

NTPC Limited
(A Government of India Enterprise)

**SHARED SERVICES CENTRE – CMHQ-RANCHI
CONTRACT & MATERIAL DEPTT.**

**NOTICE INVITING TENDER (NIT)
FOR**

PACKAGE NAME: Construction of Service Road and Drain of RLS, Pakhri Barwadih Coal Mining Project

(Domestic Competitive Bidding)

Mode of Tendering: Open Tender

NIT / GEPNIC Tender Ref. No: NTPC/SSC - Coal Mining(Ranchi)/9900284926 **Date:** 29.07.2024

BIDDING DOCUMENT NO.: SSC-C&M-CMHQ-PBCMP/400050637

I. NTPC invites on-line bids at Government e-procurement portal of NIC (GePNIC) at website- <https://eprocurementpc.nic.in/> on Single Stage Two Envelope Bidding basis (Envelope-I: Techno-commercial Bid & Envelope-II: Price Bid) from eligible Bidders for aforementioned package as per Scope of Work mentioned hereinafter.

II. Brief Scope of Work :

Construction of Service Road and Drain of RLS project,PBCMP as per contract terms and condition, BOQ, drawing and specifications. The works generally involved are as follows:

1. Construction of new bridges/culverts, drain and RCC retaining wall
2. Earth work and surface preparation
3. GSB and WMM work as per drawing.
4. DBM, BC and Seal coat work etc.

Detailed Scope shall be as per Technical Specification / Terms of Reference.

III. NTPC intends to finance the aforesaid Package through Own Resources.

IV. Detailed Specification, Scope of Work and Terms and Conditions are given in the bidding document, which are available on-line (www.eprocurementpc.nic.in) as per the following schedule:

Date of issue of NIT	29.07.2024
Downloading/ Sale of Bidding Document	Refer NTPC e-procurement portal (GePNIC portal):
Last date for receipt of queries on Bidding Documents from Bidders **	https://eprocurementpc.nic.in
Last date & Time for submission of online bids	
Date and Time for opening of Techno-Commercial bids	
Opening of Price Bids	
Cost of Bidding Documents	Rs. 4500/-
Bid Security (EMD)	Rs. 10 Lakh

Estimated Cost of Work	Rs. 6,33,94,390/- (excluding GST)
Pre-Bid Conference date	Not Applicable
Integrity Pact	Not Applicable
Minimum Percentage towards compliance of safety aspect	shall not be less than 2.00 % of the total value for works portion of Contract in terms of ITB Clause 12.2 and GCC Clause 24.11 of the bidding documents.
Contract Price Adjustment	As per SCC clause 6
Evaluation criteria	Package wise Evaluation
Splitting of Quantity	Not Applicable

Note: ****Bidders are advised to visit the GePNIC (e-tender) portal of NTPC (<https://eprocurmentpc.nic.in>) for updated bidding schedule of the Tender.***

**It is to be noted that "No Queries from Bidders, whatsoever, shall be entertained by the Employer beyond the last date of receipt of Queries/ Pre-Bid Conference (if applicable) as specified at GePNIC portal of NTPC".

Being a works contract, EMD exemption shall not be allowed for the subject work. It may be noted that due to system constraint in GePNIC portal against attribute "EMD through BG/ST or EMD Exemption Allowed" mentioned as YES for facilitating to the bidder for providing Bank Guarantee towards EMD and bidders are requested, not to upload EMD exemption document.

Tender Fees (Cost of Bidding Documents), Bid Security (EMD) shall be submitted in a sealed envelope separately offline by the stipulated bid submission closing date and time at the address given below in accordance with the provisions set forth in the bidding documents, failing which, online bid shall be treated as non-responsive and shall not be opened.

ANY BID NOT ACCOMPANIED BY AN ACCEPTABLE BID SECURITY IN A SEPARATE SEALED ENVELOPE SHALL BE REJECTED BY THE EMPLOYER AS BEING NON-RESPONSIVE AND SHALL NOT BE OPENED. IN CASE, THE BID SECURITY IS SUBMITTED THROUGH ELECTRONIC FUND TRANSFER (EFT), BIDDER TO SUBMIT THE PROOF OF E-PAYMENT OF BID SECURITY EITHER IN SEPARATE SEALED ENVELOPE OR IN THE E-TENDERING PORTAL.

- V. A complete set of Bidding Documents may be downloaded by any interested Bidder from the e-Tender Portal as per specified schedule. The tender is invited under e-tendering process. The bidders can enroll themselves on the website <https://eprocurmentpc.nic.in/>. The use of Digital Signature Certificate (DSC) Class-3 key is mandatory for e-tendering activities. Accordingly, bidders should have Digital Signature Certificate (DSC) key of Class 3 to participate in e-tendering. Bidders, if required, can obtain DSC Class-3 key from agencies authorized by Govt. of India. The e-Tender Portal also has the user manuals with detailed guidelines on enrolment and participation in the bidding process.

No hard copy of Bidding Documents shall be issued. Bids shall be submitted ONLY at the e-Tender Portal i.e. <https://eprocurmentpc.nic.in/>

VI. QUALIFYING REQUIREMENTS FOR BIDDERS:

Qualifying Requirements is enclosed at Annexure-1 to this NIT

- VII. **Notwithstanding** anything stated above, the Employer reserves the right to assess the capabilities and capacity of the Bidder/ his collaborators / associates/ subsidiaries/ group companies to perform the contract, should the circumstances warrant such assessment in the overall interest of the Employer.

VA. Any Certificate(s) / Financial Statement(s) / Audited Balance Sheet and P&L Account (wherever applicable) undertaken/ signed by a Member of Institute of Chartered Accountant of India (ICAI), which Bidders submit in support of compliance to Qualifying Requirements (QR), will carry Unique Document Identification Number (UDIN) generated in line with the Gazette Notification of Council of Institute of Chartered Accountant of India (ICAI).

VIII. Only 'Class-I local suppliers' are eligible to participate in this tender, as defined in the bidding documents/ Public Procurement (Preference to Make in India), Order 2017 and its subsequent amendments/ revisions issued by DPIIT. The bidders may apprise themselves of the relevant provisions of bidding documents in this regard before submission of their bids.

IX. Any 'Bidder from a country which shares a land border with India', as specified in the Bidding Documents, will be eligible to bid in this tender only if bidder is registered with the Competent Authority as mentioned in the Bidding Documents.

Further, any bidder (including bidder from India) having specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India, will be eligible to bid only if the bidder is registered with the same competent authority.

However, the said requirement of registration will not apply to bidders from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects.

X. Transfer of Bidding Documents purchased by one intending Bidder to another is not permissible.

XI. Downloading / Issuance of bid documents to any bidder shall not construe that such bidder is considered to be qualified.

XII. NTPC reserves the right to reject any or all bids or cancel/withdraw the NIT for the subject package without assigning any reason whatsoever and in such case no bidder/intending bidder shall have any claim arising out of such action.

XIII. Address for Communication / Location of Bid opening

DGM (C&M) / AGM (C&M)

Shared Services Centre – Coal Mining HQ

NTPC Ltd.,

Coal Mining HQ, Ginni Plaza,

Opposite Chutia Police Station,

Distt : Ranchi -834001

Mob.: 9650992083, 9437557354

E-mail: dheerendramishra@ntpc.co.in/rcmajhi@ntpc.co.in

XIV. Registered Office:

NTPC Limited

NTPC Bhawan, SCOPE Complex,

7, Institutional Area, Lodi Road, New Delhi – 110003

Corporate Identification Number: L40101DL1975GOI00796

Approved Qualifying Requirements for “Construction of Service Road and Drain of RLS, Pakhri Barwadih Coal Mining Project”

1.0 Technical Criteria:

The bidder should have executed “**Civil works including Road construction works of Bitumen/RCC/PCC/PQC**” within the preceding seven (07) years reckoned as on the date of Techno Commercial Bid Opening with either of following;

- a) Single order of value not less than Rs. **507** Lakhs,
or
- b) Two orders of value not less than Rs. **317** Lakhs each,
or
- c) Three orders of value not less than Rs. **254** Lakhs each.

Notes for Clause 1.0

- I. The word “Executed” mentioned above means that the bidder should have achieved the criteria specified above, even if the total contract is started earlier and/or is not completed/closed.
- II. In case of orders under execution, the value of work executed prior to the date of Techno-Commercial bid opening duly certified by bidder’s client shall be considered acceptable.
- III. Reference work executed by the bidder as a sub-contractor may also be considered provided the certificate issued by main contractor is duly certified by owner specifying the scope of work executed by the sub-contractor in support of qualifying requirements.
- IV. For arriving at the executed value of work specified above, basic amount without tax only shall be considered. In case contract is inclusive of taxes, bidder should provide the break – up of basic value and taxes.
- V. In case the bidder has executed any reference work as a JV partner/consortium member, the experience of the bidder shall be considered equivalent to the executed value of work corresponding to value of work under the scope of bidder only as per the JV/Consortium Agreement/certified by owner/statutory auditor etc (as applicable).

2.0 Financial Criteria:

- 2.1 The average annual turnover of the Bidder, in the preceding three (3) financial years as on the date of Techno-Commercial bid opening, should not be less than **Rs. 634 Lakhs**.

In case a Bidder does not satisfy the average annual turnover criteria, stipulated above on its own, its Holding Company would be required to meet the stipulated turnover requirement as above, provided that the Net Worth of such Holding Company as on the last day of the preceding financial year is at least equal to or more than the paid-up share capital of the Holding Company. In such an event, the Bidder would be required to furnish along with its Techno-Commercial bid, a Letter of Undertaking from the Holding Company supported by the Holding Company's Board Resolution, as per the format enclosed in the bid documents, pledging unconditional

and irrevocable financial support for execution of the Contract by the Bidder in case of award.

2.2 In case the Bidder is not able to furnish its audited financial statements on standalone entity basis, the unaudited unconsolidated financial statements of the Bidder can be considered acceptable provided the Bidder further furnishes the following documents for substantiation of its qualification.

- (i) Copies of the unaudited unconsolidated financial statements of the Bidder along with copies of the audited consolidated financial statements of its Holding Company.
- (ii) A Certificate from the CEO/CFO of the Holding Company, as per the format enclosed with the bidding documents stating that the unaudited unconsolidated financial statements form part of the consolidated Annual financial statements of the Holding Company.

