

**Four Laning of Jhanjhi – Demow Section from Design km 490.800 To
km 534.800 of NH-37, Assam under SARDP on EPC Mode**



Drawings
(Design Ch. 517.400–534.800)

- Underpass
- CD Structures

July 2016

Authority Engineer :



VOYANTS SOLUTIONS PVT LTD

Proof Checking Consultant :



GIFFORD INDIA PVT. LTD.

Contractor :



ISOLUX CORSÁN CORSAN CORVIAM CONSTRUCTION S.A.

Consultant :



Projects Consulting India (P) Ltd

(Formerly: Distinct Planning and Design Consult (P) Ltd.)

Engineers & Planners

New Delhi, India

Email: info@pcindia.co



NATIONAL HIGHWAYS & INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED

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Date of Release : 01.07.2016
Prepared : KD/SPS
Checked : BKG/AS
Approved : RBS

Authority Engineer :



VOYANTS SOLUTIONS PVT LTD

Proof Checking Consultant :

Gifford 

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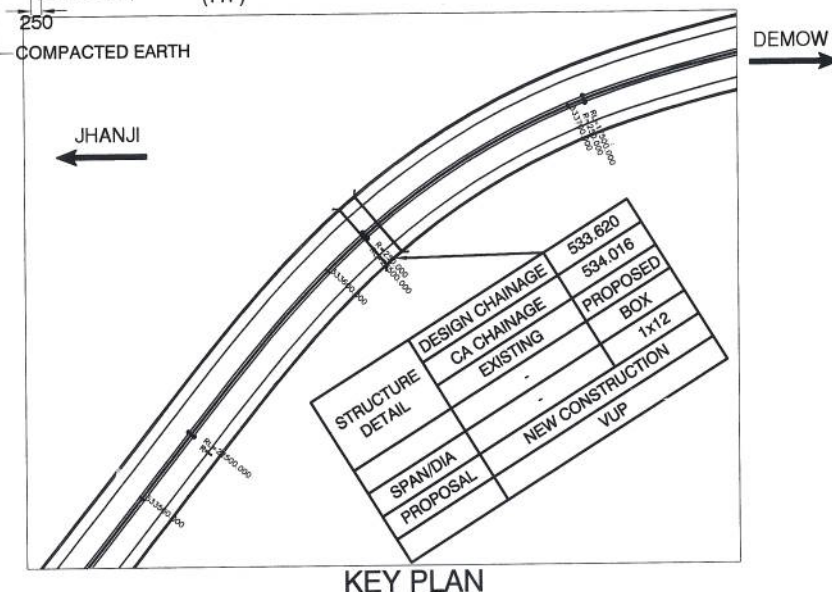
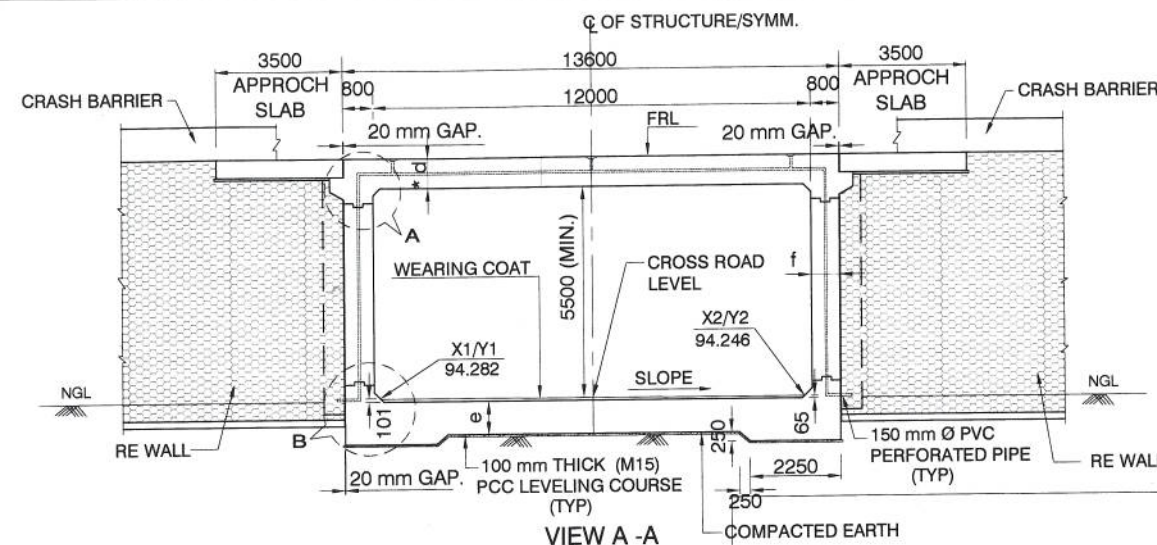
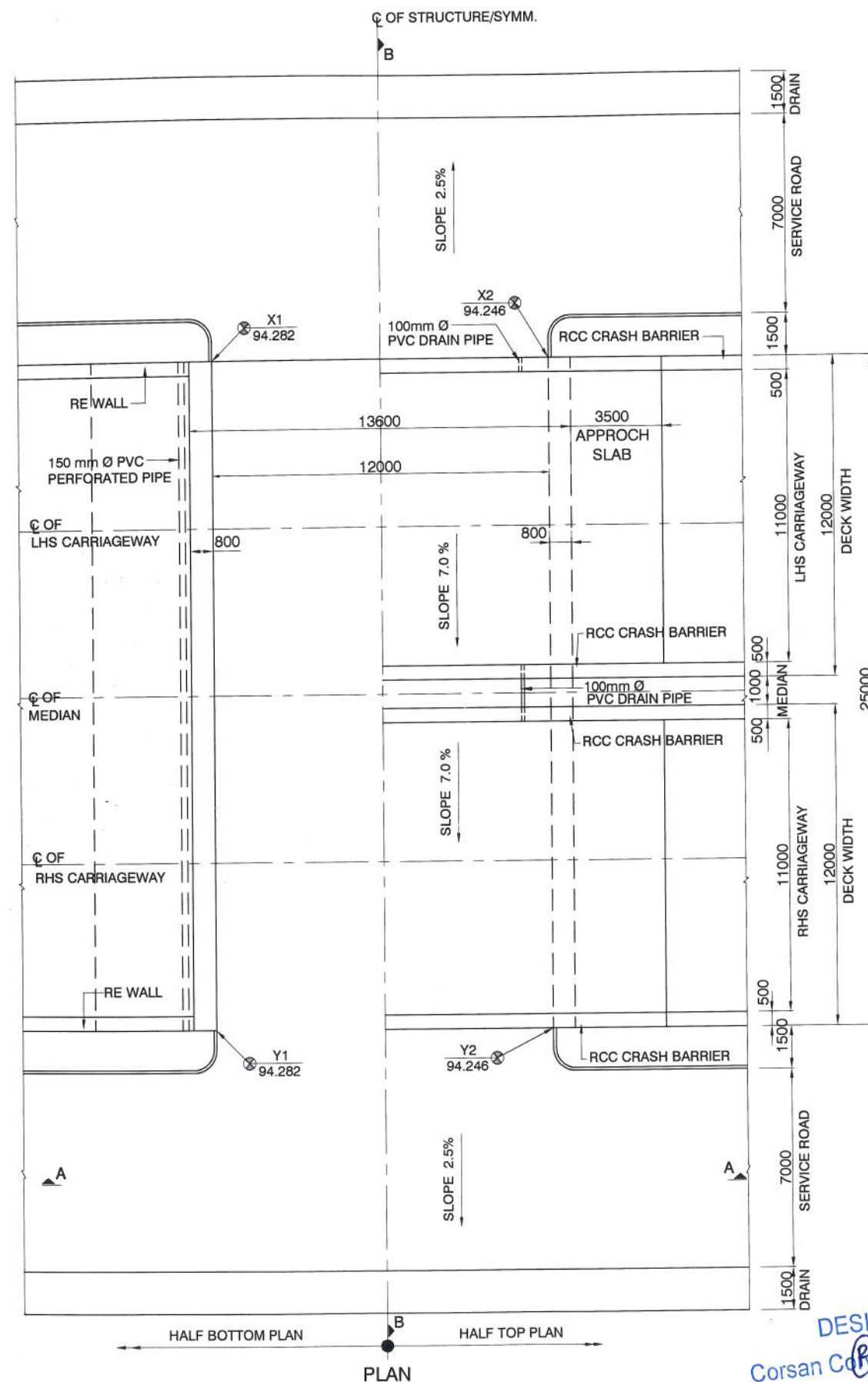
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**FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM 491+050 TO KM 535+250 (DESIGN KM. 490+800
TO 534+800) IN THE STATE OF ASSAM UNDER EPC MODE**
UNDERPASS AND CD STRUCTURES
(CH. 517+000 TO CH. 534.800)
LIST OF DRAWING

S. NO.	DRAWING NO		DRAWING TITLE	DRG. REVISION
VUP CH.- 533.620		SHEET		
1	94-41-01	(SHEET 1 OF 2)	GENERAL ARRANGEMENT DRAWING - VEHICULAR UNDERPASS (CH.- 533.620)	R1
2	94-41-01	(SHEET 2 OF 2)	GENERAL ARRANGEMENT DRAWING - VEHICULAR UNDERPASS (CH.- 533.620)	R1
REINFORCEMENT VUP				
1	94-41-02	(SHEET 1 OF 2)	REINFORCEMENT - VEHICULAR UNDERPASS (CH.- 533.620)	R0
2	94-41-02	(SHEET 2 OF 2)	REINFORCEMENT - VEHICULAR UNDERPASS (CH.- 533.620)	R0
CD STRUCTURES				
1	94-42-00		SCHEDULE	R1
CD STRUCTURES				
1	94-42-01	(SHEET 1 OF 2)	GENERAL ARRANGEMENT DRAWING - SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT (CH.-520.360, 523.810, 524.450, 525.582, 529.535, 531.494)	R0
2	94-42-01	(SHEET 2 OF 2)	GENERAL ARRANGEMENT DRAWING - SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT (CH.-520.360, 523.810, 524.450, 525.582, 529.535, 531.494)	R1
CD STRUCTURES CH.-CH.-526.774				
1	94-43-01	(SHEET 1 OF 2)	GENERAL ARRANGEMENT DRAWING - SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT (CH.-526.774)	R0
2	94-43-01	(SHEET 2 OF 2)	GENERAL ARRANGEMENT DRAWING - SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT (CH.-526.774)	R1
CD STRUCTURES CH.-CH.-532.078				
1	94-44-01	(SHEET 1 OF 2)	SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT (CH.-532.078)	R0
2	94-44-01	(SHEET 2 OF 2)	SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT (CH.-532.078)	R1
REINFORCEMENT CD STRUCTURES				
1	94-45-01	(SHEET 1 OF 3)	REINFORCEMENT- SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT	R0
2	94-45-01	(SHEET 2 OF 3)	REINFORCEMENT- SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT	R0
3	94-45-01	(SHEET 3 OF 3)	REINFORCEMENT- SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT	R0
1	94-46-01	(SHEET 1 OF 3)	MISCELLANEOUS DETAILS	R0
2	94-46-01	(SHEET 2 OF 3)	MISCELLANEOUS DETAILS	R0
3	94-46-01	(SHEET 3 OF 3)	MISCELLANEOUS DETAILS	R0

DESIGN DIRECTOR
Phan
Corsan Corviam Construcccion S.A.

APPROVED: RBS		CONSULTANT		CLIENT:		PROOF CHECKING CONSULTANT:		PROJECT:	
CHECKED: BKG		PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070		NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road , Guwahati - 24		Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002		FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE	
DESIGNED: AS		AUTHORITY ENGINEER:		CONTRACTOR:		SAFETY CONSULTANT:		TITLE:	
DRAWN: KDS		VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, BPTP Park Centra, Sector-30, NH-8, Gurgaon, Haryana - 122001, India		CORSAN CORVIAM CONSTRUCTION S.A. 02nd Floor, Block Two, Vatika Business Park, Sector - 49, Sohna Road, Gurgaon, Haryana, India - 122001		L. R. KADIYALI & ASSOCIATES RZ-44, Bhawani Kunj, Behind D-2 Vasant Kunj, New Delhi 110 070		LIST OF DRAWINGS	
DATE		DESCRIPTION OF REVISIONS						SHEETS: SHEET: DATE:	
								A3 01 March 2016	
								SCALE: NTS REV. R1	
								DRAWING NO. 94-00-00	



0.00-0.50	FILLED-UP SOIL	1.5m
0.50-1.50	BROWN SILTY CLAY OF HIGH PLASTICITY WITH TRACES OF SAND, MEDIUM EXPANSIVE (CH)	2.5m
1.50-1.95	BROWN CLAYEY SILT OF MEDIUM PLASTICITY WITH TRACES OF SAND (CI)	5.5m
2.50-2.80		
3.00-3.45		
4.50-4.95		
5.50-5.80	GREY SANDY SILT (ML-SM)	7.5m
6.00-6.45		
7.50-7.95	GREY CLAYEY SILT OF MEDIUM PLASTICITY WITH TRACES OF SAND (CI)	8.5m
8.50-8.80		
9.00-9.45		
10.00-10.45	GREY SILTY (SM)	

BORE HOLE DETAILS

NOTES:

- ALL DIMENSIONS ARE IN mm AND LEVELS IN METRES UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- THE 3 - LANE STRUCTURE IS DESIGNED FOR ONE LANE OF IRC CLASS 70R+ONE LANE OF IRC CLASS A LOADING OR 3 LANES OF CLASS A LOADING WHICHEVER GOVERNS.
- BED LEVEL, CROSS ROAD LEVEL, FORMATION LEVEL AND SUPERELEVATION / CAMBER SHALL BE PROVIDED AS PER APPROVED PLAN AND PROFILE DRAWINGS AND IN CASE ANY DISCREPANCIES. IT SHALL BE BROUGHT INTO THE NOTICE OF THE DESIGN ENGINEER.
- CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS. CHARACTERISTIC STRENGTH ON 150mm CUBES AS FOLLOWS:-
RCC BOX M - 35
CRASH BARRIER M - 40
APPROACH SLAB M - 30
LEVELLING COURSE M - 15
- THE REINFORCING SHALL BE CORROSION RESISTANT TMT H.Y.S.D. BARS (GRADE DESIGNATION Fe - 500 CONFORMING TO IS:1786 - 1985.
- 600 THIK.FILTER MEDIA SHALL BE PROVIDED BEHIND THE WALLS.
- BACK FILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC 7 - 2014 HAVING PROPERTIES $C=0$, $\phi=20^\circ$ & $d=20$ KM / m²
- 65 mm THE WEARING COURSE COMPRISING OF 40mm. THK. BITUMINOUS CONCRETE & 25mm THK. MASTIC ASPHALT.
- NET SAFE BEARING CAPACITY AT FOUNDING LEVEL ASSUMED 11.54 T/m²
- GROUND IMPROVEMENT TO BE DONE WHERE BASE PRESSURE EXCEEDS ALLOWABLE SBC
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.

