



**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT**

Notice Inviting Tender

Name of Work: Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector.

**OFFICE OF
CHIEF PROJECT MANAGER,
ICBRPZ, CPWD, JAMMU**

INDEX

Name of work: Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector

S. No.	DESCRIPTION	PAGE NO.
1.	Index	2-4
2.	Information and Instructions for Contractors For E-Tendering Forming Part of NIT and To Be Posted on Website	5-8
	PART-A (General)	9
3.	Notice Inviting E-Tender (CPWD – 6)	10-14
4.	CPWD-7 Tender and Contract for works	15-16
5.	Forms for Furnishing Information (Form-A, B, C & D)	17-23
	PART-B (Civil Component)	24
6.	Schedules “A To F”	25-33
7.	Brief Scope of The Work (Civil work)	34-38
8.	General Conditions, Special conditions, particular specifications, conditions for coarse and fine aggregate, water, admixture, special conditions and cement	39-63
9.	List of testing equipment’s to be provided by the contractor at site lab, which may be needed for execution as per actual requirement.	64-66
10.	List of preferred makes	67-68
11.	Drawings	69-82
12.	Schedule of Quantity (Civil)	83-88
	PART-C (Electrical Components)	89
13.	Schedules “A To F”	90-94
14.	Conditions for associate agency for E&M works	95-96
15.	Proposal for associating agency for E&M works (Annexure-A)	97
16.	Consent letter from associate agency for E&M works (Annexure-B)	98
17.	Memorandum of understanding (MoU) (Annexure-C)	99

S. No.	DESCRIPTION	PAGE NO.
18.	Commercial and Additional Conditions for Electrical Works	100-112
19.	Payment Terms	113
20.	Technical Specifications for Electrical Works	114-121
21.	List of acceptable makes for E&M work	122
22.	Schedule of quantities (Electrical)	123-132
23.	Financial quote	133

Note:- The EMD should be made from the bank accounts of the bidder only. If the EMD is made from the bank accounts of any other person or company, it shall be treated as an act of subletting and the bid shall be summarily rejected

Certified that this Bid document contains 133 pages serially numbered.

This NIT is approved for Rs. 42,60,82,320/- (Rupees Forty Two Crore Sixty Lakhs Eighty Two Thousand Three Hundred Twenty Only).

**Assistant Engineer (P),
ICBRPZ, CPWD, JAMMU**

**Executive Engineer (P)
ICBRPZ, CPWD, JAMMU**

**CHIEF PROJECT MANAGER,
ICBRPZ, CPWD, JAMMU**

**INFORMATION AND INSTRUCTIONS FOR CONTRACTORS FOR
e-TENDERING FORMING PART OF NIT AND TO BE POSTED ON WEBSITE**

The Executive Engineer, Border Fencing Division-III, CPWD, BSF Campus, Paloura, Jammu Mobile: 8755679728, e-mail id: jameebfd3cpwd-jk@gov.in) on behalf of the President of India invites online bids on Percentage Rate Basis from CPWD enlisted contractors of appropriate class in Building & Roads category for the following work:

S. No	NIT No.	Name of work & location	Estimated cost put to tender	Earnest Money	Period Of Completion	Last date & time of submission of bid, copy of receipt of deposition of original EMD, and other documents as specified in the bid document	Time & date of opening of bid
1	2	3	4	5	6	7	8
1	01/CPM/ICBRPZ/2026-27	Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector	Rs. 42,60,82,320/-	Rs. 52,60,824/-	13 Months	30.07.2026 up to 11:00	30.07.2026 up to 11:30

1. The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
2. This information and instructions for bidders posted on website shall form part of bid document.
3. The bid document consisting of details of proposed roads, Specifications, Schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.

4. But the bid can only be submitted after deposition of original EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission and uploading the mandatory scanned documents such as Insurance Surety Bonds, Account Payee Demand draft or Banker's Cheque or Fixed Deposit Receipts or/ and Bank Guarantee including e- Bank Guarantee (for balance amount as prescribed) from any of the Commercial Bank towards EMD in favour of Executive Engineer as mentioned in NIT, receipt for deposition of original EMD to division office of any Executive Engineer (including NIT issuing EE/ AE), CPWD and other documents as specified.
 5. Those contractors who are not registered or have not updated their profile on the website mentioned above, are required to get registered/update their profile beforehand. The necessary training materials including the videos with step-to-step process are available on download section of <https://etender.cpwd.gov.in>
 6. The intending bidder must have valid class-III digital signature certificate with encryption key (combo type) to perform any operations/transactions on the e-tendering portal / website and the bidder should download and install the eMsigner on their system as per instruction available on download section of <https://etender.cpwd.gov.in>
 7. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
 8. Contractor can upload documents in the form of JPG format and PDF format.
 9. Contractor must ensure to quote rate of each item. The column meant for quoting rate in figures appears in yellow colour and the moment rate is entered, it turns sky blue.
In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0". Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0" (ZERO).
- However, If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
10. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.
 11. The contractor shall engage manpower duly verified by the local Police as per requirement of BSF, nothing extra shall be paid on this account.

12. Following persons shall only be accepted as accredited/authorized representative(s):

- (i) Proprietor of an individual firm or one of partner in partnership firm or one of director of firm as the case may be,

or

- (ii) Senior person in management or engineer who has served in the firm in continuous past for atleast 5 years and for this, Form 16A/TDS issued to person/engineer by the bidder in last 5 financial year shall be produced as basis. If person is not issued Form 16A/TDS than he/she shall not be considered as accredited / authorized representative.

This para shall prevail over any other provision in bid document/GCC.

13. Bidder is advised to avail the facility of mobilization advance (if applicable in Schedule A to F under clause 10 B(ii)). If any bidder does not want to avail this facility from department, then bidder shall produce evidence of having invested minimum 8% of the construction contract amount towards mobilization within 6 months of start of work. The evidence shall be of bank statement of firm showing the payment made for mobilization. Non-compliance to this provision may be considered as subletting of work to other person(s)/form(s) on back-to-back basis in full or part which may attract action under clause 3 of the GCC.

This para shall prevail over any other provision in bid document/GCC.

14. In the event of tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power of attorney authorizing him to do so, such power of attorney to be uploaded with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act 1952.

15. Site information

- (i) The work is required to be carried out adjacent to the international border in Jammu. There may be restrictions on working hours from the side of BSF owing to the security considerations. No damage shall be allowed / reimbursed to the contractor on this account.
- (ii) The contractor shall have to obtain photo ID proof for all the workers from BSF authorities. All the labours and hired vehicles will have to be got checked at BSF Check posts at least two times.
- (iii) BSF may not permit workers to stay at site during night or beyond specified hours and therefore contractors may be required to commute the workers from site to nearest village from the site considering the restricted area.
- (iv) Dispensary or medical facility is available only at distance of about 50 km from site, the contractor is advised to keep a spare vehicle in case of any medical emergency for workers.
- (v) Though in general the labour is not allowed to stay at site, however, subject to the permission by BSF, the essential number of labour may be allowed to stay at site.
- (vi) Important Note to keep in mind by all the bidders before quoting rates: Sites of work are located near the Indo Pak Border in Jammu Sector.

Progress of work may also suffer due to cross border objections, cross border firing and mortar shelling from Pak side as the work is to be carried out near the sensitive Indo-Pak International Border and frequent threat of snipping and mortar shelling may cause loss not only in the form of time, money, but human also.

The Bidder should quote his rates accordingly keeping the above conditions in mind and no claim whatsoever shall be admissible for stoppage of work on this account or any loss incurred by the contractor to men and machinery. The labour and machinery might have to work during odd hours as well from security point of view and in coordination with BSF authorities. No claim whatsoever shall be admissible on this account. All materials T&P and labours shall be properly insured by the Contractor for full period till completion of work at his own cost. No any claim in this regard will be entertained.

16. The List of Documents to be scanned and uploaded within the period of Bid submission.

- a) Insurance Surety Bond, Demand Draft/ Account Payee Banker's Cheque / FDR/ Bank Guarantee of any commercial Bank (for balance amount as prescribed) against EMD in favour of **“Executive Engineer, Border Fencing Division C.P.W.D., Near SOs Mess, BSF Campus, Paloura, Jammu(J&K) – 181124”**.
- b) Copy of Receipt of deposition of original EMD issued from division office of any Executive Engineer (including NIT issuing EE/AE), CPWD. (Form – “A”).
- c) Enlistment order of the contractor of appropriate class in Building & Roads category.
- d) GST registration certificate of Jammu & Kashmir, if already obtained by the bidder.
If the bidder has not obtained GST registration as applicable, then in such a case the bidder shall upload the following undertaking with the bid document.

“If work is awarded to me/us, I/We shall obtain GST registration certificate as applicable within one month from date of receipt of award letter or before payment of 1st R.A. bill whichever is earlier, falling which, I/We shall be responsible for any delay in payments which will be due towards me on account of the work executed and/ or for any action taken by CPWD or GST department in this regard”. (Form “B”).

- e) Undertaking on structural stability and soundness as per prescribed format (Form “C”).
- f) Letter of Transmittal as per prescribed format (Form “D”).

**Executive Engineer,
Border Fencing Division-III,
CPWD, Jammu**

PART-A

(General)

Name of Work: Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector.

CPWD-6	CPWD
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**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT
CPWD-6 for e-TENDERING**

1. The Executive Engineer, Border Fencing Division-III, CPWD, BSF Campus, Paloura, Jammu Mobile: 8755679728, e-mail id: jameebfd3cpwd-jk@gov.in) on behalf of the President of India invites online bids on Percentage Rate Basis from CPWD enlisted contractors of appropriate class in Building & Roads category for the following work:
2. **Name of Work: Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector**
3. The work is estimated to cost **Rs. 42,60,82,320/-** This estimate, however, is given merely as a rough guide.
4. Agreement shall be drawn with the successful bidders on prescribed CPWD General Condition of Contract construction work 2023 which is available as a Govt. of India Publication and also available on website www.cpwd.gov.in. Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
5. The time allowed for carrying out the work will be 13 Months for from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
6. The site for the work is available. As the site is situated on international border, sometimes border guarding agencies may impose some restrictions for movement or for working. No compensation whatsoever shall be entertained on these grounds. The availability of architectural and structural drawings has been mentioned in Schedule-F.
7. The bid document consisting of details of proposed culvert & roads, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.
8. After submission of the bid the contractor can re-submit revised bid any number of times or withdraw it before last time and date of submission of bid as notified. No post-tender modification is allowed by the tenderers except through negotiations, if required. In case, any tenderer does so, the tender will be rejected and the tenderer will be debarred for future tendering in CPWD for two years by the concerned enlisting authority (in case of CPWD enlisted contractor) and by the concerned CE/SE (in case of non-enlisted contractor).
9. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.

Overwriting-NIL, Insertion-NIL, Correction-NIL, Deletion-NIL

AE(P)

EE(C)

10. When bids are invited in three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the bid submitted earlier shall become invalid.
11. Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee including e- Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks **(drawn in favour of “Executive Engineer Border Fencing Division, C.P.W.D., Near SOs Mess, BSF Campus, Paloura, Jammu(J&K) - 181124”** shall be scanned and uploaded on the e- Tendering website within the period of bid submission. The original EMD should be deposited either in the office of the Executive Engineer inviting bids or division office of any Executive Engineer, CPWD, within the period of bid submission. The EMD receiving Executive Engineer (including NIT issuing EE/AE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE in the NIT.

A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs. 20 lac, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee including e- Bank Guarantee of any Commercial bank having validity for a period of 90 days for single bid works and 180 days for two bid system or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.

The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier. However, in case of two/ three bid system, earnest money deposit of bidders unsuccessful during technical bid evaluation etc. should be returned within 30 days of declaration of result of technical bid evaluation.

Copy of Enlistment Order and certificate of work experience and other documents as specified in the notice inviting e- tender shall be scanned and uploaded on the e-Tendering website within the period of bid submission. **However, certified copy of all the scanned and uploaded documents as specified in e- tender notice shall have to be submitted by the lowest bidder within a week physically in the office of tender opening authority.** Online bid documents submitted by intending bidders shall be opened only of those bidders, whose original EMD deposited with any division of CPWD and other documents scanned and uploaded are found in order.

The bid submitted shall be opened at **11:30 on 30.07.2026.**

The bid submitted shall become invalid and e-Tender processing fee (if applicable) shall not be refunded if:

- (i) The bidder is found ineligible.
- (ii) The bidder does not upload scanned copies of all the documents stipulated in the bid document.
- (iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of bid opening authority.

- (iv) If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
12. The contractor whose bid is accepted will be required to furnish performance guarantee at specified percentage of the tendered amount as mentioned in schedule E and within the period specified in Schedule F. This guarantee shall be in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any of the Commercial Banks in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No., if applicable, and also ensure the compliance of aforesaid provisions by the sub- contractors, if any engaged by the contractor for the said work within the period specified in Schedule F.
13. **The description of the work is as follows:**
‘The proposed culvert is planned to provide connectivity to BOP Balhar over the Basanter River. The formation level of the proposed culvert shall be according to design & detailed drawing.
Further, the culvert and roads shall be adequately protected by suitable river training works on both the upstream and downstream sides to ensure its stability and prevent erosion or damage during high flows’.
- Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidders shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent to any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.
14. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.

15. Canvassing, whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
16. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
17. The contractor shall not be permitted to bid for works in the CPWD Circle (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Housing and Urban Affairs. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
18. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid for engagement in the contractor's service.
19. The bids for the work shall remain open for acceptance for a period of 30 (Thirty) days the date of opening of bids. Further,
 - (i) If any tenderer withdraws his tender within 7 days after last date and time (24 hours basis) of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - (ii) If any tenderer withdraws his tender after expiry of 7 days after last date and time (24 hours basis) of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - (iii) Withdrawal of the tender, by the tenderer, shall only be made through e-tender portal. Any other method i.e. through letter / e-mail etc. Shall not be considered.
 - (iv) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work.
20. This notice inviting Bid shall form a part of the contract document. The successful bidder/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:

- (a) The Notice Inviting Bid, all the documents including Special and additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - (b) Standard C.P.W.D. Form 7 and CPWD Standard General Conditions of Contract-construction work 2023 as amended/ modified up to last date of submission of bid.
21. The intending bidders are required to update their profile in CPWD e- tender portal and to upload their bids well in advance of last date of submission of tender. Any issue related to updating profile/uploading tender can be resolved through the concerned Executive Engineer/ Assistant Engineer or ERP helpline no. 18001803286 or e-mail id cpwd.support@techmahindra.com. The e-tendering bidders are also advised not to wait to raise any issues till the last date of submission of bid in their own interest.

**Executive Engineer,
Border Fencing Division-III,
CPWD, Jammu**

GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT
Percentage Rate Tender and contract for works

Tender for the work of: “**Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector.**”

- (i) To be uploaded by **11:00 on 30.07.2026** at <https://etender.cpwd.gov.in>.
- (ii) To be opened in presence of tenderers who may be present at **11:30 on 30.07.2026** in the office of the Executive Engineer, Border Fencing Division-III, CPWD, BSF Campus, Paloura, Jammu Mobile: 8755679728, e-mail id: jameebfd3cpwd-jk@gov.in)

TENDER

I/We have read and examined the notice inviting tender, schedule, Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate, other documents, regulations, Acts and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the planning, designing and execution of the work as per scope mentioned in this tender document specified for the President of India within the time specified in Schedule ‘F’ viz., schedule of quantities and in accordance in all respect with the applicable municipal byelaws, regulations, Acts, NGT guidelines, specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in accordance with, such conditions so far as applicable.

I/We agree to keep the tender open for **30 (Thirty) days** from the date of opening of technical bid in case tenders are invited in 2/3 bid system for work and not to make any modification in its terms and conditions.

I/We have deposited EMD for the prescribed amount in the office of concerned Executive Engineer as per the bid document.

A copy of earnest money deposit receipt of prescribed amount deposited in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (as prescribed) issued by a Commercial Bank, is scanned and uploaded (strike out as the case may be). If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the President of India or his successors, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely.

Further, if I/We fail to commence work as specified, I/ We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12 of the tender form. Further, I/We agree that in case of forfeiture of Earnest Money or Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back-to-back basis. Further that, if such a violation comes to the notice of the Department, then I/We shall be debarred for tendering in CPWD as per enlistment rules applicable. Also, if such a violation comes to the notice of the Department before the date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety & integrity of the State.

Dated
Witness:

Signature of Contractor / bidder
Postal Address

Address:
Occupation:

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the President of India for a sum of Rs.

..... (Rupees)

The letters referred to below shall form part of this contract agreement:

(a) (b)

For & on behalf of the President of India. Signatures

.....

Dated:

Designation

FORMS FOR FURNISHING
INFORMATION

18
FORM 'A'

Receipt of deposition of original EMD (Receipt No...../date)		
(i)	Name of work	Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector
(ii)	NIT No.	01/CPM/ICBRPZ/2026-27
(iii)	Estimated Cost	Rs. 42,60,82,320/-
(iv)	Amount of Earnest Money Deposit	Rs. 52,60,824/-
(v)	Last date of submission of bid (To be filled by Tender inviting authority/ NIT approving authority at the time of issue of NIT and uploaded along with NIT)	30.07.2026 up to 11:00
(vi)	Name of the Contractor	#
(vii)	Form of EMD	#
(viii)	Amount of EMD	#
(ix)	Date of submission of EMD	#
Signature, Name and Designation of EMD receiving officer (EE/ AE(P)/ AE/ AAO) along with office stamp		
(# to be filled by EMD receiving EE or NIT issuing EE/AE as the case may be)		

FORM 'B'
UNDERTAKING REGARDING GST REGISTRATION
(on letterhead of bidder with stamp)

To,
Executive Engineer,
Border Fencing Division-III
C.P.W.D. Jammu

Sub:- Submission of GST undertaking

Name of Work: Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector

NIT No.:-01/CPM/ICBRPZ/2026-27

Sir,

Having examined the details given in press notice and bid document for the above works,

I/ We hereby submit the following. "If work is awarded to me / us, I / We shall obtain GST registration certificate as applicable within one month from the date of receipt of the award letter or before release of any payment by CPWD, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by CPWD of GST department in this regard.

Seal of bidder.

Date of

submission

Signature (s) of Bidder(s)

FORM 'C'**UNDER TAKING ON STRUCTURAL STABILITY AND SOUNDNESS OF ALREADY COMPLETED BUILDINGS AND INFRASTRUCTURE PROJECTS**

I/we undertake and confirm that any building/ infrastructure constructed by our firm/partnership firm/company has not suffered any failure, making it unfit for intended use, either due to structural design and defects or due to use of sub-standard materials or execution of substandard work, poor workmanship or any other reason during the last 25 (twenty-five) years.

I/we, further undertake that if such information comes to the notice of CPWD, then Engineer-in-Charge shall be free to terminate the bid/agreement and to forfeit the entire amount of earnest money deposit, performance guarantee and security deposits.

I/we, also undertake that in addition to above, the Engineer-in-Charge shall be free to debar us forever from tendering in CPWD.

The decision of Engineer-in-Charge or any higher authority shall be final and binding.

**Signature of
Notary with seal**

**Signature of bidder or an
authorized person of
the firm with stamp**

Note: Affidavit to be furnished on a 'Non-Judicial' stamp paper of Rs. 200/- (scanned copy of the notarized affidavit to be uploaded at the time of submission of bid).

FORM 'D'

LETTER OF TRANSMITTAL

To

Executive Engineer,
Border Fencing Division-III
CPWD, Jammu

Sub: **Name of Work: Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector**

NIT NO.:-01/CPM/ICBRPZ/2026-27

Sir,

Having examined the details given in bid document for the above work, I/we hereby submit the relevant information.

1. I/We hereby certify that all the statements made and information supplied in the enclosed forms and accompanying statements are true and correct.
2. I/We have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
3. I/We hereby submit undertaking on structural stability and soundness as per prescribed format Form –“C”.

Certificate:

It is certified that the information given in the enclosed eligibility bid are correct. It is also certified that I/we shall be liable to be debarred disqualified/cancelation of enlistment in case any information furnished by me/ us found to be incorrect.

Enclosures: Seal of

bidder Date of

submission

Signature(s) of

bidder(s)

Telephone No./Mobile No./Fax No/ email

On non judicial stamp paper of minimum Rs. 100

(Guarantee offered by Bank to CPWD in connection with the execution of contracts) **Form of Bank Guarantee for Earnest Money Deposit /performance Guarantee/Security Deposit/Mobilization Advance/ refund of milestone withheld amount.**

1. Whereas the Executive Engineer (Name of division) CPWD on behalf of the President of India (hereinafter called "The Government,) has invited bids under(NIT number) dated for..... (name of work) ... The Government has further agreed to accept irrevocable Bank Guarantee for Rs. (Rupees only) valid upto (date)* as Earnest Money Deposit from (Name and address of contractor)....., (hereinafter called "the contractor") for compliance of his obligations in accordance with the terms and conditions of the said NIT.

OR**

Whereas the Executive Engineer (name of division) CPWD on behalf of the President of India (hereinafter called "The Government") has entered into an agreement bearing number with(name and address of the contractor)..... (Hereinafter called "the Contractor") for execution of work..... (name of work)

The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. (Rupees only) valid upto (date)..... as Performance Guarantee/security Deposit/Mobilization Advance/Refund of milestone withheld amount from the said Contractor for compliance of his obligations in accordance with the terms and conditions of the agreement.

2. We, (indicate the name of the bank) (herein after referred to as "the Bank"), hereby undertake to pay to the Government an amount not exceeding Rs.,..... (Rupees "). only) on demand by the Government within 10 days of the demand.
3. We, (indicate the name of the Bank).....do here by undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. (Rupees only).
4. We, (indicate the name of the Bank)....., further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor in any suit or proceeding pending On non-judicial stamp paper of minimum Rs.100 before any court or Tribunal, our liability under this Bank Guarantee being absolute and unequivocal. The payment so made by us under this Bank Guarantee shall be a valid

discharge of our liability for payment thereunder and the contractor shall have no claim against us for making such payment.

5. We, (indicate the name of the Bank).....further agree that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
6. We, (Indicate the name of the Bank)..... further agree that the Government at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor at the first instance without proceeding against the contractor and notwithstanding any security or other guarantee the Government may have in relation to the Contractor's liabilities.
7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.
8. We, (Indicate the name of the Bank) , undertake not to revoke this guarantee except with the consent of the Government in writing.
9. This Bank Guarantee shall be valid up to unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs (Rupees only) and unless a claim in writing is lodged with us within the date of expiry or extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Date.....

Witnesses:

- | | |
|----------------------------|------------|
| 1. Signature | Authorized |
| signatory Name and address | Name |
| | Designati |
| | on Staff |
| | code no. |
| 2. Signature | Bank |
| seal Name and address | |

* Date to be worked out on the basis of validity period of 90 days where only financial bids are invited and 180 days for two/three bid system from the date of submission of tender.

** In paragraph 1, strike out the portion not applicable. Bank Guarantee will be made either for earnest money or for performance guarantee/security deposit/mobilization advance/Refund of milestone withheld amount, as the case may be

PART-B

(Civil Component)

Name of Work: Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector.

SCHEDULE FOR GCC "A TO F"SCHEDULE 'A'

Schedule of quantities (Civil) (attached):

As per General Index

SCHEDULE 'D'

Extra schedule for

Specific

requirements/

Document for the work, if any:

(i) Particular Specifications:

As per General Index

(ii) Special Conditions of Contract:

As per General Index

SCHEDULE 'E'

Reference to General

Conditions of Contract:

General Conditions of Contract-2023 Construction Works as amended/modified up to the last date of submission of tenders.

NAME OF WORK: Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector.

(i)	Estimated cost of Work:	Rs. 42,60,82,320/-
(ii)	Earnest Money	Rs. 52,60,824/-
(iii)	Performance Guarantee	PG shall be: a) 5% of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher). b) Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT), the Performance Guarantee, addition to the requirement under (a) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount.
(iv)	Security Deposit	2.5% of the accepted tendered value of the work.

*SCHEDULE 'F'***GENERAL RULES & DIRECTIONS**

(v)	Officer inviting tender	Executive Engineer, Border Fencing Division-III, CPWD, BSF Campus, Paloura, Jammu
(vi)	Engineer-in-Charge	Executive Engineer, Border Fencing Division-III, CPWD, BSF Campus, Paloura, Jammu
(vii)	Accepting Authority	Chief Project Manager, Indo China Border Roads Project Zone, CPWD JAMMU or his successor thereof with prior approval of the competent authority.
(ix)	Percentage on cost of material and labour to cover all overheads and profits.	15%
(x)	Standard Schedule of Rates	DSR 2023 updated with amendments upto the last date of submission of bid & prevailing market rates at the time of last date of bid submission for market items & Morth standard data book 2019.
(xi)	Department	Central Public Works Department.
(xii)	Standard CPWD Contract form	GCC 2023 for Construction works, CPWD Form 7 as modified & corrected up-to the last date of submission of tenders.

Clause-1

(i)	Time allowed for submission of Performance Guarantee, programme chart (Time and progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW welfare board or proof of applying thereof from the date of issue of letter of acceptance.	7 (Seven) days.
(ii)	Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above.	3(Three) days.

Clause-2

Authority for fixing compensation under clause 2	Superintending Engineer, Border Fencing Circle, CPWD, BSF Campus, Paloura, Jammu or his successor thereof.
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Clause-5

(i)	Authority to convey the decision of shifting of milestone and extension of time. (Engineer-in-charge or Engineer-in-charge of Major component in case of composite contracts, as the case may be)	The Executive Engineer, Border Fencing Division- III, C P W D , Jammu or successor thereof.
(ii)	Authority to decide rescheduling of milestone and extension of time. (SE / SE&PD / CE / CE&ED).	Superintending Engineer, Border Fencing Circle, CPWD, BSF Campus, Paloura, Jammu or successor thereof.
(iii)	Shifting of date of start in case of delay in handing over of site. (SE / SE&PD/CE/CE&ED).	Superintending Engineer, Border Fencing Circle, CPWD, BSF Campus, Paloura, Jammu or successor thereof.

Time allowed for execution of work

13 Months

Number of days from the date of issue of
letter of acceptance for reckoning date of start.

10 days

Milestone(s) as per Table given below:

S. No.	Description of Milestone (Physical /Financial)	Time Allowed in days (from stipulated date of start)	Amount to be withheld in case of non-achievement of milestone.
1	Preparation and submission of Detailed Programme Chart, Labour License, Site Office Setup, Mobilization of Labour and Machinery, Design Mix of all grades of Concrete etc. (as per the direction of Engineer-in- Charge), inspection vehicle, all utility.	1 months	0.5% of contract value
2	1/8th of the tendered value	4 Months	1.0% of contract value
3	3/8th of the tendered value	7 Months	1.0% of contract value
4	3/4th of the tendered value	10 Months	1.0% of contract value
5	Total tendered value	13 Months	1.5% of contract value

Monthly recovery for delay in submission of the monthly progress report and programme chart within specified period- not exceeding Rs.10,000/- per month for each month default.