In cases where audited results for the last financial year as on the date of Techno Commercial bid opening are not available, the financial results certified by a practicing Chartered Accountant shall be considered acceptable. In case, bidder is not able to submit the Certificate from a practicing Chartered Accountant certifying its financial parameters, the audited results of three consecutive financial years preceding the last financial year shall be considered for evaluating the financial parameters. Further, a certificate would be required from the CEO / CFO as per the format enclosed in the bidding documents stating that the Financial results of the Company are under audit as on the date of Techno - commercial bid opening and the Certificate from the practicing Chartered Accountant certifying the financial parameters is not available.

2.3 Net worth of the bidder should not be less than 100% (hundred percent) of the bidder's paid up share capital as on the last day of the preceding financial year. In case the Bidder meets the requirement of Net worth based on the strength of its Subsidiary (ies) and / or Holding Company and / or Subsidiaries of its Holding companies wherever applicable, the Net worth of the Bidder and its Subsidiary (ies) and / or Holding company and / or Subsidiary (ies) of the Holding Company, in combined manner should not be less than 100% (hundred percent) of their total paid up share capital. However, individually, their Net worth should not be less than 75% (seventy five percent) of their respective paid up share capitals.

Net worth in combined manner shall be calculated as follows: Net worth (combined) = $((X1+X2+X3) / (Y1 + Y2 + Y3)) \times 100$

Where X1, X2, X3 are individual Net worth which should not be less than 75% of the respective paid up share capitals and Y1, Y2, Y3 are individual paid up share capitals.

Notes for clause 2.0 above:

- i) Net worth means the sum total of the paid up share capital and free reserve. Free reserve means all reserves credited out of the profits and share premium account but does not include reserves credited out of the revaluation of the assets, write back of depreciation provision and amalgamation. Further any debit balance of Profit and Loss account and miscellaneous expenses to the extent not adjusted or written off, if any, shall be reduced from reserves and surplus.
- ii) Other income shall not be considered for arriving at annual turnover.
- iii) "Holding Company" and "Subsidiary Company" shall have the meaning ascribed to them as per Companies Act of India.

Scope of Work:

Construction of Service Road and Drain of RLS project,PBCMP as per contract terms and condition, BOQ, drawing and specifications. The works generally involved are as follows:

1. Construction of new bridges/culverts, drain and RCC retaining wall
2. Earth work and surface preparation
3. GSB and WMM work as per drawing.
4. DBM, BC and Seal coat work etc.

Site:

The proposed site for road construction stretches from TP 10 to Banadag siding as shown in the above pic.

Special terms and conditions of contract:

1. Before tendering, the Bidder is advised to visit the site, its surroundings, assess and satisfy themselves about the local conditions such as approach roads to the site, water & power supply, taxes, duties & levies as applicable nature of the ground and sub-soil condition, underground water table, levels, accommodations they may require etc., river regime, river water levels, other details of river and any other relevant information required by them. The Bidder may obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. Bidder shall be deemed to have considered site conditions and to have satisfied himself in all respect before quoting his rates and terms and no claim whatsoever in this regard shall be entertained by the Owner later. Contractor must maintain harmonious relation with local people and administration for smooth progress of job.
2. Contractor shall have total responsibility for all equipment and materials in his custody stores, loose, semi assembled and/or erected by him at site. The contractor shall make suitable security arrangements including employment of security personnel to ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and loss.
3. Contractor shall mobilize minimum of the following: 1 no. excavator, 2 vibratory compactor (one for bitumen work and 1 pneumatic compactor for earth,GSB and WMM work), 1 paver with sensor, 1 air compressor, minimum 05 hywas for bitumen mix carrier,1 mini excavator,1 emulsion sprayer, 2 Nos. Concrete mixer of adequate capacity, 1 No. Vibro Roller, 1 auto level , 4 nos 40mm dia Needle Vibrator etc. at construction site and additional equipment if any, required for successful completion of work shall be provided / arranged by the agency and as per the direction of NTPC.
4. Agency will arrange and supply all construction material required all tools and tackles and other construction support material and No material will be issued by NTPC Ltd.
5. Agency has to deploy site engineer, Quality engineer, safety supervisor and no. of workers, supervisors as required to execute the job within time frame as per the direction of EIC. Agency has to give preference to PAPs (Project affected people) while deploying manpower.Contractor shall depute qualified and experienced manpower

holding minimum qualification of Diploma in Civil engineering or Bachelor in Civil engineering for execution of work /Quality testing/ measurement.

6. Contractor shall depute surveyor for taking levels throughout the work duration.
7. Contractor in all respects shall organize his work, systems, environment, process control documentation, tools, plant, inspection, measuring and testing equipments etc. as per instructions of Engineer-in charge. Agency has to set up one quality lab with adequate instruments with valid calibration certificate and experienced lab technician at site to conduct the quality testing of each work as per FQP and as per direction of Engineer of NTPC. The Contractor shall re-calibrate all Laboratory equipment well before expiry of calibration period and shall submit the results of such measurements without delay All expenditure on quality tests shall be borne by the contractor.
8. NTPC may depute its representative for checking and supervision of important stages of work. The contractor shall be required to provide all facilities for inspection of works at no extra cost to NTPC. Any defect in quality of work or deviations from drawings / specifications pointed out during such inspection shall be made good by the contractor, without any cost implication to NTPC.
9. Contractor shall be deemed to have fully conversant with the local conditions prevailing in State(s) where contract is operative i.e. restrictions of plying of the vehicles imposed by the Security Forces and/or local administrative and/or law enforcing agencies, also the liabilities for the security checks etc. The department will not be responsible for eventualities due to security risks/security requirements as may be required and/or imposed by the Security Forces and/or by the local administrative and/or law enforcing agencies. No claim whatsoever on this account shall be admissible. The work shall be executed on lease land.
10. Cement shall be of BIS approved make. Cement shall be of PPC grade, unless noted otherwise.
11. Structural steel shall be of make SAIL, JSW steel Ltd, Jindal Steel & power, TATA steel Ltd., RINL, Arcelor mittal, Nippon steel india Ltd, and JSW ispat special products Ltd. Reinforcement steel/ TMT bars shall be of make SAIL, JSW steel Ltd, Jindal steel & power, TATA steel Ltd, RINL, ESL steel Ltd,and JSW Ispat special product Ltd.
12. All materials shall be approved & checked by EIC or his representative, before using the materials.
13. Bitumen shall be procured from NTPC approved manufacturer or PSUs. Same shall be tested before using at site.
14. Agency has to submit invoice and co-related Manufacturer's test certificate for all bought out items.
15. Except as otherwise specifically provided in the Contract, the Contractor shall be liable and responsible for the payment of all taxes, duties, levies, royalties for construction materials and charges imposed on the contractor, its vendors and those imposed on the Contractor's equipment, materials, supplies and services to be used in the performance of the contract or furnished under the contract.
16. Efforts will be made by the Owner to hand over the site to the Contractor free of encumbrance. However, in case of any delay in handing over of the site to the Contractor, the Owner shall only consider suitable extension of time for the execution

of the work. It should be clearly understood that the Owner shall not consider any other compensation whatsoever viz. towards idleness of Contractor's labour, equipment etc

17. The Contractor shall make his own arrangement for approach to the work site including borrow/disposal areas and for movement of men, machinery, other equipment etc. required for carrying out the work included under this Contract. As the work shall be executed on half width of road with moving traffic on the other half of road. Accordingly, agency must plan the execution.
18. The Owner reserves the right to hand over the site in parts progressively to the Contractor. The Contractor will be required to do work on such released fronts in parts without any reservation whatsoever.
19. Contractor shall make necessary arrangement to prevent pollution of the water in any stream, springs, nallah, river and lakes. The Contractor shall be solely responsible and liable for all damage caused by any pollution that may take place during the execution of the work.
20. The Contractor shall be required to attend all weekly site progress review meetings organized by the 'Engineer-in-Charge' or his authorized representative.
21. The contractor shall not object to execute any extra item, if necessary, for completion of the work with prior permission from Engineer-In-Charge. The rates of such items shall be determined as per GCC.
22. The contractor at their own cost shall cover their workmen under group insurance scheme covering workmen's liability. The insurance is to be done before start of work. CAR policy as per GCC shall be obtained by the contractor.
23. The contractor at their own cost shall comply with all statutory requirements like Insurance (Labour compensation & CAR policy), PF, Labour laws etc. as required before start of work.
24. All works will be executed as per CPWD, relevant IS codes, MORTH specifications and IRC guidelines. Further in case of discrepancies during execution/construction methodology, decision of EIC shall be final.
25. Construction power and construction water will be arranged by Agency.
26. The contractor is to ensure safety to his workmen engaged in his job and is to follow standard safety norms. Safety items including PPEs, Safety Net, lifeline, first aid box etc. as required shall have to be arranged by the contractor at his own cost. The contractor at their own cost deploys minimum one Safety Officer and safety Stewart(s) as required at site.
27. The contractor at their own cost provides safety ribbon, hoarding etc and others safety provision during construction of work. No extra payment shall be made.
28. The contractor at their own cost makes diversion of the road (if required). No extra payment shall be made.
29. Contractor must follow all the guidelines of Govt of India, Govt of Jharkhand state & NTPC.
30. All other terms and conditions applicable as per GCC and technical specification of civil works.
31. Agency must submit the royalty challan for used minor minerals and clearance certificate of the same from DMO.
32. In case of any IR problems, Agency has to lodge FIR with Police department and submit the copy of same to NTPC for record purpose only.

33. Agency has to sort out the problems arising during execution with villagers for any land or other dispute without any extra cost to NTPC.
34. The contract shall be governed by General Conditions of Contract (GCC) for civil work unless otherwise mentioned elsewhere.

Contract Period:

1. Job shall be completed within 365 days from the date of LOA (Letter of Award) or as direction by EIC.

2. Contractor must mobilize adequate resources to meet his commitments to NTPC as indicated from time to time. In case due to reasons not attributable to the contractor, the work gets delayed and additional manpower / resources must be mobilized to expedite the work to meet various milestones, same shall be done within the quoted rates as per Rate Schedule, at no extra cost to NTPC. In the event the contractor fails to respond to these requirements, NTPC shall take appropriate actions to meet its commitments in line with the provisions of General Conditions of Contract.

3. The work under the scope of this contract is deemed to be completed in all respects, only when all the works are carried out as per satisfaction of NTPC. The decision of NTPC on completion date shall be final and binding on the contractor.

