NATIONAL HIGHWAY AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

BUILDING INFRASTRUCTURE - BUILDING THE NATION

Ministry of Road Transport & Highways, (Govt. of India)

National Competitive Bid
(Through CPP Portal, E-Tendering Mode)
For

"Renovation, Repair, Re-surfacing & Construction of of 32 Nos. of urban link roads at Ward no 1,2,3 &13 of LEH (PKG-3), in UT of Ladakh (2nd Call)"
Through Percentage Contract

O/o Executive Director (Projects)
National Highways & Infrastructure Development Corporation Ltd
Regional Office, Ladakh Yartsa House, Near Changspa Farm, Leh -194101, Ladakh

Corporate Head Quarters
National Highways & Infrastructure Development Corporation Ltd
3rd floor, PTI Building, 4-Parliament Street, New Delhi – 110001
CIN No: U45400DL2014GOI269062

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PART A

TO BE UPLOADED BY THE BIDDER ALONG WITH FINANCIAL BID

SECTION-I

NOTICE INVITING TENDER

Notice Inviting Tender (NIT)

Tender No: NHIDCL/Infra/Ladakh/2022 **Dated: 26.05.2022**

RFP No.: 27/RO-Ladakh/2022

The Ministry of Road Transport & Highways through National Highways & Infrastructure Development Corporation Limited (NHIDCL) is engaged in the development of National Highways and Infrastructure works. NHIDCL RO-Ladakh for and on behalf of Director Urban Local Bodies Department, Union Territory of Ladakh invites **"Online Tenders" on "Percentage Mode"** from experienced and competent bidders, meeting prescribed eligibity criteria as mentioned in tender document.

Details of the work;

Name of the work	Estimated Cost	Completion Period	Defect Liability Period
"Renovation, Repair, Re-surfacing & Construction of of 32 Nos. of urban link roads at Ward no 1,2,3 &13 of LEH (PKG-3), in UT of Ladakh (2nd Call)"	14,67,92,310/-	08 months	One Year

The complete BID document can be viewed from official portal of the CPPP website *https://eprocure.gov.in/eprocure* and website *www.nhidcl.com/tenders*. The intending Bidder can download the tender, and must submit the technical bid and financial Bid at *https://eprocure.gov.in/eprocure* only. The Updates/Corrigendum/Addendum shall be followed up to submission of tender and it will be the part of tender. The notifications on updates/Corrigendum/Addendum will only be notified in *https://eprocure.gov.in/eprocure*.

The following Date schedule is to be followed for this project:

Sr. No.	Particulars	Date
1	Bid Document Download/ Start Date	26.05.2022
2	Clarification /Pre bid queries Start Date	26.05.2022
3	Clarification /Pre bid queries End Date	28.05.2022 (1100 Hrs.)
4	Pre bid meeting	28.05.2022 (1500 Hrs.)
5	Bid submission Start date	28.05.2022
6	Bid submission End date	03.06.2022 (1100 Hrs.)
7	Opening date of Technical Bids	04.06.2022 (1100 Hrs.)

The complete BID document can be viewed / downloaded from official portal of the CPPP website https://eprocure.gov.in/eprocure/app from 26/05/2022 to 03/06/2022 (upto 1100 hrs IST). Bidder must submit its Technical bid and Financial Bid at https:// eprocure.gov.in/eprocure/app on or before 03/06/2022 (up to 1100 hrs IST)

The Instructions to bidder is attached with this NIT which shall be a part of RFP and the contract agreement. Please note that the NHIDCL reserves the right to accept or reject all or any of the BIDs without assigning any reason whatsoever.

Col. Rajeev Kumar (Retd.)
Executive Director (P)
NHIDCL RO-Ladakh, Yartsa
House near Changspa, Leh,
UT of Ladakh – 194101
Phone: 01982-295517
E-mail: nhidcl.leh@gmail.com

SECTION-II

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS (ITB)

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Instructions to Bidders (ITB)

A. General

1. Name and Scope of Work:

The Executing Agency (as defined in the Appendix to ITB) invites bids "Renovation, Repair, Re-surfacing & Construction of 32 Nos. of urban link roads at Ward no 1,2,3 &13 of LEH (PKG-3), in UT of Ladakh (2nd Call)"

1.1. Throughout these bidding documents, the terms "bid" and "tender" and their derivatives (bidder/tenderer, bid/tender, bidding/tendering, etc.) are synonymous.

2. Source of Funds

2.1. The expenditure on this project will be provided by the Director, Urban Local Bodies Department Government of UT of Ladakh to the National Highways & Infrastructure Development Corporation Limited (NHIDCL).

3. Eligible Bidders

3.1. **For the registered government contractors:** The bid is open to contactors who are registered in the appropriate class with the government departments in CPWD/AIR/Railways/MES/BRO/ and PSU's of state and Central Governments such as BSNL, NHPC, NBCC etc. in the Public works Deparments of state governments, Union Territories and its allied departments viz. Roads and Buildings, Irrigation, Public Health etc.

3.2. **For the non-registered contractors:** Bidder may be an individual, private entity, sole or partnership firm, company incorporated and registered in India, having prior experience of executing road works are eligible for bidding for this work.

3.3 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices by the Central Government, the State Government or any public undertaking, Autonomous body, authority by whatever name called under the Central or the State Government.

The eligible bidders at 3.1 and 3.2 above shall scan and upload the documents stated under Clause 11.2 as per their category to participate in the technical bid.

4. One Bid per Bidder

4.1. Each Bidder shall submit only one Bid for the work. A Bidder who submits more than one Bid will cause the proposals with the Bidder's participation to be **disqualified.**

5. Cost of Bidding

5.1. The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the Executing Agency will, in no case, be responsible or liable for those costs.

6. Site/Drawings details

6.1. i) The site for the work is available.

ii) The indicative Drawings showing the location of the proposed roads along with approaximate length attached with the bid document.

6.2. The Bidder, at his own cost, responsibility and risk, is encouraged to visit, examine and familiarise himself with the Site of Works, road conditions, road geometrics and its surroundings including source of earth, water, materials such as aggregates, bitumen, binder material etc. and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense. He may contact the person whose contact details are given in the Appendix to ITB.

B. Bidding Documents

7. Content of Bidding Documents

7.1. The bidder is expected to examine the Schedule of Quantites enclosed with bid document, indicative tender drawings, Technical and Particular specifications, contract conditions and special conditions of contract and access the site locations and include all transportation and miscellaneous cost while quoting the bid. The bill of quantities enclosed is financial bid in which the bidder is to quote a fixed percentage against the estimated cost given in the BOQ excluding GST which will be the contract price for this bid.

7.2. The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, and specifications, Schedule of Qunatities, bill of quantities, forms and drawings in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk. Pursuant to clause 22 hereof, bids, which are not substantially responsive to the requirements of the Bid Documents, shall be **rejected.**

8. Clarification of Bidding Documents

8.1. A prospective Bidder requiring any clarification on the bid document may notify the Executing Agency in writing or by e-mail (scanned copy) at the Executing Agency's address indicated in the Notice Inviting Tender. The Executing Agency will respond to any request for clarification received earlier than 7 days prior to the deadline for submission of bids through mail incase of valid queries however the bidders are instructed to forward their queries before the prebid meeting preferably. Copies of the Executing Agency's response will be hosted on website or which are required in the opinion of the Executing Agency including a description of the enquiry, but without identifying its source for the queries received prior to pre bid meeting.

9. Amendment of Bidding Documents

9.1. Before the deadline for submission of bids, the Executing Agency may modify the bidding documents by issuing addenda.

9.2. Any addendum thus issued shall be part of the bidding documents and shall be hosted on the NHIDCL website/e-procurement portal only.

9.3. To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Executing Agency shall extend, as necessary, the deadline for submission of bids, in accordance with Clause 17.

C. Preparation of Bids

10. Language of Bid

10.1. All documents relating to the Bid shall be in English and all correspondence would be in the same language.

11. Documents Comprising the Bid

11.1. The e-bid submitted by the bidder shall be in two separate parts.
Part-I: Technical Bid
Part-II: Financial Bid.

11.2. **A) Technical Bid:** The intending bidders must read the terms & conditions of tender documents carefully. The Technical Bid shall be uploaded with scanned copies of following documents. All the documents must be Serial wise as stated below along with check list.

For the registered government contractors:

Sr. No.	Particular of Document	Yes	No
1.	Letter of Application on bidder's original letter Head to submit Technical Bid as per Annexure-A		
2.	Receipt of Bid Document Cost		
3.	Qualification Information (SECTION- III)		
4.	The enlistment certificate in the appropriate class in which the bidder is registered with the concerned department. The enlistment of the contractor should be valid on the last date of submission of Bid (Note: In case the last date of submission of bid is extended the enlistment of contractor should be valid on the original date of submission of bid.)		
5.	Proof of Payment of Bid Security		
6.	**Experience certificate** in works of a similar nature and size for each of the last Seven years (ending previous day of last day of submission of bids) with certificates from the concerned officer of the minimum rank of Executive Engineer-in-Charge or equivalent; One similar completed work* costing not less than amount equals to **80% of estimated cost put to tender.** **or** Two similar completed works* costing not less than amount equals to **60% of estimated cost put to tender**. **or**		

	Three similar completed works* costing not less than amount equals to **40% of estimated cost put to tender**. (*The "similar work" means Construction/Upgradation/restoration of road works (flexible or rigid pavements)and its allied works) Note: The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to the last date of submission of bids.		
7.	Bidder shall submit Information regarding litigation or arbitration history during the last five years as per format given in Qualification Information point 4.		
8.	Bidder shall submit affidavit on the Stamp Paper, duly attested from the Notary Public that the information furnished with the bid documents is correct in all respects as per format given in Annexure-C.		
9.	Bidder shall submit Undertakings as per Annexure –D.		

For the non-registered contractors with government Department:

Sr. No.	Particular of Document	Yes	No
1.	Letter of Application on bidder's original letter Head to submit Technical Bid as per Annexure-A		
2.	Receipt of Bid Document Cost		
3.	Qualification Information (SECTION-III)		
4.	Power of Attorney as per Annexure-E		
5.	Proof of Payment of Bid Security		
6.	Scanned copy of Original document of Registration Certificate (defining the constitution or legal status, ownership details, place of registration, and principal place of business)		
7.	**Experience certificate** in works of a similar nature and size for each of the last Seven years (ending previous day of last day of submission of bids) with certificates from the concerned officer of the minimum rank of Executive Engineer-in-Charge or equivalent; One similar completed work* costing not less than amount equals to **80% of estimated cost put to tender.** **or** Two similar completed works* costing not less than amount equals to **60% of estimated cost put to tender**. **or** Three similar completed works* costing not less than amount equals to **40% of estimated cost put to tender**. (*The "similar work" means Construction/Upgradation/restoration of road works (flexible or rigid pavements)and its allied works) Note: The value of executed workshall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to the last date of submission of bids.		
8.	Bidder shall submit Information regarding litigation or arbitration history during the last five years as per format given in Qualification Information point 4.		
9.	Bidder shall submit affidavit on the Stamp Paper, duly attested from the Notary Public that the information furnished with the bid documents is correct in all respects as per format given in Annexure-C.		
10.	Bidder shall submit Undertakings as per Annexure –D.		
11.	Scanned copy of GST and PAN Registration		

Financial Bid (Applicable to both registered and non-registered government contractors)
To be submitted online on GoI e-tendering portal (https://eprocure.gov.in/cppp) on or before Schedule time given in NIT/Appendix to ITB.

11.3. The following documents forms the entire bid and the contract document.The bidders are informed that the following documents which are uploaded with the RFP are uploaded for information and for the purpose of

understanding of the nature and scope of work for the bidders. The documents will form part of the bid and subsequently part of the contract agreement with the successful bidder.

Sections	Particular
Section VIII	Conditions of Contract and Contract Data Including Annexures
Section IX	Scope of Work & Technical Specifications
Section X	Particular Specifications
Section XI	List of Approved Makes of Materials

12. Bid Prices

12.1. The Contract shall be in the mode of Percentage rate tender viz. the bidder is to quote a fixed percentage below/above/ at par (in figures as well as in words) against the total estimated cost given in the BOQ (excluding GST) which will be the contract price for this tender this amount is for the full scope of work stated in the Schedule of Quantities and as per the indicative drawings, specifications.

12.2. **The bidder shall quote bid prices on appropriate format enclosed as part of tender document on https:// eprocure.gov.in/eprocure/app.**

12.3. The bidder is required to quote the amount excluding GST. GST at the existing rate & applicable laws will be paid to the contractor along with the each bill; however, the contractor has to submit the proof of GST payment to government before next bill. In case, of non-submission of GST proof, the same will be recovered in the next bill.

12.4. Based on the percentage quoted, the contract prices shall be fixed for the duration of the Contract and shall not be subject to adjustment, except otherwise specified in relevant clauses of contract if any in the contract clauses.

