#### HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

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Tender No.: HORC/HRIDC/C-6/2024

Date: 02.05.2024

Reference: Specific Procurement Notice dated 06.03.2024

#### **CORRIGENDUM NO. 2**

**Name of Work: Contract Package C-6:** Design and Construction of Civil Works (Earthwork, Bridges, Station Buildings, Retaining Walls & other miscellaneous Works) and General Electrical Services works from km 61.50 to km 126.03 between HORC station New Patli and IR station Harsana Kalan and connectivities from Badsa Station of HORC to existing IR Sultanpur station and Mandothi station of HORC to existing IR Asaudah Station in connection with laying of New BG Double Railway line of HORC Project.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
1.	SPN, Clause 9, Last Sentence	HRIDC's response to Pre-Tender queries will be uploaded on or before 26.04.2024.	HRIDC's response to Pre-Tender queries will be uploaded on or before 03.05.2024.
2.	Part 1, Section II, TDS, Sub- Clause ITT 7.2, first paragraph	The Tenderer must obtain for themselves information related to site conditions, traffic, location, surroundings, climate, hydrology, meteorological conditions, weather data, availability of power, water, other utilities cumulative for construction, access and approach roads to the Site, handling and storage of materials, Waste disposal, applicable laws and regulations and any other matter considered relevant and necessary by them required for submitting their Tender and performance of all of its obligations in accordance with the requirements of Tender Documents.	The Tenderer must obtain for themselves information related to <i>site</i> data (which include but are not limited to details of all existing structures, all the structures of IR/KMP/NHAI/PWD/HSAMB, Panchayat/Village Roads, irrigation canal and water stream passing through Work Areas defined in Appendix 3 of Section VII-9: Employer's Requirements-Appendices), site conditions, traffic, location, surroundings, climate, topography, hydrology, meteorological conditions, weather data, availability of power, water, other utilities cumulative for construction, access and approach roads to the Site, handling and storage of materials, Waste disposal, applicable laws and regulations and any other matter considered relevant and necessary by them required for submitting their Tender and performance of all of its obligations in accordance with the requirements of Tender Documents.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
3.	Part 1, Section III, EQC, Sub-Clause 3.4	-	New Sub-Clause 3.5 "Detailed Design Consultant (DDC) for Bridges and Railway Formation" is added at the end of Sub-Clause 3.4. Revised Section III, EQC including New Sub-Clause 3.5 is annexed as " <b>Attachment 1</b> " of this Corrigendum No. 2.
4.	Part 1, Section III, EQC, Checklist-CL	Checklist-CL Checklist of submission of Documents/Forms online, duly filled	<b>The existing Checklist-CL is replaced and annexed with</b> "Attachment 1" of this Corrigendum No. 2.
5.	Section IV- Tender Forms, Form PER-2, Footer Pg 93 and Pg 94	Tender No. HORC/HRIDC/HORC/C-5/2023	Tender No. HORC/HRIDC/C-6/2024
6.	Part 1, Section IV, Tender Forms, Form EXP 3.4.2 b (iii)	_	New Forms Form UT-1, Form ELI-1.7, Form MOU, Form FIN 3.5, Form EXP 3.5 (a) and Form EXP 3.5 (b) are added at the end of Form EXP 3.4.2 (b) (iii) and is annexed as " <b>Attachment 2</b> " of this Corrigendum No. 2.
7.	Part 1, Section IV, Tender Forms, Appendix B to Financial Part: Price Schedule, Schedule 'A'	Schedule 'A'	The existing Clause No. 5 of Price Schedule for Schedule 'A' is replaced and annexed as "Attachment 3" of this Corrigendum No. 2.
8.	Part 1, Section IV, Tender Forms, Appendix B to Financial Part: Price Schedules, Schedule 'B'	Schedule 'B'	The existing Clause No. 6 of Price Schedule for Schedule 'B' is replaced and annexed as "Attachment 3" of this Corrigendum No. 2.
9.	Part 1, Section IV, Tender Forms, Appendix B to Financial Part: Price Schedules, Schedule 'C'	Schedule 'C'	The existing Clause No. 7 of Price Schedule for Schedule 'C' is replaced and annexed as "Attachment 3" of this Corrigendum No. 2.
10.	Part 1, Section IV, Tender Forms, Appendix B to Financial Part: Price Schedule, BoQ, MS-Excel	MS-Excel sheet for quoting price on eProcurement portal	The existing BoQ MS-Excel sheet for quoting price on eProcurement portal is replaced through this Corrigendum No. 2.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause	
No.	Section/ Clause No.			
11.	Part 2, Employer's Requirements, Cover Page, Name of Work	<b>Contract Package C-6:</b> Design and Construction of Civil Works (Earthwork, Bridges, Station Buildings, Retaining Walls & other miscellaneous Works) and General Electrical Services works from km 61.50 to km 125.98 and its connectivities to IR network from proposed Badsa Station of HORC to existing Sultanpur station and proposed Mandothi station to existing Asaudha Station in connection with laying of New BG Double Railway line of HORC Project.	<b>Contract Package C-6:</b> Design and Construction of Civil Wo (Earthwork, Bridges, Station Buildings, Retaining Walls & ot miscellaneous Works) and General Electrical Services works from 61.50 to km 126.03 between HORC station New Patli and IR stat Harsana Kalan and connectivities from Badsa Station of HORC existing IR Sultanpur station and Mandothi station of HORC existing IR Asaudah Station in connection with laying of New Double Railway line of HORC Project.	
12.	Part 2, Section VII-1: Employer's Requirements– General, Clause 1, General, last sentence	Haryana Orbital Rail Corridor (HORC) from Palwal to Sonipat Via Sohna, Manesar, Kharkhoda and Harsana Kalan is to be constructed as an Electrified (1X25kV AC-50Hz) double line track, capable of operating at a maximum train speed of 160 kmph.	Haryana Orbital Rail Corridor (HORC) from Palwal to Sonipat Via Sohna, Manesar, Kharkhoda and Harsana Kalan is to be constructed as an Electrified (2X25kV AC-50Hz) double line track, capable of operating at a maximum train speed of 160 kmph.	
13.	Part 2, Section VII-1: Employer's Requirements– General, Clause 4 PHASES (DESIGN AND CONSTRUCTION), Sub- Clause 4 b)	<ul> <li>The Design Phase shall commence upon the date of Letter of Acceptance (LOA). This phase shall include the preparation and submission of: <ol> <li>the Preliminary Design,</li> <li>the Definitive Design;</li> <li>The Construction Reference Drawings.</li> <li>The Design Phase will be complete upon the issue of a Notice in respect of the comprehensive and complete Construction Reference Drawings Submission for the whole of the Permanent Works.</li> </ol> </li> </ul>	<ul> <li>The Design Phase shall commence upon the date of Letter of Acceptance (LOA). This phase shall include the preparation, submission and approval of: <ol> <li>the Preliminary Design,</li> <li>the Definitive Design; and</li> <li>The Construction Reference Drawings.</li> </ol> </li> <li>The Design Phase will be complete upon approval by the Engineer in respect of the comprehensive and complete Construction Reference Drawings Submission by the Contractor for the whole of the Permanent Works.</li> </ul>	

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
14.	Part 2, Section VII-1: Employer's Requirements– General, Clause 4 PHASES (DESIGN AND CONSTRUCTION), Sub- Clause 4 d)	<ul> <li>d) The Construction Phase for the whole or a part of the Permanent Works shall commence immediately upon the issue of a Notice by the Engineer/Employer in respect of the relevant Construction Reference Drawings Submission. Such Notice may be issued by the Engineer in respect of a Construction Reference Drawing Submission covering a major and distinctive part of the Permanent Works. However, construction shall not be commenced until the appropriate Working Drawings have been endorsed: <ul> <li>(a) by the Contractor as "Good for Construction"; and</li> <li>(b) by the Engineer that he has no objections to the drawing.</li> </ul> </li> <li>The Construction Phase shall include the completion and submission of the Final Design and the preparation and submission of the As Built Drawings and other records as specified.</li> </ul>	<ul> <li>d) The Construction Phase for the whole or a part of the Permanent Works shall commence immediately upon the issue of a Notice of No Objection by the Engineer/Employer in respect of the relevant Construction Reference Drawings Submission. Such Notice may be issued by the Engineer in respect of a Construction Reference Drawing Submission covering a major and distinctive part of the Permanent Works. However, construction shall not be commenced until the appropriate Working Drawings have been endorsed: <ul> <li>(a) by the Contractor as "Good for Construction"; and</li> <li>(b) by the Engineer that he has no objections to the drawing.</li> </ul> </li> <li>The Construction Phase shall include the completion, submission and approval of the Final Design and the preparation, submission and approval of the As Built Drawings and other records as specified.</li> </ul>
15.	Part 2, Section VII-1: Employer's Requirements– General, Clause 4 PHASES (DESIGN AND CONSTRUCTION), Sub- Clause 4 e)	Notwithstanding Clause 4 (b) (iv) above, for those elements identified under Clause 2.6 of the Employer's Requirements - Design, the Construction Phase may commence immediately upon the issue of the Notice in respect of the Definitive Design Submission in respect of each such element subject to availability of the site in accordance with agreed programme.	Notwithstanding Clause 4 (b) (iv) above, for those elements identified under Clause 2.6 of the Employer's Requirements - Design, the Construction Phase may commence immediately upon the issue of the Notice of No Objection by the Engineer in respect of the Definitive Design approval in respect of each such element subject to availability of the site in accordance with agreed programme.
16.	Part 2, Section VII 2: Employer's Requirements – Functional	-	The existing Section VII 2: Employer's Requirements – Functional is replaced and annexed as <b>Attachment 4</b> of this Corrigendum No. 2.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
17.	Part 2, Section VII-4: Construction– Civil & BLT, Sub-Clause 1.3	1.3 The Contractor shall engage the Designer who shall undertake and prepare the design of the Permanent Works and Temporary Works. The Contractor shall place his core design team at Gurgaon.	<ul> <li>1.3 The Contractor shall engage the <i>Detailed Design Consultant</i> (<i>DDC</i>) who shall undertake and prepare the design of the Permanent Works and Temporary Works. The Contractor shall place his core design team at Gurgaon.</li> <li><i>The DDC shall deploy design staff as per "Attachment C-3: Minimum Requirement of the DDC's Organizational Structure" given in Section VII-4: Employer's Requirements – Construction (Civil &amp; BLT) with the approval of the Engineer.</i></li> </ul>
18.	Part 2, Section VII-4: Employer's Requirements – Construction (Civil & BLT), ATTACHMENT C3.	Attachment C-3	The existing Attachment C-3 included in Section VII-4: Employer's Requirements – Construction (Civil & BLT) is replaced and annexed as <b>Attachment 5</b> of this Corrigendum No. 2.
19.	Part 2, Section VII-3: Employer's Requirements- Design (Civil & BLT), Attachment D 1, 1. Design Certificate	<b>CONTRACTOR'S CERTIFICATE:</b> The Certifies that all design has been performed utilizing the skill and care to be expected of a professionally qualified and competent designer, experienced in work of similar nature and scope. This further certifies that all works relating to the preparation, review, checking and certification of design has been verified by us and the design proposed by the designer has been accepted by us.	<b>CONTRACTOR'S CERTIFICATE:</b> <i>We hereby certify</i> that all design has been performed utilizing the skill and care to be expected of a professionally qualified and competent designer, experienced in work of similar nature and scope. This further certifies that all works relating to the preparation, review, checking and certification of design has been verified by us and the design proposed by the designer has been accepted by us.
20.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Clause 1 : Introduction, First Paragraph.	This part lays down the specifications/criteria for design of civil structures i.e., Viaduct, bridges, stations, embankments, retaining walls, Ballastless Track, RE wall and other structures.	This part lays down the specifications/criteria for design of civil structures i.e., bridges, stations, embankments, retaining walls, Ballastless Track, RE wall and other structures.
21.	Part2,SectionVII-5:Employer'sRequirements-OutlineDesignOutlineDesignSpecification(ODS)-Civil & BLT,Clause2:OutlineDesign	The bridges, stations and other structures to be designed in C-6 Package are mentioned in the Scope of Works. The design works include the preparation and approval of GADs/architectural drawings, Definitive Design and Construction Design for structures as per the Employer's Requirement- Design.	The <i>formation</i> , bridges, <i>Ballastless Track (BLT)</i> , stations, and other structures to be designed in C-6 Package are mentioned in the Scope of Works. The design works include the preparation and approval of GADs/architectural drawings, Definitive Design and Construction Design for structures as per the Employer's Requirement- Design.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
	Specification -General, First Paragraph.		
22.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 2.1 e)	e) Geo-technical investigation reports	e) Indicative Geo-technical investigation reports
23.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 2.5, first paragraph	Geo-technical investigation reports included in the Tender Document are indicative in nature and the Contractor shall carry out independent detailed GT investigations for all structures and embankment as per provisions of various codes, manuals and guidelines mentioned in the Contract. However, if there is a wide variation (>20%) in the bearing capacity of the soil / pile capacity compared to GT report of nearest bore hole given in the Tender document, the same shall be brought to the knowledge of the Engineer and a confirmatory (repeat) bore bole shall be done to ascertain bearing capacity/pile capacity. The result that is minimum of the two boreholes carried out by the Contractor shall be adopted for design.	Geo-technical investigation reports included in the Tender Document are indicative in nature and the Contractor shall carry out independent detailed GT investigations for all structures and embankment as per provisions of various codes, manuals and guidelines mentioned in the Contract. However, if there is a wide variation (>20%) in the bearing capacity of the soil / pile capacity compared to GT report of nearest bore hole given in the Tender document, the same shall be brought to the knowledge of the Engineer and a confirmatory (repeat) bore bole shall be done <i>in the presence of Engineer's Representative</i> to ascertain bearing capacity/pile capacity. The result that is minimum of the two boreholes carried out by the Contractor shall be adopted for design.
24.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 2.5 a).	Liquefaction shall be considered as per IS 1893-Part-1. The design ground water table shall be used for liquefaction potential calculation. The moment magnitude Mw to be taken in design shall be 7.0. The factor of safety shall be more than 1.0 to ascertain that the strata is not liquefiable.	Liquefaction shall be considered as per <i>codal provisions</i> . The design ground water table shall be used for liquefaction potential calculation. The moment magnitude Mw to be taken in design shall be 7.0. The factor of safety shall be more than 1.0 to ascertain that the strata is not liquefiable.
25.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 2.7 d)	Horizontal and vertical alignment has been given in the Conceptual Plan and L-Section drawings. Proposed Right of Way (ROW) has been also marked on these drawings. The Contractor should check the feasibility at site and may propose any minor modifications, if required.	Horizontal and vertical alignment has been given in the Conceptual Plan and L-Section drawings. The Contractor should check the feasibility at site and may propose any minor modifications, if required.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
26.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 2.7 s) Part 2, Section VII-5:	The embankment on approaches of bridges shall be protected by pitching with CC blocks of suitable sizes, over 15cm thick consolidated gravel bed, encased in cast-in-situ RCC grid frames of suitable cross section having opening size of 1.75m x 1.75m. The pitching shall be provided for a length of 30m on both approaches in case of major bridges & 15m on both approaches in case of minor bridges. Toe wall shall be designed at the end of the embankment slope as shown in Tender drawings.	The embankment on approaches of bridges shall be protected by pitching with CC ( $M20 \ grade$ ) blocks of suitable sizes, over 15cm thick consolidated gravel bed, encased in cast-in-situ RCC grid frames of suitable cross section having opening size of 1.75m x 1.75m. The pitching shall be provided for a length of 30m on both approaches in case of major bridges & 15m on both approaches in case of minor bridges. Toe wall shall be designed at the end of the embankment slope as shown in Tender drawings. Inspection steps (1m wide) on either side of formation shall be
	Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 2.7 t).	designed with CC of M20 grade as shown in Tender drawings.	designed with M20 grade <i>concrete with nominal reinforcement</i> as shown in Tender drawings.
28.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 2.7 aa).	Drainage system shall be designed for RUBs where the road level in RUB is below the natural ground level in accordance with Section VII-6, Outline Construction Specifications, Part-2 Employer's Requirements. Protection works / ancillary works shall be designed for all RUBs as shown in the Tender drawings.	Drainage system shall be designed for RUBs where the road level in RUB is below the natural ground level <i>with water harvesting system and shed over the approach road in accordance with the Tender drawings</i> . Protection works / ancillary works shall be designed for all RUBs as shown in the Tender drawings.
29.	Part2SectionVII-5:Employer's Requirements -OutlineDesignSpecifications (ODS) - Civil& BLT, Sub-Clause 2.7 cc)	<b>cc</b> ) Compensated Ruling Gradient for the Section is 1 in 150. Station yard gradients shall be as shown in the Conceptual ESPs. The Contractor shall design vertical curves at all locations where the change in gradient is more than 0.4 %. Length of vertical curve shall be in multiple of 10 m & minimum radius 4000 m. Equilibrium speed for horizontal curves shall be taken as 90 kmph.	<b>cc</b> ) Compensated Ruling Gradient for the Section is 1 in 150. Station yard gradients shall be as shown in the Conceptual ESPs. The Contractor shall design vertical curves at all locations where the change in gradient is more than 0.4 %. <i>In addition, vertical curve shall also be designed at locations where algebraic difference between the grades is less than 0.4% if provided in Plan and L-Section drawings. Minimum radius of vertical curve shall be 4000 m. Equilibrium speed for horizontal curves shall be taken as 90 kmph.</i>
30.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 3.3.2 a)	A minimum side slope of 2H:1V for embankment shall be adopted up to 4m height. For higher embankments (more than 4m height.), the slopes shall be designed. However, side slope shall not be steeper than 2H:1V.	A minimum side slope of 2H:1V for embankment shall be adopted up to 4m height. For higher embankments (more than 4m height), the slopes shall be designed <i>after carrying out slope stability analysis</i> . However, side slope shall not be steeper than 2H:1V

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause		
No.	Section/ Clause No.				
31.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 3.3.2 f) iv	On embankments higher than 4 m, vegetative cover shall be provided on the entire slope from ground level to the top of formation using coir netting as per IS:15869, IS:15872 and IRC: 56.	On embankments <i>of all heights</i> , vegetative cover shall be provided on the entire slope from ground level to the top of formation using coir netting as per IS:15869, IS:15872 and IRC: 56.		
32.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 3.3.3 f) viii		Add below the Sub-Clause 3.3.3 f) viii. Precast/cast in situ RCC longitudinal drain of required capacity sha be designed with suitable slope and outfall at locations where HOR embankment overlaps with KMP and IR embankment to safely cate the surface runoff from HORC embankment and KMP/I embankment.		
33.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 4.1, General, first paragraph	This part lays down specifications for the design of bridges. The Bridges in HORC Project comprise of simply supported Prestressed Girders / Steel Composite Girders / Open Web Girders (OWG)/RCC Box Bridges/Culverts with RCC sub-structure and open/deep foundation.	This part lays down specifications for the design of bridges. The Bridges in HORC Project comprise of simply supported Prestressed Girders / Steel Composite Girders / Open Web Girders (OWG)/ <i>PSC slab</i> /RCC Box Bridges/Culverts with RCC sub-structure and open/deep foundation.		
34.	Part 2 Section VII-5: Employer's Requirements - Outline Design Specifications (ODS) – Civil & BLT, Sub-Clause 4.2.2, i	i. Superstructure with RCC deck and BLT	<ul> <li>i. Superstructure with RCC deck and BLT</li> <li>a) Superstructure with RCC deck &amp; BLT with square span arrangement for all the 19 bridges namely Bridge No. 155, 195, 199, 200, 242, 257, 267, 273, 277, 287,300, 303, 304, 343, 346, 375, 384, 5C &amp; 5D.</li> <li>b) In addition, the Contractor shall also design OWG superstructure with RCC deck &amp; BLT for 3 bridges namely Br no. 195, 200 &amp; 300 with skew span for the bridges as detailed in table given below:</li> </ul>		

S.	Tender Document Part /	Description of Existing Clause		Modi	fied Description	of Existing Clause /	New Clause
No.	Section/ Clause No.				T		1
					Superstructure to be designed for		
				Rr No	OĮ	Option -1	
				<i>DI</i> 110.	Span	Ref. of	Span
					arrangement	Conceptual GAD	arrangement
					1r76.2 m	GC-HRIDC-C-6-	Economical
				195	(Sauara)	DRW-BRD-GAD-	Skew span as
					(Square)	$01184\_A_0$	per site
					1x76.2 +	GC-HRIDC-C-6-	Economical
				200	45.7 + 1x76.2	DRW-BRD-GAD-	Skew span as
					m (Square)	$01200\_A_0$	per site
					1x76.2 m	GC-HRIDC-C-6-	Economical
				300	(Sauara)	DRW-BRD-GAD-	Skew span as
					(Square)	$01300\_A_0$	per site
				For the a the Engin designs s and Rail	bove 3 bridges, neer. These desi hall be adopted i way Board.	the Contractor will st gns will be deliberat n consultation with th	ubmit the design to red and one of the e Employer, RDSO
35.	Part 2 Section VII-5: Employer's Requirements - Outline Design Specifications (ODS) – Civil & BLT, Sub-Clause 4.3, a), i	<ul> <li>a) Bridges with Superstructure of Composite Plate Girder (CG)</li> <li>i. This group includes bridges having superstructure of steel CG. Standard RDSO drawings for "25t Loading-2008" will be used for superstructure of CG except for bridge Nos. 155, 242, 267, 303 &amp; 346 where BLT has been proposed.</li> <li>However, where standard RDSO drawings are used, the Contractor shall verify the adequacy of RDSO standard drawings of CG for double stack containers.</li> </ul>	a) I i. T St su 3 <sup>2</sup> M M	<b>Bridges v</b> This grout tandard R uperstruct 46 where Linimum 1-35 or th	vith Superstruct p includes bridg DSO drawings f sure of CG excep BLT has been pr Grade of deck sla at mentioned in I	ure of Composite Pl ges having superstructor for "25t Loading-200 t for bridge Nos. 155 oposed. b in composite girder RDSO drawings.	ate Girder (CG) cture of steel CG. 8" will be used for 5, 242, 267, 303 & rs shall be higher of

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
		Minimum Grade of deck slab in composite girders shall be higher of M-35 or that mentioned in RDSO drawings.	
36.	Part 2 Section VII-5: Employer's Requirements - Outline Design Specifications (ODS) – Civil & BLT, Sub-Clause 4.3, a), xii	xii.The design of CG with ballastless track shall also be got checked from a third party consultant of repute or RDSO. The third party consultant proposed to be deployed shall be got approved from the Engineer. Design and drawings duly proof checked by third party consultant shall be submitted to the Engineer for approval. The cost of third party consultancy shall be borne by the Contractor. The design and drawings of CG with ballastless track shall be got approved by the Contractor from the Chief Bridge Engineer, Northern Railway.	xii.The design of CG with ballastless track shall also be got checked from a third party consultant of repute or RDSO. The third party consultant proposed to be deployed shall be got approved from the Engineer. Design and drawings duly proof checked by third party consultant shall be submitted to the Engineer for approval. The cost of third party consultancy <i>including design &amp; drawings of launching</i> <i>scheme and temporary structures</i> shall be borne by the Contractor. The design and drawings of CG with ballastless track shall be got approved by the Contractor from the Chief Bridge Engineer, Northern Railway.
37.	Part 2 Section VII-5: Employer's Requirements - Outline Design Specifications (ODS) – Civil & BLT, Sub-Clause 4.3, a), xiv	Design and drawings of launching scheme and temporary structures shall also be got checked by the third party. Launching scheme for CG shall be got approved by the Contractor from the concerned stakeholders.	Design and drawings of launching scheme and temporary structures shall also be got checked by the third party. Launching scheme for CG shall be got approved by the Contractor from the concerned stakeholders. <i>The launching scheme to be proposed by the Contractor</i> <i>should cause minimum disturbance to the existing road traffic.</i>
38.	Part 2 Section VII-5: Employer's Requirements - Outline Design Specifications (ODS) – Civil & BLT, Sub-Clause 4.3, b), i	OWG for span 30.5m, 45.7m, 61m and 76.2m span shall be designed for "25t Loading-2008" with BLT track with LWR/CWR suitable for double stack container. The configuration of OWG to be designed shall be kept similar to that of RDSO standard OWG for 32.5t axle load for double stack container. RCC deck shall be provided over stringers with shear connector arrangement. Specification of all materials like steel, welds etc. shall be as per RDSO drawings mentioned below at para vii. All field connections in OWG shall be with HSFG bolts. Grade of bolts to be used shall be of property class 8.8. The weight of the steel structure shall not be less than that of corresponding standard	OWG for span 30.5m, 45.7m, 61m and 76.2m span shall be designed for "25t Loading-2008" with BLT track with LWR/CWR suitable for double stack container. The configuration of OWG to be designed shall be kept similar to that of RDSO standard OWG for 32.5t axle load for double stack container. RCC deck shall be provided over stringers with shear connector arrangement. Specification of all materials like steel, welds etc. shall be as per RDSO drawings mentioned below at para vii. All field connections in OWG shall be with HSFG bolts. Grade of bolts to be used shall be of property class 8.8.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
		RDSO OWG for "25t Loading-2008".	
39.	Part 2 Section VII-5: Employer's Requirements - Outline Design Specifications (ODS) – Civil & BLT, Sub-Clause 4.3, b), iv	The design of OWG with ballastless track shall also be got checked from a third party consultant of repute or RDSO. The third party consultant proposed to be deployed shall be got approved from the Engineer. Design and drawings duly proof checked by third party consultant shall be submitted to the Engineer for approval. The cost of third party consultancy shall be borne by the Contractor. The design and drawings of OWG with ballastless track shall be got approved by the Contractor from the Chief Bridge Engineer, Northern Railway.	The design of OWG with ballastless track shall also be got checked from a third party consultant of repute or RDSO. The third party consultant proposed to be deployed shall be got approved from the Engineer. Design and drawings duly proof checked by third party consultant shall be submitted to the Engineer for approval. The cost of third party consultancy <i>including design &amp; drawings of launching</i> <i>scheme and temporary structures</i> shall be borne by the Contractor. The design and drawings of OWG with ballastless track shall be got approved by the Contractor from the Chief Bridge Engineer, Northern Railway.
40.	Part 2, Section VII-5: Employer's Requirements - Outline Design Specifications (ODS) – Civil & BLT, Sub-Clause 4.3, b), vi	Design and drawings of launching scheme and temporary structures shall also be got checked by the third party. Launching scheme for OWG shall be got approved by the Contractor from the concerned stakeholders.	Design and drawings of launching scheme and temporary structures shall also be got checked by the third party. Launching scheme for OWG shall be got approved by the Contractor from the concerned stakeholders. <i>The launching scheme to be proposed by the Contractor</i> <i>should cause minimum disturbance to the existing road traffic.</i>
41.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 5.2, second paragraph	The Contractor shall design station buildings and structures at three stations namely Badsa Jn, Deverkhana, Badli, Mandothi Jn, New Asaudah, Jasur Kheri, Kharkhoda, Tarakpur & New Harsan Kalan.	The Contractor shall design station buildings and structures at <i>nine</i> stations namely Badsa Jn, Deverkhana, Badli, Mandothi Jn, New Asaudah, Jasur Kheri, Kharkhoda, Tarakpur & New Harsan Kalan.
42.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 5.4.5, Notes, first Paragraph	<b>Notes:</b> The walls loading will be taken based on actual location shown in architectural drawings. External wall load/glazing load will be taken as per details provided in architectural drawings. It is proposed to take 230 mm thick brick wall with 20 mm thick plaster on either side. However, the same shall not be taken less than 2.4kN/m2.	<b>Notes:</b> The walls loading will be taken based on actual location shown in architectural drawings. External wall load/glazing load will be taken as per details provided in architectural drawings. It is proposed to take 230 mm thick brick wall with 20 mm thick plaster on either side. However, the same shall not be taken less than 24 kN/m2.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
43.	Part 2, Section VII-5: Employer's Requirements- Outline Design Specification (ODS)-Civil & BLT, Sub- Clause 8.14, first Paragraph	The design of BLT system shall be got checked by the third party engaged by the Contractor and approved by the Engineer. Duly proof checked design and drawings shall be submitted to the Engineer for final approval. The cost of third-party checking shall be borne by the Employer.	The design of BLT system shall be got checked by the third party engaged by the Contractor and approved by the Engineer. Duly proof checked design and drawings shall be submitted to the Engineer for final approval. The cost of third-party checking shall be borne by the <i>Contractor</i> .
44.	Part 2, Section VII-6: Employer's Requirements - Outline Construction Specifications (OCS) – Civil & BLT, Sub-Clause 1.1.10, d)	The Engineer shall have the right at all times to inspect all operations including the sources of materials, procurement, layout and storage of materials, all equipment including the concrete batching and mixing equipment, and the quality control system. Such an inspection shall be arranged, and the Engineer's approval obtained prior to starting of the particular item of work. This shall, however, not relieve the Contractor of his responsibilities. All materials which do not conform to these specifications shall be rejected and shall be removed from the site immediately. The Engineer shall have the powers to cause the Contractors to purchase and use materials from any particular source, as May in the Engineer's opinion be necessary for the proper execution of work.	The Engineer shall have the right at all times to inspect all operations including the sources of materials, procurement, layout and storage of materials, all equipment including the concrete batching and mixing equipment, and the quality control system. Such an inspection shall be arranged, and the Engineer's approval obtained prior to starting of the particular item of work. This shall, however, not relieve the Contractor of his responsibilities. All materials which do not conform to these specifications shall be rejected and shall be removed from the site immediately. The Engineer shall have the powers to cause the Contractors to purchase and use materials from any particular source, as <i>may</i> in the Engineer's opinion be necessary for the proper execution of work.
45.	Part 2, Section VII-6: Employer's Requirements - Outline Construction Specifications (OCS) – Civil & BLT, Sub-Clause 1.1.18, f)	All costs involved in carrying out the tests (except integrity test for piles) and other incidental expenses thereto shall be borne by the contractor regardless of the result of the tests. The contractor shall take down or cut out and reconstruct the defective work or shall take the remedial measures instructed at his own cost. If the load testing is instructed on any ground other than mentioned in (i) to (ix) of Cl. 1.1.18(b), the cost of the same shall be reimbursed to the Contractor, if the result of the tests are found to be satisfactory.	All costs involved in carrying out the tests (except integrity test for piles <i>of Bridges included in Schedule 'B'</i> ) and other incidental expenses thereto shall be borne by the contractor regardless of the result of the tests. The contractor shall take down or cut out and reconstruct the defective work or shall take the remedial measures instructed at his own cost. If the load testing is instructed on any ground other than mentioned in (i) to ( <i>viii</i> ) of Cl. 1.1.18(b), the cost of the same shall be reimbursed to the Contractor, if the result of the tests are found to be satisfactory.
46.	Part 2, Section VII-6: Employer's Requirements - Outline Construction Specifications (OCS) – Civil & BLT, Sub-Clause 2.1 l)		<ul> <li>Following is inserted as Sub-Clause 2.1 1) and existing Sub-Clause 2.1</li> <li>1) is renumbered as 2.1 m)</li> <li>1) Before undertaking formation work in cutting in proximity of IR track, to avoid any damage to signalling &amp; telecommunication cables of IR, location of cables shall be assessed using cable locator and trenching dug manually across the formation width. Earth work in cutting near the cables shall be done manually in the presence of</li> </ul>

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause	
No.	Section/ Clause No.			
47.	Part 2, Section VII-6: Employer's Requirements - Outline Construction	<ol> <li>HORC alignment at some isolated stretches passes through waterlogged areas. At all such stretches, before undertaking earthwork in formation a minimum 500 mm thick layer of coarse sand (Zone I, II &amp; III as per IS: 383) shall be provided at bottom</li> </ol>	<ul> <li>the Engineer's representative with due care &amp; precautions. In case of any accidental damage to signalling or telecommunication cable, the Contractor shall promptly intimate to the Engineer and shall bear the repair/restoration cost of damaged cable</li> <li>m) HORC alignment at some isolated stretches passes through waterlogged areas. At all such stretches, before undertaking earthwork in formation a minimum 500 mm thick layer of coarse sand (Zone I,</li> </ul>	
	& BLT, Sub-Clause 2.1 l)	becifications (OCS) – Civil BLT, Sub-Clause 2.11) BLT, Sub-Clause 2.11) BLT, Sub-Clause 2.11) but the transment of the filled with earth up to a distance beyond to equal to H (height of embankment) or ROW which ever is less. A toe wall of boulders filled in crates shall be provided at the toe of embankment as shown in Tender drawings.	II & III as per IS: 383) shall be provided at bottom of embankment after dewatering by providing suitable arrangement like bunding etc. and removing slush/mud. Depression/ditch shall be filled with earth up to a distance beyond toe equal to H (height of embankment) or ROW which ever is less. A toe wall of boulders filled in crates shall be provided at the toe of embankment as shown in Tender drawings. <i>Tentative location of such waterlogged stretches is given in table below-</i> <i>Table-Tentative location of waterlogged stretches</i>	
			S. No.         Chainage (m)         Length (m)           1. $69150$ $95$ 2. $70500$ $180$ 3. $76950$ $50$ 4. $77570$ $138$ 5. $85250$ $60$ 6. $89770$ $190$ 7. $93270$ $75$ 8. $118432$ $75$ Note-The locations given in the table are tentative. For any change in location or increase/decrease in length of waterlogged stetches, no claim from the Contractor whatsoever shall be entertained.	

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause		
No.	Section/ Clause No.				
48.	Part 2, Section VII-6: Employer's Requirements - Outline Construction Specifications (OCS) – Civil & BLT, Sub-Clause 3.5.1	<b>3.5.1</b> Ground Improvement by Soil Replacement method: Upon completion of the excavation, bottom surface shall be levelled and compacted with heavy vibratory roller. All necessary safety precautions shall be ensured during excavation to protect the cut slopes. Thereafter it shall be refilled with clean coarse sand/gravel in layers with mechanical compaction using heavy vibratory roller until the design founding level is reached. The sand/gravel layers used for filling shall be compacted to a minimum of 70% of the Density Index (Relative Density) as obtained in accordance with IS 2720 Part- 14. After ground improvement by soil replacement, safe bearing capacity shall be assessed by conducting Plate Load test. Sand/gravel for soil replacement shall be well grade- $C_u>7$ and fines (passing 75 micron) shall be less than 5%.	<b>3.5.1</b> Ground Improvement by Soil Replacement method: Soil up to the depth prone for liquefaction shall be cut below the founding level in required width. Upon completion of the excavation, bottom surface shall be levelled and compacted with heavy vibratory roller. All necessary safety precautions shall be ensured during excavation to protect the cut slopes. Thereafter it shall be refilled with clean coarse sand/gravel in layers with mechanical compaction using heavy vibratory roller until the design founding level is reached. The sand/gravel layers used for filling shall be compacted to a minimum of 70% of the Density Index (Relative Density) as obtained in accordance with IS 2720 Part- 14. After ground improvement by soil replacement, safe bearing capacity shall be assessed by conducting Plate Load test. Sand/gravel for soil replacement shall be well grade- $C_u>7$ and fines (passing 75 micron) shall be less than 5%.		
49.	Part 2, Section VII-6: Employer's Requirements - Outline Construction Specifications (OCS) – Civil & BLT, Sub-Clause 3.6.3, c), iii, second bullet point	• While boring, the Contractor shall periodically check the properties of the stabilizing material and control the management items (specific gravity, marsh funnel viscosity, pH, etc.) to be within the values set in the Method Statement that has been approved by the Engineer.	• While boring, the Contractor shall periodically check the properties of the stabilizing material and control the management items (specific gravity, <i>sand content</i> , marsh funnel viscosity, pH, etc.) to be within the values set in the Method Statement that has been approved by the Engineer.		
50.	Part 2, Section VII-6: Employer's Requirements - Outline Construction Specifications (OCS) – Civil & BLT, Sub-Clause 3.6.3, c), iv, third bullet point	• A protocol shall be maintained regarding the strata at the founding level, Standard Penetration Test (SPT) value, percent core recovery, Unconfined Compressive Strength (UCS) from the nearest borehole, socketing horizon, flushing of pile bore, time interval between end of boring and start of concreting, bentonite density prior to the commencement of concreting.	• A protocol shall be maintained regarding the strata at the founding level, Standard Penetration Test (SPT) value, percent core recovery, Unconfined Compressive Strength (UCS) from the nearest borehole, socketing horizon, flushing of pile bore, time interval between end of boring and start of concreting, <i>polymer</i> density prior to the commencement of concreting.		

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
51.	Part 2, Section VII-6: Employer's Requirements - Outline Construction Specifications (OCS) – Civil & BLT, Sub-Clause 3.6.3, c), vii, last bullet point	• Carriage and Disposal: The bored spoil material and contaminated mud and bentonite slurry shall be disposed at the designated areas identified by the Contractor and as per the procedure approved by the Engineer and as mandated by other relevant Contract provisions.	• Carriage and Disposal: The bored spoil material and contaminated mud and <i>polymer</i> shall be disposed at the designated areas identified by the Contractor and as per the procedure approved by the Engineer and as mandated by other relevant Contract provisions.
52.	Part 2, Section VII-6: Employer's Requirements - Outline Construction Specifications (OCS) – Civil & BLT, Sub-Clause 3.6.8, i), a)		Add the following para to Sub-Clause 3.6.8 i) above Sub-Clause 3.6.8 i) a) Pile integrity test shall be carried out by Low strain Method and by Cross Hole Sonic Logging Test. 60% piles shall be tested by the Low Strain Method and remaining 40% piles shall be tested by Cross Hole Sonic Logging Test as detailed below.
53.	Part 2, Section VII –7A, General Electrical Services: Chapter-1 – Introduction and Objective, Clause 1.2, Scope of Work, Sub-Clause (6)	Clause 1.2, Scope of Work, Sub-Clause (6): "Supply, Installation, Testing and Commissioning of 11 meter high decorative poles with luminaires, with complete cabling arrangement at Badsa, Deverkhana, Badli, Mandothi, New Asaudah, Jasaur Khedi, Kharkhoda, Tarakpur and New Harsana Kalan stations to meet standard lux level as per specifications and guideline issued by RDSO/ Railway Board".	The existing "Clause 1.2, Scope of Work, Sub-Clause (6)" is replaced as under: "Supply, Installation, Testing and Commissioning of 6 meter high decorative poles with luminaires, with complete cabling arrangement at Badsa, Deverkhana, Badli, Mandothi, New Asaudah, Jasaur Khedi, Kharkhoda, Tarakpur and New Harsana Kalan stations to meet standard lux level as per specifications and guideline issued by RDSO/ Railway Board".
54.	Part 2, Section VII –7A, General Electrical Services: Chapter-1 – Introduction and Objective, Clause 1.2, Scope of Work, Sub-Clause (8)	<ul> <li>Clause 1.2, Scope of Work, Sub-Clause (8):</li> <li>"The space for (13 Passenger, 1000 Kg) lift and Escalators at Kharkhoda station shall be kept. If required, the lifts and escalators can be provided in future".</li> </ul>	The existing "Clause 1.2, Scope of Work, Sub-Clause (8)" is <b>DELETED</b> .
55.	Part 2, Section VII –7A, General Electrical Services: Chapter-1 – Introduction and	<ul><li>Clause 1.2, Scope of Work, Sub-Clause (18):</li><li>"Supply, installation, testing and commissioning of LT copper cables. The cable shall be laid under ground, under platform,</li></ul>	<ul> <li>The existing "Clause 1.2, Scope of Work, Sub-Clause (18)" is replaced as under:</li> <li>"Supply, installation, testing and commissioning of LT copper cables. The cable shall be laid under ground, under platform, under floor,</li> </ul>

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause			
No.	Section/ Clause No.					
	Objective, Clause 1.2, Scope of Work, Sub-Clause (18)	under floor, below tracks etc and cable route markers shall provided as per specifications and drawings. These cables sh feed 20 m high mast flood light towers, 11 m high decorati poles, platform lighting, street lighting, pump sets, S&T loa at both ends of platform etc. The maximum voltage drop cables from source to load point shall not exceed 5%".	below tracks etc and cable route markers shall be provided as specifications and drawings. These cables shall feed 20 m h mast flood light towers, 6 m high decorative poles, platfor lighting, street lighting, pump sets, S&T loads at both ends platform etc. The maximum voltage drop in cables from source load point shall not exceed 5%".			
56.	Part 2, Section VII –7A, General Electrical Services: Chapter-1 – Introduction and Objective, Clause 1.2, Scope of Work, Sub-Clause (30)	Clause 1.2, Scope of Work, Sub-Clause (30): "Provide maintenance supervision support during Defe Notification Period".	The existing "Clause 1.2, Scope of Work, Sub-Clause (30)" is <b>DELETED.</b>			
57.	Part 2, Section VII –7A: Employer's Requirements- Particular Specifications (PS)-General Electrical Services, Chapter 3 – Explanatory Notes for Book of Quantities (BOQ) Items: Sub-Clause 3.1 Explanatory Notes for BOQ Items, S. No. 2.14.	Sub-Clause 3.1 Explanatory Notes for BOQ Items:         S.       Description for BOQ Items         No.       2.14         Supply and Laying of HDPE Pipe (90 mm outside dia):         Accessories related with laying of HDPE pipe like fitting, bends joints/ coupler junction, flange end cap etc. as per site requirement shall be provided by Contractor and the payment of 90 mm outside dia HDPE pipe shall include all these items as required.	S.       Description for BOQ Items         No.       2.14         Supply and Laying of HDPE Pipe (90 mm outside dia):         Accessories related with laying of HDPE pipe like fitting, bends joints/ coupler junction, flange end cap, reducer etc. as per site requirement shall be provided by Contractor and the payment of 90 mm outside dia HDPE pipe shall include all these items as required.			

S.	Tender Document Part /		Description of Existing Clause	M	odified Description of Existing Clause / New Clause
No.	Section/ Clause No.				
58.	Part 2, Section VII –7A: Employer's Requirements-	Sub-Cl	ause 3.1 Explanatory Notes for BOQ Items:	The exist No. 3.2'	sting "Sub-Clause 3.1 Explanatory Notes for BOQ Items, S. 'is replaced as under:
	Particular Specifications (PS)- General Electrical	S. No.	Description for BOQ Items	S. No.	Description for BOQ Items
	Services, Chapter 3 – Explanatory Notes for Book of Quantities (BOQ) Items, Sub- Clause 3.1 Explanatory Notes for 7BOQ Items, S. No. 3.2	3.2	Provision of 40 Watt LED Street Light with Fitting: Supply, installation, testing & commissioning of Energy efficient 40 Watt LED with street light fitting with pressure die cast aluminium housing with driver & suitable fixing arrangement, IP-65 for outdoor application, operating voltage (140-270) V, System efficacy more than 100 lumen/W, complete with all accessories of approved make etc. The Contractor shall design the requirement of lights based on lux level calculations. The item price also includes labour & cost of all materials including cost of FRLS PVC insulated multi-stranded single core copper conductor cable for inter-connections, earthing connection etc.	3.2 (a)	Provision of 40 Watt LED Street Light with Fitting: Supply, installation, testing & commissioning of Energy efficient 40 Watt LED with street light fitting with pressure die cast aluminium housing with driver & suitable fixing arrangement, IP-65 for outdoor application, operating voltage (140-270) V, System efficacy more than 100 lumen/W, complete with all accessories of approved make etc. The Contractor shall design the requirement of lights based on lux level calculations. The item price also includes labour & cost of all materials including cost of FRLS PVC insulated multi-stranded single core copper conductor cable for inter-connections, earthing connection etc.
				3.2 (b)	<b>Provision of 60 Watt LED Street Light with</b> <b>Fitting:</b> Supply, installation, testing & commissioning of Energy efficient 60 Watt LED with street light fitting with pressure die cast aluminium housing with driver & suitable fixing arrangement, IP-65 for outdoor application, operating voltage (140-270) V, System efficacy more than 100 lumen/W, complete with all accessories of approved make etc. The Contractor shall design the requirement of lights based on lux level calculations. The item price also includes labour & cost of all materials including cost of FRLS PVC insulated

S.	Tender Document Part /	Description of Existing Clause	Mo	odified Description of Existing Clause / New Clause
No.	Section/ Clause No.			
				multi-stranded single core copper conductor cable for inter-connections, earthing connection etc.
			3.2 (c)	<b>Provision of 40 Watt LED light with Bulkhead</b> <b>Light Fitting along with anti-theft provision:</b> Supply, installation, testing & commissioning of Energy efficient 40 Watt LED light with bulkhead light fitting along with anti-theft provision with pressure die cast aluminium housing with driver & suitable fixing arrangement, for outdoor application, operating voltage (140-270) VAC, system efficacy more than 100 lumen/W, wattage of each LED shall be greater than 1 W and less than 3 W, complete with all accessories of approved make etc. The light fitting shall be provided on the wall of both sides of subway and other locations as per requirement. The item price includes labour and cost of all materials including cost of FRLS PVC insulated multi-stranded single core copper conductor cable used for connection to light fitting from the terminal or junction box etc, earthing connection etc. The Contractor shall submit dialux calculations and design for approval of the Engineer. The luminaire shall conform to IEC 60598. The bulkhead lighting shall be installed in subways and protective anti-theft arrangement shall be made to secure the light fitting.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause		
No.	Section/ Clause No.				
59.	Part 2, Section VII –7A: Employer's Requirements-	Clause 3.1 Explanatory Notes for BOQ Items:	The existing "Clause 3.1 Explanatory Notes for BOQ Items, S. No. 3.6" is replaced as under:		
	Particular Specifications (PS)- General Electrical Services, Chapter 3 – Explanatory Notes for Book of Quantities (BOQ) Items, Sub- Clause 3.1 Explanatory Notes for BOQ Items, S. No. 3.6	<ul> <li>S. Description for BOQ Items</li> <li>3.6 Supply, installation, testing and commissioning of 11 meter high cast iron decorative street light pole: Supply, installation, testing and commissioning of 11 meter high cast iron decorative platform/ street light pole with single/ double arm model (straight arm or curved hanging type arm) with all accessories i.e. GI pipe, clamps, nuts, bolts etc. along with outdoor type junction box with 6A MCB complete as required with anti-corrosive treatment and suitable for 50m/s wind speed.</li> </ul>	S. No.Description for BOQ Items3.6Supply, installation, testing and commissioning of 6 meter high cast iron decorative street light pole: Supply, installation, testing and commissioning of 6 meter high cast iron decorative platform/ street light pole with single/ double arm model (straight arm or curved hanging type arm) with all accessories i.e. GI pipe, clamps, nuts, bolts etc. along with outdoor type junction box with 6A MCB complete as required with anti- corrosive treatment and suitable for 50m/s wind speed.		
60.	Part 2, Section VII –7A: Employer's Requirements- Particular Specifications (PS)- General Electrical Services, Chapter 7 – Technical Specifications And Drawings, Appendix-2: Diesel Generator Set with AMF Panel, Clause 1: Diesel Generator Set, Sub- Clause 1.1	1.1 The scope include supply, installation, testing and commissioning of 125 kVA Diesel Generator (DG) set (440 volt, 3-phase, AC, 50 Hz, unity power factor) suitable emergency operation at full load with acoustic enclosure and all other accessories. The DG set shall be with Auto Mains Failure (AMF) panel for automatic start of the DG set in case of failure of main power supply".	1.1 "The scope include supply, installation, testing and commissioning of 125 kVA <i>Silent</i> Diesel Generator (DG) set (440 volt, 3-phase, AC, 50 Hz, unity power factor) suitable emergency operation at full load with acoustic enclosure and all other accessories. The DG set shall be with Auto Mains Failure (AMF) panel for automatic start of the DG set in case of failure of main power supply. <i>Commission for Air Quality Management (CAQM)</i> <i>directions (latest) shall be followed. All tests including type test</i> <i>shall be carried. The Contractor shall obtain type approval</i> <i>from statutory agencies and shall also comply with conformity</i> <i>of emission limits (latest).</i> "		

S.	Tender Document Part /	Description of	of Existing Clause		]	Modified Descri	ption of E	xisting Cla	ause / N	ew Clause
No.	Section/ Clause No.									
61.	Part 2, Section VII-8:			F	Revise	d and New Tend	er drawing	gs are enclo	osed as	Attachment 6 of
	Employer's Requirements-			t	his Co	orrigendum No. 2				
	Tender Drawings and									
	Documents, VII-8A-Tender									
	Drawings									
62.	Part 2, Section VII-8:	List of Curv	ve and Gradients	ſ	The ex	kisting List of C	urve and	Gradients i	is repla	ced and annexed
	Employer's Requirements-			A	Attach	ment 7 of this C	orrigendu	m No. 2.		
	Tender Drawings and									
	Documents, VII-8B-									
	Documents, S. No. 1, List of									
	Curve and Gradients									
63.	Part 2, Section VII-8:			A	Add th	e following New	S. No. 3.1	.2 at the er	nd of S.	No. 3.1.1
	Employer's Requirements-			3	<b>3.1.2</b> I	ndian Oil Corpo	oration Li	mited Petr	ol Pum	р
	Tender Drawings and									
	Documents, VII-8B-					3.1.2 Indian O	il Corpora	ation Limi	ted Pet	rol Pump
	Documents, S. No. 3, List of				a		Cha	inage	-	
	Charted Utilities,				S.	Decemination			Len	Domontra
					•	Description	From	То	(M)	Kemarks
					1	Indian Oil Corporation Limited Petrol Pump	80+30 0	80+700	400	Land to be handed after 730 days of Commenceme nt Date
64.	Part 2, Section VII-8,									
	Employer's Requirements-	5. Admixtures FOSR	OC, SIKA, MC-BAUCHEMI	Е,	5.	Admixtures	FOSROC	, SIKA, M	IC-BAU	JCHEMIE,
	Tender Drawings and	CHRY	SO, MAPEI, CICO, Asia	an			CHRYSC	), MAPE	I, CIC	O, Asian
	Document, 6. Approved	Paints	, Kunai Chemicais				Paints, Ki	inal Conch	ет	
	Manufactures/Suppliers List,									
	S. No.5									

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
65.	Part 2, Section VII-8: Employer's Requirements- Tender Drawings and Documents, VII-8B- Documents, S. No. 7		New Item "Indicative List of overlapping Section" is added as S. No. 8 at the end of S. No. 7 and annexed as <b>Attachment 7</b> of this Corrigendum No. 2.
66.	Part 2, Section VII-9: Employer's Requirements- Appendices, Appendix 2,	Appendix 2 CONTRACT KEY DATES AND COMPLETION DATE	The existing Appendix 2 is replaced and annexed as <b>Attachment 8</b> of this Corrigendum No. 2.
67.	Part 2, Section VII-9: Employer's Requirements- Appendices, Appendix 3, Clause 3	3. WORK AREA (WITHIN ROW) ACCESS DATES	<b>3. WORK AREA (within Land Boundary of HORC, KMP and IR)</b> ACCESS DATES
68.	Part 2, Section VII-9: Employer's Requirements- Appendices, Appendix 3, Sub-Clause 3.1	<ul> <li>3.1 General "Works Areas" means the areas of the Site within the Right of Way of HORC including land in KMP ROW, land in DFC ROW, land in IR ROW and any additional areas which may be obtained by the Contractor and agreed by the Engineer as additional working area. <ul> <li>a) The dates on which Work Areas (within ROW) are available to the Contractor for the commencement of the Works are defined as Work Area Access Dates (AD).</li> <li>b) The Work Area Access Dates that apply to this Contract are stated in terms of days after the Commencement Date of the Works.</li> <li>c) Where Work Areas are to be made available to the Contractor, they shall be available within the specified day. Where Work Areas are to be vacated, they shall be released not later than midnight on the specified day.</li> </ul> </li> </ul>	<ul> <li>3.1 General "Works Areas" means the areas of the Site within <i>the land boundaries</i> of HORC including the land in the boundaries of KMP, DFC &amp; IR and any additional areas which may be obtained by the Contractor at their own cost and agreed by the Engineer as additional working area. <ul> <li>a) The dates on which Work Areas (within ROW) are available to the Contractor for the commencement of the Works are defined as Work Area Access Dates (AD).</li> <li>b) The Work Area Access Dates that apply to this Contract are stated in terms of days after the Commencement Date of the Works.</li> <li>c) Where Work Areas are to be made available to the Contractor, they shall be available within the specified day. Where Work Areas are to be vacated, they shall be released not later than midnight on the specified day.</li> </ul> </li> </ul>
69.	Part 2, Section VII-9: Employer's Requirements- Appendices, Appendix-10, Sub-Clause 10.19.10.	The Contractor shall provide 06 Nos. Bolero having make not later than 2023 for use of the Employer's Staff from the Commencement Date till completion of the Contract. The vehicles shall be replaced after two years with vehicles of current make. The Contractor shall also bear the expenditure of deploying	The Contractor shall provide 08 Nos. Bolero or equivalent and 2 SUVs of make 2023 or later for use of the Employer's Staff . The vehicles will be provided for a period of 36 months (total 360 vehicle months). The vehicles will be supplied within one month from the date notified by the Employer. In case vehicle is not supplied as per the specified

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause		
No.	Section/ Clause No.				
		experienced drivers along with fuel and other incidental expenses associated with the operation of the vehicle. The approximate kilometers to be run every month will be 3000 km for each vehicle. Only experienced drivers shall be deployed. Vehicles along with drivers shall be made available round the clock throughout the Contract period. There shall be a penalty of INR 20,000 /- per week or a part thereof, for non-deployment / non availability of driver / vehicle.	<i>date</i> , a penalty of INR 20,000 /- per week or a part thereof per vehicle will be levied for non-deployment / non availability of driver / vehicle. The vehicles shall be replaced after two years with vehicles of current make. The Contractor shall also bear the expenditure of deploying experienced drivers along with fuel and other incidental expenses associated with the operation of the vehicle. The approximate kilometers to be run every month will be 3000 km for each vehicle. Only experienced drivers shall be deployed. <i>Each</i> vehicle along with driver shall be made available upto 320 hours per month as per requirement of the Employer.		
70.	Part 2, Section VII-9: Employer's Requirements- Appendices, Appendix-10, Sub-Clause 10.19.13.	The Contractor shall provide 4 AutoCAD operators with good proficiency for use of the Employer/ the Engineer from the Commencement Date till Taking Over of the Works. The Contractor shall submit CV's of suitable candidates to the Engineer for approval. They shall be deployed only after obtaining the Engineer's approval. There shall be a penalty of INR 50,000 /- per month for non-deployment of these personnels for each month or a part thereof.	The Contractor shall provide 4 AutoCAD operators with good proficiency for use of the Employer/ the Engineer from the Commencement Date till Taking Over of the Works. The Contractor shall submit CV's of suitable candidates to the Engineer for approval. They shall be deployed only after obtaining the Engineer's approval. There shall be a penalty of INR 75,000 /- per month for non-deployment for each Auto CAD operators for each month or a part thereof		
71.	Part 2, Section VII-9:	10.20.1 General	10.20.1 General		
	Employer's Requirements- Appendices, Appendix-10, Sub-Clause 10.19.13.	a) A survey shall be carried out of the Site to establish its precise boundaries and the existing ground levels within it. This survey shall include a drone cum photographic survey sufficient to provide a full record of the state of the Site before commencing the work with particular attention paid to those areas where reinstatement will be carried out later on. The survey shall be carried out before the site clearance wherever possible and in any case prior to the commencement of work in any Works Area. The survey shall be carried out by the Contractor and approved by the Engineer. Survey by drone shall also be done at all work places every one month as per Outline Construction Specifications (OCS)- Civil & BLT for Civil & BLT Works.	a) A survey shall be carried out of the Site to establish its precise boundaries and the existing ground levels within it. <i>The Contractor</i> <i>shall conduct detailed survey to carry out details of all existing</i> <i>structures including all the structures of</i> <i>IR/KMP/NHAI/PWD/HSAMB, Panchayat/Village Roads, irrigation</i> <i>canal and water stream passing through Work Areas defined Appendix</i> <i>3 of Section VII-9: Employer's Requirements-Appendices.</i> This survey shall include a drone cum photographic survey sufficient to provide a full record of the state of the Site before commencing the work with particular attention paid to those areas where reinstatement will be carried out later on. The survey shall be carried out before the site clearance wherever possible and in any case prior to the commencement of work in any Works Area. The survey shall be carried out by the Contractor and approved by the Engineer. Survey by drone shall also be done at all work places every one month as per Outline Construction Specifications (OCS)- Civil & BLT for Civil & BLT Works.		

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
72.	Part 3, Section IX - Particular	2. No claim of Bridge accessibility will be admissible before	2. No claim of Bridge accessibility shall be admissible before
	Conditions of Contract	submission of GAD for approval.	submission and approval of GAD.
	(PCC), Part A – Contract		
	Data, Note 2 under Table		
	1.1.1		
73.	Part 3, Section IX - Particular	2. No claim of Bridge accessibility will be admissible before	2. No claim of Bridge accessibility shall be admissible before
	Conditions of Contract	submission of GAD for approval.	submission and approval of GAD.
	(PCC), Part A – Contract		
	Data, Note 2 under Table		
	1.1.2.		
74.	Part 3, Section IX - Particular	2. No claim of Bridge accessibility will be admissible before	2. No claim of Bridge accessibility shall be admissible before
	Conditions of Contract	submission of GAD for approval.	submission and approval of GAD.
	(PCC), Part A – Contract		
	Data, Note 2 under Table		
	1.1.3.		
75.	Part 3, Section IX - Particular	1. No claim of Bridge accessibility will be admissible before	1. No claim of Bridge accessibility shall be admissible before
	Conditions of Contract	submission of GAD for approval	submission and approval of GAD.
	(PCC), Part A – Contract		
	Data, Note 1 under Table		
	1.1.4.		
76.	Part 3, Section IX - Particular		The existing Table 1.2 Access to Formation Site is replaced and
	Conditions of Contract		annexed as Attachment 9 of this Corrigendum No. 2.
	(PCC), Part A – Contract		
	Data, Table 1.2		
77.	Part 3, Section IX - Particular		Add the following at the end of Sub-Clause 4.2.1:
	Conditions of Contract		Performance Security shall be reduced by 80% after the issue of
	(PCC), Part B - Specific		Performance Certificate for whole of the Works except BLT works.
	Provisions, Sub-Clause 4.2.1		Balance Performance Security shall be returned by the Employer
			within 21 days after issue of Performance Certificate for whole of the
			Works including BLT works.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No.	Section/ Clause No.		
78.	Part 3, Section IX - Particular Conditions of Contract (PCC), Part B - Specific Provisions, Sub-Clause 8.8, First sentence	If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to notice under Sub- Clause 20.1 Claims] pay delay damages to the Employer for this default.	If the Contractor fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to notice under Sub-Clause 20.2 [Claims] pay delay damages to the Employer for this default.
79.	Part 3, Section IX - Particular Conditions of Contract (PCC), Part B - Specific Provisions, Sub-Clause 14.6.1 The IPC	Replace the Sub-Clause 14.6.1 with the following: The Engineer shall, within 03 business days after receiving a Statement and supporting documents from the Contractor, issue an IPC to the Employer, with a copy to the Contractor: (a) stating the amount which the Engineer fairly considers to be due; and (b) including any additions and/or deductions which have become due under Sub-Clause 3.7 [Agreement or Determination] or under the Contract or otherwise, with detailed supporting particulars (which shall identify any difference between a certified amount and the corresponding amount in the Statement and give the reasons for such difference).	Replace the Sub-Clause 14.6.1 with the following: The Engineer shall, within <i>10</i> days after receiving a Statement and supporting documents from the Contractor, issue an IPC to the Employer, with a copy to the Contractor: (a) stating the amount which the Engineer fairly considers to be due; and (b) including any additions and/or deductions which have become due under Sub-Clause 3.7 [Agreement or Determination] or under the Contract or otherwise, with detailed supporting particulars (which shall identify any difference between a certified amount and the corresponding amount in the Statement and give the reasons for such difference).
80.	Part 3, Section IX - Particular Conditions of Contract (PCC), Part B - Specific Provisions, Sub- Clause 14.7 (d) i) Payment	The Employer shall pay 80% of such amount as provisional payment within 04 business days from the receipt of IPC from the Engineer. The balance 20% shall be paid within 28 days from the receipt of evaluated statement from the Engineer. Next 80% amount of provisional payment shall be made only after 100% payment of preceding interim payment certified has been completed.	The Employer shall pay 80% of such amount as provisional payment within 07 days from the receipt of IPC from the Engineer. The balance 20% shall be paid within 28 days from the receipt of evaluated statement from the Engineer <i>subject to compliance of observations of the Engineer/Employer, if any by the Contractor,</i> . Next 80% amount of provisional payment shall be made only after 100% payment of preceding interim payment certified has been completed.

S.	Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause		
No.	Section/ Clause No.				
<u>81.</u>	Section/ Clause No. Part 3, Section IX - Particular Conditions of Contract (PCC), Part B - Specific Provisions, Sub- Clause 21.6.1 (A), In case of the Contractor or the Lead member of the Contractor (in the case of a Joint Venture or Consortium) being of foreign origin, S. No.4	<ul> <li>Nationality and Qualifications of Arbitrators - The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Contractor's home country or of the Employer's home country or of the home country of any of their members or Parties or of the Government's country. For the purposes of this Clause, "home country" means any of:</li> <li>(a) the country of incorporation of the Contractor or of any of their members or Parties; or</li> <li>(b) the country in which the Contractor's or any of their members' or Parties' principal place of business is located; or</li> <li>(c) the country of nationality of a majority of the Contractor's or of any members' or Parties' shareholders; or</li> <li>(d) the country of nationality of the Sub-Contractor concerned, where the dispute involves a subcontract.</li> </ul>	<ul> <li>Nationality and Qualifications of Arbitrators - The sole arbitrator or the third arbitrator appointed pursuant to paragraphs 1(a) through 1(c) above shall be an internationally recognized legal or technical expert with extensive experience in relation to the matter in dispute and shall not be a national of the Contractor's home country or of the Employer's home country or of the home country of <i>any of the Contractor's JV</i> members (<i>in case of a Joint Venture</i>) or Parties or of the Government's country. For the purposes of this Clause, "home country" means any of:</li> <li>(a) the country of incorporation of the Contractor or of any of the <i>Contractor's JV</i> members (<i>in case of a Joint Venture</i>) or Parties; or</li> <li>(b) the country in which the Contractor's or any of <i>Contractor's JV</i> members (<i>in case of a Joint Venture</i>) or Parties; or</li> <li>(c) the country of nationality of a majority of the Contractor's or of any <i>Contractor's JV</i> members (<i>in case of a Joint Venture</i>) or Parties' principal place of business is located; or</li> <li>(d) the country of nationality of the Sub-Contractor concerned,</li> </ul>		

S. Tender Document Part /	Description of Existing Clause	Modified Description of Existing Clause / New Clause
No. Section/ Clause No.		
82. Part 3, Section IX Particular Conditions of Contract (PCC), Part B Specific Provisions, Sub- Clause 21.6.1 (B), In case of the Contractor or the Lead member of the Contractor (in the case of a Joint Venture or Consortium) being of Indian origin, S No.1 Procedure for Appointment of Arbitrators paragraph (a)	(a) Within 30 days from the day when a written and valid demand for Arbitration is received by MD/HORCL, the Employer will forward a panel of not fewer than five (05) independent and neutral nominees to the Contractor. These names shall be obtained from those Organizations, for the purpose of nominating them as DAAB Members/Conciliator/Arbitrator, who are also not exemployees or directly or indirectly associated with the Employer. The Contractor may propose another five members to add to the above list who shall not be an ex-employees or directly or indirectly associated with the Contractor. The Contractor will then give his consent for any one name out of the above panel list to be appointed as one of the arbitrators within 30 days of dispatch of the request by the Employer.	(a) Within 30 days from the day when a written and valid demand for Arbitration is received by MD/HORCL, the Employer will forward a panel of not fewer than five (05) independent and neutral nominees to the Contractor. These names, for the purpose of nominating them as DAAB Members/Conciliator/Arbitrator, <i>shall be obtained from the list of arbitrators empaneled by</i> <i>Northern Railway which is enclosed as</i> <b>Annexure 1</b> <i>of Section IX-</i> <i>Particular Conditions of Contract and</i> who are also not ex- employees or directly or indirectly associated with the Employer. The Contractor may propose another five members to add to the above list who shall not be an ex-employees or directly or indirectly associated with the Contractor. The Contractor will then give his consent for any one name out of the above panel list to be appointed as one of the arbitrators within 30 days of dispatch of the request by the Employer.

Enclosures: Attachments 1 to 9

# List of Attachments of Corrigendum No. 2

S. No.	Attachment	Description					
1.	Attachment 1	Part 1, Section III– EQC/R1					
2.	Attachment 2	Part 1, Section IV – Tender Forms					
		1.       Form EXP-3.4.2(a)/R1         2.       Form EXP-3.4.2(b) (i)/R1         3.       Form EXP-3.4.2(b) (ii)/R1         4.       Form EXP-3.4.2(b) (iii)/R1         5.       Form UT-1         6.       Form ELI-1.7         7.       Form MOU         6.       Form FIN 3.5.1         7.       Form EXP- 3.5.2 (a)         8.       Form EXP-3.5.2 (b)					
3.	Attachment 3	<ul> <li>Part 1, Section IV – Tender Forms</li> <li>Appendix B to Financial Part: Price Schedules</li> <li>1. Clause 5: Price Schedule 'A'/R1</li> <li>2. Clause 6: Schedule 'B'/R1</li> <li>3. Clause 7: Schedule 'C'/R1</li> </ul>					
4.	Attachment 4	Part 2, Section VII-2: Employer's Requirements –Functional/R1					
5.	Attachment 5	<ul> <li>Part 2, Section VII-4: Employer's Requirements- Construction (Civil &amp; BLT)</li> <li>1. Attachment C-3/R1: Minimum Requirement of the DDC's Organizational Structure</li> </ul>					
6.	Attachment 6	<ul> <li>Part 2, Section VII-4: Employer's Requirements- Tender Drawings and Documents</li> <li>1. Section VII: 8A: List of Tender Drawings/R2</li> <li>2. Section VII: 8A: Revised and New Drawings</li> </ul>					
7.	Attachment 7	<ul> <li>Part 2, Section VII-8: Employer's Requirements- Tender Drawings and Documents</li> <li>1. List of Curve and Gradients/R1</li> <li>2. Indicative List of Overlapping Length with KMP</li> </ul>					
8.	Attachment 8	Part 2, Section VII-9: Employer's Requirements – Appendices, 1. APPENDIX – 2/R1- Contract Key Dates and Completion Date					
9.	Attachment 9	Part 3, Section IX - Particular Conditions of Contract (PCC) 1. Table 1.2: Access to Formation Site/R1					

# Tender No. HORC/HRIDC/C-6/2024 Attachment 1 of Corrigendum No. 2

# Part 1, Section III- Evaluation and Qualification Criteria/R1

# Section III. Evaluation and Qualification Criteria

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#### **1. General Provisions**

#### **1.1 Evaluation Sequence**

(a) Tenders will be evaluated through the following four stages:

- (i) Stage 1: Evaluation of Administrative Requirements
- (ii) Stage 2: Evaluation of Compliance with the Qualification Requirements
- (iii) Stage 3: Technical Evaluation
- (iv) Stage 4: Financial Evaluation

#### **1.2** Clarification from Tenderers

- (a) The Evaluation Team may request clarification(s) of any Tender in accordance with theprovisions of the Tender Documents (Part 1, Section-I: Instructions to Tenderers, Clause 27 and Clause 29).
- (b) If clarification is required, the Evaluation Team will send written (Courier/email with PDF attachment) request(s) to the Authorized Representative for clarification(s), specifying the deadline for receipt of reply.
- (c) Replies to the above request(s) shall be sent by Tenderer through Courier/e-mail with PDF attachments and the same shall be solely to clarify and/or elaborate the item(s) already included in the submitted Tenders for the purpose of evaluation in accordance with ITT 27.1 and ITT 29.

#### **1.3** Tender Forms

- (a) Tenderers should note that the information required to be inserted into the Tender Forms shall be comprehensive and detailed. The technical information shall be furnished in line with the requirements of Part 1, Part 2 and Part 3 of the Tender Documents.
- (b) All Forms contained in the Tender Documents must be fully and properly completed and all the forms must be returned duly signed by Authorised Representative of the Tenderer, as they will be reviewed exactly as submitted and errors or omissions may count against the Tenderer.
- (c) Any Tenderer who is found to have intentionally submitted false or inaccurate statements/information shall be disqualified from the Tendering process.

### 2. Stages of Evaluation

#### 2.1 Stage 1: Evaluation of Administrative Requirements

#### A. General

- (a) The Stage 1 Evaluation will consist of checking the Tenders to confirm whether they are substantially responsive to the administrative requirements of the Tender Documents.
- (b) The following administrative items will be checked:
  - (i) Whether the Tender submission is in accordance with ITT 11.2;
  - (ii) Whether the Power of Attorney (POA) for the Tender signatory is in the correct form [Ref. ITT 20.3 and ITT 20.4]. If during technical evaluation stage, POA submitted by the Tenderer is not found in the correct format, Employer will send written (Courier/email with PDF attachment) request to the Authorized Representative for rectification of POA in accordance with format prescribed in Section IV, Tender Forms, specifying the deadline for receipt of Power of Attorney in correct form. If a tenderer does not provide the Power of Attorney in correct form within the stated date and time set in the Employer's request for correction of Power of Attorney, its Tender is liable to be rejected.

## **1.2 Stage 2: Evaluation of Compliance with the Qualification Requirements**

#### A. General

Tenders will be reviewed to ascertain whether the Tender complies with all of the minimum requirements as stipulated in the Sub-Clause C. Qualification Criteria.

#### B. Check Items

The following requirements of the Instruction to Tenderers, Clauses 4, 11 & 17 will be checked to ensure compliance to the requirements of criteria given below:

#### (a) Eligibility

- (i) Nationality: Form ELI-1.1(a), ELI-1.1(b), and Form ELI-1.2
- (ii) Conflict Interest: Letter of Tender-Technical Part
- (iii) Bank Eligibility: Letter of Tender -Technical Part
- (iv) State-owned Enterprise or Institution of the Recipient country: Form ELI-1.1(a), ELI-1.1(b), and Form ELI-1.2, Letter of Tender -Technical Part
- United Nations resolution or Recipient's country law: Letter of Tender-Technical Part

#### (b) Historical Contract Non-Performance and Litigation

- (i) History of Non-Performing Contracts: Form CON-1
- (ii) Suspension Based on Execution of Tender- Securing Declaration by the Employer: Letter of Tender-Technical Part
- (iii) Pending Litigation: Form CON-1
- (iv) Declaration: Environmental, Social, Health, and Safety (ESHS) past performance: Form CON-2

#### (c) Financial Situation

- (i) Financial Situation and Performance: Form FIN-3.3.1
- (ii) Average Annual Construction Turnover: Form FIN-3.3.2
- (iii) Bid capacity: Form FIN 3.3.4

#### (d) Financial Resources

- (i) Financial Resources: Form FIN-3.3.3
- (ii) Average Net Worth: Form FIN- 3.3.1

#### (e) Experience

- (i) General Construction Experience: Form EXP-3.4.1
- (ii) Specific Construction and Contract Management Experience: Form EXP-3.4.2(a)
- (iii) Specific Construction Experience in Key Activities: Form EXP-3.4.2 (b)
- (iv) Detailed Design Consultant (DDC) for Bridges and Railway Formation: Form UT-1, Form ELI-1.7 & MOU
- (v) Average Annual Consultancy Turnover of DDC: FIN 3.51
- (vi) Specific Design Consultancy Experience: Form Exp-3.5.2 (a)
- (vii) Specific Design Consultancy Experience in Key Activity: Form EXP-3.5.2 (b)
- (viii) Design of Skew Bridge Girder: Form UT-1 & MOU

## 3. Qualification Criteria

If the Tenderer fails to comply with any item of Qualification Criteria given below, the Tenderer shall be disqualified

No.	Subject	Requirement	Single	Joint Venture (existing or intended)			Submission
			Entity	4.77			Requirements
				All	Each Marshar	Lead	
				Combined	Member	Member	
3.	1 Eligibility			Combilied			
3.1.1	Nationality	Nationality in accordance	Must meet	Must meet	Must meet	Must meet	Forms ELI –
	·	with ITT 4.4	requirement	requirement	requirement	requirement	1.1(a). 1.1 (b) and 1.2, with attachments
3.1.2	Conflict of	No conflicts of interest in	Must meet	Must meet	Must meet	Must meet	Letter of Tender-
	Interest	accordance with ITT 4.2	requirement	requirement	requirement	requirement	Technical Part
3.1.3	Bank Eligibility	Not having been declared ineligible by the Bank, as	Must meet requirement	Must meet requirement	Must meet requirement	Must meet requirement	Letter of Tender- Technical Part
		described in 111 4.5.					
3.1.4	State-owned	Meets conditions of ITT	Must meet	Must meet	Must meet	Must meet	Letter of Tender-
	Enterprise or	4.6	requirement	requirement	requirement	requirement	<b>Technical Part</b>
	Institution of the						
	Recipient						
215	country	NL-4 harden and harden and harden de	Marst	Maria	Maart	Maart	I
3.1.3	United Inations	not naving been excluded	requirement	must meet	wiust meet	wiust meet	Letter OI Tender-
	Recinient's	the Recipient's country	requirement	requirement	requirement	requirement	i connoai r alt
	country law	laws or official regulations					
		against commercial					

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No.	Subject	Requirement	Single	Joint Ve	nture (existing or	intended)	Submission
			Entity				Requirements
				All	Each	Lead	
				Members	Member	Member	
				Combined			
		relations with the					
		Tenderer's country, or by					
		an act of compliance with					
		UN Security Council					
		resolution, both in					
		accordance with ITT 4.8					
		and Section V.					
3.1.6	Share of JV	The share of JV members	N/A	100%	30%	34%	Form ELI-1.3
	members	shall not be less than the					
		specified percentage					
2.2 11	-t	- Deselection of the					
<b>3.2 H</b>	storical Contract No	n-Performance					E CON 1
3.2.1	History of Non-	Non-performance of a	Must meet	Must meet	Must meet	Must meet	Form CON-1
	Performing	contract <sup>1</sup> did not occur as a	requirement	requirements	requirement <sup>2</sup>	requirement	
	Contracts	result of contractor default					
		since 1 <sup>st</sup> April 2019 till 28					
		days prior to deadline of					
		Tender submission.					
3.2.2	Suspension	Not under suspension	Must meet	Must meet	Must meet	Must meet	Letter of Tender
	Based on	based on-execution of a	requirement	requirement	requirement	requirement	<ul> <li>Technical Part</li> </ul>

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Section III - Evaluation and Qualification Criteria

<sup>&</sup>lt;sup>1</sup> Nonperformance, as decided by the Employer, shall include all contracts terminated by the Employer where (a) nonperformance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the Contractor. Nonperformance shall not include contracts where Employer's decision was overruled by the dispute resolution mechanism. Nonperformance must be based on all information on fully settled disputes or litigation, i.e., dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Tenderer have been exhausted.

<sup>&</sup>lt;sup>2</sup> This requirement also applies to contracts executed by the Tenderer as JV member.

No.	Subject	Requirement	Single	Joint Ve	Joint Venture (existing or intended)		
			Entity	All	Each	Lead	Requirements
				Members	Member	Member	
				Combined			
	Execution of	Tender/Proposal Securing					
	Tender-	Declaration pursuant to					
	Securing	ITT 4.7 and ITT 19.9					
	Declaration by						
	the Employer						
3.2.3	Pending	Tenderer's financial	Must meet	N/A	Must meet	Must meet	Form CON-1
	Litigation	position and prospective	requirement		requirement	requirement	
		long-term profitability still					
		sound according to criteria					
		below and assuming that					
		all pending litigation and					
		$\frac{1}{3}$ arbitration $\frac{3}{3}$ will be					
		resolved against the					
		Tenderer					
3.2.4	Declaration:	Declare History of	Must make	N/A	Must make	Must make	Form CON-1
	Litigation	court/arbitral award	the		the	the	
	History	decisions against the	declaration		declaration	declaration	
		Tenderer since 1st April					
		2019 till 28 days prior to					
		deadline of Tender					
		submission.					

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<sup>&</sup>lt;sup>3</sup> Tenderer shall provide accurate information in the tender form CON-1 about any litigation and arbitration resulting from contracts completed or ongoing under its execution over the last five years since 1st April 2019 till 28 days prior to deadline of tender submission. Tender No.: HORC/HRIDC/C-6/2024

No.	Subject	Requirement	Single	Joint Venture (existing or intended)		Submission	
			Епцу	All Members Combined	Each Member	Lead Member	Kequirements
3.2.5	Declaration: Environmental, Social, Health, and Safety (ESHS) past performance	Declare any civil work contracts that have been suspended or terminated and/or performance security called by an employer for reasons related to the non- compliance of any environmental, or social, or health, or safety requirements or safeguard in the past five years <sup>4</sup> preceding 28 days prior to deadline of Tender submission	Must make the declaration	N/A	Must make the declaration.	Must make the declaration	Form CON-2 ESHS Performance Declaration
<b>3.3 Fi</b>	nancial Situation and	l Performance					
3.3.1	Financial Capabilities	(i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means	Must meet requirement	Must meet requirement	Must meet at least 30% [Thirty percentage] of the requirement	Must meet at least 40% [Forty percentage] of the requirement	Form FIN-3.3.3 (Sources of Finance for the subject Contract)

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 <sup>4</sup> The Employer may use this information to seek further information or clarifications in carrying out its due diligence.

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 Attachment 1 of Corrigendum No. 2
Section	III -	Evaluation	and (	Jualification	Criteria
Section	III –	Evaluation	anu C	Juanneauon	CINCIIA

No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
			·	All Members Combined	Each Member	Lead Member	
		(independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as INR 1600.00 million or the equivalent amount in a freely convertible currency (for the subject contract (i.e. C-6).					
		<ul> <li>(ii) The Tenderer must demonstrate the current soundness of its financial position and indicate its prospective long-term profitability. As a minimum,</li> <li>a) Average Net-Worth (Total Assets – Total Liabilities)* during the last three (03) financial years (FY: 2021-22, 2022-23 and</li> </ul>	Must meet requirement	Must meet requirement	Must meet requirement	Must meet the requirement	Form FIN-3.3.1

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Attachment 1 of Corrigendum No. 2

Section	III -	Evaluation	and (	Qualification	Criteria
Section	III –	Lvaluation	anu	Quanneation	Chicha

No.	Subject	Requirement	Single Entity	Joint Ve	Joint Venture (existing or intended)		
				All Members Combined	Each Member	Lead Member	
		2023-24) should be <b>positive</b> and b) the Net-worth during the last financial year (FY 2023-24) should be <b>positive.</b> *Note: Amount in dispute against the Tenderer corresponding to all pending litigations and arbitration resulting from contracts completed or ongoing under its execution over the last five years, considering that these will be resolved against the Tenderer (as per Form CON-1 item 2 and 3), shall be subtracted from the average Net Worth calculated as per a) above					
		1 /					

No.	Subject	Requirement	Single	Joint Ve	nture (existing or	intended)	Submission
			Entity				Requirements
				All	Each	Lead	
				Combined	Member	Member	
3.3.2	Average Annual	Minimum average annual	Must meet	Must meet	Must meet at	Must meet at	Form FIN-3.3.2
	Construction	construction turnover of	requirement	requirement	least 30%	least 40%	
	Turnover	INR 9500.00 million or		-	[Thirty	[Forty	
		the equivalent amount in			percentage]	percentage]	
		a freely convertible			of the	of the	
		currency, calculated as			requirement	requirement	
		total certified payments					
		received for contracts in					
		progress and/or completed					
		within the last three					
		financial years (FY: 2021-					
		22, 2022-23 and 2023-24)					
		divided by three.					
3.3.3	<b>Bid Capacity</b>	The Tenderer shall also	Must meet	Must meet	Must meet at	Must meet at	Form FIN –
		demonstrate to the	requirement	requirement	least 30%	least 40%	3.3.2 & Form
		satisfaction of the			[Thirty	[Forty	FIN- 3.3.4
		Employer that it has			percentage]	percentage]	
		adequate <b>Bid capacity</b> for			of	of the	
		the works currently in			requirement	requirement	
		progress and future					
		contract commitments.					
		The available Bid					
		capacity should be equal to					
		or more than INR					
		19,000.00 million or the					

Tender No.: HORC/HRIDC/C-6/2024

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No.         Subject         Requirement         Single         Joint Venture (existing or intended	l) Submission
Entity	Requirements
All Each Les Momborg Mombor M	ad
Combined	mber
equivalent amount in a	
freely convertible	
currency. The available	
Bid capacity will be	
calculated as per item no. 1	
of Form FIN- 3.3.4.	
3.4 Experience	
3.4.1 General Experience under Must meet N/A Must meet Must	meet Form EXP-3.4.1
<b>Construction</b> construction contracts in requirement requirement requirement	ment
<b>Experience</b> the role of Prime	
Contractor, JV Member or	
Management Contractor or	
a Sub-Contractor between	
1 <sup>st</sup> April 2017 till 28 days	
prior to deadline of Tender	
Submission.	ave the Former EVD
5.4.2 Specific Participation, as a Prime Must meet Must meet Must have the Must have thave the Must	read of 2.4.2(a) gland
(a) Construction $\alpha$ Contractor, Joint Requiremen Requiremen experience of experience	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Menagement Venture Vientoer or tor(1) or (1) tor(1) or executing at ex	ing at With
Experience OF (III) (II) OF (III) least One least	of ntial completion
WORK OI WORK	of nual completion

<sup>&</sup>lt;sup>5</sup> Value of completed work done by a Member in an earlier JV shall be reckoned as per the Note 2 given at the end of Sub-Clause 3.4.2 (a), Section III, EQC for purpose of satisfying his/her experience criteria mentioned in 3.4.2(a). Tender No.: HORC/HRIDC/C-6/2024 Attachment 1 of Corrigendum No. 2

No.	Subject	Requirement	Single	Joint Ve	nture (existing or	intended)	Submission
		_	Entity		_		Requirements
				All	Each	Lead	
				Members	Member	Member	
				Combined			
		Management Contractor <sup>6</sup>			value INR	value INR	by the Employer
		or Sub-Contractor <sup>7</sup> in at			5500.00	5500.00	(Owner of the
		least			million or	million or	Work) /
		(i) one "similar work" of			the	the	Concessionaire.
		minimum value of INR			equivalent	equivalent	
		11,000.00 million or the			amount in a	amount in a	
		equivalent amount in a			freely	freely	
		freely convertible			convertible	convertible	
		currency.			currency	currency	
					involving	involving	
		*"Similar work" for (i)			construction	construction	
		above shall be any			of Viaduct/	of Viaduct/	
		infrastructure work			Bridges or	Bridges or	
		involving construction of			Earthwork in	Earthwork in	
		Viaduct/Bridges and			formation for	formation for	

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<sup>&</sup>lt;sup>6</sup> A management contractor is a firm which takes on the role of contract management as a "general" contractor of sort could do. It does not normally perform directly the work(s) associated with the Contract. Rather, it manages the work of other Contractors/Sub-Contractors while bearing full responsibility for quality and timely performance of the contract. If the Tenderer or any of the JV member submits experience certificate as a Management Contractor then the documents issued by the Employer (owner of the work)/ concessionaire in support of his being appointed as Management Contractor shall only be considered for evaluation and qualification purpose. In case the Tenderer fails to submit such document(s) issued by the Employer (owner of the work) / Concessionaire, the offer of the Tenderer is liable to be rejected.