Payment Terms:

1. RA Bill shall be released on monthly basis with certification of EIC.
2. Rate shall be firm and no escalation is payable.
3. Basic rates are exclusive of GST. However, GST shall be paid extra at applicable rate.
4. Tax deduction at source shall be made as per the provisions of the relevant Act/Rules.
5. SD will be deducted as per norms.
6. Amount linked to safety shall be 2.00 %.

LOGO	Supplier's Name and Address:		REFERENCE FIELD QUALITY PLAN				PROJECT:	PBCMP				
			ITEM : CIVIL WORKS		QP NO. :		PACKAGE:	Construction of Service road and Drain of RLS Project,PBCMP.				
SUB-SYSTEM :		REV. NO.: 00		DATE:		CONTRACT NO.		MAIN-CONTRACTOR				
Sl. No	Activity and operation		Characteristics / Instruments		Class# of check	Type of	Quantum	Reference	Acceptance	Format of		Remarks
						Check	Of check	Document	Norms	Record		
1	2	3	4	5	6	7	8	9	D*	10		
A	GENERAL REQUIREMENT											
a	Sampling of testing of construction materials before commencement of work.		As agreed / required		A	Physical	Once per each source	CPWD/Tech.Spec. and cons. drawings	SR/TR	√	Test report along with the recommendations from Employer acceptable laboratories to be submitted to EIC/FQA head for their review and acceptance.	
b	Setting up of Field QA&QC laboratory, Availability of requisite laboratory set up and equipment in good working condition & duly calibrated well before commencement of concerned activity.		As agreed / required		B	Physical	Once prior to start of work and there-of monthly	CPWD/Tech.Spec. and cons. Drawings	SR	√	The contractor shall establish the mobilize the requisite laboratory equipment/set up and skilled QA&QC manpower within 30 days from the mobilization date of Main contractor at site. Functioning & calibration status of laboratory equipment in proper working condition to be verified on monthly basis.	
c	Submission of QA & QC manpower deployment schedule and availability of manpower		As agreed / required		B	Physical		CPWD/Tech.Spec. and cons. Drawings	SR	√		
d	Stacking and storage of construction materials and components at site		As per IS:4082		B	Physical	Random in each week	Tech Specs and Const. Drawings, Manufacturer's guidelines and IS 4082	SR			
B	SCHEDULE/NON-SCHEDULE ITEM											
1.00.00	ROAD WORKS											
1.01.00	Control Of Alignment , Level and Surface Regularity											
1.01.01	Horizontal alignment		As reqd		B	Physical	100%	Section 900 of MORTH specification, NTPC Spec.	SR	√	Horizontal Alignment shall be reckoned w.r.t. the centre line of carriageway, tolerance will be +/-25 mm for carriageway and +/-40 mm for lower layers	
1.01.02	Surface Levels		As reqd		B	Physical	on a grid of points placed at 6.25m longitudinally and 3.5m transversly	Table 900-1 of MORTH Spec., NTPC Spec.	SR	√	for 10 consecutive measurements taken longotudinally, not more than one measurement shall be permittedo exceed the tolerance,	
1.01.03	Surface Regularity of subgrade & Pavement Courses		As reqd		B	Physical	100%	Table 900-2 of MORTH Spec.,	SR	√	On rectification of irregularities the corrective measures given in MORTH spec (Clause 902.5) shall be followed	
2.00.00	Test on earth work for embankment,subgrade construction and cut formation											
2.01.01	Modified Proctor Density test		As reqd		A	Physical	1 test per 3500 CUM per stretch	IS 2720 - Part - 8	SR / TR	√		
2.02.02	Dry density by core cutter method ---- OR---- Dry density in place by sand displacement method		As reqd		B	Physical	One in every 2000 SQM area for each compacted layer.	IS 2720 (part28)	SR	√		
3.00.00	Test on bases and sub-bases (excluding bituminous bound bases)- Granular sub base / Wet Mix Macadam											
3.01.00	Gradation as per Table 400.1 Grading - II / Table 400.2 Grading - 1		As required/ agreed		B	Physical	1 test per 500 CUM	As per Tech Specs and Const. Drawings, Section 900 of MOSRTH specification,	SR / TR	√		
3.02.00	Modified Proctor		As required/ agreed		A	Physical	1 test per 3500 CUM per stretch	As per Tech Specs and Const. Drawings, Section 900 of	SR / TR	√		

3.03.00		Soaked CBR in 4 days	As required/ agreed	A	Physical	1 test per 3000 CUM	As per Tech Specs and Const.	SR / TR	√	
3.04.00		Aggregate impact value	As required/ agreed	A	Physical	1 for each source and for every change in source	As per Tech Specs and Const. Drawings, Section 900 of	SR / TR	√	
		Aggregate crushing value	As required/ agreed	A	Physical	1 for each source and for every change in source	As per Tech Specs and Const. Drawings, Section 900 of	SR / TR	√	
3.05.00		Los Angeles Abration Value	As required/ agreed	A	Physical	1 for each source and for every change in source	As per Tech Specs and Const. Drawings, Section 900 of	SR / TR	√	
3.06.00		Combined flakiness and elongation index	As required/ agreed	B	Physical	1test per 500 CUM	As per Tech Specs and Const. Drawings, Section 900 of	SR / TR	√	
3.5.00		Water Absorption	As required/ agreed	B	Physical	1 test per 500 CUM	As per Tech Specs and Const.	SR / TR	√	
3.06.00		Field density	As required/ agreed	B	Physical	on each layer by taking at least one measurement of density for each 1000sqm of compacted area	As per Tech Specs and Const. Drawings, Section 900 of MOSRTH specification,	SR / TR	√	
3.07.00		Surface level	As required/ agreed	C	Physical	6.25 m longitudinal and 3.5m transverse	As per Tech Specs and Const. Drawings	SR / TR		
		Atterberg Limits of portion of aggregate passing 425 micron sieve	Atterberg limits determination	B	Physical	One test per 400 cum	As per Tech Specs and Const. Drawings, Section 900 of MOSRTH specification,	SR / TR	√	
4.01.00	Test on bituminous construction (Dense Bituminous Macadam & Bituminous Concrete)									
4.02.00		Quality of binder	Penetrometre with St. needle	A	Physical	Number of samples per lot and tests as per IS:73 or IRC:SP:53, IS:15462	As per Tech Specs and Const. Drawings, Section 900 of MOSRTH specification, IS 73	SR/TR	√	APPROVED SOURCE FOR MATERIAL PROCUREMENT SHALL BE ALL GOVERNMENT REFINARIES
4.03.00		Aggregate impact value	As required/ agreed	A	Physical	1 for each source and for every change in source	Section 900 of MORTH spec.	SR / TR	√	
4.04.00		Aggregate crushing value	As required/ agreed	A	Physical	1 for each source and for every change in source	Section 900 of MORTH spec.	SR / TR	√	
4.05.00		Los Angeles Abration Value	As required/ agreed	A	Physical	1 for each source and for every change in source	Section 900 of MORTH spec.	SR / TR	√	
4.06.00		Combined flakines and elongation indices	Flakiness test gauge	B	Physical	One test per 350 cum of aggregate for each source and whenever there is change in the quality of aggregate	Section 900 of MORTH spec.	SR/TR	√	
4.07.00		Stripping value	Immersion Tray test	A	Physical	initially one set of 3 representative specimens for each source of supply , subsequently on change in the quality of aggregates	Section 900 of MORTH spec.	SR/TR	√	
4.08.00		Water absorption of aggregate	Balance, Oven etc	A	Physical	initially one set of 3 representative specimens for each source of supply , subsequently on change in the quality of aggregates	Section 900 of MORTH spec.	SR/TR	√	
4.09.00		Water sensitivity of mix	As required	B	Physical	initially one set of 3 representative specimens for each source of supply , subsequently on change in the quality of aggregates	Section 900 of MORTH spec.	SR/TR	√	
4.10.00		Soundness (Magnesium and Sodium Sulphate)	Chemical Reagents etc	B	Physical	one for each source of supply	Section 900 of MORTH spec.	SR/TR	√	
4.11.00		Binder content	centrifuge type bitumen extractor, hand operated,	B	Physical	one test per 500 cum and not less than 2 test per day	Section 900 of MORTH spec.	SR/TR	√	

4.12.00		Control of Temperature of binder and aggregate for mix and of the mix at the time of laying and rolling	Thermometer	B	Physical	At regular close intervals	Section 900 of MORTH spec.	SR/TR	√	
4.13.00		Grading of aggregates	Set of Sieves	B	Physical	one test per 100 cum of aggregates	Section 900 of MORTH spec.	SR/TR	√	
4.14.00		Density of compacted Layer	As required/ agreed	B	Physical	One test per 700 Sqm of area	As per Tech Specs and Const. Drawings, Section 900 of MOSRTH specification	SR/TR	√	
		Marshall Stability test	Marshall test setup	A	Physical	done on each designed mix	Section 900 of MORTH spec.	SR/TR	√	
5.01	Reinforcement Cement Concrete and Plain Cement Concrete Works									
5.02	CEMENT	Review of MTC for each batch of delivery from NTPC approved source.	MTC Review	A	Physical	Each batch of delivery at site	CPWD/Tech.Spec. and cons. Drawings	MfrTC	√	
		Testing of Cement for setting time (Initial & Final) and compressive strength	As required/ agreed	A	Lab	One for each manufacturing week number	IS: 269/IS:1489/IS:455	SR/LR	√	If cement is stored more than 60 days in store of contactor same shall be retested for comp. strength and setting times
		Check for the storage of cement as accepted by EIC	As required/ agreed	B	Physical	Random	IS: 4082	SR		
5.03	Coarse Aggregate									
5.03.01		Impact value test	As required/ agreed	A	Lab test	Once per source or as required by EIC.	IS : 456/IS : 383/IS: 2386 Part-III/Tech Spec	SR/TR	√	
5.03.02		Crushing Value Test	As required/ agreed	A	Lab test	Once per source or as required by EIC.		SR/TR	√	
5.03.03		Loss Angeles abrasion value test	As required/ agreed	A	Lab test	Once per source or as required by EIC.		SR/TR	√	
5.03.04		Combined Flakiness & Elongation Index	Flakiness test gauge	B	Lab test	Every 50 cum of RCC/PCC work	IS:2386 Part-I	SR/TR	√	
5.03.05		Particle size distribution	Set of Sieves	B	Lab test	Every 50 cum of RCC/PCC work	IS:2386 Part-I	SR/TR	√	
5.04	Fine Aggregate									
5.04.01		Silt Content	As required/ agreed	B	Lab test	Every 50 cum of RCC/PCC work	CPWD/Tech Spec/IS 2386/IS 456/IS 383	SR/TR	√	
5.04.02		Sieve Analysis	Set of Sieves	B	Lab test	Every 50 cum of RCC/PCC work	CPWD/Tech Spec/IS 2386/IS 456/IS 383	SR/TR	√	
5.05	Execution									
5.05.01		Check of Batching mixing, conveying, placing compaction and curing of concrete.	As required/ agreed	B	Visual	Randomly in each shift of concreting	CPWD/Tech. Spec. and cons. drawings	SR/TR	√	
5.06	Form Work									
5.06.01		Inspection and acceptance of form work before concreting	As required/ agreed	B	Visual	100% prior to each concreting	CPWD/Tech. Spec. and cons. drawings	SR/TR	√	
5.07	VOLUMETRIC / REINFORCED & DESIGN MIX CONCRETE									
5.07.01		Trial mixes to ascertain the workability and cube strength	After receiving recommended mix design	A	Lab Test	4 Trial Mixes	IS:456	SR/TR	√	
5.07.02		Works Cube test for 7 days/28 days compressive strength	CTM Machine	A	Lab Test	One set of 6 cubes per 50cum concrete or part thereof for each grade of concrete	IS:516, IS:456	SR/TR	√	