12.5. The tender submitted shall betreated as invalid if:

1) The contractor does not quote percentage above/ below/ atpar on the total amount of estimated cost

2) The percentage above / below /atpar is not quoted in figures and words

3) The percentage above / below /atpar is different in figures and words against the estimated cost.

4) Bids which proposed any alteration in the works specified / time allowed / which contents any other conditions of any sort including conditional rebates.

12.6. Incase the lowest tender amount (estimated cost plus or minus the percentage quoted by the bidder) of 2 or more contractors is same such lowest contractors will be asked to submit sealed revised offer in the form of letter mentioned in percentage above/ below / atpar against the estimated cost of tender, subjected to that the revised offered percentage quoted above / below/ atpar against the estimated cost should not be higher than the percentage quoted at the time of submission of initial bid. The successful bidder shall be the lowest bid received on the basis of revised offer. Incase if any of such bidder refuses to submit the revised offer within the prescribed time than it shall be treated as withdrawl of his tender and such bidder will not have any claim on his and deemed to have accepted that his bid is rejected.

13. Currencies of Bid and Payment

13.1. The price shall be quoted by the bidder entirely in Indian Rupees. All payments shall be made in Indian Rupees.

14. Bid Validity and Bid Document Cost

14.1. Bids shall remain valid for a period of **120 days** after the final deadline date for bid submission specified in Clause 17.

14.2. In exceptional circumstances, prior to expiry of the original time limit, the Executing Agency may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by e-mail. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for a period of the extension, and in compliance with Clause 15 in all respects.

14.3. The Bidder is required to pay a non-refundable fee as of Rs. 590/- towards cost of Bid Document through RTGS/ NEFT/ other online mode to the NHIDCL's designated bank account. Details of designated bank account are as under:

Sr.No.	Particulars	Details
1.	Name of Beneficiary	NHIDCL ESTABLISHMENT ACCOUNT
2.	Beneficiary Bank Account No.	76513070002321
3.	Beneficiary Bank Branch Name and	Canara Bank (erstwhile Syndicate Bank) Leh Branch, Tsaskan Complex near

	Address	LIC Office, Distt. Public library Road, Leh-194101
4.	Beneficiary Bank Branch IFSC	CNRB0017651

The Bidder must upload Copy of the online payment receipt (UTR/ Reference No. / Transaction ID) towards payment of cost of Bid document.

14.4. Any bid not accompanied by Bid document fee/cost, shall be summarily rejected by the Executing Agency as **non-responsive.**

15. Bid Security Detail

15.1 The Bidder is mandatorily required to pay an amount of Rs 29,35,800 (2 % of the estimated cost put to tender) towards the bid security through NEFT/RTGS/IMPS/online mode only to the NHIDCL's designated bank account. Details of designated bank account are as under:

S.No.	Particulars	Details
1.	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited NHIDCL UT Ladakh Project Account
2.	Beneficiary Bank Account No.	362305000136
3.	Beneficiary Bank Branch IFSC	ICIC0003623
4.	Beneficiary Bank Branch Name	3623 Leh Ladakh Branch
5.	Beneficiary Bank Address	ICICI Bank,Leh-194101

15.2 Any bid not accompanied by Bid proof of payment of Bid Security amount shall be summarily rejected by the Executing Agency as **non-responsive**

15.3 The Bid Security will be forfeited:

a) if the Bidder withdraws the Bid after its submission during the period of Bid validity; **or**
b) if the Bidder does not accept the correction of the bid price, pursuant to Clause 23; **or**
c) in the case of a successful Bidder, if the Bidder fails within the specified time limit to
   i. **Sign the Agreement**; and/or
   ii. **Furnish the required Performance Security;** and/or
   iii. **Submit the original documents as specified in Clause 11.2;**
   iv. **Corrupt or Fraudulent Practices as specified in Contract Agreement.**

16 Alternative Proposals by Bidders

16.1. Bidder shall submit offers that fully comply with the requirement of the bidding document including conditions of contract, conditional offer or alternate offer will not be considered further in the process of tender evaluation and the bid will be declared **non-responsive**.

D. Submission of Bids

17 Schedule for Submission of Bids

17.1. Complete E-Bid to be uploaded on e-procurement portal before due date & time as mentioned in NIT. The bidders viz. those registered with the government agencies and not registered with the government agencies shall upload the scanned documents as enlisted under para 11.2. The bidders shall upload the technical bid and financial bid before the stipulated date and time as prescribed in NIT.

17.2. The Executing Agency may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 9, in which case all rights and obligations of the Executing Agency and the bidders previously subject to the original deadline will then be subject to the new deadline.

17.3. The detailed schedule for submission of bid shall be, as given in NIT/Appendix to ITB.

18 Modification and Withdrawal of Bids

18.1. Bidders may modify or withdraw their e-bids before the deadline prescribed in NIT/Appendix to ITB.

18.2. No bid may be modified after the deadline for submission of Bids.

18.3. Withdrawal of a Bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in Clause 14.1 above or as extended pursuant to Clause 14.2 shall result in the forfeiture of the Bid security pursuant to Clause 15.

E. Bid Opening and Evaluation

19 Bid Opening

19.1. Bid opening shall be carried out in two stages. Firstly, 'Technical Bid' of all the bids received shall be opened on the date and time mentioned in the NIT/Appendix to ITB. 'Financial Bid' of those bidders whose technical bid has been determined to be technically responsive shall be opened on the subsequent date through online process of e-tender, which will be notified to such bidders.

19.2. The Executing Agency will open the "Technical Bid" of all the bids received within due date and time, in the presence of the bidders/bidders' representatives who choose to attend at the time, date and place specified in the NIT. In the event of the specified date for the submission of bids being declared a holiday for the Executing Agency, the Bids will be opened at the appointed time and location on the next working day.

19.3. The Executing Agency at the opening of Technical Bid, will announce the bidders' names and such other details.

19.4. The Executing Agency will prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Clause 19.1.

19.5. The bids accompanied with bid security declaration will be taken up for evaluation with respect to the Qualification Information and other information furnished in para 11.2

19.6. As soon as possible, the Evaluation Committee will finalize the list of technically responsive bidders whose financial bids are eligible for consideration.

19.7. The Executing Agency shall inform the bidders, whose technical bids are found technically responsive, of the date, time and place of opening of the financial bids. The technical responsiveness/non-responsiveness of the bidders will be uploaded in the CPP Portal and the financial bids will be opened after 7 days from the uploading of the results of the technical bids. The bidders so informed, or their representative, may attend the meeting of opening of financial bids.

19.8. The financial bids of only the technically responsive bidders will be opened. The technically responsive bidders' names, the Bid prices, the total amount of each bid and such other details as the Executing Agency may consider appropriate will be announced by the Executing Agency at the time of bid opening.

19.9. The Executing Agency shall prepare the minutes of the opening of the Financial Bids.

20 Process to be Confidential

20.1. Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any attempt by a Bidder to influence the Executing Agency's processing of bids or award decisions may result in the rejection of his Bid.

21 Clarification of Bids and Contacting the Executing Agency

21.1. To assist in the examination, evaluation, and comparison of Bids, the Executing Agency may, at his discretion, ask any Bidder for clarification. The request for clarification shall be given in writing or by email asking the tenderer to respond by a specified date, and also mentioning therein that, if the tenderer does not comply or respond by the date, his tender will be liable to be rejected. Depending on the outcome, such tenders are to be ignored or considered further. No change in prices or substance of the bid including specifications, shall be sought, offered or permitted. No post-bid clarification at the initiative of the bidder shall be entertained. The shortfall information/ documents should be sought only in case of historical documents which pre-existed at the time of the tender opening and which have not undergone change since then. So far as the submission of documents is concerned with regard to qualification criteria, after submission of the tender, only related shortfall documents should be asked for and considered.

21.2. Subject to clause 21.1, no Bidder shall contact the Executing Agency on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Executing Agency, he should do so in writing.

21.3. Any effort by the Bidder to influence the Executing Agency in the Executing Agency's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidders' bid.

22 Examination of Bids and Determination of Responsiveness

22.1. During the detailed evaluation of "Technical Bids", the Executing Agency will determine whether each Bid

(a) meets the eligibility criteria defined in Clause 11.2;

(b) the required documents uploaded by the bidder are in order; and

(c) is substantially responsive to the requirements of the bidding documents. During the detailed evaluation of the "Financial Bids", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e., priced bill of quantities.

23 Correction of Errors.

23.1. Financial Bids determined to be technically responsive will be checked by the Executing Agency for any arithmetic errors.

23.2. The amount stated in the Financial Bid will be corrected by the Executing Agency for the correction of errors and shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount, the Bid will be rejected, and action will be invoked on the bidder in accordance with Clause 15.1.

24 Evaluation and Comparison of Financial Bids.

24.1. The Executing Agency will evaluate and compare only the bids determined to be technically responsive in accordance with Clause 22.

24.2. In evaluating the bids, the Executing Agency will determine for each Bid the evaluated Bid price by adjusting the Bid price after making any correction for errors pursuant to Clause 23;

24.3. **If the Bid of the successful Bidder is unrealeastic or erratic** then an irrevocable and unconditional guarantee from a Bank should also be submitted in the same form given in Annexure-H an Additional Performance Security **(the "Additional Performance Security**") for an amount calculated as under:

a) If the Bid Price offered by the Selected Bidder falls between 15% to 20% lower than Estimated Project Cost, then the Additional Performance Security shall be 10% of the Bid Price offered by the selected Bidder.

b) If the Bid Price offered by the Selected Bidder falls between 20% to 30% lower than Estimated Project Cost, then the Additional Performance Security shall be 20% of the Bid Price offered by the selected Bidder.

c) If the Bid Price offered by the Selected Bidder is lower than 30% of the Estimated Project Cost and which cannot be substantiated satisfactorily by the bidder, will be rejected as non-responsive.

d) This Additional Performance Security shall be treated as part of the Performance Security.

24.4. A bid, which is quoted unrealistically/freakishly low or high and which cannot be substantiated satisfactorily by the bidder, may be rejected as non-responsive.

F. Award of Contract.

25 Award Criteria.

25.1. Subject to Clause 27, the Executing Agency will award the Contract to the Bidder whose Bid has been determined, to be technically responsive in the technical bid and who has offered the lowest financial Bid price in the financial bid.

26 Executing Agency's Right to accept any Bid and to reject any or all Bids

26.1. Notwithstanding Clause 30, the Executing Agency reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Executing Agency's action.

27 Notification of Award and Signing of Agreement.

27.1. The bidder who's Bid has been accepted will be notified of the award by the Executing Agency. The excuting agency will issue the "Letter of Acceptance". The LOA will state the sum that the Executing Agency will pay to the Contractor in consideration of the execution, completion and maintenance of the works, by the Contractor as prescribed in the contract.

27.2. The letter of acceptance and subsequent issuance of letter of commencement will be a part of the contract document.

27.3. The successful bidder shall have to sign the contract agreement within 10 days of the issue of LOA by the excuting agency. The executing agency will issue the letter of commencement on the date of the signing of the contract agreement which will be a part of agreement. The date of signing of the contract agreement will be treated as the date of commencement viz. the appointed date.

28 Performance Security.

28.1. **Within 60 (sixty) days** after signing of contract agreement, the successful Bidder shall deliver to the Executing Agency a Performance Security i.e. Five (**5%) percent of the Contract Price plus the GST applicable for the work**, valid for the period of **60 days** beyond the stipulated date of completion. The bid security amount of the successful bidder will be refunded after **30 days** from the receipt of the confirmation from the bank and on the request of the successful bidder.

28.2. The bidder shall also has to pay the additional performance security if any Bid in accordance with clause 24.3 of ITB along with the performance security for the same period. The extent rules applicable in the executing agency department are binding on the successful bidder.

28.3. The performance security shall be either in the form of a Bank Guarantee in the name of the Executing Agency, from a Bank as per the details specified below or can be submitted by online mode directly into the NHIDCL's bank account as per Annexure-H**.** Bank Guarantee shall be accepted from Public Sector Banks or Scheduled Private Sector Banks having Net Worth of Rs. 1,000/- Crores or more as per latest annual report of the bank. Authority reserves the right to add or remove any of names bank on which BG shall be accepted based on advisory from the Government/RBI. **The BGs issued by 'Foreign Banks' and 'Banks not mentioned in the list below' shall not be accepted.** The bank garuntee can be initially taken for a period of not less than one year and shall has to be extended from time to time for the total period as mentioned in 28.1 above, incase if the bank norms do not give the Bank Garauntee for the specified period at one stretch.