<sup>&</sup>lt;sup>7</sup> If a tenderer has successfully completed a work as Sub-Contractor, the work experience certificate issued only by the Employer (owner of the work) / Concessionaire for such work to Sub-Contractor shall be considered for the purpose of fulfillment of credentials. Tenders submitted without this documentary proof is liable to be rejected.

**For example:** Entity 'A' is the owner of the work and awards a contract for execution of work to Contractor 'X'. Thereafter, Contractor 'X' sublets part of the work to Sub-Contractor 'Y'. In this case, experience certificate of Sub-Contractor 'Y' issued only by Entity 'A' / Concessionaire shall be considered for the purpose of evaluation of the Tender. Experience certificate issued by Contractor 'X' to Sub-Contractor 'Y' shall not be considered and the offer submitted based on such certificate is liable to be rejected.

Section	$\mathbf{III}$ –	Evaluation	and (	Jualification	Criteria
Section	III –	Evaluation	and	Juanneation	Cinena

No.	Subject	Requirement	Single	Joint Venture (existing or intended)			Submission
			Entity		_		Requirements
				All	Each	Lead	
				Members	Member	Member	
				Combined			
		Earthwork in formation for			"Railway	"Railway	
		"Railway Project" <sup>8</sup> / Road			Project"/	Project"/	
		project.			Road Project	Road Project	
		OR			that has been	that has been	
		(ii) two "similar works"*			successfully	successfully	
		each of minimum value of			<i>completed</i> or	completed or	
		INR 7500.00 million or			substantially	substantially	
		the equivalent amount in			completed	completed	
		a freely convertible			since 1st	since 1st	
		currency.			April 2017	April 2017 till	
					till 28 days	28 days prior	
		*"Similar work" for (ii)			prior to	to deadline of	
		shall be any infrastructure			deadline of	Tender	
		work in which both the			Tender	submission	
		works combined together			submission		
		involve construction of					
		Viaduct/ Bridges and					
		Earthwork in formation for					
		"Railway Project"/ Road					
		project.					
		OR					
		(iii) three "similar works"*					
		each of minimum value of					

 <sup>&</sup>lt;sup>8</sup> Railway Project includes projects of Railway/ Metro Rail / Regional Rapid Transit System (RRTS) / High Speed Rail / Dedicated Freight Corridor (DFC).

 Tender No.: HORC/HRIDC/C-6/2024
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Section	Ш_	Evaluation	and	Qualification	Criteria
Section	III –	Evaluation	anu	Quanneation	Cinena

No.	Subject	Requirement	Single	Joint Venture (existing or intended)			Submission
			Entity				Requirements
				All	Each	Lead	
				Members	Member	Member	
				Combined			
		INR 5500.00 million or					
		the equivalent amount in					
		a freely convertible					
		currency or more.					
		"Similar work" for (iii)					
		shall be any infrastructure					
		work in which all the three					
		works combined together					
		involve construction of					
		Viaduct/ Bridges and					
		Farthwork in formation					
		for "Railway Project"/					
		Road Project					
		1.000 1.105000					
		The <i>Works</i> mentioned in (i)					
		or (ii) or (iii) above must					
		have been successfully					
		completed or					
		substantially completed <sup>9</sup>					
		since 1st April 2017 till 28					
		days prior to deadline of					

 <sup>&</sup>lt;sup>9</sup> Substantial completion shall be based on 80% or more of the original or revised value (whichever is lower) of works completed under the contract. Completion or substantial completion of work shall be based on completion/substantial completion certificate issued by the Employer (Owner of the Work) / Concessionaire.

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 Attachment 1 of Corrigendum No. 2

	-						
No.	Subject	Requirement	Single Entity	Joint Ve	Joint Venture (existing or intended)		
				All	Each	Lead	
				Members	Member	Member	
				Combined			
		Tender submission and that					
		are similar to the proposed					
		works.					
3.4.2	Specific	Participation, as a Prime	Must meet	Must meet	Must meet	Must meet	Form EXP-3.4.2
(b)	Construction	Contractor, Joint venture	requirement	requirement	requirement	requirement	(b)(i), Form EXP-
	<b>Experience</b> in	member or Management	of (i),(ii)and	of (i),(ii)and	of either (i)	of either (i) or	3.4.2 (b)(ii) and
	Key Activities	Contractor or Sub-	(iii)	(iii)	or (ii) or (iii)	(ii) or (iii)	Form EXP-3.4.2
	v	Contractor in:					(b)(iii) along with
							completion
		(i) Construction of					certificate/experie
		minimum <b>2.0 km</b>					nce certificate
		cumulative length <sup>10</sup> of					issued by the
		viaducts / Bridges in one					Employer (Owner
		contract of infrastructure					of the Work) /
		project in "Railway					Concessionaire
		Project"/ Road Project					
(b)	Construction Experience in Key Activities	Contractor, Joint venture member or Management Contractor or Sub- Contractor in: (i) Construction of minimum <b>2.0 km</b> cumulative length <sup>10</sup> of viaducts / Bridges in <b>one</b> contract of infrastructure project in "Railway Project"/ Road Project.	requirement of (i),(ii)and (iii)	requirement of (i),(ii)and (iii)	requirement of either (i) or (ii) or (iii)	requirement of either (i) or (ii) or (iii)	(b)(i), Form EXP- 3.4.2 (b)(ii) and Form EXP-3.4.2 (b)(iii) along with completion certificate/experie nce certificate issued by the Employer (Owner of the Work) / Concessionaire.

<sup>&</sup>lt;sup>10</sup>. Evaluation of length of spans for multitrack/ multilanes bridges shall be done as under:

<sup>(</sup>a) In case of Railway bridges/Metro viaduct, accommodating multiple tracks, the length of span for each track shall be taken into consideration. In case of Road bridges accommodating multilanes, the credit for length of one span shall be given for every two lanes.

<sup>(</sup>b) The credit for multiple tracks/multilanes (exceeding two lanes) shall be given only if the number of tracks or number of lanes is specifically mentioned in the certificate of the Employer.

<sup>(</sup>c) For evaluation purpose, length of bridge will be measured from abutment to abutment of the bridge or the length of bridge certified in the Employer (Owner of the Work) / Concessionaire Certificate.

Section	ш	Evaluation	and	Qualification	Critoria
Section	III –	Evaluation	anu	Quanneation	Cintena

No.	Subject	Requirement	Single Entity	Joint Ve	nture (existing or	intended)	Submission Requirements
				All Members Combined	Each Member	Lead Member	
		AND (ii) Execution of minimum equivalent length of 10,000 RM Pile foundation (of minimum dia.1000 mm)/Well <sup>11</sup> foundation in one contract of infrastructure project in "Railway Project"/ Road Project , AND (iii) Execution of Earthwork in formation for 2.0 million cum in one contract of infrastructure project in "B cileren Duject"/ B cod					
		Project .					

 <sup>&</sup>lt;sup>11</sup> Calculation of equivalent length (RM) of Pile/Well foundation:

 a) In case of Well foundation, depth of 1 RM Well foundation shall be considered equivalent to construction of 6 RM depth of Pile foundation (i.e., 1 RM Well foundation=

 6 RM Pile foundation).

Section	Ш_	Evaluation	and (	Jualification	Criteria
Section	III –	Evaluation	anu (	Juanneation	CILICIIA

No.	Subject	Requirement	Single Entity	Joint Ve	nture (existing o	r intended)	Submission Requirements
				All	Each	Lead	
				Members Combined	Member	Member	
		Note: Earthwork in formation/cutting, Blanketing, GSB/WMM in Railway/Road projects will be considered as part of Earthwork. The key activities mentioned in (i), (ii) and (iii) above should have been executed in completed / On going contract <sup>12</sup> since 1st April 2017 till 28 days prior to deadline of Tender submission.		Combined			
3.5	Detailed Design Consultant (DDC) for		Must meet requirement <b>OR</b>	Must meet requirement <b>OR</b>	N/A	N/A	Form UT-1, Form ELI-1.7 & MOU
	Bridges and		Proposed	Proposed			
	Railway		DDC must	DDC must			
	I' OF MALLON						

 <sup>&</sup>lt;sup>12</sup> The Tenderer shall submit copy of completion certificate/experience certificate issued by the Employer (Owner of the quantities of key activities.
 Work) / Concessionaire clearly indicating the executed

 Tender No.: HORC/HRIDC/C-6/2024
 Attachment 1 of Corrigendum No. 2

No.	Subject	Requirement	Single	Joint Ve	nture (existing o	intended)	Submission
			Entity	All	Each	Lead	Requirements
				Members	Member	Member	
				Combined			
			meet	meet			
			requirement	requirement			
3.5.1	Average Annual	Minimum Average Annual	Must meet	Must meet	N/A	N/A	FIN 3.5.1
	Consultancy	Consultancy Turnover of INR	requirement	requirement			
	Turnover of DDC	50 million in last three Financial Years (i.e. EV 2021	OR	OR			
		22 2022-23 and 2023-24)	Proposed	Proposed			
		22, 2022 23 and 2023 21).	DDC must	DDC must			
			meet	meet			
2.5.0			requirement	requirement	27/4	77/4	
3.5.2	Specific Design	Experience of successful	Must meet	Must meet	N/A	N/A	Form $EXP-3.5.2$
(a)	Consultancy Experience	completion of design	requirement	requirement			(a) along with
	Ехрепенсе	consultancy contract involving	of(i) or(ii)	of(i) or(u)			completion
		Railway Bridges (ROB over	or(iii)	or(iii)			certificate/experie
		Railway track will also be	Dropogod	Dropogod			nce ceriijicale
		considered) amounting to:	DDC must	DDC must			
		(i) INR 2 crore for one	DDC musi	DDC must			
		Design Consultancy	requirement	requirement			
		Work	of (i) or (ii)	of (i) or (ii)			
		(ii) INP 125 Crore each for	or(iii)	or (iii)			
		(ii) IIVK 1.55 Crore each for two Design Consultance	01 (111)	01 (111)			
		works of					
		OR					

Section	Ш_	Evaluation	and	Qualification	Criteria
Section	III –	Evaluation	anu	Quanneation	Cinena

No.	Subject	Requirement	Single Entity	Joint Ve	nture (existing o	r intended)	Submission Requirements
				All Members Combined	Each Member	Lead Member	
3.5.2 (b)	Specific Design Consultancy Experience in Key Activity	<ul> <li>(iii) INR 1.00 crore each for three Design Consultancy works.</li> <li>The above Design Consultancy works should have been completed /substantially completed since 1st April 2017 till 28 days prior to deadline of Tender submission.</li> <li>Design of steel Open Web Girder of minimum 45.0 m span for Rail/Road projects.</li> <li>This experience can be against a single/multiple contracts in completed/ongoing projects.</li> </ul>	Must meet requirement <b>OR</b> Proposed DDC must meet requirement	Must meet requirement <b>OR</b> Proposed DDC must meet requirement	N/A	N/A	Form EXP-3.5.2 (b) along with completion certificate/experie nce certificate.
3.5.2 (c)	Design of Skew Bridge Girder	DDC should undertake in the Form UT-1 that they have a capacity to design skew Steel Open Web Girder (OWG).	Must meet requirement <b>OR</b> Proposed DDC must meet requirement	Must meet requirement <b>OR</b> Proposed DDC must meet requirement			Form UT-1 & MOU

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#### 3.6 Notes for Section III, EQC Sub-Clause 3.3 & 3.4:

#### 1. Exchange Rate for Qualification Criteria

Wherever a Form in Section IV, Tender Forms, requires a Tenderer to state a monetary amount, Tenderers shall indicate the INR equivalent as indicated in the respective form using the rate of exchange determined as follows:

- (*i*) For construction turnover or financial data required for each year Exchange rate prevailing on the last day of the respective financial year.
- (*ii*) Value of single contract Exchange rate prevailing on the date of the Contract Award i.e. the *date of issue of Letter of Acceptance*.
- (iii) Exchange rates shall be taken from reference rate published by the Reserve Bank of India (RBI) on its website https://www.rbi.org.in. In case the exchange rate of particular currency on given date is not available on RBI web site, it will be as per the web site https://www.fbil.org.in of Financial Benchmark India Private Limited (FBIL). Any error in determining the exchange rates may be corrected by the Employer. In the case, where a Tenderer is required to convert a monetary amount from a currency other than those currencies for which the RBI/FBIL reference rate is not published, the INR equivalent shall be worked out using the rate of exchange rate of that currency is not directly available in INR on the website of the central bank of the country issuing the said currency then the currency will be first converted to USD as per that web site and then converted from USD to INR as Per RBI or FBIL reference rates.
- 2. Value of completed work done by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for purpose of satisfying his/her experience criteria mentioned in 3.4.2(a).
- 3. For past experience of a firm in earlier JV for specified key activity in Sub-Clause 3.4.2 (b) credit shall be given for execution of only the quantity of the specified key activity executed by the firm as part of a JV, duly certified by the Employer (owner of work)/ Concessionaire. If the Employer's (owner of work)/ Concessionaire's Certificate does not indicate the quantity of specified key activity executed by each member, in such a case credit for quantity of specified key activity shall be given as per following provisions in order of priority:
  - (i) As per details given in JV agreement forming part of the relevant Contract Agreement.

- (ii) If JV agreement does not provide such details, then credit shall be given in proportion of the percentage share of the firm in that JV mentioned in the Employer's (owner of work)/ Concessionaire's Certificate/ JV Agreement.
- 4. In case a JV quoting for the Tender has executed similar work specified in 3.4.2(a) and key activities specified in Sub-Clause 3.4.2 (b) with the same constitution of JV, the requirement specified to be met under Sub-Clause 3.4.2(a) and Sub-Clause 3.4.2(b) shall be considered to have been met treating the JV as a single entity for this purpose.
- 5. For Sub-Clause 3.3.2, Average Annual Construction Turnover, the Tenderer should submit actual construction turnover figures for the specified financial years. For Evaluation purposes the figures of previous years shall be updated @ 5% per year compounded annually based on Rupee value to bring them to the level of the last Financial Year specified in Sub-Clause 3.3.2. If the figure for turnover in an individual year is in a currency other than INR, then the same shall first be converted to INR based on the exchange rates derived as mentioned in Note 1 above and then the figures in INR shall be updated.
- 6. For Sub-Clause 3.4.2 (a) Specific Construction & Contract Management Experience,

The Tenderer should submit actual Value of Work completed/ substantially completed. Value of Work for Evaluation purposes shall be updated @ 5% per year compounded annually based on Rupee value to bring them to the price level of date of deadline for submission of Tenders. Updated value shall be calculated as per formula given below:-

 $P=Qx [1.05]^{N/365}$ 

Where

- *P* = updated value of work on deadline for submission of Tenders.
- Q = value of work on the date of completion/substantial completion as indicated in the Employer's certificate.
- N = Number of days between date of completion and deadline for submission of Tenders.

#### 3.7 Notes for Section III, EQC Sub-Clause 3.5:

3.7.1 The Tenderer must confirm, in the FORM UT-1 given in Section IV, Tender Forms, that either he himself meets the qualification requirements for Detailed Design Consultant (DDC) given in Sub-Clause 3.5 above or he will be deploying Detailed Design Consultant (DDC) meeting the qualification requirements given in Sub-Clause 3.5 above.

- **3.7.2** In case a Tenderer confirms to meet the minimum experience requirement for DDC himself, the Tenderer shall submit copy of experience certificates in support of meeting the qualification requirements given in the Sub-Clause 3.5 above.
- **3.7.3** If a Tenderer does not meet the qualification requirement for DDC, he must submit the name of the DDC in the FORM UT-1 given in Section IV, Tender Forms proposed to be deployed as DDC during execution of the Contract. Tenderer shall submit copy of experience certificates as documentary evidence for meeting the qualification requirements given in Sub-Clause 3.5 above by the proposed DDC.
- **3.7.4** The proposed DDC can associate with more than one Tenderer for the C-6 Contract Package and this shall not be considered as Conflict of Interest.
- 3.7.5 Value of completed work done by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for purpose of satisfying his/her experience criteria mentioned in Sub-Clause 3.5 above .
  - (a) For past experience of DDC activities given in the Sub-Clause 3.5 above, credit shall be given for specific activity executed by the firm as part of a JV, duly certified in the experience certificate(s). If the experience certificate(s) does not indicate the specific DDC activity/activities executed by each member, in such a case credit for DDC activity shall be given as per following provisions in order of priority:
    - *(i)* As per details given in JV agreement forming part of the relevant Contract Agreement.
    - (ii) If JV agreement does not provide such details, then credit shall be given in proportion of the percentage share of the firm in that JV.
- 3.7.6 Upon award of Contract, the Contractor is required to enter into legally enforceable agreement with the proposed DDC within 45 days of issue of LOA and submit a copy of the Agreement to the Engineer. The Agreement must specify the specific role and responsibility of the DDC. In case, Agreement with DDC is not submitted within 28 days of issue of LOA by the successful Tenderer, penalty shall be imposed on the successful Tenderer of INR 1.00 lacs for each week or part thereof beyond 45 days of issue of LOA upto the actual date of submission of a copy of the Agreement to the Engineer. This amount shall be final and binding.
- 3.7.7 **Replacement of proposed DDC**: No replacement of the DDC will be permitted upon award of the Contract. However, under exceptional circumstances proposal for replacement of DDC may be considered by the Employer subject to (i) depositing nonrefundable INR 10.00 million and (ii) no change in Key Dates and Time for Completion of the Works (iii) The proposed replacement shall fulfil the qualification criteria for DDC given in the Sub-Clause 3.5 above.

# 4. Stage 3: Evaluation of Technical Proposal

#### A. Procedure for Evaluation of Technical Proposal

- (a) The Stage 3 Evaluation will consist of checking the technical aspects of the Tenders to confirm whether they substantially conform to the requirements of the Tender Document.
- (b) In order to determine whether the Tender substantially conforms to the technical requirements of the Tender Document, the technical proposal shall broadly cover the following items in relevant Forms:

S. No.	<b>Technical Evaluation Items</b>	<b>Relevant Forms</b>
1.	Site Organization	Form TP-1, Technical Proposal, Section IV Tender Forms
2.	Outline Method Statement	Form TP-2, Technical Proposal, Section IV Tender Form
3.	Works Execution Programme	Form TP-3, Technical Proposal, Section IV Tender Form
4.	Contractors Representative and Key Personnel as per the list given in Table-1 below	Form PER-1 and PER-2, Section IV Tender Form
5.	Key Equipment as per the list given in Table-2 below	Form EQU, Section IV Tender Form

#### (i) Site Organization

The Tenderer must submit Site Organization in the Form TP-1 given in Section IV Tender Forms.

#### (ii) Outline Method Statement

The Tenderer must submit Outline Method Statement in the Form TP-2 given in Section IV Tender Forms.

#### (iii) Works Execution Programme

The Tenderer must submit Works Execution Programme in the Form TP-3 given in Section IV Tender Forms.

#### (iv) Contractor's Representative and Key Personnel

The Tenderer must demonstrate that it will have a suitably qualified Contractor's Representative and suitably qualified (and in adequate numbers) Key Personnel, as described in the Table below.

S. No.	Designation	Qualification	Minm. Nos. Required	Experience Level
1.	Contractor's Representative/ Project Manager	Graduate in Civil Engineering	1	Minimum total experience of 10 years out of which, minimum 2 years as In-charge in projects of Railway/ DFC/ Metro/ RRTS/ Highway/Expressways.
2.	Deputy Project Manager	Graduate/ Diploma in Civil Engineering	3	Minimum total experience of 06/08 years out of which minimum 03/05 years in relevant filed of projects of Railway/ DFC/ Metro/ RRTS/ Highway/Expressways.
3.	Planning Engineer	Graduate in Civil Engineering	1	Minimum total experience of 05 years out of which minimum 01 years in relevant field in planning of Infrastructure projects.
4.	Senior Quality Assurance /Quality Control Expert	Graduate / Diploma in Civil Engineering	3	Minimum total experience of 05/07 years out of which minimum 02/04 years in QA (Field) in Infrastructure Projects.

Table 1: Contractor's Representative and Key Personnel

The Tenderer shall provide details of the Contractor's Representative and Key Personnel in the relevant Forms PER-1 and PER-2 in Section IV, Tender Forms

#### (v) Key Equipment

The Tenderer must demonstrate that it has the key equipment listed in the Table 2 below:

 Table 2: Equipment

S. No.	Equipment Type	Minimum Numbers required
1.	Hydraulic Piling Rig	06
2.	Excavator	12
3.	Grader	06
4.	Dozer	06

The Tenderer shall provide details of the Equipment in the relevant Form EQU in Section IV, Tender Forms.

- (c) Noncompliance, if any, with Contractor's Representative and Key Personnel (in sub-para iv above) and Key Equipment requirements (in sub-para v above) described in this Section shall not normally be a ground for tender rejection, and such noncompliance will be subject to clarification during tender evaluation and rectification prior to contract award.
- (d) It is expected that the Tenderer visits the site and is fully aware of all the work requirements under this Tender and then prepares the Technical Part.

All Tenders which are found substantially responsive after Stage 3 evaluation will proceed to the next stage.

### 5. STAGE 4: Financial Evaluation

The activities in this Stage 4 will be in two (2) parts.

#### A. Evaluation of Compliance and Responsiveness

- (a) Under this Stage the following items will be checked:
  - (i) Whether the Letter of Tender-Financial Part is compliant (i.e. does not include any alteration to the basic terms and does not constitute an alternative offer).
  - (ii) Whether Financial Part has not been altered and is correctly completed and signed.

#### **B.** Detailed Financial Evaluation

- (a) Financial Part shall be evaluated in accordance with ITT "I. Evaluation of Financial Parts of Tenders".
- (b) Award of the Contract shall be done in accordance with ITT "J. Award of Contract".

# Checklist-CL/R1

Checklist of submission of Documents/Forms online, duly filled

(Reference to TDS-ITT 11.2 & 11.3, Section II, Part 1)

#### A. TECHNICAL PART

S.	Requirement of Tender	Ref. Clause of Tender	Tenderer's Na	ime:
No.	Document	documents	Whether information submitted (Yes/No/N.A.)	Ref. Pg No. in the Technical Submittal
1.	Letter of Tender-Technical Part	ITT 11.2 (a) and Section IV		
2.	Technical Part has been signed by authorized representative of Single Entity/Joint Venture	ITT 20.3		
3.	Tender Security- Online Receipt or Scanned copy of Bank Guarantee	ITT 19.1, ITT 19.3 and Appendix E of Section IV		
4.	Form ELI – 1.1: (a) Tenderer Information Form (Single Entity)	ITT 17.1 and Appendix D of Section IV		
5.	Form ELI – 1.1: (b) Tenderer Information Form (JV)	ITT 17.1 and Appendix D of Section IV		
6.	Form ELI – 1.2: Tenderer's JV Member Information Form	ITT 17.1 and Appendix D of Section IV		
7.	Form ELI – 1.3: Joint Venture Agreement	ITT 17.1 and Appendix D of Section IV		
8.	Form ELI-1.4: Power of Attorney (POA) for Submitting Tender	ITT 20.3 and Appendix D of Section IV		
9.	Board Resolution in case of a Public/Private limited company/LLP	TDS ITT 20.3		
10.	Incorporation Certificate and Memorandum and Articles of Association (MOA & AOA) (in case of Private/Public Limited Company)	Note (iii) (d) of Form ELI 1.4		
11.	Incorporation Certificate and Limited Liability Membership Agreement in case of Limited Liability Membership firms.	Note (iii) (e) of Form ELI 1.4		
12.	Proprietorship Affidavit (in case the Tenderer is Proprietorship Tenderer)	Note (iii) (a) of Form ELI 1.4		
13.	Partnership Deed (in case the Tenderer is Partnership Firm)	Note (iii) (b) of Form ELI 1.4		
14.	Form ELI-1.5: Power of Attorney (POA) for Authorized Signatory of Joint venture (JV) Members	ITT 20.4		

S.	Requirement of Tender	<b>Ref. Clause of Tender</b>	Tenderer's Name:	
No.	Document	documents	Whether information submitted (Yes/No/N.A.)	Ref. Pg No. in the Technical Submittal
15.	Form ELI-1.6: Power of Attorney to Lead Member and Authorised Representative of Joint venture (JV)	ITT 20.4		
16.	In case of foreign tenderer, the Notarised POA/MOU/JV Agreement is notarised in the country of origin and stamped by Indian Embassy/ High Commission or Member Countries of Hague convention submitted these documents with "Apostille" stamp	Note (i) of Form ELI 1.4		
17.	Form TP-1: Site Organization	ITT 16.1 and Appendix A of Section IV		
18.	Form TP-2: Outline Method Statement	ITT 16.1 and Appendix A of Section IV		
19.	Form TP-3: Work Execution Programme	ITT 16.1 and Appendix A of Section IV		
20.	Form EQU: Equipment,	ITT 16.1 and Appendix <i>B</i> of Section IV		
21.	Form PER – 1: Proposed Personnel	ITT 16.1 and Appendix C of Section IV		
22.	Form PER – 2: Resumé of Proposed Personnel	ITT 16.1 and Appendix <i>C</i> of Section IV		
23.	Form CON - 1: Historical Contract Non-Performance, Pending Litigation and Litigation History	ITT 17.2 and Appendix D of Section IV		
24.	Form CON - 2: Environmental, Social, Health, and Safety Performance Declaration	ITT 17.2 and Appendix D of Section IV		
25.	Form FIN – 3.3.1: Financial Situation and Performance	ITT 17.2 and Appendix D of Section IV		
26.	Form FIN – 3.3.2: Average Annual Construction Turnover	ITT 17.2 and Appendix D of Section IV		
27.	Form FIN – 3.3.3: Financial Resources	ITT 17.2 and Appendix D of Section IV		
28.	Form FIN - 3.3.4: Bid Capacity	ITT 17.2 and Appendix D of Section IV		

S.	Requirement of Tender	<b>Ref. Clause of Tender</b>	Tenderer's Na	me:
No.	Document	documents	Whether information submitted (Yes/No/N.A.)	Ref. Pg No. in the Technical Submittal
29.	Form EXP – 3.4.1: General Construction Experience	ITT 17.2 and Appendix D of Section IV		
30.	Form EXP – 3.4.2(a): Specific Construction and Contract Management Experience	ITT 17.2 and Appendix D of Section IV		
31.	Form EXP – 3.4.2(b) (i): Specific Construction Experience in Key Activity (i)	ITT 17.2 and Appendix D of Section IV		
32.	Form EXP – 3.4.2(b) (ii): Specific Construction Experience in Key Activity(ii)	ITT 17.2 and Appendix D of Section IV		
33.	Form EXP – 3.4.2(b) (iii): Specific Construction Experience in Key Activity(iii)	ITT 17.2 and Appendix D of Section IV		
34.	Form UT-1: UNDERTAKING FOR DETAILED DESIGN CONSULTANT (DDC)	ITT 17.2 and Appendix D of Section IV		
35.	Form ELI-1.7: Tenderer's Detailed Design Consultant (DDC) Information Form	EQC 3.5 and Appendix D of Section IV		
36.	Form MOU- MEMORANDUM OFUNDERSTANDING (MOU) ForDETAILEDDESIGNCONSULTANTPARTICIPATION	EQC 3.5 and Appendix D of Section IV		
37.	Form FIN 3.5	ITT 17.2 and Appendix D of Section IV		
38.	Form EXP-3.5 (a)	ITT 17.2 and Appendix D of Section IV		
39.	Form EXP-3.5 (b)	ITT 17.2 and Appendix D of Section IV		
40.	In case of Certificate/documents translated in English from Foreign Language, copy of license of licensed translator issued by the competent authority in their country of origin	ITT 10.1 of Section II		

Note:

The check list is indicative and not exhaustive. The Tenderer must go through the complete tender documents and submit the required documents accordingly.

If any of the above form or criteria is not applicable to the Tenderer, they can simply indicate N.A. against the relevant column.

All Tender Forms contained in the Tender Documents must be fully and properly completed and all the forms must be returned signed by Authorized Representative of the Tenderer.

S.	Requirement of Tender	Ref. Clause of Tender	Tenderer's Na	me:
N0.	Document	documents	Whether information submitted (Yes/No/N.A.)	Ref. Pg No. in the Technical Submittal

#### **B. FINANCIAL PART**

1. The Financial Part is provided in the Tender Documents in the form of :

- (i) MS-EXCEL file and
- (ii) PDF file.

The Contract Price for each Schedule of the Works shall be quoted in the MS-EXCEL file of Financial Part provided in the eProcurement portal. The Tenderer shall download the MS-EXCEL file and after quoting their Contract Price, upload the completed MS-EXCEL file. The quoted Contract Price shall not be offered/quoted elsewhere in the Technical Part submission/ Tender submission. These prices shall include all costs associated with the contract including GST. The Tenderer shall complete the Financial Part in accordance with the instructions given in the Financial Part.

- 2. Following information are required to be submitted by Tenderers in their Financial Part:
- (a) In PDF File
  - 1. Letter of Tender Financial Part
  - Appendix A to Financial part: Schedule of Adjustment Data Table A: Foreign Currency (FC) Table B: Summery of Payment Currencies
  - 3. Appendix B to Financial Part: Price Schedules Contract Price comprises of Schedule 'A', Schedule 'B', Schedule 'C', Schedule 'D' and fixed Provisional Sum.

The Tenderer shall upload on eProcurement portal duly signed PDF documents of Financial Part mentioned in (a) above.

#### (b) In MS-Excel File

Price Schedule for quoting Price for the Works against each Schedule.

Schedule	Description	Remarks
Α	Lump Sum component of Works	Quoted the total lump sum price for Schedule 'A'

Schedule	Description	Remarks		
BOQ Schedules (B, C and D)				
В	Bridges, Retaining Wall & other civil Works			
Sub- Schedule	Description			
B1	Bridge Works-Steel Super Structure -Open Web Girder (USSOR Based item)	Quoted single percentage (%) Excess (+) or Less (-) on the		
B2	Reinforcement (USSOR Based items)	estimated amount for each Sub- Schedules 'B1' to ' <i>B14</i> ' of Schedule		
B3	RCC Works (NS item)	'B' in the prescribed place of Price		
B4	Bridge Works-Pile foundation (NS items)	Financial Part.		
B5	Bridge Works-Steel Super Structure- Composite Girder (USSOR Based item)			
B6	Backfill Material (USSOR Based item)			
B7	Bridge Works-Precast Concrete Blocks( NS item)			
B8	Cement (USSOR Based items)			
B9	Formation Works (USSOR Based & NS items)			
B10	Bridge Works-Steel Super Structure - Miscellaneous (USSOR Based items)			
B11	Well foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)			
B12	Road and Building Works (DSR Based & NS items)			
B13	Bridge Bearing & Miscellaneous Structural Steel Works (USSOR Based & NS items)			
B14	P Way Works-Ballastless Track, Rails & Special Sleepers (NS items)			
С	General Electricals Services	Quoted single percentage (%) Excess (+) or Less (-) on the estimated amount 'C' in the prescribed place of Price Schedule in MS-Excel file of Financial Part.		
D	Signalling & Telecommunication (S&T) Works	Quoted single percentage (%) Excess (+) or Less (-) on the estimated amount 'D' in the		

Schedule	Description	Remarks
		prescribed place of Price Schedule in MS-Excel file of Financial Part.

3. I hereby confirm that:

- (i) I have checked the above list with our submittal. I am also aware that if our Tender is not containing the above documents, the Employer has the right to reject our Tender.
- (ii) All the pages of Tender submission are properly indexed and numbered.

Seal: Date: (Signature of Authorized representative of Tenderer)

# Tender No. HORC/HRIDC/C-6/2024 Attachment 2 of Corrigendum No. 2

# Part 1, Section IV- Tender Forms

- 1. Form EXP-3.4.2(a)/R1
- 2. Form EXP-3.4.2(b) (i)/R1
- 3. Form EXP-3.4.2(b) (ii)/R1
- 4. Form EXP-3.4.2(b) (iii)/R1
- **5.** Form UT-1
- 6. Form ELI 1.7
- 7. Form MOU
- 8. Form FIN 3.5.1
- 9. Form EXP- 3.5.2 (a)
- 10. Form EXP-3.5.2 (b)

### Form EXP-3.4.2(a)/R1

# **Specific Construction and Contract Management Experience**

[Ref. ITT Sub-Clause 17.2 and Section III, Evaluation and Qualification Criteria, Sub-Clause 3.4.2 (a)] [The following table shall be filled in for the Tenderer or in case of JV, each member of a Joint

Venture]

Tender No.: HORC/HRIDC/C-6/2024

Tenderer's Name:

JV Member's Name\_\_\_\_\_\_Of \_\_\_\_\_pages

Similar Contract No.	Information		
Contract Identification			
Award date			
Completion date			
Role in Contract as Prime Contractor or Member in JV or <i>Management</i> <i>Contractor</i> or Sub-Contractor		[insert the role	in Contract]
Total Contract Amount	[insert Contract amount(s) and currency(ies)]		INR [insert * Exchange rate prevailing on the date of the Contract Award i.e. the date of issue of Letter of Acceptance and total Contract amount in INR equivalent]
If member in a JV or sub-contractor, specify participation in total Contract amount	[insert Percentage participation]	[insert amount(s) and currency) of participation]	INR [insert Exchange rate prevailing on the date of the Contract Award i.e. the date of issue of Letter of Acceptance and amount of participation in INR equivalent]
Employer's Name:			
Address: Mobile: Telephone/fax number E-mail:			
Description of the similarity in accordance with Sub-Clause 3.4.2(a) of Section III:			
1. Amount in (INR)			

<ol> <li>Works involving:         <ol> <li>Viaduct/Bridges and</li> <li>Earthwork in formation</li> </ol> </li> </ol>	
2. Type of Project: Railway/Metro Rail/ Regional Rapid Transit System (RRTS)/High Speed Rail/DFCC/Road project	
3. Whether copy of experience certificates issued by the Employer (Owner of the Work) / Concessionaire attached or Not	Copy of experience certificates issued by: [Select the appropriate one as applicable] The Employer (Owner of the Work) OR Concessionaire.

\*Refer to Notes: Exchange Rate for Qualification Criteria, Section III, EQC.

#### **Tenderer's Authorized Representative**

Signature:
Date:
Company stamp:
Company stamp:

Notes:

- (i) Value of completed work done by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for purpose of satisfying his/her experience criteria mentioned in 3.4.2(a).
- (ii) The Tenderer shall submit copy of certificates issued by the Employer (Owner of the Work) / Concessionaire as documentary proof clearly indicating the similarity of the work as per Sub-Clause 3.4.2 (a), actual completion cost, actual completion date. Tenders submitted without this documentary proof shall be liable to be rejected.
- (iii) In case Tenderer submits work experience certificate issued by other than Govt. / Public Sector undertakings, the Tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.
- (iv) If a tenderer has successfully completed a work as subcontractor, the work experience certificate issued for such work to subcontractor by the Employer (Owner of the Work) / Concessionaire shall only be considered for the purpose of fulfillment of credentials.

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## Form EXP-3.4.2(b) (i)/R1

# Specific Construction Experience in Key Activity in **Completed/Ongoing contracts**

[Ref. ITT Sub-Clause 17.2 and Section III, Evaluation and Qualification Criteria, Sub-Clause 3.4.2

(b) (i)]

[The following table shall be filled in for the Tenderer or in case of JV, each member of a Joint Venture]

Tender No.: HORC/HRIDC/C-6/2024

Tenderer's Name:

JV Member's Name\_\_\_\_\_

Page \_\_\_\_\_of \_\_\_\_pages

1. Key Activity: Construction of minimum 2.00 km cumulative length of viaducts / Bridges in one contract of infrastructure project in Railway / Metro Rail / RRTS / High Speed Rail / DFCC/Road project

		Information
Contract Identification		
Award date		
Completion date / ongoing contracts		
Role in Contract as Prime Contractor or Member in JV or Management Contractor or Sub-Contractor	[insert the rol	e in Contract]
Total Contract Amount	[insert Contract amount(s) and currency(ies)]	INR [insert * Exchange rate prevailing on the date of the Contract Award i.e. the <b>date</b> <b>of issue of Letter of</b> <b>Acceptance</b> and total Contract amount in INR equivalent]
Employer's Name:		
Address:		
Telephone/fax number		
E-mail:		
Description of the key activity in accordance with Sub-Clause 3.4.2 (b) (i) of Section III:		

	Information
Cumulative length of viaducts / Bridges (km) in infrastructure work Railway / Metro Rail / RRTS / High Speed Rail / DFCC / Road project (A)	
In case the qualitying contract has been ex	kecuted as JV/Consortium member:
<ul> <li>a) Specify the percentage share of the participating Tenderer / JV member in the qualifying contract, (B)</li> <li>b) Actual Cumulative length of viaducts/Bridges (km) in infrastructure work Railway / Metro Rail / RRTS / High Speed Rail / DFCC / Road project,</li> </ul>	
$(\mathbf{C}) = (\mathbf{A}) \mathbf{x} (\mathbf{B})$	
c) Whether copy of experience certificates issued by the Employer (Owner of the Work) / Concessionaire attached or Not	Copy of experience certificates attached is issued by: [Select the appropriate one as applicable] The Employer (Owner of the Work) OR Concessionaire

Notes:

- *(i) Evaluation of length of spans for multitrack/ multilanes bridges shall be done as under:* 
  - (a) In case of Railway bridges/Metro viaduct, accommodating multiple tracks, the length of span for each track shall be taken into consideration. In case of Road bridges accommodating multilanes, the credit for length of one span shall be given for every two lanes.
  - (b) The credit for multiple tracks/multilanes (exceeding two lanes) shall be given only if the number of tracks or number of lanes is specifically mentioned in the certificate of the Employer.
  - (c) For evaluation purpose, length of bridge will be measured from abutment to abutment of the bridge or the length of bridge certified in the Employer (Owner of the Work) / Concessionaire Certificate.
- (ii) For past experience of a firm in earlier JV for specified key activity in Sub-Clause 3.4.2 (b) credit shall be given for execution of that quantity of the specified key activity executed by the firm as per the Note 3 under Sub-Clause 3.4.2 (b).
- (iii) The Tenderer shall submit copy of certificates issued by the Employer (Owner of the Work)/ Concessionaire as documentary proof clearly indicating the description of the key activity as per Sub-Clause 3.4.2 (b), actual completed quantity and actual completion date. Tender submitted without this documentary proof shall be liable to be rejected.
- (iv) In case Tenderer submits work experience certificate issued by other than Govt. / Public Sector undertakings, the Tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly

certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.

(v) If a tenderer has successfully completed a work as Sub-Contractor, the work experience certificate issued for such work to Sub-Contractor by the Employer (Owner of the Work)/ Concessionaire shall only be considered for the purpose of fulfillment of credentials. Tender submitted without this documentary proof shall be summarily rejected.

## Form EXP-3.4.2(b) (ii)/R1

# Specific Construction Experience in Key Activity in Completed/Ongoing contracts

[Ref. ITT Sub-Clause 17.2 and Section III, Evaluation and Qualification Criteria, Sub-Clause 3.4.2

(b) (ii)]

[The following table shall be filled in for the Tenderer or in case of JV, each member of a Joint Venture]

Tender No.: HORC/HRIDC/C-6/2024

Tenderer's Name: \_\_\_\_\_

JV Member's Name

Page \_\_\_\_\_ of \_\_\_\_\_ pages

1. Key Activity: Execution of minimum equivalent length of **10,000 RM Pile foundation (of minimum dia 1000 mm)/Well foundation** in one contract of infrastructure project in Railway / Metro Rail / RRTS / High Speed Rail / DFCC / Road project

		Information
Contract Identification		
Award date		
Completion date / ongoing contracts		
Role in Contract as Prime Contractor or Member in JV or Management Contractor or Sub-Contractor	[insert the ro	ole in Contract]
Total Contract Amount	[insert Contract amount(s) and currency(ies)]	INR [insert * Exchange rate prevailing on the date of the Contract Award i.e. the <b>date</b> of issue of Letter of Acceptance and total Contract amount in INR equivalent]
Employer's Name:		
Address:		
Telephone/fax number		
E-mail:		
Description of the key activity in accordance with Sub-Clause 3.4.2 (b) (ii) of Section III:		

	Information
Executed length <b>Pile foundation</b> ( <b>RM</b> ) of minimum dia 1000 mm in one contract of infrastructure project in Railway / Metro Rail / RRTS / High Speed Rail / DFCC / Road project, (A)	
Executed length Well foundation (RM) of minimum dia. 1000 mm in one contract of infrastructure project in Railway / Metro Rail / RRTS / High Speed Rail / DFCC / Road project, (B)	
In case of Well Foundation, equivalent Pile foundation Length executed, C= 6 x (B)	
Total Equivalent length of Pile/Well Foundation executed, $(D) = (A)+(C)$	
In case the qualifying contract has been e	xecuted as JV/Consortium member:
a) Specify the percentage share of the participating Tenderer / JV member in the qualifying contract, (E)	
<ul> <li>b) Actual executed length Pile /well foundation (RM) of minimum dia 1000 mm in one contract of infrastructure project in Railway / Metro Rail / RRTS / High Speed Rail / DFCC / Road project, (F) = (D) x (E)</li> </ul>	
c) Whether copy of experience certificates issued by the Employer (Owner of the Work) / Concessionaire attached or Not	Copy of experience certificates attached is issued by: [Select the appropriate one as applicable] The Employer (Owner of the Work) OR Concessionaire

Notes:

- (i) For past experience of a firm in earlier JV for specified key activity in Sub-Clause 3.4.2 (b) credit shall be given for execution of that quantity of the specified key activity executed by the firm as per the Note 3 under Sub-Clause 3.4.2 (b).
- (ii) Calculation of equivalent length (RM) of Pile/Well foundation:
- In case of Well foundation, depth of 1 RM Well foundation shall be considered equivalent to construction of 6 RM depth of Pile foundation (i.e., 1 RM Well foundation= 6 RM Pile foundation).
- (iii) The Tenderer shall submit copy of certificates issued by the Employer (Owner of the Work) / Concessionaire as documentary proof clearly indicating the description of the key activity as

per Sub-Clause 3.4.2 (b), actual completed quantity and actual completion date. Tender submitted without this documentary proof shall be liable to be rejected.

- (iv) In case Tenderer submits work experience certificate issued by other than Govt. / Public Sector undertakings, the Tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.
- (v) If a tenderer has successfully completed a work as Sub-Contractor, the work experience certificate issued for such work to Sub-Contractor by the Employer (Owner of the Work) / Concessionaire shall only be considered for the purpose of fulfillment of credentials. Tender submitted without this documentary proof shall be summarily rejected.

### Form EXP-3.4.2(b) (iii)/R1

# Specific Construction Experience in Key Activity in Completed/Ongoing contracts

[Ref. ITT Sub-Clause 17.2 and Section III, Evaluation and Qualification Criteria, Sub-Clause 3.4.2

(b) (iii)]

[The following table shall be filled in for the Tenderer or in case of JV, each member of a Joint Venture]

Tender No.: HORC/HRIDC/C-6/2024

Tenderer's Name:

JV Member's Name

Page \_\_\_\_\_ of \_\_\_\_\_ pages

1. Key Activity: Execution of Earthwork in formation for 2.0 million cum in one contract of infrastructure project in Railway / Metro Rail / RRTS / High Speed Rail / DFCC / Road project

	Information	
Contract Identification		
Award date		
Completion date / ongoing contracts		
Role in Contract as Prime Contractor or Member in JV or Management Contractor or Sub-Contractor	[insert the role in Contract]	
Total Contract Amount	[insert Contract amount(s) and currency(ies)]	INR [insert * Exchange rate prevailing on the date of the Contract Award i.e. the <b>date</b> of issue of Letter of Acceptance and total Contract amount in INR equivalent]
Employer's Name:		
Address:		
Telephone/fax number		
E-mail:		
Description of the key activity in accordance with Sub-Clause 3.4.2 (b) (iii) of Section III:		
	Information	
--	--	
Executed quantities of Earthwork in formation in one contract of infrastructure project in Railway / Metro Rail / RRTS / High Speed Rail / DFCC / Road project, (A)		
In case the qualifying contract has been ex	xecuted as JV/Consortium member:	
<ul> <li>a) Specify the percentage share of the participating Tenderer / JV member in the qualifying contract, (B)</li> <li>b) Actual executed quantities of Earthwork in formation in one contract of infrastructure project in Railway / Metro Rail / RRTS / High Speed Rail / DFCC / Road project, (C) = (A) x (B)</li> </ul>		
c) Whether copy of experience certificates issued by the Employer (Owner of the Work) / Concessionaire attached or Not	Copy of experience certificates attached is issued by: [Select the appropriate one as applicable] The Employer (Owner of the Work) OR Concessionaire	

- (i) Earthwork in formation/cutting, Blanketing, GSB/WMM in Railway/Road projects will be considered as part of Earthwork.
- (ii) For past experience of a firm in earlier JV for specified key activity in Sub-Clause 3.4.2 (b) credit shall be given for execution of that quantity of the specified key activity executed by the firm as per the Note 3 under Sub-Clause 3.4.2 (b).
- (iii) The Tenderer shall submit copy of certificates issued by the Employer (Owner of the Work) / Concessionaire as documentary proof clearly indicating the description of the key activity as per Sub-Clause 3.4.2 (b), actual completed quantity and actual completion date. Tender submitted without this documentary proof shall be liable to be rejected.
- (iv) In case Tenderer submits work experience certificate issued by other than Govt. / Public Sector undertakings, the Tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.
- (v) If a tenderer has successfully completed a work as Sub-Contractor, the work experience certificate issued for such work to Sub-Contractor by the Employer (Owner of the Work) / Concessionaire shall only be considered for the purpose of fulfillment of credentials. Tender submitted without this documentary proof shall be summarily rejected.

### Form UT-1

#### UNDERTAKING FOR DETAILED DESIGN CONSULTANT (DDC) (Refer Sub-Clause 3.5 and 3.5.2 (c) of Section III, EQC) (On the Letterhead of Tenderer/DDC)

### I. UNDERTAKING BY THE TENDERER

(On the Letterhead of Tenderer)

### [Delete (a) or (b) whichever is not applicable)]

- a) We hereby confirm that we...... (*Insert name of the Tenderer*) fulfil the qualification requirements for the DDC stated in Sub-Clause 3.5 of Section III of EQC. The copy of the experience certificate(s) in support of fulfilment of qualification requirements is submitted with the Technical Part. We hereby undertake that:
  - (i) We have adequate in house capacity to design skew Steel Open Web Girder (OWG).
  - We shall deploy Design personnel during the execution of project with the approval of the Engineer as per the Attachment C-3 given in Section VII-4: Construction (Civil & BLT), Part 2 of Tender Document

### OR

b) We hereby confirm that we...... (*Insert name of the Tenderer*) are going to deploy ..... (*Insert name of proposed DDC*) for the DDC stated in Sub-Clause 3.5 of Section III of EQC. The copy of the experience certificate(s) in support of fulfilment of minimum experience requirement is submitted with the Technical Part.

### Signature of authorized signatory of Tenderer with Seal

#### II. UNDERTAKING BY THE DDC [To be submitted only when I (b) is applicable] (On the Letterhead of DDC)

- a) We, ...... (*Insert Name of proposed DDC*) hereby confirm that we are associating with ...... (*Insert name of the Tenderer*) for the work of "**Contract Package C-6:** Design and Construction of Civil Works (Earthwork, Bridges, Station Buildings, Retaining Walls & other miscellaneous Works) and General Electrical Services works from km 61.50 to km 126.03 between HORC station New Patli and IR station Harsana Kalan and connectivities from Badsa Station of HORC to existing IR Sultanpur station and Mandothi station of HORC to existing IR Asaudah Station in connection with laying of New BG Double Railway line of HORC Project "stated in Sub-Clause 3.5 of Section III of EQC;
- (b) We, ...... (*Insert Name of DDC*) hereby confirm that we fulfil the qualification requirements for the DDC stated in Sub-Clause 3.5 of Section III of EQC. The copy of the experience certificate(s) issued in support of fulfilment of qualification requirements is submitted with the Technical Part;
- (c) We hereby undertake that we have the adequate in house capacity to design skew Steel Open Web Girder (OWG).
- (d) We hereby undertake to deploy Design personnel during the execution of project with the approval of the Engineer as per the Attachment C-3 given in Section VII-4: Construction (Civil & BLT), Part 2 of Tender Document.

Signature of authorized signatory of proposed DDC with Seal

Signature of authorized signatory of Tenderer with Seal

#### Note:

(i) If a Tenderer does not submit the copy of experience certificates as documentary evidence in favour of himself /proposed DDC for meeting the qualification requirements for DDC given in Sub-Clause 3.5 of Section III, EQC, his Tender shall be liable to be rejected.

### Form ELI-1.7

### **Tenderer's Detailed Design Consultant (DDC) Information** Form

[Ref. Sub-Clause 3.5, Section III, EQC] (To be completed for DDC of Tenderer)

Tender No.: HORC/HRIDC/C-6/2024

Tenderer's Name:

JV Member's Name\_\_\_\_\_

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Tenderer's name:	
DDC name:	
DDC's country of registration:	
DDC's year of constitution:	
DDC's legal address in country of constitution:	
DDC's address for Communication:	
DDC's authorized representative information	
Name:	_
Address:	_
Mobile:	
Telephone/Fax numbers:	_
E-mail address:	

#### **Tenderer's Authorized Representative**

Signature: ..... Date: ..... Company stamp: .....

### Form MOU (Refer Sub-Clause 3.5 and 3.5.2 (c) of Section III, EQC)

### MEMORANDUM OF UNDERSTANDING (MOU) For DETAILED DESIGN CONSULTANT (DDC) PARTICIPATION

### BETWEEN

M/s ...... having its registered office at ..... (Hereinafter referred to as .....) acting as the Tenderer of the first part,

And

The expressions of ...... and ..... shall wherever the context admits, mean and include their respective legal representatives, successors-in-interest and assigns and shall collectively be referred to as "the Parties" and individually as "the Party".

### WHEREAS:

Haryana Rail Infrastructure Development Corporation Limited (HRIDC) on behalf of Haryana Orbital Rail Corporation Limited (HORCL) [hereinafter referred to as "Employer"] has invited bids for "Contract Package C-6: Design and Construction of Civil Works (Earthwork, Bridges, Station Buildings, Retaining Walls & other miscellaneous Works) and General Electrical Services works from km 61.50 to km 126.03 between HORC station New Patli and IR station Harsana Kalan and connectivities from Badsa Station of HORC to existing IR Sultanpur station and Mandothi station of HORC to existing IR Asaudah Station in connection with laying of New BG Double Railway line of HORC Project"

#### NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

- 1. The following documents shall be deemed to form and be read and construed as an integral part of this MOU.
  - i) Specific Procurement Notice (SPN), and
  - ii) Tender Document issued by HRIDC
  - iii) Any Addendum/Corrigendum issued by HRIDC
- 2. The `Parties' have studied the documents and have agreed to participate in submitting a `Tender' wherein ------ [Insert the name of proposed DDC] shall act as Detailed Design Consultant (DDC) for the Contract Package C-6 invited by HRIDC.
- 3. M/s .......[Insert name of the Tenderer] shall be the Contractor for all intents and purpose and shall represent the Contractor and DDC in its dealing with the Employer upon award of the Contract. For the purpose of submission of Technical Bid, the Parties agree that the M/s...... [Insert name of the Tenderer] is authorized to sign and submit all documents and subsequent clarifications, if any, to the Employer on behalf of DDC.

- 4. The 'Parties' undertake that DDC meet the requirements of Sub-Clauses 3.5, 3.5.1, 3.5.2 (a), 3.5.2 (b) and 3.5.2 (c) of Section III EQC. Documentary evidence as per the requirements of Section III-EQC and Section IV-Tender Forms, Part 1 of Tender Documents are submitted with the Tender, failing which the submitted Tender shall be liable for rejection.
- 5. The 'Parties' have resolved the responsibilities to be carried out by DDC in accordance with the Tender Documents and Corrigenda issued by the Employer. Tenderer shall ensure that the DDC who is qualifying the EQC requirements of Detailed Design Consultant under Sub-Clauses 3.5, 3.5.1, 3.5.2 (a), 3.5.2 (b) and 3.5.2 (c) of Section III EQC, shall be assigned the complete responsibilities of Detailed Design and Drawings for the Contract Package C-6. DDC shall be responsible for carrying out all the Detailed Design and Drawings for Package C-6 meeting the design, quality, the time frame and other requirements specified in the Tender Document.
- 6. The 'Parties' undertake that M/s ----- [Insert the name of Proposed DDC] have adequate in house capacity to design skew Steel Open Web Girder (OWG), required to be designed during execution of the Contract failing which the submitted Tender shall be liable for rejection.
- 7. DDC shall deploy Design personnel during the execution of project with the approval of the Engineer as per the Attachment C-3 given in Section VII-4: Construction (Civil & BLT), Part 2 of Tender Document.

### 8. AGREEMENT BETWEEN THE PARTIES

Upon award of Contract, the Parties shall enter into legally enforceable agreement within 45 days of issue of LOA and submit a copy of the Agreement to the Engineer. The Agreement must specify the specific role and responsibility of the DDC in accordance with the requirements of Tender Document.

### 9. JOINT AND SEVERAL RESPONSIBILITY

The Parties undertake that they shall be jointly and severally liable to the Employer in the discharge of all the obligations and liabilities of Detailed Design Consultant as per the Contract with the Employer and for the performance of the Detailed Design Consultancy of the contract awarded to the Tenderer.

#### **10. ASSIGNMENT AND THIRD PARTIES**

The Parties shall co-operate throughout the entire period of this MOU. DDC can enter into agreement either directly or indirectly with any other party or group of parties on matters relating to this Tender. The Tenderer shall not have any objection to the inclusion of the same DDC in more than one Tender for the same contract.

### 11. EXECUTIVE AUTHORITY

The said Tenderer through its authorized representative shall receive instructions and payments from the Employer. The Tenderer shall be responsible for making payments to the DDC. The Employer shall not be liable for making any payment due to the DDC on behalf of Tenderer.

#### 12. TENDER SUBMISSION

Each Party shall bear its own cost and expenses for preparation and submission of the Tender and all costs until conclusion of a contract with the Employer for the Project.

#### **13. DOCUMENTS & CONFIDENTIALITY**

Each Party shall maintain confidentiality and not use for any purpose related to the Project all commercial and technical information received or generated in the course of preparation and submission of the Tender.

#### 14. VALIDITY

This MOU shall remain in force till the occurrence of the earliest to occur of the following:

- a. The Tender submitted by the Tenderer is declared unsuccessful, or
- b. Cancellation/ shelving of the Project by the Employer for any reasons prior to award of work
- **c.** Execution of detailed Agreement by the Parties, setting out detailed terms after award of work by the Employer to the Tenderer.
- 15. This MOU is drawn in three number of copies with equal legal strength and status. One copy is held by M/s ...... and the other by M/s. ..... and a copy submitted with the Tender.
- 16. This MOU shall be construed under the laws of India.

#### **17. NOTICES BETWEEN THE PARTIES**

Notices shall be given in writing by email confirmed by registered mail or commercial courier to the following addresses:

Tenderer.	Detailed Design Consultant		
(Name & Address)	(Name & Address)		

In witness whereof the Parties have executed this MOU the day, month and year first before written.

M/s	M/s

(Seal)

(Seal)

Witness	
---------	--

1..... (Name & Address)

2..... (Name & Address)

### Form FIN-3.5.1:

### **Average Annual Consultancy Turnover**

[Ref. ITT Sub-Clause 17.2, Section III, Evaluation and Qualification Criteria, Sub-Clause 3.5] [The following table shall be filled in for the Tenderer or in case of proposed DDC, Proposed DDC shall fill this form]

Tender No.: HORC/HRIDC/C-6/2024

Tenderer's Name:

Proposed DDC Name: \_\_\_\_\_\_ Page \_\_\_\_\_\_of \_\_\_\_\_pages

(All amounts in Millions)

Annual Turnover Data for the Last Three (03) Financial Years (Consultancy Only)			
Year	Amount Currency	*Exchange Rate	INR Equivalent
2021-22	[insert amount and indicate currency]		
2022-23			
2023-24			

\* See Section III, Evaluation and Qualification Criteria

- (i) In case, the Financial Year is the same as the Calendar Year, the turnover for the year 2021, 2022 and 2023 shall be furnished.
- (ii) The Average Annual Consultancy Turnover shall be calculated by adding the turnover amount of last three financial years divided by three.
- (iii) The Tenderer/Proposed DDC is not required to submit any document as documentary evidence along with the Tender Documents. All information furnished in this Form shall be certified by a Chartered Accountant/Company Auditor/Statutory Auditor.
- (*iv*) The Form duly certified by a Chartered Accountant/Company Auditor/Statutory Auditor shall also be signed by Tenderer's Authorized representative and Proposed DDC Authorized representative.
- (v) The above documents shall reflect the financial situation of the legal entity or entities comprising the Tenderer/ Proposed DDC and not the Tenderer/ Proposed DDC parent companies, subsidiaries, or affiliates.
- (vi) In the event that the audited accounts for the latest concluded Financial Year are not available, the Tenderer/ Proposed DDC shall furnish information pertaining to the last three financial years after ignoring the latest concluded financial year. In case, the Tenderer/ Proposed DDC submits audited financial information for the last four or more years, only the figures for the latest three years shall be considered for evaluation.

(vii) In case audited balance sheet of the last financial year is not available with the tenderer/ Proposed DDC, he will declare the same vide item (p) prescribed in the Letter of Tender-Technical Part..
(viii) If the value of Annual Consultancy Turnover is not submitted for any of the last three years prescribed in Financial Data, the Tender shall be evaluated by considering "NIL" Turnover for that year(s).

### **Tenderer's Authorized Representative**

Signature:
Date:
Company stamp:

**Proposed DDC Authorized Representative** 

Signature:
Date:
Company stamp:

### Chartered Accountant/Company Auditor/Statutory Auditor

Certified that the information furnished above is correct as per the audited balance sheets of the entity.

Signature:
Name:
Position: Date:
Company:
Company stamp:
Membership No:
Address: Contact No:
Email ID:

### Form EXP-3.5.2(a)

### **Detailed Design Consultant (DDC) for Bridges and Railway Formation**

[Ref. ITT Sub-Clause 17.2 and Section III, Evaluation and Qualification Criteria, Sub-Clause

3.5.2 (a)]

[The following table shall be filled in for the Tenderer or in case of proposed DDC, Proposed DDC shall fill this form]

Tender No.: HORC/HRIDC/C-6/2024

Tenderer's Name: \_\_\_\_\_

Proposed DDC Name: \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_ pages

Similar Contract No.	Information		
Contract Identification			
Award date			
Completion date			
Role in Contract	[insert the role in Contract]		
Total Contract Amount	[insert Contract amount(s) and currency(ies)]		INR [insert * <i>Exchange rate</i> prevailing on the date of the Contract Award i.e. the date of issue of Letter of Acceptance and total Contract amount in INR equivalent]
If member in a JV or sub-contractor, specify participation in total Contract amount	[insert Percentage participation]	[insert amount(s) and currency) of participation]	INR [insert Exchange rate prevailing on the date of the Contract Award i.e. the date of issue of Letter of Acceptance and amount of participation in INR equivalent]
Employer's Name:			
Address: Mobile: Telephone/fax number			

E-mail:	
Description of design consultancy contract in accordance with Sub- Clause 3.5 of Section III: Design Consultancy <i>involving</i> : (i) Railway Bridges OR (ii) ROB over Railway Track	[insert the type of Contract]
1. Amount in (INR)	
2. Whether Experience Certificate is attached or not?	[Insert Yes/NO]

\*Refer to Notes: Exchange Rate for Qualification Criteria, Section III, EQC.

### Tenderer's Authorized Representative

Signature:
Date:
Company stamp:

### **Proposed DDC Authorized Representative**

Signature:
Date:
Company stamp:

- (i) Value of completed work done by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for purpose of satisfying his/her experience criteria mentioned in 3.5.2 (a).
- (ii) The Tenderer/Proposed DDC shall submit a copy of certificates as documentary proof clearly indicating the specific design consultancy experience as per Sub-Clause 3.5.2 (a), actual completion cost, actual completion date. Tenders submitted without this documentary proof shall be liable to be rejected.
- (iii) In case Tenderer/Proposed DDC submits work experience certificate issued by other than Govt. / Public Sector undertakings, the Tenderer/ Proposed DDC shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.

### Form EXP-3.5.2(b)

### **DDC Experience in Key Activity in Completed/Ongoing Contracts**

[Ref. ITT Sub-Clause 17.2 and Section III, Ev	valuation and Qualification Criteria, Sub-Clause
3.5.2	. (b)]

[The following table shall be filled in for the Tenderer or in case of proposed DDC, Proposed DDC shall fill this form]

Tender No.: HORC/HRIDC/C-6/2024

Tenderer's Name: \_\_\_\_\_

Proposed DDC Name\_\_\_\_\_

Page \_\_\_\_\_of \_\_\_\_pages

1. Key Activity: Design of steel Open Web Girder of minimum 45.0 m span for Rail/Road projects.

Item		Information
Contract Identification		
Award date		
Start date		
Completion date / ongoing contracts		
Role in Contract as Detailed Design Consultant	[insert th	ne role in Contract]
Total Contract Amount	[insert Contract amount(s) and currency(ies)]	INR [insert * Exchange rate prevailing on the date of the Contract Award i.e. the <b>date</b> <b>of issue of Letter of</b> <b>Acceptance</b> and total Contract amount in INR equivalent]
Employer's Name:		
Address: Telephone/fax number E-mail:		

Item	Information
Description of the design activity in accordance with Sub-Clause 3.5 of Section III: Whether Design of Steel Open Web Girder carried out or not?	(Insert Yes or NO)
No. of Steel Open Web Girder(s) designed	(Insert No. of Steel Open Web Girder designed)
Span Size of Steel Open Web Girder (m)	(Insert Span length (m) of Steel Open Web Girder designed)
Type of Project (Rail/Road)	
Whether Experience certificate Attached or not	[Insert Yes/NO]
In case the qualifying contract has been	n executed as JV/Consortium member:
<ul> <li>a) Specify the percentage share of the participating Tenderer / JV member in the qualifying contract, (B)</li> <li>b) Actual No. of Steel Open Web</li> </ul>	
Girder(s) designed, (C) = (A) x (B)	

- (i) For past experience of a firm in earlier JV for specified key activity in Sub-Clause 3.5.2
  (b) of Section III, EQC, credit shall be given for execution of that quantity of the specified activity designed by the firm as per the Note 2 under Sub-Clause 3.5.
- (ii) The Tenderer/Proposed DDC shall submit copy of experience certificates as documentary proof clearly indicating the design description of the activity as per Sub-Clause 3.5, actual completed quantity and Actual completion date. Tender submitted without this documentary proof shall be liable to be rejected.
- (iii) In case, Tenderer/Proposed DDC submits work experience certificate is issued by other than Govt. / Public Sector undertakings, the Tenderer/proposed DDC shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate.

# Tender No. HORC/HRIDC/C-6/2024 Attachment 3 of Corrigendum No. 2

## **Part 1, Section IV- Tender Forms**

## **Appendix B to Financial Part: Price Schedule**

## **Revised Price Schedule**

Schedule 'A'/R1,
 Schedule 'B'/R1 and

3.3. Schedule 'C'/R1

- 5 Price Schedule '*A*'/*R*1
- 5.1 Schedule "A'- Breakup of Lump Sum cost of Works under various Sub-Heads shall be as follows:

Sub- Head	Description	Percentage of the quoted lump sum cost of Schedule 'A'	No. of Cost Centre	Total Cost of Sub-Head
1	2	3	4	5
С	Civil works	100%	4	C= 1xLS*

\*LS = Total lump sum accepted cost of the Works for Schedule 'A'

# 5.2 Apportionment of Contract Price *for Schedule 'A'* for payments under various Cost Centre for Sub-Head 'C'- Civil Works

Cost Centre	Description of Cost Centre	Percentage of Cost Centre 'C'	Total Cost of Cost Centre	Total Cost of Sub-Head 'C'
1	2	3	4	5
CD	Design and As Built Drawing & Documents	1.50%	CD= 0.015x 'C'	100% of SCH 'A'
CE	Earthwork and blanketing	51.00%	CE=0.51x 'C'	
CB	Bridges	36.75%	CB=0.3675x 'C'	
CS	Stations	10.75%	CS=0.1075x 'C'	
	Total	100.00%		

Note: Value of 'C' shall be as defined in Sub-Clause 5.1 above.

The percentage figures as filled in column (3) for the apportionment of the Contract Price *of Schedule* '*A*' for completion of the Works corresponding to the various Sub-Heads and Cost Centres are fixed and payment will be released for different Cost centre as per above percentage break-up of Contract Price *of Schedule* '*A*'.

Cost Centre		entre	'CD'- Design and As Built	Drawing &
Weightag	Weightage of Cost Centre 'CD', (X)-		1.5%	
Sub Cost	Cost Item of Work		Martena	Weightage
Centre	No.	Description	Ivillestone	( <b>Y</b> )
1	2	3	4	5
	CD1.1	Preliminary design	Preliminary Design	4.00%
	CD1.2	Formation, retaining wall and Drainage	Definitive design & Good for Construction Drawings (GFC)	
	CD1.2.1	Formation & yard Drainage	Definitive design & Good for Construction Drawings (GFC)	3.00%
	CD1.2.2	Retaining wall	<i>Definitive design &amp; Good for Construction Drawings (GFC)</i>	2.00%
	CD1.2.3	Drain on embankment & longitudinal drains	Definitive design & Good for Construction Drawings (GFC)	1.00%
	CD1.3	Minor Bridges		
CD1-	CD1.3.1		Preparation & approval of GADs	10.00%
Design	CD1.3.2		Definitive Design	09.00%
	CD1.3.3		Good For Construction (GFC) Drawings	09.00%
	CD1.4	Major Bridges		
	CD1.4.1		Preparation & approval of GADs	7.00%
	CD1.4.2		Definitive Design of OWGs & Composite Girder superstructure of Bridge No.155, 195 (Both square and skew span), 199, 200 (Both square and skew span), 242, 257, 267, 273, 277, 287,300 (Both square and skew span), 303, 304, 343, 346, 375, 384, 5C & 5D with BLT track including GEC	7.00%

# 5.2.1 Stages of Payment i.e. Milestones of Cost Centre 'CD'- Design and As Built Drawing & Documents

Cost Centre		entre	'CD'- Design and As Built Documents	Drawing &
Weighta	ge of Cost	Centre 'CD', (X)-	1.5%	
Sub Cost	I	tem of Work	Milestone	Weightage
Centre	No.	Description	winestone	( <b>Y</b> )
1	2	3	4	5
	CD1.4.3		Definitive Design including RSI (except OWGs & Composite Girder superstructure of Bridge No. 155, 195, 199, 200, 242, 257, 267, 273, 277, 287,300, 303, 304, 343, 346, 375, 384, 5C & 5D with BLT track including GFC which is covered in CD1.4.2)	8.00%
CD1.4.4			Good For Construction (GFC) Drawings (except OWGs & Composite Girder superstructure of Bridge Nos. 155, 195, 199, 200, 242, 257, 267, 273, 277, 287,300, 303, 304, 343, 346, 375, 384, 5C & 5D with BLT track including GFC)	8.00%
	CD1.5	Stations		
	CD1.5.1		Preparation & approval of Architectural Drawings	3.00%
	CD1.5.2		Definitive Design	01.50%
	CD1.5.3		Combined Services Drawings & MEP Drawings	01.50%
	CD1.5.4		Good For Construction (GFC) Drawings	03.00%
	<b>CD1.6</b> S&T Hut and Cable ductsPreparation architectural, definitive design and Good For Construction Drawings (GFC)		01.00%	
	CD1.7	Auto Location Huts	Preparation & approval of architectural, definitive design and Good For Construction Drawings (GFC)	01.00%
	CD1.7	Circulating area & approach road at stations including retaining /RE Wall,		01.00%

Cost Centre		lentre	'CD'- Design and As Built Documents	Drawing &
Weightag	ge of Cost	Centre 'CD', (X)-	1.5%	
Sub Cost	Ι	tem of Work		Weightage
Centre No. Description	Milestone	(Y)		
1	2	3	4	5
		footpath, ramp, drains etc. complete in all respects		
CD2- As Built	CD 2.1	As Built Drawings		13.00%
Drawing & Documents	CD 2.2	As Built Documents	Submission of As Built Documents	7.00%
			Total	100.00%

- The value of each Milestones will be total lump sum accepted cost of Works for Schedule 'A' (LS) multiplied by X \* Y. For example, the value of Milestone CD 1.3.1 will be equal to LS\*X\*Y= LSx0.015x0.10.
- 2. Adjustment to Contract Price pursuant to GCC 13.7 shall **NOT** be applicable to the payments of Works executed under this Cost Centre.
- 3. All minor bridges shall have equal weightage. Payment of each stage/Milestones shall be made on pro rata basis on completion of a stage for a bridge.
- 4. All major bridges shall have equal weightage. Payment of each stage/Milestones shall be made on pro rata basis on completion of a stage for a bridge.
- 5. No payment shall be made against the Sub-Cost Centre CD 1.4.2, if design & drawing of superstructure of Br. Nos. 155, 195, 199, 200, 242, 257, 267, 273, 277, 287,300, 303, 304, 343, 346, 375, 384, 5C & 5D is not required and standard RDSO spans are adopted with the approval of the Engineer.
- 6. All stations shall have equal weightage. Payment of each stage/Milestones shall be made on pro rata basis on completion of a stage for a station.
- 7. Payment will be made on Completion of each Milestones as per weightage given in this Cost Centre
- 8. The cost of Milestones includes cost of design of the formation, Bridges, retaining wall & other Structures included in Schedule 'A' and Schedule 'B' as mentioned in Section VII-2: Functional, Employer's Requirements.
- 9. CD 1.4.2 also includes the design of skew spans for Br 195, 200 and 300 as given in Clause 4.2.2. of Section VII-5: Employer's Requirements -Outline Design Specifications (Civil & BLT), Part 2 of Tender Document.

Cost Centre		CE-Earthwork and Blanketing		
Wei	ghtage of Cost Cer	ntre 'CE', (X)	51.00%	
Sub-Cost	Item	of Work	Milestone	Weightage
Centre	No.	Description		<b>(Y)</b>
1	2	3	4	5
	CE.1.1	Earthwork in formation from Ch 61500 m to 62000 m for double main line track		
	CE. 1.1.1		Earthwork in embankment / cutting including compaction.	0.3%
CE.1- Earthwork	CE. 1.1.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.03%
	CE. 1.1.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.02%
	CE.1.2	Earthwork in formation from Ch 62000 m to 63000 m for double main line track.		
	CE. 1.2.1		Earthwork in embankment/ cutting including compaction.	1.25%
	CE.1.2.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.1%

### 5.2.2 Stages of Payment i.e. Milestones of Cost Centre 'CE'- Earthwork and Blanketing

Cost Centre		CE-Earthwork and Bla	nketing	
Wei	ghtage of Cost Cer	tre 'CE', (X)	51.00%	
Sub-Cost	Item of Work		Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
	CE.1.2.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.10%
	CE.1.3	Earthwork in formation from Ch 63000m to 64000m for double main line track, connecting line, loop lines in Badsa Jn station yard		
	CE.1.3.1		Earthwork in embankment / cutting including compaction.	0.72%
	CE.1.3.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.07%
	CE.1.3.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.06%
	CE.1.4	Earthwork in formation from Ch 64000 to 65000 for double main line track, connecting line, loop lines, platform area in Badsa Jn station yard		

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	Item of Work		Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
	CE.1.4.1		Earthwork in embankment / cutting including compaction.	0.83%
	CE.1.4.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.07%
	CE.1.4.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.06%
	CE.1.5	Earthwork in formation from Ch 65000 to 66000 for double main line track, loop lines, platform area in Badsa Jn station yard.		
	CE.1.5.1		Earthwork in embankment /	0.67%
	CE.1.5.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.06%
	CE.1.5.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.06%
	CE.1.6	Earthwork in formation from Ch		

Cost Centre		CE-Earthwork and Bla	nd Blanketing	
We	ightage of Cost	Centre 'CE', (X)	51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
		66000 to 67000 for double main line track.		
	CE.1.6.1		Earthwork in embankment / cutting including compaction.	0.42%
	CE.1.6.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.05%
	CE.1.6.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.04%
	CE.1.7	Earthwork in formation from Ch 67000 to 68000 for double main line track.		
	CE.1.7.1		Earthwork in embankment / cutting including compaction.	0.62%
	CE.1.7.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.08%
	CE.1.7.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.06%
	CE.1.8	Earthwork in formation from Ch		

Cost Centre		CE-Earthwork and Bla	and Blanketing	
We	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	Ite	em of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
		68000 to 69000 for double main line track.		
	CE.1.8.1		Earthwork in embankment / cutting including compaction.	0.47%
	CE.1.8.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.06%
	CE.1.8.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.05%
	CE.1.9	Earthwork in formation from Ch 69000 to 70000 for double main line track.		
	CE.1.9.1		Earthwork in embankment / cutting including compaction.	0.62%
	CE.1.9.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.06%
	CE.1.9.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.05%
	CE.1.10	Earthwork in formation from Ch		

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
We	Weightage of Cost Centre 'CE', (X)		51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
		70000 to 71000 for double main line track & platform area in Deverkhana Station.		
	CE.1.10.1		Earthwork in embankment / cutting including compaction.	0.47%
	CE.1.10.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.07%
	CE.1.10.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.05%
	CE.1.11	Earthwork in formation from Ch 71000 to 72000 for double main line track & platform area in Deverkhana Station		
	CE.1.11.1		Earthwork in embankment / cutting including compaction.	0.41%
	CE.1.11.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.05%
	CE.1.11.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring	0.04%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
We	ightage of Cost	Centre 'CE', (X)	51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			that vegetative cover is properly rooted .	
	CE.1.12	Earthwork in formation from Ch 72000 to 73000 for double main line track.		
	CE.1.12.1		Earthwork in embankment / cutting including compaction.	0.39%
	CE.1.12.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.04%
	CE.1.12.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.04%
	CE.1.13	Earthwork in formation from Ch 73000 to 74000 for double main line track.		
	CE.1.13.1		Earthwork in embankment / cutting including compaction.	1.45%
	CE.1.13.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.14%
	CE.1.13.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12	0.10%

Cost Centre		CE-Earthwork and Bla	and Blanketing	
We	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	Ite	em of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			months and after ensuring that vegetative cover is properly rooted .	
	CE.1.14	Earthwork in formation from Ch 74000 to 75000 for double main line track.		
	CE.1.14.1		Earthwork in embankment / cutting including compaction.	0.95%
	CE.1.14.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.12%
	CE.1.14.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.08%
	CE.1.15	Earthwork in formation from Ch 75000 to 76000 for double main line track.		
	CE.1.15.1		Earthwork in embankment / cutting including compaction.	1.12%
	CE.1.15.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.14%
	CE.1.15.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12	0.09%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	ightage of Cost C	Centre 'CE', (X)	51.00%	
Sub-Cost	Ite	em of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			months and after ensuring that vegetative cover is properly rooted .	
	CE.1.16	Earthwork in formation from Ch 76000 to 77000 for double main line track, loop lines, platform area in Badli station yard		
	CE.1.16.1		Earthwork in embankment / cutting including compaction.	2.1%
	CE.1.16.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.17%
	CE.1.16.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.12%
	CE.1.17	Earthwork in formation from Ch 77000 to 78000 for double main line track, loop lines, platform area in Badli station yard		
	CE.1.17.1		Earthwork in embankment / cutting including compaction.	1.38%
	CE.1.17.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage	0.15%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	Ite	em of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			arrangement complete in all respects.	
	CE.1.17.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.10%
	CE.1.18	Earthwork in formation from Ch 78000 to 79000 for double main line track.		
	CE.1.18.1		Earthwork in embankment / cutting including compaction.	0.7%
	CE.1.18.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.07%
	CE.1.18.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.07%
	CE.1.19	Earthwork in formation from Ch 79000 to 80000 for double main line track.		
	CE.1.19.1		Earthwork in embankment / cutting including compaction.	0.87%
	CE.1.19.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including	0.1%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
We	ightage of Cost	Centre 'CE', (X)	51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
			coir netting and drainage arrangement complete in all respects.	
	CE.1.19.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.07%
	CE.1.20	Earthwork in formation from Ch 80000 to 81000 for double main line track.		
	CE.1.20.1		Earthwork in embankment / cutting including compaction.	0.20%
	CE.1.20.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.02%
	CE.1.20.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.03%
	CE.1.21	Earthwork in formation from Ch 81000 to 82000 for double main line track.		
	CE.1.21.1		Earthwork in embankment / cutting including compaction.	0.54%
	CE.1.21.2		On cutting of extra width & dressing of slopes in profile, compaction, providing	0.05%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	ightage of Cost Co	entre 'CE', (X)	51.00%	
Sub-Cost	Iter	n of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			vegetative cover including coir netting and drainage arrangement complete in all respects.	
	CE.1.21.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.05%
	CE.1.22	Earthwork in formation from Ch 82000 to 83000 for double main line track.		
	CE.1.22.1		Earthwork in embankment / cutting including compaction.	0.76%
	CE.1.22.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.1%
	CE.1.22.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.06%
	CE.1.23	Earthwork in formation from Ch 83000 to 84000 for double main line track.		
	CE.1.23.1		Earthwork in embankment / cutting including compaction.	0.63%
	CE.1.23.2		On cutting of extra width & dressing of slopes in profile,	0.08%

	Cost Centre		<b>CE-Earthwork and Blanketing</b>	
Wei	ightage of Cost Ce	ntre 'CE', (X)	51.00%	
Sub-Cost	Item	of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	
	CE.1.23.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.06%
	CE.1.24	Earthwork in formation from Ch 84000 to 85000 for double main line track.		
	CE.1.24.1		Earthwork in embankment / cutting including compaction.	0.71%
	CE.1.24.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.12%
	CE.1.24.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.07%
	CE.1.25	Earthwork in formation from Ch 85000 to 86000 for double main line track.	· · ·	
	CE.1.25.1		Earthwork in embankment / cutting including compaction.	0.45%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	Weightage of Cost Centre 'CE', (X)		51.00%	
Sub-Cost	Item	n of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
	CE.1.25.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.05%
	CE.1.25.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.05%
	CE.1.26	Earthwork in formation from Ch 86000 to 87000 for double main line track.		
	CE.1.26.1		Earthwork in embankment / cutting including compaction.	0.86%
	CE.1.26.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.09%
	CE.1.26.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.07%
	CE.1.27	Earthwork in formation from Ch 87000 to 88000 for double main line track.		