PERFORMA OF SCHEDULES

Clause 5 : Schedule of handing over of site:

Part	Portion of site	Time Period for handing over reckoned from date of issue of letter of intent.
Part A	Portion without any hindrance	Full site is available
Part B	Portions with encumbrances	NIL
Part C	Portions dependent on work of other agencies	NIL

2.Schedule of issue of Design and drawings

Part	Time period for issue
All the design and drawings	GAD, structural design & drawings will be issued after award of tender.

Overwriting-NIL, Insertion-NIL, Correction-NIL, Deletion-NIL

AE(P)

EE(C)

Clause-6:

Mode of Measurements: CMB (Computerized Measurement Book)

Clause 7

Gross work to be done together with net payment/adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment	Rs. 3 Crore
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Clause-7A

Whether clause 7 A shall be applicable	Yes (No running account bill shall be Paid for the work till the applicable Labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-Charge).
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Clause 8

Competent authority to inspect completion certificate

Superintending Engineer,
Border Fencing Circle, CPWD,
BSF Campus, Paloura, Jammu or successor thereof.

Clause 8A

Authority to decide compensation on account, if contractor fails to submit completion plans:	Executive Engineer, Border Fencing Division-III, CPWD, BSF Campus, Paloura Jammu or his successor thereof.
The rate of recovery for delay in submission:	Rs. 25,000/- per day maximum up to 0.10% of tendered amount.

Clause 10A

List of testing equipment to be provided by the contractor at site lab:	As per NIT
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Clause 10 B

Whether Clause 10 B shall be applicable	Yes
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Clause 10C

N.A.

Clause 10 CC:

: Applicable

Sl. No.	Relevant component of Material / Labour for price escalation	Percentage of total value of work
1	Component of cement	6.0 %
2	Component of Labour	25 %
3	Civil component of other construction materials	31 %
4	Component of POL (Diesel)	5 %
5	Reinforcement steel bars / TMT bars / structural steels (including strands and cables).	33 %

Clause 11:

Specifications to be followed for execution of work:	C.P.W.D. Specifications (Vol. I & II) 2019 with upto date correction slips, as applicable & MoRTH Specifications for Road and Bridges work 2013 (5 th Revision).	
Building information model (BIM) is applicable and BIM professional to be deployed by the contractor.		NO

Clause 12: Type of work: Original Work.

12.2 (C)	Deviation limit beyond which Clauses 12.2 (C) shall apply:	100%
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Clause 16

Competent Authority for deciding reduced rates:	Superintending Engineer, Border Fencing Circle, CPWD, BSF Campus, Paloura Jammu or his successor thereof.
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Clause 18

List of mandatory machinery, tools & plants to be deployed by the contractor at site:	As per list attached and as per direction of Engineer in charge and contract provisions/specifications/site requirements.
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Clause 19

Clause 19C	Authority to decide penalty for each default:	Executive Engineer, Border Fencing Division-III, CPWD, BSF Campus, Paloura Jammu or his successor thereof.
Clause 19D	Authority to decide penalty for each default:	Executive Engineer, Border Fencing Division-III, CPWD, BSF Campus, Paloura Jammu or his successor thereof.
Clause 19G	Authority to decide penalty for each default:	Executive Engineer, Border Fencing Division-III, CPWD, BSF Campus, Paloura Jammu or his successor thereof.
Clause 19K	Authority to decide penalty for each default:	Executive Engineer, Border Fencing Division-III, CPWD, BSF Campus, Paloura Jammu or his successor thereof.

Clause 25:

- i. Conciliator: Additional Director General (Border), CPWD, Nirman Bhawan, New Delhi.
- ii. Arbitrator Appointing Authority: Chief Project Manager, ICBRPZ, CPWD, JAMMU.
- iii. Place of Arbitration: Jammu.
- iv. Jurisdiction of Court: Jammu

Clause-32: Requirement of Technical Representative(s) and recovery Rate:

Sl. No.	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical/ Technical representative)	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)	
						Figures	Words
1	Graduate Engineer.		Project Manager	20 years (should have experience in the successful completion of at least one bridge project.)	01	Rs. 60,000/- (Rupees Sixty thousand) per month	
2	Graduate Engineer.	Civil	Deputy Project Manager	12 years (should have experience in the successful completion of at least one bridge project.)	01	Rs. 40,000/- per month	
3	Graduate Engineer or Diploma Engineer	Civil	Project/Site Engineer	5 or 10 years respectively.	01	Rs. 30,000/- per month	
4	Graduate Engineer or Diploma Engineer	Civil	Project Planning/Quality/ Billing Engineer	2 or 5 years respectively.	01	Rs. 25,000/- per month per person	
5	Diploma Engineer	Civil	Surveyor	5 years	02	Rs. 25,000/- per month	

- Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.

- Diploma holder with minimum 10 year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

Clause 38

(i)	(a)	Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates 2023 printed by C.P.W.D.	
(ii)		Variations permissible on theoretical quantities:	
	(a)	Cement:	3% Plus/Minus
	(b)	Bitumen for All Works:	2.5% plus only and Nil on minus side.
	(c)	Steel Reinforcement and structural steel sections for each diameter, section and category:	2% plus/minus
	(d)	All other material:	Nil

Brief Scope of the work

1. Salient details of the work for which bids are invited as under:

S. No.	Name of work	Estimated Cost	Period of completion
1.	Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector	Rs. 42,60,82,320/-	13 Months

2. Project synopsis:

International Border between India and Pakistan in the UT of J&K covers an approximate length of 179 Kms.

The proposed culvert is planned to provide connectivity to BOP Balhar over the Basanter River.

Location: The site of the work is Indo-Pakistan International Border in Jammu Sector.

Performance and fulfillment of all other obligations of the Contractor in accordance with the provisions of this Agreement and matters incidental there to or necessary for the performance of any or all of the obligations of the Contractor under this contract agreement.

3. GENERAL FEATURES & MAJOR COMPONENTS OF THE WORK:

The proposed work for construction of causeway with box culvert will involve following:

- Earth work, sub structure and super structure of proposed culvert.
- River protection works to protect proposed culvert & road.
- CC approach road with retaining wall.
- Obtaining approvals, statutory or otherwise, if required, for completing the work as per the scope of work and technical specifications.

4. SITE INFORMATION:

The site of the project for Construction of Box culvert and approach road is in AOR of Balhar BOP under Jammu Frontier.

The construction site is accessible through the network of village roads up to BOP Tanwar.

The terrain falling in the project stretches is all plain with alluvial soils sloping gently from the northeast to southwest. The average yearly rainfall for the last five years is 1204 mm approximately. The variation of highest and the lowest temperature is 47 degrees Celsius to 05 degrees Celsius. During winter season, the entire area is covered with dense fog.

The site is accessible through the network of village roads up to BOP Tanwar. Generally, Pucca Roads exist up to the last village/nearest BOP but beyond BOPs, only kutchha roads exist. These kutchha roads become slippery during rains. However, the work is to be carried out on the defined location, on the Basantar river which is beyond existing fencing along the Indo-Pak Border. The contractor shall make all necessary arrangements for carriage of materials, labourers and Machinery up to the site of work.

The above details are just for information and indicative. The bidder is required to get these details confirmed through their own sources.

The work shall be carried out at location near to the International Border and thus have security restrictions (including access control) imposed by border security forces (BSF), army and district administration. The nature and period of these restrictions is beyond the control of the department, and these may vary from time to time. The contractor shall perform within the said restrictions as applicable during the execution of the work.

BSF may not permit workers to stay at site during night or beyond specified hours and therefore, contractor may be required to commute the workers from site to nearest village from the site considering the restricted area.

Dispensary or medical facility is available only at distance of more than 20 km from site, the contractor is advised to keep a spare vehicle in case of any medical emergency for workers.

5. Design and General Features

The GAD & structural design will be issued after award of tender. In tender documents GAD enclosed for reference purpose only. The contractor shall submit bar bending schedule based on issued structural drawings and will obtain approval of the Engineer-in-Charge before start of execution. The contractor will examine issued drawings with respect to actual site condition. If any additional drawings are required to complete scope of the work, contractor will intimate department well before.

Any item needed to be executed shall be paid under agreement item of schedule of quantity or in extra item if it does not exist in agreement.

6. Project Utilities

i. Temporary Site Office Construction

The Contractor shall construct a temporary site office for CPWD Engineers comprising:

- 1 No. conference room & 01 No. office Room: 12.00 sqm with attached toilet.
- 1 No. Pantry/Kitchen: 4.00 sqm with verandah/corridor/passage width of 1.5 m. The site office shall include:
- False ceilings, office furniture, internal and external finishing, painting, flooring, doors and windows with grills.
- Internal and external water supply system including fittings and fixtures with uninterrupted supply of water.
- Sewerage system.
- Electrical installations including fittings and fixtures with uninterrupted electricity supply.
- In case site office, MTS, Computer Operator services are not provided, a recovery of ₹1,00,000/- per Month.

The site office layout shall be approved by the Engineer-in-Charge prior to execution. The Contractor shall maintain the amenities until completion of the work.

ii. Office Furniture and Utilities

(a) Furniture:

- Office table (1800 x 900 mm) with drawers, 1 mid-back revolving chair, and 4 visitor chairs in the office room.
- 1 Steel office almirah (1000 x 2100 x 600 mm) with 6 adjustable shelves.
- 20 seating conference room with table and chairs.

(b) Office Utilities:

- Computers: 1 No. laptop of reputed make (Samsung, HP, Apple, Microsoft) with Intel Core-i9/M2 13th Gen or above, 14-inch display, 1 TB SSD, 16 GB DDR5 RAM, Windows 11 Pro/i OS with preloaded software (MS Office, Auto CAD, Nitro, Win RAR, etc.).
- Printer: 1 no., 3-in-1 A-4 size, laser printer (HP Laser Jet Pro MFP M126a) with cartridges and stationery provided until project completion.
- Connectivity: LAN and Wi-Fi Internet facilities (5G or latest spectrum) available 24/7 until project completion.
- Maintenance: Operation and maintenance of all office fittings, utilities, furniture, and consumables.
- Personnel: Provision of one computer operator (knowledge of Auto CAD, MS Office, MS Project, Primavera) and Multi-tasking staff for 10 hrs per day.

All costs of construction, procurement, operation, and maintenance of the site office and utilities shall be deemed included in the tender amount. If the project is prolonged, the Contractor shall continue providing the above services at no extra cost. The temporary site office shall be dismantled, removed, and the site cleared of debris before handing over the project to the client.

iii. Vehicles**(a) Provision of Inspection Vehicles**

- The Contractor shall provide 1 (One) BS-VI or latest standard inspection vehicles (equivalent to Innova Hycross (Top Model)) with air conditioning, POL, drivers, and full maintenance from the start of work until project completion.
- Vehicles shall not be older than 1 years from the date of award.
- Vehicles shall be available 24x7 at the disposal of CPWD officials.

(b) Payment and Recovery

- The cost of vehicles, POL, drivers, and maintenance is deemed included in the tendered rate.
- In case vehicles, POL, or services are not provided, a recovery of Rs. 150,000/- per vehicle per month shall be made on a pro-rata basis from running accounts and final bill.

iv. Others**1. For execution of work, the following shall generally be applicable:**

- a. MoRTH Specifications Fifth Revision 2013 with up-to-date correction slip.
- b. CPWD Specifications 2019 with up-to-date correction slip.
- c. General Condition of Contract 2023 for construction work 2023 of CPWD with correction slip issued up to last date of submission of bid.
- d. Relevant Indian Road Congress (IRC) & BIS Codes.

2. Any Approvals/NOC/Permissions etc. if required, the same shall be obtained by the contractor at his own cost. However, the department will assist in this matter. Nothing extra shall be payable to contractor on this account.

Bidder shall maintain secrecy of infrastructure to be developed (prior and during execution) and shall not share any detail related to the project either in physical or through electronic mode except with authorized persons.

GENERAL CONDITIONS

1. The work shall be carried out according to specifications of Road and Bridges works issued by Ministry of Road Transport and Highways and CPWD specification 2019 Volume I to Volume II, including correction slips upto date of submission of bid and relevant MoRTH and IRC Codes mentioned in the tender and particular specifications, additional conditions of the contract.
2. The contractors shall quote their rates inclusive of all sorts of taxes, stamp duty, cartage, royalties etc., complete.
3. Unless otherwise specified, the agreement rates for all items of work of the schedule of quantities are for all heights, depths, leads and lifts involved in the execution of work.
4. The contractor shall make his own arrangement of generators for carrying out electrical activities.
5. Other agencies working at site will also simultaneously execute the work entrusted to them and the contractor shall offer necessary co-operation wherever required to other agencies.
6. On account of security consideration, there could be some restrictions on the working hours, movement of vehicles for transportation of materials. The contractor shall be bound to follow all such restrictions and adjust the programme for execution accordingly.
7. The work shall be carried out in a manner complying in all respects with the requirements of relevant bye laws of the local bodies, labour laws, minimum wages act, workmen compensation act and other statutory laws enacted by Central Government as well as State Government.
8. No claims of the labour shall be entertained by the Department including that of providing employment, regularization of services etc.
9. The staff employed by the contractor should be well behaved, Polite & courteous. Any complaint against staff on behavior should be taken very seriously and such should be removed by the contractor immediately from the site.
10. The contractor shall make all safety arrangement required for the labour engaged by him at his own cost. All consequences due to negligence or due to lapse of security/safety or otherwise shall remain with the contractor. The department shall not be responsible for any mishap, injury, accident or death of the contractor's staff. No claim in this regard shall be entertained /accepted by the department.
11. Contractor shall be fully responsible for any damages caused to govt. Property by his labour/staff in carrying out the work and shall be rectified by the contractor at his own cost
12. GST/Income Tax/other taxes as applicable shall be recovered from the contractor's bill.
13. All the screws used for joinery / fixing fixtures etc. shall be stainless steel of 304 Grade. No MS screws shall be used.

Overwriting-NIL, Insertion-NIL, Correction-NIL, Deletion-NIL

AE(P)

EE(C)

14. Unforeseeable difficulties/situations: Except as otherwise specifically stated elsewhere in the contract: The agency shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the works.

By signing the contract, the agency accepts total responsibility for having foreseen all difficulties and costs of successfully completing the works.

The contract amount shall not be adjusted to take account of any unforeseen difficulties or costs.

16. **ALL HEIGHTS, LIFTS, LEADS AND DEPTHS**

Unless otherwise specified in tender document, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths for the work and nothing extra shall be payable to him on this account.

17. **DAMAGE CAUSED BY RAIN, SNOWFALL, FLOOD OR ANY OTHER NATURAL CALAMITY**

No payment shall be made for any damage caused by rain, snowfall, flood or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the government property and the work for which payment has been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P/Machinery brought to the site by him.

18. **SETTING OUT**

It shall be responsibility of the contractor to ensure correct setting out of alignment. Real Time Kinematics / Total Station survey instruments only shall be used for layout, fixing boundaries, and center lines, etc., Nothing extra shall be payable on this account.

Though the site levels are indicated in the drawings the contractor shall ascertain and confirm the site levels with respect to benchmark from the concerned authorities. The contractor shall protect and maintain temporary/ permanent benchmarks at the site of work throughout the execution of work. These benchmarks shall be got checked by the Engineer-in-Charge or his authorized representatives. The work at different stages shall be checked with reference to bench marks maintained for the said purpose. Nothing extra shall be payable on this account.

The contractor shall be entirely and exclusively responsible for the horizontal, vertical and other alignments, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be carried out by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge.

19. **SUBMISSION AND DOCUMENTATION**

The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc. under various labour laws and other regulations applicable to the works, at his site office. He should also keep at site at least one set of BIS / IRC/ MoRTH Codes and other relevant codes at site and produce the same if asked for by Engineer-in-Charge. In case of non-compliance, these codes will be purchased from the market and actual cost of purchase will be recovered from the next RA Bill of the Contractor.

The Contractor shall make available four (04) sets of completed Project Drawings and services drawings like cross drainage “As Built Drawings” along with literatures, manuals, warranty certificates etc. of various installed fittings, fixtures and equipment for the completed projects. This shall be the prerequisite for payment of final bill.

20. DE-WATERING

De-watering required, if any, shall be done conforming to BIS Code IS: 9759 (guide lines for dewatering during construction) and / or as per the specifications approved by the Engineer-in-Charge. Design of an appropriate and suitable dewatering system shall be the Contractor’s responsibility.

Such scheme shall be modified / augmented as the work proceeds based on fresh information discovered during the progress of work, at no extra cost. At all times during the construction work, efficient drainage of the site shall be carried out by the Contractor and especially during the laying of plain cement concrete, taking levels etc. The Contractor shall also ensure that there is no danger to the nearby properties and installations on account of such lowering of water table. If needed, suitable precautionary measures shall be taken by the Contractor. Also the scheme of dewatering adopted shall have adequate built in arrangement to serve as stand-bye to attend to repair of pumps etc. and disruption of power / fuel supply. Nothing extra shall be payable on this account. In trenches where surface water is likely to get into cut / trench during monsoons, a ring bund of puddle clay or by any other means shall be formed outside, to the required height, and maintained by the Contractor. Also, suitable steps shall be taken by the Contractor to prevent back flow of pumped water into the trench. Nothing extra shall be payable on this account.

For works below ground level the contractor shall keep that area free from water. If dewatering or bailing out of the water is required, the contractor shall do the same at his own cost and nothing extra shall be paid. Nothing extra shall be paid for execution of work in or under water and / or liquid mud including pumping out of water as required.

To execute work contractors should divert flow with creation of bund and using hume pipe of suitable size and length. Nothing extra shall be paid on this account.

21. The huts for labour are not to be erected at the site of work by the contractors. He is required to make his own arrangements for labour accommodation and nothing extra shall be paid by CPWD on this account. He shall also arrange place for yard for keeping various materials, cement/ steel store outside of campus. No space is available at the site of work, however for keeping chowkidar, site office, lab, samples room, toilets for labour etc., working yard and other essential requirements such as cement store for day to day requirement, some space shall be made available near the campus. All labour and staff of contractor shall possess valid identity cards such as Aadhar Card, Voter Card etc. Before tendering, he shall visit the site and assess the manner in which he is able to arrange the above facilities. The Engineer- in-Charge shall in no way be responsible for any delay on these accounts and no claim, whatsoever, on these accounts shall be entertained.

The contractor has to build his site office for housing their staff and engineers, sample rooms, testing laboratories, conference hall etc. The conference room should be air-conditioned and have at least capacity of 15 persons around a conference table.

22. The original copies of challan/cash memos / invoices towards the quantity of various materials procured shall be made available by the contractor at the request from the Engineer-in-Charge and a copy of the same shall be kept in record. Warranty / Guarantees cards of various materials shall also be submitted by the contractor during handing over of the buildings to the client.

SPECIAL CONDITIONS

1. The work is required to be carried out at International Border in Jammu.
2. The contractor shall submit a detailed programme in the form of CPM/ PERT/ BAR chart to the Engineer-in-charge within 15 days of award of work and shall be got approved from him.

The programme chart should include the following:-

Network CPM/ PERT/ BAR diagram prepared as per existing practice.

3. The programme chart will have to be updated on monthly basis and will be submitted to Engineer-in-charge regularly.
4. The approval by the Engineer-in-charge of such programme or the furnishing of such particulars shall not relieve the contractor of any of his duties or responsibility under the contract. This is without prejudice to the right of the Engineer-in-charge to take action against contractor as per terms and conditions of the agreement.
5. All tools, plant and machinery provided by the contractor shall, when brought to the site, be deemed to be exclusively intended for construction and completion of this work and contractor shall not remove the same or any part thereof without the consent of the Engineer-in-charge.
6. The rates quoted by the contractor shall be all inclusive keeping in view the specifications, additional and special conditions and lead involved for various material and other inputs for carrying out the work, nothing extra shall be payable whatsoever, unless otherwise specified.
7. Labour Cess @ 1% of Gross value of work done shall be deducted from each bill as per Building & other Construction Workers Welfare Cess Act 1996.
8. GST/Income Tax and Education Cess shall be deducted from each bill as per Govt. Orders.
9. The contractor shall have to make approaches to the site and keep them in good condition for transportation of labour and materials as well as inspection of works by the Engineer-in-charge. Nothing extra shall be paid on this account.
10. Foreign consultants / sub-consultants and foreign bidders shall not be allowed.
11. The approach to construction site is available from one side only. If any for execution any other approach is required, contractor will prepare and nothing extra shall be paid.

12. TESTING OF MATERIAL

The cost of samples including packing, transportation and any other incidental charges and testing charges thereof shall be borne by the Contractor.

The test results shall be final and binding on the contractor. The decision of the Engineer- in-Charge in this regard shall be final and binding on the contractor.

All necessary tests as per the CPWD specifications /MoRT&H specifications /relevant BIS / IRC codes shall be carried out on all the materials whatsoever ISI marked or otherwise. Wherever CPWD specifications/ MoRT&H specifications /relevant BIS / IRC codes are not available, the tests shall be carried out as per the directions of the Engineer-In-Charge. Nothing extra, what so ever, shall be payable on this account.

13. The contractor shall take all necessary measures for the safety of traffic during construction and provide, erect and maintain such barricades, including signs, markings, flags, lights and flagman, as necessary at either end of the excavation/embankment and at such intermediate points as directed by the Engineer-in-Charge for the proper identification of construction area. He shall be responsible for all damages and accidents caused due to negligence on his part.
14. The malba/garbage, removed from the site shall be disposed off by the contractor at any suitable place as directed by the Engineer-in-Charge.
15. Some restrictions may be imposed by the security Staff/BSF/Army etc. on the working and or movement of labour, materials etc. and the contractor shall be bound to follow all such restriction / instructions and nothing extra shall be payable on this account or due to less reduced working hours etc.
16. Location, B.P. or chainage /R.D. given in the Name of work is only for broad guidance. Actual place /reach for the work will be decided at site by the Engineer-In-Charge and no claim what so ever on this account shall be entertained by the department.
17. Wherever any reference to the Indian Standard Codes of BIS/IRC has been made, it shall be with reference to the latest revisions up to the date of receipt of tender.
18. The contractor shall be responsible to arrange at his own cost all necessary tools and plants required for execution of the work.
19. Royalty at the prevalent rates wherever payable, shall have to be paid by the contractor on the, boulders, metal, shingle, sand and bajri etc. or any other materials collected by him for the work direct to revenue authority of the District /State Government concerned.
20. The rates for all items of work, shall unless clearly specified otherwise include cost of all labour, materials T&P and other inputs involved in the execution of the item.
21. Unless otherwise specified in the schedule of quantities, the rate for all items of the work shall be considered as inclusive of pumping out or bailing out water from all depths if required for which no extra payment will be made. This will include water encountered from any source, such as rains, floods, sub-soil, water being high due to any other cause what so ever etc.

22. The work shall be carried out in a manner so as not to cause any obstruction or to affect the progress of the works being carried out in the area.
23. Necessary platforms of required size etc. shall be made by the contractor to prevent the construction material from coming in to direct contact with the local soil. Nothing extra shall be payable on this account.
24. Whenever any reference to any Indian Standard Specifications occurs in the documents relating to this contract the same shall be inclusive of all the amendments issued there to or revision thereof, if any, up to the date of receipt tenders.
25. The work shall be executed and measured as per metric dimensions given in the schedule of Quantities, Drawings etc. (F.P.S. Units wherever indicated are for guidance only).
26. The contractor shall ensure that sufficient quantity of water of approved quality is available at site for proper execution of work. Nothing extra for arranging water at site will be paid to the contractor by the department.
27. The attached drawings are schematic drawing not to scale. They shall neither be scaled nor element in them counted. The decision of Engineer-in-Charge in regard to interpretation of drawing shall be final and binding.
28. The work shall be carried out strictly in conformity with the drawings and in accordance with the nomenclature of the items, specifications etc. Any discrepancy in the drawing/nomenclature of item/additional specification etc. shall be got clarified from Engineer in Charge. Decision of Engineer in Charge shall be final and binding on the agency.
29. The contractor has to start the work after submitting the programme duly approved by the Engineerin Charge. Physical progress shall be similar to the programme submitted by the contractor and in accordance with the mile stone as in schedule 'F'.
30. The Engineer-in-Charge shall be at the liberty to appoint 3rd party inspection team from any other professional body to check the quality of the work. The contractor shall be liable to the provisions under clause 16 of GCC 2023 in this respect also.
31. The contractor will procure all the materials in advance so that there is sufficient time for testing and approving of the materials and clearance of the same before use in work.
32. All materials brought by the contractor for use in the work will be got checked from the Engineer-in-charge or his authorized representative of the work on receipt of the same at site, before use.
33. The contractor will also employ necessary watch and ward establishment for the safe custody of materials at his own cost.
34. The work shall be carried out near Indo-Pak Border. Nothing extra for different location of work shall be entertained.

35. The contractor shall not store /dump construction material or debris on islands.
36. The contractor shall get prior approval from Engineer-in-charge for the area where the construction material or debris can be stored beyond the islands. The contractor shall identify a suitable area and location for dumping debris and waste material, in consultation with the local authorities.
37. The contractor shall take appropriate protection measures like raising wind breakers of appropriate height on all sides of the plot/Area using CGI sheet or plastic and /or other similar material to ensure that no construction material dust fly outside the plot area. Nothing Extra shall be payable on this account.
38. The contractor shall ensure that all the trucks or vehicles of any kind which are used for construction purposes/or are carrying construction material like cement, sand and other allied material are fully covered. The contractor shall take every necessary precautions that the vehicles are properly cleaned and dust free to ensure that enroute their destination, the dust, sand or any other particles are not released in air/ Contaminate air.
39. The contractor shall provide mask to every worker on the construction site and involved in loading, unloading and carriage of construction material and construction debris to prevent inhalation of dust particles.
40. The contractor shall provide all medical help, investigation and treatment to the workers involved in the construction of building and carry of construction material and debris relatable to dust emission. The contractor has to establish a Primary care/treatment unit which have a doctor and all essential medicine for primary treatment at site office.
41. The contractor shall ensure that C&D waste is transported to the C&D waste site only and due record shall be maintained by the contractor.
42. The contractor shall compulsorily use of wet jet in grinding and stone cutting.
43. The contractor shall comply all the preventive and protective environmental steps as stated in the MoEF guidelines, 2010.
44. The contractor shall carry out on-Road- Inspection for black smoke generating machinery. The contractor shall use cleaner fuel.
45. The contractor shall ensure that all DG sets comply emission norms notified by MoEF.
46. The contractor shall use vehicles having pollution under control certificate. The emissions can use reduced by a large extent by reducing the speed of a vehicle to 20 kmph. Speed bumps shall be used to ensure speed reduction. In cases where speed reduction cannot effectively reduce fugitive dust, the contractor shall divert traffic to nearby paved areas.