List of Public Sector Banks		
Bank of Baroda	Indian Bank	State Bank of India
Bank of India	Indian Overseas Bank	Union Bank of India
Bank of Maharashtra	Punjab National Bank	Central Bank of India
Canara Bank	Punjab & Sind Bank	UCO Bank

List of Scheduled Private Sector Banks		
Axis Bank Ltd.	Bandhan Bank Ltd.	CSB Bank Ltd.
City Union Bank Ltd.	DCB Bank Ltd.	Federal Bank Ltd.
HDFC Bank Ltd.	ICICI Bank Ltd.	Indusind Bank Ltd.
IDFC First Bank Ltd.	Jammu & Kashmir Bank Ltd.	Karnataka Bank Ltd.
Karur Vysya Bank Ltd.	Kotak Mahindra Bank Ltd.	Lakshmi Vilas Bank Ltd
RBL Bank Ltd.	South Indian Bank Ltd.	Tamilnadu Mercantile Bank Ltd.
Yes Bank Ltd.	IDBI Bank Ltd.	

28.4. Failure of the successful bidder to comply with the requirement of sub-clause 28.1 shall constitute sufficient ground for cancellation of the contract and debarment for a period of one year from the date of debarment.

28.5. The bid security amount paid by the all remaining unsuccessful bidders will be refunded on submission of request the same after 30 days from the date of opeining of financial bids on submission of their request.

Appendix to ITB

<table>
<tr><th>Clause Reference</th><th>Instructions to Bidders</th></tr>
<tr><td>1.1</td><td>Executing Agency
Designation: Executive Director (P)
Address: NHIDCL, RO-Ladakh, Leh
Email: nhidcl.leh@gmail.com</td></tr>
<tr><td>7.1</td><td>Engineer-in-Charge
Designation: General Manager (P)
Address: NHIDCL, PMU-Infra, Leh
Email: nhidcl.infraleh@gmail.com</td></tr>
<tr><td>14.3</td><td>Bid Document Cost: Rs.590/- (inclusive of GST)</td></tr>
<tr><td>15.1</td><td>Bid Security Amount: Rs 29,35,800/- to be paid through NEFT/RTGS/IMPS to NHIDCL account</td></tr>
<tr><td>20.3 & 22.1</td><td>Schedule for submission of Bids:
<table>
<tr><th>Sr. No.</th><th>Particulars</th><th>Date</th></tr>
<tr><td>1</td><td>Bid Document Download/ Start Date</td><td>26.05.2022</td></tr>
<tr><td>2</td><td>Clarification /Pre bid queries Start Date</td><td>26.05.2022</td></tr>
<tr><td>3</td><td>Clarification /Pre bid queries End Date</td><td>28.05.2022 (1100 Hrs.)</td></tr>
<tr><td>4</td><td>Pre bid meeting</td><td>28.05.2022 (1500 Hrs.)</td></tr>
<tr><td>5</td><td>Bid submission Start date</td><td>28.05.2022</td></tr>
<tr><td>6</td><td>Bid submission End date</td><td>03.06.2022 (1100 Hrs.)</td></tr>
<tr><td>7</td><td>Opening date of Technical Bids</td><td>04.06.2022 (1100 Hrs.)</td></tr>
</table></td></tr>
<tr><td>33.1</td><td>Performance Security: Five (5%) percent of the Contract Price plus the GST applicable for the work.</td></tr>
</table>

SECTION-III

QUALIFICATION INFORMATION

QUALIFICATION INFORMATION

[The information is to be filled and submitted by the intending bidder along with their technical bid.]

1) For Individual Bidders **(Applicable to contractors not registered with government dept.)**
Constitution or legal status of Bidder
(Upload scanned copy of Original)

Details of Ownership: _____

Place of registration: _____

Principal place of business: _____

2) Power of attorney of signatory of Bid **(Applicable to contractors not registered with government dept.)**
(Upload scanned copy)

3) Work performed as prime contractor, work performed in the past as a nominated sub- contractor duly approved by Executing Agency will also be considered, provided further that all other qualification criteria are satisfied (in the same name) on works of a similar nature during the last **Five** years to qualify as per ITB. **(Applicable to contractors registered with government dept. and also contractors not registered with government dept.)**

Project Name	Name of the Executing Agency*	Description of Work	Contract No.	Value Contract (Rs. Crore)	Date of issue of work order	Stipulated period completion	Actual date completion*	Remarks explaini reasons for delay work Completed

** Attach certificate(s) from the minimum rank of Executive Engineer-in-Charge or equivalent*
Note: In case of nominated sub-contractor, a certificate from the minimum rank of Executive Engineer-in-Charge or equivalent of the Prime Executing Agency should be obtained from whom an approval for subcontractor has been obtained.

4) Litigation/Arbitration **(Applicable to contractors registered with government dept. and also contractors not registered with government dept.)**
Bidder shall submit Information regarding litigation or arbitration history during the last five years in which the Bidder is involved, the parties concerned, the disputed amount, and the matter in bidder Letter Head

Other Party /Department / Executing Agency	Cause of Dispute	Amount involved	Remarks showing Present Status

5) Bidders should provide the following affidavits/ undertakings as per formats enclosed hereafter: - **(Applicable to contractors registered with government dept. and also contractors not registered with government dept.)**

(i) Affidavit as per format given in Annexure- C
(ii) Undertaking as per format given in Annexure- D

SECTION-IV

ANNEXURES

ANNEXURE- A

FORM OF LETTER OF APPLICATION
(On Bidder's letter Head)

To,
The Executive Director (P)
NHIDCL, RO-Ladakh
Yartsa House, Changspa,
Leh, UT of Ladakh-194101

Name of Work: "Renovation, Repair, Re-surfacing & Construction of 32 Nos. of urban link roads at Ward no 1,2,3 &13 of LEH (PKG-3), in UT of Ladakh (2nd Call)"

Sir,
Having examined the Bid Document, Instruction to Bidders, Qualification Information, Scope of works, etc. for the subject work. We, hereby submit our technical and financial bid for the subject work.

It is certified that the information furnished in this document is true and correct. The proposal is unconditional and unqualified. We undersigned accept that NHIDCL reserves the right to reject any or all application without assigning any reason.

Thanking you,

Yours faithfully,

(Name)
(Authorized Signatory)
(Official-Seal)

For and on behalf of M/s_____
Date:
Mobile No.:
Email Id:

ANNEXURE- B

Bid Security Deceleration

The bid security declaration is deleted in view of recent guidelines from the NHIDCL headquater and in view of restoration of payment of bid security amount.

ANNEXURE- C

AFFIDAVIT
(To be notarized by Notary)

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.

2. The undersigned also hereby certifies that neither our firm M/s _____ has abandoned any work on National Highways in India nor any contract awarded to us for such works have been rescinded, during last **Five** years prior to the date of this bid.

3. The undersigned hereby authorize(s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.

4. The undersigned understand and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the Department Project implementing agency.

5. I/ We undertake and confirm that eligible similar works have not been got executed through another contractor on back to back basis.

_____
(Signed and sealed by an Authorized Officer of the Firm)

_____
Title of Officer

_____
Name of Firm

_____
DATE

ANNEXURE- D

UNDERTAKING
(On Bidder's letter Head)

I, the undersigned do hereby undertake on behalf of our firm M/s [Name of the bidder], that we shall not withdraw or modify our bid during the period of validity from the bid submission date.

I, on behalf of the bidder, [Name of the bidder], also accept the fact that in case the bid is withdrawn or modified during the period of its validity or if we fail to sign the contract in case the work is awarded to us or we fail to submit a performance security before the deadline defined in the Bid, then [Name of the bidder] will be debarred for participation in the tendering process for the works of NHIDCL and other works under other Centrally Sponsored Schemes, for a period of two year from the bid due date of this work.

_____

(Signed and sealed by an Authorized Officer of the Firm)

_____

Title of Officer

_____

Name of Firm

_____

DATE

ANNEXURE- E

FORMAT FOR POWER OF ATTORNEY FOR SIGNING OF BID
(To be notarized by Notary)

Know all men by these presents, We **(name of the firm and address of the registered office)** do hereby irrevocably constitute, nominate, appoint and authorize Mr./Ms (name), son/daughter/wife of **(Name)** and presently residing at **(Address)**, who is presently employed with us/the Lead Member of our Joint Venture and holding the position of **(Designation),** as our true and lawful attorney (hereinafter referred to as the "Attorney") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our BID for the Project proposed or being developed by the National Highways & Infrastructure Development Corporation Ltd. (the "Authority") including but not limited to signing and submission of all applications, BIDs and other documents and writings, participate in Pre-BID and other conferences and providing information/responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts including the agreement and undertakings consequent to acceptance of our BID, and generally dealing with the Authority in all matters in connection with or relating to or arising out of our BID for the said Project and/ or upon award thereof to us and/or until the entering into of the Contract with the Authority.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, _____, THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS _____DAY OF _____ 20_____ .

For ……..

(Signature, name, designation and address) of person authorized by Board Resolution (incase of Firm/ Company)/ partner in case of Partnership firm

Witnesses:

1.

2.

Accepted

…… (Signature)

(Name, Title and Address of the Attorney)

(Notarised)

Person identified by me/ personally appeared before me/ Attested/ Authenticated*

(*Notary to specify as applicable)

(Signature Name and Address of the Notary)

(Seal of the Notary)

Registration No. of the Notary

Date:……

Notes:

- *The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure*.
- *Wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders' resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.*
- *For a Power of Attorney executed and issued overseas, the document will also have to be legalised by the Indian Embassy and notarised in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention 1961 are not required to be legalised by the Indian Embassy if it carries a conforming Appostille certificate.*

ANNEXURE- H

FORM OF BANK GUARANTEE

[Performance Security/Additional Performance Security]

To

[National Highway and Infrastructure Development Corporation Limited]

[Yartsa House near Changspa Farm, Changspa, Leh, UT of Ladakh-194101]

WHEREAS _____[name and address of Contractor] (hereafter called the "Contractor") has undertaken, in pursuance of Letter of Acceptance (LOA) No. Dated_____ for construction of [name of the Project] (hereinafter called the"Contract")

AND WHEREAS the Contract requires the Contractor to furnish an {Performance Security/ Additional Performance Security} for due and faithful performance of its obligations, under and in accordance with the Contract, during the {Construction Period/ Defects Liability Period and Maintenance Period} in a sum of Rs. _____Cr. (Rupees _____ Crore) (the "**Guarantee Amount**"[1]).

AND WHEREAS we, _____through our branch at _____ (the "**Bank**") have agreed to furnish this Bank Guarantee (hereinafter called the **"Guarantee**") by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor's obligations during the {Construction Period/ Defects Liability Period and Maintenance Period} under and in accordance with the Contract, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
2. A letter from the Authority, under the hand of an officer not below the rank of [Offg. Executive Director, of National Highways & Infrastructure Development Corporation Limited], that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Contract shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Contract and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.
3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Contract or to extend the time or period for the compliance with, fulfillment and/ or performance of all or any of the obligations of the Contractor contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for

[1] Guarantee Amount for Performance Security and Additional Performance Security shall be calculated as per Contract.

this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Contract or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Contract.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Guarantee shall cease to be in force and effect on ****. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

   Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sentby post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
10. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Contract.
11. This Guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15 (a) is hereby excluded.
12. This guarantee shall also be operatable at our ICICI Branch at Leh, UT of Ladakh, from whom, confirmation regarding the issue of this guarantee or extension / renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment there-under claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.
13. The guarantor/bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform & shall invariably send an advice of this Bank Guarantee to the designated bank of [MoRT&H/NHAI/ NHIDCL/State PWD/BRO], details of which is as under:

S.No.	Particulars	Details
1	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited NHIDCL UT Ladakh Project Account
2	Beneficiary Bank Account No.	362305000136
3	Beneficiary Bank Branch IFSC	ICIC0003623
4	Beneficiary Bank Branch Name	3623 Leh Ladakh Branch
5	Beneficiary Bank Address	ICICI Bank,Leh-194101

Signed and sealed this ……. day of ……..., 20…… at …….