5.07.03		Slump Test	Slump Cone	B	Field Test	Once in each shift	CPWD/Tech.Spec. , IS:456	SR/TR	√	
5.07.04		Placement of concrete, compacting, curing	As required/ agreed	B	Visual	At random	CPWD/Tech.Spec. and cons. Drawings	SR/TR	√	
5.07.05		Curing	As required/ agreed	B	Visual	Daily	IS:456	SR/TR	√	
5.08	Reinforcement									
5.08.01		Submission of MTC for each batch of delivery from NTPC approved source	As agreed/required	A	Review of MTC	Each batch of delivery at site	IS:1786, IS:456	MfrTC	√	Each consignment of cement shall be duly correlated with manufacturers TC.
5.08.03		Check for straightening, cutting, bending, placing in position and binding	As agreed/required	B	Physical	Random	CPWD/Tech. Spec. and cons. drawings	SR		
5.08.04		Check for the transportation and storage of steel as accepted by EIC	As agreed/required	B	Physical	Random	CPWD/Tech. Spec. and cons. Drawings/IS: 4082	SR		
6.00.00	Concrete Admixture	MATERIAL/TYPE OF ADMIXTURE	As agreed/required	A	Review of MTC	Each Batch	As per design mix and IS:9103/Tech. spec.	MfrTC	√	
7.00.00	Construction Water	Complete Testing as per IS:456-2000	As agreed/required	A	Lab test	Once for each source	iS:456-2000/ Tech. spec	TR	√	
8.00.00	Hume Pipe	Submission of MTC for each batch of delivery	As agreed/required	A	Review of MTC	Each batch of delivery at site	IS:458	MfrTC	√	Manufacturer shall have valid BIS Licence

Quality Assurance Plan

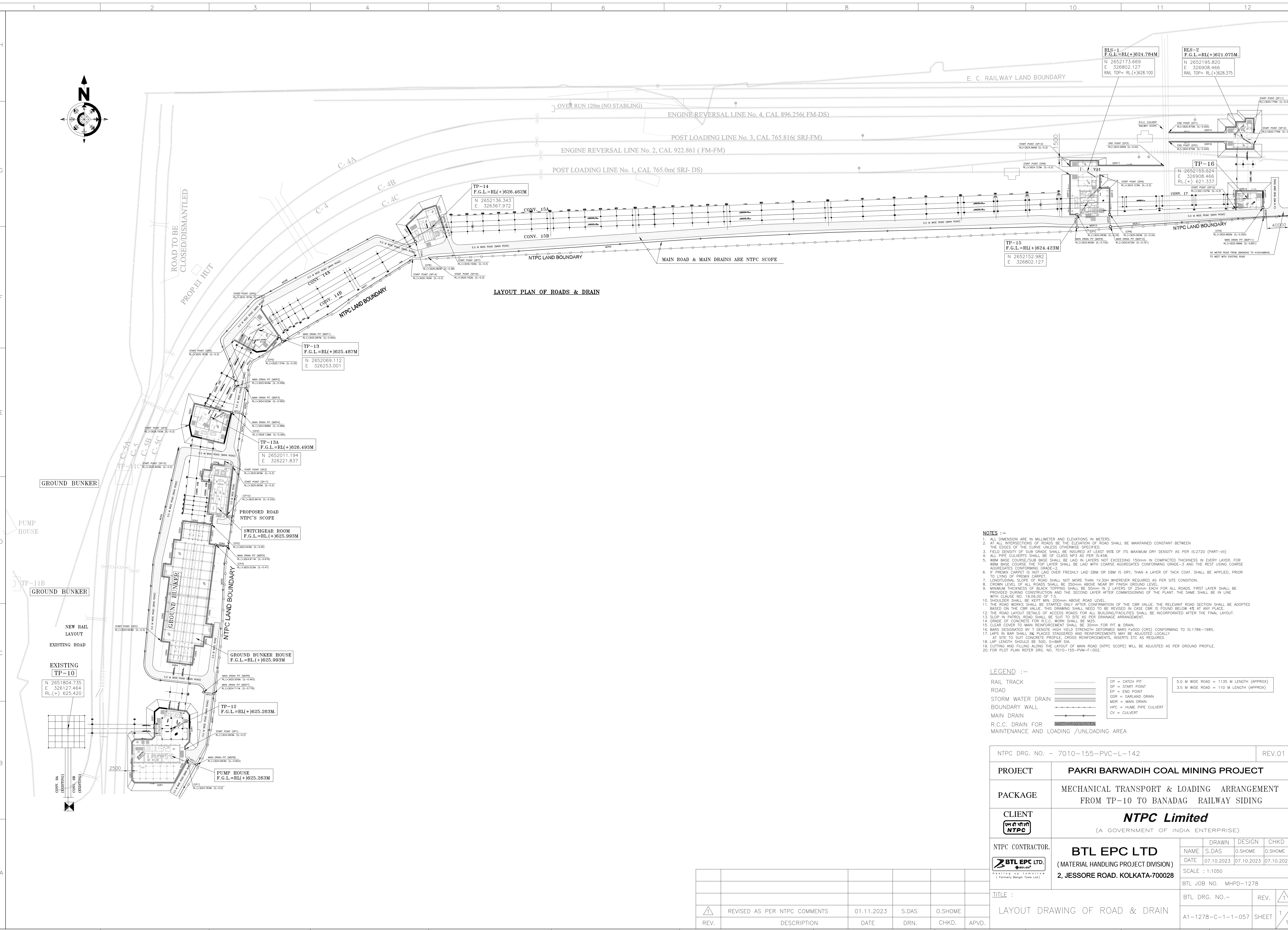
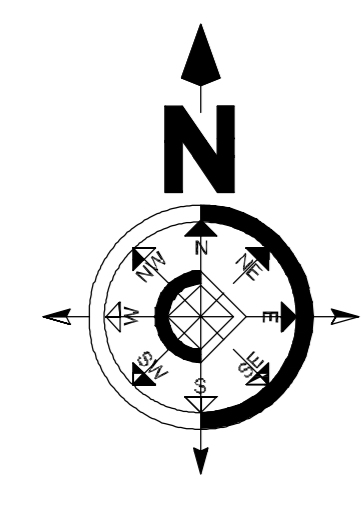
- i) Before execution of any civil work the contractor shall conduct full scale suitability tests on various construction materials like cement, reinforcement steel, fine & coarse aggregates, bricks etc.
- ii) For those test which can not be conducted at contractor's lab, Material shall be jointly sampled & sealed by contractor and NTPC engineer, thereafter, these shall be sent to concerned lab for testing through the covering letter signed by FQA engineer. Test shall be conducted by the Agency at his own cost in the presence of Agency and NTPC representative. The test report along with the recommendation obtained from laboratories shall be submitted to NTPC by the agency without delay.
- iii) Brick shall be essentially chimney burnt clay bricks of class –I designation complying all standard tests mentioned in FQP.
- iv) Cement shall be of BIS approved source having valid BIS license.
- v) Structural steel shall be of make SAIL, JSW Steel Ltd, Jindal Steel & Power, Tata steel Ltd. RINL, Arcelormittal Nippon Steel India Ltd, and JSW Ispat Special Products Ltd.
- vi) Reinforcement steel/TMT bars shall be of make SAIL, JSW Steel Ltd, Jindal Steel & Power, Tata steel Ltd. RINL, ESL Steel Ltd and JSW Ispat Special Products Ltd.
- vii) Reinforced steel & Structural steel supplied at the site shall be conforming to IS:1786 & IS:2062, respectively.
- viii) NTPC reserves the right to carry out quality surveillance of the quality management and control activities and procedure of the contractor or sub-contractor.