	Cost Ce	ntre	CE-Earthwork and Bla	nketing
Weightage of Cost Centre 'CE', (X)			51.00%	
Sub-Cost	Item of Work		Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
	CE.1.27.1		Earthwork in embankment / cutting including compaction.	0.28%
	CE.1.27.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.03%
	CE.1.27.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted	0.03%
	CE.1.28	Earthwork in formation from Ch 88000 to 89000 for double main line track.		
	CE.1.28.1		Earthwork in embankment / cutting including compaction.	0.75%
	CE.1.28.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.08%
	CE.1.28.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.07%
	CE.1.29	Earthwork in formation from Ch 89000 to 90000 for double main line		

Cost Centre Weightage of Cost Centre 'CE', (X)		CE-Earthwork and Blanketing		
		51.00%		
Sub-Cost Centre	It	em of Work	Milestone	Weightage
	No.	Description		( <b>Y</b> )
1	2	3	4	5
		track, loop lines in Mandothi station yard		
	CE.1.29.1		Earthwork in embankment / cutting including compaction.	1.28%
	CE.1.29.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.15%
	CE.1.29.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.1%
	CE.1.30	Earthwork in formation from Ch 90000 to 91000 for double main line track, connecting line, loop lines, platform area in Mandothi station yard.		
	CE.1.30.1		Earthwork in embankment / cutting including compaction.	3.15%
	CE.1.30.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.2%
	CE.1.30.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12	0.11%

	Cost Cen	tre	CE-Earthwork and Bla	nketing
Weightage of Cost Centre 'CE', (X)		51.00%		
Sub-Cost Centre	Item of Work		Milestone	Weightage
	No.	Description		( <b>Y</b> )
1	2	3	4	5
			months and after ensuring that vegetative cover is properly rooted.	
	CE.1.31	Earthwork in formation from Ch 91000 to 92000 for double main line track, connecting line, loop lines, in Mandothi station yard		
	CE.1.31.1		Earthwork in embankment / cutting including compaction.	2.08%
	CE.1.31.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.2%
	CE.1.31.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.11%
	CE.1.32	Earthwork in formation from Ch 92000 to 93000 for double main line track.		
	CE.1.32.1		Earthwork in embankment / cutting including compaction.	2.33%
	CE.1.32.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.2%

Cost Centre Weightage of Cost Centre 'CE', (X)		CE-Earthwork and Blanketing		
		51.00%		
Sub-Cost Centre	Item of Work		Milestone	Weightage
	No.	Description		(Y)
1	2	3	4	5
	CE.1.32.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.11%
	CE.1.33	Earthwork in formation from Ch 93000 to 94000 for double main line track.		
	CE.1.33.1		Earthwork in embankment / cutting including compaction.	1.75%
	CE.1.33.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.2%
	CE.1.33.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.1%
	CE.1.34	Earthwork in formation from Ch 94000 to 95000 for double main line track, platform area in New Asaudah Station.		
	CE.1.34.1		Earthwork in embankment / cutting including compaction.	1.92%
	CE.1.34.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including	0.20%
	Cost Ce	ntre	CE-Earthwork and Bla	nketing
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Wei	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	Item of Work		Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			coir netting and drainage arrangement complete in all respects.	
	CE.1.34.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.12%
	CE.1.35	Earthwork in formation from Ch 95000 to 96000 m for double main line track.		
	CE.1.35.1		Earthwork in embankment / cutting including compaction.	1.18%
	CE.1.35.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.12%
	CE.1.35.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.09%
	CE.1.36	Earthwork in formation from Ch 96000 to 97000 for double main line track		
	CE.1.36.1		Earthwork in embankment / cutting including compaction.	0.66%
	CE.1.36.2		On cutting of extra width & dressing of slopes in profile, compaction, providing	0.07%

Cost Centre		CE-Earthwork and Bla	nketing	
We	ightage of Cost	Centre 'CE', (X)	51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			vegetative cover including coir netting and drainage arrangement complete in all respects.	
	CE.1.36.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.06%
	CE.1.37	Earthwork in formation from Ch 97000 to 98000 for double main line track.		
	CE.1.37.1		Earthwork in embankment / cutting including compaction.	0.55%
	CE.1.37.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.07%
	CE.1.37.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.05%
	CE.1.38	Earthwork in formation from Ch 98000 to 99000 for double main line track, platform area in Jasur Kheri Station.		
	CE.1.38.1		Earthwork in embankment / cutting including compaction.	0.67%

	Cost Cer	ıtre	CE-Earthwork and Bla	nketing
Wei	ightage of Cost C	entre 'CE', (X)	51.00%	
Sub-Cost	Ite	m of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
	CE.1.38.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.06%
	CE.1.38.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.07%
	CE.1.39	Earthwork in formation from Ch 99000 to 100000 for double main line track, platform area in Jasur Kheri Station		
	CE.1.39.1		Earthwork in embankment / cutting including compaction.	0.94%
	CE.1.39.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.12%
	CE.1.39.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.08%
	CE.1.40	Earthwork in formation from Ch 100000 to 101453 for double main line track		

	Cost Cent	re	CE-Earthwork and Bla	nketing
Wei	Weightage of Cost Centre 'CE', (X)		51.00%	
Sub-Cost	Item	n of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
	CE.1.40.1		Earthwork in embankment / cutting including compaction.	0.1%
	CE.1.40.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.05%
	CE.1.40.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.05%
	CE.1.41	Earthwork in formation from Ch 101044 to 102000 for double main line track		
	CE.1.41.1		Earthwork in embankment / cutting including compaction.	0.82%
	CE.1.41.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.09%
	CE.1.41.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.05%
	CE.1.42	Earthwork in formation from Ch 102000 to 103000		

	Cost Cen	tre	CE-Earthwork and Bla	nketing
Wei	Weightage of Cost Centre 'CE', (X)		51.00%	
Sub-Cost	Ite	m of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
		for double main line track		
	CE.1.42.1		Earthwork in embankment / cutting including compaction.	0.49%
	CE.1.42.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.05%
	CE.1.42.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.04%
	CE.1.43	Earthwork in formation from Ch 103000 to 104000 for double main line track		
	CE.1.43.1		Earthwork in embankment / cutting including compaction.	0.37%
	CE.1.43.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.04%
	CE.1.43.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.03%

	Cost Cer	ntre	CE-Earthwork and Bla	nketing
Wei	Weightage of Cost Centre 'CE', (X)		51.00%	
Sub-Cost	Ite	em of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
	CE.1.44	Earthwork in formation from Ch 104000 to 105000 for double main line track		
	CE.1.44.1		Earthwork in embankment / cutting including compaction.	0.85%
	CE.1.44.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.09%
	CE.1.44.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.07%
	CE.1.45	Earthwork in formation from Ch 105000 to 106000 for double main line track		
	CE.1.45.1		Earthwork in embankment / cutting including compaction.	0.2%
	CE.1.45.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.02%
	CE.1.45.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring	0.03%

	Cost Cen	tre	CE-Earthwork and Bla	nketing
Wei	Weightage of Cost Centre 'CE', (X)		51.00%	
Sub-Cost	Iten	n of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			that vegetative cover is properly rooted .	
	CE.1.46	Earthwork in formation from Ch 106000 to 107000 for double main line track		
	CE.1.46.1		Earthwork in embankment / cutting including compaction.	0.68%
	CE.1.46.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.07%
	CE.1.46.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.06%
	CE.1.47	Earthwork in formation from Ch 107000 to 108000 for double main line track, loop lines in Khrkhoda station yard.		
	CE.1.47.1		Earthwork in embankment / cutting including compaction.	0.52%
	CE.1.47.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.07%

	Cost Ce	entre	CE-Earthwork and Bla	nketing
We	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
	CE.1.47.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.05%
	CE.1.48	Earthwork in formation from Ch 108000 to 109000 for double main line track, loop lines, platform area in Kharkhoda station yard.		
	CE.1.48.1		Earthwork in embankment / cutting including compaction.	1.10%
	CE.1.48.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.08%
	CE.1.48.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.08%
	CE.1.49	Earthwork in formation from Ch 109000 to 110000 for double main line track, loop lines, platform area in Kharkhoda station yard.		
	CE.1.49.1		Earthwork in embankment / cutting including compaction.	0.92%

	Cost Cent	tre	CE-Earthwork and Bla	nketing
Wei	Weightage of Cost Centre 'CE', (X)		51.00%	
Sub-Cost	Iten	n of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
	CE.1.49.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.10%
	CE.1.49.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.07%
	CE.1.50	Earthwork in formation from Ch 110000 to 111000 for double main line track.		
	CE.1.50.1		Earthwork in embankment / cutting including compaction.	1.27%
	CE.1.50.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.14%
	CE.1.50.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.08%
	CE.1.51	Earthwork in formation from Ch 111000 to 112000 for double main line track.		

	Cost Ce	ntre	CE-Earthwork and Bla	nketing
Wei	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	Ite	em of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
	CE.1.51.1		Earthwork in embankment / cutting including compaction.	0.94%
	CE.1.51.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.10%
	CE.1.51.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.07%
	CE.1.52	Earthwork in formation from Ch 112000 to 1130000 for double main line track.		
	CE.1.52.1		Earthwork in embankment / cutting including compaction.	0.63%
	CE.1.52.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.06%
	CE.1.52.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.06%
	CE.1.53	Earthwork in formation from Ch 113000 to 114000 for double main line		

Cost Centre		CE-Earthwork and Bla	nketing	
We	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	Ite	em of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
		track, loop lines, platform area in Tarakpur station yard.		
	CE.1.53.1		Earthwork in embankment / cutting including compaction.	0.83%
	CE.1.53.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.08%
	CE.1.53.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.06%
	CE.1.54	Earthwork in formation from Ch 114000 to 115000 for double main line track, loop lines, platform area in Tarakpur station yard.		
	CE.1.54.1		Earthwork in embankment / cutting including compaction.	0.93%
	CE.1.54.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.08%
	CE.1.54.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12	0.06%

	Cost Ce	entre	CE-Earthwork and Bla	nketing
We	Weightage of Cost Centre 'CE', (X)		51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
			months and after ensuring that vegetative cover is properly rooted .	
	CE.1.55	Earthwork in formation from Ch 115000 to 116000 for double main line track.		
	CE.1.55.1		Earthwork in embankment / cutting including compaction.	0.78%
	CE.1.55.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.1%
	CE.1.55.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.06%
	CE.1.56	Earthwork in formation from Ch 116000 to 117000 for double main line track.		
	CE.1.56.1		Earthwork in embankment / cutting including compaction.	0.57%
	CE.1.56.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.06%
	CE.1.56.3		On completion of maintenance of slopes, drainage system & vegetative	0.04%

Cost Centre		CE-Earthwork and Bla	<b>CE-Earthwork and Blanketing</b>	
We	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
			cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	
	CE.1.57	Earthwork in formation from Ch 117000 to 118000 for double main line track.		
	CE.1.57.1		Earthwork in embankment / cutting including compaction.	1.35%
	CE.1.57.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.12%
	CE.1.57.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.08%
	CE.1.58	Earthwork in formation from Ch 118000 to 119000 for double main line track.		
	CE.1.58.1		Earthwork in embankment / cutting including compaction.	2.48%
	CE.1.58.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.2%
	CE.1.58.3		On completion of maintenance of slopes,	0.1%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	ightage of Cost	Centre 'CE', (X)	51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	
	CE.1.59	Earthwork in formation from Ch 119000 to 120000 for double main line track.		
	CE.1.59.1		Earthwork in embankment / cutting including compaction.	2.40%
	CE.1.59.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.18%
	CE.1.59.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.1%
	CE.1.60	Earthwork in formation from Ch 120000 to 121000 for double main line track.		
	CE.1.60.1		Earthwork in embankment / cutting including compaction.	1.84%
	CE.1.60.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.15%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	ghtage of Cost Ce	ntre 'CE', (X)	51.00%	
Sub-Cost	Item	of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
	CE.1.60.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.1%
	CE.1.61	Earthwork in formation from Ch 121000 to 122000 for double main line track.		
	CE.1.61.1		Earthwork in embankment / cutting including compaction.	1.56%
	CE.1.61.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.15%
	CE.1.61.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.1%
	CE.1.62	Earthwork in formation from Ch 122000 to 123000 for double main line track.		
	CE.1.62.1		Earthwork in embankment / cutting including compaction.	0.27%
	CE.1.62.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage	0.02%

	Cost Centre		CE-Earthwork and Bla	nketing
Wei	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		<b>(Y)</b>
1	2	3	4	5
			arrangement complete in all respects.	
	CE.1.62.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.03%
	CE.1.63	Earthwork in formation from Ch 513 to 3250 for Badsa -Sultanpur connecting line.		
	CE.1.63.1		Earthwork in embankment / cutting including compaction.	0.21%
	CE.1.63.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.03%
	CE.1.63.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.02%
	CE.1.64	Earthwork in formation from Ch 616 to 2000m for Mandothi-Asaudah connecting line.		
	CE.1.64.1		Earthwork in embankment / cutting including compaction	1.11%
	CE.1.64.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including	0.15%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	ightage of Cost (	Centre 'CE', (X)	51.00%	
Sub-Cost	Ite	em of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			coir netting and drainage arrangement complete in all respects.	
	CE.1.64.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted .	0.1%
	CE.1.65	Earthwork in formation from Ch 2000 to 3000m for Mandothi -Asaudah connecting line.		
	CE.1.65.1		Earthwork in embankment / cutting including compaction.	0.82%
	CE.1.65.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including coir netting and drainage arrangement complete in all respects.	0.1%
	CE.1.65.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.07%
	CE.1.66	Earthwork in formation from Ch 3000 to 4000m for Mandothi -Asaudah connecting line.		
	CE.1.66.1		Earthwork in embankment / cutting including compaction.	0.30%
	CE.1.66.2		On cutting of extra width & dressing of slopes in profile, compaction, providing vegetative cover including	0.06%

	Cost Cer	ntre	CE-Earthwork and Bla	nketing
Wei	ghtage of Cost C	Centre 'CE', (X)	51.00%	
Sub-Cost	Ite	em of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			coir netting and drainage arrangement complete in all respects.	
	CE.1.66.3		On completion of maintenance of slopes, drainage system & vegetative cover for a period of 12 months and after ensuring that vegetative cover is properly rooted.	0.05%
	CE.2.1	Blanketing from Ch 61500 m to 62000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.21%
	CE.2.2	Blanketing from Ch 62000m to 63000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.42%
	CE.2.3	Blanketing from from Ch 63000 to 64000 for double main line track, connecting line, loop lines in Badsa Jn station yard	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.70%
CE.2- Blanketing	CE.2.4	Blanketing from Ch 64000 to 65000 for double main line track, connecting line, loop lines in Badsa Jn station yard	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.63%
	CE.2.5	Blanketing from Ch 65000 to 66000 for double main line track, loop lines in Badsa Jn station yard.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.48%
	CE.2.6	Blanketing from Ch 66000 to 67000m for	Blanketing on subgrade/ prepared subgrade as per	0.38%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	ightage of Cost Ce	entre 'CE', (X)	51.00%	
Sub-Cost	Iten	n of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
		double main line track.	design profile including compaction complete in all respects.	
	CE.2.7	Blanketing from Ch 67000 to 68000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.8	Blanketing from Ch 68000 to 69000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.9	Blanketing from Ch 69000 to 70000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.10	Blanketing from Ch 70000 to 71000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.36%
	CE.2.11	Blanketing from Ch 71000 to 72000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.33%
	CE.2.12	Blanketing from Ch 72000 to 73000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.13	Blanketing from Ch 73000 to 74000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.45%
	CE.2.14	Blanketing from Ch 74000 to 75000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including	0.44%

Cost Centre		CE-Earthwork and Blanketing		
Wei	ightage of Cost Ce	ntre 'CE', (X)	51.00%	
Sub-Cost	Item	n of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			compaction complete in all respects.	
	CE.2.15	Blanketing from Ch 75000 to 76000m for double main line track, loop lines in Badli station yard.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.16	Blanketing from Ch 76000 to 77000m for double main line track, loop lines in Badli station yard	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.54%
	CE.2.17	Blanketing from Ch 77000 to 78000m for double main line track, loop lines in Badli station yard	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.51%
	CE.2.18	Blanketing from Ch 78000 to 79000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.19	Blanketing from Ch 79000 to 80000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.20	Blanketing from Ch 80000 to 81000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.21	Blanketing from Ch 81000 to 82000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.22	Blanketing from Ch 82000 to 83000 for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	ightage of Cost Ce	entre 'CE', (X)	51.00%	
Sub-Cost	Iten	n of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
	CE.2.23	Blanketing from Ch 83000 to 84000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.24	Blanketing from Ch 84000 to 85000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.43%
	CE.2.25	Blanketing from Ch 85000 to 86000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.26	Blanketing Ch 86000 to 87000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.27	Blanketing from Ch 87000 to 88000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.28	Blanketing from Ch 88000 to 89000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.40%
	CE.2.29	Blanketing from Ch 89000 to 90000m for double main line track, connecting line, loop lines in Mandothi station yard	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.45%
	CE.2.30	Blanketing from Ch 90000 to 91000 for double main line track, loop lines, connecting line in	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.77%

Cost Centre		<b>CE-Earthwork and Blanketing</b>		
Wei	ightage of Cost C	entre 'CE', (X)	51.00%	
Sub-Cost	Ite	m of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
		Mandothi station yard.		
	CE.2.31	Blanketing from Ch 91000 to 92000m for double main line track, loop lines, connecting line in Mandothi station yard	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.44%
	CE.2.32	Blanketing from Ch 92000 to 93000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.42%
	CE.2.33	Blanketing from Ch 93000 to 94000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.45%
	CE.2.34	Blanketing from Ch 94000 to 95000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.35	Blanketing from Ch 95000 to 96000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.39%
	CE.2.36	Blanketing from Ch 96000 to 97000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.45%
	CE.2.37	Blanketing from Ch 97000 to 98000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.43%
	CE.2.38	Blanketing from Ch 98000 to 99000m for	Blanketing on subgrade/ prepared subgrade as per design profile including	0.34%

Cost Centre		CE-Earthwork and Blanketing		
Wei	ightage of Cost C	entre 'CE', (X)	51.00%	
Sub-Cost	Ite	m of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
		double main line track.	compaction complete in all respects.	
	CE.2.39	Blanketing from Ch 99000 to 100000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.36%
	CE.2.40	Blanketing from Ch 100000 to 100453 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.15%
	CE.2.41	Blanketing from Ch 101044 to 102000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.42%
	CE.2.42	Blanketing from Ch 102000 to 103000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.43	Blanketing from Ch 103000 to 104000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.44	Blanketing from Ch 104000 to 105000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.45	Blanketing from Ch 105000 to 106000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.46	Blanketing from Ch 106000 to 107000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%

Cost Centre		CE-Earthwork and Bla	<b>CE-Earthwork and Blanketing</b>	
Wei	ightage of Cost Co	entre 'CE', (X)	51.00%	
Sub-Cost	Iter	n of Work	Milestone	Weightage
Centre	No.	Description		(Y)
1	2	3	4	5
	CE.2.47	Blanketing from Ch 107000 to 108000 m for double main line track, loop lines in Kharkhoda station yard	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.48	Blanketing from Ch 108000 to 109000m for double main line track, loop lines in Kharkhoda station yard.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.73%
	CE.2.49	Blanketing from Ch 109000 to 110000m for double main line track, loop lines in Kharkhoda station yard.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.58%
	CE.2.50	Blanketing from Ch 110000 to 111000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.45%
	CE.2.51	Blanketing from Ch 111000 to 112000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.41%
	CE.2.52	Blanketing from Ch 112000 to 1130000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.53	Blanketing from Ch 113000 to 114000 m for double main line track, loop lines in Tarakpur station yard.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.47%
	CE.2.54	Blanketing from Ch 114000 to 115000 m for double main line	Blanketing on subgrade/ prepared subgrade as per design profile including	0.56%

Cost Centre		CE-Earthwork and Blanketing		
Wei	Weightage of Cost Centre 'CE', (X)		51.00%	
Sub-Cost	It	em of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
		track, loop lines in Tarakpur station yard.	compaction complete in all respects.	
	CE.2.55	Blanketing from Ch 115000 to 116000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.56	Blanketing from Ch 116000 to 117000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.57	Blanketing from Ch 117000 to 118000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.38%
	CE.2.58	Blanketing from Ch 118000 to 119000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.42%
	CE.2.59	Blanketing from Ch 119000 to 120000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.45%
	CE.2.60	Blanketing from Ch 120000 to 121000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.45%
	CE.2.61	Blanketing from Ch 121000 to 122000 m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.39%
	CE.2.62	Blanketing from Ch 122000 to 123000m for double main line track.	Blanketing on subgrade/ prepared subgrade as per design profile including	0.38%

Cost Centre		CE-Earthwork and Bla	nketing	
Wei	ghtage of Cost Cer	ntre 'CE', (X)	51.00%	
Sub-Cost	Item	of Work	Milestone	Weightage
Centre	No.	Description		( <b>Y</b> )
1	2	3	4	5
			compaction complete in all respects.	
	CE.2.63	Blanketing from Ch 513 to 3250 m for Badsa- Sultanpur connecting single line.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.56%
	CE.2.64	Blanketing from Ch 616 to 2000 m for Mandothi- Asaudah connecting single line.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.29%
	CE.2.65	Blanketing from Ch 2000 to 3000 m for Mandothi- Asaudah connecting single line.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.23%
	CE.2.66	Blanketing from Ch 3000 to 4000 m for Mandothi- Asaudah connecting single line.	Blanketing on subgrade/ prepared subgrade as per design profile including compaction complete in all respects.	0.27%
			Total	100.00%

## Notes:

- The value of each Milestones will be total lump sum accepted cost of Works for Schedule 'A' (LS) multiplied by X \* Y. For example, the value of Milestone CE1.1.1 will be equal to LS\*X\*Y= LSx0.51 x 0.003.
- 2. Adjustment to Contract Price pursuant to GCC 13.7 shall be applicable to the payments of Works executed under this Sub Heads / Price Schedule.
- 3. Payment will be made on Completion of each Milestones as per weightage given in this schedule.
- 4. If owing to site conditions or any other reasons, locations of retaining walls are changed or new retaining walls are constructed or retaining walls are eliminated & normal bank is provided, the variation caused in quantity of earthwork in embankment on this account shall be payable/ recoverable under Item No. NS-4 of Schedule 'B9'.

## 5.2.3 Milestones of Cost Centre 'CB'- for Bridges

Cost Centre		CB- Bridges		
Weightage of Cost Centre 'CB', (X)		36.75%		
Sub-	Iter	n of Work		Weightage
cost Centre	No.	Description	Milestone	<b>(Y)</b>
1	2	3	4	5
	CB.1.1	Construction of minor bridge No. <b>Nil</b> between Ch 61500 to 62000m.		0%
	CB.1.2	Construction of minor bridge No. 156, 157, 158, 159 & 160 between Ch 62000 to 63000m.	On completion of bridge works in all respects	2.92%
	CB.1.3	Construction of minor bridge No. 161 & 162 between Ch 63000 to 64000m.	On completion of bridge works in all respects	0.46%
CB1- Minor Bridges	CB1.4	Construction of minor bridge No. 163, 164 & 166 between ch 64000 to 65000m.	On completion of bridge works in all respects	1.50%
Bridges	CB1.5	Construction of minor bridge No. 167, 168 & 169 between ch 65000 to 66000m.	On completion of bridge works in all respects	0.48%
	CB1.6 Construction of minor bridge No. 170 & 171 between ch 66000 to 67000. On completion of works in all resp	On completion of bridge works in all respects	0.17%	
	CB1.7	Construction of minor bridge No. 173, 174, 175 & 177 between Ch 67000 to 68000.	On completion of bridge works in all respects	1.37%
	CB1.8	Construction of minor bridge No. 179 & 180 between Ch 68000 to 69000.	On completion of bridge works in all respects	0.16%

			0.4504
CB1.9	Construction of minor bridge No. 181 & 182 between ch 69000 to 70000	On completion of bridge works in all respects	0.45%
CB1.10	Construction of minor bridge No. 187 between Ch 70000 to 71000.	On completion of bridge works in all respects	0.07%
CB1.11	Construction of minor bridge No. 188 between Ch 71000 to 72000m.	On completion of bridge works in all respects	0.09%
CB1.12	Construction of minor bridge No. 192 & 193 between Ch 72000 to 73000.	On completion of bridge works in all respects	0.18%
CB1.13	Construction of minor bridge No. 194 & 196 between ch 73000 to 74000.	On completion of bridge works in all respects	0.68%
CB1.14	Construction of minor bridge No. Nil between Ch 74000 to 75000m.		0%
CB1.15	Construction of minor bridge No. 202 between Ch 75000 to 76000.	On completion of bridge works in all respects	0.58%
CB1.16	Construction of minor bridge No. 204 between Ch 76000 to 77000.	On completion of bridge works in all respects	1.02%
CB1.17	Construction of minor bridge No. 205, 206 & 209 between Ch 77000 to 78000m for main line track.	On completion of bridge works in all respects	3.09%
CB1.18	Construction of minor bridge No. 210, 211, 212, 213 & 214 between Ch 78000 to 79000m for main line track.	On completion of bridge works in all respects	0.79%
CB1.19	Construction of minor bridge No. 216, 217 & 218 between Ch	On completion of bridge works in all respects	0.87%

	79000 to 80000m for main line track.		
CB1.20	Construction of minor bridge No. 221, 222 & 223 between Ch 80000 to 81000m for main line track.	On completion of bridge works in all respects	0.33%
CB1.21	Construction of minor bridge No. 225, 226, 227 & 228 between Ch 81000 to 82000m for main line track.	On completion of bridge works in all respects	1.93%
CB1.22	Construction of minor bridge No. 230, 231, 232 & 233 between Ch 82000 to 83000m for main line track.	On completion of bridge works in all respects	1.02%
CB1.23	Construction of minor bridge No. 236, 237, 238, 239 & 240 between Ch 83000 to 84000m for main line track.	On completion of bridge works in all respects	0.65%
CB1.24	Construction of minor bridge No. 241, 243 & 244 between Ch 84000 to 85000m for main line track.	On completion of bridge works in all respects	1.14%
CB1.25	Construction of minor bridge No. 247 between Ch 85000 to 86000m for main line track.	On completion of bridge works in all respects	0.37%
CB1.26	Construction of minor bridge No. 249 & 251 between Ch 86000 to 87000m for main line track.	On completion of bridge works in all respects	1.33%
CB1.27	Construction of minor bridge No. 252 & 253 between Ch 87000 to 88000m for main line track.	On completion of bridge works in all respects	0.47%

CB1.28	Construction of minor bridge No. 254 & 256 between Ch 88000 to 89000m for main line track.	On completion of bridge works in all respects	0.24%
CB1.29	Construction of minor bridge No. Nil between Ch 89000 to 90000m for main line track.		
CB1.30	Construction of minor bridge No. 262 & 264 between Ch 90000 to 91000m for main line track.	On completion of bridge works in all respects	2.96%
CB1.31	Construction of minor bridge No. 265 between Ch 91000 to 92000m for main line track.	On completion of bridge works in all respects	0.94%
CB1.32	Construction of minor bridge No. 270 & 271 between Ch 92000 to 93000m for main line track.	On completion of bridge works in all respects	1.31%
CB1.33	Construction of minor bridge No. 272, 274 & 275 between Ch 93000 to 94000m for main line track.	On completion of bridge works in all respects	1.89%
CB1.34	Construction of minor bridge No. 276 & 279 between Ch 94000 to 95000m for main line track.	On completion of bridge works in all respects	0.76%
CB1.35	Construction of minor bridge No. 282 & 284 between Ch 95000 to 96000m for main line track.	On completion of bridge works in all respects	0.63%
CB1.36	Construction of minor bridge No. 285, 286 & 288 between Ch 96000 to 97000m for main line track.	On completion of bridge works in all respects	1.07%

CB1.37	Construction of minor bridge No. 289, 290, 291 & 292 between Ch 97000 to 98000m for main line track.	On completion of bridge works in all respects	2.55%
CB1.38	Construction of minor bridge No. 293, 294 & 296 between Ch 98000 to 99000m for main line track.	On completion of bridge works in all respects	0.36%
CB1.39	Construction of minor bridge No. 299 & 302 between Ch 99000 to 100000m for main line track.	On completion of bridge works in all respects	0.71%
CB1.40	Construction of minor bridge No. <b>Nil</b> between Ch 100000 to 100453m for main line track.		0.00%
CB1.41	Construction of minor bridge No. 305, 306 & 308 between Ch 101000 to 102000m for main line track.	On completion of bridge works in all respects	0.73%
CB1.42	Construction of minor bridge No. 309 & 310 between Ch 102000 to 103000m for main line track.	On completion of bridge works in all respects	0.16%
CB1.43	Construction of minor bridge No. 312, 313, 314 & 315 between Ch 103000 to 104000m for main line track.	On completion of bridge works in all respects	0.84%
CB1.44	Construction of minor bridge No. 316, 318, 319 & 320 between Ch 104000 to 105000m for main line track.	On completion of bridge works in all respects	0.85%
CB1.45	Construction of minor bridge No. 321, 322, 323 & 324 between Ch 105000 to	On completion of bridge works in all respects	0.32%

	106000m for main line track.		
CB1.46	Construction of minor bridge No. 326 & 327 between Ch 106000 to 107000m for main line track.	On completion of bridge works in all respects	0.17%
CB1.47	Construction of minor bridge No. 329, 330, 331, 332 & 333 between Ch 107000 to 108000m for main line track.	On completion of bridge works in all respects	0.60%
CB1.48	Construction of minor bridge No. 334 & 335 between Ch 108000 to 109000m for main line track.	On completion of bridge works in all respects	0.77%
CB1.49	Construction of minor bridge No. 338, 339, 340, 341 & 342 between Ch 109000 to 110000m for main line track.	On completion of bridge works in all respects	1.23%
CB1.50	Construction of minor bridge No. 344 & 345 between Ch 110000 to 111000m for main line track.	On completion of bridge works in all respects	0.50%
CB1.51	Construction of minor bridge No. 347 & 349 between Ch 111000 to 112000m for main line track.	On completion of bridge works in all respects	0.41%
CB1.52	Construction of minor bridge No. 350 between Ch 112000 to 113000m for main line track.	On completion of bridge works in all respects	0.48%
CB1.53	Construction of minor bridge No. 353, 354, 355 & 356 between Ch 113000 to 114000m for main line track.	On completion of bridge works in all respects	1.06%

		Construction of minor bridge No. 357 & 358		0.70%
	CB1.54	between Ch 114000 to 115000m for main	On completion of bridge works in all respects	
-		line track.		0.00%
	CB1.55	bridge No. 361, 362 & 364 between Ch 115000 to 116000m for main line track.	On completion of bridge works in all respects	0.29%
	CB1.56	Construction of minor bridge No. 366, 367, 368 & 369 between Ch 116000 to 117000m for main line track.	On completion of bridge works in all respects	1.32%
	CB1.57	Construction of minor bridge No. 370, 371 & 373 between Ch 117000 to 118000m for main line track.	On completion of bridge works in all respects	1.22%
	CB1.58	Construction of minor bridge No. Nil between Ch 118000 to 119000m for main line track.		0%
	CB1.59	Construction of minor bridge No. 377 & 381 between Ch 119000 to 120000m for main line track.	On completion of bridge works in all respects	1.43%
	CB1.60	Construction of minor bridge No. 382 between Ch 120000 to 121000m for main line track.	On completion of bridge works in all respects	0.39%
	CB1.61	Construction of minor bridge No. 385 & 386 between Ch 121000 to 122000m for main line track.	On completion of bridge works in all respects	1.47%
	CB1.62	Construction of minor bridge No. 387 between Ch 122000 to 123000m for main line track.	On completion of bridge works in all respects	0.57%

		Construction of minor bridge No. 4A		0.52%
	CB1.63	between Ch 513 to 3250 m on Badsa- Sultanpur connectivity line.	On completion of bridge works in all respects	
	CB1.64	Construction of minor bridge No. 5A between Ch 616 to 2000 m on Badsa- Sultanpur connectivity line.	On completion of bridge works in all respects	0.54%
	CB1.65	Construction of minor bridge No. 5B & 5B1 between Ch 2000 to 3000 m on Badsa- Sultanpur connectivity line.	On completion of bridge works in all respects	1.78%
	CB1.66	Construction of minor bridge No. 5G between Ch 3000 to 4300 m on Badsa- Sultanpur connectivity line.	On completion of bridge works in all respects	0.12%
CB.2- Major	CB.2.1	Foundation	On completion of the foundation work including pile caps/ well caps and foundations for wing and return walls, and testing.	15.8%
	CB.2.2	Substructure	On Completion of Abutment/Piers including Abutment/Pier Cap without bearings.	
Bridges	CB.2.2.1		Pier/Abutment	3.0%
	CB.2.2.2		Pier/Abutment cap	1.0%
	CB.2.2.3		Completion of the wing walls, return walls in all respects.	3.0%
	СВ.2.3	Superstructure		
	CB.2.3.1		On completion of superstructure including launching in position.	9.60%

1			
CB.2.3.2		On fixing of bearings in position true to line & level and placement of superstructure on bearings including grouting of holding down bolts complete	2.0%
<b>CB.2.4</b>	Miscellaneous works		
CB.2.4.1		On completion of backfill, transition system on approaches, Trolley refuge, Pathway on the sides, Inspection arrangement including access ladder etc.as per approved drawings and Employer's Requirements.	5.80%
CB.2.4.2		On completion of balance works as per drawing like- Protection works including Toe wall, flooring / apron, inspection steps, Bridge plaque, Bridge board, painting of HFL, Height Gauge, approach road, drainage arrangement in RUBs, and Testing on completion, if any, complete in all respect and fit for use.	5.79%
		Total	100.00%

Notes:

- 1. The value of each Milestones will be total lump sum accepted cost of Works for Schedule 'A' (LS) multiplied by X \* Y. For example, the value of Milestone CB 1.2 will be equal to LS\*X\*Y=LSx0.3675x0.0292.
- 2. Adjustment to Contract Price pursuant to GCC 13.7 shall be applicable to the payments of Works executed under this Sub Head / Price Schedule.
- 3. *CB2*-Major Bridges:

- (i) For the purpose of stage payment/Milestones, cost of a bridge shall be taken in proportion to its linear length measured along the alignment to the total linear length of all major bridges.
- (ii) Payment of each stage/Milestones for a bridge will be made on completion of the relevant stage as per the weightage given in this schedule in proportion to the cost of the bridge.
- 4. Stages CB.2.1 to CB.2.2 will further be subdivided into the number of piers + 2 abutments, as applicable as per approved drawing by the Engineer, and Milestones for completed work for each pier and abutment shall be made as per the requirement of the stages stated above.
- 5. For Composite girders payment against Cost centre CB.2.3.1 shall be released as per following schedule-
  - (i) Receipt of material at approved location against submission of Bank Guarantees: 25%
  - (ii) Fabrication of girder and transportation to site: 25%
  - (iii) Erection/launching: 20%,
  - (iv) Completion of Concrete Deck and all other balance works: 30%

and for PSC girder/slabs payment against sub cost centre 2.3.1 shall be released as per following schedule-

(i) On casting of PSC girder/slabs:	50%
(ii) On first stage prestressing:	20%
(iii) On completion in all respect:	30%

- The Cost of Milestones includes cost of all temporary works and temporary diversion of roads wherever required, for all bridges included in Schedule 'A', Section VII-2:Functional, Employer's Requirements.
- 7. The Cost of Milestones include cost of all permanent roads diversion and regrading of roads, wherever required, for all bridges included in Schedule 'A'.
| Cost Centre                         |          | e                                    | <b>'CS'-</b> Stations   |            |  |  |  |
|-------------------------------------|----------|--------------------------------------|---|------------|--|--|--|
| Weightage of Cost Centre 'CS', (X)- |          | tre 'CS', (X)-                       | 10.75 %   |            |  |  |  |
| Sub-Cost                            | Iten     | n of Work                            | Milestone   | Weightage  |  |  |  |
| Centre                              | No.      | Description                          |   | <b>(Y)</b> |  |  |  |
| 1                                   | 2        | 3                                    | 4   | 5          |  |  |  |
|                                     | CS.1.1   | Station<br>building                  | Construction of station building complete in all respects.  | 1.40%      |  |  |  |
|                                     | CS.1.2   | Platform &<br>Passenger<br>amenities |   |            |  |  |  |
|                                     | CS.1.2.1 |                                      | Construction of platforms including<br>earthwork in filling above<br>formation level and cast-in-situ<br>platform face wall as per the<br>Employer's requirements.  | 1.80%      |  |  |  |
|                                     | CS.1.2.2 |                                      | Surfacing of platform, Precast coping, tactile tiles, fencing at end platform etc.  | 1.70%      |  |  |  |
|                                     | CS.1.2.3 |                                      | PF shelters, Mini PF shelters.  | 0.65%      |  |  |  |
|                                     | CS.1.2.4 |                                      | Passenger amenities   | 0.45%      |  |  |  |
|                                     | CS.1.3   | Subway                               |   |            |  |  |  |
| CS.1-Badli                          | CS.1.3.1 |                                      | Passenger amenities       0.45%         On completion of barrel of RCC box.       3.0%  |            |  |  |  |
|                                     | CS.1.3.2 |                                      | MilestoneMilestoneion445Construction of station building<br>complete in all respects.1.409&Construction of platforms including<br>earthwork in filling above<br>formation level and cast-in-situ<br>platform face wall as per the<br>Employer's requirements.1.809Surfacing of platform, Precast<br>coping, tactile tiles, fencing at end<br>platform etc.1.709PF shelters, Mini PF shelters.0.659Passenger amenities0.459On completion of barrel of RCC<br>box.3.0%On completion of stairs & ramp to<br>platforms including retaining wall,<br>shed, portico.3.259On completion of subway in all<br>respect including flooring, wall<br>cladding, drainage, waterproofing<br>etc.1.5%Water supply works including bore<br>well, pump house, underground &<br>overhead water storage tanks, water<br>supply distribution system0.359and<br>on completion of misc. works such<br>as station name boards at station<br>building and platform, platform0.359 |            |  |  |  |
| CS.1.3.3                            |          |                                      | On completion of subway in all<br>respect including flooring, wall<br>cladding, drainage, waterproofing<br>etc.   | 1.5%       |  |  |  |
|                                     | CS.1.4   | Water Supply                         | Water supply works including bore<br>well, pump house, underground &<br>overhead water storage tanks, water<br>supply distribution system   | 0.50%      |  |  |  |
|                                     | CS.1.5   | Drainage and<br>Sewerage             | CalificationInitial form above<br>formation level and cast-in-situ<br>platform face wall as per the<br>Employer's requirements.Surfacing of platform, Precast<br>coping, tactile tiles, fencing at end<br>platform etc.1.70%PF shelters, Mini PF shelters.0.65%Passenger amenities0.45%On completion of barrel of RCC<br>box.3.0%On completion of stairs & ramp to<br>platforms including retaining wall,<br>shed, portico.3.25%On completion of subway in all<br>respect including flooring, wall<br>cladding, drainage, waterproofing<br>etc.1.5%Water supply works including bore<br>well, pump house, underground &<br>overhead water storage tanks, water<br>supply distribution system0.50%dOn completion of misc. works such<br>as station name boards at station<br>building and platform, platform0.35%  |            |  |  |  |
|                                     | CS.1.6   | Miscellaneous<br>works               | On completion of misc. works such<br>as station name boards at station<br>building and platform, platform   | 0.35%      |  |  |  |

# 5.2.4 Stages of Payment i.e. Milestones of Cost Centre 'CS'- Stations

Cost Centre		e	<b>'CS'-</b> Stations			
Weightage o	f Cost Cen	tre 'CS', (X)-	10.75 %			
Sub-Cost	Iten	n of Work	Milestone	Weightage		
Centre	No.	Description	Description     3			
1	2	3	4	5		
			number boards and other incidental			
		S4-4	works in railway station area.	0.10/		
	CS.2.1	Station	office complete in all respects	0.1%		
		Platform &	office complete in all respects.			
	CS.2.2	Passenger amenities				
	CS.2.2.1		Construction of platforms including earthwork in filling above formation level and cast-in-situ platform face wall as per the Employer's requirements.	1.30%		
	CS.2.2.2		Surfacing of platform, Precast coping, tactile tiles, fencing at end platform etc.	1.30%		
	CS.2.2.3		PF shelters, Mini PF shelters.	0.65%		
	CS.2.2.4		Passenger amenities	0.45%		
	CS.2.3	Subway				
CS.2-Dever Khana	CS.2.3.1		On completion of barrel of RCC box.	2.75%		
	CS.2.3.2		On completion of stairs & ramp to platforms including retaining wall, shed, portico.	3.00%		
	CS.2.3.3		On completion of subway in all respect including flooring, wall cladding, drainage, waterproofing etc.	1.25%		
	CS.2.4	Water Supply	number boards and other incidental works in railway station area.Construction of ticket booking office complete in all respects.&&Construction of platforms including earthwork in filling above formation level and cast-in-situ platform face wall as per the Employer's requirements.Surfacing of platform, Precast coping, tactile tiles, fencing at end platform etc.PF shelters, Mini PF shelters.Passenger amenitiesOn completion of barrel of RCC box.On completion of stairs & ramp to platforms including flooring, wall cladding, drainage, waterproofing etc.pplyWater supply works including bore well, pump house, underground & overhead water storage tanks, water supply distribution system.andOn completion of drainage and sewerage system.			
	CS.2.5	Drainage and Sewerage system	On completion of drainage and sewerage system.	0.70%		

(	Cost Centr	e	'CS'- Stations		
Weightage of	f Cost Cen	tre 'CS', (X)-	10.75 %		
Sub-Cost	Item of Work No. Description		Weightage		
CentreNo.Description123			<b>(Y)</b>		
1	2	3	4	5	
	CS.2.6	Miscellaneous works	On completion of misc. works such as station name boards at station building and platform, platform number boards area and other incidental works in railway station area.	0.25%	
	CS.3.1	Station building	Construction of ticket booking office complete in all respects.	0.1%	
	CS.3.2	Platform & Passenger amenities			
CS.3-New Asaudah	CS.3.2.1		Construction of platforms including earthwork in filling above formation level and cast-in-situ platform face wall as per the Employer's requirements.	1.30%	
	CS.3.2.2		Surfacing of platform, Precast coping, tactile tiles, fencing at end platform etc.	1.30%	
	CS.3.2.3		PF shelters, Mini PF shelters.	0.65%	
	CS.3.2.4		Passenger amenities	0.45%	
	CS.3.3	Subway			
	CS.3.3.1		On completion of barrel of RCC box.	2.75%	
	CS.3.3.2		On completion of stairs & ramp to platforms including retaining wall, shed, portico.	3.00%	
	CS.3.3.3		On completion of subway in all respect including flooring, wall cladding, drainage, waterproofing etc.	1.10%	

Cost Centre		e	<b>'CS'-</b> Stations			
Weightage of	f Cost Cen	tre 'CS', (X)-	10.75 %			
Sub-Cost	Iten	n of Work	Milestone	Weightage		
Centre	No.	Description		<b>(Y)</b>		
1	2	3	4	5		
	CS.3.4	Water Supply	Water supply works including bore well, pump house, underground & overhead water storage tanks, water supply distribution system.	0.40%		
	CS.3.5	Drainage and Sewerage system	On completion of drainage and sewerage system.			
	CS.3.6	Miscellaneous works	On completion of misc. works such as station name boards at station building and platform, platform number boards area and other incidental works in railway station area.	0.25%		
	CS.4.1	Station building	Construction of ticket booking office complete in all respects.	0.1%		
	CS.4.2	Platform & Passenger amenities				
CS.4 Jasur Kheri	CS.4.2.1		Construction of platforms including earthwork in filling above formation level and cast-in-situ platform face wall as per the Employer's requirements.	1.30%		
	CS.4.2.2		Surfacing of platform, Precast coping, tactile tiles, fencing at end platform etc.	1.30%		
	CS.4.2.3		PF shelters, Mini PF shelters.	0.65%		
	CS.4.2.4		Passenger amenities	0.45%		
	CS.4.3	Subway				
	CS.4.3.1		On completion of barrel of RCC box.	2.75%		

Cost Centre		e	<b>'CS'-</b> Stations		
Weightage o	f Cost Cen	tre 'CS', (X)-	10.75 %		
Sub-Cost	Iten	n of Work	Milestone	Weightage	
Centre	No.	Description		( <b>Y</b> )	
1	1 2 3		4	5	
	CS.4.3.2		On completion of stairs & ramp to platforms including retaining wall, shed, portico.	3.00%	
	CS.4.3.3		On completion of subway in all respect including flooring, wall cladding, drainage, waterproofing etc.	1.25%	
	CS.4.4	Water Supply	Water supply works including bore well, pump house, underground & overhead water storage tanks, water supply distribution system.	0.40%	
	CS.4.5	Drainage and Sewerage system	On completion of drainage and sewerage system.	0.70%	
	CS.4.6	Miscellaneous works	On completion of misc. works such as station name boards at station building and platform, platform number boards area and other incidental works in railway station area.	0.35%	
	CS.5.1	Station building	Construction of station building complete in all respects.	1.40%	
	CS.5.2	Platform & Passenger amenities			
CS.5- Tarakpur	CS.5.2.1		Construction of platforms including earthwork in filling above formation level and cast-in-situ platform face wall as per the Employer's requirements.	1.80%	
	CS.5.2.2		Surfacing of platform, Precast coping, tactile tiles, fencing at end platform etc.	1.70%	

Cost Centre		e	<b>'CS'-</b> Stations		
Weightage of	f Cost Cen	tre 'CS', (X)-	10.75 %		
Sub-Cost	Iten	n of Work	Milestone	Weightage	
Centre	No.	Description		( <b>Y</b> )	
1	2	3	4	5	
	CS.5.2.3		PF shelters, Mini PF shelters.	0.65%	
	CS.5.2.4		Passenger amenities	0.45%	
	CS.5.3	Subway			
	CS.5.3.1		On completion of barrel of RCC box.	3.15%	
	CS.5.3.2		On completion of stairs & ramp to platforms including retaining wall, shed, portico.	3.25%	
	CS.5.3.3		On completion of subway in all respect including flooring, wall cladding, drainage, waterproofing etc.	1.25%	
	CS.5.4	Water Supply	Water supply works including bore well, pump house, underground & overhead water storage tanks, water supply distribution system	0.50%	
	CS.5.5	Drainage and Sewerage	On completion of drainage and sewerage system.	1.00%	
	CS.5.6	Miscellaneous works	On completion of misc. works such as station name boards at station building and platform, platform number boards and other incidental works in railway station area.	0.35%	
	CS.6.1	Station building	Construction of station building and S&T huts complete in all respects.	1.60%	
CS.6-Badsa	CS.6.2	Platform & Passenger amenities			

	Cost Centre		<b>'CS'-</b> Stations		
Weightage o	of Cost Cen	tre 'CS', (X)-	10.75 %	-	
Sub-Cost	Iten	n of Work	Milestone	Weightage	
Centre	No.	Description		( <b>Y</b> )	
1	2	3	4	5	
	CS.6.2.1		Construction of platforms including earthwork in filling above formation level and cast-in-situ platform face wall as per the Employer's requirements.	1.80%	
	CS.6.2.2		Surfacing of platforms, Precast coping, tactile tiles, fencing at end platform etc.	1.50%	
	CS.6.2.3		PF shelters, Mini PF shelters.	0.65%	
	CS.6.2.4		Passenger amenities	0.45%	
	CS.6.3	Subway			
	CS.6.3.1		On completion of barrel of RCC box.	4.30%	
	CS6.3.2		On completion of stairs & ramp to platforms including retaining wall, shed, portico.	3.0%	
	CS6.3.3		On completion of subway in all respect including flooring, wall cladding, drainage, waterproofing etc.	1.25%	
	CS.6.4	Water Supply	On completion of water supply works including bore well, pump house, underground water storage tanks, water supply distribution system	0.50%	
	CS.6.5	Drainage and Sewerage system	On completion of drainage and sewerage system.	1.00%	

Cost Centre		e	'CS'- Stations		
Weightage of	f Cost Cen	tre 'CS', (X)-	10.75 %		
Sub-Cost	Iten	n of Work	Milestone	Weightage	
Centre	No.	Description		<b>(Y)</b>	
1	2	3	4	5	
	CS.6.6	Miscellaneous works	On completion of misc. works such as station name boards at station building and platforms, platform number boards and other incidental works in railway station area.	0.35%	
	CS.7.1	Station building	Construction of station building, and S&T huts complete in all respects.	1.60%	
	CS.7.2	Platform & Passenger amenities			
	CS.7.2.1		Construction of platforms including earthwork in filling above formation level and cast-in-situ platform face wall as per the Employer's requirements.	1.75%	
CS.7-	CS.7.2.2		Surfacing of platforms, Precast coping, tactile tiles, fencing at end platform etc.	1.30%	
Mandothi Jn.	CS.7.2.3		PF shelters, Mini PF shelters.	0.65%	
	CS.7.2.4		Passenger amenities	0.45%	
	CS.7.3	Subway			
	CS.7.3.1		On completion of barrel of RCC box.	4.0%	
	CS7.3.2		On completion of stairs & ramp to platforms including retaining wall, shed, portico.	3.25%	
	CS.7.3.3		On completion of subway in all respect including flooring, wall cladding, drainage, waterproofing etc.	1.15%	

Cost Centre		'e	'CS'- Stations		
Weightage of Cost Centre 'CS', (X)-		tre 'CS', (X)-	10.75 %		
Sub-Cost Item of Work		n of Work	Milestone	Weightage	
Centre	No.	Description		( <b>Y</b> )	
1	2	3	4	5	
	CS.7.4	Water Supply	On completion of water supply works including bore well, pump house, underground water storage tanks, water supply distribution system	0.50%	
CS.7.5 Drainage and Sewerage system		Drainage and Sewerage system	On completion of drainage and sewerage system.	1.00%	
	CS.7.6	Miscellaneous works	On completion of misc. works such as station name boards at station building and platforms, platform number boards and other incidental works in railway station area.	0.45%	
			Total	100.00%	

### Notes:

- The value of each Milestones will be total lump sum accepted cost of Works for Schedule 'A' (LS) multiplied by X \* Y. For example, the value of Milestone CS1.1-will be equal to LS\*X\*Y= LS x 0.1075x 0.0140
- 2. Adjustment to Contract Price pursuant to GCC 13.7 shall be applicable to the payments of Works executed under this Sub Head / Price Schedule.
- 3. Station Building- Unit of measurement is plinth area in square meters. For the buildings having more than one storey, the total area shall be found out by adding the area of each storey. Unit cost shall be determined on pro rata basis with respect to the total area of all stations and service buildings.
  - 50% Payment shall be paid after completion of structural works i.e beam, columns & slab in case of framed structure or walls & slabs in case of other buildings and
  - 30% Payment shall be paid after completion of finishing and
  - 20% Payment on final completion of works in all respects ready for use.
- 4. Platform- Unit of measurement is area measured in square meter. Unit cost shall be determined on pro rata basis with respect to the total area of all platforms at the station.

- 5. Payment will be made on Completion of each Milestones as per weightage given in this schedule.
- 6. Variation in 'Station building':

In case of variation in the plinth area of any station building on either side i.e. increase or decrease with respect to the area shown in the Tender Drawings, the total value of station as mentioned in respective Sub-Cost Centres as applicable will get modified accordingly on pro rata basis of plinth area.

# 6 Schedule 'B': Retaining Wall, Bridges & other Civil works/R1

Schedule 'B' is subdivided into fourteen	n (14) Sub-Schedules as	given below:
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	SCHEDULE 'B': Bridges, Retaining Wall & other Civil works/R1							
S. No.	Sub- Schedule	Description	Item Range	No. of Items	Estimated Amount (INR)			
1	B1	Bridge Works-Steel Super Structure - Open Web Girder (USSOR Based item)	1	1	2,45,07,33,235.96			
2	B2	Reinforcement (USSOR Based item)	2	1	1,78,76,03,943.24			
3	B3	RCC Works (NS item)	3	1	87,22,89,707.67			
4	B4	Bridge Works-Pile foundation (NS item)	4	1	45,10,18,730.58			
5	B5	Bridge Works-Steel Super Structure- Composite Girder (USSOR Based item)	5	1	34,77,03,915.45			
6	B6	Backfill Material (USSOR Based item)	6	1	36,24,60,971.53			
7	B7	Bridge Works-Precast Concrete Blocks (NS item)	7	1	23,37,45,360.40			
8	B8	Cement (USSOR Based item)	8	1	18,28,25,033.80			
9	В9	Formation Works (USSOR Based & NS items)	9 to 12	4	27,16,92,337.75			
10	B10	Bridge Works-Steel Super Structure - Miscellaneous (USSOR Based items)	13 to 14	2	37,80,16,255.30			
11	B11	Well Foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)	15 to 56	42	68,84,88,597.04			
12	B12	Road and Building Works (DSR Based & NS items)	57 to 168	112	67,91,91,594.31			
13	B13	Bridge Bearing & Miscellaneous Structural Steel Works (USSOR Based & NS items)	169 to 184	16	37,40,42,621.75			
14	B14	P Way Works-Ballastless Track, Rails & Special Sleepers (NS items)	185 to 190	6	35,94,19,099.93			
		<b>Total Estimated Amount</b>	'B' (INR)	9,43,92,31,404.71				

S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
1	041010	Supplying, fabrication, assembling of all types of steel girders of specified spans with structural steel conforming to Quality "B0" Grade Designation E250 conforming to IS:2062, erection / slewing / end launching of steel girders with cranes or any other approved launching methods as per site conditions (not requiring traffic block) on sub-structure including provision of trolley refuges etc., complete as per approved QAP and drawings conforming to IRS-B1-2001 and other relevant codes and specifications.				
		Note:				
		prepared by the contractor and got approved from Railway.				
		2. The item includes fabrication of all types of battens, bracings, ties, stiffeners, packing, diaphragms, shop rivets / welding, T&F bolts, drifts, SAW, templates, jigs, fixtures, accessories, transporting various components from fabrication shop to site including loading & unloading, assembly of girders with drifts/bolts, field riveting /welding /HSFG Bolting, assembling of temporary support for side slewing, raising of girders to the bed block level, providing sliding arrangements and slewing the girder in position, lowering of girder on bearings and bed plates with all temporary arrangements or any other method of launching complete.				
		3. The bearing sets to be provided with the girders will be paid separately as per relevant item of <b>Sub-Schedule 'B13'</b> .				
		4. Payment for addition in weight for rivets / welds shall be made as per clause 45 of IRS B-1-2001.				
		5. In case of composite work (welding and HSFG bolts), addition in weight shall be 1% for welding and HSFG bolts shall be paid separately under relevant item of <b>Sub-Schedule 'B10'</b> .				

#### 6.1 Sub-Schedule 'B1': Bridge Works- Steel Super Structure -Open Web Girder (USSOR Based item)

	SUB-SCHEDULE 'B1' Bridge Works-Steel Super Structure -Open Web Girder (USSOR Based item)						
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)	
		<ul> <li>6. Painting of girders will be paid separately under relevant item of this Sub-Schedule 'B10'.</li> <li>7. Payment Schedule: <ul> <li>(i) Receipt of material at plant/workshop against submission of Bank Guarantee: 40%</li> <li>(ii) Fabrication of girders: 20%</li> <li>(iii) Erection/Launching: 20%</li> <li>(iv) Completion in all respects: 20%</li> </ul> </li> </ul>					
1a	041012	Open Web Girder Upto 45.7 m Clear Span	6439.00	MT	1,61,358.34	1,03,89,86,351.26	
1b	041013	Open Web Girder Above 45.7 m Clear Span	8205.00	MT	1,72,059.34	1,41,17,46,884.70	
Total Estimated Value of Sub-Schedule 'B1' Bridge Works-Steel Super Structure -Open Web Girder (USSOR Based item)					2,45,07,33,235.96		

6.2	Sub-Schedule	<b>'B2'- Reinforcement</b>	(USSOR Based items)
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	Sub-Schedule 'B2' Reinforcement (USSOR Based item)								
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)			
2	025070	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete							
2a	025072	Thermo-Mechanically Treated bars of grade Fe-500D or more.	2,30,15,372	Kg	77.67	1,78,76,03,943.24			
Total Estimated Value of Sub-Schedule 'B2' Reinforcement (USSOR Based item)						1,78,76,03,943.24			

### 6.3 Sub-Schedule 'B3': RCC Works (NS Item)

	Sub-Schedule 'B3' RCC Works (NS item)						
S. No.	NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)	
3	NS-1	Supplying and laying in position M-35 RCC as per approved design mix with admixtures and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all lifts & leads, having continuous agitated mixer, pumping concrete from transit mixer to site of laying, compacting, finishing & curing, with all labour, material, tools, plants, machinery and equipment, taxes, cess etc., as a complete job ,but excluding supplying & fixing form work (centring & shuttering),in accordance with the specification and drawings. Notes- (i) Cost of cement is included in the above item. (ii) Cost of Reinforcement steel is not included in the above item and will be paid separately under relevant item of <b>Sub- Schedule 'B2'</b> . (iii) Cost of supplying & fixing form work (centring & shuttering) is not included in the above item (except pile cap & open foundation) and will be paid separately under relevant item of <b>Sub-Schedule 'B11'</b> .					
3a	NS-1A	In Pile caps, open foundation & RCC Box/Sub way	70,595	Cum	7,836.38	55,32,09,246.10	
3b	NS-1B	In Piers, abutments	7,853.00	Cum	8,103.19	6,36,34,351.07	
3c	NS-1C	Abutment cap & Pier Cap, pedestals, deck slab, Inspection platform, Trolly refugee	7,846.00	Cum	8,370.65	6,56,76,119.90	

	Sub-Schedule 'B3' RCC Works (NS item)									
S. No.	NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)				
3d	NS-1D	Retaining walls, wing walls, return walls, drop walls, curtain walls, Wearing Coat etc. of all heights	23,932.00	Cum	7,929.55	18,97,69,990.60				
	87,22,89,707.67									

	Sub-Schedule 'B4' Bridge Works-Pile foundation (NS item)							
S. No.	NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
4	NS-2	Providing, Boring suitable diameter piles using Hydraulic Rig in all kinds of strata including boulder studded soil, underground structure like channel, sewer manholes, old foundation or any other obstruction, irrespective of sub-soil water level in all conditions whether dry or under water, shoe and temporary casing pipe, if required, with contractor plant, machinery & equipment for pile boring, use of bentonite slurry including all operations, cleaning of bore holes, supplying and laying in-situ with tremie pipe M-35 RCC in piles as per approved design mix with admixtures and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all lifts & leads, having continuous agitated mixer, pumping concrete from transit mixer to site of laying including supplying & fixing form work (centering & shuttering), compacting, finishing, curing, chipping off pile top to remove laitance concrete above cut off level, removal and disposal of surplus excavated earth/debris/muck outside ROW including all lead, lift, ascends, descends, loading, unloading handling, re-handling, crossing of stream, nallahs, railway track, level crossing etc. with all labour, material, tools, plants, machinery and equipment, taxes, cess etc. as a complete job in accordance with the Specification and the Drawings. Notes – i.Cost of cement is included in the above item and will be paid separately under relevant item of <b>Sub-Schedule-'B2'</b> . iii.Cost of temporary casing pipe is not included in this item and shall be paid separately under relevant item of <b>Sub-Schedule-'B13'</b> , if required and approved by the Engineer.						

## 6.4 Sub-Schedule 'B4': Bridge Works-Pile foundation (NS item)

	Sub-Schedule 'B4' Bridge Works-Pile foundation (NS item)							
S. No.	NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
		iv. Rate for using higher diameter piles shall be worked out from the rate of 1200 mm diameter pile in proportion to the area of piles.						
4a	NS-2A	1200 mm diameter	26,064.00	Rmt	12,514.48	32,61,77,406.72		
4b	NS-2B	600 mm diameter	39,903.00	Rmt	3,128.62	12,48,41,323.86		
	Total Estimated Value of Sub-Schedule 'B4' Bridge Works-Pile foundation (NS items)							

## 6.5 Sub-Schedule 'B5': Bridge Works-Steel Super Structure – Composite Girder (USSOR Based item)

	Sub-Schedule 'B5' Bridge Works-Steel Super Structure- Composite Girder (USSOR Based item)					)
S. No.	NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
5	041020	Supplying, fabrication, assembling of all types of steel Composite girders of specified spans with structural steel conforming to Quality "B0" Grade Designation E250 conforming to IS:2062, erection / slewing / end launching of steel girders with cranes or any other approved launching methods as per site conditions on sub-structure including provision of stud bolts / shear connectors, complete as per approved QAP and drawings conforming to IRS- B1-2001 and other relevant codes and specifications.				
		Notes: 1. Detailed fabrication and erection drawings & launching methodology will be prepared by the contractor and shall be got approved from Railway/Stakeholders.				
		<ol> <li>Rate includes fabrication of all types of battens, bracings, ties, stiffeners, packing, diaphragms, shop rivets / welding, T&amp;F bolts, drifts, SAW, templates, jigs, fixtures, accessories, transporting various components from fabrication shop to site including loading &amp; unloading, assembly of girders with drifts/bolts, field riveting /welding /HSFG Bolting, assembling of temporary support for side slewing, raising of girders to the bed block level, providing sliding arrangements and slewing the girder in position, lowering of girder on bearings and bed plates with all temporary arrangements or any other method of launching complete.</li> <li>The bearing sets to be provided with the girders will be paid separately</li> </ol>				
		<ul> <li>as per relevant item of Sub- Schedule 'B13.</li> <li>4. Payment for addition in weight for rivets / welds shall be made as per clause 45 of IRS B-1-2001.</li> </ul>				

	Sub-Schedule 'B5' Bridge Works-Steel Super Structure- Composite Girder (USSOR Based item)							
S. No.	NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
		5. In case of composite work (welding and HSFG bolts), addition in weight shall be 1% for welding and HSFG bolts shall be paid separtely under relevant item of <b>Sub-Schedule 'B10'</b> .						
		6. Painting of girders will be paid separately under relevant item of <b>Sub</b> -Schedule 'B10'.						
		7. Payment Schedule:						
		(i) Receipt of material at plant/workshop against submission of Bank Guarantee: 40%						
		(ii) Fabrication of girders: 20%						
		(iii) Erection/Launching: 20%						
		(iv) Completion in all respects: 20%						
5a	041021	Composite steel girder of span length up to 36.0m	2,577.00	MT	1,34,925.85	34,77,03,915.45		
Total Estimated Value of Sub-Schedule 'B5' Bridge Works-Steel Super Structure- Composite Girder (USSOR Based item)       34,						34,77,03,915.45		

	Sub-Schedule 'B6' Backfill Material (USSOR Based item)							
S. No.	USSOR/ NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
6	051170	Providing and laying of filter media consisting of granular materials of GW, GP, SW groups as per IS:1498 (latest) in required profile behind boulder filling of abutments, wing walls / return walls etc. above bed level with all labour and material complete job as per drawing and technical specification of RDSO Guidelines	1,63,373.00	Cum	2,218.61	36,24,60,971.53		
Total Estimated Value of Sub-Schedule 'B6' Backfill Material (USSOR Based item)						36,24,60,971.53		

e Works-Precast Concrete Blocks (NS	5 item)			
Sub-Schedule 'B7' Bridge Works-Pre	cast Concre	ete Bloc	ks(NS item)	
Description of Item	Quantity	Unit	<b>Estimated Rate</b>	F

# 6.7 Sub-Schedule 'B7': Bridge

S. No.	USSOR/	Description of Item	Quantity	Unit	<b>Estimated Rate</b>	Estimated Amount (INR)
	NS Item No.				(INR)	
7	NS-3	Casting, supplying and installation of Pre-cast cement concrete blocks of size 25X25 X20cm. or of required size as directed by the Engineer for protective works at bridges & banks like pitching, toe wall, flooring, drains etc. using M20 design concrete mix with 20mm aggregate size including Contractor's shuttering, leading to bridge site from casting depot, including dressing and levelling of surface, providing gravel backing, laying & jointing blocks with cement mortar 1:3 with Contractor's labour and as directed by Engineer-in- charge (All labour and materials including cement by Contractor). Note: i) Payment for gravel backing will be paid under relevant item of <b>Sub Schedule 'B11'</b> . ii) 60% Payment shall be made after casting of pre-cast concrete blocks and bringing at work site. The balance 40% will be made on completion of laying and finishing. iii) Measurement is based on quantity calculation of blocks used only (no of blocks x volume of one block).	37,361.00	Cum	6,256.40	23,37,45,360.40
	Total Est	imated Value of Sub-Schedule 'B7' Bridge Works	-Precast Co	oncrete	Blocks (NS item)	23,37,45,360.40

#### 6.8 Sub-Schedule 'B8': Cement (USSOR Based items)

	Sub-Schedule-'B8' Cement (USSOR Based items)							
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
8	025060	Supply and using Cement at Worksite						
8a	025062	Ordinary Portland Cement 53 grade	2,278	MT	8,730.17	1,98,87,327.26		
8b	025063	Pozzolana Portland Cement	20,929.00	MT	7,785.26	16,29,37,706.54		
	Total Estimated Value of Sub-Schedule 'B8' Cement (USSOR Based items)							

## 6.9 Sub-Schedule 'B9': Formation Works (USSOR Based & NS items)

	Sub-Schedule 'B9' Formation Works (USSOR Based & NS items)								
S. No .	USSOR/NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)			
9	011010	Earthwork in cutting (classified) in formation, trolley refuges, side drains, level crossing approaches, platforms, catch water drains, diversion of nallah & finishing to required dimension and slopes to obtain a neat appearance to standard profile inclusive of all labour, machine & materials and removing & leading all cut spoils either to make spoil dumps beyond 10m from cutting edge or for filling in embankment with leads within 2 km on either side of cutting edge, lifts, ascent, descent, loading, unloading, all taxes / royalty, clearance of site and all incidental charges, bailing & pumping out water, if required, etc. complete as per directions of the Engineer-In-Charge. The works are to be executed as per latest / updated edition of "Guidelines for Earthwork in Railway Projects" issued by RDSO, Lucknow.							
9a	011011	In all conditions and classifications of soil except rock	2,000	Cum	189.33	3,78,660.00			
10	013050	Turfing / planting, including all lead & lift and watering as required until properly rooted with. Note - Initially payment of only 40% will be made. Balance 60% will be paid only after 3 months of maintenance period, if the turfing is properly rooted.							
10a	013053	Planting Sarkanda / sarpat or any other suitable species approved by the Engineer.	840	100 sqm	7,974.75	66,98,790.00			

	Sub-Schedule 'B9' Formation Works (USSOR Based & NS items)								
S. No .	USSOR/NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)			
11	NS-4	Earthwork in embankment for 32.5t axle load and as per RDSO specification No. RDSO/2020/GE:004 September 2020 "Comprehensive Guidelines and Specification for Railway Formation" with contractor's own earth from borrow areas including all lead, lift, ascent, descent, royalty, taxes, cess, compensation, crossing of nallahs /stream and other obstructions including mechanical compaction in layers with watering, handling, re-handling, dressing of banks to the final profile with all labour, material, tools, plant, machinery and equipment, taxes, cess etc. as a complete job in accordance with the specification and drawings. Note:10% of payment shall be withheld till the slopes are dressed to the required profile and compacted mechanically with vibratory rollers as per RDSO guidelines.	4,31,069.00	Cum	338.75	14,60,24,623.75			
12	NS-5	Supplying and laying blanketing material produced through mechanical means using crushers and pug mill for 32.5 T axle load as per RDSO specification No. RDSO/2020/GE:004 September 2020 "Comprehensive Guidelines and Specification for Railway Formation" over the top of subgrade including all lead, lift, ascent, descent, royalty, taxes, cess, crossing of nallahs /stream and other obstructions including mechanical compaction in layers not exceeding 200 mm thick with vibratory rollers, watering, handling, re-handling and dressing of formation to the final profile with all labour, material, tools, plants, machinery and equipment, taxes, cess, etc. as a complete job in accordance with the specification and drawings. Note: 10% of payment shall be withheld till the slopes are dressed to the required profile and compacted mechanically with vibratory rollers as per RDSO guidelines.	47,100.00	Cum	2,517.84	11,85,90,264.00			

	Sub-Schedule 'B9' Formation Works (USSOR Based & NS items)							
S. No .	USSOR/NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
	Total Estimated Value of Sub-Schedule 'B9' Formation Works (USSOR Based & NS items)       27,16,92,337.75							

S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
13	041030	Supplying and fixing HSFG bolts of any dia. and any length with suitable nuts including DTI washers conforming to IRS-B1-2001 for bridges and steel structures with Contractors labour, tools and plants and lead and lift etc., complete.	6,73,790.00	Kg	304.73	20,53,24,026.70
4	041050	Metalizing of steel work of girders with sprayed aluminium after surface preparation by Sand/grit blasting, followed by one coat of etch primer (IS:5666) & one coat of Zinc Chrome primer (IS:104)and two coats of aluminium paint (IS:2339) with all labour, T&P and material as a complete job duly conforming to all relevant specifications and process given under Clause 39 of IRS-B1-2001 Note: Nominal Thickness of Aluminium coating shall be 150 microns. DFT of Zinc chrome primer shall be 25-30 microns and DFT of each	2,04,210.00	Sqm	845.66	17,26,92,228.60

### 6.10 Sub-Schedule 'B10': Bridge Works-Steel Super Structure -Miscellaneous (USSOR Based items)

S	Sub-Schedul	e-'B11' Well foundation, Concrete Superstructure, RE wall & Other 1	niscellaneou	s Work	s (USSOR Based	l & NS items)
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
15	013130	Shoring with 'Z' section MS sheet piles side by side in all kinds of soil mechanically or manually as per approved drawing with contractor's own arrangement complete in all respects and removal of sheet piles after completion of the work as directed by engineer in-charge. {Note - Payment will be made as per actual driven length of pile}	2,000	Sqm	944.42	18,88,840.00
16	014020	Supplying and laying of drainage composite for use behind abutments, wing walls, return walls and retaining walls geo composite drain (vertical) as per RDSO Specification No- RDSO/2018/GE: IRS-0006 Latest version with all material, labour ,equipment, tools and plants, lead, lift etc. complete in all respects as per the direction of engineer-in-charge.	6,614	Sqm	777.92	51,45,162.88
17	022010	Earthwork in excavation by mechanical means (Hydraulic Excavator)/Manual Means for foundations and floors of the bridges, retaining walls etc. including setting out, dressing of sides, ramming of bottom, getting out the excavated material, back filling in layers with approved material and consolidation of the layers by ramming and watering etc. including all lift, disposal of surplus soil upto a lead of 300m, all types of shoring and strutting with all labour and material complete as per drawing and technical specification as directed by Engineer. Note: This item will be used for excavation work in connection with other miscellaneous works also like side drains, foundation for OHE masts and other miscellaneous structures in connection with Gauge Conversion, Doubling, New lines.				
17a	022011	All kinds of soils	1,67,569	Cum	243.13	4,07,41,050.97

S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
18	022040	Providing and laying in position machine batched, machine mixed and machine vibrated Design Mix Cement Concrete of specified grade (M-20 Cast in-Situ) using 20mm graded crushed stone aggregate and coarse sand of approved quality in RCC raft foundation & Pile cap including finishing, using Admixtures in approved proportions (as per IS:9103), to modify workability & other properties without impairing strength and durability complete as per specifications and direction of the Engineer in charge. Payment for cement, reinforcement and shuttering shall be paid extra. Note-Cement concrete in drainage and other miscellaneous works shall be paid under this item.	27,827	Cum	3,452.08	9,60,61,030.16
19	022070	Providing and fixing Weep Holes in Abutments, RCC Box, Wing walls and Return walls etc., of new bridges with 110mm dia. UPVC pipe (IS :13592) Type A ISI marked with all contractor's men, material, transportation, all taxes as per specifications and as directed by Engineer-in-Charge.	21,668	Meter	264.87	57,39,203.16
20	022120	Conducting load testing of a single pile upto following capacity in accordance with IS:2911 (Part-IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. with all labour, material, tool & plants, equipment, machinery, etc. complete as per drawing and specification, as directed by the Engineer.				
20a	022123	Initial load test above 100 ton capacity upto 250 ton capacity pile	43	Each	1,00,393.79	43,16,932.97
20b	022124	Extra for every increase of 50 ton in pile capacity or part thereof over 250 ton	276	Each	9,884.76	27,28,193.76
20c	022127	Routine Load Test above 100 ton capacity upto 250 ton capacity pile	60	Each	67,476.12	40,48,567.20
21	022130	Lateral load testing of single pile in accordance with "IS Code of practice IS:2911 (Part-IV) for determining safe allowable lateral load of pile" with all labour, material, tool & plants, equipment, machinery, etc complete as per drawing and specification as directed by the Engineer				

S	Sub-Schedul	e-'B11' Well foundation, Concrete Superstructure, RE wall & Other r	niscellaneou	s Work	s (USSOR Based	l & NS items)
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
21a	022131	Piles with lateral load capacity of upto 50 ton	43	Each	25,088.45	10,78,803.35
22	022140	Pulse Echo Test (PET) for integrity testing of piles with contractor's men, materials and machines. The rate includes cost of Inspection of site, preparation of pile head and any other unforeseen cost required for the test, submission of reports in triplicate as per satisfaction of the Engineer in Charge at site.	3,049	Each	3,579.91	1,09,15,145.59
23	023010	Earth work in OPEN excavation in foundation of bridges, for placing of well curbs of all shapes and designs in all kinds of soil including taking out the excavated soil, levelling, ramming of bottom of excavation and trimming of sides, returning the soil in layers, consolidation, disposal of surplus soil within a lead of 300m, including all lift, dewatering, shoring and strutting complete as per technical specification and as directed by Engineer in charge. (compaction of surplus soil when led to the bank will be paid as per relevant item separately)	10,156	Cum	268.45	27,26,378.20
24	023040	Dry/Wet Sinking of Circular Wells (Other than pneumatic method) in all types of strata except hard rock requiring ballasting, including bailing and pumping out water, removal of excavated soil with all labour and material required for sinking as per drawing and direction of the Engineer in charge, disposal of surplus soil in the adjoining bank/embankment (compaction to be paid separately under the relevant item).				
24a	023041	From initial level of cutting edge & upto 3m depth	4,960	Cum	200.25	9,93,240.00
24b	023042	Above 3m to 10m depth	11,572	Cum	301.97	34,94,396.84
24c	023043	Above 10m to 15m depth	8,266	Cum	438.09	36,21,251.94
24d	023044	Above 15m to 20m depth	8,266	Cum	517.58	42,78,316.28
24e	023045	Above 20m to 25m depth	8,266	Cum	941.99	77,86,489.34
24f	023046	Above 25m to 30m depth	100	Cum	1,170.30	1,17,030.00

S	Sub-Schedule-'B11' Well foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)							
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
25	023090	Providing and laying in position machine batched, machine mixed and machine vibrated Design Mix Cement Concrete of specified grade (Cast in-Situ) using 20mm graded crushed stone aggregate and coarse sand of approved quality in the following elements of well including finishing, using Admixtures in approved proportions (as per IS:9103), to modify workability & other properties without impairing strength and durability complete as per drawings and technical specifications as directed by Engineer. Payment for cement, reinforcement and shuttering shall be made extra.						
25a	023091	In well Curb	1,770	Cum	3,627.79	64,21,188.30		
25b	023092	In Steining of wells	20,818	Cum	3,627.79	7,55,23,332.22		
25c	023093	In Bottom plug for wells including arrangements for placing concrete under water with tremie or bottom opening skips.	8,164	Cum	4,087.62	3,33,71,329.68		
25d	023095	In Intermediate/Top plug with internal shuttering	1,519	Cum	4,384.01	66,59,311.19		
25e	023096	In Well cap and corbel, if provided	4,676	Cum	4,384.01	2,04,99,630.76		
26	023100	Supplying and filling ordinary sand in between bottom plug and top plug in wells including all lead lift handling, re-handling, as a complete job. Sand should be simultaneously filled with water for three days to achieve full compaction so that further chances of shrinkage due to voids are eliminated.						
26a	023102	Using sand from other than River bed (This item is to be operated if suitable sand is not available in River Bed for filling	20,002	Cum	1,948.23	3,89,68,496.46		
27	025020	Providing and applying two coats of coal tar or bitumen confirming to IS:3117– latest version on the top and sides of RCC box/slabs @ 1.70 kg/sqm after cleaning the surface with all labour and materials complete job as directed by the Engineer	19,019	Sqm	188.23	35,79,946.37		
28	025030	centering and shuttering including strutting, propping etc. and removal of form for :						

	Sub-Schedule-'B11' Well foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)							
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
28a	025032	All types of bridge super-structures, e.g. slabs, I-girders, T-girders, Box girders etc. upto 5m above ground level	12,360	Sqm	952.41	1,17,71,787.60		
28b	025033	Extra for additional height over item no. 025032 wherever required with adequate bracing, propping etc. over initial height of 5 metres for every additional height of 1 metre or part thereof	38,850	Sqm	119.99	46,61,611.50		
29	031020	Providing and laying in position machine batched, machine mixed and machine vibrated Design Mix Cement Concrete of specified grade using 20mm graded crushed stone aggregate and coarse sand of approved quality for the Precast Prestressed (Post tensioned) concrete girder/Box (spans upto 30.5m) in contactor's casting yard, including finishing, using Admixtures in approved proportions (as per IS:9103), to modify workability & other properties without impairing strength and durability, complete as per drawings, specifications and direction of the Engineer. Payment for Shuttering, Cement, reinforcement, HTS cables, anchorage cones, stressing of cables and grouting of the ducts will be done extra. Launching of girder/slab in position is not included in this item.	211	Cum	3,136.51	6,61,803.61		
29a	031021	Deduct from 0310220 for casting of Slab in place of Girder/Box	211	Cum	-98.34	-20,749.74		
30	031040	Providing, fabricating & fixing in position to exact design profiles, prestressing H.T.S. cables of all classification made from Low Relaxation strands conforming to IS:14268– latest version in Prestressed (Post tensioned) Concrete girders/slabs etc. including supplying, cutting, making into cables with necessary spacers, colour coding, protecting with water soluble oil at all time, anchoring of cables, supplying and placing spiral corrugated type galvanized metal steel ducts sheathing made up of Cold Rolled Cold Annealed (CRCA) mild steel conforming to IS:513 of required diameter/ thickness, vent pipe, placing, bending, routing, fixing, stressing & grouting of cable ducts with cement grout, Anchorage sets in required number with provision for future prestressing if any including all lead and lift with contractor's own materials, labour, equipments etc. complete as per drawings & specifications. Rate also includes covering anchorage pads with epoxy mortar of approved quality to avoid corrosion. Cement for	10	MT	1,98,765.86	19,87,658.60		

ŗ	Sub-Schedule-'B11' well foundation, Concrete Superstructure, KE wall & Other miscellaneous works (USSOR Based & NS items)									
	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INI				
		grouting to be paid separately. Payment shall be made in terms of weight of HTS cables as per drawing.								
	031060	Extra for Using HDPE Sheathing in place of CRCA Sheathing	1,102	Meter	164.00	1,80,728.00				
	031110	Load testing of one and more span of bridge as selected by the engineer as per approved load test procedure following relevant IS/IRC/Railway code with contractor's labour, deflection measuring instruments, loading material, recording and analyzing the load testing results including all lead and lift, etc. complete as required. The rates are all inclusive and will be paid after load test is finish and girder is cleared of the Kentledges/loading material etc. The load shall be 1.25 times the stipulated design								

S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
		grouting to be paid separately. Payment shall be made in terms of weight of HTS cables as per drawing.				
31	031060	Extra for Using HDPE Sheathing in place of CRCA Sheathing	1,102	Meter	164.00	1,80,728.00
32	031110	Load testing of one and more span of bridge as selected by the engineer as per approved load test procedure following relevant IS/IRC/Railway code with contractor's labour, deflection measuring instruments, loading material, recording and analyzing the load testing results including all lead and lift, etc. complete as required. The rates are all inclusive and will be paid after load test is finish and girder is cleared of the Kentledges/loading material etc. The load shall be 1.25 times the stipulated design load.				
32a	031111	For Span design load upto 100 MT	93	Each	93,641.49	87,08,658.57
32b	031112	Extra for every increase 1 MT for part there of in the span design load capacity upto 800 MT	7,430	MT	924.60	68,69,778.00
33	031140	Providing and fixing in position GI Drainage Spouts of required length with Grating in RCC slab and filling bitumen along kerb as shown in drawing with contractor's pipes, bitumen, tools, equipment, lead, lifts etc. complete as per specifications and as directed by Engineer in-charge				
33a	031142	100mm dia. Drainage Spouts	681	Meter	1,307.93	8,90,700.33
34	041240	Surface preparation for painting of bridge plate/composite girders and other steel structures where the finishing coat shows signs of deterioration; but primer coat of paint is sufficiently in good condition and there are no signs of rusting etc. Surface shall be cleaned free from oil grease, scaling and other foreign matters without disturbing the primer coat {Rate includes cost of labour, consumables, tools & plants, scaffolding, jhoola, ladder etc.}	14,040	Sqm	27.77	3,89,890.80

Sub-Schedule-'B11' Well foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)						
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
35	041260	Painting cleaned bridge plate/composite girders including all scaffolding, shuttering and strutting along with provision of Jhoola / hanging scaffolding ladders etc. where required				
35a	041261	With one coat ready mix Zinc Chromate conforming to IS:104 with DFT of 25-30 Microns followed by one coat of Zinc Chromate red oxide conforming to IS:2074 DFT of 25 Microns	14,040	Sqm	119.87	16,82,974.80
36	041270	Painting cleaned bridge triangulated girders including all scaffolding, shuttering and strutting along with provision of Jhoola / hanging scaffolding ladder where required				
36a	041273	With two coats Aluminium paint in dual containers conforming to IS:2339 with DFT of 12-14 Microns for each coat.	32,490	Sqm	119.37	38,78,331.30
37	041330	Launching & fixing in specified Bridge location all types of Steel Plate girders / PSC girders / Slabs including loading/unloading and transport to the site of launching with a lead of five kilometres & lifting to any height as per site requirement, provision of approaches for leading, cleaning of bed block and minor repairs to bed block with epoxy if required, as directed by Engineer in charge with all labour, tools and plant, equipment etc., complete				
37a	041331	PSC girders / slabs	532	MT	5,789.97	30,80,264.04
38	051010	Providing and laying boulders apron on river bed for protection against scour with stone boulders weighing not less than 35 kg each with voids filled with spalls complete as per drawing and Technical Specification	942	Cum	1,540.46	14,51,113.32
39	051120	Stenciling of Girders with black / blue lettering over yellow background with ready mix paint w.r.t. details of executed inspection, greasing and painting, other details as directed by Engineer incharge	4,440	Each	44.69	1,98,423.60
40	052220	Painting the HFL mark and Danger level mark, year of HFL on bridge abutments and piers with ready mixed paint as per standard in two coats over one coat of primer with all materials, labour, tools, scaffolding, all lead and lift etc. including writing complete	621	Each	308.80	1,91,764.80

Sub-Schedule-'B11' Well foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)						
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
41	052230	Providing cast in situ bridge number plaques as per Railway drawing in cement concrete 1:2:4 mix using 20mm hard stone aggregate embedded in 30mm notch in Bridge parapet coping duly engraving the letter and figures and an arrow indicating the direction of flow and finishing the top exposed surface with cement mortar 1:3, painting letters and figures with two coats of black enamel paint on two coats of white background with all labour, tools, cement, paint etc. with all leads and lifts.	42	Each	871.98	36,623.16
42	052240	Providing cast in-situ plaques for bridge foundations details of size 45cmx45cmx5cm in cement concrete 1:2:4 mix using 20mm hard stone aggregate embedded in 30mm deep notch over abutment & piers, engraving the letters & figures with CM 1:3 and finished smooth including painting letters and figures with 2 coats of black enamel and plaque with white enamel with all labour, tools, cement, paint, curing etc. as a complete job.	69	Each	1,141.93	78,793.17
43	052250	Providing & laying non pressure NP-4 Class RCC pipe with collars, jointing with 1:2 cement and ordinary sand mortar including testing of joints, but excluding earthwork with all labour and material as a complete job. Cement for mortar will be paid separately. (Pipes of 600mm dia and above will be laid using crane/hydra).				
43a	052252	450mm dia.	100	Meter	2,838.75	2,83,875.00
44	052260	Supplying, spreading and filling coarse sand (no cohesive materials to be used) of approved quality including watering and ramming in foundation, plinth, behind the abutment, wing wall, retaining wall in layers not exceeding 150mm thick including its compaction as per direction of Engineer-Incharge. The rate includes all lead, lift, ascent, descent, crossing of Railway line etc. complete with contractor's labour, materials, tools and plant.	27,207	Cum	2,061.26	5,60,80,700.82

Sub-Schedule-'B11' Well foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)						
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
45	191310	<ul> <li>Fabrication, supplying and fixing 600mm x 450mm Bridge Board made from 16 SWG MS Sheet duly welded or rivited to back support of two 600mm long horizontal angles of size 25mm x 25mm x 3mm &amp; two 2.5 metre long vertical support of MS Angle of size 50mm x 50mm x 5mm, welded /riveted to board. Vertical supports shall have split ends for proper fixing in ground. Vertical supports of board shall be embedded in ground in M 20 Cement Concrete blocks of size 300mm x300mm x 300mm, complete job including painting &amp; writing of subject matter on bridge board, as directed by Engineer – Incharge.</li> <li>{Note: Excavation &amp; concrete work will be paid separately under Sub-Schedule 'B12'}</li> </ul>	42	Each	2,796.70	1,17,461.40
46	195030	Centring and shuttering including strutting, propping etc. and removal of form for :				
46a	195032	Abutment, pier, wing walls and return walls	25,933	Sqm	383.91	99,55,938.03
46b	195033	Abutment cap, Pier Cap, Inspection Platform & Pedestal over Pier cap, Fender wall, Diaphragm wall etc.	9,761	Sqm	372.61	36,37,046.21
46c	195034	Approach slab at formation level, Dirt wall/ ballast wall at formation level	2,301	Sqm	242.15	5,57,187.15
46d	195038	In Bottom/top slab & side walls of RCC Box , toe wall and sumps haunch filling head walls, In well Kerb & Steining or any other component	1,35,044	Sqm	383.91	5,18,44,742.04
47	NS-6	Supplying and laying of 150mm thick well graded stones aggregate/gravel as base layer over the slopes of embankment with manual dressing with water compaction including the cost of supply of all material, labour, lead, lift, tools, plants, crossing of tracks etc. complete as per approved drawings and technical specifications.	28,021	Cum	1,117.77	3,13,21,033.17
S. No.