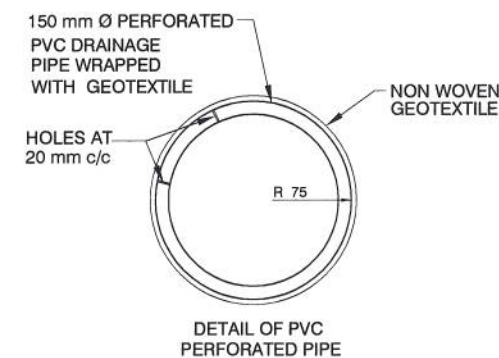
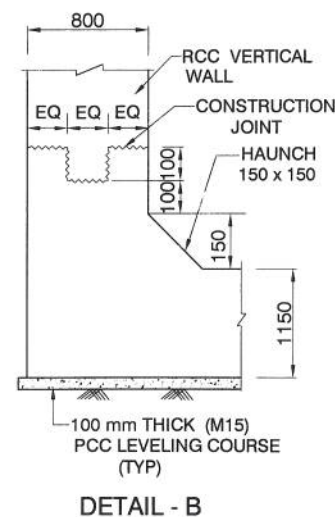
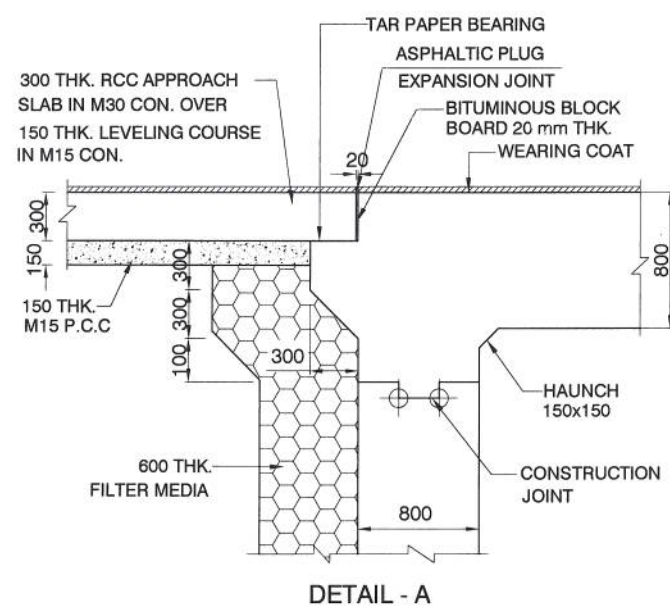
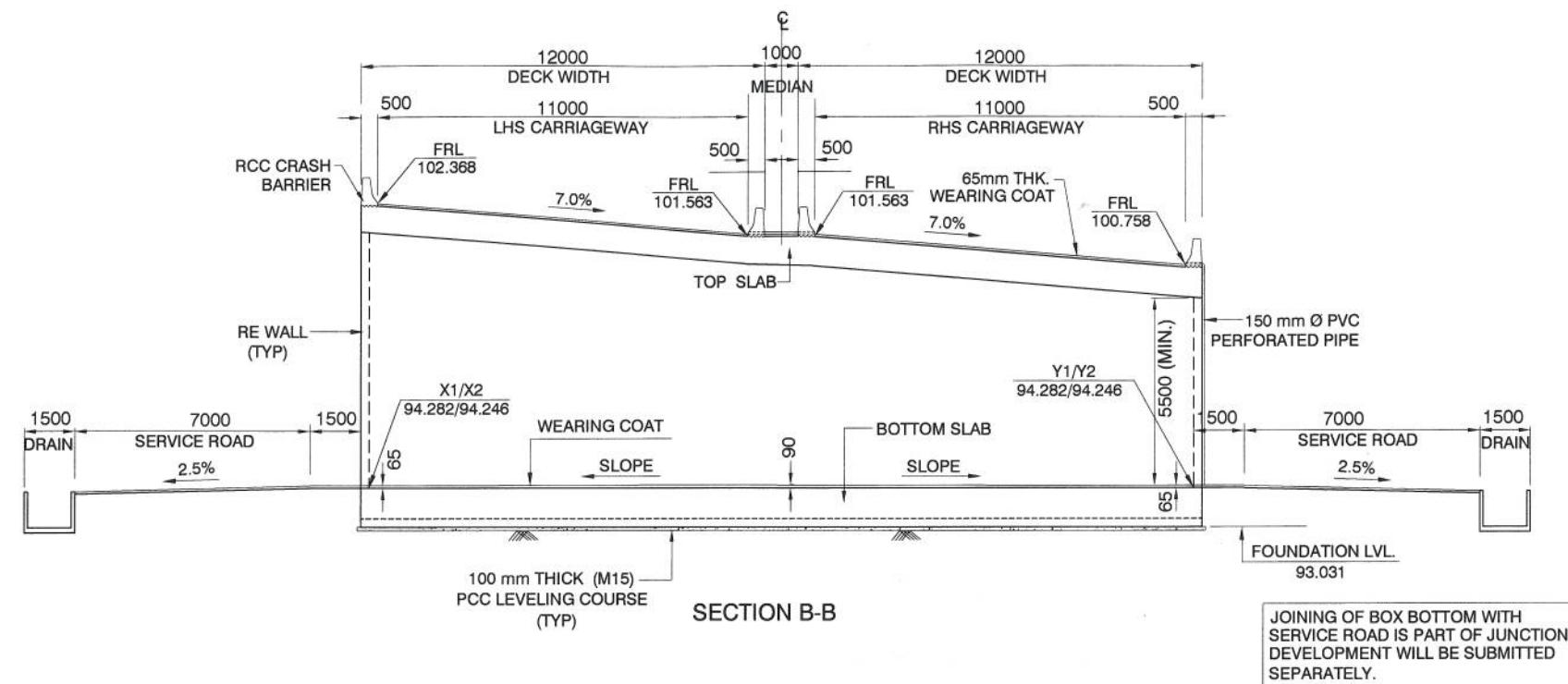
DESIGN DIRECTOR
Corsan Construction S.A.

APPROVED:	RBS
CHECKED:	BKG
DESIGNED:	AS
CONSULTANT	PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070
AUTHORITY ENGINEER	VOYANTS SOLUTIONS PVT LTD.

CLIENT:	NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No. 1, Panipath, Ambikagiri Nagar, Zoo Road, Guwahati - 24
CONTRACTOR:	CORSAN CORVIAM CONSTRUCTION S.A. 02nd Floor, Block Two, Vatika Business Park, Sector - 49,







PROOF CHECKING CONSULTANT:	Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002
SAFETY CONSULTANT:	L. R. KADIYALI & ASSOCIATES RZ-44, Bhawani Kunj, Behind D-2 Vasant Kunj,

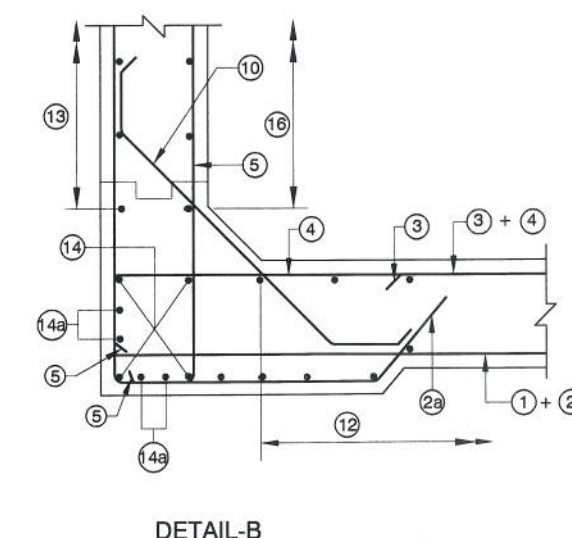
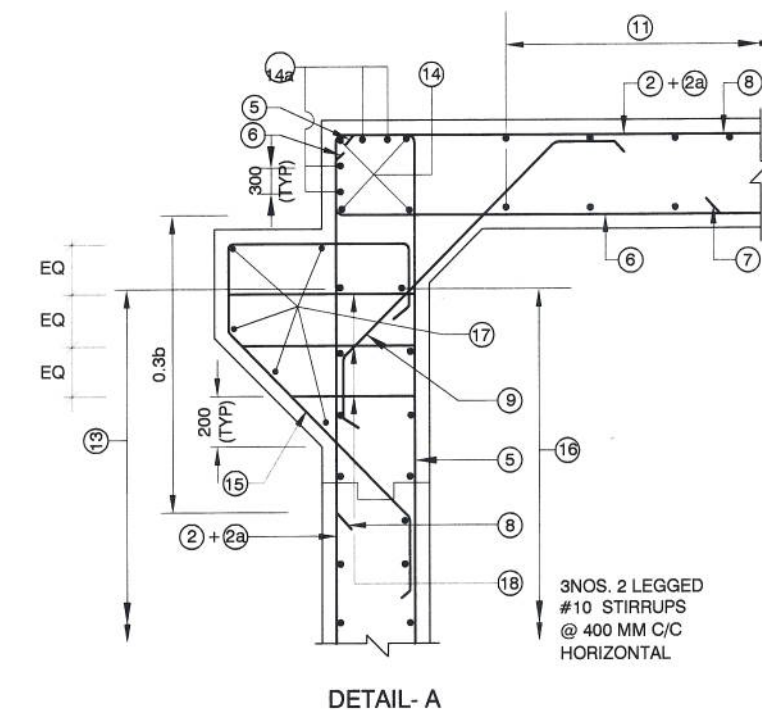
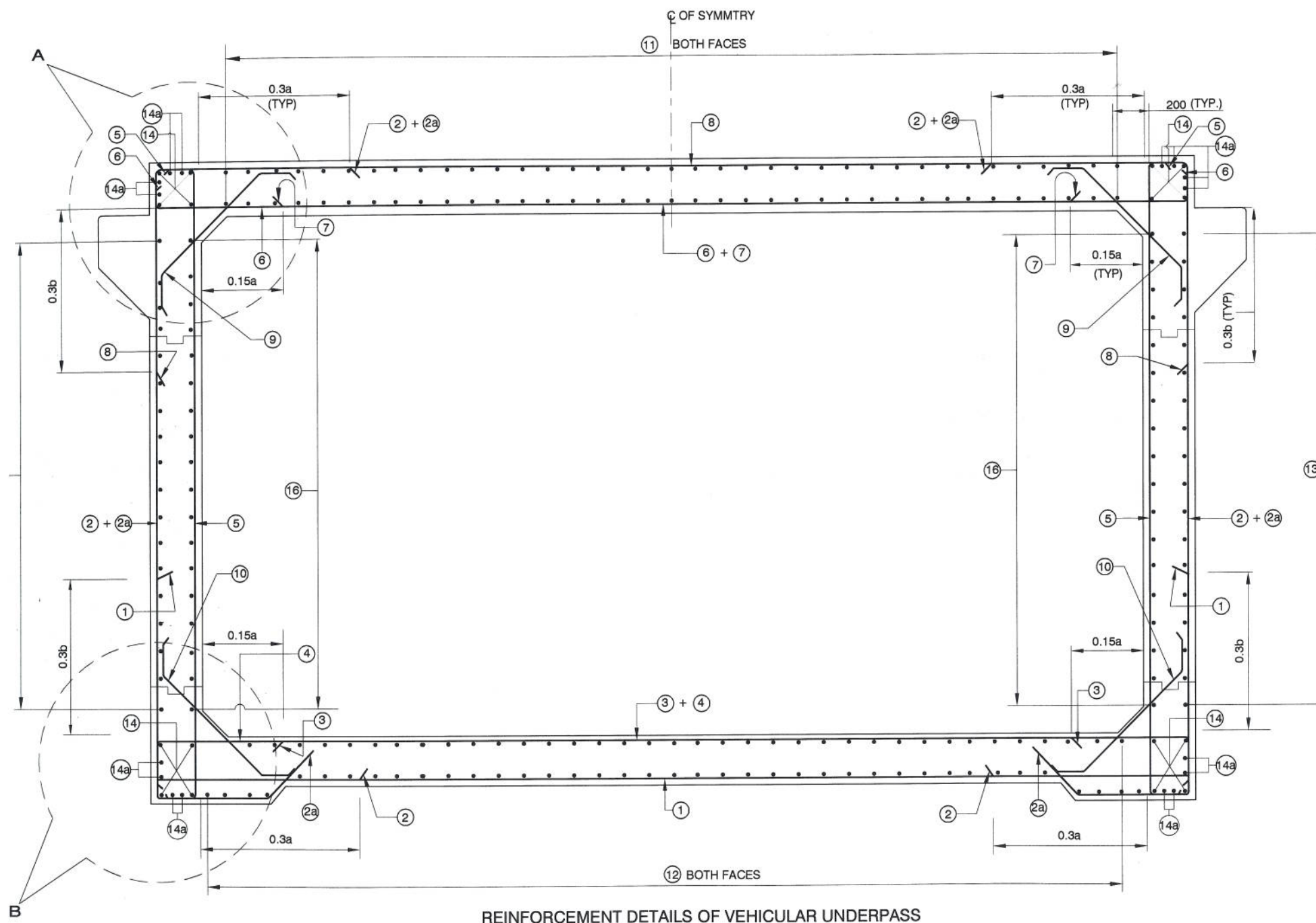
PROJECT:	FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE
TITLE:	GENERAL ARRANGEMENT DRAWING VEHICULAR UNDERPASS (CH.-533.620)
DRAWING NO.	24.11.01
SHEETSIZE:	A3
SHEET:	01
DATE:	March 2016
SCALE:	NTS
REV.	R1







