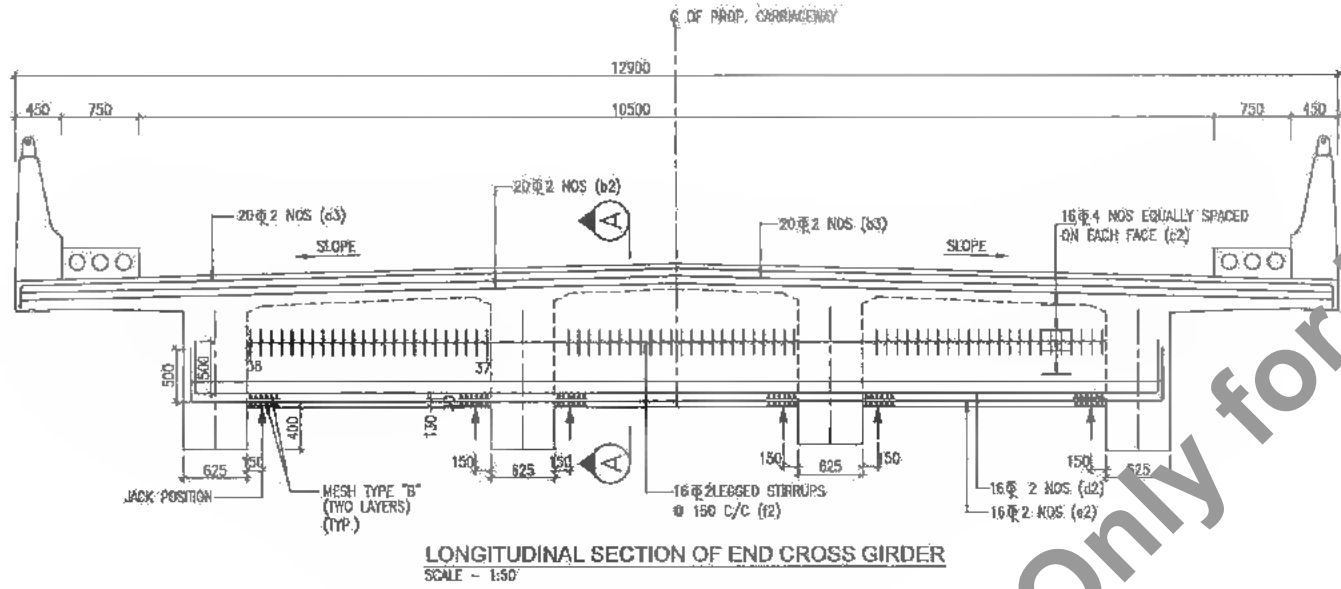
NOTES :

- ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER.
- 32# SPACER BARS SHALL BE PROVIDED @ 1.0m. c/c BETWEEN TWO TIERS OF LONGITUDINAL BARS OF GIRDERS.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MIN/25.180/SUP-01
 - REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO.SAI-213007/DPR/C/B/MIN/25.180/SUP-03
 - REINFORCEMENT DETAILS OF DECK SLAB DRG. NO.SAI-213007/DPR/C/B/MIN/25.180/SUP-04
 - SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MIN/25.180/SUP-05

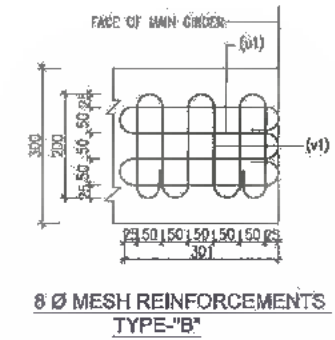
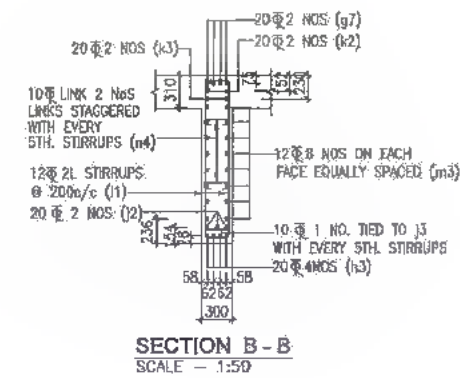
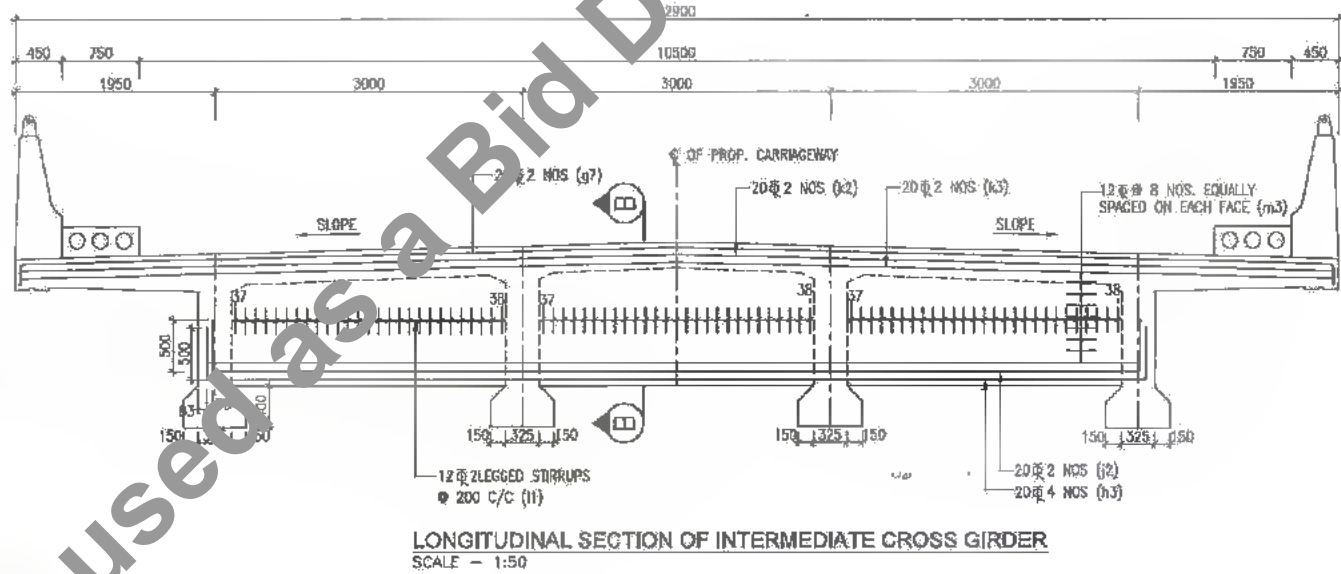
DATE: 20/07/13 2:20 pm
PATH: I:\CAD\TAD - 2007 BIHAR\REVISED DPR\CAD\PACKAGE-2\MINOR BRIDGE\01 CH.25+180\SUPER STR.16.5m span\102 LONG\1-16.5m.dwg

 <p>Bihar State Road Development Corporation Limited (BSRDCL) (A Government of Bihar Undertaking)</p> <p>D. G. M. Tech. D. G. S. C. L. PIU-Katihar</p>	<p>PROJECT:</p> <p>Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS :</p> <p>SAI SYSTRA GROUP</p> <p>SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company</p> <p>Block-A 'SAI House', Salyasa Corporate Square, 8th Dejothi, Dighalbank, Ahmednagar-430009, Dist. Jalgaon, India Phone : +91-79-2536280/184 Fax : +91-79-2541280 E-mail : mail@saiconsulting.com</p>	<table border="1"> <tr> <td>PE</td> <td>24/07/13</td> <td>GOOD FOR CONSTRUCTION (REVISED DPR)</td> <td>DRAWN BY : G.M.O. (S)</td> </tr> <tr> <td>PD</td> <td>17/12/13</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td>CHECKED BY : N.K.S.</td> </tr> <tr> <td>PI</td> <td>10/08/14</td> <td>GOOD FOR CONSTRUCTION (DPR)</td> <td>APPROVED BY : B.R.V.</td> </tr> <tr> <td>PI</td> <td>26/02/14</td> <td>ISSUED WITH FINAL DPR</td> <td></td> </tr> <tr> <td>PI</td> <td>13/11/13</td> <td>ISSUED WITH DPR</td> <td></td> </tr> </table> <p>SCALE : AS SHOWN</p>	PE	24/07/13	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : G.M.O. (S)	PD	17/12/13	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : N.K.S.	PI	10/08/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : B.R.V.	PI	26/02/14	ISSUED WITH FINAL DPR		PI	13/11/13	ISSUED WITH DPR		<p>TITLE: RAUTA-MAHADEV DIGHI CHOWK (PACKAGE-II) REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER FOR RCC T-BEAM SUPER STRU. AT EXL CH. 25/282 & PROP. CH. 25+180</p> <p>DRG. NO. : SAI-213007/DPR/C/B/MIN/25.180/SUP-02</p> <p>REVISION : PE</p>
PE	24/07/13	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : G.M.O. (S)																					
PD	17/12/13	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : N.K.S.																					
PI	10/08/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : B.R.V.																					
PI	26/02/14	ISSUED WITH FINAL DPR																						
PI	13/11/13	ISSUED WITH DPR																						





- NOTES:**
1. THE LOCATIONS OF THE JACK FOR LIFTING OF SUPERSTRUCTURE IS SHOWN & THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END CROSS GIRDER AND PIERCAP / ABUTMENT CAPS
 2. DURING THE LIFTING OPERATION ALL THE SIX JACKS PLACED UNDER THE END CROSS GIRDER IN THE LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATION CONSOLE GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL SIX JACKS ARE EQUAL AT ALL TIMES.
 3. CAPACITY OF EACH JACK SHALL NOT BE LESS THAN 50 TON.
 4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO. SAI-213007/DPR/C/B/TYP/06R
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-02
 - d. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-04
 - e. SCHEDULE OF REINFORCEMENT DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-05

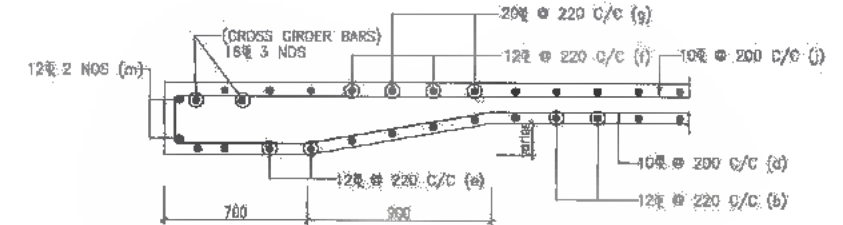
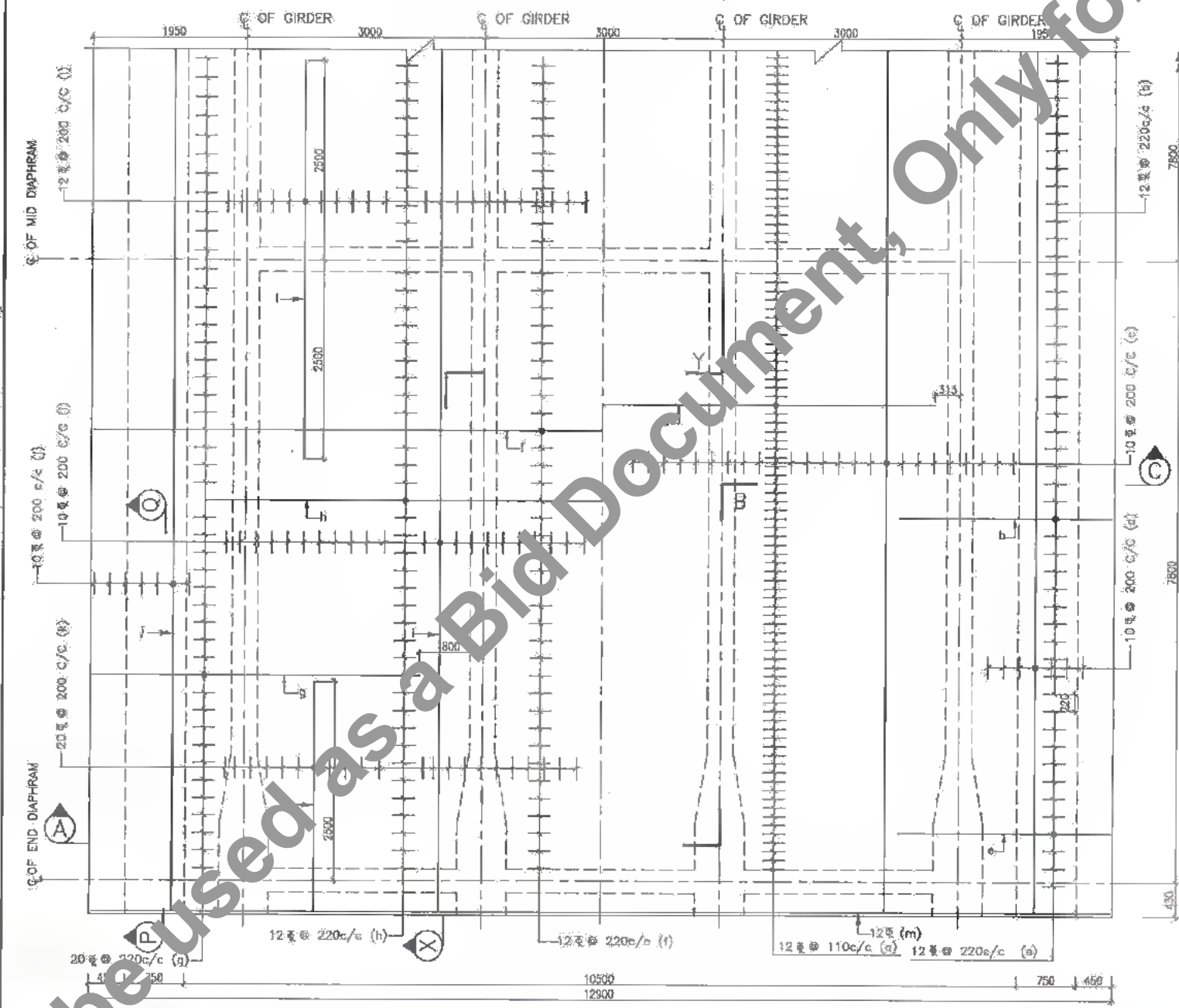
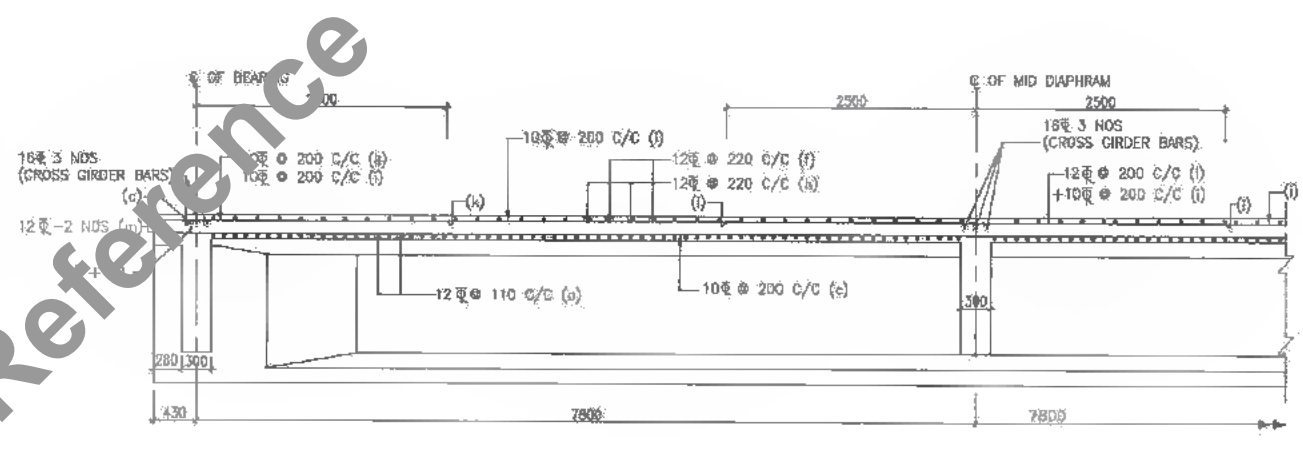
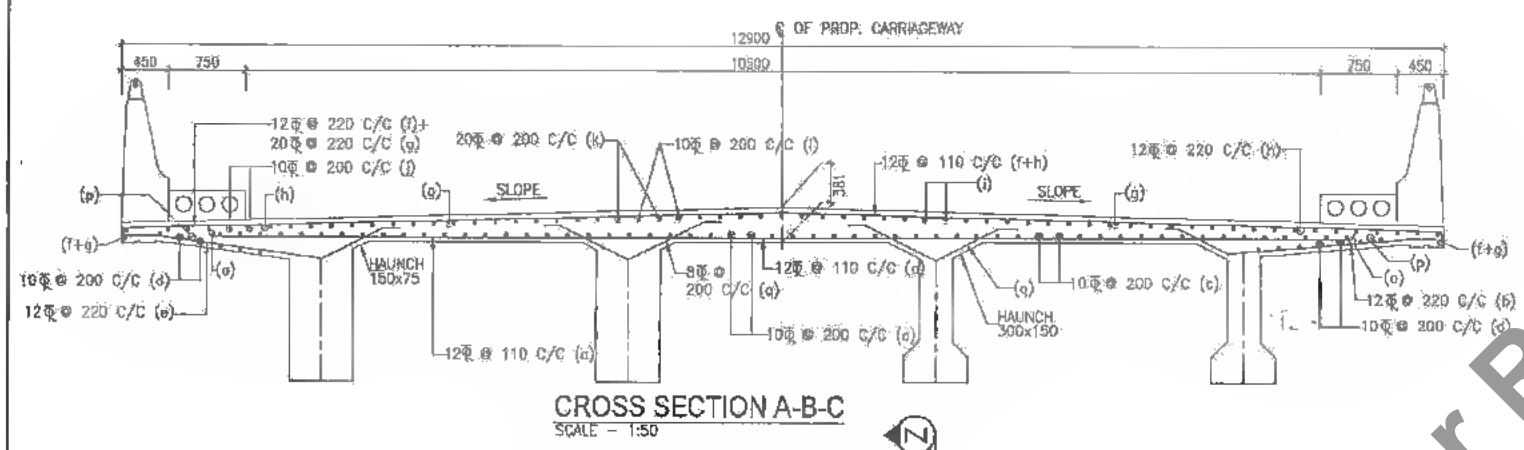


DATE: 2019/06/29 - 2:27am
PATH: I:\CAD\TAD 2017\BIHAR\REVISED DPR\1\B\PACKAGE-2\MINOR BRIDGE\01.CH.25+180\SUPER STR.16.5m span\103 CROSS GIRDER.16.50m.dwg

<p>Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)</p>	<p>PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)</p>	<p>CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company</p>	<p>PE 31/07/18 PD 17/12/18 FC 10/04/14 FB 26/07/14 FA 13/11/13</p>	<p>GOOD FOR CONSTRUCTION (REVISED DPR) GOOD FOR CONSTRUCTION (DPR) GOOD FOR CONSTRUCTION (DPR) ISSUED WITH FINAL DPR ISSUED WITH DPRP</p>	<p>DRAWN BY : S.M.G. CHECKED BY : N.K.S. APPROVED BY : B.A.V.</p>	<p>TITLE: RAUTA-MAHADEY DIGHI CHOWK (PACKAGE-II) REINFORCEMENT DETAIL OF CROSS GIRDER FOR RCC T-BEAM SUPER STRU. AT EXH. CH. 25/292 & PROP. CH. 26+180</p> <p>DRG. NO. : SAI-213007/DPR/C/B/MIN/25.180/SUP-03</p> <p>REVISION : PE</p>
			<p>REV. DATE DESCRIPTION</p>	<p>SCALE : AS SHOWN</p>		



31
466



NOTES :

1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER.
2. THE REINFORCEMENT FOR CRASH BARRIER SHOULD BE PROPERLY ANCHORED IN THE DECK SLAB BEFORE CASTING THE SLAB.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MIN/25.180/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO.SAI-213007/DPR/C/B/MIN/25.180/SUP-02
 - d. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO.SAI-213007/DPR/C/B/MIN/25.180/SUP-03
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MIN/25.180/SUP-05



DATE: 2019/02/29 - 22:21pm
PATH: T:\CADD\2017 BIHARREVISED DPR\BYPACKAGE-3\MINOR BRIDGE\VT CH.25+80\SUPER STRU\16.5m span\1\04_DECK SLAB-16.50m.dwg

BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI CONSULTING ENGINEERS PVT. LTD.
An ISO 9001 Certified Company
SAI SYSTRA GROUP

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)
PB	26/02/14	ISSUED WITH FINAL DPR
PA	15/11/13	ISSUED WITH DPR

TITLE:	RAJFA-MAHADEV DIGHI CHOWK (PACKAGE-B) REINFORCEMENT DETAILS OF DECK SLAB FOR RCC T-BEAM SUPER STRU. AT EXL. CH. 26/202 & PROP. CH. 25+180
DRG. NO.:	SAI-213007/DPR/C/B/MIN/25.180/SUP-04
REVISION:	PE

SCHEDULE OF REINFORCEMENT (DECK SLAB) PER SPAN

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Nos. of Bars	Spacing of Bars
1	a		12	-	110
2	b		12	-	220
3	c		10	-	200
4	d		10	-	200
5	e		12	-	220
6	f		12	-	220
7	g		20	-	220
8	h		12	-	220
9	i		10	-	200
10	j		10	-	200
11	k		20	-	200
12	l		12	-	200
13	m		12	2 NOS.	-
14	q		8	-	200

M.S. BARS (MESH REINFORCEMENT IN LONGITUDINAL GIRDER)

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Nos. of Bars
1	u		8	16 NOS.
2	v		8	16 NOS.