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S	Sub-Schedule-'B11' Well foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)							
	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
	NS-7	Providing Boulder Backing behind wing wall, return wall, retaining wall with hand packed boulders & cobbles not less than 15cm in any direction & not less than 15kg (except smaller boulders required for filling voids) including all lead, lift, labour & other incidental charges as complete work in all respect. Cost of boulder/cobbles is included in this item.	25,562	Cum	1,244.18	3,18,03,729.16		
	NS-8	Providing and fixing of 75mm dia PVC pipe for weep holes in abutments, Wing Wall, Return Wall, Face wall, retaining wall etc. at suitable intervals as directed by the Engineer-in-charge.	1,500	Meter	232.42	3,48,630.00		
	NS-9A	Manufacturing, transportation (including loading & unloading) and installation in position (including joining and grouting) M-35 or higher grade precast reinforced cement concrete segmental Platform fencing as shown in the drawing and as per the directions of the Engineer. precast reinforced cement concrete segmental Platform fencing shall be factory-made, and steam cured in a controlled environment with arrangements for handling/transportation. Dimensional tolerances shall be as per IS: 6408 (part 2) for PC Class 6.	150	Cum	27,689.46	41,53,419.00		
		Notes:- 1. This item includes cost of cement, all the materials, labour, machinery, tools & plant etc. complete required for manufacture of precast segments except Steel Reinforcement which shall be paid separately under <b>Sub-Schedule 'B2'</b> .						
		2. Excavation of soil for foundation shall be paid separately under relevant item of this Sub Schedule.						
		3. Payment of M20 concrete used for fixing of Precast RCC Posts shall be made under relevant item of <b>Sub-Schedule 'B11'</b> .						
		4. 60% of the rate shall be paid on receipt of the precast retaining wall segments at site and balance 40% will be paid on fixing the same in position in satisfactory condition.						

S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
51	NS-9B	Manufacturing, transportation (including loading & unloading) and installation in position (including joining and grouting) M-35 or higher grade precast reinforced cement concrete U-shaped drain/duct with cover as per the directions of the Engineer. Precast reinforced U-shaped drain shall be factory-made, and steam cured in a controlled environment with inserts for handling/transportation. Dimensional tolerances shall be as per IS: 6408 (part 2) for PC Class 6.	775	Cum	27,567.34	2,13,64,688.50
		Notes:-				
		1. This item includes cost of all the materials, labour, machinery, tools & plant etc. complete required for manufacture of precast segments except Steel Reinforcement which shall be paid separately under relevant item of <b>Sub-Schedule B2</b> .				
		2. Excavation of soil for foundation shall be paid separately under relevant item of this Sub Schedule.				
		3. Before placing of wall segments, 20 mm thick stiff 1:3 cement mortar bedding layer shall be laid over a levelling course of 50 mm thick of M20 concrete. Payment for M20 concrete shall be made under relevant item of <b>Sub-Schedule B11</b> and for mortar under relevant item of <b>Sub-Schedule B12</b> .				
		4. 60% of the rate shall be paid on receipt of the precast retaining wall segments at site and balance 40% will be paid on fixing the same in position in satisfactory condition.				
52	NS-9C	Manufacturing, Supplying & Fixing of Pre Fabricated RCC Coping Stone of Size 530mm x 1125mmx 100mm thick as per top face designed and approved by site engineer with M-30 Grade RCC with 8mm dia. tor steel at 150mm c/c both ways and manufactured by vibro compaction process using jointless FRP/GRP Steel moulds of required size and shape & design.	8264	Each	1,443.30	1,119,27,431.20
		Note- The item includes cost of cement, reinforcement, transportation etc. under layer cement mortar of 1:3 cement mortar to be laid as per site condition & should be paid separately under relevant item of Sub-Schedule.				

5	Sub-Schedule-'B11' Well foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)							
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
53	NS-10	<ul> <li>Designing, Providing and erection of specified grade precast RCC Facia Panel of thickness 180 mm made with M-35 Grade Concrete Batching plant, Transit Mixer, Concrete Pump and Vibrator for retaining earth with all element and accessories including reinforcing element complete as per approval drawing and Section 3100 of MORTH specification including all material labour machinery etc. (Scope of work including designing, getting approval, casting in yad, curing, storing, Transporting, lifting, placing in position, erection with all necessaries fasteners etc complete). The cost of cement &amp; steel are included in this item &amp; no separate payment shall be paid whatsoever. The rate also include cost for excavation, foundation, reinforcing element, fasteners, drainage layer, drain pipe, coping beam and other accessories for which nothing extra shall be paid.</li> <li>Mode of Payment:</li> <li>1- Casting of RE Panel : 60%</li> <li>2- Erection &amp; fixing : 35 %</li> <li>3- Final Bill: 5%</li> </ul>	4,400	Sqm	6,193.07	2,72,49,508.00		
54	NS-11	Providing Placing & Compacting to desired density approved backfill material in layers as per approved methodology including testing of reinforced fill portion in approaches between reinforced soil (RS) wall panels as per approved drawing as per Section 3103 of MORT&H Specification .The soil should be predominantly coarse grained, Not more than 10 % of particles should pass 75 micron sieve. The item shall be measured and paid for the finished volume of backfill and subgrade placed in position excluding the volume of filter media at base and behind the RS RE Wall	13,860	Cum	380.95	52,79,967.00		

S	Sub-Schedule-'B11' Well foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)						
S. No.	USSOR Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)	
55	NS-12	Providing & constructing of RCC Crash Barrier of M35 at the edge of road , approaches to bridge structures and medians, constructed with specified grade of concrete using batching plant, transit mixer, concrete pump and vibrator with 450 mm long at expansion joint filled with premolded asphalt filler board, keyed to the structure on which it is built and installed as per design and dimension in the approved drawing and at location directed by the engineer, all as specified as per Section 809 of MORT&H Specification including all material labour, scaffolding etc.	396	Cum	7,139.68	28,27,313,28	
56	NS-12 A	Integrity Pile test using cross hole sonic logging as per the provision of ASTM standard D6760, as per drawings & technical specifications.	400	Nos.	5,831.26	23,32,504.00	
Total Estimated Value of Sub-Schedule 'B11' Well foundation, Concrete Superstructure, RE wall & Other miscellaneous Works (USSOR Based & NS items)						68,84,88,597.04	
	(1220112						

Attachment 3 of Corrigendum No. 2

## 6.12 Sub-Schedule 'B12': Road and Building Works (DSR Based & NS items)

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
57	2.27	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete	792	Cum	2,278.16	18,04,302.72		
58	3.8	1:3 (1 Cement : 3 coarse sand (zone-III)) cement sand leveling mortar. Item will be used as below precast item. Note:- cost of cement is included in the item.	79	Cum	5,296.04	4,18,387.16		
59	4.17	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling & dressing & finishing the top smooth.	528	Sqm	718.54	3,79,389.12		
60	4.6	Providing and fixing at or near ground level precast cement concrete in kerbs, edgings etc. as per approved pattern and setting in position with cement mortar 1:3 (1 Cement : 3 coarse sand), including the cost of required centering, shuttering complete						
60a	4.6.1	1:1 <sup>1</sup> / <sub>2</sub> :3 (1 Cement: 1 <sup>1</sup> / <sub>2</sub> coarse sand(zone-III) derived from natural sources: 3 graded stone aggregate 20 mm nominal size derived from natural sources)	20	Cum	8,570.65	1,71,413.00		
61	5.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level						

**Description of Item** 

DSR-

2021

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No.

Sub Schedule- B12 Road and Building Works (DSR Based & NS items)									
Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)						
222	Cum	8,816.84	19,57,338.48						
0	rks (DSR Based Quantity 222	rks (DSR Based & NS ite       Quantity     Unit       222     Cum	rks (DSR Based & NS items)         Quantity       Unit       Estimated Rate (INR)         222       Cum       8,816.84						

	Item No.					
61a	5.1.2	1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size de rived from natural sources)	222	Cum	8,816.84	19,57,338.48
62	5.3	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources).	236	Cum	11,299.38	26,66,653.68
63	5.9	Centering and shuttering including strutting, propping etc. and removal of form for				
63a	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete	1,500	Sqm	324.61	4,86,915.00
63b	5.9.2	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	1,300	Sqm	705.78	9,17,514.00
63c	5.9.3	Suspended floors, roofs, landings, balconies and access platform	6,000	Sqm	808.03	48,48,180.00
63d	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	2,830	Sqm	641.27	18,14,794.10
63e	5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts	1,730	Sqm	847.77	14,66,642.10
63f	5.9.19	Weather shade, Chajjas, corbels etc., including edges	1,000	Sqm	859.05	8,59,050.00

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
64	5.33	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. Note:- Extra cement up to 10% of the minimum specified cement content in design mix is more than 1.10 times of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement						
64a	5.33.1	All works upto plinth level						
64aa	5.33.1.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	282	Cum	9,153.73	25,81,351.86		
64b	5.33.2	All works above plinth level upto floor V level						
64ba	5.33.2.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	776	Cum	10,863.93	84,30,409.68		
65	6.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:						
65a	6.1.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	288	Cum	7,018.57	20,21,348.16		
66	6.4	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :						

		Sub Schedule- B12 Road and Building Wo	orks (DSR Base	d & NS it	ems)	
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
66a	6.4.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	1,191	Cum	8,736.93	1,04,05,683.63
67	8.31	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete	170	Sqm	1,121.00	1,90,570.00
68	9.1	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).				
68a	9.1.3	Kiln seasoned and chemically treated Hollock wood	5	Cum	78,216.12	3,91,080.60
69	9.5	Providing and fixing panelled or panelled and glazed shutters for doors, windows and clerestory windows fixing with butt hinges of required size with necessary screws, excluding panelling which will be paid for separately, all complete as per direction of Engineer-in-charge. (Note:- Butt hinges and necessary screws shall be paid separately)				
69a	9.5.2	Kiln seasoned and chemically treated hollock wood				
69aa	9.5.2.1	35 mm thick shutters	800	Sqm	2647.89	21,18,312.00
70	9.7.7	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick: Float glass panes				

S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
70a	9.7.7.1	4 mm thick glass pane (weight not less than 10kg/sqm).	134	Sqm	1,999.76	2,67,967.84
71	9.21	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters				
71a	9.21.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	928	Sqm	2,124.83	19,71,842.24
72	9.48	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.				
72a	9.48.1	Fixed to steel windows by welding	600	Kg	190.79	1,14,474.00
72b	9.482	Fixed to openings/ wooden frames with rawl plugs screws etc	400	Kg	208.40	83,360.00
73	9.51	Providing and fixing fly proof galvanized M.S. wire gauge to windows and clerestory windows using wire gauge with average width of aperture 1.4 mm in both directions with wire of dia 0.63 mm all complete.				
73a	9.51.1	With 2nd class teak wood beading 62X19 mm	50	Sqm	1,227.94	61,397.00
74	9.53	Providing 40x5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embedding in cement concrete block 30x10x15cm 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size).	80	Each	204.92	16,393.60

stainless steel screws etc. complete :

75

9.70

Providing and fixing IS: 12817 marked stainless steel butt hinges with

		Sub Schedule- B12 Road and Building Wo	orks (DSR Base	ed & NS it	ems)	
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
75a	9.70.2	100X58X1.90 mm	200	Each	100.67	20,134.00
75b	9.70.3	75x47x1.80 mm	50	Each	90.81	4,540.50
76	9.83	Providing and fixing aluminium die cast body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 35 kg and door width upto 700 mm), with necessary accessories and screws etc. complete	22	Each	1,081.15	23,785.30
77	9.96	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete				
77a	9.96.1	300x16 mm	72	Each	274.44	19,759.68
78	9.97	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete				
78a	9.97.1	300x10 mm	76	Each	124.02	9,425.52
78b	9.97.4	150x10 mm	20	Each	77.34	1,546.80
79	9.100	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete				
79a	9.100.1	125 mm	108	Each	63.30	6,836.40
80	9.101	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete				

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
80a	9.101.2	Twin rubber stopper	42	Each	65.62	2,756.04		
81	9.118	Providing and fixing to existing door frames.						
81a	9.118.2	30 mm thick factory made Polyvinyl Chloride (PVC) door shutter made of styles and rails of a uPVC hollow section of size 60x30 mm and wall thickness 2 mm ( $\pm$ 0.2 mm), with inbuilt decorative moulding edging on one side. The styles and rails mitred and joint at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 25x20 mm and 1 mm ( $\pm$ 0.1 mm) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x30 mm and 2 mm ( $\pm$ 0.2 mm) wall thickness fixed to the shutter styles by means of plastic/ galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm ( $\pm$ 0.1 mm) wall thickness . The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in- charge.	150	Sqm	2,117.25	3,17,587.50		
82	9.119	Providing and fixing factory made P.V.C. door frame of size 50x47 mm with a wall thickness of 5 mm, made out of extruded 5mm rigid PVC foam sheet, mitred at corners and joined with 2 Nos of 150 mm long brackets of 15x15 mm M.S. square tube, the vertical door frame profiles to be reinforced with 19x19 mm M.S. square tube of 19 gauge, EPDM rubber gasket weather seal to be provided through out the frame. The door frame to be fixed to the wall using M.S. screws of 65/100 mm size, complete as per manufacturer's specification and direction of Engineer- in-Charge.	50	Metre	430.34	21,517.00		

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
83	10.13	Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer						
83a	10.13.1	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of C.C. 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	1,200	Kg	120.85	1,45,020.00		
84	10.14	Providing and fixing pressed steel door frames conforming to IS: 4351, manufactured from commercial mild steel sheet of 1.60 mm thickness, including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25 mm, or base ties of 1.60 mm, pressed mild steel welded or rigidly fixed together by mechanical means, including M.S. pressed butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge:						
84a	10.14.1	Profile B						
84aa	10.14.1.1	Fixing with adjustable lugs with split end tail to each jamb	500	Meter	468.55	2,34,275.00		
85	10.17	Providing and fixing M.S. fan clamp type I or II of 16 mm dia M.S. bar, bent to shape with hooked ends in R.C.C. slabs or beams during laying, including painting the exposed portion of loop, all as per standard design complete	48	Each	195.22	9,370.56		
86	10.25	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel						

primer using structural steel etc. as required

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
86a	10.25.2	in gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	20,888	Kg	150.00	31,33,200.00		
87	10.26	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer						
87a	10.26.1	M.S. tube	404	Kg	165.65	66,922.60		
87b	10.26.3	G.I. pipes	468	Kg	189.95	88,896.60		
88	10.29	Providing & fixing fly proof wire gauze to windows, clerestory windows & doors with M.S. Flat 15x3 mm and nuts & bolts complete						
88a	10.29.1	Galvanised M.S. Wire gauze with 0.63 mm dia wire and 1.4 mm aperture on both sides	240	Sqm	771.82	1,85,236.80		
89	11.20	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand)						
89a	11.20.1	Light shade pigment using white cement	1,200	Sqm	1,299.78	15,59,736.00		
90	11.21	Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding, and joints filled with acid and/or alkali resisting cement as per IS : 4457, complete as per the direction of Engineer-in- Charge						
90a	11.21.1	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)						

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
90aa	11.21.1.1	Acid and alkali resistant tile	320	Sqm	1,597.46	5,11,187.20		
90b	11.21.2	In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)						
90ba	11.21.2.1	Acid and alkali resistant tile	380	Sqm	1,726.33	6,56,005.40		
91	11.27	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	1,200	Sqm	2,148.87	25,78,644.00		
92	11.38	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sq.m including pointing the joints with white cement and matching pigments etc., complete	120	Sqm	1,166.96	1,40,035.20		
93	11.41	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete						
93a	11.41.2	Size of Tile 600x600 mm	1,462	Sqm	1,493.31	21,83,219.22		

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
94	11.55	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :						
94a	11.55.1	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	200	Sqm	2,730.05	5,46,010.00		
95	12.31	Providing 10 mm thick plaster of Paris (gypsum anhydrous) ceiling up to a height of 5 m above floor level, over first class kail wood strips 25x6 mm with 10 mm gap in between and reinforced with rabbit wire mesh fixed to wooden frame (frame work to be paid separately):						
95a	12.31.1	Flat surfaces	1,200	Sqm	1,498.17	17,97,804.00		
96	12.33	Extra for providing plaster of Paris (Gypsum anhydrous) ceiling above 5 metres height from floor level.	700	Sqm	230.75	1,61,525.00		
97	12.41	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.						
97a	12.41.2	110 mm diameter	50	Metre	337.05	16,852.50		
98	12.42	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS						

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
		: 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.						
98a	12.42.1	Coupler						
98aa	12.42.1.2	110 mm	12	Each	126.44	1,517.28		
98b	12.42.5	Bend 87.5°						
98ba	12.42.5.2	110 mm bend	10	Each	139.14	1,391.40		
99	12.43	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.						
99a	12.43.2	110 mm	30	Each	326.25	9,787.50		

S.	DSR-	Description of Item	Quantity	Unit	Estimated Rate	Estimated Amount
No.	2021 Item No.					
100	12.45	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with				

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
100a	12.45.1	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) :2011 (Board with BIS Certification marks)	1,000	Sqm	1,207.97	12,07,966.36		
101	13.1	12 mm cement plaster of mix						
101a	13.1.2	1:6 (1 cement: 6 fine sand)	7,400	Sqm	297.26	21,99,724.00		
102	13.2	15 mm cement plaster on the rough side of single or half brick wall of mix						
102a	13.2.2	1:6 (1 cement: 6 fine sand)	2,840	Sqm	341.85	9,70,854.00		
103	13.16	6 mm cement plaster of mix						
103a	13.16.1	1:3 (1 cement : 3 fine sand)	2,720	Sqm	266.74	7,25,532.80		
104	13.42	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gms/litre, of approved manufacturer, of required shade and colour complete, as per manufacturer's specification						
104a	13.42.1	Two or more coats on new work	5,560	Sqm	97.77	5,43,601.20		
105	13.45	Finishing walls with textured exterior paint of required shade						
105a	13.45.1	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm	3,340	Sqm	258.26	8,62,588.40		
106	13.47	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade						
106a	13.47.1	New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	4,100	Sqm	171.14	7,01,674.00		

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
107	13.48	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :						
107a	13.48.2	Painting wood work with Deluxe Multi Surface Paint of required shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @0.75 ltr/10 sqm of approved brand and manufacture	448	Sqm	152.74	68,427.52		
107b	13.48.3	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/ 10 sqm over an under coat of primer applied @ 0.80 ltr/ 10 sqm of approved brand and manufacture	1,060	Sqm	147.63	1,56,487.80		
108	13.50	Applying priming coat:						
108a	13.50.1	With ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood)	508	Sqm	64.78	32,908.24		
109	13.60	Wall painting with acrylic emulsion paint of approved brand and manufacture to give an even shade						
109a	13.60.1	Two or more coats on new work	4,340	Sqm	145.31	6,30,645.40		
110	13.61	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade						
110a	13.61.1	Two or more coats on new work	1,222	Sqm	138.56	1,69,320.32		
111	13.80	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete	13,360	Sqm	130.55	17,44,148.00		

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
112	16.54	Providing and laying Dense Graded Bituminous Macadam using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge						
112a	16.54.1	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	3,145	Cum	10,555.18	3,31,96,041.10		
113	16.57	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge						
113a	16.57.1	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity	1,479	Cum	11,459.03	1,69,47,905.37		

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
114	16.69	Providing and laying at or near ground level factory made kerb stone of M- 25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in- charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge)	2,614	Cum	9,079.68	2,37,34,283.52		
115	16.75	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-Incharge. (The panel shuttering work shall be paid for separately). (Note:- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).	12,938	Cum	8,725.50	11,28,90,519.00		
116	16.78	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge						
116a	16.78.2	With material conforming to Grade-II (size range 53 mm to 0.075 mm ) having CBR Value-25	22,374	Cum	2,925.86	6,54,63,191.64		

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
117	16.79	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	18,777	Cum	2,955.37	5,54,92,982.49		
118	16.80	Construction of dry lean cement concrete sub base over a prepared sub- grade with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per specifications, cement content not to be less than 150 Kg/cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, for all leads & lifts, laid with a mechanical paver, compacting with 8-10 tonne vibratory roller, finishing and curing etc. complete as per direction of Engineer in- charge	17,258	Cum	4,354.08	7,51,42,712.64		
119	16.90	Providing and laying tactile tile (for vision impaired persons as per standards) of size 300x300x9.8mm having with water absorption less than 0.5% and conforming to IS:15622 of approved make in all colours and shades in for outdoor floors such as footpath, court yard, multi modals location etc., laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge	2,000	Sqm	1,812.03	36,24,060.00		

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
120	16.91	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge.						
120a	16.91.1	60mm thick cement concrete paver block of M-35 grade with approved colour, design & pattern.	200	Sqm	982.80	1,96,560.00		
120b	16.91.2	80 mm thick C.C. paver block of M-30 grade with approved color design and pattern.	4,500	Sqm	1,065.92	47,96,640.00		
121	17.1	Providing and fixing water closet squatting pan (Indian type W.C. pan ) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:						
121a	17.1.1	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	5	Each	6,094.22	30,471.10		
122	17.2	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :						

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
122a	17.2.1	W.C. pan with ISI marked white solid plastic seat and lid	15	Each	5,840.39	87,605.85		
123	17.4	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :						
123a	17.4.1	One urinal basin with 5 litre white P.V.C. automatic flushing cistern	10	Each	5,553.99	55,539.90		
124	17.5	Providing and fixing white vitreous china flat back half stall urinal of size 580x380x350 mm with white PVC automatic flushing cistern, with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS : 2556, C.I. trap with outlet grating and other couplings in C.P. brass, including painting of fittings and cutting and making good the walls and floors wherever required :						
124a	17.5.1	Single half stall urinal with 5 litre PVC. automatic flushing cistern	8	Each	10,676.42	85,411.36		
125	17.7	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:						
125a	17.7.1	White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	20	Each	2,398.12	47,962.40		
126	17.1	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required :						

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)								
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)			
126a	17.10.1	Kitchen sink with drain board							
126aa	17.10.1.1	510x1040 mm bowl depth 250 mm	4	Each	6,333.61	25,334.44			
127	17.28	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.							
127a	17.28.2	Flexible pipe							
127aa	17.28.2.2	40 mm dia	12	Each	110.00	1,320.00			
128	17.29	Providing and fixing 100 mm sand cast Iron grating for gully trap.	30	Each	47.70	1,431.00			
129	17.31	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	4	Each	1,487.52	5,950.08			
130	17.32	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :							
130a	17.32.4	Rectangular shape 1500x450 mm	4	Each	1,915.54	7,662.16			
131	17.35	Providing and fixing soil, waste and vent pipes:							
131a	17.35.1	100 mm dia							
131aa	17.35.1.1	Sand cast iron S&S pipe as per IS: 1729	150	Metre	1,073.14	1,60,971.00			
131b	17.35.2	75 mm diameter							
131ba	17.35.2.1	Sand cast iron S&S pipe as per IS: 1729	100	Metre	981.96	98,196.00			

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)								
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)			
132	17.38	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.							
132a	17.38.1	100 mm dia							
132aa	17.38.1.1	Sand cast iron S&S as per IS - 1729	50	Each	559.42	27,971.00			
133	17.39	Providing and fixing plain bend of required degree.							
133a	17.39.1	100 mm dia							
133aa	17.39.1.1	Sand cast iron S&S as per IS - 1729	40	Each	435.30	17,412.00			
134	17.57	Providing and fixing collar:							
134a	17.57.1	100 mm							
134aa	17.57.1.1	Sand cast iron S&S as per IS - 1729	80	Each	421.23	33,698.40			
135	17.61	Cutting chases in brick masonry walls for following diameter sand cast iron/ centrifugally cast (spun) iron pipes and making good the same with cement concrete 1:3:6 (1 cement : 3 coarse sand :6 graded stone aggregate 12.5 mm nominal size), including necessary plaster and pointing in cement mortar 1:4 (1 cement : 4 coarse sand) :							
135a	17.61.1	100 mm dia	400	Metre	649.02	2,59,608.00			
135b	17.61.2	75 mm dia	400	Metre	466.13	1,86,452.00			
135c	17.61.3	50 mm dia	300	Metre	303.06	90,918.00			
136	17.71	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the	8	Each	154.16	1,233.28			

		Sub Schedule- B12 Road and Building Wo	orks (DSR Based	& NS it	ems)	
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
		same materials with snap fittings of approved quality and colour, weighing not less than 105 gms.				
137	17.73	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour.				
137a	17.73.2	600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms.	8	Each	632.84	5,062.72
138	18.10	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, i/c cutting and making good the walls etc.				
		Internal work - Exposed on wall				
138a	18.10.1	15 mm dia nominal bore	80	Metre	320.61	25,648.80
138b	18.10.2	20 mm dia nominal bore	50	Metre	393.55	19,677.50
138c	18.10.3	25 mm dia nominal bore	30	Metre	517.78	15,533.40
139	18.12	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc.				
		External work				
139a	18.12.1	15 mm dia nominal bore	60	Metre	281.98	16,918.80
139b	18.12.3	25 mm dia nominal bore	40	Metre	440.57	17,622.80
139c	18.12.6	50 mm dia nominal bore	20	Metre	689.60	13,792.00
139d	18.12.7	65 mm dia nominal bore	20	Metre	810.19	16,203.80

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
139e	18.12.8	80 mm dia nominal bore	40	Metre	968.84	38,753.60		
140	18.13	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete :including cutting and threading the pipe etc. complete:						
140a	18.13.1	25 to 40 mm nominal bore	40	Each	798.07	31,922.80		
140b	18.13.2	50 to 80 mm nominal bore	40	Each	1,595.57	63,822.80		
141	18.27	Providing and laying S&S centrifugally cast (spun) iron pipes (Class LA) conforming to IS - 1536 :						
141a	18.27.3	150 mm dia pipe	40	Metre	1,923.45	76,938.00		
142	18.35	Constructing masonry Chamber 120x120x100 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep ( inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate: 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating Cost of neat cement complete as per standard design :						
142a	18.35.1	With common burnt clay F.P.S. (non modular ) bricks of class designation 7.5	4	Each	25,708.77	1,02,835.08		
143	18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	20,000	Litre	10.22	2,04,400.00		

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
144	18.49	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931.						
144a	18.49.1	15 mm nominal bore	10	Each	457.70	4,577.00		
145	18.52	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.						
145a	18.52.1	15 mm nominal bore	8	Each	626.94	5,015.52		
146	18.54	Providing and fixing PTMT bib cock of approved quality and colour.						
146a	18.54.1	15 mm nominal bore, 86 mm long, weighing not less than 88 gms	10	Each	115.79	1,157.90		
147	18.57	Providing and fixing PTMT, push cock of approved quality and colour.						
147a	18.57.1	15 mm nominal bore, 98 mm long, weighing not less than 75 gms	18	Each	101.67	1,830.06		
148	18.58	Providing and fixing PTMT grating of approved quality and colour.						
148a	18.58.1	Circular type						
148aa	18.58.1.1	100 mm nominal dia	20	Each	35.00	700.00		
149	18.65	Providing and fixing PTMT soap Dish Holder having length of 138mm, breadth 102mm, height of 75mm with concealed fitting arrangements, weighing not less than 106 gms.	8	Each	101.99	815.92		
150	19.1	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :						
150a	19.1.2	150 mm diameter	108	RMT	623.40	67,327.20		

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
151	19.6	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :						
151a	19.6.5	450 mm dia. R.C.C. pipe	200	RMT	1,561.73	3,12,346.00		
151b	19.6.7	600 mm dia. R.C.C. pipe	200	RMT	2,211.64	4,42,328.00		
152	19.36	Providing and laying Non Pressure NP-4 class (Heavy duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete						
152a	19.36.5	1200 mm dia RCC pipes. (Laying by manual/mechanical means)	60	RMT	10,405.44	6,24,326.40		
153	21.1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately)						
153a	21.1.1	For fixed portion						
153aa	21.1.1.1	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	1,220	Kg	457.43	5,58,064.60		

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)							
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
153b	21.1.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)						
153ba	21.1.2.1	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	1,280	Kg	560.58	7,17,542.40		
154	21.3	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):						
154a	21.3.2	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	50	Sqm	1,397.29	69,864.50		
155	21.17	Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment).	800	Kg	591.20	4,72,960.00		
156	23.1	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants &						

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)								
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)			
		machineries required for the job, all complete as per direction of Engineer- in-charge, upto 90 metre depth below ground level.							
156a	23.1.1	All types of soil							
156aa	23.1.1.1	300 mm dia	150	Metre	624.09	93,613.50			
157	23.3	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.							
157a	23.3.2	150 mm nominal size dia	150	Metre	704.68	1,05,702.00			
158	23.4	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.	-						
158a	23.4.2	150 mm nominal size dia	150	Metre	718.80	1,07,820.00			
159	23.8	Gravel packing in tubewell construction in accordance with IS: 4097, including providing ravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	10	Cum	1,559.30	15,593.00			
160	23.90	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineer-in-charge.	3	Each	1,278.91	3,836.73			

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)								
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)			
161	23.12	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	72	Hour	966.42	69,582.24			
162	23.13	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of:							
162a	23.13.2	150 mm dia	4	Each	222.16	888.64			
163	23.14	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.							
163a	23.14.2	150 mm clamp	4	Each	1,696.34	6,785.36			
164	23.15	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).							

150 mm dia

23.15.2

164a

4

Each

297.05

1,188.20

	Sub Schedule- B12 Road and Building Works (DSR Based & NS items)								
S. No.	DSR- 2021 Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)			
165	26.65	Providing and fixing roofing consist of 0.8 mm thick galvanized steel deck sheet confirming to IS 277:1992 used as permanent shuttering over which MS wire mesh 3mm laid at 100x100 mm grid including edge trim covered with concrete. This metal deck will be supported on structural steel beam with shear studs. (Structural steel like Beam, column, joists etc. & concrete of different grade as per design will be paid separately).	5,000	Sqm	1,718.53	85,92,650.00			
166		For Unforeseen items not covered in this Sub Schedule taken from Delhi Schedule of Rate-2021		LS		20,00,000.00			
167		Items included in Delhi Schedule of Rate-(Horticulture & Landscaping) 2020		LS		10,00,000.00			
168	NS-13	Earthwork in filling with contractor's own earth of approved quality from borrow areas including all lead all lead, lift, ascent, descent, royalty, taxes, cess, compensation, crossing of nallahs /stream and other obstructions including mechanical compaction in layers with watering to 95% of MDD (as per IS 2720 part 8), handling, re-handling, dressing to the final profile with all labour, material, tools, plant, machinery and equipment, taxes, cess etc. as a complete job in accordance with the specification and drawings Note:- This item will be used for earthwork in filling for other than railway embankment work.	7,51,582	Cum	265.63	19,96,42,726.66			
		Total Estimated Value of Sub Schedule-B12 Road and	Building Work	s (DSR B	ased & NS items)	67,91,91,594.31			

## 6.13 Sub-Schedule 'B13': Bridge Bearing & Miscellaneous Structural Steel Works (USSOR Based & NS items)

	SUB SCHEDULE-B13 Bridge Bearing & Miscellaneous Structural Steel Works (USSOR Based & NS items)							
S.No.	USSOR/ NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)		
169	022100	Providing, fabricating and installing permanent casing pipe for bored piles for all diameters with specified thickness of steel plate including all labour, materials, pumping and bailing out water wherever required, complete as per technical specifications as directed by Engineer in charge. This will include the weight of plate only and no cognizance will be given for the fittings, i.e. rivets and welding etc	1,130	MT	92,869.73	10,49,42,794.90		
170	023030	Supplying, Fabrication, assembly, erection & placing in position the cutting edge of well curb with structural steel including MS sheet/Plates of specified thickness for pier/abutment complete as per approved plans and as per direction of Engineering In charge including all operations like cutting, bending, straightening, drilling holes, bolting, riveting, welding, threading, jointing of steel sections including outer and inner places liners and skin plates, stiffeners, hooks, bottle nuts, bond rods etc. as per design including all ascent, descents, leads, lifts, handing, re-handling, all other obstructions whatsoever, diverting channels, pumping / bailing out of water wherever required including cost of steel such as flats, sheets, angles, steel bars etc. with all labour and material as a complete job	117	MT	1,03,043.33	1,20,56,069.61		
171	031090	<ul> <li>Design, manufacturing, supplying and fixing in position elastomeric bearing true to line and level conforming to IS:3400, IS:226, BS-5400 under prestressed concrete girders/ Steel Girders, for Precast as well as cast-in-situ girders as per approved drawing. The rate shall include cost of load test of one no. bearing from Railway approved firms and all fixing materials, equipments, machineries, labour, taxes, loading, unloading, leading, lifting etc. complete. Rates include getting the drawing approved from Railway and cost of inspection during manufacturing from railway approved organization.</li> <li>Notes :</li> <li>1. The rate is for finished item complete and paid only after fixing in position below the girder.</li> <li>2. The volume shall be given in the drawing and no deduction shall be made for inserted</li> </ul>	5,52,960	Cu.Cm.	1.72	9,51,091.20		

SUB SCHEDULE-B13 Bridge Bearing & Miscellaneous Structural Steel Works (USSOR Based & NS items)						
S.No.	USSOR/ NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
172	041060	Providing and fixing railing used in rows for footpath or anti-crash barrier railing with B class G.I. pipe 65/50 mm nominal dia including cost of M.S. angle and channels in vertical posts, welding / bolting, priming painting with one coat ready mix Zinc Chromate conforming to IS:104 with DFT of 25-30Microns, followed by one coat of Zinc Chrome red oxide conforming to IS:2074 with DFT of 25 Microns with all material, labour, T&P as a complete job.	19,815	Kg	107.14	21,22,979.10
173	041080	Providing and fixing various size HTS holding down bolts conforming to IS:1364 in concrete column or in other structures with proper nuts, bolts, washers/plates, grouting of holes with all material, labour, T&P as a complete job. Note: Cement used in grouting will be paid separately under relevant item.	2,000	Kg	164.54	3,29,080.00
	SUB SCHEDULE-B13 Bridge Bearing & Miscellaneous Structural Steel Works (USSOR Based & NS items)					
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S.No.	USSOR/ NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
174	041180	Design, supply and fixing 300MT capacity Spherical Bearing in position true to line and level consisting of set of concave and convex mating steel backing plate with a low friction sliding interface, flat sliding elements ,guides and restraining rings; with all components conforming to approved drawing and technical specifications & Bridge Code including grouting of holes for anchor bolts and underside of baseplate with approved non-shrink epoxy grout with all material, labour, T&P as a complete job. Note: Sliding surface with PTFE or UHMWPE low friction thermoplastic material and steel for backing plate of Mild steel in accordance to IS:2062 grade-B. Cast steel in accordance with IS 1030 Grade 280-520W. Stain less steel in accordance with AISI 304/316.Low friction thermo -plastic sliding PTFE material either pure polytetrafluroethalyne (PTFE) Or Ultra High Molecular weight Polythylene (UHMWPE). Austanitic steel is of stainless steel for the sliding interface shall be in accordance with AISI 316L or O2 Cr17 NI12 of IS-6911. The thickness of the stain less steel sheet shall be 3mm minimum. The stainless steel sheet shall be attached to its backing plate either by screwing/riveting or by continuous fillet weld. Hard chromium plated surface shall be entire curved surface of the convex steel plate mating with hard chromium plated concave sliding surface. The thickness of the hard chromium plating shall be at least 100 microns and the final surface roughness of the plate distrace shall not exceed 3 microns. Bearing manufacturer shall give the guarantee for satisfactory performance of bearing for period specified				
174a	041181	Spherical Fixed Bearing	99	Each	1,21,368.15	1,20,15,446.85
174b	041182	Spherical Free Float Bearing	99	Each	1,32,515.01	1,31,18,985.99
174c	041183	Spherical Slide Guide (L) Bearing	99	Each	1,33,005.93	1,31,67,587.07
174d	041184	Spherical Slide Guide (T) Bearing	99	Each	1,32,746.02	1,31,41,855.98

	SUB SCHEDULE-B13 Bridge Bearing & Miscellaneous Structural Steel Works (USSOR Based & NS items)						
S.No.	USSOR/ NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)	
175	041390	Supplying fabricating and erecting welded and/or bolted and/or riveted steel work in built up sections, trusses and framed work, staging, racks etc. for Steel Structures other than bridge girders, using RSJ, tees, angles and channels/flats, plates, gussets, round or square bars, cleats, bolts etc., with contractors own steel including cutting, bending, straightening, drilling, riveting, hoisting, fixing, erecting, welding, bolting etc., with Providing stiffeners wherever required as per approved drawing including applying a priming coat of a approved steel primer with all contractor's materials, labour, tools & plants, lead & lift including crossing of tracks if required etc., complete as per specification and as directed by Engineer- in-charge.	572	MT	1,04,586.55	5,98,23,506.60	
176	191260	Supplying & fixing MS chequered plates 6 to 8mm thick between guard rails on unballasted deck bridge for gang pathway, overlapping at regular intervals of 2m to 2.5m with rail screws or bolts duly drilling holes in chequered plate, as directed [Note : Overlapping of chequered plates shall not fall in between sleepers]	5	МТ	93,754.26	4,68,771.30	
177	NS-14	Construction of Mild Steel pipe of 323.9 mm outer diameter in the embankment at approximately 500m interval (except in station yards) for crossing utilities in future as shown in drawings	100	RMT	3,909.00	3,90,900.00	
178	NS-15	Supplying, fabrication and fixing pathway on Open Web Girder bridges & Composite with hollow steel, rolled and chequred plate including welding / bolting, priming painting with one coat ready mix Zinc Chromate conforming to IS:104 with DFT of 25-30Microns, followed by one coat of Zinc Chrome red oxide conforming to IS:2074 with DFT of 25 Microns with all material, labour, T&P as a complete job as RDSO drawing No. CBS 0045 & CBS 0046	1,035	МТ	1,16,754.26	12,08,40,659.10	
179	NS-16	Supplying and fixing M.S. Angles 100mmx 100mm x 10mm size conforming to IS:2062 in expansion joint of Composite girder bridges including provision of 10mm dia dowel bar & 12mm dia anchor bolts at 150 mm centre to centre ,and 250mm wide GI plate over the top of angles as per relevant RDSO standard drawing with all material, labour, T&P as a complete job.	263	Each	6,321.84	16,62,643.92	

		SUB SCHEDULE-B13 Bridge Bearing & Miscellaneous Structur	ral Steel Wo	rks (USSOR I	Based & NS item	s)
S.No.	USSOR/ NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
180	NS-17	<ul> <li>supplying, fabricating, transportation and fixing galvanized H-Beam sleepers as per RDSO drawing RDSO/B/1636/4/R &amp; RDSO/B/1636/5 with latest alteration and specifications thereto complete with all fittings and fixtures including the cost of all steel sections, all fittings and fixtures, elastomeric pad, galvanized bolts, nuts, washer, split pin, fish plates 1m and 0.6m long along with fish bolts and nuts for 60Kg running rail and 52Kg gaurd rail respectively, track fittings and fastenings (Zero Toe Load Fastening) for 60 kg running rail and 52 Kg guard rail as per RDSO drg -RDSO/T-8759 to RDSO/T8765. labour, lead, lift, plants and equipments including galvanized work of full steel components complete in all respects as per approved drawing and technical specifications &amp; as per direction of Engineer on Open Web Girder(OWG) bridges .The rate is also inclusive of the cost of supply of approved quality of epoxy/adhesive and fixing of elastomeric pads with different components of steel sleepers &amp; girder in accordance with approved drawings. The steel to be supplied by the contractor for fabrication of steel H-Beam sleepers shall conform to IS-2062-2006, Grade B0 only. The rate is also inclusive of inspection charges of components of sleepers including all fixtures &amp; fastening, galvanization etc. from the reputed laboratory/organization. Elastomeric pad plate and other track fittings shall be procured from RDSO approved source.</li> <li>Note: Payment under this item shall be made in following manner;</li> <li>i. 75% of the rate shall be paid after fabrication, galvanization and transportation of inspection certificate of the agency nominated by Engineer.</li> <li>ii. 10% of the rate will be paid after supply of fittings to the site and submission of inspection certificate of the agency nominated by Engineer.</li> <li>iii. 10% of the rate will be paid after fixing H Beam sleepers to the girder in satisfactory manner.</li> <li>iv. In case fixing is not required, then balance payment will be released on handing</li></ul>	135	Each	30,507.75	41,18,546.25

	SUB SCHEDULE-B13 Bridge Bearing & Miscellaneous Structural Steel Works (USSOR Based & NS items)					
S.No.	USSOR/ NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
181	NS-18A	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners, stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	13,789	Kg	670.60	92,46,903.40
182	NS-18B	Manufacturing, Supplying and installation of Stainless Steel Benches as per RDSO Type Plan No. RDSO/WKS/2018/2 and specification.	32	Each	32,770.64	10,48,660.48
183	NS-19	Supply, fabrication and erection of bed plate of approved sizes(as per relevant RDSO drawing No. RDSO/B-11751/4R2, B-11753/5R1, B-11754/3R2 with upto date corrections), in exact position over bed block on pier/abutments by giving full and even bearing, setting them on the layer of free flow non-shrinkable grouting compound, scrapping or chipping of bed block, if required, fabrication and fixing of HD bolts of suitable sizes along with nuts, washers etc., drilling holes of required size, grouting of holes by epoxy mortar after fixing HD bolts with all labour, material, T & P as a complete job.				
183a	NS-19A	More than 12.2m and upto 18.3m clear span	11,000	Kg	232.35	25,55,850.00
184	NS-20	Supply and fixing of Metallic Guided Bearing in position true to line and level as per RDSO drawing No. RDSO/B-11754/3R2 and IRC:83 pt. III-2018 including supply & grouting of anchor bolts with approved non-shrinking epoxy grout with all material, labour, T&P as a complete job.	40	Each	51,007.25	20,40,290.00
		Total Estimated Value of Sub Schedule-B13 Bridge Bearing & Miscellaneous St	ructural Steel	Works (USSOR	Based & NS items)	37,40,42,621.75

## 6.14 Sub-Schedule 'B14': P Way Works-Ballastless Track, Rails & Special Sleepers (NS items)

	SUB SCHEDULE-B14 P Way Works-Ballastless Track, Rails & Special Sleepers (NS items)					
S.No.	NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)
185	NS-21	Construction of ballast less track on straight, curved track on bridges including linking of track with 60 Kg rails in LWR including, supply and fixing of rail fittings/ fastening, Construction of derailment guard, as per design approved by the Engineer. The item include supply and leading of all material, labour and tools & plants as a complete job including welding of track in LWR, destressing, drainage arrangement as per the approved drawing complete in all respect. Nothing extra shall be paid. Note:-	4,204	Rmt	53,976.33	22,69,16,491.32
		1- Supply of 60 Kg 350 R Rails shall be paid under item no NS-25 of this Sub-Schedule				
186	NS-22	Construction of Transition system of ballastless track to ballasted track on bridge approach including linking of track with 60 Kg rails in LWR including, supply and fixing of rail fittings/ fastening, Construction of derailment guard, as per design approved by the Engineer. The item include supply and leading of all material, labour and tools & plants as a complete job including welding of track in LWR, destressing, drainage arrangement as per the approved drawing complete in all respect. Nothing extra shall be paid. Note:- 1- Supply of 60 Kg 350 R Rails shall be paid under item no NS-25 of this Sub- Schedule	38	Each	11,65,886.50	4,43,03,687.00
187	NS-23	Linking of track on H- beam sleepers on Open Web Girder (OWG) bridges with 60 Kg running rail and 52 kg guard rail with track fittings/fastenings including leading of Running and guard rails from bridge approach and fixing of running rails & guard rails, bending of guard rails, notching, drilling of holes, cutting of rails etc., as directed and making track structure fit for sectional speed. (Rails will be supplied by Employer)	82	RTM	1,453.57	1,19,192.74
188	NS-24	Supplying at site of work including leading, loading, unloading and stacking of special PSC wider base sleepers for bridge approaches with provision of guard rails as per RDSO Drawing No. T-8673 to T-8680 for 60 Kg Rail.	4	Set	49,622.71	1,98,490.84

	SUB SCHEDULE-B14 P Way Works-Ballastless Track, Rails & Special Sleepers (NS items)						
S.No.	NS Item No.	Description of Item	Quantity	Unit	Estimated Rate (INR)	Estimated Amount (INR)	
189	NS-25	Supplying, Transporting of Rail 60 kg Class 'A', <b>R350</b> rail of 13/26 meter length as per IRS: T-12/2009 Specifications with latest amendments issued by RDSO.	11,767	Rmt	7,396.29	8,70,32,144.43	
190	NS-26	Supplying, Transporting of Rail 60 kg Class 'IU' as per IRS: T-12/2009 Specifications with latest amendments issued by RDSO.	164	Rmt	5,177.40	8,49,093.60	
r	Fotal Estin	nated Value of SUB SCHEDULE B14 P Way Works-Ballastless Track, Rai	ls & Specia	l Sleepers	(NS items)	35,94,19,099.93	

Total Estimated Amount of Schedule 'B'/R1: INR 9,43,92,31,404.71

## 7 Schedule 'C': General Electrical Services /R1

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
1	CONDUITS, WIRING, PLUGS, FAN AND DISTRIBUTION BOARDS				
1.1	Point Wiring By 3x2.5 sqmm Copper Cable (With Modular Switches & Socket) with Conduits.	Nos	1990	457.82	911,061.80
1.2	Supply of Material and Erection of 3x2.5 Sqmm Copper Cable along with Conduits.	m	13785	95.19	1312,194.15
1.3	Supply of Material and Erection of 3x6 Sqmm Copper Cable along with Conduits.	m	2120	144.89	307,166.80
1.4	Supply and Installation of 6A Modular Switch Socket.	Nos	1489	257.03	382,717.67
1.5	Supply and Installation of 16A Modular Power Switch Socket.	Nos	395	284.35	112,318.25
1.6	Supply and Installation of 02 Module Plate GI Box.	Nos	275	110.51	30,390.25
1.7	Supply and Installation of 04 Module Plate GI Box.	Nos	739	152.73	112,867.47
1.8	Supply and Installation of 08 Module Plate GI Box.	Nos	305	263.24	80,288.20

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
1.9	Supply and Installation of 12 Module Plate GI Box.	Nos	38	283.11	10,758.18
1.10	Supply, Installation, Testing and Commissioning (SITC) of 1200 mm Sweep Ceiling Fan with Fan Regulator.	Nos	559	2806.82	1569,012.38
1.11	Supply, Installation, Testing and Commissioning (SITC) of 300 mm Sweep Exhaust Fan.	Nos	95	1640.95	155,890.25
1.12	Supply, Installation, Testing and Commissioning of Double Door, with MCB TPN 440V, 8 Module Distribution Boards (DB).	Nos	54	20227.48	1092,283.92
1.13	Supply, Installation, Testing and Commissioning of Double Door, with DP MCB 40A, SP, 12 Way Distribution Board (DB).	Nos	70	9610.50	672,735.00
1.14	Supply, Installation, Testing and Commissioning of 440V, 3- phase Change Over Distribution Board.	Nos	6	26177.88	157,067.28
1.15	Supply, Installation, Testing and Commissioning of MCCB 200A, 440V, 3-phase, (4 Pole, 36 kA) with enclosure.	Nos	13	34903.83	453,749.79

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
1.16	Supply, Installation, Testing and Commissioning of Double Door, with 63A, 240V, MCB SP, 8 Way Distribution Board.	Nos	39	4805.25	187,404.75
1.17	Supply and Installation of Junction Box Size 390(H)x305(B)x170(D) mm.	Nos	32	3119.47	99,823.04
1.18	Supply and Installation of Metal Clad Plug Socket 20A, 240V, Single Phase with 32A MCB with enclosure.	Nos	65	1110.08	72,155.20
1.19	Supply and Installation of Metal Clad Plug Socket 16A, 240V, Single Phase with 20A MCB with enclosure.	Nos	38	888.06	33,746.28
1.20	Supply, installation, testing and commissioning of 25 mm dia GI Conduit.	m	1900	150.09	285,171.00
1.21	Supply, installation, testing and commissioning of 32 mm dia GI Conduit.	m	260	192.12	49,951.20
1.22	Design and Drawing of conduits, wiring, panels, distribution board, as built drawings, survey, calculation etc. for Item no. 1.1 to 1.21.	LS	LS		1,61,775.06
2	LT & HT CABLES AND LAYING				

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
2.1	Supply of 2 Core x 10 Sqmm, 1.1 kV Copper Cable.	m	10210	156.49	1597,762.90
2.2	Supply of 2 Core x 16 Sqmm, 1.1 kV Copper Cable.	m	22840	250.38	5718,679.20
2.3	Supply of 2 Core x 35 Sqmm, 1.1 kV Copper Cable.	m	7560	547.71	4140,687.60
2.4	Supply of 2 Core x 70 Sqmm, 1.1 kV Copper Cable.	m	3150	1095.40	3450,510.00
2.5	Supply of 2 Core x 95 Sqmm, 1.1 kV Copper Cable.	m	6930	1486.62	10302,276.60
2.6	Supply of 4 Core x 120 Sqmm, 1.1 kV Copper Cable.	m	5670	3755.66	21294,592.20
2.7	Supply of 4 Core x 240 Sqmm, 1.1 kV Copper Cable.	m	1890	7511.32	14196,394.80
2.8	Supply, Installation, Testing and Commissioning of 1.1 kV Heat Shrinkable Straight Through Joint.	Nos	63	2636.42	166,094.46
2.9	Supply of 3 Core x 120 Sqmm 11 kV Copper Cable.	m	1890	7486.70	14149,863.00

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
2.10	Supply and Installation of End Termination Kit for 3 core 70 to 185 Sqmm, 11 kV Copper Cable.	Nos	76	14965.57	1137,383.32
2.11	Laying of LT/ HT Cables (All Size) In Air/ Pipe/ Cable Tray/ Trench Etc.	m	63665	47.96	3053,373.40
2.12	Excavation and Refilling of Trench of Size 500 mm Wide and depth up to 1200 mm (as per design) for cables.	m	63665	133.87	8522,833.55
2.13	Excavation and Refilling of Trench of Size 500 mm Wide and depth up to 1200 mm with brick protection (as per design) for cables.	m	6615	340.87	2254,855.05
2.14	Supply and Laying of HDPE Pipe (90 mm outside dia).	m	26460	137.78	3645,658.80
2.15	Supply and Laying of HDPE Pipe (90 mm outside dia) at platform along with pit and cover.	m	7560	151.55	1145,718.00
2.16	Supply and Laying of HDPE Pipe (125 mm outside dia).	m	10080	476.31	4801,204.80
2.17	Supply and Laying of HDPE Pipe (160 mm outside dia).	m	1890	609.68	1152,295.20

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
2.18	Supply and Laying of GI Pipe (nominal bore 125 mm).	m	5670	1714.05	9718,663.50
2.19	Supply and Installation of Cable Route Marker.	Nos	665	2191.36	1457,254.40
2.20	Drilling of horizontal bore below Railway track or road by pushing method for laying of HDPE/GI pipe.	m	3780	2787.66	10537,354.80
2.21	Design and Drawing of cable layout, trench layout, route markers, cable and pipe schedule, as built drawings, survey, calculation etc. for Item no. 2.1 to 2.20.	LS	LS		24,48,869.11
3	LIGHTING, STREET LIGHT POLE AND HIGH MAST				
3.1	Provision of 22 Watt LED Tube Light with fitting.	Nos	1498	756.31	1132,952.38
3.2 (a)	Provision of 40 Watt LED Street Light with Fitting.	Nos	180	5239.09	943,036.20
3.2 (b)	Provision of 60 Watt LED Street Light with Fitting.	Nos	300	8382.54	2514,762.00
3.2 (c)	Provision of 40 Watt LED light with Bulkhead Light Fitting along with anti-theft provision.	Nos	120	4191.27	502,952.40

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
3.3	Provision of 120 Watt LED Street Light with Fitting.	Nos	220	13097.72	2881,498.40
3.4	Provision of Rechargeable Batten Type 240 Watt Emergency Light.	Nos	26	3212.28	83,519.28
3.5	Provision of Outdoor LED Type Flood Light Luminaries (200 Watt).	Nos	180	33441.04	6019,387.20
3.6	Supply, installation, testing and commissioning of 6 meter high cast iron decorative street light pole.	Nos	630	20000.00	12,600,000.00
3.7	Supply, Installation, Testing and Commissioning of (OFF Delay) Modular Digital Timers.	Nos	45	6595.91	296,815.95
3.8	Supply, Installation, Testing and Commissioning of 20 Meter High Mast.	Nos	15	539402.50	8091,037.50
3.9	Design and Drawing of high masts, street poles, digital timer, foundation, lighting lux calculations, earthing, calculation, survey, as built drawings etc. for Item no. 3.1 to 3.8.	LS	LS		8,13,330.87
4	ELECTRICAL EQUIPMENTS (PUMPS, AIR- CONDITIONERS, UPS, WATER COOLER, ETC.)				
4.1	Supply of Submersible Pump Set of 7.5 kW.	Nos	9	70013.25	630,119.25

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
4.2	Supply, Installation, Testing and Commissioning of Automatic Control Panel for 7.5 kW, 440V, 3- Phase Submersible Pump.	Nos	9	20239.71	182,157.39
4.3	Installation, Testing and Commissioning of Submersible Pump Set of 7.5 kW.	Nos	9	4552.07	40,968.63
4.4	Supply, installation, testing and commissioning of Mono-Block Pump 1.5 kW, 240V, complete with all accessories and control panel.	Nos	3	16119.75	48,359.25
4.5	Supply, Installation, Testing, Commissioning of 3 Core, 10 Sqmm Copper Flat Cable.	m	4300	201.16	864,988.00
4.6	Supply of Mono Block Pump 3.75 kW, 440V, 3-phase.	Nos	6	35006.63	210,039.78
4.7	Supply, Installation, Testing and Commissioning of Automatic Control Panel with DOL Starter for 3.75 kW, 440V, 3-Phase Pump.	Nos	6	10119.86	60,719.16
4.8	Installation, Testing and Commissioning of 3.75 kW, 440V, 3-phase Mono Block Pump Set.	Nos	6	2731.24	16,387.44

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
4.9	Supply and Installation of G.I. Pipe 40 mm nominal dia Medium Class with bends, fitting bends, sockets, flanges, delivery valve, non-return valve etc. as required.	m	300	278.94	83,682.00
4.10	Supply and Installation of G.I. Pipe 50 mm nominal dia Medium Class with bends, fitting bends, sockets, flanges, delivery valve, non-return valve etc. as required.	m	300	348.67	104,601.00
4.11	Supply and Installation of G.I. Pipe 65 mm nominal dia Medium Class with bends, fitting bends, sockets, flanges, delivery valve, non-return valve etc. as required.	m	300	453.27	135,981.00
4.12	Supply and Installation of G.I. Pipe 80 mm nominal dia Medium Class with bends, fitting bends, sockets, flanges, delivery valve, non-return valve etc. as required.	m	300	557.87	167,361.00
4.13	Supply, Installation, Testing and Commissioning of 32A, 240V, DP MCB with enclosure.	Nos	38	2189.38	83,196.44
4.14	Supply, Installation, Testing and Commissioning of Heavy Duty 5 Star, 1.5 Ton Split Inverter Type Air Conditioner, 240V.	Nos	36	50956.24	1834,424.64

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
4.15	Supply, Installation, Testing and Commissioning of Heavy Duty 5 Star, 2 Ton Split Inverter Type Air Conditioner, 240V.	Nos	62	67941.66	42,12,382.92
4.16	Supply, Installation, Testing and Commissioning of 2 KVA, 240 Volt, AC, Pure Sine Wave Online UPS cum Inverter.	Nos	12	55625.00	667,500.00
4.17	Supply, Installation, Testing and Commissioning of Water Cooler (150 Litre).	Nos	21	79503.00	1669,563.00
4.18	Supply, Installation, Testing and Commissioning of 5 star rated storage geyser 25 litre capacity.	Nos	12	4812.83	57,753.96
4.19	Design and Drawing of pumps, control panels, AC, water coolers, geyser, UPS, survey, calculation, as built drawings etc. for Item no. 4.1 to 4.18.	LS	LS		2,21,403.70
5	SUBSTATION 11kV/ 0.44 KV, HT PANEL, LT PANEL, APFC PANEL, DG SET AND EARTHING				
5.1	Supply, Installation, Testing and Commissioning Of 11kV/0.44kV, 1x250 kVA, Compact Substation (CSS).	Nos	7	1097570.91	7682,996.37

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
5.2	Supply, Installation, Testing and Commissioning of Automatic Power Factor Correction Panel (APFC panel) with 150 kVAR shunt capacitors complete in all respect.	Nos	6	114548.69	687,292.14
5.3	Supply, Installation, Testing and Commissioning of Indoor Type 400A LT Panel.	Nos	6	212247.75	1273,486.50
5.4	Supply, Installation, Testing and Commissioning of Indoor Type 160A LT Panel.	Nos	3	127348.65	382,045.95
5.5	Supply, Installation, Testing and Commissioning of Indoor Type 160A Essential LT Panel.	Nos	2	133716.08	267,432.16
5.6	Supply and Installation of 3 mm Thick Rubber Mat.	Sqm	190	3619.98	687,796.20
5.7	Supply, Installation, Testing and Commissioning of 125 kVA Capacity, Radiator Cooled Silent DG Set.	Nos	2	1264870.22	2529,740.44
5.8	Supply, Installation, Testing and Commissioning of Feeder Pillar.	Nos	18	115740.07	2083,321.26

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
5.9	Supply, Installation, Testing and Commissioning of Earth Electrode Complete with RCC chamber etc.	Nos	125	3820.91	477,613.75
5.10	Supply, Installation, Testing and Commissioning Earth Electrode buried in ground complete.	Nos	430	3629.87	1560,844.10
5.11	Supply and Installation of 40x5 mm Copper Strip on Surface or in Recess or in GI Pipe.	m	320	1719.61	550,275.20
5.12	Supply and laying of 40mm x 6mm GI Flat.	m	3450	139.34	480,723.00
5.13	Supply and installation of lightning conductor finials (air conductor) of 25 mm dia 1000 mm long GI pipe having a single copper prong.	Nos	45	1031.75	46,428.75
5.14	Supply and Installation of 5 mm Dia GI Wire.	m	14200	71.53	1015,726.00
5.15	Supply, Installation, Testing and Commissioning of Clean agent gas based panel flooding system for Electrical LT panels (Clean agent panel flooding system - Fire tube system) complete as required.	Nos	11	307089.32	3377,982.52

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
5.16	Design and Drawing of Sub-station, LT panels, APFC Panel, DG set, earthing, feeder pillar, fire trace system, as-build drawings, calculations, survey etc. for Item no. 5.1 to 5.15.	LS	LS		4,62,074.09
6	FIRE FIGHTING EQUIPMENTS				
6.1	Supply and Installation of Safety Items in the Substation.	Set	9	18769.54	168,925.86
6.2	Supply and installation of Set of 04 fire buckets (10 litre) capacity with one GI stand and GI cover.	Set	16	6785.55	108,568.80
6.3	Supply and installation of Portable fire extinguisher Dry Chemical Powder (5 kg).	Nos	104	1277.33	132,842.32
6.4	Supply and installation of Carbon dioxide fire extinguishers complete as required, capacity 4.5 kg.	Nos	104	6374.36	662,933.44
7	MISCELLANEOUS				
7.1	Supply, Installation, Testing and Commissioning of 25 Litre Fully Automatic with Auto Cut-Off RO water purification system.	Nos	15	17000.00	255,000.00

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
7.2	Supply, Installation, Testing and Commissioning of Single Sided LED Signage Board.	Sqm	100	26060.88	2606,088.00
7.3	Supply, Installation, Testing and Commissioning of Double Sided LED Signage Board.	Sqm	50	32322.59	1616,129.50
7.4	Dismantling of Rail Pole, Cable Pole, Overhead Line, Cable Tray Complete.	Nos	38	700.94	26,635.72
7.5	Supply and Installation of GI Cable Duct 40x60 mm (wxh) Minimum 2 mm Thick.	m	790	108.04	85,351.60
7.6	Supply and Installation of Stainless Steel Wire Mesh 25mm x 25mm (of 5 mm dia wire) Welded on GI Angle.	Kg	1575	88.86	139,954.50
7.7	Supply, Installation, Testing and Commissioning of GI Perforated Cable Tray of Size 150x50 mm with Thickness 2 mm.	m	1260	649.36	818,193.60
7.8	(1) Hiring of AC vehicle Bolero on monthly basis at Manesar/Gurugram for 2500 km per month. Two Vehicles shall be provided at all the time.	Vehicle Month	96	54019.58	5185,879.68
	(2) Extra charge beyond 2500 km per month per vehicle (96x500=48000).	km	48000	13.69	657,120.00

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
7.9	Spares				
7.9.1	Digital Earth Testers	Nos	4	9991.00	39,964.00
7.9.2	Earth Leakage Detector 1000 V	Nos	4	24849.00	99,396.00
7.9.3	Digital Insulation Tester 2.5 kV	Nos	4	8559.00	34,236.00
7.9.4	Digital Insulation Tester 0 – 1000 V	Nos	4	2175.00	8,700.00
7.9.5	Digital Vernier Caliper	Nos	10	12872.00	128,720.00
7.9.6	Portable Diesel Generating set, 3 kVA, 240 V AC	Nos	2	110400.00	220,800.00
7.9.7	Digital micrometer	Nos	10	9957.00	99,570.00
7.9.8	Digital Multi-meter	Nos	10	1490.00	14,900.00
7.9.9	Safety Helmet	Nos	20	995.00	19,900.00
7.9.10	Tool Kit Box	Nos	6	6603.00	39,618.00
7.9.11	Portable Grinder Electrically Operated	Nos	4	8463.00	33,852.00
7.9.12	Portable Electrical Drill	Nos	4	14914.00	59,656.00

Item No.	Item Description	Unit	Quantity	Unit Rate (INR)	Amount (INR)
1	2	3	4	5	6
7.10	Operation and Maintenance Manuals	LS	LS		222,743.03
7.11	Training to Staff	LS	LS		556,857.57
	Total of Schedule 'C'/R1				

Total Estimated amount of Schedule 'C'/R1: INR 21,79,22,047.40

# Tender No. HORC/HRIDC/C-6/2024 Attachment 4

## of

**Corrigendum No. 2** 

Part 2, Section VII 2: Employer's Requirements – Functional/R1 Section VII: Employer's Requirements Section VII-2: Functional /R1

#### **EMPLOYER'S REQUIREMENTS – FUNCTIONAL**

#### Objective

The objective of the Contract is design, construction, testing and commissioning of the permanent works by the Contractor (including without limitation, the design, construction and removal of the Temporary Works) and the rectification of defects appearing in Permanent Works in the manner and to the standards and within the time obligations, liabilities and risks which may be involved, the Contractor shall undertake the execution of the Works.

#### 1. **GENERAL**

- **1.1** The Works to be executed under Package C-6 is for design and construction of civil works and General Electrical Services work as per Employer's Requirements on 'Design Build' basis. All information available with the Employer has been furnished in Section VII-8: *Employer's Requirements*-Tender Drawings and Documents. The Works are to be designed by the Contractor. Any other site data and information required for design and execution of the Works shall be collected (through tests or otherwise), arranged, produced by the Contractor at his own cost. No claim from the Contractor whatsoever shall be entertained on the ground of certain information not being furnished in the Contract. The design and performance of the Permanent Works shall comply with the specific core requirements contained in these Employer's Requirements Functional.
- **1.2** The design of the Permanent Works shall be developed in accordance with these Employer's Requirements Functional and other requirements of the Contract.
- 1.3 The Permanent Works shall be designed and constructed to the highest standards available using proven up-to-date good engineering practices. The Specifications shall in no case specify standards which, in the Engineer's opinion, are less than or inferior to those described in the Outline Design Specifications (ODS) Civil & BLT and Outline Construction Specifications (OCS) -Civil & BLT. Construction shall be carried out employing the procedures established by the Contractor as per approved Quality Assurance and Quality Control plan and Environmental, Social, Health and Safety (ESHS) Plan.
- **1.4** The Contractor shall be responsible for obtaining all necessary approvals from the relevant Public/Government/Local/Statutory or any agencies in the design and construction of the Works at his own cost.
- 1.5 Employer's Requirements- Functional shall be read in conjunction with Employer's Requirements- Design, Construction, Outline Design Specifications (ODS)- Civil & BLT, Outline Construction Specifications (OCS) -Civil & BLT, General Electrical Services, Signalling & Telecom (S&T) Works and other requirements of the Contract. The price quoted by the Contractor shall include cost of Works as per Part 2-Employer's Requirements (General, Functional, Design- Civil & BLT, Construction Civil & BLT, Outline Design specifications (ODS) Civil & BLT, Construction Specifications (OCS) Civil & BLT, General Electrical Services, Signalling & Telecom (S&T) Works, Tender Drawings and Documents and Appendices).

- **1.6** Jurisdictional Sketch of Civil works under C-6 package is given in Section VII-8: Tender Drawings and Documents, Part 2, Employer's Requirements.
- 1.7 In C-6 Package, railway formation and structures at number of locations are extending beyond the HORC ROW into KMP/IR ROW. The scope under this Package includes all works as per the Employer's Requirements which are coming in the 'Work Areas' as defined in Sub Clause 3.1 of Appendix 3, Section VII-9: Employer's Requirements- Appendices. The Contractor shall take adequate protection measures for safety of KMP/IR during construction. In case of any damage to KMP/IR due to failure of the Contractor, Contractor shall have to repair/restore the KMP/IR to its original condition at his own cost to the satisfaction of KMP/IR.

## 2. SCOPE OF WORK

## 2.1 Scope under Lump Sum Price Schedule 'A'

2.1.1 The Lumpsum Scope of Work in brief is given below but the scope also includes all other requirements stipulated in various parts/sections of the Contract Document including Appendices and Annexures. The through Chainages mentioned in the Scope of the Works/Tender drawings can undergo some minor corrections, without any impact on the overall length/Scope of the Works.

## 2.1.2 Design of the Works

- i. Schedule 'A'
  - a) Design and drawings of all items of the Works under Schedule 'A' shall be carried out by the Contractor and the payment for the same is included in Cost Centre 'CD' of Schedule 'A'.
  - b) Design and drawings of all the temporary works, temporary road diversion shall also be carried out by the Contractor and the payment for the same is included in Cost Centre 'CD' of Schedule 'A'.
- ii. Schedule 'B'
  - a) Design and drawings of all items of the Works under Schedule 'B' shall be carried out by the Contractor and the payment for the same is included in Cost Centre 'CD' of Schedule 'A'.
  - b) Design and drawings of all the temporary works, temporary road diversion shall also be carried out by the Contractor and the cost for the same is deemed to be included in the rates quoted for the relevant item of Schedule 'B' unless otherwise specified in the Contract.
- iii. Payment matrix

Payment matrix for design of bridges, temporary diversions, permanent diversions, widening of existing roads, restoration of existing roads and diversion of canals / nallah is given in **Annexure F-7**.

## 2.1.3 Design and construction of railway formation

2.1.3.1 The Contractor shall design and construct railway formation for 32.5 t axle load as per updated RDSO Specifications "Comprehensive Guidelines and Specifications for Railway Formation-

Specification No. RDSO/2020/GE: IRS-0004" from Chainage 61500.0 m to Chainage 100453 m and from Chainage 101044 m to 123000 m for double tracks of Main line and from Chainage 513.085 m to Chainage 3144.666 m for Badsa-Sultanpur & from Chainage 616.193 m to Chainage 4000 m for Mandothi Jn -Asaudah connectivity single lines as per Employer's Requirements and shall include earthwork in cutting/filling, subgrade, prepared subgrade and blanketing including mechanical compaction. The Contractor shall arrange borrow areas for earthwork in embankment at his own cost.

2.1.3.2 Formation width in station yards (i.e. from platform end to a distance of 200m beyond outermost SRJs on both up and down sides at both ends of station) shall be increased by 1.0m to lay cables and other utilities.

## 2.1.4 Design and construction of slope protection work

The slope of embankment/cuttings shall be protected by vegetative cover comprising perennial turf forming grass in accordance with Section VII- 6 Outline Construction Specifications (OCS)-Civil & BLT. On embankments *of all heights*, vegetative cover shall be provided on the entire slope from ground level to the top of formation using coir netting as per IS:15869, IS:15872 and IRC: 56.

After Taking Over the Works, the Contractor shall maintain slopes of embankment/cutting and vegetative cover for a period of one (01) year and shall make good any loss/damage to formation and vegetative cover due to rain cuts, pedestrian movement or any other reason.

# 2.1.5 Design and construction of drainage system on embankments by providing precast RCC drains on berms, chute drains & sumps.

The Contractor shall design and construct precast RCC longitudinal drains on berms of embankments to collect surface runoff from the slope. Precast RCC chute drains shall be provided at approximately every 50 m for collecting water from drains on berms and discharging it safely away from toe of embankments as shown in the Tender drawings. RCC collecting chambers shall be provided at the junction of longitudinal berm drains and chutes.

After Taking Over the Works, the Contractor shall maintain drainage system on embankments including sump, drain on berms, chutes etc. for a period of one (01) year and shall make good any damage to the drainage system due to rain cuts, pedestrian movement or any other reason.

## 2.1.6 Design and construction of minor bridges

The Contractor shall design and construct minor bridges (RUBs, canal, utilities and waterway bridges) including protection works on bridge approaches and height gauges at all RUBs as per Employer's Requirements. List of minor bridges is given in **Annexure-F-1.** Approach road on both sides of RUBs shall be designed by the Contractor. The Contractor shall construct RCC road *within Works Araea as defined in Sub-Clause 3.1 of Appendix 9 of Section VII-9:Employer's Requirements-Appendices* for full clear width of RUB. Design and construction of permanent diversion at RUBs shall be carried out by the Contractor, as shown in the Tender drawings or wherever required. In bridges over canals, RCC lining of canal over soil shall be designed & constructed by the Contractor upto ROW. Payment matrix for various items incidental to bridges is given in **Annexure F-7.** Drainage arrangement shall be designed and constructed at RUBs where road level in the RUB is below natural ground level.

#### 2.1.7 Design and construction of major bridges

The Contractor shall design and construct major bridges (RUBs, canal and waterway bridges) including protection works on bridge approaches and height gauges at all RUBs as per Employer's Requirements. List of major bridges is given in **Annexure- F-2**. Approach road on both sides of RUBs shall be designed by the Contractor. Design and construction of permanent diversion at RUBs shall be carried out by the Contractor, as shown in the Tender drawings or wherever required. In bridges over canals, RCC lining of canal over soil shall be designed & constructed by the Contractor upto ROW. Payment matrix for various items incidental to bridges is given in **Annexure F-7**. Drainage arrangement shall be designed and constructed at RUBs where road level in the RUB is below natural ground level.

The Contractor shall carry out RSI analysis of major bridges wherever required to cater to the effect of providing LWRs in design of bridges.

The Contractor shall provide holding down bolts with washers, nuts, locknuts and template on piers of major bridge (having multiple spans with overall span length of more than 25m), for each line, at the locations given by the SYS-1 Contractor for installation of OHE masts/portals. The design and specification of (a) holding down bolts i.e length, dia, thread part, material composition, washers, nuts, locknuts, galvanisation etc. and (b) template i.e length, breadth, thickness, hole location, material composition, galvanisation etc. shall be given by SYS-1 Contractor to the Contractor. The Contractor shall arrange the material and install the same on major bridge piers for OHE mast/portals in coordination with SYS-1 Contractor. The above items shall also be provided on piers of major bridge (having multiple spans with overall span length of more than 25m) included in Schedule "B". Payment of these items is deemed to be included in Schedule 'A' under Cost Centre 'CB.2'.

#### 2.1.8 Design and construction of stations

The Contractor shall design and construct following new stations:

#### i. Badsa Junction station

This is a Junction station having platforms, subways, station building, RCC portico, S&T huts, retaining wall etc as shown in Tender drawings.

## ii. Deverkhana Station

This is a halt station having platforms, subways, ticket booking office, RCC portico, retaining wall etc as shown in Tender drawings.

#### iii. Badli station

This is a crossing station having platforms, subways, station building, RCC portico, retaining wall etc as shown in Tender drawings.

#### iv. Mandothi Junction station

This is a Junction station having platforms, subways, station building, S&T huts, RCC portico, retaining wall etc as shown in Tender drawings.

#### v. New Asaudah Station

## vi. Jasur kheri Station

This is a halt station having platforms, subways, ticket booking office, RCC portico, retaining wall etc as shown in Tender drawings.

## vii. Tarakpur Station

This is a crossing station having platforms, subways, station building, RCC portico, retaining wall etc as shown in Tender drawings.

The items of works to be carried out at various stations are given in **Annexure F-3**. The list of subways to be provided is given in **Annexure F-5**. The Works at stations shall be carried out in accordance with Tender drawings, Outline Design specifications (ODS) – Civil & BLT, Outline Construction Specifications (OCS) - Civil & BLT and other requirements of the Contract.

## 2.1.9 Design and application of water proofing system

Design and application of water proofing system in subway at eight stations i.e, Badsa, Deverkhana, Badli, Mandothi, New Asaudah, Jasur Kheri, Kharkhoda & Tarakpur as per the Employer's Requirements.

## 2.1.10 Design and construction of RCC hume pipe/ RCC Box in embankment

Design and construction of RCC hume pipe (NP-4) of 450 mm dia/ precast RCC box (500mmx500mm clear opening) in the embankment at approximately 500 m interval (except in station yards) for crossing utilities in future as shown in Tender drawings.

## 2.1.11 Design of Auto Location Hut (ALH):

Design of 12 Nos. Auto Location Huts along the alignment between km 61.5 to km 126.0 as per Tender drawings. Floor level of the Auto Location Hut shall be at least 300 mm above the formation level. Construction of Auto Location Huts shall be paid under Schedule 'B'.

## 2.1.12 Design of approach road at stations

Design of concrete station approach road at Badsa, Deverkhana, Badli, Mandothi, New Asaudah, Jasur Kheri, Kharkhoda, Tarakpur & New Harsan Kalan stations including retaining/RE wall, footpath, ramp drain etc as shown in Tender drawings. Construction of road, retaining/RE wall, footpath, ramp, drain etc shall be paid under schedule 'B'.

## 2.1.13 Design of prefabricated/precast cable duct

Design of prefabricated/precast cable duct of 300mm x 300mm internal size, with RCC cover, for laying of S&T cables in station yards buried under formation. The top of duct cover shall be minimum 690 mm below the formation level. The duct shall be designed with chamber of size 1200mmX1200mmX1500mm depth with a lid and locking arrangement at suitable interval, not more than 500m along the duct and at each track crossing location. Construction

of precast duct and chamber shall be paid under schedule 'B'. Cable route plan for ducts shall be provided by SYS-2 Contractor.

## 2.1.14 Design of precast/cast in situ RCC longitudinal drains

Design of precast/cast in situ RCC longitudinal drain of required capacity with suitable slope and outfall at locations where HORC embankment overlaps with KMP embankment to safely cater the surface runoff from the slopes of HORC embankment and KMP embankment. Construction of precast/cast in situ RCC drain shall be paid under Schedule 'B'. The outfall of drains shall be at the nearest bridges on HORC alignment.

#### 2.1.15 Design of precast and cast in-situ retaining walls

Design of precast and cast in-situ retaining walls for retaining formation slope (except retaining walls at stations covered in Schedule 'A' as shown in Tender drawings of stations. Design & construction of these retaining walls is included in Cost Centre 'CS-Station' under Schedule 'A') along the alignment at tentative locations given in **Annexure F-4**. Construction of these retaining walls shall be paid under Schedule 'B'.

#### 2.1.16 Design of bridges including protection works included in Schedule 'B'

Design of bridges including protection works as mentioned in **Annexure F-6.** In major bridge Nos. 155, 195, 199, 200, 242, 257, 267, 273, 277, 287, 300, 303, 304, 343, 346, 375, 384, 5C & 5D superstructure shall also be designed for BLT with LWR. In case, the Employer/Engineer decides to adopt design of standard RDSO span, the design of superstructure of above bridges shall not be done by the Contractor and shall be deleted from the scope of the work. Construction of these bridges shall be paid under Schedule 'B'.

#### 2.1.17 Design of minor works at stations not included in Schedule 'A'

Design of minor works at stations like circulating area, land scaping etc. shall also be carried out by the Contractor. Construction of above-mentioned items shall be paid under Schedule 'B'.

#### 2.1.18 Traffic management

Traffic management along the work site including construction works required in connection with traffic management like road works, footpaths, drains and other services etc. and repair and maintenance of these construction works during construction period. Any road widening / diversion along with associated drainage system required to facilitate the movement of traffic and their repair & maintenance shall also be carried out by the Contractor. It also includes reinstatement of land/structure/roads/services etc. to original condition wherever road diversion has been made outside original road including reconstruction of structure demolished for traffic management. Materials and other specification related to traffic control devices shall conform to IRC standards.

#### 2.1.19 Barricading

The Contractor shall provide and maintain during progress of works barricading around the work area where vehicular or pedestrian traffic passes with all safety measures as shown in Tender drawings. The excavations near habitations/public movement areas and all works along

the roads shall be provided with proper caution signs and marked with red lights, reflectors at night to avoid accidents near public places to ensure safety of public.

## 2.1.20 Reinstatement/Restoration of roads and services

Reinstatement/Restoration of roads and services within and outside of ROW with new material of similar specification as per codal requirement after completion of work for the area disturbed by the Contractor during construction activities. However, reinstatement of roads and its drainage system will be as per current standards being used by the roads/service owning agency for similar roads. Proper survey to be done before dismantling of any of the above services along with extensive photographs, videos & sample of these services by the Contractor & get it verified by the Engineer so as to ascertain the extent of these existing services and its specification.

- 2.1.21 There is possibility of some of the items not getting mentioned in the above list of works. Tenderers are requested to go through the Tender drawings also in details as the works listed in Clause 2.1 above as well as indicated in the Tender drawings would be considered inclusive in the scope of work under lump sum quoted price except the items mentioned in Sub-Clause 2.2, 2.3 and 2.4 below unless specified otherwise in the Contract. Engineer's decision shall be final in this regard in case of dispute.
- **2.1.22** The work content against the lump sum component of the work i.e. Schedule 'A' shall also include, but not be limited to, the following:
  - *a)* Site Clearance as per Sub-Clause 10.14 of Appendix 10, Section VII-9: Appendices, Part 2-Employer's Requirements or as directed by the Engineer;
  - *b)* True and proper setting out and layout of the Works, benchmarks and provision of all necessary labour, instruments and appliances in connection therewith as specified or as directed by the Engineer;
  - *c)* All aspects of quality assurance including testing of materials as per the approved Inspection and Test Plan and other components of the work as specified or as directed by the Engineer;
  - *d*) Day to day cleaning of worksite throughout the execution period;
  - *e)* Maintenance of the completed Works during the period as specified or as directed by the Engineer;
  - *f*) Submission of completion (i.e., 'As-Built') drawings 06 (Six) sets in A-1 size and all other related documents as specified including scanned (in .pdf) and AutoCAD copy with soft copies in both formats of all As-built drawings & documents.
  - *g)* Preparing Definitive Design, Construction Reference drawings, Good For Construction (GFC) drawings and working drawings for various components of the Works and obtaining approval in respect thereof from the Engineer, inclusive of incorporation of all modifications, alterations, changes, etc. that may be required to be carried out as directed by the Engineer;
  - *h*) Compliance of requirements of Environmental, Social, Health and Safety (ESHS) Manual as per Appendix 13 of Employer's Requirements, Section VII-9: Appendices.

*i)* Results of sub-surface investigations conducted at project site are enclosed with the Tender documents. This information about the soil and sub-soil water conditions is being made available to the Contractor in good faith and the Contractor shall have to obtain the details of sub-soil parameters independently. At few isolated stretches ground is waterlogged. Tentative location of such stretches has been given in OCS for information. Contractor shall be required to take necessary measures while doing earthwork in formation. In addition, the Contractor shall conduct the GT investigation in accordance with the latest edition of RDSO/2020/GE: IRS-004 and carry out ground improvement at weak sub-soil stretches, if any, through soil replacement at his own cost. No claim whatsoever on account of any discrepancy/variation about the soil parameters and sub soil water conditions that may be actually encountered at the time of execution of the work and those given in these Tender Documents shall be payable to the Contractor under any circumstances.

## 2.1.23 Other Works under Lump Sum

The Interface Management Document as per Appendix- 5 of Employer's Requirements shall also be complied with.

## 2.1.24 Associated Works

Works to be performed shall also include all general works, preparatory works for the construction and works of any kind necessary for the design and satisfactory construction, completion and maintenance of the Works to the intent and meaning of the drawings adopted and Outline Construction Specifications (OCS) - Civil & BLT, to best Engineering standards and orders that may be issued by the Engineer from time to time, compliance with all Conditions of Contract, supply of all materials, apparatus, plants, equipment, tools, fuel, water, strutting, timbering, transport, offices, stores, workshop, staff, labour and the provision of proper and sufficient protective works, diversion, temporary fencing, lighting and watching required for the safety of the public and protection of works on adjoining land; first-aid equipment, sanitary accommodation for the staff and workmen, effecting and maintenance of all insurances, the payment of all wages, salaries, fees, royalties, duties or the other charges arising out of the execution of works and the regular clearance of rubbish, clearing up, leaving the site perfect and tidy on completion.

## 2.1.25 Land for Contractor's Facilities & Site Office

For batching plants, field quality control laboratories, site offices and other activities (excluding labour camps), land total measuring approx. 20,000 Sq. m will be made available at multiple locations between km 61.5 to km 126 by the Employer on 'as is where is basis' free of cost. This land shall be made good for such offsite activities as needed by the Contractor at no extra cost to the Employer. Any land required beyond the above area will have to be arranged by the Contractor at his own cost. The land shall be cleared from debris, all structures made by the Contractor including RCC footings and rafts etc. and reinstated to the line, level and to the same conditions as existed before the work started before handing over back to the Employer within 91 days after Taking over Certificate. The final bill shall be released to the Contractor after all structures from the Contractor facility and site office are removed & *cleared* of site.

The cost of setting up of all the above-mentioned facilities & the office and reinstatement of site is included in lump sum price in Schedule 'A'.

## 2.1.26 Design of Permanent Diversion of Canal

Design of permanent diversion of canal/drain/nallah at bridges included in Annexure F-1, F-2 and F-6 as shown in Tender drawings. Construction of permanent diversion of canal shall be paid in Schedule 'B'.

## 2.2 Scope under BOQ Schedule 'B'

Under this Schedule, the Contractor is required to carry out works which are not covered in Schedule 'A'. Broadly following works shall be carried out under this Schedule 'B':

- a) Construction of railway formation for 32.5 t axle load as per updated RDSO Specifications "Comprehensive Guidelines and Specifications for Railway Formation-Specification No. RDSO/2020/GE: IRS-0004" from Chainage 100453 m to Chainage 101044 m and from Chainage 123000 m to Chainage 126023.815 m for double tracks of Main line and from Chainage 4000 m to Chainage 4837.053 m for Mandothi Jn Asaudah connectivity single line as per Employer's Requirements and shall include earthwork in cutting/filling, subgrade, prepared subgrade and blanketing including mechanical compaction. The Contractor shall arrange borrow areas for earthwork in embankment at his own cost.
- b) Construction of cast in-situ retaining walls along the embankment at locations as given in **Annexure F-4** as shown in Tender drawings.
- c) Construction of bridges including slope protection on bridge approaches & height gauge as mentioned in **Annexure F-6** as shown in Tender drawings.
- d) Construction of Ballastless Track (BLT) on major bridges (OWG) Nos. 155, 195, 199, 200, 242, 257, 267, 273, 277, 287, 300, 303, 304, 343, 346, 375, 384, 5C & 5D including supplying, flash butt welding & fixing rails and track fittings complete in all respect. This shall also include transition from ballastless track to ballasted track on approaches & derailment guard.
- e) Construction of permanent diversion of canal/drain/nallah at bridges included in **Annexure F-1, F-2** and **F-6** as shown in Tender drawings.
- f) Earthwork in excavation and construction of precast S&T cable ducts of 300mmX300 mm internal dimensions with RCC cover and chambers in station yards as shown in Tender drawings. The top of duct cover shall be minimum 690 mm below the formation level. The Chamber shall be 1200 mmx 1200 mm x1500 mm (depth) size, with a lid & locking arrangement, shall be provided at suitable interval not more than 500m along the duct and at each track crossing location. The design of cable ducts is included in Schedule 'A'. Cable route plan for ducts shall be provided by SYS-2 Contractor.
- g) Construction of Stations at Kharkhoda and New Harsan Kalan as given in Annexure F-3.