S.no	Existing Chainage	Design Chainage	Proposed			Details of widening		FRL at RME	FRL at LME	Span "a" (m)	clear height "b" (m)	top slab 'd' thickness (m)	Bottom slab 'e' thickness (m)	Side wall 'f' thickness (m)	Design Base Pressure (kN/m ²)
			Type of Structure Proposed	No. of Spans	No. of span x span arrangement	Existing width	Widening								
1	534.016	533.620	Box	1	12	-	12	101.563	101.563	12	5.5	0.8	0.9	0.8	115.4

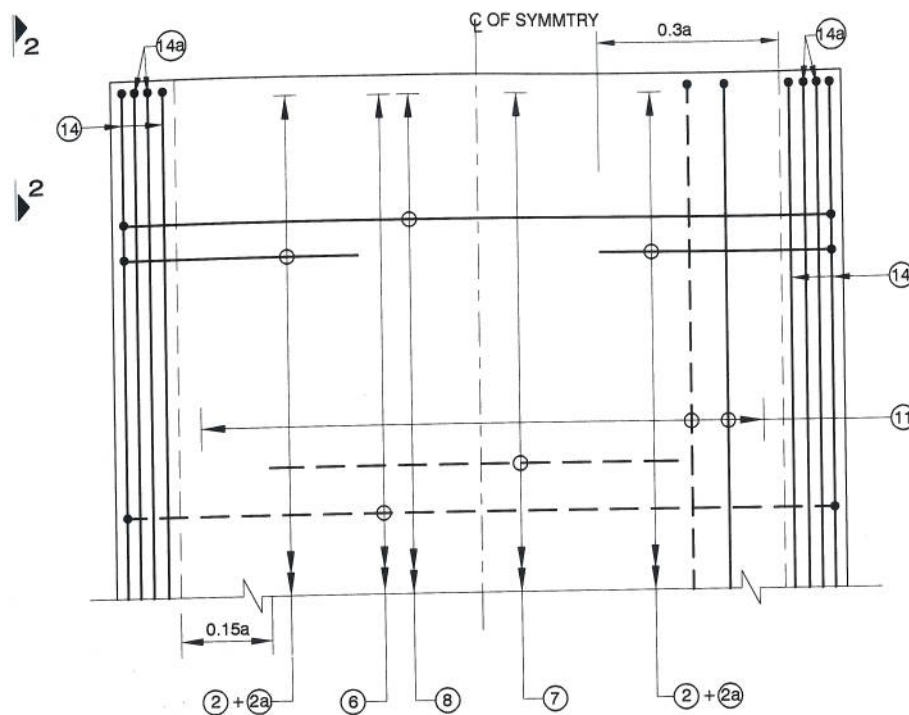
DESIGN DIRECTOR
Corian Corviam Construcccion S.A.

			APPROVED:	CONSULTANT	CLIENT:	PROOF CHECKING CONSULTANT:	PROJECT:									
			RBS	<div> PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070</div>	<div> NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road , Guwahati - 24</div>	<div> Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002</div>	FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE									
			CHECKED:				BKG	<div> L. R. KADIYALI & ASSOCIATES RZ-44, Bhawani Kunj, Behind D-2 Vasant Kunj, New Delhi 110 070</div>	TITLE:	GENERAL ARRANGEMENT DRAWING VEHICULAR UNDERPASS (CH.-533.620)	SHEETSIZE:	A3	SHEET:	02	DATE:	March 2016
			DESIGNED:				AS		SCALE:	NTS		REV.	R1			
1	01.07.2016	PC COMPLIANCE	DRAWN:				AUTHORITY ENGINEER:		CONTRACTOR:	SAFETY CONSULTANT:	DRAWING NO.	94-41-01				
				<div> VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, BPTP Park Centra, Gurgaon, Haryana-122001</div>	<div> CORSAN CORVAM CONSTRUCTION S.A. 02nd Floor, Block Two, Vatika Business Park, Sector - 49, Sohna Road, Gurgaon, Haryana, India - 122001</div>											

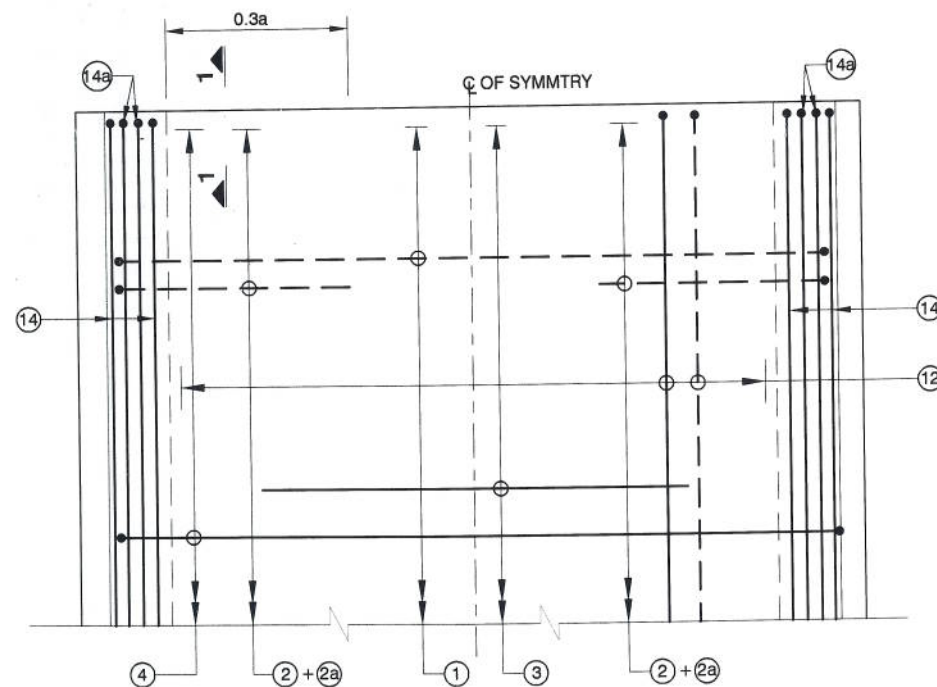


DESIGN DIRECTOR
 Corsan Corviam Construccon S.A.

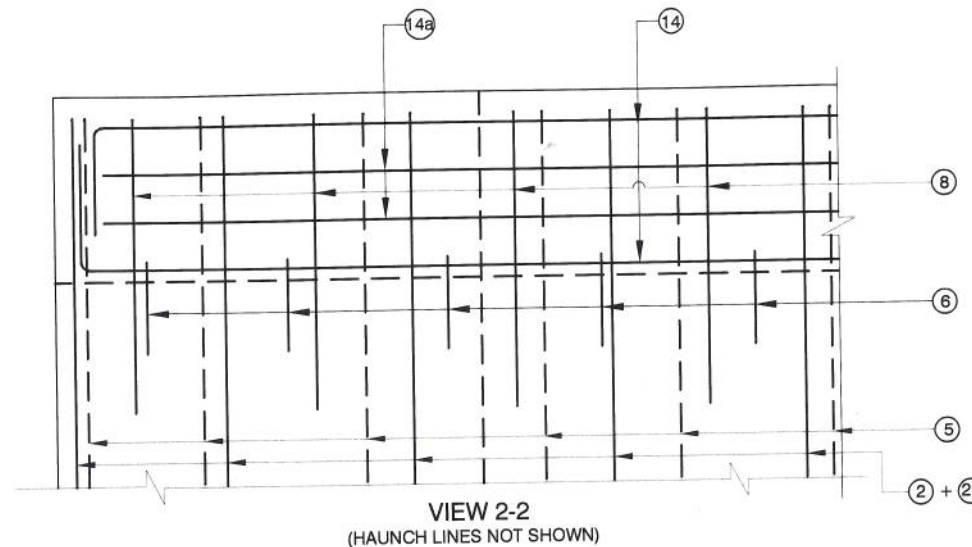
		APPROVED:	CONSULTANT	CLIENT:	PROOF CHECKING CONSULTANT:	PROJECT:						
		RBS	 PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070 AUTHORITY ENGINEER :  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, BPTP Park Centra, Sector-30, NH-8, Gurgaon, Haryana – 122001, India	 NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road , Guwahati - 24	 Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002	FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE						
	CHECKED:	BKG					TITLE:	SHEETSIZE:	SHEET:	DATE:		
	DESIGNED:	AS					CONTRACTOR:	SAFETY CONSULTANT:	REINFORCEMENT-VEHICULAR UNDERPASS (CH.-533.620)	A3	01	March 2016
	DRAWN:	KDS										
DATE	DESCRIPTION OF REVISIONS											



TOP SLAB REINFORCEMENT PLAN
(BAR MARK ⑤, ⑱ KERB, BRACKET & HAUNCH LINES NOT SHOWN IN PLAN)



BOTTOM SLAB REINFORCEMENT PLAN
(HAUNCH LINES NOT SHOWN IN PLAN)



NOTES:

- ALL DIMENSIONS ARE IN mm AND LEVELS IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- DIMENSIONS SHALL NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL TO BE FOLLOWED.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
- ALL REINFORCING STEEL SHALL BE HIGH YIELD STRENGTH DEFORMED (CRS-TMT) BARS (GRADE - Fe 500). CONFORMING IS : 1786.
- CLEAR COVER TO OUTERMOST REINFORCEMENT SHALL BE FOLLOWS.
a. EARTH FACE - 75 mm
b. FOR OTHERS - 40 mm
- MINIMUM ANCHORAGE LENGTH SHALL BE 42D .WHERE 'D' IS THE DIAMETER OF BAR.
- LAP LENGTH SHALL BE PROVIDED AS PER BELOW -
(FOR GRADE OF CONC. M35 AND ABOVE)

LAP LENGTH	% LAP AT ANY SECTION IS
76 d	BETWEEN 40 - 50%
68 d	BETWEEN 25 - 40%
60 d	- 25%

(WHERE 'd' IS THE DIAMETER OF THE BAR)

- FOR UNFAVORABLE BOND CONDITIONS LAP LENGTH SHALL BE MULTIPLIED 1.4 AS PER IRC: 21-2000
- ALL LAP SHALL BE SUITABLY STAGGERED AND MINIMUM DISTANCE BETWEEN THE ADJACENT LAPS SHALL BE 130 TIMES OF LAP LENGTH.

SCHEDULE OF REINFORCEMENT

BAR MARKS	BARS SHAPE	BAR DIA.	SPACING / NOS.	REMARKS
①		20	200	Lapping
②		20	200	Alternate + Lapping
②a		12	200	Alternate + Lapping
③		20	200	Alternate
④		20	200	Alternate
⑤		16	200	
⑥		16	200	Alternate
⑦		20	200	Alternate
⑧		16	200	Lapping
⑨		10	200	
⑩		10	200	
⑪		12	200	
⑫		12	150	
⑬		12	200	
⑭		10	4 x 4 Nos	
⑭a		12	4 x 4 Nos	
⑮		12	200	
⑯		12	200	
⑰		12	2 x 5 Nos	
⑱		10	3 LAYERS 2 LEGGED STIRRUPS @ 400 c/c	

LEGEND

	TOP FACE BARS/ OUTER FACE BARS
	BOTTOM FACE BARS/ INNER FACE BARS

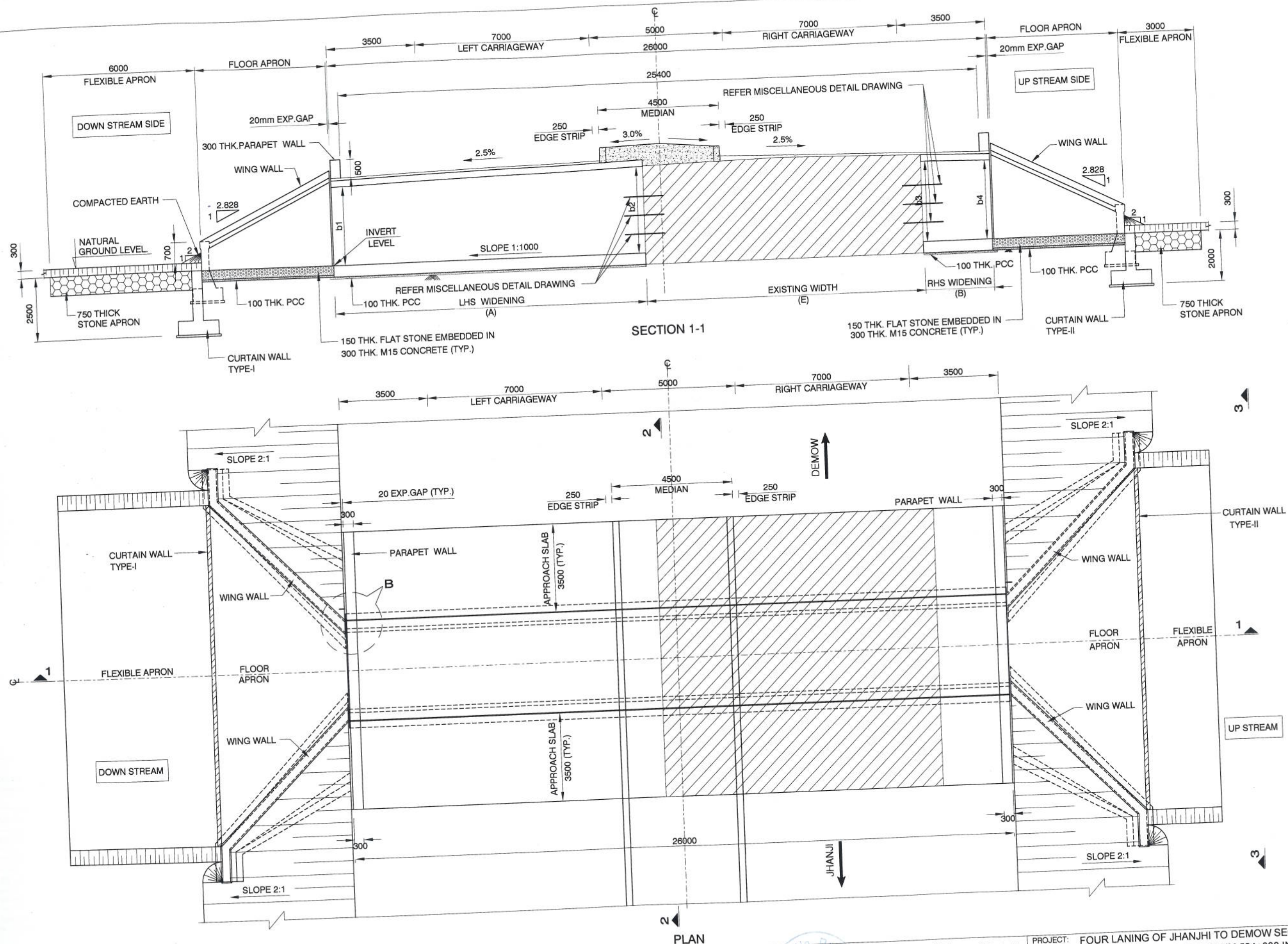
APPROVED:	RBS
CHECKED:	BKG
DESIGNED:	AS
DRAWN:	