SCHEDULE OF REINFORCEMENT FOR LONGITUDINAL GIRDERS (PER SPAN)

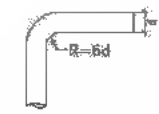
Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Spacing of Bars	Nos. of Bars
1	q1		16	300	-
2	q2		18	100	-
3	q1		18	150	-
4	b2		12	150	-
5	c1		18	-	8
6	d1		16	-	8
7	q1		10	-	32
8	11		10	-	40
9	g1		52	-	20
10	g2		32	-	20
11	g1		32	-	12
12	g1		32	-	8
13	11		10	-	10
14	j1		18	300	-
15	j2		18	100	-
16	k1		18	150	-
17	k2		12	150	-
18	n2		10	-	10
19	n3		10	-	10

SCHEDULE OF REINFORCEMENT (CROSS GIRDERS) PER SPAN

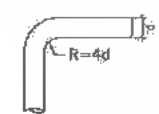
Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Spacing of Bars	Nos. of Bars/Order	Nos. of Bars/Span
1	b2		20	-	2	4
2	b2		20	-	2	4
3	b3		20	-	2	4
4	c2		16	-	5	12
5	d2		18	-	2	4
6	e2		16	-	2	4
7	f2		16	150	-	-
8	g7		20	-	2	2
9	k2		20	-	2	2
10	k3		20	-	2	2
11	k3		20	-	4	4
12	j2		20	-	2	2
13	11		12	200	-	-
14	m3		12	-	8	-
15	n4		16	-	-	-

NOTES :

- THE EXACT LENGTH OF THE BARS WILL BE DETERMINED BY THE ACTUAL LAPS WITH SPLICES ADOPTED AT SITE.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - GENERAL NOTES DRG. NO. SAI-213007/DPR/C/B/TYP/GEN
 - GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-01
 - REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-02
 - REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-03
 - REINFORCEMENT DETAILS OF DECK SLAB DRG. NO. SAI-213007/DPR/C/B/MIN/25.180/SUP-04



d = Dia of bar
For bar above 25mm dia



d = Dia of bar
For bar upto 25mm dia

M.S. BARS (MESH REINFORCEMENT IN CROSS GIRDERS)

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Spacing of Bars	Nos. of Bars/Order	Nos. of Bars/Span
1	u1		8	-	24	24
2	v1		8	-	24	24

DATE: 2019/07/29 - 2:22 PM
PATH: T:\CA\140 2017 BIHAR\REVISED DPR\EN\PACKAGE-2\MINGR BRIDGE\01 CH.25+180\SUPER STR.16.5m span\05_SCHEDULE 16.50m.dwg

Bihar State Road Development Corporation Limited (BSRDEL)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

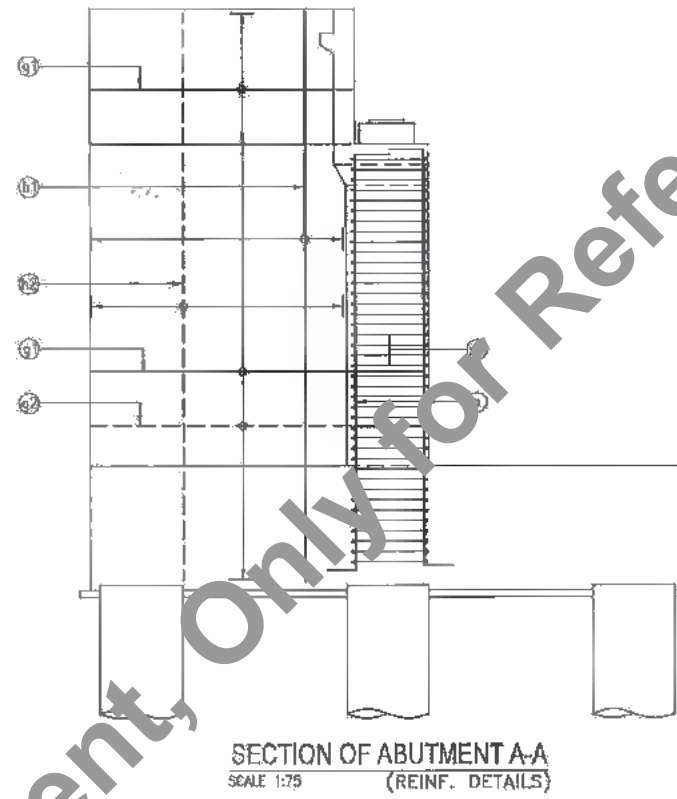
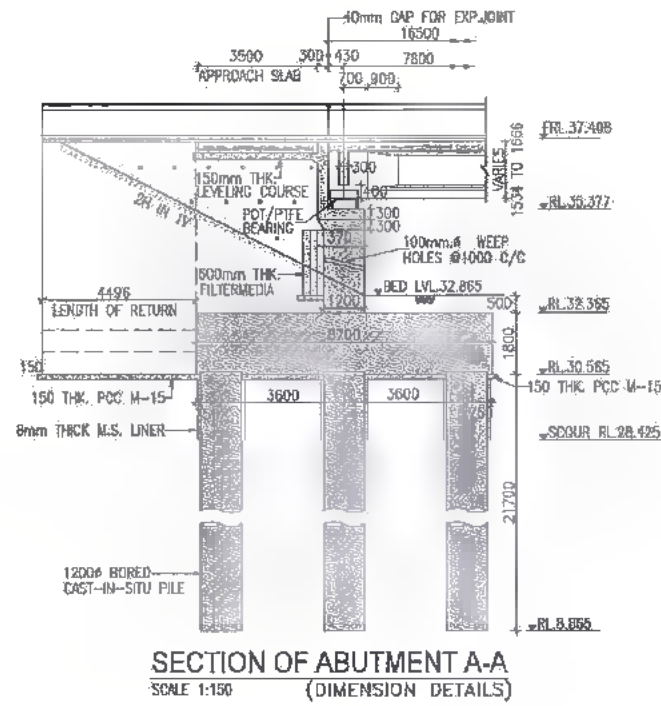
CONSULTANTS :
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

PE	31/07/16	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY : D.M.S.	TITLE : RAUTA-MAHADEV DIGHI CHOWK (PACKAGE-8)
PD	17/12/15	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : N.K.S.	REINFORCEMENT SCHEDULE FOR RCC T-BEAM SUPER STRUAT EXI.
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : B.R.V.	CH. 25/282 & PROP. CH. 25+180
PA	26/02/14	ISSUED WITH FINAL DOPR		
PA	15/11/13	ISSUED WITH DOPR		

DRG. NO. :
SAI-213007/DPR/C/B/MIN/25.180/SUP-05
REVISION : PE



313
464

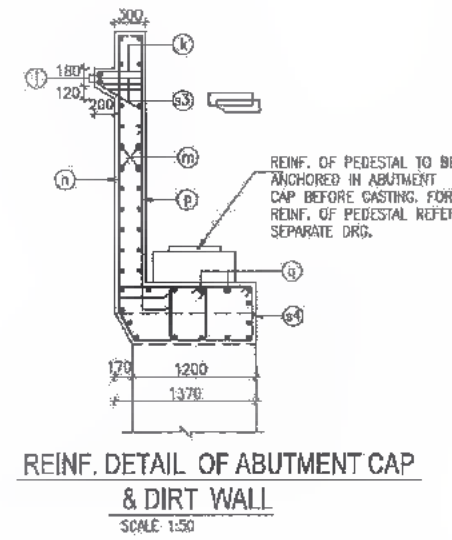


REINF. SCHEDULE FOR RIDING RETURN

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIAM OF BARS (mm.)	SPACING / NOS OF BARS (mm.)
p1	450	16	180 C/C
q2	1800	10	180 C/C
h1	350	18	120 C/C
h2	350	12	180 C/C
v		8	150 D/C

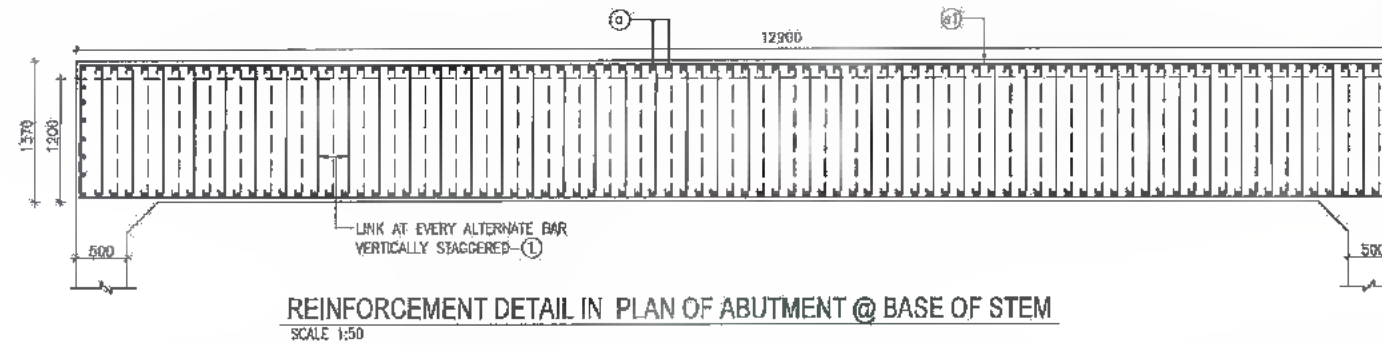
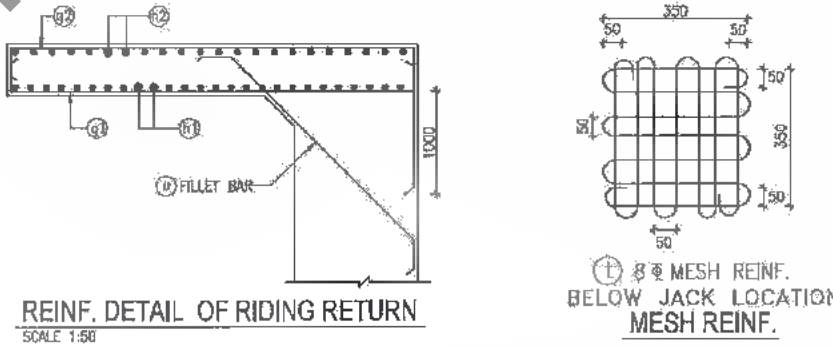
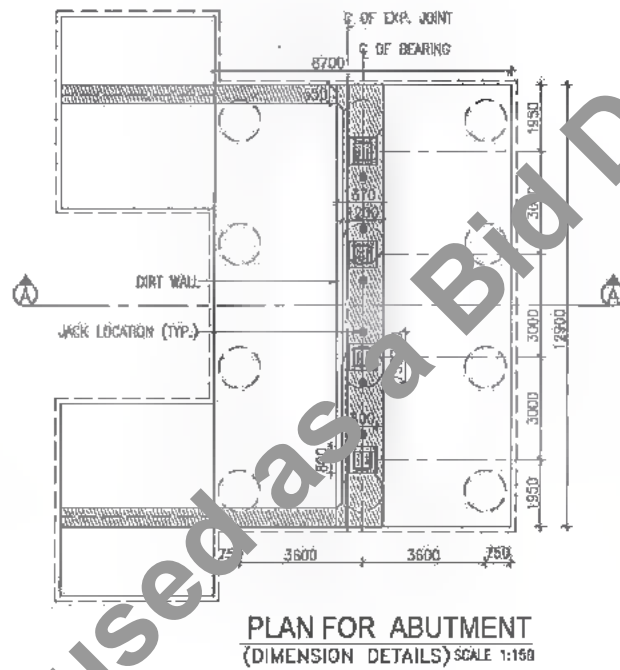
REINF. SCHEDULE FOR ABUTMENT

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIAM OF BARS (mm.)	SPACING / NOS OF BARS (mm.)
a	500	20	140 C/C
L		8	280 C/C
s1		16	130 C/C



REINF. SCHEDULE FOR ABUTMENT CAP

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIAM OF BARS (mm.)	SPACING / NOS OF BARS (mm.)
j		12	2 NOS
k		12	250 C/C
m		10	170 C/C
n		16	250 C/C
p		16	280 C/C
q		16	14 NOS
s3		10	280 C/C
s4		12	150 C/C



NOTES:-

- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHANGES & LEVELS ARE IN METERS.
- ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
- GRADE OF CONCRETE : M-30
- GRADE OF HYSD REINFORCEMENT : Fe-500
- MINIMUM COVER TO ANY REINFORCEMENT SHALL BE (i) 50mm IN ABUTMENT (ii) 75mm IN FOOTING
- MINIMUM COVER TO MESH REINF. SHALL BE 20mm UNLESS OTHERWISE SHOWN IN THE DRAWING.
- IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.6.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 87 TIMES BAR DIAMETER. LAPPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
- THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE TO REPLACE BEARING etc. IS SHOWN THIS @ - THESE SHOULD BE DISTINCTLY ETCHED ON THE CROSS GIRDERS AND PIER/ABUTMENT CAPS.

DATE: 20/07/2019 - 2:23pm PROJECT: BIHAR REVISION D:\PROJECTS\PACKAGE-2\MINOR BRIDGE\01.CH.25*80\SUB STRUCTURE\ABUTMENT & ABUTMENT CAP.dwg



PROJECT: Bihar State Road Development Corporation Limited (BSRDL) (A Government of Bihar Undertaking)

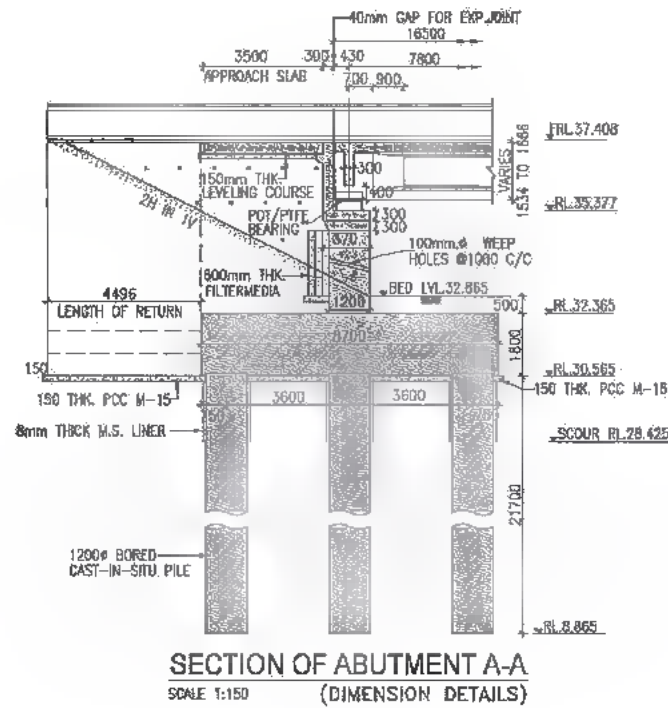
PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company. SYSTRA GROUP. Block-A "SAI House", Sanyam Corporate Square, 8th Bypass, City, Patancheru, Hyderabad-500099. Phone: +91-77-6488207/208 Fax: +91-77-6482299 Email: saic@saicons.com

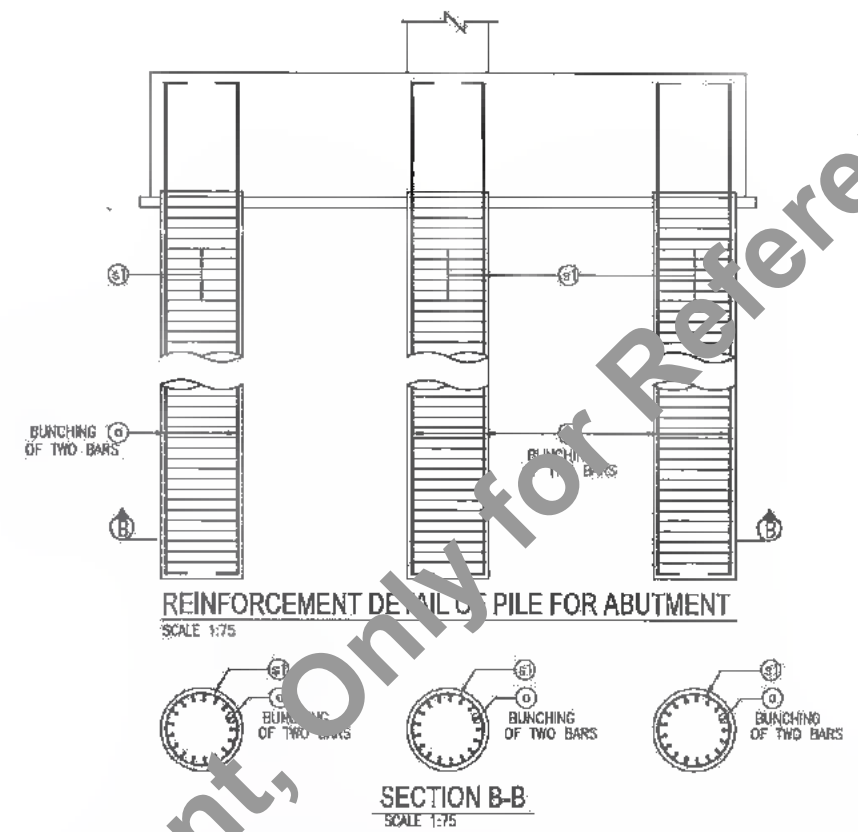
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PD	17/12/19	0000 FOR CONSTRUCTION (DPR)		
PC	10/04/14	0000 FOR CONSTRUCTION (DPR)		
PB	26/02/14	ISSUED WITH FINAL DPR		
PA	13/11/13	ISSUED WITH DPR		

DRWN BY: G.M.G. CHECKED BY: M.K.S. APPROVED BY: S.K.V. TITLE: RAJTA-MAHADEV DIHI CHOKK (PACKAGE-II) REINFORCEMENT DETAILS OF ABUTMENT ABUTMENT CAP & DIRTWALL FOR MINOR BRIDGE AT EXIS. CH.25/292 & PROP. CH. 25+180 DRG. NO.: SAI-213007/DPR/CB/MIN/25.180/SUB-01 REVISION: PE

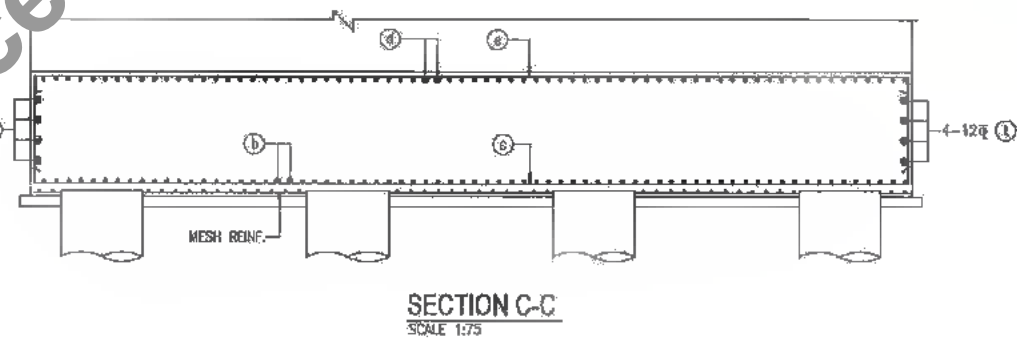




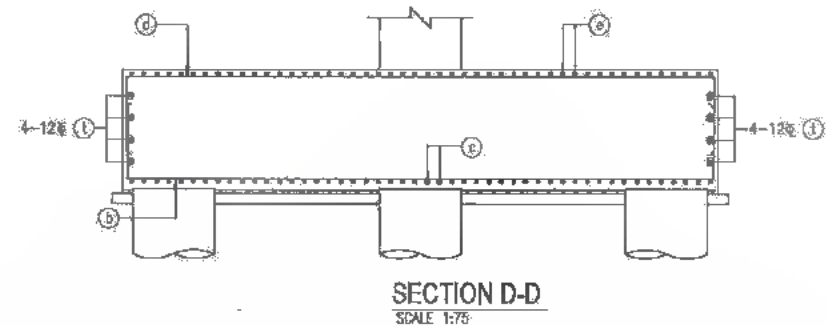
SECTION OF ABUTMENT A-A
SCALE 1:150 (DIMENSION DETAILS)



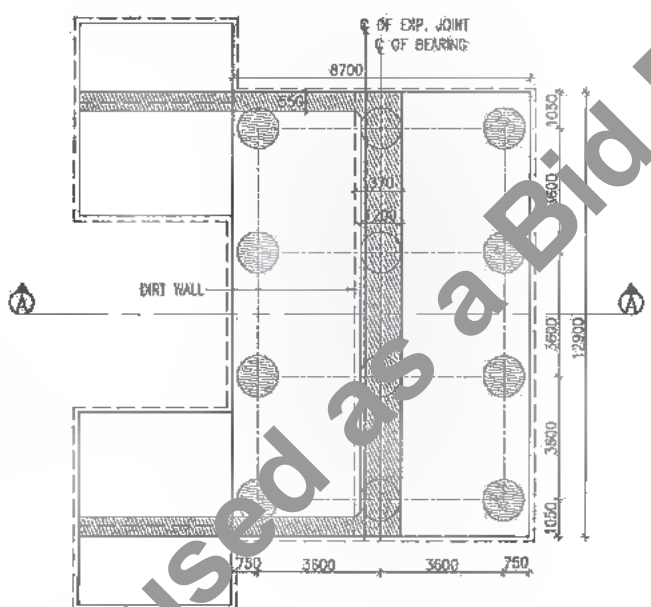
REINFORCEMENT DETAIL OF PILE FOR ABUTMENT
SCALE 1:75



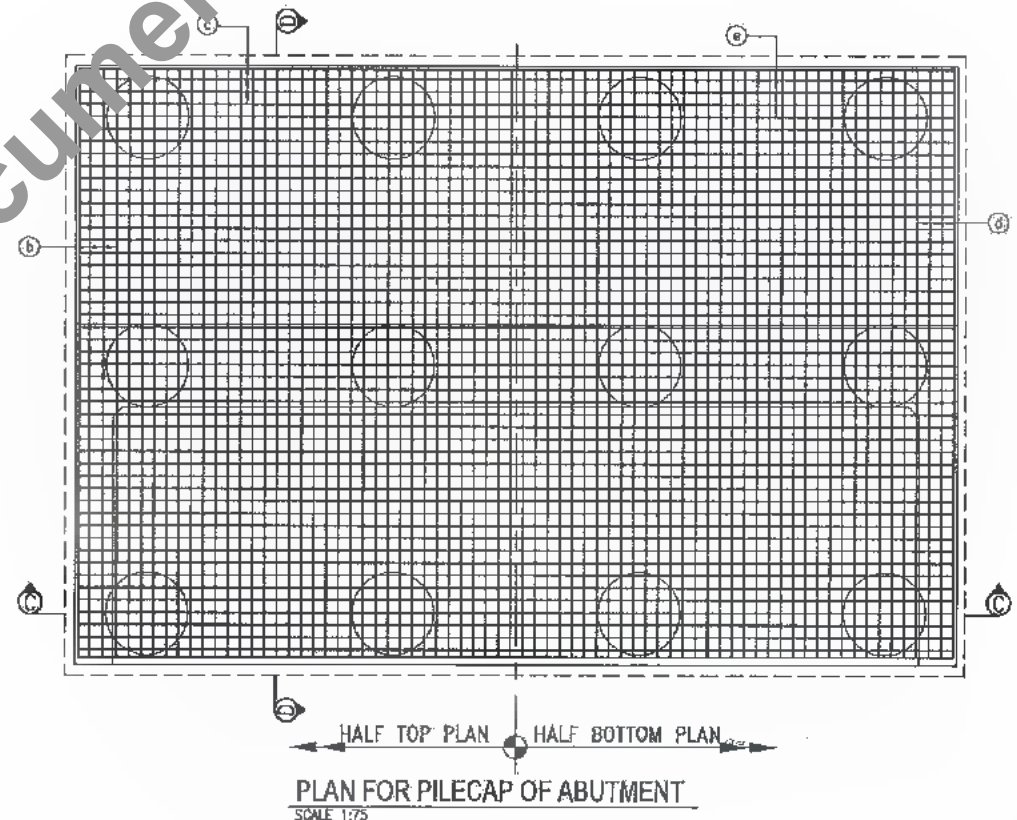
SECTION C-C
SCALE 1:75



SECTION D-D
SCALE 1:75



PLAN FOR ABUTMENT
SCALE 1:150 (DIMENSION DETAILS)



PLAN FOR PILECAP OF ABUTMENT
SCALE 1:75

SCHEDULE OF REINFORCEMENT PER PILE

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MM)	DIA OF BARS (mm.)	SPACING / NO. OF BARS
a	VARIES	32	34 NOS. BUNCHING OF TWO BARS
s1	200	8	150 C/C

SCHEDULE OF REINF. FOR PILE CAP

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MM)	DIA OF BARS (mm.)	SPACING / NO. OF BARS
b	300	25	200 C/C
c	300	16	180 C/C
d	300	16	180 C/C
e	300	16	180 C/C
f		12	16 NOS.