- h) Construction of station approach road including RE wall/Retaining wall, foot path, ramp, drain etc at Badsa, Deverkhana, Badli, Mandothi, New Asaudah, Jasur Kheri, Kharkhoda, Tarakpur & New Harsan Kalan stations.
- i) Construction of circulating area at Badsa, Deverkhana, Badli, Mandothi, New Asaudah, Jasur Kheri, Kharkhoda, Tarakpur & New Harsan Kalan stations.
- j) Construction of precast/cast in-situ RCC longitudinal drain of required capacity with outfall arrangement where HORC embankment overlaps with KMP embankment to safely cater the surface runoff from the slopes of HORC embankment and KMP embankment.
- k) Earth filling in station area near the circulating area to improve drainage etc.
- Construction of 12 Nos. Auto location Huts (ALH) at approximate chainage 61500 m, 69100 m, 72600 m, 81250 m, 86050 m, 94030 m, 100900 m, 104500 m, 111450 m, 117300 & 120850 m.
- *m)* Temporary road diversion and allied works of bridge No. 267 at Ch.91965.012 m and bridge No. 5D at Ch.2773.190 m along with final dismantling of temporary road and its restoration.
- n) Any other item as directed by the Engineer related to the work.

## 2.3 Scope under Schedule 'C' (General Electrical Services works)

Under this Schedule, the Contractor is required to carry out General Electrical Services works. Detailed Scope of Works is given in Section VII-7A: General Electrical Services, Part 2-Employer's Requirements.

## 2.4 Scope under Schedule 'D' (S&T works)

Under this Schedule, the Contractor is required to carry out S&T works. Detailed Scope of Works is given in Section VII-7B: S&T Works, Part 2- Employer's Requirements.

## 2.5 REFERENCE TO THE STANDARD CODES OF PRACTICE

- **2.5.1** All Standards, Outline Construction Specifications (OCS) Civil & BLT, Technical Specifications and Codes of Practice referred to shall be latest editions including all applicable official amendments and revisions. The Contractor shall make available at site all relevant Standard Codes of practice, viz IRS, IS, IRC, UIC, etc as applicable.
- **2.5.2** Wherever Indian Standards do not cover some particular aspects of design/ construction, relevant International Standards will be referred to. The Contractor shall make available at site such standard codes of practice.
- **2.5.3** In case of discrepancy among Standard codes of practice and Section VII-6: Outline Construction Specifications (OCS) -Civil & BLT, the order of precedence shall be as given below:
  - a. Outline Design Specifications (ODS) Civil & BLT
  - b. Outline Construction Specifications (OCS) Civil & BLT.

- c. Standard Codes of Practice. In case of discrepancy among Standard Codes of Practice, the order of precedence will be
  - i. IRS,
  - ii. IS,
  - iii. IRC,
  - iv. other International codes
- d. Indian Railway Unified Standard Specifications,
- e. CPWD specifications,
- f. NBC 2016,
- g. MORTH Specification for Road & Bridges

## 2.6 **DIMENSIONS**

As regards errors, omissions and discrepancies in Specifications and *Tender drawings*, relevant clause of Particular Specification will apply. The levels, measurements and other information concerning the existing *S*ite as shown on the conceptual / layout drawings are believed to be correct, but the Contractor shall verify them for himself and examine the nature of the ground as no claim or allowance whatsoever shall be entertained on account of any errors or omissions in the levels or strata turning out different from what is shown on Tender drawings.

## 2.7 INSPECTION

The Employer may appoint an independent agency to ensure the quality checking of design, supply, fabrication, erection and construction of all works under scope of work. Payment to the independent agency shall be made by the Employer separately. The Contractor shall ensure complete co-operation with the agency to perform their work satisfactorily. In addition, the Employer also reserves right to undertake quality check and inspection directly by itself.

## 2.8 ALIGNMENT OF TRACKS

- **2.8.1** The alignment of tracks shall be as shown in the Tender drawings. The alignment has been developed by the Employer to meet operational and technical criteria. The Contractor is not required to evaluate the alignment for compliance with these criteria but shall review it with respect to his own design and construction proposals and shall satisfy himself that it suites to the available land width and there is no conflict with the clearances at proposed structures.
- **2.8.2** The Contractor is permitted to propose minor deviations in alignment to suit his construction proposals, but he must demonstrate that any such deviations shall comply with good design practice and the alignment requirement of the design criteria. Such deviations shall require prior approval of the Employer subject to following conditions:
  - i. There is no extra cost to the *Employer*.
  - ii. Changes proposed are essentially required to suit the Contractor's specific design.

- iii. There is no change at the Contract boundaries or if there is any, the same is agreed by the Contractor of the adjoining section without any extra cost to the Employer.
- **2.8.3** The ground levels shown in Conceptual Alignment Plan & L-Section Tender drawings are based on preliminary survey. Detailed survey shall be carried out by the Contractor for confirming and preparation of final Alignment Plan & L-Section. No claim by the Contractor shall be entertained on account of any variation in the ground levels with respect to ground levels shown in conceptual Alignment Plan & L-Section *T*ender drawings.

## 2.9 DURABILITY AND MAINTENANCE

The *p*ermanent Works shall be designed and constructed such that, if maintained reasonably, they shall endure in a serviceable condition throughout their minimum life as described in Section VII-5: Outline Design Specifications (ODS) – Civil & BLT. The *p*ermanent Works shall be designed and constructed so as to minimise the cost of maintenance whilst not compromising the performance characteristics and ride quality of the railway.

## 2.10 OPERATIONAL REQUIREMENTS

- a) The vertical and horizontal alignments for the main and connectivity line shall comply with the conditions laid in para 2.8 above.
- b) During construction the Contractor shall be responsible for providing and maintaining adequate flood protection to ensure protection of the Works.

## 2.11 ENVIRONMENTAL CONSIDERATIONS

All provisions and conditions contained in the Environmental, Social, Health and Safety (ESHS) Manual as per Appendix 13 shall be strictly complied with by the Contractor.

## 2.12 TRAFFIC MANAGEMENT

The Contractor shall carry out the Works so as to minimise disruption to road and pedestrian traffic. The Contractor shall prepare his traffic management plan based on his proposed construction methodology in co-ordination with the Engineer and in conjunction with the concerned road authority as per Appendix 10. He shall comply strictly with the approved plan during construction of his works.

## 2.13 CRS INSPECTION

The Contractor shall note that the Commissioner for Railway Safety (CRS) will inspect the Works from time to time for the purpose of determining whether the HORC Project complies with the terms of operational and infrastructural safety in accordance with the Laws of India. The Contractor shall note that CRS approval is mandatory for commissioning the system. Notwithstanding other provisions of the Contract, the Contractor shall ensure that the Works comply with the requirements of CRS in terms of construction to the drawings and shall make all necessary arrangements and assist the representatives of the Employer and CRS in carrying out their inspection duties and also comply with their instructions regarding rectifying any defects and making good any deficiencies. The Contractor shall prepare and make available all
drawings, documents, sketches, photographs etc. as required for submission of application for inspection of CRS as instructed by the Engineer.

#### 2.14 STANDARDS

Equipment, materials and systems shall be designed, manufactured and tested in accordance with the latest issue of National and/or International codes and standards. The Contractor shall submit hard copies in original to the Engineer of all codes and standards used for the work.

Reference to standards or to materials and equipment of a particular manufacturer shall be regarded as followed by the words "or equivalent". The Contractor may propose alternative standard materials, or equipment that shall be equal to or better than those specified. If the Contractor for any reason proposes alternatives to or deviations from the specified standards, or desires to use materials or equipment not covered by the specified standards, the Contractor shall apply for the consent of the Engineer. The Contractor shall state the exact nature of the change, the reason for making the change and relevant specifications of the materials and equipment in English language. The decision of the Engineer in the matter of quality shall be final.

ANNEXURE-F-1
(Ref. Sub-Clause 2.1.6)
LIST OF BRIDGES UNDER SCHEDULE 'A'
LIST OF MINOR BRIDGES**

					SPAN
S. No.	Br. No.	*Chainage (m)	Type of Crossing	Type of Bridge	No. x L (in m) x H (in m)
1.	156	62025.073	Balancing Culvert	RCC Box	1X4X4.2
2.	157	62255.378	Balancing Culvert	RCC Box	1X2X2
3.	158	62484.662	RUB	RCC Box	1x7x4
4.	159	62685.476	Balancing Culvert	RCC Box	1X2X3
5.	160	62761.902	GAIL gas pipe line	Inverted Portal	1X5X5
6.	161	63116.756	Pipe Culvert	RCC PIPE	1X1.8
7.	162	63548.961	Balancing Culvert	RCC Box	1X4X3.15
8.	163	64190.090	Pipe Culvert	RCC PIPE	1X1.8
9.	164	64492.449	Balancing Culvert	RCC Box	1X4X3
10.	166	64964.375	RUB	RCC Box	1x7x3.65
11.	167	65383.263	Pipe Culvert	RCC PIPE	1X1.8
12.	168	65626.087	Pipe Culvert	RCC PIPE	1X1.8
13.	169	65900.000	Balancing Culvert	RCC Box	1X4X3
14.	170	66476.051	Pipe Culvert	RCC PIPE	1X1.8
15.	171	66719.051	Pipe Culvert	RCC PIPE	1X1.8
16.	173	67190.041	Canal	RCC Box	1x6x5.68+1x5x5.68
17.	174	67329.047	Pipe Culvert	RCC PIPE	1X1.8
18.	175	67383.210	Pipe Culvert	RCC PIPE	1X1.8
19.	177	67919.046	Pipe Culvert	RCC PIPE	1X1.8
20.	179	68449.011	Pipe Culvert	RCC PIPE	1X1.8
21.	180	68799.047	Pipe Culvert	RCC PIPE	1x1.8

					SPAN
S. No.	Br. No.	*Chainage (m)	Type of Crossing	Type of Bridge	No. x L (in m) x H (in m)
22.	181	69109.046	Pipe Culvert	RCC PIPE	1X1.8
23.	182	69192.504	Balancing Culvert	RCC Box	1x4x3.15
24.	187	70870.000	Pipe Culvert	RCC PIPE	1X1.8
25.	188	71124.047	Pipe Culvert	RCC PIPE	1X1.8
26.	192	72389.046	Pipe Culvert	RCC PIPE	1X1.8
27.	193	72774.050	Pipe Culvert	RCC PIPE	1X1.8
28.	194	73249.076	Balancing Culvert	RCC Box	1X2X2
29.	196	73803.079	Balancing Culvert	RCC Box	1X2X2
30.	202	75503.079	RUB	RCC Box	1X6X4.5
31.	204	76779.079	RUB	RCC BOX	1X6X4
32.	205	77156.000	Balancing Culvert	RCC Box	1X2X2
33.	206	77258.079	Balancing Culvert	RCC Box	1X2X2
34.	209	77738.079	RUB	RCC Box	1X11.2X5.15
35.	210	78089.079	Pipe Culvert	RCC PIPE	1X1.8
36.	211	78398.956	Pipe Culvert	RCC PIPE	1X1.8
37.	212	78488.723	RUB	RCC Box	1X4X3
38.	213	78639.709	Pipe Culvert	RCC PIPE	1X1.8
39.	214	78979.079	Pipe Culvert	RCC PIPE	1X1.8
40.	216	79289.079	Balancing Culvert	RCC Box	1x2x2
41.	217	79590.706	RUB	RCC Box	1X4X3
42.	218	79699.706	Pipe Culvert	RCC PIPE	1X1.8
43.	221	80279.079	Pipe Culvert	RCC PIPE	1X1.8
44.	222	80649.079	Pipe Culvert	RCC PIPE	1X1.8
45.	223	80939.079	Pipe Culvert	RCC PIPE	1x1.2

					SPAN
S. No.	Br. No.	*Chainage (m)	Type of Crossing	Type of Bridge	No. x L (in m) x H (in m)
1.5				Inverted	
46.	225	81356.014	HPCL Pipe line	Portal	1x7x5
47.	226	81524.076	Pipe Culvert	RCC PIPE	1X1.8
48.	227	81606.729	RUB	RCC Box	1X4X3.15
49.	228	81845.653	Pipe Culvert	RCC PIPE	1X1.8
50.	230	82179.076	Balancing Culvert	RCC Box	1X2X2
51.	231	82449.076	Pipe Culvert	RCC PIPE	1X1.8
52.	232	82579.075	Pipe Culvert	RCC PIPE	1X1.8
53.	233	82935.000	RUB	RCC Box	1X4X4.5
54.	236	83297.108	Pipe Culvert	RCC PIPE	1X1.8
55.	237	83663.622	Pipe Culvert	RCC PIPE	1X1.8
56.	238	83757.075	Balancing Culvert	RCC Box	1x4x2.8
57.	239	83779.075	Pipe Culvert	RCC PIPE	1X1.8
58.	240	83970.103	Pipe Culvert	RCC PIPE	1X1.8
59.	241	84380.113	Balancing Culvert	RCC Box	1x2x2
60.	243	84911.912	Pipe Culvert	RCC PIPE	1x1.8
61.	244	84968.847	Balancing Culvert	PSC Slab	1x6.1
62.	247	85857.820	Balancing Culvert	RCC Box	1X3X3.5
63.	249	86159.071	Balancing Culvert	RCC Box	1x3x3
64.	251	86782.880	RUB	RCC Box	1x11.8x5.15
65.	252	87209.068	Balancing Culvert	RCC Box	1X4X3.6
66.	253	87629.067	Balancing Culvert	RCC PIPE	1X1.2
67.	254	88124.068	Pipe Culvert	RCC PIPE	1X1.8
68.	256	88734.065	Pipe Culvert	RCC PIPE	1x1.8
69.	262	90419.137	Balancing Culvert	RCC Box	1X4X4

					SPAN
S. No.	Br. No.	*Chainage (m)	Type of Crossing	Type of Bridge	No. x L (in m) x H (in m)
70.	264	90879.131	Canal	RCC Box	1X6X6
71.	265	91089.137	RUB	RCC Box	1x5x5.15
72.	270	92450.000	Balancing Culvert	RCC Box	1X2X2
73.	271	92520.000	RUB	RCC BOX	1X5X5.15
74.	272	93040.007	Balancing Culvert	RCC Box	1X2X2
75.	274	93747.996	RUB	RCC Box	1X4X4
76.	275	93814.420	HPCL Pile Line	Inverted Portal	1x7x5
77.	276	94254.435	Balancing Culvert	RCC Box	1x2X2
78.	279	94598.874	Balancing Culvert	RCC Box	1x2x2
79.	282	95089.873	Balancing Culvert	RCC Box	1X2X2
80.	284	95623.874	Balancing Culvert	RCC Box	1x2x2
81.	285	96028.876	Pipe Culvert	RCC PIPE	1X1.8
82.	286	96153.801	RUB	RCC Box	1X4X4
83.	288	96741.634	RUB	PSC SLAB	1X6.1
84.	289	97228.876	Pipe Culvert	RCC PIPE	1X1.8
85.	290	97707.806	Balancing Culvert	PSC SLAB	1X6.1
86.	291	97828.876	Balancing Culvert	RCC Box	1x2x2
87.	292	97969.987	RUB	RCC BOX	1X11.8X5.15
88.	293	98233.875	Pipe Culvert	RCC PIPE	1X1.8
89.	294	98792.183	Pipe Culvert	RCC PIPE	1X1.8
90.	296	98888.874	Pipe Culvert	RCC PIPE	1X1.8
91.	299	99558.875	Balancing Culvert	RCC Box	1x2x2
92.	302	99871.034	Balancing Culvert	RCC Box	1X2X2
93.	305	101228.875	Balancing Culvert	RCC Box	1x2x2

					SPAN
S. No.	Br. No.	*Chainage (m)	Type of Crossing	Type of Bridge	No. x L (in m) x H (in m)
94.	306	101515.621	Balancing Culvert	RCC Box	1x2x2
95.	308	101944.696	Pipe Culvert	RCC PIPE	1X1.8
96.	309	102133.113	Pipe Culvert	RCC PIPE	1X1.8
97.	310	102503.743	Pipe Culvert	RCC PIPE	1X1.8
98.	312	103018.867	Pipe Culvert	RCC PIPE	1X1.8
99.	313	103288.866	Balancing Culvert	RCC Box	1X4X3.15
100.	314	103423.867	Pipe Culvert	RCC PIPE	1X1.8
101.	315	103885.311	Balancing Culvert	RCC Box	1X4X3.15
102.	316	104323.867	Balancing Culvert	RCC Box	1X2X2
103.	318	104613.866	Pipe Culvert	RCC PIPE	1X1.8
104.	319	104769.280	Balancing Culvert	RCC Box	1X4X4
105.	320	104968.865	Pipe Culvert	RCC PIPE	1x1.8
106.	321	105124.595	Pipe Culvert	RCC PIPE	1X1.8
107.	322	105447.176	Pipe Culvert	RCC PIPE	1X1.8
108.	323	105698.865	Pipe Culvert	RCC PIPE	1X1.8
109.	324	105908.784	Pipe Culvert	RCC PIPE	1X1.8
110.	326	106204.010	Pipe Culvert	RCC PIPE	1X1.8
111.	327	106446.884	Pipe Culvert	RCC PIPE	1X1.8
112.	329	107013.865	Pipe Culvert	RCC PIPE	1X1.8
113.	330	107168.865	Pipe Culvert	RCC PIPE	1X1.8
114.	331	107408.865	Pipe Culvert	RCC PIPE	1X1.8
115.	332	107600.000	Balancing Culvert	RCC Box	1X4X3.15
116.	333	107660.000	Pipe Culvert	RCC PIPE	1X1.8
117.	334	108347.785	Balancing Culvert	RCC Box	1X4X3.15
118.	335	108563.745	RUB	RCC Box	1X4X3.4

					SPAN
S. No.	Br. No.	*Chainage (m)	Type of Crossing	Type of Bridge	No. x L (in m) x H (in m)
119.	338	109193.730	Balancing Culvert	RCC Box	1X4X3.15
120.	339	109250.271	Balancing Culvert	RCC Box	1X4X3.4
121.	340	109408.864	Pipe Culvert	RCC PIPE	1X1.8
122.	341	109668.864	Pipe Culvert	RCC PIPE	1X1.8
123.	342	109711.090	Balancing Culvert	RCC Box	1X4X3.4
124.	344	110373.864	Pipe Culvert	RCC PIPE	1X1.8
125.	345	110798.805	Balancing Culvert	RCC Box	1X2X3
126.	347	111698.864	Balancing Culvert	RCC Box	1X2X2
127.	349	112020.000	Pipe Culvert	RCC PIPE	1X1.8
128.	350	112232.778	Balancing Culvert	RCC Box	1X4X4
129.	353	113208.865	Pipe Culvert	RCC PIPE	1X1.8
130.	354	113518.053	canal	PSC SLAB	1X6.1
131.	355	113715.000	Pipe Culvert	RCC PIPE	1X1.8
132.	356	113750.251	Balancing Culvert	RCC box	1X4X4
133.	357	114008.865	Pipe Culvert	RCC PIPE	1X1.8
134.	358	114198.865	Balancing Culvert	RCC Box	1x4x3.15
135.	361	115198.864	Pipe Culvert	RCC PIPE	1X1.8
136.	362	115473.865	Pipe Culvert	RCC PIPE	1X1.8
137.	364	115708.865	Pipe Culvert	RCC Pipe	1X1.8
138.	366	116151.504	Pipe Culvert	RCC PIPE	1X1.8
139.	367	116447.129	RUB	PSC SLAB	1X6.1
140.	368	116673.674	Pipe Culvert	RCC PIPE	1X1.8
141.	369	116790.624	RUB	PSC SLAB	1X6.1
142.	370	117133.463	RUB	PSC SLAB	1X6.1
143.	371	117208.674	Pipe Culvert	RCC PIPE	1X1.8

					SPAN
S. No.	Br. No.	*Chainage (m)	Type of Crossing	Type of Bridge	No. x L (in m) x H (in m)
144.	373	117983.674	Balancing Culvert	RCC Box	1X2X2
145.	377	119162.000	GAIL GAS PIPE LINE	INVERTED PORTAL	1X5X5
146.	381	119958.674	Balancing Culvert	RCC BOX	1X2X2
147.	382	120233.673	Balancing Culvert	RCC Box	1x2x2
148.	385	121268.674	RUB	RCC Box	1X5X5.15
149.	386	121953.670	RUB	RCC BOX	1X5X5.10
150.	387	122169.723	RUB	RCC BOX	1X5X5.15
			Badsa JnSultanpu	r connectivity	
151.	4A	2727.62	RUB	RCC BOX	1X4X2.65
			Mandothi Jn- Asauda	h connectivity	
152.	5A	1330.0	RUB	RCC BOX	1X5X5
153.	5B	2030.0	RUB	RCC BOX	1X5X5
154.	5B1	2340.0	HPCL PIPE LINE	INVERTED PORTAL	1X7X5
155.	5G	4063.00	BALANCING CULVERT	RCC BOX	1X2X2

#### Notes:

- 1. \*Chainages start from Prithla station of HORC.
- 2. \*\*Payment of bridges in Annexure F-1 will be made in Cost Centre 'CB'-Bridges under lumpsum Schedule 'A'.
- **3.** There can be minor change in span arrangement to suit site conditions. Nothing extra shall be payable to the Contractor on this account.

## ANNEXURE-F-2 (Ref. Sub-Clause 2.1.7) LIST OF BRIDGES UNDER SCHEDULE 'A' LIST OF MAJOR BRIDGES\*\*

S.	Bridge	*Chainage		Type of Bridge Super	Snan
No.	110.	(m)	Type of Crossing	structure	Arrangement
1.	178	68212.040	RUB	PSC U SLAB	1x12.2
2.	183	69683.047	RUB	PSC U SLAB	1X12.2
3.	184	69843.000	Canal	CG	2x30.5
4.	185	70233.046	RUB	PSC U SLAB	1x12.2
5.	201	74887.079	RUB	PSC U SLAB	1x12.2
6.	207	77550.328	Canal	CG	1x30.5
7.	208	77622.079	Canal	PSC U SLAB	2x12.2
8.	220	80181.795	Water Pipe line	PSC U SLAB	1x12.2
9.	229	82126.406	RUB	PSC U SLAB	2x12.2
10.	234	83055.317	Canal	CG	1x30.5
11.	235	83238.137	RUB	PSC U SLAB	1x12.2
12.	248	86017.014	RUB	PSC U SLAB	1x12.2
					1X12.2
13.					+1X24.4+
	281	94864.556	Canal	CG + PSC U SLAB	1X12.2
14.	283	95455.223	RUB	PSC U SLAB	1X12.2
15.	298	99227.360	RUB	PSC U SLAB	1X12.2
16.	307	101626.434	RUB	PSC U SLAB	1X12.2
17.	311	102710.680	CANAL & ROAD	PSC U SLAB	2X12.2
18.	328	106823.940	RUB	PSC U SLAB	1X12.2
19.	351	112350.446	CANAL	PSC U SLAB	1X12.2
20.	352	112989.693	RUB	PSC U SLAB	1X12.2
21.	360	114875.785	RUB	PSC U SLAB	1X12.2
22.	363	115649.037	RUB	PSC U SLAB	1X12.2
23.	372	117496.052	RUB	PSC U SLAB	1X12.2
24.	390	123137.440	CANAL	PSC U SLAB	1X12.2
25.	391	123236.274	CANAL	CG	2X30.5

Note:

- 1. \*Chainages start from centre line of Prithla station of HORC.
- 2. \*\*Payment of bridges in Annexure F-2 will be made in Cost Centre 'CB'-Bridges under lumpsum Schedule 'A'.
- 3. There can be minor change in span arrangement to suit site conditions. Nothing extra shall be payable to the Contractor on this account.
- 4. Deep foundation shall be provided at locations shown in Tender drawings. Type of foundation at other locations shall be decided as per design requirements.

#### **ANNEXURE-F-3**

#### (Ref. Sub-Clause 2.1.8)

# List of items of works to be carried out at stations under Schedule 'A' and Schedule 'B'

S. No	Item	Badsa Jn & Mandothi	Deverkhana, New Asaudah & Jasur Kheri	Badli & Tarakpur	New Harsan Kalan	Kharkhoda
	Schedule	Α	Α	Α	В	В
1	Station Building					
	a) Station Building.	1 No. at each station.	1 No. Ticket Booking Office <i>at</i> <i>each station</i> .	1 No. at each station.	1 No.	1 No.
	b) S & T huts.	2 Nos. at each station.	-	-	2 Nos.	2 Nos.
2	<i>High Level</i> Platforms					
	<ul> <li>a) Earthwork in filling above formation level,</li> <li>b) Cast in-situ RCC platform face wall</li> </ul>	<i>For 2</i> Nos. <i>PF</i> each 600m long (as shown in Tender drawings) <i>for each</i> <i>station</i> 2 Nos. each 600m	For 2 Nos. PF each 425m long (as shown in Tender drawings) for each station 02 No. each 425m	For 2 Nos. PF each 600m long (as shown in Tender drawings) for each station 2 Nos. each 600m long (as shown in Tender	For 3 PF faces each 600m long (as shown in Tender drawings) 3Nos. each 600m long (as shown in Tender	For 3 PF faces each 600m long (as shown in Tender drawings) 3 Nos. each 600m long (as shown in Tender
	plationi face wan.	(as shown in Tender drawings) for each station	(as shown in Tender drawings) for each station	drawings) for each station	(as shown in Tender drawings)	(as shown in Tender drawings)
	c) Surfacing of platform with VDC, RCC precast	For entire area of platforms.	For entire area of platforms.	For entire area of platforms.	For entire area of platforms.	For entire area of platforms

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S. No	Item	Badsa Jn & Mandothi	Deverkhana, New Asaudah & Jasur	Badli & Tarakpur	New Harsan Kalan	Kharkhoda
	Schedule	A	Kheri     A	Α	В	В
	coping, tactile tiles, precast fencing at end platforms.					
	d) PF Shelters	2 x 20m on each PF covering entire PF width	2 x 20m on each PF covering entire PF width	2 x 20m on each PF covering entire PF width	2 x 20m on each PF covering entire PF width	2 x 20m on each PF covering entire PF width
	e) Mini PF Shelters	4 Nos. on each PF	4 Nos. on each PF	4 Nos. on each PF	4 Nos. on each PF	4 Nos. on each PF
	f) Passenger amenities-					
	i) Toilet blocks.	01 No. on each PF	01 No. on each PF	01 No. on each PF	01 No. on each PF	01 No. on each PF
	ii) Drinking water booths at platforms.	5 Nos. on each PF	5 Nos. on each PF	5 Nos. on each PF	5 Nos. on each PF	5 Nos. on each PF
	iii)Seating arrangement (Stainless steel).	48 Nos. seats on each PF	24 Nos. seats on each PF	48 Nos. seats on each PF	48 Nos. seats on each PF	48 Nos. seats on each PF
	g) Two HDPE pipes on platforms for laying Electrical and S&T cables.			All Stations		
3	a) Subway/FOB for inter-platform transfer including covered stairs & ramps to platforms covered with self-	Subway 2 Nos. at each station	Subway 2 Nos. at each station	Subway 2 Nos. at each station	1 FOB with stairs, ramp & roof sheeting (6 m wide as shown in tender drawings)	Subway 2 Nos.

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S. No	Item	Badsa Jn & Mandothi	Deverkhana, New Asaudah & Jasur Kheri	Badli & Tarakpur	New Harsan Kalan	Kharkhoda
	Schedule	Α	Α	Α	В	В
	supported roof, flooring, dado, wall cladding, water proofing, drainage, complete in all respects.					
	b) Lift Well & space for escalator	-	-	-	-	2 Nos.
4	Water supply system-					
	a) Tube well with minimum 15000 litres/hr yield, pump house, overhead gantry and automatic chlorinator (submersible pump and its pipe connection to underground tank shall be provided by SYS-1 contractor). <i>Note: Submersible</i> <i>pump and its pipe</i> <i>connection to</i> <i>underground tank</i> <i>shall be provided</i>	Yes	Yes	Yes	Yes	Yes

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S. No	Item	Badsa Jn & Mandothi	Deverkhana, New Asaudah & Jasur Kheri	Badli & Tarakpur	New Harsan Kalan	Kharkhoda
	Schedule	Α	Α	Α	В	В
	by the Contractor and payment shall be made under Schedule 'C').					
	b) Underground RCC water storage tank having capacity of 50,000litres its pipe connection from underground tank to overhead tank shall be provided by the Contractor and payment shall be made under Schedule 'C')	1 at each station	1 at each station	1 at each station	1	1
	c) Overhead RCC water storage tank having capacity of 20,000 litres	1 at each station	1 at each station	1 at each station	1	1
	d) Water supply distribution system complete from overhead tank to station building, platforms and S&T huts.	Yes	Yes	Yes	Yes	Yes

S. No	Item	Badsa Jn & Mandothi	Deverkhana, New Asaudah & Jasur Kheri	Badli & Tarakpur	New Harsan Kalan	Kharkhoda
	Schedule	Α	Α	Α	В	В
5	Drainage & Sewerage system-					
	i) Platform drainage.	Yes	Yes	Yes	Yes	Yes
	ii) Station Yard drainage <i>as</i> shown in Tender drawings.	Yes	Yes	Yes	Yes	Yes
	iii) Sewerage system.	1 No. septic tank for 50 users at each PF; 1 No. septic tank for 100 users for station building <i>at each</i> <i>station</i> .	1 No. septic tank for 50 users at each PF.	1 No. septic tank for 50 users at each PF; 1 No. septic tank for 100 users for station building <i>at each</i> <i>station</i> .	<ul><li>1 No. septic tank for 50</li><li>users at each PF;</li><li>1 No. septic tank for</li><li>100 users for station</li><li>building.</li></ul>	<ol> <li>No. septic tank for 50 users at each PF;</li> <li>No. septic tank for 100 users for station building.</li> </ol>
6	Miscellaneous Work					
	a) Station name board at station building and at platform ends.	Yes	Yes	Yes	Yes	Yes
	b) Platform number boards at each platform.	Yes	Yes	Yes	Yes	Yes
	c) RCC portico at entrance to subway	Yes	Yes	Yes	Yes	Yes
	d) Retaining walls on both side of subway	Yes	Yes	Yes	Yes	Yes

S. No	Item	Badsa Jn & Mandothi	Deverkhana, New Asaudah & Jasur Kheri	Badli & Tarakpur	New Harsan Kalan	Kharkhoda
	Schedule	Α	Α	Α	В	В
	near end of ramp and stairs.					

Note: The above requirements must be read in conjunction with Employer's Requirement mentioned in Section VII-5: Outline Design Specifications (ODS) Civil & BLT and Section VII-6: Outline Construction Specifications (OCS) Civil & BLT.

## Annexure-F-4

### [Ref. Sub-Clause 2.2 b)

#### Approximate Details of Retaining Wall Along Formation Under Schedule 'B'

	Retaining wall-Main Line (LHS)						
S.	Chainage	(m)		Approx. Height (m)			
No.	From	То	Length (m)	Above ground level			
1	89820	89925	105	4.0			
2	100453	101044	591	4.0			
3	118360	118500	140	2.5			
4	118800	118840	40	2.5			
5	118840	118860	20	0.75			
6	118860	118900	40	1.00			
7	118900	118920	20	0.75			
8	8 118920 119000		80	0.75			
9	119620	119700	80	0.75			
10	121000	121020	20	0.75			
		<b>Total Length</b>	1136				
		F	Retaining wall-Main Line (RHS)				
1	89947	90052	105	4.0			
2	96380	96490	110	3.0			
3	96530	96580	50	3.0			
4	92060	92340	280	4.0			
5	100453	101044	591	4.0			
6	10800	108020	20	1.5			
		<b>Total Length</b>	1156				

#### **ANNEXURE-F-5**

#### 1. LIST OF SUBWAYS AT STATIONS UNDER SCHEDULE 'A'

# (Ref. Sub-Clause 2.1.8)

#### ANNEXURE-F-5/1

				-	SPAN
S. No.	Bridge No.	*Chainage (m)	Type of Crossing/Station	Type of Bridge	No. x L (in m) x H (in m)
1	165	64642.718	Pedestrian Subway/ Badsa Jn	RCC Box	1x6x2.9
2	165A	64842.718	Pedestrian Subway/ Badsa Jn	RCC Box	1x6x2.9
3	187A	70998.961	Pedestrian Subway/ Deverkhana	RCC Box	1x6x2.9
4	189	71198.961	Pedestrian Subway/ Deverkhana	RCC Box	1x6x2.9
5	203A	76729.080	Pedestrian Subway/ Badli	RCC Box	1x6x2.9
6	204A	76929.080	Pedestrian Subway/ Badli	RCC Box	1x6x2.9
7	261	90349.137	Pedestrian Subway/ Mandothi Jn	RCC Box	1x6x2.9
8	263	90549.137	Pedestrian Subway/ Mandothi Jn	RCC Box	1x6x2.9
9	278	94508.282	Pedestrian Subway/ New Asaudah	RCC Box	1x6x2.9
10	279A	94658.282	Pedestrian Subway/ New Asaudah	RCC Box	1x6x2.9
11	293A	98775.000	Pedestrian Subway/ Jasaur kheri	RCC Box	1x6x2.9
12	297	98975.000	Pedestrian Subway/ Jasaur kheri	RCC Box	1x6x2.9
13	357A	114098.885	Pedestrian Subway/ Tarakpur	RCC Box	1x6x2.9
14	359	114318.885	Pedestrian Subway/ Tarakpur	RCC Box	1x6x2.9

Note:-

- 1. \*Chainages start from Prithla station of HORC
- 2. Payment of above subways shall be made in Cost Centre 'CS'-Stations under lumpsum Schedule 'A'.

## 2. LIST OF SUBWAYS AT STATIONS UNDER SCHEDULE 'B'

#### (*Ref. Sub-Clause 2.2* (g))

#### ANNEXURE-F-5/2

S. No.	Bridge No.	*Chainage (m)	Type of Crossing/Station	Type of Bridge	SPAN No. x L (in m) x H (in m)
1	336	108628.000	Pedestrian Subway/ Kharkhoda	RCC Box	1x10x2.9
2	337	108783.000	Pedestrian Subway/ Kharkhoda	RCC Box	1x10x2.9

Note:-

- 1. \*Chainages start from Prithla station of HORC
- 2. Payment of above subways included in Annexure F-5/2 shall be made under BOQ Schedule 'B'.

# ANNEXURE-F-6 (*Ref. Sub-Clause 2.2 c*)

### LIST OF BRIDGES UNDER SCHEDULE 'B' ANNEXURE-F-6/1

#### 1) LIST OF MINOR BRIDGES

S.	Br.	*Chainage	Type of		SPAN
No.	NO.	(m)	Crossing	Type of Bridge	No. x L (in m) x H (in m)
1	172	67067.076	RUB	RCC Box	1x10x5.15
2	176	67582.047	Balancing Culvert	RCC Box	1x4x3.15
3	186	70389.046	Balancing Culvert	RCC BOX	1X2X2
4	190	71544.046	Balancing Culvert	RCC Box	1x4x3.15
5	191	71759.046	Balancing Culvert	RCC BOX	1X2x2
6	197	74074.099	Balancing Culvert	RCC BOX	1X2X2
7	198	74203.079	Balancing Culvert	RCC BOX	1X2X2
8	215	79061.280	RUB	RCC BOX	1X11.8X5.15
9	219	80027.350	RUB	RCC BOX	1X4X3.15
10	224	81281.786	RUB	RCC Box	1x10.x4.5
11	245	85271.073	Balancing Culvert	RCC BOX	1X2x2
12	246	85666.90	Balancing Culvert	RCC BOX	1X4X3
13	250	86379.560	RUB	RCC BOX	1X11.8X5.15
14	255	88560.038	Balancing Culvert	RCC BOX	1X4X4
15	258	89119.065	Balancing Culvert	RCC Box	1X2X2
16	260	90025.000	RUB	RCC Box	1X7X5.15
17	266	91469.131	RUB	RCC Box	1x5x5.15
18	268	92249.307	RUB	RCC BOX	1X5X5
19	269	92369.245	RUB	RCC BOX	1X5X5
20	280	94724.238	RUB	RCC Box	1x10x 5.65
21	295	98873.874	Balancing Culvert	RCC Box	1X5X5.15
22	301	99822.595	RUB & Canal	RCC Box	2X5X5.15
23	317	104369.684	RUB	RCC Box	1x10x5.15

S.	Br.	*Chainage	Type of		SPAN
No.	190.	(m)	Crossing	Type of Bridge	No. x L (in m) x H (in m)
24	325	106118.699	Balancing Culvert	RCC Box	1X4X3.15
25	348	111728.410	RUB	RCC Box	1x10x5.15
26	365	116053.810	Balancing Culvert	RCC BOX	1X4X4
27	374	118379.093	RUB	RCC Box	1x10x6.0
28	376	118839.375	RUB	RCC BOX	1X6X6
29	378	119218.674	RUB	RCC BOX	1X5X5.15
30	379	119573.598	RUB	RCC BOX	1X11.8X5.13
31	380	119684.770	RUB	RCC BOX	1X5X5.15
32	383	120301.142	RUB	RCC Box	1X5X5.15
33	388	122821.445	ROB	RCC Box	2X5X5.15
34	389	123113.094	RUB	RCC Box	2X4X3.15
35	392	123625.971	Gas pipe line	Inverted Portal	1X5X5
36	393	125227.882	Pipe Culvert	RCC PIPE	1X1.2
37	394	125932.564	Pipe Culvert	RCC PIPE	1X1.2
			Badsa Jn S	Sultanpur Connectivity	1
38	4B	3005.803	RUB	RCC BOX	1X10X5.5
			Mandothi Jn.	– Asaudah Connectivi	ty
39	5E	3510.0	RUB	RCC BOX	1X4X4
40	5F	4006.0	RUB	RCC BOX	1X5X3

Note:

- 1. \*Chainages start from centre line of Prithla station of HORC.
- 2. Payment for design of bridges in Annexure F-6/1 will be made under Lumpsum Schedule 'A'.
- 3. Payment for construction of bridges in Annexure F-6/1 will be made under BOQ Schedule 'B'.
- 4. There can be modifications in span arrangement to suit site conditions. Payment shall be made as per actual quantities executed.

#### ANNEXURE-F-6/2

#### 2) LIST OF MAJOR BRIDGES

S. No.	Bridge No.	*Chainage (m)	Type of Crossing	Type of Bridge	Span Arrangement
1.	155	61698.565	RFO & RUB	OWG +CG	2X24.4 + 1X45.7 + 4X24.4
2.	195	73371.630	RUB	OWG	1X76.2
3.	199	74339.079	RUB	OWG	2x30.5
4.	200	74635.455	Canal	OWG	1X76.2 + 1X45.7 + 1X76.2
5.	203	76027.240	CANAL+RUB	CG+PSC U slab	1x30.5+2x12.2
6.	242	84505.278	RUB	OWG+ CG	3X18.3 + 1X61
7.	257	89078.570	RUB	OWG	1X30.5
8.	259	89522.580	CANAL	CG	1x18.3+1x30.5+1x24. 4
9.	267	91968.140	KMP	OWG+ CG	1X30.5+ 1X45.7 + 1x30.5
10.	273	93159.463	NH	OWG	1x61+1x45.7
11.	277	94381.195	RFO	OWG	3X30.5
12.	287	96515.503	Canal	OWG	1x45.7
13.	300	99722.960	Canal	OWG	1X76.2
14.	303	100336.400	NH	OWG+CG	1X61+1X45.7+4X24. 4+1X61
15.	304	101093.650	NH	OWG	2X45.7
16.	343	110191.720	RUB	OWG	1X45.7
17.	346	111210.372	KMP CLOVER LEAF	OWG+CG	1X45.7 + 1X24.4 + 1X30.5 + 1x18.3 + 4X30.5
18.	375	118581.880	UER-II& CANAL	OWG	2x76.2
19.	384	120861.723	RUB	OWG	1X30.5

S. No.	Bridge No.	*Chainage (m)	Type of Crossing	Type of Bridge	Span Arrangement
20.	5C	2680.000	Canal	OWG	1X30.5
21.	5D	2773.19	NH	OWG	2X30.5

Note:

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- 1. \*Chainages start from centre line of Prithla station of HORC.
- 2. Payment for design of bridges in Annexure F-6/2 will be made under Lumpsum Schedule 'A'.
- 3. Payment for construction of bridges in Annexure F-6/2 will be made under BOQ Schedule 'B'.
- 4. There can be some modifications in span arrangement to suit site conditions/ stakeholder's requirement. Payment shall be made as per actual quantities executed.
- 5. Deep foundation shall be provided at locations shown in Tender drawings. Type of foundation at other locations shall be decided as per design requirements.

#### **Annexure F-7**

## [Ref. Sub-Clause 2.1.2, Sub-Clause 2.1.31, Sub-Clause 2.2 (f), Sub-Clause 2.2 (g), Annexures F-1, F-2, F-5 and F-6]

#### Payment matrix for Design of Bridges, Temporary diversions, Permanent diversions, widening of existing roads and Restoration of existing roads for C6 package.

Sr No	Activity	Minor bridges in Annexure F-1 included in Schedule 'A'	Major bridges in Annexure F-2 included in Schedule 'A'	Subways at stations in Annexure F- 5/1 included in Schedule 'A'	Subways at stations in Annexure F- 5/2 included in Schedule <i>'B'</i>	Bridges in Annexure F-6 included in Schedule 'B'
	Number of bridges covered	155	25	14	2	61
i.	a. Submission and approval of design of permanent works, permanent diversion and regrading of roads and submission of As Built drawings and documents	Included in Cost Centre 'CD' of Price Schedule A	Included in Cost Centre 'CD' of Price Schedule A	Included in Cost Centre 'CD' of Price Schedule A	Included in Cost Centre 'CD' of Price Schedule A	Included in Cost Centre 'CD' of Price Schedule A
	<ul> <li>b. Design of Temporary works and temporary diversion/widening of roads</li> </ul>	Included in Cost Centre 'CD' of Price Schedule A	Included in Cost Centre 'CD' of Price Schedule A	NA	NA	Included in quoted rates of relevant items under Schedule-B
ii.	Construction of all permanent works as shown in Tender drawings	Included in Cost Centre 'CB' of Price Schedule A	Included in Cost Centre 'CB' of Price Schedule A	Included in Cost Centre 'CS' of Price Schedule A	Will be paid as per actual quantities executed under relevant items under Schedule-B	Will be paid as per actual quantities executed under relevant items under Schedule-B

Sr No	Activity	Minor bridges in Annexure F-1 included in Schedule 'A'	Major bridges in Annexure F-2 included in Schedule 'A'	Subways at stations in Annexure F- 5/1 included in Schedule 'A'	Subways at stations in Annexure F- 5/2 included in Schedule 'B'	Bridges in Annexure F-6 included in Schedule 'B'
	Number of bridges covered	155	25	14	2	61
iii.	Construction of temporary diversions, if any, including additional land (if any required beyond ROW) for constructing the same	Included in quoted lumpsum cost of works under Schedule A	Included in quoted lumpsum cost of works under Schedule A	NA	NA	No separate payment for Construction of temporary diversions shall be made except for bridge No. 267 at Ch.91965.012 m and bride No. 5D at Ch.2773.190 m, where cost of temporary diversion and allied works shall be paid separately under Schedule 'B'.
iv.	Construction of permanent diversions and re-grading of roads, if any required	Included in quoted lumpsum cost of works under Schedule A	Included in quoted lumpsum cost of works under Schedule A.	NA	NA	Will be paid separately under Schedule -B
V.	Widening of existing roads (within HORC ROW)	Included in quoted lumpsum cost of works under Schedule A	Included in quoted lumpsum cost of works under Schedule A	NA	NA	Included in quoted rates of relevant items under Schedule-B
vi.	Restoration of existing roads damaged during construction activities	Included in quoted lumpsum cost of works under Schedule A	Included in quoted lumpsum cost of works under Schedule A	NA	NA	Included in the rates quoted under Schedule- B

Sr No	Activity	Minor bridges in Annexure F-1 included in Schedule 'A'	Major bridges in Annexure F-2 included in Schedule 'A'	Subways at stations in Annexure F- 5/1 included in Schedule 'A'	Subways at stations in Annexure F- 5/2 included in Schedule 'B'	Bridges in Annexure F-6 included in Schedule 'B'
	Number of bridges covered	155	25	14	2	61
vii.	Design of permanent diversion of Canal/Drain/ Nallah	Included in Cost Centre 'CD' of Price Schedule A	Included in Cost Centre 'CD' of Price Schedule A	NA	NA	Included in Cost Centre 'CD' of Price Schedule A
viii.	Construction of permanent diversion of Canal/Drain/ Nallah	Will be paid separately under Schedule-B	Will be paid separately under Schedule-B	NA	NA	Will be paid separately under Schedule-B

# **ANNEXURE F-8**

#### (Ref. Sub-Clause 7.3.17 of Section VII-6: OCS (Civil & BLT))

## LIST OF TRACK FITTINGS

#### LIST OF MATERIALS FOR 1 SET OF H- BEAM SLEEPER.

<b>S.</b>	DESCRIPTION OF PARTS	DRAWING NO.	SPECIFICATION	Nos.
No.				
1	H-BEAM (ISHB 200X200) 2655 mm LENGTH	BASED ON	BS :45, IS :4759	1
		R.D.S.O./B-1636/4/R		
2	M.S BASE PLATE	R.D.S.O./T-8760	IS.2062-2011	2
3	RAIL PAD WITH EMBEDDED STEEL	R.D.S.O./T-8761	IRS. SPECIFICATION FOR 10mm. THICK	2
	PLATE		G.R. PAD (PROVISIONAL-1989) & STEEL AS	
			PER PROVISIONAL-2019	
4	SPL.CAST LINER (INNER)FOR 60KG RAIL	R.D.S.O./T-8762	<b>IRS. SPECIFICATION PROVISIONAL -2019</b>	2
5	SPL.CAST LINER (OUTER)FOR 60KG RAIL	R.D.S.O./T-8763	<b>IRS. SPECIFICATION PROVISIONAL -2019</b>	2
6	ELASTIC RAIL CLIP MK III	RDSO/T-3701	IRS T-31-2018	4
7	TAPPER WASHER (FOR GUARD RAIL)	R.D.S.O./T-5161	IS.226-1962	4
8	TAPPER WASHER (FOR GUARD RAIL)	R.D.S.O./T-5162	IS.226-1962	4
9	SINGLE COIL SPRING WASHER	R.D.S.O./T-10773	IRS T-42-1988	4
10	6mm GROOVED RUBBER PAD (FOR	R.D.S.O./T-5163	IRS. SPECIFICATION FOR 6mm. THICK G.R.	4
	GUARD RAIL)		PAD (PROVISIONAL-1989)	
11	305X300X25/30mm ELASTOMERIC PAD	R.D.S.O./B-1636/5	REV02 Dt-26/11/2012	2
12	TAPERED SPLIT PIN	CE's NO.22994/8	IS.226-1962	8
13	Φ28 HOOK BOLT347mm Length and 2 Nos	BASED ON	IS.226-1962	4
	NUT & 3 Nos. Washer	R.D.S.O./B-1636/5		
14	PACKING PLATE FOR GUARD RAIL		IS.226-1962	4
	150mmX22mmX75mm			
15	BOLT & NUT FOR GUARD RAIL	R.D.S.O./T-5164	IRS T-10-1968	2

**Note:** The above list excluding Sr No.1, 2 & 14 will be considered equal to 1 set of spare fittings. The Contractor shall supply spare set of fittings for 10% quantity of H Beam sleepers under NS Item No. 17 of Schedule 'B'.

# Tender No. HORC/HRIDC/C-6/2024 Attachment 5

# of

# **Corrigendum No. 2**

Part 2, Section VII-4: Employer's Requirements– Construction (Civil & BLT)

ATTACHMENT C-3/R1

MINIMUM REQUIREMENT OF THE DDC'S ORGANIZATIONAL STRUCTURE

2

# ATTACHMENT C-3/R1

### MINIMUM REQUIREMENT OF THE DDC'S ORGANIZATIONAL STRUCTURE

The DDC shall submit an Organisation Chart together with clear description of the responsibilities of each member within the overall works programme.

S. No	Designation	Numbers	Experience
1	Team Leader	01	Graduate degree in Civil Engineering having experience not less than 07 years and would have handled minimum 01 project as Team Leader of similar nature & complexity.
2	Bridge Design Expert	05	Graduate degree in Civil Engineering with total experience of 05 years and minimum 03 years of experience in <i>bridge design for Railway/Metro rail/RRTS/DFC/Road project</i> and would have <i>designed</i> minimum 01 project involving railway bridge involving deep foundation.
3	Steel Bridge Design Expert	01	Graduate degree in Civil Engineering with total experience of 05 years and minimum 03 years of experience in steel bridge design for Railway/Metro rail/RRTS/DFC/Road project and would have designed minimum 01 project involving railway OWG bridge of minimum span 45.7 m span.
4	Embankment Design Expert	01	Graduate degree in Civil Engineering with total experience of 05 years and minimum 03 years of experience in <i>design of embankment for</i> <i>Railway/Metro rail/RRTS/DFC/Road project</i> and would have <i>designed</i> minimum 01 project involving railway/highway embankment of minimum 6 m height.
5	Rail Structure Interaction (RSI) Design Expert	01	Graduate degree in Civil Engineering with total experience of 05 years and minimum 01 years of experience in design of Rail Structure Interaction (RSI) for Railway/Metro rail/RRTS/DFC project and would have designed minimum 01 project involving RSI study of railway bridge having minimum length of 100m.

6	Building/other Structural Engineers	03	Graduate degree in Civil Engineering with total experience of 05 years and minimum 03 years experience of building design/other structure design and would have designed minimum 01 project involving building/other structures.
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#### NOTES:

- 1. Sufficient documentary proof to substantiate the qualification and work experience shall be submitted. The Contractor shall submit proposal of DDC experts having experience as mentioned above to the Engineer for approval before deployment.
- 2. The requirement given above is minimum. The Contractor shall be required to supplement the above mentioned design team as per requirement of the Works so as to adhere to the timelines given in Appendix-2- Contract Key Dates and Completion Date, Section VII-9: Appendices, Part 2- Employer's Requirements under the Contract.
- 3. Design expert at item No. 5 shall not be required for the entire period of the project and may be deployed as per the requirement.
- 4. Relaxation in qualification / experience can be given by the Engineer in exceptional cases where candidates have got high level of professional competency. Decision of the Engineer in such cases shall be final and binding.

# Tender No. HORC/HRIDC/C-6/2024

# Attachment 6 of Corrigendum No. 2

# Section VII: 8A: Tender Drawings and Documents Revised, Missing and New Additional Tender Drawings

- (i) Revised List of Tender Drawings/R2
- (ii) Alignment Plan & L-Section (Revised)
- (iii) ESP/Yard Plan (Revised)
- (iv) Station Building and Subway (Revised and New Drawings)
- (v) Bridges (Revised and New Drawings)
- (vi) Miscellaneous Drawings (Conceptual Plans) (Revised and New Drawings)

Attachment 6 to Corrigendum No. 2

# Section VII-8A Tender Drawings/R2

Tenderer shall download Section VII-8A: Tender Drawings/R1 are available for downloading under Active Tender Section on HRIDC website (<u>https://hridc.co.in/active-tender.php</u>). Section VII-8A: Tender Drawings/R1 uploaded on HRIDC website for Package C-6 shall be deemed to form part of Tender Documents. Attachment 6 of Corrigendum No. 2 contains only revised and new drawings. Tenderer shall refer Attachment 1 of Corrigendum No. 1 for drawings which have not been revised (Drawing Nos. shown in Black Colour font in the list given hereunder) in Corrigendum No. 2. Revised List of Tender Drawings/R2 are enclosed hereunder.

- Black colour shows Tender drawings which have not been revised in Corrigendum No. 2
- Blue colour shows Tender drawings which have been revised in
Corrigendum No. 2
- Red colour shows New Tender drawings included in Corrigendum No. 2

# **Revised List of Tender Drawings/R2**

# I. Civil Drawings

S. No	TITLE	DRAWING NO.		
1. AI	1. ALIGNMENT PLAN & L-SECTION			
1.	Conceptual Plan & longitudinal section (60.0 KM to 65.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(60.0)- (65.0) KM_A1		
2.	Conceptual Plan & longitudinal section (65.0 KM to 70.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(65.0)- (70.0) KM_A1		
3.	Conceptual Plan & longitudinal section (70.0 KM to 75.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(70.0)- (75.0) KM_A1		
4.	Conceptual Plan & longitudinal section (75.0 KM to 80.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(75.0)- (80.0) KM_A1		
5.	Conceptual Plan & longitudinal section (80.0 KM to 85.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(80.0)- (85.0) KM_A1		
6.	Conceptual Plan & longitudinal section (85.0 KM to 90.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(85.0)- (90.0) KM_A1		
7.	Conceptual Plan & longitudinal section (90.0 KM to 95.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(90.0)- (95.0) KM_A1		
8.	Conceptual Plan & longitudinal section (95.0 KM to 100.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(95.0)- (100.0) KM_A1		
9.	Conceptual Plan & longitudinal section (100.0 KM to 105.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(100.0)- (105.0) KM_A1		
10.	Conceptual Plan & longitudinal section (105.0 KM to 110.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(105.0)- (110.0) KM_A1		
11.	Conceptual Plan & longitudinal section (110.0 KM to 115.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(110.0)- (115.0) KM_A1		

S.	TITLE	DRAWING NO.
No		
12.	Conceptual Plan & longitudinal section (115.0 KM to 120.0 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(115.0)- (120.0) KM_A1
13.	Conceptual Plan & longitudinal section (120.0 KM to 125.82 KM)	GC-HRIDC-ALL-DRW-ALN-P&P(120.0)- (125.82) KM A1
14.	Conceptual Plan & longitudinal section Mandothi To Asaudha Connectivity	GC-HRIDC-DRW-ALN-P&P-MAN-
15.	Conceptual Plan & longitudinal section Badsa To	GC-HRIDC-DRW-ALN-P&P-BAD-SUL_A1
2 FS		
2. ES	F/IARD FLAN	COUDIDO OC DDW OTN ESD DDS01 41
1.	Station Ch: 64742.718 m F/Prithala	GC-HRIDC-C6-DRW-SIN-ESP-BDS01_A1
2.	Conceptual Engineering Scale Plan Devarkhana Station Yard Ch:71098.961 m F/Prithla	GC-HRIDC-C6-DRW-STN-ESP-DEV01_A1
3.	Conceptual Engineering Scale Plan Badli Crossing station Yard CH:76829.080m F/Prithla	GC-HRIDC-C6-DRW-STN-ESP-BDL01_A1
4.	Conceptual Engineering Scale Plan Mandothi Station Yard CH:90449.137 m F/Prithala	GC-HRIDC-C6-DRW-STN-ESP-MAN01_A1
5.	Conceptual Engineering Scale Plan New Asaudth Station CH:94031.161 m F/Prithala	GC-HRIDC-C6-DRW-STN-ESP-NAS01_A1
6.	Conceptual Engineering Scale Plan Jasaur Kheri Station Yard CH:100228.880 m F/Prithala	GC-HRIDC-C6-DRW-STN-ESP-JSK01_A1
7.	Conceptual Engineering Scale Plan Kharkhoda Kirholi Station Yard CH:108728.865 m F/Prithala	GC-HRIDC-C6-DRW-STN-ESP-KHR01_A1
8.	Conceptual Engineering Scale Plan Tarakpur crossing Station Yard CH:114218.885 m F/Prithala	GC-HRIDC-C6-DRW-STN-ESP-TAR01_A1
9.	Conceptual Engineering Scale Plan New Harsana Kalan Junction Ch:125075.0 m F/Prithala.KM:35.68F/DLI	AA/RLY/2245/HRIDC/ESP-17/REV-5
10.	Engineering scale plan of Asaudah at KM: 37.720	GC-HRIDC-C6-DRW-STN-ESP-IRA01 A0
11.	Engineering scale plan Sultanpur Kaliawas Junction CH:3674 74m F/Badsa KM:7/187	AA/RLY/2245/HRIDC/ESP-07/REV-3
3. ST	ATION BUILDING AND SUBWAY	
1.	Conceptual Plan of Badsa Station & Subway No 165	GC-HRIDC-C6-DRW-STN-BDA01_A1
	Conceptual Architectural drawing Badsa station	GC-HRIDC-C6-DRW-STN-BDA01_A1 (Sheet 2 of 3)
	Conceptual Architectural drawing Badsa station	GC-HRIDC-C6-DRW-STN-BDA01_A1
	Building	(Sheet 3 of 3)
2.	Conceptual Plan of Deverkhana Station & Subway No 187 & 187A	GC-HRIDC-C6-DRW-STN-DEV01_A1 (Sheet 1 of 1)
3.	Conceptual Plan of Badli Station & Subway No 203 & 204A	GC-HRIDC-C6-DRW-STN-BADL01_A1 (Sheet 1 of 3)
	Conceptual Architectural drawing Badli station Building	GC-HRIDC-C6-DRW-STN- BADL01_A1 (Sheet 2 of 3)
	Conceptual Architectural drawing Badli station Building	GC-HRIDC-C6-DRW-STN- BADL01_A1 (Sheet 3 of 3)
4.	Conceptual Plan of Mandothi Station & Subway No 261 & 263	GC-HRIDC-C6-DRW-STN-MAN01_A1 (Sheet 1 of 3)
	Conceptual Architectural drawing Mandothi station Building	GC-HRIDC-C6-DRW-STN- MAN01_A1 (Sheet 2 of 3)

S. No	TITLE	DRAWING NO.				
	Conceptual Architectural drawing Mandothi station Building	GC-HRIDC-C6-DRW-STN- MAN01_A1 (Sheet 3 of 3)				
5.	Conceptual Plan of New Asudha Station & Subway No 278 & 279A	GC-HRIDC-C6-DRW-STN-NAS01_A1 (Sheet 1 of 1)				
6.	Conceptual Plan of Jasaur Kheri Station & Subway No 293A & 297	GC-HRIDC-C6-DRW-STN-JAS01_A1 (Sheet 1 of 1)				
7.	Conceptual Plan of Kharkhoda Kirholi Station & Subway No 336 & 337	GC-HRIDC-C6-DRW-STN-KHAR01_A1 (Sheet 1 of 5)				
	Conceptual Architectural drawing Kharkhoda Kirholi station Building	GC-HRIDC-C6-DRW-STN- KHAR01_A1 (Sheet 2 of 5)				
	Conceptual Architectural drawing Kharkhoda Kirholi station Building	GC-HRIDC-C6-DRW-STN- KHAR01_A1 (Sheet 3 of 5)				
	Conceptual Architectural drawing Kharkhoda Kirholi service Building	GC-HRIDC-C6-DRW-STN- KHAR01_A1 (Sheet 4 of 5)				
0	Conceptual Architectural drawing Kharkhoda Kirholi service Building	GC-HRIDC-C6-DRW-STN-KHAR01_A1 (Sheet 5 of 5)				
0.	357A & 359 Conceptual Architectural drawing Tarakour station	(Sheet 1 of 3)				
	Building Conceptual Architectural drawing Tarakpur station	(Sheet 2 of 3) GC-HRIDC-C6-DRW-STN- TAR01_A1				
	Building	(Sheet 3 of 3)				
9.	Conceptual Architectural drawing New Harsana Kalan station Building	GC-HRIDC-C6-DRW-STN- NHK01_A0 (Sheet 1 of 2)				
	Conceptual Architectural drawing New Harsana Kalan station Building	GC-HRIDC-C6-DRW-STN- NHK01_A0 (Sheet 2 of 2)				
4. BR	4. BRIDGES					
4.1 M	INOR BRIDGES					
1.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-GAD 01156 &				
	Balancing Culvert bridge no.156 & 4A Span 1x4x4.2 &1x4x2.65 RCC Box at Ch: 62025.073 & CH 2727.620	0104A_A0				
2.	Conceptual general arrangement drawing for Balancing Culvert bridge no.157 Span 1x 2x 2 RCC box at Ch: 62255.378	GC-HRIDC-C6-DRW-BRD-GAD_01157_A0				
3.	Conceptual general arrangement drawing for RUB Bridge no. 158 Span 1X7X4 RCC box at Ch:62484.662	GC-HRIDC-C6-DRW-BRD-GAD_01158_A0				
4.	Conceptual general arrangement drawing for Balancing Culvert bridge no. 159 Span 1x2x3 RCC box at Ch: 62685.476	GC-HRIDC-C6-DRW-BRD-GAD_01159_A0				
5.	Conceptual general arrangement drawing for GAIL gas pipeline bridge no. 160 Span 1x5x5 INVERTED PORTAL at Ch: 62761.902	GC-HRIDC-C6-DRW-BRD-GAD_01160_A0				
6.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 161 Span 1X1.8 RCC pipe at Ch: 63116.756	GC-HRIDC-C6-DRW-BRD-GAD_01161_A0				
7.	Conceptual general arrangement drawing for Balancing Culvert Bridge no 162	GC-HRIDC-C6-DRW-BRD-GAD-01162_A1				

S. No	TITLE	DRAWING NO.
110	Span 1X4X3.15 RCC box at Ch: 63548.961	
8.	Conceptual general arrangement drawing for Pipe Culvert bridge no. 163 Span 1X1.8 RCC pipe at Ch: 64190.090	GC-HRIDC-C6-DRW-BRD-GAD_01163_A0
9.	Conceptual general arrangement drawing for balancing culvert bridge no. 164 Span 1X4X3 RCC box at Ch: 64492.449	GC-HRIDC-C6-DRW-BRD-GAD_01164_A1
10.	Conceptual general arrangement drawing for RUB Bridge no 166 Span 1X7X3.65 RCC box at Ch: 64964.375	GC-HRIDC-C6-DRW-BRD-GAD-01166_A0
11.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 167 Span 1x1.8 RCC Pipe at Ch: 65383.263	GC-HRIDC-C6-DRW-BRD-GAD-01167_A0
12.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 168 Span 1x1.8 RCC Pipe at Ch: 65626.087	GC-HRIDC-C6-DRW-BRD-GAD-01168_A1
13.	Conceptual general arrangement drawing for Balancing Culvert Bridge no 169 Span 1x4x3 RCC Box at Ch: 65900.000	GC-HRIDC-C6-DRW-BRD-GAD-01169_A1
14.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 170 Span 1x1.8 RCC Pipe at Ch: 66476.051	GC-HRIDC-C6-DRW-BRD-GAD-01170_A0
15.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 171 Span 1x1.8 RCC Pipe at Ch: 66719.051	GC-HRIDC-C6-DRW-BRD-GAD-01171_A1
16.	Conceptual general arrangement drawing for RUB Bridge no 172 Span 1x10x5.15 RCC Box at Ch: 67067.076	GC-HRIDC-C6-DRW-BRD-GAD-01172_A0
17.	Conceptual general arrangement drawing for Canal Bridge no 173 Span 1x6x5.68+1x5x5.68 RCC Box at Ch: 67190.041	GC-HRIDC-C6-DRW-BRD-GAD-01173_A0
18.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 174 Span 1x1.8 RCC Pipe at Ch: 67329.047	GC-HRIDC-C6-DRW-BRD-GAD-01174_A1
19.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 175 Span 1x1.8 RCC Pipe at Ch: 67383.210	GC-HRIDC-C6-DRW-BRD-GAD-01175_A1
20.	Conceptual general arrangement drawing for Balancing Culvert Bridge no 176 Span 1x4x3.15 RCC Box at Ch: 67582.047	GC-HRIDC-C6-DRW-BRD-GAD-01176_A1
21.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 177 Span 1x1.8 RCC Pipe at Ch: 67919.046	GC-HRIDC-C6-DRW-BRD-GAD-01177_A1
22.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 179 Span 1x1.8 RCC Pipe at Ch: 68449.011	GC-HRIDC-C6-DRW-BRD-GAD-01179_A1
23.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 180 Span 1x1.8 RCC Pipe at Ch: 68799.047	GC-HRIDC-C6-DRW-BRD-GAD-01180_A0
24.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 181 Span 1x1.8 RCC Pipe at Ch:	GC-HRIDC-C6-DRW-BRD-GAD-01181_A1

S. No	TITLE	DRAWING NO.
	69109.046	
25.	Conceptual general arrangement drawing for Balancing Culvert Bridge no 182 Span 1x4x3.15 RCC Box at Ch: 69192.504	GC-HRIDC-C6-DRW-BRD-GAD-01182_A1
26.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 186 Span 1x2x2 RCC Pipe at Ch: 70389.046	GC-HRIDC-C6-DRW-BRD-GAD-01186_A0
27.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 187 Span 1x1.8 RCC Pipe at Ch: 70870.000	GC-HRIDC-C6-DRW-BRD-GAD-01187_A1
28.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 188 Span 1x1.8 RCC Pipe at Ch: 71124.047	GC-HRIDC-C6-DRW-BRD-GAD-01188_A0
29.	Conceptual general arrangement drawing for Balancing Culvert Bridge no 190 Span 1x4x3.15 RCC Box at Ch: 71544.046	GC-HRIDC-C6-DRW-BRD-GAD-01190_A0
30.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 191 Span 1x2x2 RCC Pipe at Ch: 71759.046	GC-HRIDC-C6-DRW-BRD-GAD-01191_A0
31.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 192 Span 1x1.8 RCC Pipe at Ch: 72389.046	GC-HRIDC-C6-DRW-BRD-GAD-01192_A1
32.	Conceptual general arrangement drawing for Pipe Culvert Bridge no 193 Span 1x1.8 RCC Pipe at Ch: 72744.048	GC-HRIDC-C6-DRW-BRD-GAD-01193_A1
33.	Conceptual general arrangement drawing for Balancing Culvert bridge no 194 Span 1X2X2 RCC box at Ch. 73249.076	GC-HRIDC-C6-DRW-BRD-GAD-01194_A0
34.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 196 Span 1X2X2 RCC box at Ch. 73803.079	GC-HRIDC-C6-DRW-BRD-GAD_01196_A0
35.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 197 Span 1X2X2 RCC box at Ch. 74074.099	GC-HRIDC-C6-DRW-BRD-GAD_01197_A0
36.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 198 Span 1X2X2 RCC box at Ch. 74203.079	GC-HRIDC-C6-DRW-BRD-GAD_01198_A0
37.	Conceptual general arrangement drawing for RUB Bridge No. 202 Span 1X6X4.5 RCC box at Ch. 75503.079	GC-HRIDC-C6-DRW-BRD-GAD_01202_A0
38.	Conceptual general arrangement drawing for RUB Bridge no 204 Span 1X6X4 RCC box at Ch: 76779.079	GC-HRIDC-C6-DRW-BRD-GAD-01204_A0
39.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 205 Span 1X2X2 RCC box at Ch: 77156.000	GC-HRIDC-C6-DRW-BRD-GAD_01205_A0
40.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 206 Span 1X2X2 RCC box at Ch: 77258.079	GC-HRIDC-C6-DRW-BRD-GAD_01206_A0
41.	Conceptual general arrangement drawing for RUB Bridge No. 209, Span 1X11.2X5.15 RCC box at Ch.	GC-HRIDC-C6-DRW-BRD-GAD_01209_A0

S.	TITLE	DRAWING NO.
INO	77738 079	
42.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 210, Span 1x1.8 RCC Pipe at Ch. 78089.079	GC-HRIDC-C6-DRW-BRD-GAD_01210_A1
43.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 211, Span 1x1.8 RCC Pipe at Ch. 78398.956	GC-HRIDC-C6-DRW-BRD-GAD_01211_A1
44.	Conceptual general arrangement drawing for RUB Bridge No. 212 Span 1X4X3 RCC box at Ch: 78488.723	GC-HRIDC-C6-DRW-BRD-GAD_01212_A0
45.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 213, Span 1x1.8 RCC Pipe at Ch. 78639.709	GC-HRIDC-C6-DRW-BRD-GAD_01213_A1
46.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 214, Span 1x1.8 RCC Pipe at Ch. 78979.079	GC-HRIDC-C6-DRW-BRD-GAD_01214_A0
47.	Conceptual general arrangement drawing for RUB Bridge No. 215 Span 1X11.8X5.15 RCC box at Ch: 79061.280	GC-HRIDC-C6-DRW-BRD-GAD_01215_A0
48.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 216 Span 1X2X2 RCC box at Ch: 79289.079	GC-HRIDC-C6-DRW-BRD-GAD_01216_A0
49.	Conceptual general arrangement drawing for RUB Bridge No. 217 Span 1x4x3 RCC box at Ch: 79590.706	GC-HRIDC-C6-DRW-BRD-GAD_01217_A0
50.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 218, Span 1x1.8 RCC Pipe at Ch. 79699.076	GC-HRIDC-C6-DRW-BRD-GAD_01218_A1
51.	Conceptual general arrangement drawing for RUB Bridge No. 219 Span 1x4x3.15 RCC box at Ch: 80027.350	GC-HRIDC-C6-DRW-BRD-GAD_01219_A0
52.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 221, Span 1x1.8 RCC Pipe at Ch. 80279.079	GC-HRIDC-C6-DRW-BRD-GAD_01221_A0
53.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 222, Span 1x1.8 RCC Pipe at Ch. 80649.079	GC-HRIDC-C6-DRW-BRD-GAD_01222_A0
54.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 223, Span 1x1.2 RCC Pipe at Ch. 80939.079	GC-HRIDC-C6-DRW-BRD-GAD_01223_A0
55.	Conceptual general arrangement drawing for RUB Bridge No. 224 Span 1x10x4.5 RCC box at Ch: 81281.786	GC-HRIDC-C6-DRW-BRD-GAD_01224_A0
56.	Conceptual general arrangement drawing for HPCL Pipeline Bridge No. 225 Span 1x7x5 Inverted U Portal Frame at Ch: 81356.014	GC-HRIDC-C6-DRW-BRD-GAD_01225_A0
57.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 226, Span 1x1.8 RCC Pipe at Ch. 81524.076	GC-HRIDC-C6-DRW-BRD-GAD_01226_A1
58.	Conceptual general arrangement drawing for RUB Bridge No. 227 Span 1x4x3.15 RCC box at Ch:	GC-HRIDC-C6-DRW-BRD-GAD_01227_A0
S. No	TITLE	DRAWING NO.
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	81606.729	
59.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 228, Span 1x1.8 RCC Pipe at Ch. 81845.653	GC-HRIDC-C6-DRW-BRD-GAD_01228_A1
60.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 230 Span 1X2X2 RCC box at Ch: 82179.076	GC-HRIDC-C6-DRW-BRD-GAD_01230_A0
61.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 231, Span 1x1.8 RCC Pipe at Ch. 82449.076	GC-HRIDC-C6-DRW-BRD-GAD_01231_A0
62.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 232, Span 1x1.8 RCC Pipe at Ch. 82579.075	GC-HRIDC-C6-DRW-BRD-GAD_01232_A0
63.	Conceptual general arrangement drawing for RUB Bridge No. 233 Span 1x4x4.5 RCC Box at Ch: 82935.000	GC-HRIDC-C6-DRW-BRD-GAD_01233_A0
64.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 236, Span 1x1.8 RCC Pipe at Ch. 83297.108	GC-HRIDC-C6-DRW-BRD-GAD_01236_A0
65.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 237, Span 1x1.8 RCC Pipe at Ch. 83663.622	GC-HRIDC-C6-DRW-BRD-GAD_01237_A0
66.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 238 Span 1X4X2.8 RCC box at Ch: 83757.075	GC-HRIDC-C6-DRW-BRD-GAD_01238_A0
67.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 239, Span 1x1.8 RCC Pipe at Ch. 83779.075	GC-HRIDC-C6-DRW-BRD-GAD_01239_A1
68.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 240, Span 1x1.8 RCC Pipe at Ch. 83970.103	GC-HRIDC-C6-DRW-BRD-GAD_01240_A0
69.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 241, Span 1x2x2 RCC Pipe at Ch. 84380.113	GC-HRIDC-C6-DRW-BRD-GAD_01241_A0
70.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 243 Span 1X1.8 RCC Pipe at Ch: 84911.912	GC-HRIDC-C6-DRW-BRD-GAD_01243_A0
71.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 244 Span 1X6.1 PSC Slab at Ch: 84968.847	GC-HRIDC-C6-DRW-BRD-GAD_01244_A0
72.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 245 Span 1x2x2 RCC Box at Ch: 85271.073	GC-HRIDC-C6-DRW-BRD-GAD_01245_A0
73.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 246 Span 1x4x3 RCC Box at Ch: 85666.900	GC-HRIDC-C6-DRW-BRD-GAD_01246_A1
74.	Conceptual general arrangement drawing for Canal Bridge No. 247 Span 1x3x3.5 RCC Box at Ch: 85857.820	GC-HRIDC-C6-DRW-BRD-GAD_01247_A0
75.	Conceptual general arrangement drawing for Canal Bridge No. 249 Span 1x3x3 RCC Box at Ch:	GC-HRIDC-C6-DRW-BRD-GAD-01249_A0

<b>S.</b>	TITLE	DRAWING NO.
No	96150.071	
76	Concentual general arrangement drawing for RUB	CC HRIDC C6 DRW BRD GAD 01250 A1
70.	Bridge No. 250 Span 1x11.8x5.15 RCC Box at Ch: 86379.560	GC-IIKIDC-CO-DKW-BKD-GAD-01250_A1
77.	Conceptual general arrangement drawing for RUB Bridge No. 251 Span 1x11.8x5.15 RCC Box at Ch: 86782.880	GC-HRIDC-C6-DRW-BRD-GAD-01251_A0
78.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 252 Span 1x4x3.6 RCC Box at Ch: 87209.068	GC-HRIDC-C6-DRW-BRD-GAD-01252_A0
79.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 253 Span 1x1.2 RCC Pipe at Ch: 87629.067	GC-HRIDC-C6-DRW-BRD-GAD-01253_A0
80.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 254 Span 1x1.8 RCC Pipe at Ch: 88124.068	GC-HRIDC-C6-DRW-BRD-GAD-01254_A1
81.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 255 Span 1x4x4 RCC Box at Ch: 88560.038	GC-HRIDC-C6-DRW-BRD-GAD-01255_A1
82.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 256 Span 1x1.8 RCC Pipe at Ch: 88734.065	GC-HRIDC-C6-DRW-BRD-GAD-01256_A0
83.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 258 Span 1x2x2 RCC Box at Ch: 89119.065	GC-HRIDC-C6-DRW-BRD-GAD-01258_A0
84.	Conceptual general arrangement drawing for RUB Bridge No. 260 Span 1x7x5.15 RCC Box at Ch: 90025.000	GC-HRIDC-C6-DRW-BRD-GAD-01260_A1
85.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 262 Span 1x4x4 RCC Box at Ch: 90419.137	GC-HRIDC-C6-DRW-BRD-GAD-01262_A0
86.	Conceptual general arrangement drawing for Canal Bridge No. 264 Span 1X6X6 RCC Box at Ch:90879.131	GC-HRIDC-C6-DRW-BRD-GAD-01264_A0
87.	Conceptual general arrangement drawing for RUB Bridge No. 265 Span 1x5x5.15 RCC Box at Ch: 91089.137	GC-HRIDC-C6-DRW-BRD-GAD-01265_A1
88.	Conceptual general arrangement drawing for RUB Bridge No. 266 Span 1x5x5.15 RCC Box at Ch: 91469.131	GC-HRIDC-C6-DRW-BRD-GAD-01266_A0
89.	Conceptual general arrangement drawing for RUB Bridge No. 268 Span 1x5x5 RCC Box at Ch: 92249.307	GC-HRIDC-C6-DRW-BRD-GAD-01268_A0
90.	Conceptual general arrangement drawing for RUB Bridge No. 269 Span 1x5x5 RCC Box at Ch: 92369.245	GC-HRIDC-C6-DRW-BRD-GAD-01269_A0
91.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 270 Span 1x2x2 RCC Box at Ch: 92450.000	GC-HRIDC-C6-DRW-BRD-GAD-01270_A0
92.	Conceptual general arrangement drawing for RUB Bridge No. 271 Span 1x5x5.15 RCC Box at Ch:	GC-HRIDC-C6-DRW-BRD-GAD-01271_A1

S. No	TITLE	DRAWING NO.
110	92520.000	
93.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 272 Span 1x2x2 RCC Box at Ch: 93040.007	GC-HRIDC-C6-DRW-BRD-GAD-01272_A0
94.	Conceptual general arrangement drawing for RUB Bridge No. 274 Span 1x4x4 RCC Box at Ch: 93747.996	GC-HRIDC-C6-DRW-BRD-GAD-01274_A0
95.	Conceptual general arrangement drawing for HPCL Pile Line Bridge No. 275 Span 1x7x5 Inverted U Frame at Ch: 93814.420	GC-HRIDC-C6-DRW-BRD-GAD-01275_A0
96.	Conceptual general arrangement drawing for Canal Bridge No. 276 Span 1X2X2 RCC Box at Ch: 94254.435	GC-HRIDC-C6-DRW-BRD-GAD-01276_A0
97.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 279 Span 1x2x2 RCC Box at Ch: 94598.874	GC-HRIDC-C6-DRW-BRD-GAD-01279_A0
98.	Conceptual general arrangement drawing for RUB Bridge No. 280 Span 1x10x6.25 RCC Box at Ch: 94724.238	GC-HRIDC-C6-DRW-BRD-GAD-01280_A0
99.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 282 Span 1x2x2 RCC Box at Ch: 95089.873	GC-HRIDC-C6-DRW-BRD-GAD-01282_A0
100.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 284 Span 1x2x2 RCC Box at Ch: 95623.874	GC-HRIDC-C6-DRW-BRD-GAD-01284_A0
101.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 285 Span 1x1.8 RCC Pipe at Ch: 96028.876	GC-HRIDC-C6-DRW-BRD-GAD-01285_A0
102.	Conceptual general arrangement drawing for RUB Bridge No. 286 Span 1x4x4 RCC Box at Ch: 96153.801	GC-HRIDC-C6-DRW-BRD-GAD-01286_A0
103.	Conceptual general arrangement drawing for RUB Bridge No. 288 Span 1x6.1 PSC Slab at Ch: 96741.634	GC-HRIDC-C6-DRW-BRD-GAD-01288_A0
104.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 289 Span 1x1.8 RCC Pipe at Ch: 97228.876	GC-HRIDC-C6-DRW-BRD-GAD-01289_A1
105.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 290 Span 1x6.1 PSC SLAB at Ch: 97707.806	GC-HRIDC-C6-DRW-BRD-GAD-01290_A1
106.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 291 Span 1x2x2 RCC Box at Ch: 97828.876	GC-HRIDC-C6-DRW-BRD-GAD-01291_A0
107.	Conceptual general arrangement drawing for RUB Bridge No. 292 Span 1x11.8x5.15 RCC Box at Ch: 97969.987	GC-HRIDC-C6-DRW-BRD-GAD-01292_A0
108.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 293 Span 1x1.8 RCC Pipe at Ch: 98233.875	GC-HRIDC-C6-DRW-BRD-GAD-01293_A1
109.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 294 Span 1x1.8 RCC Pipe at Ch:	GC-HRIDC-C6-DRW-BRD-GAD-01294_A0

S. No	TITLE	DRAWING NO.
	98792.183	
110.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 295 Span 1x5x5.15 RCC Box at Ch: 98873.874	GC-HRIDC-C6-DRW-BRD-GAD-01295_A0
111.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 296 Span 1x1.8 RCC Pipe at Ch: 98888.874	GC-HRIDC-C6-DRW-BRD-GAD-01296_A0
112.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 299 Span 1x2x2 RCC Box at Ch: 99558.875	GC-HRIDC-C6-DRW-BRD-GAD-01299_A0
113.	Conceptual general arrangement drawing for Canal Bridge No. 301 Span 2X5X5.15 RCC BOX at Ch: 99822.595	GC-HRIDC-C6-DRW-BRD-GAD-01301_A0
114.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 302 Span 1x2x2 RCC Box at Ch: 99871.034	GC-HRIDC-C6-DRW-BRD-GAD-01302_A0
115.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 305 Span 1x2x2 RCC Box at Ch: 101228.875	GC-HRIDC-C6-DRW-BRD-GAD-01305_A0
116.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 306 Span 1x2x2 RCC Box at Ch: 101515.621	GC-HRIDC-C6-DRW-BRD-GAD-01306_A0
117.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 308 Span 1x1.8 RCC Pipe at Ch: 101944.696	GC-HRIDC-C6-DRW-BRD-GAD-01308_A0
118.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 309 Span 1x1.8 RCC Pipe at Ch: 102133.113	GC-HRIDC-C6-DRW-BRD-GAD-01309_A1
119.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 310 Span 1x1.8 RCC Pipe at Ch: 102503.743	GC-HRIDC-C6-DRW-BRD-GAD-01310_A1
120.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 312 Span 1x1.8 RCC Pipe at Ch: 103018.867	GC-HRIDC-C6-DRW-BRD-GAD-01312_A1
121.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 313 Span 1x4x3.15 RCC Box at Ch: 103288.866	GC-HRIDC-C6-DRW-BRD-GAD-01313_A1
122.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 314 Span 1x1.8 RCC Box at Ch: 103423.867	GC-HRIDC-C6-DRW-BRD-GAD-01314_A1
123.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 315 Span 1x4x3.15 RCC Box at Ch: 103885.311	GC-HRIDC-C6-DRW-BRD-GAD-01315_A1
124.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 316 Span 1x2x2 RCC Box at Ch: 104323.867	GC-HRIDC-C6-DRW-BRD-GAD-01316_A0
125.	Conceptual general arrangement drawing for RUB Bridge No. 317 Span 1x10x5.15 RCC Box at Ch: 104369.684	GC-HRIDC-C6-DRW-BRD-GAD-01317_A0
126.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 318 Span 1x1.8 RCC Pipe at Ch:	GC-HRIDC-C6-DRW-BRD-GAD-01318_A0