		LEGEND: D * Records, identified with "Tick" (√) shall be essentially included by supplier in QA Legend to be used: Class # : A = Critical, B=Major, C=Minor; SR,TR,MfrTC, LB 'A' shall be witnessed by NTPC FQA, 'B' shall be witnessed by ntpc erection / construction deptt. and 'C' shall be witnessed by erection supplier (A & B check shall be NTPC CHP stage); SR = Site Register, TR = Test Report, MfrTC = Manufacturer's Test Certificate		DOC. NO.:		
Sub-supplier	Main-supplier		For NTPC USE			
Signature		This document shall be read in conjunction with NTPC Tech. Specifications, BOQ & Drawings		REVIEWED BY	APPROVED BY	APPROVAL SEAL

COMPLIANCE SHEET

SI NO.	NTPC COMMENTS	BTL'S REPLY
1	Provide cross section of road along with drain	INCORPORATED
2	Check the RL (IL), direction of drain should be from higher IL to lower IL	INCORPORATED
3	The gradient of drain shall be down ward from TP14 towards pump house and from TP14 towards TP16. The drain from pump house shall further be extended upto the existing nallah on the north side of TP10(240 mtr from the RCC water tank).	INCORPORATED
4	Furnish Schedule of quantities based on DSR rates.	TO BE FURNISHED AFTER FINAL APPROVAL OF DRAWING
5	Change the direction of flow	INCORPORATED
6	check and revise as discussed	INCORPORATED
7	The service road from TP16 may further be extended upto 40 meter in the east direction to connect with existing road (Banadag to Kushumbha).	INCORPORATED

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LAYOUT PLAN OF ROADS & DRAIN

- NOTES :-**
1. ALL DIMENSION ARE IN MILLIMETER AND ELEVATIONS IN METERS.
 2. AT ALL INTERSECTIONS OF ROADS BE THE ELEVATION OF ROAD SHALL BE MAINTAINED CONSTANT BETWEEN THE EDGES OF THE CURVE UNLESS OTHERWISE SPECIFIED.
 3. FIELD DENSITY OF SUB GRADE SHALL BE INSURED AT LEAST 95% OF ITS MAXIMUM DRY DENSITY AS PER IS:2720 (PART-VI)
 4. ALL PIPE CULVERTS SHALL BE OF CLASS NPS AS PER IS:6468.
 5. WBM BASE COURSE/SUB BASE SHALL BE LAID IN LAYERS NOT EXCEEDING 150mm IN COMPACTED THICKNESS IN EVERY LAYER. FOR WBM BASE COURSE THE TOP LAYER SHALL BE LAD WITH COARSE AGGREGATES CONFORMING GRADE-3 AND THE REST USING COARSE AGGREGATES CONFORMING GRADE-2.
 6. IF PREMIX CARPET IS NOT LAD OVER FRESHLY LAD DBM OR DBM IS DRY, THEN A LAYER OF TACK COAT, SHALL BE APPLIED, PRIOR TO LAYING OF PREMIX CARPET.
 7. LONGITUDINAL SLOPE OF ROAD SHALL NOT MORE THAN 1%:30H WHEREVER REQUIRED AS PER SITE CONDITION.
 8. CROWN LEVEL OF ALL ROADS SHALL BE 300mm ABOVE NEAR BY FINISH GROUND LEVEL.
 9. MINIMUM THICKNESS OF BLACK TOPPING SHALL BE 50mm IN 2 LAYERS OF 25mm EACH FOR ALL ROADS. FIRST LAYER SHALL BE PROVIDED DURING CONSTRUCTION AND THE SECOND LAYER AFTER COMMISSIONING OF THE PLANT. THE SAME SHALL BE IN LINE WITH CLAUSE NO. 19.06.00 OF T.S.
 10. SHOULDER SHALL BE KEPT MIN. 200mm ABOVE ROAD LEVEL.
 11. THE ROAD WORKS SHALL BE STARTED ONLY AFTER CONFIRMATION OF THE CBR VALUE. THE RELEVANT ROAD SECTION SHALL BE ADOPTED BASED ON THE CBR VALUE. THIS DRAWING SHALL NEED TO BE REVISED IN CASE CBR IS FOUND BELOW 4% AT ANY PLACE.
 12. THE ROAD LAYOUT DETAILS OF ACCESS ROADS FOR ALL BUILDING/FACILITIES SHALL BE INCORPORATED AFTER THE FINAL LAYOUT.
 13. SLOP IN PATROL ROAD SHALL BE SUIT TO SITE AS PER DRAINAGE ARRANGEMENT.
 14. GRADE OF CONCRETE FOR R.C.C. WORK SHALL BE M20.
 15. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE 30mm FOR PIT & DRAIN.
 16. BARS DISCONTINUED BY 1 DENSIVE HIGH YIELD STRENGTH DEFORMED BARS F400 (DSE) CONFORMING TO IS:1786-1985.
 17. LAPS IN BAR SHALL BE PLACED STAGGERED AND REINFORCEMENTS MAY BE ADJUSTED LOCALLY AT SITE TO SUIT CONCRETE PROFILE, CROSS REINFORCEMENTS, INSERTS ETC AS REQUIRED.
 18. LAP LENGTH SHOULD BE 50D, D=BAR DIA.
 19. CUTTING AND FILLING ALONG THE LAYOUT OF MAIN ROAD (NTPC SCOPE) WILL BE ADJUSTED AS PER GROUND PROFILE.
 20. FOR PLOT PLAN REFER DRG. NO. 7010-155-PVM-F-002.

LEGEND :-

RAIL TRACK	GP = CATCH PIT	5.0 M WIDE ROAD = 1135 M LENGTH (APPROX)
ROAD	SP = START POINT	3.5 M WIDE ROAD = 110 M LENGTH (APPROX)
STORM WATER DRAIN	EP = END POINT	
BOUNDARY WALL	GDR = GARLAND DRAIN	
MAIN DRAIN	MDR = MAIN DRAIN	
R.C.C. DRAIN FOR MAINTENANCE AND LOADING /UNLOADING AREA	HPC = HUMPE PIPE CULVERT	
	CV = CULVERT	

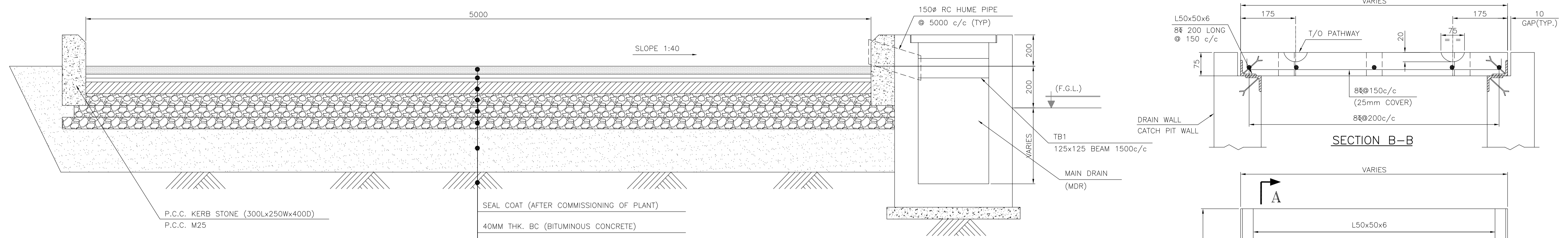
NTPC DRG. NO. - 7010-155-PVC-L-142		REV.01
PROJECT	PAKRI BARWADIH COAL MINING PROJECT	
PACKAGE	MECHANICAL TRANSPORT & LOADING ARRANGEMENT FROM TP-10 TO BANADAG RAILWAY SIDING	
CLIENT	NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)	
NTPC CONTRACTOR.	BTL EPC LTD (MATERIAL HANDLING PROJECT DIVISION) 2, JESSORE ROAD, KOLKATA-700028	
	DRAWN	DESIGN
	NAME	CHKD
	S.DAS	O.SHOME
	DATE	DATE
	07.10.2023	07.10.2023
	SCALE : 1:1050	
	BTL JOB NO. MHPD-1278	
	BTL DRG. NO.-	REV.
	A1-1278-C-1-1-057	1
	SHEET 1	

REV.	DESCRIPTION	DATE	DRN.	CHKD.	APVD.
1	REVISED AS PER NTPC COMMENTS	01.11.2023	S.DAS	O.SHOME	

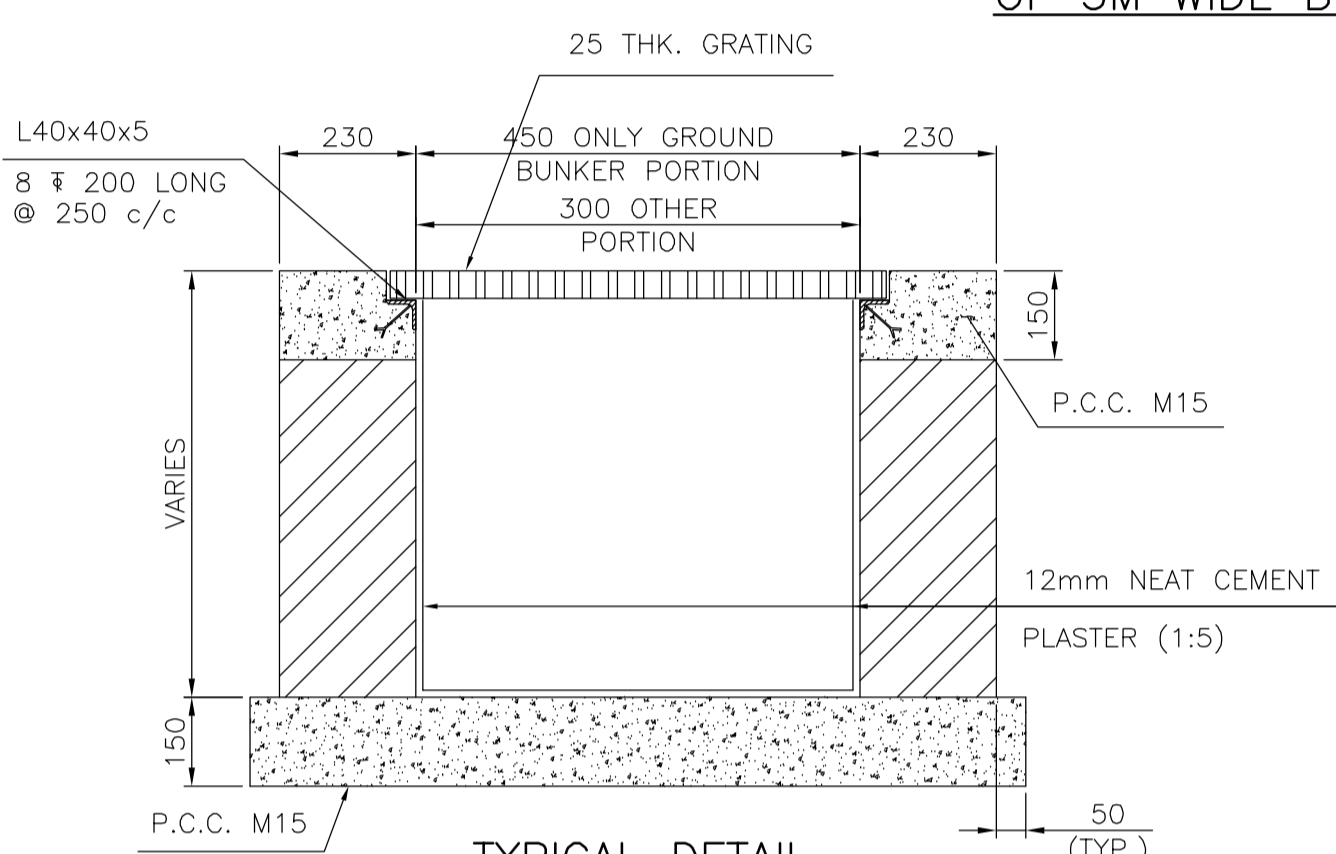
COMPLIANCE SHEET

SI NO.	NTPC COMMENTS	BTL'S REPLY
1	PROVIDE RCC DRAIN DETAILS AT AND AROUND MAINTENANCE AND LOADING /UNLOADING AREA.	INCORPORATED
2	WMM	INCORPORATED
3	250MM GRANULAR SUB BASE GRADE-1	INCORPORATED
4	100MM WMM	INCORPORATED
5	Dense Graded Bituminous Macadam with VG-30	INCORPORATED
6	PROVIDE DETAILS	INCORPORATED

