Dedicated Freight Corridor Corporation of India Ltd.

Detail Engineering Construction Survey of the proposed alignment of the section, preparation of land Plan and Land Acquisition Proposal as per Railway (Amendment) Act, 2008, identification of utilities & preparation of schedule of quantities for construction of Dedicated Freight Corridor from Dankuni at Km 14.81 To Dhanbad at Km 270.88 (Approx. route length of 256 Kms) on Eastern Dedicated Freight Corridor (KM 00.00 starts from Howrah).

Tender No.HQ/EN/EC/Pre (Works)/DKAE - DHN

Dedicated Freight Corridor Corporation of India Ltd.,

5th Floor, Pragati Maidan Metro Station Building Complex,

New Delhi – 1, Ph.No. 011 – 23454680 Fax No. 23454682.

Detail Engineering Construction Survey of the proposed alignment of the section, preparation of land Plan and Land Acquisition Proposal as per Railway (Amendment) Act, 2008, identification of utilities & preparation of schedule of quantities for construction of Dedicated Freight Corridor from Dankuni at Km 14.81 To Dhanbad at Km 270.88 (Approx. route length of 256 Kms) on Eastern Dedicated Freight Corridor (KM 00.00 starts from Howrah).

Tender No.HQ/EN/EC/Pre (Works)/DKAE - DHN

Bid Document

Dedicated Freight Corridor Corporation of India Ltd.,
5th Floor, Pragati Maidan Metro Station Building Complex,
New Delhi – 1, Ph.No. 011 – 23454680 Fax No. 23454682

Dedicated Freight Corridor Corporation of India Ltd.,
5th Floor, Pragati Maidan Metro Station Building Complex,
New Delhi – 1, Ph.No. 011 – 23454680 Fax No. 23454682.

Tender No.HQ/EN/EC/Pre (Works)/DKAE – DHN

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Dedicated Freight Corridor Corporation of India Ltd.,

5th Floor, Pragati Maidan Metro Station Building Complex,

New Delhi –1, Ph.No. 011 – 23454680 Fax No. 23454682

****

To,

The General Manager (Engg. III),

DFCC,

New Delhi.

Ref: **Tender No.HQ/EN/EC/Pre (Works)/DKAE - DHN**

1. I/We…….. have read the various conditions of tender attached hereto and hereby agree to abide by the said conditions. I also agree to keep this tender open for acceptance for a period of 120 days from the date fixed for opening the same and in default thereof, I/We will be liable for forfeiture of my/our "Bid Security". I/We offer to do the work as set out in the Bid Document. I/We also agree to abide by the General Conditions of the Contract and to carry out the work according to the special conditions as laid down by the DFCC Administration for the execution of present contract.

2. A sum **of Rs. 2,00,000/- (Rupees Two Lakh only)** has been forwarded as Bid Security. The value of the Bid Security shall stand forfeited without prejudice to any other rights or remedies if:

   i) I/We do not execute the contract agreement within 15 days of receipt of notice from the DFCC Administration that such documents are ready.

   OR

   ii) I/We do not commence the work within 10 days after receipt of orders to that effect.

3. Until a formal agreement is prepared and executed acceptance of this tender shall constitute a binding contract between us subject to the modifications, as may be mutually agreed to, between us and indicated in the letter of acceptance or my/our offer for the work.

Signature of Tenderer

Contractor's Address

Signature of Witness

Dedicated Freight corridor Corporation of India Limited
(A Government of India Undertaking under Ministry of Railways)
5th Floor, Pragati Maidan Metro Station Building Complex,
New Delhi – 1, Ph.No. 011 – 23454680 Fax No. 23454682

Section 1.

Invitation for Bids (IFB)

Dear Sir,

The General Manager Engg. (III), DFCC, New Delhi for and on behalf of DFCC invites, bids in single stage, from the tendering firms / **Detail Engineering Construction Survey of the proposed alignment of the section, preparation of land Plan and Land Acquisition Proposal as per Railway (Amendment) Act, 2008, identification of utilities & preparation of schedule of quantities for construction of Dedicated Freight Corridor from Dankuni at Km 14.81 To Dhanbad at Km 270.88 (Approx. route length of 256 Kms) on Eastern Dedicated Freight Corridor (KM 00.00 starts from Howrah).**

Brief Scope of work for the subject Section is as under :-

I. Detailed Engineering construction Survey of the entire stretch for the construction of double line electrified Railway Track as per the indicative alignment shown at **Annexure -III.**

II. Stacking of finalized alignment.

III. Assessment of Land width required to be acquired and preparation of Land Plan for double line construction of Railway track.

IV. Preparation of Land Acquisition Proposal for notification under Section 20(A) of Railway (Amendment) Act, 2008 for special Railway project.

V. Manufacturing and Supplying precast M:20 pillars/stones/boundary mattams.

VI. Finding out Utility services along the proposed alignment and preparation of their plans for shifting and plotting these on the strip map.

VII. Preparation of Detailed Bill of quantities based on the realistic analysis of rate and quantity for construction of double line electrified railway track.

VIII. Preparation of Detailed estimate as per railway format for new line construction.

IX. Preparation of Presentation for the works undertaken and Detail Project Report of the surveyed section.

1. DETAILS OF BID DOCUMENT

1.1 **Bidding documents:** Cost of the bid document is Rs. 10,000/- (Ten Thousand only). Bidders should enclose a demand draft / bankers cheque issued by State Bank of India or any other nationalized bank or any scheduled bank of India, in favour of DFCCIL, payable at New Delhi amounting to Rs. 10,000/- towards the cost of Bid document along with their offer, failing which their tender shall be liable to be rejected.

1.2 **Bids must be accompanied by a Bid Security deposit** a sum **of Rs. 2,00,000/- (Rupees Two Lakh only)** by a crossed Demand Draft/ Bankers cheque issued by State Bank of India or any other nationalized bank or any scheduled bank of India, in favour of DFCCIL, Payable at New Delhi. Bids received without Bid Security shall be summarily rejected.

1.3 Eligible Bidders:

A Bidder may be a natural person, private entity & public sector Undertaking. No Joint Venture or Consortium is permitted. In case of single entity the bidder must submit Power of Attorney authorizing the signatory of the Bid to commit the bidder.

1.4 Submission of bids:

Date and time for submission of offer - From 20.07.2009 to 22.07.2009 [from 20.07.2009 to 21.07.2009 between 10.00 Hrs to 17.00 Hrs and upto 15.00 Hrs on 22.07.2009].

1.5 Venue for submission of bids:- Dedicated Freight Corridor Corporation of India Ltd., 5th Floor, Pragati Maidan Metro Station Building Complex, New Delhi – 1, Ph.No. 011 – 23454680 Fax No. 23454682.

1.6 Time for opening of offer: - 15.30 hrs on 22-07-2009

1.7 If the date of opening is declared as holiday then the tender shall be accepted upto 15.00 hrs of the next working day and the same will be opened at 15.30 hrs on the same day i.e, next working day.

1.8 **Address for Communication:** Interested Bidders may obtain further information from the address given below.

General Manager (Engg.III), **Dedicated Freight corridor Corporation of India Limited,** 5th Floor, Pragati Maidan Metro Station Building Complex, New Delhi – 1, Ph.No. 011 – 23454680 Fax No. 23454682 **during office hours on any working day.**

2. GENERAL

2.1 Bid document is non-transferable. Bids received from bidders in whose name Bidding Document has been issued shall only be considered.

2.2 No extension in the Bid Due Date shall be considered on account of delay in receipt of Bid Document by post.

3. Validity of the Bid :

3.1 The bidders shall keep their offer open for a minimum period of **120 days** from the date of opening of the bid, extendable further if required by mutual agreement from time to time. Any contravention of the above condition shall make the bidder liable for forfeiture of his Bid Security deposit. The bidders cannot withdraw their offer within the period of validity / extended validity.

4. TENDERING PROCEDURE.

4.1 Procedure for Submission of Bid

This is a single stage two envelopes / packet system of tendering.

The bid consists of two packets / envelope containing Technical Bid and Price Bid. Each page of Bid must be signed and sealed by the bidder or its authorized representative in whose name power of attorney is issued. Bids should be submitted in one envelope containing two separate envelopes super scribed as follows:

Envelope / Packet No. 1:- Technical Bid
Envelope/ Packet No. 2:- Price Bid

On the outer envelope containing these two envelopes brief description of the tender should be clearly written such as:
Tender No.
Name of work
Date & Time of opening of tender

Name & Address of tenderer

4.1.1 Envelope / Packet No. 1 (Technical Bid) should contain following documents

i) Forwarding Letter given in the Bid document.

ii) DD or Bankers Cheque towards the cost of Blank tender document in case of bid document downloaded from internet.

iii) Bid Security Deposit in the approved form as per para 1.2 above.

iv) Power of Attorney of authorized person who signed the bid.

v) Document in support of minimum eligibility criteria as enumerated in paras 6.1 to 6.4.

vi) General Information of the bidders in Annexure T-1.

vii) A list of works completed in last three years i.e., Current year and the last three financial years in Annexure T-2 (Ref. para 6.5)

viii) A list of similar work in hand in the format as in Annexure T-3 (Ref. para 6.6)

ix) A List of Plant and Machinery in the format as in Annexure T-4 (Ref. para 7.1 to 7.5)

x) A List of Computers & Software in the format as in Annexure T-5 (Ref. para 7.4)

xi) List of Key Personnel in the format as in Annexure T-6 (Ref. para 7.6)

xii) The audited balance sheet & profit and loss account for the previous three years certified by C.A.

xiii) Notarised Documents in support of information submitted against paras 7.1 to 7.6.

4.1.2 Envelope /Packet No. No. 2 (Price Bid)

This envelope shall contain only price bid.

4.1.3 ***While opening the technical bid, the envelope marked as Technical Bid shall only be opened. In case, it contains anything other than the technical bid, the offer shall be summarily rejected.***

5. Bid opening:

5.1 The Employer shall conduct the opening of Technical Proposals in the presence of Bidders' representatives who choose to attend, at the address, date and time specified in the BDS.

5.2 The financial Proposals will remain unopened and will be held in custody of the Employer until the time of opening of the Financial Proposals. The date, time, and location of the opening of Financial Proposals will be advised in writing by the Employer to all the bidders who have been determined qualified in technical evaluation.

5.3 All other envelopes holding the Technical Proposals shall be opened one at a time, and the following read out and recorded :

- the name of the Bidder;
- the presence of a Bid Security; and
- any other details as the Employer may consider appropriate

5.4 Only Technical Proposals read out and recorded at bid opening, shall be considered for evaluation. No Bid shall be rejected at the opening of Technical Proposals except for late bids.

5.5 The Employer shall prepare a record of the opening of Technical Proposals that shall include, as a minimum: the name of the Bidder and the presence or absence of a Bid Security. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record.

5.6 At the end of the evaluation of the Technical Proposals, the Employer will invite bidders who have submitted substantially responsive Technical Proposals and who have been determined as being qualified for award to attend the opening of the Financial Proposals. The date, time, and location of the opening of Financial Proposals will be advised in writing by the Employer. Bidders shall be given reasonable notice of the opening of Financial Proposals.

5.7 The Employer shall conduct the opening of Financial Proposals of all Bidders who submitted substantially responsive Technical Proposals and who have been determined qualified as a result of technical evaluation, in the presence of Bidders` representatives who choose to attend at the address, date and time

specified by the Employer. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.

5.8 All envelopes containing Financial Proposals shall be opened one at a time and the following read out and recorded :

- o the name of the Bidder
- o the Bid Price(s), including any discounts
- o any other details as the Employer may consider appropriate

5.9 Only Financial Proposals, discounts, read out and recorded during the opening of Financial Proposals shall be considered for evaluation. No Bid shall be rejected at the opening of Financial Proposals.

5.10 The Employer shall prepare a record of the opening of Financial Proposals that shall include, as a minimum: the name of the Bidder, the Bid Price (per contract if applicable), any discounts. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record.

6. Minimum eligibility criteria for the work is an under:

6.1 The bidder should have completed at **least 95 km Final Location Survey or Detailed Engineering Construction Survey for Railway projects/Highway projects** in one **single contract** in the last three financial years (i.e. current financial year and three previous financial years) i.e. financial years 2006-2007, 2007-2008, 2008-2009 & 2009-2010 (upto date of opening of tender).

6.2 The bidder should have experience **in Detailed Engineering Construction Survey for Railway projects/Highway projects** and should have completed at least one similar single work **involving Detailed Engineering Construction Survey for** a minimum value of Rs. 50 lakhs in the last three financial years (i.e. current financial year and three previous financial years) i.e. financial years 2006-2007, 2007-2008, 2008-2009 & 2009-2010 (upto date of opening of tender).

6.3 The bidder should have experience **in Preparation of Land Plan and making of necessary Land Acquisition Proposals for notification under various sections of Indian Land Acquisition Act of 1894 with latest amendments or Railway (Amendment) Act, 2008** and should have completed at least one similar single work **involving preparation of Land Plan and Land Acquisition Proposal for** a minimum value of Rs. 20 lakhs in the last three financial years (i.e. current financial year and three previous financial years) i.e. financial years 2006-2007, 2007-2008, 2008-2009 & 2009-2010 (upto date of opening of tender).

6.4 The total contract amount received by the bidder during the last three financial years and in the current financial i.e. financial years 2006-2007, 2007-2008, 2008-2009 & 2009-2010 (upto date of opening of tender) should be minimum of 150% of advertised tender value of the work i.e. Rs. **310 Lakhs**.

6.5 The bidders must submit the list of similar works completed in the last three financial years giving description of work, organization for whom executed, approximate value of the contract at the time of award, date of award, date of scheduled completion of work, date of actual completion of the work and final value of the contract. This information should be given in the format placed at Annexure- T-2.

6.6 The bidders must submit the list of similar works on hand indicating description of work, contract value, approximate value of balance work to be done and the date of award. The information should be submitted in the proforma placed at Annexure-T-3.

6.7 Tenders must submit the audited financial statements/ documents/certificates in support of information submitted against para 6.4 failing which his/ their offer may be rejected without any correspondence with the tenderers at the sole discretion of DFCC.

6.8 Tenderer must submit the documents/ certificates of the completed works from State/ Central Govt. Organizations / PSUs in support of information submitted against para 6.1, 6.2 & 6.3. The certificates from private individuals for whom such works are executed/being executed shall not be accepted.

7. Plants & Machinery and List of Personnel/Organization available on hand and proposed to be engaged.

7.1 The bidder should submit list of plants and machinery available in hand and proposed to be inducted (own and hired to be given separately) for the subject work.

7.2 The bidder should own at least six Total Stations & One DGPS in his possession. The said information should be given in the format given at Annexure - T - 4.

7.3 The bidder should own at least two Auto Level . The said information should be given in the format given at Annexure - T - 4.

7.4 The bidder should own necessary data processing licensed software preferably Mx Rail/Road and/or Auto Cad 3D Civil for generation of L-Section & C -Sections.
The said information should be given in the format given at Annexure T-5.

7.5 The bidder should submit list of field & laboratory equipment available with them along with Make and Year of purchase. The said information should be given in the format given at Annexure - T - 4.

7.6 The bidder should have at least four civil engineers who are having minimum 10 years experience in the field of field survey for Railway/Highway/Pipeline. The bidders should attached Bio data for proposed key personnel to be deployed for this work shall be submitted along with the bid document. The said information should be given in the format given at Annexure T-6. Attested Photocopies of Certificates as well as certificates of experience should be submitted along with CV.

7.7 The firm should submit the documents along with the offer in Support of the information submitted against para 7.1 to 7.6 in the form of an Affidavit on Stamp Paper of Rs. 10/- duly attested by Notary / Magistrate.

8 Disqualification: - Even though the bidder may be qualifying the above criteria as per the records submitted by him, he shall be disqualified if he is found to have made misleading or false representation in the forms, statements and attachments submitted against the proof of eligibility or qualifying requirements. A declaration to the above effect in the form of an affidavit on stamp paper of Rs. 10/- duly attested by notary/Magistrate should be submitted along with the offer.

9.0 Evaluation of Bid

9.1 The Bids will be evaluated by the employer based on the contents of the Bid. Technical proposal will be evaluated based on the minimum eligibility criteria as detailed in para 6 above. The Bid whose technical proposal are not fulfilling the minimum eligibility criteria shall be declared as non-responsive and their financial bid will not be opened.

9.2 To assist in the examination, evaluation & comparison of the Bids, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change in the prices or substance of the Bid shall be sought, offered, or

permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Financial Proposals.

9.3 If a Bidder does not provide clarifications of its bid by the date and time set in the Employer's request for clarification, its bid may be rejected.

10. Time Schedule

The total time for completion of work shall be of **Nine months** from date of issue of Letter of Acceptance by DFCC. Time is the essence of the Contract.

11. Rate

11.1 The contractor / bidder must quote a flat single percentage above or below or at par of the total amount of the schedule of tender as given in the bid document. **This percentage shall be applicable on each item of the schedule in consideration, uniformly.**

11.2 Tenderers are required to give unconditional offers. **A conditional offer is liable to be rejected.**

12. Bid Security is liable to be forfeited in case of the following:

12.1. On revocation of tender due to increase in rates by the firm after opening of tenders but during the validity of the tender.

12.2. On refusal to accept the work order after issue of Letter of Acceptance of the offer by DFCCIL.

12.3. If the work is not commenced on the stipulated date of start of the work awarded to the contractor.

(S.K.Pathak)
General Manager (Engg.III)
For and on behalf of DFCC

Section 2

Instructions to Tenderers/Bidders (ITB)

1.0 Site visit: - The Bidders are advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract. The costs of visiting the Site shall be at the Bidder's own expense.

2.0 Cost of Bidding: - The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall not be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

3.0 Language of Bid: - The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in English..

4.0 Currencies of Bid and Payment: - The bidder shall quote the unit rates and the prices entirely in the Indian Rupees.

5.0 Period of Validity of Bids:- Bids shall be valid for a minimum period of 120 days from the date of opening of the tender. A bid valid for a shorter period shall be rejected by the Employer as non responsive.

6.0 Format and Signing of Bid:- . Bid document shall be signed by a person duly authorized to sign on behalf of the Bidder. Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

7.0 Deadline for Submission of Bids: - Bids must be received by the Employer at the address and no later than the date and time indicated in the Bid document.

8.0 Late Bids: - The Employer shall not consider any bid received after the deadline for submission of bids. Any bid received by the Employer after the deadline for submission of bids shall be declared late and rejected.

9.0 Signing of Contract: - The successful bidder, whose tender has been accepted by the competent authority of DFCC, will be informed by the Employer through a Letter of Acceptance. In response the successful bidder should sign the Contract Agreement **(Annexure II)** within fifteen days of receipt of notice from DFCC that such documents are ready.

10.0 Corrupt Practices: - The Employer requires that bidders, suppliers, and contractors observe the highest standard of ethics during the execution of such contracts.

11.0 Security deposit: - The security deposit will be equal to **5%** of the value of the contract. The Bid Security of the successful bidder will be converted into initial security deposit. Balance Security deposit shall be deducted at the rate of **10%** from each of the running bill of the contractor till the realization of full amount of security deposit as per contract.

12.0 Performance Security:

a. Within fifteen days of issue of letter of acceptance from the Employer/ engineer, the successful tenderer shall furnish to Employer/ engineer a **performance guarantee in the form of irrevocable bank guarantee amounting to 5% of original**

contract value from any scheduled banks of India in the Proforma attached at **Annexure-I.**

b. No payment under the contract will be made to the firm without receipt of performance guarantee from the firm.

c. Failure to furnish the require performance guarantee shall be a ground for annulment of the contract and forfeiture of Bid Security.

d. In case of termination of contract on account of failure of the contractor performance guarantee shall be encashed.

e. In case the firm/ contractor fails to extend the validity of performance guarantee as desired by the Employer then the Employer may encash the performance guarantee of the firm/ contractor.

f. Release of performance guarantee:-The performance guarantee shall be released to the firm only after the physical completion of the work based on the Completion Certificate issued by Competent Authority stating that contractor has completed the work in all respect satisfactorily.

13.0. Price variation clause is not applicable for this contract

Section 3: Bid Data Sheet

This section consists of provisions that are specific to the bid and supplement the information or requirements included in Section I & 2 –IFB & ITB.