S.	TITLE	DRAWING NO.
INU	104613.866	
127.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 319 Span 1x4x4 RCC Box at Ch: 104769.280	GC-HRIDC-C6-DRW-BRD-GAD-01319_A0
128.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 320 Span 1x1.8 RCC Pipe at Ch: 104968.865	GC-HRIDC-C6-DRW-BRD-GAD-01320_A1
129.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 321 Span 1x1.8 RCC Pipe at Ch: 105124.595	GC-HRIDC-C6-DRW-BRD-GAD-01321_A1
130.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 322 Span 1x1.8 RCC Pipe at Ch: 105447.176	GC-HRIDC-C6-DRW-BRD-GAD-01322_A1
131.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 323 Span 1x1.8 RCC Pipe at Ch: 105698.865	GC-HRIDC-C6-DRW-BRD-GAD-01323_A0
132.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 324 Span 1x1.8 RCC Pipe at Ch: 105908.784	GC-HRIDC-C6-DRW-BRD-GAD-01324_A1
133.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 325 Span 1x4x3.15 RCC Box at Ch: 106118.699	GC-HRIDC-C6-DRW-BRD-GAD-01325_A0
134.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 326 Span 1x1.8 RCC Pipe at Ch: 106204.010	GC-HRIDC-C6-DRW-BRD-GAD-01326_A1
135.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 327 Span 1x1.8 RCC Pipe at Ch: 106446.884	GC-HRIDC-C6-DRW-BRD-GAD-01327_A1
136.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 329 Span 1x1.8 RCC Pipe at Ch: 107013.865	GC-HRIDC-C6-DRW-BRD-GAD-01329_A0
137.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 330 Span 1x1.8 RCC Pipe at Ch: 107168.865	GC-HRIDC-C6-DRW-BRD-GAD-01330_A1
138.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 331 Span 1x1.8 RCC Pipe at Ch: 107408.865	GC-HRIDC-C6-DRW-BRD-GAD-01331_A1
139.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 332 Span 1x4x3.15 RCC Box at Ch: 107600.000	GC-HRIDC-C6-DRW-BRD-GAD-01332_A1
140.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 333 Span 1x1.8 RCC Pipe at Ch: 107660.000	GC-HRIDC-C6-DRW-BRD-GAD-01333_A1
141.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 334 Span 1x4x3.15 RCC Box at Ch: 108347.785	GC-HRIDC-C6-DRW-BRD-GAD-01334_A1
142.	Conceptual general arrangement drawing for RUB Bridge No. 335 Span 1x4x3.4 RCC Box at Ch: 108563.745	GC-HRIDC-C6-DRW-BRD-GAD-01335_A1
143.	Conceptual general arrangement drawing for Canal Bridge No. 338 Span 1x4x3.15 RCC Box at Ch:	GC-HRIDC-C6-DRW-BRD-GAD-01338_A0

S. No	TITLE	DRAWING NO.
	109193.730	
144.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 339 Span 1x4x3.4 RCC Box at Ch: 109250.271	GC-HRIDC-C6-DRW-BRD-GAD-01339_A0
145.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 340 Span 1x1.8 RCC Pipe at Ch: 109408.864	GC-HRIDC-C6-DRW-BRD-GAD-01340_A1
146.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 341 Span 1x1.8 RCC Pipe at Ch: 109668.864	GC-HRIDC-C6-DRW-BRD-GAD-01341_A1
147.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 342 Span 1x4x3.4 RCC Box at Ch: 109711.090	GC-HRIDC-C6-DRW-BRD-GAD-01342_A0
148.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 344 Span 1x1.8 RCC Pipe at Ch: 110373.864	GC-HRIDC-C6-DRW-BRD-GAD-01344_A1
149.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 345 Span 1x2x3 RCC Box at Ch: 110798.805	GC-HRIDC-C6-DRW-BRD-GAD-01345_A0
150.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 347 Span 1x2x2 RCC Box at Ch: 111698.864	GC-HRIDC-C6-DRW-BRD-GAD-01347_A0
151.	Conceptual general arrangement drawing for RUB Bridge No. 348 Span 1x10x5.15 RCC Box at Ch: 111728.410	GC-HRIDC-C6-DRW-BRD-GAD-01348_A0
152.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 349 Span 1x1.8 RCC Pipe at Ch: 112020.000	GC-HRIDC-C6-DRW-BRD-GAD-01349_A1
153.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 350 Span 1x4x4 RCC Box at Ch: 112232.778	GC-HRIDC-C6-DRW-BRD-GAD-01350_A0
154.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 353 Span 1x1.8 RCC Pipe at Ch: 113208.865	GC-HRIDC-C6-DRW-BRD-GAD-01353_A1
155.	Conceptual general arrangement drawing for Canal Bridge No. 354 Span 1x6.1 PSC SLAB at Ch: 113518.053	GC-HRIDC-C6-DRW-BRD-GAD-01354_A1
156.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 355 Span 1x1.8 RCC Pipe at Ch: 113715.000	GC-HRIDC-C6-DRW-BRD-GAD-01355_A0
157.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 356 Span 1x4x4 RCC Box at Ch: 113750.251	GC-HRIDC-C6-DRW-BRD-GAD-01356_A0
158.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 357 Span 1x1.8 RCC Pipe at Ch: 114008.865	GC-HRIDC-C6-DRW-BRD-GAD-01357_A0
159.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 358 Span 1x4x3.15 RCC Box at Ch: 114875.000	GC-HRIDC-C6-DRW-BRD-GAD-01358_A0
160.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 361 Span 1x1.8 RCC Pipe at Ch:	GC-HRIDC-C6-DRW-BRD-GAD-01361_A2

S. No	TITLE	DRAWING NO.
110	115198.864	
161.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 362 Span 1x1.8 RCC Pipe at Ch: 115473.865	GC-HRIDC-C6-DRW-BRD-GAD-01362_A1
162.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 364 Span 1x1.8 RCC Pipe at Ch: 115708.865	GC-HRIDC-C6-DRW-BRD-GAD-01364_A0
163.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 365 Span 1x4x4 RCC Box at Ch: 116053.810	GC-HRIDC-C6-DRW-BRD-GAD-01365_A1
164.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 366 Span 1x1.8 RCC Pipe at Ch: 116151.504	GC-HRIDC-C6-DRW-BRD-GAD-01366_A1
165.	Conceptual general arrangement drawing for RUB Bridge No. 367 span 1X6.1 PSC SLAB at Ch: 116447.129	GC-HRIDC-C6-DRW-BRD-GAD-01367_A0
166.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 368 Span 1x1.8 RCC Pipe at Ch: 116673.674	GC-HRIDC-C6-DRW-BRD-GAD-01368_A1
167.	Conceptual general arrangement drawing for RUB Bridge No. 369 span 1X6.1 PSC SLAB at Ch: 116790.624	GC-HRIDC-C6-DRW-BRD-GAD-01369_A0
168.	Conceptual general arrangement drawing for RUB Bridge No. 370 span 1X6.1 PSC SLAB at Ch: 117133.463	GC-HRIDC-C6-DRW-BRD-GAD-01370_A0
169.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 371 Span 1x1.8 RCC Pipe at Ch: 117208.674	GC-HRIDC-C6-DRW-BRD-GAD-01371_A1
170.	Conceptual general arrangement drawing for Canal Bridge No. 373 Span 1x2x2 RCC Box at Ch: 117983.674	GC-HRIDC-C6-DRW-BRD-GAD-01373_A0
171.	Conceptual general arrangement drawing for RUB Bridge No. 374 span 1X10x6 RCC Box at Ch: 118379.093	GC-HRIDC-C6-DRW-BRD-GAD-01374_A1
172.	Conceptual general arrangement drawing for RUB Bridge No. 376 span 1x6x6 RCC Box at Ch: 118839.375	GC-HRIDC-C6-DRW-BRD-GAD-01376_A0
173.	Conceptual general arrangement drawing for GAIL GAS Pipeline Bridge No. 377 span 1X5x5 Inverted Portal at Ch: 119162.000	GC-HRIDC-C6-DRW-BRD-GAD-01377_A0
174.	Conceptual general arrangement drawing for RUB Bridge No. 378 span 1x5x5.15 RCC Box at Ch: 119218.674	GC-HRIDC-C6-DRW-BRD-GAD-01378_A0
175.	Conceptual general arrangement drawing for RUB Bridge No. 379 span 1x11.8x5.15 RCC Box at Ch: 119573.598	GC-HRIDC-C6-DRW-BRD-GAD-01379_A1
176.	Conceptual general arrangement drawing for RUB Bridge No. 380 span 1X5X5 RCC Box at Ch: 119684.770	GC-HRIDC-C6-DRW-BRD-GAD-01380_A0
177.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 381 span 1X2X2 RCC	GC-HRIDC-C6-DRW-BRD-GAD-01381_A0

S.	TITLE	DRAWING NO.
No	box at Ch: 110058 674	
178.	Conceptual general arrangement drawing for Balancing Culvert Bridge No. 382 span 1X2X2 RCC box at Ch: 120233.673	GC-HRIDC-C6-DRW-BRD-GAD-01382_A0
179.	Conceptual general arrangement drawing for RUB Bridge No. 383 span 1x5x5.15 RCC Box at Ch: 120301.142	GC-HRIDC-C6-DRW-BRD-GAD-01383_A0
180.	Conceptual general arrangement drawing for RUB Bridge No. 385 span 1x5x5.15 RCC Box at Ch: 121268.674	GC-HRIDC-C6-DRW-BRD-GAD-01385_A0
181.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 386 Span 1x5x5.10 RCC Box at Ch: 121953.670	GC-HRIDC-C6-DRW-BRD-GAD-01386_A1
182.	Conceptual general arrangement drawing for RUB Bridge No. 387 span 1x5x5.15 RCC Box at Ch: 122169.723	GC-HRIDC-C6-DRW-BRD-GAD-01387_A0
183.	Conceptual general arrangement drawing for ROB Bridge No. 388 span 2x5x 5.15 RCC Box at Ch: 122821.445	GC-HRIDC-C6-DRW-BRD-GAD-01388_A0
184.	Conceptual general arrangement drawing for RUB Bridge No. 389 span 2x4x3.15 RCC Box at Ch: 123113.094	GC-HRIDC-C6-DRW-BRD-GAD-01389_A1
185.	Conceptual general arrangement drawing for GAS Pipeline Bridge No. 392 span 1x5x5 Inverted U Frame at Ch:123625.971	GC-HRIDC-C6-DRW-BRD-GAD-01392_A0
186.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 393 Span 1x1.2 RCC Box at Ch: 125227.882	GC-HRIDC-C6-DRW-BRD-GAD-01393_A1
187.	Conceptual general arrangement drawing for Pipe Culvert Bridge No. 394 Span 1X1.2 RCC Pipe at Ch: 125932.564	GC-HRIDC-C6-DRW-BRD-GAD-01394_A0
<b>4.1.2</b> I	MINOR BRIDGES- CONNECTING LINE	
<b>A. B</b>	ADSA TO SULTANPUR	
1.	Conceptual general arrangement drawing for Balancing Culvert bridge no.156 & 4A Span 1x4x4.2 &1x4x2.65 RCC Box at Ch: 62025.073 & CH 2727.620	GC-HRIDC-C6-DRW-BRD-GAD_01156 & 0104A_A0
2.	Conceptual general arrangement drawing for RUB bridge no. 4B Span 1X10X5.5, RCC box, at Ch: 3005.803	GC-HRIDC-C6-DRW-BRD- GAD_0104B_A1
B. N	IANDOTHI TO ASAUDAH	
1.	Conceptual general arrangement drawing for RUB Bridge no. 5A, Span 1X5X5m RCC box at Ch. 1330.00	GC-HRIDC-C6-DRW-BRD- GAD_0105A_A1
2.	Conceptual general arrangement drawing for RUB no. 5B, Span 1X5X5 RCC box at Ch. 2030.00m	GC-HRIDC-C6-DRW-BRD- GAD_0105B_A1
3.	Conceptual general arrangement drawing for Road no. 5B1, Span	GC-HRIDC-C6-DRW-BRD- GAD_0105B1_A1

<b>S.</b>	TITLE	DRAWING NO.
No		
4	1X/X5 Inverted portal at Ch. 2340.00m	
4.	Conceptual general arrangement drawing for PUB Br no 5E Span 1X4X4 PCC how at	GAD 0105E A1
	Ch:3510.00	GAD_0105E_AI
5.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-
	road under bridge no. 5F	GAD_0105F_A0
6	Span 1X4X3.15 m, RCC box Ch: 4006.00	
6.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-
	road under bridge no.5G Span 1X2X2 RCC box	GAD_0105G_A1
4.2 MA	AJOR BRIDGES	
4.2.1 N	AJOR BRIDGES- MAIN LINE	
1.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-
	RFO bridge no.155 Span 2X24.4 + 1X45.7 +	GAD_01155_A0
	4X24.4 OWG, Composite at Ch: 61698.565	
2.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-GAD-
	RUB Bridge no 178 Span 1x12.2 PSC U SLAB	01178_A0
2	at Ch: 68212.04	
э.	Conceptual general arrangement drawing for DUD Dridge no 182 Spon 1x12 2 DSC U SLAD	GC-HRIDC-CO-DRW-BRD-GAD-
	at Ch: 69683 047	01185_A0
4.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-GAD-
	Canal Bridge no 184 Span 2x30.5 composite	01184 A1
	Girder at Ch: 69843.000	_
5.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-GAD-
	RUB Bridge no 185Span 1x12.2 PSC U SLAB at	01185_A0
6	Ch: 70233.046	
0.	Conceptual general arrangement drawing for PUP bridge po 105 Spen 1x76.2 OWG at Ch	GC-HRIDC-C6-DRW-BRD-GAD-
	73371 630	01195_A0
7.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-
	RUB bridge no 199 Span 2x30.5 OWG at Ch.	GAD_01199_A1
	74339.079	
8.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-
	Canal Bridge no 200 Span	GAD_01200_A1
	1x24.4+1x76.2+1x45.7+1X76.2 OWG at Ch:	
0	74635.455 Concentual general arrangement drawing for	CC HPIDC C6 DPW PPD
).	RUB bridge no 201 Span 1x12 2 PSC U SI AR	GAD 01201 A0
	at Ch. 74887.079	0/10_01201_/10
10.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-
	Canal Bridge no 203 Span 1X30.5+2X12.2 CG +	GAD_01203_A0
	PSC U SLAB at Ch: 76027.240	
11.	Conceptual general arrangement drawing for	GC-HRIDC-C6-DRW-BRD-
	Canal Bridge No 207 Span 1x30.5 Composite at	GAD_01207_A0
	Ch: 77550.328	

S. No	TITLE	DRAWING NO.
12.	Conceptual general arrangement drawing for Canal Bridge No 208 Span 2x12.2 PSC U SLAB at Ch: 77622.079	GC-HRIDC-C6-DRW-BRD- GAD_01208_A1
13.	Conceptual general arrangement drawing for Water pipe line Bridge No. 220 Span 1x12.2 PSC Slab at Ch: 80181.795	GC-HRIDC-C6-DRW-BRD- GAD_01220_A0
14.	Conceptual general arrangement drawing for RUB Bridge No. 229 Span 2x12.2 PSC U SLAB at Ch: 82126.406	GC-HRIDC-C6-DRW-BRD- GAD_01229_A1
15.	Conceptual general arrangement drawing for Canal Bridge No. 234 Span 1x30.5 composite at Ch: 83055.317	GC-HRIDC-C6-DRW-BRD- GAD_01234_A0
16.	Conceptual general arrangement drawing for RUB Bridge No. 235 Span 1x12.2 PSC U SLAB at Ch: 83238.137	GC-HRIDC-C6-DRW-BRD- GAD_01235_A1
17.	Conceptual general arrangement drawing for RUB Bridge No. 242 Span 3X18.3 + 1X61 OWG+CG at Ch: 84505.278	GC-HRIDC-C6-DRW-BRD- GAD_01242_A0
18.	Conceptual general arrangement drawing for RUB Bridge No. 248 Span 1X12.2 PSC U SLAB at Ch: 86017.014	GC-HRIDC-C6-DRW-BRD- GAD_01248_A0
19.	Conceptual general arrangement drawing for RUB Bridge No. 257 Span 1x30.5 OWG at Ch: 89078.570	GC-HRIDC-C6-DRW-BRD-GAD- 01257_A0
20.	Conceptual general arrangement drawing for Canal Bridge No. 259 Span 1X18.3+1X30.5+1X24.4 Composite at Ch: 89522.580	GC-HRIDC-C6-DRW-BRD-GAD- 01259_A0
21.	Conceptual general arrangement drawing for KMP Bridge No. 267 Span 1x30.5+1x45.7+1x30.5 Composite +OWG at Ch: 91968.140	GC-HRIDC-C6-DRW-BRD-GAD- 01267_A1
22.	Conceptual general arrangement drawing for NH Bridge No. 273 Span 1X61.0+1X45.7 OWG at Ch:93159.463	GC-HRIDC-C6-DRW-BRD-GAD- 01273_A0
23.	Conceptual general arrangement drawing for RFO Bridge No. 277 Span 3X30.5 OWG at Ch: 94381.195	GC-HRIDC-C6-DRW-BRD-GAD-01277_A1
24.	Conceptual general arrangement drawing for Canal Bridge No. 281 Span 1x12.2+1x24.4+1x12.2 Composite, PSC U SLAB at Ch: 94864.556	GC-HRIDC-C6-DRW-BRD-GAD- 01281_A0
25.	Conceptual general arrangement drawing for RUB Bridge No. 283 Span 1x12.2 PSC U SLAB at Ch: 95455.223	GC-HRIDC-C6-DRW-BRD-GAD- 01283_A0
26.	Conceptual general arrangement drawing for Canal Bridge No. 287 Span 1x45.7 OWG at Ch:	GC-HRIDC-C6-DRW-BRD-GAD- 01287_A0

S. No	TITLE	DRAWING NO.
	96515.503	
27.	Conceptual general arrangement drawing for RUB Bridge No. 298 Span 1x12.2 PSC SLAB at Ch: 99227.360	GC-HRIDC-C6-DRW-BRD-GAD- 01298_A0
28.	Conceptual general arrangement drawing for Canal Bridge No. 300 Span 1X76.2 OWG at Ch: 99722.960	GC-HRIDC-C6-DRW-BRD-GAD- 01300_A0
29.	Conceptual general arrangement drawing for NH Bridge No. 303 Span 1X61 + 1X45.7 + 4X24.4 + 1X61 Composite Girder + OWG at Ch: 100336.4	GC-HRIDC-C6-DRW-BRD-GAD- 01303_A0
30.	Conceptual general arrangement drawing for NH Bridge No. 304 Span 2x45.7 OWG at Ch: 101093.65	GC-HRIDC-C6-DRW-BRD-GAD-01304_A0
31.	Conceptual general arrangement drawing for RUB Bridge No. 307 Span 1x12.2 PSC U SLAB at Ch: 101626.434	GC-HRIDC-C6-DRW-BRD-GAD-01307_A0
32.	Conceptual general arrangement drawing for Canal Bridge No. 311 Span 2x12.2 PSC U SLAB at Ch: 102710.680	GC-HRIDC-C6-DRW-BRD-GAD-01311_A1
33.	Conceptual general arrangement drawing for RUB Bridge No. 328 Span 1x12.2 PSC U SLAB at Ch: 106823.940	GC-HRIDC-C6-DRW-BRD-GAD- 01328_A0
34.	Conceptual general arrangement drawing for RUB Bridge No. 343 Span 1x45.7 OWG at Ch: 110191.720	GC-HRIDC-C6-DRW-BRD-GAD-01343_A1
35.	Conceptual general arrangement drawing for KMP Bridge No. 346 Span 1X45.7 + 1X24.4 + 1X30.5 + 1x18.3 + 4X30.5 OWG+COMPOSITE GIRDER at Ch: 111210.375	GC-HRIDC-C6-DRW-BRD-GAD-01346_A0
36.	Conceptual general arrangement drawing for Canal Bridge No. 351 Span 1x12.2 PSC U SLAB at Ch: 112350.446	GC-HRIDC-C6-DRW-BRD-GAD- 01351_A0
37.	Conceptual general arrangement drawing for RUB Bridge No. 352 Span 1x12.2 PSC U SLAB at Ch: 112989.693	GC-HRIDC-C6-DRW-BRD-GAD-01352_A0
38.	Conceptual general arrangement drawing for RUB Bridge No. 360 span 1X12.2 PSC U SLAB at Ch: 114875.785	GC-HRIDC-C6-DRW-BRD-GAD- 01360_A0
39.	Conceptual general arrangement drawing for RUB Bridge No. 363 span 1X12.2 PSC U SLAB at Ch: 115649.037	GC-HRIDC-C6-DRW-BRD-GAD-01363_A0
40.	Conceptual general arrangement drawing for RUB Bridge No. 372 span 1X12.2 PSC SLAB at Ch: 117496.052	GC-HRIDC-C6-DRW-BRD-GAD- 01372_A0
41.	Conceptual general arrangement drawing for NH Bridge No. 375 span 2X76.2 OWG at Ch:118581.880	GC-HRIDC-C6-DRW-BRD-GAD- 01375_A0

S.	TITLE	DRAWING NO.
No		
42.	Conceptual general arrangement drawing for RUB Bridge No. 384 span 1x30.5 OWG at Ch: 120861.723	GC-HRIDC-C6-DRW-BRD-GAD-01384_A0
43.	Conceptual general arrangement drawing for Canal Bridge No. 390 span 1x12.2 PSC U SLAB at Ch: 123137.440	GC-HRIDC-C6-DRW-BRD-GAD- 01390_A1
44.	Conceptual general arrangement drawing for Canal Bridge No. 391 span 2x30.5 CG at Ch: 123236.274	GC-HRIDC-C6-DRW-BRD-GAD- 01391_A0
4.2.2 N	1AJOR BRIDGES -CONNECTING LINE	
A. N	IANDOTHI TO ASAUDAH	
1.	Conceptual general arrangement drawing for Canal Bridge No. 5C span 1x30.5 OWG at Ch: 2680.00	GC-HRIDC-C6-DRW-BRD-GAD- 0105C_A0
2.	Conceptual general arrangement drawing for NH Bridge No. 5D span 2x30.5 OWG at Ch: 2773.19	GC-HRIDC-C6-DRW-BRD-GAD-0105D_A1
5. MI	SCELLANEOUS DRAWINGS (CONCEPTUAI	L PLANS)
1.	Jurisdictional Sketch for civil works C-6 package	GC-HRIDC-C6-SK-CIVIL-001_A2
2.	Conceptual Plan Typical embankment/cutting profile	GC-HRIDC-SK-GEN-001_A1
3.	Conceptual Plan Mini platform shelter	GC-HRIDC-SK-GEN-003
4.	Conceptual Plan R.C. pre-cast fencing for end platform	GC-HRIDC-SK-GEN-004
5.	Conceptual Plan Station name board	GC-HRIDC-SK-GEN-005
6.	Conceptual Plan Proposed toilet block on end platforms	GC-HRIDC-SK-GEN-007_A1
7.	Conceptual Plan drains for Embankment	GC-HRIDC-SK-GEN-008_A1
8.	Conceptual Plan Steel barricade	GC-HRIDC-SK-GEN-009
9.	Conceptual Plan Water booth with one side taps arrangement (end platform)	GC-HRIDC-SK-GEN-010_A1
10.	Conceptual Plan Water booth with both side taps arrangement (island platform)	GC-HRIDC-SK-GEN-011_A1
11.	Conceptual Plan for Auto location hut (S&T)	GC-HRIDC-SK-GEN-012_A0
12.	Conceptual Plan Ticket counter	GC-HRIDC-SK-GEN-013
13.	Conceptual Plan CC Toe wall	GC-HRIDC-SK-GEN-014_A1
14.	Conceptual Plan Typical details of protection work on bridge approaches	GC-HRIDC-SK-GEN-015_A1
15.	Conceptual Plan Barbed wire fencing	GC-HRIDC-SK-GEN-016_A1
16.	Conceptual Plan for RCC duct of signalling cable	GC-HRIDC-SK-GEN-017
17.	Conceptual Plan for Transition system of major bridge approaches	GC-HRIDC-SK-GEN-019
18.	Conceptual Plan for Self-Supporting roof covering Shed	GC-HRIDC-SK-GEN-020

S.	TITLE	DRAWING NO.
<b>N0</b>	Concentual Plan for formation details below	
1).	subway, lift well	GC-HRIDC-SK-GEN-021
20.	Conceptual plan for Trolley Refuge in embankment	GC-HRIDC-SK-GEN-022
21.	Conceptual plan for Trolley Refuge in cutting	GC-HRIDC-SK-GEN-023
22.	Conceptual sketch for RCC platform wall	GC-HRIDC-SK-GEN-024
23.	Conceptual Plan for single and double lane road	GC-HRIDC-SK-GEN-025
24.	Conceptual Plan for reinforced earth wall with geogrid reinforcement	GC-HRIDC-SK-GEN-026
25.	Conceptual Sketch for Drainage arrangement at RUB (LHS)	GC-HRIDC-SK-GEN-027
26.	Conceptual Plan for NP-4 hume pipe 450 mm for utility	GC-HRIDC-SK-C6-GEN-030
27.	Conceptual Plan Drainage arrangement (Badsa)	GC-HRIDC-C6-SK-CIVIL-002_A0
28.	Conceptual Plan Drainage arrangement (Deverkhana)	GC-HRIDC-C6-SK-CIVIL-003_A0
29.	Conceptual Plan Drainage arrangement (Badli)	GC-HRIDC-C6-SK-CIVIL-004_A0
30.	Conceptual Plan Drainage arrangement (Mandothi)	GC-HRIDC-C6-SK-CIVIL-005_A0
31.	Conceptual Plan Drainage arrangement (New Asaudha)	GC-HRIDC-C6-SK-CIVIL-006_A0
32.	Conceptual Plan Drainage arrangement (Jasaur Kheri)	GC-HRIDC-C6-SK-CIVIL-007_A0
33.	Conceptual Plan Drainage arrangement (Kharkhoda Kirholi)	GC-HRIDC-C6-SK-CIVIL-008_A0
34.	Conceptual Plan Drainage arrangement (Tarakpur)	GC-HRIDC-C6-SK-CIVIL-009_A0
35.	Conceptual Plan Drainage arrangement (New Harsana Kalan)	GC-HRIDC-C6-SK-CIVIL-0010_A0
36.	Conceptual Plan Bank/cutting benching at interface locations	GC-HRIDC-C6-SK-CIVIL-0011_A0
37.	Type plan powder toilet for divyangs	N.R.H.Q.E PLAN NO. HQ/20/11-2021
38.	Conceptual plan for OWG with concrete deck for BLT	GC-HRIDC-SK-GEN-036
39.	Conceptual plan for ground improvement for embankment at Pond/water logged area.	GC-HRIDC-SK-GEN-037
40.	Conceptual plan for OHE earthing & OHE bolt fixing arrangement on bridges	GC-HRIDC- C6-SK-GEN-038
41.	Conceptual plan location of OHE Mast for composite girder bridges	GC-HRIDC- C6-SK-GEN-031
42.	Conceptual plan OHE Portal for OWG bridges	GC-HRIDC- SK-GEN-035
43.	Conceptual Cross- sectional sketch of ALH	GC-HRIDC- C6-SK-GEN-039_A0
44.	Conceptual Plan S&T hut	GC-HRIDC- SK-GEN-002_A0
45.	Typical Conceptual Cross- sectional sketch of End Platform	GC-HRIDC- SK-GEN-042_A0

<b>S.</b>	TITLE	DRAWING NO.
No		
46.	Conceptual Sketch for Typical Detail Of	
	Inspection Steps	GC-HRIDC- SK-GEN-043_A0
47.	Typical Conceptual Cross- sectional sketch of	CC HPIDC SK CEN 044 A0
	Island Platform	OC-IINIDC- SK-OEN-044_A0
II.	GENERAL ELECTRICAL SERVICES DRAWINGS	5
1.	INDICATIVE LT SUPPLY SYSTEM WITH	GC-HRIDC-C6-DRW-ELE-001_A0
	LOCAL, DG & AUXILIARY TRANSFORMER	
	SUPPLY	
2.	INDICATIVE LT SUPPLY DISTRIBUTION	GC-HRIDC-C6-DRW-ELE-002_A0
	DIAGRAM	
3.	INDICATIVE ARRANGEMENT OF	GC-HRIDC-C6-DRW-ELE-03_A0
	DECORATIVE STREET LIGHT POLE AT	
	STATION AND PLATFORM	
4.	INDICATIVE CABLE ROUTE PLAN FOR TRACK	GC-HRIDC-C6-DRW-ELE-04_A0
	CROSSING OF POWER CABLE AND ROUTE	
	MARKER	
э.	INDICATIVE EARTHING ARRANGEMENT OF	GC-HRIDC-C6-DRW-ELE-05_A0
	ELECTRICAL SISTEM BI COPPER CLADDED	
6	INDICATIVE SCHEMATIC DRAWING OF 11 KV	CC HPIDC C6 DPW ELE 06 A0
0.	POWER SUPPLY ARRANGEMENT	OC-IIKIDC-CO-DKW-ELE-00_A0
7	INDICATIVE IT SUPPLY SYSTEM WITH	GC-HRIDC-C6-DRW-FLF-007_A0
1.	LOCAL	GC-IIMIDC-CO-DKW-LLL-007_A0
	& AUXILIARY TRANSFORMER SUPPLY	
8.	INDICATIVE COMPACT SUBSTATION (CSS)	GC-HRIDC-C6-DRW-ELE-08 A0
	SINGLE LINE DIAGRAM	

## Alignment Plan & L-Section (Revised)



<b></b>			
LEGEND: EXISTING RAILWAY TRA	ACK		¥ <sup>-</sup> ×
PROPOSED UP & DN LIN	NE		
DISMANTLING WORKS PROPOSED DIVERSION	S		
EXISTING ROAD			
KMP LAND BOUNDARY	r		
HT LINE			
STREAM / CANAL / DRAI			
WELL		0	
POND			
PRO.TOE LINE			
NOTE:-			
<ol> <li>ALL DIMENSIONS ARE IN</li> <li>ALL THE LEVELS ARE W</li> <li>TRACK CETRE BETWEE</li> </ol>	N METRE UNLE ITH RESPECT N MAIN LINES	SS OTHERWISE STATE TO MEAN SEA LEVEL. OF HORC HAS BEEN	D. KEPT AS MIN
5.30m. 4. PUBLIC UTILITIES HT/LT	LINES OFC C	ABLES WATER /SEWE	R LINES ETC
INTERFERING WITH DFC 5. ARRANGEMENT & SIZE	TRACKS SHAL	L BE RELOCATED. DGE SHOWN IN THE	DRAWING IS
<ul><li>TENTATIVE AND MAY CH</li><li>6. VERTICAL CLEARANCE</li></ul>	HANGE AS PER	THE APPROVED GAD. T CONDUCTOR OF HT I	POWER LINE
TO PROPOSED RAIL LEV 7. FINAL L-SECTION SHALL	/EL ARE SHOW L BE PREPARE	'N. D BY CONTRACTOR O	N THE BASIS
OF THIS CONCEPTUAL PROVISION OF IRPWM.	L-SECTION F	OR C-6 SECTION BY	COMPLYING
PROPOSED TRA	CK STRUCTUR	RE (TO SUIT FOR 25T AX	(LE LOAD)
I. FOR RAIL CORI * TRACK = 60KG	RIDOR: 160KMF GRAILS	PH Speed	
* SLEEPER DEN	ISITY : PSC SLE	EPERS = 1660 No.S PE	RKM
* BALLAST CUS * ALL TURNOUT	HION : 350mm SARE 1 in 12	UNLESS OTHERWISE S	PECIFIED.
ABBREVIATIONS	<u>S:-</u> - BEGIN OF VI	ERTICAL CURVE	
2. PVI	- POINT OF VE	ERTICAL	
3. EVC	- END OF VER	RTICAL CURVE	
3. EVC	- END OF VER	TICAL CURVE	
3. EVC	- END OF VER	TICAL CURVE	_
3. EVC	- END OF VER	TICAL CURVE	
3. EVC LEGEND FOR PR PROPOSED RAIL PROPOSED FOR	- END OF VER OFILE : PROFILE MATION PROF		
3. EVC LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL	- END OF VER OFILE : PROFILE MATION PROF LE		
3. EVC LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL	- END OF VER OFILE : PROFILE MATION PROF LE		
3. EVC LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL	- END OF VER OFILE : PROFILE MATION PROF LE		
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3. EVC <u>LEGEND FOR PR</u> PROPOSED RAIL PROPOSED FOR GROUND PROFIL	- END OF VER		RIDC
3. EVC LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL GC/HORC NAME / DESIGNATION	- END OF VER		RIDC SIGN
3. EVC LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL GC/HORC NAME / DESIGNATION CHAHATEY RAM PD	- END OF VER	TICAL CURVE	RIDC SIGN
3. EVC LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL GC/HORC NAME / DESIGNATION CHAHATEY RAM PD SUDHIR AGRAWAL DPD/CIVIL	- END OF VER	TICAL CURVE	RIDC SIGN How whee
3. EVC  LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL  GC/HORC  CHAHATEY RAM PD  SUDHIR AGRAWAL DPD/CIVIL KRISHAN CHAND SAINSI	- END OF VER	TICAL CURVE	RIDC SIGN JAN Mare Supre
3. EVC LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL GC/HORC CHAHATEY RAM PD SUDHIR AGRAWAL DPD/CIVIL KRISHAN CHAND SAINSI CRE/CIVIL	- END OF VER	TICAL CURVE	RIDC SIGN Hove Supre
3. EVC  LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL COE/CIVIL RRISHAN CHAND SAINSI CRE/CIVIL REETU PATIAL CDE/CIVIL	- END OF VER	TICAL CURVE	RIDC SIGN John Marce Marce Marce Marce Marce Marce Marce
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3. EVC  LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL GC/HORC  GC/HORC  CHAHATEY RAM PD  SUDHIR AGRAWAL DPD/CIVIL KRISHAN CHAND SAINSI CRE/CIVIL REETU PATIAL CDE/CIVIL MEENAKSHI SHARMA SDE/CIVIL	- END OF VER	TICAL CURVE	RIDC SIGN John Marce Mar
3. EVC  LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL  GC/HORC  GC/HORC  CHAHATEY RAM PD  SUDHIR AGRAWAL DPD/CIVIL  KRISHAN CHAND SAINSI CRE/CIVIL  KRISHAN CHAND SAINSI CRE/CIVIL  REETU PATIAL CDE/CIVIL  MEENAKSHI SHARMA SDE/CIVIL  PROJECT:	- END OF VER	TICAL CURVE	RIDC SIGN Hove Supre More Supre More Supre
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3. EVC           J. EGEND FOR PR           PROPOSED RAIL           PROPOSED FOR           GROUND PROFIN           GC/HORC           NAME / DESIGNATION           CHAHATEY RAM           PD           SUDHIR AGRAWAL           DPD/CIVIL           KRISHAN CHAND SAINSI           CRE/CIVIL           REETU PATIAL           CDE/CIVIL           MEENAKSHI SHARMA           SDE/CIVIL           MEENAKSHI SHARMA           SDE/CIVIL           REETU PATIAL           CDE/CIVIL           MEENAKSHI SHARMA           SDE/CIVIL           PROJECT:           HARYANA ORBITAL R           CONNECTING PALWA           LINKING ASAOTI-PATI           BG DOUBLE LINE           CLIENT:           MARYANA RAIL INFRA           LIMITED.	- END OF VER	TICAL CURVE	RIDC SIGN JAA Marken Marken Marken Marken SIGN Marken Mark
3. EVC LEGEND FOR PR PROPOSED RAIL PROPOSED FOR GROUND PROFIL GC/HORC GC/HORC GC/HORC CHAHATEY RAM PD SUDHIR AGRAWAL DPD/CIVIL KRISHAN CHAND SAINSI CRE/CIVIL KRISHAN CHAND SAINSI CRE/CIVIL REETU PATIAL CDE/CIVIL REETU PATIAL CDE/CIVIL REETU PATIAL CDE/CIVIL REENAKSHI SHARMA SDE/CIVIL PROJECT: HARYANA ORBITAL R CONNECTING PALWA LINKING ASAOTI-PATI BG DOUBLE LINE CLIENT: HARYANA RAIL INFRA LIMITED.	- END OF VER	TICAL CURVE	RIDC SIGN JAA Markan Ma
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3. EVC  3. EVC  3. EVC  3. EVC  3. EVC  4. Consultants  4. Consultants  4. Consultants  4. Consultants  5. Con	- END OF VER	TICAL CURVE	RIDC SIGN Mare Aufre Mare Aufre M
3. EVC  4. EVC  4. EVC  5. EVC 5. EVC 5. EVC 5. EVC 5. EVC 5. EVC 5. E	- END OF VER	TICAL CURVE	RIDC SIGN J J J J J J J J J J J J J J J J J J J
3. EVC  3. EVC  4. Consultants  4. Consultants  5. Consultant	- END OF VER	TANMAY	RIDC SIGN J J J J J J J J J J J J J J J J J J J
3. EVC  A  A  A  A  A  A  A  A  A  A  A  A  A	- END OF VER	RTICAL CURVE   NAME   NAME   VISHAL GUPTA CPM/N/HRIDC   ABHA GUPTA DGM/CIVIL   SUNIL COMPACT   SUNIL KUMAR EXE./CIVIL   SUNIL KUMAR EXE./CIVIL   PRIYA SINGH EXE./CIVIL   BYPASSING DELHI ARE ASAUDAH BY NEW ELE   DEVELOPMENT CORPOR   DEVELOPMENT CORPOR   International Pty. Ltd.   International Pty. Ltd.   International Pty. Ltd.   INTANNAY (ARVEE ASSOCIA   AARVEE ASSOCIA   TANMAY (AMCAN)   G.PRASAD (D CHECKED	RIDC SIGN J J J J J J J J J J J J J J J J J J J
3. EVC  4. EVC	- END OF VER	RTICAL CURVE   NAME   NAME   VISHAL GUPTA   OGM/CIVIL   SUNIL CUTT   SUNIL CUTT   SUNIL DUTT   SUNIL KUMAR   EXE./CIVIL   PRIYA SINGH   EXE./CIVIL   PRIYA SINGH   EXE./CIVIL   Development corpored   International Pty. Ltd.   International Pty. Ltd.   SECTION   S. OK:m.)   AARVEE ASSOCIA   TANMAY   MARVE ASSOCIA   TANMAY   ARVEE ASSOCIA   TANMAY   ORAWN   G.PRASAD (CHECKED)   No. 11 OF 24   Dt: 26 11 2019	RIDC SIGN J J J J J J J J J J J J J J J J J J J





	7		
LEGEND:			
PROPOSED UP & DN LI	NE ·		
DISMANTLING WORKS			
EXISTING ROAD	15		A
	Y .	HORC L. B.	
HT LINE	Γ		
ELECTRICAL LINE(LT)			
STREAM / CANAL / DRA	IN		
POND			
PRO.TOE LINE			-
NOTE:-			
1. ALL DIMENSIONS ARE		ESS OTHERWISE STATE	ED.
<ol> <li>ALL THE LEVELS ARE</li> <li>TRACK CETRE BETW</li> </ol>	E WITH RESPEC	ES OF HORC HAS BEEN	KEPT AS MIN
5.30m. 4. PUBLIC UTILITIES HT	/LT LINES OFC	CABLES WATER /SEWE	ER LINES ETC
INTERFERING WITH D 5. ARRANGEMENT & S	FC TRACKS SH	IALL BE RELOCATED. RIDGE SHOWN IN THE	DRAWING IS
TENTATIVE AND MAY 6. VERTICAL CLEARANC	CHANGE AS PE	ER THE APPROVED GAD. EST CONDUCTOR OF HT	POWER LINE
TO PROPOSED RAIL I 7 FINAL L-SECTION SH	LEVEL ARE SHO	)WN. RED BY CONTRACTOR (	ON THE BASIS
	JAL L-SECTION	FOR C-6 SECTION BY	COMPLYING
	vi.		
			_
		/	
PROPOSED TF	RACK STRUCTU	RE (TO SUIT FOR 25T AX	LE LOAD)
I. FOR RAIL COI * TRACK = 60k	RRIDOR: 160KM (G RAILS	IPH Speed	С
* SLEEPER DE * BALLAST CL	ENSITY : PSC SL	EEPERS = 1660 No.S PE	RKM
* ALL TURNOU	JTS ARE 1 in 12	2 UNLESS OTHERWISE S	PECIFIED.
1. BVC	- BEGIN OF \	/ERTICAL CURVE	
2. PVI	- POINT OF \ INTERSECT	/ERTICAL FION	
3. EVC	- END OF VE	RTICAL CURVE	
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	1220.0 1220.0	1260.0	1280.0	1320.0	31340.0 - 31360.0 -	1380.0	81400.0 - 81420.0 -	1440.0	81460.0	1500.0	81520.0 -	1560.0	31580.0 1600.0	1620.0	1640.0	1660.0	1680.0 - 1700.0 -	81720.0	1740.0	81760.0 - 81780.0 -	1800.0	1820.0	31840.0 - 1860.0 -	1880.0	1900.0	1920.0 -	- 0.050	- 1980.0	2020.0	2040.0	\$2060.0 - \$2080.0 -	2100.0	2120.0 -	2160.0	32180.0	2220.0	32240.0	2280.0	32300.0	2340.0	2360.0 -	2400.0	32420.0	2460.0	82480.0 - 82500.0 -	32520.0	2560.0	2580.0	2620.0	2640.0	2680.0	\$2700.0 -	2740.0	2760.0 - 2780.0 -	2800.0	22820.0 - 32840.0 -	12860.0 -	2900.0
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222.452 - 222.459 -	222.473	222.487 -	222.516	222.530 - 222.545 -	222.559 -	222.573 - 222.587 -	222.602	222.616 - 222.630 -	222.645 -	222.659 - 222.673 -	222.688	222.702 - 222.716 -	222.730	222.759 -	222.773 -	222.788 - 222.802 -	222.816	222.830 - 222.845 -	222.859 -	222.873 - 222.888 -	222.902 -	222.916 - 222.931 -	222.945 -	222.959 - 222.973 -	222.988	223.002 - 223.016 -	223.031 -	223.045 - 223.059 -	223.074 - 223.088 -	223.102 -	223.116 - 223.131 -	223.145 -	223.174 -	223.188 - 223.202 -	223.216	223.231 - 223.245 -	223.259	223.288	223.302 - 223.317 -	223.331 -	223.359 -	223.374 - 223.388 -	223.402	223.431	223.445	223.474 -	223.488 - 223.502 -	223.517 -	223.531 -	223.560 - 223.574 -	223.588 -	223.617	223.631 - 223.645 -	223.660	ZZ3.117
218.932 - 218.878 -	218.795 -	218.815 - 218.805 -	218.810 -	218.763 - 218.724 -	218.735 -	218.739 - 218.764 -	218.772	218.741 - 218.587 -	218.557 -	218.821 - 218.694 -	218.635	218.613 - 218.558 -	218.527 -	218.471	218.523 -	218.775 - 219.054 -	218.849 -	218.478 - 218.802 -	219.123 -	219.074 - 219.039 -	218.812 -	218.605 - 218.595 -	218.518 -	218.429 - 218.467 -	218.865 -	218.374 - 218.353 -	218.342 -	218.375 - 218.855 -	219.202 -	219.256	219.298 - 219.303 -	219.285 -	219.316	219.273 - 219.272 -	219.260 -	219.253 - 219.271 -	219.284 -	219.217	219.122 - 219.224 -	219.239 -	220.254 -	220.897 - 220.381 -	219.639 -	219.649 -	219.650 -	219.605 -	219.613 - 219.528 -	219.239 -	219.141 -	218.571 - 218.161 -	218.165 -	218.251 -	218.369 - 218.415 -	218.480	210.402
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DISMANTLING WORKS PROPOSED DIVERSIONS EXISTING ROAD			
EXISTING ROAD	<b>^</b>		
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	· .	HORC L. B.	
HT LINE	Γ		
ELECTRICAL LINE(LT)			
STREAM / CANAL / DRAI	Ν	0	
POND			
PRO.TOE LINE		<u>706 706 706 706 106 </u>	-
<ol> <li>ALL DIMENSIONS ARE</li> <li>ALL THE LEVELS ARE</li> <li>TRACK CETRE BETWE 5.30m.</li> <li>PUBLIC UTILITIES HT/ INTERFERING WITH DI</li> <li>ARRANGEMENT &amp; SI TENTATIVE AND MAY 0</li> <li>VERTICAL CLEARANC TO PROPOSED RAIL L</li> <li>FINAL L-SECTION SHA OF THIS CONCEPTUA PROVISION OF IRPWW</li> </ol> PROPOSED TRACE <ol> <li>I. FOR RAIL CORRITING * TRACK = 60KG I</li> <li>* SLEEPER DENS * BALLAST CUSH</li> <li>* ALL TURNOUTS</li> </ol> ABBREVIATIONS: <ol> <li>BVC</li> <li>BVC</li> <li>EVC</li> </ol> PROPOSED RAIL PROPOSED RAIL PROPOSED FORM GROUND PROFILE	WITH RESPEC EEN MAIN LINE LT LINES OFC FC TRACKS SH ZE OF THE B CHANGE AS PE E FROM LOWE EVEL ARE SHO ALL BE PREPAR AL L-SECTION 1. CK STRUCTURE IDOR: 160KMPH RAILS SITY : PSC SLEE ION : 350mm ARE 1 in 12 U E BEGIN OF VER INTERSECTION E ROINT OF VER INTERSECTION FILE : PROFILE MATION PROFILE	ESS OTHERWISE STAT T TO MEAN SEA LEVEL. S OF HORC HAS BEEN CABLES WATER /SEW ALL BE RELOCATED. RIDGE SHOWN IN THE ER THE APPROVED GAD ST CONDUCTOR OF HT WN. RED BY CONTRACTOR FOR C-6 SECTION B E (TO SUIT FOR 25T AXL I Speed EPERS = 1660 No.S PER NLESS OTHERWISE SP RTICAL CURVE RTICAL CURVE CAL CURVE LE	ED. N KEPT AS MIN VER LINES ETC DRAWING IS POWER LINE ON THE BASIS Y COMPLYING ELOAD) KM ECIFIED.
GC/HORC		HF	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	Chahatey Ron	VISHAL GUPTA CPM/N/HRIDC	Je -
SUDHIR AGRAWAL	Nil	ABHA GUPTA	the Inste
CRE/CIVIL	-9	Sr. MANAGER	p
	Realtin	Sr. MANAGER HARSH CHAURASIA	A Sur Kom
CRE/CIVIL REETU PATIAL CDE/CIVIL MEENAKSHI SHARMA	Realtin H+24	Sr. MANAGER HARSH CHAURASIA EXE./CIVIL PRIYA SINGH	A Sur Kom
PROJECT: HARYANA ORBITAL RA CONNECTING PALWA LINKING ASAOTI-PATL BG DOUBLE LINE	AIL CORRIDOR L TO SONIPAT I-SULTANPUR-	Sr. MANAGER HARSH CHAURASIA EXE./CIVIL PRIYA SINGH EXE./CIVIL BYPASSING DELHI ARE ASAUDAH BY NEW ELE	A BY CTRIFIED
CRE/CIVIL REETU PATIAL CDE/CIVIL MEENAKSHI SHARMA SDE/CIVIL PROJECT: HARYANA ORBITAL RA CONNECTING PALWAA LINKING ASAOTI-PATL BG DOUBLE LINE CLIENT: MARYANA RAIL INFRA	AIL CORRIDOR L TO SONIPAT I-SULTANPUR-	Sr. MANAGER HARSH CHAURASIA EXE./CIVIL PRIYA SINGH EXE./CIVIL BYPASSING DELHI ARE ASAUDAH BY NEW ELE	A BY CTRIFIED
CRE/CIVIL         REETU PATIAL         CDE/CIVIL         MEENAKSHI SHARMA         SDE/CIVIL         PROJECT:         HARYANA ORBITAL R         CONNECTING PALWAI         LINKING ASAOTI-PATIL         BG DOUBLE LINE         CLIENT:         MARYANA RAIL INFRA         LIMITED.	Realtr JU+74 AIL CORRIDOR L TO SONIPAT I-SULTANPUR-	Sr. MANAGER HARSH CHAURASIA EXE./CIVIL PRIYA SINGH EXE./CIVIL BYPASSING DELHI ARE ASAUDAH BY NEW ELE	A BY CTRIFIED
CRE/CIVIL         REETU PATIAL         CDE/CIVIL         MEENAKSHI SHARMA         SDE/CIVIL         MEENAKSHI SHARMA         SDE/CIVIL         PROJECT:         HARYANA ORBITAL RA         CONNECTING PALWAL         LINKING ASAOTI-PATL         BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRA         LIMITED.         GENERAL CONSULTANT:	Redit JL+JU AIL CORRIDOR L TO SONIPAT I-SULTANPUR- I-SULTANPUR-	Sr. MANAGER HARSH CHAURASIA EXE./CIVIL PRIYA SINGH EXE./CIVIL BYPASSING DELHI ARE ASAUDAH BY NEW ELE	A BY CTRIFIED
CRE/CIVIL         REETU PATIAL         CDE/CIVIL         MEENAKSHI SHARMA         SDE/CIVIL         MEENAKSHI SHARMA         SDE/CIVIL         PROJECT:         HARYANA ORBITAL RJ         CONNECTING PALWAL         LINKING ASAOTI-PATL         BG DOUBLE LINE         CLIENT:         MARYANA RAIL INFRA         LIMITED.         GENERAL CONSULTANT:         GENERAL CONSULTANT:         ODITEO LINTICAL	AIL CORRIDOR L TO SONIPAT I-SULTANPUR- STRUCTURE D	Sr. MANAGER HARSH CHAURASIA EXE./CIVIL PRIYA SINGH EXE./CIVIL BYPASSING DELHI ARE ASAUDAH BY NEW ELE PEVELOPMENT CORPOR	A BY CTRIFIED
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DRG.NO. AA/2245/AL/DR/P&P/R3 SHEET No. 3 OF 4

SCALE : H = 1:5000 V = 1:500 ISSUED Dt: 26.11.2019 REV Dt: 06-08-2022

## ESP/Yard Plan (Revised)



		CS	R DETAILS FOR B	BADSA Y	/ARD	
LINE NO	LINE NOTATION	C	H: m F/CSB	CI	H: m F/CSB	TOTAL LENGTH OF CSR
LINE NO-1	COMMON. LOOP LINE	SRJ	393.085	SRJ	376.915	770.000 M
LINE NO-2	DN MAIN LINE	FM	393.085	FM	376.915	770.000 M
LINE NO-3	UP MAIN LINE	FM	393.085	FM	433.493	826.578 M
LINE NO-4	LOOP LINE	SRJ	393.085	SRJ	433.493	826.578 M





	CSR	DET	AILS FOR BA	DLI	YARD	
LINE NO	LINE NOTATION		START		END	TOTAL LENGTH OF CSR
LINE NO-1	DN LOOP LINE	SRJ	442.578	SRJ	442.578	885.156
LINE NO-2	DN MAIN LINE	FM	442.578	FM	442.578	885.156
LINE NO-3	UP MAIN LINE	FM	385.000	FM	385.000	770.000
LINE NO-4	COMMON LOOP LINE	SRJ	385.000	SRJ	385.000	770.000



	CSR DETAILS FOR MANDOTHI YARD														
LINE NO	LINE NOTATION		START		END	TOTAL LENGTH OF CSR									
LINE NO-1	LOOP LINE 1	SRJ	392.785	SRJ	377.215	770.000									
LINE NO-2	LOOP LINE NO-2	FM	392.785	FM	377.215	770.000									
LINE NO-3	DN MAIN LINE	FM	467.163	FM	496.193	963.356									
LINE NO-4	UP MAIN LINE	FM	348.185	FM	438.615	786.800									
LINE NO-5	LOOP LINE NO-5	SRJ	348.185	SRJ	438.615	786.800									








				SRJ & FM AT CH:114661.478m F/PRITHALA, CH:442.593m F/CSB			DE AT CH:114781.478m F/PRITHALA, CH:562.593m F/CSB	
	PROW PROW PROW	PROW-		www.prowwww.prowwww.prowwww.prowwww.prowwww.prowwww.prowwww.prowwww.prowwww.prowwww.prowwww.prowwww.prowwww.prow	ow	PROW PROW PROW PROW		PRONT PRONT PRONT
HIGH LEVEL PASSENGER PLATFORM (600mx6.0m)								
6.0m		6,00		OV EM01 in 12	<u>ER RUN LII</u>	<u>NE - 120m(PT TO DE)</u> 1 in 12	<u> </u> [	
5.3m		5.30			FM⊕1 in	12 g		1 in12
6.0m		6.00	PFM PLin 12	1 in 12 🔶		<sup>rd</sup> 12.50		
HIGH LEVEL PASSENGER PLATFORM (600mx6.0m)				OVER RUN LINE - 120m(PT TO DE)		S&T HUT		API
		APPROACH ROAD 7.5m WIDE					ROW PROW PROW PROW PROW	PROW PROW F
APPROACH ROAD 1.300 MIDE	1x12.2m,PSC U SLAB, RUB PLATFORM END AT CH:114518.885m	F/PRITHALA, CH:300.000m F/CSB Mat CH:114603.900m F/PRITHALA		SRJ AT CH:114709.900m F/POM _ MOM _ MOM ( HIMANDA _ MOM _	SRJ & FM AT CH:114722.878m F/PRITHALA	CH:505.015m F/CSB SRJ AT CH:114767.478m F/PRITHALA, CH:548.593m F/CSB		OUTER MOSTPOINT SRJ & FM AT CH:114820.456m F/PRITHALA CH:601.571m F/CSB



### **Station Building and Subway (Revised and New Drawings)**





BRIDGE NO.	CHAINAGE	GL	SUBWAY FLOOR LEVEL	PFL
189	71.198	213.073	212.801	216.426
187 A	70.998	213.079	212.420	216.045





GC/HORC		HF	RIDC
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	
AMAR PRAKASH DWIVEDI PD		VISHAL GUPTA CPM SOUTH	
SUDHIR AGRAWAL DPD/CIVIL	MIR	VIKRAM YADAV GM/ IE & A	
A.S. JANGHU CRE/ELECT.	Alm	ABHA GUPTA DGM/CIVIL	X
REETU PATIAL CDE/CIVIL	Realis	JYOTI SANGWAN DGM/ELEC.	
C.S TEWARI SRE/S&T			
MEENASKHI SHARMA SDE/CIVIL	J1.70		





N P SONIPAL ATFORM (600m) ATFORM (600m)	<ol> <li>NOTES:</li> <li>ALL DIMENSIONS ARE I MENTIONED.</li> <li>ALL LEVEL ARE IN METERS</li> <li>PROTECTION WORK ON BOTH SIDES ON APPRO DONE AS PER SKETCH NO</li> <li>STAINLESS STEEL (SS 304) WALL IN STAIRCASE &amp; RA</li> <li>SELF-SUPPORTING SHED I AND RAMP AS PER SKETCE</li> <li>APPROACH ROAD INCLU SHALL BE PAID UNDER SC</li> <li>CONTRACTOR SHALL LAY SIDE WALL OF SUBWAY EVERY 5m DISTANCE WITI</li> <li>RETAINING WALLS ON ENTRANCE NEAR THE E INCLUDED IN LUMPSUM S</li> <li>BEDING CONDITION OF S NO-GC-HRIDC-SK-SEN-02</li> </ol>	IN METERS UN S. SLOPES OF BA DACHES OF SL GC-HRIDC-SK-G HAND RAIL SHA MP. SHALL BE PROVII H NO. GC-HRIDC DING ITS RETAIL HEDULE 'B'. 32mm DIA GI C AND PROVIDE JL H OPENING IN SI BOTH SIDE ( SID OF STAIR SCHEDULE 'A'. UBWAY SHALL E	LESS OTHERWISE NK UP TO 15M, JBWAY SHALL BE EN-015. LL BE FIXED WITH DED OVER STAIRS -SK-GEN-020. NING STRUCTURE CONDUIT IN BOTH JNCTION BOX AT UBWAY. DF SUBWAY AT AND RAMP ARE BE AS PER SKETCH
'ROW			
L WITH MS DP 1.0m	PROJECT: HARYANA OR CONNECTING PALW AREA BY LINKING A: NEW ELECTRIFIED E	BITAL RAIL C AL TO SONIPAT BY SAOTI-PATLI-SULT. 3G DOUBLE LINE	CORRIDOR (PASSING DELHI ANPUR-ASAUDAH BY
F: 224.638 L: 223.056	CONSULTANT:	IT CORPORA	ATION LIMITED.
OR: 219.431 G 214.603	GENERAL CO HARYANA OR RITES Limited in cons	NSULTANT F BITAL RAIL C ortium with SMEC Ir	OR CORRIDOR ternational Pty. Ltd.
00	THE INFRASTRUCTURE PEOPLE	Member of th	ne Surbana Jurong Group
SIGN	TITLE:- CONCEPTUAL PL/ AND SUBV	AN OF MANDO VAY NO.261 & 2	THI STATION 263
Idid a C. Lto	DRG. NO.		SHEET NO.
More mpa	GC-HRIDC-C6-DRW-STN	-MAN01_A1	
1/2007m	SCALE : NTS	18.03.2024	23.04.2024
		1	



SONIPAT	<ul> <li>NOTES:</li> <li>1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE MENTIONED.</li> <li>2. ALL LEVEL ARE IN METERS.</li> <li>3. PROTECTION WORK ON SLOPES OF BANK UP TO 15M, BOTH SIDES ON APPROACHES OF SUBWAY SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015.</li> <li>4. STAINLESS STEEL (SS 304) HAND RAIL SHALL BE FIXED WITH WALL IN STAIRCASE &amp; RAMP.</li> <li>5. SELF-SUPPORTING SHED SHALL BE PROVIDED OVER STAIRS AND RAMP AS PER SKETCH NO. GC-HRIDC-SK-GEN-020.</li> <li>6. APPROACH ROAD INCLUDING ITS RETAINING STRUCTURE SHALL BE PAID UNDER SCHEDULE 'B'.</li> <li>7. CONTRACTOR SHALL LAY 32mm DIA GI CONDUIT IN BOTH SIDE WALL OF SUBWAY AND PROVIDE JUNCTION BOX AT EVERY 5m DISTANCE WITH OPENING IN SUBWAY.</li> <li>8. RETAINING WALLS ON BOTH SIDE OF SUBWAY AT ENTRANCE NEAR THE END OF STAIR AND RAMP ARE INCLUDED IN LUMPSUM SCHEDULE 'A'.</li> <li>9. BEDING CONDITION OF SUBWAY SHALL BE AS PER SKETCH NO-GC-HRIDC-SK-SEN-02.</li> </ul>
25m) PROW 125m)	
PROW	
	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT:
RETAINING WALL	GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
SIGN	TITLE:- CONCEPTUAL PLAN OF NEW ASUDHA STATION AND SUBWAY NO.278 & 279A
the more	GC-HRIDC-C6-DRW-STN-NAS01 A1
JIN THE	
*1941	NTS 18.03.2024 23.04.2024





	<ol> <li>NOTES:</li> <li>ALL DIMENSIONS ARE I MENTIONED.</li> <li>ALL LEVEL ARE IN METERS</li> <li>PROTECTION WORK ON BOTH SIDES ON APPRO DONE AS PER SKETCH NO</li> <li>STAINLESS STEEL (SS 304) WALL IN STAIRCASE &amp; RA</li> <li>SELF-SUPPORTING SHED AND RAMP AS PER SKETCC</li> <li>APPROACH ROAD INCLU SHALL BE PAID UNDER SC</li> <li>CONTRACTOR SHALL LAY SIDE WALL OF SUBWAY EVERY 5m DISTANCE WITT</li> <li>RETAINING WALLS ON ENTRANCE NEAR THE E INCLUDED IN LUMPSUM S</li> <li>BEDING CONDITION OF S NO-GC-HRIDC-SK-SEN-02</li> </ol>	IN METERS UN S. SLOPES OF BA DACHES OF SL . GC-HRIDC-SK-G HAND RAIL SHA MP. SHALL BE PROVII H NO. GC-HRIDC DING ITS RETAIL HEDULE 'B'. 32mm DIA GI C AND PROVIDE JL H OPENING IN SI BOTH SIDE ( END OF STAIR SCHEDULE 'A'. UBWAY SHALL E	LESS OTHERWISE NK UP TO 15M, JBWAY SHALL BE EN-015. LL BE FIXED WITH DED OVER STAIRS -SK-GEN-020. NING STRUCTURE CONDUIT IN BOTH JNCTION BOX AT UBWAY. DF SUBWAY AT AND RAMP ARE DE AS PER SKETCH
n(SRJ TO SRJ) W PRC M TO FM) TM TO FM) (FM TO FM)			
RJ TO SRJ) ÀTION TOE PROW			
2mm DIA GI DNDUIT RNOTE NO - 7	PROJECT: HARYANA OR CONNECTING PALW AREA BY LINKING AS NEW ELECTRIFIED E CLIENT: HARYANA RA DEVELOPMEN CONSULTANT:	BITAL RAIL C AL TO SONIPAT BY SAOTI-PATLI-SULT SG DOUBLE LINE IL INFRASTR NT CORPORA	CORRIDOR (PASSING DELHI ANPUR-ASAUDAH BY UCTURE ATION LIMITED.
	GENERAL CO HARYANA OR RITES Limited in cons	NSULTANT F BITAL RAIL C Portium with SMEC In Member of B	OR CORRIDOR International Pty. Ltd.
SIGN SIGN Hole Supte	TITLE:- CONCEPTUAL PLA STATION AND S DRG. NO. GC-HRIDC-C6-DRW-STN	N OF KHARKHU UBWAY NO.330 -KHAR01_A1	ODA KHIROLI 6 & 337 SHEET NO.
Jtottorym	SCALE : NTS	ISSUE DATE 18.03.2024	REVISED DATE 23.04.2024





TYPE	OPENIN	G SIZE	DESCRIPTION
D0	3000	2100	Rolling Shutter with Grill
D	3000	2100	PVC Framed Door
D1	900	2100	Panelled Door
D2	540	2100	Panelled Door
W	1500	1200	Glazed with MS Grill
V1	600	500	Glazed Louvered Ventilator
W1	600	500	Louvex Glass

GC/HOR	С	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION
AMAR PRAKASH DWIVEDI PD	Ø	VISHAL GUPTA CPM/ NORTH
SUDHIR AGRAWAL DPD/CIVIL	MIR	VIKRAM YADAV GM/IE & A
A.S JANGHU CRE/ELECT	olim	JYOTI SANGWAN DGM/ELECTRICAL
REETU PATIAL CDE/CIVIL	Realts	ABHA GUPTA DGM/CIVIL
C.S TEWARI SRE/S&T		AM/S&T
MEENAKSHI SHARMA SDE/CIVIL	91-24	



## **Bridges (Revised and New)**

### Minor Bridges Main Line (Revised and New)



	NOTES : A) GENERAL NOTES
	1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
	2. NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
	3. THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
	<ol> <li>FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.</li> <li>THE EXISTING DETAILS ARE AS PER PRELIMINARY SITE SURVEY AND SHALL BE</li> </ol>
	VERIFIED BY THE CONCTRACTOR BEFORE EXECUTION. 6. ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION
	LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
	<ol> <li>ENGINEER IN CHARGE SHALL ENSURE THE SAFETY OF DFC TRACK AND STRUCTURE DURING EXECUTION OF WORK</li> </ol>
	9. ENGINEER IN CHARGE SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK CONCERNED DEBT. SUCH AS
	BSNLAIRTEL/SE/(Sig)NR,DFCCIL ETC. SHALL BE INFORMED WELL IN ADVANCE
	10. DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM
	BE DONE BY CONTRACTOR AT HIS COST
	11. THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC. 12. DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL
	APPROVED GAD:
	B) TECHNICAL NOTES :
	<ol> <li>BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.</li> <li>DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES</li> </ol>
	<ul><li>(i) IRS BRIDGE RULE</li><li>(ii) IRS CONCRETE BRIDGE CODE</li></ul>
	(iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE 3. SEISMIC ZONE- IV
	<ol> <li>EXPOSURE CONDITION-MODERATE.</li> <li>FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE.</li> </ol>
	GRADE OF CONCRETE : (i) ALL RCC /WEARING COURSE : M:35/DETAILED DESIGN DRG.
	<ul> <li>(ii) LEVELING COURSE/PCC : M:20/DETAILED DESIGN DRG.</li> <li>6. REINFORCEMENT SHALL BE Fe 500D (TMT) CONFORMING TO IS 1786.</li> </ul>
	7. PROTECTION WORK ON SLOPES OF BANK UP TO 15M,BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015
	8. INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE SIDES ON BOTH ENDS OF THE BOX AFTER PROTECTION WORK.
	9. FOR PROPER DRAINAGE OF WATER, SUITABLE SLOPE TO BE PROVIDED ON TOP OF BOX SLAB.
	10. ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL 11. ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH
	BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM. CONFIRMING TO IS: 3117.
	12. PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED LIDON THE DECUMPEMENT OF A CLEARANCE
	DRAINAGE &NATURAL GROUND PROFILE.
	SUB-STRUCTURE AND FOUNDATION CODE. ANGLE OF INTERNAL FRICTION OF
	BACKFILL SHALL NOT BE LESS THAN 33°. 14. 75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORIZONTAL AND 1000 MM C/C
	VERTIGALLY IN RETURN WALL & ABUTMENT THROUGHOUT. 15. BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN
	REQUIREMENT. IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED OUT AND CONFIRMED THROUGH FIELD TESTING.
	16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.
	<u>C) OTHER NOTES</u> :
150	1. HEIGHT GAUGE SHALL BE PROVIDE AS PER RDSO STANDARD DRAWING NO. RDSO/M0001.
	2. SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD INCLUDE
150	BERMS. 3 RETAINING WALL ALONG THE ROAD SHALL BE MIN 500 ABOVE GROUND LEVEL NO
	WEEP HOLE SHALL BE PROVIDED IN RETAINING WALL.
750	DRAINAGE. HUMP SHALL BE PROVIDED AT BECTH ENDS OF THE RAMP.
<u> </u>	ROAD.HEIGHT OF STEEL POST ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR
20	6. ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW
	<ol> <li>SHALL BE PROVIDED.</li> <li>GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND DECIDE DEPENDENT OF THE SHALL BE AS PER DETAILED GT INVESTIGATION AND</li> </ol>
	IMPORTANT NOTE:
	GROUND LEVEL.HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD
	BOX MAY NEED MODIFICATION ACCORDINGLY.THE HEIGHT OF RCC BOX SHALL BE
	PROVIDED REEPING ABOVE PROVISION IN VIEW.
SOIL	
FLOORING	
	HAR I ANA URBITAL KAIL CURRIDUR
-	CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
<u>_S</u>	
	NEW ELECTRIFIED BG DOUBLE LINE
	NEW ELECTRIFIED BG DOUBLE LINE
	CLIENT:
	CLIENT: HARYANA RAIL INFRASTRUCTURE
	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
POSED	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
POSED TING IANTLE	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
POSED TING 1ANTLE	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
POSED TING IANTLE VEL	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR
POSED TING IANTLE VEL TION LEVEL	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
POSED TING IANTLE VEL TION LEVEL	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
POSED TING IANTLE VEL FION LEVEL EVEL ROW	AREA BT LINKING ASAO IN-PAILI-SOL TANFOR-ASAODAH BT NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
POSED TING IANTLE VEL TION LEVEL EVEL ROW ESTING	AREA BY LINKING ASAO THPATTERSOL TANPOR-ASAODAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
POSED TING IANTLE VEL TION LEVEL EVEL ROW ESTING	CLIENT: WELECTRIFIED BG DOUBLE LINE HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. INFORMATION LIMITED.
POSED TING MANTLE VEL TION LEVEL EVEL ROW STING	AREA BY LINKING ASAO II-PATEI-SOLTANPOR-ASAODAH BY NEW ELECTRIFIED BG DOUBLE LINE LARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT:
POSED TING IANTLE VEL TION LEVEL EVEL ROW STING	AREA BY LINKING ASAO IN-FAILI-SOLTANPORASAODAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONSULTANT: CONSU
POSED TING IANTLE VEL TION LEVEL EVEL ROW STING	AREA BY LINKING ASAO IN-PAILI-SOLIANPOR-ASAODAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Construction of the surbana juring Group         CONSULTANT:         Image: Construction of the Surbana juring Group         CONSULTANT:         Image: Construction of the Surbana juring Group         CONSULTANT:         Image: Construction of the Surbana juring Group         Construction of the Surbana juring Group
POSED TING IANTLE VEL TION LEVEL EVEL ROW STING	AREA BT LINKING ASAO IPPATILISUL TAMPORASAODAH BT         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         GENERAL CONSULTANT FOR         HARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.         Import Structure People         TITLE:         CONCEPTUAL GENERAL ARRANGEMENT DRAWING         FOR BALANCING CULVERT BRIDGE NO.156 & 04A         1x4x4.2 & 1x4x2.65 m RCC BOX AT CH:62025.073 m & 2727.62m
POSED TING IANTLE VEL TION LEVEL EVEL ROW STING	AREA BT LINKING ASAO IPPATIELISUL TAMPORASAODAH BT         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         ORNERAL CONSULTANT FOR         HARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Development Consultant For         MARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Development Consultant For         RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Development For         Image: Develo
POSED TING IANTLE VEL TION LEVEL EVEL ROW STING	AREA B T LINKING ASAOTIFATEI-SULTANFOR-ASAODAH BTNEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         OCONSULTANT:         GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Consultant results and resu
POSED TING MANTLE VEL TION LEVEL EVEL ROW ESTING	AREA BY LINKING ASAOTIPATEL-SOLTAINPOR-ASAODAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WHARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONSULTANT: MEMBER OF the Surbara Jurong Group TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR BALANCING CULVERT BRIDGE NO.156 & 04A 1x4x4.2 & 1x4x2.65 m RCC BOX AT CH:62025.073 m & 2727.62m DRG. NO. GC-HRIDC-C6-DRW-BRD-GAD_01156 & 0104A_A0 1 OF 1
POSED TING MANTLE VEL TION LEVEL EVEL ROW ESTING	AREA BY LINKING ASAOTIPATE-SOLTANPOR-ASAODATION         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Construct the properties of the subscription of the subscri
POSED STING MANTLE VEL TION LEVEL EVEL ROW ESTING	AREA BY LINKING ASAOTH-FAIL-SOLTANFOR-ASAODAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WHARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONSULTANT: CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR BALANCING CULVERT BRIDGE NO.156 & 04A 1x4x4.2 & 1x4x2.65 m RCC BOX AT CH:62025.073 m & 2727.62m DRG. NO. GC-HRIDC-C6-DRW-BRD-GAD_01156 & 0104A_A0 1 OF 1 SCALE : ISSUE DATE REVISED DATE
POSED TING ANTLE VEL TION LEVEL ROW STING STING	AREA BT LINKING ASACITPATE PSUPART PARTY OR ASACIDATI BT NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WHARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONSULTANT: CONSULTANT
POSED TING MANTLE VEL TION LEVEL ROW SSTING	AREA BY LINKING ASACITPATE SOLTAINFOR-ASAGDART BY NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.         CONSULTANT         GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Conserve the Surbana Jurong Group         TITLE: CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR BALANCING CULVERT BRIDGE NO.156 & 04A 1x4x4.2 & 1x4x2.65 m RCC BOX AT CH:62025.073 m & 2727.62m         DRG. NO.         GC-HRIDC-C6-DRW-BRD-GAD_01156 & 0104A_A0         ISSUE DATE         AS SHOWN         03-04-2024





![](_page_343_Figure_0.jpeg)

![](_page_344_Figure_0.jpeg)

2	NOTES :
	<ul> <li>A) <u>GENERAL NOTES</u></li> <li>1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER,</li> </ul>
0	UNLESS OTHERWISE MENTIONED. 2. NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN
N.	DIMENSION ARE TO BE FOLLOWED. 3. THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION
	4. FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.
	5. THE EXISTING DETAILS ARE AS PER PRELIMINARY SITE SURVEY AND SHALL BE VERIFIED BY THE CONCTRACTOR BEFORE EXECUTION.
	6. ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE
	COMMENCEMENT OF WORK. 7. ENGINEER IN CHARGE SHALL ENSURE THE SAFETY OF DFC TRACK AND
	STRUCTURE DURING EXECUTION OF WORK.
+++++++++++++++++++++++++++++++++++++++	DAMAGE OF S&T CABLE/OFC DURING EXECUTION OF WORK. CONCERNED
	WELL IN ADVANCE BEFORE EXECUTION OF WORK.
	FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY,
	10.THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF
₹0₩ PRO₩  \	HORC. 11.DETAILED GAD WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED
	GAD.
	<ul> <li>B) <u>TECHNICAL NOTES</u>:</li> <li>1. STANDARD OF LOADING :- SUPER STRUCTURE-25T (RDSO STANDARD PSC U</li> </ul>
	SLAB),& SUB STRUCTURE-32.5T- LOADING 2. DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
	a. IRS BRIDGE RULE b. IRS CONCRETE BRIDGE CODE
	c. IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
	4. EXPOSURE CONDITION-MODERATE.
	GRADE OF CONCRETE : GRADE OF CONCRETE : ALL BCC AVEABING COURSE : M425/DETAILED DESIGN DBC
	a. ALL RCC / WEARING COURSE : M:35/DETAILED DESIGN DRG. b. LEVELING COURSE/PCC : M:20/DETAILED DESIGN DRG.
	6. REINFORCEMENT SHALL BE Min. Fe 500D (TMT) CONFORMING TO IS 1786. 7. PROTECTION WORK ON SLOPES OF BANK UP TO 30M,BOTH SIDES ON
	APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015
	8. INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE SIDES ON BOTH ENDS OF THE BRIDGE AFTER PROTECTION WORK.
	9. ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL 10.ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED
	WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM.
	11.THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB-
	BACKFILL SHALL NOT BE LESS THAN 33 °.
	12.75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORIZONTAL AND 1000 MM C/C VERTICALLY IN RETURN WALL & ABUTMENT THROUGHOUT.
	13.BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED OUT
	AND CONFIRMED THROUGH FIELD TESTING. 14.THE STRUCTURAL DIMENSIONS AND SIZES ARE INDICATIVE AND THESE MAY
	VARY DURING DETAIL DESIGN. 15.SIZE, TYPE OF FOUNDATION & GROUND IMPROVEMENT DETAILS SHOWN ARE
	TENTATIVE AND MAY CHANGE DURING DETAILED DESIGN.
	17.DETAIL OF TOE WALL SHALL BE PROVIDED AS PER SKETCH NO.
	C) OTHER NOTES :
	1. FOR SUPERSTRUCTURE DETAILS FOLLOW RDSO DRG.NO'S : RDSO/B-10257/R.
	2. TRANSITION SYSTEM TO BE ADOPTED ON BRIDGE APPROACHES SHALL BE AS PER RDSO REPORT NO. GE:R-50(TRANSITION SYSTEM ON APPROACHES OF
	BRIDEGES). FOR DETAILS REFER SKETCH NO. GC-HRIDC-SK-GEN-019. 3. GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION
	AND DESIGN REQUIREMENTS.
-	
	PROJECT:
	HARYANA ORBITAL RAIL CORRIDOR
	CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
	AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
-	
	CLIENT:
	HARYANA RAIL INFRASTRUCTURE
SED FORMATION LEVEL	DEVELOPMENT CORPORATION LIMITED.
EVEL -	
IESS	CONSULTANT:
	GENERAL CONSULTANT FOR
SED HORC ROW	HARYANA ORBITAL RAIL CORRIDOR
	RITES Limited in consortium with SMEC International Pty. Ltd.
PROPOSED	
DISMANTLE	KICS Number of the Surbana lurger Group
I	THE INFRASTRUCTURE PEOPLE Member of the surbana juring group
	TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
	FOR BALANCING CULVERT NO.290, SPAN 1X6.1 PSC SLAB AT CH:97707.806m
L ±0	
ju	GC-HRIDC-C6-DRW-BRD-GAD-01290 A1 1 OF 1
F	
	SCALE .   ISSUE DATE KEVISED DATE
	AS SHOWN 03-04-2024

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NN S	
WS	A) GENERAL NOTES
	1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
	NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN     DIMENSION ARE TO BE FOLLOWED.     3. THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION
	<ul> <li>BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.</li> <li>FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.</li> </ul>
	5. THE EXISTING DETAILS ARE AS PER PRELIMINARY SITE SURVEY AND SHALL BE VERIFIED BY THE CONCTRACTOR BEFORE EXECUTION.
	6. ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE
	<ul> <li>COMMENCEMENT OF WORK.</li> <li>7. SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE</li> <li>CONDITIONS</li> </ul>
	8. ENGINEER IN CHARGE SHALL ENSURE THE SAFETY OF DFC TRACK AND STRUCTURE DURING EXECUTION OF WORK.
	9. ENGINEER IN CHARGE SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK.
	CONCERNED DEPT. SUCH AS BSNL/AIRTEL/SSE/(Sig)NR,DFCCIL ETC. SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
	10. DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY,
	11. THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC.
	12. DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED GAD.
	B) TECHNICAL NOTES :
	<ol> <li>DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES</li> <li>IRS BRIDGE RULE</li> </ol>
	<ul> <li>(ii) IRS CONCRETE BRIDGE CODE</li> <li>(iii) IRS BRIDGE SUB-STRUCTURE &amp; FOUNDATION CODE</li> </ul>
	(iv) IRBM 2. SEISMIC ZONE- IV
	<ol> <li>EXPOSURE CONDITION-MODERATE.</li> <li>FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE.</li> <li>CRADE OF CONCRETE :</li> </ol>
	<ul> <li>(i) ALL RCC /WEARING COURSE : M:35/DETAILED DESIGN DRG.</li> <li>(ii) LEVELING COURSE/PCC : M:20/DETAILED DESIGN DRG.</li> </ul>
	<ol> <li>REINFORCEMENT SHALL BE MIN. Fe 500D (TMT) CONFORMING TO IS 1786.</li> <li>PROTECTION WORK ON SLOPES OF BANK UP TO 6M,BOTH SIDES ON</li> </ol>
	APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015
	<ul> <li>NOT LOTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE SIDES</li> <li>ON BOTH ENDS OF THE BRIDGE AFTER PROTECTION WORK.</li> <li>8. ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BF PAINTED</li> </ul>
	WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM. CONFIRMING TO IS: 3117.
	9. PLACEMENT LEVEL OF PIPE AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF
	CLEARANCE, DRAINAGE &NATURAL GROUND PROFILE. 10. 75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORIZONTAL AND 1000
	11. BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN BEOUREMENT IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED
	OUT AND CONFIRMED THROUGH FIELD TESTING.
	C) OTHER NOTES :
	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE
	PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: the structure of t
	PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:
	PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         GENERAL CONSULTANT FOR
	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
	PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Maryana Rail INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         Image: GENERAL CONSULTANT FOR         HARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.
/EL	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
/EL	PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI       AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE       NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:       HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.       CONSULTANT:         ORSULTANT:       GENERAL CONSULTANT FOR         HARYANA ORBITAL RAIL CORRIDOR       RITES Limited in consortium with SMEC International Pty. Ltd.
VEL	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: CONSULTANT: CONSULTANT: CENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
VEL	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WHARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONSULTANT: CONS
	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WHARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED CONSULTANT:
	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT:
	PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Consultant:         Image: Consuttant:         Im
VEL	PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         GENERAL CONSULTANT FOR         HARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Consultant for the Surbara Jurong Group         TITLE:       GENERAL ARRANGEMENT DRAWING OF BRIDGE         NO.       GENERAL ARRANGEMENT DRAWING OF BRIDGE         NO.       GOR SPAN PIPE CULVERT 1X1.8 Ø         DRG. NO.       SHEET NO.         GC-HRIDC-C6-DRW-BRD-GAD-01349_A1       10F 1         SCALE :       ISSUE DATE         AS SHOWN       03-04-2024

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MP CH:	NOTES :
1X3X1.5	A) <u>GENERAL NOTES</u> 1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER.
	UNLESS OTHERWISE MENTIONED. 2 NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN
	DIMENSION ARE TO BE FOLLOWED.
	BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
	5. THE EXISTING DETAILS ARE AS PER PRELIMINARY SITE SURVEY AND SHALL BE
×.	6. ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL
A PROWL	COMMENCEMENT OF WORK.
	STRUCTURE DURING EXECUTION OF WORK.
1-CL	DAMAGE OF S&T CABLE/OFC DURING EXECUTION OF WORK. CONCERNED DEPT. SUCH AS BSNI /AIRTEL/SSE/ (Sig.)/ NB_DECCLETC_SHALL BE INFORMED
	WELL IN ADVANCE BEFORE EXECUTION OF WORK.
	FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY, BEOLIBED IS TO BE DONE BY CONTRACTOR AT HIS COST
	10.THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC
	11.DETAILED GAD WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED
	B) TECHNICAL NOTES :
	1. STANDARD OF LOADING :- SUPER STRUCTURE-25T (RDSO STANDARD PSC U SLAB) & SUB STRUCTURE-32 5T- LOADING
	2. DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
	b. IRS CONCRETE BRIDGE CODE c. IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
PROW PROW PROW PROW PROW PROW PROW PROW	3. SEISMIC ZONE- IV 4. EXPOSURE CONDITION-MODERATE.
	5. FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE. GRADE OF CONCRETE :
	a. ALL RCC /WEARING COURSE : M:35/DETAILED DESIGN DRG. b. LEVELING COURSE/PCC : M:20/DETAILED DESIGN DRG.
	6. REINFORCEMENT SHALL BE Min. Fe 500D (TMT) CONFORMING TO IS 1786. 7. PROTECTION WORK ON SLOPES OF BANK UP TO 30M BOTH SIDES ON
	APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015
	8. INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE SIDES ON BOTH ENDS OF THE BRIDGE AFTER PROTECTION WORK.
	9. ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL 10.ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED
	WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM. CONFIRMING TO IS: 3117.
	11.THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB- STRUCTURE AND FOUNDATION CODE. ANGLE OF INTERNAL FRICTION OF
	BACKFILL SHALL NOT BE LESS THAN 33 °. 12.75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORIZONTAL AND 1000
	MM C/C VERTICALLY IN RETURN WALL & ABUTMENT THROUGHOUT. 13.BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN
	REQUIREMENT. IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED OUT AND CONFIRMED THROUGH FIELD TESTING.
	14.THE STRUCTURAL DIMENSIONS AND SIZES ARE INDICATIVE AND THESE MAY VARY DURING DETAIL DESIGN.
	15.SIZE, TYPE OF FOUNDATION & GROUND IMPROVEMENT DETAILS SHOWN ARE TENTATIVE AND MAY CHANGE DURING DETAILED DESIGN.
	16.SEISMIC ARRESTOR SHALL BE PROVIDED ON THE PIER/ABUTMENT CAP. 17.DETAIL OF TOE WALL SHALL BE PROVIDED AS PER SKETCH NO.
	C) OTHER NOTES :
	1. FOR SUPERSTRUCTURE DETAILS FOLLOW RDSO DRG.NO'S : RDSO/B-10257/R.
	PER RDSO REPORT NO. GE:R-50(TRANSITION SYSTEM ON APPROACHES OF BRIDEGES) FOR DETAILS REFER SKETCH NO. GC-HRIDC-SK-GEN-019
	3. HEIGHT GAUGE SHALL BE PROVIDE AS PER RDSO STANDARD DRAWING NO. BDSO/M0001
	4. SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD
	INCLUDE BERMS.
	PROJECT:
	HARYANA ORBITAL RAIL CORRIDOR
	CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
	AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE
SED RAIL LEVEL SED FORMATION LEVEL	
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	DEVELOPMENT CORPORATION LIMITED
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SION GAP	CONSULTANT:
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ID LEVEL	HARYANA ORBITAL RAIL CORRIDOR
	RITES Limited in consortium with SMEC International Pty. Ltd.
EXISTING	
DISMANTLE	THE INFRASTRUCTURE PEOPLE Member of the Surbana Jurong Group
	TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR
	1x6.1m, PSC SLAB, RUB
1.10	
pte	DKG. NU. SHEET NO. SHEET NO.
	SCALE :   ISSUE DATE   REVISED DATE
	AS SHOWN 03-04-2024