- NOTES:-
- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHAINAGES & LEVELS ARE IN METERS.
 - ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NO DIMENSIONS SHALL BE SCALED.
 - IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.8.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 87 TIMES BAR DIAMETER FOR PIER & SHALL NOT BE LESS THAN 77 TIMES BAR DIAMETER FOR PILE & PILE CAP. LAPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
 - MINIMUM COVER TO ANY REINFORCEMENT SHALL BE (a) IN ABUTMENT 50mm (b) IN FOUNDATION 75mm
 - GRADE OF CONCRETE (a) PILE : M-35 (b) PILE CAP : M-35
 - GRADE OF HYSD REINFORCEMENT : Fe-500

Table Showing Various Parameters of Piles

Existing Chainage	Proposed Chainage	Abutment	Ground Level (m)	Founding Level, FRL (m)	Length of Pile (m)	Top of Pile Cap (m)	Bottom of Pile Cap (m)	Formation Level (m)	Top of Abutment Cap (m)	Top of Abutment (m)	Height of Abutment (m)	Max. Vertical Load		Horizontal Load on Pile			
												Normal (Mton)	Seismic (Mton)	Longitudinal Normal (t)	Transverse Seismic (t)		
25/292	25+180	A1	32.865	8.895	21.700	32.365	30.565	37.408	35.377	34.777	2.412	200.99	215.27	36.53	36.53	36.49	13.19
		A2	32.765	8.895	21.700												

DATE: 2019/07/29 - 2:24 PM
PATH: T:\CAD\TAD 2017 BHARREVISED DPR\CVB\PACKAGE-2\MINOR BRIDGE\01 CH.25+180\SUB STRU\1\02 ABUTMENT PILE & PILE CAP.dwg

PROJECT: Bihar State Road Development Corporation (A Government of Bihar Undertaking)

CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

SAI CONSULTING ENGINEERS PVT. LTD.

SAI SYSTRA GROUP

Block-A "SAI House" Salgama Corporate Square, 5th Phase, Ch. Bahadurganj, Patna - 801 001

Phone : +91-91-6511699/100 Fax : +91-91-6511699 Email : saiconsulting@gmail.com

REV. DATE DESCRIPTION SIGN

PE 31/07/19 GOOD FOR CONSTRUCTION (REVISED DPR)

PD 17/12/18 GOOD FOR CONSTRUCTION (DPR)

PC 10/04/14 GOOD FOR CONSTRUCTION (DPR)

PR 26/02/14 ISSUED WITH FINAL DPR

PR 13/11/13 ISSUED WITH DPR

DRAWN BY : G.M.D.

CHECKED BY : N.K.S.

APPROVED BY : B.R.V.

ISSUED BY : B.S.

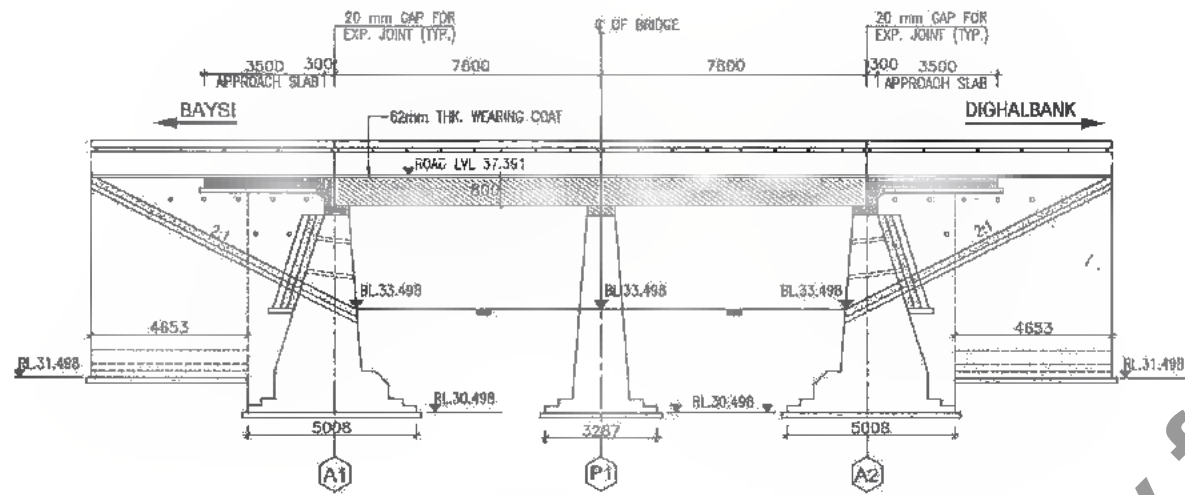
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TITLE: RAJTA-MAHADEV DIGHI CHOWK (PACKAGE-II) REINFORCEMENT DETAILS OF ABUTMENT PILE & PILE CAP ABUTMENT FOR MINOR BRIDGE AT EXIS. CH.25+282 & PROP. CH.25+180

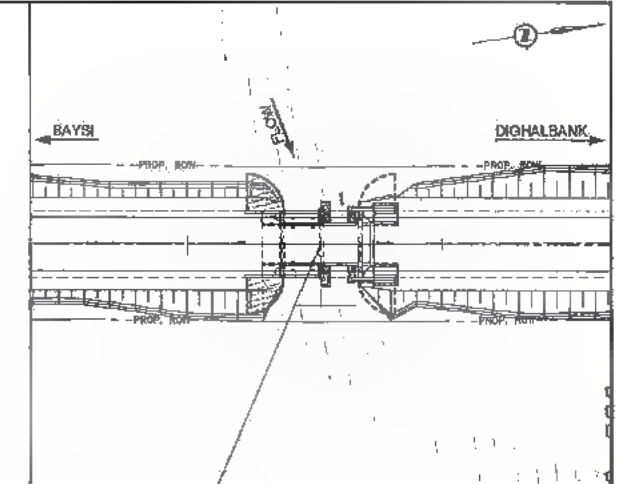
DRG. NO.: SAI-213007/DPR/CH.25+180/SUB-02

REVISION: PE



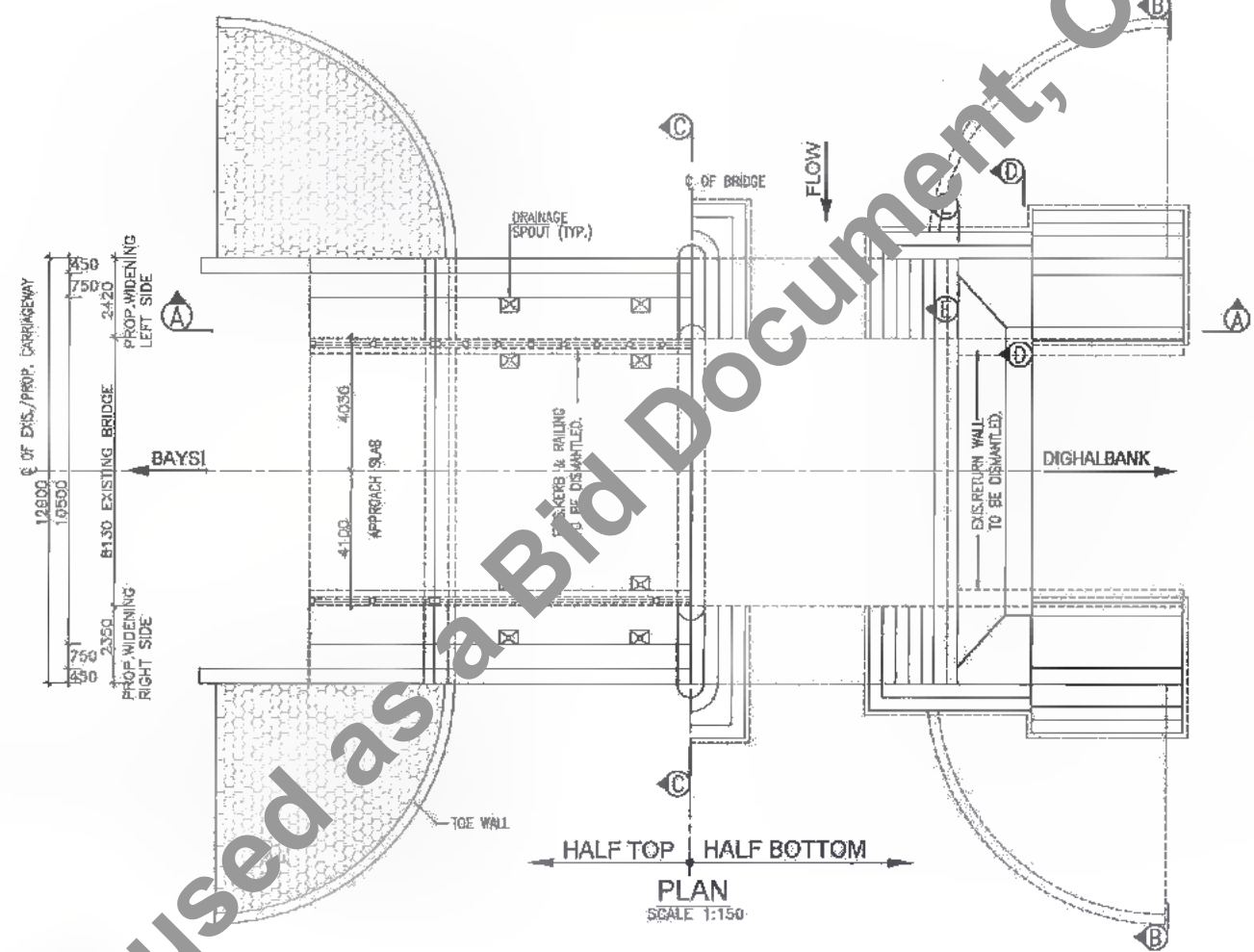


SECTIONAL ELEVATION A-A
SCALE 1:150

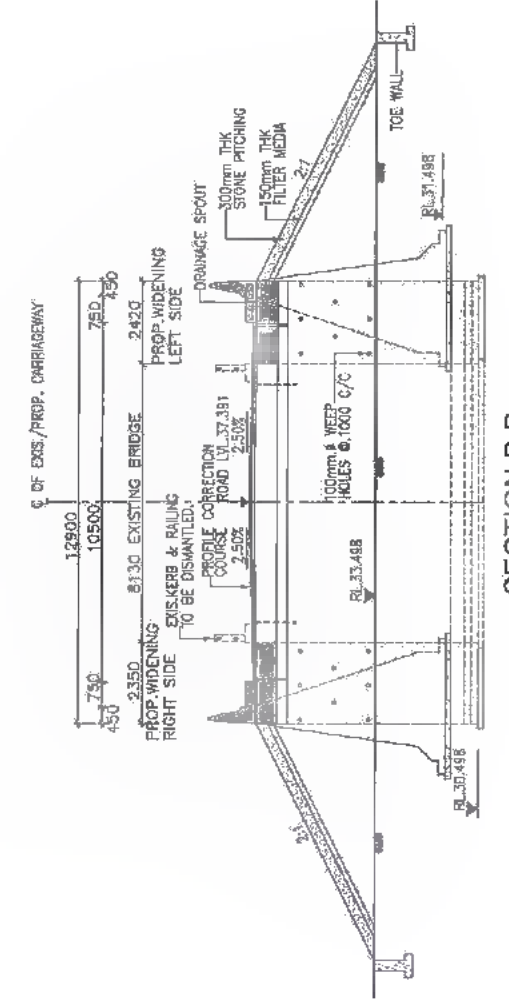


DESCRIPTION	EXISTING	PROPOSED
TYPE OF STR.	MINOR BRIDGE	MINOR BR. (WIDENING)
STR. NO.	-	30/4
CHANNAGE	30/083	29+826
SIZE	2x7.80m	2x7.80m

KEY PLAN



PLAN
SCALE 1:150

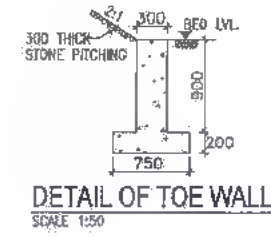


SECTION B-B
SCALE 1:150

REFERENCE DRAWINGS

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS
 - GENERAL NOTES REFER DRG NO. SAI-213007/DPR/C/B/GEN
 - DETAILS OF FILLER TYPE EXPANSION JOINT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-01
 - APPROACH SLAB & DRAINAGE SPOUT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-02
 - TYPICAL DRAWING FOR RCC CRASH BARRIER REFER DRG. NO. SAI-213007/DPR/C/B/TYP-03
 - TYP. DETAILS OF WIDENING OF PCC SUB STRUCTURE REFER DRG. NO. SAI-213007/DPR/C/B/TYP-04
 - REINF. DETAILS OF R.C.C. SOLID SLAB SUPERSTRU. FOR WIDENING OF MINOR BRIDGE AT PROP. CH. 29+826 (7.80M SPAN) REFER DRG. NO. SAI-213007/DPR/C/B/MIN/SUP-02
- GRADE OF HYSD REINFORCEMENT - FE-500.
- TYPE OF BEARING-TAR PAPER
- GRADE OF CONCRETE

ABUTMENT CAP/PIER CAP	RCC-M20
SOLID SLAB	RCC-M25
APPROACH SLAB	RCC-M30
CRASH BARRIER	RCC-M40
SAFETY KERB	RCC-M20
ABUTMENT/PIER	PCC-M20
RETURN WALL	PCC-M20
TOE WALL	PCC-M15
LEVELING COURSE	PCC-M15
- THE FOUNDING LEVEL (RL) OF WIDENING PORTION SHOULD NOT BE HIGHER THAN FOUNDING LEVEL (RL) OF EXISTING BRIDGE.



DETAIL OF TOE WALL
SCALE 1:50

DATE: 20/07/2019 2:26pm
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Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House", Baysan Corporate Square, Bih Bahadurganj, Bahadurganj, Bihar-800011, India
Phone : +91-91-2415262/7100 Fax : +91-79-6642890
Email : sai@saiconsulting.com

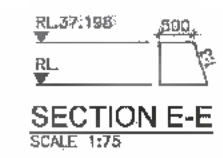
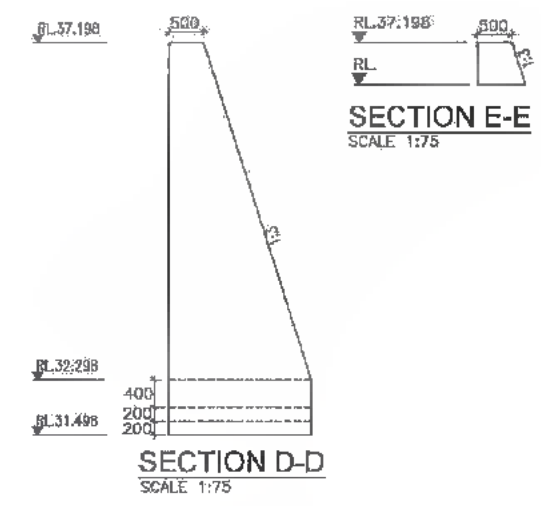
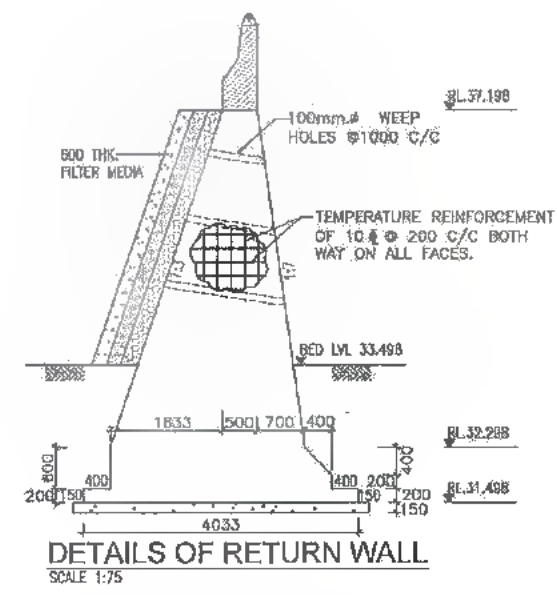
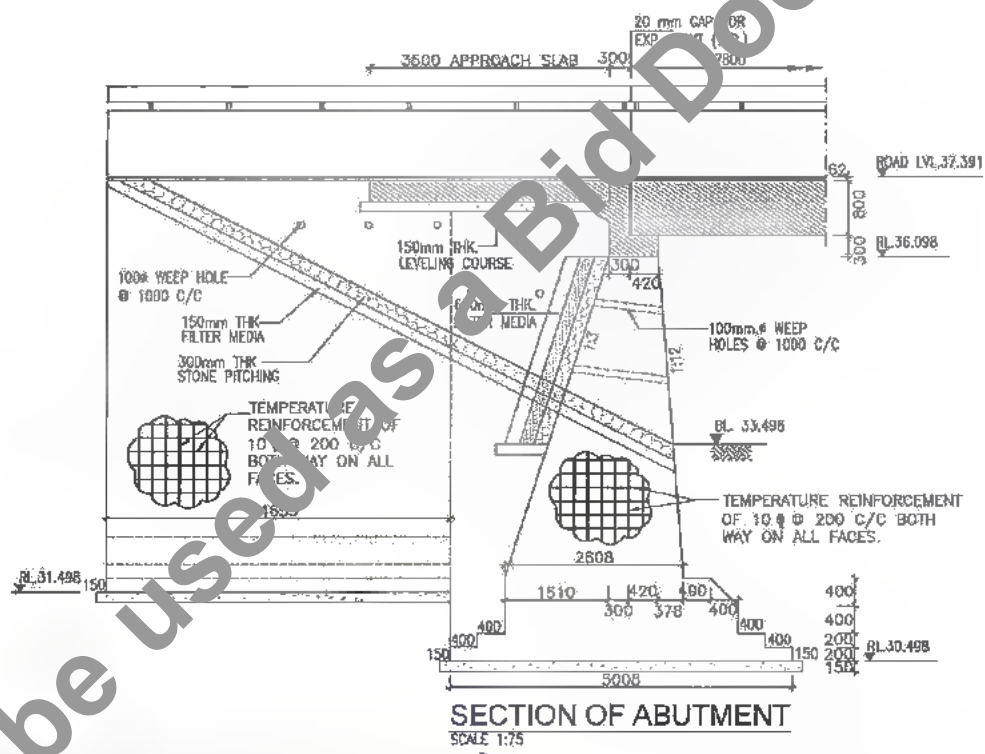
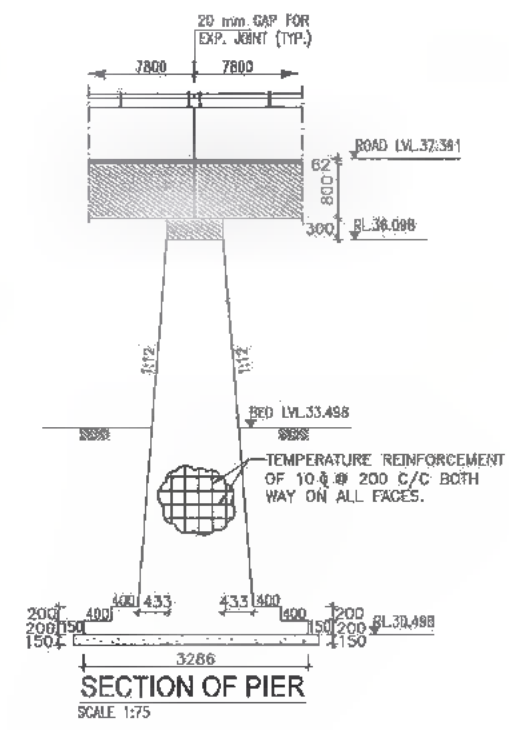
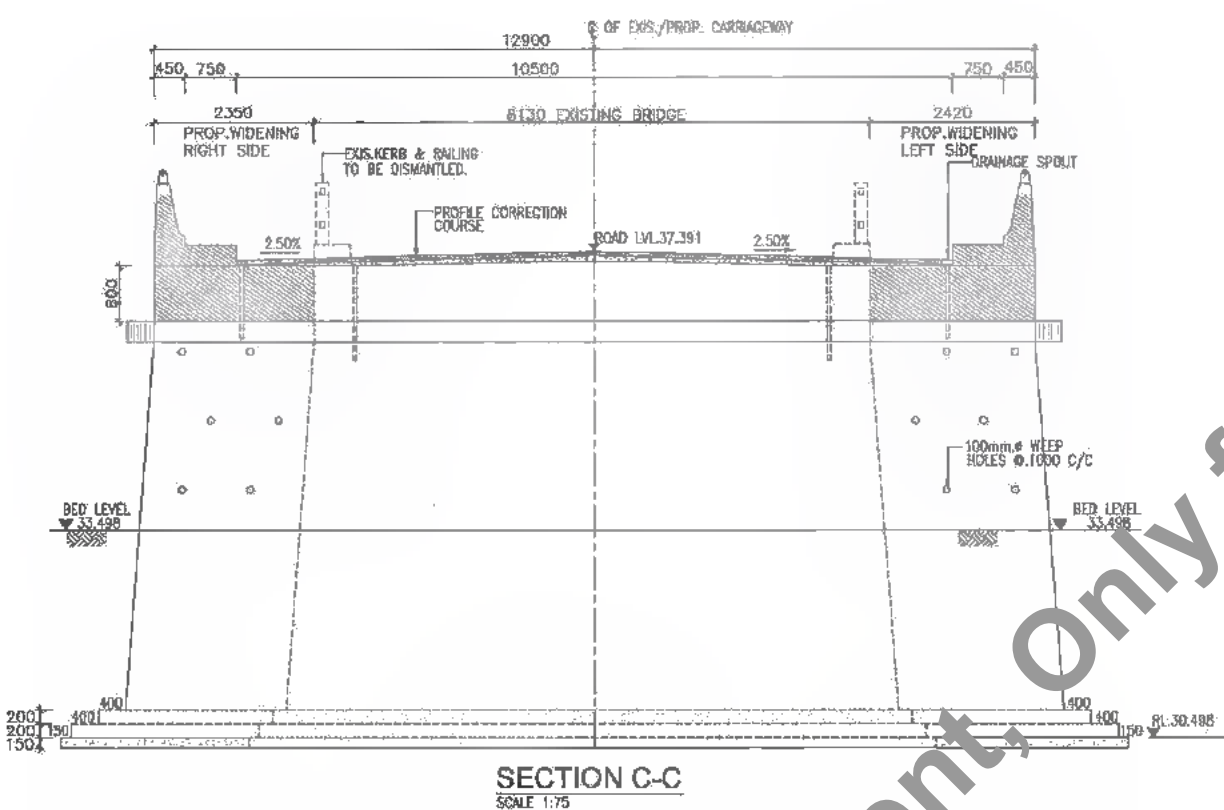
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PF	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PE	17/12/18	GOOD FOR CONSTRUCTION (DPR)		
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PC	25/02/14	ISSUED WITH FINAL DPR		
PB	01/01/14	APPROVAL OF DPR		