1	Bid number **:** **Tender No.HQ/EN/EC/Pre (Works)/DKAE – DHN Date :28/05/2009**
2	The Employer : **Dedicated Freight Corridor Corporation of India Limited. NEW DELHI**
3	**Name of work :** **Detail Engineering Construction Survey of the proposed alignment of the section, preparation of land Plan and Land Acquisition Proposal as per Railway (Amendment) Act, 2008, identification of utilities & preparation of schedule of quantities for construction of Dedicated Freight Corridor from Dankuni at Km 14.81 To Dhanbad at Km 270.88 (Approx. route length of 256 Kms) on Eastern Dedicated Freight Corridor (KM 00.00 starts from Howrah).**
4	The Bidder should submit along with the bid, a bid security for **Rs 2,00,000 (Rupees Two Lakh only)**
5	**TYPE of TENDER**: Open Tender Two packet system.
6	The bid validity period shall be 120 **(One Hundred Twenty)** days.
7	The Bid Document can be downloaded from the website http://www.dfccil.org w.e.f. 5.6.2009 or the bid document can be bought through Demand Draft or Bankers Cheque of Rs 10000/- in favour of DFCCIL payable at New Delhi, from the address given below on or after 5.6.2009.
8	**Date upto which clarification can be asked in writing – 25.6.2009**
9	**For bid submission purposes only, the Employer's address is:** General Manager (Engg.III), Floor/Room No. : 5th Floor, Pragati Maidan Metro Station Building Complex

	Street Address : City : Delhi Pin Code : 110002. Country : Indian Republic Tel. No. (011) 23454680 Fax. (011) **2345 4682** Time & Date of submission of Bid: From 20.07.2009 to 21.07.2009 between 10.00 Hrs to 17.00 Hrs and upto 15.00 Hrs on 22.07.2009].
10	The bid opening shall take place at: Dedicated Freight Corridor Corporation of India Limited, Floor/Room No. :5th Floor, Pragati Maidan Metro Station Building Complex Street Address City : Delhi Pin Code : 110002. Country : Indian Republic Tel. No. 011-23454680 : Fax. (011) **2345 4682** **Time & Date of Opening of Bid** : 1530 Hrs. on **22.07.2009**
11	**Penalty Clauses : Detailed in Paras : 17 & 18 of GCC Section 4**
12	**Performance Guarantee : Detailed in para 21 of GCC Section 4**
13	**Security Deposit : Detailed in para 3 of GCC Section 4**
14	**Completion Period : Nine Months**

Section – 4

GENERAL CONDITIONS OF CONTRACT

1.0 GENERAL CONDITIONS OF CONTRACT will form an integral part of the Bid and contract, which is enclosed along with the tender documents. In case of any deviation between conditions of contract and any other special condition & specifications of contract of this tender document, the special condition & specifications of contract of this tender document shall prevail. The tenders must give a certificate along with their offer that they have thoroughly read, understood and accepted the conditions/special conditions & specifications of contract as well as other conditions of tender etc.

2.0. DEFINITIONS

2.1 Unless excluded by or repugnant to the context:

i. The expression Employer /DFCC as used in the tender papers shall mean the Dedicated Fright corridor Corporation of India Ltd.

ii. The expression Corporation as used in the tender paper means Dedicated Fright corridor Corporation of India Ltd.

iii. The expression “Department” as used in the tender papers shall mean Dedicated Fright corridor Corporation of India Ltd.

iv. “Drawing” shall be mean the drawings referred to in specifications and any modifications of such drawings approved in writing by engineers and such other drawings as may from time to time be furnished or approved in writing by the Engineer In Charge.

v. Engineer/ “Engineer-in-charge” of the work shall mean the ‘Representative’ appointed by DFCC.

vi. The “Site” shall mean the lands and / or other places in or through which the work is to be executed under the contract including any other lands or place used for the purpose of contract.

vii. Part(s) thereof as the case may be and shall include all extra or additional, altered or substituted works as required for performance of the contract.

viii. The “Contract” shall mean The agreement entered into between the DFCC and the contractor as recorded in the contract form signed by the parties include all attachment the notice of tender, the sealed quotation and the tender documents including the tender and acceptance thereof together with the documents referred to therein, and the accepted conditions with annexure mentioned therein including any special conditions, specifications, designs, drawings, price schedule / bill of quantities and schedule of rates. All these documents taken together shall be deemed to form one contract and shall be complementary to one another. Contract is deed of contract together with its entire accompaniment and those later incorporated in it by internal consent.

ix. The “Contractor/ ” shall mean the individual or firm or company whether incorporated or not, undertaking the work and shall include legal representative of such an individual or persons comprising such firms or company as the case may be and permitted, assigns of such individual or firm or company.

x. The “Contract sum” / “Contract price” shall mean the sum for which the tender is accepted.

xi. The “Contract time” means period specified in the tender document for entire execution of contracted works from the date of notification of award including monsoon period.

xii. A “Day” shall mean a day of 24 hours from midnight to midnight irrespective of the number of hours worked in that day.

xiii. A “month” shall mean a calendar month.

xiv. A "week" shall mean seven consecutive days without regard to the number of hours worked in any day in that week.

xv. "Excepted Risks" are risks due to riots (otherwise than among contractor's employees) and civil commotion (in so far as both these are un-insurable) was (whether declared or not), invasion, act of foreign enemies, hostilities, civil war, rebellion, revolution, insurrection, military or usurped power, any acts of God, such as earthquake, lightening and un-precedent floods over which the contractor has no control.

xvi. "Temporary works" shall mean all temporary works of every kind required in or about the execution completion or maintenance of the works.

xvii. "Urgent works" shall mean any measures, which in the opinion of the Engineer, become necessary during the progress of the works to obviate any risk or accident or failure or which become necessary for security of the work or the persons working, thereon.

xviii. Where the context so requires, word imparting the singular number only also include the plural number of vice-versa.

3.0 SECURITY DEPOSIT

3.1 The security deposit will be equal to **5%** of the value of the contract. The Bid Security of the successful bidder will be converted into initial security deposit. Balance Security deposit shall be deducted at the rate of **10%** from each of the running bill of the contractor till the realization of full amount of security deposit as per contract.

3.2 The security deposit shall be returned to the contractor without any interest when the contractor ceases to be under any obligations under the contract i.e. after completion of 120 days of the satisfactory completion of the work.

4.0 SUPERVISION AND SUPERINTENDENCE

4.1 **CONTRACTOR'S SUPERVISION:-**The Contractor shall supervise & direct the works efficiently & with his best skill & attention. He shall be solely responsible for means, methods, techniques, procedures & sequences of construction. The Contractor shall co-ordinate all parts of the work and shall be responsible to see that the finished work complies fully with the contract documents, & such instructions & variation orders as the Engineer may issue during the progress of the works.

5.0 ENGINEERS AND ENGINEER'S REPRESENTATIVES

a) Engineers or Engineer's Representative Duties and Authority will in principle comprise the following :

i) Supervision of day to day work including quality and quantity.

ii) To hold site review meeting and review the Contractor's Programme of Work.

iii) Approving contractor's design of enabling works.

iv) To inspect the record of Contractor's personnel and equipment

v) Certification, determination, instruction, opinion or evaluation of disputes

vi) Superintendence of work as directed by the Engineer from time to time till final Bill is paid, Defect Liability period is over.

vii) To instruct the Contractor to remove unsuitable personnel form site of work.

viii) To submit recommendations to the Employer with reference to proposals of additional work and/or variations after obtaining the details from the Contractor.

ix) To submit recommendations to the Employer with reference to request for extension of time received from the Contractor.

x) Certification of Contractor's Interim Payment and Final Payment applications.

b) Any proposal, inspection, examination, testing, consent, approval or similar act by the Engineer (including absence of disapproval) shall not relieve the Contractor from any responsibility including responsibility for his errors, omissions and discrepancies.

c) For the purpose of the instant bid engineers and engineer's representative shall be nominated by the DFCC officials.

6.0. EMPLOYER'S/ENGINEER'S INSPECTION OF WORK

a) The Employer and the Engineer shall at all reasonable times have full access to all parts of the Site and be entitled to inspect, examine, measure and workmanship, and to check the progress of work.

b) The Contractor shall give the Engineer full opportunity to carry out these activities including providing access, facilities, permissions and safety equipments. No such activity/inspection shall relieve the Contractor from any obligation or responsibility.

7.0 REPRESENTATION OF WORK

a. Unless the Contractor's Representative is named in the Contract, the Contractor shall, within 14 days of Notice to Proceed, submit to the Engineer for consent the name and particulars of the person the Contractor proposes to appoint. The Contractor shall not revoke the appointment of the Contractor's Representative without the prior

consent of the Engineer. The Contractor's Representative so nominated shall have full authority to act on behalf of the Contractor The Contractor's Representative shall give his whole time to directing execution of the Works. The Contractor's Representative shall receive (on behalf of the Contractor) all notices, instructions, consents, approvals, certificates. Determinations and other communications under the Contract. Whenever the Contractor's Representative is to be absent from the Site, a suitable replacement person shall be appointed, with prior consent of Engineer.

b. Failure on part of the Contractor to comply with these provisions shall constitute a breach.

c. The Contractor's Representative may delegate any of his powers, functions and authorities to any competent person, and may at any time revoke any such delegation. Any such delegation or revocation shall be in writing and shall not take effect until the Engineer has given prior consent thereto. The Contractor's Representative and such persons shall be fluent in the language of day to day communication and the Contractor shall be bound by and fully liable for the acts or omissions of the Contractor's Representatives or any of his employees and/or delegates, agents or nominees.

8.0 USE OF EXPLOSIVES

8.1 Blasting is not permitted on this work unless under exceptionally unavoidable conditions but subject to Government’s Policy /rules/acts on the subject matter and approval of engineer in charge.

9.0. PROTECTION

9.1 The works included in this contract if required to be carried out close to the running tracks and public utilities, therefore, safety of running trains and the public is paramount. Therefore, all activities undertaken by the Contractor / his Sub-contractors shall ensure safety at all times. The contractor shall comply with the instructions issued by the Railway / Engineer / Employer from time to time to ensure safe running of trains while carrying out works . The rates quoted by the Contractor shall be deemed to include all expenditure incurred in compliance with the same.

10.0 WORKMEN

10.1 The contractor shall at all times enforce strict discipline and good order among his employees and shall not employ on the works any unfit person or anyone not skilled and experienced in the assigned task. The Contractor shall in respect of labour employed by him comply with or cause to be complied with the provisions of various labour law and rules and regulations as applicable to them in regard to all matters provided therein and shall indemnify the owner in respect of all claims that may be made against the owner for non-compliance thereof by the Contractor. In the event of the contractor committing a default or breach of any provisions of labour laws and rules and regulations, the Contractor shall without prejudice is liable to be prosecuted as per Indian Laws.

11.0 LAWS AND REGULATIONS :

11.1 Governing Law: The contract documents shall be governed by the laws and by-laws of India.

12.0 SAFETY PRECAUTIONS AND EMERGENCIES AND PROTECTION OF ENVIRONMENT

12.1 The contractor shall be solely responsible notwithstanding any stipulations by owner or Engineer for initiating, maintaining and supervising all safety precautions and programmes, in connection with the work and shall comply with all laws, ordinance, code rules, regulations and lawful orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damages, injury or loss during the entire contract period including non-working hours.

13.0 INCOME TAX

13.1 Income Tax as per rates applicable/amended under the Income Tax Act of work shall be deducted at source unless the contractor is exempted by Income Tax Authorities.

14.0 SERVICE TAX

14.1 Service Tax as applicable on gross value of each running account bill shall be paid by DFCC as per prevailing law.

15.0 PERMITS, FEES, TAXES & ROYALTIES

15.1 Unless otherwise provided in the contract documents, the contractor shall secure and pay for all permits, Government fees and licenses necessary for the execution and completion of the works. The contractor shall pay all duties including excise duty, sales tax, works contract tax, local taxes, income tax, octroi and

other Govt taxes **except service tax**. The service tax will be paid extra if payable under law on submission of the documentary evidence. The DFCC authorities will not take any responsibility of refund of such taxes/fees. Any violation, in the legal provisions of taxes, duties, permits and fees, carried out by the Contractor and detected subsequently shall be the sole responsibility of the Contractor and his legal heirs.

16.0 STATUTORY INCREASE IN DUTIES, TAXES ETC

16.1 All the taxes and duties levied by the State and Central Govt. and by Local Bodies at the prevailing rates applicable on the date of receipt of tender shall be fully borne by the Contractor and shall not be reimbursed to him on any account. The tender shall be inclusive of all taxes levies, octroi etc.

16.2 Further **DFCC** shall not honour any claim arising out of any in any of the prevailing statutory duties, taxes, levies, octroi, etc. At the time of quoting/bidding contractor should bear the above fact in mind.

17.0 DELAY AND EXTENSION OF CONTRACT PERIOD / LIQUIDATED DAMAGES

17.1 The time allowed for execution and completion of the works or part of the works as specified in the contract, shall be essence of the contract.

17.2 As soon as it becomes apparent to the Firm/Contractor, that the work and / or portions thereof (required to be completed earlier), cannot be completed within the period(s) stipulated in the contract, or the extended periods granted, he shall forthwith inform the

Engineer and advise him of the reasons for the delay, as also the extra time required to complete the work and / or portions of work, together with justification thereof. In all such cases, whether the delay is attributable to the Firm/Contractor or not, the Firm/Contractor shall be bound to apply for extension well within the period of completion / extended period of completion of the whole works and / or portions thereof.

17.3 **Extension due to modifications:-**If any modifications are ordered by the Engineer or site conditions actually encountered are such, that in the opinion of the Engineer the magnitude of the work has increased materially, then such extension of the stipulated date of completion may be granted, as shall appear to the Engineer to be reasonable.

17.4 **Delays not due to Employer:-**If the completion of the whole works (or part thereof which as per the contract is required to be completed earlier) , is likely to be delayed on account of:

i. Any force majeure event referred to in Clause 20.0 or

ii. Any relevant order of court or

iii. Any other event or occurrence which, according to the Engineer is not due to the Firm/Contractor's failure or fault, and is beyond his control. The Engineer may grant such extensions of the completion period as in his opinion reasonable.

17.5 **Delays due to Employer / Engineer.** In the event of any failure or delay by the Employer / Engineer in fulfilling his obligations under the contract, then such failure or delay, shall in no way affect or vitiate the contract or alter the character thereof; or entitle the Firm/Contractor to damages or compensation thereof but in any such case, the Engineer shall grant such extension or extensions of time to complete the work, as in his opinion is / are reasonable.

17.6 **Delays due to Firm/Contractor and Liquidated Damages:-**If the delay in the completion of the whole works or a part of the works, beyond stipulated completion period, is due to the Firm/Contractor's failure or fault, and the Engineer feels that the remaining works or the portion of works can be completed by the Firm/Contractor in a reasonable and acceptable short time, then, the Engineer may allow the Firm/Contractor extension or further extension of time, for completion, as he may decide, subject to the following: -

17.7 Without prejudice to any other right or remedy available to the Engineer, recover by way of liquidated damages and not as penalty, a sum equivalent to quarter of one percent (0.25%) of the contract value of the works, for each week or part thereof the Firm/Contractor is in default.

17.8 Penalty for delay shall be limited to 5% of his contract value of the works, or the portion of the works, as the case may be.

17.9 The recovery of such damages shall not relieve the Firm/Contractor from his obligation to complete the work or from any other obligation and liability under the contract. **Engineer's decision on compensation payable being final.**

17.10 The decision of the Engineer as to the penalty, if any, payable by the Firm/Contractor under this clause shall be final and binding.

17.11 Time shall continue to be treated as the essence of contract in spite of extension of time. It is an agreed term of the contract that notwithstanding grant of extension of time under any of the sub-clauses mentioned herein, time shall continue to be treated as the essence of contract on the part of the Firm/Contractor.

18. DETERMINATION OF CONTRACT DUE TO FIRM/ CONTRACTOR'S DEFAULT

18.1 Conditions leading to determination of' contract:

If the Firm/Contractor

a. becomes bankrupt or insolvent, or,
b. makes arrangements with or assignment in favour of his creditor, or agrees to carry out the contract under a committee of inspection of his creditors or
c. being a company or corporation goes into liquidation by a resolution passed by the Board of Directors / General Body of the share-holders or as a result of court order (other than voluntary liquidation for the purpose of amalgamation or reconstruction) ; or
d. has execution levied on his goods or property or the works, or
e. assigns or sublets the contract or any part thereof otherwise than as provided for under conditions of' this contract, or
f. abandons the contract, or
g. persistently disregards instructions of the Engineer or contravenes any provisions of the contract, or
h. fails to adhere to the agreed programme of work or fails to complete the works or parts of the works within the stipulated or extended period of completion, or is unlikely to complete the whole work or part thereof within time because of poor record of progress; or
i. fails to take steps to employ competent and / or additional staff and labour, or
j. promises, offers or gives any bribe, commission, gift or advantage, either himself or through his partners, agents or servants to any officer or employee of the Engineer or the Employer, or to any person on their behalf, in relation to obtaining or execution of this or any other contract with the Employer, or
k. Suppresses or gives wrong information while submitting the tender.
l. In any such case the Engineer on behalf of the Employer may serve the Firm/Contractor with a notice in writing to that effect and if the Firm/Contractor does not, within 7 days after delivery to him

of such notice, proceed to make good his default in so far as the same is capable of being made good, and carry on the work or comply with such instructions as aforesaid to the entire satisfaction of the Engineer, the Employer shall be entitled after giving 48 hours notice in writing to terminate the contract, as a whole or in part or parts (as may be specified in such notice).

18.2 In such a case of termination, the Employer / Engineer may adopt the following course :

18.2.1 Carry out the whole or part of the work from which the Firm/Contractor has been removed by engaging another Firm/Contractor or deployment of technical staff at site.

18.3 DETERMINATION OF CONTRACT ON EMPLOYER/ ENGINEER'S ACCOUNT

18.3.1 The Employer / Engineer shall be entitled to determinate the contract, at any time, should, in the Employer / Engineer's opinion, the cessation of works becomes necessary, owing to paucity of funds or due to court orders or from any other cause whatsoever. Notice in writing from the Employer / Engineer of such termination and reasons therefore, shall be conclusive evidence thereof.

18.3.2 In case of determination of contract on Employer / Engineer's account as described above, the claims of the Firm/Contractor towards expenditure incurred by him in the expectation of completing the whole works, shall be admitted and considered for payment as deemed reasonable and such claims should be supported by the documents / vouchers etc., to the satisfaction of Employer / Engineer.

The decision of the Employer / Engineer on the necessity and propriety of such expenditure shall be final and conclusive. However, the Firm/Contractor shall have no claim to any payment of compensation or otherwise, on account of any profit or advantage which he might have derived from the execution of the work in full but which he could not in consequence of determination of contract under this clause.

19.0 FOSSILS ETC

19.1 All fossils, coins, articles of value of antiquity and structures or other remains or things of geological or archaeological interest discovered on the site shall be deemed to be the property of the owner and the Contractor shall take reasonable precautions to prevent his workmen or any other person from removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal acquaint the Engineer of such discovery and carry out at the expenses of the Engineer's order as to the disposal of the same.

20.0 LABOUR RULES

20.1 The contractor will have to produce to the satisfaction of the accepting authority a valid and current license issued in his favour under the provision of Contract Labour (Regulation and Abolition) Act 1970, before starting the work, otherwise the Contractor shall have to face the further consequences.

20.2 The contractor shall have to follow all rules and regulations pertaining to payment of Minimum Wages Act as notified by C.G. Government applicable for Project Sites. The contractor shall also

be responsible for observance of labour regulations in respect of labour welfare PF & EI.

21.0 **PERFORMANCE GUARANTEE**

21.1. Within Fifteen days of issue of letter of acceptance from the Employer/ engineer the successful tenderer shall furnish to Employer/ engineer a **performance guarantee in the form of irrevocable bank guarantee amounting to 5% of original contract value** from any scheduled or nationalized bank of India in the Performa attached at **Annexure-I.**

21.2. Alternatively the firm can furnish the performance guarantee in the form of FDR from a scheduled or nationalized bank of India in favour of the Employer i.e. in DFCC.

21.3. No payment under the contract will be made to the firm without receipt of performance guarantee from the firm.

21.4. Failure of the successful tenderer to furnish the require performance guarantee shall be a ground for annulment of the contract and forfeiture of Bid Security.