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AME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	Chahatey Ram	VISHAL GUPTA CPM/NORTH	UF
SUDHIR AGRAWAL DPD/CIVIL	Stil	ABHA GUPTA DGM/CIVIL/DESIGN	Male In
REETU PATIAL CDE/ CIVIL	Reeter	SUNIL DUTT Sr.MANAGER	ħ
ISHPENDRA KR.SINGH SDE/ CIVIL	P.K. SINJ	HARSH CHAURASIA EXECUTIVE/CIVIL	Harth
IEENAKSHI SHARMA SDE/ CIVIL	J1.71		

DRG. NO.	SHEET N
GC-HRIDC-C6-DRW-BRD-GAD 01358 A0	1051

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¥.	A) GENERAL NOTES					
Ł	1. ALL DIMENSIONS ARE IN M			S WHICH	ARE IN	
5	2. NO DIMENSION SHALL BE DIMENSION ARE TO BE FC	SCALED FROM	ED. M THE DRAWING	G ONLY V	VRITTEN	
	3. THE CHAINAGES SHOWN A BUILDING TAKEN AS 0.00 M	ARE RECKONI	ED FROM C/L O ECT TO UP MAI	F PRITHA N LINE.	LA STATION	
	4. FOR RAIL LEVELS, FORMA 5. THE EXISTING DETAILS AF	TION LEVEL, ( RE AS PER PR	GRADES ETC. R ELIMINARY SITE	EFER L-	SECTION. Y AND SHALL	
	BE VERIFIED BY THE CON 6. ENGINEER IN CHARGE/ SI	CTRACTOR BE	FORE EXECUT	ION. Y THE RA	AIL LEVEL	
	FORMATION LEVEL , BED I COMMENCEMENT OF WO	LEVEL & TRAC RK.		SITE BEF		
	CONDITIONS					
	9. ENGINEER IN CHARGE SH	CUTION OF W	ORK. CESSARY PREC	AUTIONS	S TO	
	PREVENT DAMAGE OF S& CONCERNED DEPT. SUCH	T CABLE /OFC I AS BSNL/AIR <sup>-</sup>	DURING EXEC	UTION OF R,DFCCIL	F WORK. ETC.	
	SHALL BE INFORMED WEI 10. DURING CONSTRUCTION,	LL IN ADVANC	E BEFORE EXE	CUTION ORE TO BE	OF WORK. E OBTAINED	
	FROM CONCERNED ROAD REQUIRED IS TO BE DONE	D/CIVIL AUTHO	RITIES. DIVERS CTOR AT HIS CO	ION OF R DST	NE USE OF	
	HORC. 12. DETAILED DESIGN DRAWI		REPARED BASE		IS	
	CONCEPTUAL APPROVED	GAD.				
	B) TECHNICAL NOTES :					
	1. DESIGN CRITERIA SHALLE (i) IRS BRIDGE RULE (ii) IRS CONCRETE BRIDGE CO	ODE	FOLLOWING IR	S CODES	5	
	(ii) IRS CONCRETE BRIDGE CO (iii) IRS BRIDGE SUB-STRUCTU (iv) IRBM	JRE & FOUND	ATION CODE			
	2. SEISMIC ZONE- IV 3. EXPOSURE CONDITION-M	ODERATE.				
	4. FOR CONCRETE SPECIFIC GRADE OF CONCRETE :	CATION REFER	IRS CONCRET	E BRIDGE	E CODE.	
	(I) ALL RCC /WEARING COUR (II) LEVELING COURSE/PCC :	RE MINI E COO	35/DETAILED D 20/DETAILED D	ESIGN DI	RG. RG.	
	6. PROTECTION WORK ON S APPROACHES OF BRIDGE		NK UP TO 6M,BONE NE AS PER SKE		ES ON	
	GC-HRIDC-SK-GEN-015 7. INSPECTION STEPS SHALL	L BE PROVIDE			OSITE SIDES	
	ON BOTH ENDS OF THE BE8.ALL RCC SURFACES COM	RIDGE AFTER	PROTECTION V	Vork. Should e		
	WITH BITUMEN OR COAL T CONFIRMING TO IS: 3117.			@ 1.464 K	K.G/SQM.	
	BE SUITABLY LOWERED/E CLEARANCE, DRAINAGE &	LEVATED BAS	ED UPON THE I	REQUIRE	MENT OF	
	10. 75mm DIA WEEP HOLES TO MM C/C VERTICALLY IN RE	O BE PROVIDE	D @1000 C/C H ABUTMENT TH	ORIZONT	TAL AND 1000 DUT.	
	11 BEARING CAPACITY OF SC					
	REQUIREMENT. IF REQUIR	DIL SHALL BE RED GROUND	ENSURED AS P	ER DETA MAY BE	ILED DESIGN CARRIED	
	C) OTHER NOTES :	DIL SHALL BE RED GROUND ROUGH FIELD	ENSURED AS P IMPROVEMENT TESTING.	ER DETA MAY BE	ILED DESIGN CARRIED	
	C) OTHER NOTES : 1. ADEQUATE SLOPE OF RCG	DIL SHALL BE RED GROUND ROUGH FIELD C PIPE TOWAF	ENSURED AS P IMPROVEMENT TESTING. RDS DIRECTION	ER DETA MAY BE	ILED DESIGN CARRIED W SHALL BE	
	<ul> <li>C) OTHER NOTES :</li> <li>1. ADEQUATE SLOPE OF RCO PROVIDED.</li> </ul>	DIL SHALL BE RED GROUND ROUGH FIELD C PIPE TOWAF	ENSURED AS P IMPROVEMENT TESTING. RDS DIRECTION	ER DETA MAY BE	ILED DESIGN CARRIED W SHALL BE	
	<ul> <li>C) OTHER NOTES :</li> <li>1. ADEQUATE SLOPE OF RCG PROVIDED.</li> </ul>	DIL SHALL BE RED GROUND ROUGH FIELD C PIPE TOWAF	ENSURED AS P IMPROVEMENT TESTING.	ER DETA MAY BE	ILED DESIGN CARRIED	
	<ul> <li>C) OTHER NOTES :</li> <li>1. ADEQUATE SLOPE OF RCO PROVIDED.</li> </ul>	DIL SHALL BE RED GROUND ROUGH FIELD C PIPE TOWAF	ENSURED AS P IMPROVEMENT TESTING. RDS DIRECTION	ER DETA MAY BE	ILED DESIGN CARRIED	
	<ul> <li>C) OTHER NOTES :</li> <li>1. ADEQUATE SLOPE OF RCG PROVIDED.</li> </ul>	DIL SHALL BE RED GROUND ROUGH FIELD C PIPE TOWA	ENSURED AS P IMPROVEMENT TESTING.	ER DETA MAY BE	ILED DESIGN CARRIED	
	<ul> <li>PROJECT:</li> </ul>	DIL SHALL BE RED GROUND ROUGH FIELD C PIPE TOWA	ENSURED AS P IMPROVEMENT TESTING. RDS DIRECTION	ER DETA MAY BE	ILED DESIGN CARRIED	
	PROJECT: HARYANA	OIL SHALL BE RED GROUND ROUGH FIELD C PIPE TOWAR	ENSURED AS P IMPROVEMENT TESTING. RDS DIRECTION	ER DETA MAY BE	ILED DESIGN CARRIED	
	PROJECT: HARYANA CONNECTING AREA BY LINKI	OIL SHALL BE RED GROUND ROUGH FIELD C PIPE TOWAR ORBITA PALWAL TO ING ASAOTI	ENSURED AS P IMPROVEMENT TESTING. RDS DIRECTION AL RAIL C SONIPAT BY -PATLI-SULT/	OF FLOV	ILED DESIGN CARRIED	
	PROJECT: HARYANA CONNECTING AREA BY LINKING	OIL SHALL BE RED GROUND ROUGH FIELD C PIPE TOWAR ORBITA PALWAL TO ING ASAOTI FIED BG DO	ENSURED AS P IMPROVEMENT TESTING. RDS DIRECTION AL RAIL C SONIPAT BY -PATLI-SULT/ UBLE LINE	OF FLOV	ILED DESIGN CARRIED	Y
	<ul> <li>PROJECT: HARYANA CONNECTING AREA BY LINKI NEW ELECTRIF</li> </ul>	OIL SHALL BE RED GROUND ROUGH FIELD C PIPE TOWAR ORBITA PALWAL TO ING ASAOTI FIED BG DO	ENSURED AS P IMPROVEMENT TESTING. RDS DIRECTION AL RAIL C SONIPAT BY -PATLI-SULT/ UBLE LINE	ER DETA MAY BE	ILED DESIGN CARRIED	Y
	<ul> <li>PROJECT:</li> <li>PROJECT:</li> <li>HARYANA</li> <li>CONNECTING</li> <li>AREA BY LINKINE</li> <li>NEW ELECTRIF</li> </ul>	ORBITA PALWAL TO ING ASAOTI FIED BG DO	AL RAIL C SONIPAT BY PATLI-SULT/ UBLE LINE	OF FLOV	IDOR IDOR IG DELHI ASAUDAH E	××
	<ul> <li>PROJECT: HARYANA CONNECTING AREA BY LINKI NEW ELECTRIF</li> <li>CLIENT: HARYANA DEVELOP</li> </ul>	ORBITA PALWAL TO ING ASAOTI FIED BG DO	ENSURED AS P IMPROVEMENT TESTING. RDS DIRECTION AL RAIL C SONIPAT BY PATLI-SULT/ UBLE LINE FRASTRI ORPORA	OF FLOV	ILED DESIGN CARRIED	γ D.
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/ L.	NOTES:
2	A) GENERAL NOTES
To	1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER,
4	2. NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN DIMENSION
	<ol> <li>3. THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION</li> <li>BUILDING TAKEN AS A 22 M WITH DESPECT TO UP MAINLUNE.</li> </ol>
	<ol> <li>4. FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.</li> <li>5. THE EXISTING DETAILS ARE AS DEP DEFLIMINARY SITE SURVEY AND SHALL BE</li> </ol>
	VERIFIED BY THE CONCTRACTOR BEFORE EXECUTION.
	FORMATION LEVEL , BED LEVEL & TRACK CENTER AT SITE BEFORE
	7. SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE
	8. ENGINEER IN CHARGE SHALL ENSURE THE STRUCTURE DURING EXECUTION OF
	9. ENGINEER IN CHARGE SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK CONCERNED DEPT
	SUCH AS BSNL/AIRTEL/SSE/(Sig)NR,DFCCIL/ETC. SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
	10. DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES, DIVERSION OF ROAD IF ANY, REQUIRED
	IS TO BE DONE BY CONTRACTOR AT HIS COST 11. THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC.
	12. DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED GAD
	B) TECHNICAL NOTES :
	1. BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.
	<ul> <li>(i) IRS BRIDGE RULE</li> <li>(ii) IRS CONCRETE BRIDGE CODE</li> </ul>
	(iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE 3. SEISMIC ZONE- IV
	<ol> <li>EXPOSURE CONDITION-MODERATE.</li> <li>FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE.</li> </ol>
	GRADE OF CONCRETE : (i) ALL RCC /WEARING COURSE : M:35/DETAILED DESIGN DRG.
	<ul> <li>(ii) LEVELING COURSE/PCC : M:20/DETAILED DESIGN DRG.</li> <li>6. REINFORCEMENT SHALL BE MIN. Fe 500D (TMT) CONFORMING TO IS 1786.</li> </ul>
	7. PROTECTION WORK ON SLOPES OF BANK UP TO 15M,BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO.
	GC-HRIDC-SK-GEN-015 8. INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE SIDES ON
	9. FOR PROPER DRAINAGE OF WATER, SUITABLE SLOPE TO BE PROVIDED ON
	10. ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL
	WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM.
	12.PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF
	CLEARANCE, DRAINAGE &NATURAL GROUND PROFILE. 13. THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5. OF IRS
	SUB- STRUCTURE AND FOUNDATION CODE. ANGLE OF INTERNAL FRICTION OF BACKFILL SHALL NOT BE LESS THAN 33 °.
	14.75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORIZONTAL AND 1000 MM C/C VERTICALLY IN RETURN WALL & ABUTMENT THROUGHOUT.
	15. BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED OUT
	AND CONFIRMED THROUGH FIELD TESTING.
	16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE
	<ul> <li>16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.</li> <li>17. DETAIL OF TOE WALL SHALL BE PROVIDED AS PER SKETCH NO.</li> </ul>
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021         0	<ul> <li>16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DESIGN.</li> <li>17. DETAIL OF TOE WALL SHALL BE PROVIDED AS PER SKETCH NO. GC-HRIDC-SK-GEN-014_A1</li> <li>PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE</li> <li>CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.</li> <li>CONSULTANT: CONSULTANT:</li> <li>GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.</li> <li>IFTES LIMITED IN CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED IN CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR</li> </ul>
C'S ROW	<ul> <li>16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DESIGN.</li> <li>17. DETAIL OF TOE WALL SHALL BE PROVIDED AS PER SKETCH NO. GC-HRIDC-SK-GEN-014_A1</li> <li>PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE</li> <li>CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.</li> <li>CONSULTANT:</li> <li>GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED IN CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED IN CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED</li> <li>TITLE: CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR BALANCING CULVERT BRIDGE NO. 365 1x 4x 4m RCC BOX AT CH:116053.810m</li> </ul>
B WALL ROPOSED XISTING ISMANTLE LEVEL AATION LEVEL C'S ROW	16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DESIGN. 17. DETAIL OF TOE WALL SHALL BE PROVIDED AS PER SKETCH NO. GC-HRIDC-SK-GEN-014_A1 PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WE ELECTRIFIED BG DOUBLE LINE CLIENT: CONSULTANT: CONSU
921         921         921         921         922         923         924         925         924         925         926         927         928         929         921         9	16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISE AFTER DETAILED DESIGN. 17. DETAIL OF TOE WALL SHALL BE PROVIDED AS PER SKETCH NO. GC-HRIDC-SK-GEN-014_A1 PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WE ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. ITTLE: CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR BALANCING CULVERT BRIDGE NO. 365 1x 4x 4m RCC BOX AT CH:116053.810m DRG. NO. GC-HRIDC-C6-DRW-BRD-GAD_01365_A1 1 OF 1
021         0	16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISE AFTER DETAILED DESIGN. 17. DETAIL OF TOE WALL SHALL BE PROVIDED AS PER SKETCH NO. GC-HRIDC-SK-GEN-014_A1 PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WHARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. INFRASTRUCTURE PEOPLE TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR BALANCING CULVERT BRIDGE NO. 365 1x 4x 4m RCC BOX AT CH:116053.810m DRG. NO. GC-HRIDC-C6-DRW-BRD-GAD_01365_A1 IOF 1 SCALE : ISSUE DATE REVISED DATE
021         0	16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN. 17. DETAIL OF TOE WALL SHALL BE PROVIDED AS PER SKETCH NO. GC-HRIDC-SK-GEN-014_A1 PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED IN CORPORATION LIMITED. TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR BALANCING CULVERT BRIDGE NO. 365 1x 4x 4m RCC BOX AT CH:116053.810m DRG. NO. GC-HRIDC-C6-DRW-BRD-GAD_01365_A1 IOF 1 SCALE : AS SHOWN 03.04.2024

![](_page_351_Figure_0.jpeg)

	NOTES :			
	A) GENERAL NO	TES		
	1. ALL DIMENS UNLESS OTH	IONS ARE IN MILLIMETI TERWISE MENTIONED.	ERS EXCEPT LEVELS	WHICH ARE IN METER,
	2. NO DIMENSIO ARE TO BE F	)N SHALL BE SCALED FR FOLLOWED.	OM THE DRAWING ON	LY WRITTEN DIMENSION
	3. THE CHAIN, BUILDING TA	AGES SHOWN ARE RE AKEN AS 0.00 M, WITH RE	CKONED FROM C/L SPECT TO UP MAIN LII	OF PRITHALA STATION
	4. FOR RAIL LE 5. THE EXISTII	VELS, FORMATION LEVE	L, GRADES ETC. REFE R PRELIMINARY SITE	R L-SECTION. SURVEY AND SHALL BE
	6. ENGINEER FORMATION	IN CHARGE/ SITE ENG	GINEER SHOULD VE	RIFY THE RAIL LEVEL
	COMMENCE 7. SUITABLE E	MENT OF WORK. BED SLOPE SHALL BE	PROVIDED AND AD	JUSTED AS PER SITE
	CONDITIONS 8. ENGINEER IN	; N CHARGE SHALL ENSU	RE THE STRUCTURE	DURING EXECUTION OF
	WORK. 9. ENGINEER I	N CHARGE SHALL TAKI	E NECESSARY PREC	AUTIONS TO PREVENT
	DAMAGE OF SUCH AS B	S&T CABLE /OFC DURIN SNL/AIRTEL/SSE/(Sig)NR,	IG EXECUTION OF WO DFCCIL/ETC. SHALL E	DRK. CONCERNED DEPT. BE INFORMED WELL IN
	10. DURING COL	STRUCTION, IF REQUIR	IORK. ED, ROAD CLOSURE	
	IS TO BE DO	NE BY CONTRACTOR AT	HIS COST	USIVE USE OF HORC
	12. DETAILED D APPROVED	ESIGN DRAWING WILL E	BE PREPARED BASED	ON THIS CONCEPTUAL
	B) TECHNICAL N	OTES :		
	1. BOX BRIDGE I 2. DESIGN CRITE	S TO BE DESIGNED FOR ERIA SHALL BE BASED O	32.5 T LOADING AS AF N FOLLOWING IRS COI	PPLICABLE. DES
	(i) IRS BRIDO (ii) IRS CONC	GE RULE RETE BRIDGE CODE		
	3. SEISMIC ZONI	E-IV DNDITION-MODERATE	JUNDATION CODE	
	5. FOR CONCRE GRADE OF CO	TE SPECIFICATION REFE	R IRS CONCRETE BRI	DGE CODE.
	(i) ALL RCC / (ii) LEVELING	WEARING COURSE : COURSE/PCC :	M:35/DETAILED DE M:20/DETAILED DE	SIGN DRG. SIGN DRG.
	6. REINFORCEM 7. PROTECTION	ENT SHALL BE MIN. Fe 50 WORK ON SLOPES OF B	00D (TMT) CONFORMIN ANK UP TO 15M,BOTH	IG TO IS 1786. SIDES ON
	GC-HRIDC-SK 8. INSPECTION S	-GEN-015 STEPS SHALL BE PROVID	ED AT DIAGONALLY O	PPOSITE SIDES ON
	BOTH ENDS C 9. FOR PROPER	F THE BOX AFTER PROT DRAINAGE OF WATER,S	ECTION WORK. UITABLE SLOPE TO BI	E PROVIDED ON
	TOP OF BOX 10. ALL CLEAN/ E	SLAB. XPANSION JOINTS SHAL	L BE FILLED WITH THE	RMOCOL.
	11. ALL RCC SUR WITH BITUME	FACES COMING IN CONT N OR COAL TAR OF APPF TO IS: 3117	ACT WITH SOIL SHOU ROVED QUALITY @ 1.4	LD BE PAINTED 64 K.G/SQM.
	12.PLACEMENT L SUITABLY LOV	.EVEL OF BOX AS SHOW WERED/ELEVATED BASE	N IN THIS GAD IS INDIC D UPON THE REQUIRE	CATIVE AND MAY BE
	CLEARANCE, 13.THE BACK FIL	DRAINAGE &NATURAL G L MATERIAL SHALL BE C	ROUND PROFILE. ONFORMING TO CLAU	SE 7.5 OF IRS
	SUB- STRUCT BACKFILL SH	URE AND FOUNDATION ALL NOT BE LESS THAN	CODE. ANGLE OF INTE 33 °.	
	14.75mm DIA WE MM C/C VERT	EP HOLES TO BE PROVID TCALLY IN RETURN WALL	DED @1000 C/C HORIZ _ & ABUTMENT THROU	ONTAL AND 1000 IGHOUT.
	REQUIREMEN AND CONFIRI	VIT. IF REQUIRED GROUN	D IMPROVEMENT MAY STING.	BE CARRIED OUT
	16. THICKNESS C FINALISED AF	F STRUCTURAL MEMBEI TER DETAILED DESIGN.	RS ARE TENTATIVE AN	ID WILL BE
	17. DETAIL OF TO GC-HRIDC-SK	)E WALL SHALL BE PROV (-GEN-014_A1	IDED AS PER SKETCH	NO.
	1. HEIGHT GAUG	≥. SE SHALL BE PROVIDE AS	S PER RDSO STANDAR	D DRAWING NO.
	RDSO/M0001. 2. SPEED BREAK	KER SHOULD BE PROVID	ED ON EITHER APPRO	DACH OF RUB AT A
	DISTANCE OF INCLUDE BER	20M FROM THE BRIDGE MS.	COVERING FULL WIDT	TH OF THE ROAD
	IMPORTANT NOT	E: TTOM SLAB OF RCC BO	X SHALL NOT BE KEP	T ABOVE THE NATURAL
	GROUND LEVE	EVEL.HOWEVER, ROAD	LEVEL AND VERTICA	AL CLEARANCE ABOVE THE DRAWING.OVERALL
NER	HEIGHT OF RCC BOX SH	THE BOX MAY NEED M IALL BE PROVIDED KEEP	ODIFICATION ACCOR PING ABOVE PROVISIO	DINGLY.THE HEIGHT OF DN IN VIEW.
OF 75 DIA	PROJECT			
00 C/C				
	/		SAOTI-PATLI-SULT	ANPUR-ASAUDAH BY
		DEVELOPMEN	IT CORPORA	
	No. Contraction			
	CONSUL	TANT:		
TING	WEAL CONSILION	GENERAL CO	NSULTANT F	OR
ANTLE		HARYANA OR	BITAL RAIL C	ORRIDOR
/EL	HORC	RITES Limited in cons	ortium with SMEC I	nternational Pty. Ltd.
ION LEVEL				CMEC
ROW		RITES	AK.	SIVIEC
	THE INFR.	ASTRUCTURE PEOPLE	Member of t	he Surbana Jurong Group
	TITLE:-	CONCEPTUAL GEN	NERAL ARRANGE	EMENT DRAWING
		FOR ROAD UN	DER BRIDGE NO.	374 9 093m
	DRG. NO			SHEET NO.
	GC-	⊓КIDU-U6-DKW-В	кט-GAD_01374	
	SCALE :		ISSUE DATE	
	ļ	AS SHOWN	03-04-2024	

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	NOTES :
BROM	<ul> <li>NOTES :</li> <li>A) GENERAL NOTES</li> <li>ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.</li> <li>NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.</li> <li>THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.</li> <li>FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.</li> <li>THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.</li> <li>FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.</li> <li>ENGINEER IN CHARGE' SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL, BED LEVEL &amp; TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.</li> <li>ENGINEER IN CHARGE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS</li> <li>ENGINEER IN CHARGE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS</li> <li>ENGINEER IN CHARGE SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF SAT CABLE OFC DURING EXECUTION OF WORK.</li> <li>DERGINEER IN CHARGE SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF SAT CABLE OFC DURING EXECUTION OF WORK.</li> <li>DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED WELL IN ADVANCE BEFORE EXECUTION OF WORK.</li> <li>DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED WELL NADVANCE BEORE DADLEVIL AUTHORITES. DIVERSION OF ROAD IF ANY. REQUIRED IS TO BE DORE BY CONTRACTOR AT HIS COST</li> <li>THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC.</li> <li>DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED GAD.</li> <li>BIDTECHNICAL MOTES:</li> <li>BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.</li> <li>DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES</li> <li>INS BRIDGE RULE</li> <li>MIL CONCERTER BRIDGE CODE.</li> <li>MARDE CONNETTON.</li> <li>SEISMER CONSET: MAS</li></ul>
	AND CONFIRMED THROUGH FIELD TESTING. 16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.
	<ol> <li>C) OTHER NOTES :</li> <li>1. HEIGHT GAUGE SHALL BE PROVIDE AS PER RDSO STANDARD DRAWING NO. RDSO/M0001.</li> <li>2. SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD INCLUDE BERMS.</li> <li>3. GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT</li> </ol>
	IMPORTANT NOTE: TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL.HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING.OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY.THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.
172 mm         10 mm         210 mm         350 mm         742 mm	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE
ON DSED RAIL LEVEL DSED FORMATION LEVEL LEVEL NESS	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT:
AL ND LEVEL DSED HORC ROW CAL CLEARANCE	GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
PROPOSED EXISTING DISMANTLE	THE INFRASTRUCTURE PEOPLE
	TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR ROAD UNDER BRIDGE NO.379, SPAN 1X11.8X5.15, RCC BOX AT CH:119573.598m
pte	DRG. NO. GC-HRIDC-C6-DRW-BRD-GAD-01379_A1 1 OF 1
	SCALE :ISSUE DATEREVISED DATEAS SHOWN03-04-2024

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![](_page_355_Figure_0.jpeg)

LEGENL	)	
		PROPOSED
		EXISTING
		DISMANTLE
ABBREV	/IATION	
PRL	PROPOSED RA	IL LEVEL
PFL	PROPOSED FO	RMATION LE

PFL	PROPOSED FORMATION LEVEL
GL	GROUND LEVEL
PROW	PROPOSED HORC'S ROW

	GC/HORC		HRIDC
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	Chahatey Rom	VISHAL GUPTA CPM/NORTH	UF -
SUDHIR AGRAWAL DPD/CIVIL	Mil	ABHA GUPTA DGM/CIVIL/DESIGN	Mole Inpte
REETU PATIAL CDE/ CIVIL	Reeten	SUNIL DUTT Sr.MANAGER	ħ
PUSHPENDRA KR.SINGH SDE/ CIVIL	P.K. Singe	HARSH CHAURASIA EXECUTIVE/CIVIL	Alarth
MEENAKSHI SHARMA SDE/ CIVIL	J1.71		

	NOTES :
	A) GENERAL NOTES
	1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
	2. NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
	<ol> <li>THE CHAINAGES SHOWN ARE RECROILED FROM C/L OF FRITHALA STATION</li> <li>BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.</li> <li>FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.</li> </ol>
	5. THE EXISTING DETAILS ARE AS PER PRELIMINARY SITE SURVEY AND SHALL BE VERIFIED BY THE CONCTRACTOR BEFORE EXECUTION.
	6. ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL , BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
	<ul> <li>7. SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS</li> </ul>
	8. ENGINEER IN CHARGE SHALL ENSURE THE SAFETY OF DFC TRACK AND STRUCTURE DURING EXECUTION OF WORK.
	PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK. CONCERNED DEPT. SUCH AS BSNL/AIRTEL/SSE/(Sig)NR,DFCCIL ETC.
	SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK. 10. DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED
	REQUIRED IS TO BE DONE BY CONTRACTOR AT HIS COST 11. THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF
	HORC. 12. DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS
	B) TECHNICAL NOTES :
	1. DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
	(i) IRS BRIDGE RULE     (ii) IRS CONCRETE BRIDGE CODE     (iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
	(iv) IRBM 2. SEISMIC ZONE- IV
	<ol> <li>EXPOSURE CONDITION-MODERATE.</li> <li>FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE.</li> <li>GRADE OF CONCRETE :</li> </ol>
	<ul> <li>(i) ALL RCC /WEARING COURSE : M:35/DETAILED DESIGN DRG.</li> <li>(ii) LEVELING COURSE/PCC : M:20/DETAILED DESIGN DRG.</li> </ul>
	<ol> <li>KEINFORCEMENT SHALL BE MIN. Fe 500D (TMT) CONFORMING TO IS 1786.</li> <li>PROTECTION WORK ON SLOPES OF BANK UP TO 6M,BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO</li> </ol>
	GC-HRIDC-SK-GEN-015 7. INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE SIDES
	<ul> <li>ON BOTH ENDS OF THE BRIDGE AFTER PROTECTION WORK.</li> <li>8. ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K G/SOM</li> </ul>
	CONFIRMING TO IS: 3117. 9. PLACEMENT LEVEL OF PIPE AS SHOWN IN THIS GAD IS INDICATIVE AND MAY
	BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE &NATURAL GROUND PROFILE.
	<ul> <li>MM C/C VERTICALLY IN RETURN WALL &amp; ABUTMENT THROUGHOUT.</li> <li>BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN</li> </ul>
	REQUIREMENT. IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED OUT AND CONFIRMED THROUGH FIELD TESTING.
	C) OTHER NOTES :
	1. ADEQUATE SLOPE IN BOTTOM SLAB OF RCC PIPE TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.
Į	
	PROJECT:
	HARYANA ORBITAL RAIL CORRIDOR
	CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
	NEW ELECTRIFIED BG DOUBLE LINE
	DEVELOPMENT CORPORATION LIMITED
	CONSULTANT:
	GENERAL CONSULTANT FOR
	HARYANA ORBITAL RAIL CORRIDOR
	THE INFRASTRUCTURE PEOPLE Member of the Surbana Jurong Group
	TITLE:- GENERAL ARRANGEMENT DRAWING OF
	BRIDGE NO-393 AT CHAINAGE 125227.882
	FOR SPAN PIPE CULVERT 1X1.2 Ø
	DRG. NO. SHEET NO.
	GC-HRIDC-C6-DRW-BRD-GAD-01393_A1 1 OF 1
	SCALE : ISSUE DATE REVISED DATE
	AS SHOWN 03-04-2024

# Minor Bridges Connectivity Line Badsa to SultanPur (Revised and New)

![](_page_357_Figure_0.jpeg)

	NOTES : A) GENERAL NOTES
	1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
	<ol> <li>NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.</li> </ol>
	3. THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
	4. FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION. 5. THE EXISTING DETAILS ARE AS PER PRELIMINARY SITE SURVEY AND SHALL BE
	VERIFIED BY THE CONCTRACTOR BEFORE EXECUTION. 6. ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION
	LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
	<ol> <li>ENGINEER IN CHARGE SHALL ENSURE THE SAFETY OF DFC TRACK AND STRUCTURE DURING EXECUTION OF WORK</li> </ol>
	9. ENGINEER IN CHARGE SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE (OFC, DURING EXECUTION OF WORK, CONCERNED DEBT, SUCH AS
	BSNL/AIRTEL/SSE/(Sig)NR,DFCCIL ETC. SHALL BE INFORMED WELL IN ADVANCE
	10. DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM
	BE DONE BY CONTRACTOR AT HIS COST
	11. THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC. 12. DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL
	APPROVED GAD.
	B) TECHNICAL NOTES :
	<ol> <li>BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.</li> <li>DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES</li> </ol>
	<ul><li>(i) IRS BRIDGE RULE</li><li>(ii) IRS CONCRETE BRIDGE CODE</li></ul>
	(iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE 3. SEISMIC ZONE- IV
	<ol> <li>EXPOSURE CONDITION-MODERATE.</li> <li>FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE.</li> </ol>
	GRADE OF CONCRETE : (i) ALL RCC /WEARING COURSE : M:35/DETAILED DESIGN DRG.
	<ul> <li>(ii) LEVELING COURSE/PCC : M:20/DETAILED DESIGN DRG.</li> <li>6. REINFORCEMENT SHALL BE Fe 500D (TMT) CONFORMING TO IS 1786.</li> </ul>
	<ol> <li>PROTECTION WORK ON SLOPES OF BANK UP TO 15M,BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015</li> </ol>
	<ol> <li>INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE SIDES ON BOTH ENDS OF THE BOX AFTER PROTECTION WORK.</li> </ol>
	<ol> <li>FOR PROPER DRAINAGE OF WATER, SUITABLE SLOPE TO BE PROVIDED ON TOP OF BOX SLAB</li> </ol>
	10. ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL
	BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM. CONFIRMING TO IS: 3117
	12. PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE
	DRAINAGE &NATURAL GROUND PROFILE.
	SUB-STRUCTURE AND FOUNDATION CODE. ANGLE OF INTERNAL FRICTION OF
	14. 75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORIZONTAL AND 1000 MM C/C
	VERTICALLY IN RETURN WALL & ABUTMENT THROUGHOUT. 15. BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN DESIGN DESIGN AND DESIGN
	REQUIREMENT. IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED OUT AND CONFIRMED THROUGH FIELD TESTING.
	<ol> <li>THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.</li> </ol>
	C) OTHER NOTES :
150	<ol> <li>HEIGHT GAUGE SHALL BE PROVIDE AS PER RDSO STANDARD DRAWING NO. RDSO/M0001.</li> </ol>
	<ol> <li>SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD INCLUDE</li> </ol>
450	BERMS. 3. RETAINING WALL ALONG THE ROAD SHALL BE MIN 500 ABOVE GROUND LEVEL. NO
50(	4. DRAIN WITH SUMP & SUITABLE OUTFALL SHALL BE PROVIDED FOR PROPER
1200	<ol> <li>WEEP HOLE SHALL BE PROVIDED IN RETAINING WALL.</li> <li>DRAIN WITH SUMP &amp; SUITABLE OUTFALL SHALL BE PROVIDED FOR PROPER DRAINAGE. HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.</li> <li>SELF SUPPORTING COVER SHED SHALL BE PROVIDED OVER THE APPROACH</li> </ol>
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OGL OGL OGL OGL OGL OGL OGL OGL OGL OGL	<ul> <li>WEEP HOLE SHALL BE PROVIDED IN RETAINING WALL.</li> <li>DRAINAGE, HUMP \$\$ SUIP AS UTABLE OUTFALL SHALL BE PROVIDED FOR PROPER DRAINAGE, HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.</li> <li>SELF SUPPORTING COVER SHED SHALL BE PROVIDED OVER THE APPROACH ROAD.HEIGHT OF STEEL POST ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR PERMITTING NATURAL LIGHT.</li> <li>ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.</li> <li>GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND DESIGN REQUIREMENTS.</li> <li>IMPORTANT NOTE:</li> <li>TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL.HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING.OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY.THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.</li> <li>PROJECT:</li> <li>HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE</li> <li>CLIENT:</li> <li>HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.</li> <li>CONSULTANT:</li> </ul>
OSED TING IANTLE /EL	<ul> <li>WEEP HOLE SHALL BE PROVIDED IN RETAINING WALL.</li> <li>DRAINAGE, HUMP &amp; SUITABLE OUTRAIL SHALL BE PROVIDED FOR PROPER DRAINAGE, HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.</li> <li>SELF SUPPORTING COVER SHED SHALL BE PROVIDED OVER THE APPROACH ROAD HEIGHT OF STEEL POST ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR PERMITTING NATURAL LIGHT.</li> <li>A ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.</li> <li>GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND DESIGN REQUIREMENTS.</li> <li>IMPORTANT NOTE:</li> <li>TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING, OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY.THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.</li> <li>PROJECT:</li> <li>HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE</li> <li>CLIENT:</li> <li>MARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.</li> <li>CONSULTANT:</li> <li>GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORPUDOR</li> </ul>
OSED TING IANTLE /EL ION LEVEL	<ul> <li>WEEP HOLE SHALL BE PROVIDED IN RETAINING WALL.</li> <li>DRAINAGE, HUMP &amp; SUITABLE OUTFAILE SHALL BE PROVIDED FOR PROPER DRAINAGE, HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.</li> <li>SELF SUPPORTING COVER SHED SHALL BE PROVIDED OVER THE APPROACH ROAD HEIGHT OF STEEL POST ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR PREMITTING NATURAL LIGHT.</li> <li>ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.</li> <li>GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND DESIGN REQUIREMENTS.</li> <li>IMPORTANT NOTE:</li> <li>TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING.OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY.THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.</li> <li>PROJECT:</li> <li>HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE</li> <li>CLIENT:</li> <li>WEELECTRIFIED BG DOUBLE LINE</li> <li>CLIENT:</li> <li>GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR LIMITED.</li> <li>CONSULTANT:</li> <li>GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR BITEL DIVERTION LIMITED.</li> </ul>
SOIL SOIL	<ul> <li>WEEP HOLE SHALL BE PROVIDED IN RETAINING WALL.</li> <li>DRAINAGE, HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.</li> <li>SELF SUPPORTING COVER SHED SHALL BE PROVIDED OVER THE APPROACH PRAINAGE. HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.</li> <li>ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.</li> <li>GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND DESIGN REQUIREMENTS.</li> <li>IMPORTANT NOTE: TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND DESIGN REQUIREMENTS.</li> <li>IMPORTANT NOTE: TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL. HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING.OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY.THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.</li> <li>PROJECT: HARRYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE</li> <li>CLIENT: WEELECTRIFIED BG DOUBLE LINE</li> <li>CONSULTANT:</li> <li>GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED IN CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED IN CONSULTANT FOR</li> </ul>
SOIL OG C FLOORING ANTLE VEL TING TANTLE VEL TION LEVEL EVEL ROW	<ul> <li>WEEP HOLE SHALL BE PROVIDED IN RAINING WALL.</li> <li>DRAINAGE, HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.</li> <li>SELF SUPPORTING COVER SHED SHALL BE PROVIDED OVER THE APPROACH ROAD HEIGHT OF STEEL POST ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR PERMITTING NATURAL LIGHT.</li> <li>ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.</li> <li>GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND DESIGN REQUIREMENTS.</li> <li>IMPORTANT NOTE:</li> <li>TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE FOAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING.OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY. THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.</li> <li>PROJECT:</li> <li>HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE</li> <li>CLIENT:</li> <li>HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.</li> <li>CONSULTANT:</li> <li>GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED IN CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED IN CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR</li> </ul>
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OSED TING IANTLE VEL TION LEVEL EVEL ROW STING	<ul> <li>WEEP HOLE SHALL BE PROVIDED IN RELIAINING WALL.</li> <li>DRAIN WITH SUMP &amp; SUITABLE OUTFALL SHALL BE PROVIDED FOR PROPER DRAINAGE. HUMP SHALL BE PROVIDED SHALL BE PROVIDED OVER THE APPROACH ROAD HEIGHT OF STELE POST ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR PERMITING NATURAL LIGHT.</li> <li>ADECUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.</li> <li>GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND DESIGN REQUIREMENTS.</li> <li>IMPORTANT NOTE:</li> <li>TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE HEID FOR THE APPROVIDED KEEPING ABOVE PROVISION IN VIEW.</li> <li>PROJECT:</li> <ul> <li>HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.</li> <li>CONSULTANT:</li> <li>WEELECTRIFIED BG DOUBLE LINE</li> </ul> <li>CONSULTANT:</li> <li>GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED INTERSIMENT MITHS MEC INTERNATIONAL PROPERTION ALL METERSITY.</li> <li>THE INFRASTRUCTURE PEOPLE</li> <li>THE INFRASTRUCTURE PEOPLE</li> <li>THE INFRASTRUCTURE PEOPLE</li> <li>TITLE: CONCEPTUAL</li></ul>
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OSED TING IANTLE VEL ROW STING STING	<ul> <li>DERAIN WITH SUMP &amp; SUITABLE OF NOTIFIEL SHALL BE PROVIDED FOR PROPER DARINAGE. HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.</li> <li>SELF SUPPORTING COVER SHED SHALL BE PROVIDED OVER THE APPROACH ROAD HEIGHT OF STELE POST ABOVE RETAINING WALL BE MINIMUM 2m FOR PERMITTION ANTAL LIGHT.</li> <li>ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.</li> <li>GROUND IMPROVEMENT DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND DESIGN REQUIREMENTS.</li> <li>MPORTANT NOTE::</li> <li>TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD HEAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD HEAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE HEAD ROAD HE</li></ul>
OSED TING IANTLE VEL TION LEVEL EVEL ROW STING	<ul> <li>DRANAGE HOLE SHALL BE PROVIDED IN RETAINING WALL</li> <li>DRANAGE HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.</li> <li>SELF SUPPORTING COVER SHED SHALL BE PROVIDED OVER THE APPROACH ROAD HEIGHT OF STELE POST ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR PERMITTION NATURAL LIGHT.</li> <li>ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.</li> <li>OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE APPROACH ROAD HEIGHT OF STELE POST.</li> <li>MORTANT NOTE:</li> <li>TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GEOUND LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD HEIGHT OF REC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.</li> </ul>
OSED TING IANTLE VEL TION LEVEL EVEL ROW STING	<ul> <li>WEP ROLE SHALL BE PROVIDED IN RELIAMING WALL</li> <li>DRAIN WITH SUMP AS BUITABLE OUTPAIL SHALL BE PROVIDED FOR PROPER DRAINAGE HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.</li> <li>SELF SUPPORTING COVER SHED SHALL BE PROVIDED OVER THE APPROACH ROAD HEIGHT OF STEEL POST ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR PERMITING NATURAL LIGHT.</li> <li>ADECUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED OVER THE NATURAL LIGHT.</li> <li>ADECUATE SLOPE IN BOTTOM SLAB OF RCC BOX STOWARDS DIRECTION OF FLOW SHALL BE PROVIDED MEETER PROVIDED EVENT SHALL BE AS PER DETAILED GT INVESTIGATION AND DESIGN REQUIREMENTS.</li> <li>MPORTANT NOTE:</li> <li>TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL.HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL AND ACCORDINGLY. THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VEW.</li> </ul>
SOIL SOIL	VEP ROLE SHALL BE PROVIDED IN RELAYING WALL     DRAIN WITH SUMP AS SUITABLE OUTPAIL SHALL BE PROVIDED FOR PROPER     DRAINAGE. HUMP SHALL BE PROVIDED AT BOTH ENDS OT THE RAMP.     SELF SUPPORTING COVER SHED SHALL BE PROVIDED OVER THE APPROACH     ROADHEIGHT OF STEEL POST ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR     PERMITING ATURAL LIGHT.     A DECUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW     SHALL BE PROVIDED     OVER SHED SHALL BE ARSING WALL SHALL BE MINIMUM 2m FOR     PERMITING ATURAL LIGHT.     A DECUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW     SHALL BE PROVIDED     DESIGN REQUIREMENTS.     MPORTANT NOTE:     TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL     GROUND LEVEL.HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD     LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD     LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD     LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD     LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD     LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD     LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD     LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD     LEVEL OPMENT CORPORATION LIMITED.     CONSULTANT:     MARYANA A CRBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTING SMEED     THE INFRASTRUCTURE PEOPLE      TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING     FOR BALANCING CULVERT BRIDGE NO.156 & 04A     1x4x4.2 & 1x4x2.65 m RCC BOX AT CH:62025.073 m & 2727.62m      DRG, NO.     GC-HRIDC-C6-DRW-BRD-GAD_01156 & 0104A_A0     10F1
SOIL OG C C C C C C C C C C C C C	WEEP ROLE STRALL BE PROVIDED IN RELIAMING WALL     OPANINGE HUMP SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP.     SELF SUPPORTING COURS OFED SHALL BE PROVIDED OF THE RAMP.     SELF SUPPORTING COURS OFED SHALL BE PROVIDED OF THE RAMP.     SELF SUPPORTING COURS OFED SHALL BE PROVIDED OF THE RAMP.     SELF SUPPORTING COURS OF BOT ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR     ADEQUAREMENTS.  MPORTAIN TOTE:      GROUND DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND     DESIGN RECURREMENTS.  MPORTAIN NOTE:      OF 05 BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL     GROUND LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARNOCE ABOVE ROAD     LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING OVERALL HEIGHT OF THE     BOX MALE DEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARNOCE ABOVE ROAD     LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING OVERALL HEIGHT OF THE     BOX MALE DEVELHOWEVER, ROAD LEVEL AND VERTICAL CLEARNOCE ABOVE ROAD     LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING OVERALL HEIGHT OF THE     BOX MALE DEVELOPMENT CORDINALT, THE HEIGHT OF RCC BOX SHALL BE     PROVIDED KEEPING ABOVE PROVISION IN VIEW.  PROJECT:      HARYANA RAIL INFRASTRUCTURE     DEVELOPMENT CORPORATION LIMITED.  CLIENT:      HARYANA RAIL INFRASTRUCTURE     DEVELOPMENT CORPORATION LIMITED.  CONSULTANT:      GENERAL CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR     HARYANA ORBITAL RAIL CORRIDOR     RITES LIMITED IN CONSULTANT FOR
SOIL OG C C C C C C C C C C C C C	DEAN WITH SUME A SUITABLE PONJLEU IN RELIAMING WALL BE PROVIDED FOR PROPER DEALINGE HUM SHALL BE PROVIDED AT BOTH ENDS OF THE RAMP. SELF SUPPORTING COVER SHED SHALL BE ADAVERTIAL BE ARAVIDED OVER THE APPROACH PROPERTING TO STELL POST. BOUTONED OVER THE APPROACH PROVIDED IN STELL POST. BOUTONED OVER THE APPROACH PROVIDED IN STELL POST. BOUTOM SUAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE ROWIND IN PROVEMENTS. INFORTANT NOTE: OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROWD MEROUNDERNENTS. INFORTANT NOTE: OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROWD MEROUNDERNENTS. INFORTANT NOTE: OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROWD MENOTHER ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL AND VERTICAL CLEARANCE ABOVE FOR ADOVE PROVIDED KEEPING ABOVE PROVISION IN VIEW. CLIENT: I HARYANA RAIL INFRASTRUCTURE DEVISION IN VIEW. CLIENT: I HARYANA RAIL INFRASTRUCTURE DEVISION IN VIEW. CLIENT: I HARYANA CRBITAL RAIL CORRIDOR ROUNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: I HARYANA CRBITAL RAIL CORRIDOR RITEL IMITED INTERNATION LIMITED. CONSULTANT: <b>GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR</b> RITES LIMITED IN CONSCILUE PROVIDED IN VIEW. CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR BALANCING CULVERT BRIDGE NO. 156 & 04A 1x4x4.2 & 1x4x2.65 m RCC BOX AT CH62025.073 m & 2727.62m DRG. NO. GC-HRIDC-C6-DRW-BRD-GAD_01156 & 0104A_A0 I OF I SCALE : I SSUE DATE I SUE DATE I ADAVENTIAL I ADAVENTIAL I ADAVENTIAL I ADAVENTIAL I ADAVENTIAL I ADAVENTIAL INFRASTRUCTURE I ADAVENTIAL INFRASTRUCTURE
OSED TING IANTLE VEL TION LEVEL EVEL ROW STING	<ul> <li>WEEP FOLDE SHALL BE PROVIDED IN RELIANNE WALL.</li> <li>DEAN WITH SUMP A SUITABLE COUTALL SHALL BE PROVIDED FOR PROPER TO BRANCH THE SUPER IN BUTABLE COUTALL SHALL BE PROVIDED FOR PROPER PROVIDED TO STALE USER AND USE DATA THE PROVIDED FOR THE APPROACH ROAD MEET OF STEEL POST ABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR PROVIDED TO SUARD DEPTOS HABOVE RETAINING WALL SHALL BE MINIMUM 2m FOR PROVIDED SUPEN IN DEPTH SHALL BE AS PER DETAILED GT INVESTIGATION AND DESIGN REQUIREMENTS.</li> <li>MPORTANT NOTE:</li> <li>TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL MOVEWER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.</li> <li>PROJECT:</li> <li>HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE</li> <li>CLIENT:</li> <li>HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.</li> <li>CONSULTANT:</li> <li>GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED IN CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED IN CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR</li> <li>RITES LIMITED IN CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR BALANCING CULVERT BRIDGE NO. 156 &amp; 044 1x4x4.2 &amp; 1x4x2.65 m RCC BOX AT CH:62025.073 m 272</li></ul>

![](_page_358_Figure_0.jpeg)

![](_page_358_Figure_1.jpeg)

SCALE :

AS SHOWN

ISSUE DATE REVISED DATE

03-04-2024

# Minor Bridges Connectivity Line Mandothi to Asaudah (Revised and New)


all interest	NOTES :
N DO	A) GENERAL NOTES
HO TRACE	ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER.
cation	UNLESS OTHERWISE MENTIONED.
	DIMENSION ARE TO BE FOLLOWED.
DF TRACK	BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
	<ol> <li>FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.</li> <li>THE EXISTING DETAILS ARE AS PER PRELIMINARY SITE SURVEY AND SHALL</li> </ol>
	6. ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL
	FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
	7. SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS
	8. ENGINEER IN CHARGE SHALL ENSURE THE SAFETY OF DFC TRACK AND STRUCTURE DURING EXECUTION OF WORK.
	9. ENGINEER IN CHARGE SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK. CONCERNED
	DEPT. SUCH AS BSNL/AIRTEL/SSE/(Sig)NR,DFCCIL ETC. SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
	10. DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY,
	REQUIRED IS TO BE DONE BY CONTRACTOR AT HIS COST 11. THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF
	HORC. 12. DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS
	CONCEPTUAL APPROVED GAD.
	B) TECHNICAL NOTES :
	1. BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE. 2. DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
	(i) IRS BRIDGE RULE (ii) IRS CONCRETE BRIDGE CODE
	(iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE 3 SEISMIC ZONE- IV
	4. EXPOSURE CONDITION-MODERATE. 5. FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE
	GRADE OF CONCRETE : (i) ALL BCC (WEARING COURSE : M:35/DETAILED DESIGN DRG
	(ii) LEVELING COURSE/PCC : M:20/DETAILED DESIGN DRG. 6 REINFORCEMENT SHALL BE MIN FR 500D (TMT) CONFORMING TO IS 1786
	7. PROTECTION WORK ON SLOPES OF BANK UP TO 15M,BOTH SIDES ON
	GC-HRIDC-SK-GEN-015
	BOTH ENDS OF THE BOX AFTER PROTECTION WORK.
	TOP OF BOX SLAB. 10. ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOOOL
	11. ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K G/SOM
	CONFIRMING TO IS: 3117.
	BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE &NATURAL GROUND PROFILE
	13. THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB-STRUCTURE AND FOUNDATION CODE, ANGLE OF INTERNAL ERICTION OF
VEEP HOLES	BACKFILL SHALL NOT BE LESS THAN 33 °. 14 75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORIZONTAL AND 1000
	MM C/C VERTICALLY IN RETURN WALL & ABUTMENT THROUGHOUT.
	REQUIREMENT. IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED OUT
	16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.
	C) OTHER NOTES :
	1. HEIGHT GAUGE SHALL BE PROVIDE AS PER RDSO STANDARD DRAWING NO.
	RDSO/M0001. 2. SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A
	DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD INCLUDE BERMS.
175(	IMPORTANT NOTE:
	TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL.HOWEVER, ROAD LEVEL AND VERTICAL
	CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING.OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION
	ACCORDINGLY.THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.
L / WING WALL	
RUCTION DEPTH	
172 mm	PROJECT:
R PAD 10 mm	HARYANA ORBITAL RAIL CORRIDOR
EEPER 210 mm	CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
350 mm	AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
/42	
	CLIENT:
N	HARYANA RAIL INFRASTRUCTURE
SED RAIL LEVEL	DEVELOPMENT CORPORATION LIMITED
FVFI	Not have a second secon
IESS	CONSULTANT:
L	
ID LEVEL	GENERAL CONSULTANT FOR
SED HORC ROW	HARYANA ORBITAL RAIL CORRIDOR
	RITES LIMITED IN CONSORTIUM WITH SMEC International Pty. Ltd.
PROPOSED	
EXISTING	
	THE INFRASTRUCTURE PEOPLE Member of the Surbana Jurong Group
	TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
	FOR ROAD UNDER BRIDGE NO. 5A, SPAN 1X5X5, RCC BOX AT CH: 1330.00m
hte	DRG. NO. SHEET NO.
	GC-HRIDC-C6-DRW-BRD-GAD-0105A_A1 1 OF 1
	AS SHOWN 22-03-2024





	NOTES
	A) GENERAL NOTES
×.	1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED
N S	2. NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN
	3. THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION
OF TRACK	BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE. 4. FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.
	5. THE EXISTING DETAILS ARE AS PER PRELIMINARY SITE SURVEY AND SHALL BE VERIFIED BY THE CONCTRACTOR BEFORE EXECUTION
	6. ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL
	FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
	7. SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE
	8. ENGINEER IN CHARGE SHALL ENSURE THE SAFETY OF DFC TRACK AND
	9. ENGINEER IN CHARGE SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT
	DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK. CONCERNED DEPT. SUCH AS BSNL/AIRTEL/SSE/(Sig)NR.DFCCIL ETC. SHALL BE INFORMED
	WELL IN ADVANCE BEFORE EXECUTION OF WORK.
	FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY,
	11. THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF
	HORC. 12. DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS
	CONCEPTUAL APPROVED GAD.
	B) TECHNICAL NOTES :
	1. BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.
	2. DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES (i) IRS BRIDGE RULE
	(i) IRS CONCRETE BRIDGE CODE
	(III) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE 3. SEISMIC ZONE- IV
	EXPOSURE CONDITION-MODERATE.     FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE.
	(i) ALL NOU /WEAKING COURSE : MI:35/DETAILED DESIGN DRG. (ii) LEVELING COURSE/PCC : MI:20/DETAILED DESIGN DRG.
	<ul> <li>KEINFORCEMENT SHALL BE MIN. Fe 500D (TMT) CONFORMING TO IS 1786.</li> <li>PROTECTION WORK ON SLOPES OF BANK UP TO 15M.BOTH SIDES ON</li> </ul>
	APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015
	8. INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE SIDES ON
	9. FOR PROPER DRAINAGE OF WATER, SUITABLE SLOPE TO BE PROVIDED ON
	TOP OF BOX SLAB. 10. ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL
	11. ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED
	CONFIRMING TO IS: 3117.
	12. PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF
	CLEARANCE, DRAINAGE &NATURAL GROUND PROFILE.
	SUB-STRUCTURE AND FOUNDATION CODE. ANGLE OF INTERNAL FRICTION OF
VEEP HOLES	14. 75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORIZONTAL AND 1000
	MM C/C VERTICALLY IN RETURN WALL & ABUTMENT THROUGHOUT. 15. BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN
	REQUIREMENT. IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED OUT
	16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE
	FINALISED AFTER DETAILED DESIGN.
	<u>C) OTHER NOTES</u> :
	1. HEIGHT GAUGE SHALL BE PROVIDE AS PER RDSO STANDARD DRAWING NO.
	2. SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A
	DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD INCLUDE BERMS.
1750	
	TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE
	CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE
	DRAWING.OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY.THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING
	ABOVE PROVISION IN VIEW.
L / WING WALL	
172 mm	PROJECT:
	HARYANA ORBITAL RAIL CORRIDOR
210 mm	CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
ן 350 mm	AREA BY LINKING ASAOTI-PATI I-SUI TANPUR-ASAUDAH BY
740	
742 mm	NEW ELECTRIFIED BG DOUBLE LINE
742 mm	
742 mm	CLIENT:
742 mm	CLIENT: HARYANA RAIL INFRASTRUCTURE
742 mm ON SED RAIL LEVEL	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
742 mm ON DSED RAIL LEVEL DSED FORMATION LEVEL	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
742 mm ON SED RAIL LEVEL SED FORMATION LEVEL EVEL	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
742 mm ON SED RAIL LEVEL SED FORMATION LEVEL EVEL	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT:
742 mm ON SED RAIL LEVEL SED FORMATION LEVEL EVEL IESS	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR
742 mm ON OSED RAIL LEVEL OSED FORMATION LEVEL LEVEL JESS L ID LEVEL OSED HORC ROW	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
742 mm       ON       DSED RAIL LEVEL       DSED FORMATION LEVEL       LEVEL       NESS       NL       ND LEVEL       DSED HORC ROW	NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Maryana Rail Infrastructure Development Corporation Limited.         CONSULTANT:         Image: General Consultant For Haryana Orbital Consultant:         Image: General Consultant For Haryana Orbital Consultant:         Image: General Consultant For Haryana Orbital Consultant For Haryana Orbitant For Haryana Orbital Consultant For Haryan
742 mm ON OSED RAIL LEVEL OSED FORMATION LEVEL LEVEL JESS L JD LEVEL OSED HORC ROW	NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Margin and Straight StraightS
742 mm  ON  SED RAIL LEVEL  SED FORMATION LEVEL  LEVEL  NESS  L  ND LEVEL  SED HORC ROW  PROPOSED	NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Construction of the second secon
742 mm       ON       DSED RAIL LEVEL       DSED FORMATION LEVEL       DSED FORMATION LEVEL       NESS       NL       ND LEVEL       DSED HORC ROW       PROPOSED       EXISTING	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. Image: Source State
742 mm       ON       SED RAIL LEVEL       SED FORMATION LEVEL       SED FORMATION LEVEL       ID LEVEL       SED HORC ROW       PROPOSED       EXISTING       DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         GENERAL CONSULTANT FOR         HARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Construction of the Surbana Israe
742 mm       ON       SED RAIL LEVEL       SED FORMATION LEVEL       EVEL       ID LEVEL       SED HORC ROW       PROPOSED       EXISTING       DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. INFRASTRUCTURE PEOPLE
742 mm       ON       DSED RAIL LEVEL       DSED FORMATION LEVEL       DEVEL       JESS       JL       JD LEVEL       DSED HORC ROW       PROPOSED       EXISTING       DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONSULTANT: CONSTRUCTORE PEOPLE THE INFRASTRUCTURE PEOPLE
742 mm       ON       DSED RAIL LEVEL       DSED FORMATION LEVEL       EVEL       IESS       IL       ID LEVEL       DSED HORC ROW       PROPOSED       EXISTING       DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. RITES Limited in consortium with SMEC International Pty. Ltd. INFRASTRUCTURE PEOPLE THE INFRASTRUCTURE PEOPLE CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR ROAD UNDER BRIDGE NO. 5B
742 mm       ON       SED RAIL LEVEL       SED FORMATION LEVEL       EVEL       IESS       IL       ID LEVEL       SED HORC ROW       PROPOSED       EXISTING       DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         GENERAL CONSULTANT FOR         HARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Conceptual general ARRANGEMENT DRAWING         FOR ROAD UNDER BRIDGE NO. 5B,         SPAN 1X5X5, RCC BOX AT CH: 2030.00m
ON SED RAIL LEVEL SED FORMATION LEVEL EVEL IESS IL ID LEVEL SED HORC ROW PROPOSED EXISTING DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         GENERAL CONSULTANT FOR         HARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Constructure people
742 mm       ON       SED RAIL LEVEL       SED FORMATION LEVEL       EVEL       ID LEVEL       SED HORC ROW         PROPOSED       EXISTING       DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Straight of the straight of t
742 mm       DN       DSED RAIL LEVEL       DSED FORMATION LEVEL       SED FORMATION LEVEL       JESS       JL       JD LEVEL       DSED HORC ROW       PROPOSED       EXISTING       DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONSULTANT: Member of the Surbana Jurong Group TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR ROAD UNDER BRIDGE NO. 5B, SPAN 1X5X5, RCC BOX AT CH: 2030.00m DRG. NO. GC-HRIDC-C6-DRW-BRD-GAD-0105B A1
742 mm         ON         SED RAIL LEVEL         SED FORMATION LEVEL         EVEL         JESS         JL         JD LEVEL         SED HORC ROW         PROPOSED         EXISTING         DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Construct of the submersion o
742 mm         ON         SED RAIL LEVEL         SED FORMATION LEVEL         LEVEL         JESS         JL         JD LEVEL         SED HORC ROW         PROPOSED         EXISTING         DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         WARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Conservation of the Surbana Jurong Group         TITLE:-         CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR ROAD UNDER BRIDGE NO. 5B, SPAN 1X5X5, RCC BOX AT CH: 2030.00m         DRG. NO.         GC-HRIDC-C6-DRW-BRD-GAD-0105B_A1         SHEET NO.         105UE DATE
DN SED RAIL LEVEL SED FORMATION LEVEL LEVEL IESS IL ID LEVEL SED HORC ROW	NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         WARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Conservation of the Surbana Jurong Group         TITLE:         CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR ROAD UNDER BRIDGE NO. 5B, SPAN 1X5X5, RCC BOX AT CH: 2030.00m         DRG. NO.         GC-HRIDC-C6-DRW-BRD-GAD-0105B_A1         OLIGE INSUL TANT FOR SUBJECT TO THE INFRASTRUCTURE PEOPLE
742 mm         SED RAIL LEVEL         SED FORMATION LEVEL         SED FORMATION LEVEL         ID LEVEL         SED HORC ROW         PROPOSED         EXISTING         DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.         CONSULTANT         GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Conserve the surbana jurge component of the Surbana jurge component
DN SED RAIL LEVEL SED FORMATION LEVEL EVEL IESS IL ID LEVEL SED HORC ROW  PROPOSED EXISTING DISMANTLE	NEW ELECTRIFIED BG DOUBLE LINE         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Conserve the surbana jurge of the



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## A) GENERAL NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
- 2. NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
- 3. THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
- 4. FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION. 5. THE EXISTING DETAILS ARE AS PER PRELIMINARY SITE SURVEY AND SHALL BE VERIFIED BY THE CONCTRACTOR BEFORE EXECUTION.
- 6. ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
- 7. SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS
- 8. ENGINEER IN CHARGE SHALL ENSURE THE SAFETY OF DFC TRACK AND STRUCTURE DURING EXECUTION OF WORK.
- 9. ENGINEER IN CHARGE SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK. CONCERNED DEPT. SUCH AS BSNL/AIRTEL/SSE/(Sig)NR,DFCCIL ETC. SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
- 10. DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY, REQUIRED IS TO BE DONE BY CONTRACTOR AT HIS COST
- 11. THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC.
- 12. DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED GAD.

## **B) TECHNICAL NOTES**

1. INVERTED U IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE. 2. DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES

- (i) IRS BRIDGE RULE
- (ii) IRS CONCRETE BRIDGE CODE
- (iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE 3. SEISMIC ZONE- IV
- 4.EXPOSURE CONDITION-MODERATE.
- 5.FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE. GRADE OF CONCRETE :
- (i) ALL RCC /WEARING COURSE :
- M:35/DETAILED DESIGN DRG. M:20/DETAILED DESIGN DRG.
- (ii) LEVELING COURSE/PCC : 6.REINFORCEMENT SHALL BE MIN. Fe 500D (TMT) CONFORMING TO IS 1786. 7. PROTECTION WORK ON SLOPES OF BANK UP TO 15M, BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO.
- GC-HRIDC-SK-GEN-015 8.INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE SIDES ON
- BOTH ENDS OF THE BOX AFTER PROTECTION WORK. 9.FOR PROPER DRAINAGE OF WATER, SUITABLE SLOPE TO BE PROVIDED ON TOP
- OF BOX SLAB. 10. ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL.
- 11. ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM. CONFIRMING TO IS: 3117.
- 12.PLACEMENT LEVEL OF PORTAL AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE &NATURAL GROUND PROFILE.
- 13. THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB- STRUCTURE AND FOUNDATION CODE. ANGLE OF INTERNAL FRICTION OF BACKFILL SHALL NOT BE LESS THAN 33 °
- 14.75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORIZONTAL AND 1000 MM C/C VERTICALLY IN RETURN WALL & ABUTMENT THROUGHOUT.
- 15.BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED OUT AND CONFIRMED THROUGH FIELD TESTING.
- 16. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.

PROJECT:

# HARYANA ORBITAL RAIL CORRIDOR

CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE





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<u>~</u>	AS SHOWN	06.03.2024		



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<u>.T</u>	8. ENGINEER IN CHARGE SHALL ENSURE THE STRUCTURE DURING EXECUTION OF
	9. ENGINEER IN CHARGE SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT
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	10. DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY. REQUIRED
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	6. REINFORCEMENT SHALL BE MIN. Fe 500D (TMT) CONFORMING TO IS 1786.
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	15. BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. IF REQUIRED GROUND IMPROVEMENT MAY BE CARRIED OUT
n	AND CONFIRMED THROUGH FIELD TESTING.
	FINALISED AFTER DETAILED DESIGN.
	17. DETAIL OF TOE WALL SHALL BE PROVIDED AS PER SKETCH NO.
	<u>C) OTHER NOTES</u> :
	1. HEIGHT GAUGE SHALL BE PROVIDE AS PER RDSO STANDARD DRAWING NO.
	RDSO/M0001.
	2. SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF ROBAT A DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD
	INCLUDE BERMS.
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	GROUND LEVEL.HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE
	ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING.OVERALL
	RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.
	PROJECT:
<b>i</b>	PROJECT: HARYANA ORBITAL RAIL CORRIDOR
	PROJECT: HARYANA ORBITAL RAIL CORRIDOR
	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
1750	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE
1750	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE
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G WALL	PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Maryana Rail INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.
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COPOSED EXISTING DISMANTLE	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
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COPOSED EXISTING DISMANTLE	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
C'S ROW	PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         GENERAL CONSULTANT FOR         HARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Similar Simila
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C'S ROW	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: CONSULTANT: CENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONSULTANT: CENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONSULTES LIMITED IN CONSULTANT FOR CONSULTANT: CENERAL CONSULTANT FOR CONSULTANT:
Image: Second system	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WE HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: CONSULTANT: CENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONCEPTUAL GENERAL ARRANGEMENT DRAWING FOR BALANCING CULVERT BRIDGE NO. 05E
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C'S ROW	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: WE ELECTRIFIED BG DOUBLE LINE HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: CONSULTANT: CONSULTANT: CENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONSULTING CONSULTING IN CONSOLITION OF THE SURDANG INFORMATION DEVELOPMENT CORPORATION INTED. CONSULTANT:
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			NOTES :	
40100 GL 216.138	CL OF BR.No.05F AT CH: 4006.0m, 1 x 4.00 x 3.15m RCC BOX RUB.	RACK RACK 28045 BT ROAD TT215 28045 BT ROAD V PLAN ALE NTS	<ul> <li>A) GENERAL NOTES</li> <li>1. ALL DIMENSIONS ARE IN MILLIMETE UNLESS OTHERWISE MENTIONED.</li> <li>2. NO DIMENSION SHALL BE SCALED FR ARE TO BE FOLLOWED.</li> <li>3. THE CHAINAGES SHOWN ARE READ BUILDING TAKEN AS 0.00 M, WITH RESS</li> <li>4. FOR RAIL LEVELS, FORMATION LEVEL</li> <li>5. THE EXISTING DETAILS ARE AS PERVERIFIED BY THE CONCTRACTOR BESS</li> <li>6. ENGINEER IN CHARGE/ SITE ENCOMENCEMENT OF WORK.</li> <li>7. SUITABLE BED SLOPE SHALL BE CONDITIONS</li> <li>8. ENGINEER IN CHARGE SHALL ENSISTRUCTURE DURING EXECUTION OF</li> <li>9. ENGINEER IN CHARGE SHALL ENSISTRUCTURE DURING EXECUTION OF</li> <li>9. ENGINEER IN CHARGE SHALL TAKE DAMAGE OF S&amp;T CABLE /OFC DURIN SUCH AS BSNL/AIRTEL/SSE/(Sig)NR,E ADVANCE BEFORE EXECUTION OF WO</li> <li>10. DURING CONSTRUCTION, IF REQUIRE CONCERNED ROAD/CIVIL AUTHORITIE TO BE DONE BY CONTRACTOR AT HIS</li> <li>11. THIS DRAWING IS THE PROPERTY OF</li> <li>12. DETAILED DESIGN DRAWING WILL E APPROVED GAD.</li> </ul>	ERS EXCEPT LEVELS WHICH ARE IN METER, COM THE DRAWING ONLY WRITTEN DIMENSION CKONED FROM C/L OF PRITHALA STATION SPECT TO UP MAIN LINE. , GRADES ETC. REFER L-SECTION. R PRELIMINARY SITE SURVEY AND SHALL BE FORE EXECUTION. GINEER SHOULD VERIFY THE RAIL LEVEL & TRACK CENTER AT SITE BEFORE PROVIDED AND ADJUSTED AS PER SITE SURE THE SAFETY OF DFC TRACK AND WORK. E NECESSARY PRECAUTIONS TO PREVENT IG EXECUTION OF WORK. CONCERNED DEPT. DFCCIL ETC. SHALL BE INFORMED WELL IN ORK. ED, ROAD CLOSURE TO BE OBTAINED FROM ES. DIVERSION OF ROAD IF ANY, REQUIRED IS S COST HRIDC AND FOR EXCLUSIVE USE OF HORC. BE PREPARED BASED ON THIS CONCEPTUAL
AB165 48165 48165 CL.OF BOX 140 0 0 0 0 0 0 0 0 0 0 0 0 0	Control of the second s	WEEP HOLES	<ul> <li>BOX BRIDGE IS TO BE DESIGNED FOR</li> <li>DESIGN CRITERIA SHALL BE BASED O</li> <li>(i) IRS BRIDGE SUB-STRUCTURE &amp; FO</li> <li>SEISMIC ZONE-IV</li> <li>EXPOSURE CONDITION-MODERATE.</li> <li>FOR CONCRETE SPECIFICATION REFG</li> <li>GRADE OF CONCRETE :</li> <li>(i) ALL RCC WEARING COURSE :</li> <li>(ii) LEVELING COURSE/PCC :</li> <li>REINFORCEMENT SHALL BE FE 500D (</li> <li>PROTECTION WORK ON SLOPES</li> <li>APPROACHES OF BRIDGE SHAL</li> <li>GC-HRIDC-SK-GEN-015</li> <li>INSPECTION STEPS SHALL BE PRO'</li> <li>BOTH ENDS OF THE BOX AFTER PRO'</li> <li>FOR PROPER DRAINAGE OF WATER OF BOX SLAB.</li> <li>ALL CLEAN/ EXPANSION JOINTS SHAL</li> <li>ALL CLEARANCE, DRAINAGE &amp;NATURAL G</li> <li>THE BACK FILL MATERIAL SHALL</li> <li>SUB-STRUCTURE AND FOUNDATION BACKFILL SHALL NOT BE LESS THAN:</li> <li>STRUCTURE AND FOUNDATION BACKFILL SHALL NOT BE LESS THAN:</li> <li>TOB OF SOLLY IN RETURN WALL &amp;A</li> <li>BEARING CAPACITY OF SOLL SHALL REQUIREMENT. IF REQUIRED GROUDATION BACKFILL SHALL NOT BE LESS THAN:</li> <li>OTHER NOTES:</li> <li>HEIGHT GAUGE SHALL BE PROVID BACKFILLY IN RETURN WALL &amp;A</li> <li>SPEED BREAKER SHOULD BE PRO DO DISTANCE OF SOM FROM THE BRIDINCLUDE BERMS.</li> <li>RETAINING WALL ALONG THE ROAD SWEEP HOLE SHALL BE PROVIDED IN FOOD DISTANCE OF STRUCTURAL MEMBIAFIC DETING COVER SHED SROAD. HEIGHT OF STEEL POST ABOVE PERMITTING NATURAL LIGHT.</li> <li>MPORTANT NOTE:</li> <li>TOP OF BOTTOM SLAB OF RCC BOX GROUND LEVELHOWEVER, ROAD ROAD LEVEL HOWEVER, ROAD ROAD LEVEL HOWEVE</li></ul>	R 32.5 T LOADING AS APPLICABLE. IN FOLLOWING IRS CODES UNDATION CODE ER IRS CONCRETE BRIDGE CODE. M:35/DETAILED DESIGN DRG. M:20/DETAILED DESIGN DRG. M:20/DETAILED DESIGN DRG. TMT) CONFORMING TO IS 1786. OF BANK UP TO 15M.BOTH SIDES ON ILL BE DONE AS PER SKETCH NO. VIDED AT DIAGONALLY OPPOSITE SIDES ON rECTION WORK. SUITABLE SLOPE TO BE PROVIDED ON TOP L BE FILLED WITH THERMOCOL NTACT WITH SOIL SHOULD BE PAINTED WITH ED QUALITY @ 1.464 K.G/SQM. CONFIRMING TO WN IN THIS GAD IS INDICATIVE AND MAY BE BASED UPON THE REQUIREMENT OF ROUND PROFILE. BE CONFORMING TO CLAUSE 7.5 OF IRS 1 CODE. ANGLE OF INTERNAL FRICTION OF 33°. CODE ANGLE OF INTERNAL FRICTION OF 33°. WIDED @1000 C/C HORIZONTAL AND 1000 MM ABUTMENT THROUGHOUT. L BE ENSURED AS PER DETAILED DESIGN UND IMPROVEMENT MAY BE CARRIED OUT STING. ERS ARE TENTATIVE AND WILL BE FINALISED E AS PER RDSO STANDARD DRAWING NO. VIDED ON EITHER APPROACH OF RUB AT A DGE COVERING FULL WIDTH OF THE ROAD SHALL BE MIN 500 ABOVE GROUND LEVEL. NO RETAINING WALL. UTFALL SHALL BE PROVIDED FOR PROPER ED AT BOTH ENDS OF THE RAMP. SHALL BE PROVIDED OVER THE APPROACH E RETAINING WALL SHALL BE MINIMUM 2m FOR X SHALL NOT BE KEPT ABOVE THE NATURAL LEVEL AND VERTICAL CLEARANCE ABOVE WED AS SHOWN IN THE DRAWING OVERALL ODIFICATION ACCORDINGLY.THE HEIGHT OF ING ABOVE PROVISION IN VIEW. BITALL SHALL CORRIDOR ALTO SONIPAT BYPASSING DELHI SAOTI-PATLI-SULTANPUR-ASAUDAH BY AG DOUBLE LINE NSULTANT FOR BITAL RAIL CORRIDOR ALTO SONIPAT BYPASSING DELHI SAOTI-PATLI-SULTANPUR-ASAUDAH BY AG DOUBLE LINE NSULTANT FOR BITAL RAIL CORRIDOR ALTO SONIPAT BYPASSING DELHI SAOTI-PATLI-SULTANPUR-ASAUDAH BY AG DOUBLE LINE NSULTANT FOR BITAL RAIL CORRIDOR ON IN VIEW.
GC/HORC		HRIDC	THE INFRASTRUCTURE PEOPLE	Member of the Surbana Jurong Group
NAME / DESIGNATION SIGN	NAME / DESIGNATION	SIGN	TITLE:- CONCEPTUAL GEN	NERAL ARRANGEMENT DRAWING NDER BRIDGE NO. 05F
CHAHATEY RAM PD SUDHIR AGRAWAL DPD/CIVIL REETU PATIAL CDE/ CIVIL PUSHPENDRA KR.SINGH	VISHAL GUPTA CPM/NORTH ABHA GUPTA DGM/CIVIL/DESIGN SUNIL DUTT Sr.MANAGER SUNIL KUMAR	Hole Inpte	1 x 4.0x 3.15m, RCG DRG. NO. GC-HRIDC-C6-DRW-B SCALE :	C BOX AT CH. : 4006.0m SHEET NO. BRD-GAD_0105F_A0 1 OF 1 ISSUE DATE REVISED DATE
SDE/ CIVIL MEENAKSHI SHARMA SDE/ CIVIL JL • 7	EXECUTIVE/CIVIL	Suntham	AS SHOWN	03-04-2024



	NOTES :	
Ņ	A) GENERAL NOTES	
W E	1. ALL DIMENSIONS ARE IN MILLIN METER, UNLESS OTHERWISE M	IETERS EXCEPT LEVELS WHICH ARE IN IENTIONED.
S	2. NO DIMENSION SHALL BE SCAL DIMENSION ARE TO BE FOLLOW 3. THE CHAINAGES SHOWN ARE F	ED FROM THE DRAWING ONLY WRITTEN VED. RECKONED FROM C/L OF PRITHALA STATION
	4. FOR RAIL LEVELS, FORMATION	TH RESPECT TO UP MAIN LINE. LEVEL, GRADES ETC. REFER L-SECTION.
DRAIN	5. THE EXISTING DETAILS ARE AS BE VERIFIED BY THE CONCTRA	PER PRELIMINARY SITE SURVEY AND SHALL CTOR BEFORE EXECUTION.
	6. ENGINEER IN CHARGE/ SITE EN FORMATION LEVEL , BED LEVEL COMMENCEMENT OF WORK	& TRACK CENTER AT SITE BEFORE
	7. SUITABLE BED SLOPE SHALL BI CONDITIONS	E PROVIDED AND ADJUSTED AS PER SITE
	8. ENGINEER IN CHARGE SHALL E STRUCTURE DURING EXECUTIO	NSURE THE SAFETY OF DFC TRACK AND ON OF WORK.
	9. ENGINEER IN CHARGE SHALL I PREVENT DAMAGE OF S&T CAB CONCERNED DEPT. SUCH AS B	AKE NECESSARY PRECAUTIONS TO BLE /OFC DURING EXECUTION OF WORK.
	SHALL BE INFORMED WELL IN / 10. DURING CONSTRUCTION, IF RE FROM CONCERNED ROAD/CIVIL	ADVANCE BEFORE EXECUTION OF WORK. QUIRED, ROAD CLOSURE TO BE OBTAINED AUTHORITIES. DIVERSION OF ROAD IF ANY,
	REQUIRED IS TO BE DONE BY C 11. THIS DRAWING IS THE PROPER	ONTRACTOR AT HIS COST TY OF HRIDC AND FOR EXCLUSIVE USE OF
	12. DETAILED DESIGN DRAWING W CONCEPTUAL APPROVED GAD.	ILL BE PREPARED BASED ON THIS
	B) TECHNICAL NOTES :	
	1. BOX BRIDGE IS TO BE DESIGNE	D FOR 32.5 T LOADING AS APPLICABLE.
	(i) IRS BRIDGE RULE (ii) IRS CONCRETE BRIDGE CODE	
	(iii) IRS BRIDGE SUB-STRUCTURE & 3. SEISMIC ZONE- IV	FOUNDATION CODE
ES	<ol> <li>EXPOSURE CONDITION-MODER</li> <li>FOR CONCRETE SPECIFICATION</li> </ol>	ATE. N REFER IRS CONCRETE BRIDGE CODE.
	<ul> <li>(i) ALL RCC /WEARING COURSE :</li> <li>(ii) LEVELING COURSE/PCC :</li> </ul>	M:35/DETAILED DESIGN DRG. M:20/DETAILED DESIGN DRG.
	<ol> <li>REINFORCEMENT SHALL BE Fe</li> <li>PROTECTION WORK ON SLOPE APPROACHES OF BRIDGE SHAL</li> </ol>	500D (TMT) CONFORMING TO IS 1786. S OF BANK UP TO 15M,BOTH SIDES ON LL BE DONE AS PER SKETCH NO.
	GC-HRIDC-SK-GEN-015 8. INSPECTION STEPS SHALL BE F ON BOTH ENDS OF THE BOX AF	PROVIDED AT DIAGONALLY OPPOSITE SIDES
	9. FOR PROPER DRAINAGE OF WA TOP OF BOX SLAB.	ATER, SUITABLE SLOPE TO BE PROVIDED ON
	10. ALL CLEAN/ EXPANSION JOINTS 11. ALL RCC SURFACES COMING IN WITH BITUMEN OR COAL TAB O	S SHALL BE FILLED WITH THERMOCOL N CONTACT WITH SOIL SHOULD BE PAINTED
1750	CONFIRMING TO IS: 3117. 12. PLACEMENT LEVEL OF BOX AS	SHOWN IN THIS GAD IS INDICATIVE AND MAY
	BE SUITABLY LOWERED/ELEVA CLEARANCE, DRAINAGE &NATU	TED BASED UPON THE REQUIREMENT OF IRAL GROUND PROFILE.
<u>I</u>	13. THE BACK FILL MATERIAL SHAL SUB- STRUCTURE AND FOUNDA	L BE CONFORMING TO CLAUSE 7.5 OF IRS ATION CODE. ANGLE OF INTERNAL FRICTION SS THAN 33 °
NG WALL	14. 75mm DIA WEEP HOLES TO BE I MM C/C VERTICALLY IN RETURN	PROVIDED @1000 C/C HORIZONTAL AND 1000 N WALL & ABUTMENT THROUGHOUT.
	15. BEARING CAPACITY OF SOIL SH REQUIREMENT. IF REQUIRED G	IALL BE ENSURED AS PER DETAILED DESIGN ROUND IMPROVEMENT MAY BE CARRIED
	16. THICKNESS OF STRUCTURAL M FINALISED AFTER DETAILED DE	EMBERS ARE TENTATIVE AND WILL BE
	C) OTHER NOTES :	
	1. ADEQUATE SLOPE IN BOTTOM	SLAB OF RCC BOX TOWARDS DIRECTION OF
	PROJECT:	
	HARYANA OR	BITAL RAIL CORRIDOR
	CONNECTING PALW AREA BY LINKING AS	AL TO SONIPAT BYPASSING DELHI SAOTI-PATLI-SULTANPUR-ASAUDAH BY
	NEW ELECTRIFIED E	3G DOUBLE LINE
		IL INFRASTRUCTURE
PROPOSED	CONSULTANT:	
DISMANTLE	GENERAL CO	NSULTANT FOR
	HARYANA OR BITES Limited in cons	BITAL RAIL CORRIDOR
D FORMATION LEVEL		, , , , , , , , , , , , , , , , , , ,
EVEL D HORC'S ROW		SMEC
	THE INFRASTRUCTURE PEOPLE	Member of the Surbana Jurong Group
	TITLE:- CONCEPTUAL GET	NERAL ARRANGEMENT DRAWING
	FOR BALANCIN SPAN 1X2 0X	NG CULVERT BRIDGE NO. 5G 2.0 RCC BOX AT CH:4063.00
pte		SHEET NO.
	JUALE .	
	AS SHOWN	22-03-2024