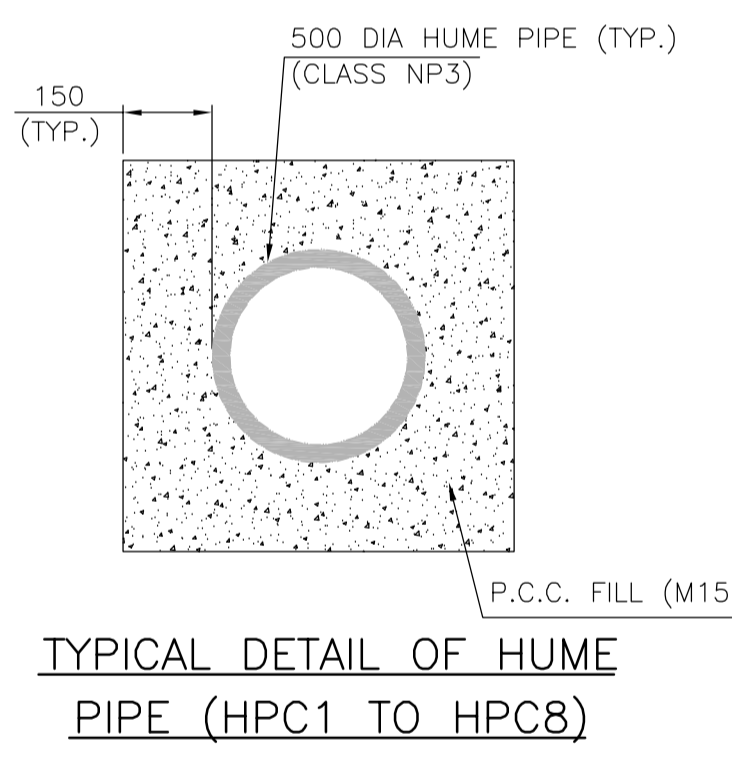
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TYPICAL CROSS SECTIONAL DETAIL OF 5M WIDE BITUMEN ROAD

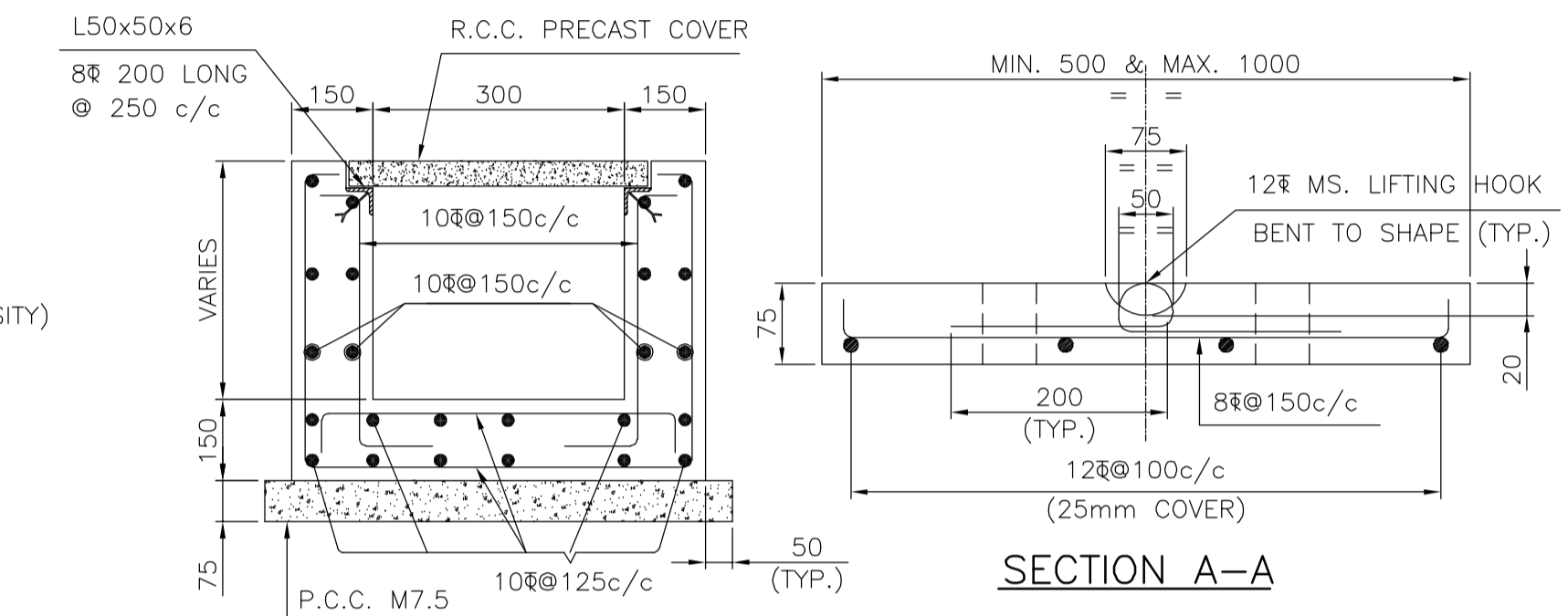


TYPICAL DETAIL OF BRICK DRAIN (GDR)

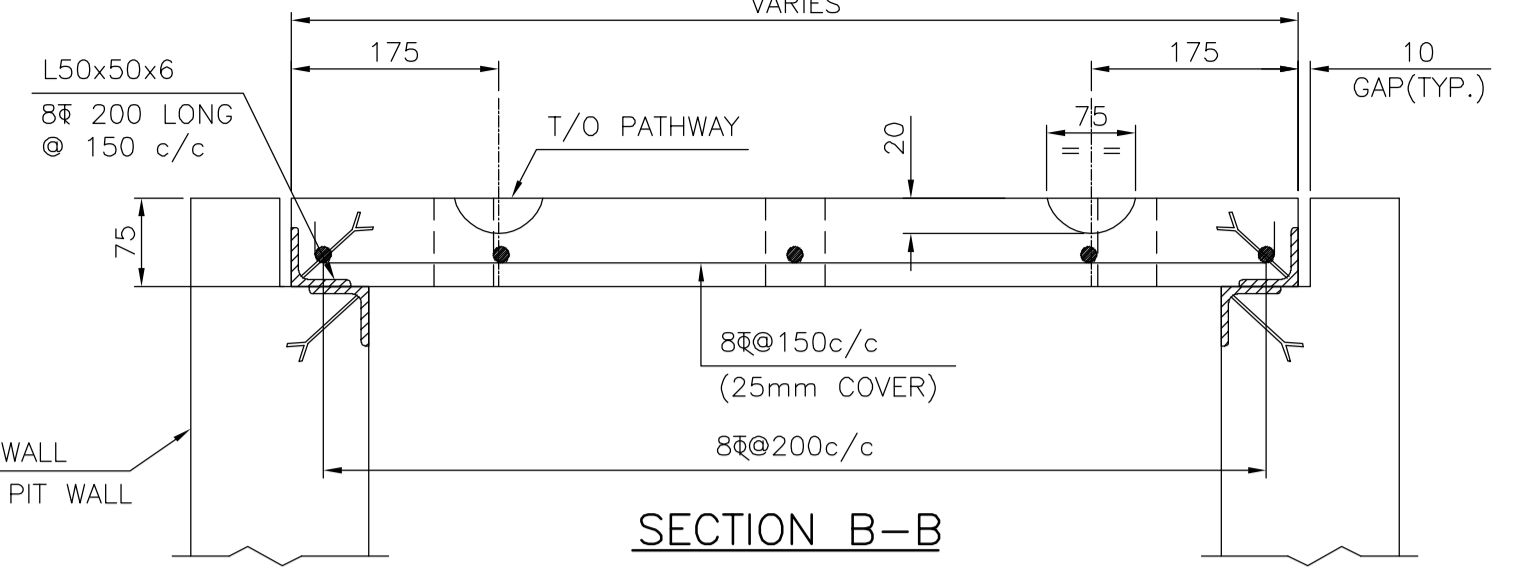


TYPICAL DETAIL OF HUME PIPE (HPC1 TO HPC8)