SIGNED, SEALED AND DELIVERED
For and on behalf of the Bank by:
(Signature)
(Name)
(Designation)
(Code Number)
(Address)

SECTION-V

TENDER DRAWINGS

uploaded along with the RFP and as part of Contract Document

SECTION-VI

SCHEDULE OF QUANTITIES

List of Works to be executed under this Contract

The Following is the list of indicative works to be executed under this Contract Agreement:-

Sr. No	Name of the Work	Tentative Cost (exclusive of GST)	Length of the road (m)
1	Construction of link road from thakskan spurka road to Angdu Spurka house Leh, UT of Ladakh	13,44,873.00	200
2	Construction of link road from thakskan spurka road to doktuk rigzen house , Leh UT of Ladakh	13,44,873.00	200
3	Construction of link road from Gangles to Govt. School , Leh UT of Ladakh	25,92,737.00	30
4	Construction of link road from Gayu yontan to Gyamtsa Leh, UT of Ladakh	1,14,48,344.00	1200
5	Construction/ Resurfacing of Gonpa Gangles Main Road , Leh UT of Ladakh	3,57,53,933.00	2400
6	Construction of link road from GURU House to SPON HOUSE , Leh UT of Ladakh	27,47,799.00	2000
7	Construction of link road from Jingmal to lchangri , Leh UT of Ladakh	32,90,668.00	500
8	Construction of link road from Lamdon school to Nawang Jago, Leh UT of Ladakh	1,32,431.00	50
9	Construction of paver block road from langto House to Tikchupa &Chakzot pa House , Leh UT of Ladakh	32,59,465.00	200
10	Construction of link road from Main road to Horzey masjid , Leh UT of Ladakh	16,00,496.00	240
11	Construction of link road from Community halll to Mitik House , Leh UT of Ladakh	12,87,121.00	200
12	Construction of paver block Road from Niran Hotel to Chutay Rantak, Leh UT of Ladakh	10,68,705.00	100
13	Construction of footpath from new petrol pump to chube katpa at Sankar Ward, Leh UT of Ladakh	4,56,515.00	60
14	Construction of link road from Hotel Sankar Three Roses to Horpo Standuks House , Leh UT of Ladakh	6,73,294.00	120
15	Construction of link road from SSK (Alim Jan) to Kalon House , Leh UT of Ladakh	37,87,428.00	350
16	Construction of link road from SSK to Gyamtsa , Leh UT of Ladakh	2,14,38,123.00	3200
17	Construction of link road from Thakskan to Spurka , Leh UT of Ladakh	74,81,262.00	900
18	Construction of link road from Thaltsi to Digur , Leh UT of Ladakh	1,83,72,888.00	1800
19	Construction of link road from Yourtung Bridge to Skyang chiks , Leh UT of Ladakh	35,81,593.00	550
20	Construction of link road from Yourtung community hall to Nesar Rai , Leh UT of Ladakh	7,97,439.00	400

21	Re-surfacing of link road from Yourtung to Taisuru road, Leh UT of Ladakh	13,44,873.00	430
22	Construction of link road from Leh Palace Main road to Hotel Hill top view, Skamapari Leh UT Ladakh	14,17,513.00	220
23	Construction of link road from Leh Palace Main road to Hotel Ladakh View, Skampari, Leh UT Ladakh	7,78,448.00	120
24	Construction of link road from Skampari Market to Maney sermo, Skampari Leh UT Ladakh	9,06,263.00	140
25	Construction of link road from Pologround gate to backside of Picture hall, Leh UT Ladakh	7,43,797.00	120
26	Repairing of Footpath from Jamia Masjid to DB2, Leh UT Ladakh	7,11,857.00	120
27	Repairing of Footpath from Jamia Masjid to Shia Masjid, Leh UT Ladakh	7,41,519.00	125
28	Construction of link road from Changspa Bridge to Goba Kunzes House, Changspa, Leh UT Ladakh	51,24,076.00	800
29	Construction of link road from Changspa farm to Chunka house Changspa, Leh UT Ladakh	20,04,569.00	135
30	Construction of link road from Lanagon guest house to taktok house Changspa, Leh UT Ladakh	3,90,821.00	90
31	Construction of link road from Ecology road to Shanti stupa road, Leh UT Ladakh	90,70,606.00	800
32	Construction of link road from ABC centre to Rabsal House, Leh UT Ladakh	10,97,981.00	170
	Total (Rs)	**14,67,92,310.00**	**17970**

Note:

1. Single tender percentage shall be quoted by the bidder in the BOQ (Priced schedule) which shall be applicable for all works mentioned above.
2. Work shall be awarded to the bidder whose overall bid amount worked out as lowest based on quoted percentage among the responsive tenders.
3. Separate work orders shall be issued for each of the above-mentioned works by Engineer-in-charge in case of necessity based on availability of land, approval from the competent authority for each work.
4. Separate running and final bills shall be prepared for each of the above-mentioned works.
5. Separate site registers shall be maintained for each of the above-mentioned works.
6. Separate extension of time, if any, shall be applied for each of the above-mentioned works in case of necessity.
7. The Schedule of Quantities for each of the work mentioned above is enclosed with RFP.

DETAILED ESTIMATE								
Name of work : Construction of link road from thakskan spurka road to Angdu Spurka house Leh, UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	1160.00	139.40		161704	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	60.00	1077.15		64629	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	77.00	1041.50		80196	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	770.00		53.47		41172.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	37.50	5917.98		221924	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	750.00	42.10		31575	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	30.00	9004.58		270137	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	750.00	78.15		58613	

		Cross Drains						
9	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	8.00		5500.00		44000
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	1.37	5877.45		8058	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	8.16	573.85		4683	
		ROAD MARKINGS AND SIGN BOARDS						
12	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	4.44	193.85		862	
13	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	10.00	604.50		6045	
14	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
14.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
14.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
15	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	18.00	1396.82		25143	
16	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	6.00	6213.80		37283	
17	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	9.00	4943.40		44491	

18	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	10.00	573.85		5739	
19	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	90.00	770.60		69354	
						Total (Rs)	1100493	
						Add 25% approximate cost index on JK Schedule items	275123	
							1375616	85172
						Total (Rs) JK SoR + NS	**1460788**	
						Add contingencies @5%	73039	
						Total (Rs)	1533828	
						Estimated cost of the work inclusive of GST	1533828	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**13,44,873**	

DETAILED ESTIMATE								
Name of work : Construction of link road from thakskan spurka road to doktuk rigzen house , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	1160.00	139.40		161704	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	60.00	1077.15		64629	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	77.00	1041.50		80196	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	770.00		53.47		41172.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	37.50	5917.98		221924	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	750.00	42.10		31575	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	30.00	9004.58		270137	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	750.00	78.15		58613	

		Cross Drains						
9	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	8.00		5500.00		44000
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	1.37	5877.45		8058	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	8.16	573.85		4683	
		ROAD MARKINGS AND SIGN BOARDS						
12	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	4	193.85		862	
13	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	10.00	604.50		6045	
14	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
14.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
14.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
15	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	18.00	1396.82		25143	

16	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	6.00	6213.80		37283	
17	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	9.00	4943.40		44491	
18	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	10.00	573.85		5739	
19	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	90.00	770.60		69354	
						Total (Rs)	1100493	
						Add 25% approximate cost index on JK Schedule items	275123	
							1375616	85172
						Total (Rs) JK SoR + NS	**1460788**	
						Add contingencies @5%	73039	
						Total (Rs)	1533828	
						Estimated cost of the work inclusive of GST	1533828	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**13,44,873**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Gangles to Govt. School , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		Retaining Wall						
1	2.7.1	Earth work in bulk excavation by mechanical means (hydraulic excavator) over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10m^2 on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, as directed by Engineer-in-Charge						
		All kinds of soil :	cum	45.00	188.75		8494	
2	2.11	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50m and lift upto 1.5 m.	cum	20.25	198.70		4024	
3	4.4.7	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)						
		Below Retaining Wall (PCC)	cum	6.30	4419.85		27845	
4	4.5.3	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchors blocks, plain window sills, fillets etc upto floor V level, including curing but excluding the cost of centring, shuttering and finishing with. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)						
		Coping over retaining wall	cum	0.90	7542.40		6788	
5	7.1.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level and curing complete with :						
		Cement mortar 1:6 (1 cement : 6 coarse sand).	cum	51.00	4435.25		226198	
6	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.						
		PCC for retaining wall & for Coping	sqm	12.00	573.85		6886	
		ROAD WORK						
7	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	sqm	120.00	139.40		16728	
8	16.82.2	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 trippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and comp[acting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	cum	9.00	1077.15		9694	
9	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	cum	11.55	1041.50		12029	

10	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.	sqm	115.50		53.47		6176
		On W.B.M/W.M.M @0.80Kg/sqm						
11	JKSoR derived Rate from 16.65.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	5.63	5917.98		33289	
12	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	112.50	42.10		4736	
13	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	210.00	9004.58		1890962	
14	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	4.50	78.15		352	
						Total (Rs)	2248025	
		Add 25% approximate cost index on JK Schedule items					562006	
							2810031	6176
						Total (Rs) JK SoR + NS	**2816207**	
		Add contingencies @5%					140810	
						Total (Rs)	2957017	
		Estimated cost of the work inclusive of GST					2957017	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**25,92,737**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Gayu yontan to Gyamtsa Leh, UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	6960.00	139.40		970224	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	360.00	1077.15		387774	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	462.00	1041.50		481173	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	4620.00		53.47		247031.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	231.00	5917.98		1367053	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	4620.00	42.10		194502	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	180.00	9004.58		1620824	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	4500.00	78.15		351675	
		Side Drain						
9	2.8	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (not exceeding 1.5 m in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out excavated earth and disposal of surplus excavated earth as directed: Rate for a lead upto 25 meters beyond 1meter from cutting edge						

		2.8.1. All kinds of soil :	cum	446.25	524.40		234014	
		2.8.2 Ordinary Rock	cum	148.75	922.35		137200	
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	240.00	5877.45		1410588	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	2600.00	573.85		1492010	
		Cross Drains						
12	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	24.00		5500.00		132000
13	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	4.72	5877.45		27722	
14	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	24.48	573.85		14048	
		ROAD MARKINGS AND SIGN BOARDS						
15	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	26.67	193.85		5169	
16	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	60.00	604.50		36270	
17	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
17.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
17.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	

18	16.67.1	Manufacturing supplying and fixing retro reflective overhead signage boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity and encapsulated lens type heat activated retro reflective sheeting conforming to type-III of ASTM-D-4956-01 as approved by Engineer-in-charge; letters, borders etc. as per IRC : 67-2001 in silver white with blue colour background and with high intensity grade, pasted on substrate by pressure sensitive adhesive backing which shall be activated by applying pressure conforming to class -II of ASTM-D-4956-01 and fixing the same to the plate of structural frame work by means of suitable sized aluminum alloys, rivets or bolts and nuts @ 300mm c/c all along the periphery as well as in two vertical rows along with theft resistant measures including the cost of painting with two or more coats of epoxy paint in grey colour on the back side of aluminum sheet including appropriate priming coat. The rate includes the cost of rounding off the corners, lowering down the structural frame work from the gantry, fixing and erecting the same in position all complete as per drawing, specification and direction of Engineer-in-charge (Structural frame work including M.S. plate to be provided separately. Rectangular area of the sheet only shall be measured for payment): Overhead informatory road signage	each	1.00	5651.25		5651	
		FOOTPATH WORK						
19	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	108.00	1396.82		150857	
20	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	36.00	6213.80		223697	
21	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	54.00	4943.40		266944	
22	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	60.00	573.85		34431	
23	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	540.00	770.60		416124	
						Total (Rs)	9838007	
		Add 25% approximate cost index on JK Schedule items					2459502	
							12297509	379031
						Total (Rs) JK SoR + NS	**12676540**	
		Add contingencies @3%					380296	
						Total (Rs)	13056836	
		Estimated cost of the work inclusive of GST					13056836	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**1,14,48,344**	

DETAILED ESTIMATE								
Name of work : Construction/ Resurfacing of Gonpa Gangles Main Road , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		Retaining Wall						
1	15.9.2	Demolishing stone rubble masonry manually/ by mechanical means including stacking of serviceable materials and disposal of unserviceable material within 50 meters lead as per direction of Engineer-in Charge (The stacked stones shall be used for reconstruction of the retaining wall to the extent required. The remaining quantity of recovered stones will be used in the nearby roadworks for which the contractor is to transport the stones at his own cost and nothing will be paid extra on this account.) In Cement Mortar						
			cum	75.00	1583.05		118729	
2	2.7.1	Earth work in bulk excavation by mechanical means (hydraulic excavator) over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10m^2 on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, as directed by Engineer-in-Charge						
		All kinds of soil :	cum	150.00	188.75		28313	
3	2.11	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50m and lift upto 1.5 m.	cum	67.50	198.70		13412	
4	4.4.7	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)						
		Below Retaining Wall (PCC)	cum	21.00	4419.85		92817	
5	4.5.3	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchors blocks, plain window sills, fillets etc upto floor V level, including curing but excluding the cost of centring, shuttering and finishing with. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)						
		Coping over retaining wall	cum	3.00	7542.40		22627	
6	J&KSoR derived 7.1.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level and curing complete with (Stones recovered from the dismantlement are to be used to the full extent for this item. The rate shall be excluding of the cost of stones.) Cement mortar 1:6 (1 cement : 6 coarse sand).	cum	170.00	3750.99		637668	
7	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.						
		PCC for retaining wall & for Coping	sqm	40.00	573.85		22954	
		ROAD WORK						
8	16.81	Scarifying the existing bituminous road surface to a depth of 50mm and disposal of scarified material within all lifts and lead upto 1 km (by mechanical means).	Sqm	4000.00	4.90		19600	
9	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	sqm	9600.00	139.40		1338240	