# Major Bridges Main Line Mandothi to Asaudah (Revised)













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1. 2.	ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METER DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS TO BE FOLLOWED
3.	DESIGN CRITERIA i) IRS BRIDGE SUBSTRUCTURE AND FOUNDATION CODE 2013.
	ii) IRS CONCRETE BRIDGE CODE 2014. iii) IRS BRIDGE RULES 2014.
	iv) IS 2911 PART-1 SECTION-2. v) EXPOSURE CONDITION - MODERATE.
	vi) SEISMIC ZONE - IV vii) STANDARD OF LOADING :- SUPER STRUCTURE-32.5T (RDSO STANDARD OWG) AND
4.	SUB STRUCTURE-32.5T- 2008 LOADING. THE STRUCTURAL DIMENSIONS AND SIZES ARE INDICATIVE AND THESE MAY
5.	VARY DURING DETAIL DESIGN. TYPE OF FOUNDATION SHALL BE DEEP FOUNDATION. NO.OF PILES & SIZE OF WELL
6.	SHOWN IS TENTATIVE AND MAY CHANGE DURING DETAILED DESIGN. ALL RCC AND CC WORKS SHALL BE DONE IN ACCORDANCE WITH SPECIFICATION LAID
7.	DOWN IN IRS CONCRETE BRIDGE CODE. THE GRADE OF CONCRETE
	i) FOR ABUTMENT,DIRT & RETURN WALLM35 ii) FOR FOUNDATIONM35
8.	iii) FOR LEVELING COURSEM20 ALL CONCRETE WORK SHALL BE MECHANICALLY MIXED AND VIBRATED.
9. 10.	MIX DESIGN SHALL BE APPROVED BY ENGINEER - IN CHARGE. HIGH YIELD STRENGTH DEFORMED BARS OF GRADE Fe-500D CONFORMING TO IS:
11.	1786-2008 SHALL BE USED AS REINFORCEMENT. BED LEVEL & ROAD LEVEL,FORMATION LEVEL AND RAIL LEVEL & ALIGNMENT SHALL BE
12.	VERIFIED BY THE ENGINEER AT SITE BEFORE EXECUTION OF WORK. ANGLE OF INTERNAL FRICTION OF BACK FILL SHALL NOT BE LESS THAN 33°.
13.	PROTECTION WORK ON SLOPES OF BANK UP TO 30M,BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015.
14.	ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 KG/SQM.
15. 16	CURING SHALL BE DONE AS PER CLAUSE NO 8.4 OF IRS CONCRETE BRIDGE CODE. SAFETY & PROTECTION OF THE PROPOSED WORK IS TO BE ENSURED BY THE
10.	CONTRACTOR AS PER PARA 826 OF IRPWM WITH UPDATED CORRECTION SLIPS
17.	THE SPECIFICATIONS FOR THE OPEN WEB GIRDER SHALL BE IN ACCORDANCE WITH RDSO
18.	CONCRETING SHALL BE DONE IN ACCORDANCE WITH IRS CONCRETE BRIDGE
19.	ALL DIMENSIONS AND LEVELS SHOULD BE VERIFIED AT SITE BEFORE EXECUTION.
20.	PER BRIDGE MANUAL, DURING CONSTRUCTION.
21.	CORPORATION LIMITED (HRIDC) AND EXCLUSIVE USE OF HRIDC.
22.	CBS-0045(FOR OWG) & CBS-0046 (FOR CG).
23. 24.	SEISMIC ARRESTOR SHALL BE PROVIDED ON OPPOSITE SIDES OF EACH CENTRAL PIER.
25.	INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE ENDS OF THE BRIDGE AFTER PROTECTION WORK.
26. 27.	PROVISION FOR OHE MAST SHALL BE KEPT EACH PIER CAP AS PER REQUIREMENT. TRANSITION SYSTEM TO BE ADOPTED ON BRIDGE APPROACHES SHALL BE AS PER RDSO
	REPORT NO. GE:R-50(TRANSITION SYSTEM ON APPROACHES OF BRIDGES). FOR DETAILS REFER SKETCH NO. GC-HRIDC-SK-GEN-019.
28.	SEPERATE LAUNCHING SCHEME SHALL BE GOT APPROVED FROM DIVISION & HQ. OFFICE BY HRIDC.
29.	CRS SANCTION SHALL BE OBTAINED BEFORE COMMENCEMENT OF WORK & LAUNCING OF GIRDER.
30.	(TRO) OHE MODIFICATION WORK WILL BE REQUIRED. ESTIMATE FOR SAME SHALL BE SUBMITTED SHORTLY.
31.	NO ACTIVITY SHALL BE DONE INSIDE THE BARRICADING LINE WITHOUT TRAFFIC CUM POWER BLOCK OF IR TRACKS.
32. 33.	(TRD) BEFORE & AFTER LAUNCHING REQUIRED OHE MODIFICATION. S&T CABLE SHIFTING NEEDED BEFORE LAUNCHING .
34.	TFC BLOCK AND SPEED RESTRICTION WITH BE DECIDED OF THE TIME OF EXECUTIONOF WORK.
35.	ALL MAINTENANCE WORK IN RAILWAY BOUNDARY WITH THE RESPECT TO BE RFO WILL BE DONE BY STATE GOVT./ HORC.
36. 37.	ALL INSPECTION WILL BE DONE BY HORC. MINIMUM HORIZONTAL AND VERTICAL PILE CAPACITY IS 14T AND 206T RESPECTIVELY.
	SANCTIONED SECTIONAL SPEED IS 160 km/h.
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38. PR	OJECT: HARYANA ORBITAL RAIL CORRIDOR
38. PR	OJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
38.	OJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE
38.	OJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE
<sup>38.</sup> PR	OJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE
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	OJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE IENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. INSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
	OJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE IENT: MARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. INSULTANT: CONSULTANT: CONSULTANT:
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ISSUE DATE REVISED DATE

06-03-2024

AS SHOWN



	NOTES :		
	<ul> <li>NOTES :</li> <li>ALL DIMENSIONS ARE IN MILLIMET UNLESS OTHERWISE MENTIONED.</li> <li>NO DIMENSION SHALL BE SCALED DIMENSION ARE TO BE FOLLOWED SILONING TAKEN AS 0.00 M, WITH JF</li> <li>THE CHAINAGES SHOWN ARE REC BUILDING TAKEN AS 0.00 M, WITH JF</li> <li>FOR RAIL LEVELS, FORMATION LEYEL SITHE CHAINAGES SHOWN ARE AS PE VERIFIED BY THE CONCTRACTOR</li> <li>ENGINEER IN CHARGE/SITE ENGIN FORMATION LEVEL, BED LEVEL &amp; COMMENCEMENT OF WORK.</li> <li>ENGINEER IN CHARGE SHALL TAK DAMAGE OF S&amp;T CABLE/OFC DURIN DEPT. SUCH AS BSNL/AIRTEL/SSE/ WELL IN ADVANCE BEFORE EXECCI</li> <li>DURING CONSTRUCTION, IF REQU FROM CONCERNED ROAD/CIVIL AL REQUIRED IS TO BE DONE BY COM</li> <li>THIS DRAWING IS THE PROPERTY HORC.</li> <li>DETAILED GAD WILL BE PREPARE GAD.</li> <li>TECHNICAL NOTES:</li> <li>STANDARD OF LOADING :- SUPER SLAB), &amp; SUB STRUCTURE-32.5T-10 2. DESIGN CRITERIA SHALL BE BASED a.IRS BRIDGE RULE b.IRS CONCRETE BRIDGE CODE c. IRS BRIDGE SUB-STRUCTURE &amp; I d.IS 2011 PART-1 SECTION-2.</li> <li>SEISMIC ZONE- IV</li> <li>EXPOSURE CONDITION-MODERATI 5. FOR CONCRETE SPECIFICATION R GRADE OF CONCRETE: a. ALL RCC /WEARING COURSE: I b.LEVELING COURSE/PCC :</li> <li>REINFORCEMENT SHALL BE F6 500 7. PROTECTION WORK ON SLOPES O APPROACHES OF BRIDGE SHALL E GC-HRIDC-SK-GEN-015</li> <li>INSPECTION STEPS SHALL BE FRO BOTH ENDS OF THE BRIDGE AFTEI 9. ALL RCC SURFACES COMING IN CO WITH ENTJOR OF THE BRIDGE AFTEI 9. ALL CLEAN/ EXPANSION JOINTS SI</li> <li>ALL RCC SURFACES COMING IN CO WITH ENTONG NEEPS SHALL BE PRO CONFIRMENT IF REQUIRED GRO AND CONFIRMED THROUGH FIELD 9. ALL CLEAN/ EXPANSION JOINTS SI</li> <li>ALL CLEAN/ EXPANSION JOINTS SI</li> <li>ALL RCC SURFACES COMING IN CO WITH BITUMEN OR COAL TAR OF A CONFIRMING TO IS: 3117.</li> <li>THE BACK FILL MATERIAL SHALL BE PRO HEIGH GAUGE SHALL DE PRO DAND CONFIRMED THROUGH FIELD GC-HRIDC-SK-GEN-014_A1</li> <li>CONFIRMENT IF REQUIRED GRO AND CONFIRMED THROUGAL FIELD FOR DANG REPORT NO. GE: R-50(TI</li></ul>	ERS EXCEPT LEVELS WHIC FROM THE DRAWING ONLY KONED FROM C/L OF PRITE RESPECT TO UP MAIN LINE. /EL, GRADES ETC. REFER I R PRELIMINARY SITE SURV BEFORE EXECUTION. VEER SHOULD VERIFY THE TRACK CENTER AT SITE B URE THE SAFETY OF DFC T OF WORK. ENECESSARY PRECAUTION NG EXECUTION OF WORK. (Sig.) / NR, DFCCI ETC. SHAI JTHORITIES. DIVERSION OF ITRACTOR AT HIS COST OF HRIDC AND FOR EXCLU D BASED ON THIS CONCEP STRUCTURE-25T (RDSO ST. DADING D ON FOLLOWING IRS CODE E. EFER IRS CONCRETE BRIDA M:35/DETAILED DESIGN DRG M:35/DETAILED DESIGN DRG M:100 NG NOR C/C HORIZOI ALL & ABUTMENT THROUGI L BE FILLED WITH THER DYIDED @ 1000 C/C HORIZOI ALL & ABUTMENT THROUGI L BE INSURCE APPROACH DIND IMPROVEMENT DETA NO SIZES ARE INDICATIVE A DUND IMPROVEMENT DETA COLLOW RDSO DRG.NO'S : F TED ON BRIDGE APPROACH M:100 DY THE PIER/ABUTI NO DED ON THE PIER/ABUTI NO DED ON THE PIER/ABUTI NO DED ON EITHER APPROACH M:100 DY RESC STANDARD N/IDED ON EITHER APPROACH M:100 DY RESC STANDARD M:100 DY RENCY CENTOR FULL WIDTH M:100 DY RENCY CENTOR FULL WIDTH M:1000 DY RENCY CENTOR FULL WIDTH M:1000 DY RENCY CENTOR	H ARE IN METER, WRITTEN HALA STATION L-SECTION. EY AND SHALL BE RAIL LEVEL EFORE RACK AND NS TO PREVENT CONCERNED L BE INFORMED BE OBTAINED ROAD IF ANY, SIVE USE OF TUAL APPROVED ANDARD PSC U ES GE CODE. S. 5 1786. IDES ON O. POSITE SIDES ON O. POSITE SIDES ON O. POSITE SIDES ON O. POSITE SIDES ON D. POSITE SIDES ON D. POSITE SIDES ON D. POSITE SIDES ON O. POSITE SIDES ON O. POSITE SIDES ON D. POSITE SIDES ON O. POSITE SIDES ON O. POSITE SIDES ON O. POSITE SIDES ON D. POSITE SIDES ON D. POSITE SIDES ON O. POSITE SIDES ON D. POSITE SIDES ON O. POSITE SIDES ON O. POSITE SIDES ON D. POSITE SIDES ON
TH 172 mm 10 mm 210 mm 210 mm 350 mm 742 mm LEVEL MATION LEVEL MATION LEVEL TION NDATION C'S ROW PROPOSED XISTING DISMANTLE I I I I I I I I I I I I I	PROJECT: HARYANA OR CONNECTING PALWA AREA BY LINKING AS NEW ELECTRIFIED B CLIENT: MARYANA RAN EVELOPMEN CONSULTANT: CONSULTANT	BITAL RAIL COR AL TO SONIPAT BYPAS SAOTI-PATLI-SULTANPL G DOUBLE LINE L INFRASTRUC IT CORPORATION NSULTANT FOR BITAL RAIL COR ORTIUM WITH SMEC Interna ON SULTANT FOR BITAL RAIL COR ORTIUM WITH SMEC Interna MERAL ARRANGEMEN RUB BRIDGE NO. 311, J SLAB, CH: 102710.680 RD-GAD-01311_A1 ISSUE DATE RET	RIDOR SING DELHI JR-ASAUDAH BY DURE DN LIMITED. RIDOR tional Pty. Ltd. SMEEC ana Jurong Group JT DRAWING
	AS SHOWN	03-04-2024	





# Miscellaneous Drawings (Conceptual Plans) (Revised and New)





NOTES: 1. ALL DIMENSION ARE IN MM. 2. DEPTH OF BALLAST CUSHION SHOULD BE PROVIDED AS PER PARA 212(2) OF IRPWM. CROSS SLOPE OF 1IN 30 SHALL BE PROVIDED. 3. MINIMUM FORMATION WIDTH OF 13160 MM 4. SHALL BE ENSURED FOR NEW WORKS IN BOTH EMBANKMENT AND IN CUTTING (EXCLUDING SIDE DRAIN) \* FORMATION WIDTH SHALL BE INCREASED 5. BASED ON CURVE & SUPER ELEVATION AS PER IRSOD 6. X, Y, Z DIMENSIONS SHALL BE AS PER DESIGN. PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. SMEC TRITE Member of the Surbana Jurong Gr TITLE:-CONCEPTUAL PLAN TYPICAL EMBANKMENT/CUTTING PROFILE DRG. NO. SHEET NO GC-HRIDC-SK-GEN-001\_A1 SCALE : ISSUE DATE REVISED DATE AS SHOWN 05-04-2024



MOTES :- I. ALDIMENSIONS ARE IN MM UNLESS OTHERWISE SOLUTIONS ARE TO BROW DRAWING OND DIMENSIONS ARE IN MM UNLESS OTHERWISE SOLUTIONS ARE TO BROW DRAWING OND DIMENSIONS ARE IN MM UNLESS OTHERWISE SOLUTIONS ARE TO BROW DRAWING OND DIMENSIONS ARE IN MM UNLESS OTHERWISE SOLUTIONS ARE TO BROW DRAWING OND DIMENSIONS ARE IN MM UNLESS OTHERWISE SOLUTIONS ARE IN MILL BE SCALED FROM DRAWING ON PRECAST WATER ARE TO BE FOLLOWED.         M20)       PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONSCITUS PALWAL TO SOMPAT BYPASISMO DELH AREAST UNKING ASACTI-PATLISULTANPUR-ASAUDAH BY NEW ELECTRIFIED BO DOUBLE LINE CLIENT: WE ELECTRIFIED BO DOUBLE LINE CONSULTANT: WE ELECTRIFIED BO DOUBLE LINE CONSULTANT: WE SCALE WATER AREAL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: WE SKETCH NO. GC-HRIDC-SK-GEN-008_AT ARS SHOWN						
M20)         PROJECT:         HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALIWAL TO SOMIPAT BYPASSING DELHI         MARKA ORBITAL RAIL CORRIDOR         CONNECTING PALIWAL TO SOMIPAT BYPASSING DELHI         MARKA ORBITAL RAIL CORRIDOR         CONSULTANT         MARYANA ARALL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED         CONSULTANT:         MARYANA ORBITAL RAIL CORRIDOR         MARYANA FOR EMBANKMENT         MARYANS FOR EMBANKMENT         MARYANS FOR EMBANKMENT         MARYANS FOR EMBANKMENT		NOTES :- 1. ALL DIMEN SPECIFIEI 2. NO DIMEN ONLY WR 3. MIN. GRAI A) PREC B) CAST C) PCC	NSIONS ARE IN M D. ISION SHALL BE ITTEN DIMENSIO DE OF CONCRET AST M IN SITU M M	MM UNLESS SCALED FR N ARE TO E 25 20	OTHERW COM DRAW SE FOLLOV	ISE /ING VED.
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASADTI-PATIL-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         MERVELOPMENT CORPORATION LIMITED         DEVELOPMENT CORPORATION LIMITED         CONSULTANT:         ENERGAL CONSULTANT FOR BARYANA ORBITAL RAIL CORRIDOR INTEGLIMINED IN CONSULTANT FOR BARYANA ORBITAL RAIL CORRIDOR INTEGLIMINED IN CONSULTANT FOR BARYANA ORBITAL RAIL CORRIDOR         ITITLE:       CONCEPTUAL PLAN DRAINS FOR EMBANKMENT         ITITLE:       CONCEPTUAL PLAN DRAINS FOR EMBANKMENT         SKETCH NO. GC-HRIDC-SK-GEN-008_A1       SHEET NO. 10F 1         SCALE :       ISSUE DATE         AS SHOWN       26.03.2024	(M20)					
PROJECT:         HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SOMPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         WWW         DEVELOPMENT CORPORATION LIMITED         CONSULTANT:         DEVELOPMENT CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR NETES LIMITED IN CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR NITES LIMITED IN CONSULTANT FOR FORE HARYANA ORBITAL RAIL CORRIDOR NITES LIMITED IN CONSULTANT FOR FORE HARYANA CONSULTANT IN CONSULTANT FOR HARYANA CONSULTANT FOR HARYANA CONSULTANT IN CONSULTANT FOR HA						
CLIENT:       HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:       EXECUTION         Image: Construction of the subscription of the		PROJECT: HA CON ARE NEW	RYANA OR INECTING PALW A BY LINKING AS ( ELECTRIFIED B	BITAL R. AL TO SONI SAOTI-PATL G DOUBLE	AIL COI PAT BYPA I-SULTANF	RRIDOR SSING DELHI PUR-ASAUDAH BY
Image: Description of the Surbane Jurong Group         TITLE:-         CONCEPTUAL PLAN DRAINS FOR EMBANKMENT         b/2         SKETCH NO. GC-HRIDC-SK-GEN-008_A1         SKETCH NO. GC-HRIDC-SK-GEN-008_A1         SHEET NO. 1 OF 1         SCALE :       ISSUE DATE         AS SHOWN       26.03.2024		CLIENT: HA DE CONSULTAN	RYANA RAI VELOPMEN NT: NERAL CO RYANA OR IS Limited in cons	L INFRA IT CORF NSULTA BITAL R ortium with S	NT FOF	CTURE ON LIMITED. R RRIDOR national Pty. Ltd.
SKETCH NO. GC-HRIDC-SK-GEN-008_A1 SHEET NO. SCALE : ISSUE DATE REVISED DATE AS SHOWN 26.03.2024		TITLE:-	CONCEPTUAL		mber of the Sur	SMEC
AS SHOWN 26.03.2024	pte	SKETCH NO	GC-HRIDC	-SK-GEN	-008_A1	SHEET NO.
AS SHOWN 26.03.2024		SCALE :		ISSUE D	DATE RE	1 OF 1 EVISED DATE
		AS	SHOWN	26.03.20	024	





## NOTE

- ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
   BARBED FENCING SHALL BE MADE OF G.I BARBED WIRES CONFIRMING
- TO IS: 278. THE WEIGHT OF G.I BARBED WIRE SHALL BE AS PER SOR. 3. THE G.IBARBED WIRE SHALL BE FIXED TO THE COLUMNS WITH HOOKS MADE OF 6mm DIA .GALVANIZED STEEL, ANOTHER END OF GALVANIZED STEEL HOOK SHALL BE PLACED BEHIND STIRRUPS AND TIED WITH STIRRUPS AS PER DRAWING TO PROVIDE STRENGTH.
- FOR ERECTION OF WIRE FENCING RECOMMENDATION GIVEN IN IS:4996 1984SHALL BE FOLLOWED, FENCING WIRE SHALL BE TIED TO GALVANISED STEEL HOOKS WITH SHORT PIECE OF LIGHT WIRE.
- M-25 GRADE CONCRETE SHALL BE USED IN PRECAST COLUMN/ STRUT. COLUMN/ STRUT SHALL BE CAST AT CENTRALIZED DEPOT UNDER CONTROLLED CONDITION AS PER IS :456-2000
- 6. TMT BARS OF GRADE FE 415/ 500 OF SPECIFIED DIA. SHALL BE USED. TMT BAR SHALL BE CONFIRMING TO IS:1786 (LATEST).
- 7. ZONAL RAILWAY MAY PAINT THEIR INITIALS (SUCH AS NR, SER etc.) ON COLUMN AND STRUT.
- 8. TRUT OR BRACE SHALL BE FIXED WITH END RCC COLUMN BY SUITABLE ARRANGEMENT AS DETAILED IN DRAWING. 50 X 6 mm MS FLAT SHALL BE USED TO CONNECT STRUT/BRACE TO RCC COLUMN. 10 mm DIA. MS BOLT BLACK HEXAGONAL HEAD ROUND NECK WITH HEXAGONAL NUTS AND TWO WASHER SHAL BE USED. AFTER TIGHTING NUT, END OF BOLT SHALL BE HAMMERED TO MAKE ANTITHEFT.
- 9. SUPPORTING STRUT SHALL BE PROVIDED AT FIRST / END COLUMN OR CHANGE OF DIRECTION.
- 10.1:20 SLOPE SHALL BE PROVIDED ON TOP OF COLUMN AT THE TIME OF CASTING.
- 11.AT EVERY 30 METRE TWO COLUMN SHALL BE GROUTED SIDE BY SIDE. 12.IN UNDULATING AREA, COLUMN SHALL BE PLACED ACCORDINGLY HORIZONTAL. VERTICALITY OF COLUMN SHALL BE CHECKED DURING
- ERECTION. 13. FOUNDATION SHALL BE DUG USING AUGAR/ MECHANICAL BORING EARTH
- SHALL BE RAMMED PROPERLY AND 50 MM SAND SHALL BE PLACED BEFORE FOUNDATION CASTING, FOUNDATION SHALL BE CURED PROPERLY.
- THIS FENCE SHALL BE PROVIDED AROUND ALL EXCAVATION AREAS, RAILWAY BOUNDARY WHEREVER NECESSARY AS PER ENGINEER INCHARGE.
   IS:456 (LATEST) SHALL BE FOLLOWED IN ALL R.C.C. & P.C.C. WORKS.



GC/HOR	с	HRIDO	2
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	
CHAHATEY RAM PD	Chahatz Rom	VISHAL GUPTA CPM/NORTH	
SUDHIR AGRAWAL DPD/CIVIL	Mik	ABHA GUPTA DGM/CIVIL/DESIGN	
REETU PATIAL CDE/ CIVIL	Rente		
MEENAKSHI SHARMA SDE/ CIVIL	gl.20		

Notes: 1. THIS DRAWING IS BASED ON RDSO DRAWING NO. RDSO/WKS/2019/2. 2. GRADE OF CONCRETE M25. PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. SMEC RITES Member of the Surbana Jurong Gro TITLE:-CONCEPTUAL PLAN BARBED WIRE FENCING SIGN DRG. NO. GC-HRIDC-SK-GEN-016\_A1 SHEET NO 4 1 OF 1 More Inple SCALE : **ISSUE DATE** AS SHOWN 05.04.2024







## SECTION FOR PLATFORM WALL

GC/HORC		HRIDO	С
NAME / DEGINATION	SIGN	NAME / DEGINATION	Γ
AMAR PRAKASH DWIVEDI PD	æ	VISHAL GUPTA CPM/NORTH	
SUDHIR AGRAWAL DPD/CIVIL	Kil	ABHA GUPTA DGM/CIVIL/DESIGN	Γ
REETU PATIAL CDE / CIVIL	Reels		Γ
MEENAKSHI SHARMA SDE / CIVIL	y. 71		





	<ol> <li>ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.</li> <li>SIZE OF SUMP SHALL BE AS PER DESIGN DISCHARGE.</li> <li>LOCATION OF SUMP AND DRAINAGE ARRANGEMENT TO BE DECIDED BY ENGINEER. DEPENDING UPON SITE CONDITION PLANNED FUTURE</li> </ol>
	<ul> <li>WORK.</li> <li>4. THE DIAMETER &amp; DEPTH OF BORE WELL SHOWN ARE INDICATIVE ONLY.THESE TO BE SUITABLY ALTERED BY ENGINEER DEPENDING UPON SITE CONDITION, STRATA RAINFALL &amp; CATCHMENTS DATA.</li> </ul>
BORSONI       BUDIES DUE DE DUE VATERISCO FUNDER         BUDIES DE BERLE ALLENT ALLE MARCHARTERISCO FUNDER         BUDIES DA FER ACTURIES DE REQUERER PARTIE         BUDIES DA FER ACTURES DE REQUERER PARTIE         BUDIES DA FER ACTURES DE REQUERER PARTIE         CONDITION         BUDIES DA FER ACTURES DE REQUERER PARTIE         CONDITION         PROJECT:         HARYANA ORBITAL RAIL CORRIDOR         CONDITION         CONDECTINE         HARYANA ORBITAL RAIL CORRIDOR         CONDECTINE PALVAL TO SOMPATE PARASING DELHI         MARE DA UNIXOR SACITAR PARTIESULTAPURASABADIAHEDY         NEW ELECTRIFED BE DOUBLE LINE         CONSULTANT         MENERCELOR CONSULTANT FOR EXECUTIVE DE CONCEPTUAL SKETCH FOR DREADED LINES         CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT REUL CORRIDOR         ITTLE:       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT REUL LOURS         DRG. NO.       CCHRIDOC SK-GEN-027       SHEET NO. 10 F1         SCALE I:       ISSUE DATE       SHEET NO. 10 F1	<ol> <li>CONCRETE MIX FOR PRE-CAST RCC SLAB IS M-25.</li> <li>PERFORATED PIPE TO BE USED IN BOREHOLE.</li> <li>CLEANING /DESILTING SHALL BE DONE BEFORE ON SET OF</li> </ol>
<ul> <li> a) BORDERSENSE AND PRACTURAL STEE REQUIREMENT. </li> <li> b) STEEL CARATING OVER URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> b) STEEL CARATING OVER URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> b) STEEL CARATING OVER URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> c) STEEL CARATING DUE URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> c) STEEL CARATING DUE URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> c) STEEL CARATING DUE URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> c) STEEL CARATING DUE URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> c) STEEL CARATING DUE URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> C) STEEL CARATING DUE URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> C) STEEL CARATING DUE URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> C) STEEL CARATING DUE URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> C) STEEL CARATING DUE URAN TO AVE CLOSE MESH OF ME FLATS </li> <li> C) STEEL CARATING DE ALVAL TO SONIPAT BY PASSING DE HIA AVE CLOSE MESH OF AVE AVE CLOSE MESH OF AVE AVE AVE AVE AVE AVE AVE AVE AVE AVE</li></ul>	MONSOON. 8. BOREHOLE SHOULD BE DEVELOPED BY DEWATERING OF UNDER
19. STREEM GALTING CON SUBMARY IN UNCE CLOSE MESH DO ME RATS         11. CONDITION.         11. CONDITION.         12. CONDITION.         13. CONDITION.         14. CONDITION.         15. CONDITION.         16. CONDITION.         17. CONDITION.         18. CONDITION.         19. CONTROLOGICAL CONSULTANT FOR CONTROLOGICAL CONSULTANT FOR CONCEPTUAL SACETOR FOREITON LIMITED.         10. CONSULTANT:         10. CONCEPTUAL SKETCH FOR CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         10. CONCEPTUAL S	<ul> <li>9. SIZE SHOWN OF VARIES ELEMENT ARE MINIMUM &amp; SHALL BE INCREASED AS PER ACTUAL SITE REQUIREMENT.</li> </ul>
CONDITION         PROJECT:         HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALIWAL TO SOMPLATE BYPASSING DELHI         AREA PS UNINGING SAATURAL TO SOMPLATE BYPASSING DELHI         AREA PS UNINGING SAATURATISULTAMPURASAJUDAH BYNINGWIG ESCHTALTISULTAMPURASAJUDAH BYNINGWIG ESCHTALTISULTAMPURASAJUDAH BYNINGWIG ESCHTALTISULTAMPURASAJUDAH BYNINGWIG ESCHTALTISULTAMPURASAJUDAH BYNINGWIG ESCHTALTISULTAMPURASAJUDAH BYNINGWIG ESCHTATISULTAMPURASAJUDAH BYNINGWIG ESCHTALTISULTAMPURASAJUDAH BYNINGWIG ESCHTATISULTAMPURASAJUDAH BYNINGWIG ESC	<ol> <li>STEEL GRATING OVER DRAIN TO HAVE CLOSE MESH OF MS FLATS 20X6MM @ C/C OF 33.5MM IN BOTH DIRECTION .</li> <li>*6M (MIN.) TO BE DECIDED BY THE ENGINEER AS PER SITE</li> </ol>
PROJECT:         HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALIWAL TO SONPARE THY PASSING DELHI         AREA PS UNING SASATI PARE THY PASSING DELHI         AREA PS UNING SASATI PARE THY PASSING DELHI         AREA PS UNING SASATI PARE THY PASSING DELHI         MARYANA ARAIL INFRASTRUCTURE         EDEVELOPMENT CORPORATION LIMITED         CONSULTANT:         EDEVELOPMENT CORPORATION LIMITED         CONSULTANT:         EDEVELOPMENT CORPORATION LIMITED         CONSULTANT:         EDEVELOPMENT CORPORATION LIMITED         CONSULTANT:         EDEVELOPMENT CORPORATION LIMITED         ITTLE:       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         ITTLE:       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG. NO.       GC-HRIDC-SK-GEN-027         SCALE :       ISSUE DATE         AS SHOWN       18-04-2024	CONDITIÓN.
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALIVAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLISULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT         MARYANA ORBITAL RAIL CORRIDOR         CONSULTANT:         DEVELOPMENT CORPORATION LIMITED         CONSULTANT:         DEVELOPMENT CORPORATION LIMITED         CONSULTANT:         DEVELOPMENT CORPORATION LIMITED         ITILE:         DEVELOPMENT CORPORATION LIMITED         DITILE:       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG, NO.       GC-HRIDC-SK-GEN-027         TITLE:       ISSUE DATE         REST CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG, NO.       SCHET NO. 10 F1         SCALE :       ISSUE DATE         AS SHOWN       18-04-2024	
PROJECT:       MARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELH         APEA BY LINKING ASADTI-PATLI-SUL TANPUR-ASAUDAH BYN         EVENTION         MARYANA RAIL INFRASTRUCTURE         EVENTION         HARYANA RAIL INFRASTRUCTURE         EVENTION         MARYANA ORBITAL RAIL CORRIDOR         CUENTI         MARYANA RAIL INFRASTRUCTURE         EVENTION         MARYANA ORBITAL RAIL CORPORATION LIMITED         CONSULTANT:         MARYANA ORBITAL RAIL CORRIDOR         CINSULTANT:         MARYANA ORBITAL RAIL CORRIDOR         ITTLE:       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG: NO.       GC-HRIDC-SK-GEN-027         TITLE:       ISUE DATE         DRG: NO.       GC-HRIDC-SK-GEN-027         ISUE DATE       REVISED DATE         AS SHOWN       18-04-2024	
PROJECT:       HARVANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BYN         EVENTION         MARYANA RAIL INFRASTRUCTURE         EVENTION         HARYANA RAIL INFRASTRUCTURE         EVENTION         MARYANA RAIL INFRASTRUCTURE         EVENTION         MARYANA RAIL INFRASTRUCTURE         EVENTION         MARYANA ORBITAL RAIL CORPORATION LIMITED.         CONSULTANT:         EVENTION         GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR         RETES Limited in consortium with SMEC International Phy. Ltd.         INTLE:       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG. NO.       GC-HRIDC-SK-GEN027         TITLE:       ISSUE DATE         AS SHOWN       18-04-2024	
PROJECT:       HARVANA ORBITAL RAIL CORRIDOR         CONDUCTING PALIVAL TO SONPAT BYPASSING DELHI         AREA BY LINKING ASACTIVAPIL-SQLITANPUR-ASALDAH BYN         NEW ELECTRIFIED BG DOUBLE LINE         CLEENT:         MARVANA RAIL INFRASTRUCTURE         DENSULTANT:	
PROJECT:         HARYANA ORBITAL RAIL CORRIDOR         CONSENTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASADTI PATL'SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE         CLEINT:         MARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         MARYANA ORBITAL RAIL CORRIDOR LINE         CONSULTANT:         MARYANA ORBITAL RAIL CORRIDOR LIMITED.         CONSULTANT:         MARYANA ORBITAL RAIL CORRIDOR LIMITED.         CONSULTANT:         MARYANA ORBITAL RAIL CORRIDOR LIMITED.         CONSULTANT:         MARYANA ORBITAL RAIL CORRIDOR         ITILE:         CONCEPTUAL SKETCH FOR DRAING ARRANGE ARRANGE ARRANGEMENT AT RUB (LHS)         ITILE:       CONCEPTUAL SKETCH FOR DRAING ARRANGE ARRANGE ARRANGE ARRANGE ARRANGEMENT AT RUB (LHS)         DRG. NO.       GC-HRIDC-SK-GEN.027         MARYANA       GC-HRIDC-SK-GEN.027         SCALE :       ISSUE DATE REVISED DATE         AS SHOWN       18-04-2024	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI       AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         CLIENT:       WE ELECTRIFIED BG DOUBLE LINE         CLIENT:       HARYANA RAIL INFRASTRUCTURE         MARYANA RAIL INFRASTRUCTURE       DELHI         CONSULTANT:       MARYANA RAIL INFRASTRUCTURE         CONSULTANT:       MARYANA RAIL INFRASTRUCTURE         MARYANA ORBITAL RAIL CORRIDOR       REVELOPMENT CORPORATION LIMITED         CONSULTANT:       MARYANA ORBITAL RAIL CONCIDIOR         MARYANA ORBITAL RAIL CONCIDIOR       REVENCED         TITLE:       CONCEPTUAL SKETCH FOR         DRG. NO.       GC-HRIDC-SK-GEN-027       Inor1         SCALE :       ISSUE DATE       REVISED DATE         AS SHOWN       18-04-2024       INFERIMENTIAL	
PROJECT:         HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATL-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED B GODUBLE LINE         CLIENT:         WEXTER STRUCTURE D BG DOUBLE LINE         CONSULTANT:         WEXTER STRUCTIONE PEOPLE         CONSULTANT:         CONSULTANT:         WEXTER STRUCTURE DECONSULTANT FOR EXPERIENCE         CONSULTANT:         WEXTER STRUCTURE PEOPLE         TITLE:       CONCEPTUAL SKETCH FOR DRAIDOR         TITLE:       CONCEPTUAL SKETCH FOR DRAINGEMENT AT RUB (LHS)         DRG. NO.       GC-HRIDC-SK-GEN-027         MARGE ARRANGEMENT AT RUB (LHS)       SHEET NO. 10-1         SCALE :       ISSUE DATE REVISED DATE         AS SHOWN       18-04-2024	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING SAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:       MARYANA RAIL INFRASTRUCTURE BEVELOPMENT CORPORATION LIMITED.         CONSULTANT:       ENSUELOPMENT CORPORATION LIMITED.         CONSULTANT:       ENSUELOPMENT CORPORATION LIMITED.         CONSULTANT:       ENSUELOPMENT CORPORATION LIMITED.         CONSULTANT:       ENSUELOPMENT CORPORATION LIMITED.         ITTEL:       CONCEPTUAL SKETCH FOR CORPORATION LIMITED.         ITTEL:       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         ITTEL:       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGE ARRANGEMENT AT RUB (LHS)         ITTEL:       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGE ARRANG	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         MARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED         CONSULTANT:         OCNSULTANT:         DENERAL CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         RETES Limited in consortium with SMEC International Ply. Ltd.         DENERAL CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         MARYANA ORBITAL RAIL CORRIDOR         MARYANA ORBITAL RAIL CORRIDOR         ITTES Limited in consortium with SMEC International Ply. Ltd.         DEVELOPMENT CORPORATION LIMITED         DITIES CONCEPTUAL SKETCH FOR         DRG. NO.       GC-HRIDC-SK-GEN-027         DRG. NO.       GC-HRIDC-SK-GEN-027         DRG. NO.       GC-HRIDC-SK-GEN-027         SCALE :       ISSUE DATE REVISED DATE         AS SHOWN       18-04-2024	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONSECTINO PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         MARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         CONSULTANT:         GENERAL CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         RTES LIMITED IN CORPORATION LIMITED.         CONSULTANT:         CONSULTANT:         CONSULTANT:         CONSULTANT:         CONSULTANT:         CONCEPTUAL SKETCH FOR         DRG. NO.       GC-HRIDC-SK-GEN-027         NITLE:       CONCEPTUAL SKETCH FOR         DRG. NO.       GC-HRIDC-SK-GEN-027         SCALE :       ISSUE DATE         AS SHOWN       18-04-2024	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED         CONSULTANT:         ©         GENERAL CONSULTANT FOR         HARYANA ORBITAL RAIL CORRIDOR         RTES Limited in consortium with SMEC International Pty. Ltd.         Image: Conceptual Sketch For         DRG. NO.       CONCEPTUAL SKEtCH FOR         DRG. NO.       GC-HRIDC-SK-GEN-027         Ingrain       ISSUE DATE         REVISED DATE         AS SHOWN       18-04-2024	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONSECTING PALWAL TO SOMPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:         OCNSULTANT:         MARYANA ORBITAL RAIL CORRIDOR         RES LIMITED IN CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         RTES LIMITED IN CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         TETE LIMITED IN CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         TETE LIMITED IN CONCEPTUAL SKETCH FOR         DRG. NO.       GC-HRIDC-SK-GEN-027         TITLE:       ISSUE DATE         DRG. NO.       GC-HRIDC-SK-GEN-027         AS SHOWN       18-04-2024	
PROJECT:         HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         MARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED         CONSULTANT         CONSULTANT:         MARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Phy. Ltd.         DEVELOPMENT         ITTLE:         CONCEPTUAL SKETCH FOR         DRG. NO.       GC-HRIDC-SK-GEN-027         TITLE:       ISSUE DATE         REVISED DATE         AS SHOWN       18-04-2024	
PROJECT:         HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         MARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED         CONSULTANT:         MARYANA ORBITAL RAIL CORRIDOR         CILENT:         MARYANA RAIL INFRASTRUCTURE         DORSULTANT:         MARYANA ORBITAL RAIL CORRIDOR         ITTES LIMITED IN CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         ITTES LIMITED IN CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         ITTES LIMITED IN CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         ITTES LIMITED IN CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         ITTES LIMITED IN CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         ITTES LIMITED IN CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         ITTES INTICUTURE PEONE         DRG. NO.       GC-HRIDC-SK-GEN-027         INFA       ISSUE DATE         AS SHOWN       18-04-2024	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENTI         WEW ELECTRIFIED BG DOUBLE LINE         CLIENTI         MARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED         CONSULTANT FOR         DEVELOPMENT CORPORATION LIMITED         CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         INTEL LIMITED CONSULTANT FOR         DEVELOPMENT CORPORATION LIMITED         CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         ITEL LIMITED INTEL LIMITED         DEVELOPMENT CONSULTANT FOR         ITEL LIMITED INTEL CONSULTANT FOR         ITEL LIMITED INTEL CONSULTANT FOR         ITEL LIMITED INTEL CONSULTANT FOR         DREMENTAT RUE LINERATION (LIMITED)         ITILE:         CONCEPTUAL SKETCH FOR         DRG. NO.         GE-HRIDC-SK-GEN-027         INFLATE         ISSUE DATE     <	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         MARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED         CONSULTANT         MARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED         CONSULTANT         MEREAL CONSULTANT FOR         MEREAL CONCEPTUAL SKETCH FOR         MEREAL CONCEPTUAL SKETCH FOR         MEREAL CONCEPTUAL SKETCH FOR         MEREAL CONCEPTUAL SKETCH FOR	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         MARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT         MARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.         DEFENSION DEVELOPMENT CORPORATION LIMITED.         ITTES Limited in consortium with SMEC International Pty. Ltd.         DEFENSION DEFENSION DEVELOPMENT ARAIL CORRIDOR         RITES LIMITED IN CONCEPTUAL SKETCH FOR       DRG. NO.         GC-HRIDC-SK-GEN-027       SHEET NO.         DRG. NO.       GC-HRIDC-SK-GEN-027       SHEET NO.         SCALE :       ISSUE DATE       REVISED DATE         AS SHOWN       18-04-2024       HENDER	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BYNEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Consultant in the stream of the s	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         MARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED.         CONSULTANT         MARYANA ORBITAL RAIL CORRIDOR         CISED       GENERAL CONSULTANT FOR         MARYANA ORBITAL RAIL CORRIDOR         RITES Limited in consortium with SMEC International Pty. Ltd.         INFRASTRUCTURE PEOPLE       DECEMBER         MITLE:       CONCEPTUAL SKETCH FOR         DRG. NO.       GC-HRIDC-SK-GEN-027         DRG. NO.       GC-HRIDC-SK-GEN-027         SCALE :       ISSUE DATE         AS SHOWN       18-04-2024	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI       AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BYNEW ELECTRIFIED BG DOUBLE LINE         CLIENT:       Image: Consultant in the second provided by the sec	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTAMPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Consultant in the second of	
PROJECT:       HARYANA ORBITAL RAIL CORRIDOR         CONNECTING PALWAL TO SONIPAT BYPASSING DELHI         AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY         NEW ELECTRIFIED BG DOUBLE LINE         CLIENT:         Image: Consultant:         Image: Consultant consortium with SMEC International Pty. Ltd.         Image: Consultant consortium with SMEC International Pty. Ltd.         Image: Consultant con	
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd. CONCEPTUAL SKETCH FOR DRG. NO. GC-HRIDC-SK-GEN-027 AS SHOWN 18-04-2024 CONSECTING ASAOTI-PATLI-SULTANT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: CONSULTANT: CONSULTANT: CONSULTANT: SELECTION CONSULTANT: CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES LIMITED INFRASTRUCTURE OF SURDER SELECTION CONCEPTUAL SKETCH FOR DRG. NO. CONCEPTUAL SKETCH FOR DRG. NO. CONCEPT	PROJECT: HARYANA ORBITAL RAIL CORRIDOR
CLIENT:       HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.         CONSULTANT:       CONSULTANT:         CONSULTANT:       CONSULTANT:         CONSULTANT:       CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Construction of the Surbana Jurong Group       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         Image: Construction of the Surbana Jurong Group       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         Image: Construction of the Surbana Jurong Group       SHEET NO. 10F 1         Image: Construction of the Surbana Jurong Group       SHEET NO. 10F 1         Image: Construction of the Surbana Jurong Group       SHEET NO. 10F 1         Image: Construction of the Surbana Jurong Group       SHEET NO. 10F 1	CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
CLIENT:       HARYANA RAIL INFRASTRUCTURE         DEVELOPMENT CORPORATION LIMITED         CONSULTANT:         ORG. NO.         GC-HRIDC-SK-GEN-027         ISSUE DATE         AS SHOWN	NEW ELECTRIFIED BG DOUBLE LINE
Image: Arriva Kail Inferast Ruction         Image: Arriva Kail Inferast Ruction         Development Corporation Limited.         CONSULTANT:         Image: Arriva Kail Inferast Corporation Limited.         Image: Arriva Kail Corporation Limited.         Image: Arriva Kail Inferast Corporation Limited.         Image: Arriva Kail Inferation Limited.	
CONSULTANT:	DEVELOPMENT CORPORATION LIMITED.
GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Conceptual Sketch For DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG. NO.       GC-HRIDC-SK-GEN-027         DRG. NO.       GC-HRIDC-SK-GEN-027         SCALE :       ISSUE DATE         AS SHOWN       18-04-2024	
GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Construct of the surbana jurge service of the surbana jurge group         TITLE:-       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG. NO.       GC-HRIDC-SK-GEN-027         Image: Construct of the surbana jurge group         SCALE :       ISSUE DATE         AS SHOWN       18-04-2024	
RITES Limited in consortium with SMEC International Pty. Ltd.         Image: Construction of the surbana jurong Group         TITLE:-         CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG. NO.         GC-HRIDC-SK-GEN-027         SCALE :       ISSUE DATE         AS SHOWN         18-04-2024	HARYANA ORBITAL RAIL CORRIDOR
Image: Description of the subana jurong Group         TITLE:-       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG. NO.       GC-HRIDC-SK-GEN-027       SHEET NO. 1 OF 1         SCALE :       ISSUE DATE REVISED DATE         AS SHOWN       18-04-2024       Unitsed data	RITES Limited in consortium with SMEC International Pty. Ltd.
THE INFRASTRUCTURE PEOPLE       Member of the Surbana Jurong Group         TITLE:-       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG. NO.       GC-HRIDC-SK-GEN-027         SHEET NO.       1 OF 1         SCALE :       ISSUE DATE         AS SHOWN       18-04-2024	
TITLE:-       CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)         DRG. NO.       GC-HRIDC-SK-GEN-027       SHEET NO. 1 OF 1         SCALE :       ISSUE DATE       REVISED DATE         AS SHOWN       18-04-2024       Lude Laboration of the second	 THE INFRASTRUCTURE PEOPLE Member of the Surbana Jurong Group
DRG. NO.       GC-HRIDC-SK-GEN-027       SHEET NO.         SCALE :       ISSUE DATE       REVISED DATE         AS SHOWN       18-04-2024	
DRG. NO. GC-HRIDC-SK-GEN-027 SHEET NO. 1 OF 1 SCALE : ISSUE DATE REVISED DATE AS SHOWN 18-04-2024	 CONCEPTUAL SKETCH FOR DRAINAGE ARRANGEMENT AT RUB (LHS)
DRG. NO.       GC-HRIDC-SK-GEN-027       SHEET NO.         1 OF 1         SCALE :       ISSUE DATE       REVISED DATE         AS SHOWN       18-04-2024       ISSUE	
SCALE : ISSUE DATE REVISED DATE AS SHOWN 18-04-2024	 DRG. NO. GC-HRIDC-SK-GEN-027
AS SHOWN 18-04-2024	 SCALE : ISSUE DATE REVISED DATE
	 AS SHOWN 18-04-2024



	GC/HORC		HRIDC
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	ChahatezPown	VISHAL GUPTA CPM/NORTH	H
SUDHIR AGRAWAL DPD/CIVIL	Mil	ABHA GUPTA DGM/CIVIL/DESIGN	Moke "
REETU PATIAL CDE/ CIVIL	Realty		
MEENAKSHI SHARMA SDE/ CIVIL	y.r		



	NOTES:         1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.         2. A MIN. CUSHION BELOW BOTTOM OF SLEEPER OF 900MM SHALL BE ENSURED FOR NP4 PIPE.         3. REINFORCED (IN-4 CLASS) CONCRETE PIPES SHALL BE PROVIDED AS PER IS: 488-2003 TITLE PRECASC CONCRETE PIPES (WITH AND WITHOUT REINFORCEMENT). SPECIFICATION (FOURTH REVISION). FOLLOW TABLE-6 OF IS: 458-2003.         4. REINFORCED NP4 CLASS PIPE MANUFACTURED BY SPUN PROCESS SHALL BE USED.         5. LAVING CONDING SHALL BE AS PER IS:783-1985 TITLED CODE OF PRACTICE FOR LAVING OF CONCRETE PIPES (FIRST REVISION).         6. "POSITIVE PROJECTION IN BEANMENT CONDITION. TYPE A BEDDING- EARTH POUNDATION FIALL BE REVISION.         7. SELCCED DI TE MORDER PROVIDED A 26 SMM SIGUE IS PLACED AROUND AND OVER THE PIPE AND COMPACTED IN LAVIES NOT EXCEEDING SIGNM THICK TO A CONSOLIDATED HEIGHT OF 300M ABOVE THE TOP OF PIPE.         8. A TERENCH OF 1000m BOTTOM WIDTH AND 1200mm DEPTH SHALL BE CUT IN THE EMBANKMENT FOR PLACING OF PIPE.         9. PIPE SHALL BE PROVIDED AT EVERY 500M ALONG THE ALIGNMENT.
	PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE
	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
	GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
]	THE INFRASTRUCTURE PEOPLE
-	GENERAL ARRANGEMENT DRAWING FOR RCC UTILITY PIPE ( NP-4 CLASS, 450MM DIA)
npte	DRG. NO. SHEET NO. 1 OF1
	AS SHOWN 04.04.2024
	I





	Legend	
4 4 4 4	RCC YARD DRAIN WITH COVER	
	PLATFORM AREA	
	PF DRAIN WITH MS GRATING	
	RCC CHAMBER	

CHAINAGE	-20	-80	150
Difference in level	0	-160	300
DRAIN SLOPE	LEVEL	1 IN 300	1 IN 200
FIX DEPTH	-1200	-250	-250
DEPTH DUE TO SLOPE	0	267	750
TOTAL DEPTH AT Junc.	-1200.000	676.667	700.000







	Legend
4 4	RCC YARD DRAIN WITH COVER
	PLATFORM AREA
	PF DRAIN WITH MS GRATING
	RCC CHAMBER

CHAINAGE	-35	-90	60
Difference in level	0	0	0
DRAIN SLOPE	LEVEL	1 IN 300	1 IN 200
DEPTH	-1200	-250	-250
DEPTH DUE TO SLOPE	0	300	300
TOTAL DEPTH AT Junc.	-1200.000	550.000	550.000



	Legend
4 4 4 A	RCC YARD DRAIN WITH COVER
	PLATFORM AREA
	PF DRAIN WITH MS GRATING
	RCC CHAMBER

CHAINAGE	-25	-100	100
Difference in level	0	-83	83
DRAIN SLOPE	LEVEL	1 IN 300	1 IN 200
FIX DEPTH	-250	-250	-250
DEPTH DUE TO SLOPE	0	333	500
TOTAL DEPTH AT Junc.	-1200.000	666.667	666.667







	Legend
44	RCC YARD DRAIN WITH COVER
	PLATFORM AREA
	PF DRAIN WITH MS GRATING
	RCC CHAMBER


	NOTES :
	NO DIMENSION SHALL BE SCALED FROM THE DRAWING. ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
	2. FOR OTHER DETAILS REFER RDSU SPECIFICATION NO. RDSO/2020/GE:IRS-004 SEPTEMBER 2020 "COMPREHENSIVE GUIDELINES AND SPECIFICATIONS FOR RAILWAY FORMATION".
	3. DETAILS OF HATCHED AS BELOW-
	AREA IS IN THE SCOPE OF C6 PACKAGE
SE	
RACK	
STATION.	
	HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
	NEW ELECTRIFIED BG DOUBLE LINE
	HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
	CONSULTANT:
	HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
	THE INFRASTRUCTURE PEOPLE
	TITLE:- CONCEPTUAL PLAN BANK/CUTTING BENCHING AT INTERFACE LOCATION
npte	DRG. NO. GC-HRIDC-C6-SK-CIVIL-0011_A0
	SCALE : ISSUE DATE REVISED DATE



SDE/ CIVIL

PEDESTAL.	<ul> <li>NOTES:</li> <li>ALL DIMENSIONS ARE IN MILIMETERS.</li> <li>DESIGN DETAILS OF TEMPLATE FOR HOLDING DOWN BOLT FOR OHE BASE PLATE AT PIER, DIA OF BOLT, LENGTH, SHAPE, MATERIAL AND LOCATION SHALL BE PROVIDED BY OHE CONTRACTOR TO CIVIL CONTRACTOR.</li> <li>CIVIL CONTRACTOR SHALL SUPPLY HOT DIP GALVANISED HOLDING DOWN BOLTS WITH 5MM THICK TEMPLATE AND ERECT IN COORDINATION WITH OHE CONTRACTOR.</li> <li>EARTHING GI PLATE SHALL BE PROVIDED BY CIVIL CONTRACTOR WELDED WITH 20MM DIA ROD FOR OHE EARTHING WITH PIER EARTHING.</li> <li>GI PLATE SIZE 200X100X10MM HAVING TWO HOLES OF 17MM DIA EACH SHALL BE PROVIDED BY CIVIL CONTRACTOR.</li> <li>20MM DIA ROD SHALL BE 140MM OUTSIDE THE CONCRETE.</li> <li>REINFORCEMENT OF TWO DIAGONALLY OPPOSITE PILES SHALL BE CONNECTED WITH PIER &amp; PIER CAP BY MIN. 20MM DIA STEEL ROD FOR EARTHING.</li> </ul>
	PROJECT: HARYANA ORBITAL RAIL CORRIDOR
	CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE
	CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.
	CONSULTANT:
	GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR RITES Limited in consortium with SMEC International Pty. Ltd.
	THE INFRASTRUCTURE PEOPLE Member of the Surbana Jurong Group
	TITLE:- CONCEPTUAL PLAN FOR OHE EARTHING & OHE BOLT FIXING ARRANGEMENT ON BRIDGES
	DRG. NO.
Inhte	GC-HRIDC-C6-SK-GEN-38
2 miles	SCALE : ISSUE DATE REVISED DATE
1	AS SHOWN 23-02-2024



	GC/HORC	HRIDC					
ME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN				
CHAHATEY RAM PD	Chahatz Ram	VISHAL GUPTA CPM/NORTH	y -				
UDHIR AGRAWAL DPD/CIVIL	Mil	VIKRAM YADAV GM/ A&IE/HRIDC	¥				
A.S.JANGHU CRE/ ELECT.	Alm	ABHA GUPTA DGM/CIVIL/DESIGN	More grop				
REETU PATIAL CDE/ CIVIL	Russ	JYOTI SANGWAN DGM/Elect.	J1 tom				
EENAKSHI SHARMA SDE/ CIVIL	St-21		, ,				

NOTES : ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
 NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
 THE EARTHING ARRANGEMENT, EARTHING PLATES HOUDING DOWN POLTS TEMPLATES ETC. SHALL BE HOLDING DOWN BOLTS, TEMPLATES ETC. SHALL BE PROVIDED BY CIVIL CONTRACTOR AS MENTIONED IN SKETCH NO. GC-HRIDC-C5-SK-GEN-38. OHE CONTRACTOR SHALL PROVIDE DETAILS OF ANCHOR ARRANGEMENT ON BRIDGE & CIVIL 4. CONTRACTOR SHALL PROVIDE THE SAME AS PER DRG. NO.GC-HRIDC-SYS4-DRW-ELE-007\_A0. PROJECT: HARYANA ORBITAL RAIL CORRIDOR CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE <u>CLIENT</u> HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED. CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR 9 RITES Limited in consortium with SMEC International Pty. Ltd. SMEC RITES 7 Member of the Surbana Jurong Gro TITLE:-CONCEPTUAL PLAN LOCATION OF OHE MAST FOR COMPOSITE GIRDER BRIDGES DRG. NO. SHEET NO GC-HRIDC-SK-GEN-031 1 OF 1 t SCALE : ISSUE DATE REVISED DATE AS SHOWN 03.04.2024





GC/HORC	GC/HORC								
NAME / DEGINATION	SIGN	NAME / DEGINATION							
CHAHATEY RAM PD	Uhahatz Rom	VISHAL GUPTA CPM/NORTH							
SUDHIR AGRAWAL DPD/CIVIL	xul	ABHA GUPTA DGM/CIVIL/DESIGN							
REETU PATIAL CDE/ CIVIL	Realtion	DEVESH TIWARI AM / S&T							
PRATIBHA KUMARI SR.D&D / EXPERT									
MEENAKSHI SHARMA SDE/ CIVIL	SL-2V								







GC/HORC		HRIDO	C
NAME / DEGINATION	SIGN	NAME / DEGINATION	
AMAR PRAKASH DWIVEDI PD	(and	VISHAL GUPTA	
SUDHIR AGRAWAL DPD/CIVIL	Kik	ABHA GUPTA DGM/CIVIL/DESIGN	
REETU PATIAL CDE / CIVIL	Realin		
MEENAKSHI SHARMA SDE / CIVIL	JL.71		

	<ol> <li>ALL DIMENSION ARE IN MIM.</li> <li>NO DIMENSION SHALL BE SCALED FROM THE DRAW ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.</li> </ol>	ING
	3. FOR DETAIL OF PLATFORM FACE WALL REFER SKETC	н
	NO.GC-HRIDC-SK-GEN-024.	
	4. FOR PLATFORM DRAINS REFER SKETCH NO.	AI .
	<ul> <li>B) GC-HRIDC-C6-SK-CIVIL-002-A0 FOR BADSA STATION</li> <li>B) GC-HRIDC-C6-SK-CIVIL-003-A0 FOR DEVERKHANA STATION.</li> </ul>	N.
	C) GC-HRIDC-C6-SK-CIVIL-004-A0 FOR BADLI STATION	D)
	<ul> <li>D) GC-HRIDC-C6-SK-CIVIL-005-A0FOR MANDOTHI STA</li> <li>E) GC-HRIDC-C6-SK-CIVIL-006-A0 FOR NEW ASAUDHA STATION</li> </ul>	TION
	F) GC-HRIDC-C6-SK-CIVIL-007-A0 FOR JASAUR KHERI STATION.	
	G) GC-HRIDC-C6-SK-CIVIL-008-A0 FOR KHARKHODA K STATION.	RHOLI
	<ul> <li>H) GC-HRIDC-C6-SK-CIVIL-009-A0 FOR TARAKPUR STA</li> <li>I) GC-HRIDC-C6-SK-CIVIL-010-A0 FOR NEW HARSANA KALAN STATION.</li> </ul>	TION.
	5. DRY BRICK BATS FILLING TO BE PROVIDED BEHIND WALL IN WIDTH OF 500MM.	THE
	HARYANA ORBITAL RAIL CORRIDC	R
	CONNECTING PALWAL TO SONIPAT BYPASSING D AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASA NEW ELECTRIFIED BG DOUBLE LINE	ELHI JDAH BY
	HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LI	MITED.
	CONSULTANT:	
	GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDO RITES Limited in consortium with SMEC International P	)R ty. Ltd.
	THE INFRASTRUCTURE PEOPLE	Group
	TITLE:- TYPICAL CONCEPTUAL CROSS-SECTIO SKETCH OF END PLATFORM	NAL
SIGN	SKETCH NO. SHE	ET NO.
Mole Inste	GC-HRIDCSK-GEN-042_A0 10F	1 ) ה⊿ד⊏
	AS SHOWN 30-03-2024	



GC/HORC		н	IRIDC
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	
AMAR PRAKASH DWIVEDI PD		VISHAL GUPTA CPM/NORTH	
SUDHIR AGRAWAL DPD/CIVIL	xul	ABHA GUPTA DGM/CIVIL/DESIGN	Mo
REETU PATIAL CDE/ CIVIL	Realtin		
MEENAKSHI SHARMA SDE/ CIVIL	શ.ઝ		



GC/HORC		HRIDC				
NAME / DEGINATION	SIGN	NAME / DEGINATION				
AMAR PRAKASH DWIVEDI PD		VISHAL GUPTA CPM/NORTH				
SUDHIR AGRAWAL DPD/CIVIL	XIX	ABHA GUPTA DGM/CIVIL/DESIGN	<b>_</b>			
REETU PATIAL CDE / CIVIL	Realty					
MEENAKSHI SHARMA SDE / CIVIL	JI.7V					

#### NOTES :

- 1. ALL DIMENSION ARE IN MM.
- 2. NO DIMENSION SHALL BE SCALED FROM THE DRAWING ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
- 3. FOR DETAIL OF PLATFORM FACE WALL REFER SKETCH NO.GC-HRIDC-SK-GEN-024.
- 4. FOR PLATFORM DRAINS REFER SKETCH NO.
- A) GC-HRIDC-C6-SK-CIVIL-002-A0 FOR BADSA STATION.
- B) GC-HRIDC-C6-SK-CIVIL-003-A0 FOR DEVERKHANA STATION.
- C) GC-HRIDC-C6-SK-CIVIL-004-A0 FOR BADLI STATIOND)
- D) GC-HRIDC-C6-SK-CIVIL-005-A0FOR MANDOTHI STATION
- E) GC-HRIDC-C6-SK-CIVIL-006-A0 FOR NEW ASAUDHA STATION.
- F) GC-HRIDC-C6-SK-CIVIL-007-A0 FOR JASAUR KHERI STATION.
- G) GC-HRIDC-C6-SK-CIVIL-008-A0 FOR KHARKHODA KIRHOLI STATION.
- H) GC-HRIDC-C6-SK-CIVIL-009-A0 FOR TARAKPUR STATION.
- I) GC-HRIDC-C6-SK-CIVIL-010-A0 FOR NEW HARSANA KALAN STATION.
- J) DRY BRICK BATS FILLING TO BE PROVIDED BEHIND THE WALL IN WIDTH OF 500MM.



## Tender No. HORC/HRIDC/C-6/2024 Attachment 7

#### of

#### Corrigendum No. 2

Section VII-8: Employer's Requirements-Tender Drawings and Documents

**Section VII-8B: Documents** 

- 1. List of Curve and Gradients/R1 (Item No. 1 of Section VII-8B)
- 2. Indicative List of Overlapping Length with KMP (New Item No. 7 added in Section VII-8B)

#### 1. List of Curve and Gradients/R1

						Pkg. C-	6: HORI	ZONTAI	L CUR	VE				
S. No.	Curve No.	Degree	Radius	Def. Angle (Delta)	Cant {Se) (Mm)	Tangent Length	Circular Curve Length (CCL)	Transition Length	Vmax	TPTC1	TPCC1	TPCC2	TPTC2	Total Length
1	51	0.8727	2005.300	4°52'33"	80.00	130.4	80.600	90.00	160.00	61727.202	61817.202	61897.803	61987.803	260.601
2	52	0.7000	2500.000	4°04'54"	45.00	139.1	78.100	100.00	160.00	62041.372	62141.372	62219.424	62319.424	278.052
3	53	0.5804	3015.000	21°05'52"	35.00	616.5	1000.200	110.00	160.00	62761.073	62871.073	63871.228	63981.228	1220.155
4	54	0.8728	2005.000	9°35'24"	80.00	233.1	205.400	130.00	160.00	64636.040	64766.040	64971.484	65101.484	465.444
5	55	0.7353	2380.000	15°05'03"	50.00	380.1	496.500	130.00	160.00	65356.526	65486.526	65983.003	66113.003	756.477
6	56	0.8727	2005.300	5°59'09"	80.00	169.8	79.400	130.00	160.00	69485.347	69615.347	69694.699	69824.699	339.352
7	57	1.1290	1550.000	18°21'44"	130.00	315.5	366.500	130.00	160.00	72639.503	72769.503	73136.003	73266.003	626.500
8	58	2.0122	869.700	19°29'57"	150.00	219.1	155.000	140.00	125.00	74787.169	74927.169	75082.165	75222.165	434.996
9	59	0.8727	2005.300	16°02'30"	80.00	347.5	431.300	130.00	160.00	78031.692	78161.692	78592.991	78722.991	691.299
10	60	0.9589	1825.000	9°57'40"	95.00	224	187.100	130.00	160.00	78940.729	79070.729	79257.835	79387.835	447.106
11	61	0.5823	3005.300	13°51'32"	35.00	420.2	616.900	110.00	160.00	80799.506	80909.506	81526.398	81636.398	836.892
12	62	0.5823	3005.300	12°50'03"	35.00	393	563.100	110.00	160.00	83623.367	83733.367	84296.511	84406.511	783.144
13	63	0.2692	6500.000	0°46'50"	15.00	74.3	28.500	60.00	160.00	84640.005	84700.005	84728.550	84788.550	148.545
14	64	0.2692	6500.000	0°46'50"	15.00	74.3	28.500	60.00	160.00	84852.894	84912.894	84941.438	85001.438	148.544
15	65	0.5719	3060	7°24'14"	35.00	253	285.4	110.00	160.00	85733.930	85843.930	86129.315	86239.315	505.385
16	66	0.5823	3005.3	13°07'29"	35.00	400.7	578.400	110.00	160.00	86571.301	86681.301	87259.682	87369.682	798.381
17	67	0.7015	2494.7	6°43'07"	45.00	211.4	162.4	130	160	88341.224	88471.224	88633.661	88763.661	422.437
18	68	2.0000	875	19°14'20"	165.00	213	163	130	130	89269.056	89399.056	89562.087	89692.087	423.031
19	69	1.9880	880.3	22°53'57"	165.00	250.4	205.8	140	130	91293.305	91438.305	91644.062	91789.062	495.757

Tender No.: HORC/HRIDC/C-6/2024

						Pkg. C-	6: HORI	ZONTAI	L CUR	VE				
S.	Curve	Degree	Radius	Def.	Cant	Tangent	Circular	Transition	Vmax	TPTC1	TPCC1	TPCC2	TPTC2	Total
No.	No.			Angle	{Se)	Length	Curve	Length						Length
				(Delta)	(Mm)		Length (CCL)							
20	70	1.9880	880.3	17°31'35"	165.00	222.4	92.4	175	130	92083.011	92258.011	92350.392	92525.392	442.381
21	71	2.0000	875	21°03'52"	165.00	249.5	144.8	175	130	92579.102	92754.102	92898.872	93073.872	494,770
22	72	0.7000	2500	6°08'41"	45.00	199.2	138	130	160	93523.004	93653.004	93791.024	93921.024	398.020
23	73	0.2692	6500	0°46'50"	15.00	74.3	28.5	60	160	94482.43	94542.43	94570.974	94630.974	148.544
24	74	0.2692	6500	0°46'50"	15.00	74.3	28.5	60	160	94695.3	94755.319	94783.863	94843.863	148.563
25	75	0.5823	3005.3	8°53'53"	40.00	283.8	366.7	100	160	95530.645	95630.645	95997.343	96097.343	566.698
26	76	0.2695	6494.7	6°38'59"	15.00	407.3	693.8	60	160	97443.443	97503.443	98197.205	98257.205	813.762
27	77	0.2692	6500	0°46'58"	20.00	74.4	28.8	60	160	100605.129	100665.129	100693.929	100753.929	148.800
28	78	0.2692	6500	0°46'58"	20.00	69.4	38.8	50	160	100807.765	100857.765	100896.566	100946.566	138.801
29	79	0.9970	1755.3	15°23'40"	105.00	307.2	331.4	140	160	101290.595	101430.595	101761.981	101901.981	611.386
30	80	0.3543	4940	3°59'31"	25.00	212.2	264.2	80	160	104306.158	104386.158	104650.328	104730.328	424.170
31	81	0.3496	5005.3	2°40'50"	20.00	157.1	154.2	80	160	105557.308	105637.308	105791.48	105871.48	314.172
32	82	0.4167	4200	3°47'37"	25.00	179.1	198.1	80	160	109362.175	109442.175	109640.255	109720.255	358.080
33	83	0.4369	4005.3	2°25'11"	30.00	124.6	89.1	80	160	110657.487	110737.487	110826.624	110906.624	249.137
34	84	0.2692	6500	0°46'58"	20.00	69.4	38.8	50	160	111356.69	111406.69	111445.49	111495.49	138.800
35	85	0.2692	6500	0°46'58"	20.00	69.4	38.8	50	160	111554.33	111604.33	111643.13	111693.13	138.800
36	86	0.4369	4005.3	2°57'48"	50.00	138.6	137.1	70	160	112929.54	112999.54	113136.68	113206.68	277.140
37	87	0.3500	5000	2°33'11"	25.00	146.4	152.8	70	160	113257.694	113327.694	113480.498	113550.498	292.804
38	88	1.1745	1490	31°43'18"	140.00	513.2	644.2	180	160	115718.313	115898.313	116542.541	116722.541	1004.228
39	89	2.0000	875	99°57'18"	165.00	1117.6	1375.3	150	130	121855.882	122005.882	123381.16	123531.16	1675.278
40	90	1.2069	1450	1°40'28.95"	40	21.192	12.382	30	90	124074.88	124104.88	124117.262	124147.262	72.382
41	91	1.7500	1000	3°01'32.81"	50	26.41	22.81	30	85	124197.658	124227.658	124250.468	124280.468	82.810
42	92	1.7500	1000	3°37'1.67"	50	31.58	33.131	30	85	124636.561	124666.561	124699.692	124729.692	93.131

						Pkg. C-	6: HORI	ZONTAI	CUR	VE				
S.	Curve	Degree	Radius	Def.	Cant	Tangent	Circular	Transition	Vmax	TPTC1	TPCC1	TPCC2	TPTC2	Total
No.	No.			Angle (Dalta)	{Se)	Length	Curve	Length						Length
				(Delta)	( <b>WIM</b> )		(CCL)							
43	93	1.7500	1000	3°34'50.47"	50	31.26	32.495	30	85	124812.049	124842.049	124874.544	124904.544	92.495
44	94	1.7500	1000	3°45'57.65"	50	32.88	35.729	30	85	125215.338	125245.338	125281.068	125311.068	95.730
45	95	1.7500	1000	3°43'53.37"	50	32.57	35.127	30	85	125384.963	125414.963	125450.089	125480.089	95.126
						DOWN L	INE HORIZO	ONTAL CURV	Έ					
1	40	2.5000	700.000	9°16'39"	165.00	111.5	2.600	110.00	115.00	61376.441	61486.441	61489.041	61599.041	222.600
2	42	0.7955	2200.000	4°04'54"	80.00	118.4	76.700	80.00	160.00	62077.190	62157.190	62233.885	62313.885	236.695
3	43	0.5833	3000.000	21°05'52"	35.00	613.7	994.600	110.00	160.00	62780.187	62890.187	63884.819	63994.819	1214.632
4	44	0.8974	1950.000	9°35'24"	85.00	228.5	196.200	130.00	160.00	64658.473	64788.473	64984.673	65114.673	456.200
5	45	0.7277	2405.000	15°05'03"	50.00	383.4	503.100	130.00	160.00	65370.754	65500.754	66003.894	66133.894	763.140
6	46	0.8140	2150.000	05°59'09"	65.00	177.4	94.500	130.00	160.00	69494.334	69624.334	69718.823	69848.823	354.489
7	47	1.1252	1555.300	18°21'44"	130.00	336.2	327.900	170.00	160.00	72624.960	72794.960	73122.858	73292.858	667.898
8	48	2.0000	875.000	19°29'57"	165.00	215.1	167.000	130.00	130.00	74797.877	74927.877	75094.885	75224.885	427.008
9	49	0.8537	2050.000	16°02'30"	75.00	353.8	443.800	130.00	160.00	78040.968	78170.968	78614.789	78744.789	703.821
10	50	0.9943	1760.000	9°57'40"	105.00	223.3	165.700	140.00	160.00	78956.630	79096.630	79262.374	79402.374	445.744
11	51	0.5776	3030.000	13°51'32"	35.00	423.3	622.900	110.00	160.00	80811.550	80921.550	81544.417	81654.417	842.867
12	52	0.5853	2990.000	12°50'03"	35.00	391.3	559.700	110.00	160.00	83625.809	83735.809	84295.525	84405.525	779.716
13	53	0.5833	3000.000	7°24'14"	35	249.1	277.6	110	160	85751.007	85861.007	86138.638	86248.638	497.631
14	54	0.5738	3050	13°07'29"	35	405.9	588.6	110	160	86579.097	86689.097	87277.719	87387.719	808.622
15	55	0.7000	2500	6°43'07"	45	211.7	163.1	130	160	88376.587	88506.587	88669.646	88799.646	423.059
16	56	1.9880	880.3	19°14'20"	165	248	92.7	200	130	89253.95	89453.95	89546.681	89746.681	492.731
17	57	2.0000	875	22°53'57"	165	242	218.9	130	130	91320.271	91450.271	91669.202	91799.202	478.931
18	58	2.0000	875	17°31'35"	165	199.6	136.9	130	130	92111.4	92241.4	92378.28	92508.28	396.880
19	59	1.9880	880.3	21°03'52"	165	250.5	146.7	175	130	92584.561	92759.561	92906.302	93081.302	496.741

	Pkg. C-6: HORIZONTAL CURVE													
S. No.	Curve No.	Degree	Radius	Def. Angle (Delta)	Cant {Se) (Mm)	Tangent Length	Circular Curve Length (CCL)	Transition Length	Vmax	TPTC1	TPCC1	TPCC2	TPTC2	Total Length
20	60	0.7022	2492	6°08'41"	45	198.7	137.2	130	160	93535.972	93665.972	93803.133	93933.133	397.161
21	61	0.5833	3000	8°53'53"	35	288.4	355.9	110	160	95520.275	95630.275	95986.14	96096.14	575.865
22	62	0.2692	6500	6°38'59"	15	407.6	694.4	60	160	97431.328	97491.328	98185.706	98245.706	814.378
23	63	0.2692	6500	0°48'12.2"	15	75.57	31.142	60	160	99264.422	99324.422	99355.563	99415.564	151.142
24	64	0.2692	6500	0°48'12.2"	15	75.57	31.142	60	160	99478.379	99538.379	99569.52	99629.521	151.142
25	65	0.2692	6500	0°45'58.8"	15	73.47	26.98	60	160	100537.812	100597.812	100624.75	100684.75	146.938
26	66	0.2692	6500	0°45'58.8"	15	73.47	26.98	60	160	100739.682	100799.682	100826.62	100886.62	146.938
27	67	1.0000	1750	15°23'40.5"	105	266.53	330.201	140	160	101313.196	101453.196	101783.397	101923.397	610.201
28	68	0.3418	5120	3°59'31"	20	213.4	286.7	70	160	104314.699	104384.699	104671.411	104741.411	426.712
29	69	0.3271	5350	2°40'50"	20	160.2	180.3	70	160	105563.743	105633.743	105814.044	105884.044	320.301
30	70	0.4369	4005.3	3°47'37"	30	172.6	185.2	80	160	109418.996	109498.996	109684.184	109764.184	345.188
31	71	0.4375	4000	2°25'11"	30	124.5	88.9	80	160	110667.25	110747.25	110836.164	110916.164	248.914
32	72	0.4070	4300	2°57'48"	25	151.2	142.4	80	160	112926.274	113006.264	113148.646	113228.646	302.372
33	73	0.4375	4000	2°33'11"	30	129.1	98.2	80	160	113284.287	113364.287	113462.525	113542.525	258.238
34	74	1.1667	1500	31°43'18"	140	516.1	649.8	180	160	115723.394	115903.394	116553.167	116733.167	1009.773
35	75	0.2692	6500	0°46'50"	15	74.3	28.5	60	160	118167.141	118227.141	118255.687	118315.687	148.546
36	76	0.2692	6500	0°46'50"	15	74.3	28.5	60	160	118380.034	118440.034	118468.578	118528.578	148.544
37	77	0.2692	6500	0°46'50"	15	74.3	28.5	60	160	120934.117	120994.117	121022.661	121082.661	148.544
38	78	0.2692	6500	0°46'50"	15	74.3	28.5	60	160	121147.023	121207.023	121235.567	121295.567	148.544
39	79	1.9880	880.3	99°57'18"	165	1121.4	1389.7	145	130	121864.713	122009.713	123398.388	123543.388	1678.675
40	80	1.1667	1500	1°40'39"	40	21.96	13.92	30	90	124065.87	124095.87	124109.79	124139.79	73.920
41	81	1.7500	1000	3°04'48.56"	50	26.89	23.759	30	85	124200.271	124230.271	124254.03	124284.03	83.759
												TOTAL I	LENGTH	38443.306

7. Indicative List of Overlapping Length with KMP				
S No	Chainage			
<b>3.</b> NO	From	То	Total length (in M)	
1	61800	62900	1100	
2	64500	65000	500	
3	65500	66000	500	
4	66800	67700	900	
5	68000	69400	1400	
6	69500	69600	100	
7	70900	71300	400	
8	72700	74200	1500	
9	79700	80100	400	
10	81000	81500	500	
11	82000	82300	300	
12	83000	83200	200	
13	83600	86000	2400	
14	86600	86800	200	
15	88700	89600	900	
16	93200	95250	2050	
17	96800	97100	300	
18	97300	101900	4600	
19	104000	104800	800	
20	106100	107250	1150	
21	107550	109300	1750	
22	110500	111100	600	
23	112700	113200	500	
24	113900	114500	600	
	Total Length (in M)		23650	

Attachment 7 of Corrigendum No. 2

## Tender No. HORC/HRIDC/C-6/2024 Attachment 8

of

**Corrigendum No. 2** 

### Section VII-9: Employer's Requirements-Appendices

### 1. APPENDIX – 2/R1

### CONTRACT KEY DATES AND COMPLETION DATE

### APPENDIX – 2/R1

## CONTRACT KEY DATES AND COMPLETION DATE

Key	Weeks from	Description of Stage	Delay Damage for each week of delay or part thereof for pop-
Dates	Commencement Date	Description of Stuge	achieving the key dates
Key Date 1	4	Submission of Initial Works Programme with all activities for entire work Package C-6.	
Key Date 2	12	Submission and approval of Detailed Works Programme (resources & cost loaded) incorporating all comments of Engineer including 2 weeks for review by the Engineer.	0.005% of the fixed lump sum price quoted in Schedule 'A'.
Key Date 3	16	Submission & <i>approval</i> of Preliminary Design <i>and</i> GAD of 50 Nos. of minor bridges & 12 Nos. of major bridges including RSI (Submission may be in stages but to start NOT later than 10 weeks from Commencement Date and completed within 16 weeks.).	
Key Date 4	24	Submission and approval of Definitive Design & GFC drawings for 50 Nos. of minor bridges & 12 Nos. of major bridges including RSI (Submission may be in stages but to start NOT later than 12 weeks from Commencement Date and completed within 24 weeks)	0.005% of the fixed lump sum price quoted in Schedule 'A'.
Key Date 5	26	Completion of 1 <sup>st</sup> 10 lakh cum of earthwork in formation	0.005% of the fixed lump sum price quoted in Schedule 'A'.
Key Date 6	75	Submission and approval of design of BLT on OWG & CG including fastening system.	
Key Date 7	100	Completion of all the works in Section 3 (from Ch. 108000 m to 126000 m excluding <i>turfing</i> <i>on slopes of embankment</i> , Major Br No.343, 346, 375 & 384, slope protection <i>on bridge</i> <i>approaches</i> and drainage works to enable execution of works by T-2 Contractor, SYS – 1 Contractor & SYS – 2 Contractor.	0.005% of the fixed lump sum price quoted in Schedule 'A'.

Key Dates	Weeks from Commencement Date	Description of Stage	Delay Damage for each week of delay or part thereof for non- achieving the key dates
Key Date 8	110	Completion of all the works in Section 1 (from Ch. 61500 m to 91500 m excluding Major Br No.155, 195, 199, 200, 242 & 257, 5C & 5D slope protection and drainage works to enable execution of works by T-2 Contractor, SYS – 1 Contractor & SYS – 2 Contractor.	
Key Date 9	120	Completion of station buildings at Badsa Jn, Badli, Mandothi Jn, Kharkhoda, Tarakpur & New Harsan Kalan Jn; S&T huts and all Auto location huts to enable execution of works by SYS-2 Contractor (Signalling & Telecommunication).	0.005% of the fixed lump sum price quoted in Schedule 'A'. Note: Delay Damages will be imposed on pro rata basis with each structure considered as one unit.
Key Date 10	125	Completion of all the works in Section 2 from Ch. 91500 m to 108000 m excluding <i>turfing on</i> <i>slopes of embankment</i> , Major Br No.267, 273, 277, 287, 300, 303 & 304 slope protection <i>on</i> <i>bridge approaches</i> and drainage works to enable execution of works by T-2 Contractor, SYS – 1 Contractor & SYS – 2 Contractor.	
Key Date 11	130	Completion of Major Br No.343, 346, 375 & 384 in Section 3 from Ch. 108000 m to 126000 m.	0.005% of the fixed lump sum price quoted in Schedule 'A'.
Key Date 12	140	Completion of Major Br No. 155, 195, 199, 200, 242 & 257, 5C & 5D in Section 1 from Ch. 61500 m to 91500 m.	
Key Date 13	150	Completion of Major Br No. 267, 273, 277, 287, 300, 303 & 304 in Section 2 from Ch. 91500 m to 108000 m.	

# Tender No. HORC/HRIDC/C-6/2024 Attachment 9

of

**Corrigendum No. 2** 

### Section IX - Particular Conditions of Contract (PCC)

**Part A-Contract Data** 

Table 1.2: Access to Formation Site/R1

1.2.1 Land for Formation accessible within 60 days from Commencement Date				
C N-	District HORC Chainage			Clear Length in
<b>5.</b> NO		From	То	Meters
1	Gurugram	61500	61800	300
2	Gurugram	62900	65500	2600
3	Jhajjar	66000	68000	1900
4	Jhajjar	69400	72700	3300
5	Jhajjar	76500	77400	900
6	Jhajjar	78300	78800	500
7	Jhajjar	79200	80300	1000
8	Jhajjar	98200	98600	400
9	Jhajjar	101900	102600	700
10	Sonipat	102700	104000	1300
11	Sonipat	105400	106200	800
12	Sonipat	107250	107550	300
13	Sonipat	109300	110200	900
14	Sonipat	111100	112700	1600
15	Sonipat	114500	114900	400
16	Sonipat	115700	116400	700
17	Sonipat	116800	117300	500
18	Sonipat	119300	120400	1100
19	Sonipat	121200	122400	1200
20	Sonipat	122800	123200	400
21	Sonipat	124000	125858	1858
22	Gurugram	Badsa- Sultanpur cor 0 - 296	2960	
Total land for formation accessible within 60 days from Commencement Date				25618

#### Table 1.2: Access to Formation Site/R1

#### Notes:

1. The chainages given in above table are tentative and may change but overall cumulative length of 24000 M will be made available within 60 days from the Commencement Date. Length between Ch. 80300 m to Ch. 80700 m would be made available to the Contractor 730 days after the Commencement Date. However, isolated structures, bore well, trees, electric poles

etc may exists on site in this duration which will not create hindrances to C&G and will not hinder in preparation of L-section. The Contractor shall be responsible for removal of these structure, borewells & trees etc. However, permission for removal of above structure, borewell & tree etc. will be made available to the Contractor by HRIDC. Removal of electric poles will be done by HRIDC.

2. The land accessibility is subject to *approval of* L-section of that respective chainage and no claim for non-accessibility of the land will be entertained without submission *and approval* of L- Section for the respective stretch.

1.2.2 Land for formation accessible within 180 days from the Commencement				
Date				
S No	District	HORC Chainage		Chara I an ath
5. NO	District	From	То	
1	Gurugram	61800	62900	1100
2	Jhajjar	65500	66000	500
3	Jhajjar	68000	69400	1400
4	Jhajjar	72900	74700	1800
5	Jhajjar	99200	101900	2700
6	Sonipat	102600	102700	100
7	Sonipat	104000	105400	1400
8	Sonipat	106200	107250	1050
9	Sonipat	107550	109300	1750
10	Sonipat	110200	110500	300
11	Sonipat	110500	111100	600
12	Sonipat	112700	114500	1800
13	Sonipat	114900	115700	800
14	Sonipat	116400	116800	400
15	Sonipat	117300	119300	2000
16	Sonipat	120400	121200	800
17	Sonipat	122400	122800	400
18	Sonipat	123200	124000	800
r	Fotal land acces	10700		
<b>Commencement Date</b>				19/00

#### Notes:

1. The chainage given in above table is tentative and may change but overall cumulative length for access to Site would be made available for a minimum length of 44000 M within 180 days from Commencement Date. *However, isolated structures, bore well, trees, electric poles etc may exists on site in this duration which will not create hindrances to C&G and will not hinder in preparation of L-section. The Contractor shall be responsible for removal of these structure, borewells & trees etc . However, permission for removal of above structure, borewell & tree etc. will be made available to the Contractor by HRIDC. Removal of electric poles will be done by HRIDC.* 

- 2. The access to complete length would be made available within 330 days from the Commencement Date except for the length between Ch. 80300 m to Ch. 80700 m which would be made available to the Contractor 730 days after the Commencement Date. Accessibility for Clearing and Grubbing (C&G) for this balance portion of formation length will be made available to the Contractor for C&G within 300 days from the Commencement Date.
- 3. The land accessibility is subjected to approval of L-section of that respective chainage and no claim for non-accessibility of the land will be entertained without submission and approval of L-Section for the respective stretch.