CONSULTANT	PCI PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070
AUTHORITY ENGINEER:	VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, RPTP Park Centre,

CLIENT:	NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road, Guwahati - 24
CONTRACTOR:	CORSAN CORVIAM CONSTRUCTION S.A. 02nd Floor, Block Two, Vatika Business Park, Sector - 49, Sohna Road, Gurgaon, Haryana, India - 122001

PROOF CHECKING CONSULTANT:	Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002
SAFETY CONSULTANT:	L. R. KADIYALI & ASSOCIATES RZ-44, Bhawani Kunj, Behind D-2 Vasant Kunj, New Delhi 110 070

PROJECT:	FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE
TITLE:	REINFORCEMENT-VEHICULAR UNDERPASS (CH.-533.620)
DRAWING NO.	94-41-02
SHEET SIZE:	A3
SHEET:	02
DATE:	March 2016
SCALE:	NTS
REV.	0



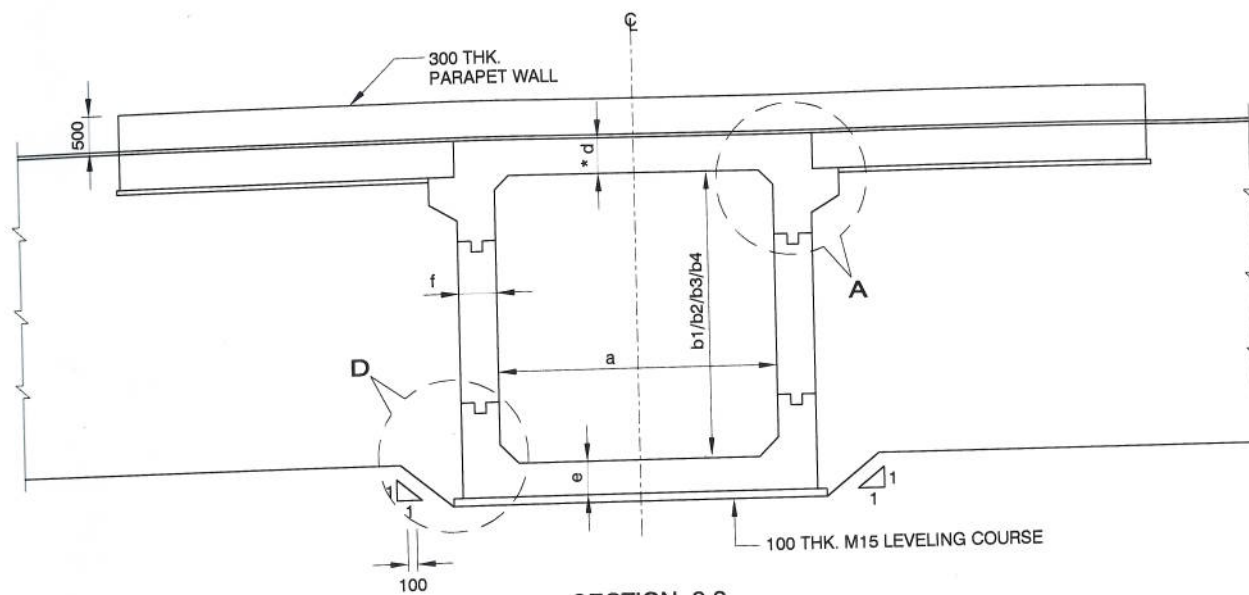
DESIGN DIRECTOR
Corisan Corviam Construction S.A.

APPROVED: RBS
CHECKED: BKS
DESIGNED: KDS
CONSULTANT: PROJECTS CONSULTING INDIA (P) LTD
Engineers and Planners
6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070
AUTHORITY ENGINEER: PROJECTS CONSULTING INDIA (P) LTD

CLIENT: NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
Ministry of Road Transport & Highways, Government of India
Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road, Guwahati - 24
CONTRACTOR: CORISAN CORVIAM CONSTRUCTION S.A.
02nd Floor, Block Two, Vatika Business Park, Sector - 49, Gurgaon, India - 122001

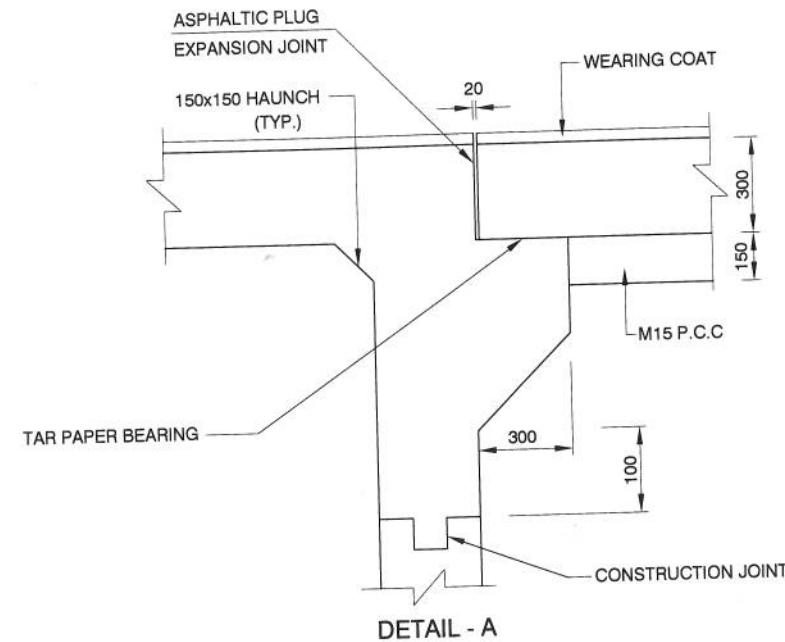
PROOF CHECKING CONSULTANT: Gifford India Pvt Ltd. (Part of Ramboll)
The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002
SAFETY CONSULTANT: L. R. KADIYALI & ASSOCIATES
RZ-44, Bhawani Kunj, Behind D-2 Vasant Kunj, New Delhi 110 070

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE
TITLE: GENERAL ARRANGEMENT DRAWING SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT
DRAWING NO. 94-42-01
SHEET SIZE: A3
SHEET: 01
DATE: March 2016
SCALE: NTS
REV: 0

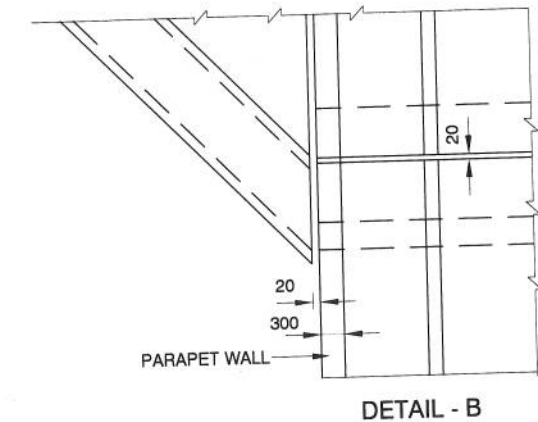


SECTION 2-2

*d DECK SLAB THICKNESS AT INNER EDGE OF KERB AS SHOWN IN SECTION 1-1

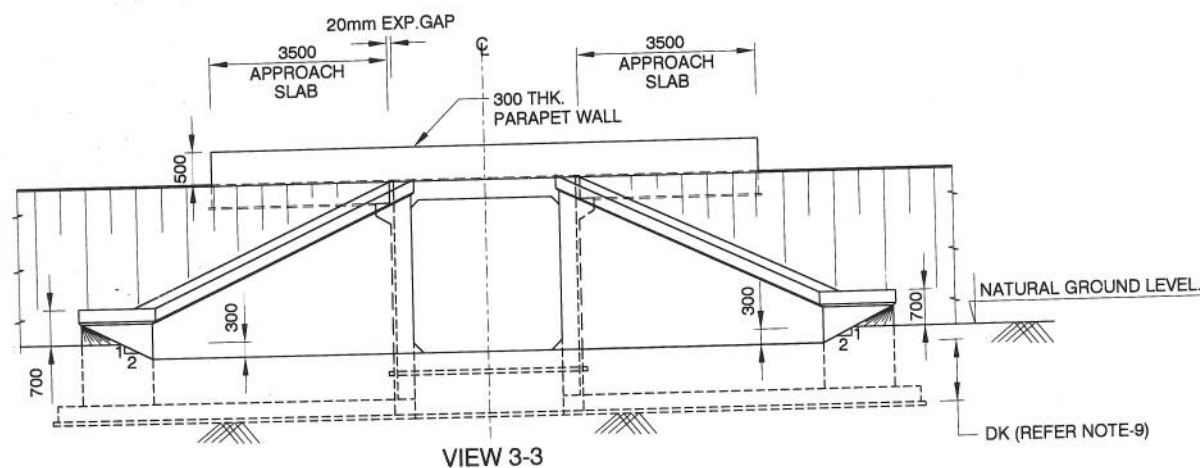


DETAIL - A

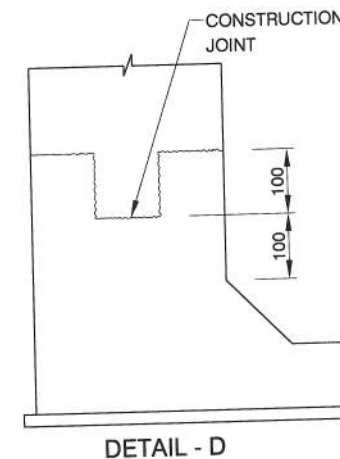


DETAIL - B

DESIGN DIRECTOR
Corsan Corviam Construction S.A.



VIEW 3-3



DETAIL - D

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150MM CUBES AS FOLLOWS:-

RCC BOX	M-30
APPROACH SLAB	M-30
LEVELLING COARSE	M15
PCC WING WALL	M20
PARAPET WALL	M-30
PCC CURTAIN WALL	M-20
- THE REINFORCING STEEL SHALL BE CORROSION RESISTANT TMT HYSD BARS (GRADE DESIGNATION FE-500 CONFORMING TO IS:1786-1985)
- PROPOSED CULVERT IS DESIGNED FOR ONE LANE OF IRC CLASS 70R TRACKED & 40 BOGIE LOAD WHICHEVER IS GOVERNING.
- BACKFILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC 78-2014 HAVING PROPERTIES $C=0$, $\phi > 30^\circ$ & $YD=20 \text{ KN/M}^2$
- 65MM THK WEARING COURSE COMPRISING OF 40MM THK BITUMINOUS CONCRETE & 25MM THK ASPHALTIC SHALL BE PROVIDED
- GROUND IMPROVEMENT TO BE DONE WHERE BASE PRESSURE EXCEEDS ALLOWABLE SBC
- THE VARIOUS LEVELS (FRL, INVERT LEVELS) & SUPER ELEVATION SHOWN IN DRAWINGS SHALL BE VERIFIED PRIOR TO EXECUTION AT SITE, AND IF ANY DISCREPANCY FOUND SHALL BE INFORM TO ENGINEER
- SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
- FOR REINFORCEMENT DETAILS REFER DRG NO. 94-45-01
- FOR RETAINING WALL/WING WALL, PARAPET WALL, CURTAIN WALL & GUARD STONE DETAILS REFER DRG NO. 94-46-01
- EXISTING WING WALL SHALL BE DISMANTLED AT WIDENING END BEFORE EXECUTION.