47. The contractor shall ensure that the construction material is covered by tarpaulin. The contractor shall take all other precaution to ensure that no dust particles are permitted to pollute air quality as a result of such storage.
48. The contractor shall make arrangement for creating a working platform for stacking of construction materials, Batch mix plant, setting of field lab, cement godown etc. at a sufficient height from natural ground level at their own cost.
49. **Environmental Protection measures:** The quoted amount shall include cost of carrying out following activities by the contractor for nothing extra shall be made:
 The contractor shall ensure that the construction material is covered by tarpaulin. The contractor shall take all other precaution to ensure that no dust particles are permitted to pollute air quality as a result of such storage.
 The contractor shall take appropriate protection measures like raising wind breakers of appropriate height on all sides of the plot/Area using CGI sheet or plastic and /or other similar material to ensure that no construction material /dust fly outside the plot area.
 The contractor shall ensure that all the trucks or vehicles of any kind which are used for construction purposes/or are carrying construction material like cement, sand and other allied material are fully covered. The contractor shall take every necessary precaution that the vehicles are properly cleaned and dust free to ensure that enroute their destination, the dust, sand or any other particles are not released in air further to Contaminate the air.
 The contractor shall use vehicles having pollution under control certificate. The emissions can be reduced by a large extent by reducing the speed of a vehicle to 20 kmph. Speed bumps shall be used to ensure speed reduction. In cases where speed reduction cannot effectively reduce fugitive dust, the contractor shall divert traffic to nearby paved areas.
 The contractor shall comply all the preventive and protective environmental steps as stated in the MoEF guidelines, 2010. The contractor shall carry out on-Road-Inspection for black smoke generating machinery. The contractor shall use cleaner fuel.
 The contractor shall ensure that all DG sets comply emission norms notified by MoEF.
 The contractor shall provide mask to every worker on the construction site and involved in loading, unloading and carriage of construction material and construction debris to prevent inhalation of dust particles.
 The contractor shall provide all medical help, investigation and treatment to the workers involved in the construction of building or all type construction activities and carry of construction material and debris related to dust emission.

50 Safety precautions:

Contractor shall within two weeks of award of work, submit to the Engineer-in- Charge for his approval, list of measures for maintaining safety of manpower deployed for construction and avoidance of accidents.

The contractor shall make all safety arrangement required for the labour engaged by him at his own cost. All consequences due to negligence or due to lapse of security/safety or otherwise shall remain with the contractor. The department shall not be responsible for any mishap, injury, accident or death of the contractor's staff. No claim in this regard shall be entertained /accepted by the department.

51. Material Handling:

Necessary platforms of required size etc. shall be made by the contractor to prevent the construction material from coming into direct contact with the local soil. Nothing extra shall be payable on this account.

The contractor shall ensure that sufficient quantity of water of approved quality is available at site for proper execution of work. Nothing extra for arranging water at site will be paid to the contractor by the department.

All materials brought by the contractor for use in the work will be got checked from the Engineer-in-charge or his authorized representative of the work on receipt of the same at site, before use.

Samples of various materials required for testing shall be provided free of cost by the contractor and all other incidental expenditure required to be incurred like for taking out the samples, packing, conveyance, etc. shall be borne by the contractor himself.

52. Housing, water supply, drainage and electricity.

No accommodation is available at the site of work.

The contractor has to make his own arrangements for housing, stores and field offices, accommodations for his labour and other employees etc. Contractor should visit the site and see in what manner he is able to arrange the above. No other space shall be made available at work site. However, onus will be on contractor to arrange the space on its own. No claim whatsoever will be entertained on this account.

The contractor has to make his own arrangement for water required for the work as per clause 30 of the general conditions of the contract for CPWD works. If required, boring of tube well with permission from concerned department which is to be obtained by contractor, if necessary, will be done by the contractor at his own cost and nothing extra shall be paid by the department for arrangement of water or on its treatment as per IS:456/2000, para 5.4 or CPWD specifications 2019 volume-I & II with upto date correction slips.

Arrangement of water for drinking purpose in addition to the water required for construction work is also to be made by the contractor.

The contractor shall make his own arrangements for obtaining electric connection for carrying out construction as well as any maintenance activity and make necessary payment directly to the department concerned. In the absence of electric connection or failure of power supply, the contractor shall make his own arrangement of generators.

- 52.0 The original copies of challan/cash memos/invoices towards the quantity of various materials procured shall be made available by the contractor at the request from the Engineer-in-Charge and a copy of the same shall be kept in record. Warranty / Guarantees cards of various materials shall also be submitted by the contractor during handing over of the work to the client.
- 53.0 Maintenance of Register: Site Order Book shall be kept at site. All test registers, and MAS registers issued by the Engineer-in-Charge shall be maintained by the contractor which will be reviewed by the officers of CPWD at regular intervals.

Maintenance of Register of Tests –

- (i) All the registers of tests carried out at Construction Site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-Charge.
- (ii) All Samples of materials including Cement Concrete Cubes shall be taken jointly with Contractor by JE/AE and out of this at least 50% samples shall be taken in presence of AE in charge. If there is no JE, all Samples of materials including Cement Concrete Cubes shall be taken by AE jointly with Contractor. All the necessary assistance shall be provided by the contractor. Cost of sample materials is to be borne by the contractor and he shall be responsible for safe custody of samples to be tested at site.
- (iii) All the test in field lab setup at Construction Site shall be carried out by the Engineering Staff deployed by the contractor which shall be 100% witnessed by JE/AE. At least 10% of the tests are to be witnessed by the Executive Engineer / Executive Engineer and Senior Manager.
- (iv) Minimum 10% test should be conducted in outside CPWD approved lab as directed by Engineer-in- Charge.
- (v) All the entries in the registers will be made by the designated Engineering Staff of the contractor and same should be regularly reviewed by JE/AE/AEE/EE.
- (vi) Contractor shall be responsible for safe custody of all the test registers.
- (vii) Submission of statement of all test conducted at site/lab, material at Site Register along with each alternate Running Account Bill and Final Bill shall be mandatory.

Maintenance of Material at Site (MAS) Register:

- (i) All the MAS Registers including Cement and Steel Registers shall be maintained by Contractor which shall be issued to the contractor by Engineer-in-Charge in the same manner as being issued to CPWD field staff. Authenticated copies of bills / vouchers of materials which has to be entered in the MAS register are to be submitted by the contractor to CPWD before making payments.
 - (ii) Each of the entry of receipt of material at site shall be 100% test checked by JE or by AE/AEE if there is no JE.
 - (iii) Each MAS Register shall be checked by JE at least twice a week and at least once a week by AE/AEE. If there is no JE then MAS registers will be checked by AE at least twice a week.
 - (iv) Cement Register shall be reviewed by EE at least once in a month.
 - (v) It will be deemed that work so measured, checked and paid is of the required quality and standard, both in respect of ingredients as well as the intended functions it is supposed to perform. In other words, the work would not only meet the required specifications but also the workmanship as per sound engineering practices.
 - (vi) The PM/CE cum ED/SE shall also have to check and sign these reports at suitable intervals in token of his ensuring compliance of the 'Quality Assurance Plan' for the work.
 - (vii) Copies of bills: Agency will provide authenticated copies of itemize bills of materials which has to be entered in the MAS Register viz steel, cement, bitumen, paint, water proofing or any other item suggested by the Engineer-in-Charge.
- 54.0 54.0 Since the curing of RCC or Mortar work is difficult in the area, the chemical curing compound shall be used for the purpose of curing, for which nothing extra shall be paid.
- 55.0 The side slopes of Granular subgrade earth in the filling/embankment area shall be compacted with appropriate methods as per MoRTH specifications to achieve the desired compaction.
- 56.0 The contractor shall execute work with diversion of channel stream by using pipe, excavation, banking etc. The contractor shall quote his rates considering all expenditure on account of diversion of flow. Nothing extra shall be paid on this account.
- 57.0 The work shall be carried out according to specifications of Road and Bridges works issued by Ministry of Road Transport and Highways and CPWD specification 2019 Volume I to Volume III and MoRTH specifications updated, including upto date correction slips till date of submission of bid and particular specifications, additional conditions of the contract, special conditions etc. that are part of this Contract.

- 58.0 The work of causeway/culvert has to be executed over river Basanter by making arrangements of temporary coffer dam/bund/drain/island to divert water way for taking up concrete work and other works etc. simultaneously i/c all arrangement for dewatering from site of work. The rates quoted by contractor deemed to have included cost of all activities required to construct temporary coffer dam/bund/drain/island to divert water way and dewatering etc. Nothing extra shall be paid on this account.
- 59.0 Contractor shall submit design and drawings of protective barricading for approval of Engineer-in-Charge. The T&P required for fabrication, carriage, placing of barricading in position and shifting etc. shall be arranged by the contractor. The cost of material, labour, fabrication, carriage, placing in position, shifting and maintaining the barricading in good condition etc. is included in the rate quoted for tender. Nothing extra shall be paid on this account.
- 60.0 The work is to be carried out in the perennial Nallah/River bed, may be required diversion of flow, bailing out of water, removing of mud/muck etc. and at some or all places may be quick sand condition, and for the execution of the work any supplementary/additional work required in the process of completion of the work shall be carried out and it is deemed to be rates quoted is inclusive of all. In this regard no claim whatsoever shall be admissible.
- 61.0 The work of causeway/culvert has to be executed over river Basanter by making arrangements of temporary coffer dam/bundh/drain/island to divert water way for taking up concrete work and other works etc. simultaneously i/c. all arrangement for dewatering from site of work. The rates quoted by contractor deemed to have included cost of all activities required to construct temporary coffer dam/bundh/drain/island to divert water way and dewatering etc. Nothing extra shall be paid on this account.

PARTICULAR SPECIFICATIONS

1. The work, in general, shall be executed as per description of item, specifications attached, MoRT&H specifications, CPWD Specifications 2019 Vol. I & II with correction slips issued up to the date of receipt of tender and relevant BIS / IRC/ MoRTH Codes, BSEN codes, ISO Codes & ASTM Codes.
2. All the works unless otherwise specified hereinafter or permitted by Engineer- in-charge shall be done in accordance with the latest editions of MoRT&H specification and relevant BIS / IRC/ MoRTH Codes, BSEN codes, ISO Codes & ASTM Codes as on the date of receipt of tenders or any other specified code.

Any additional standard specifications or criteria published by the BIS / IRC/ MoRTH or other foreign standard and in practice upto the date of receipt of tenders shall also take into account. In the absence of any definite provisions on any particular issue in the above-mentioned specifications / relevant BIS / IRC/ MoRTH Codes, BSEN codes, ISO Codes & ASTM Codes, the design and construction shall be in conformity with the Sound Engineering Practice and in all such matters the decision of the Engineer-in-charge shall be final and binding on the contractor and nothing shall be paid extra.

In case of any discrepancy or contradiction amongst the specified standard the following order of preferences shall generally prevail.

- i. Nomenclature of items etc. given in Schedule of Quantities.
- ii. Particular Specifications, Special conditions, specification and additional specifications as per tendered document if any.
- iii. Drawings attached with the tender.
- iv. General Condition of Contract 2023 construction work, amended up to last date of submission of bid.
- v. MoRT&H Specifications for Roads & Bridge works (2019) published by IRC.
- vi. CPWD Specifications, 2019 Vol. I & II with up-to-date correction slips.
- vii. All relevant BIS / IRC Codes with the latest revisions.
- viii. Foreign standards, such as BSEN, ISO, ASTM etc. and accepted international practice as approved by Engineer-in-Charge.
- ix. Sound Engineering Practice as per directions of the Engineer-in-Charge.

If there are varying or conflicting provision made in any document forming part of the contract, the Engineer-in-charge shall be the deciding authority with regard to the Intention / interpretation of the document and his decision shall be binding without any reservations.

3. The contractor shall ensure quality control measures on different aspects of construction materials, workmanship and correct construction methodologies to be adopted. He shall have to submit quality assurance programme within two weeks of the award of the work. The quality assurance programme should include method statement for various items of work to be executed along with check list to enforce quality control.

The contractor shall submit least three brand / make of various materials from preferred make list brand / make of various materials to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it.

The contractor shall submit shop drawings of staging and formwork arrangement etc. for the approval of Engineer-in-Charge. Unless stated otherwise, the rate for concrete in plain concrete or reinforced concrete or prestressed concrete, shall be deemed to include all formwork required in accordance with this Section, which shall not be measured separately. The contractor shall also submit bar bending schedule for approval of Engineer-in- charge before execution.

The contractor shall get the water tested with regard to its suitability for use in the works and get written approval from the Engineer-in-charge before the proceeds with the use of same for execution of works. Water charges shall not be recovered in case arrangement of water is made at his own by the contractor.

Wherever any reference to any Indian Standard Specifications and other relevant codes occur in the documents relating to this contract same shall be inclusive of all amendments issued thereto or revision thereof, if any, up to date of receipt of the tender.

All the drawings shall at all times be properly correlated by the contractor before executing the work and no claim what so ever shall be entertained for failing to do so. In case of any discrepancy in the specifications, Schedule of Quantity and drawings, the decision of the Engineer-in-charge shall be final, conclusive and binding on the contractor.

Rates for the items are inclusive of all labour, materials, T&P, incidental charges, contractors profit and overheads and Taxes etc. unless, otherwise, specified. The contractors shall quote the rates accordingly.

The mix design shall be done by IIT Jammu. All expenditure for mix design shall be borne by contractor.

4. GENERAL CONDITIONS FOR SUPPLY OF MATERIALS

The sample of all the items shall have to be got approved by the Contractor from the Engineer-in-charge before the supply commences and shall be without prejudice to the right of Engineer-in-Charge to get random samples tested out of the actual lot received.

The contractor shall if required furnish the manufacturer's certificate that the material supplied satisfy the requirements of the relevant specifications.

The Engineer-in-charge shall be at liberty to take respective sample (s) of each item of schedule of quantity in any approved laboratory as decided by him. The sample for testing shall be provided by the contractor. All other expenditure required to be incurred for taking sample, conveyances and packing etc. shall be borne by the contractor himself. In case any sample particular lot fails in testing the contractor shall be bound to replace the entire lot with fresh material of prescribed specification and the rejected lot shall be returned to the contractor only after fresh lot is supplied.

Rejected materials shall have to be removed by the contractor at his own cost immediately of the instructions of doing so.

In case of any dispute regarding rejection of quality of materials the decision of the Engineer-in-charge shall be final and binding upon the contractor.

Royalty octroi terminal, tax etc. at prevalent rates shall have to paid by the contractor himself and the rates quoted by him shall include these duties and nothing extra on, this account shall be payable.

The contractor shall have to produce the cash memo to satisfy department that the material has been purchased from the authorized dealer and the GST has been paid.

5 **MINIMUM QUALITY ASSURANCE PLAN**

The contractor shall also assist inspection and collection of samples by Engineer in charge for testing. The samples of material/items of work required for testing by Engineer in Charge or his representative shall be provided free of charge by the contractor. **The cost incurred in collection of samples and its packing and transportation to the CPWD approved lab/field laboratory including testing charges shall be borne by the contractor.**

Tests which are mandatory as per CPWD specification 2019 Vol. I & II, MoRT&H Specifications are to be carried out by the contractor at the frequency mentioned in contract document & relevant specifications. While deciding these criteria CPWD Specifications, MoRT&H Specifications & Provisions of BIS / IRC/ MoRTH Code and Standard Practices may be referred.

Machinery and other Tool & Plants required to be deployed at site by the contractor as per requirement. Entire Machinery and T&P may not be required at the start of work, therefore, a proper time schedule by which each Machinery & T&P is to be brought at site should be submitted by the contractor to the Engineer-in-Charge before start of the work.

The contractor shall submit the design mix for each layer of the Rigid/flexible pavement and RCC structure (if any), duly vetted by IIT Jammu. The submitted design mix must comply with the minimum requirements specified in the contract and relevant IRC & IS codes. The charges shall be borne by contractor.

QAP shall be prepared in accordance with quality assurance manual available at CPWD website and shall be got approved by the Engineer-in-Charge CPWD.

The contractor shall ensure quality control measures on different aspects of construction including materials, workmanship and correct construction methodologies to be adopted.

The contractor shall get the source of various raw materials namely bitumen, aggregate, cement, sand, steel, water etc. to be used on the work, approved from the Engineer-in-Charge and trial mixes for controlled concrete shall be done using the approved materials. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-in-Charge for which tests etc. shall be done by the contractor at his own cost.

Similarly, the contractor shall submit brand/make of various materials to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it. Any change will have to be got approved from engineer in charge in advance.

The contractor shall submit shop drawings of staging and shuttering arrangement, stone cladding and other works including mock work as desired by Engineer-in-Charge for his approval before execution. The contractor shall also submit bar bending schedule for approval of Engineer-in-Charge before execution.

The contractor shall depute Quality Engineer exclusively for enforcement of quality control. For other staff to be deployed for quality assurance, the contractor may refer to clause 32 under schedule "F". Nothing extra shall be paid on this account.

Testing

(A) For determining that the works conform to the Specifications and Standards, the Engineer-in-Charge shall require the contractor to carry out or cause to be carried out tests, at such time and frequency and in such manner as specified in this Agreement and in accordance with sound engineering practice for quality assurance. Frequency and the manner in which tests shall be conducted shall be as per the MoRTH specifications, if the item pertains to MoRTH specification as per table in the NIT named as **"Minimum acceptable criteria for specification of various items to be executed"** and as per CPWD specifications if item pertains to DSR.

(B) Outside tests shall be conducted at Government labs/IITs/NITs and other approved laboratories by the Engineer-in-Charge for testing of materials.

(C) All the tests in field lab setup at construction site shall be carried out by the QA Staff deployed by the contractor and shall be witnessed by the Engineer-in-Charge or his authorized subordinates as specified in NIT. The contractor shall provide all necessary facility to them for witnessing the tests in the field laboratory. In general, contractor shall carry out 90% of field tests in site laboratory and 10% tests shall be got carried out from outside laboratory as indicated below. Contractor shall endeavor to obtain test reports for tests conducted from outside laboratory in a reasonable time.

(D) The cost of samples including packing and transportation and other incidental charge including testing charges shall be borne by the agency.

6 MAINTENANCE OF REGISTER OF TESTS-

- 6.1. All the registers of tests carried out at Construction Site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-charge at the time of issue of award letter.

All samples of materials including cement concrete cubes shall be taken by contractor jointly with JE in charge of work and out of this at least 50% samples shall be taken in presence of AE in charge. If there is no JE, all samples of materials including Cement Concrete Cubes shall be taken by contractor in presence of AE in charge of work. All the necessary assistance shall be provided by the contractor. Cost of sample materials is to be borne by the contractor and he shall be responsible for safe custody of samples to be tested at site.

All the test in field lab setup at Construction Site shall be carried out by the Engineering Staff deployed by the contractor in presence of JE-in-charge and at least 50% of tests in presence AE-in-charge. At least 10% of tests shall be carried out in presence of Executive Engineer.

All the entries in the registers will be made by the designated Engineering Staff of the contractor and same should be presented before JE/AE/Divisional Engineer for their review.

Contractor shall be responsible for safe custody of all the test registers.

It is mandatory to the contractor to submit copy of all test registers, Material at Site Register along with each alternate Running Account Bill and Final Bill.

If all the test registers is not submitted by contractor along with each alternate R/A Bill & Final Bill, no payment shall be released to the contractor.

7 Field Laboratory

The agency shall set-up field laboratory with the equipment as laid down in MoRTH and sub clauses there under of MORT&H Specifications or as directed by Engineer-in-charge with the water and electricity facilities and manpower as needed for carrying out the requisite tests on materials and finished work and shall maintain the same till the time of completion of the work or till such time as directed by the Engineer-in-Charge. Nothing extra will be paid on this account.

Wherever possible, the materials shall get tested in the field lab of agency. The cost of samples including packing, transportation and other incidental charges shall be borne by the Bidder.

The testing of materials, if required by the Officer in charge of the Quality Control Wing of CPWD or his authorized representative, shall also be carried out in the field Laboratory of the Bidder wherever possible. The cost of samples including packing and transportation and other incidental charges shall be borne by the agency.

In case the tests are conducted at any Laboratory other than field Lab of the agency, the testing charges shall be borne by the contractor. The cost of samples including packing and transportation and other incidental charges shall also be borne by the agency.

The decision of Engineer –in- Charge regarding test results shall be final and binding on agency.

8. SPECIFICATION FOR GABION WORK

The work in general shall be carried out as per MOR&TH specification given in clause 2503.3, & BS EN-10223.

The wire of specified diameter, used for the fabrication of gabion shall be procured from the firm of repute like SAIL, RINL, TISCO, JSPL and JSW or as approved by E-in-C. The agency shall submit the in-house test certificate of the manufacturer before commencement of work.

The Gabion Work shall be got done by the contractor from the specialized agency to the satisfaction of the Engineer-in-charge and a certificate to this effect shall be obtained by the contractor from the Engineer-in-charge/.

9 QUALITY CONTROL FOR ROAD WORKS FIELD LABORATORY:

The agency shall set-up field laboratory with all equipment as laid down in Clause 120 and sub clauses there under of MoRT&H Specifications or as directed by Engineer-in-charge with the water and electricity facilities. The manpower as needed for carrying out the requisite tests on materials and finished work as per MoRTH and CPWD Specification shall maintain till the time of completion of the work or as directed by the Engineer-in-Charge. Nothing extra will be paid on this account.

Minimum Quality Assurance Plan for Road work: Embankment under OMC condition:

Test		Frequency	Ref. Codes
1.	Moisture content	250 m3	IS: 2720(Part II)
2.	Density	250 m3	IS: 2720 (Part XXVIII)
3.	Control test on borrow pits.		
	(a) Gradation	One to two tests per 8000 m3	IS: 2720(Part IV)
	(b) Plasticity	-do-	IS: 2720(Part V)
	I Proctor test	-do-	IS: 2720(Part VIII)
	(d) Deleterious content	As required by the Engineer-in-charge	
	I Moisture contents	250 m3	IS: 2720(Part II)

CONDITION FOR COARSE AND FINE AGGREGATE, WATER & ADMIXTURE

1. SOURCE OF MATERIALS

It shall be the responsibility of the contractor to procure all the materials required for construction and completion of the contract. The contractor shall indicate in writing the source of materials well in advance to the Engineer-in- Charge, after the award of the work and before commencing the work. If the material from any source is found to be unacceptable at any time, it shall be rejected by the Engineer-in-Charge and the contractor shall forthwith remove the material immediately from the site as directed by the Engineer-in-Charge.

2. COARSE AGGREGATES

Coarse aggregate shall consist of naturally occurring crushed stones, crushed gravel, natural gravel or a suitable combination thereof. Coarse aggregate obtained from crushed or broken stone shall be angular, hard, strong, dense, durable, clean and free from adherent coating, injurious amounts of disintegrated pieces, alkali, vegetable matter, soft, friable, thin plate, elongated or flaky pieces and any deleterious material. The presence of flaky and elongated pieces shall be avoided. Coarse aggregate having positive alkali- silica reaction shall not be used. All coarse aggregates shall conform IS:383 and tests for conformity shall be carried out as per IS:2386 , part-I to part- VIII.

The nominal maximum size of aggregate to be used in R.C.C work shall be 20 mm, while for factory made precast it shall be 12 mm due to self compacting concrete as per EFNARC of EN.

The contractor shall satisfy himself that the material proposed to be used for construction complies with the requirements of IS: 383 and shall submit the entire information indicated in Appendix 'A' of IS: 383 for approval of the Engineer-in-charge. In case the aggregate tested do not comply with any requirement of the specifications, the source for the same shall be rejected. No further samples from the rejected source shall normally be considered for approval.

The aggregate shall be stored in such a way as to prevent mixing with foreign materials. Different sizes of coarse aggregate shall be stored in paved area in separate stock piles sufficiently distant from each other in order to prevent inter mixing of the materials at the edges of the stock piles.

3. FINE AGGREGATES

Fine aggregate shall consist of clean, hard, strong and durable pieces of crushed stone, crushed gravel, or a suitable combination of natural sand, crushed stone or gravel. They shall not contain dust, lumps, soft or flaky, materials, mica or other deleterious materials in such quantities as to reduce the strength and durability of the concrete, or to attack the embedded steel. Motorized sand washing machines should be used to remove impurities from sand. Fine aggregate having positive alkali-silica reaction shall not be used. All fine aggregates shall conform to IS: 383 and tests for conformity shall be carried out as per IS: 2386, (Parts I to VIII). The contractor shall submit the entire information indicated in Appendix A of IS:383 for approval of Engineer- in-charge. In case the aggregate tested do not comply with any requirement of the specifications,

the source for the same shall be rejected. No further samples from the rejected source shall normally be considered for approval.

Regarding storage of fine aggregate, provisions as specified for coarse aggregate shall apply.

4. WATER (IF THE WATER FIT FOR CONSTRUCTION IS NOT AVAILABLE)

Water used for mixing and curing shall be RO water and clear & free from injurious impurities like oils, acids, alkalis, salts, sugar, organic material or other substances that may be deleterious to concrete or steel. The maximum permissible limits for physical and chemical impurities shall be as per Quality Control requirements of this tender document and relevant Indian standard codes. The agency is required to install the industrial R.O. Plant of suitable capacity to meet the requirement of work.

The PH value of water shall not be less than six. Potable water is generally considered satisfactory for mixing concrete. As a guide, the following concentrations represent the maximum permissible values.

- (a) To neutralize 100 ml sample of water, using phenolphthalein as an indicator, it should not require more than 5 ml of 0.02 normal NaOH. The details of test are given in 8.1 of IS:3025 (Part 22).
- (b) To neutralise 100 ml sample of water, using mixed indicator, it should not require more than 25 ml of 0.02 normal H₂SO₄. The details of test shall be as given in Clause 8 of IS:3025 (Part 23).

5 ADMIXTURES

The admixtures, if used shall comply with the requirement of IS: 9103-1999. Admixtures shall not impair durability of concrete nor combine with constituents to form harmful compounds nor risk the corrosion of reinforcement. The contractor shall provide the following details concerning each Admixture proposed to be used, after obtaining the same from the manufacturer, for the prior approval of the Engineer-in-charge along with a copy of the Manufacturer's Test Certificate of not earlier than 6 months.

Normal dosage and detrimental effects, if any, of under dosage and over

dosage. The chemical names of the main ingredients in the admixtures.

The chloride content, if any, expressed as a percentage by the weight of the admixture.

Values of dry material contents, ash content and relative density of the admixture which can be used for Uniformity Tests.

Whether or not the admixture leads to the entrainment of air when used as per the manufacturer's

recommended dosage, and if so to what extent.

Where two or more admixtures are proposed to be used in any one mix, confirmation as to their compatibility.

There would be no increase in risk of corrosion of the reinforcement or other embedment as a result of using the admixture.

Admixture in addition to conformity to the requirement IS: 9103-1999 shall satisfy the following conditions.

“Plasticisers” and “Super-Plasticisers” shall meet the requirements indicated for “Water reducing Admixture”.