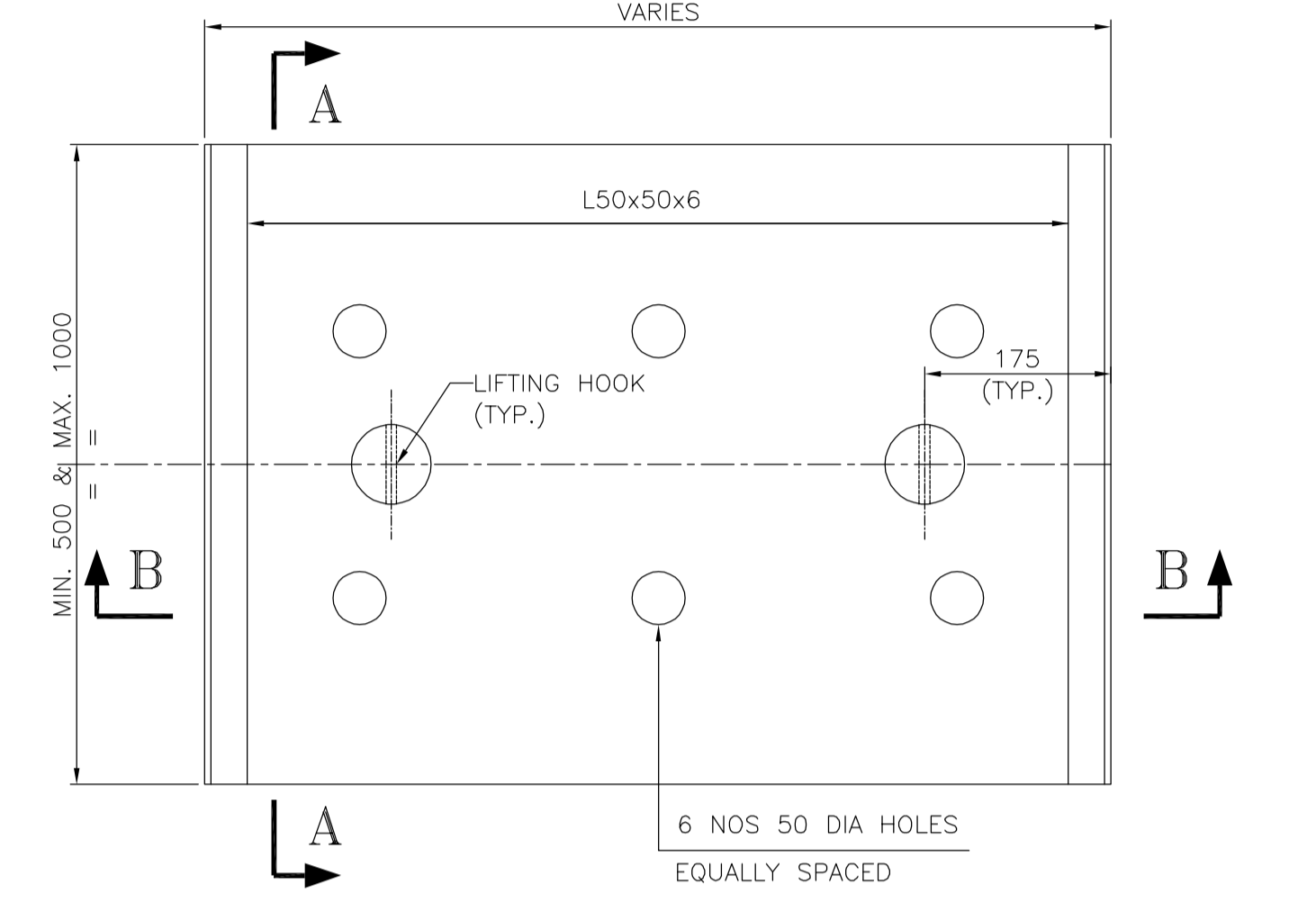
- SEAL COAT (AFTER COMMISSIONING OF PLANT)
- 40MM THK. BC (BITUMINOUS CONCRETE)
- 75MM THK SURFACE FOR CBR 4 - 6 % (DENSE GRADED BITUMINOUS MACADAM WITH VG-30)
- 75MM WMM
- 75MM WMM
- 100MM WMM
- 250MM GRANULAR SUB BASE GRADE-1 (MINIMUM COMPACTION OF SUB-GRADE SHALL BE 95% OR MORE OF MODIFIED PROCTOR MAXIMUM DRY DENSITY)
- WELL COMPACTED EARTH



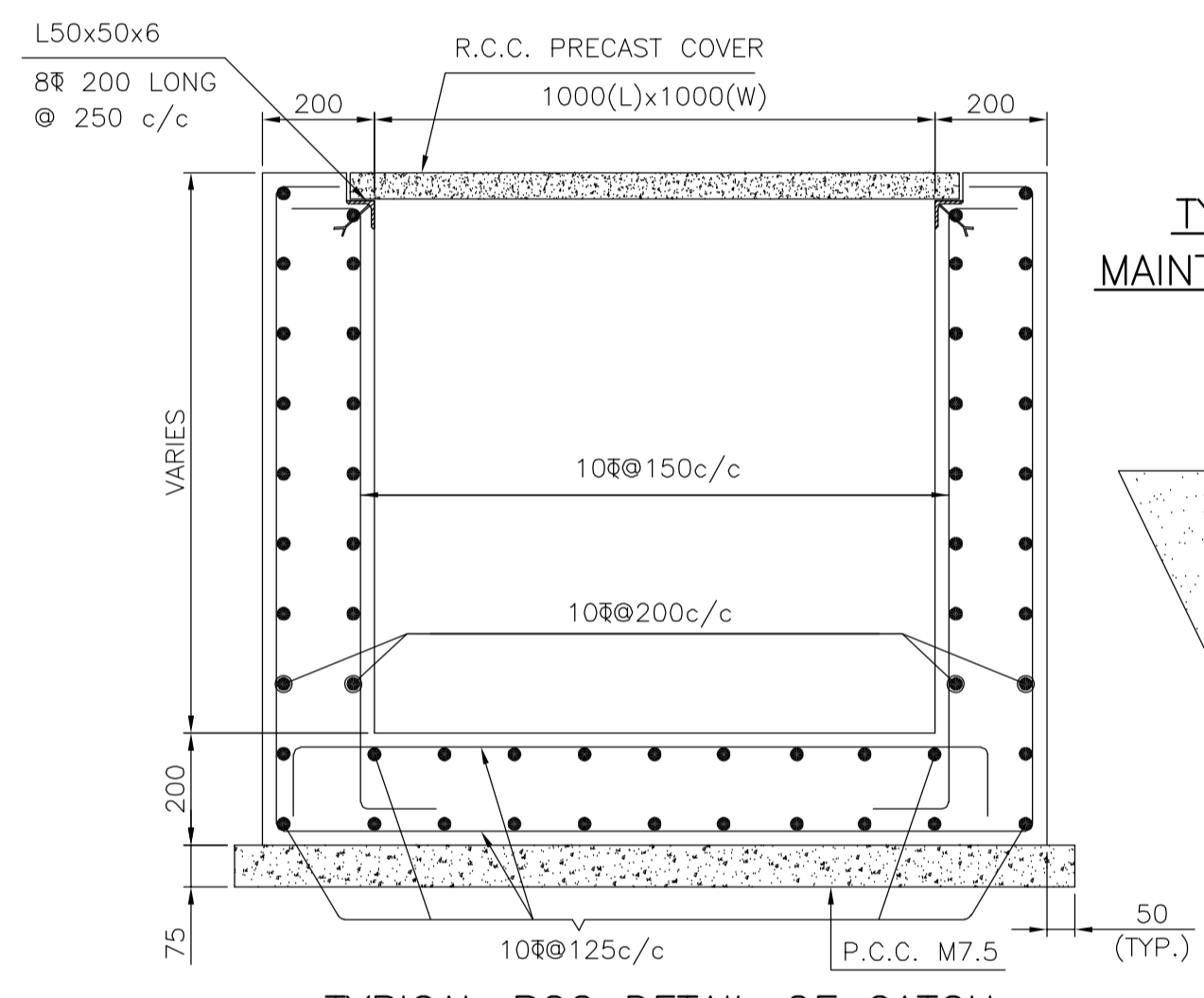
TYPICAL R.C.C. DETAIL OF DRAIN FOR MAINTENANCE AND LOADING /UNLOADING AREA



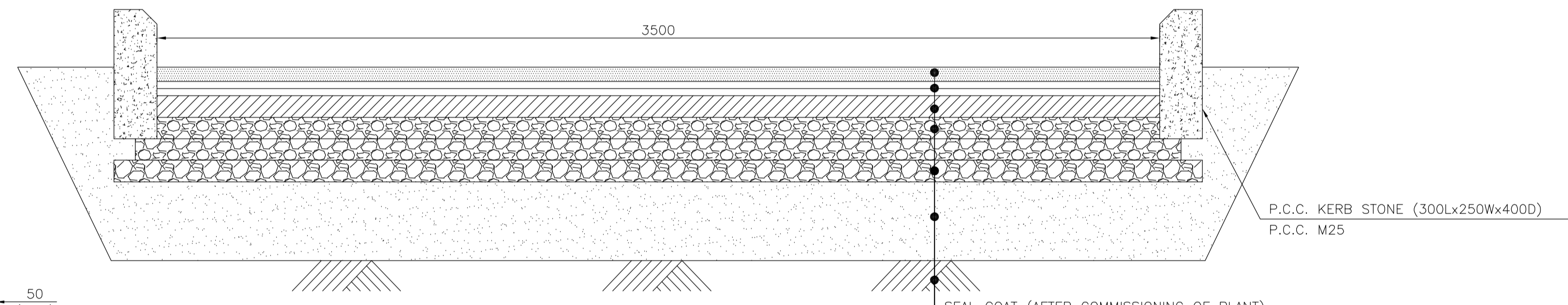
SECTION B-B



TYP. DETAIL OF PRECAST COVER SLAB (PERFORATED) AT RCC DRAIN LOCATION
(WEIGHT NOT MORE THAN 65 KG/PCS)