10	16.82.2	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 trippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and comp[acting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	cum	720.00	1077.15		775548	
11	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	cum	960.00	1041.50		999840	
12	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.	sqm	9600.00		53.47		513312
		On W.B.M/W.M.M @0.80Kg/sqm						
13	JKSoR derived Rate from 16.65.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	480.00	5917.98		2840630	
14	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	13600.00	42.10		572560	
15	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	680.00	9004.58		6123114	
16	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	13600.00	78.15		1062840	
		Cross drain						
17	Non Schedule	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	24.00		5500		132000
18	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	4.72	5877.50		27722	
19	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.						
		PCC	sqm	24.48	573.85		14048	
		Side Drain						
20	2.8	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (not exceeding 1.5 m in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out excavated earth and disposal of surplus excavated earth as directed: Rate for a lead upto 25 meters beyond 1meter from cutting edge						

		2.8.1. All kinds of soil :	cum	1517.25	524.40		795646	
		2.8.2 Ordinary Rock	cum	505.75	922.35		466479	
21	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with:						
		1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	816.00	8577.50		6999240	
22	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	8840.00	573.85		5072834	
		ROAD MARKINGS AND SIGN BOARDS						
23	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	76	193.85		14646	
24	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	170.00	604.50		102765	
25	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
25.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	5.00	5795.50		28978	
25.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	5.00	4260.80		21304	
26	16.67.1	Manufacturing supplying and fixing retro reflective overhead signage boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity and encapsulated lens type heat activated retro reflective sheeting conforming to type-III of ASTM-D-4956-01 as approved by Engineer-in-charge; letters, borders etc. as per IRC : 67-2001 in silver white with blue colour background and with high intensity grade, pasted on substrate by pressure sensitive adhesive backing which shall be activated by applying pressure conforming to class -II of ASTM-D-4956-01 and fixing the same to the plate of structural frame work by means of suitable sized aluminum alloys, rivets or bolts and nuts @ 300mm c/c all along the periphery as well as in two vertical rows along with theft resistant measures including the cost of painting with two or more coats of epoxy paint in grey colour on the back side of aluminum sheet including appropriate priming coat. The rate includes the cost of rounding off the corners, lowering down the structural frame work from the gantry, fixing and erecting the same in position all complete as per drawing, specification and direction of Engineer-in-charge (Structural frame work including M.S. plate to be provided separately. Rectangular area of the sheet only shall be measured for payment): Overhead informatory road signage	each	1.00	5651.25		5651	
		FOOTPATH WORK						

27	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	306.00	1396.82		427427	
28	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	96.00	6213.80		596525	
29	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	144.00	4943.40		711850	
30	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	160.00	573.85		91816	
31	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	1440.00	770.60		1109664	
						Total (Rs)	31155487	
						Add 25% approximate cost index on JK Schedule items	7788872	
							38944359	645312
						Total (Rs) JK SoR + NS	**39589671**	
						Add contingencies @3%	1187690	
						Total (Rs)	40777361	
						Estimated cost of the work inclusive of GST	40777361	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**3,57,53,933**	

DETAILED ESTIMATE								
Name of work : Construction of link road from GURU House to SPON HOUSE , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		Retaining Wall						
1	2.7.1	Earth work in bulk excavation by mechanical means (hydraulic excavator) over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10m^2 on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, as directed by Engineer-in-Charge						
		All kinds of soil :	cum	225.00	188.75		42469	
2	2.11	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50m and lift upto 1.5 m.	cum	101.25	198.70		20118	
3	4.4.7	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)						
		Below Retaining Wall (PCC)	cum	31.50	4419.85		139225	
4	4.5.3	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchors blocks, plain window sills, fillets etc upto floor V level, including curing but excluding the cost of centring, shuttering and finishing with. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)						
		Coping over retaining wall	cum	4.50	7542.40		33941	
5	7.1.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level and curing complete with :						
		Cement mortar 1:6 (1 cement : 6 coarse sand).	cum	255.00	4435.25		1130989	
6	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.						
		PCC for retaining wall & for Coping	sqm	60.00	573.85		34431	
		ROAD WORK						
7	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	sqm	1160.00	139.40		161704	
8	16.82.2	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 trippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and comp[acting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	cum	60.00	1077.15		64629	
9	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	cum	77.00	1041.50		80196	

10	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.	sqm	770.00		53.47		41172
		On W.B.M/W.M.M @0.80Kg/sqm						
11	JKSoR derived Rate from 16.65.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	37.50	5917.98		221924	
12	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	750.00	42.10		31575	
13	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	30.00	9004.58		270137	
14	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	750.00	78.15		58613	
		Cross drain						
15	Non Schedule	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	8.00		5500		44000
16	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	1.37	5877.50		8058	
17	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.						
		PCC	sqm	8.16	573.85		4683	
		ROAD MARKINGS AND SIGN BOARDS						
18	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	4.00	193.85		775	
19	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	10.00	604.50		6045	

20	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
20.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
20.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
13	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	18.00	1396.82		25143	
14	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	6.00	6213.80		37283	
15	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	9.00	4943.40		44491	
16	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	10.00	573.85		5739	
17	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	90.00	770.60		69354	
						Total (Rs)	2319569	
		Add 25% approximate cost index on JK Schedule items					579892	
							2899461	85172
						Total (Rs) JK SoR + NS	**2984633**	
		Add contingencies @5%					149232	
						Total (Rs)	3133865	
		Estimated cost of the work inclusive of GST					3133865	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**27,47,799**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Jingmal to Ichangri , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	2900.00	139.40		404260	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	150.00	1077.15		161573	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	192.50	1041.50		200489	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	1925.00		53.47		102930.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	93.75	5917.98		554811	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	1875.00	42.10		78938	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	75.00	9004.58		675344	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	1875.00	78.15		146531	
		Cross Drains						

9	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	12.00		5500.00		66000
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	2.21	5877.45		12974	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	12.24	573.85		7024	
		ROAD MARKINGS AND SIGN BOARDS						
12	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	11	193.85		2154	
13	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	25.00	604.50		15113	
14	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
14.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
14.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
15	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	45.00	1396.82		62857	
16	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	15.00	6213.80		93207	

17	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	22.50	4943.40		111227	
18	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	25.00	573.85		14346	
19	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	225.00	770.60		173385	
						Total (Rs)	2724290	
						Add 25% approximate cost index on JK Schedule items	681073	
							3405363	168930
						Total (Rs) JK SoR + NS	**3574293**	
						Add contingencies @5%	178715	
						Total (Rs)	3753007	
						Estimated cost of the work inclusive of GST	3753007	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**32,90,668**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Lamdon school to Nawang Jago, Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Quantity**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.81	Scarifying the existing bituminous road surface to a depth of 50mm and disposal of scarified material within all lifts and lead upto 1km (by mechanical means).	Sqm	200	4.9		980	
2	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	200	42.1		8420	
3	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	10	9004.58		90045.8	
4	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	200	78.15		15630	
						Total (Rs)	115075.8	
		Add 25% approximate cost index on JK Schedule items					28768.95	
							143844.75	
						Total (Rs)	143844.75	
		Add contingencies @5%					7192.2375	
						Total (Rs)	151036.9875	
		Estimated cost of the work inclusive of GST					151037	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**1,32,431**	

DETAILED ESTIMATE

Name of work : Construction of paver block road from langto House to Tikchupa &Chakzot pa House , Leh UT of Ladakh

S.NO	Reference of Rates JK SOR 2020 Code no.	DESCRIPTION	Unit	Qty	Rate (Rs)		Amount (Rs)	
					JK SoR	NS	JK SoR	NS
		Road Works						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters.	Sqm	1110.00	139.4		154734	
2	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	cum	150.00	776.57		116486	
3	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size	Cum	75.00	5877.45		440809	
4	4.7.1	Providing and laying cement concrete in kerbs, steps and the like at or near ground level including curing, excluding the cost of centring, shuttering, and finishing. 1:1½:3(1 cement :1½ coarse sand :3 graded stone aggregate 20 mm nominal size)	Cum	31.80	6624.8		210669	
5	4.6.2	Centering and shuttering including strutting, propping etc. and removal of form work for: Retaining walls, return walls, walls (any thickness) including attached pilasters buttresses, plinth and string course fillets, kerbs and steps etc	sqm	344.00	573.85		197404	
6	16.94	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand complete all as per direction of Engineer-in-Charge.	sqm	750.00	864.25		648188	
		80 mm thick C.C. paver block of M-30 grade with approved color design and pattern.						
		Cross drain						
7	Non Schedule	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	16.00		5500		88000
8	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	3.04	5877.50		17890	

9	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.						
		PCC	sqm	16.32	573.85		9365	
		Side Drain						
10	2.8	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (not exceeding 1.5 m in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out excavated earth and disposal of surplus excavated earth as directed: Rate for a lead upto 25 meters beyond 1meter from cutting edge						
		2.8.1. All kinds of soil :	cum	89.25	524.40		46803	
		2.8.2 Ordinary Rock	cum	29.75	922.35		27440	
11	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with:						
		1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	48.00	8577.50		411720	
12	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	520.00	573.85		298402	
		FOOTPATH WORK						
13	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	18.00	1396.82		25143	
14	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	6.00	6213.80		37283	
15	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	9.00	4943.40		44491	
16	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	10.00	573.85		5739	

17	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	90.00	770.60		69354	
						Total (Rs)	2761920	
						Add 25% approximate cost index on JK Schedule items	690480	
							3452400	88000
						Total (Rs) JK SoR + NS	**3540400**	
						Add contingencies @5%	177020	
						Total (Rs)	3717420	
						Estimated cost of the work inclusive of GST	3717420	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**32,59,465**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Main road to Horzey masjid , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	1392.00	139.40		194045	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	72.00	1077.15		77555	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	92.40	1041.50		96235	
4	Non Schedule	Providing and applying primer coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	924.00		53.47		49406.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	45.00	5917.98		266309	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	900.00	42.10		37890	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	36.00	9004.58		324165	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	900.00	78.15		70335	

		Cross Drains						
9	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	8.00		5500.00		44000
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	1.37	5877.45		8058	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	8.16	573.85		4683	
		ROAD MARKINGS AND SIGN BOARDS						
12	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	5	193.85		1034	
13	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	12.00	604.50		7254	
14	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
14.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
14.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
15	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	21.60	1396.82		30171	

16	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	7.20	6213.80		44739	
17	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	10.80	4943.40		53389	
18	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	12.00	573.85		6886	
19	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	108.00	770.60		83225	
						Total (Rs)	1316030	
						Add 25% approximate cost index on JK Schedule items	329008	
							1645038	93406
						Total (Rs) JK SoR + NS	**1738444**	
						Add contingencies @5%	86922	
						Total (Rs)	1825366	
						Estimated cost of the work inclusive of GST	1825366	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**16,00,496**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Community halll to Mitik House , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	800.00	139.40		111520	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	60.00	1077.15		64629	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	77.00	1041.50		80196	
4	Non Schedule	Providing and applying primer coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	770.00		53.47		41172.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	37.50	5917.98		221924	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	750.00	42.10		31575	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	30.00	9004.58		270137	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	750.00	78.15		58613	

		Cross Drains						
9	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	8.00		5500.00		44000
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	1.37	5877.45		8058	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	8.16	573.85		4683	
		ROAD MARKINGS AND SIGN BOARDS						
12	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	4	193.85		862	
13	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	10.00	604.50		6045	
14	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
14.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
14.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
15	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	18.00	1396.82		25143	

16	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	6.00	6213.80		37283	
17	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	9.00	4943.40		44491	
18	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	10.00	573.85		5739	
19	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	90.00	770.60		69354	
						Total (Rs)	1050309	
						Add 25% approximate cost index on JK Schedule items	262577	
							1312886	85172
						Total (Rs) JK SoR + NS	**1398058**	
						Add contingencies @5%	69903	
						Total (Rs)	1467961	
						Estimated cost of the work inclusive of GST	1467961	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**12,87,121**	

DETAILED ESTIMATE								
Name of work : Construction of paver block road from Niran Hotel to Chutay Rantak, Leh UT of Ladakh								
S.NO	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		Road Works						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters.	Sqm	375.00	139.40		52275	
2	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	cum	75.00	1396.82		104761	
3	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size	Cum	37.50	5877.45		220404	
4	4.7.1	Providing and laying cement concrete in kerbs, steps and the like at or near ground level including curing, excluding the cost of centring, shuttering, and finishing. 1:1½:3(1 cement :1½ coarse sand :3 graded stone aggregate 20 mm nominal size)	Cum	15.90	6624.8		105334.32	
5	4.6.2	Centering and shuttering including strutting, propping etc. and removal of form work for: Retaining walls, return walls, walls (any thickness) including attached pilasters buttresses, plinth and string course fillets, kerbs and steps etc	sqm	172.00	573.85		98702	
6	16.94	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand complete all as per direction of Engineer-in-Charge.	sqm	375.00	864.25		324094	
		80 mm thick C.C. paver block of M-30 grade with approved color design and pattern.						
		Cross drain						
7	Non Schedule	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	4.00		5500		22000
8	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	0.53	5877.50		3142	
9	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.						
		PCC	sqm	4.08	573.85		2341	