List of mandatory machinery, tools & plants to be deployed by the Contractor at site:-

1)	Bulldozer /crawler tractor.	1 Nos.
2)	Excavator.	1 Nos.
3)	Front End Loader (1.5-2.0 cum.).	1 Nos.
4)	Tipper.	1 Nos.
5)	Tractor.	1 Nos.
6)	Scraper.	1 Nos.
7)	Concrete Mixer (Diesel).	1 Nos.
8)	Needle Vibrator (Petrol).	2 Nos.
9)	Generator Set (125 KVA).	1 No. Set
10)	Vibratory, Tandem, Smooth wheeled Roller.	1 Set each
11)	Spreaders.	1 Nos.
12)	Water Tanker.	1 Nos.
13)	Transit Mixer.	4 Nos.
14)	Batching and Mixing plant (20 Cum/ per hour capacity).	1 Nos.
15)	Plate Vibrator	1 Nos.
16)	Concrete Pump	1 Nos.

Note:- Any other/additional T&P/Machinery shall also be deployed by the contractor as per requirement at site and CPWD/MoRTH specifications and as per directions of the Engineer-in-Charge.

SPECIAL CONDITION FOR CEMENT, SAND AND REINFORCEMENT

1 CONDITION FOR CEMENT

Cement PPC/OPC of 43 or 53 Grade required for the work shall be procured by the contractor.

Every delivery of cement shall be accompanied by producer's certificate confirming that the supplied cement confirms to relevant specifications. These certificates shall be endorsed to the engineer in charge for his record.

The cement shall be brought at site in supply of approximately 50 tons or more as decided by the Engineer-in-charge.

Cement store shall be provided with a single door with two locks. The keys of one lock shall remain with CPWD Engineer-in-charge or his authorized person and that of other lock with the authorized agent of the contractor at the site of work so that the cement is issued from godown according to the daily requirement with the knowledge of both the parties. The account of daily receipt and issue of cement shall be maintained in a register in the prescribed Performa and signed daily by the contractor or his authorized agent in token of its correctness.

The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at any time.

Samples of cement arranged by the contractor shall be taken by the Engineer- in charge and got tested in accordance with provisions of relevant BIS codes as and when testing required by Engineer- in-Charge. In case test results indicate that the cement arranged by the contractor does not confirm to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-charge to do so.

The contractor shall supply free of charge the cement required for testing. The cost of tests shall be borne by the contractor.

The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract.

The theoretical, consumption of cement shall be worked out as per procedure prescribed in agreement conditions and shall be governed by conditions laid therein. No payment for excess consumption of cement will be allowed.

For non-schedule items, the decision of the Superintending Engineer regarding theoretical quantity of cement, which should have been actually used, shall be final and binding on the contractor.

Cement brought to site and remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-charge.

PROFORMA FOR THE CEMENT REGISTER

PARTICULARS OF RECEIPT			PARTICULARS OF ISSUE			REMARK							
	Quantity received	Progressive Total	Date of issued	quantity issued	Item of work for which issued	Quantity returned at the end of the day	Total issued	Daily Balance in hand	Contractors initials	J.E's initials	Asstt. Engg. initials	A.E. initials	
1	2	3	4	5	6	7	8	9	10	11	12	13	14

2. SPECIAL CONDITIONS FOR SAND:

Coarse sand shall be either river sand or pit sand or crusher dust or a combination of the two. It shall be inert, clean, sharp, angular and gritty to touch and composed of hard siliceous material and shall be brought from the quarry approved by Engineer-in-Charge. Its grading shall fall within the limits of grading zone I, II, III of 'Table 4: Fine aggregates' of IS – 383.

Fine Sand shall be either river or pit sand or a combination of the two. Its grading shall fall within the limits of grading Zone IV of 'Table 4: Fine aggregates'

3. CONDITIONS FOR STEEL REINFORCEMENT

The Contractor shall procure IS marked TMT bars of various grade from the steel manufacturers as given General List of approved manufacturers or their authorized dealers having valid BIS license for IS: 1786-2008 (Amendment -1 November 2012). The contractor shall have to obtain and furnish test certificate to the Engineer in charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to BIS codes, the same shall stand rejected and shall be removed from the site of work by the contractor at his own cost within a week's time by written orders from the Engineer in charge to do so.

Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders from the Engineer-in-Charge to do so.

The steel reinforcement shall be brought at site in supply of 2 tons or more as decided by the Engineer in charge.

The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

For checking nominal mass, tensile strength, bend test & re-bend test etc. specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than the specified below:

Size of bar	For consignment below 100 tonnes	For consignment above 100 tonnes
Under 10 mm dia bars	One sample for each 25 tonnes or part thereof	One sample for each 40 tonnes part thereof
10 mm to 16mm dia bars	One sample for each 35 tonnes or part thereof	One sample for each 45 tonnes part thereof
Over 16mm dia bars	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes part thereof

The contractor shall supply free of charge the steel reinforcement required for testing. The cost of testing charges including packaging transportation and other incidental charges shall be borne by the contractor irrespective of the results.

The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed in Schedule F shall be made. In case of excess consumption, no adjustment needs to be made.

Steel brought to site and remaining unused shall not be removed from site without the written permission of Engineer-in-Charge.

- (i) Reinforcement shall be measured in length including hooks, if any, separately for different diameters as actually used in work, excluding overlaps. From the length so measured, the weight of reinforcement shall be calculated in tonnes on the basis of IS: 1732. Wastage, overlaps, couplings, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire or other methods for binding and placing, shall not be measured and cost of these items shall be deemed to be included in the rates for reinforcement.

- (ii) The standard sectional weights referred to shall be as in Table 5.4 in para 5.3.4 in CPWD specifications 2019 Vol. 1 will be considered for conversion of length of various sizes of High Corrosion Resistant Steel bars in to standard weight. Record of actual sectional weights shall also be kept dia wise and lot wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer in charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as Derived Actual Weight.

(a) If the derived weight is less than the standard weight as in sub-para (ii) above, then the derived Actual Weight shall be taken for payment.

(b) If the derived actual weight is found more than the standard weight, then standard weight as worked out in sub para (ii) above shall be taken for payment and nothing shall be paid extra for the difference in Derived Actual Weight and standard weight.

TMT Steel Bars of Fe 500D, IS-1786 shall be used in all RCC works.

The reinforcing steel brought to site of work shall be stored on brick or timber platform of 30/40-cm height, nothing extra shall be paid on this account.

List of testing equipment's to be provided by the contractor at site lab, which may be needed for execution as per actual requirement.

All necessary equipment for conducting all necessary tests shall be provided at the site laboratory by the contractor at his own cost. The following minimum laboratory equipment's shall be set up at site office laboratory, which shall be set up at one place. It may be possible that some of the equipment may not be needed or some may be needed for some fixed period (As per requirement of work to be decided by Engineer-in-charge).

A. For Building Work

1. Balances
 - (i) 7 kg. to 10 kg. capacity, semi-self-indicating type - accuracy 10 gm.
 - (ii) 500 gm. capacity, semi-self-indicating type - accuracy 1 gm.
 - (iii) Pan balance- 5 kg. capacity - accuracy 10 gms.
 2. Ovens-electrically operated, thermostatically controlled upto 110°C - sensitivity 1°C.
 3. Sieves: as per IS 460-1962.
 - (i) I.S. sieves - 450mm internal dia, of sizes 100 mm, 80 mm, 63mm, 50 mm, 40 mm, 25 mm, 20 mm, 12.5 mm, 10 mm, 6.3 mm, 4.75mm, complete with lid and pan.
 - (ii) I.S. sieves- 200mm internal dia (brass frame) consisting of 2.36mm, 1.18mm, 600 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns, 75 microns, with lid and pan.
 4. Sieve shaker capable of 200 mm and 300 mm dia sieves, manually operated with timing switch assembly.
 5. Equipment for slump test - Slump cone, steel plate, tamping rod, steel scale, scoop.
 6. Dial gauges, 25 mm travel - 0.01 mm/division least count - 2nos.
 7. 100 tonnes compression testing machine, electrical-cum manually operated.
 8. Graduated measuring cylinders 200 ml capacity - 3 Nos.
 9. Enamel trays (for efflorescence test for bricks).
 - (i) 300 m×250 mm × 40 mm - 2 nos.
 - (ii) Circular plates of 250 mm dia - 4 nos.
- B. For Road Works**
1. Balances
 - (i) 7 kg to 10 kg capacity, semi-self-indicating type - accuracy 10 gm.
 - (ii) 500 gm capacity, semi-self-indicating type, accuracy 1 gm.
 - (iii) Chemical balance, 100 gm capacity - accuracy 0.1 gm.
 - (iv) Pan balance - 5 kg. capacity - 10 gm accuracy.
 - (v) Platform scale- 300 kg capacity.
 2. Oven electrically operated, thermostatically controlled.
 - (i) Upto 200°C for determination of loss on heating of bitumen.

3. Sieves as per IS 460-1962.
 - (i) I.S. sieves - 450 mm of internal dia of sizes 100 mm, 80mm, 63mm, 50mm, 40mm, 25mm, 20mm, 12.5mm, 10mm, 6.3mm, 1.75mm, complete with lid and pan.
 - (ii) I.S. sieves - 200 mm internal dia (brass frame) consisting of 2.36mm, 1.18mm, 600 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns and 75 microns with lid and pan.
4. Sieves shaker capable for shaking 200mm and 300mm dia sieves, electrically operated with timer.
5. Dial gauge
 - (i) 25mm travel - 0.01mm/division.
6. Load frame-5 tonnes capacity, electrically operated with speed control.
7. Aggregate impact test apparatus as per IS 2386-Part IV-1963.
8. Compaction apparatus (Proctor) as per IS 2720-Part VII-1974.
9. Modified ASHO compaction apparatus as per IS 2720-Part-III-1974.
10. Sand pouring cylinder with control funnel and tube complete as per IS 2720-Part XXVIII- 1974.
11. Sampling tins with rods 100mm dia × 50mm ht., 1/2kg capacity, and miscellaneous items like moisture tins etc.
12. Constant temperature bath for accommodating bitumen test specimen, electrically operated and thermostatically controlled.
13. Penetrometer with automatic time controller and with adjustable weight accessories and needles as per IS 1203-1958.
14. Oxllet extraction apparatus complete with extraction thimbles etc.
15. Laboratory mixer, about 0.02 cu-meter capacity, electrically operated with heating jacket.
16. Hubbard field stability test apparatus complete.
17. Marshall compaction apparatus as per ASTM 1559-62T, and complete with electrically operated leading unit, compaction pedestal bearing head assembly, dial micrometer, and bracket for flow measurement, load transfer bar, specimen mould (4 inch. dia) with base plate, columns, mould (4 inch, dia) with base plate, collars, specimen extracted. Compaction hammer, 4.53 kg (10lb)/457 mm (18inch) fall.
18. Distant reading thermometers.
19. Graduated cylinder 1000 ml. capacity.
20. Enamel tray.
21. Total station survey instrument (nos. as per requirement)
22. Steel tape 5m, 10m, 30m, 50m.
23. Camber template 1 lane (crown type cross-section and straight run cross section)
24. Precision automatic level with micrometer attachment.
25. Flakiness index test apparatus.
26. Softening point (Ring and ball app.).
27. Automatic asphalt content meter.
28. Core cutting machine suitable for upto 150mm dia core.

29. Ductility meter.
30. Liquid limit device with ASTM grooving tools as per IS:2720
31. Speedy moisture meter complete with chemicals.
32. Standard penetration test equipment.
33. Vicat needle apparatus for setting time with plungers as per IS; 269-1967.
34. Moulds of different sizes as per requirements.
35. Equipment for determination of specific gravity of fine and coarse aggregate as per IS;2386 (Part3) 1963.
36. Soundness testing apparatus for cement (Lee chattlier).
37. 0.5 cft, 1 cft cylinder for checking bulk density of aggregate with tamping rod.
38. Any other equipment as directed by Engineer-in-charge.

LIST OF PREFERRED MAKE OF MATERIALS (CIVIL WORK)

The contractor shall provide the materials as per the Make or Brand indicated below. When two or more alternative brands have been mentioned, the brand to be finally used shall be as decided by the Engineer-in-Charge. The contractor shall obtain the approval of Engineer in charge, for the alternative brands, before the actual execution of items.

General Materials.

S.No.	Materials	Brand /Manufacturer Name
1.	PPC /OPC Cement 43/53 Grade	A.C.C., Ultratech, Shree Cement, Ambuja,Birla, Cement Corporation of India.
2.	Portland Slag Cement	A.C.C., Ultratech, Shree Cement, Ambuja, Birla,Cement Corporation of India
3.	Port Land Cement (Blended with Metakaolin or Marble Powder Cement or Slag Cement having Slag content more than 50%)	A.C.C., Ultratech, Shree Cement, Ambuja, Birla Cement, Cement Corporation of India, JSW Portland Slag Cement Ltd.,
4.	POLYMER MODIFIED CEMENTITIOUS GROUT	BAL ENDURA/ WEBBER / MYK LATICRETE / CHRYSO
5.	EPOXY MORTAR	FOSROC / SIKA / CICO / LATICRETE
6.	CEMENTITIOUS GROUT	XYPEX / FOSROC/KRYTONE / CHRYSO
7.	POLYMERIC CEMENTIOUS COATING	BASF / CICO / FOSROC / SUNANDA
8.	LIST of RMC PRODUCER	ULTRATECH / READY MIX INDIA PVT. LTD./ ACC / LAFARGE/NDCON/RDC Pvt. Ltd.
9.	Steel Reinforcement / Structural steel	SAIL, TISCO, RINL(VIZAG), Jindal Steel & Power Ltd., JSW Steel Ltd.
10.	Synthetic Enamel Paint / Wood Emulsion / Steel Primer	Berger, Asian Paints, Nerolac, Jenson & Nicholson, Shalimar Paints, ICI Paints
11.	Acrylic Washable Distemper	Berger, Asian Paints, Nerolac, Jenson & Nicholson, Shalimar
12.	Water Proofing Cement Paint, Primer	Berger, Asian Paints, Nerolac, Jenson & Nicholson, Shalimar
13.	Acrylic Exterior Paint	Berger, Asian Paints, Nerolac, Jenson & Nicholson
14.	Crystalline Integral Admixture	XYPEX, PENETRON, KRYTON
15.	Strip seal expansion Joint System	Hercules, Saint Gobain
16.	EPDM Gasket	Hanu, Anand

Precast RCC Products, Gabion & Geosynthetics

S.No.	Materials	Brand /Manufacturer Name
1	Gabion Box Mesh and revet mattress with polymer coating	Meccafferri, Guru Kripa Wire Netting Industries, A-1 Fence Products Company Pvt. Ltd., Mobius, Tech Fab India, Gajpati Industries Pvt. Ltd., Mobius Protection Industries LLP.
2	Geo textile, Geogrid, Geocells & Geo-composites	Tech Fab India, SKAPS Industries (I) Pvt. Ltd., Supreme Non Woven Company Mumbai, Meccafferri, Khator Technical Textile Ltd.

All other items shall be of ISI marked/as per approved sample kept at site of work. Samples of various materials to be approved by the Engineer-in-charge.

NOTE:

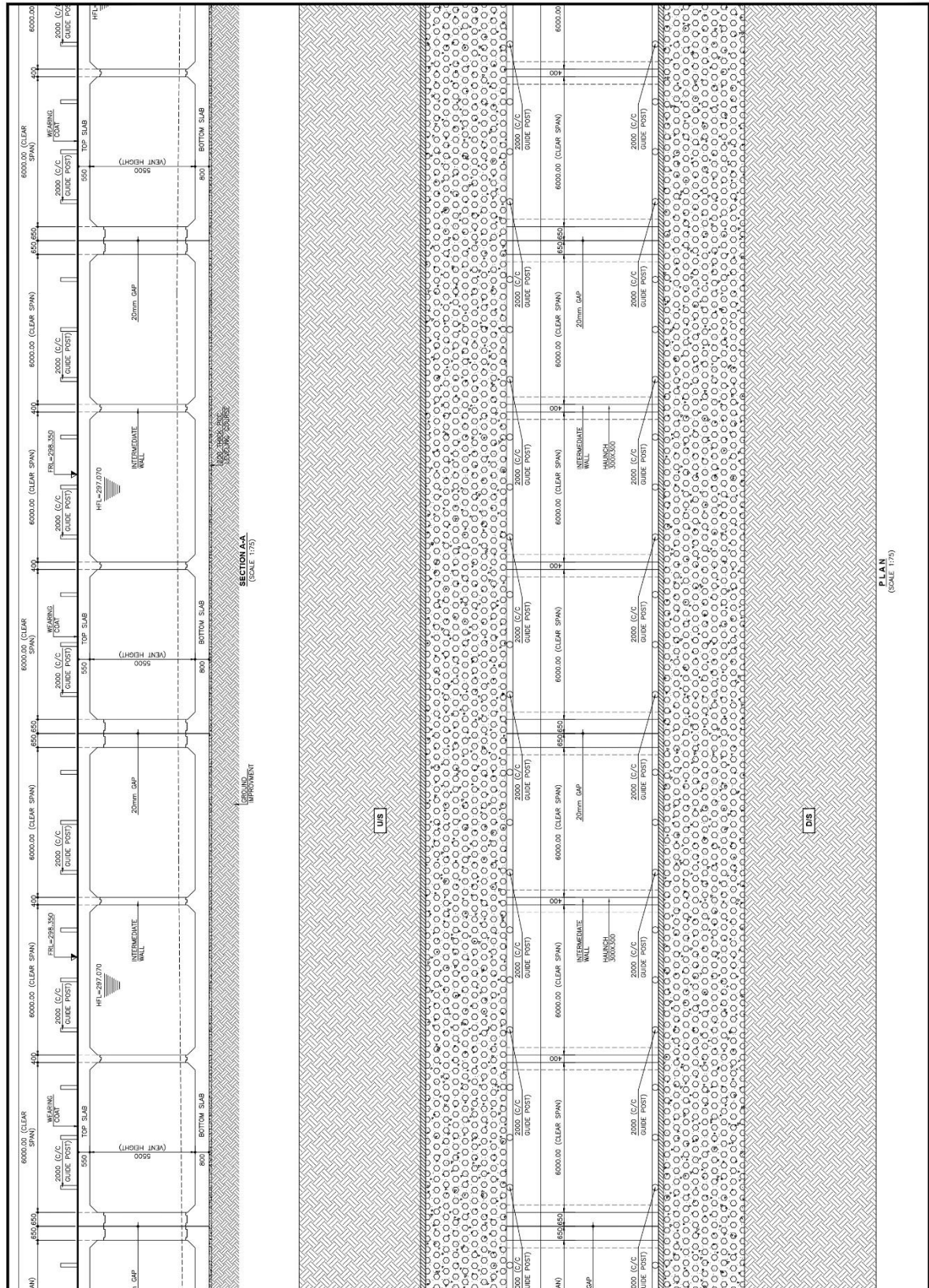
- i. All approved materials, samples and products shall be kept at site.
- ii. The Contractor shall procure and provide all the materials from the manufacturers / suppliers as per the above list attached with the tender documents, as per the item description and particular specifications for the work. The equivalent brand for any item shall be permitted to be used in the work, only when the specified make is not available. This is, however, subject to documentary evidence produced by the contractor for non-availability of the brand specified and also subject to independent verification by the Engineer-in-Charge. In exceptional cases, where such approval is required, the decision of Engineer-in-Charge as regards equivalent make of the material shall be final and binding on the Contractor. Nothing extra shall be payable on this account.
- iii. The SE, BFC, CPWD reserves the right to add/delete any material and Brands in the Preferred list of materials/brands on the recommendation of Engineer-in-Charge

DRAWINGS



Overwriting-NIL, Insertion-NIL, Correction-NIL, Deletion-NIL

EE(C)

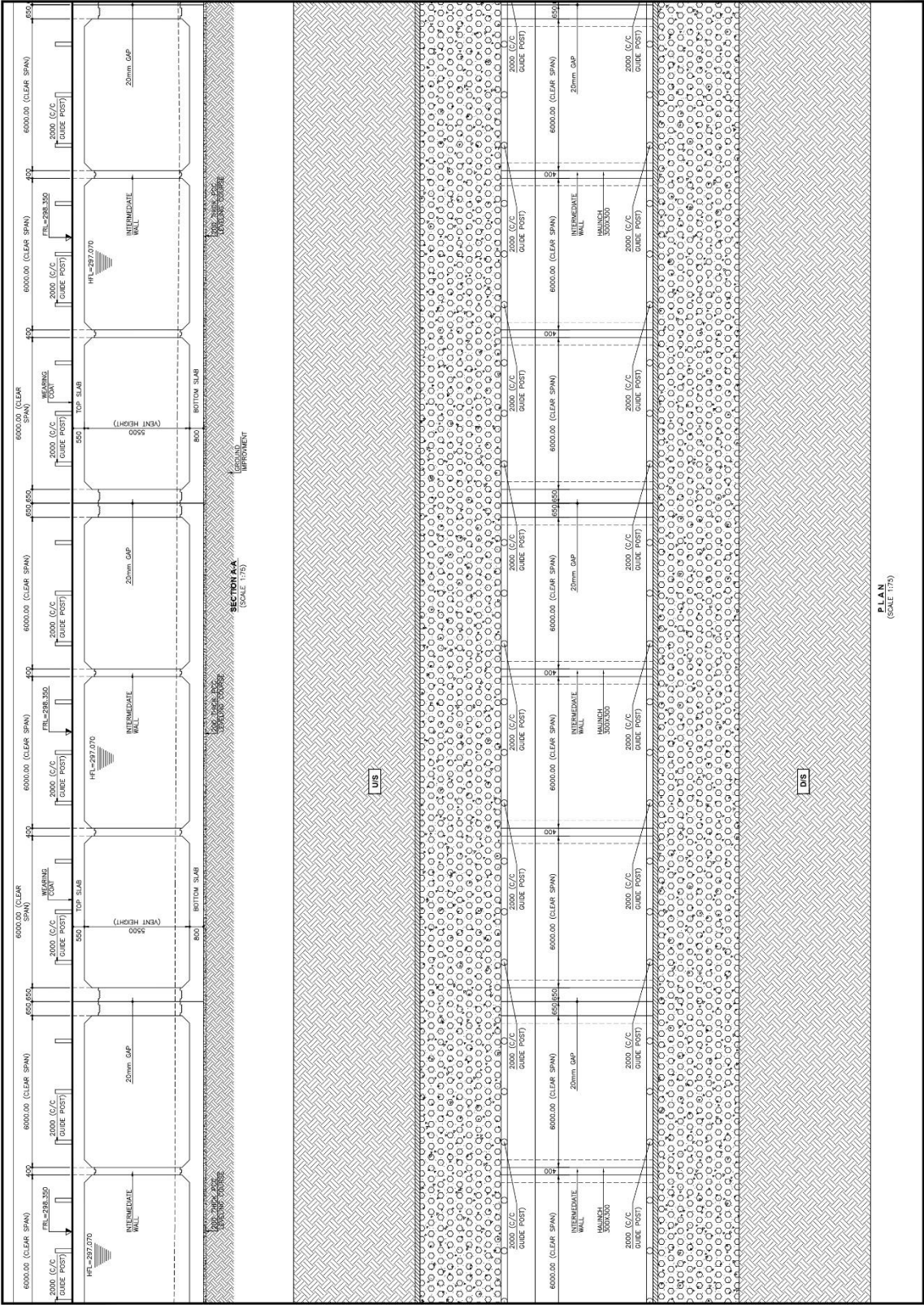


GAD SHEET-2

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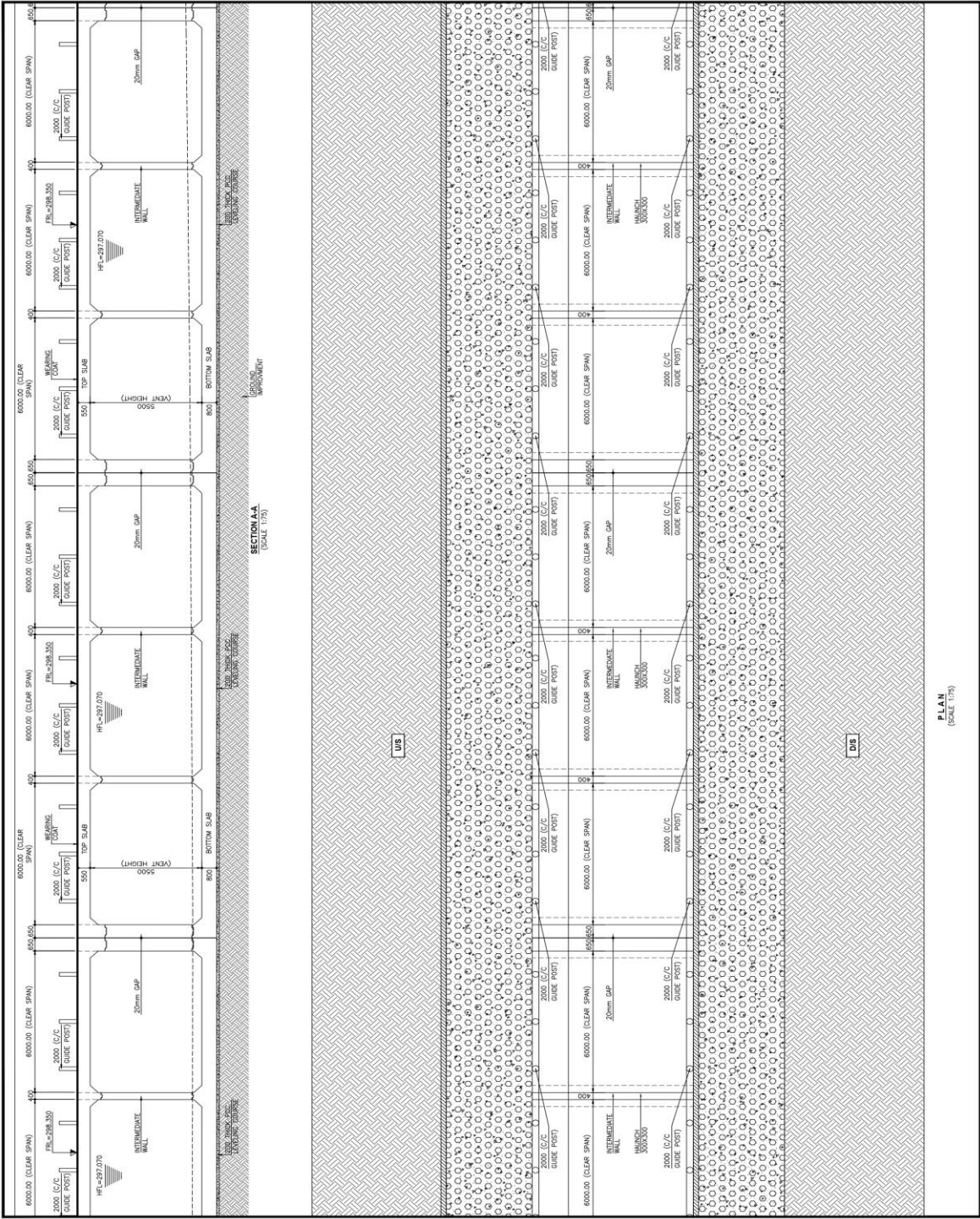
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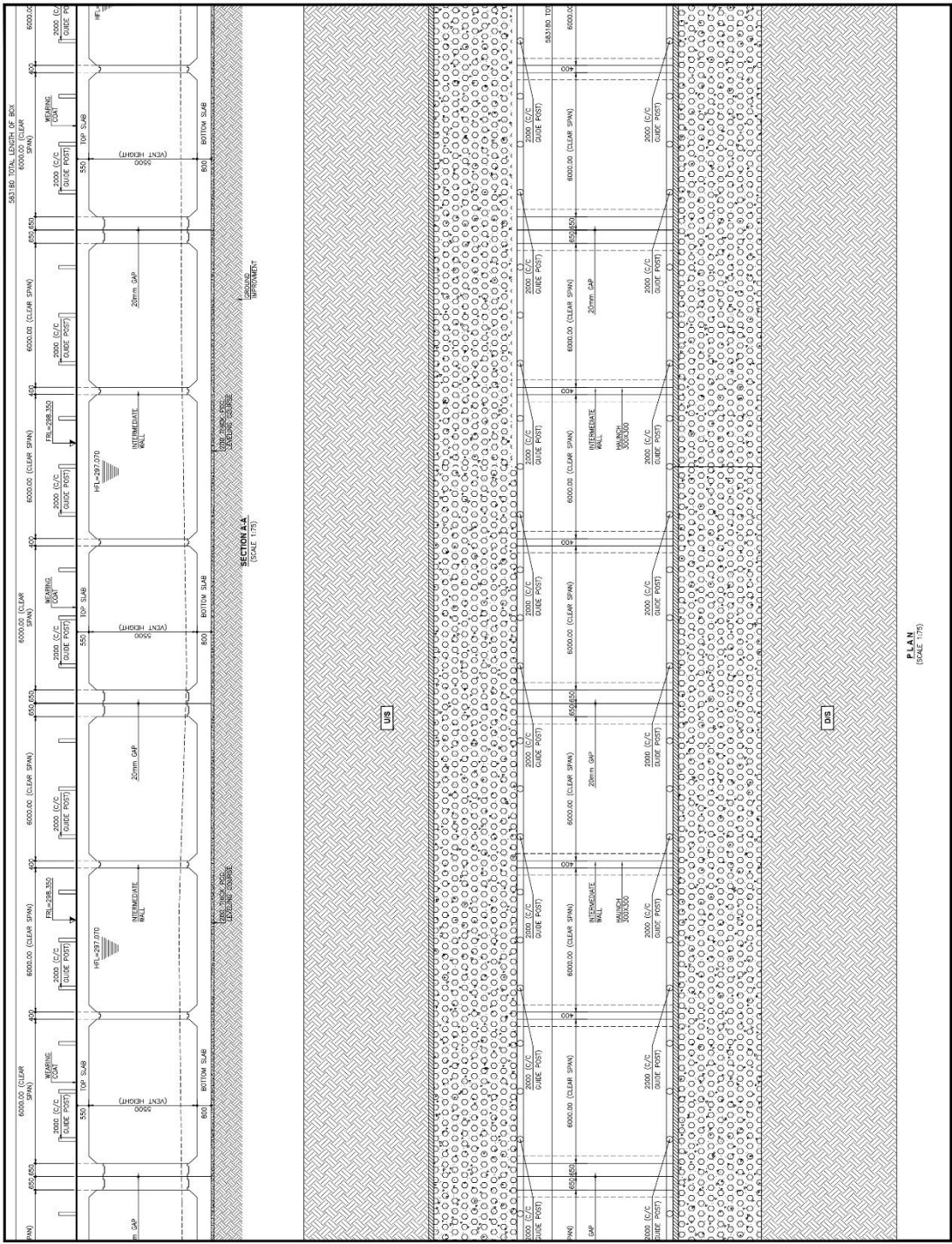