S.no	Existing Chainage	Design Chainage	Proposed			Details of widening				FRL at RME	FRL at LME	Invert level	Lowest Bed Level	Span "a" (m)	clear height "b1" (m)	clear height "b2" (m)	clear height "b3" (m)	clear height "b4" (m)	top slab 'd' thickness (m)	Bottom slab 'e' thickness (m)	Side wall 'r' thickness (m)	Design Base Pressure (kN/m2)	Direction of flow
			Type of Structure Proposed	No. of Spans	No. of span x span arrangement	Existing FRL	Existing width (E)	LHS Widening (A)	RHS Widening (B)														
1	520.752	520.360	BOX	1	1x2.5x1.842	92.095	11.346	13.180	1.473	92.095	92.095	89.961	90.261	2.5	1.5	1.842	1.538	1.5	0.300	0.425	0.325	87	Right to Left
2	524.120	523.810	BOX	1	1x3x3.338	93.808	11.155	13.027	1.878	93.808	93.808	90.149	90.449	3	3	3.338	3.049	3	0.325	0.475	0.375	91	Right to Left
3	524.960	524.450	BOX	1	1x3x3.831	93.009	11.273	12.750	2.000	93.009	93.009	88.850	89.150	3	3.5	3.831	3.552	3.5	0.325	0.500	0.400	95	Right to Left
4	526.000	525.582	BOX	1	1x4x3.40	93.141	11.290	13.077	1.640	93.141	93.141	89.432	89.732	4	3	3.340	3.044	3	0.375	0.450	0.400	80	Right to Left
5	529.930	529.535	BOX	1	1x6x3.332	94.117	10.967	2.277	12.755	94.117	94.117	90.283	90.583	6	3	3.059	3.332	3	0.500	0.600	0.450	66	Right to Left
6	531.895	531.494	BOX	1	1x6x3.845	93.501	11.129	13.262	1.608	93.501	93.501	88.987	89.287	6	3.5	3.845	3.542	3.5	0.500	0.600	0.450	68	Right to Left

APPROVED:	RBS
CHECKED:	BKS
DESIGNED:	KDS
DRAWN:	

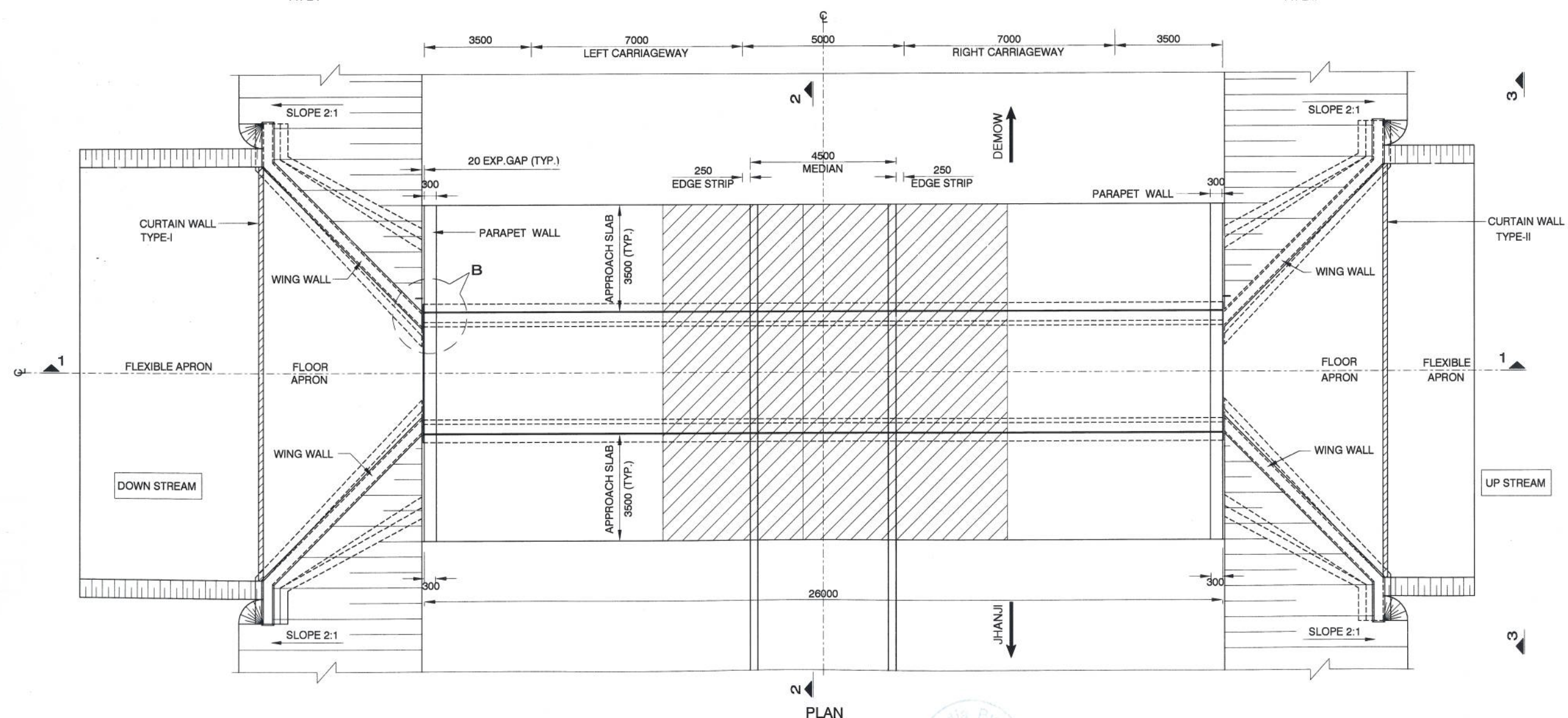
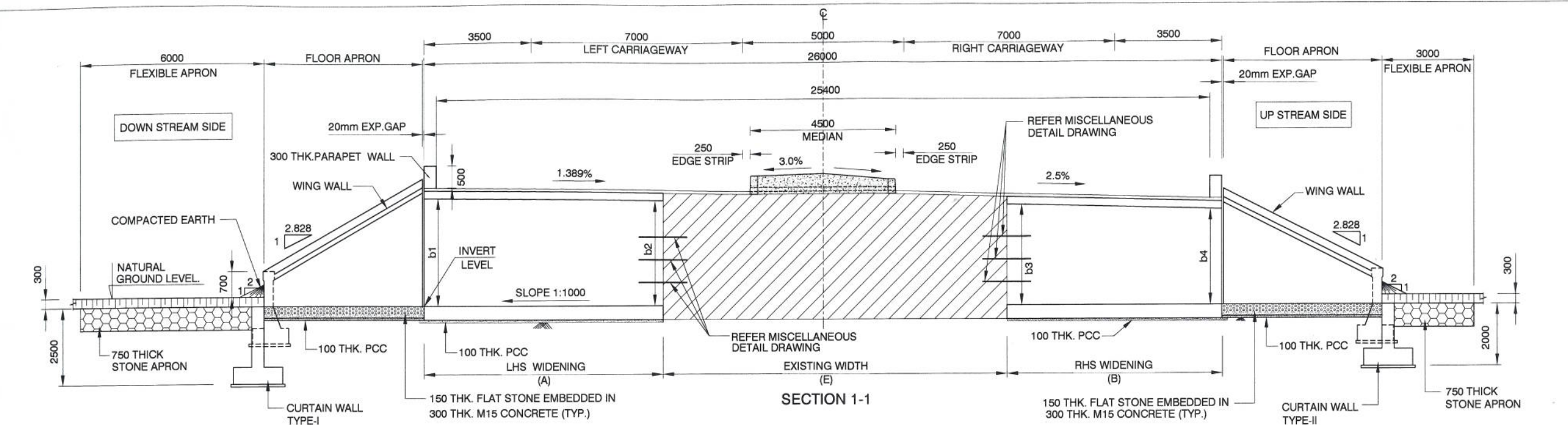
CONSULTANT	PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070
AUTHORITY ENGINEER	VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, BPTP Park Centra,

CLIENT:	NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road, Guwahati - 24
CONTRACTOR:	CORSAN CORVIAM CONSTRUCTION S.A. 02nd Floor, Block Two, Vatika Business Park, Sector - 49, Sohna Road, Gurgaon, Haryana, India - 122001


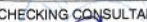

PROOF CHECKING CONSULTANT:	Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002
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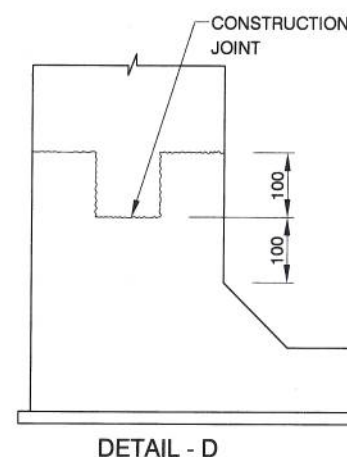
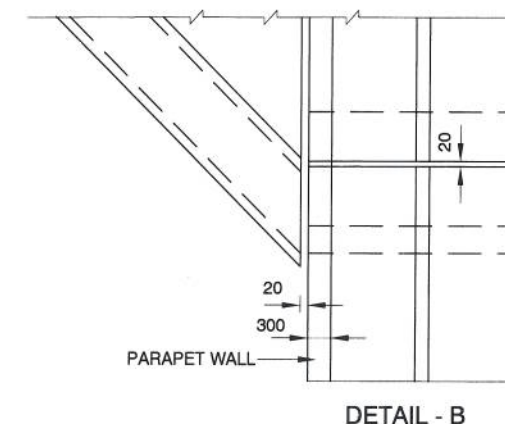
SAFETY CONSULTANT:	L. R. KADIYALI & ASSOCIATES RZ-44, Bhawani Kunj, Behind D-2 Vasant Kunj, New Delhi 110 070
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PROJECT:	FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE
TITLE:	GENERAL ARRANGEMENT DRAWING SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT
SHEET SIZE:	A3
SHEET:	02
DATE:	March 2016
SCALE:	NTS
REV:	R1
DRAWING NO.	94-42-01



Plaza
DESIGN DIRECTOR
Corsan Corviam Construccion S.A.

		APPROVED:	CONSULTANT	CLIENT:	PROOF CHECKING CONSULTANT:	PROJECT:	FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE		
		RBS	 PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070	 NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road , Guwahati - 24	 Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002	TITLE: GENERAL ARRANGEMENT DRAWING SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT (CH.-526.774)	SHEETSIZE:	SHEET:	DATE:
	BKS	A3					01	March 2016	
	DESIGNED:	KDS					SCALE: NTS	REV.	
TE	DESCRIPTION OF REVISIONS	DRAWN:	 VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, BPTP Park Centra, Sector-30, NH-8, Gurgaon, Haryana - 122001, India	 CORSAN CORVIAM CONSTRUCTION S.A. 02nd Floor, Block Two, Vatika Business Park, Sector - 49, Sohna Road, Gurgaon, Haryana, India - 122001	 L. R. KADIYALI & ASSOCIATES RZ-44, Bhawani Kunj, Behind D-2 Vasant Kunj, New Delhi 110 070	DRAWING NO.	94-43-01	0	

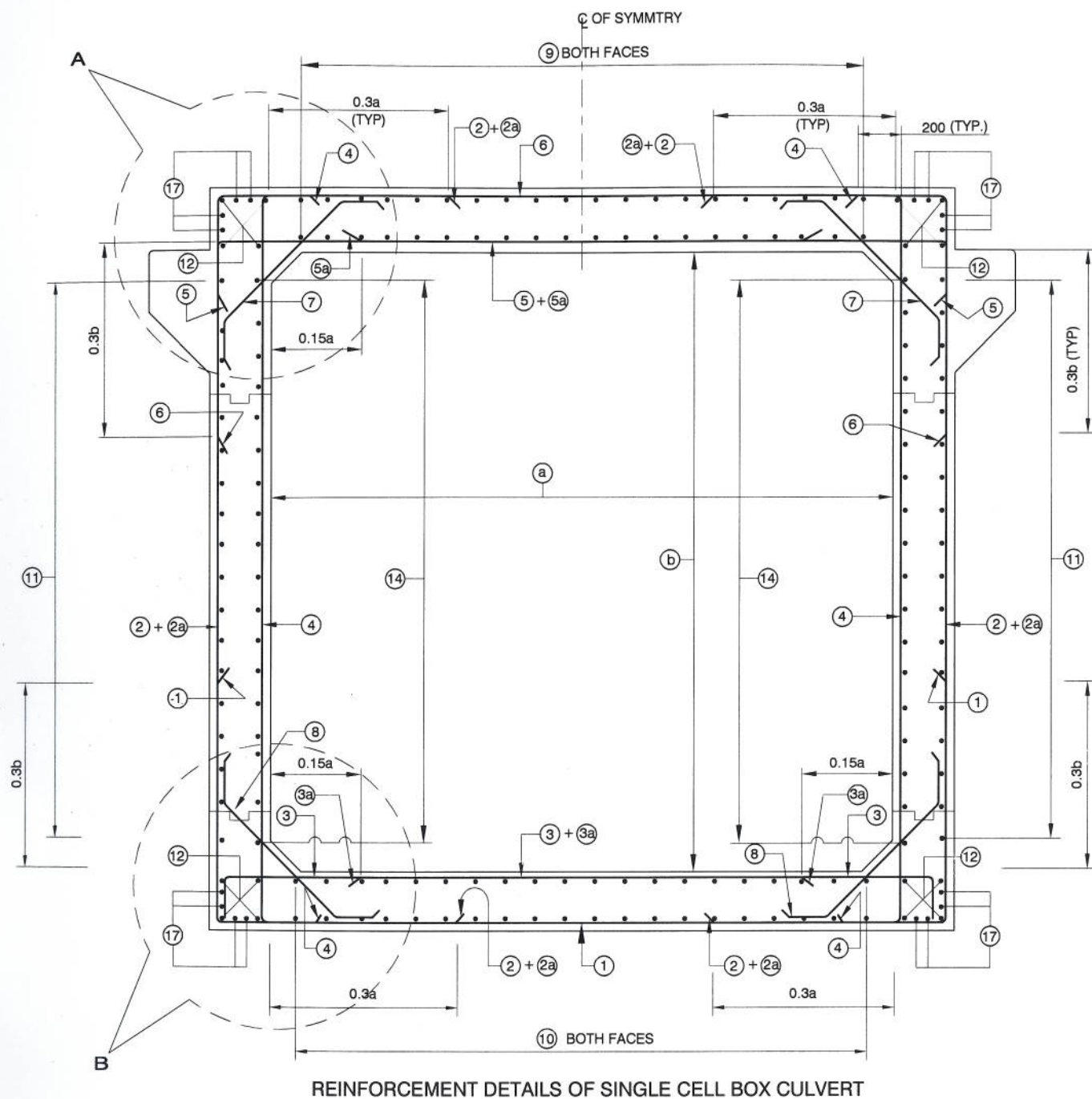


DESIGN DIRECTOR
Corsan Construction S.A.