21.5. In case of termination of contract on account of failure of the contractor performance guarantee shall be encashed.

21.6. In case the firm/ contractor fails to extend the validity of performance guarantee as desired by the Employer then the Employer may encash the performance guarantee of the firm/ contractor.

21.7. Release of performance guarantee:-The performance guarantee shall be released to the firm only after the physical completion of the work based on the completion certificate issued by competent authority stating that contractor has completed the work in all respect satisfactorily.

22.0 FORCE MAJEURE

22.1 War, invasion, revolution, riots, sabotage, lockouts, strikes, work shut downs imposed by Government, acts of Legislative or other Authorities, stoppage in supply of raw materials, fuel or electricity, breakdown of machinery, act of God, epidemics, fires, earthquakes, floods, explosives, accidents and navigation blockages, or any other acts or events whatsoever, which are beyond reasonable control of Contractor and which shall directly or indirectly prevent completion of the project within the time specified in the agreement, will be considered Force Majeure. Contractor shall be granted necessary extension of completion date to cover the delay caused by Force Majeure without any financial repercussions.

23.0 SETTLEMENT OF DISPUTES

23.1 All disputes or differences of any kind whatsoever that may arise between the Employer / Engineer and the in connection with or arising out of the contract or subject matter thereof or the execution of works, whether during the progress of works or after their completion, whether before or after determination of contract shall be settled as under:

23.2 **Mutual Settlement:-**All such disputes or differences shall in the first place be referred by the to the Employer in writing for resolving the same through mutual discussions, negotiations, deliberation etc. associating representatives from both the sides and concerted efforts shall be made for reaching amicable settlement of disputes or differences.

23.3 **Conciliation/Arbitration:-**is a term of this contract that Conciliation / Arbitration of disputes to settle shall not be commenced unless an

attempt has first been made by the parties to settles such disputes through mutual settlement.

23.4 If the is not satisfied with the settlement by the Employer on any matter in question, disputes or differences, the contractor may refer to the Managing Director of the Employer in writing to settle such disputes or differences through Conciliation or Arbitration provided that the demand for Conciliation or Arbitration shall specify the matters, which are in question or subject of the disputes or differences as also the amount of claim, item wise. Only such dispute(s), or difference(s) in respect of which the demand has been made, together with counter claims of the Employer shall be referred to Conciliator or Arbitrator as the case may be and other matters shall not be included in the reference.

23.5 Managing Director of the Employer may himself act as Sole Conciliator/Sole Arbitrator or may at his option appoint another person as Sole Conciliator or Sole Arbitrator, as the case may be. In case, Managing Director of the Employer decides to appoint a Sole Conciliator / Sole Arbitrator, then a panel of atleast three names will be sent to the Contractor. Such persons may be working / retired employees of the Employer who had not been connected with the work. The contractor shall suggest minimum two names out of this panel for appointment of Sole Conciliator / Sole Arbitrator. Managing Director of the Employer will appoint Sole Conciliator / Sole Arbitrator out of the names agreed by the Contractor._____ .

23.6 In case, the contractor opts for settlement of disputes through Conciliation at first stage and if the efforts to resolve all or any of the disputes thorough Conciliation fails, the contractor may refer to the Managing Director of the Employer for settlement of such disputes or differences through Arbitration. The appointment of Sole Arbitrator shall be done by the Managing Director of the

Employer as per the procedure described above. No disputes or differences shall be referred to Arbitration after expiry of 60 days from the date of notification of failure of Conciliation.

23.7 The Conciliation and / or Arbitration proceedings shall be governed by the provisions of the Indian Arbitration and Conciliation Act 1996 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the conciliation and arbitration proceedings under this clause.

23.8 The language of proceedings, documents or communications shall be in English and the award shall be made in writing in English language.

23.9 The conciliation / arbitration proceedings shall be held at a place decided by Conciliator / Arbitrator.

23.10 The fees and other charges of the Conciliator / Arbitrator shall be as per the scales fixed by the Employer and shall be shared equally between the Employer and the contractor .

23.11 **Settlement through Court:-**It is a term of this contract that the shall not approach any Court of Law for settlement of such disputes or differences unless an attempt has first been made by the parties to settle such disputes or differences through clauses of 23.

24 Suspension of work

24.1 The Obligations of the Employer, shall not be altered by reasons of conciliation / arbitration being conducted during the progress of works. Neither party shall be entitled to suspend the work on account of conciliation / arbitration and payments to the contractor shall continue to be made in terms of the contract.

25.0 Award to be binding on all parties

25.1 The award of the Sole Arbitrator, unless challenged in court of law,

shall be binding on all parties.

26.0 Exception

26.1 For settlement of disputes with central PSUs, the procedure as per existing orders of Permanent Machinery for Arbitration (PMA), Bureau of Public Enterprises, Govt. of India shall be followed.

27.0 Jurisdiction of Courts

27.1 Jurisdiction of courts for dispute resolution shall be New Delhi only.

SECTION 5

SPECIAL CONDITIONS OF CONTRACT AND SPECIFICATIONS

1. DETAIL SCOPE OF WORK INCLUDES :-

1.1 Survey of the Indicative Alignment :

1.1.1 Conducting detailed Engineering Construction survey for construction of double line electrified railway track as per the tentative alignment as shown in the bid document **at Annexure-III** both for parallel section and detour section or at any other location(s) as directed by the Engineer Incharge. While doing the above survey contractor should keep the track centres between the existing nearest IR track and adjacent DFC track as 10-15 meter in parallel portion. Selection of track centre should be based on constructability and feasibility of the new line, keeping in mind ground features such as major bridges or any other features which affects the seamless construction of DFCC.

1.1.2 In detour portion contractor should mark alternative alignments on the NRSA/Topo/Google/Quick Bird Sheets, showing the exact ground features for the detour alignment and arrive at the optimum alignment after traversing these alternative alignment routes. The alignment alternatives should be marked on NRSA/Google/Quick bird data sheets of 1.5 to 0.6m resolution, making trials and arriving at best fit economical alignment. The Contractor shall traverse along one or more routes using his own engineers, labour, tools & plant & equipment, materials, transportation with all lead and lifts to judge the feasibility of fixing the alignment on ground.

1.1.3 Contractor / firm shall conduct detailed Engineering Construction survey of DFCC's approved detour alignment using Total Station or any other advanced survey instruments. The survey must be completed as per the scope, terms of reference, relevant provisions of Indian Railways Code for Engineering Department (1999, Third Reprint) and special conditions of tender. During the survey the contractor should pick up all the topographical site details (i.e. existing ground feature details, ground levels and cross section at fix interval) upto 50m on either side of the proposed alignment.

1.1.4 Contractor should submit **Km wise strip map** showing all Topographical features – duly geo referenced in the corridor upto 50m on either side of the proposed alignment during the survey.

1.1.5 During the survey contractor should also pick up details of existing bridges like formation level, HFL, Free Board, foundation details if foundations are exposed, etc.

1.1.6 At the end of the survey contractor should submit the X,Y, Z coordinates of the centre line of adjacent DFC track from IR Track at every 100m and control points of traversing including their latitude and longitudes so that entire alignment can be geo-referenced.

1.1.7 The contractor has to carry out the selection of technically most suitable site for the bridge as close to the existing alignment as possible so as to ensure seamless construction of major bridge on DFC alignment without imposition of any speed restriction on the existing major bridge on IR Track.

1.1.8 Contractor should also collect the GAD of existing bridges of parallel portion from the concerned Zonal Railway or Divisional Office of Zonal Railway. DFCC will assist the contractor in this regard. For detour portion while doing the survey the contractor based on his own experience particularly the experience of Bridge Engineer should fix the number of bridges required and their

respective spans. These details are absolutely essential for making the estimates.

1.1.9 After doing the Detailed Construction Survey in all respect contractor should design the plan and profile of the section based on the typical cross section of Bank and Cutting as given in the bid document at **Annexure V,** and submit the same to DFCC for approval.

Note : The indicative list of all the Important, Major & Minor bridges on existing alignment of IR Track is attached as Annexure IV for guidance.

1.2 Stacking of finalised alignment.

1.2.1 The firm shall carry out the survey as indicated in para 1.1. The Firm/ Contractor shall carry out the work of transferring the finalized alignment on ground using Total Station based on the X, Y, Z coordinates of different points of the adjacent DFC track from nearest IR Track. Contractor shall fix up concrete pillars at every 500 m in straight portion of alignment & in curves, the concrete pillar should be fixed at every junction point of the straight and curve, Curve and straight etc. i.e. at T1, J1, J2 & T2 (J1 & J2 are junction points of transition with circular curve) . In addition to the fixing of above pillars, contractor shall be required to fix the CC muttams at every 100m on straight & at every 50m on curve portion. Alignment Pillars shall be fixed at both ends of each of the major bridges.

1.2.2 The concrete pillars shall be of pre-cast concrete of size 150x150x900 mm or more as per site requirement and shall be fixed firmly in the ground and also be engraved with details of curves as decided by the Engineer-in-charge.

1.3 PREPARATION OF LAND PLANS:

1.3.1 Contractor should prepare the Land Plan after approval of the designed alignment by DFCC. In the meantime Contractor should collect all necessary revenue Survey maps required for preparation of Land acquisition plans and proposals thereof from the concerned district authorities and then Land Plans should be prepared using plane table/any other survey technique (duly approved by DFCC) for the plot(s) of land required for the construction of DFC. The land plan based on Khasra & Khatoni Map should be prepared on Autocad and the DFCC alignment should be superimposed on it.

1.3.2 Identification & measurement of properties (such as Trees, structures, wells, gardens etc) coming on the area of land proposed to be acquired should be done. It also includes collecting details such as owner of property, type of structure, number of floors, land use pattern such as agriculture, commercial, barren, forest etc. **Consultant should also collect Khasra and Khatoni, detailed list of properties, like structure, garden etc. before submission of land plans and its notification under clause 20 (A) of Railways (Amendment) Act, 2008 for Special Railway Projects to DFCC.**

1.3.3 Government fees towards the collection of Khasra and Khatoni of individual title holder whose land is proposed to be acquired, will be reimbursed by DFCC.

1.3.4 After the completion of preparation of Land Plan and Land Acquisition Proposal Contractor shall submit a strip plan showing

various physical features existing on the land to be acquired like presence of structure, no. of floors, land use pattern, well, trees, gardens, etc.

1.4 PREPARATION OF LAND ACQUISITION PROPOSALS FOR NOTIFICATION UNDER SECTION 20(A) OF Railways (Amendment) Act, 2008 for Special Railway Projects.

1.4.1 Contractor / firm shall prepare land acquisition proposal in five copies in the format given by DFCC as per Railways (Amendment) Act, 2008 for Special Railway Projects. Land acquisition proposal should be both for area of land required for DFC construction.

1.5 FINDING OUT UTILITY SERVICES ALONG THE PROPOSED ALIGNMENT

1.5.1 Finding out utility services along the proposed alignment such as electrical line/poles, telephone line, high tension lines along with their voltage & sag height, OFC cables, existing RE cables & the location of SSP, SP, Quad cables, retaining walls, trees, pipelines for water, petrol or gas etc including preparation of kilometer wise plan showing all utility services which need to shifted before construction etc. complete. After identification of these utilities, contractor has to prepare their relocation plan in consultation with the concerned authorities. DFCC will assist the contractor in approaching various authorities for getting this job done.

1.5.2 Details of various utilities identified above should be exhibited on a strip map.

1.5.3 Contractor should also prepare the list of infringement (like signal cable, Jn. Box, or any other civil Engg. & Electrical structures etc.) wherever alignment is passing through the existing yards of Indian Railway.

2. PREPARATION OF DETAILED SCHEDULE OF QUANTITIES & ESTIMATES

Contractor/ Firm shall prepare detailed schedule of quantities for formation Quantity of earthwork, blanket, walling, side drains etc.), minor & major bridges, RUB etc. The estimates shall be updated to include items as per the latest practice of railway and railway board's instructions. The rates adopted for BOQ and detailed estimate should be latest and realistic. To calculate the realistic rates contractor/ firm shall study the availability of material required for earthwork, blanketing etc considering the lead involved and submit rate analysis to DFCC.

Based on the detailed schedule of quantities, contractor should prepare estimate as per Indian Railway format for New Line (Double Line) construction.

3. PREPARATION OF ENGINEERING SCALE PLAN OF THE YARDS :

Contractor should fix the location of Junction station and crossing stations in straight portion of the alignment where there is no change in grade wherever possible and prepare the Engineering Scale plan for Jn. Station and crossing stations. Contractor should also prepare the modified Engineering Scale plans of those IR yards through which DFC track is passing and affecting the existing yards. Detailed list of infringement like signal cables, Jn. Box, Civil Engg. Structures, Electrical structures, or any other structure coming on the DFC alignment should also be furnished for such yards.

4. PREPARATION OF PRESENTATION, DETAILED PROJECT REPORT

After the completion of the detailed construction survey and approval of the designed alignment (plan & profile) of the contractor by DFCC, contractor should prepare a detailed project report of the work to facilitate construction of DFC in the subject section. The detailed project should include the description of the project, general map, project at a glance,

methodology adopted for survey, description of route, characteristic of the project area, standard of construction, project engineering, cost estimates, list of curves, list of gradient, list of proposed Important, Major & minor bridges, RUB/ROBs, Rail Flyovers, list of level crossings, list of stations on DFC (both Jn. & crossing stations) and list of villages through which alignment is passing. **Detailed project report should also include the alignment marked in Red Color on the google map or the toposheets as decided by Engineer-in-charge.**

Contractor/ Firm shall prepare a comprehensive Power Point presentation for the subject work showing all important characteristic of the work.

Note : In the various items of tender schedule the unit of measurement is per route km, which means the linear length from one chainage point to the other chainage point. Each route km of Double line and yards will be treated as one km only not two or more kms. For single line portions and at the locations of flyovers etc the route km will be linear length from one chainage point to other chainage point.

5. SUBMISSION OF DOCUMENTS/REPORTS :

5.1 After the end of the work contractor should submit the following documents duly approved by field unit of DFCC to Corporate Office of DFCC for detailed scrutiny**.**

i) Detailed Project Report for Construction of Freight Corridor from Dankuni to Dhanbad (Excluding).

ii) Project sheets (Plan and Profile) of the subject section.

iii) Index Plan and Index Section & Roll diagram of the section.

iv) X, Y,Z coordinates of different points on centre line of the alignment of adjacent track of DFC from the nearest IR track, along with their latitude and longitudes, list of bench marks,

list of control traverse points and their coordinates (X,Y,Z, Latitude, Longitude).

v) **Land Plans duly signed by the concerned Competent Authorities notified for acquiring the land.**

vi) **Notification under Section 20(A) of Railways (Amendment) Act, 2008 for Special Railway Projects duly signed by the concerned Competent Authority.**

vii) **Yard Plans – Engineering Scale plans of Jn. And crossing stations and affected stations of IR through which DFC track is passing.**

viii) **Detailed Bill of Quantities and Detailed Estimate as per Railway format for new line Construction.**

ix) **Rate Analysis and Rate Reference**

x) **Strip Plan showing the various topographical features along the alignment Km wise in Autocad.**

xi) **Strip Plan showing the various utilities identified to be shifted along the alignment Km wise in Autocad.**

xii) **Strip plan showing various physical features existing on the land to be acquired like presence of structure, no. of floors, land use pattern, well, trees, gardens, etc.**

Note : Contractor should submit a time table for various deliverables.

6. TIME SCHEDULE

Time allowed for the work is **Nine months** including Monsoon and mobilisation of Man Power and Machineries etc. at site, which shall be reckoned from the day of the issue of letter of acceptance by DFCC. Tenderers must satisfy themselves that they would be able to complete the work within stipulated period. The work for all the important bridges has to be taken up simultaneously to achieve the work within the time period prescribed.

7. QUANTITY VARIATION:-

7.1 Procedure as detailed below shall be adopted for dealing with variation in quantities during execution of contract:-

(i) Variation will come into the picture when overall agreement value goes beyond 25% of the contracted cost.

(ii) For variation in Agreement value upto 25%, the contractor will be paid at the agreement rates. For any variation beyond 25% but upto 50% rates will have a reduction of 2% in the incremental value of the agreement beyond 25%. For Variation beyond +50% but upto +60% rates will have a reduction of 5% in the incremental value of the agreement beyond +50%.

(iii) Execution of quantities beyond 60% of the overall agreement value should not be permitted.

8. ADDITIONAL WORK:

Engineer or representative of DFCC shall have the power to make any alternation, deletion, addition or substitution in the original scope and specification of work and no claim whatsoever on account of the above shall be entertained except for the payment for the actual work done on agreemental rates for original items of the contract and mutually agreed and approved rates. The contractor shall not refuse to carryout any new item as directed by Engineer in-charge. However the rate shall be mutually decided and agreed by the contractor and DFCC.

9. PAYMENT SCHEDULE

9.1. Payments will be made as per the quantum of work done and certification thereon by the engineer nominated by the DFCC, as per the accepted rates terms and condition.

9.2. **On Account Payment**

9.2.1. The contractor shall be entitled to be paid from time to time normally once in a calendar month, by way of “On account” bills, only for such Works, as, in the opinion of the Engineer, the Contractor has executed in terms of the Contract.

9.2.2. The Contractor shall submit the on-account bills, by the date stipulated by the Engineer, supported with measurements, jointly acknowledged and accepted in the measurement books.

9.2.3. After preliminary scrutiny and certification and certification by the Engineer payment of 80% of the certified amount shall be made as far as possible by the Employer within 2 days but not later than 7 days. The amount certified shall account for all deductions, including statutory deductions, recoveries for advances and any amounts due from the Contractor. The balance 20% shall be paid within 28 days from the date of the preliminary certification of the bill by the Engineer.

9.2.4. Such payments made by the Employer, shall not constitute any acceptance of the measurements or bill of quantities by the Employer and the Employer shall have the right to alter, modify, reduce or diminish the quantities or classification entered in the Measurement Books or Bills. The Employer shall have right to recover any amount paid in the earlier bill from any subsequent bill and should the amount to be recovered be more than the amount of the subsequent bill, the Contractor shall on demand from the Engineer or Employer immediately refund the extra amount to the Employer within 7 days, failing which he shall have to pay interest @ 10% per annum with monthly rest till the said extra amount is paid back by him. In addition to above, if contractor claims more on-account payment than due, second time, the facility of making 80% on –account payment shall be withdrawn.

SECTION-6

Schedule of Quantities

Detail Engineering Construction Survey of the proposed alignment of the section, preparation of land Plan and Land Acquisition Proposal as per Railway (Amendment) Act, 2008, identification of utilities & preparation of schedule of quantities for construction of Dedicated Freight Corridor from Dankuni at Km 14.81 To Dhanbad at Km 270.88 (Approx. route length of 256 Kms) on Eastern Dedicated Freight Corridor (KM 00.00 starts from Howrah).					
	Item	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
1	Conducting detailed Engineering Construction survey for construction of double line electrified railway track as per the tentative alignment as shown in the bid document **at Annexure-III** both for parallel section and detour section or at any other location(s) as directed by the Engineer Incharge. While doing the above survey contractor should keep the track centres between the existing nearest IR track and adjacent DFC track as 10-15 meter in parallel portion. Selection of track centre should be based on constructability and feasibility of the new line, keeping in mind ground features such as major bridges or any other features which affects the seamless construction of DFCC. In detour portion contractor should mark alternative alignments on the NRSA/Topo/Google/Quick Bird Sheets, showing the exact ground features for the detour alignment and arrive at the optimum alignment after	Km	270	23750	6412500

	traversing these alternative alignment routes. The alignment alternatives should be marked on NRSA/Google/Quick bird data sheets of 1.5 to 0.6m resolution, making trials and arriving at best fit economical alignment. The Contractor shall traverse along one or more routes using his own engineers, labour, tools & plant & equipment, materials, transportation with all lead and lifts to judge the feasibility of fixing the alignment on ground. Contractor / firm shall conduct detailed Engineering Construction survey of DFCC's approved detour alignment using Total Station or any other advanced survey instruments. The survey must be completed as per the scope, terms of reference, relevant provisions of Indian Railways Code for Engineering Department (1999, Third Reprint) and special conditions of tender. During the survey the contractor should pick up all the topographical site details (i.e. existing ground feature details, ground levels and cross section at fix interval) upto 50m on either side of the proposed alignment.				