TITLE: RAUTA-MAHADEY DIGHI GHOWK (PACKAGE-II)
GAD FOR WIDENING OF MINOR BRIDGE AT EXI. CH.30/083 & PROP. CH. 29+826

DRG. NO.: (SHEET 1 OF 2)
SAI-213007/DPR/C/B/MIN/GAD-02

REVISION: PF





DATE: 20/10/19 - 2:25pm
PATH: C:\Users\bsrdcl\appdata\local\temp\AcPublish\2860\102_GAO_CH_29+826 (WIDENING).dwg

Not to be used as a Bid Document, Only for Reference

CLIENT:


Bihar State Road Development Corporation Limited (BSRDCL)
 (A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:

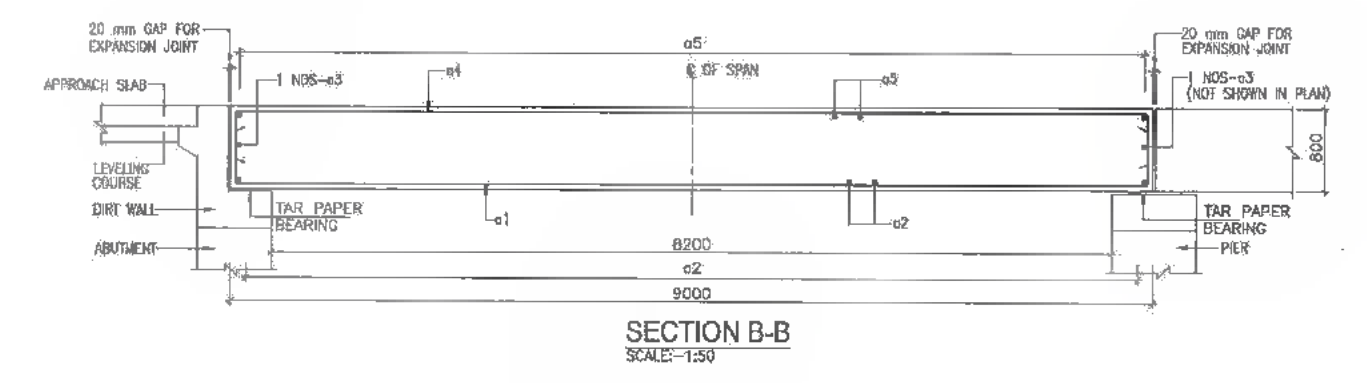
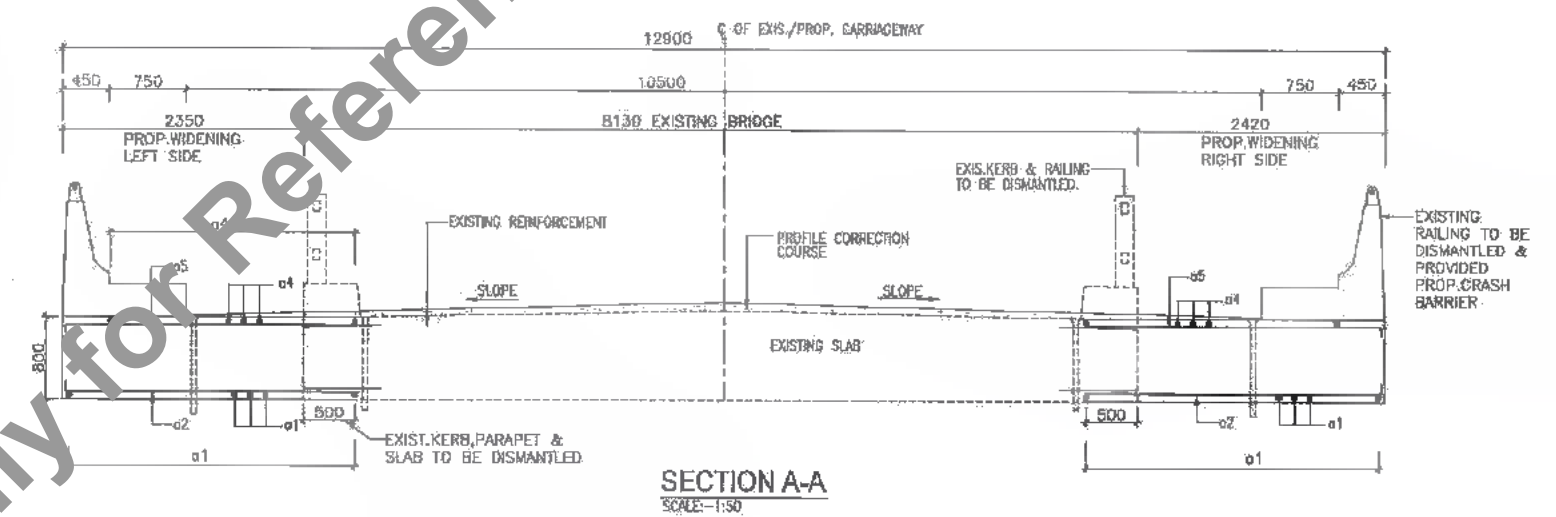
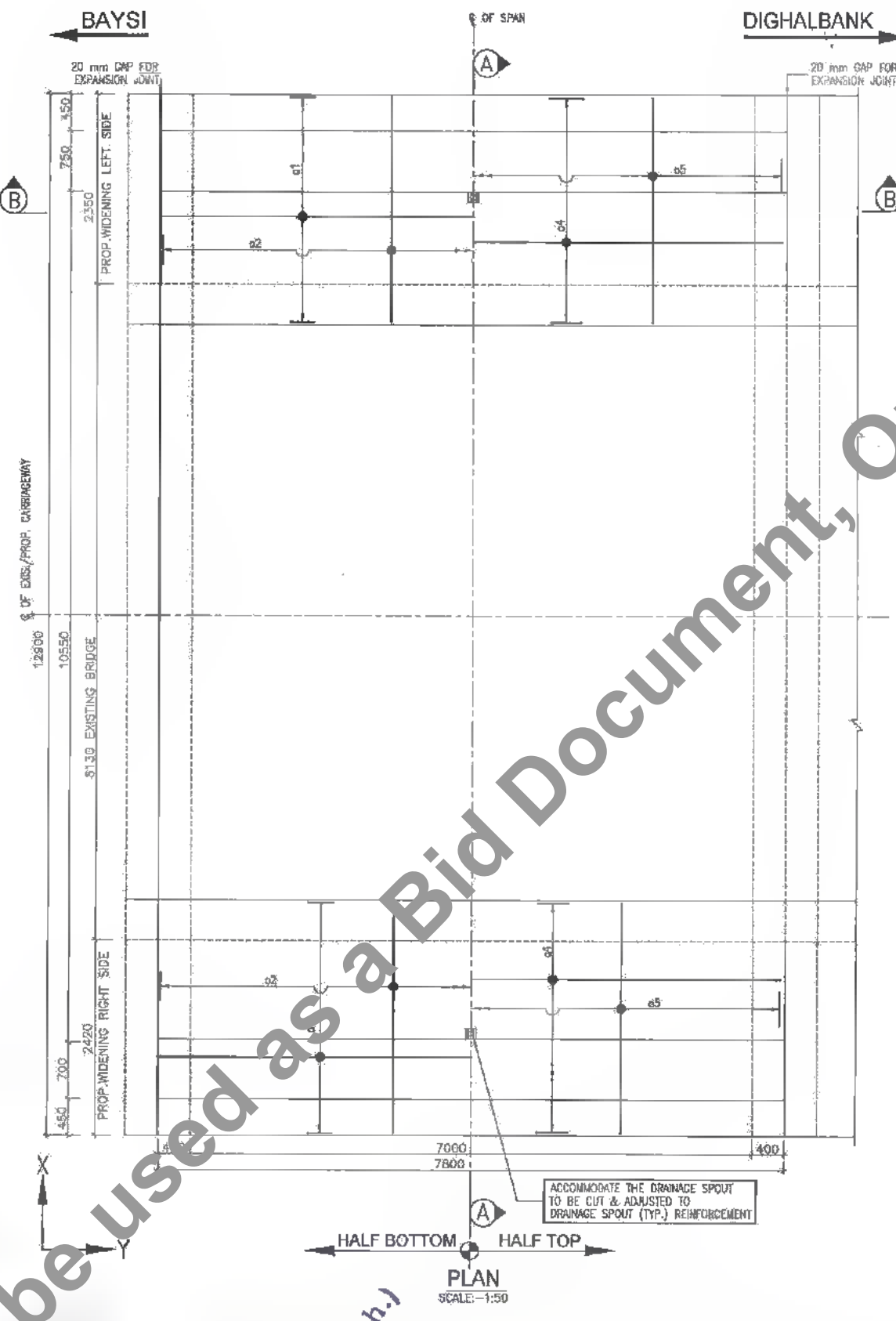
SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
Block-A 'SAI House', Sector-3, Indira Park, Patna-800015, Bihar
 Ph: +91-91-2662601/2662602 Fax: +91-91-2662603
 Email: mail@saiindia.com

REV.	DATE	DESCRIPTION	BY
PF	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	
PC	17/12/18	GOOD FOR CONSTRUCTION (DPR)	
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)	
PE	25/02/14	ISSUED WITH FINAL DPR	
PI	01/01/14	ADDENDUM OF DPR	


SAI CONSULTING ENGINEERS PVT. LTD.
 DRAWN BY : C.M.G.
 CHECKED BY : N.K.S.
 APPROVED BY : B.R.V.
 ISSUED BY : B.S.
 TITLE: RAUTA-MAHADEV DIGHI CHOKH (PACKAGE-II)
GAD FOR WIDENING OF MINOR BRIDGE AT EXL CH.30/D83 & PROP. CH. 29+826
 DRG. NO.: (SHEET 2 OF 2)
 SAI-213007/DPR/CB/MIN/GAD-02
 REVISION: PF

317
980

DATE: 20/07/29 - 2:25pm
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SCHEDULE OF REINFORCEMENT (PER SPAN)

S.R. NO.	LOCATION	BAR MKD.	SHAPE	DIA. (mm)	SPACING (mm)
1	SLAB-BOTTOM ALONG-X	a1		25	120
2	SLAB-BOTTOM ALONG-Y	a2		10	180
3	SLAB-SIDE ALONG-Y	a3		10	2 Nos
4	SLAB-TOP ALONG-X	a4		10	300
5	SLAB-TOP ALONG-Y	a5		10	300

- REFERENCE DRAWINGS**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS
 - GENERAL NOTES REFER DRG. NO. SAI-213007/DPR/C/B/GEN
 - DETAILS OF FILLER TYPE EXPANSION JOINT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-01
 - APPROACH SLAB & DRAINAGE SPOUT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-02
 - TYPICAL DRAWING FOR RCC CRASH BARRIER REFER DRG. NO. SAI-213007/DPR/C/B/TYP-03
 - GAD FOR WIDENING OF MINOR BRIDGES PROP. CH.29+826 REFER DRG. NO. SAI-213007/DPR/C/B/MIN/GAD-02 (SHEET 1 OF 2 & 2 OF 2)



Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

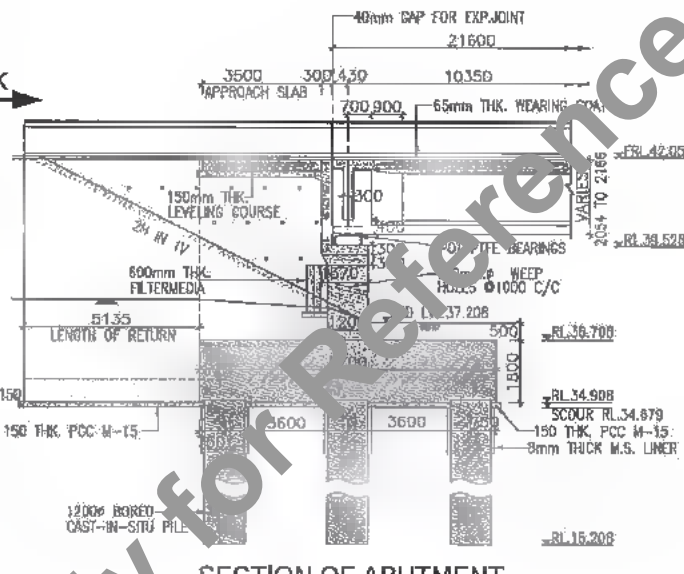
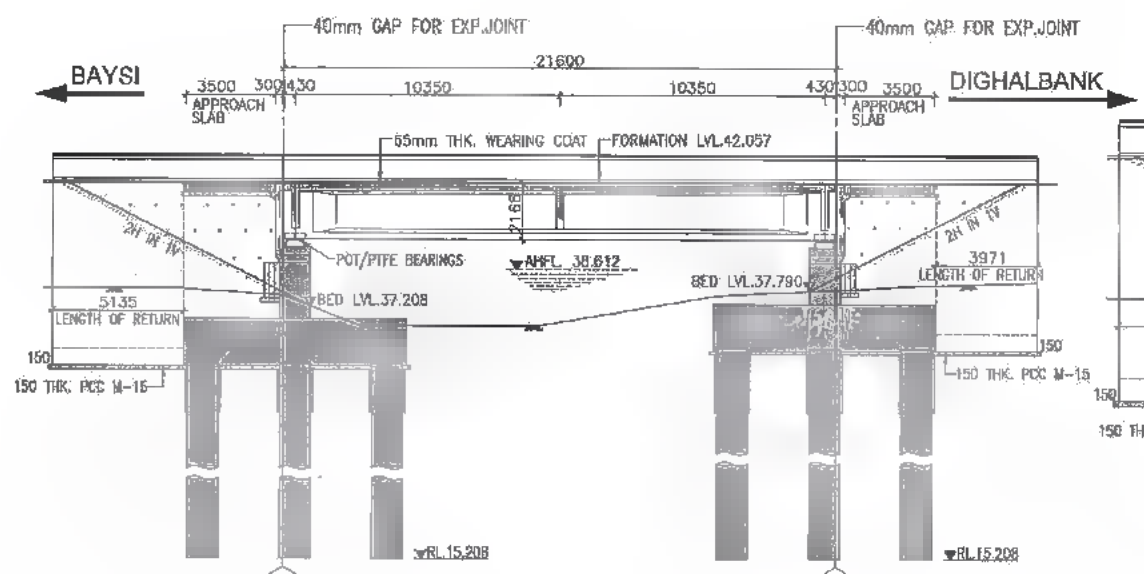
PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

REV.	DATE	DESCRIPTION	ISSN	ISSUED BY
PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)		
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PB	26/02/14	ISSUED WITH FINAL DOPR		
PA	12/11/13	ISSUED WITH DOPR		

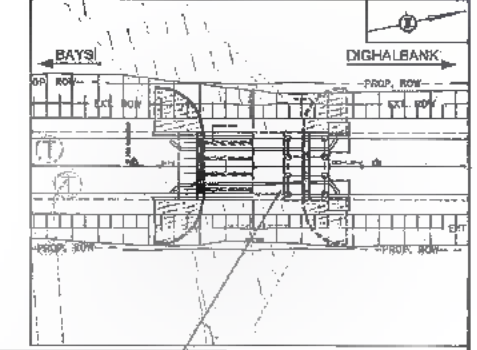
DRG. NO.:
SAI-213007/DPR/C/B/MIN/SUP-02

REVISION: PE



RL. 37.790 EXIST. CH. 35.980
BORE HOLE NO. A-2

DEPTH (m)	NOTATION	SOIL DESCRIPTION	SPT N VALUE	CORE RECOVERY %	SOIL %
37.790					
36.790			N=0		
35.790			N=0		
34.790			N=10		
33.790			N=12		
32.790			N=15		
31.790			N=15		
30.790			N=19		
29.790			N=21		
28.790			N=20		
27.790			N=26		
26.790			N=31		
25.790			N=33		
24.790			N=39		
23.790			N=48		
22.790			N=50		
21.790			N=62		
20.790			N=66		



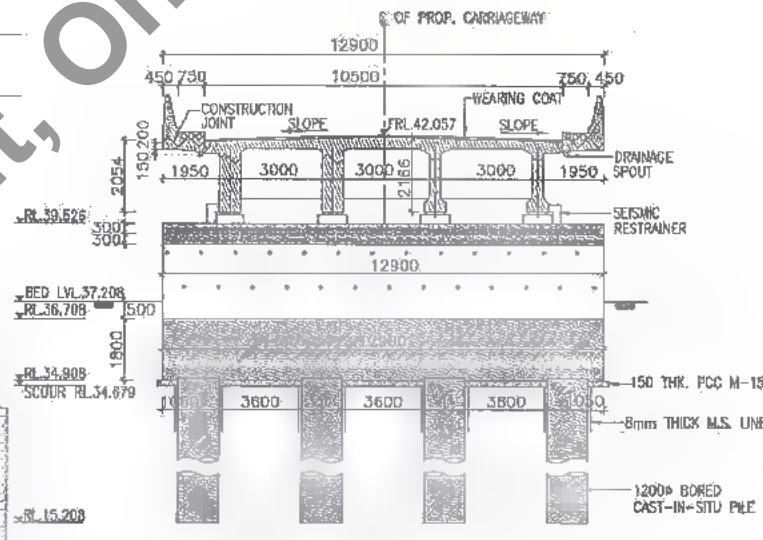
DESCRIPTION	EXISTING	PROPOSED
TYPE OF BRIDGE	MINOR BRIDGE	MINOR BRIDGE
SPAN	36/75	36/75
CHANGING	35+750	35+750
SCALE	1:200	1:200