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
2. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150MM CUBES AS FOLLOWS:-

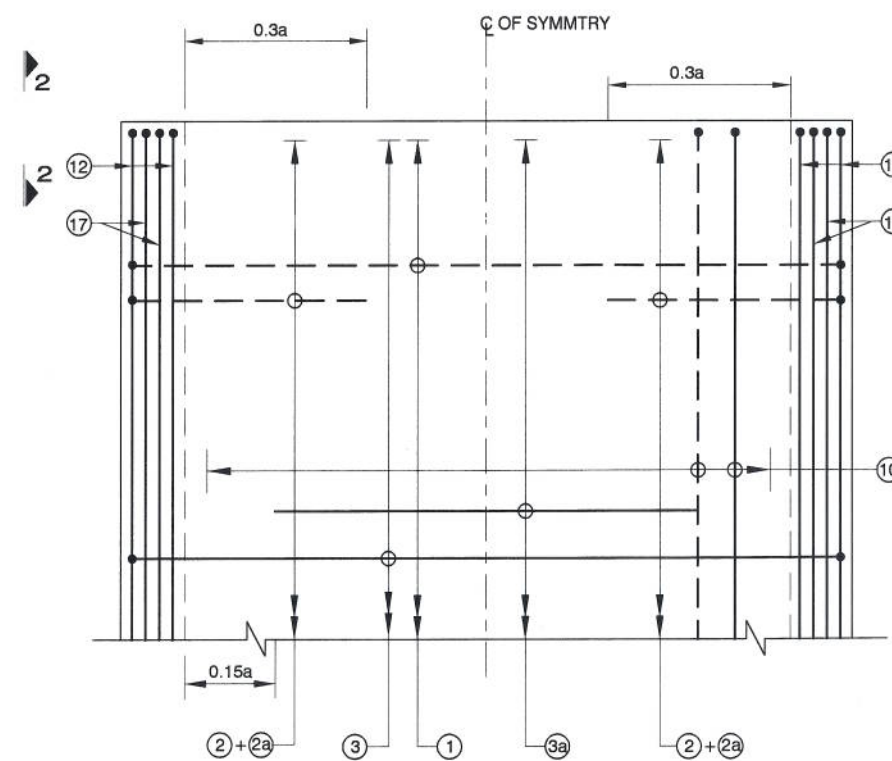
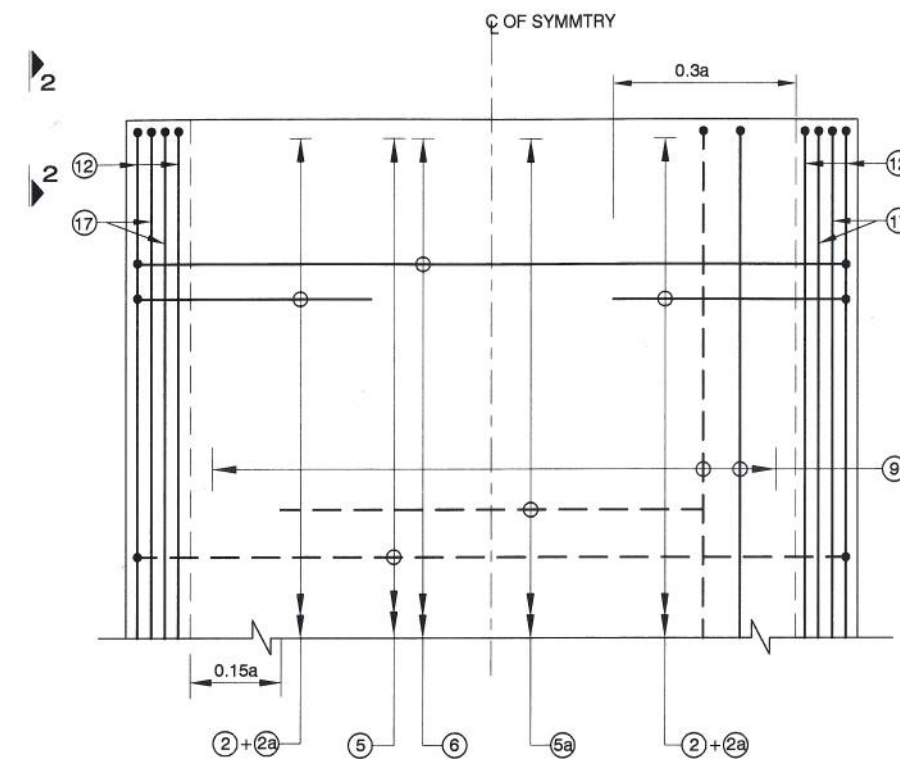
RCC BOX	M-30
APPROACH SLAB	M-30
LEVELLING COARSE	M15
PCC WING WALL	M20
PARAPET WALL	M-30
PCC CURTAIN WALL	M-20
3. THE REINFORCING STEEL SHALL BE CORROSION RESISTANT TMT HYSD BARS (GRADE DESIGNATION FE-500 CONFORMING TO IS:1786-1985)
4. PROPOSED CULVERT IS DESIGNED FOR ONE LANE OF IRC CLASS 70R TRACKED & 40 BOGIE LOAD WHICHEVER IS GOVERNING.
5. BACKFILLING BEHIND BOX SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC 78-2014 HAVING PROPERTIES $C=0$, $\phi > 30^\circ$ & $YD=20 \text{ KN/M}^2$
6. 65MM THK WEARING COURSE COMPRISING OF 40MM THK BITUMINOUS CONCRETE & 25MM THK ASPHALTIC SHALL BE PROVIDED
7. NET SAFE BEARING CAPACITY AT FDN LEVEL ASSUMED 11.2 T/M^2
8. GROUND IMPROVEMENT TO BE DONE WHERE BASE PRESSURE EXCEEDS ALLOWABLE SBC
9. THE VARIOUS LEVELS (FRL, INVERT LEVELS) & SUPER ELEVATION SHOWN IN DRAWINGS SHALL BE VERIFIED PRIOR TO EXECUTION AT SITE, AND IF ANY DISCREPANCY FOUND SHALL BE INFORM TO ENGINEER
10. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
11. FOR REINFORCEMENT DETAILS REFER DRG NO. 94-45-01
12. FOR RETAINING WALL/WING WALL, PARAPET WALL, CURTAIN WALL & GUARD STONE DETAILS REFER DRG NO. 94-46-01
13. EXISTING WING WALL SHALL BE DISMANTLED AT WIDENING END BEFORE EXECUTION.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN KH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE			
TITLE: GENERAL ARRANGEMENT DRAWING SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT (CH.-532.078)		SHEETSIZE: A3	SHEET: 02
		DATE: March 2016	
DRAWING NO.	94-44-01	SCALE: NTS	REV. R1

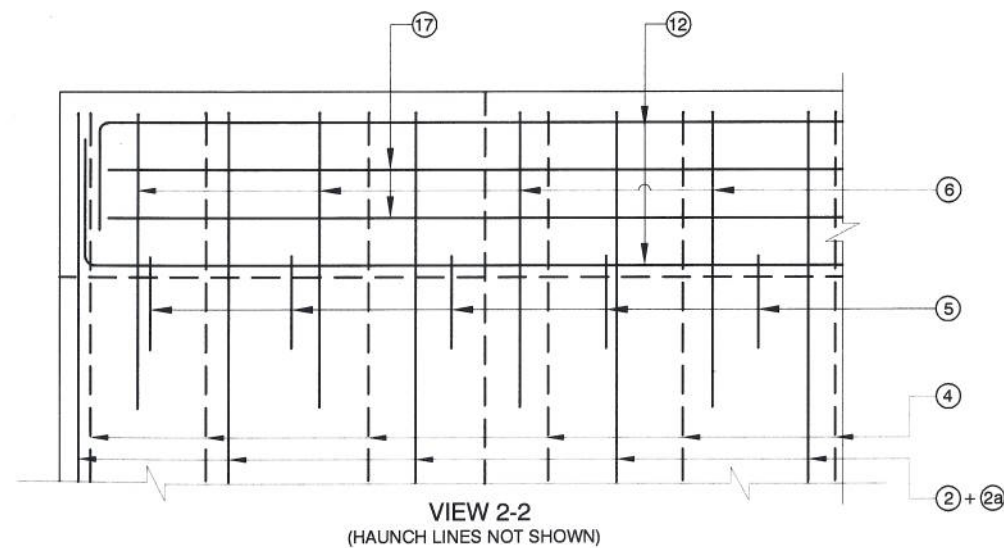
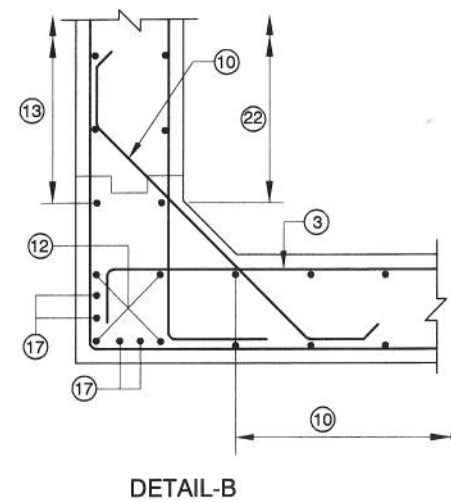
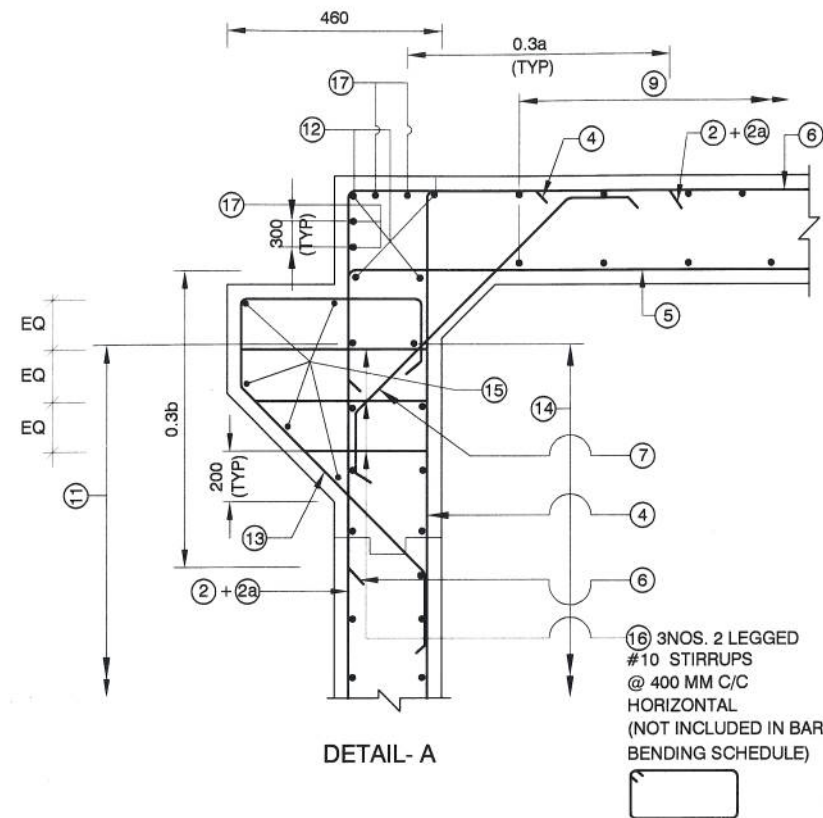


LEGEND

- : TOP FACE BARS/
OUTER FACE BARS
- - - - - : BOTTOM FACE BARS/
INNER FACE BARS



DESIGN DIRECTOR
Corsan Corviam Construccion S.A.



NOTES:

- ALL DIMENSIONS ARE IN mm AND LEVELS IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- DIMENSIONS SHALL NOT TO BE SCALED ONLY WRITTEN DIMENSIONS SHALL TO BE FOLLOWED.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
- ALL REINFORCING STEEL SHALL BE HIGH YIELD STRENGTH DEFORMED (CRS-TMT) BARS (GRADE - Fe 500). CONFORMING IS :1786.
- CLEAR COVER TO OUTERMOST REINFORCEMENT SHALL BE FOLLOWS.
 - EARTH FACE - 75 mm
 - FOR OTHERS - 40 mm
- MINIMUM ANCHORAGE LENGTH SHALL BE 42D .WHERE 'D' IS THE DIAMETER OF BAR.
- LAP LENGTH SHALL BE PROVIDED AS PER BELOW -
(FOR GRADE OF CONC. M30 AND ABOVE)

LAP LENGTH	% LAP AT ANY SECTION IS
76 d	BETWEEN 40 - 50%
68 d	BETWEEN 25 - 40%
60 d	- 25%

(WHERE 'd' IS THE DIAMETER OF THE BAR)

- FOR UNFAVORABLE BOND CONDITIONS LAP LENGTH SHALL BE MULTIPLIED 1.4 AS PER IRC: 21-2000
- ALL LAP SHALL BE SUITABLY STAGGERED AND MINIMUM DISTANCE BETWEEN THE ADJACENT LAPS SHALL BE 1.3 TIMES OF LAP LENGTH.
- PARAPET REINFORCEMENT SHALL BE TIED TO SLAB REINFORCEMENT & SHALL BE CAST MONOLITHICALLY. FOR PARAPET REINFORCEMENT REFER DRG NO. 94-46-01







DESIGN DIRECTOR
CORSAN CORVIAM CONSTRUCTION S.A.

APPROVED:	RBS	CONSULTANT	PCI PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070	CLIENT:	NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road , Guwahati - 24	PROOF CHECKING CONSULTANT:	Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002	PROJECT:	FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE		
CHECKED:	BKS					Gifford		TITLE:	REINFORCEMENT SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT	SHEETSIZE:	A3
DESIGNED:	KDS									SHEET:	02
DRAWN:	AY									DATE:	March 2016
DESCRIPTION OF REVISIONS										SCALE:	NTS
										REV.	0
										DRAWING NO.	94-45-01

SCHEDULE OF REINFORCEMENT

DESIGN CHAINAGE		520.360	523.810	524.450	525.582	526.774	529.535	531.494	532.078
OPENING		2.5 x 2	3.0 x 3.5	3 x 4	4 x 3.5	1.8 x 2	6 x 3.5	6 x 4	2.0 x 4
BAR MARKS	BARS SHAPE	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6	TYPE 7	TYPE 8
①		#10 s200	#10 s200	#10 s200	#10 s200	#10 s200	#12 s200	#12 s200	#10 s200
②		#12 s200	#16 s200	#16 s200	#16 s200	#12 s200	#16 s200	#16 s200	#16 s200
②a		#12 s200	#12 s200	#12 s200	#12 s200	#10 s200	#12 s200	#16 s200	#12 s200
③		#12 s200	#12 s200	#12 s200	#16 s200	#12 s200	#16 s200	#16 s200	#12 s200
③a		#10 s200	#10 s200	#12 s200	#10 s200	N.A.	#16 s200	#16 s200	N.A.
④		#10 s200	#12 s200	#12 s200	#10 s200	#10 s200	#12 s200	#12 s200	#12 s200
⑤		#12 s200	#12 s200	#12 s200	#16 s200	#12 s200	#16 s200	#16 s200	#12 s200
⑤a		#10 s200	#10 s200	#10 s200	#12 s200	N.A.	#12 s200	#12 s200	N.A.
⑥		#12 s200	#10 s200	#12 s200	#12 s200	#10 s200	#12 s200	#12 s200	#12 s200
⑦		#10 s200	#10 s200	#10 s200	#10 s200	#10 s200	#10 s200	#10 s200	#10 s200
⑧		#10 s200	#10 s200	#10 s200	#10 s200	#10 s200	#10 s200	#10 s200	#10 s200
⑨		#10 s200	#10 s200	#10 s200	#10 s200	#10 s250	#10 s200	#10 s200	#10 s200
⑩		#10 s200	#10 s175	#10 s150	#10 s175	#10 s250	#10 s150	#10 s150	#10 s200
⑪		#10 s200	#10 s200	#10 s200	#10 s200	#10 s250	#10 s175	#10 s175	#10 s200
⑫		4 X 4 - #10	4 X 4 - #10	4 x 4 - #10	4 X 4 - #10	4 X 4 - #10	4 X 4 - #10	4 X 4 - #10	4 X 4 - #10
⑬		#12 s200	#12 s200	#12 s200	#12 s200	#12 s200	#12 s200	#12 s200	#12 s200
⑭		#10 s200	#10 s200	#10 s200	#10 s200	#10 s250	#10 s175	#10 s175	#10 s200
⑮		2 x 5 - #12	2 x 5 - #12	2 x 5 - #12	2 x 5 - #12	2 x 5 - #12	2 x 5 - #12	2 x 5 - #12	2 x 5 - #12
⑯		#10 s400 IN 3 LAYERS HORIZONTAL	#10 s400 IN 3 LAYERS HORIZONTAL	#10 s400 IN 3 LAYERS HORIZONTAL	#10 s400 IN 3 LAYERS HORIZONTAL	#10 s400 IN 3 LAYERS HORIZONTAL	#10 s400 IN 3 LAYERS HORIZONTAL	#10 s400 IN 3 LAYERS HORIZONTAL	#10 s400 IN 3 LAYERS HORIZONTAL
⑰		2 x 4 - #10	2 x 4 - #10	2 x 4 - #10	4 x 4 - #10	2 x 4 - #10	4 x 4 - #10	4 x 4 - #10	2 x 4 - #10

DESIGN DIRECTOR
 Corsan Corviam Construcccion S.A.