2	Transferring the finalized alignment on ground using Total station or any other survey instrument as approved by Engineer-in-charge. Contractor shall fix up a concrete pillar at every 500 m in straight portion of alignment & in curves the concrete pillar should be fixed at every junction point of the straight and curve, Curve and straight etc. i.e. at T1, J1, J2 & T2 (J1 & J2 are junction points of transition with circular curve) . In addition to above pillars contractor shall be required to fix the CC muttams at every 100m on a straight & at every 50m on curve portion. Alignment Pillar shall be fixed at both ends of each major bridge.	Km	270	13750	3712500
3	**Preparation of Land Plans:** Preparation of Land Plans using plane table/any other survey technique (duly approved by DFCC) along the existing track (if any) and both sides of proposed alignment for identification & measurement of adjoining properties required for superimposition of revenue record. It also includes collecting details such as owner of property, type of structure, number of floors, land use pattern such as agriculture, commercial, barren, forest etc. Collection of all necessary revenue Survey maps required for preparation of Land acquisition proposals. Consultant should also collect Khasra and Khatoni, detailed list of properties, like structure, garden etc. before submission of land plan and its notification under clause 20 (A) of the Special Land Acquisition Act, 2008 of Indian	Km	270	13800	3726000

	Railways. The land plan showing Khasra & Khatoni Map should be prepared on Autocad and the alignment should be superimposed on it.				
4	Preparation of land acquisition proposal (in five copies) for 20(A) notification as per the provisions of Special Land Acquisition Act of Indian Railways (2008). For preparing 20(A) notification contractor has to collect Khasra & Khatoni of individual title holder whose land is proposed to be acquired. This item also includes making the list of structures, properties etc. coming on the proposed alignment. This should be submitted alongwith the submission of land acquisition proposal. The Government fees towards the collection of Khasra & Khatoni will be reimbursed by DFCC.	Km	270	6702	1809540
5	Finding out utility services along the proposed alignment such as electrical line/poles, telephone line , high tension lines along with their voltage & sag height, OFC cables, existing RE cables, Quad cables, retaining walls, trees, pipelines for water, petrol or gas etc including preparation of kilometer wise plan showing all utility services which need to shifted before construction etc. complete. After identification of these utilities, contractor has to prepare their relocation plan and got it approved from the concerned authorities. DFCC will assist	Km	270	5,560	1501200

	the contractor in approaching various authorities for their relocation etc.				
6	Supplying precast M-20 RCC pillars of different sizes as per Scope of Work & Technical Specifications with Contractors' own materials, tools and plants including all leads and lifts and crossing of track etc. complete.	Nos.	2700	316	853200
7	Preparation of detailed schedule of quantities for formation work and the supply ballast for double line construction including crossing station and junction station. The BOQ should consists of Quantity of earthwork, blanket material, ballast, length of retaining walls, length of side drains) ,detailed quantities of various items of minor & major bridges and RUB and estimation thereof. The estimates shall be updated to include items as per the latest practice of railway and railway board's instructions. The rates adopted for schedule of quantities and detailed estimate should be latest and realistic. To calculate the realistic rates contractor/ firm shall study the availability of material required for earthwork, blanketing etc considering the lead involved and submit rate analysis to DFCC. Based on the detailed schedule of quantities, contractor should prepare estimate as per Indian Railway format for New Line (Double Line) construction.	Km	270	5435	1467450

8	Preparation of detailed presentation of the work done as per the scope of work and as & when required, marking of alignment on google image, Topo-sheet and preparation of detailed project report as directed by Engineer in Charge etc. complete.	Km	270	2500	675000
9	Preparation of Engineering Scale Plan of Jn. Stations and Crossing Stations by doing proper survey of the entire yard alongwith the plan, contractor has to submit detailed list of infringement (signaling, electrical and Civil etc) coming on the proposed alignment. The plan for Jn. Station should be got approved by the concerned Railway authorities and DFCC.	Each	8	40000	320000
	TOTAL FOR SCHEDULE Rs.				20477390

Note:- The payment shall be done as per the above schedule based on actual quantum of work done as certified by engineer in charge.

In figure:- ---------- % above/at par / or below

In words:- ---------- % above/at par / or below

The tenderer is required to quote the overall single percentage rate above / at par / or below. The tenderer quoting the rates for individual items will be disqualified. The tender is required to quote the rate in both words and figures. In case of any discrepancy, rate quoted in words shall prevail.

(Seal & Signature of bidder)

The payment shall be done as per the above schedule based on actual as certified by Engineer In charge

ANNEXURE – T - 1

BIDDER'S GENERAL INFORMATION

1-1 Bidder Name: _____

1-2 Number of Years in Operation:

_____

1-3 Registered Address: _____

_____

1-4 Operation Address if

different from above:

_____

1-5 Telephone Number _____

(Country Code) (Area Code) (Telephone Number)

1-6 E-mail address & Web Site _____

1-7 Telefax Number _____

(Country Code) (Area Code) (Telephone Number)

1-8 ISO Certification, if any {If yes, please furnish details}

1-9 PF / EPF Registration No.:

1-10 Service Tax No.:

1-11 Pan No.:

1-12 Bank A/C No with Bank code for electronic clearance of the payment.:

(Seal & Signature of bidder)

ANNEXURE – T - 2

LIST OF SIMILAR WORKS COMPLETED IN THE LAST 3 YEARS

Sl. No.	Description of work	Organisation for whom the work has been done	Approximate e value of the work at the time of award	Scheduled completion date	Date of actual completion &reason for delay	Final Value of the contract	Remarks

Note :- Experience certificate from Govt. Organisations/PSUs/ must be attached

(Seal & Signature of bidder)

ANNEXURE – T – 3

LIST OF SIMILAR WORKS ON HAND

Sl. No.	Description of work	Organization for whom the work is executed	Approximate value of the contract at the time of award	Scheduled date of completion	Balance work to be done	Remarks

Note: -.Work orders/ agreement copies of works in progress in Govt. Organisations/PSUs / must be enclosed.

(Seal & Signature of bidder)

ANNEXURE – T - 4

LIST OF EQUIPMENT

Sl. No.	Name and type of instrument/equipment	Qty	Model/ Sl. No.	Year of purchase	Remarks (Proof of purchase)
	DGPS				
	Total stations				
	Auto level				
	Others				

1. Photocopies of the invoices for GPS/ Total Station must be enclosed
2. Photocopies of the invoices for software's along with serial no., computers and peripherals required for preparation of maps must be enclosed.

(Seal & Signature of bidder)

ANNEXURE – T – 5

LIST OF COMPUTER & SOFTWARE

1 Photocopies of the invoices for software's along with serial no., computers and peripherals required for preparation of maps must be enclosed.

Sl. No.	Name and type of software	Qty	Model/ Sl. No.	Year of purchase	Remarks (Proof of purchase)

(Seal & Signature of bidder)

ANNEXURE – T - 6

The list of Key Personnel who under take the job which include the Team Leader(s) and the surveyors .

Sl. No.	Name of incum-bent	Professional Qualifi-cation	Areas of Speciali-zation	Total experience		Training	Date since Employed with consultant	Total No. of projects Completed
				Related field	Other Field			

(Seal & Signature of bidder)

ANNEXURE – T – 6A

PROFORMA FOR CURRICULUM VITAE

1. Name of Staff :
2. Proposed Position :
3. Profession :
4. Date of birth :
5. Years with Firm:
6. Nationality :
7. Tasks that would be assigned: In the survey project
8. Education :
9. Technical training other than academic qualification :
10. Membership of : professional bodies
11. Knowledge of :

Year	Degree/ Diploma	School/College	Main field

Computer application Word processing:

Spread sheet :

Data base : CAD : Programming :

12. Technical papers : Published
13. Foreign visit/work experience:
14. Award received :
15. Languages (indicate the degree of proficiency – good, fair, poor, nil):
16. Employment Record :

Language	Speaking	Reading	Writing

(Starting with the latest , furnish details in the following format)

From-To Employer: Position: Duties:

CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, this bio-data correctly

Describes my qualifications my experience and myself.

Place: Signature…….

Date: Name……..

Note :

1. Nothing to entered in this form. The Consultant shall use this format to furnish the details separately for each member of the staff- Team Leader(s) and all the surveyors who will be deployed on the survey project and not for other disciplines.

2. Information for each item shall be furnished. Where there is no any information (reply),'Nil' shall be entered.

ANNEXURE – I

PERFORMANCE BANK GUARANTEE (UNCONDITIONAL)

To DFCC Name & Address of Project.
[Acting through _____ (Project Incharge) & Address of the Project]
WHEREAS _____ [name and address of Consultant]

(hereinafter called “the Consultant”) has undertaken, in pursuance of Contract

No. _____ dated _____ to execute

_____ [name of contract and brief

description of works} (hereinafter called “the contract”).

AND WHEREAS it has been stipulated by you in the said Contract that the Consultant shall furnish you with a Bank Guarantee by a scheduled bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Consultant such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Consultant, upto a total of _____ [amount of Guarantee], _____ [amount in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ [amount of Guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Consultant before presenting us with the demand. We further agree that no change or addition to or

other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Consultant shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid upto _____ (a date 60 days from the date of completion of the work).

SIGNATURE AND SEAL OF THE GUARANTOR

Name of Bank: _____

Address: _____

Date: _____

ANNEXURE – II

FORM OF AGREEMENT

(To be executed on requisite value of stamp papers) AGREEMENT

THIS AGREEMENT made on _____ day of _____ (Month/year) between DFCC, 5th Floor, Pragati Maidan Metro Station Building Complex, New Delhi – 1, Ph.No. 011 – 23454680.

acting through (Project Head and name / address of the Project)

WHEREAS the Employer is desirous that certain works should be executed by

the Consultant viz. Contract No. _____ (hereinafter called "the works", and has accepted a Bid by the Consultant for the execution and completion of such works and the remedying of any defects therein.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expressions shall have the same meaning as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement:

a) Letter of Acceptance of Tender

b) Notice Inviting Tender

c) Instructions to the Tenderers

d) Conditions of the Contract

e) Bill of Quantities

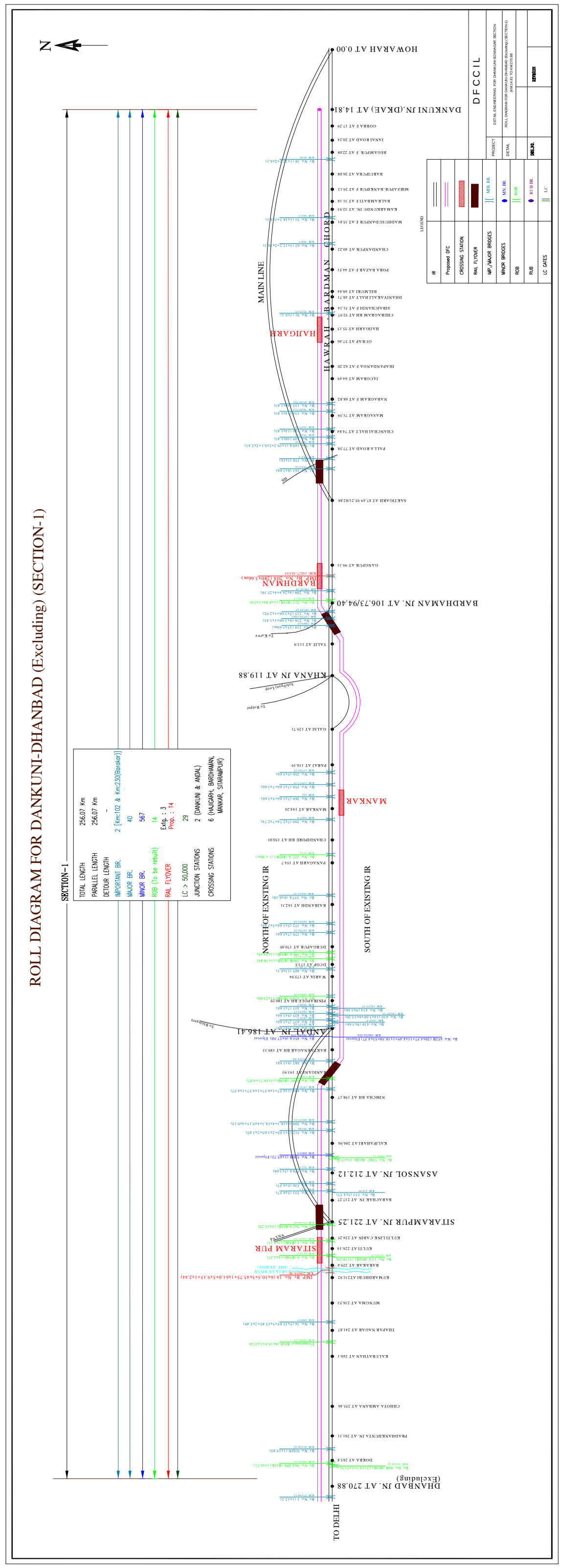
3. In consideration of the payments to be made by the Employer to the Consultant as hereinafter mentioned, the Consultant hereby convenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenant to pay the Consultant in consideration of the execution and completion of the Works and the remedying of defects therein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement executed the day and year first before written.

(Name, Designation and address of the authorised signatory)	(Name, Designation and address of the authorised signatory)
Signed for and on behalf of the Consultant in the presence of:	Signed for and on behalf of the Employer in the presence of:
Witness:	Witness:
1.	1.
2.	2.

Name and address of the witnesses to be indicated.


ROLL DIAGRAM FOR DANKUNI-DHANBAD (Excluding) (SECTION-1)
HOWRAH AT 0.00
DANKUNI JN.(DKAE) AT 14.81
BARDHAMAN JN. AT 106.73/94.40
KHANA JN AT 119.88
ANDAL JN. AT 186.41
ASANSOL JN. AT 212.12
SITARAMPUR JN. AT 221.25
DHANBAD JN. AT 270.88 (Excluding)
MAIN LINE
NORTH OF EXISTING IR
SOUTH OF EXISTING IR
TO DELHI
DFCCIL

INDICATIVE BRIDGE LIST ON EXISTING IR TRACK IN THE SUBJECT SECTION

Bridge List of Howrah Division (GC Line) -

Br No.	Section	STATE	KM	NO OF LINE	NO. OF SPAN	SPAN LENGTH		TYPE OF BRIDGE
						IN MTR	IN FT	
27	HWH - BWN Chord	West Bengal	15/3-5	3	1	0.91	3'-0"	Trough Plate
28	HWH - BWN Chord	West Bengal	16/1-3	2	1	1.83	6'-0"	RCC Slab
				1	1	1.83	6'-0"	RCC Box
29	HWH - BWN Chord	West Bengal	16/27-29	2	1	0.61	2'-0"	RCC Box
				1	1	0.61	2'-0"	Flat Top
30	HWH - BWN Chord	West Bengal	17/10-12	2	1	6.1	20'-0"	PSC Slab
				1	1	6.1	20'-0"	RCC Box
31	HWH - BWN Chord	West Bengal	18/3-5	2	1	3.66	12'-0"	FC Slab
				1	1	3.66	12'-0"	RCC Box
32	HWH - BWN Chord	West Bengal	19/17-19	2	1	1.83	6'-0"	FC Slab
				1	1	1.83	6'-0"	RCC Box
33	HWH - BWN Chord	West Bengal	20/23-25	3	1	3.66	12'-0"	RCC Box

34	HWH - BWN Chord	West Bengal	21/15-17	3	1	1.83	6'-0"	FC Slab 3rd line-RCC BOX
35	HWH - BWN Chord	West Bengal	21/31-22/1	3	1	0.91	3'-0"	Arch 3rd line-RCC BOX
36	HWH - BWN Chord	West Bengal	22/23-25	3	1	0.91	3'-0"	Arch 3rd line-RCC BOX
37	HWH - BWN Chord	West Bengal	23/25-27	3	1	1.83	6'-0"	FC Slab 3rd line-RCC BOX
38	HWH - BWN Chord	West Bengal	24.42	3	1	12.2	40'-0"	Semi Through Type Plate Girder
				3	2	6.1	20'-0"	FC Slab
39	HWH - BWN Chord	West Bengal	23/39-25/1	2	1	0.61	2'-0"	Flat Top
				1	1	0.91	3'-0"	RCC Box
40	HWH - BWN Chord	West Bengal	26/21-23	3	1	3.66	12'-0"	RCC Box

41	HWH - BWN Chord	West Bengal	26/29-31	3	1	0.91	3'-0"	Arch3rd line-RCC BOX
42	HWH - BWN Chord	West Bengal	27/7-9	3	1	0.91	3'-0"	FC Slab
43	HWH - BWN Chord	West Bengal	27/29-31	2	1	0.61	2'-0"	Flat Top
				1	1	0.91	3'-0"	RCC Box
44	HWH - BWN Chord	West Bengal	28/5-7	2	1	0.61	2'-0"	Flat Top
				1	1	0.91	3'-0"	RCC Box
45	HWH - BWN Chord	West Bengal	29/23-25	2	1	0.61	2'-0"	Flat Top
				1	1	0.91	3'-0"	RCC Box
46	HWH - BWN Chord	West Bengal	30/9-11	2	1	0.61	2'-0"	Flat Top
				1	1	0.91	3'-0"	RCC Box
47	HWH - BWN Chord	West Bengal	31/1-3	2	2	1.21	4'-0"	RCC Syphone
				1	1	3.05	10'-0"	RCC Box
48	HWH - BWN Chord	West Bengal	32/9-11	2	1	3.66	12'-0"	FC Slab
				1	1	3.66	12'-0"	RCC Box
49 (SKEW)	HWH - BWN Chord	West Bengal	32/27-29	2	1	8.53	28'-0"	Deck Type plate Gider

				1	1	8.53	28'-0"	Deck Type plate Gider
50	HWH - BWN Chord	West Bengal	32/33-35	2	4	0.91	3'-0"	Arch
				1	4	0.91	3'-0"	RCC Box
51	HWH - BWN Chord	West Bengal	33/7-9	2	1	0.91	3'-0"	Arch
				1	1	0.91	3'-0"	RCC Box
52	HWH - BWN Chord	West Bengal	33/23-25	2	1	0.91	3'-0"	Arch
				1	1	0.91	3'-0"	RCC Box
53	HWH - BWN Chord	West Bengal	34/1-3	1	1	18.3	60'-0"	DN-Semi Through Type Plate Girder
				2	3	6.1	20'-0"	FC Slab
54	HWH - BWN Chord	West Bengal	34/19-21	2	1	1.83	6'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
55	HWH - BWN Chord	West Bengal	34/31-35/1	2	1	1.83	6'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
56	HWH - BWN Chord	West Bengal	35/17-19	2	1	1.83	6'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
57	HWH - BWN Chord	West Bengal	36/1-3	2	1	1.83	6'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
58	HWH - BWN Chord	West Bengal	36/21-23	2	1	2.44	8'-0"	Arch
				1	1	2.44	8'-0"	RCC Box
59	HWH -	West	37/9-11	2	1	2.44	8'-0"	Arch

	BWN Chord	Bengal		1	1	2.44	8'-0"	RCC Box
60	HWH - BWN Chord	West Bengal	38/9/11	2	1	1.83	6'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
61	HWH - BWN Chord	West Bengal	38/29-31	2	2	1.83	6'-0"	Arch
				1	2	1.83	6'-0"	RCC Box
62	HWH - BWN Chord	West Bengal	39/8-5	2	3	12.2	40'-0"	Deck Type Plate Girder
				1	2	18.3	60'-0"	Semi Through Type Plate Girder
63	HWH - BWN Chord	West Bengal	39/6-8	2	1	0.91	3'-0"	Arch
				1	1	0.91	3'-0"	RCC Box
64	HWH - BWN Chord	West Bengal	40/27-29	2	2	0.91	3'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
65	HWH - BWN Chord	West Bengal	40/35-41/1	2	1	0.91	3'-0"	Arch
				1	1	0.91	3'-0"	RCC Box
66	HWH - BWN Chord	West Bengal	41/21-23	2	1	3.66	12'-0"	FC Slab
				1	1	3.66	12'-0"	RCC Box
67	HWH - BWN Chord	West Bengal	40/27-29	2	2	0.91	3'-0"	Arch
				1	1	1.83	6'-0"	RCC Slab
68	HWH - BWN Chord	West Bengal	42/11-13	2	3	0.91	3'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
					1	0.91	3'-0"	RCC Box