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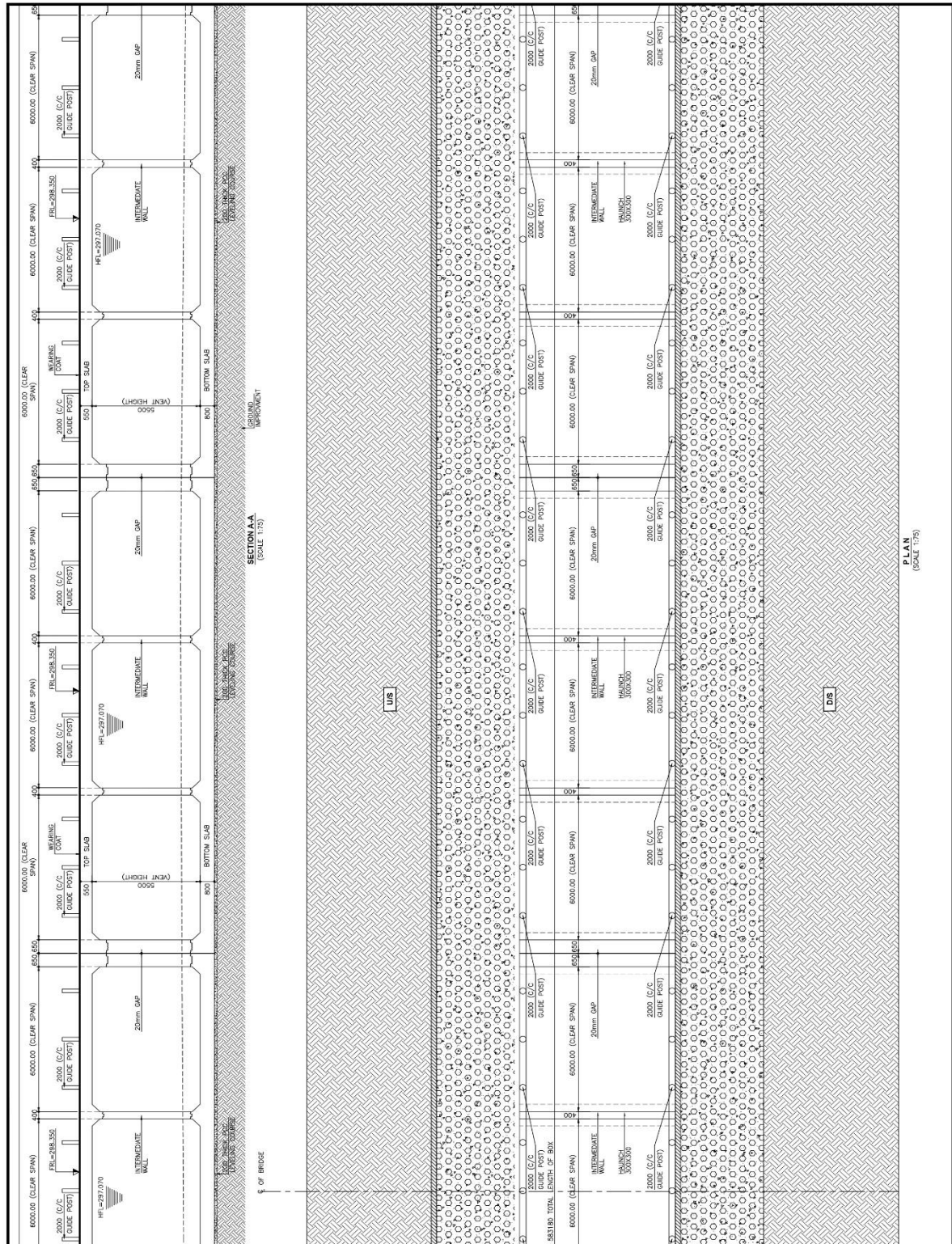
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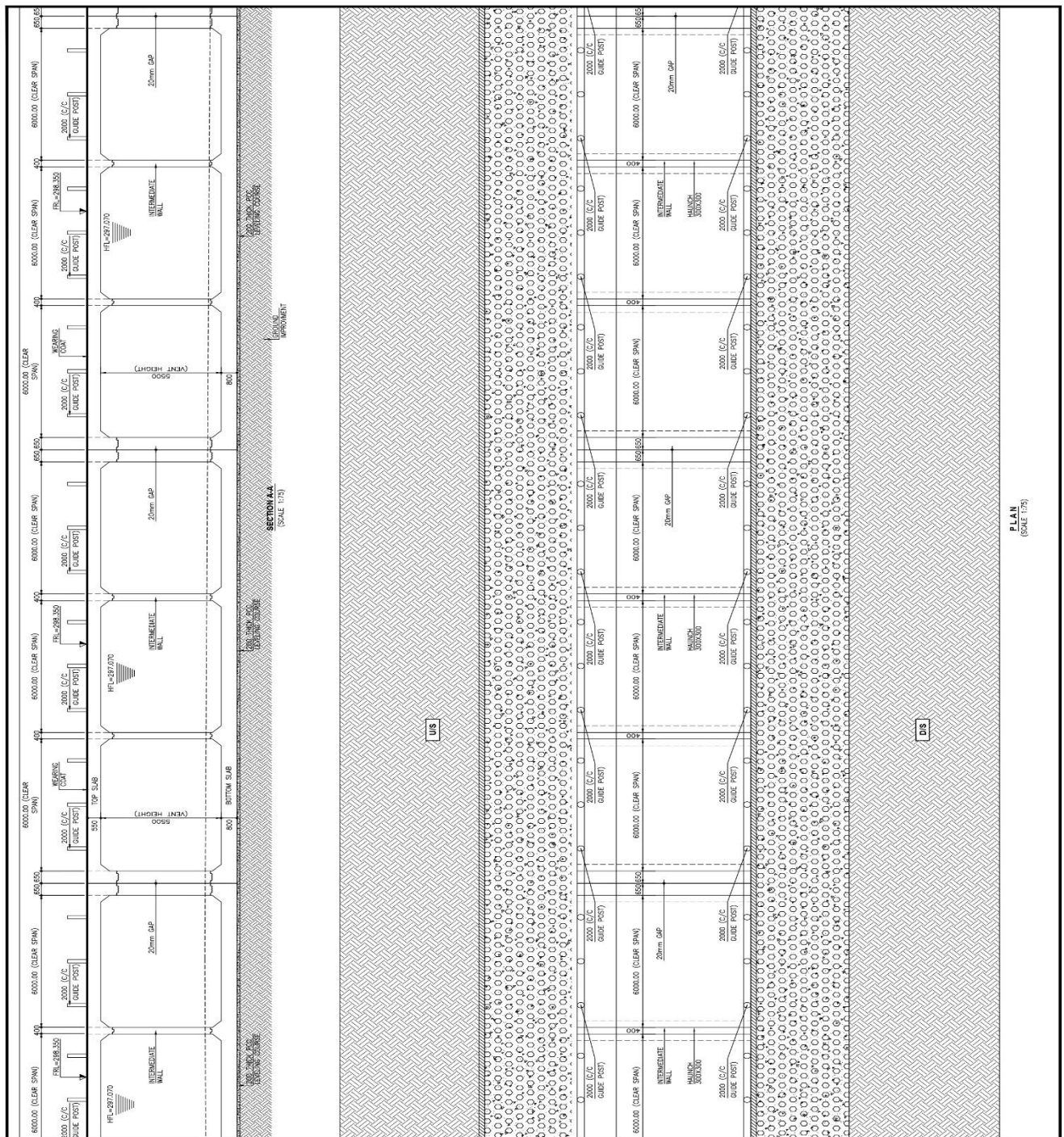


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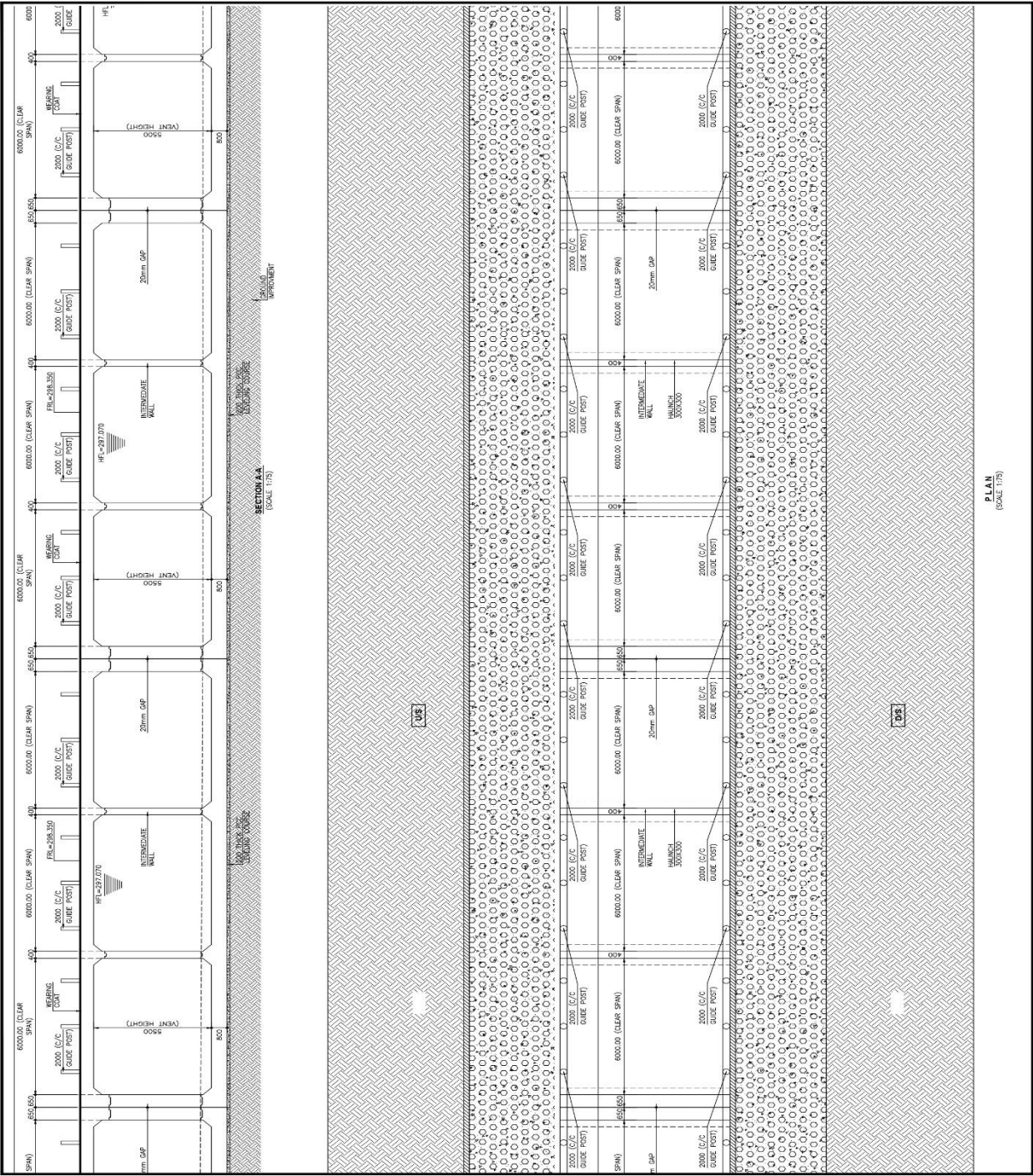


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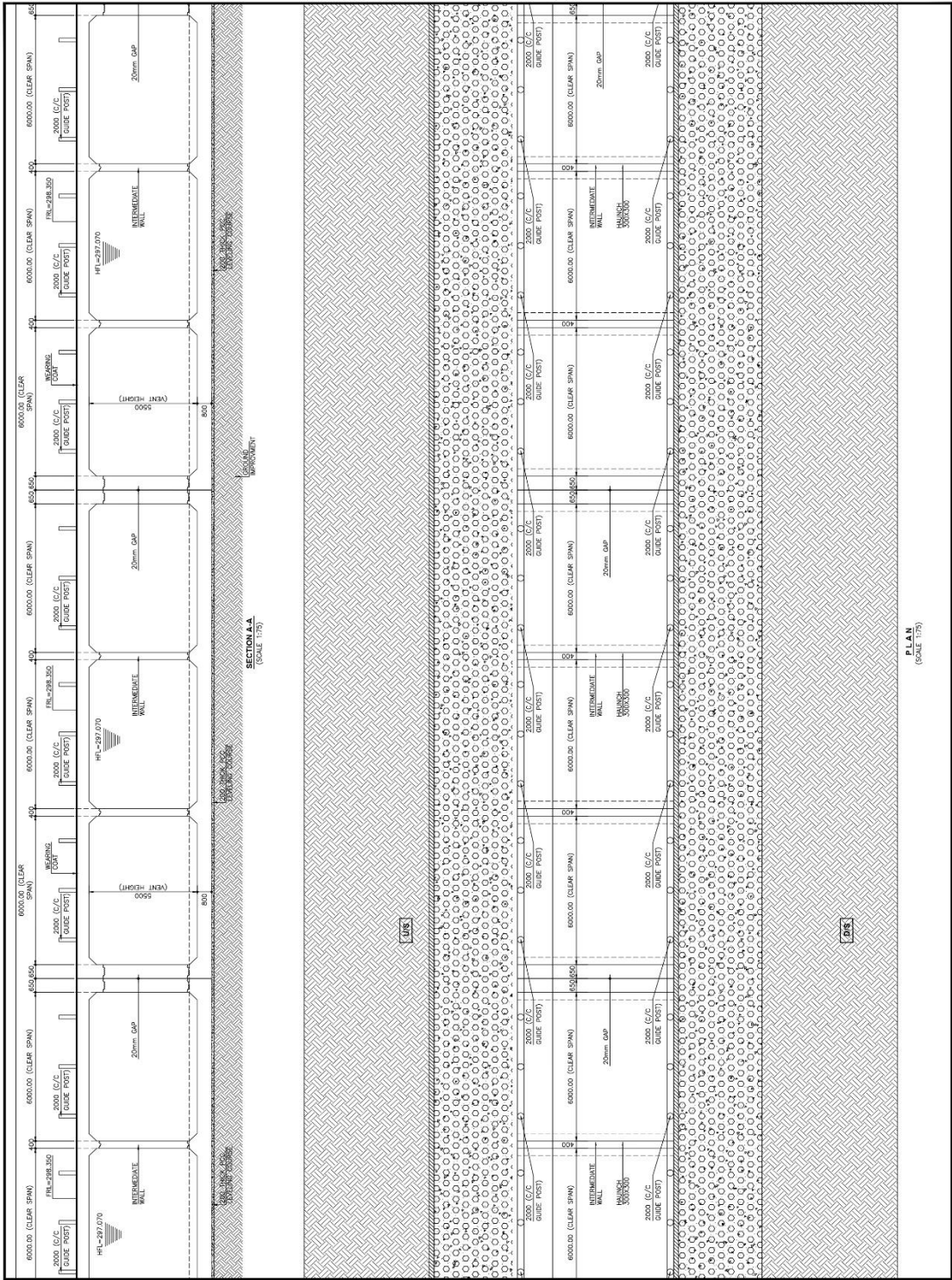
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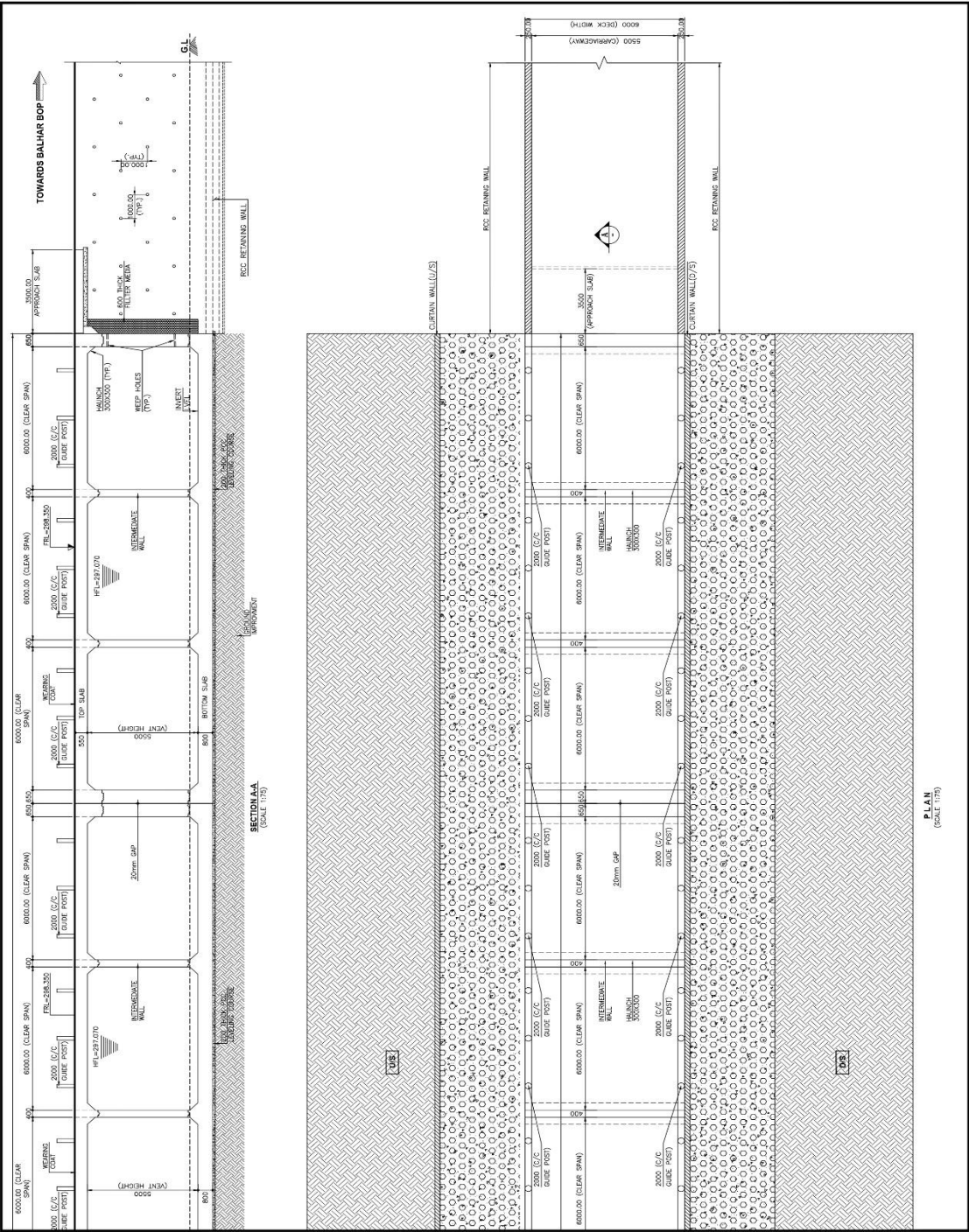
GAD SHEET-9



GAD SHEET-10



GAD SHEET-11



GAD SHEET-12

SCHEDULE OF QUANTITY

Name of work:- Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector.

S.no.	Description of Item	Unit	Quantity	DSR 2023 (after applying Correction Factor 0.973 & Cost Index 10.21%) /NS Items	Amount (Rs.)
MAIN CULVERTS					
	SUB HEAD - 1 : EARTH WORK				
1.0	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth for all lead and for all lift, as directed by Engineer-in-charge.				
	All kinds of Soil	Cum.	34808.00	190.34	66,25,355
1.1	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth for all lead and for all lift, as directed by Engineer-in-charge.				
	All kinds of Soil	Cum.	5866.00	279.13	16,37,377
1.2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 and for all lift. Back Fill	Cum	4814.00	210.18	10,11,807
1.3	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.	Cum	3393.00	135.97	4,61,346

	SUB HEAD-2 : CONCRETE WORKS				
2.0	Providing and laying in position ready mixed or site batched design mix cement concrete for plain cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana/ Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate/ retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering and finishing as per direction of the engineer-in-charge; for the following grades of concrete. Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the minimum specified cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.				
	All works upto plinth level :				
	Concrete of M10 grade with minimum cement content of 220 kg /cum	Cum.	185.00	9474.31	17,52,747
	Concrete of M15 grade with minimum cement content of 240 kg /cum	Cum.	2315.00	9636.24	2,23,07,896
	Concrete of M20 grade with minimum cement content of 270 kg /cum Rigid Apron and Curtain Wall	Cum.	3267.00	9879.07	3,22,74,922
	SUB HEAD-3 : RCC WORKS				
3.0	Centering and shuttering including strutting, propping etc. and removal of form for				
a	Foundations, footings, bases of columns, etc. for mass concrete	Sqm	3361.00	420.52	14,13,368
b	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sqm	18188.00	903.45	1,64,31,949
c	Suspended floors, roofs, landings, balconies and access platform	Sqm	3965.00	994.33	39,42,518
3.1	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete at all level. Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	1133634.00	115.65	13,11,04,772

3.2	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge, for the following grades of concrete.: Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement				
	All works upto plinth level				
	Concrete of M25 grade with minimum cement content of 330 kg /cum	Cum	595.00	10192.35	60,64,448
	Concrete of M35 grade with minimum cement content of 370 kg /cum	Cum	7211.00	10516.15	7,58,31,958
3.3	Add for using extra cement in the items of design mix over and above the specified cement content therein.	Qtl	2697.00	786.56	21,21,352
	SUB HEAD-4 : STEEL WORK				
4.0	Structural steel work in single section, fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	Kg	7232.00	125.84	9,10,075
	SUB HEAD-5 : ROAD WORKS				
5.0	Providing and laying bitumen mastic wearing course (as per specifications) with industrial bitumen of grade 85/25 conforming to IS : 702, prepared by using mastic cooker and laid to required level and slope, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of approved size at the rate of 0.005 cum per 10 sqm and at approximate spacing of 10 cm centre to centre in both directions, pressed into surface protruding 1 mm to 4 mm over mastic surface, including cleaning the surface, removal of debris etc. all complete. (Considering bitumen using 10.2% as per MORTH specification).				
	25 mm thick	Sqm	3,501.00	915.94	32,06,706

5.1	Providing and laying design mix cement concrete of M-30 grade, in roads/ taxi tracks/ runways, using cement content as per design mix, using coarse sand and graded stone aggregate of 40 mm nominal size in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve/ tie bars wherever required, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel form work with sturdy M.S. channel sections, curing, making provision for contraction/ expansion, construction & longitudinal joints (10 mm wide x 50 mm deep) by groove cutting machine, providing and filling joints with approved joint filler and sealants, complete all as per direction of Engineer-in-charge (Item of joint fillers, sealants, dowel bars with sleeve/ tie bars to be paid separately).Note:- Cement content considered in M-30 is @ 340 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately.				
	Cement concrete prepared with batch mixing machine	Cum	450.00	11291.08	50,80,986
5.2	Providing and filling in position rubberized bitumen hot sealing compound for sealing of expansion joints in roads / pavements all complete as per direction of the Engineer-in-Charge. Using grade 'A' sealing compound conforming to IS: 1834.	m	3445.00	9.28	31,970
5.3	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge. 16.78.1 With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	Cum.	310.00	2985.40	9,25,474