						Total (Rs)	911053	
						Add 25% approximate cost index on JK Schedule items	227763	
							1138817	22000
						Total (Rs) JK SoR + NS	**1160817**	
						Add contingencies @5%	58041	
						Total (Rs)	1218858	
						Estimated cost of the work inclusive of GST	1218858	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**10,68,705**	

DETAILED ESTIMATE								
Name of work : Construction of footpath from new petrol pump to chube katpa at Sankar Ward, Leh UT of Ladakh								
S.NO	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		Road Works						
1	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	141.00	1396.82		196952	
2	4.4.6	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	Cum	14.10	4908.2		69206	
3	16.75	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement: 3 coarse sand) including making joints with or without grooves (thickness of the joints except at sharp curve shall not to be more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	cum	1.80	8328.3		14990.94	
4	4.6.2	Centering and shuttering including strutting, propping etc. and removal of form work for: Retaining walls, return walls, walls (any thickness) including attached pilasters buttresses, plinth and string course fillets, kerbs and steps etc	sqm	12.00	573.85		6886	
5	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	141.00	770.6		108655	
						Total (Rs)	396690	
		Add 25% approximate cost index on JK Schedule items					99172	
							495862	0
						Total (Rs) JK SoR + NS	**495862**	
		Add contingencies @5%					24793	
						Total (Rs)	520655	
						Estimated cost of the work inclusive of GST	520655	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**4,56,515**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Hotel Sankar Three Roses to Horpo Standuks House , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	480.00	139.40		66912	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	36.00	1077.15		38777	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	46.20	1041.50		48117	
4	Non Schedule	Providing and applying primer coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	462.00		53.47		24703.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	22.50	5917.98		133155	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	450.00	42.10		18945	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	18.00	9004.58		162082	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	450.00	78.15		35168	

		Cross Drains						
9	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	8.00		5500.00		44000
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	1.37	5877.45		8058	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	8.16	573.85		4683	
		ROAD MARKINGS AND SIGN BOARDS						
12	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	3	193.85		517	
13	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	6.00	604.50		3627	
14	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
14.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
14.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
						Total (Rs)	530098	
		Add 25% approximate cost index on JK Schedule items					132525	
							662623	68703
						Total (Rs) JK SoR + NS	**731326**	
		Add contingencies @5%					36566	
						Total (Rs)	767892	
		Estimated cost of the work inclusive of GST					767892	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**6,73,294**	

DETAILED ESTIMATE								
Name of work : Construction of link road from SSK (Alim Jan) to Kalon House , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		Retaining Wall						
1	2.7.1	Earth work in bulk excavation by mechanical means (hydraulic excavator) over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10m^2 on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, as directed by Engineer-in-Charge						
		All kinds of soil :	cum	300.00	188.75		56625	
2	2.11	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50m and lift upto 1.5 m.	cum	135.00	198.70		26825	
3	4.4.7	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)						
		Below Retaining Wall (PCC)	cum	42.00	4419.85		185634	
4	4.5.3	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchors blocks, plain window sills, fillets etc upto floor V level, including curing but excluding the cost of centring, shuttering and finishing with. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)						
		Coping over retaining wall	cum	6.00	7542.40		45254	
5	7.1.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level and curing complete with :						
		Cement mortar 1:6 (1 cement : 6 coarse sand).	cum	340.00	4435.25		1507985	
6	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.						
		PCC for retaining wall & for Coping	sqm	80.00	573.85		45908	
		ROAD WORK						
7	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	sqm	1225.00	139.40		170765	
8	16.82.2	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 trippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and comp[acting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	cum	91.88	1077.15		98963	
9	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	cum	122.50	1041.50		127584	

10	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.	sqm	1225.00		53.47		65501
		On W.B.M/W.M.M @0.80Kg/sqm						
11	JKSoR derived Rate from 16.65.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	61.25	5917.98		362476	
12	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	1225.00	42.10		51573	
13	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	49.00	9004.58		441224	
14	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	1225.00	78.15		95734	
		ROAD MARKINGS AND SIGN BOARDS						
15	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	8	193.85		1508	
16	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	17.50	604.50		10579	

17	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
17.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
17.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
						Total (Rs)	3238694	
		Add 25% approximate cost index on JK Schedule items					809674	
							4048368	65501
						Total (Rs) JK SoR + NS	**4113869**	
		Add contingencies @5%					205693	
						Total (Rs)	4319562	
		Estimated cost of the work inclusive of GST					4319562	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**37,87,428**	

DETAILED ESTIMATE								
Name of work : Construction of link road from SSK to Gyamtsa , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		Retaining Wall						
1	2.7.1	Earth work in bulk excavation by mechanical means (hydraulic excavator) over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10m^2 on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, as directed by Engineer-in-Charge						
		All kinds of soil :	cum	450.00	188.75		84938	
2	2.11	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50m and lift upto 1.5 m.	cum	202.50	198.70		40237	
3	4.4.7	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)						
		Below Retaining Wall (PCC)	cum	63.00	4419.85		278451	
4	4.5.3	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchors blocks, plain window sills, fillets etc upto floor V level, including curing but excluding the cost of centring, shuttering and finishing with. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)						
		Coping over retaining wall	cum	9.00	7542.40		67882	
5	7.1.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level and curing complete with :						
		Cement mortar 1:6 (1 cement : 6 coarse sand).	cum	510.00	4435.25		2261978	
6	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.						
		PCC for retaining wall & for Coping	sqm	120.00	573.85		68862	
		ROAD WORK						
7	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	sqm	18560.00	139.40		2587264	
8	16.82.2	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 trippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and comp[acting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	cum	960.00	1077.15		1034064	
9	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	cum	1232.00	1041.50		1283128	

10	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.	sqm	12320.00		53.47		658750
		On W.B.M/W.M.M @0.80Kg/sqm						
11	JKSoR derived Rate from 16.65.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	600.00	5917.98		3550788	
12	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	12000.00	42.10		505200	
13	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	480.00	9004.58		4322198	
14	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	12000.00	78.15		937800	
		Cross drain						
15	Non Schedule	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	16.00		5500		88000
16	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	3.04	5877.50		17890	
17	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.						
		PCC	sqm	16.32	573.85		9365	
		Side Drain						
18	2.8	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (not exceeding 1.5 m in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out excavated earth and disposal of surplus excavated earth as directed: Rate for a lead upto 25 meters beyond 1meter from cutting edge						
		2.8.1. All kinds of soil :	cum	133.88	524.40		70204	
		2.8.2 Ordinary Rock	cum	44.63	922.35		41160	
19	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with:						
		1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	72.00	8577.50		617580	
20	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	780.00	573.85		447603	
		ROAD MARKINGS AND SIGN BOARDS						

21	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	71	193.85		13785	
22	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	160.00	604.50		96720	
23	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
23.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	5.00	5795.50		28978	
23.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	5.00	4260.80		21304	
24	16.67.1	Manufacturing supplying and fixing retro reflective overhead signage boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity and encapsulated lens type heat activated retro reflective sheeting conforming to type-III of ASTM-D-4956-01 as approved by Engineer-in-charge; letters, borders etc. as per IRC : 67-2001 in silver white with blue colour background and with high intensity grade, pasted on substrate by pressure sensitive adhesive backing which shall be activated by applying pressure conforming to class -II of ASTM-D-4956-01 and fixing the same to the plate of structural frame work by means of suitable sized aluminum alloys, rivets or bolts and nuts @ 300mm c/c all along the periphery as well as in two vertical rows along with theft resistant measures including the cost of painting with two or more coats of epoxy paint in grey colour on the back side of aluminum sheet including appropriate priming coat. The rate includes the cost of rounding off the corners, lowering down the structural frame work from the gantry, fixing and erecting the same in position all complete as per drawing, specification and direction of Engineer-in-charge (Structural frame work including M.S. plate to be provided separately. Rectangular area of the sheet only shall be measured for payment): Overhead informatory road signage	each	1.00	5651.25		5651	
		FOOTPATH WORK						
25	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	288.00	1396.82		402284	
26	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	96.00	6213.80		596525	
27	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	144.00	4943.40		711850	

28	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	160.00	573.85		91816	
29	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	1440.00	770.60		1109664	
						Total (Rs)	18393030	
						Add 25% approximate cost index on JK Schedule items	4598258	
							22991288	746750
						Total (Rs) JK SoR + NS	**23738038**	
						Add contingencies @3%	712141	
						Total (Rs)	24450179	
						Estimated cost of the work inclusive of GST	24450179	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**2,14,38,123**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Thakskan to Spurka , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	5220.00	139.40		727668	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	270.00	1077.15		290831	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	346.50	1041.50		360880	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	3465.00		53.47		185274.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	173.25	5917.98		1025290	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	3465.00	42.10		145877	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	135.00	9004.58		1215618	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	3375.00	78.15		263756	
		Side Drain						

9	2.8	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (not exceeding 1.5 m in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out excavated earth and disposal of surplus excavated earth as directed: Rate for a lead upto 25 meters beyond 1meter from cutting edge						
		2.8.1. All kinds of soil :	cum	178.50	524.40		93605	
		2.8.2 Ordinary Rock	cum	59.50	922.35		54880	
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	96.00	5877.45		564235	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	1040.00	573.85		596804	
		Cross Drains						
12	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	24.00		5500.00		132000
13	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	4.72	5877.45		27722	
14	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	24.48	573.85		14048	
		ROAD MARKINGS AND SIGN BOARDS						
15	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	20.00	193.85		3877	
16	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	45.00	604.50		27203	

17	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
17.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
17.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
18	16.67.1	Manufacturing supplying and fixing retro reflective overhead signage boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity and encapsulated lens type heat activated retro reflective sheeting conforming to type-III of ASTM-D-4956-01 as approved by Engineer-in-charge; letters, borders etc. as per IRC : 67-2001 in silver white with blue colour background and with high intensity grade, pasted on substrate by pressure sensitive adhesive backing which shall be activated by applying pressure conforming to class -II of ASTM-D-4956-01 and fixing the same to the plate of structural frame work by means of suitable sized aluminum alloys, rivets or bolts and nuts @ 300mm c/c all along the periphery as well as in two vertical rows along with theft resistant measures including the cost of painting with two or more coats of epoxy paint in grey colour on the back side of aluminum sheet including appropriate priming coat. The rate includes the cost of rounding off the corners, lowering down the structural frame work from the gantry, fixing and erecting the same in position all complete as per drawing, specification and direction of Engineer-in-charge (Structural frame work including M.S. plate to be provided separately. Rectangular area of the sheet only shall be measured for payment): Overhead informatory road signage	each	1.00	5651.25		5651	
		FOOTPATH WORK						
17	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	81.00	1396.82		113142	
18	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	27.00	6213.80		167773	
19	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	40.50	4943.40		200208	
20	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	45.00	573.85		25823	
21	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	405.00	770.60		312093	
						Total (Rs)	6247041	
						Add 25% approximate cost index on JK Schedule items	1561760	
							7808801	317274
						Total (Rs) JK SoR + NS	**8126075**	
						Add contingencies @5%	406304	
						Total (Rs)	8532379	
						Estimated cost of the work inclusive of GST	8532379	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**74,81,262**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Thaltsi to Digur , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		Retaining Wall						
1	2.7.1	Earth work in bulk excavation by mechanical means (hydraulic excavator) over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10m^2 on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, as directed by Engineer-in-Charge						
		All kinds of soil :	cum	900.00	188.75		169875	
2	2.11	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50m and lift upto 1.5 m.	cum	405.00	198.70		80474	
3	4.4.7	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)						
		Below Retaining Wall (PCC)	cum	126.00	4419.85		556901	
4	4.5.3	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchors blocks, plain window sills, fillets etc upto floor V level, including curing but excluding the cost of centring, shuttering and finishing with. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)						
		Coping over retaining wall	cum	18.00	7542.40		135763	
5	7.1.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level and curing complete with :						
		Cement mortar 1:6 (1 cement : 6 coarse sand).	cum	1020.00	4435.25		4523955	
6	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.						
		PCC for retaining wall & for Coping	sqm	240.00	573.85		137724	
		ROAD WORK						
7	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	sqm	10440.00	139.40		1455336	
8	16.82.2	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 trippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and comp[acting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	cum	540.00	1077.15		581661	
9	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	cum	693.00	1041.50		721760	