69	HWH - BWN Chord	West Bengal	42/17-19	2	2	1.22	4'-0"	FC Slab
				1	2	1.22	4'-0"	RCC Slab
70	HWH - BWN Chord	West Bengal	42/29-31	2	1	0.91	3'-0"	Arch
				1	1	0.91	3'-0"	RCC Slab
71	HWH - BWN Chord	West Bengal	43/3-5	2	2	0.91	3'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
72	HWH - BWN Chord	West Bengal	43/15-17	2	2	0.91	3'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
73	HWH - BWN Chord	West Bengal	43/27-29	2	2	1.21	4'-0"	RCC Box
				1	1	2.44	8'-0"	
74	HWH - BWN Chord	West Bengal	44/5-7	2	1	0.91	3'-0"	Arch
				1	1	1.21	4'-0"	RCC Box
75	HWH - BWN Chord	West Bengal	44/11-13	2	2	0.91	3'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
76	HWH - BWN Chord	West Bengal	44/21-23	2	3	1.83	6'-0"	Arch
				1	3	1.83	6'-0"	RCC Box
77	HWH - BWN Chord	West Bengal	45/13-15	2	2	0.91	3'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
78	HWH - BWN Chord	West Bengal	45/21-23	2	2	0.91	3'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
79	HWH - BWN Chord	West Bengal	46/33-35	3	2	0.91	3'-0"	FC Slab
80	HWH - BWN Chord	West Bengal	47/14-16	3	2	1.21	4'-0"	Arch
81	HWH - BWN Chord	West Bengal	48/10-12	3	1	1.83	6'-0"	Arch

82	HWH - BWN Chord	West Bengal	48/21-23	3	1	3.66	12'-0"	Shallow type girder
83	HWH - BWN Chord	West Bengal	49/5-7	2	2	3.66	12'-0"	Arch
				1	1	7.62		RCC Box
84	HWH - BWN Chord	West Bengal	49/22-24	3	1	3.66	12'-0"	Arch
85 (Skew)	HWH - BWN Chord	West Bengal	49/24-26	3	1	3.66	12'-0"	RCC Box
86	HWH - BWN Chord	West Bengal	50/3-5	3	1	3.66	12'-0"	Arch
87	HWH - BWN Chord	West Bengal	50/19-21	3	1	3.66	12'-0"	Arch
88	HWH - BWN Chord	West Bengal	50/29-51/1	3	1	3.66	12'-0"	FC Slab
89	HWH - BWN Chord	West Bengal	51/7-9	3	1	3.66	12'-0"	FC Slab
90	HWH - BWN Chord	West Bengal	51/17-19	3	1	3.66	12'-0"	Arch
91	HWH - BWN Chord	West Bengal	52/13-15	3	3	6.1	20'-0"	FC Slab
92	HWH - BWN Chord	West Bengal	52/19-21	3	3	2.44	8'-0"	Arch
93	HWH - BWN Chord	West Bengal	53/9-11	2	3	2.44	8'-0"	Slab Top
				1	3	2.44	8'-0"	RCC Box
94	HWH -	West	54/7-9	2	2	0.91	3'-0"	Arch

	BWN Chord	Bengal		1	1	1.83	6'-0"	RCC Box
95	HWH - BWN Chord	West Bengal	54/11-13	3	2	3.66	12'-0"	RCC Box
96	HWH - BWN Chord	West Bengal	54/21-23	2	1	1.22	4'-0"	Arch
				1	1	1.83	6'-0"	RCC Box
97	HWH - BWN Chord	West Bengal	55/26-28	2	7	1.22	4'-0"	Arch
				1	3	3.05	10'-0"	RCC Box
98	HWH - BWN Chord	West Bengal	56/31-33	2	2	0.91	3'-0"	RCC Box
				1	1	2.5	8'-2"	Trough Plate
99	HWH - BWN Chord	West Bengal	57/35-37	3	1	2.74	9'-0"	FC Slab
100	HWH - BWN Chord	West Bengal	58/12-14	3	2	0.91	3'-0"	Arch
101	HWH - BWN Chord	West Bengal	58/26-28	3	2	0.91	3'-0"	FC Slab
102	HWH - BWN Chord	West Bengal	58/31-33	3	1	1.83	6'-0"	FC Slab
103	HWH - BWN Chord	West Bengal	59/5-7	3	1	0.91	3'-0"	Arch
104	HWH - BWN Chord	West Bengal	59/23-25	3	2	1.22	4'-0"	Arch
105	HWH - BWN Chord	West Bengal	60/9-11	3	1	3.66	12'-0"	FC Slab
106	HWH - BWN Chord	West Bengal	60/28-30	3	2	3.66	12'-0"	FC Slab

107	HWH - BWN Chord	West Bengal	61/8-10	3	1	1.83	6'-0"	Arch
108	HWH - BWN Chord	West Bengal	61/25-27	3	2	0.91	3'-0"	Arch
109	HWH - BWN Chord	West Bengal	61/31-62/1	3	1	0.91	3'-0"	FC Slab
110	HWH - BWN Chord	West Bengal	62/19-21	3	3	1.83	6'-0"	Arch
111	HWH - BWN Chord	West Bengal	63/1-3	3	1	1.22	4'-0"	FC Slab
112	HWH - BWN Chord	West Bengal	63/5-7	3	2	0.91	3'-0"	Arch
113	HWH - BWN Chord	West Bengal	63/15-17	3	1	0.91	3'-0"	FC Slab
114	HWH - BWN Chord	West Bengal	63/29-31	3	2	0.91	3'-0"	FC Slab
115	HWH - BWN Chord	West Bengal	64/31-33	3	1	3.66	12'-0"	FC Slab
116	HWH - BWN Chord	West Bengal	65/7-9	3	1	0.91	3'-0"	FC Slab
117	HWH - BWN Chord	West Bengal	65/17-19	3	2	1.22	4'-0"	FC Slab
118	HWH - BWN Chord	West Bengal	65/21-23	3	1	0.91	3'-0"	FC Slab
119	HWH - BWN Chord	West Bengal	65/29-66/1	3	2	1.22	4'-0"	Arch

120	HWH - BWN Chord	West Bengal	66/7-9	3	3	1.52	5'-0"	Arch
121	HWH - BWN Chord	West Bengal	66/21-23	3	2	0.91	3'-0"	Arch
122	HWH - BWN Chord	West Bengal	67/3-5	3	1	6.1	20'-0"	FC Slab
123	HWH - BWN Chord	West Bengal	67/13-15	3	1	0.91	3'-0"	Arch
124	HWH - BWN Chord	West Bengal	68/11-13	3	1	0.91	3'-0"	Arch
125	HWH - BWN Chord	West Bengal	68/11-13	3	2	1.22	4'-0"	Arch
126	HWH - BWN Chord	West Bengal	68/23-25	3	1	0.91	3'-0"	Arch
127	HWH - BWN Chord	West Bengal	68/25-27	3	1	0.91	3'-0"	Arch
128	HWH - BWN Chord	West Bengal	68/29-69/1	3	1	0.91	3'-0"	Arch
129	HWH - BWN Chord	West Bengal	69/7-9	3	1	0.91	3'-0"	Arch
130	HWH - BWN Chord	West Bengal	69/11-13	3	1	0.91	3'-0"	Arch
131	HWH - BWN Chord	West Bengal	69/21-23	3	1	0.91	3'-0"	Arch
132	HWH - BWN Chord	West Bengal	69/23-25	3	1	0.91	3'-0"	Arch

133	HWH - BWN Chord	West Bengal	69/29-70/1	3	10	1.83	6'-0"	Arch
134	HWH - BWN Chord	West Bengal	70/29-71/1	3	14	1.83	6'-0"	Arch
135	HWH - BWN Chord	West Bengal	70/5-7	3	1	0.91	3'-0"	Arch
136	HWH - BWN Chord	West Bengal	71/39-72/1	1	2	0.91	3'-0"	FC Slab
137	HWH - BWN Chord	West Bengal	72/7-9	3	1	0.91	3'-0"	Arch
138	HWH - BWN Chord	West Bengal	72/15-17	3	1	0.91	3'-0"	FC Slab
139	HWH - BWN Chord	West Bengal	72/27-29	3	1	0.91	3'-0"	Arch
140	HWH - BWN Chord	West Bengal	72/31-73/1	3	2	6.1	20'-0"	FC Slab
141 (SKEW)	HWH - BWN Chord	West Bengal	73/1-3	3	1	1.83	6'-0"	Arch
142	HWH - BWN Chord	West Bengal	73/9-11	3	2	0.91	3'-0"	Arch
143	HWH - BWN Chord	West Bengal	73/19-21	3	2	1.22	4'-0"	Arch
144	HWH - BWN Chord	West Bengal	74/5-7	3	1	1.83	6'-0"	Arch
145	HWH - BWN Chord	West Bengal	74/11-13	3	3	1.83	6'-0"	Arch

146	HWH - BWN Chord	West Bengal	74/37-39	3	14	1.83	6'-0"	Arch
147	HWH - BWN Chord	West Bengal	75/5-7	3	1	0.91	3'-0"	FC Slab
148	HWH - BWN Chord	West Bengal	75/9-11	3	1	0.91	3'-0"	FC Slab
149	HWH - BWN Chord	West Bengal	75/13-15	3	10	1.83	6'-0"	Arch
149A (Skew)	HWH - BWN Chord	West Bengal	75/17-19	3	1	19.2	63'-0"	Semi thru Type plate Girder
				3	2	6.1	20'-0"	Slab
				3	2	2.43	8'-0"	Slab
150	HWH - BWN Chord	West Bengal	75/25-27	3	1	3.66	12'-0"	FC Slab
151	HWH - BWN Chord	West Bengal	73/1-3	3	8	0.91	3'-0"	Arch
152	HWH - BWN Chord	West Bengal	76/7-9	3	1	0.91	3'-0"	Arch
153	HWH - BWN Chord	West Bengal	76/13-15	3	3	1.22	4'-0"	FC Slab
154	HWH - BWN Chord	West Bengal	76/15-17	3	1	0.91	3'-0"	FC Slab
155	HWH - BWN Chord	West Bengal	76/21-23	3	1	0.91	3'-0"	FC Slab

156	HWH - BWN Chord	West Bengal	77/5-7	3	3	3.66	12'-0"	FC Slab
157	HWH - BWN Chord	West Bengal	77/31-33	3	1	0.91	3'-0"	Arch UP loop -Slab
158	HWH - BWN Chord	West Bengal	78/2-4	3	16	1.83	6'-0"	Arch
159	HWH - BWN Chord	West Bengal	78/7-9	3	1	1.83	6'-0"	Arch
160	HWH - BWN Chord	West Bengal	78/13-15	3	1	1.83	6'-0"	Arch
163	HWH - BWN Chord	West Bengal	79/12-14	3	8	3.66	12'-0"	FC Slab
165	HWH - BWN Chord	West Bengal	79.94	3	1	1.83	6'-0"	Arch
166	HWH - BWN Chord	West Bengal	80/1-3	3	4	3.66	12'-0"	FC Slab
167	HWH - BWN Chord	West Bengal	80/19-21	3	4	3.66	12'-0"	FC Slab
1	HWH - BWN M/L	West Bengal	95/1A-2A	2	1	0.91	3'-0"	Arch
2	HWH - BWN M/L	West Bengal	95/25-27	4	1	1.83	6'-0"	Arch
3	HWH - BWN M/L	West Bengal	95/27-29	4	1	1.37	4'-6"	Arch Semi
196	HWH - BWN M/L	West Bengal	96/7-9	4	2	2.44	8'-0"	Arch

197	HWH - BWN M/L	West Bengal	96/15-17	4	1	1.22	4'-0"	Arch
198	HWH - BWN M/L	West Bengal	96/25-27	4	2	1.83	6'-0"	Arch
199	HWH - BWN M/L	West Bengal	97/1-3	4	1	1.22	4'-0"	Arch
200	HWH - BWN M/L	West Bengal	97/17-19	4	1	1.22	4'-0"	Arch
201	HWH - BWN M/L	West Bengal	98/11-13	4	1	1.37	4'-6"	Arch
202	HWH - BWN M/L	West Bengal	98/17-19	4	1	1.22		Arch
203	HWH - BWN M/L	West Bengal	99/5-7	4	1	1.22		Arch
204	HWH - BWN M/L	West Bengal	99/17-19A	4	1	0.76	2'-6"	Arch
205	HWH - BWN M/L	West Bengal	100/1-3	4	1	1.22		Arch
206	HWH - BWN M/L	West Bengal	100/29-101/1	4	1	1.22	4'-0"	Arch
207	HWH - BWN M/L	West Bengal	101/27-29	4	1	3.66	12'-0"	Arch
208	HWH - BWN M/L	West Bengal	102/7-103/15	4	280	3.66	12'-0"	Arch
209	HWH - BWN M/L	West Bengal	104/16-18	2	4	24.4	80'-0"	Through Type

				2	4	25.38	83'-3"	Semi Through Type Plate Girder
210	HWH - BWN M/L	West Bengal	105/1-2	4	1	3.5		Arch
213 BWN ROB	HWH - BWN M/L	West Bengal	106/12-13		1	8.84	29'-0"	
					1	5.8	19'-0"	
					1	7.62	25'-0"	
					1	9.15	30'-0"	
					1	4.27	14'-0"	
214	HWH - BWN M/L	West Bengal	107/7A-9A	4	2	3.66	12'-0"	Arch
215	HWH - BWN M/L	West Bengal	107/19-21	4	5	3.66	12'-0"	Arch
				4	1	2.92	9'-7"	
216	HWH - BWN M/L	West Bengal	107/29-108/1	4	8	3.66	12'-0"	Arch
				4	1	1.83	6'-0"	

217	HWH - BWN M/L	West Bengal	108/4-6	4	1	1.83	6'-0"	Arch
218	HWH - BWN M/L	West Bengal	108/9-13	4	35	3.66	12'-0"	Arch
219	HWH - BWN M/L	West Bengal	109/4-5	4	1	3.66	12'-0"	Arch
219A	HWH - BWN M/L	West Bengal	110/20-22	4	1	6.1		FC Slab
220	HWH - BWN M/L	West Bengal	111/7-9	4	1	0.91	3'-0"	Arch
221	HWH - BWN M/L	West Bengal	111/23-25	4	1	0.91	3'-0"	Arch
222	HWH - BWN M/L	West Bengal	112/1-3	4	1	0.91	3'-0"	Arch
223	HWH - BWN M/L	West Bengal	113/3-5	4	1	0.91	3'-0"	Arch
224	HWH - BWN M/L	West Bengal	113/15-17	4	3	4.27	14'-0"	Arch
225	HWH - BWN M/L	West Bengal	114/16-18	4	1	2.44	8'-0"	Arch
226	HWH - BWN M/L	West Bengal	117/0-2	4	1	0.91	3'-0"	Arch
227	HWH - BWN M/L	West Bengal	118/3-5	4	1	1.83	6'-0"	Arch
228	HWH - BWN M/L	West Bengal	119/18	4	1	1.22	4'-0"	Arch

229	HWH - BWN M/L	West Bengal	120/60	4	1	0.91	3'-0"	Arch

List of Bridges in Asansol Division

Br No.	section	STATE	KM	NO OF LINE	NO. OF SPAN	SPAN LENGTH		TYPE OF BRIDGE
						IN MTR	IN FT	
230	KAN - STN	West Bengal	121/9-11	2	1	0.91	3'-0"	Arch-(Main line)
				2	1	0.91	3'-0"	Slab Top (Slow Lines)
231	KAN - STN	West Bengal	121/25	3	1	0.91	3'-0"	Arch (UP-1+DN-1+DN-2)
				1	1	1.22	4'-0"	FC slab (UP-2)
232	KAN - STN	West Bengal	123/1-3	4	1	1.22	4'-0"	Arch
233	KAN - STN	West Bengal	123/21-23	3	1	0.91	3'-0"	Arch(UP-1+DN-1+DN-2)
				1	1	0.91	3'-0"	FC slab(UP-2)
234	KAN - STN	West Bengal	124/9-11	2	1	0.61	2'-0"	Arch-MLs

				2	1	0.61	2'-0"	Hume pipe-Slow Lines
235	KAN - STN	West Bengal	125/3-5	2	1	0.91	3'-0"	Arch-MLs
				2	1	0.91	3'-0"	FC slab-Slow Lines
236	KAN - STN	West Bengal	125/13-15	2	2	1.22	4'-0"	Arch-UP-1+DN-1
				1	2	1.22	4'-0"	FC slab-DN-2
				1	1	3.66	12'-0"	FC slab-UP-2
237	KAN - STN	West Bengal	125/25-27	3	2	1.22	4'-0"	Arch(UP-1+DN-1+DN-2)
				1	1	3.66	12'-0"	FC slab(UP-2)
238	KAN - STN	West Bengal	127/7-9	4	1	1.22	4'-0"	Arch
239	KAN - STN	West Bengal	128/5-7	4	1	0.91	3'-0"	Arch
240	KAN - STN	West Bengal	129/0	4	1	0.91	3'-0"	Arch
241	KAN - STN	West Bengal	129/27	3	1	0.91	3'-0"	Arch(UP-1+DN-1+UP-2)

				1	1	0.91	3'-0"	FC slab(DN-2)
242	KAN - STN	West Bengal	129/57-61	4	1	0.61	2'-0"	Arch
243	KAN - STN	West Bengal	130/38-40	2	1	0.91	3'-0"	Arch-MLs
				2	1	0.91	3'-0"	FC slab-Slow Lines
244	KAN - STN	West Bengal	130/47-49	2	1	0.61	2'-0"	0.61-Hume pipe-MLs & 1.22-FC slab-Slow Lines
				2	1	1.22	4'-0"	
245	KAN - STN	West Bengal	131/9-11	3	1	0.91	3'-0"	Arch(UP-1+DN-1+DN-2)
				1	1	0.91	3'-0"	FC slab(UP-2)
245A	KAN - STN	West Bengal	131/25-27	4	3	3.66	12'-0"	FC slab
246	KAN - STN	West Bengal	132/7-9	2	1	0.91	3'-0"	Arch-MLs
				2	1	0.91	3'-0"	FC slab-Slow Lines
247	KAN - STN	West Bengal	132/25-27	2	1	0.61	2'-0"	Arch-MLs
				2	1	0.61	2'-0"	Hume pipe-Slow Lines
248	KAN - STN	West Bengal	133/5-7	2	1	0.91	3'-0"	Arch-MLs

				2	1	0.91	3'-0"	FC slab-Slow Lines
249	KAN - STN	West Bengal	134/7-9	2	1	0.91	3'-0"	Arch-MLs
				2	1	0.91	3'-0"	FC slab-Slow Lines
250	KAN - STN	West Bengal	134/21-23	2	1	0.91	3'-0"	Arch-MLs
				2	1	0.91	3'-0"	FC slab-Slow Lines
251	KAN - STN	West Bengal	135/17-19	2	1	0.61	2'-0"	Arch-MLs
				2	1	0.61	2'-0"	FC slab-Slow Lines
252	KAN - STN	West Bengal	135/43-136/1	2	1	0.61	2'-0"	Arch-MLs
				2	1	0.61	2'-0"	FC slab-Slow Lines
253	KAN - STN	West Bengal	136/33-35	2	1	0,61	2'-0"	Arch-MLs
				3	1	0.91	3'-0"	FC slab-Slow Lines
254	KAN - STN	West Bengal	136/43-45	2	1	1.22	4'-0"	Arch-MLs
				2	1	1.83	6'-0"	FC slab-Slow Lines
256	KAN - STN	West Bengal	137/25-27	4	5	3.66	12'-0"	Arch

257	KAN - STN	West Bengal	138/15-17	3	1	0.61	2'-0"	Arch(UP-1+DN-1+DN-2)
				1	1	0.61	2'-0"	Hume pipe(UP-2)
258	KAN - STN	West Bengal	139/17-19	3	7	3.66	12'-0"	Arch(UP-1+DN-1+DN-2)
				1	7	3.66	12'-0"	RC slab(UP-2)
259	KAN - STN	West Bengal	139/25-27	3	1	0.61	2'-0"	Arch(UP-1+DN-1+DN-2)
				1	1	0.61	2'-0"	FC slab(UP-2)
260	KAN - STN	West Bengal	140/0	3	1	0.61	2'-0"	Arch(UP-1+DN-1+DN-2)
				1	1	0.61	2'-0"	Hume pipe(UP-2)
261	KAN - STN	West Bengal	140/5-7	2	1	0.61	2'-0"	Arch-MLs
				2	1	0.61	2'-0"	Hume pipe-Slow Lines
264	KAN - STN	West Bengal	140/15-17	4	1	0.3	1'-0"	Hume pipe
265	KAN - STN	West Bengal	140/19-21	2	1	0.46	1'-6"	Arch-MLs