5.4	Providing & making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire mesh Gabion Boxes as per IS 16014:2012, MORTH Clause 2500, of required size, Mesh Type 10x12 (D=100 mm with tolerance of $\pm 2\%$) Zinc+PVC coated, Mesh wire diameter 2.7/3.7mm, mechanically edged/selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2/3.2mm (ID/OD), supplied @3% by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per directions of Engineer-in-charge.	Cum.	14425.00	4899.80	7,06,79,615
	SUB HEAD-6 : MARKET RATE				
6.0	P/L dry Stone Soling/ Granular River Bed Material duly hand packed (Quarry) & consolidated with hand rammers incl.all carriage complete Job.	Cum.	8237.00	3848.90	3,17,03,389
6.1	Providing weep holes in brick masonry / plain / reinforced concrete abutment, wing walls / return wall with 100mm dia PVC pipe, extending through the full width of structure with slope of IV:20H towards draining face complete as per drg. and MORT&H specifications clause 2706.	Nr.	488.00	271.40	1,32,443
6.2	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MoRTH specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and Technical Specification.	Cum.	583.00	3111.50	18,14,005
6.3	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2.	Sqm	1253.00	285.10	3,57,230
6.4	Providing and laying of a strip seal expansion joint catering to maximum horizontal movement upto 70 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.	RM	168.00	5012.50	8,42,099

6.5	Providing & Placing in position UV stablized polypropylene non - woven geo textile of minimum 3 mm thickness, wieght minimum 300 gsm having pores of 150 micron and peak tensile strength of minimum 25 KN/sqm as per drawing all complete as per direction of Engineer - in-charge at one side of Vertical Gabion wire mesh panels.	Sqm	5546.00	268.40	14,88,546
6.6	Providing and laying Sepration Membrane of impermable plastic sheeting 125 micron thick in full length over prepared Lean base such that the sheet have overlapping of 150mm at cut outs or at edges where ever aplicable as per direction of the Engineer-in-Charge.	Sqm	664.00	100.00	66,400
6.7	Providing and Fixing plastic covering (PVC Sleeve) to dowel bars including grease / debonding compound complete as per MoRTH Sepecefications.	Rm	551.00	52.80	29,093
Total					42,02,49,845

Executive Engineer
Border Fencing Division-III
CPWD, Jammu

PART C

(Electrical Components)

Name of work: - Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Frontier (SH: Electrical Work)

PROFORMA OF SCHEDULES

SCHEDULE 'A'		
Schedule of quantities	:	Enclosed.
SCHEDULE 'B'		
Schedule of materials to be issued to the contractor	:	NIL
SCHEDULE 'C'		
Tools and plants to be hired to the contractor	:	NIL
SCHEDULE 'D'		
Extra schedule for specific requirements/document	:	As enclosed in the Bid document
SCHEDULE 'E'		
Reference to General Conditions of contract	:	As per part "B" (Major component)
Name of work: - Providing and replacement of HML and Electrical accessories damaged /Washed Away during flash Flood in Aug 2025 in Jammu Frontier BSF. (Sub Head: SITC of High Mast)		
Estimated cost of work	:	As per part "B" (Major component)
(i) Earnest money	:	As per part "B" (Major component)
(ii) Performance Guarantee	:	As per part "B" (Major component)
(iii) Security Deposit	:	As per part "B" (Major component)
* 50% of PG corresponding to E&M work shall be refunded after completion of the work & recording of the completion certificate. Remaining 50 % of PG shall be retained as Security Deposit. 50 % of PG retained as Security Deposit plus 2.5% Security Deposit already deducted from running bills (total 2.5% + 50% of PG) corresponding to Internal Electrification work shall be refunded year wise proportionately during five years after completion of the work as LED fittings shall be guaranteed for a period of five years.		
SCHEDULE 'F'		
GENERAL RULES & DIRECTIONS	:	
Officer inviting tender	:	As per part "B" (Major component)

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3	:	As per part “B” (Major component)
Definitions:		
2(v) Engineer-in-Charge	:	Ex. Engr (E), BFLD, CPWD, Amritsar
2(viii) Accepting Authority	:	As per part “B” (Major component)
2(x) Percentage on cost of materials and labour to cover all over heads and profits.	:	As per part “B” (Major component)
2(xi) Standard Schedule of Rates	:	DSR (Electrical)–2025.with amendments upto last date of submission of bid
2(xii) Department	:	CPWD
9(ii) Standard CPWD contract Form	:	As per part “B” (Major component)
Clause 1		
(i) Time allowed for submission of Performance Guarantee Programme Chart (Time and progress) and applicable Labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof applying thereof from the date of issue of letter of acceptance.	:	As per part “B” (Major component)
(ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above	:	As per part “B” (Major component)
Clause 2		
Authority for fixing compensation under clause 2.	:	As per part “B” (Major component)
Clause 2A		
Whether Clause 2 A shall be applicable	:	As per part “B” (Major component)
Clause 5		
Number of days from the date of issue of letter of acceptance for reckoning date of start	:	As per part “B” (Major component)

Milestone (s): As per table given below.

S. No.	Description of Milestone (Physical)	Time allowed in days (from the date of start)	Amount to be withheld in case of non-achievement of milestone
	As per part “B” (Major component)		

Time allowed for execution of work	:	As per part “B” (Major component)
Authority to decide:		
(i) Extension of time	:	As per part “B” (Major component)
(ii) Rescheduling of milestones	:	As per part “B” (Major component)
Clause 6, 6A		
Clause applicable	:	As per part “B” (Major component)
Clause 7		
Gross work to be done together with net payment/adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment.	:	Rs. 10.00 Lakh for electrical work or as mutually Agreed by Parties
Clause 7 A		
Whether Clause 7 A shall be applicable	:	As per part “B” (Major component)
Clause 8 A		
Authority to decide compensation on account If contractor fails to submit completion plans	:	As per part “B” (Major component)
Clause 10 A		
List of testing equipment to be provided by the contractor at site lab.	:	As per actual requirement at site
Clause 10B(ii)	:	As per part “B” (Major component)
Clause 10C	:	As per part “B” (Major component)
Clause 10CA	:	As per part “B” (Major component)
Clause 10CC	:	As per part “B” (Major component)
Schedule of component of other Materials, Labour, POL etc. for price escalation (applicable only in case clause 10 CC is applicable as per part “B” (Major component))		
Component of E & M construction materials expressed as percent of total value of E & M work		‘Xm=75%’
Component of labour for electrical work expressed as percent of total value of E & M work		‘Y=25%’

Component of P.O.L.- expressed as percent of total value of work of all Sub heads of electrical works.		'Z=0%'
Clause 11		
Specifications to be followed for execution of work	:	CPWD General Specifications for Electrical Works Part-I (Int. 2023), Part-II (Ext. 2023) Part-IV (Sub-Station 2013), as amended upto date and Terms & Conditions
Clause 12		
Type of work	:	Original Work”
12.2 & 12.3 Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building work	:	As per part “B” (Major component)

Clause16		
Competent Authority for deciding reduced rates	:	(i) Upto 5% of contract value, SE (E), BFLC, Amritsar (ii) Beyond 5% of contract value, CE(E), BFLZ, Vidyut Bhawan, New Delhi
Clause18		
List of mandatory machinery, tools & plants to be deployed by the contractor at site	:	As per actual requirement at site.
Clause19C, 19D, 19G & 19K		
Authority to decide penalty for each default	:	Engineer-In -Charge
Clause25		
1.Conciliator	:	As per part “B” (Major component)
2.ArbitratorAppointingAuthority	:	As per part “B” (Major component)
3.PlaceofArbitration	:	As per part “B” (Major component)

Clause 32**Requirement of Technical Representative(s) and recovery Rate**

Requirement of Technical Representative(s) and recovery Rate:							
S.No.	Minimum Qualification of Technical Representative	Discipline	Designation	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 32	
						Figures	Words
1.	Graduate Engineer or Diploma Holder	E/M	Principal Technical Representative	2 Yrs or 5Yrs	1	Rs.15,000/- PM	Rs. Fifteen Thousand Month
OR							
2.	Diploma Engineer	E/M	Principal Technical Representative	5 yrs.	1	Rs.10,000/- PM	Ten Thousand Per Month
Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.							

NOTE: - Assistant Engineers retired from Government services who are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10-year relevant experience with a reputed company can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

Executive Engineer (E)
BFLD CPWD Amritsar

CONDITIONS FOR ASSOCIATE AGENCY FOR E & M WORKS

1. The tenderer should either himself meet the eligibility conditions for execution of minor component of work i.e. E&M work (i/c specialized E&M) Works or otherwise he will have to associate with agencies, fulfilling the eligibility requirements prescribed in the tender document after duly taking prior approval from department.
2. In case the main contractor is himself eligible (as per eligibility criteria) for executing all or some components of E&M work and intends doing job himself, he may not be required to associate with another agency for such components of E&M work. In such cases the main contractor also has to submit the documents as per eligibility criteria mentioned for associated agency of individual E & M component(s) within one month of award of work or 15 days before start of electrical related work whichever is earlier (**as per Annexure-A**).
3. In case, the main contractor himself is not eligible (as per eligibility criteria) for executing any of the components of E & M work he will have to associate with him eligible agencies for doing such components of E&M work. In such cases the main contractor has to submit proposal for approval of associate agency along with consent letter i/c documents in support of fulfilling eligibility criteria mentioned for associated agency of individual E&M components within one month of award of work or 15 days before start of electrical related work whichever is earlier (**as per Annexure-A & B**).
4. MoU between composite category contractor and specialized agency shall be executed as per Annexure-C.
5. In the event of the associated E&M agency not performing satisfactorily or failure of associate agency to complete the E&M work, the main contractor on written directions of the department, shall remove the Associate agency deployed on the work and shall submit proposal for approval of new associate agency without any loss of time or variation in cost to the department. Such new associate agency shall also give an undertaking along with the main tenderer that both of them shall guarantee for the equipment already supplied for which payment has been released by the department in part. If any equipment supplied for the work, during the currency of the earlier associate agency and paid partly by the department, becomes redundant /not in a position to be installed and commissioned and put to beneficial use due to change in agency for execution of E&M work, the main contractor shall be liable for replacement of the equipment(s) at no cost to the department. No change of associate agency will be allowed without prior approval of the Engineer-in-charge of the work.
6. The main contractor shall be responsible and liable for proper and complete execution of the Electrical work and ensure coordination and completion of both civil and electrical work.
7. The associate contractor shall attend the inspection of the work by the Engineer-in-charge of E&M works as and when required.

8. ELIGIBILITY CRITERIA FOR MAIN CONTRACTOR / ASSOCIATED AGENCY FOR E & M WORKS:

8.1 The tenderer(s) must associate eligible agencies to execute components of E&M Works who fulfill the prescribed eligibility criteria given below after duly taking prior approval from department (NIT approving authority). However, the main contractor shall also be eligible to carry out himself any or all of the components of E&M Works provided he fulfills the prescribed eligibility criteria respectively for these work(s)

8.2 Internal Electrification Work:

The associate agency shall be registered/enlisted in CPWD in **Building & Road category** in appropriate class (eligible for estimated cost of E & M work).

9. SUBMISSION OF PROPOSAL FOR APPROVAL OF ASSOCIATED AGENCY:

9.1 In support of the eligibility conditions of the proposed associated E&M agency, copy of their registration documents, Electrical Contractor's License, PAN Card, GST Registration duly attested by the applicants (Main Contractor) shall be submitted to the Engineer-in-charge of major component who will submit these documents to the Engineer-in-charge of minor component for deciding the eligibility within seven days of receipt of the same. Each such electrical contractor will certify that they are not debarred as on the day of application for sale of tender.

Proposal for associating agency for minor components of work shall be submitted, as per proforma given in this tender document, from each associate independently for all E & M components. The associate agency shall be engaged by the main contractor after taking prior approval of the same from engineer-in-charge (who in turn shall obtain prior approval from NIT approving authority.)

9.2 Proposal for Associating Agency for E & M Components of Work shall be submitted in prescribed Proforma given here in (**as per Annexure-A & B**).

Executive Engineer (E)
BFLD CPWD Amritsar

PROPOSAL FOR ASSOCIATING AGENCY FOR E & M WORKS

I/we hereby propose the following agency for execution of E & M work component mentioned herein. Consent Letter from the proposed associated agency is enclosed.

- (i) Name of work:
- (ii) Component of E & M Work:
- (iii) Name of Associated Agency:
- (iv) Details of Enlistment:
- (v) Category and Class of Enlistment:
- (vi) Monetary limit of work in Enlistment:
- (vii) Validity of Enlistment:
- (viii) Copy of Enlistment Order attached: (Yes/No)
- (ix) Copy of electrical contractor license attached: (Yes/No)
- (x) Copy of completion certificates of similar work experience attached: (Yes/No)
- (xi) Copy GST Registration attached: (Yes/No)
- (xii) Copy PAN Card Attached: (Yes/No)
- (xiii) Consent Letter of agency attached: (Yes/No)

Encls: Self Attested photocopies of as stated above

Seal & Signature of the Main Contractor

CONSENT LETTER FROM ASSOCIATE AGENCY FOR E & M WORKS

Name of Work:

I/We hereby give my consent to associate with M/s,
For executing the..... (mention category) component of E & M work of the above-mentioned work.

I / We will execute the work as per specifications and conditions of the agreement for the work and as per directions of the Engineer-in-Charge for the said component of E&M work till the completion of the work. I / We will be responsible for necessary action to handover the installations and for rectification of defects and repair during the maintenance/warranty period.

I / We will employ full time technically qualified Engineer / supervisor for the said component of E & M work as required for the work.

I/We will attend inspection of officers of the department as and when required.

Dated:

Seal & Signature of Associate Agency for E & M

MEMORANDUM OF UNDERSTANDING (MoU)

1] M/s [Name of the firm with full address]

Enlistment Status

Valid Upto:

[Hence for the called the main contractor]

And

2] M/s [Name of the firm with full address]

Enlistment Status

Valid Upto:

[Hence for the called Associated E & M Contractor or Electrical Contractor]

For the execution of..... (mention category) component of E & M work in the contract for the work:” as per Schedule of Quantities, Specifications, Terms and Conditions of the said contract.

We state that MoU between us will be treated as an agreement and has legality as per Indian Contract Act (amended up to date) and the department (CPWD) can enforce all the terms and conditions of the agreement for execution of the above work. Both of us shall be responsible for the execution of work as per the agreement to the extent this MoU allows. Both the parties shall be paid consequent to the execution as per agreement to the extent this MoU permits. In case of any dispute, either of us will go for mediation by the Engineer-in-charge of E&M work. Any of us may appeal against the mediation to the Superintending Engineer (E), BFLC, CPWD, Amritsar. His decision shall be final and binding on both of us.

We have agreed as under:

1. The electrical contractor will execute all electrical works in the wholesome manner as per terms and conditions of the agreement.
2. The electrical contractor shall be liable for disciplinary action if he fails to discharge the action(s) and other legal action as per agreement.
3. All the machinery and equipment, tools and tackles required for execution of the electrical works, as per agreement, shall be the responsibility of the Electrical Contractor.
4. The Technical and other site staff required for the said E&M work shall be arranged by the Electrical Contractor as per terms and conditions of the agreement.
5. Site order book maintained for the said work shall be signed by the main contractor as well as by the Engineer of the Associated E & M Contractor or Associated E & M Contractor himself.
6. All the correspondence regarding execution of the electrical work shall be done by the department with the Associated Contractor with a copy to the main contractor. In case of non-compliance of the provisions of agreement, the main contractor, as well as the associated contractor shall be responsible. The action under clauses 2 and 3 shall be initiated and taken against the main contractor.

Date:

Place:

Signature of Main Contractor Signature of Associated E & M Contractor

1. Witness with address
(From major component contract or side)

2. Witness with address
(From minor component contractor side)

Commercial and Additional Conditions for Electrical works

1. The work to be carried in the AOR of Balhar BOPs of BSF under I/ Nagar Sector of Jammu Frontier along Indo-Pak Border. Total 70 Pole to be erected on newly constructed bridge. No extra claim shall be entertained on account of change in locations of Pole
2. The contractor is advised to visit the site of work before tendering to acquaint himself regarding the site conditions, availability of water, provisions and other necessities to be made for execution of work and arrangement to be made for labour and supervisory staff including transportation and cartage as required and only persons of good integrity should be deployed. Any of the staff involved in any kind of unlawful activity shall be firms' liability.
3. In case of reduction in scope of work no claim on account of reduction in value of work, loss of expected profit, consequential overheads etc. shall be entertained.
4. The contractors shall quote their rates inclusive of all sorts of taxes, stamp duty, cartage, royalties etc., complete unless otherwise specified, the agreement rates for all items of work of the schedule of quantities are for all heights, depths, leads and lifts involved in the execution of work.
5. The contractor shall make his own arrangement of generators for carrying out electrical activities.
6. The underground power cables from existing LT Panel in Source BOP to High Mast Control Panel shall be laid in HDPE Pipe at a depth of 75 cm from the ground including trenching (75 cm deep) and re-filling etc. as required. The cable route shall be decided by the Engineer-In-Charge as per feasibility at site and the decision of Engineer-in- Charge in this regard shall be final and binding on the contractor.

Also, when cables are entered into Sub Feeder Pillars, Cable Jointing / Junction Boxes, the exposed portion of the cable over the ground shall be laid in HDPE pipe for protection of the cable. The selected sizes of the DWC HDPE Pipes to carry cable and double earth wires shall not be lower than indicated below: -

S. No.	Size of DWC HDPE Pipe	Size of Cable to be accommodated
(a)	OD-63 mm / ID-51 mm	Upto 50 sqmm

7. Similarly, in case laying of cable while crossing border track / road, the cables shall be laid in HDPE Pipe of size as specified above including trenching (75 cm deep) and re- filling etc. as required.
8. The work shall be carried out in a manner complying in all respects with the requirements of relevant bye laws of the local bodies, labour laws, minimum wages act, workmen compensation act and other statutory laws enacted by Central Government as well as State Government.

9. No claims of the labour shall be entertained by the Department including that of providing employment, regularization of services etc.
10. The staff employed by the contractor should be well behaved, Polite & courteous. Any complaint against staff on behavior should be taken very seriously and such should be removed by the contractor immediately from the site.
11. The contractor and his man shall have to abide by the security instructions of BSF authorities/other concerned authorities. No claim of idle labour or any other claim on this account shall be entertained by the department. The normal working time shall be in day time. No claim from contractor for extra payment on account of any change in working hours shall be entertained by the department.
12. The contractor has to take full precaution & safety measure during execution of work. If any type of miss-happening/human loss occur during execution of work at site, the contractor will be fully responsible for it and liable to bear all losses and has to pay full compensation. The department will not take any responsibility for such type of happening.
13. Contractor shall be fully responsible for any damages caused to govt. Property by his labour/staff in carrying out the work and shall be rectified by the contractor at his own cost
14. By signing the contract, the agency accepts total responsibility for having foreseen all difficulties and costs of successfully completing the works.
15. The contract amount shall not be adjusted to take account of any unforeseen difficulties or costs.
16. The contractor has to take full precaution & safety measure during execution of work. If any type of miss-happening/human loss occur during execution of work at site, the contractor will be fully responsible for it and liable to bear all losses and has to pay full compensation. The department will not take any responsibility for such type of happening.
17. All the work shall be carried out as per CPWD General specification for Electrical work part-1 (Internal 2023) & part-2 (External) 2023 amended up to date and should also comply with relevant provisions of the Indian Electricity Rules and/Acts as applicable, amended up to date.
18. Due to restricted length of cables in cable drums, jointing of cables shall be carried out through cable junction boxes only and no other type of jointing will be accepted.
19. Double earthing with G.I pipe earth electrode with salt and charcoal shall be provided for earthing of Sub Feeder Pillars, cable joint boxes, GI Pole Control Feeder Pillars. Double wired looped earth G.I. wires of 6 SWG dia. shall also run along the cables. For the cable stretches in HDPE Pipe, these earth wires shall also be drawn in the HDPE Pipe, duly clamped /tied with the cables at a spacing not more than 1 Mtr.

20. Any damage to the existing infrastructures during execution of the work shall be repaired and made good within the scope of the work to the satisfaction of the Engineer-In-Charge for which no extra payment shall be made. In case, the Contractor fails to repair the damages within specified period of time, same shall be done through other agency and expenditure incurred on this account shall be recovered from the bills of the Contractor.
21. All concealed work and earthing shall have to be done in presence of the Engineer- in-Charge or his authorized representative.
22. Earth continuity and availability shall be ensured by the contractor during execution of work.
23. The contractor shall submit neatly prepared electrical inventory of electrical installations in triplicate.
24. The dismantled material, if any, to be carried away from border only after completion of work.
25. The contractor shall ensure that all the persons executing the electrical work have the valid electrical license issued by competent authority. Consequences arising due to the fault of the contractor in not complying with the above conditions will be the responsibility of the contractor.
26. The contractor is bound to sign the site order book as and when required by the Engineer-in-charge and carryout the instruction recorded therein.
27. All debris/malba generated while carrying out electrical work shall be removed and shall be cleared by contractor as soon as the work is completed. Nothing extra will be paid on this account.
28. No T & P will be issued by the Department. All T&P required for the execution of work shall be arranged by the contractor at his own cost and nothing extra shall be paid on this account.
29. The contractor shall be responsible for watch and ward and the safety of the Electrical installations so long as the entire work completed i/c. testing as required under the rules and handing over of the installation. Nothing extra shall be paid by the department on this account.
30. All the cable terminals for connection to MCB's/MCCB's/Switch gear etc. be provided with suitable capacity of thimbles/sockets.
31. All repairs & patch work shall be neatly carried out to match with the original finish & all damages caused to the building or any other installation during the execution of work shall have to be made good by the contractor or immediately at his own cost to the entire satisfaction of Engineer-in-charge.

In case contractor fails to comply with the instructions, the Engineer-in-charge shall be at liberty to get the work done by any third agency and recover such amount paid from the bill(s) of the contractor.

32. The work shall have to be carried out as per directions given by the Engineer-in- Charge or his authorized representative AE(E)/JE(E) at site of work.
33. Completed work is to be handed over to BSF by the department. The same will be intimated to the contractor and the firm/authorized Engineer with required staff is supposed to be present at the time of handing over. However, any defect pointed out by BSF authorities at the time of handing over is to be rectified by the firm. Nothing extra will be paid on this account.
34. The agency shall make their own arrangement of lodging and boarding of worker/staff.
35. **Rates:**

All tendered rates shall be inclusive of all taxes, levy or cess applicable on last stipulated date of receipt of tender including extension if any.

GST / Security Deposit / Income Tax / Cess and any other tax as applicable, will be recovered/ deducted from the contractor's bill.

Road Permit/Entry permit/ Octroi exemption certificate etc. of any type shall not be issued by the department for the materials to be brought from outside the state by contractor for this work.

All the applicable Central Government / State Government taxation, levies and labour laws as are required to be complied with is to be fulfilled by the agency, within his quoted rates.

Nothing extra shall be paid for following any of the terms and conditions, if not mentioned otherwise.

36. Site Information

- 38.1 The contractor is advised to visit the site of work before submission of tender to assess the quantum / scope of work involved and to acquaint himself regarding the site conditions, availability of water, provisions and other necessities to be made for execution of work, arrangements to be made for labour & supervisory staff including transportation & cartage as required. Department shall facilitate their entry in the secured area.

- 38.2 The work is of sensitive nature and meant for National Security, target date for completion of the work has to be adhered strictly. The contractor shall plan and execute the work, adhering to the scheduled date of completion, which requires simultaneous taking up the work at various locations by deploying sufficient manpower and machineries, for which nothing extra shall be paid. All the staff deployed by the contractor shall be of sound integrity and the antecedents of the staff needs to be got verified from the police authorities. The contractor shall have to coordinate with police authorities, if required. The contractor and his men shall have to abide by the security instructions of BSF authorities and the normal working time shall be in day time. No claim of idle labour or any other claim on this account shall be entertained by the Department. The persons executing the electrical work should have, the valid electrical license issued by the competent authority. The persons executing the electrical works shall possess valid electrical license / permit issued by the competent authority as applicable.
- 38.3 The work is required to be carried out adjacent to International Border in Jammu Frontier. The contractor shall not be compensated in case the work is not executed in part or in full due to protest or hostile activity from Pak side. No claim whatsoever shall be entertained on this account.
- 38.4 The power supply and water supply will be arranged by the contractor at the site for execution of Electrical works at his own cost and nothing extra shall be paid by the Department on this account. In case, BSF permits the usage of available facilities of “water and power supply” to the Contractor, the same can be availed subject to Contractor substantiating the quality / suitability of available water for usage in the foundation work. However, any charges payable to the BSF authority for such a usage of “water and power supply” shall be payable by the Contractor, directly to the BSF and no claim on this account shall be entertained by the Department.
- 38.5 The contractor shall provide necessary safety measures wherever necessary to avoid any accident. He shall also indemnify CPWD against claims for compensation arising out of negligence in this respect. Contractor shall be liable, in accordance with the Indian Law and Regulations, for any accident occurring due to any cause and the contractor shall be responsible for any accident or damage incurred or claims arising there from during the period of erection, construction and putting into operation the equipments and ancillary equipment under the supervision of the contractor in so far as the latter is responsible. The department shall not be responsible on this account. The contractor shall also provide all insurance including third party insurance as may be necessary to cover the risk. No extra payment would be made to the contractor due to the above provisions thereof. Nothing in these specifications shall be construed to relieve the contractor of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with applicable Statutory Regulations and Safety Codes in force from the safety angle.
- 38.6 The watch and ward of the stores and their safe custody shall be the responsibility of the Contractor till the final taking over of the installation by the Department and nothing extra shall be paid by the Department on this account.

- 38.7 All tools and tackles required for handling of equipments and materials at site of work as well as for their assembly, erection, testing and commissioning and also necessary test instruments shall be arranged by the contractor at his own cost and nothing extra shall be paid by the Department on this account. Also, no material shall be issued by the Department to the Contractor for execution of Electrical works.
- 38.8 The procurement & delivery of various Electrical materials, equipments shall be made in consultation with the Engineer-In- Charge and at appropriate stages commensurate with the progress of civil foundation work. The Department is not bound to release immediate payment against materials brought to site at a premature / inappropriate stage of work.
- 38.9 Good workmanship is an essential requirement to be complied with. The entire work of manufacture / fabrication, assembly and installation shall conform to sound engineering practice. The bad workmanship will not be accepted and shall be redone and / or defects shall be rectified at contractor's cost to the satisfaction of the Engineer-in-Charge. The contractor shall engage suitably skilled / licensed workmen of various categories for execution of Electrical work supervised by supervisors / Engineer of appropriate qualification and experience to ensure proper execution of Electrical work. The requirement of Technical Representative (s) is specified in the bid document.
- 38.10 All sundry fittings, assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections as required, and all other sundry items which are useful and necessary for proper assembly and efficient working of the various components of the Electrical work shall be deemed to have been included in the tender, whether such items are specifically mentioned in the bid documents or not. Hence, no extra cost is payable on this account.
- 38.11 All materials and equipments supplied by the contractor shall be new and shall be procured from the manufacturer or from its authorized dealers. They shall be of such design, size and materials as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site. All equipment shall incorporate suitable safety provisions to ensure safety of the operating personnel at all times as per relevant standards / norms. Only makes & models approved by Engineer - in-Charge shall be used in the work. The Contractor shall procure materials for use at site as per the list of Acceptable makes for Electrical works as appended in the bid document.