10	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.	sqm	6930.00		53.47		370547
		On W.B.M/W.M.M @0.80Kg/sqm						
11	JKSoR derived Rate from 16.65.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	337.50	5917.98		1997318	
12	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	6750.00	42.10		284175	
13	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	270.00	9004.58		2431237	
14	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	6750.00	78.15		527513	
		Cross drain						
15	Non Schedule	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	40.00		5500		220000
16	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	8.06	5877.50		47386	
17	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.						
		PCC	sqm	40.80	573.85		23413	
		Side Drain						
18	2.8	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (not exceeding 1.5 m in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out excavated earth and disposal of surplus excavated earth as directed: Rate for a lead upto 25 meters beyond 1meter from cutting edge						
		2.8.1. All kinds of soil :	cum	44.63	524.40		23401	
		2.8.2 Ordinary Rock	cum	14.88	922.35		13720	
19	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with:						
		1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	24.00	8577.50		205860	
20	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	260.00	573.85		149201	
		ROAD MARKINGS AND SIGN BOARDS						

21	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	40	193.85		7754	
22	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	90.00	604.50		54405	
23	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
23.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	3.00	5795.50		17387	
23.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	3.00	4260.80		12782	
24	16.67.1	Manufacturing supplying and fixing retro reflective overhead signage boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity and encapsulated lens type heat activated retro reflective sheeting conforming to type-III of ASTM-D-4956-01 as approved by Engineer-in-charge; letters, borders etc. as per IRC : 67-2001 in silver white with blue colour background and with high intensity grade, pasted on substrate by pressure sensitive adhesive backing which shall be activated by applying pressure conforming to class -II of ASTM-D-4956-01 and fixing the same to the plate of structural frame work by means of suitable sized aluminum alloys, rivets or bolts and nuts @ 300mm c/c all along the periphery as well as in two vertical rows along with theft resistant measures including the cost of painting with two or more coats of epoxy paint in grey colour on the back side of aluminum sheet including appropriate priming coat. The rate includes the cost of rounding off the corners, lowering down the structural frame work from the gantry, fixing and erecting the same in position all complete as per drawing, specification and direction of Engineer-in-charge (Structural frame work including M.S. plate to be provided separately. Rectangular area of the sheet only shall be measured for payment): Overhead informatory road signage	each	1.00	5651.25		5651	
		FOOTPATH WORK						
25	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	162.00	1396.82		226285	
26	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	54.00	6213.80		335545	
27	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	81.00	4943.40		400415	

28	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	90.00	573.85		51647	
29	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	810.00	770.60		624186	
						Total (Rs)	15802730	
						Add 25% approximate cost index on JK Schedule items	3950683	
							19753413	590547
						Total (Rs) JK SoR + NS	**20343960**	
						Add contingencies @3%	610319	
						Total (Rs)	20954279	
						Estimated cost of the work inclusive of GST	20954279	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**1,83,72,888**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Yourtung Bridge to Skyang chiks , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	3190.00	139.40		444686	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	165.00	1077.15		177730	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	211.75	1041.50		220538	
4	Non Schedule	Providing and applying primer coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	2117.50		53.47		113223.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	103.13	5917.98		610292	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	2062.50	42.10		86831	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	82.50	9004.58		742878	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	2062.50	78.15		161184	
		Cross Drains						

9	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	8.00		5500.00		44000
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	1.37	5877.45		8058	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	8.16	573.85		4683	
		ROAD MARKINGS AND SIGN BOARDS						
12	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	12	193.85		2369	
13	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	27.50	604.50		16624	
14	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
14.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
14.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
15	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	49.50	1396.82		69143	
16	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	16.50	6213.80		102528	

17	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	24.75	4943.40		122349	
18	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	27.50	573.85		15781	
19	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	247.50	770.60		190724	
						Total (Rs)	2986455	
		Add 25% approximate cost index on JK Schedule items					746614	
							3733069	157223
						Total (Rs) JK SoR + NS	**3890292**	
		Add contingencies @5%					194515	
						Total (Rs)	4084806	
		Estimated cost of the work inclusive of GST					4084806	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**35,81,593**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Yourtung community hall to Nesar Rai , Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	400.00	139.40		55760	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	30.00	1077.15		32315	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	38.50	1041.50		40098	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	385.00		53.47		20586.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	19.25	5917.98		113921	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	385.00	42.10		16209	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	15.00	9004.58		135069	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	375.00	78.15		29306	
		Side Drain						

9	2.8	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (not exceeding 1.5 m in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out excavated earth and disposal of surplus excavated earth as directed: Rate for a lead upto 25 meters beyond 1meter from cutting edge						
		2.8.1. All kinds of soil :	cum	22.31	524.40		11701	
		2.8.2 Ordinary Rock	cum	2.98	922.35		2744	
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	16.80	5877.45		98741	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	182.00	573.85		104441	
		Cross Drains						
12	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	4.00		5500.00		22000
13	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	0.53	5877.45		3142	
14	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	4.08	573.85		2341	
		ROAD MARKINGS AND SIGN BOARDS						
15	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	5.00	604.50		3023	
16	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
16.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	

16.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
						Total (Rs)	658868	
						Add 25% approximate cost index on JK Schedule items	164717	
							823585	42586
						Total (Rs) JK SoR + NS	**866171**	
						Add contingencies @5%	43309	
						Total (Rs)	909480	
						Estimated cost of the work inclusive of GST	909480	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**7,97,439**	

DETAILED ESTIMATE								
Name of work : Re-surfacing of link road from Yourtung to Taisuru road, Leh UT of Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.81	Scarifying the existing bituminous road surface to a depth of 50mm and disposal of scarified material within all lifts and lead upto 1 km (by mechanical means).	sqm	1720.00	4.90		8428.00	
2	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	1720.00	42.10		72412	
3	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	86.00	9004.58		774394	
4	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	1720.00	78.15		134418	
		Side Drain						
5	2.8	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (not exceeding 1.5 m in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out excavated earth and disposal of surplus excavated earth as directed: Rate for a lead upto 25 meters beyond 1meter from cutting edge						
		2.8.1. All kinds of soil :	cum	31.24	524.40		16381	
		2.8.2 Ordinary Rock	cum	4.46	922.35		4116	
6	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	24.00	5877.45		141059	
7	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	260.00	573.85		149201	
		Cross Drains						
8	NS	Supply, transportation to site and laying of 300 mm dia mild steel pipe as directed by Engineer-in-charge (minimum thickness of pipe 4.50mm)	m	20.00		5500.00		110000

9	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cum	3.88	5877.45		22806	
10	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	20.40	573.85		11707	
		ROAD MARKINGS AND SIGN BOARDS						
11	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	9.56	193.85		1852	
12	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	21.50	604.50		12997	
13	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
13.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
13.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
14	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	38.70	1396.82		54057	

15	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	12.96	6213.80		80531	
16	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	19.44	4943.40		96100	
17	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	21.60	573.85		12395	
18	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	194.40	770.60		149805	
						Total (Rs)	1752716	
						Add 25% approximate cost index on JK Schedule items	438179	
							2190895	0
						Total (Rs) JK SoR + NS	**2190895**	
						Add contingencies @5%	109545	
						Total (Rs)	2300440	
						Estimated cost of the work inclusive of GST	2300440	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**20,17,045**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Leh Palace Main road to Hotel Hill top view, Skamapari Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	1276.00	139.40		177874	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	66.00	1077.15		71092	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	84.70	1041.50		88215	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	847.00		53.47		45289.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	41.25	5917.98		244117	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	825.00	42.10		34733	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	33.00	9004.58		297151	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	825.00	78.15		64474	

		ROAD MARKINGS AND SIGN BOARDS						
9	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	5	193.85		948	
10	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	11.00	604.50		6650	
11	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
11.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
11.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
12	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	19.80	1396.82		27657	
13	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	6.60	6213.80		41011	
14	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	9.90	4943.40		48940	
15	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	11.00	573.85		6312	

16	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	99.00	770.60		76289	
						Total (Rs)	1195520	
		Add 25% approximate cost index on JK Schedule items					298880	
							1494400	45289
						Total (Rs) JK SoR + NS	**1539689**	
		Add contingencies @5%					76984	
						Total (Rs)	1616673	
		Estimated cost of the work inclusive of GST					1616673	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**14,17,513**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Leh Palace Main road to Hotel Ladakh View, Skampari, Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	696.00	139.40		97022	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	36.00	1077.15		38777	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	46.20	1041.50		48117	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	462.00		53.47		24703.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	22.50	5917.98		133155	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	450.00	42.10		18945	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	18.00	9004.58		162082	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	450.00	78.15		35168	

		ROAD MARKINGS AND SIGN BOARDS						
9	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	3	193.85		517	
10	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	6.00	604.50		3627	
11	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
11.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
11.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
12	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	10.80	1396.82		15086	
13	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	3.60	6213.80		22370	
14	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	5.40	4943.40		26694	
15	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	6.00	573.85		3443	

16	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	54.00	770.60		41612	
						Total (Rs)	656672	
		Add 25% approximate cost index on JK Schedule items					164168	
							820840	24703
						Total (Rs) JK SoR + NS	**845543**	
		Add contingencies @5%					42277	
						Total (Rs)	887820	
		Estimated cost of the work inclusive of GST					887820	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**7,78,448**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Skampari Market to Maney sermo, Skampari Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	812.00	139.40		113193	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	42.00	1077.15		45240	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	53.90	1041.50		56137	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	539.00		53.47		28820.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	26.25	5917.98		155347	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	525.00	42.10		22103	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	21.00	9004.58		189096	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	525.00	78.15		41029	

		ROAD MARKINGS AND SIGN BOARDS						
9	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	3	193.85		603	
10	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	7.00	604.50		4232	
11	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
11.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
11.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
12	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	12.60	1396.82		17600	
13	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	4.20	6213.80		26098	
14	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	6.30	4943.40		31143	
15	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	7.00	573.85		4017	

16	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	63.00	770.60		48548	
						Total (Rs)	764443	
		Add 25% approximate cost index on JK Schedule items					191111	
							955554	28820
						Total (Rs) JK SoR + NS	**984374**	
		Add contingencies @5%					49219	
						Total (Rs)	1033592	
		Estimated cost of the work inclusive of GST					1033592	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**9,06,263**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Pologround gate to backside of Picture hall, Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	480.00	139.40		66912	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	36.00	1077.15		38777	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	46.20	1041.50		48117	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	462.00		53.47		24703.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	22.50	5917.98		133155	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	450.00	42.10		18945	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	18.00	9004.58		162082	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	450.00	78.15		35168	

		ROAD MARKINGS AND SIGN BOARDS						
9	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	3	193.85		517	
10	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	6.00	604.50		3627	
11	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
11.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
11.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
12	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	10.80	1396.82		15086	
13	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	3.60	6213.80		22370	
14	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	5.40	4943.40		26694	
15	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	6.00	573.85		3443	

16	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	54.00	770.60		41612	
						Total (Rs)	626562	
		Add 25% approximate cost index on JK Schedule items					156641	
							783203	24703
						Total (Rs) JK SoR + NS	**807906**	
		Add contingencies @5%					40395	
						Total (Rs)	848301	
		Estimated cost of the work inclusive of GST					848301	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**7,43,797**	

DETAILED ESTIMATE								
Name of work : Repairing of Footpath from Jamia Masjid to DB2, Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
1	15.23.2	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 meters lead. For thickness of tiles above 25 mm and upto 40 mm.	sqm	420.00	81.65		34293	
2	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	420.00	770.60		323652	
3	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	42.00	5877.5		246853	
4	4.6.2	Centering and shuttering including strutting, propping etc. and removal of form work for: Retaining walls, return walls, walls (any thickness) including attached pilasters buttresses, plinth and string course fillets, kerbs and steps etc	sqm	24.00	573.85		13772	
						Total (Rs)	618570.00	
						Add 25% approximate cost index on JK Schedule items	154642.50	
							773212.50	0.00
						Total (Rs) JK SoR + NS	**773212.50**	
						Add contingencies @5%	38660.63	
						Total (Rs)	811873.125	
		Estimated cost of the work inclusive of GST					811873	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**7,11,857**	