				2	1	0.46	1'-6"	Hume pipe-Slow Lines
266	KAN - STN	West Bengal	140/30-141/1	4	1	0.76	2'-6"	Hume pipe
267	KAN - STN	West Bengal	141/7-9	4	1	0.76	2'-6"	Hume pipe
268	KAN - STN	West Bengal	141/21-23	4	2	0.76	2'-6"	Arch
269	KAN - STN	West Bengal	142	3	7	3.66.	12'-0"	Arch(UP-1+DN-1+DN-2)
				1	5	3.66	12'-0"	RC slab(UP-2)
270	KAN - STN	West Bengal	142/9-11	3	1	1.29	4'-3"	Arch(UP-1+DN-1+DN-2)
				1	1	1.29	4'-3"	FC slab(UP-2)
271	KAN - STN	West Bengal	143/1-3	2	1	0.61.	2'-0"	Arch
				2	1	0.91	3'-0"	F.C.slab
272	KAN - STN	West Bengal	143/9-11	4	1	2.74	9'-0"	FC slab
273	KAN - STN	West Bengal	143/15-19	4	1	0.91	3'-0"	FC slab
274	KAN - STN	West Bengal	143.59	4	1	0.91	3'-0"	FC slab
275	KAN - STN	West Bengal	143.84	4	1	0.61	2'-0"	FC slab

276	KAN - STN	West Bengal	143.96	4	1	1.83	6'-0"	FC slab
277A	KAN - STN	West Bengal	144.17	4	1	0.53	1'-9"	Arch
277	KAN - STN	West Bengal	144.19	4	1	0.61	2'-0"	Arch
278	KAN - STN	West Bengal	144.25	4	1	0.61	2'-0"	Rail cluster
279	KAN - STN	West Bengal	144.42	2	2	0	0.66	CI pipe(UP-1)
				2	1	0.46	1'-6"	Hume pipe(DN-1)
280	KAN - STN	West Bengal	144.54	4	2	1.10	3'-7"	FC slab
281	KAN - STN	West Bengal	144.76	3	1	0.61	2'-0"	EW pipe(UP-1+DN-1+UP-2)
				1	1	0.61	2'-0"	FC slab(DN-2)
282	KAN - STN	West Bengal	145	4	1	0.61	2'-0"	Open top
283	KAN - STN	West Bengal	145.02	4	1	0.61	2'-0"	Hume pipe
284	KAN - STN	West Bengal	145.21	4	1	0.61	2'-0"	FC slab
285	KAN - STN	West Bengal	145.39	4	1	0.46	1'-6"	Hume pipe
286	KAN - STN	West Bengal	145.46	1	1	0.46	1'-6"	RC slab-UP-1 & Hume pipe-UP-2, DN-1, DN-2

				3	1	0.46	1'-6"	
287	KAN - STN	West Bengal	145.52	1	1	1	2'0"	RC slab(UP-1)
				3	1	0.46	1'-6"	Hume pipe(UP-2, DN-1, DN-2)
288	KAN - STN	West Bengal	145.69	1	1	0.61	2'-0"	RC slab(UP-1)
				3	1	0.61	2'-0"	Hume pipe(UP-2, DN-1, DN-2)
289	KAN - STN	West Bengal	146.1	4	1	0.61	2'-0"	Hume pipe
290	KAN - STN	West Bengal	146/7-9	2	7	2.74	9'-0"	Arch-MLs
				2	7	2.74	9'-0"	FC slab-Slow Lines
291	KAN - STN	West Bengal	146.39	2	1	1.22	4'-0"	Arch(UP-1+DN-1)
				2	1	1.22	4'-0"	FC slab(UP-2+DN-2)
292	KAN - STN	West Bengal	147	2	1	1.22	4'-0"	Arch(UP-1+DN-1)

				2	1	1.22	4'-0"	FC slab(UP-2+DN-2)
293	KAN - STN	West Bengal	147.05	1	1	0.61	2'-0"	RC slab(UP-1)
				3	1	0.61	2'-0"	Hume pipe(UP-2, DN-1, DN-2)
294	KAN - STN	West Bengal	147.16	4	1	0.46	1'-6"	Hume pipe
295	KAN - STN	West Bengal	147.22	4	1	0.46	1'-6"	Hume pipe
296	KAN - STN	West Bengal	147.32	3	1	0.46	1'-6"	Arch(DN-2)
				1	1	0.46	1'-6"	Hume pipe(UP-1, UP-2, DN-1)
297	KAN - STN	West Bengal	147.46	4	1	0.46	1'-6"	Hume pipe
298	KAN - STN	West Bengal	147.59	2	3	1.06	3'-6"	Arch(UP-1+DN-1)
				2	3	1.06	3'-6"	FC slab(UP-2+DN-2)
299	KAN - STN	West Bengal	147.62	4	1	3.05	10'-0"	FC slab

300	KAN - STN	West Bengal	147.69	3	1	0	0.00	0.31Hume pipe(UP-1, UP-2, DN-1)
				1	1	0.61	2'-0"	FC slab(DN-2)
301	KAN - STN	West Bengal	148.02	3	1	1	2.23	0.68-Hume pipe(UP-1, UP-2, DN-1)
				1	1	1.22	4'-0"	FC slab(DN-2)
302	KAN - STN	West Bengal	148.11	4	1	0.61	2'-0"	FC slab
303	KAN - STN	West Bengal	148.22	1	1	0.46	1'-6"	RC slab(UP-1)
				3	1	0.46	1'-6"	Hume pipe(UP-2, DN-1, DN-2)
304	KAN - STN	West Bengal	148.29	4	1	0.61	2'-0"	FC slab
305	KAN - STN	West Bengal	148.33	4	1	0.61	2'-0"	FC slab
306	KAN - STN	West Bengal	148.42	4	1	0.61	2'-0"	FC slab
307	KAN - STN	West Bengal	148.56	1	1	0.46	1'-6"	RC slab(UP-1))

				3	1	0.46	1'-6"	Hume pipe(UP-2, DN-1, DN-2)
308	KAN - STN	West Bengal	148.76	1	1	0.46	1'-6"	RC slab(UP-1)
				3	1	0.46	1'-6"	Hume pipe(UP-2, DN-1, DN-2)
309	KAN - STN	West Bengal	149.1	4	1	0.30	0.98	Hume pipe
310	KAN - STN	West Bengal	149.23	2	1	0.61	2'-0"	Hume pipe(UP-1+DN-1)
				2	1	0.61	2'-0"	FC slab(UP-2+DN-2)
311	KAN - STN	West Bengal	149.27	4	1	0.30	0.98	Hume pipe
312	KAN - STN	West Bengal	149.34	4	2	0.61	2'-0"	Hume pipe
313	KAN - STN	West Bengal	149.73	2	1	0.46	1'-6"	FC slab(UP-1+DN-1)
				1	1	0.46	1'-6"	Hume pipe(UP-2)
				1	1	0.46	1'-6"	Arch(DN-2)
314	KAN - STN	West Bengal	149.77	4	1	0.46	1'-6"	Arch

315	KAN - STN	West Bengal	150.22	2	1	0.46	1'-6"	RC slab(UP-1+DN-1)
				2	1	0.46	1'-6"	Hume pipe(UP-2+ DN-2)
316	KAN - STN	West Bengal	150.29	4	1	0.61	2'-0"	FC slab
317	KAN - STN	West Bengal	150.41	4	1	0.46	1'-6"	Hume pipe
318	KAN - STN	West Bengal	150.76	4	1	0.30	0.98	Hume pipe
319	KAN - STN	West Bengal	150.97	4	1	0.38	1'-3"	Hume pipe
320	KAN - STN	West Bengal	151.26	4	1	0.30	0.98	Hume pipe
321	KAN - STN	West Bengal	151.29	4	1	0.30	0.98	Hume pipe
322	KAN - STN	West Bengal	152.29	1	1	0.61	2'-0"	RC slab(DN-2)
				1	1	0.61	2'-0"	Hume pipe9UP-2)
				2	1	0.61	2'-0"	Arch(UP-1+DN-1)
322A ROB Panagarh	KAN - STN	West Bengal			1	50.00		
323	KAN - STN	West Bengal	152.48	4	1	0.61	2'-0"	FC slab
324	KAN - STN	West Bengal	153/1	4	6	2.74	9'-0"	Arch

325	KAN - STN	West Bengal	154.28	4	1	0.30	0.98	Hume pipe
326	KAN - STN	West Bengal	154.39	2	1	0.91	3'-0"	RC slab(UP-2+DN-2)
				2	1	0.91	3'-0"	Arch(UP-1+DN-1)
327	KAN - STN	West Bengal	154.52	4	1	0.61	2'-0"	Hume pipe
328	KAN - STN	West Bengal	154.75	2	1	1	3'-0"	Arch(UP-1+DN-1)
				2	1	0.61	2'-0"	Hume pipe (UP-2 + DN-2)
329	KAN - STN	West Bengal	155.09	4	1	0.91	3'-0"	Arch
330	KAN - STN	West Bengal	155.16	2	1	0.91	3'-0"	RC slab(UP-1+DN-1)
				2	1	0.91	3'-0"	Hume pipe(UP-2+ DN-2)
331	KAN - STN	West Bengal	155.76	4	1	0.61	2'-0"	Hume pipe
332	KAN - STN	West Bengal	155.84	1	1	0.61	2'-0"	RC slab(UP-1)

				3	1	0.61	2'-0"	Hume pipe(UP-2+DN-1+ DN-2)
333	KAN - STN	West Bengal	155.92	4	1	0.46	1'-6"	Hume pipe
334	KAN - STN	West Bengal	155.97	4	1	0.61	2'-0"	FC slab
335	KAN - STN	West Bengal	156.02	2	1	0.61	2'-0"	Flat top(UP-1+DN-1)
				2	1	0.61	2'-0"	Hume pipe(UP-2+ DN-2)
336	KAN - STN	West Bengal	156.14	4	1	0.61	2'-0"	FC slab
337	KAN - STN	West Bengal	156.27	4	1	0.46	1'-6"	Hume pipe
338	KAN - STN	West Bengal	156.29	4	1	0.30	0.98	Hume pipe
339	KAN - STN	West Bengal	156.32	4	1	0.46	1'-6"	Hume pipe
340	KAN - STN	West Bengal	156.49	4	1	1.53	5.02	FC slab
341	KAN - STN	West Bengal	156.62	2	1	0.46	1'-6"	RC slab(UP-1+UP-2)
				2	1	0.46	1'-6"	Hume pipe(DN-1+ DN-2)
342	KAN - STN	West Bengal	156.74	2	1	0.46	1'-6"	RC slab(UP-1+UP-2)

				2	1	0.46	1'-6"	Hume pipe(DN-1+ DN-2)
343	KAN - STN	West Bengal	157.29	2	1	3	9'-0"	FC slab(UP-1+DN-1)
				2	1	3.05	10'-0"	
344	KAN - STN	West Bengal	157.44	4	1	0.61	2'-0"	Hume pipe
345	KAN - STN	West Bengal	157.56	4	1	0.61	2'-0"	Hume pipe
346	KAN - STN	West Bengal	158.12	4	1	0.91	3'-0"	FC slab
347	KAN - STN	West Bengal	158.53	2	1	0.91	3'-0"	Arch(UP-1+DN-1)
				2	1	0.91	3'-0"	FC slab(UP-2+ DN-2)
348	KAN - STN	West Bengal	158.55	4	1	0.61	2'-0"	Arch
349	KAN - STN	West Bengal	158.64	4	1	0.91	3'-0"	FC slab
350	KAN - STN	West Bengal	159	4	1	1.83	6'-0"	FC slab
351	KAN - STN	West Bengal	159.19	4	2	0.91	3'-0"	Arch
352	KAN - STN	West Bengal	159.52	4	4	0.61	2'-0"	Hume pipe
353	KAN - STN	West Bengal	160/11	4	1	0.61	2'-0"	FC slab
354	KAN - STN	West Bengal	160/19	3	1	2.74	9'-0"	Arch(UP-1+DN-1+DN-2)
				1	1	2.74	9'-0"	FC Slab

355	KAN - STN	West Bengal	160/25-27	4	1	3.05	10'-0"	FC slab
356	KAN - STN	West Bengal	161/7-9	4	2	1.22	4'-0"	Arch
357	KAN - STN	West Bengal	161/13-17	5	1	0.61	2'-0"	FC slab
357A	KAN - STN	West Bengal	161/21-23	5	8	6.10	20'-0"	FC slab
358	KAN - STN	West Bengal	162/31-33	3	1	1.22	4'-0"	Arch-MLs
				2	1	1.22	4'-0"	FC slab-Slow Lines
359	KAN - STN	West Bengal	162/51-53	5	1	2.74	9'-0"	Arch
360	KAN - STN	West Bengal	162/57-59	4	1	2.74	9'-0"	Arch
361	KAN - STN	West Bengal	163/9-11	4	1	0.91	3'-0"	Arch
362	KAN - STN	West Bengal	163/19	4	1	1.83	6'-0"	Arch
363	KAN - STN	West Bengal	163/23-25	4	2	2.74.	9'-0"	Arch(ML+Upslow)
				4	2	3.05	10'-0"	Arch(DN-slow)
364	KAN - STN	West Bengal	163/29-31	4	1	1.22	4'-0"	Arch
365	KAN - STN	West Bengal	163/37-39	4	1	2.74	9'-0"	Arch
366	KAN - STN	West Bengal	163/41-164/1	4	1	1.83	6'-0"	Arch
367	KAN - STN	West Bengal	164/11-13	4	1	0.46	1'-6"	Hume pipe
368	KAN - STN	West Bengal	164/23-25	4	2	2.74	9'-0"	Arch
369	KAN - STN	West Bengal	164/31-165/0	4	1	1.83	6'-0"	Arch

370	KAN - STN	West Bengal	165/5-7	2	1	0.61	2'-0"	Arch-MLs &
				2	1	0.61	2'-0"	Hume pipe-Slow Lines
371	KAN - STN	West Bengal	165/9-11	4	1	0.61	2'-0"	Arch
372	KAN - STN	West Bengal	165/23-25	3	5	3.66	12'-0"	Arch(UP-1+DN-1+DN-2)
				1	5	3.66	12'-0"	FC slab(UP-2)
373	KAN - STN	West Bengal	166/15-17	4	2	0.76	2'-6"	Rail cluster
374	KAN - STN	West Bengal	166/23	4	2	1.83	6'-0"	Arch
375	KAN - STN	West Bengal	166/29	4	1	0.61	2'-0"	Arch
376	KAN - STN	West Bengal	167/3-5	2	1	0.46	1'-6"	Arch-MLs
				2	1	0.46	1'-6"	Hume pipe-Slow Lines
377	KAN - STN	West Bengal	167/5-7	4	1	1.37	4'-6"	Arch
378	KAN - STN	West Bengal	167/13	2	1	0.61	2'-0"	RC slab-MLs
				2	1	0.61	2'-0"	& Hume pipe-Slow Lines
379	KAN - STN	West Bengal	167/21-23	4	7	3.66	12'-0"	Arch

380	KAN - STN	West Bengal	167/29-31	4	2	1.83	6'-0"	Arch
381	KAN - STN	West Bengal	167/31-33	3	1	1	3'-0"	Hume pipe(UP-1+DN-1+UP-2)
				1	1	1.22	4'-0"	Arch(DN-2)
382	KAN - STN	West Bengal	168/3-5	4	1	0.61	2'-0"	Arch
383	KAN - STN	West Bengal	168/11-13	4	1	0.61	2'-0"	FC slab
384	KAN - STN	West Bengal	168/19-21	4	2	1.83	6'-0"	Arch
385	KAN - STN	West Bengal	168/23-25	4	2	1.22	4'-0"	Arch
386	KAN - STN	West Bengal	168/27-169/1	4	1	1.22	4'-0"	Arch
387	KAN - STN	West Bengal	169/5-7	2	1	2.74	9'-0"	Arch-MLs
				2	1	3.05	10'-0"	FC slab-slow lines
388	KAN - STN	West Bengal	169/11	2	1	2.74	9'-0"	Arch-MLs
				2	1	3.05	10'-0"	FC slab-slow lines
389	KAN - STN	West Bengal	169/19-21	1	1	0.61	2'-0"	Arch(UP-1)
				3	1	0.61	2'-0"	FC slab(DN-1+UP-2+DN-2)

390	KAN - STN	West Bengal	169/25-27	3	1	2.74	9'-0"	Arch(UP-1+DN-1+UP-2)
				1	1	3.05	10'-0"	FC slab(Dn-2)
391	KAN - STN	West Bengal		2	1	0.38	1'-3"	CI pipe-MLs
			169/25-27	2	1	0.38	1'-3"	Hume pipe-Slow Lines
393	KAN - STN	West Bengal	170/3	3	1	1	3'-0"	Arch(UP-1+DN-1+UP-2)
				1	1	1.22	4'-0"	FC slab(DN-2)
394	KAN - STN	West Bengal	170/25	9	2	1.83	6'-0"	Arch
395	KAN - STN	West Bengal	170.64	4	3	1.22	4'-0"	Arch
396	KAN - STN	West Bengal	170.92	4	1	0.76	2'-6"	RC slab
396A	KAN - STN	West Bengal	171/21-23		1	24.38	80'-0"	Arch
396B	KAN - STN	West Bengal	171/23-25		1	30.48	100'-0"	RCC GIRDER
397	KAN - STN	West Bengal	172.22	3	2	0.91	3'-0"	FC slab(UP-1+DN-1+UP-2)
				1	1	3.05	10'-0"	FC slab(DN-2)

398	KAN - STN	West Bengal		3	2	0.91	3'-0"	FC slab(UP-1+DN-1+UP-2)
			172.3	1	1	3.05	10'-0"	FC slab(DN-2)
399	KAN - STN	West Bengal	172.41	4	1	1.83	6'-0"	FC Slab
400	KAN - STN	West Bengal	172.38	2	2	0.91	3'-0"	Arch(UP-1+DN-1)
				2	2	0.91	3'-0"	FC slab(UP-2+DN-2)
401	KAN - STN	West Bengal	172.38	2	2	0.91	3'-0"	Arch9UP-1+DN-1)
				2	2	0.91	3'-0"	FC slab(UP-2+DN-2)
402	KAN - STN	West Bengal	172.68	4	3	0.91	3'-0"	Arch
403	KAN - STN	West Bengal	172.79	4	2	1.83	6'-0"	Arch
404	KAN - STN	West Bengal	173.07	4	2	1.83	6'-0"	Arch
405	KAN - STN	West Bengal	173/9-13	4	13	6.1	20'-0"	Arch
406	KAN - STN	West Bengal	173.58	4	2	1.83	6'-0"	Arch
407	KAN - STN	West Bengal	173.79	4	1	2.74	9'-0"	FC slab
408	KAN - STN	West Bengal	175.09	2	1	0.46	1'-6"	Arch-MLs
				2	12	0.48	1'-6"	Hume pipe-slow lines
409	KAN - STN	West Bengal	175.12	2	1	0.46	1'-6"	RC slab-MLs

				2	1	0.48	1'-6"	Hume pipe-slow lines
410	KAN - STN	West Bengal	175.63	4	2	1.22	4'-0"	Arch
411	KAN - STN	West Bengal	176.11	4	2	1.22	4'-0"	Arch
412	KAN - STN	West Bengal	176.25	2	1	0.91	3'-0"	Arch-MLs
				2	1	0.91	3'-0"	Hume pipe-slow lines
413	KAN - STN	West Bengal	176.76	4	2	0.3	1'-0"	Hume pipe
414	KAN - STN	West Bengal	176.79	4	1	0.38	1'-3"	Hume pipe
415	KAN - STN	West Bengal	177.23	4	1	0.91	3'-0"	RC slab
416	KAN - STN	West Bengal	177.52	4	1	0.38	1'-3"	Hume pipe
417	KAN - STN	West Bengal	177.71	2	1	0.91	3'-0"	Arch-MLs + FC slab-slow lines
				2	1	1.22	4'-0"	
418	KAN - STN	West Bengal	178.13	3	1	3.05	10'-0"	RC slab(UP-1+DN-1+UP-2)
				1	1	3.66	12'-0"	FC slab(DN-2)
419	KAN - STN	West Bengal	178.25	5	1	2.44	8'-0"	Arch
420	KAN - STN	West Bengal	178.41	5	4	1.83	6'-0"	Arch
420A	KAN - STN	West Bengal	178.62	5	1	4.53	14'-10"	FC slab
421	KAN - STN	West Bengal	178.64	5	2	1.83	6'-0"	Arch