- NOTES:-**
- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED) & CHANGES ARE IN METRES. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
 - THE FOLLOWING LOADS HAVE BEEN CONSIDERED IN THE DESIGN:-
 - FOR TWO LANE CARRIAGEWAY ONE LANE OF IRC CLASS 70R OR TWO LANES OF IRC CLASS A PLUS FOOTPATH, WHICHEVER GOVERNS.
 - FOR THREE LANE CARRIAGEWAY ONE LANE OF 70R PLUS ONE LANE OF CLASS A OR THREE LANES OF CLASS A WHICH EVER GOVERNS.
 - ELASTOMERIC STRIP SEAL TYPE JOINT SHALL BE PROVIDED. DETAILS SHALL BE AS PER MANUFACTURERS DRAWINGS.
 - BACKFILL MATERIAL BEHIND ABUTMENT SHALL BE SELECTED, SOIL HAVING PROPERTIES AS C = 0.05 KG/SQ.CM., $\phi \geq 30^\circ$, $\gamma = 1750$ KG/CUM.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - GENERAL NOTES DRG. NO. SAI-213007/DPR/C/B/TYP/BEN
 - GAD FOR SUPER STRUCTURE SAI-213007/DPR/C/B/MIN/35.755/SUP-01
 - REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO. SAI-213007/DPR/C/B/MIN/35.755/SUP-02
 - REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO. SAI-213007/DPR/C/B/MIN/35.755/SUP-03
 - REINFORCEMENT DETAILS OF DECK SLAB DRG. NO. SAI-213007/DPR/C/B/MIN/35.755/SUP-04
 - SCHEDULE OF REINFORCEMENT DRG. NO. SAI-213007/DPR/C/B/MIN/35.755/SUP-05
 - DIMENSIONS & REINF. DETAILS FOR ABUTMENT & ABUTMENT GAP FOR MINOR BRIDGE AT PROP. CH. 35+755 DRG. NO. SAI-213007/DPR/C/B/MIN/35.755/SUB-01
 - DIMENSIONS & REINF. DETAILS FOR PILE & PILE CAP OF ABUTMENT FOR MINOR BRIDGE AT PROP. CH. 35+755 DRG. NO. SAI-213007/DPR/C/B/MIN/35.755/SUB-02
 - DETAILS OF APPROACH SLAB & DRAINAGE SPOUT DRG. NO. SAI-213007/DPR/C/B/TYP-02
 - TYP. DETAILS OF R.C.C. CRASH BARRIER DRG. NO. SAI-213007/DPR/C/B/TYP-03
 - TYPICAL DETAILS OF SEISMIC RESTRAINER DRG. NO. SAI-213007/DPR/C/B/TYP-05
 - DETAILS OF SCHEMATIC ARRANGEMENT AND DESIGN FORCES OF POT/PIFE BEARINGS OF RCC T-BEAM SUP. STR. DRG. NO. SAI-213007/DPR/C/B/TYP-06
 - DIMENSIONS & REINF. DETAILS OF RCC RETURN WALL DRG. NO. SAI-213007/DPR/C/B/TYP-07

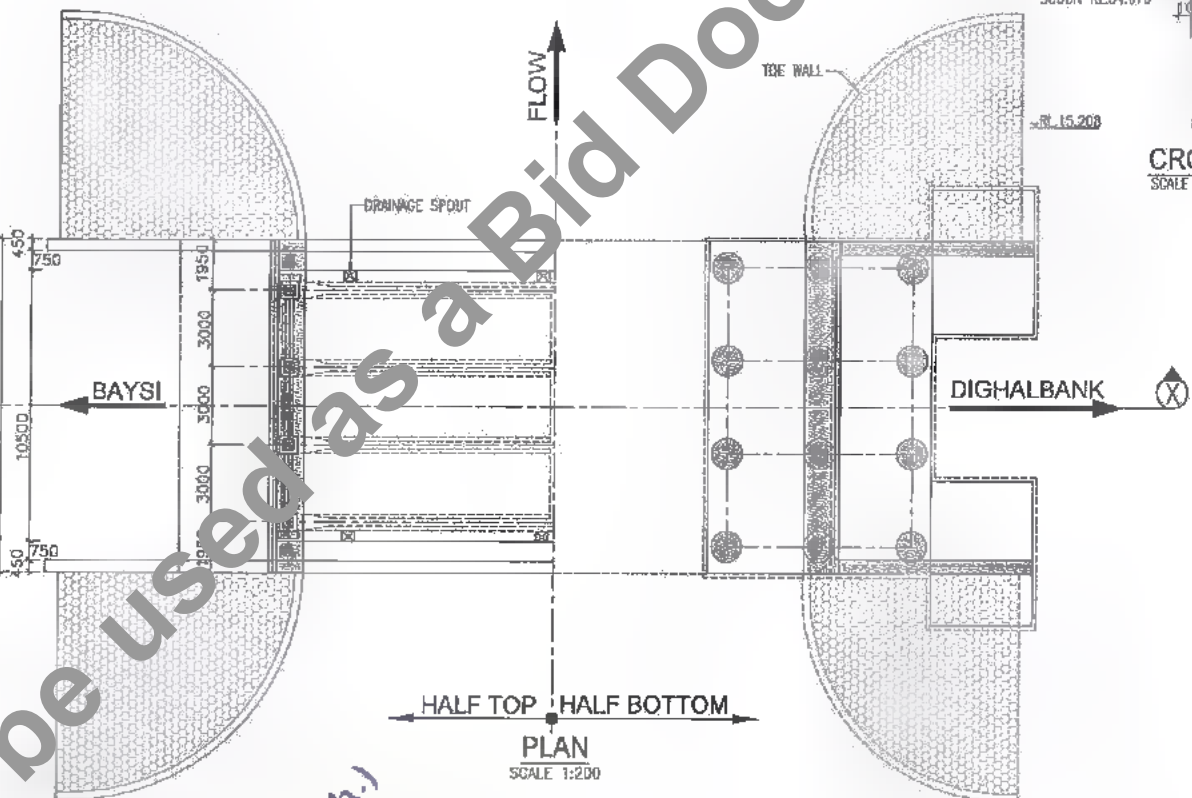
LEVEL DATUM = 25

GROUND LEVEL AT (m)	DRAINAGE (m)
-35740	-35740
-35742	-35742
-35744	-35744
-35747	-35747
-35750	-35750
-35754	-35754
-35755	-35755
-35758	-35758
-35761	-35761
-35765	-35765
-35767	-35767
-35769	-35769

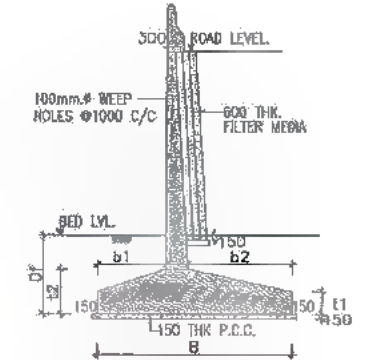
SECTIONAL ELEVATION X-X
SCALE 1:200



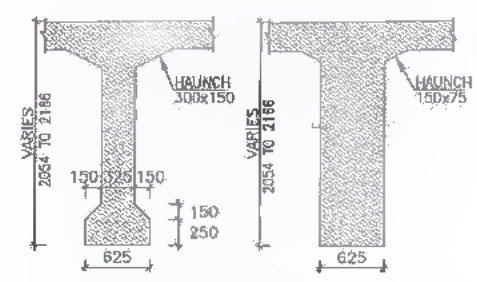
CROSS SECTION OF NEAR ABUTMENT
SCALE 1:150



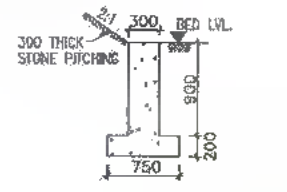
PLAN
SCALE 1:200



SECTION OF RETURN WALL
SCALE 1:150



DETAILS OF R.C.C. GIRDER
SCALE 1:50



DETAIL OF TOE WALL
SCALE 1:50

DATE: 2019/07/29 - 2:36pm
PATH: T:\CADD\AD 2\07 BIHARREVISED DPR\PACKAGE-2\MINOR BRIDGE\03 CH.35+755\1\03 GAD CH.35+755.dwg



Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

D. B. Singh (Tech.)
PIU-BSRDCL

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

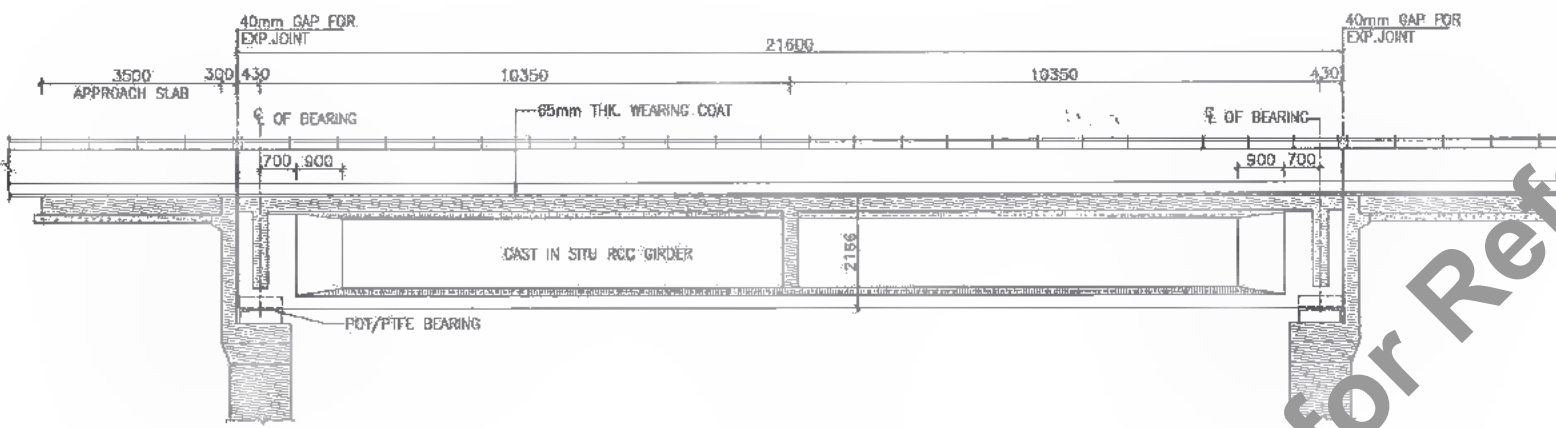
CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House", Satyam Corporate Square, 5th & 6th
Cross, Sector-4, Alhambra-2-380053 Gurgaon, India
Phone : +91-12-6631508/780 Fax : +91-12-6631500
Email : saiconsulting@gmail.com

REV.	DATE	DESCRIPTION	ISSUED BY	SIGN
PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)		
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PA	26/02/14	ISSUED WITH FINAL DPR		
PA	13/11/13	ISSUED WITH DPR		

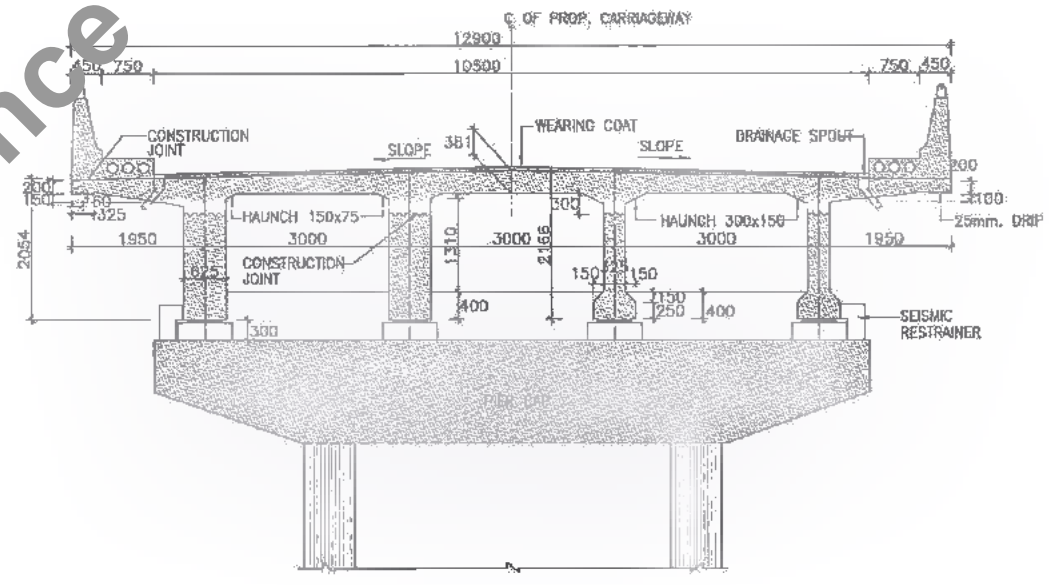
FILE: RAJITA-MAHADEV DIGHALBANK (PACKAGE-II)
GAD FOR RECONSTRUCTION OF MINOR BRIDGE AT EXI. CH.35+800 & PROP. CH. 35+755
DRG. NO. : SAI-213007/DPR/C/B/MIN/GAD-03
REVISION : PE



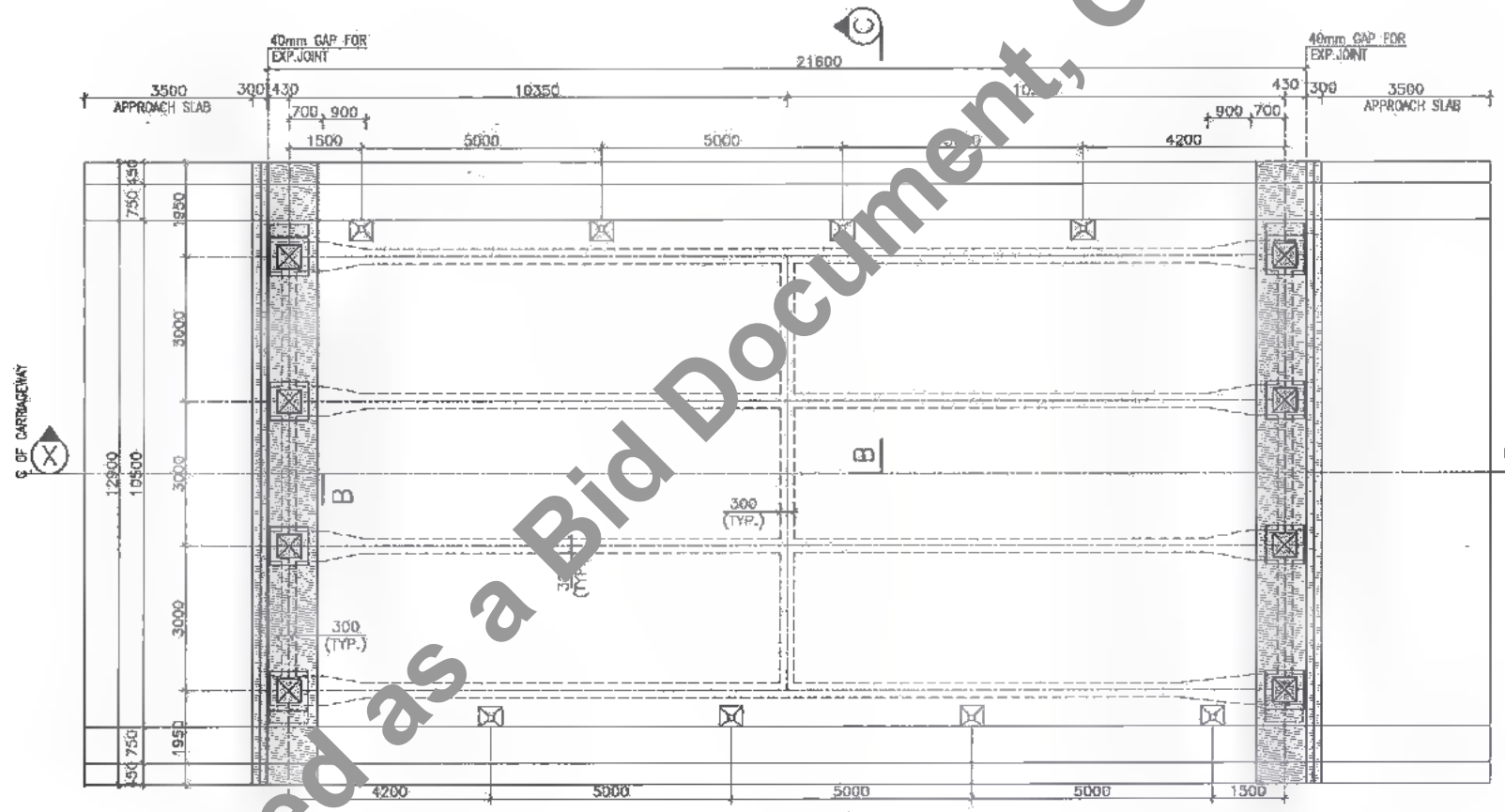
319
458



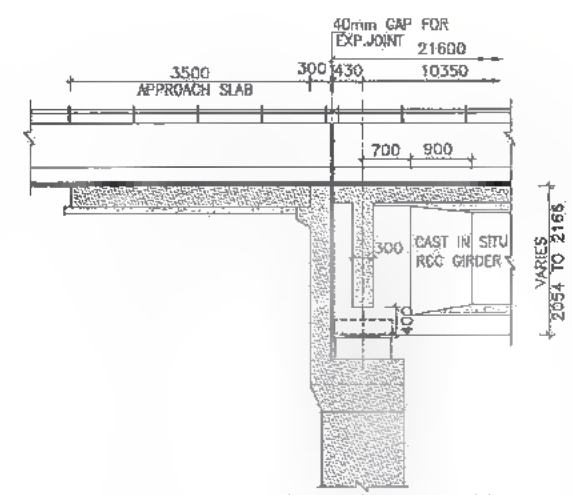
SECTIONAL ELEVATION X-X
SCALE 1:100



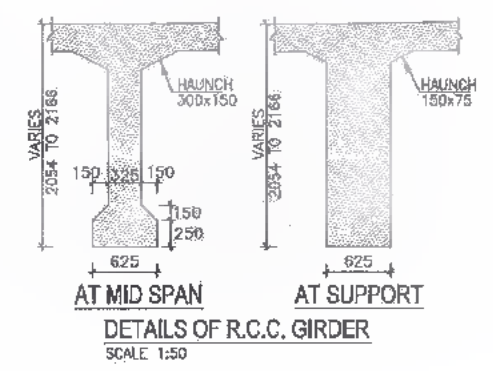
SECTION A-B-C
SCALE 1:75



PLAN
SCALE 1:100



DETAIL OF SUPERSTRUCTURE
AT ABUTMENT LOCATION
SCALE 1:75



AT MID SPAN AT SUPPORT
DETAILS OF R.C.C. GIRDER
SCALE 1:50

NOTES :

1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - b. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO.SAI-213007/DPR/C/B/MN/35.755/SUP-02
 - c. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO.SAI-213007/DPR/C/B/MN/35.755/SUP-03
 - d. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO.SAI-213007/DPR/C/B/MN/35.755/SUP-04
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MN/35.755/SUP-05



DATE: 20/07/2019 2:33pm PATH: FACADITAD\007 BHARREVISED DPR\CB\PACKAGE-2\MINOR BRIDGE\03 CH.35+755\SUPER STR.21.6m span\01 GAD SUP 21.6m.dwg

CLIENT:



Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

D. G. M. (Tech.)
PIU, Kishor

PROJECT:

Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS :



SAL Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

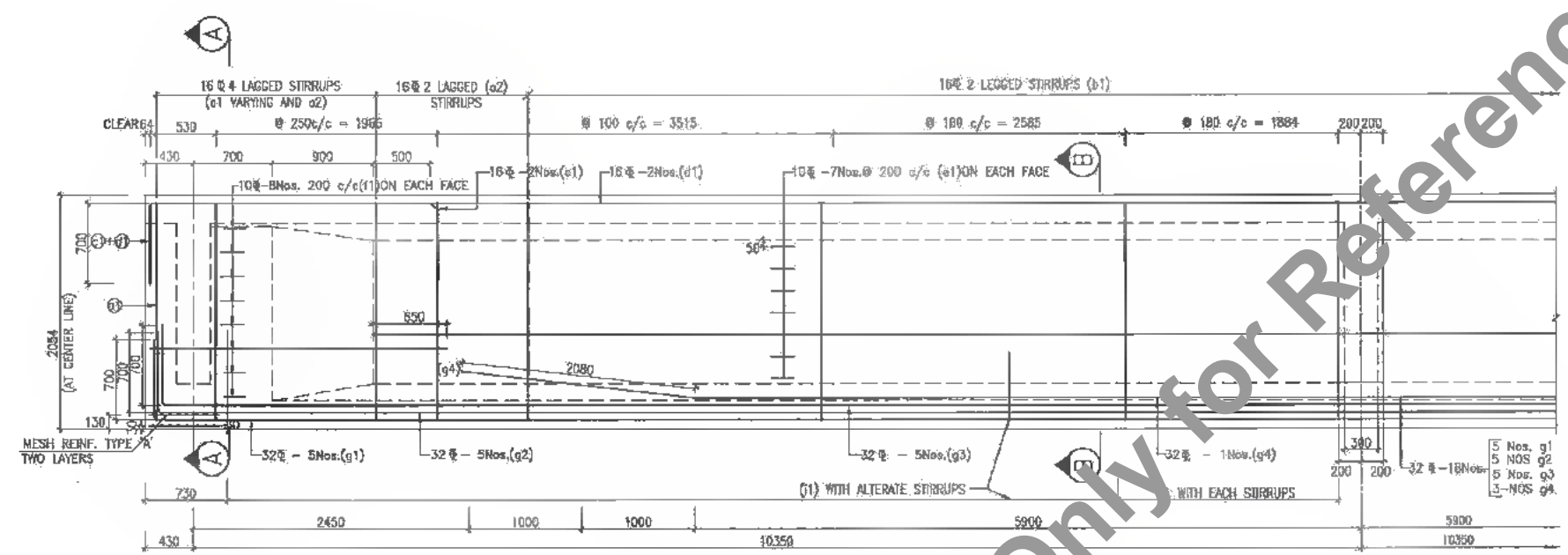
Block-A, "Sai House", Saltora Corporate Square, 8th Rangeh (1st Block), Patna-800015 Bihar, India
Phone : +91-9451124897/30, Fax : +91-9451124900
Email : mail@saiindia.com

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DRAWN BY :	G.M.G.
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY :	N.K.S.
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY :	B.R.V.
PB	26/02/14	ISSUED WITH FINAL DPR	ISSUED BY :	B.S.
PA	13/11/13	ISSUED WITH DPR		

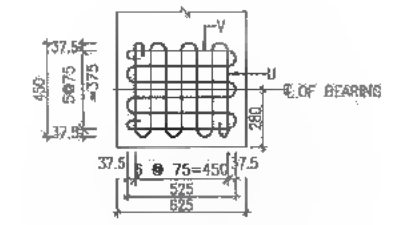
TITLE :	RAUTA-MAHADEY DIGRI GHOWK (PACKAGE-II) GAD FOR RCC T-BEAM SUPER STRU. AT EXL CH. 35+980 & PROP. CH. 35+755
DRG. NO. :	SAI-213007/DPR/C/B/MN/35.755/SUP-01
REVISION :	PE

NOTES :