37. Related Documents

These General Specifications shall be read in conjunction with the General conditions of contract, Tender Specifications, Schedule of work, Drawings and other documents connected with the work. In case of any conflict in the specifications, terms & conditions, following precedence shall follow: -

- (a) As per the description mentioned in Schedule of work.
- (b) As per additional technical specifications in this tender document.
- (c) As per Commercial and Additional conditions in this tender document.
- (d) As per relevant CPWD specifications for Civil and Electrical work.

- (e) The material should be confirming to IS specification and should be ISI marked, if available.
- (f) If material to be used is not covered by any one of the above specifications it should be got approved from the Engineer-in-charge, before use at site.

38. Conformity with Statutory Acts/Rules, Standards, Specifications and Codes

All the work shall be carried out as per following CPWD General Specifications and should also comply with relevant provisions of the Indian Electricity Rules and Act as applicable, amended up to date. :-

- (a) CPWD Specifications for Electrical work part-I (Internal)- 2013
- (b) CPWD Specifications for Electrical work part-II (External)-1994
- (c) CPWD Specifications for Electrical work part-IV (Substation)-2013

Besides the above, during execution of Electrical works, various provisions of Indian Electricity Rules, 1956, India Electricity Act, 2003, CEA (Measures Relating to Safety and Electric Supply) Regulations, 2010, NEC 2011 shall also be followed wherever applicable.

- 40.1 All components shall conform to relevant Indian Standard Specifications, wherever existing, as amended up to date. No claim for defective material brought by the contractor and not approved by the Engineer-In-Charge shall be entertained.
- 40.2 Sizes of angle iron/flat iron/ Thickness of M.S. sheet to be used for fabrication of High Mast, Feeder Pillar, LT Panels etc. wherever mentioned are nominal sizes.
- 40.3 The contractor will have to maintain proper alignment of G I Pole which may require clearing of shrub/ trees etc. falling on the route for which no extra payment will be made. All the cable terminals for connection to MCBs/MCCBs/Switch gear etc be provided with suitable capacity of thimbles/sockets.
- 40.4 The contractor shall unroll the cable drums properly at the time of laying of cables, so that the cables are not damaged. Empty cable drums (wooden) and assorted wooden packing boxes of other accessories etc. shall be the property of contractor after completion of work and such property shall be removed by the contractor within two weeks of the physical completion of works.
- 40.5 In Pipe laying and / or cable laying work the excavated soil is to be used as cushioning. If required, the extra earth (surplus earth) after back filling of excavated trench / foundation is to be disposed of beyond the lead of border road. Nothing extra shall be paid on this account. All debris/ malba generated while carrying out work shall be removed and shall be cleared by contractor as soon as the work is completed. The work should be carried out, carefully, in a manner that no damage is done to the existing fence, road. In case any damage is done, same has to be repaired without any extra cost. In case of excavation for foundation, in trenches or other areas, the bed of excavation shall be to the correct level or slope and shall be consolidated by watering and ramming.

39. Scope of work

- 41.1 The Contractor shall be responsible for the selection and design of appropriate equipments to provide the best coordinated performance of the pole system conforming to the latest applicable standards. The Contractor shall be fully responsible for detailed design, execution, manufacture, shop fabrication, assembly, testing and inspection at manufacturer's work by Engineer-In-Charge , packing, dispatch, transportation , transit insurance etc. delivery to site , unloading, handling, storage at site, preservation and conservation of equipments / materials at site, insurance during storage, construction, erection, including erection supervision, testing, commissioning and handing over to BSF authorities and Guarantee including all associated Civil, structural and Electrical works as specified required unless specifically excluded.
- 41.2 It shall be endeavored to comply with the intent of these Specifications to the satisfaction of the Engineer-In-Charge.
- 41.3 Final approval of all design data, drawings documents etc. shall be conveyed by Engineer-In-Charge. The comments and suggestions put up by Engineer-In-Charge shall be incorporated by the contractor, without any commercial implication. All works shall be executed according to the approved drawings and requirements of Engineer-In-Charge, in a professional and diligent manner and all supplies and works shall comply with the quality requirements defined in the relevant section of these Specifications and other Bidding Documents.
- 41.4 All the items brought for execution of the work should be preserved properly. Preservation includes providing tarpaulins and covering materials, as required, for protection of materials at temporary storage place and during erection, testing & commissioning and handing over stages. The Pole should be stacked in a manner such that it is not deteriorated by the dampness of the soil.
- 41.5 The Scope of the Contractor shall be deemed to include all such items which although are not specifically mentioned in the bid documents and/or Contractor's proposal but are needed to make the project complete in all respects for its safe, operation and the same shall be carried out. All equipments/ material shall be complete in every respect, with all mountings, fittings, fixtures and standard accessories normally provided with such equipment and/or those needed for erection, completion and safe reliable, efficient and trouble-free operation of the equipment and for the safety of the operating personnel, as required by applicable codes, though they may not have been specifically detailed in the respective specifications, unless included in the list of exclusions.

40. Planning, Design and Engineering

The contractor shall be responsible for establishing and verification of the work requirements, as per site conditions, making & marking local grid for facilitating execution of project i/c carrying out complete engineering, finalization of the layout of the entire project, detailed project planning and execution schedule.

41. Submission of Drawings for approval

The successful bidder shall prepare and submit three sets of following documents along with drawings, within the prescribed Mile stone and get them approved from Engineer- In-Charge, before start of the work.

- (a) The cable routing plan of the electrical distribution system along with length and sizes of the various UG Cables.
 - (b) Dimensional General Arrangement Drawings of Pole, Control Panel of Pole, Outdoor Type Sub Feeder Pillars, cable junction box.
- 43.1 It is responsibility of the Contractor to get all the drawings approved before execution wherever applicable. The contractor shall submit adequate prints of drawing/ data/ document for Engineer-In-Charge's review and approval. The Engineer-In-Charge shall review the drawings and return the sets to the contractor authorizing either to proceed with manufacture or fabrication/ construction/ erection or marked to show changes desired.
- 43.2 When changes are required, drawings shall be re-submitted promptly, with revisions clearly marked, for final review. Any delays arising out of failure of the contractor to submit/rectify and resubmit in time shall not be accepted as a reason for delay in execution of the contract
- 43.3 Errors, if any, noticed by the Contractor in the Engineer-In-Charge drawings specifications and other information shall, however be promptly pointed out by the Contractor to the Engineer-In-Charge.
- 43.4 The review of these documents/data/ drawings by the Engineer-In-Charge will cover only general conformance of the documents/data/drawings to the specifications and contract, interfaces of the equipments provided under the contract and external connections and dimensions which might affect border flood lighting layout.

This review by the Engineer-In-Charge should not be construed to be a thorough review of all dimensions, quantities and details of the equipment, materials, any devices or items indicated or the accuracy of the information submitted.

This review and/or approval by the Engineer-In-Charge shall not relieve the Contractor, of any of his responsibilities and liabilities under the contract.

Further, mere adherence to the tender proposals of the employer shall not absolve the contractor of his responsibility of providing safe and sound technical solutions.

All engineering data/ drawings submitted by the Contractor after final process including review and approval by the Engineer-In-Charge shall form part of the Contract Documents and the entire works covered under these specifications shall be performed in strict conformity, unless otherwise expressly requested by the Engineer-In-Charge, in writing.

42. **Submission of Drawings on completion of Installation:** On completion of the work, the Contractor shall submit three sets of completion drawings to the Department as detailed below:
43. BOP-wise electrical installations drawing depicting: -
- (a) Electrical distribution system for the installed High Mast incorporating, High Mast locations, Feeder Pillar locations and cable route with cable sizes, earthings.
 - (b) Line diagram and layout of all electrical control panels giving switchgear ratings and their disposition, cable feeder sizes and their layout.
44. Procurement of materials
- 46.1 The placement of orders on the manufacturer for supply of the cables, HDPE Pipes, G I Pole, feeder pillars, junction box, switchgears etc. shall be in accordance with the final approved design only and shall be procured directly from the approved manufacturer or their authorized distributor/dealers only. All the LED Luminaires required for the work shall be procured directly from the approved manufacturer or their authorized distributors/dealers only. As and when the contractor places order for the Pole, LED fittings cables, HDPE Pipes and Feeder Pillars, Junction Boxes, cables etc., a copy of such orders shall be endorsed to the Engineer-In-Charge. Department shall not take back any spare quantity of items, if procured more than what is required at the site and approved by the Engineer-in-charge. **Contactora has to survey the site for actual quantity required for cable & DWC Pipe in consultation with Engineer-In-Charge before placing of order for procurement of material. Department shall Not Take Back any spare quantity of items, if procured more than what is required at the site and approved by the Engineer-in-charge.**
- 46.2 The contractor shall provide UG cables, Pole, LED Luminaires and HDPE Pipes of only one make out of the indicated acceptable makes in the NIT. Engineer-In-Charge may permit the agency to take deviation in the one make requirements, under exceptional circumstances beyond the control of the agency and at the instance of the agency.
- 46.3 To ensure genuineness & quality of material like MCCBs, MCBs, switchgears, etc.,
- (a) The contractor shall submit proof of their direct procurement from the manufacturer/ authorized dealers.
 - (b) Certification of the authorized Engineer of the manufacture of panels and feeder pillars towards of genuineness of material like MCCBs, MCBs, switchgears, etc. utilized in panels and feeder pillars.

45. Inspection of materials and equipments

Materials and equipments to be used in the work shall be inspected by the Departmental officers/ third party. Such inspection will be of following categories:

- (i) Inspection and testing of materials or equipments as the case may be, to be witnessed at the Manufacturer's Factory/Works in accordance with relevant BIS / Agreement Inspection Procedure.
- (ii) To receive materials after physical inspection at site with Manufacturer's Test Certificate(s).
- (iii) To receive materials after physical inspection at site.
- (iv) Outside laboratory testing wherever applicable.

46. Inspection at Factory / Works and Laboratory Testing

48.1 The contractor must intimate to the Engineer-in-Charge at least seven days, in advance, about the probable dates for factory/work's inspection of materials like Pole LED Fittings, cables, HDPE Pipes and Feeder Pillars. The contractor shall coordinate arrangements at factory/works for inspection. The contractor shall furnish certified copies of all the Type Test Certificates, as prescribed in the relevant BIS standards to inspecting officers. Further access to the original Type Test Certificate for verification shall be arranged by the contractor.

48.2 The Engineer-in-charge or his authorized representative shall inspect the material at the manufacturer's works and the Acceptance and Routine tests as per the prescribed BIS standards, as amended up to date shall be provided to authorized representative and if required by authorized representative the Acceptance and Routine tests shall be carried out in his/her presence. Copies of all documents of routine and type test certificates of the equipment, carried out at the manufacturer's premises / works shall be furnished to the Engineer-in-charge and consignee. The cost of visit of the Departmental officials to the factory / work's shall be borne by the Department. **The outside/ third party laboratory test shall be conducted in CBRI, Central Institute of Plastic Engineering & technology, National Test House, Regional Research Laboratory, Laboratories of IIT/NIT, any other NABL accredited Test House approved by the Department.** The contractor shall provide samples from the material brought at site **"free of cost"**. The contractor shall also assist inspection and collection of samples for testing by Engineer-in-charge or his authorized representative. All costs incurred in collection of samples, packing & transportation to the approved outside laboratory shall be borne by the contractor.

48.3 The cost of testing conducted in outside approved laboratory of Cable & DWC Pipe, LED fitting etc. shall be borne by the contractor. In case the contractor or his authorized representative is not present or don't associate themselves in collection of test samples, the test results/reports of such tests and consequences there on shall be binding on the contractor.

- 48.4 On completion of factory/work's inspection, dispatch instructions accompanied with copies of inspection report shall be issued by the Inspecting Officer. Only those materials as passed in inspection by the Inspecting Officer shall be dispatched. The inspecting officer will get the stickers {marked "INSPECTED"} pasted on all items inspected and an additional sticker marked "TESTED" only on the items tested. The UG Cables etc damaged in transit, found defective in manufacturing, or otherwise shall be replaced with new ones within **two weeks** of intimation given in this regard.
- 48.5 Sequential cable marking, after every 1 meter, indicating the name of the purchaser as "**BFLZ, CPWD**", size of cable, name of the manufacturer etc. shall be provided. Cables shall be supplied in the wooden drums in the specified length. Wooden drums shall be strong, weather proof and non-returnable. The ends of the cable shall be sealed by means of non – hygroscopic sealing material
- 48.6 The cost of visit of the Departmental officials to the factory/work's shall be borne by the Department. The details of testing of LED fittings is described in this tender document under Technical Specification.
- 48.7 The Engineer In charge or his authorized representative shall have free access to the works of the manufacturer and to be present at all reasonable times and shall be given facilities by the manufacturer to inspect the manufacturing process of the item/material at any stage of manufacture. He shall have the right to reject whole or part of any item or material that does not conform to the terms of this specification or any equivalent specification or requirement applicable and may order the same to be removed / replaced or altered at the expense of the manufacturer. All reasonable/complete setup / facilities considered necessary by the inspecting authorities for the inspection of the item/material shall be provided by the manufacturer "free of cost".
- 48.8 The cost of testing conducted in outside approved laboratory of Cables, LED Fittings and HDPE Pipes shall be borne by the contractor. All expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor. The sample size for testing shall be as per CPWD Quality Assurance Policy for E&M Services (2016) as amended up to date / relevant BIS Standard or as per direction of the Engineer-In-Charge. The sample size for LED fitting has been specified in this tender document under Technical Specifications.
- 48.9 In case the contractor or his authorized representative is not present or don't associate themselves in collection of test samples, the test results/reports of such tests and consequences thereon shall be binding on the contractor and all expenditure incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be recovered from the Contractor.

47. Guarantee

The contractor shall guarantee among other things, the followings

- (a) Quality, strength & performance of the materials used as per manufacturers standards
- (b) Safe mechanical and electrical stress on all parts at specified conditions of operation.
- (c) Satisfactory operation during the defects liability period.

All equipments shall be guaranteed, against unsatisfactory performance and/or break down due to defective design, workmanship or material, for a period indicated hereafter, to be reckoned from the date of completion of the installation or date of offering of installation to BSF for taking over, whichever is later.

Sl. No.	Description of items	Guarantee Period
1	LED Flood Light Luminaires complete i/c their electronic drivers, SPD	5 Years
2	Other items	1 Year

The equipments or components, or any part thereof, so found defective during guarantee period shall be forthwith repaired or replaced by the contractor free of cost, to the satisfaction of the Engineer-in-Charge. In case, undue delay is caused by the contractor in doing this, the same will be got done by the department at the risk and cost of contractor. The decision of Engineer-in-Charge in this regard shall be final and binding.

48. Handing over of installation

Completed work is to be offered to BSF for handover by the Department. The same will be intimated to the contractor and they shall ensure their presence at the time of handing over. Before handing over of installation the contractor has to provide two days training to operational staff about the functioning of the system. However, any defects pointed out by BSF authorities at the time of handing over is to be rectified by the contractor. Nothing extra shall be paid on this account.

Executive Engineer (E)
BFLD, CPWD, Amritsar

Payment Terms

Pro-rata payments may be allowed to the contractors. However, the percentage of contract rate which shall be allowable or payable against a completion of a particular stage of work is indicated here under: -

Sl. No.	Stage of work	Allowed % of the quoted rate of relevant items of SOW
1	On supply of the items like UG Cables, DWC Pipes after initial inspection and delivery at site in good condition	60 %
2	supply of the items like Poles, LED Fittings, Feeder Pillars, Cable Junction boxes, after initial inspection and delivery at site in good condition	70%
3	Completion of installation of items against S. No. 1	30 %
4	Completion of installation of items against S. No. 2	20%
5	After testing, commissioning and handing over to the client department (BSF) for beneficial use including submission of all necessary completion documents, test results etc complete as required.	10 %

The contractor shall have to produce and submit relevant test certificates of the items like Poles, LED fittings, Feeder Pillars, cables, HDPE Pipes from the manufacturers, before claiming any payment of such items.

Executive Engineer (E)
BFLD, CPWD, Amritsar

Technical Specifications for Electrical works

1.0 **DWC HDPE Pipes**

- 1.1 The Double Walled Corrugated (DWC) HDPE Pipes shall confirm to IS: 14930 (Part-II)-2001. The DWC HDPE Pipes shall consist of two layers, the outer layer shall be corrugated and the inner layer shall be plain and smooth, free of sharp edge, burrs or surface projections, holes, breaks and other defects. The ends shall be cleanly cut and shall be square with axis of the pipes. The DWC HDPE Pipes shall be supplied in any color other than black.
- 1.2 The contractor shall provide, within his quoted rates, the required quantities of following accessories having dimensions suitable for the pipes, as per the DWC HDPE pipe manufacturer recommendations.
- (a) **Plastic Coupler:** The coupler shall be of Push-fit type with O-ring meeting IP:67 requirements. It is used for jointing two or more pipes. The design of this shall be simple, easy to install and shall provide air tight and water tight joint between the two pipes. The coupler shall ensure that the two pipes are butted smoothly without any step formation in the inner surface.
 - (b) **End Cap:**
 - (i) Suitable plastic cap shall be fitted on the both ends of pipe to avoid entry of dust, mud and rainwater into the pipe during the transit & storage.
 - (ii) The Contractor shall also arrange suitable end caps for the pipe from the manufacturer of the HDPE pipe. Such end caps shall have requisite sized hole, commensurate to the size of the cable drawn in the HDPE pipe for sealing the open ends of pipe after laying of cables. The end caps shall be properly sealed with epoxy sealing compound/silicon sealing compound to achieve IP-67 protection, as per the recommendations of the HDPE pipes manufacturer. The contractor shall provide end caps and their sealing within his quoted rates.
- 1.3 The DWC HDPE Pipes and fittings shall withstand the stresses likely to occur during transport, storage, recommended installation practice and application. The protective properties of the joint between the pipes and its accessories shall not be less than that declared for the DWC HDPE Pipes.
- 1.4 The DWC HDPE Pipes shall have prominent marking, at regular intervals along their length, preferably at 1m but not longer than 3m, using indelible ink with following information.
- (i) Manufacturers name and size of the pipe
 - (ii) Specification No.
 - (iii) Lot No. of the Product and Date of manufacture
 - (iv) BFLZ, CPWD
- 1.5 The DWC HDPE pipes shall be packed as to permit convenient handling and to protect against loss or damage during transit and storage.

1.6 Requirements of Raw Materials Used for the DWC HDPE Pipes

- 1.6.1 The base HDPE resin used for the outer and inner layer of the DWC HDPE Pipe shall conform to any designation of IS: 7328 or to any equivalent standard meeting the requirements, when tested as per the standards given therein. However, the manufacturers shall furnish the designation for the HDPE resin as per IS: 7328 as applicable.
- 1.6.2 The anti-oxidants used shall be physiologically harmless and none of the additives shall be used separately or together in quantities as to impair long term physical and chemical properties of the pipe.
- 1.6.3 The raw material used for extrusion shall be dried to bring the moisture content to less than 0.1%.

1.7 Testing of DWC HDPE Pipe

The acceptance tests shall be conducted for normal duty of DWC HDPE pipe and its accessories, at the manufacturer's laboratory and all test reports shall be provided to inspecting authority. The test report of recognized laboratory in respect of raw material of the DWC pipes shall be furnished to the inspecting authority. On receipt of material at site, sample for testing shall be drawn as per CPWD Quality Assurance Policy for E&M Services (2016) as amended up to date / relevant BIS Standard or as per direction of the Engineer- In-Charge

The Engineer In charge or his authorized representative shall have free access to the works of the manufacturer and to be present at all reasonable times and shall be given facilities by the manufacturer to inspect the manufacturing of the pipe at any stage of manufacture. He shall have the right to reject whole or part of any work or material that does not conform to the terms of this specification or any equivalent specification or requirement applicable and may order the same to be removed / replaced or altered at the expense of the manufacturer. All reasonable / complete facilities considered necessary by the inspecting authorities for the inspection of the pipes shall be supplied by the manufacturer "free of cost".

The manufacturer shall supply the pipe samples and samples of the raw materials "free of charge" as required by the inspecting authority and shall, at his own cost, prepare and furnish the necessary test pieces and appliances for such testing as may be carried out at his own premises in accordance with this specification. Failing the existence of facilities at his own premises for the prescribed tests, the manufacturer shall bear the cost of carrying out the tests in an approved laboratory, workshop or test house.

All the length of same nominal size, similar construction and class manufactured from the same material under essentially similar conditions of production shall be grouped together to constitute a lot. For judging the conformity of a lot to the requirements of the acceptance tests, sampling shall be done for each lot separately. For this purpose, the number of lengths to be selected at random from the lot. These lengths will be selected at random from the lot for taking samples.

From each of these lengths, sample of pipe shall be taken. The length of the sample shall be sufficient so as to provide test pieces of required lengths as laid down in various test clauses.

1.8 Rejection

In case the samples of DWC HDPE pipes fail to pass the tests or comply with the requirement of the specifications, the whole consignment shall be rejected subject to the discretion of the Engineer In charge or his authorized representatives.

1.9 Size of Trench

The DWC HDPE pipes shall be laid in 75 cm deep trench, the width of trench for laying two pipes in one tier horizontal formation shall be 50cm and for laying one pipe shall be 30 cm.

2.0 Aluminum Conductor Armoured LT XLPE Cable

- 2.1 The XLPE cables shall be **with extruded inner and outer sheath**, suitable for installation in air, conduits/pipes, ducts, open concrete trenches, for direct burial in either wet, or dry locations for indicated operating conditions. The length of the cables required shall be measured w.r.t. site conditions and these shall be delivered in section of approved length only, to avoid jointing as far as possible. Cable delivery shall be scheduled in consultation with Department only.
- 2.2 All cables shall be offered for inspection by Department prior to dispatch, Department reserve the right to wave of inspection so required in lieu of proper test certificates.
- 2.3 Cables shall be bought from manufacturer only as per approved NIT and confirm to following latest relevant applicable Standards: -

(a)	IS-8130	:-	Conductors for insulated electric cables and flexible cords
(b)	IS-5831	:-	PVC insulation and sheath of electric cables
(c)	IS-7098 (Part-I)	:-	Specification for cross linked polyethylene insulated pvc sheathed cables
(d)	IS- 3975	:-	Low carbon galvanized steel wires, formed wires and tapes for armouring of cables
(e)	IS-10810	:-	Methods of test for Cables.

- 2.4 The cross-linked polyethylene insulated (XLPE) Cable shall be manufactured and tested strictly in accordance with the Indian Standard IS 7098 (Part – I) and its latest amendments. The insulation shall fit tightly to the conductor and shall be applied concentrically about the conductor in thickness consistent with the voltage classification. The insulation shall be so applied that it shall be possible to remove it without damaging the conductor.
- 2.5 All conductors shall be of stranded construction complying with the requirement of class II of IS: 8130 with latest amendments. All conductors shall be of high electrical conductivity Aluminum conforming to requirement of IS: 8130 with latest amendments. Before stranding, the conductor shall be circular in cross section, uniform in quality, solid, smooth and free from scale, sharp edges and other defects.

- 2.6 The laid-up cores shall be provided with an inner sheath applied by extrusion process. It shall be ensured that it is as circular as possible. The inner sheath material shall be of polyvinyl chloride (PVC) compound conforming to the requirements of type ST 2 compound of IS:5831 with latest amendments. The inner sheath shall be so applied that it fits closely on the laid-up cores and shall be possible to remove it without damage to the insulation. The armouring shall be of galvanized steel strips for multi core cables, complying with the requirements of IS: 3975 with latest amendments. The outer sheath shall be of polyvinyl chloride (PVC) compound conforming to the requirements of Type ST 2 of IS: 5831 with latest amendments. The outer sheath shall be applied by extrusion process. The thickness of the outer sheath shall be as per IS: 7098 (Part - I).
- 2.7 Sequential cable marking, after every 1 meter, indicating the name of the purchaser as “**BFLZ, CPWD**”, size of cable, name of the manufacturer etc. shall be provided. Cables shall be supplied in the wooden drums in the specified length. Wooden drums shall be strong, weatherproof and non-returnable. The ends of the cable shall be sealed by means of non – hygroscopic sealing material.

2.8 Testing of Cables

The underground cable shall be inspected by the Departmental officers before bringing the materials to the site. The cost of visit of the Departmental officials to the factory / work's shall be borne by the Department. No additional payment shall be made to the contractor for arranging initial inspection / testing of the item at the manufacturer's works. Cables shall be subjected to routine & acceptance tests in accordance with the relevant standards in addition to physical, ageing and electrical tests at the Manufacturer's plant in accordance with applicable standards. Each test shall be carried out on randomly selected samples.

For testing of Cable & DWC/HDPE Pipe in approved outside laboratory, all expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor. The sample size for testing shall be as per CPWD Quality Assurance Policy for E&M Services (2016) as amended up to date / relevant BIS Standard or as per direction of the Engineer- In-Charge.

2.9 Rejection

In case the samples of cables fail to pass the tests or comply with the requirement of the specifications, the whole consignment shall be rejected subject to the discretion of the Engineer In charge or his authorized representatives.

3.0 Cable Junction Box

- 3.1 Jointing of cables shall be carried out through cable junction boxes only and no other type of jointing will be accepted.
- 3.2 The Cable Junction Box shall be not less than of nominal dimensions of 600mm(H) x 400mm(W) x 300 mm(D), and made out of 2 mm thick CRCA sheet, duly powder coated and with locking arrangement.

- 3.3 4 strip Aluminium bus bar arrangement of appropriate size (minimum size: 30 mm x 5 mm) for cable jointing shall be provided in the Cable Junction Box and these Junction Boxes shall be mounted on 40 mm x 40 mm x 6 mm thick G.I angle frame with four nos. 1.8-metre-long leg, as per the approved drawings.
- 3.4 The foundation for junction box shall be made of cement concrete 1:3:6 (1 cement: 3 coarse sand (zone-III) derived from natural sources: 6 graded stone aggregate 20 mm nominal size derived from natural sources). The base of the junction box shall be at least 300 mm above the ground level. However, in low lying flood prone area height of the junction box shall be suitably increased for which no extra cost shall be paid to the contractor. Similarly, depth of the foundation below the ground level shall be suitably decided depending on the soil condition. The foundation drawing shall be got approved from Engineer-In-Charge before execution.
- 4.0 Route Marker
- 4.1 The Cable route markers shall be provided along the runs of cable at the locations approved by the Engineer-in-Charge and generally at an interval not exceeding 200Mtr. Markers shall also be provided to identify change in the direction of the cable route.
- 4.2 The cable route marker shall be with 10cm X 10cm X 5mm thick G.I. Plate with inscription thereon, bolted/welded to 35mm X 35mm X 6mm G.I. Angle, 60 cm long, Grouting shall be done upto suitable depth with the cement concrete as decided by the Engineer-in-charge.