	APPROVED:	CONSULTANT	CLIENT:	PROOF CHECKING CONSULTANT:	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE					
	RBS	 PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070	 NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road , Guwahati - 24	 Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002	TITLE: REINFORCEMENT SINGLE CELL RCC BOX CULVERT FOR WIDENING OF BOX CULVERT		SHEETSIZE:	SHEET:	DATE:	
	CHECKED:						BKS	A3	03	March 2016
	DESIGNED:						KDS	SCALE: NTS		
	DRAWN:	AY	DRAWING NO. 94-45-01							
DESCRIPTION OF REVISIONS		AUTHORITY ENGINEER :  VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, BPTP Park Centra, Sector-30, NH-8, Gurgaon, Haryana – 122001, India				CONTRACTOR:  CORSAN CORVIAM CONSTRUCTION S.A. 02nd Floor, Block Two, Vatika Business Park, Sector - 49, Sohna Road, Gurgaon, Haryana, India - 122001	SAFETY CONSULTANT:  L. R. KADIYALI & ASSOCIATES RZ-44, Bhawani Kunj, Behind D-2 Vasant Kunj, New Delhi 110 070			







DETAILS OF DRAINAGE SPOUT AND COLLECTION PIT
SCALE 1:100

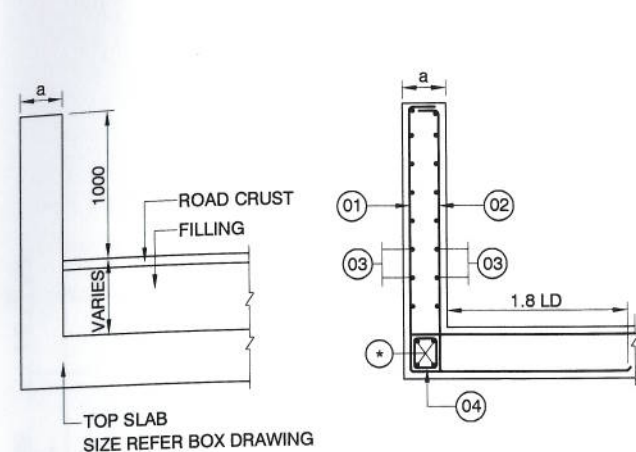


DESIGN DIRECTOR
Corsan Construction S.A.

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE SPECIFIED.
2. $H' = H - 200\text{MM}$, WHERE H IS THE HEIGHT OF THE RELATED ABUTMENT.
3. THE DETAIL OF WING WALL OF 3.8M HEIGHT HAS BEEN SHOWN IN THE DRAWING FOR ILLUSTRATION ONLY.
4. 80 DIA WEEP HOLES SHALL BE PROVIDED IN STAGGERED PATTERN STARTING FROM 0.5M ABOVE GROUND LEVEL WITH 1.0m C/C SPACING IN A SLOPE OF 1:20 TOWARDS OUTER SIDE.
5. ALL EXPOSED SURFACE OF PCC SHALL BE PROVIDED WITH REINFORCEMENT # 8 - 200 C/C .

		APPROVED:	CONSULTANT	CLIENT:	PROOF CHECKING CONSULTANT:	REINFORCEMENT # 8 - 200 C/C .					
		RBS	 PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070	 NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road , Guwahati - 24	 Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE					
		BKG				CONTRACTOR:	SAFETY CONSULTANT:	TITLE:	SHEETSIZE:	SHEET:	DATE:
		AS									
DATE DESCRIPTION OF REVISIONS		KDS	AUTHORITY ENGINEER :			DRAWING NO.	SCALE:	REV.			
			 VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, 9PTP Park Centra, Sector-30, NH-8, Gurgaon, Haryana – 122001, India			94-16-01	AS SHOWN				

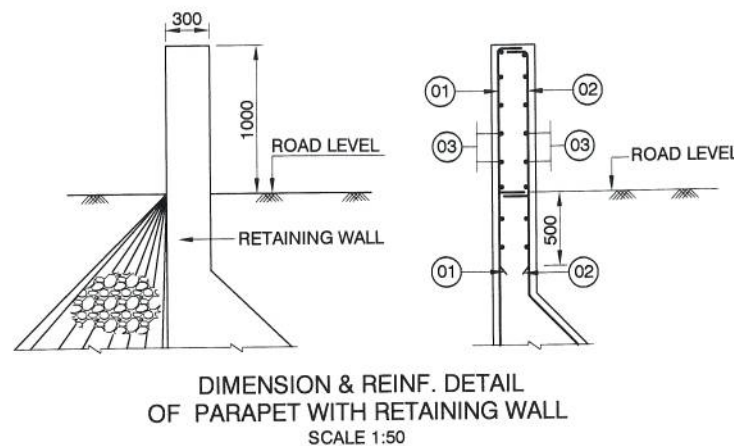


DIMENSION & REINF. DETAIL
OF PARAPET WITH BOX

*(BAR MARK NO. - REFER REINFORCEMENT DRAWING OF BOX)
SCALE 1:50

REINFORCEMENT SCHEDULE FOR PARAPET WALL

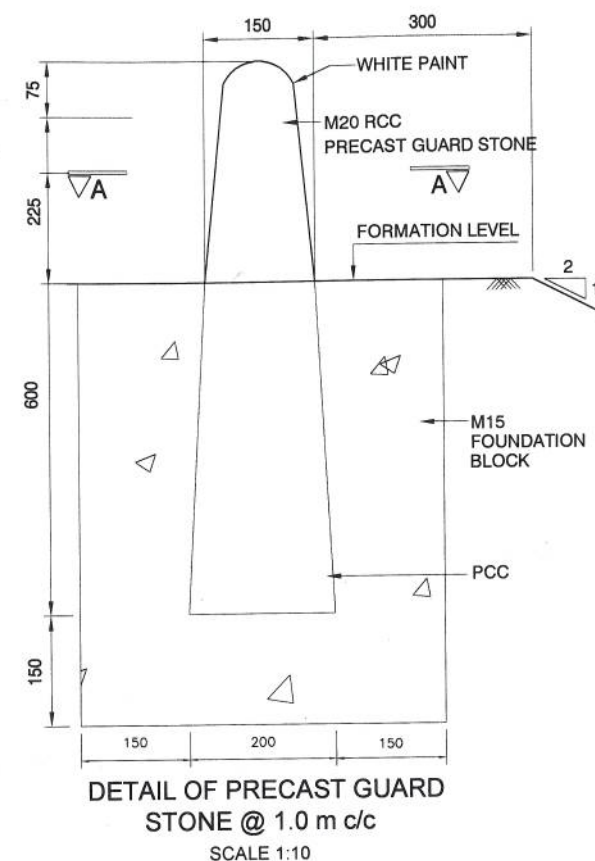
BAR MARK	SHAPE OF BARS	1.0m		1.5m		2.0m		2.5m	
		DIA #	NOS / SPACING	DIA #	NOS / SPACING	DIA #	NOS / SPACING	DIA #	NOS / SPACING
1		10	150 c/c	10	150 c/c	10	150 c/c	10	150 c/c
2		10	150 c/c	10	150 c/c	12	150 c/c	12	100 c/c
3		10	250 c/c	10	250 c/c	10	250 c/c	10	250 c/c
4		NOT IN USE		NOT IN USE		10	200 c/c	10	200 c/c



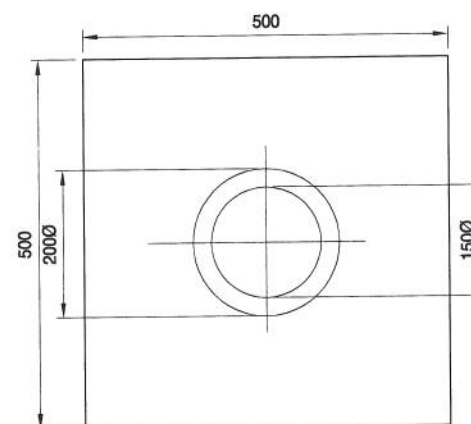
DIMENSION & REINF. DETAIL
OF PARAPET WITH RETAINING WALL
SCALE 1:50

DIMENSION OF PARAPET WALL

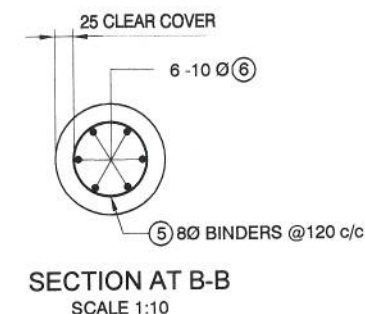
HEIGHT				
1.0m	1.5m	2.0m	2.5m	
300	300	300	300	



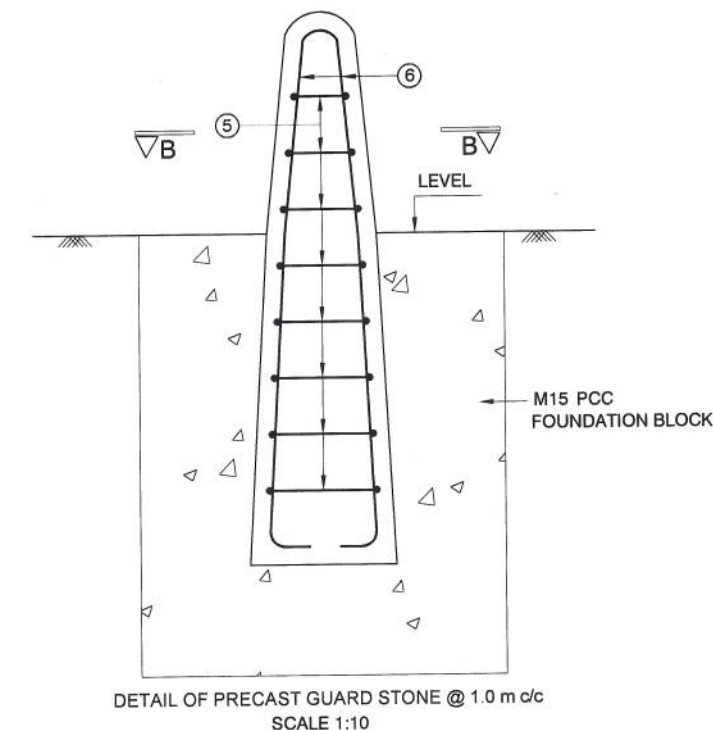
DETAIL OF PRECAST GUARD
STONE @ 1.0 m c/c
SCALE 1:10