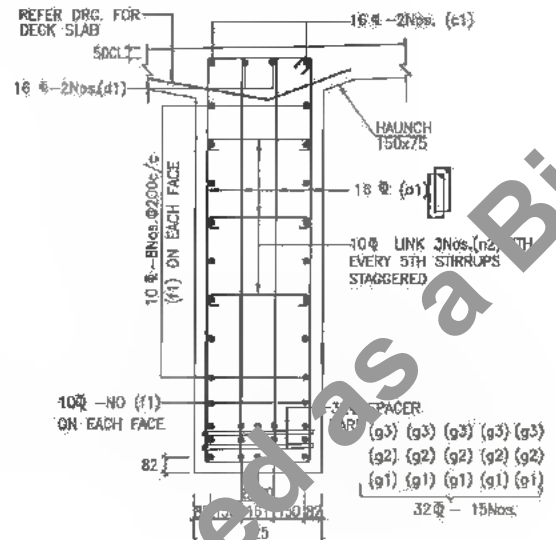
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER.
2. 32 ϕ SPACER BARS SHALL BE PROVIDED @ 1.00m c/c BETWEEN TWO TIERS OF LONGITUDINAL BARS OF GIRDERS.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-01
 - c. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-03
 - d. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-04
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-05



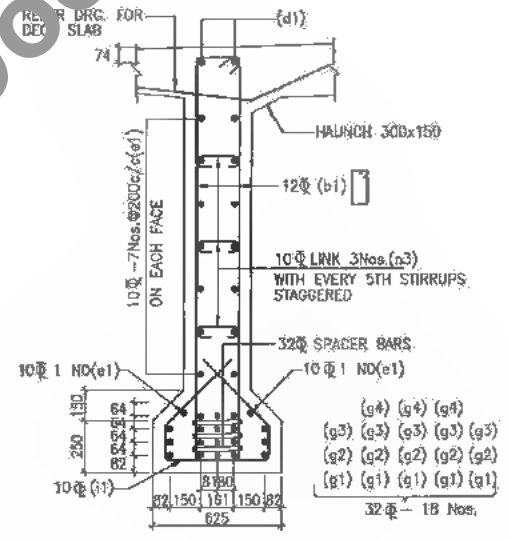
LONGITUDINAL SECTION OF GIRDER
SCALE 1:40



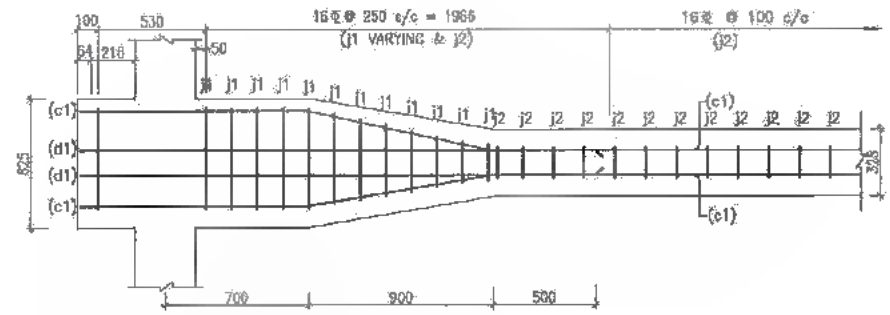
8 ϕ MESH REINFORCEMENTS
TYPE - 'A'



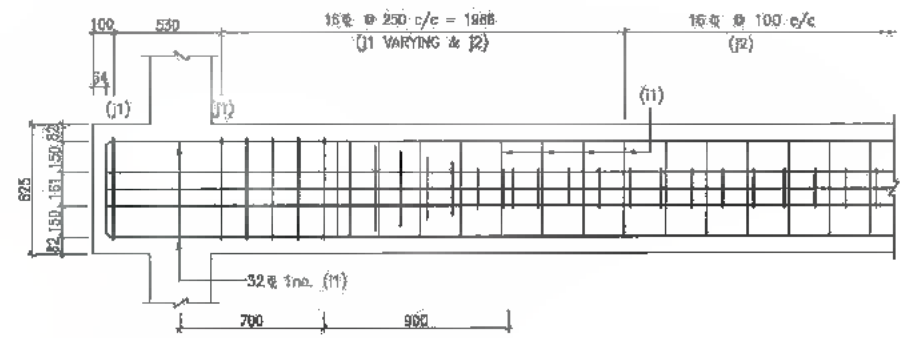
SECTION A-A
SCALE 1:25



SECTION B-B
SCALE 1:25




[INNER GIRDER]
PLAN SHOWING WEB REINF. (TOP) AT THE END
SCALE 1:25



[INNER GIRDERS]
PLAN SHOWING WEB REINF. (BOTTOM) AT THE END
SCALE 1:40

DATE: 2019/07/29 - 7:33PM
PATH: FACAD\FACAD\07 BIHAR\REVISED DPR\CIVIL\PACKAGE-2\MINOR BRIDGE\03 CH.35.755\SUPER STR.21.6m span\102 LONGITUDINAL GIR. 21.6m.dwg

CLIENT:

Bihar State Road Development Corporation Limited (BSRIDC)
 (A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:

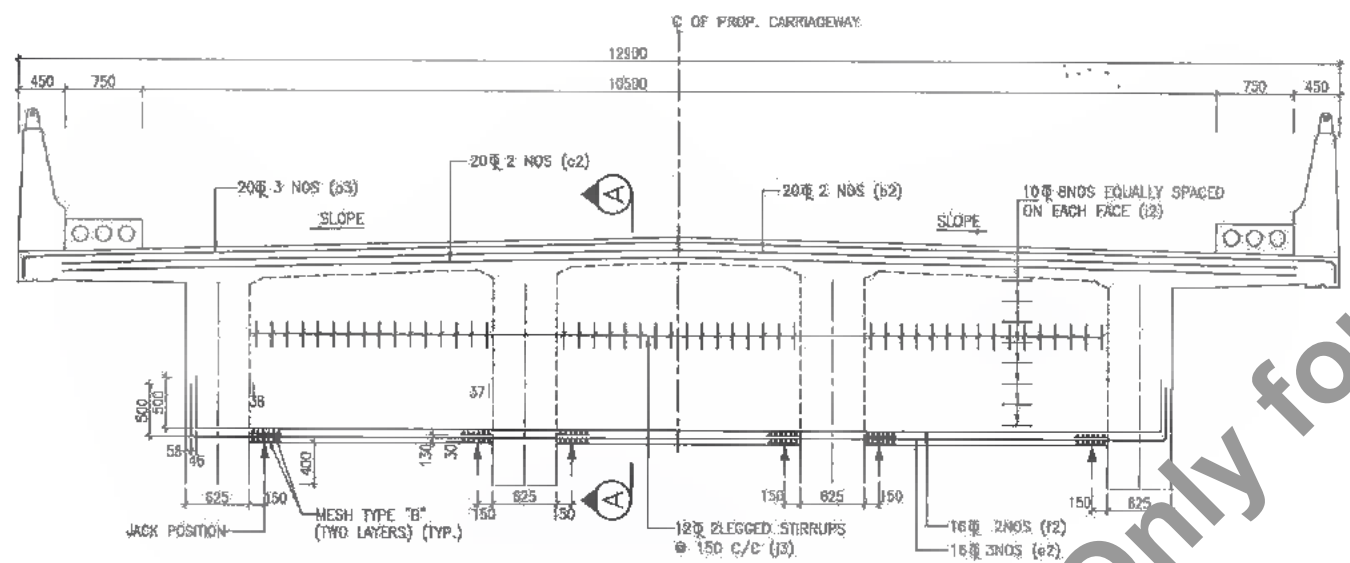
SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A "SAI House" Saltram Corporate Square, 8th Rd, 3rd St, Patna, Bihar, India - 800 009
 Phone : +91-79-4482608/708 Fax : +91-71-4512200
 Email : mail@saiindia.com

PC	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DESIGN BY : G.M.G.	TITLE : RAUTA-MAHADEV DIHI CHOWK (PACKAGE-II)
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY : H.K.S.	REINFORCEMENT DETAILS OF LONGITUDINAL GIRDER FOR RCC T-BEAM SUPER STRU. AT EXL. CH. 35/990 & PROP. CH. 35+765
PE	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY : B.B.V.	DRG. NO. : SAI-213007/DPR/C/B/MIN/35.755/SUP-02
PF	26/02/14	ISSUED WITH FINAL DPR	SIGN	REVISION : PE
PK	13/11/13	ISSUED WITH DPR	ISSUED BY : H.S.	

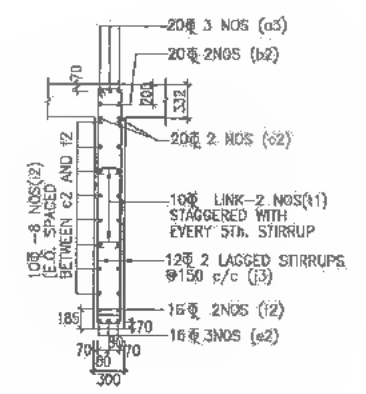
SCALE : AS SHOWN



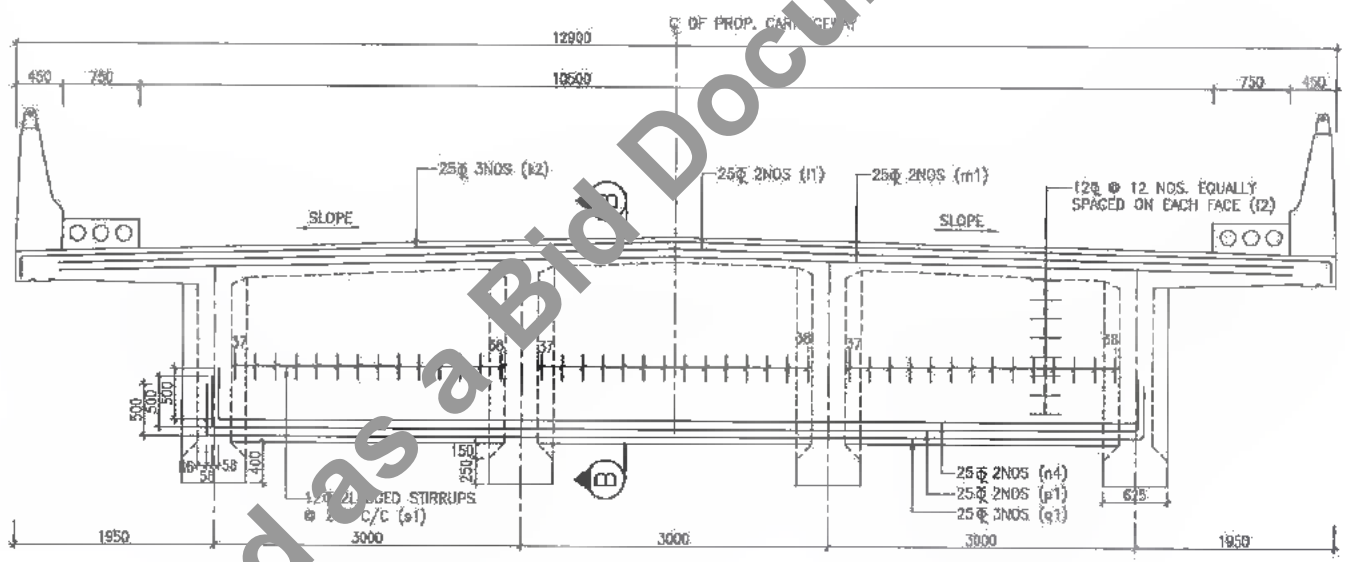
321
456



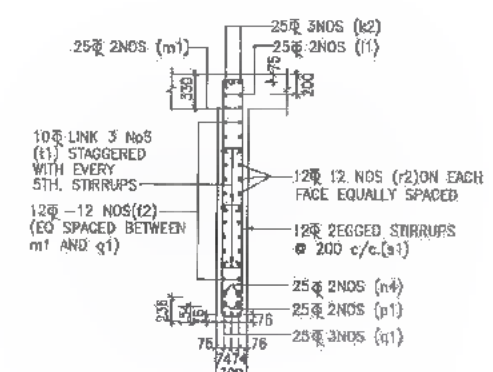
LONGITUDINAL SECTION OF END CROSS GIRDER
SCALE - 1:50



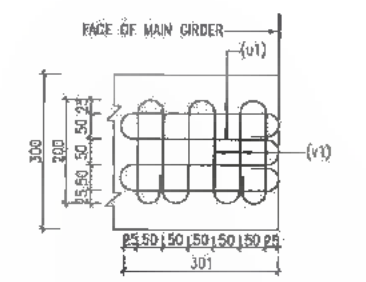
SECTION A-A
SCALE-1:50



LONGITUDINAL SECTION OF INTERMEDIATE CROSS GIRDER
SCALE - 1:50



SECTION B-B
SCALE - 1:50



8 Ø MESH REINFORCEMENTS
TYPE-'B'

NOTES:

1. THE LOCATIONS OF THE JACK FOR LIFTING OF SUPERSTRUCTURE IS SHOWN & THUS THIS SHALL BE DISTINCTLY ETCHED FOR EASY IDENTIFICATION ON THE END CROSS GIRDER AND PIERCAP / ABUTMENT CAPS
2. DURING THE LIFTING OPERATION ALL THE SIX JACKS PLACED UNDER THE END CROSS GIRDER IN THE LINE WITH THE BEARINGS SHALL BE OPERATED SIMULTANEOUSLY USING SINGLE OPERATION CONSOLE GROUPING THE PUMP AND CONTROL SYSTEM SO AS TO ENSURE THAT THE REACTIONS ON ALL SIX JACKS ARE EQUAL AT ALL TIMES.
3. CAPACITY OF EACH JACK SHALL NOT BE LESS THAN 50 TON.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/YYP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-D2
 - d. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-D4
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-05

DATE: 20/07/25 - 2:33pm
PATH: T:\ADITAC\3007 BIKAR\REVISED DPR\18\PACKAGE-2\MINOR BRIDGE\103 CH.35-755\SUPER STR.21.6m spm\1\03 CROSS GIRDER 21.6m.dwg

LIE:
Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

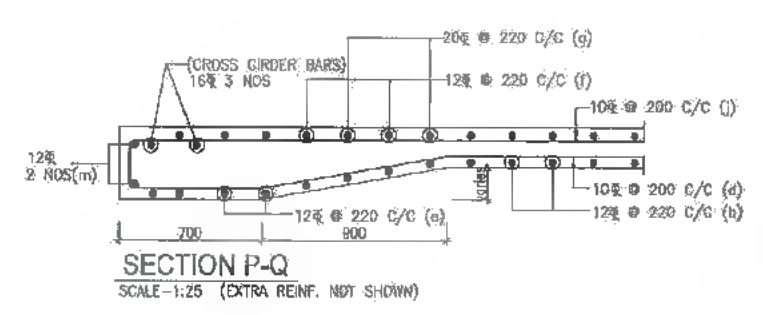
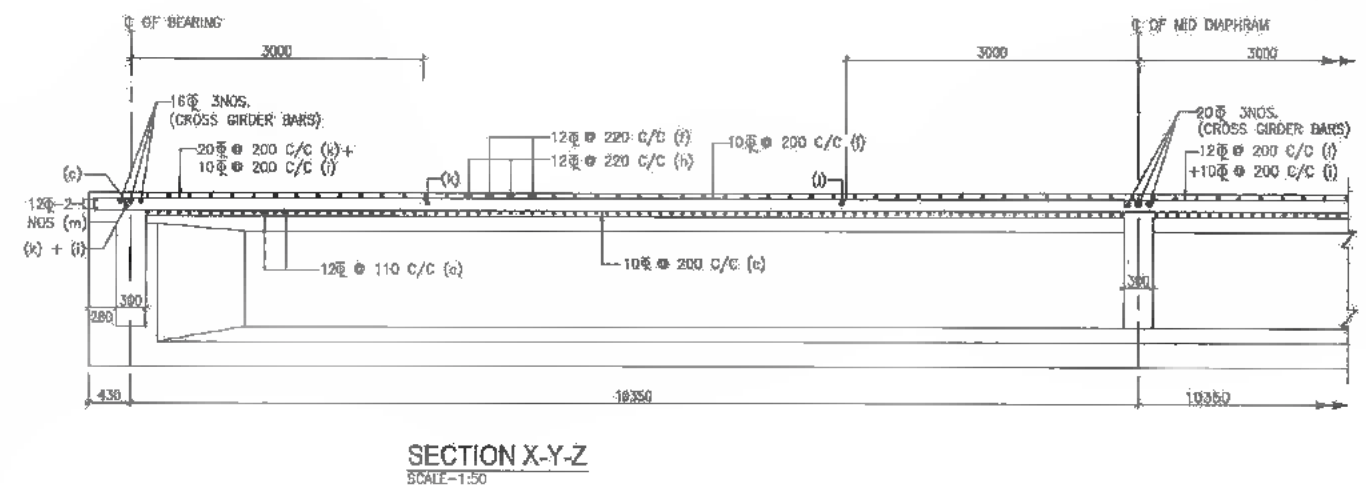
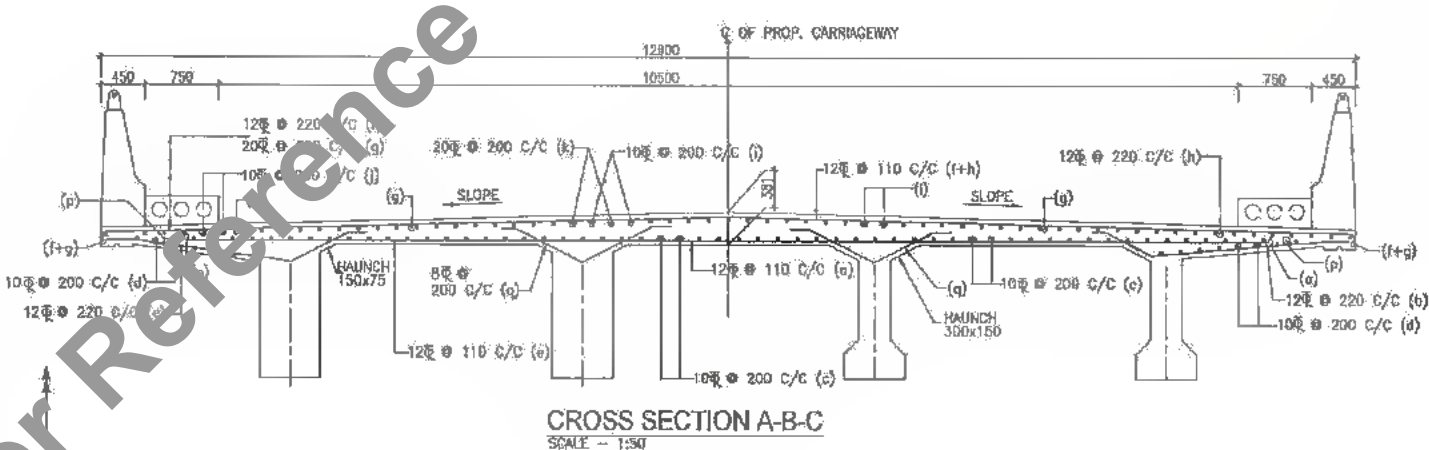
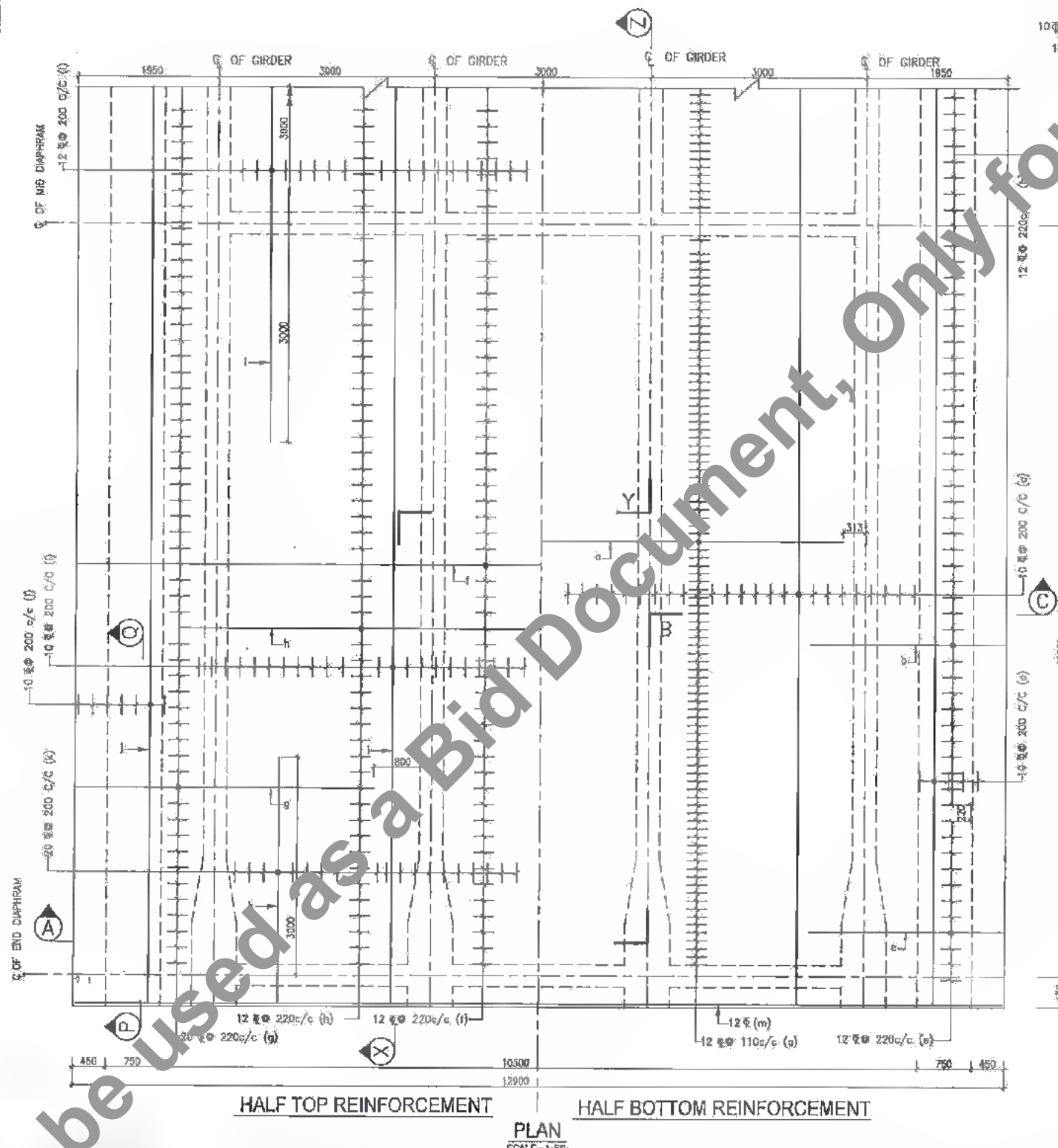
PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Block-A "SAI House", Sanyal Corporate Square, 8th Bypass, Old Bypass, Alameda Road-800051, Patna, Bihar
Phone: +91-91-6614287103 Fax: +91-91-6614287104 Email: mcr@saiindia.com

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)	DESIGNED BY: D.M.G.	<table border="1"> <tr> <td>DRG. NO.:</td> <td>SAI-213007/DPR/C/B/MIN/35.755/SUP-03</td> </tr> <tr> <td>REVISION:</td> <td>PE</td> </tr> </table>	DRG. NO.:	SAI-213007/DPR/C/B/MIN/35.755/SUP-03	REVISION:	PE
DRG. NO.:	SAI-213007/DPR/C/B/MIN/35.755/SUP-03							
REVISION:	PE							
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)	CHECKED BY: H.K.S.					
PI	10/04/14	GOOD FOR CONSTRUCTION (DPR)	APPROVED BY: B.R.Y.					
PA	13/11/13	ISSUED WITH FINAL DPR	ISSUED BY: B.S.					
REV.	DATE	DESCRIPTION	SIGN	ISSUED BY: B.S.				