DETAILS OF MEASUREMENT								
Name of work : Repairing of Footpath from Jamia Masjid to Shia Masjid, Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
1	15.23.2	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 meters lead. For thickness of tiles above 25 mm and upto 40 mm.	sqm	437.50	81.65		35721.875	
2	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	437.50	770.60		337138	
3	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	43.75	5877.5		257138.4375	
4	4.6.2	Centering and shuttering including strutting, propping etc. and removal of form work for: Retaining walls, return walls, walls (any thickness) including attached pilasters buttresses, plinth and string course fillets, kerbs and steps etc	sqm	25.00	573.85		14346	
						Total (Rs)	644344.31	
						Add 25% approximate cost index on JK Schedule items	161086.08	
							805430.39	0.00
						Total (Rs) JK SoR + NS	**805430.39**	
						Add contingencies @5%	40271.52	
						Total (Rs)	845701.9102	
						Estimated cost of the work inclusive of GST	845702	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**7,41,519**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Changspa Bridge to Goba Kunzes House, Changspa, Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	4640.00	139.40		646816	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	240.00	1077.15		258516	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	308.00	1041.50		320782	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	3080.00		53.47		164688.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	150.00	5917.98		887697	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	3000.00	42.10		126300	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	120.00	9004.58		1080550	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	3000.00	78.15		234450	
		ROAD MARKINGS AND SIGN BOARDS						

9	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	18	193.85		3446	
10	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	40.00	604.50		24180	
11	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
11.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
11.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
12	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	72.00	1396.82		100571	
13	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	24.00	6213.80		149131	
14	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	36.00	4943.40		177962	
15	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	40.00	573.85		22954	
16	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	360.00	770.60		277416	
						Total (Rs)	4320828	
		Add 25% approximate cost index on JK Schedule items					1080207	

	5401035	164688
Total (Rs) JK SoR + NS	**5565723**	
Add contingencies @5%	278286	
Total (Rs)	5844009	
Estimated cost of the work inclusive of GST	5844009	
Estimated cost put to Tender (Excluding GST @ 14.05%)	**51,24,076**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Changspa farm to Chunka house Changspa, Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	783.00	139.40		109150	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	40.50	1077.15		43625	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	51.98	1041.50		54132	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	519.75		53.47		27791.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	25.31	5917.98		149799	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	506.25	42.10		21313	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	20.25	9004.58		182343	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	506.25	78.15		39563	
		Side Drain						

9	2.8	Earth work in excavation by manual means in trenches for foundations, drains, pipes, cables etc. (not exceeding 1.5 m in width) and for shafts, wells, cesspits and the like not exceeding 10 sqm on plan, including dressing of sides and ramming of bottoms lift upto 1.5 m, including getting out excavated earth and disposal of surplus excavated earth as directed: Rate for a lead upto 25 meters beyond 1meter from cutting edge						
		2.8.1. All kinds of soil :	cum	133.88	524.40		70204	
		2.8.2 Ordinary Rock	cum	44.63	922.35		41160	
10	4.4.3	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	72.00	5877.45		423176	
11	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.	sqm	780.00	573.85		447603	
		ROAD MARKINGS AND SIGN BOARDS						
12	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	3	193.85		582	
13	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	6.75	604.50		4080	
14	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
14.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
14.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
15	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	12.15	1396.82		16971	

16	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	4.05	6213.80		25166	
17	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	6.08	4943.40		30031	
18	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	6.75	573.85		3873	
19	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	60.75	770.60		46814	
						Total (Rs)	1719642	
						Add 25% approximate cost index on JK Schedule items	429911	
							2149553	27791
						Total (Rs) JK SoR + NS	**2177344**	
						Add contingencies @5%	108867	
						Total (Rs)	2286211	
						Estimated cost of the work inclusive of GST	2286211	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**20,04,569**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Lanagon guest house to taktok house Changspa, Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	297.00	139.40		41402	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	22.28	1077.15		23994	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	29.70	1041.50		30933	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	297.00		53.47		15881.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	14.85	5917.98		87882	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	297.00	42.10		12504	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	11.88	9004.58		106974	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	297.00	78.15		23211	
						Total (Rs)	326900	
		Add 25% approximate cost index on JK Schedule items					81725	
							408625	15881

		Total (Rs) JK SoR + NS	**424506**	
		Add contingencies @5%	21225	
		Total (Rs)	445731	
		Estimated cost of the work inclusive of GST	445731	
		Estimated cost put to Tender (Excluding GST @ 14.05%)	**3,90,821**	

DETAILED ESTIMATE								
Name of work : Construction of link road from Ecology road to Shanti stupa road, Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		Retaining Wall						
1	15.9.2	Demolishing stone rubble masonry manually/ by mechanical means including stacking of serviceable materials and disposal of unserviceable material within 50 meters lead as per direction of Engineer-in Charge (The stacked stones shall be used for reconstruction of the retaining wall to the extent required. The remaining quantity of recovered stones will be used in the nearby roadworks for which the contractor is to transport the stones at his own cost and nothing will be paid extra on this account.) In Cement Mortar						
			cum	640.00	1583.05		1013152	
2	2.7.1	Earth work in bulk excavation by mechanical means (hydraulic excavator) over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10m^2 on plan) including disposal of excavated earth lead upto 50m and lift upto 1.5m, as directed by Engineer-in-Charge						
		All kinds of soil :	cum	480.00	188.75		90600	
3	2.11	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50m and lift upto 1.5 m.	cum	216.00	198.70		42919	
4	4.4.7	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)						
		Below Retaining Wall (PCC)	cum	67.20	4419.85		297014	
5	4.5.3	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchors blocks, plain window sills, fillets etc upto floor V level, including curing but excluding the cost of centring, shuttering and finishing with. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)						
		Coping over retaining wall	cum	9.60	7542.40		72407	
6	J&KSoR derived 7.1.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level and curing complete with (Stones recovered from the dismantlement are to be used to the full extent for this item. The rate shall be excluding of the cost of stones.) Cement mortar 1:6 (1 cement : 6 coarse sand).	cum	544.00	3750.99		2040537	
7	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return wall, walls (any thickness) including attached pilasters butteresses, plinth ans string coarse fillets, kerbs and steps etc.						
		PCC for retaining wall & for Coping	sqm	128.00	573.85		73453	
		ROAD WORK						
8	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	3200.00	139.40		446080	
9	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	240.00	1077.15		258516	

10	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	308.00	1041.50		320782	
11	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	3080.00		53.47		164688.00
12	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	150.00	5917.98		887697	
13	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	3000.00	42.10		126300	
14	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	120.00	9004.58		1080550	
15	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	3000.00	78.15		234450	
		ROAD MARKINGS AND SIGN BOARDS						
16	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	18	193.85		3446	
17	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	40.00	604.50		24180	

18	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
18.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
18.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
19	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	72.00	1396.82		100571	
20	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	24.00	6213.80		149131	
21	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	36.00	4943.40		177962	
22	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	40.00	573.85		22954	
23	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	360.00	770.60		277416	
						Total (Rs)	7750174	
		Add 25% approximate cost index on JK Schedule items					1937544	
							9687718	164688
						Total (Rs) JK SoR + NS	**9852406**	
		Add contingencies @5%					492620	
						Total (Rs)	10345026	
		Estimated cost of the work inclusive of GST					10345026	
		Estimated cost put to Tender (Excluding GST @ 14.05%)					**90,70,606**	

DETAILED ESTIMATE								
Name of work : Construction of link road from ABC centre to Rabsal House, Leh UT Ladakh								
S.N0	**Reference of Rates JK SOR 2020 Code no.**	**DESCRIPTION**	**Unit**	**Qty**	**Rate (Rs)**		**Amount (Rs)**	
					JK SoR	**NS**	**JK SoR**	**NS**
		ROAD WORK						
1	16.1	Preparation of subgrade by excavating earth to an avarage of 22.5 cm depth, dressing to camber and consolidation with road roller of 8-12 tonne capacity including making good the undulation etc. and disposal of surplus earth upto 50 meters..	Sqm	986.00	139.40		137448	
2	16.82.2	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 trippers 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. (in Two Layer)						
		With material conforming to Grade-II (size range 53 mm to 0.075mm) having CBR Value-25	Cum	51.00	1077.15		54935	
3	16.83	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to **Wet Mix Macadam** (WMM) specification including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tipper to site, for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	Cum	65.45	1041.50		68166	
4	Non Schedule	Providing and applying prime coat with bitumen emulsion Grade SS-1 complying with IS:8887 on prepared surface of granular base including cleaning of road surface with compressed air and spraying primer at the rate of 0.80kg/sqm using pressure distributer as per clause 502 of MoRTH specifications complete.						
		On WMM surface @0.80kg/sqm	Sqm	654.50		53.47		34996.00
5	JKSoR derived Rate from 16.63.1	Providing and laying **bituminous macadam** using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by trippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.50 t0 100mm average compacted thickness with bitumen of VG-10 @3.5% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	cum	31.88	5917.98		188636	
6	16.38.2	Providing and applying **Tack Coat** using hot straight run bitumen of grade-VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and prepared the existing road surface as per specifications.						
		On bitumen surface @0.50 kg/sqm	sqm	637.50	42.10		26839	
7	JKSoR derived Rate from 16.65.1	Providing and laying **Bituminous concrete** using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.: 40/50 mm compacted thickness with bitumen of grade VG-10@ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	25.50	9004.58		229617	
8	16.48	Providing **seal coat** of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling mad finishing with road all complete.	sqm	637.50	78.15		49821	
		ROAD MARKINGS AND SIGN BOARDS						

9	16.58	Providing and fixing Glow studs of size 100x20mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact Polystyrene) or ABS having electronically welded micro-prismatic lens with abrasion resistant coating as approved by Engineer-in-charge. The Glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 +/- 5 degrees to base. The reflective panels on both sides with at least 12cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS : 873 part 4 : 1973. The studs shall be fixed to the road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge	each	4	193.85		732	
10	16.69	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/colour using hot thermoplastic material by fully/semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm	8.50	604.50		5138	
11	16.66	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminum sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type-IV of ASTM-D-4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC : 67-2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminum alloy rivets @ 20cm c/c to back support frame of M.S. angle iron of size 25x25x3mm along with theft resistant measures mounted and fixed with 2 nos. M.S. angles of size 35x35x5mm to a vertical post made upto M.S. Tee section ISMT 50x50x6mm welded with base plate of size 100x100x5mm at the bottom end and including making holes in pipes, angle flats, providing and fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical M.S.-Tee support to be painted in black and white colours). Backside of aluminum sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coats including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge.						
11.1	16.66.1	Mandatory/Regulatory sign boards of 900 mm diameter with part as length of 3750 mm	each	1.00	5795.50		5796	
11.2	16.66.2	Cautionary/warning sign boards of equilateral triangular shape having each side of 900 mm support length of 3650mm.	each	1.00	4260.80		4261	
		FOOTPATH WORK						
12	Derived from JKSoR	Providing and laying 200 mm thick compacted bed of Stone soling including spreading, well ramming, consolidating including finishing smooth etc. complete as per direction of Engineer-in-charge	sqm	15.30	1396.82		21371	
13	4.9.2	Providing & fixing at or near ground level precast cement concrete in kerbs, edging etc as per approved patterns and setting in position with cement mortar 1:3 (1 cement:3 coarse sand) including the cost of required centring, shuttering and curing complete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	5.10	6213.80		31690	
14	4.4.5	Providing and laying in position cement concrete of specified grade including curing but excluding the cost of centring and shuttering. All work upto plinth level with: 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	7.65	4943.40		37817	
15	4.6.2	Centering and shuttering including strutting, propping etc. and removal of formwork for: Retaining wall, return walls, walls (any thickness) including attached pilasters butteresses, plinth and string course fillets, kerbs and steps etc.	sqm	8.50	573.85		4878	

16	16.74	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in-charge.	sqm	76.50	770.60		58951	
						Total (Rs)	926096	
		Add 25% approximate cost index on JK Schedule items					231524	
							1157620	34996
						Total (Rs) JK SoR + NS	**1192616**	
		Add contingencies @5%					59631	
						Total (Rs)	1252247	
						Estimated cost of the work inclusive of GST	1252247	
						Estimated cost put to Tender (Excluding GST @ 14.05%)	**10,97,981**	

SECTION-VII

BILL OF QUANTITIES

Bill of Quantities

Through Percentage Rate Contract

Tender Inviting Authority: Executive Director (P), National Highways & Infrastructure Development Corporation Limited, RO-Ladakh	
Name of Work: "Renovation, Repair, Re-surfacing & Construction of 32 Nos. of urban link roads at Ward no 1,2,3 &13 of LEH (PKG-3), in UT of Ladakh(2nd Call)"	
RFP No: 27/RO-Ladakh/2022	
Name of the Bidder/ Bidding Firm / Company :	

BILL OF QUANTITIES

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

Sl. No.	Item Description/Name of Work	Estimated Rate excluding GST in Rs. P	Percentage to be quoted by the bidder excluding GST (above/Below / atpar against EC) Rs. P	Percentage in words	TOTAL AMOUNT excluding GST
1	"Renovation, Repair, Re-surfacing & Construction of 32 Nos. of urban link roads at Ward no 1,2,3 &13 of LEH (PKG-3), in UT of Ladakh (2nd Call)"	14,67,92,310/-			INR ---------- - Only
Total in Figures					
Quoted Rate in Figures			**Select**		**0.00**
Quoted Rate in Words					