422	KAN - STN	West Bengal	178.78	5	1	1.83	6'-0"	Arch
423	KAN - STN	West Bengal	179.28	2	1	0.61	2'-0"	Arch-MLs
				2	1	0.61	2'-0"	FC slab-slow lines
424	KAN - STN	West Bengal	179.42	5	1	1.22	4'-0"	Arch
425	KAN - STN	West Bengal	179.72	4	1	1.83	6'-0"	Arch
426	KAN - STN	West Bengal	180/11-13	4	1	0.46	1'-6"	Hume pipe
427	KAN - STN	West Bengal	180/17-19	4	1	1.22	4'-0"	Arch
428	KAN - STN	West Bengal	180/21-23	4	1	1.22	4'-0"	Arch
428A	KAN - STN	West Bengal	180/24-26		1	25.00		COMP GIRDER ROB
				4	2	7.65		
429	KAN - STN	West Bengal	180/28-181/0	4	1	0.91	3'-0"	Arch
430	KAN - STN	West Bengal	181/9-11	4	1	0.61	2'-0"	FC Slab
431	KAN - STN	West Bengal	181/11-13	3	1	0.61	2'-0"	Arch relieved by RC slab(UP-I&DN-I) FC slab(UP-IIDN-II)
				1	1	0.91	3'-0"	FC slab(DN-2)
432	KAN - STN	West Bengal	181/19-21	4	1	0.61	2'-0"	Arch relieved by RC slab
433	KAN - STN	West Bengal	182/0-1	4	7	3.66	12'-0"	Arch

434	KAN - STN	West Bengal	182/13-15	4	9	3.66	12'-0"	RC slab
435	KAN - STN	West Bengal	182/15-17	4	9	3.66	12'-0"	RC slab
436	KAN - STN	West Bengal	182/27-33	4	14	3.66	12'-0"	FC slab (7 nos at each end)
				4	6	12.20	40'-0"	Deck type plate girders
437	KAN - STN	West Bengal	183/2-3	4	7	3.66	12'-0"	RC slab
438	KAN - STN	West Bengal	183/7-9	4	9	3.66	12'-0"	RC slab
439	KAN - STN	West Bengal	183/17-19	4	9	3.66	12'-0"	RC slab
440	KAN - STN	West Bengal	183/19-21	4	2	1.83	6'-0"	Arch
441	KAN - STN	West Bengal	183/23-25	4	1	3.05	10'-0"	FC slab(UP-I+UP-2+loop+DN-I)
				1	1	3.05	10'-0"	RC slab(DN-2)
442	KAN - STN	West Bengal	183/29-31	5	1	0.61	2'-0"	Slab top
443	KAN - STN	West Bengal	184/9-11	3	1	0.61	2'-0"	Arch(UP-I+DN-I+DN-2)
				1	1	0.61	2'-0"	RC Slab(UP-2)
				1	1	0.61	2'-0"	Pipe-loop
444	KAN - STN	West Bengal	184/15-17	3	1	0.46	1'-6"	Arch(UP-I+DN-I+DN-2)

				1	1	0.46	1'-6"	Pipe(UP-2)
446	KAN - STN	West Bengal	184/23-25	2	1	0.61	2'-0"	Arch(UP-I+DN-I)
				2	1	0.61	2'-0"	Hume pipe(UP-2+DN-2)
450	KAN - STN	West Bengal	185/27-29	4	1	0.61	2'-0"	Rail cluster
451	KAN - STN	West Bengal	186/5-7	4	3	0.91	3'-0"	Arch
451A	KAN - STN	West Bengal	186/9A-13A	1	6	17.50		Semi through type girder
452A	KAN - STN	West Bengal	186.45	4	2	3.05	10'-0"	FC slab
452B	KAN - STN	West Bengal	186/3A-23A	1	20	4.57	15'-0"	RC slab
				1	11	4.49	14'-9"	RC slab
				1	1	18.30	60'-0"	Deck type plate girders
				1	53	4.57	15'-0"	RC slab
453	KAN - STN	West Bengal	186/25-27	7	1	3.05	10'-0"	CI pipe
455	KAN - STN	West Bengal	187/19-21	4	1	0.91	3'-0"	Slab top
456	KAN - STN	West Bengal	187/29-31	3	1	2.74	9'-0"	RC slab(UP-I+DN-I+DN-2)
				1	1	2.74	9'-0"	FC slab(UP-2)
457	KAN - STN	West Bengal	187/31-188/1	4	1	1.22	4'-0"	Arch
458	KAN - STN	West Bengal	188/1-3	4	2	1.83	6'-0"	Arch

459	KAN - STN	West Bengal	188/5-7	4	1	1.22	4'-0"	Arch
460	KAN - STN	West Bengal	188.33	4	1	1.22	4'-0"	Arch
461	KAN - STN	West Bengal	188/13-15	4	1	0.46	1'-6"	Slab top
462	KAN - STN	West Bengal	188/15-17	3	1	1	4'-0"	Arch9UP-I+DN-I+DN-2)
				1	1	1.52	5'-0"	RC slab(UP-2)
463	KAN - STN	West Bengal	188/19-21	3	1	0.91	3'-0"	Arch(UP-I+DN-I+DN-2)
				1	1	0.91	3'-0"	RC slab(UP-2)
464	KAN - STN	West Bengal	188/21-23	1	1	0.91	3'-0"	Arch(DN-2)
				3	1	0.91	3'-0"	RC slab(UP-I+UP-2+DN-I)
465	KAN - STN	West Bengal	188/23-25	4	1	0.91	3'-0"	Hume pipe
466	KAN - STN	West Bengal	188/25-27	1	2	0.91	3'-0"	Arch(DN-2)
				3	2	0.91	3'-0"	RC slab(UP-I+UP-2+DN-I)
467	KAN - STN	West Bengal	189/1-3	3	2	0.91	3'-0"	Arch(UP-I+DN-I+DN-2)
				1	2	0.91	3'-0"	RC slab(UP-2)
				1	2	0.91	3'-0"	Hume pipe-DSP

469	KAN - STN	West Bengal	189/5-7	3	2	0.91	3'-0"	Arch(UP-I+DN-I+DN-2)
				1	2	0.91	3'-0"	RC slab(UP-2)
				1	2	0.91	3'-0"	Hume pipe-DSP
471	KAN - STN	West Bengal	189/11-13	3	1	0.61	2'-0"	RC slab(UP-I+DN-I+DN-2)
				1	1	0.61	2'-0"	Hume pipe(UP-2)
473	KAN - STN	West Bengal	189/27-29	5	1	0.46	1'-6"	RC slab
474	KAN - STN	West Bengal	189/31-190/1	4	1	1.83	6'-0"	RC slab
475	KAN - STN	West Bengal	189/31-190/1	3	2	1.22	4'-0"	Arch(UP-I+DN-I+DN-2)
				1	2	1.22	4'-0"	RC slab(UP-2)
476	KAN - STN	West Bengal	190/3A-5A	3	2	0.91	3'-0"	Arch(UP-I+DN-I+DN-2)
				1	2	0.91	3'-0"	RC slab(UP-20
477	KAN - STN	West Bengal	190/5A-7A	4	1	0.61	2'-0"	Slab top
478	KAN - STN	West Bengal	190/15 A-17A	4	3	1.22	4'-0"	Arch
479	KAN - STN	West Bengal	190/17 A-19A	4	1	1.22	4'-0"	Arch
480	KAN - STN	West Bengal	190/21 A-23A	4	2	1.22	4'-0"	Arch
482	KAN - STN	West Bengal	191/ 4A-6A	4	8	3.66	12'-0"	Arch

483	KAN - STN	West Bengal	191/19 A-21A	4	1	1.83	6'-0"	Arch
484	KAN - STN	West Bengal	191/26 A-28A	4	1	1.83	6'-0"	Arch
485	KAN - STN	West Bengal	192/8A-10A	4	1	0.46	1'-6"	RC slab
486A	KAN - STN	West Bengal	192/15-17	4	1	0.46	1'-6"	Syphone
488	KAN - STN	West Bengal	192/26-28	4	4	3.66	12'-0"	Arch
489A	KAN - STN	West Bengal	193/25-27	5	1	0.91	3'-0"	Pipe
489C	KAN - STN	West Bengal	194/5-7		3	18.71+ 8.07		Girder + RC Slab
490	KAN - STN	West Bengal	194/22-24	4	1	1.22	4'-0"	RCC Box
491	KAN - STN	West Bengal	194/35-37	3	2	0.91	3'-0"	Arch(UP-I+DN-I+DN-2)
				1	2	0.91	3'-0"	RC Slab(UP-2)
492	KAN - STN	West Bengal	195/11-13	4	1	3.66	12'-0"	Slab top
492A	KAN - STN	West Bengal	195/19-21	4	1	0.61	2'-0"	Slab top
493	KAN - STN	West Bengal	196/13-15	4	1	1.22	4'-0"	FC Slab
494	KAN - STN	West Bengal	197/3-5	2	1	4.57	15'-0"	Arch(UP-1+DN-I)
				1	1	4.57	15'-0"	RC slab(UP-2)
				1	1	4.57	15'-0"	Box(DN-2)
				1	1	4.57	15'-0"	Arch-(DN-Avoiding)

495	KAN - STN	West Bengal	197/19-21	4	1	6.10	20'-0"	Arch(UP-I+UP-2+DN-I+DN-2)
				2	1	6.10	20'-0"	Box(UP+DN-Avoiding)
496	KAN - STN	West Bengal	198/13-15	6	1	0.61	2'-0"	FC slab
497	KAN - STN	West Bengal	198.8	6	1	1.22	4'-0"	Arch
498	KAN - STN	West Bengal	199.1	3	1	1.83	6'-0"	Arch(UP-1+DN-I+DN-2)
				2	1	1.83	6'-0"	RC slab(UP-2+UP-Avoiding)
				1	1	1.83	6'-0"	Box(DN-Avoiding)
499	KAN - STN	West Bengal	199.2	3	1	1.22	4'-0"	Arch(UP-1+DN-I+DN-2)
				2	1	1.22	4'-0"	RC slab(UP-2+UP-Avoiding)

				1	1	1.22	4'-0"	Box(DN-Avoiding)
500	KAN - STN	West Bengal	199.6	3	1	1.83	6'-0"	Arch(UP-I+UP-2+DN-I+DN-2)
				2	1	1.83	6'-0"	RC slab(UP-Avoiding)
				1	1	1.83	6'-0"	Box(DN-Avoiding)
501	KAN - STN	West Bengal	199.9	6	2	6.10	20'-0"	Arch
502	KAN - STN	West Bengal	200.2	3	1	3.05	10'-0"	Arch(UP-I+DN-I+DN-2)
				2	1	3.05	10'-0"	Slab(UP-2+UP)
				1	1	3.05	10'-0"	DN-Avoiding
503	KAN - STN	West Bengal	200.3	3	1	1.82	6'-0"	Arch(UP-I+DN-I+DN-2)

				2	1	1.82	6'-0"	Slab(UP-2+UP-Avoiding)
				1	1	1.82	6'-0"	Box(DN-Avoiding)
504	KAN - STN	West Bengal	200.5	3	1	1.22	4'-0"	Arch(UP-I+DN-I+DN-2)
				2	1	1.22	4'-0"	Slab(UP-2+UP)
				1	1	1.22	4'-0"	DN-Avoiding
505	KAN - STN	West Bengal	201.1	6	1	6.10	20'-0"	Arch
506	KAN - STN	West Bengal	201.5	4	2	6.10	20'-0"	Arch(UP-I+UP-2+DN-I+DN-2)
				1	2	6.10	20'-0"	Box-DN-Avoiding
507	KAN - STN	West Bengal	201.8	2	1	0.46	1'-6"	E.W.Pipe(UP-I+DN-I)
				1	1	0.61	2'-0"	Hume pipe(UP-2)

				1	1	1.22	4'-0"	Arch(DN-2)
508	KAN - STN	West Bengal	202.2	4	1	2.04	6'-7"	Arch
509	KAN - STN	West Bengal	202/17-21	3	4	18.3	60'-0"	UP-I, DN-I & DN-II Composit girder
				1	4	18.3	60'-0"	UP-II
				1	4	9.15	30'-0"	Two RCC box at each end in UP-II line
				3	4	9.15	30'-0"	Two Arch at both end in UP-I, DN-I & DN-II line
512	KAN - STN	West Bengal	203.9	4	2	3.05	10'-0"	Arch(UP-I+UP-2+DN-I+DN-2)
				1	2	3.05	10'-0"	Slab-UP-Avoiding
				1	2	3.05	10'-0"	Siding

513	KAN - STN	West Bengal	204.1	5	1	0.46	1'-6"	C.I.Pipe
514	KAN - STN	West Bengal	204.7	4	1	1.83	6'-0"	Arch(UP-I+UP-2+DN-I+DN-2)
				1	1	1.83	6'-0"	Slab-UP-Avoiding
515	KAN - STN	West Bengal	205	4	2	3.66	12'-0"	Arch(UP-I+UP-2+DN-I+DN-2)
				1	2	3.66	12'-0"	Box-UP-Avoiding
516	KAN - STN	West Bengal	205.4	4	1	3.66	12'-0"	Arch
517	KAN - STN	West Bengal	205.5	4	1	1.83	6'-0"	Arch
518	KAN - STN	West Bengal	205.9	4	1	4.57	15'-0"	Arch
519	KAN - STN	West Bengal	207.06	3	1	0.46	1'-6"	E.W.Pipe
520	KAN - STN	West Bengal	207.74	5	2	6.10	20'-0"	Arch
520A	KAN - STN	West Bengal	207.74	1	2	6.10	20'-0"	Arch
				1	1	0.45		Pipe Drain
520B	KAN - STN	West Bengal	208/3-5	1	1	45.72	150'-0"	Girder
				1	2	7.62		Arch
520C	KAN - STN	West Bengal	208/9-11		3	19.21	63'-0"	PSC Girder + RC Box

521	KAN - STN	West Bengal	208.75	4	1	3.56	11'-6"	Arch
522	KAN - STN	West Bengal	209.06	3	1	1.22	4'-0"	Arch(UP-I+DN-I+DN-2)
				1	1	1.22	4'-0"	Slab(UP-2)
523	KAN - STN	West Bengal	209.29	3	2	1.83	6'-0"	Arch(UP-I+DN-I+DN-2)
				1	2	1.83	6'-0"	Slab(UP-2)
524	KAN - STN	West Bengal	209.85	3	2	1.83	6'-0"	Arch(UP-I+DN-I+DN-2)
				1	2	1.83	6'-0"	Slab(UP-2)
525	KAN - STN	West Bengal	210.29	6	2	3.66	12'-0"	Arch
526	KAN - STN	West Bengal	210.84	3	1	1.22	4'-0"	Arch
527	KAN - STN	West Bengal	211.31	3	1	4.57	15'-0"	Arch
528	KAN - STN	West Bengal	211.9	1	2	3.05	10'-0"	Arch
528A	KAN - STN	west Bengal	212.3	1	2	3.66	12'-0"	Girder
529	KAN - STN	West Bengal	213.1	9	1	3.05	10'-0"	F.C.Slab
530	KAN - STN	West Bengal	213.5	9	5	4.57	15'-0"	Arch
531	KAN - STN	West Bengal	213.83	7	2	1.82	6'-0"	Arch
				6	1	3.66	12'-0"	Slab
532	KAN - STN	West Bengal	214.3	9	3	4.57	15'-0"	Arch
533	KAN - STN	West Bengal	214.3	1	5	4.57	15'-0"	Arch

533	KAN - STN	West Bengal	214.6	1	5	4.57	15'-0"	BRICK ARCH
533A	KAN - STN	West Bengal	214.6	1	1	0.61	2'-0"	FC slab
534	KAN - STN	West Bengal	215.6	1	1	0.61	2'-0"	pipe(DN-2)
				3	1	0.76	2'-6"	FC slab(UP-1+DN-1+UP-2)
535	KAN - STN	West Bengal	215.9	3	1	1.22	4'-0"	Arch(UP-1+UP-2+DN-)
				1	1	1.52	5'-0"	FC SLAB(DN-2)
536	KAN - STN	West Bengal	216.2	3	3	3.66	12'-0"	Arch(UP-1+DN-1+UP-2)
				1	3	2.91	9'-6"	FC SLAB(DN-2)
537	KAN - STN	West Bengal	217	4	3	4.57	15'-0"	Arch
538	KAN - STN	West Bengal	218.16	4	3	4.57	15'-0"	Arch
539	KAN - STN	West Bengal	218.6	4	1	1.53	5.02	Arch
540	KAN - STN	West Bengal	219.21	4	3	4.57	15'-0"	Arch
541	KAN - STN	West Bengal	220.64	4	2	4.57	15'-0"	Arch
541A	KAN - STN	West Bengal	220.64	5	2	5.57		Slab + Arch

542	KAN - STN	West Bengal	221.3	4	1	3.66	12'-0"	Arch + FC slab
542A	KAN - STN	West Bengal	221/44-46		1	15.29	52'-0"	UNDER SLUNG
1	GC Section	West Bengal	221/15-17	2	3	2.89	9'-6"	Arch with Jacketting
2	GC Section	West Bengal	223/3-5	2	3	4.57	15'-0"	Arch
3	GC Section	West Bengal	223/15-16	3	3	4.57	15'-0"	Arch
4	GC Section	West Bengal	224/3-5	3	1	1.83	6'-0"	Arch
4A	GC Section	West Bengal	224/21-23	3	1	0.61	2'-0"	Rail cluster-UP
				3	1	0.46	1'-3"	Pipe-DN
5	GC Section	West Bengal	224/27-29		3	9.15	30'-0"	Arch
6	GC Section	West Bengal	225/13-15	3	3	3.66	12'-0"	Arch with Jacketting
7	GC Section	West Bengal	225/31-33	4	1	3.73	12'-3"	Arch
8	GC Section	West Bengal	226/19-21	3	2	1.68	5'-6"	Arch
9	GC Section	West Bengal	227/3-5		4	4.27	14'-0"	Girder
10	GC Section	West Bengal	227/15-17	3	1	0.61	2'-0"	FC slab

11	GC Section	West Bengal	227.6	2	1	0.51	1'-8"	EW Pipe
11A	GC Section	West Bengal	227/23-27		1	18.29	52'-0"	Semi-through Plate Girder
12	GC Section	West Bengal	228/7-9	4	1	0.91	3'-0"	FC slab
13	GC Section	West Bengal	228/13-15	5	1	0.61	2'-0"	FC slab
14	GC Section	West Bengal	228/30-32	1	1	0.61	2'-0"	FC slab
15	GC Section	West Bengal	228/31-33	7	1	0.61	2'-0"	FC slab
16	GC Section	West Bengal	229/4-9	7	1	0.61	2'-0"	FC slab
17	GC Section	West Bengal	229/19-21	6	1	4.57	15'-0"	Arch Stone
18	GC Section	West Bengal	230/16-30	2	6	30.50	100'-0"	U/S Girder + Arch
				2	5	45.75	150'-0"	U/S Girder + Arch
				2	1	61.00	200'-0"	
				2	5	9.15	30'-0"	Arch
				2	1	2.44	8'-0"	Arch
18A	GC Section	Jharkhand	230/27-29	1	1	0.61	2'-0"	Stone slab