5.1 Indoor Type LT Panel, Outdoor type Feeder Pillar

The contractor shall have to furnish dimensional drawings of Feeder Pillars / LT Panel for the approval of the Engineer-in-charge, prior to their fabrication. The fabrication of Feeder Pillars / LT Panel shall be done as per the approved drawings and changes, modifications, rectifications suggested as per the inspection observations. Degree of Ingress Protection for the indoor type LT panel shall not be less than IP 42. Degree of Ingress Protection for outdoor Feeder Pillars, Pole Control Box / Junction Box shall not be less than IP 54.

The MCCBs shall be compatible for reliable protection and accurate measurement. The rated Service breaking capacity (kA) shall be 100 % of Ultimate breaking capacity (kA). All MCCBs shall be current limiting type with features of load line reversibility and suitable for horizontal / vertical mounting without any derating. The MCCBs shall be with thermo magnetic release (S/C & O/L protection and with adjustable trip setting). MCCBs shall be used with terminal spreaders and all terminals shall be shrouded to avoid direct contact. Preferably only one make of MCCB/MCB shall be used in the Feeder Pillars / LT Panel.

All measuring and indicating instruments shall be protected through MCB's and isolating switches. The LT Panel, Feeder Pillars shall conform to relevant IS standard and shall comply with CPWD specifications and Indian Electricity Rules. All components used in the manufacture of the LT Panel; Feeder Pillars shall confirm to the relevant Indian standard specification and especially to the followings:

Indian standard	Title
IS -8623 / 1993	Low-Voltage Switchgear and Control gear Assemblies
IS- 5039	Distribution pillars for voltages not exceeding 1000 V AC
IS / IEC - 60529	Degrees of protection provided by enclosures (IP code)
IS / IEC - 60947	Low-voltage switchgear and control gear

Testing of Panels and feeder pillars

Panels and feeder pillars shall be subjected to routine & acceptance tests in accordance with the relevant standards. The sample size for testing shall be as per CPWD Quality Assurance Policy for E&M Services (2016) as amended up to date / relevant BIS Standard or as per direction of the Engineer-In-Charge. The test report of recognized laboratory in respect of material used during manufacturing shall be furnished to the inspecting authority.

After erection, the LT Panel, Source, Feeder Pillars shall be commissioned after:

- (a) Tightening of all nuts and bolts.
- (b) Closing any left-out holes to ensure the entire panel is insect proof.
- (c) Megger testing.
- (d) Earth testing.

Nothing extra will be paid to contractor on this account.

Outdoor Type Feeder Pillar

Feeder Pillar shall be provided with two leaf doors with suitable numbers of heavy duty outside hinges. The feeder pillar shall be fabricated out of 2 mm thick CRCA sheet and the doors on front and rear side shall be fitted with two numbers mechanical locking and one number pad locking arrangement. The roof of the feeder pillar shall be front and back trapped drip proof top fabricated from 3 mm thick CRCA sheet. Arrangement for pad locking of doors shall be made in the center of the door. All doors shall be provided with suitable door handles i.e. feeder pillars should be open able from both fronts as well as from rear side. The feeder pillars shall have a sloping canopy projecting out on all sides with suitable sloping arrangement on front and back for drainage of water. Suitable size base frame made out of 50 mm X 50 mm X 6 mm thick M.S. angle having 4 nos. legs shall be provided with each feeder pillar. The feeder pillars shall be provided with Ventilation Window covered with wire net in double fold from inside. The window shall be provided on the both side of feeder pillars. The feeder pillar shall have 2 Nos. 20 x 3 mm copper strip earth bus all round on the rear wall for earthing. The feeder pillar shall be fixed on angle iron base frame with suitable size and number of GI nut bolt.

The bus bar of the feeder pillar will be shaped out of high conductivity, electrically conductor grade, aluminum and with sufficient cross section so that a maximum current density of 130Amp/sq.cm (800Amp/ sq. inch). The bus bar will be covered with RED, YELLOW, BLUE AND BLACK heat shrinking PVC sleeve throughout. The bus bar will run in a separate bus bar chamber using bus insulators made of non-deteriorating, vermin proof, non- hygroscopic materials such as epoxy fiber, reinforced polyester and the glazed porcelain.

The feeder pillar shall be compartmentalized, totally enclosed, dust and vermin proof. Besides the two-leave center opening front door, every compartment made for MCCBs / MCBs / switchgears etc shall have individual compartment door. The rear side door of the feeder pillar shall also be two leave center opening type. The operating knob of MCCBs shall be accessible to operator through an opening made in the individual compartment door so that MCCB can be operated without opening the door of the compartment. Use of rotary operating handle for MCCB is not permitted.

The feeder pillars shall be provided with a danger notice plate (As per C.P.W.D specifications for Electrical Works, Part-I, Internal-2023).

At the bottom of feeder pillar there should be suitable provision for cable entry / Provision for fixing cable gland and providing detachable gland plates etc. as required. For outgoing connections 4way terminal blocks of suitable current rating (matching with current rating of switch gear / MCCB) shall be provided. Suitable size of neoprene rubber gasket shall be provided to make the Feeder Pillar, completely waterproofed.

Painting shall be done with powder coating in approved shade after seven tank pretreatment process. The feeder pillars shall be provided with a danger notice plate (As per C.P.W.D specifications for Electrical Works, Part-I, Internal- 2023).

Routine tests as recommended in the IS 8623/93 shall be conducted. Type tests however are not required for indoor/outdoor panel.

The foundation for feeder pillar shall be made of cement concrete 1:3:6 (1 cement: 3 coarse sand (zone-III) derived from natural sources: 6 graded stone aggregate 20 mm nominal size derived from natural sources). However, in low lying flood prone area height shall be suitably increased for which no extra cost shall be paid to the contractor. Similarly, depth of the foundation below the ground level shall be suitably decided depending on the soil condition. The foundation drawing shall be got approved from Engineer- In-Charge before execution.

6 Technical Specifications for Pole

Octagonal poles shall be of 6 Mtrs. height designed as per BS EN 40-3-1- 2000 for structural design & as per IS875 (Part III), 1987 for dynamic loading. The force coefficient taken for design of the octagonal structure is to be established from the wind tunnel test data. The pole shaft shall be made single piece MS structure continuously tapered having polygonal (8 sides) cross section and a single longitudinal welding. The MS shall conform to BSEN100025/100027.

The welding will be done as per BS 5135 / IS 9595. No circumferential welding shall be allowed in the pole shaft. A Suitable base flange will be welded and plate reinforcements will be provided between base flange & pole. Foundation accessories will be as per IS 1367.

The Pole structure complete with base plate shall be single hot dip galvanized as per BS 729 / IS2629/ BS EN ISO 1461 internally and externally. Individual sections of the poles, like door, spigots and bracket arms shall be protected against corrosion by hot dip galvanized. All welding work shall be done before galvanizing. The treatment prior to galvanizing shall be done before galvanizing. The treatment prior to galvanizing shall include degreasing, rinsing, pickling further rinsing and fluxing. The minimum average of Zinc coating shall be 65 microns. The galvanized column and spigots/brackets arms shall be of prime finish and of good uniformity i.e. free from injurious defects, such as blisters, flux and un coated spots.

A suitable size opening shall be provided in the pole shaft at suitable height from the pole base. Height of the opening shall be taken as per site condition, as decided by the Engineer-in-charge. The opening shall have internal reinforcement to compensate for the loss of stiffness of the pole caused by forming the opening.

Size of the opening in the base plate shall be suitable for entry of incoming & outgoing 4 x 16 sqmm UG XLPE cable and pole wiring cables (1 Nos.3x 2.5sqmm cable for 1Nos. LED Luminaire) for LED luminaires.

Indoor suitable arrangements in poles window for Terminating 4 core inlet & outlet cable connections including providing & fixing the following accessories: —

- (i) 3 nos GI strips 4 mm thick with suitable length and having suitable size tapped holes.
- (ii) Terminal Block (connector 4 way) suitable for 4x16 sq mm
- (iii) DIN Bar or Channel of suitable length - 2 nos. on the existing Bakelite sheet (DIN bar 6/8 way) - 1 NO
- (iv) 6 AMP SP MCB, C curve — 1 No.
- (v) Earth Stud with washer, spring washer & nuts - 2 nos

The plates, bracket arms and spigots shall be manufactured as separate units suitable for mountings or fixing on the columns. No opening should be left in Pole Top to avoid entry of rain water. Further, the openings in the Poles (i.e. for cable entry / exit) may be suitably blocked to prevent entering of birds / insects inside the Pole.

The Pole bracket should be such that it is mounted on top of pole with the GI canopy with nut bolts so that as per requirement it can be adjusted for proper alignment of the fittings for proper illumination. The mounting bracket of the Pole shall be suitable to accommodate one no. LED Luminaires The bracket shall have necessary holes of suitable diameter, for taking out cables and wires for wirings and installation of LED luminaries, installation of junction box, fixing of safety hook, tying of wires.

Earthing Terminal in the Poles shall be provided with a corrosion resistant earthing terminal having substantial contact surface for the attachment of an earthing lead. The terminal shall be provided close to the door opening inside the poles. Where a bolt is used, it shall be at-least 6mm in diameter and 20mm in length and provided with two suitable washers and nuts, the bolts, nuts and washers made of stainless steel.

Executive Engineer (E)
BFLD, CPWD, Amritsar

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LIST OF ACCEPTABLE MAKES FOR E & M WORK

S. No.	Description of Item	Acceptable Makes
1	Poles	Bajaj / Valmont / Philips / Crompton / Skipper / Transrail / Surya/ R R Ispat
2	Al. conductor XLPE UG cable and PVC insulated and FR PVC sheathed Cu. conductor flexible cable (ISI marked)	Finolex / Havells / KEI / Polycab / RR Kabel/ Grandlay
3	LED Flood Light Fittings	Philips / Crompton / Bajaj / Wipro / Havells / Halonix / Trilux / Lighting Technology / Orient / Surya/ Jaguar
4	Accessories of LED Flood Light Fittings	
(a)	Lens	Ledil / Ledlink / Khatod / Phillips
(b)	Drivers	Xitanium (Phillips) / Osram / Meanwell / Tridonic
(c)	LEDs	CREE / Osram / Nichia / Phillips Lumileds
(d)	SPD	Finder / Littlefuse / Phillips / Eaton / Schneider / Zotup / Hager
5	DWC HDPE Pipe (ISI marked)	REX / Duraline / Gemini / Tirupati Plastomatic
6	Cable gland / Lug / Thimble	Dowell / Comet / Raychem RPG / HMI / Elmex / Gripwell
7	LT cubical panel / Control Panel of High Mast / Feeder Pillar / Junction (cable joint) box	Milestone Switchgears Pvt. Ltd./ Adlec Power Pvt. Ltd. / C&S / Tricolite / ASPL (Noida) / Advance Panels and Switch Gear Pvt Ltd. / Neptune India / Vilan Power control Pvt. Ltd. (Noida) / R.P. Controls and Switchgear/ BDE Switch Gears.
8	MCB / MCB DB	Legrand / Schneider / Hager / ABB / Siemens / L & T
9	MCCB / Change Over Switch / Contactor / Relay / Starter	Legrand / Schneider / Hager / ABB / Siemens / L & T
10	Digital Ammeter/ Digital Voltmeter/ Digital MF Meter	Automatic Electric/ L&T / Schneider / Konzerv / Siemens / ABB/ Legrand / C&S
11	Selector Switch	L&T / Salzer/ Kaycee/ Siemens/ Schneider / GE / ABB / Legrand / C&S
12	Indication Lamp & Push Button	BCH / L & T / Siemens / Schneider / ABB / GE / Legrand / C&S
13	Timer	L&T/ Siemens/ Schneider / ABB/ Legrand
14	CT	Kappa/ L&T/Automatic Electric
15	Paints	ICI paint / Asian paint / Berger / Nerolac / Jenson & Nicholson
16	Cement and Reinforcement Steel	As specified under approved make in additional conditions & specifications of civil works.
17	Any other item(s)	As decided by Engineer-In-Charge

Executive Engineer (E)
BFLD, CPWD, Amritsar

SCHEDULE OF QUANTITIES

NAME OF WORK: Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Frontier (SH: Electrical Work)					
S.No.	Description of Item	Qty	Unit	Rate	Amount
	Sub Head-1				
1	SITC of 6 meter height hot dip galvanised hinged door octagonal poles on the existing foundation as per enclosed technical specification and having following dimension and provision. incoming conductor cable — 1 NO				
	(a) Top dia 70 mm				
	(b) bottom dia 130 mm				
	(c) thickness of sheet 3 mm				
	(d) base plate 220 mm x 220 mm x 12 mm.				
	Indoor suitable arrangements in poles window for Terminating 4 core inlet & outlet cable connections including providing & fixing the following accessories: —				
	(i) 3 nos GI strips 4 mm thick with suitable length and having suitable size tapped holes.				
	(ii) Bakelite Sheet of suitable size of 6 mm thickness.				
	(iii) Terminal Block (connector 4 way) suitable for 4x16 sq mm				
	(iv) DIN Bar or Channel of suitable length - 2 nos. on the existing Bakelite sheet (DIN bar 6/8 way) - 1 NO				
	(v) 6 AMP SP MCB, C curve — 1 No.				
	(vi) Earth Stud with washer, spring washer & nuts - 2 nos.				
	(vii) Cable Support Clamp suitable for 2 no. of cable				
	Supplying and drawing of 1.1KV grade 3x1.5 sq mm PVC Insulated and FRLSH PVC sheathed copper conductor flexible cable for 1 no. LED street light i/c connection etc. cable 4 nos., GI Foundation bolts of 16 mm dia and 600mm length along with nuts, washers, anchor plate, and template i/c connection etc. complete as reqd.				
	Bracket for 1 no. LED fitting — flanged type suitable size made out of GI channel suitable for mounting of 1 nos. LED fitting.	70.00	Nos	18,642.00	13,04,940.00

	Fabricating, supplying & fixing of totally enclosed dust & vermin proof both side openable outdoor cubicle type, sub feeder panel made out of 2 mm thick MS sheet with 7 tank process for powder coating suitable for 415 V, 3 phase, 4 wire 50 Hz AC supply complete with following incoming and outgoing accessories having suitable size spreader links, rotary handle, suitable CTs, having suitable size aluminium busbars of minimum 200 A rating including internal wiring with suitable size copper wires/cables, hinged lockable doors, bonding to earth, interconnection, painting, not less than IP-54 protection, bulb holder at back side etc. as required. The cubical panel must have front face area 1.17sq. mtr (minimum) and of depth 300 mm				
2	(min.) having sloping roof (minimum inclination angle of 10 deg) made of 3 mm thick MS sheet with lockable compartment doors & locking arrangement, removable gland plates (for cable entry on the bottom),having 2 Nos. 20 x 3 mm copper strip earth bus all round on the rear wall for earthing, bottom of panel shall be duly welded with 6mm thick MS C Channel (duly galvanized) of size 75mm x 50mm (approx.) which shall be supported and fixed on angle iron base frame through suitable size nuts and bolts, angle iron base frame shall have 4 nos legs of 1800 mm height each from ground level (excluding 300 mm below ground level in CC foundation) made out of 50mmX 50mm X 6mm thick M.S. Angle iron duly painted with anticorrosive paint, making suitable foundation of min size 1500 mm(W) x 500 (L) mm x 915 mm (H- 615 mm below ground & 300 mm above ground level) of cement concrete 1:3:6 (1 cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size) i/c erection of panel etc. as required .	2	Job	96057.00	192114.00
A	Incomer				
(i)	100 Amp, Four pole MCCB 30 KA (minimum) Ics = 100% Icu, operational voltage 690V with thermal magnetic based release, S/C & O/L protection: 1 No.				
(ii)	LED Phase Indicating Lamps for R, Y, B Phases- 1 Set of 3 Nos.				
(iii)	2A SP MCB 10kA (for Cont. Ckt.)- 3 Nos.				

B	Outgoings				
(i)	63A Four pole MCCB 25 KA (minimum) Ics = 100% Icu with thermal magnetic based release S/C & O/L protection with spreader terminals: 4 Nos.				
(ii)	Astronomical Timer - 3 output (1 output per phase) and suitable for three phase supply - 1 No. & 1 no. suitable Contractor including wiring for auto on-off				
3	Supplying, installation, testing, commissioning of outdoor type Cable Junction / Jointing Box of size 600 mm x 400 mm x 300 mm made out of 2 mm thick MS sheet with 7 tank process for powder coating, not less than IP-54 protection, bulb holder at back side, equipped with 4 strip 150 Amps aluminum busbars, having 2 Nos. 20 x 3 mm copper strip earth bus all round on the rear wall for earthing, bottom of panel shall be duly welded with 6mm thick MS C Channel (duly galvanized) of size 75mm x 50mm (approx.) which shall be supported and fixed on angle iron base frame through suitable size nuts and bolts, angle iron base frame shall have 4 nos legs of 1800 mm height each from ground level (excluding 300 mm below ground level in CC foundation) made out of 50mmX 50mm X 6mm thick M.S. Angle iron duly painted with anticorrosive paint, making suitable foundation of min size 600 mm(W) x 500 (L) mm x 915 mm (H- 615 mm below ground & 300 mm above ground level) of cement concrete 1:3:6 (1 cement: 3 coarse sand: 6 graded stone aggregate 20 mm nominal size) i/c erection of panel etc. as required.	1	Job	12701.00	12701.00
4	SITC of sheet steel wall mounted MCCB's enclosure having detachable gland plate for cable entry, common design for 3P and 4P MCCBs, internal louvers for better heat dissipation, IP55 rating i/c providing and fixing of 125 Amp, 35/36 KA rating and breaking capacity four pole MCCB with thermo magnetic release Ics=100% Icu, suitable for operation on 415 V, having terminal spreader etc. in the above MCCB enclosure etc. complete as required	1	Each	12450.00	12450.00

	LED Street light fixture, powder coated pressure die cast aluminium body (System lumen efficacy >135 lm/Watt) Supplying, installation, Testing & Commissioning of Street light LED fixture powder coated pressure die cast aluminium body with driver as per the requirement with Driver efficiency >85%, Input voltage: 140-270 Volt AC, freq 50/60 hz, Operating temp range -5 deg to 50 deg centigrade, internal surge protection of 5 KV L,N,E as per IEC 61000-4-5, Driver efficiency >85%, THD < 10% as per IEC 61000-3-2, P. F.≥0.95, IP-66, IK-10, CRI ≥70, under voltage and over voltage protection, EMI-EMC As per CISPR -15, lenses for beam angle as per IESNA type I/II/III as per the width of the road and the project requirement., suitable to fit in up to 65mm dia pipe, life time (LED,				
5	Driver & electrical circuitry) of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM- 21-11 report, CCT 3000°K/ 4000°K/ 5700°K/ 6500°K (As per), SDCM (Standard Deviation Colour Matching) <5, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard complete in all respect i/c external connections with 1.5 sq. mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy >135 lm/Watt output. LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).				
a	45 watts	70	Each	1966.00	137620.00
5.1	LED Street light fixture, powder coated pressure die cast aluminium body (System lumen efficacy ≥105 <120 lm/Watt) of following body materials.				
a	45 watts	4	Each	800.00	3200.00

6	LED Flood Light, powder coated pressure die cast aluminium (System lumen efficacy as per technical specifications) Supplying, installation, Testing & Commissioning of Flood Light, powder coated pressure die cast aluminium body with built in or separate driver as per the requirement with Driver efficiency >85%, Input voltage: Input voltage: 140-270 Volt AC, freq 50/60 hz, Operating temp range -5 deg to 50 deg centigrade, internal surge protection of 5 KV L,N,E as per IEC 61000-4-5, Driver efficiency >85%, THD < 10% as per IEC 61000-3-2, P. F. ≥ 0.95, IP-66, IK-10, CRI > 70, under voltage and over voltage protection, EMI-EMC as per CISPR-15, lenses for beam angle 30 deg- 120deg as per the application and the project requirement deg., suitable tilt able fitting, life time (LED, Driver & electrical circuitry) of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM-21 report, CCT 3000°K (As per ANSI Bin), SDCM (Standard Deviation Color Matching) < 5, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy as per technical specifications. LM 79 & LM 80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).				
a	150 W (maximum wattage)	16	Each	3602.00	57632.00
7	LED Flood Light, powder coated pressure die cast aluminium (System lumen efficacy as per technical specifications) Supplying of Flood Light, powder coated pressure die cast aluminium body with built in or separate driver as per the requirement with Driver efficiency >85%, Input voltage: Input voltage: 140-270 Volt AC, freq 50/60 hz, Operating temp range -5 deg to 50 deg centigrade, internal surge protection of 5 KV L,N,E as per IEC 61000-4-5, Driver efficiency >85%, THD < 10% as per IEC 61000-3-2, P. F. ≥ 0.95, IP-66, IK-10, CRI > 70, under voltage and over voltage protection, EMI-EMC as per CISPR-15, lenses for beam angle 30 deg- 120deg as per the application and the project				

	requirement deg., suitable tilt able fitting, life time (LED, Driver & electrical circuitry) of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM-21 report, CCT 3000°K (As per ANSI Bin), SDCM(Standard Deviation Color Matching) <5, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy as per technical specifications. LM79 & LM80				
	Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).				
a	150 W (maximum wattage)	2	Each	3125.00	6250.00
8	Supplying and Laying of one number PVC insulated and PVC sheathed / XLPE aluminium armoured power cable of 1.1 KV grade of following size in the existing masonry open duct as required.				
a	3.5 Core X 50 sq. mm	50	Metre	846.00	42300.00
9	Supplying and Laying of one number PVC insulated and PVC sheathed / XLPE aluminium armoured power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe /DWC HDPE pipe as required.				
a	3.5 Core X 50 sq. mm	1800	Metre	860.00	1548000.00
b	4Core X16 sq. mm	1500	Metre	462.00	693000.00
10	Supplying and Laying and fixing of aluminium armoured one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
a	4Core X16 sq. mm	1200	Metre	479.00	574800.00
11	Supplying and drawing following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.				
a	3 x 2.5 sq. mm	500	Metre	148.00	74000.00

12	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc. direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc., complete as required.				
a	63 mm dia (OD-63 mm & ID-51 mm nominal)	1800	Metre	289.00	520200.00
13	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc. in the existing trench, complete as required.				
a	63 mm dia (OD-63 mm & ID-51 mm nominal)	50	Metre	136.00	6800.00
14	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
a	4 X 16 sq. mm (28mm)	142	Set	366.00	51972.00
b	3½ X 50 sq. mm (32mm)	4	Set	484.00	1936.00
15	Supplying and fixing cable route marker with 10 cm X 10 cm X 5 mm thick G.I. plate with inscription there on, bolted /welded to 35 mm X 35 mm X 6 mm angle iron, 60 cm long and fixing the same in ground through CC foundation of size 200mm(L)x200mm(W)x300mm(D) as required.	12	Each	598.00	7176.00
16	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	8	Set	7658.00	61264.00
17	Providing and laying earth connection from earth electrode with 6 SWG dia G.I. Wire in 15 mm dia G.I. pipe from earth electrode including connection with G.I. thimble excavation and re-filling as required.	80	Metre	313.00	25040.00
18	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ submain wiring/ cable as required.	5400	Metre	50.00	270000
Sub Head-1 Total					₹ 56,03,395.00

	Sub Head-2 (EI)				
1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed steel conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.				
a	Group C	40	Point	2101.00	84040.00
2	Wiring for light/ power plug with 2X4 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed steel conduit along with 1 No. 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	80	Metre	480.00	38400.00
3	Wiring for light/ power plug with 4X4 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed steel conduit along with 2 Nos. 4 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable for loop earthing as required.	40	Metre	724.00	28960.00
4	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)				
a	6 way, Double door	4	Each	2390.00	9560.00
5	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a	Single pole	24	Each	285.00	6840.00
b	Single pole and neutral	4	Each	643.00	2572.00
6	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.				
a	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	40	Metre	370.00	14800.00

7	Supply, Installation, Testing and Commissioning of ceiling fan with Brush Less Direct Current (BLDC) Motor, class of insulation: B, 3 nos. metal(Aluminium alloy) blades, 30 cm long down rod, 2 nos. canopies, shackle kit, safety rope, copper winding, steel/Al body. Power Factor not less than 0.9, Service Value (CM/M/W) minimum as below, 350 RPM (tolerance as per IS : 374-2019), THD (Total Harmonic Distortion) less than 10%, remote (preferably mobile app based) for speed control and all remaining accessories including safety pin, nut bolts, washers, temperature rise=75 0C (max.), insulation resistance more than 2 mega ohm, suitable for 230 V, 50 Hz, single phase AC supply Ceiling Fan compliant to IS 374:2019 fan i/c external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required.				
a	1400mm, service value ≥ 6.0 CM/Min/Watt, air delivery 245 CM/Min (Minimum)	4	Each	2913.00	11652.00
8	Supplying and fixing brass batten/ angle holder including connection etc. as required.	8	Each	154.00	1232.00
9	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required.	8	Each	659.00	5272.00
10	Supplying, Installation, Testing & Commissioning of LED surface mounted Batten light of following body material and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency >85%, Operating voltage AC 140- 270 Volt, frequency 50/60 hz, Operating temp range -5 °C to 40 °C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD < 10%, P. F. $\geq$ 0.95, IP20, CRI >80, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM(Standard Deviation				

	Colour Matching) <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5-year OEM warranty. System lumen efficacy ≥ 105 <120 lm/Watt output. LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in- Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C). Powder coated die cast /Extruded aluminium Body (Thickness > 1.20 mm)				
a	18- 22 Watt	8	Each	681.00	5448.00
11	Supply, Installation, Testing and Commissioning of 250 mm fresh air fan / exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.	8	Each	2469.00	19752.00
12	SITC of 7-watt LED bulb etc complete as required	8	Each	69.00	552.00
Sub Head-2 Total					₹ 2,29,080.00
Total Electrical Work:					₹ 58,32,475.00

Executive Engineer (E)
BFLD, CPWD, Amritsar

FINANCIAL QUOTE

Name of Work: Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector).

S.No.	Description of item	Estimated cost (In rupees)	% above or below the estimated cost	Percentage in figures	Total Cost (in rupees)
1.	Construction of Causeway with Box Culvert along with its Approach Road over Basantar River in AOR of BOP Balhar under SHQ BSF Indereshwar Nagar in Jammu Sector	Rs. 42,02,49,845/- (Civil) + Rs. 58,32,475/- (Electrical) =			
	Total	Rs.42,60,82,320/-			

**Executive Engineer,
Border Fencing Division-III
CPWD, Jammu**