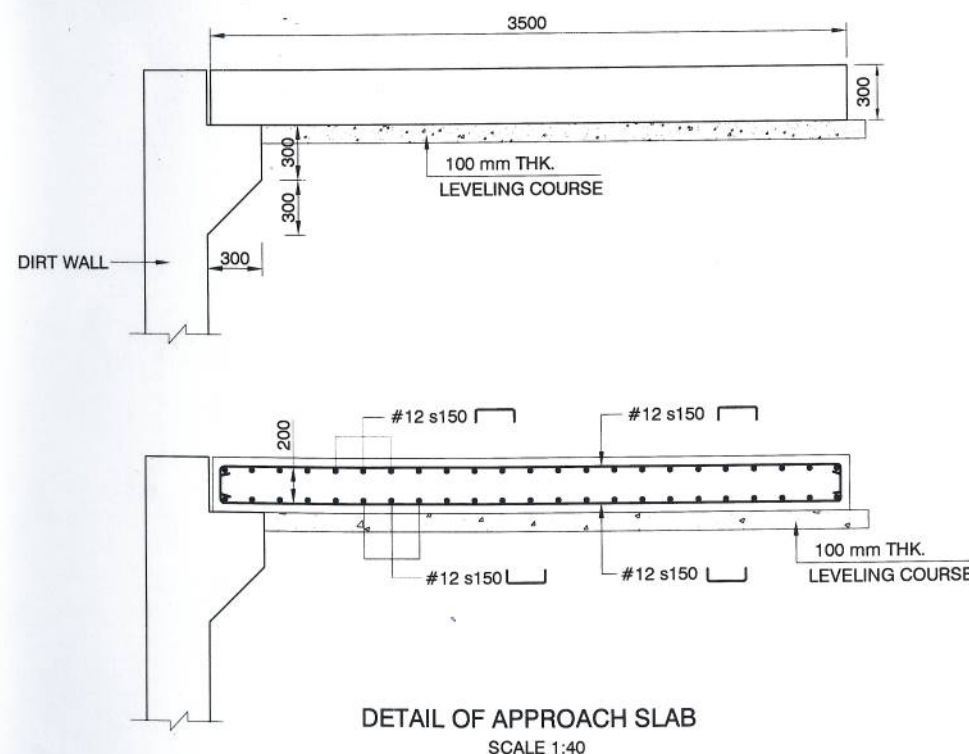
SECTION AT A-A
SCALE 1:10



SECTION AT B-B
SCALE 1:10



DETAIL OF PRECAST GUARD STONE @ 1.0 m c/c
SCALE 1:10









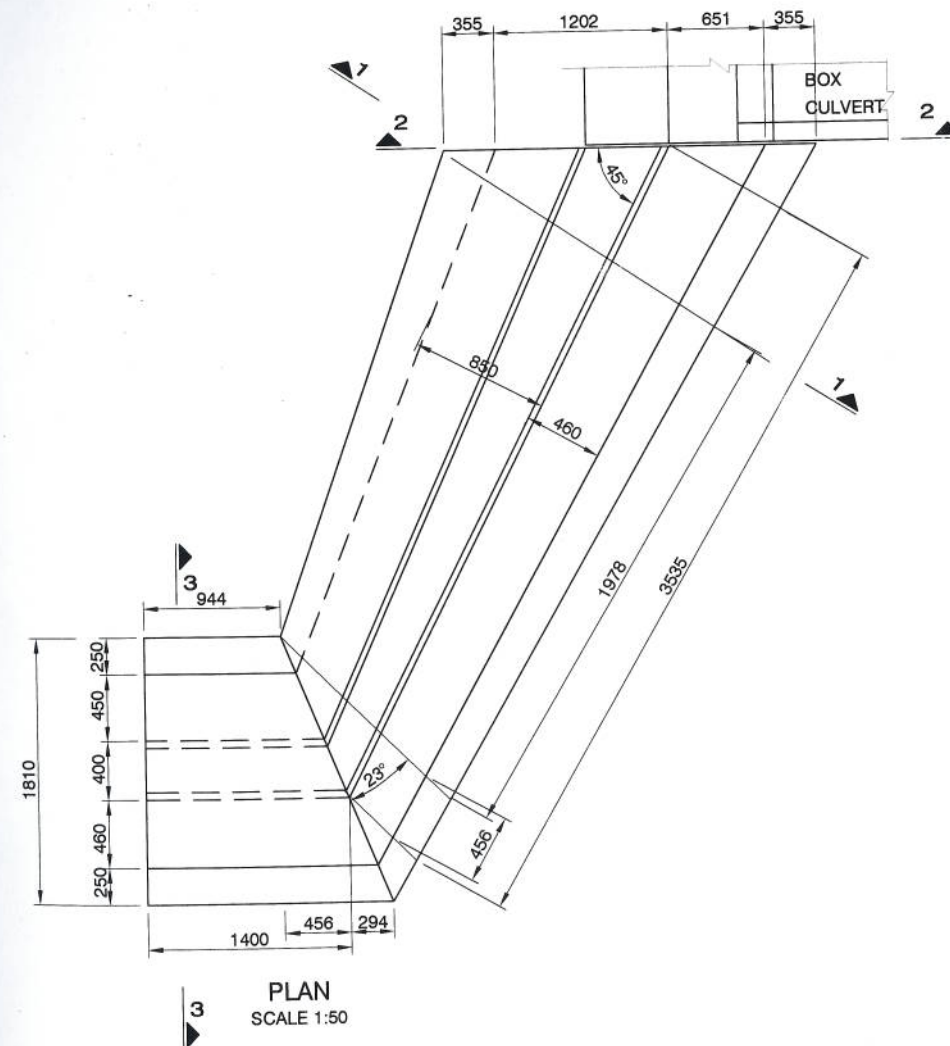
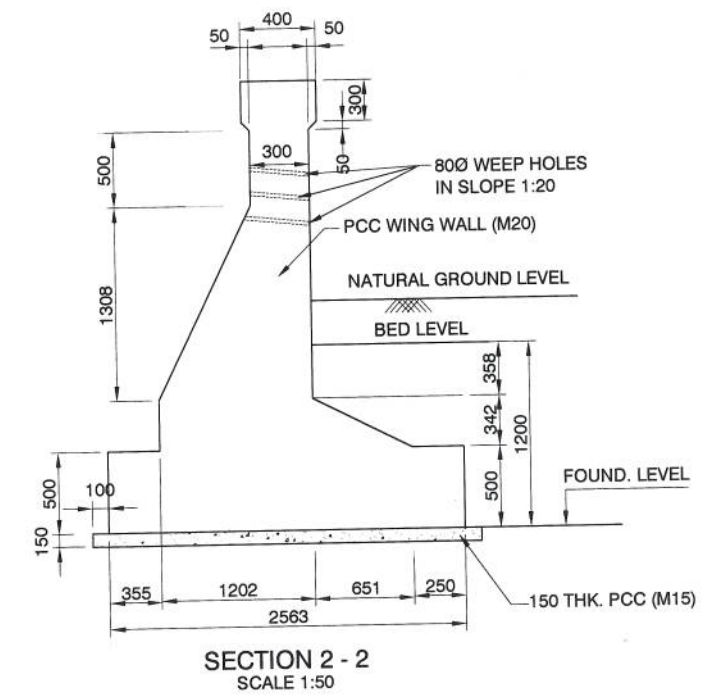
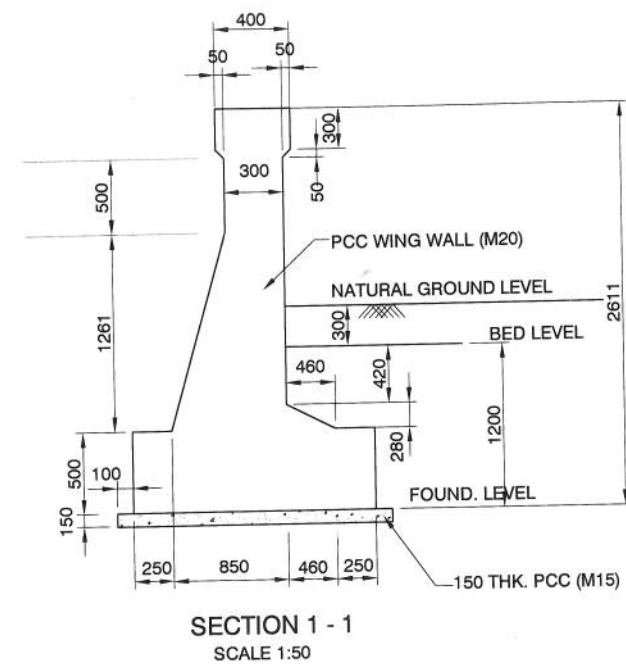
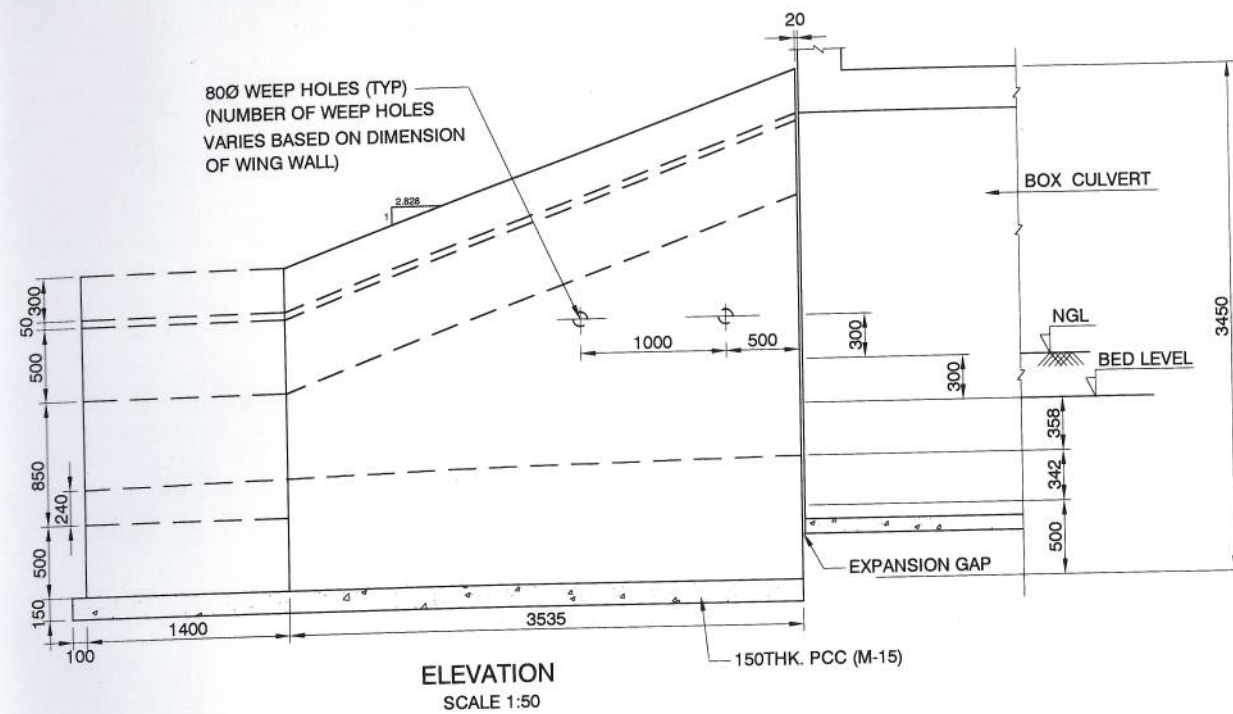
DETAIL OF APPROACH SLAB
SCALE 1:40

NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- ALL REINFORCEMENT SHOWN IN THIS DRAWING ARE OF HIGH YIELD STRENGTH DEFORMED BARS CONFORMING TO IS:1786 GRADE OF STEEL - 500 (T.M.T BARS.)
PARAPET WALL M30.
CURTAIN WALL PCC M20.
GUARD STONE FOR RCC M20.
- MINIMUM DEVELOPMENT LENGTH LD SHALL BE 42 TIMES DIA OF THE BAR
MINIMUM LAP LENGTH SHALL BE 18 TIMES LD.
WHERE 'D' IS DIA OF BAR.
NOT MORE THAN 50% BARS TO BE LAPPED AT ONE LOCATION.
- CLEAR COVER.
WALL EARTH FACE 50MM
WALL NON EARTH FACE 40MM
- ADEQUATE LINKS / SPACER BARS SHALL BE PROVIDED FOR PROPER POSITIONING OF REINFORCEMENT.

DESIGN DIRECTOR
CORSAN CORVIAM CONSTRUCTION S.A.

		APPROVED:	CONSULTANT	CLIENT:	PROOF CHECKING CONSULTANT:	PROJECT:			
		RBS	 PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070	 NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road , Guwahati - 24	 Gifford Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002	FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE			
		CHECKED:				BKG			
		DESIGNED:				AS	CONTRACTOR:	SAFETY CONSULTANT:	TITLE:
		DRAWN:				 AUTHORITY ENGINEER : VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, BPTP Park Centra, Sector-30, NH-8, Gurgaon, Haryana - 122001, India	 CORSAN CORVIAM CONSTRUCTION S.A. 02nd Floor, Block Two, Vatika Business Park, Sector - 49, Sohna Road, Gurgaon, Haryana, India - 122001	 L. R. KADIYALI & ASSOCIATES RZ-44, Bhawani Kunj, Behind D-2 Vasant Kunj, New Delhi 110 070	MISCELLANEOUS DETAILS
DATE	DESCRIPTION OF REVISIONS					SHEETSIZE: SHEET: DATE:			
						A3 02 March 2016			
						SCALE: REV.			
						AS SHOWN 0			
						DRAWING NO. 94-46-01			



DESIGN DIRECTOR
Corasan Corviam Construction S.A.

NOTES

1. SURFACE REINFORCEMENT AT THE RATE OF 2.5 kg/m² SHALL BE PROVIDED IN EACH DIRECTION. i.e. BOTH HORIZONTALLY AND VERTICALLY SPACING SHALL NOT EXCEED 200MM.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED. DIMENSIONS ARE NOT TO BE SCALED.
3. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300mm.
4. IF THERE IS ANY LEVEL DIFFERENCE IN FOUNDING LEVEL OF WING WALL AND DOWNWARD PROJECTION
5. AT THE ADJACENT EDGE OF BOX STRUCTURE, PROPER GRANULAR PROTECTION IS TO BE PROVIDED IN THIS AREA TO COMPENSATE THE LEVEL DIFFERENCE.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION OF NH-37 FROM DESIGN CH. KM 490+800 TO KM 534+800 IN THE STATE OF ASSAM UNDER EPC MODE

TITLE:	MISCELLANEOUS DETAILS	SHEETSIZE:	A3	SHEET:	03	DATE:	March 2016
DRAWING NO.	94-46-01	SCALE:	AS SHOWN	REV.	0		

APPROVED:	RBS
CHECKED:	BKG
DESIGNED:	AS
DRAWN:	

CONSULTANT	PCI PROJECTS CONSULTING INDIA (P) LTD Engineers and Planners 6110 / 2 Sector - D6, Vasant Kunj New Delhi (India) 110070
AUTHORITY ENGINEER	VOYANTS SOLUTIONS PVT LTD. 403, 4th Floor, BPTP Park Centre, Haryana - 122001, India

CLIENT:	NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. Ministry of Road Transport & Highways, Government of India Branch Office : House No.1, Panipath, Ambikagiri Nagar, Zoo Road, Guwahati - 24
CONTRACTOR:	CORSAN CORVIAM CONSTRUCTION S.A. 02nd Floor, Block Two, Vatika Business Park, Sector - 49, Sohna Road, Gurgaon, Haryana, India - 122001

PROOF CHECKING CONSULTANT:	Gifford India Pvt Ltd. (Part of Ramboll) The Epitome, Building No 5, Tower 'B', Level - 17, DLF Cyber City Phase-III, Gurgaon, Haryana-122002
SAFETY CONSULTANT:	L. R. KADIYALI & ASSOCIATES RZ-44, Bhawani Kunj, Behind D-2 Vasant Kunj, New Delhi 110 070