19	GC Section	Jharkhand	232/13-15	3	2	7.12	23'-4"	Arch
20	GC Section	Jharkhand	232/17-19	3	1	6.10	20'-0"	Arch
21	GC Section	Jharkhand	232/23-25	3	1	1.22	4'-0"	Arch
22	GC Section	Jharkhand	233/9-11	2	4	0.76	2'-6"	FC slab
23	GC Section	Jharkhand	233/13-15	3	1	0.61	2'-0"	FC slab
24	GC Section	Jharkhand	234/3-5	3	1	3.05	10'-0"	Arch
25	GC Section	Jharkhand	234/19-21	2	1	1.22	4'-0"	Arch Stone
				1	1	1.22	4'-0"	FC slab
26	GC Section	Jharkhand	235/15-17	3	1	5.49	18'-0"	Arch Stone
27	GC Section	Jharkhand	235/25-27	5	1	1.83	6'-0"	Arch Stone
28	GC Section	Jharkhand	236/5-7	8	1	1.83	6'-0"	Arch Stone
29	GC Section	Jharkhand	236/11-13	9	2	0.76	2'-6"	Slab top
30	GC Section	Jharkhand	236/21-23	6	2	0.76	2'-6"	Slab top
30A DN	GC Section	Jharkhand	237/5-7	1	1	0.61	2'-0"	FC slab

31	GC Section	Jharkhand	237/7-9	2	1	3.66	12'-0"	UP&DN-Arch Stone
				1	1	3.66	12'-0"	Siding-FC slab
32	GC Section	Jharkhand	237/19-21	2	1	3.05	10'-0"	UP&DN-Arch
				1	1	3.66	12'-0"	Siding-FC slab
33	GC Section	Jharkhand	239/13-15	4	1	4.57	15'-0"	Arch Stone
34	GC Section	Jharkhand	240/3-7	1	5	15.85	52'-0"	DN- Deck - Girder
				1	5	15.85	52'-0"	UP- Arch Stone
				1	2	5.49	18'-0"	UP- Arch Stone
35	GC Section	Jharkhand	240/9-11	2	1	0.46	1'-6"	E.W.Pipe
36	GC Section	Jharkhand	240/21-23	2	1	0.46	1'-6"	E.W.Pipe
37	GC Section	Jharkhand	240..81	2	1	0.61	2'-0"	E.W.Pipe
38	GC Section	Jharkhand	241.39	2	1	1.07	3'-6"	Stone slab
39	GC Section	Jharkhand	241.8	1	1	0.61	2'-0"	F.C.Slab
				1	1	0.46	1'-3"	E.W.Pipe
40	GC Section	Jharkhand	242	1	1	0.61	2'-0"	Open top
				1	1	0.53	1'-9"	E.W.Pipe

41	GC Section	Jharkhand	242.2	2	1	1.07	3'-6"	Stone slab
41AUP	GC Section	Jharkhand	242.28	1	1	0.46	1'-3"	Hume pipe
Thaparnagar ROB	GC Section	Jharkhand	243/21-23		6	15.00		PSC Girder
					1	12.00		
42	GC Section	Jharkhand	244.07	2	1	3.69	12'-0"	Arch Stone
43	GC Section	Jharkhand	244.65	2	1	9.11	30'-0"	Arch Stone
44	GC Section	Jharkhand	245.2	1	1	0.46	1'-3"	Open top
				1	1	0.76	2'-6"	Stone slab
44A	GC Section	Jharkhand	245.35	2	1	0.46	1'-3"	Hume pipe
45	GC Section	Jharkhand	245.8	1	1	1.83	6'-0"	Arch
				1	1	0.46	1'-3"	Hume pipe
46	GC Section	Jharkhand	246	1	1	0.61	2'-0"	Hume pipe
				1	1	0.46	1'-3"	Hume pipe
46ADN	GC Section	Jharkhand	245.8	1	2	0.61	2'-0"	F.C.Slab
47	GC Section	Jharkhand	246.08	1	1	0.76	2'-6"	Hume pipe
				1	1	0.76	2'-6"	Stone slab
47A	GC Section	Jharkhand	246.42	2	1	0.46	1'-3"	Arch

48	GC Section	Jharkhand	246.34	2	1	3.05	10'-0"	Arch Stone
48ADN	GC Section	Jharkhand	246.69	1	1	0.76	2'-6"	F.C.Slab
49	GC Section	Jharkhand	246.81	2	3	0.61	2'-0"	F.C.Slab
49ADN	GC Section	Jharkhand	246.97	1	1	0.46	1'-3"	E.W.Pipe
50	GC Section	Jharkhand	247.27	2	1	2.44	8'-0"	Arch Stone
50ADN	GC Section	Jharkhand	247.42	1	1	0.46	1'-3"	E.W.Pipe
51	GC Section	Jharkhand	247.66	2	1	0.61	2'-0"	E.W.Pipe
52	GC Section	Jharkhand	248.41	2	1	4.57	15'-0"	Arch Stone
52A	GC Section	Jharkhand	248.94	1	4	0.76		Arch Stone
53	GC Section	Jharkhand	249.17	2	1	6.10	20'-0"	Arch Stone
54	GC Section	Jharkhand	249.42	2	1	0.61	2'-0"	Stone slab
55	GC Section	Jharkhand	249.74	2	1	0.61	2'-0"	Stone slab
56	GC Section	Jharkhand	249.89	2	1	0.46	1'-3"	E.W.Pipe

57	GC Section	Jharkhand	250.06	2	1	0.61	2'-0"	E.W.Pipe
58	GC Section	Jharkhand	250.14	2	1	0.46	1'-3"	E.W.Pipe
59	GC Section	Jharkhand	250.2	2	1	0.51	1'-8"	E.W.Pipe
60	GC Section	Jharkhand	250.61	2	1	1.83	6'-0"	Arch Stone
61	GC Section	Jharkhand	251.12	2	1	0.46	1'-3"	Stone slab
62	GC Section	Jharkhand	251.41	2	1	1.83	6'-0"	Arch
63	GC Section	Jharkhand	251.74	2	1	0.46	1'-3"	E.W.Pipe
64	GC Section	Jharkhand	252.08	2	1	2.44	8'-0"	Arch
65	GC Section	Jharkhand	252.34	2	1	0.46	1'-3"	E.W.Pipe
66	GC Section	Jharkhand	252.49	2	1	1.83	6'-0"	Arch
67	GC Section	Jharkhand	252.62	2	1	1.52	5'-00'	Arch
68	GC Section	Jharkhand	252.97	2	1	1.83	6'-0"	Stone slab
69	GC Section	Jharkhand	253.04	2	1	0.61	2'-0"	Stone slab

70	GC Section	Jharkhand	253.11	2	1	3.05	10'-0"	Arch
71	GC Section	Jharkhand	253.27	2	1	0.91	3'-0"	F.C.Slab
72	GC Section	Jharkhand	253.33	2	1	0.61	2'-0"	F.C.Slab
73	GC Section	Jharkhand	253.74	2	1	0.61	2'-0"	F.C.Slab
74	GC Section	Jharkhand	253.85	2	5	0.61	2'-0"	F.C.Slab
75	GC Section	Jharkhand	254.04	2	2	1.83	6'-0"	Arch
76	GC Section	Jharkhand	254.23	2	1	0.61	2'-0"	F.C.Slab
77	GC Section	Jharkhand	255.02	4	1	0.61	2'-0"	F.C.Slab
78	GC Section	Jharkhand	255.4	2	1	0.61	2'-0"	F.C.Slab
79	GC Section	Jharkhand	255.79	4	2	1.07	3'-6"	F.C.Slab
80	GC Section	Jharkhand	256.67	2	5	0.76	2'-6"	F.C.Slab
81	GC Section	Jharkhand	256.84	2	3	0.76	2'-6"	F.C.Slab
82	GC Section	Jharkhand	257.71	2	1	9.15	30'-0"	Arch Stone

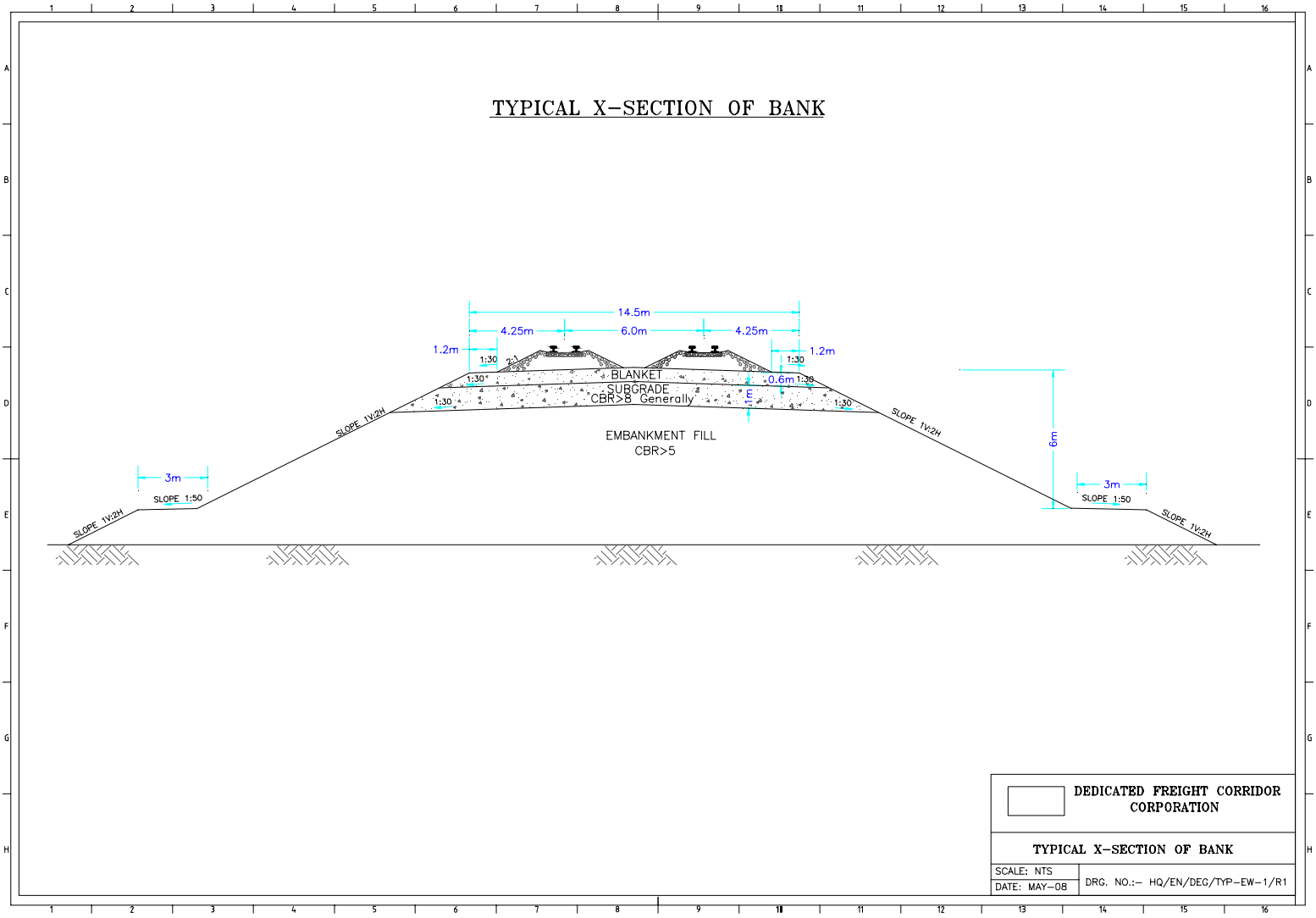
83	GC Section	Jharkhand	258.19	2	1	0.46	1'-3"	E.W.Pipe
84	GC Section	Jharkhand	258.45	2	1	0.46	1'-3"	E.W.Pipe
85	GC Section	Jharkhand	258.66	2	1	6.10	20'-0"	Arch
86	GC Section	Jharkhand	259.26	2	1	0.91	3'-0"	Stone slab
87	GC Section	Jharkhand	259.58	2	1	1.83	6'-0"	Arch Stone

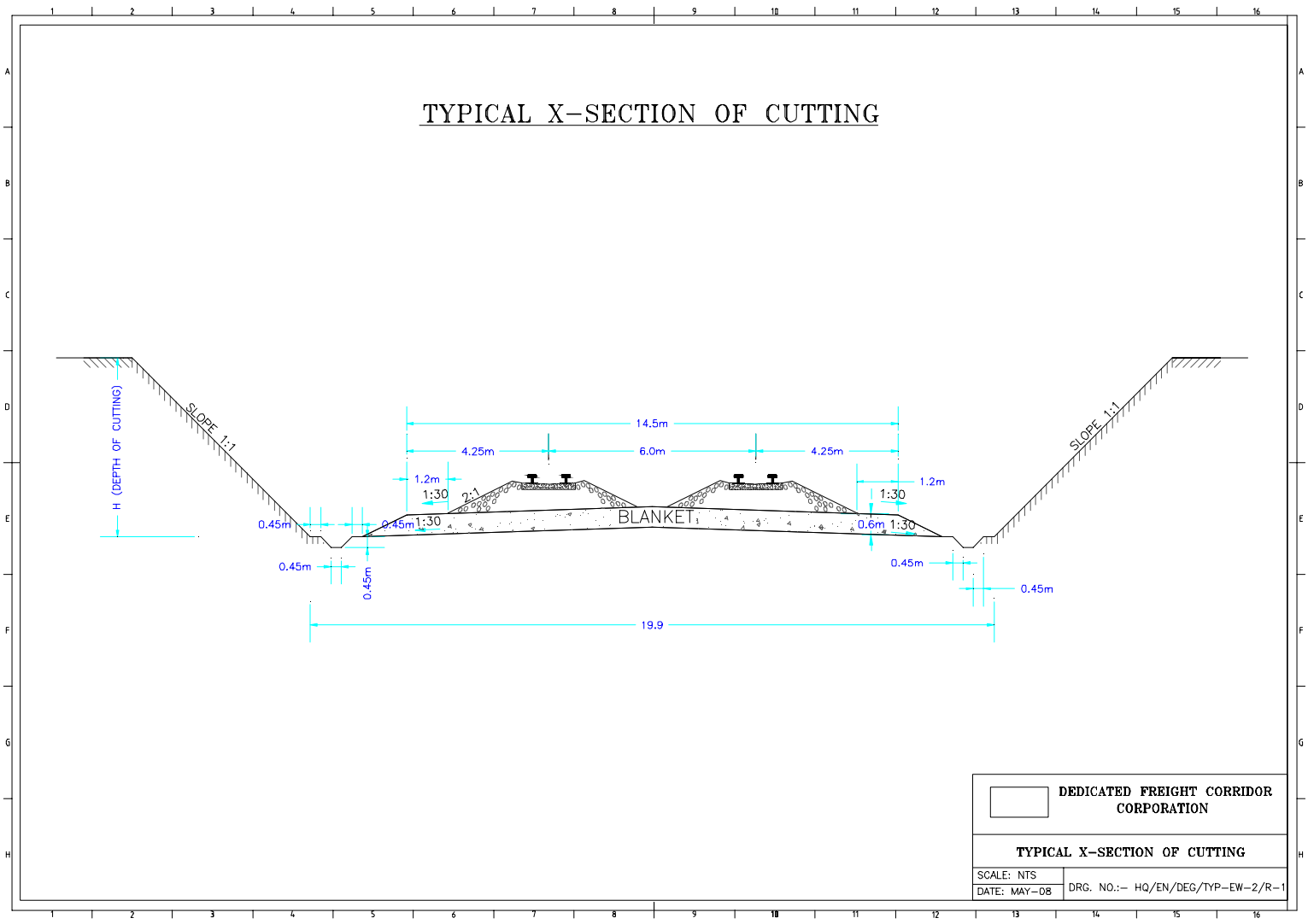
List of Bridges in G.C. Section, Dhanbad Division

Sl. No.	Bridge No.	Span in Mtr.	Loacation	Section	Between Station	Type of Bridge	Loading standard	Type of foundation	Type of substructure
Major Bridges									
1	93DN	1x15.85	263/20-22	PKA-MPO	DHN-Dokra	Plate girder	MBG	Open	Stone Masonary
2	94A DN (ROB)	3x6.71	265/12-14	PKA-MPO	PKA-DHN	RCC	MBG	Open	RC Slab
3	94B(ROB)	2x14.5, 1x21.5	265/20-22	PKA-MPO	DHN-Dokra	RCC/PSC	MBG	Open	RCC/PSC
Minor Bridges									
1	88	1x0.610	260/23-25	PKA-MPO	CAM-PKA	Arch	MBG	Open	Stone masonary
2	89	1x2.438	260/36A-8A	PKA-MPO	CAM-PKA	Arch	MBG	Open	Stone masonary
3	90	2x0.914	261/22-24	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
4	91DN	2x0.914	262/8-10	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
5	91UP	1x1.829	262/15-17	PKA-MPO	PKA-DHN	Arch	MBG	Open	Stone masonary
6	92DN	1x0.457	262/18-6	PKA-MPO	PKA-DHN	D/Pipe	MBG	Open	Stone masonary
7	92A DN	2x1.066	262/24-26	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
8	92B DN	1x6.10	262/26-28	PKA-MPO	PKA-DHN	Arch	MBG	Open	Stone masonary

9	92 UP	2x6.10	263/3-5	PKA-MPO	PKA-DHN	Arch	MBG	Open	Stone masonary
10	92C DN	1x1.058	263/12-14	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
11	93UP	1x0.610	264/25-27	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
12	93A DN	1x1.066	264/10-12	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
13	93B DN	2x1.066	264/16-18	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
14	94DN	2x1.066	265/6-8	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
15	94 UP	1x2.438	265/1-1	PKA-MPO	PKA-DHN	Arch	MBG	Open	Stone masonary
16	95	2x1.066	265/22-24	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
17	96A UP	1x1.829	266/7-9	PKA-MPO	PKA-DHN	D/Pipe	MBG	Open	Brick masonary
18	96	1x0.610	266/22-24	PKA-MPO	PKA-DHN	Arch	MBG	Open	Brick masonary
19	96B	1x0.610	266/1-23	PKA-MPO	PKA-DHN	D/Pipe	MBG	Open	Brick masonary
20	97A UP	2x3.048	266/25-27	PKA-MPO	PKA-DHN	D/Pipe	MBG	Open	Brick masonary
21	97	2x0.610	266/26-28	PKA-MPO	PKA-DHN	D/Pipe	MBG	Open	Brick masonary
22	97B UP	1x0.610	267/3-5	PKA-MPO	PKA-DHN	Arch	MBG	Open	Brick masonary

23	98DN	1x0.914	267/18-20	PKA-MPO	PKA-DHN	Arch	MBG	Open	Stone masonary
24	98B UP	1x0.610	267/17-19	PKA-MPO	PKA-DHN	D/Pipe	MBG	Open	Stone masonary
25	99A	1x0.610	267/28-268/1	PKA-MPO	PKA-DHN	D/Pipe	MBG	Open	Stone masonary
26	99	2x1.066	268/11-13	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
27	100	1x4.572	268/6.8	PKA-MPO	PKA-DHN	Arch	MBG	Open	Stone masonary
28	100A	1x.0.610	268-11-13	PKA-MPO	PKA-DHN	EW Pipe	MBG	Open	Stone masonary
29	101	1x1.066	268/20-22	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
30	102	3x1.470	269/28-30	PKA-MPO	PKA-DHN	Arch	MBG	Open	Stone masonary
31	103	2x0.914	270/22-24	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary
32	104	3x0.914	270/22-24	PKA-MPO	PKA-DHN	Flat Top	MBG	Open	Stone masonary


TYPICAL X-SECTION OF BANK
14.5m
4.25m
6.0m
4.25m
1.2m
1.2m
1:30
2:1
1:30
1:30
BLANKET
SUBGRADE
CBR>8 Generally
0.6m
1m
1:30
EMBANKMENT FILL
CBR>5
SLOPE 1V:2H
SLOPE 1V:2H
3m
SLOPE 1:50
6m
3m
SLOPE 1:50
SLOPE 1V:2H
DEDICATED FREIGHT CORRIDOR CORPORATION
TYPICAL X-SECTION OF BANK
SCALE: NTS
DATE: MAY-08
DRG. NO.:- HQ/EN/DEG/TYP-EW-1/R1


TYPICAL X-SECTION OF CUTTING
H (DEPTH OF CUTTING)
SLOPE 1:1
SLOPE 1:1
14.5m
4.25m
6.0m
4.25m
1.2m
1.2m
1:30
2:1
1:30
BLANKET
0.45m
0.45m
1:30
0.6m
1:30
0.45m
0.45m
0.45m
19.9
DEDICATED FREIGHT CORRIDOR CORPORATION
TYPICAL X-SECTION OF CUTTING
SCALE: NTS
DATE: MAY-08
DRG. NO.:- HQ/EN/DEG/TYP-EW-2/R-1