SAI CONSULTING ENGINEERS PVT. LTD.
TITLE: RAUTA-MAHADEV DIGHI CHOWK (PACKAGE-II)
REINFORCEMENT DETAIL OF CROSS GIRDER FOR RCC T-BEAM SUPER STRU. AT EXI. CH. 35/80 & PROP. CH. 35+756
DRG. NO. : SAI-213007/DPR/C/B/MIN/35.755/SUP-03
REVISION: PE

DATE: 2019/07/29 - 2:33pm
PATH: T:\C\MATAD\2017 BIHAR REVISED DPR\CV\PACKAGE-2\MINOR BRIDGE\103 CH.35+755\1\SUPER STRU\21.5m span\104 DECK SLAB-21.5m.dwg



- NOTES :**
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METER.
 2. THE REINFORCEMENT FOR CRASH BARRIER SHOULD BE PROPERLY ANCHORED IN THE DECK SLAB BEFORE CASTING THE SLAB.
 3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO.SAI-213007/DPR/C/B/TYP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-02
 - d. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-03
 - e. SCHEDULE OF REINFORCEMENT DRG. NO.SAI-213007/DPR/C/B/MIN/35.755/SUP-05

Bihar State Road Development Corporation Limited (BSRDC)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Plot No. 541, Sector 10, Gurgaon, Haryana, India
Phone: +91-12-9450000, Fax: +91-12-9450000
Email: sai@india.com

PE	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PD	17/12/18	GOOD FOR CONSTRUCTION (DPR)		
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PB	20/02/14	ISSUED WITH FINAL DPR		
PA	15/11/13	ISSUED WITH DPR		

DRAWN BY	G.M.O.	TITLE	RAUTA-MAHADEV DIGHI CHOWK (PACKAGE-II) REINFORCEMENT DETAILS OF DECK SLAB FOR RCC T-BEAM SUPER STRU. AT EXL CH. 35/930 & PROP. CH. 35+755
CHECKED BY	N.K.S.	DRG. NO.:	SAI-213007/DPR/C/B/MIN/35.755/SUP-04
APPROVED BY	B.A.R.	REVISION:	PE



323
454

SCHEDULE OF REINFORCEMENT (DECK SLAB) PER SPAN

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Nos. of Bars	Spacing of Bars
1	a		12	-	130
2	b		12	-	220
3	c		10	-	200
4	d		10	-	200
5	e		12	-	220
6	f		12	-	220
7	g		20	-	220
8	h		12	-	220
9	i		10	-	200
10	j		10	-	200
11	k		20	-	200
12	l		12	-	200
13	m		12	2 NOS	-
14	q		8	-	200

SCHEDULE OF REINFORCEMENT FOR LONGITUDINAL GIRDERS (PER SPAN)

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Spacing of Bars	Nos. of Bars
1	a1		16	250	-
2	a2		16	100	-
3	b1		16	180	-
4	c1		16	-	8
5	d1		16	-	8
6	e1		10	-	16
7	f1		10	-	64
8	g1		10	-	20
9	g2		10	-	20
10	g3		10	-	20
11	g4		10	-	12
12	h1		10	-	10
13	i1		16	250	-
14	j2		16	100	-
15	k1		12	100	-

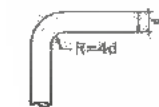
SCHEDULE OF REINFORCEMENT (CROSS GIRDERS) PER SPAN

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Spacing of Bars	Nos. of Bars/Girder	Nos. of Bars/SPAN
1	a1		20	-	3	6
2	b2		20	-	2	4
3	c2		20	-	2	4
4	e2		16	-	3	6
5	i2		16	-	2	4
6	h2		16	-	2	4
7	i2		10	-	2	4
8	j5		12	-	-	150
9	k2		25	-	3	3
10	l1		25	-	2	2
11	m1		25	-	2	2
12	n4		25	-	2	2
13	p1		25	-	2	2
14	q1		25	-	3	3
15	r1		12	200	-	-
17	t1		10	-	-	-

- NOTES:**
- THE EXACT LENGTH OF THE BARS WILL BE DETERMINED BY THE ACTUAL LAPS WITH SPLICES ADOPTED AT SITE.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS.
 - a. GENERAL NOTES DRG. NO. SAI-213007/DP/C/B/TP/GEN
 - b. GENERAL ARRANGEMENT DRAWING FOR SUPERSTRUCTURE DRG. NO. SAI-213007/DP/C/B/MIN/35.755/SUP-01
 - c. REINFORCEMENT DETAILS FOR LONGITUDINAL GIRDER DRG. NO. SAI-213007/DP/C/B/MIN/35.755/SUP-02
 - d. REINFORCEMENT DETAILS FOR CROSS GIRDER DRG. NO. SAI-213007/DP/C/B/MIN/35.755/SUP-03
 - e. REINFORCEMENT DETAILS OF DECK SLAB DRG. NO. SAI-213007/DP/C/B/MIN/35.755/SUP-04



d = Dia of bar
For bar above 25mm dia



d = Dia of bar
For bar upto 25mm dia

M.S. BARS (MESH REINFORCEMENT IN LONGITUDINAL GIRDER)

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Nos. of Bars
1	u		8	16 NOS
2	v		8	16 NOS

M.S. BARS (MESH REINFORCEMENT IN CROSS GIRDERS)

Sr. No.	Type of Bars	Shape of Bars (Dimensions are in mm) (Not to Scale)	Dia of Bars (mm)	Spacing of Bars	Nos. of Bars/Girder	Nos. of Bars/SPAN
1	u1		8	-	24	24
2	v1		8	-	24	24

DATE: 20/07/2019 - 2:32pm
PATH: T:\ADVTAD\3007_BIHARREVISED DPR\CIB\PACKAGE-2\MINOR BRIDGE\VE CH.35+755\SUPER_STR.21.6m span\105_SCHEDULE_21.6m.dwg

CLIENT:
Bihar State Road Development Corporation Limited (BSRDCL)
(A Government of Bihar Undertaking)

PROJECT:
Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

REVISIONS:

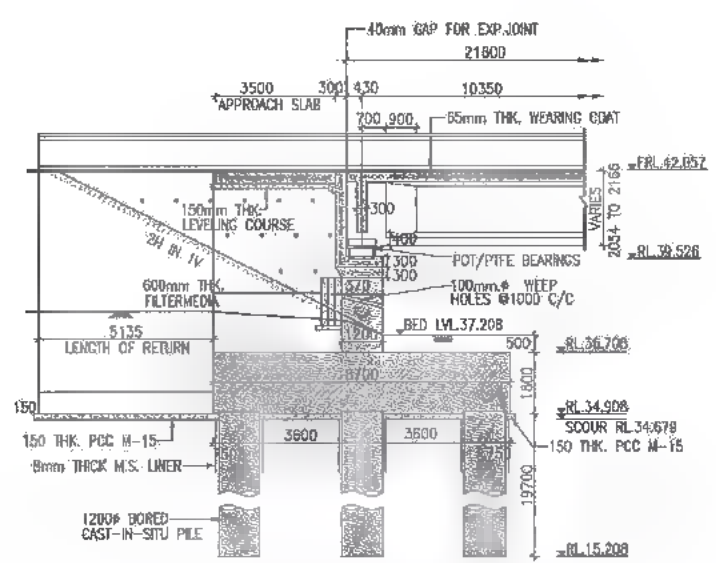
REV.	DATE	DESCRIPTION	SIGN
PE	31/07/18	GOOD FOR CONSTRUCTION (REVISED DPR)	
PD	17/12/16	GOOD FOR CONSTRUCTION (DPR)	
PC	10/04/14	GOOD FOR CONSTRUCTION (DPR)	
PA	28/02/14	ISSUED WITH FINAL DPR	
PA	13/11/13	ISSUED WITH DPR	

SCALE: AS SHOWN

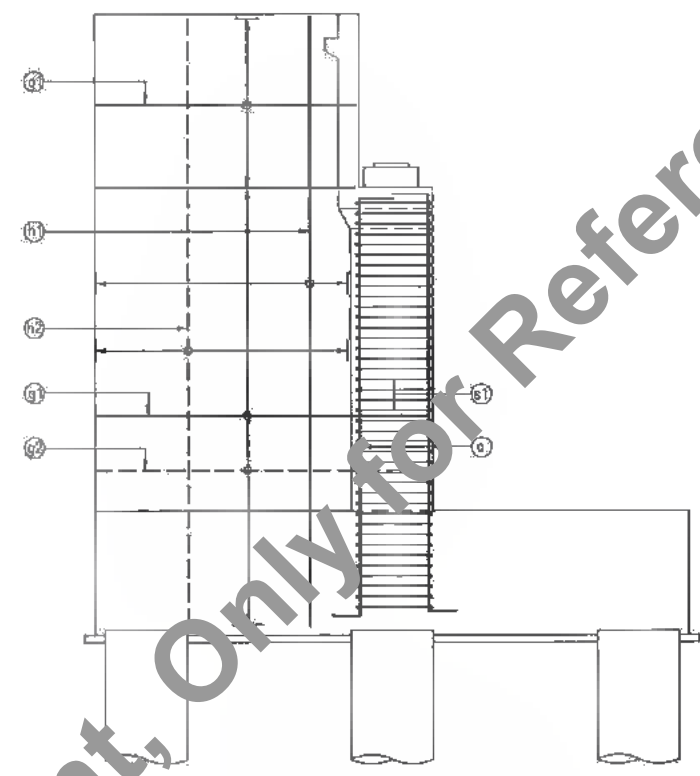
TITLE: RAJITA-MAHADEV DIGHI CHOWK (PACKAGE-II)
REINFORCEMENT SCHEDULE FOR RCC T-BEAM SUPER STRU. AT EXL. CH. 35/950 & PROP. CH. 35+755

DRG. NO.: SAI-213007/DP/C/B/MIN/35.755/SUP-05
REVISION: PE





SECTION OF ABUTMENT A-A
SCALE 1:150 (DIMENSION DETAILS)



SECTION OF ABUTMENT A-A
SCALE 1:75 (REINF. DETAILS)

REINF. SCHEDULE FOR RIDING RETURN

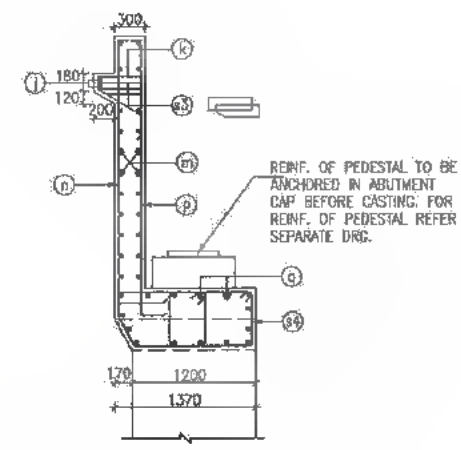
TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIA OF BARS (mm.)	SPACING /NOS OF BARS (mm.)
g1		16	180 C/C
g2		10	180 C/C
h1		16	100 C/C
h2		12	180 C/C
e		8	150 C/C

REINF. SCHEDULE FOR ABUTMENT

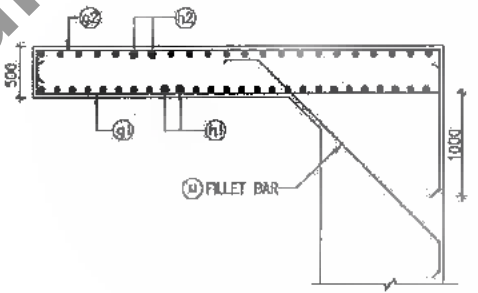
TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIA OF BARS (mm.)	SPACING /NOS OF BARS (mm.)
a		25	150 C/C
L		8	300 C/C
s1		16	130 C/C

REINF. SCHEDULE FOR ABUTMENT CAP

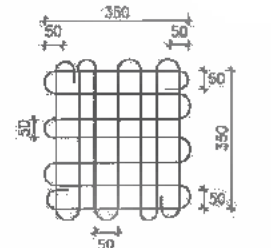
TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (mm.)	DIA OF BARS (mm.)	SPACING /NOS OF BARS (mm.)
j		12	2 NOS
k		12	170 C/C
m		16	170 C/C
n		16	170 C/C
p		16	170 C/C
q		16	14 NOS
r3		10	170 C/C
s4		12	150 C/C



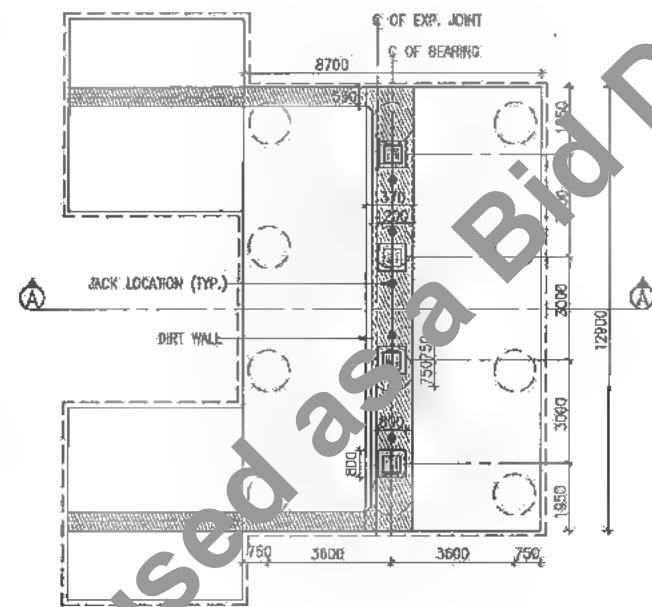
REINF. DETAIL OF ABUTMENT CAP & DIRT WALL
SCALE 1:50



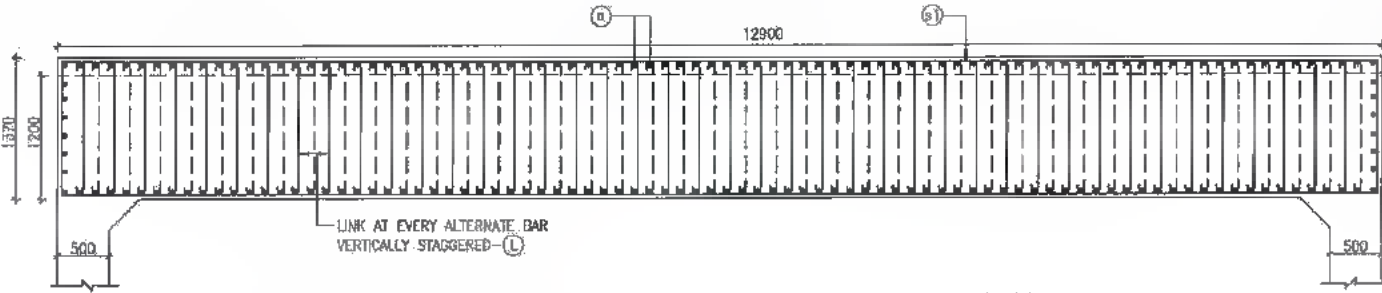
REINF. DETAIL OF RIDING RETURN
SCALE 1:50



8 Ø MESH REINF. BELOW JACK LOCATION MESH REINF.



PLAN FOR ABUTMENT
SCALE 1:150 (DIMENSION DETAILS)



REINFORCEMENT DETAIL IN PLAN OF ABUTMENT @ BASE OF STEM
SCALE 1:50

- NOTES:-
- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHANGES & LEVELS ARE IN METERS.
 - ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
 - GRADE OF CONCRETE : M-30
 - GRADE OF HYSD REINFORCEMENT : Fe-500
 - MINIMUM COVER TO ANY REINFORCEMENT SHALL BE (i) 50mm IN ABUTMENT (ii) 75mm IN FOOTING.
 - MINIMUM COVER TO MESH REINF. SHALL BE 20mm UNLESS OTHERWISE SHOWN IN THE DRAWING.
 - IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.6.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 87 TIMES BAR DIAMETER. LAPPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
 - THE LOCATION OF JACKS FOR LIFTING UP THE SUPERSTRUCTURE TO REPLACE BEARING etc. IS SHOWN THUS ●. THESE SHOULD BE DISTINCTLY ETCHED ON THE CROSS GIRDERS AND PIER/ABUTMENT CAPS.



DATE: 2018/07/29 - 7:26:00 PM PATH: T:\CAD\TAD - 2017 BIHAR REVISD DPR\CH\PACKAGE-2\MINOR BRIDGE\03 CH.35-75\SUB STRU\101 ABUTMENT & ABUTMENT CAP.dwg

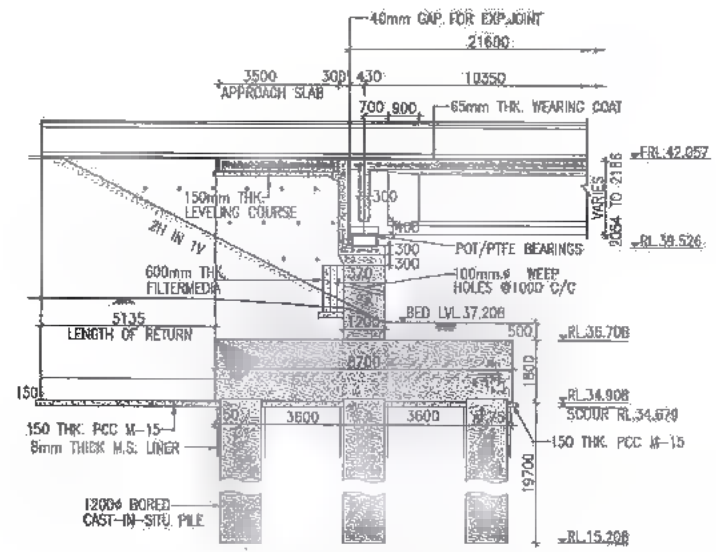
PROJECT: Bihar State Road Development Corporation Limited (BSRDC) (A Government of Bihar Undertaking)

CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

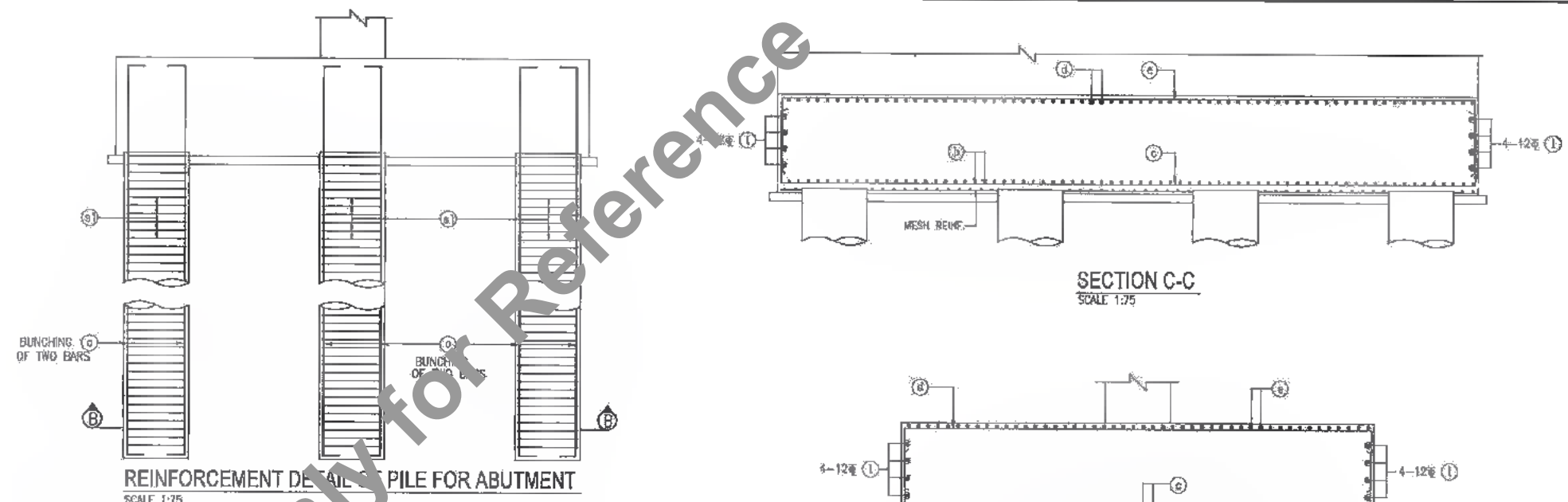
REVISIONS: PE 31/07/19 GOOD FOR CONSTRUCTION (REVISED DPR) ...

TITLE: RAJITA-MAHADEVI DIGHI CROWK (PACKAGE-II) REINFORCEMENT DETAILS OF ABUTMENT ABUTMENT CAP & DIRT WALL MINOR BRIDGE AT EXIS. CH:35/080 & PROP.CH:36*766

325
452



SECTION OF ABUTMENT A-A
SCALE 1:150 (DIMENSION DETAILS)

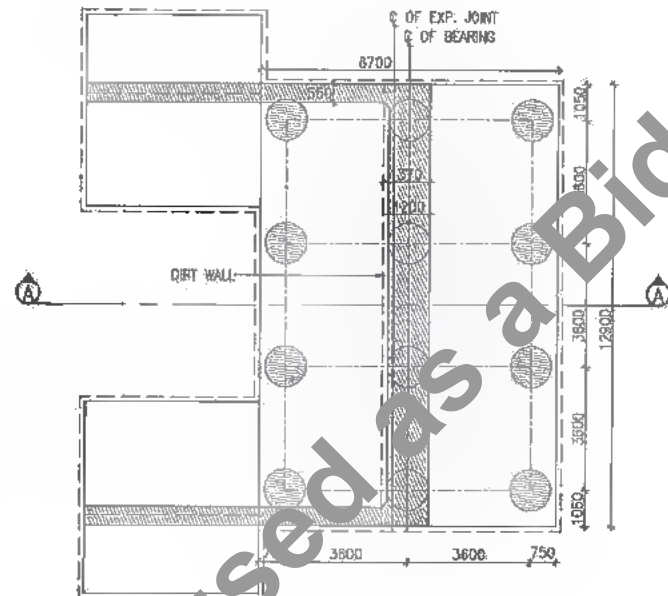


REINFORCEMENT DETAIL OF PILE FOR ABUTMENT
SCALE 1:75

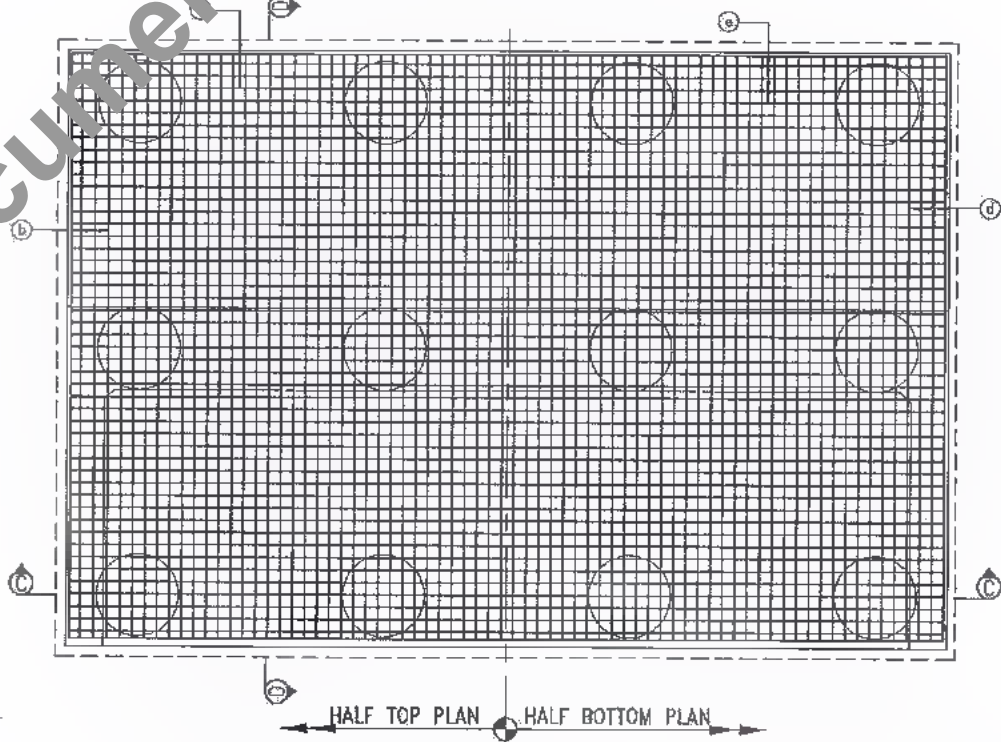
SECTION C-C
SCALE 1:75

SECTION B-B
SCALE 1:75

SECTION D-D
SCALE 1:75



PLAN FOR ABUTMENT
SCALE 1:150 (DIMENSION DETAILS)



PLAN FOR PILECAP OF ABUTMENT
SCALE 1:75

SCHEDULE OF REINFORCEMENT PER PILE

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MM)	DIA OF BARS (mm)	SPACING / NO. OF BARS
a	VARIES	32	34 NOS. BUNCHING OF TWO BARS
a1	200	8	150 C/C

SCHEDULE OF REINF. FOR PILE CAP

TYPE OF BARS	SHAPE OF BARS (NOT TO SCALE) (DIMENSIONS ARE IN MM)	DIA OF BARS (mm)	SPACING / NO. OF BARS
b	900	25	200 C/C
c	900	18	180 C/C
d	900	16	180 C/C
e	900	16	180 C/C
t		12	16 NOS.

NOTES:-

- ALL DIMENSIONS ARE IN MM (UNLESS OTHERWISE SPECIFIED), CHANGES & LEVELS ARE IN METERS.
- ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
- IF FULL LENGTH BARS ARE NOT AVAILABLE LAPS MAY BE PROVIDED IN ACCORDANCE WITH CLAUSE 304.6.6.3 I.R.C. 21-2000. WHERE LAPS ARE PROVIDED, THEY SHOULD BE LOCATED AT POINT OF LOW STRESS AND SUITABLY STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED AT ANY CROSS SECTION. THE LAP LENGTH SHALL NOT BE LESS THAN 87 TIMES BAR DIAMETER FOR PIER & SHALL NOT BE LESS THAN 77 TIMES BAR DIAMETER FOR PILE & PILE CAP. LAPPING OF BARS SHALL BE DONE IN HORIZONTAL PLANE ONLY.
- MINIMUM COVER TO ANY REINFORCEMENT SHALL BE (i) IN ABUTMENT 50mm (ii) IN FOUNDATION 75mm
- GRADE OF CONCRETE
(a) PILE : M-35
(b) PILE CAP : M-35
- GRADE OF HYSD REINFORCEMENT : Fe-500

Table Showing Various Parameters of Piles

Existing Chaining	Proposed Chaining	Abutment	Ground Level (m)	Founding Level, FRL (m)	Length of Pile (m)	Top of Pile Cap (m)	Bottom of Pile Cap (m)	Formation Level (m)	Top of Abutment Cap (m)	Top of Abutment (m)	Height of Abutment (m)	Max. Vertical Load (Mton)	Normal Seismic (Mton)	Horizontal Load on Pile			
														Normal (t)	Seismic (t)	Normal (t)	Seismic (t)
35/980	35+725	A1	37.208	15.208	19.700	36.708	34.908	42.057	39.526	38.726	2.019	210.10	246.85	40.77	40.77	39.45	14.04
		A2	37.290	15.208	19.700												

DATE: 20/07/29 - 2:35pm
PATH: T:\ADITAB\3007 BIHAR REVISED DPR\PACKAGE-2\MINOR BRIDGE\03 CH-35+725\SUB STRUCT\02 ABUTMENT PILE & PILE CAP.dwg

BIHAR STATE ROAD DEVELOPMENT CORPORATION LIMITED (BSRDC) (A Government of Bihar Undertaking)

PROJECT: Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar Baysi - Bahadurganj - Dighalbank (SH-99)

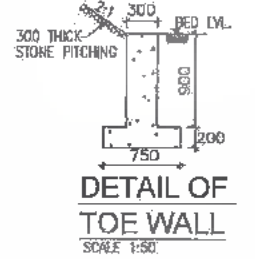
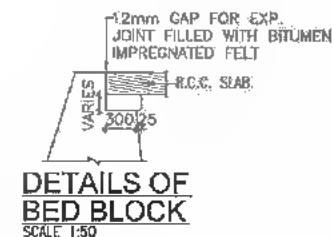
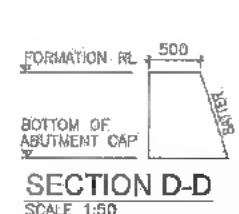
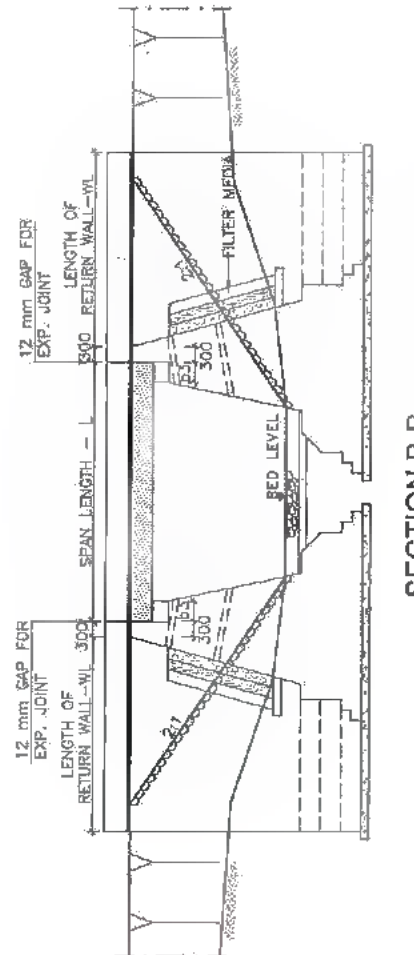
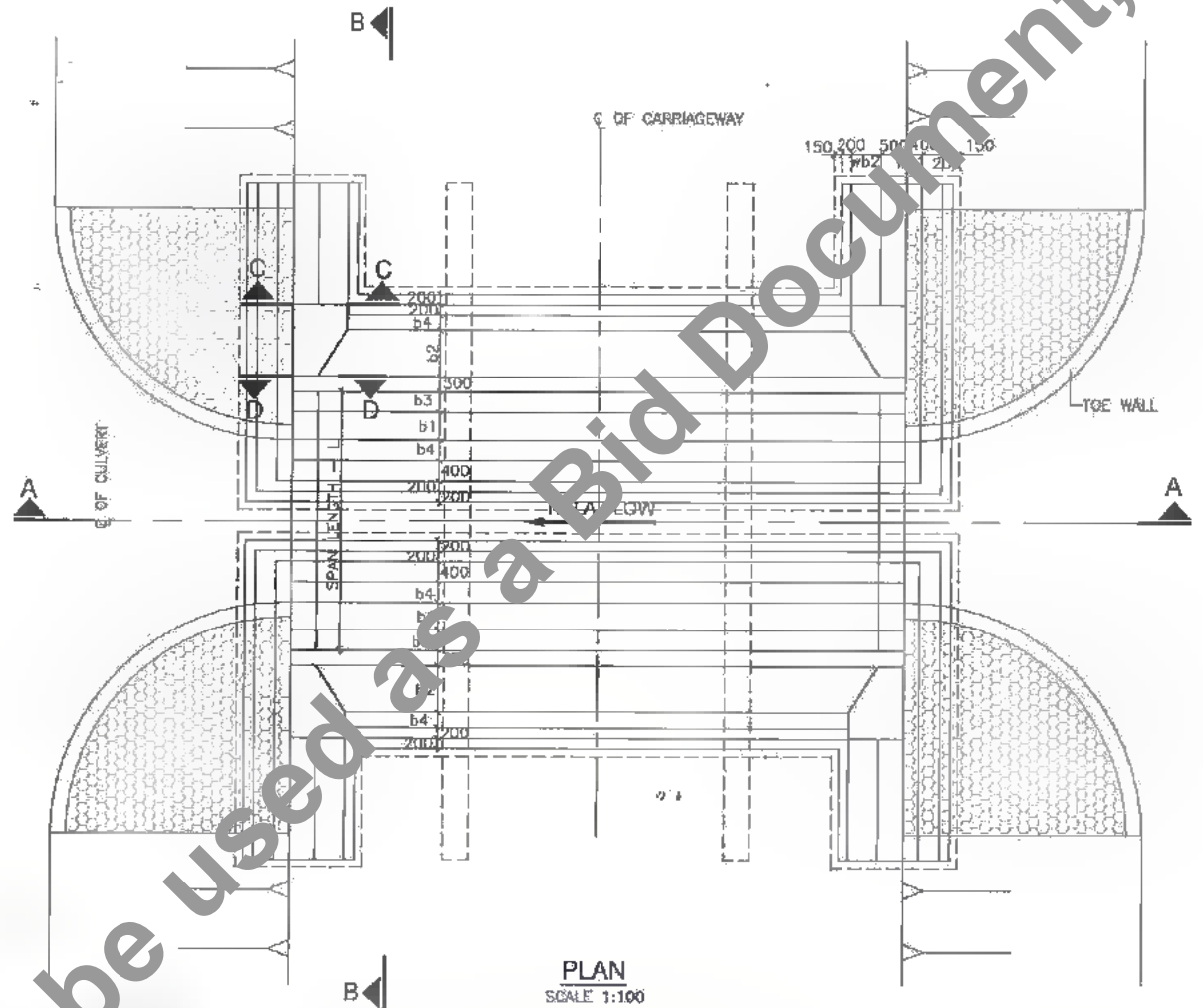
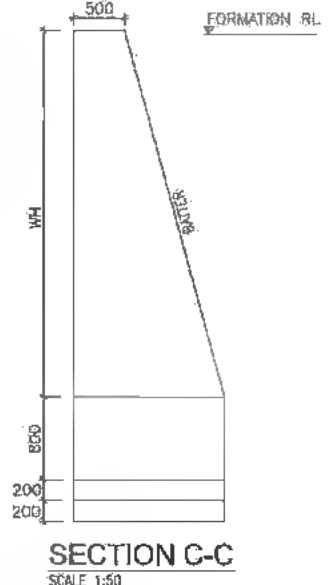
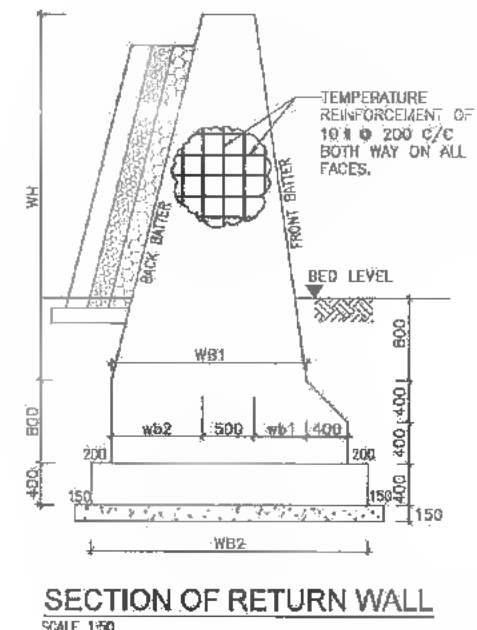
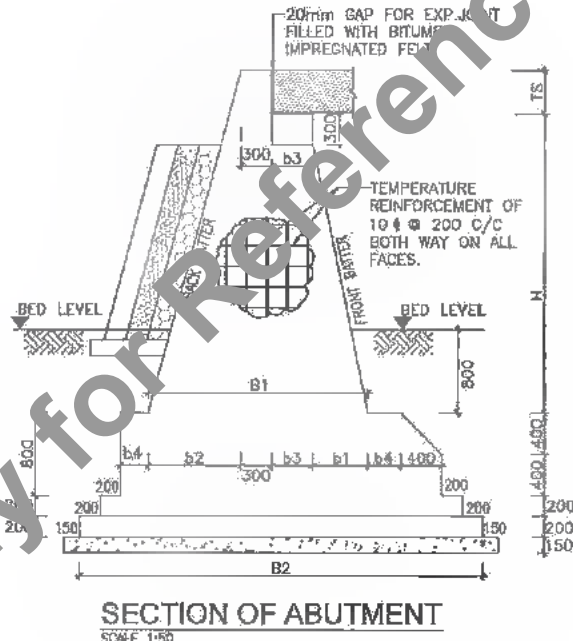
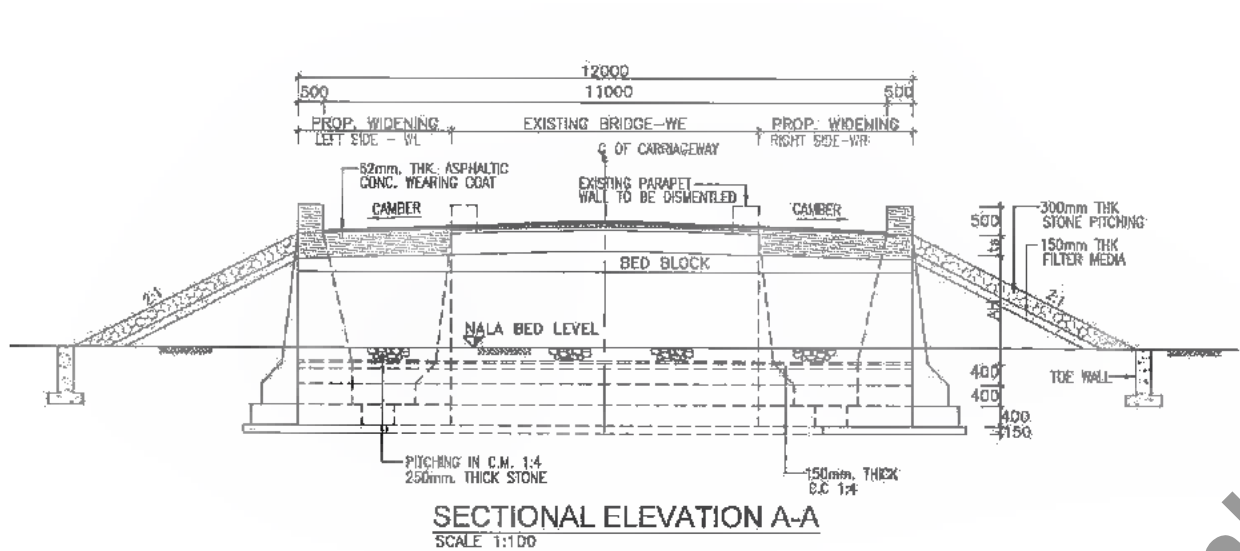
CONSULTANTS: SAI Consulting Engineers Pvt. Ltd. An ISO 9001 Certified Company

REVISIONS: PE 31/02/18 GOOD FOR CONSTRUCTION (REVISED DPR) PD 17/12/18 GOOD FOR CONSTRUCTION (DPR) PC 16/04/14 GOOD FOR CONSTRUCTION (DPR) PD 26/02/14 ISSUED WITH FINAL DOPR PA 13/11/13 ISSUED WITH DOPR

DRG. NO.: SAI-213007/DP/RC/BI/MINOR/05.755/SUB-02
REVISION: PE



386
451



- NOTES:**
- (1) ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METRES UNLESS OTHERWISE MENTIONED ON DRAWING
 - (2) NO DIMENSION SHALL BE SCALED FROM THIS DRAWING. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 - (3) TEMPERATURE REINFORCEMENT OF 10 # 200 C/C BOTH WAY SHALL BE PROVIDED ON ALL FACES.
 - (4) THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE FOLLOWING DRAWINGS
 - (a) FOR GENERAL NOTES REFER DRG NO. SAI-213007/DPR/C/B/GEN.
 - (b) DETAILS OF FILLER TYPE EXPANSION JOINT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-01
 - (c) APPROACH SLAB & DRAINAGE SPOUT REFER DRG. NO. SAI-213007/DPR/C/B/TYP-02
 - (d) TYP. DETAILS OF WIDENING OF PCC SUB STRUCTURE DRG. NO. SAI-213007/DPR/C/B/TYP-04
 - (e) TABLE SHOWING VARIOUS PARAMETER OF SLAB CULVERT REFER DRG. NO. SAI-213007/DPR/C/B/SC/GAD-01 (SHEET 2 OF 2)
 - (5) GRADE OF HYSD REINFORCEMENT - FE-500.
 - (6) TYPE OF BEARING-TAR PAPER
 - (7) GRADE OF CONCRETE

ABUTMENT CAP/PIER CAP	RCC-M:20
SOLID SLAB	RCC-M:25
RAILING	RCC-M:30
ABUTMENT/PIER	PCC-M:20
RETURN WALL	PCC-M:20
TGE WALL	PCC-M:15
LEVELING COURSE	PCC-M:15



DATE: 2019/12/28 - 2:35pm
 PATH: C:\Users\saib\AppData\Local\temp\AcPublish_12860\01 SC_SINGLE_SPAN (Both side widening).dwg



Bihar State Road Development Corporation Limited (BSRDCL)
 (A Government of Bihar Undertaking)

PROJECT:
 Consultancy Services for Preparation of Detailed Project Report of different State Highway in Bihar
 Baysi - Bahadurganj - Dighalbank (SH-99)

CONSULTANTS:
SAI SAI Consulting Engineers Pvt. Ltd.
 An ISO 9001 Certified Company
 Block-A "SAI House" Sitra Corporate Square, Bih Rajghat
 E-6, Sitra Road, Atmahehal-200037, Gajrauli, India
 Phone : +91-79-6692500/702, Fax : +91-79-6594200
 Email : mail@saiconsulting.com

REV.	DATE	DESCRIPTION	SIGN	ISSUED BY
PF	31/07/19	GOOD FOR CONSTRUCTION (REVISED DPR)		
PC	17/12/18	GOOD FOR CONSTRUCTION (DPR)		
PD	10/04/14	GOOD FOR CONSTRUCTION (DPR)		
PE	26/02/14	ISSUED WITH FINAL DPR		
PF	01/01/14	ADDENDUM OF DPR		

DRWN BY : G.M.G.
 CHECKED BY : H.K.S.
 APPROVED BY : B.R.V.

TITLE: RAUTA-MAHADEV DIGHI CHOWK (PACKAGE-II)
TYP. GAD FOR WIDENING OF SLAB CULVERT (SINGLE SPAN)
 DRG. NO. : (SHEET-1 OF 2)
 SAI-213007/DPR/C/B/SC/GAD-01
 REVISION : PF

Not to be used as a Bid Document, Only for Reference