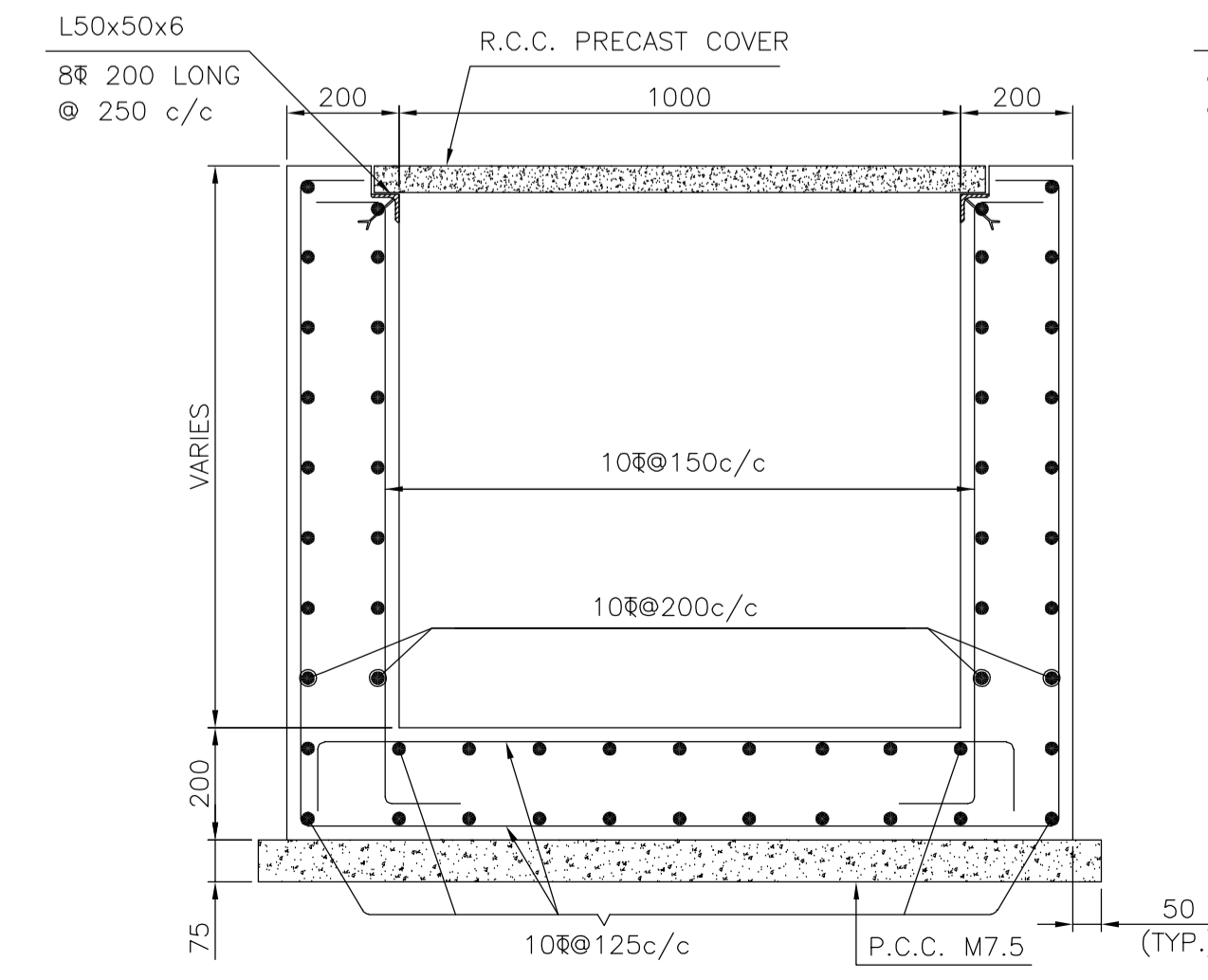


TYPICAL R.C.C. DETAIL OF CATCH PIT MKD. (CP1 TO CP3)

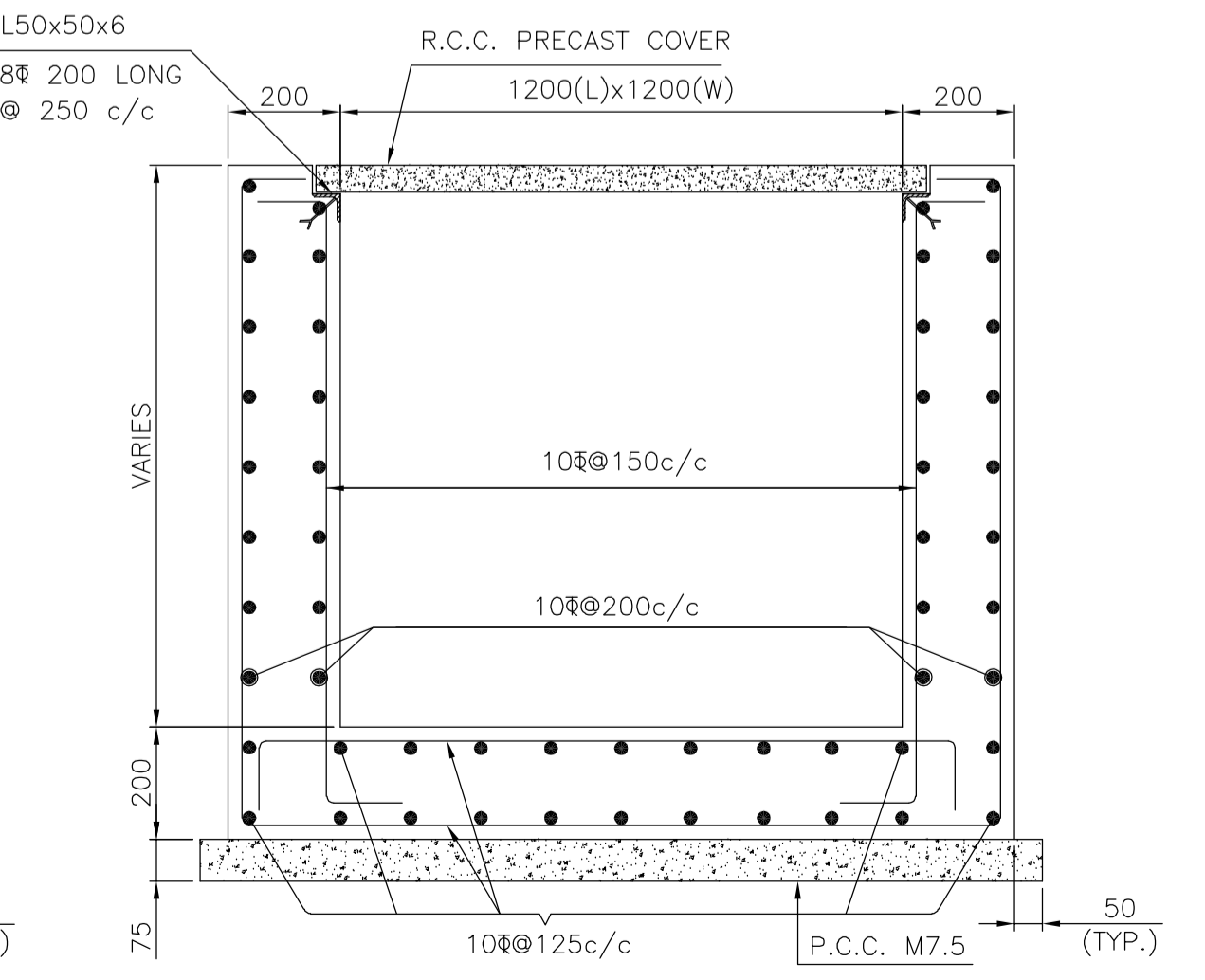


TYPICAL CROSS SECTIONAL DETAIL OF 3.5M WIDE BITUMEN ROAD

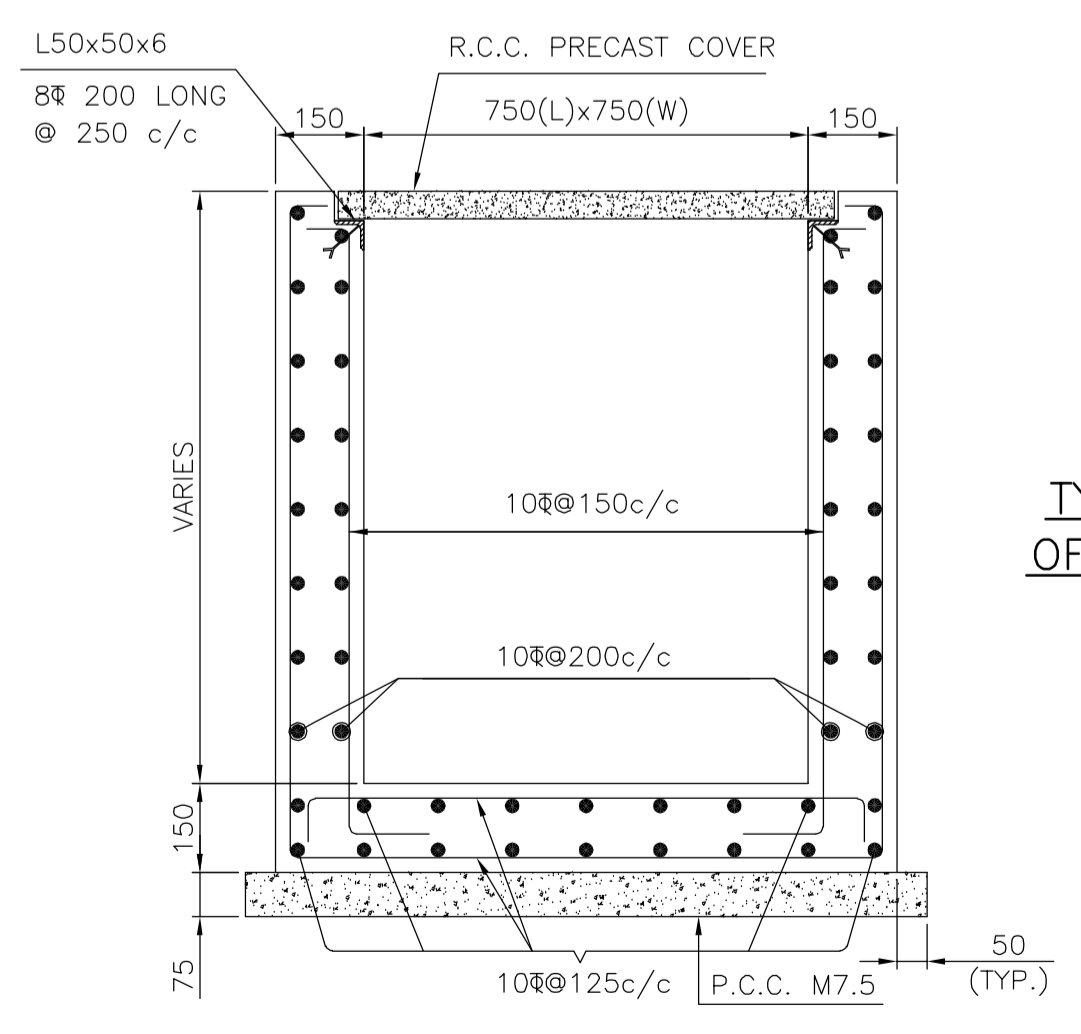
- SEAL COAT (AFTER COMMISSIONING OF PLANT)
- 40MM THK. BC (BITUMINOUS CONCRETE)
- 75MM THK SURFACE FOR CBR 4 - 6 % (DENSE GRADED BITUMINOUS MACADAM WITH VG-30)
- 75MM WMM
- 75MM WMM
- 100MM WMM
- 250MM GRANULAR SUB BASE GRADE-1 (MINIMUM COMPACTION OF SUB-GRADE SHALL BE 95% OR MORE OF MODIFIED PROCTOR MAXIMUM DRY DENSITY)
- WELL COMPACTED EARTH



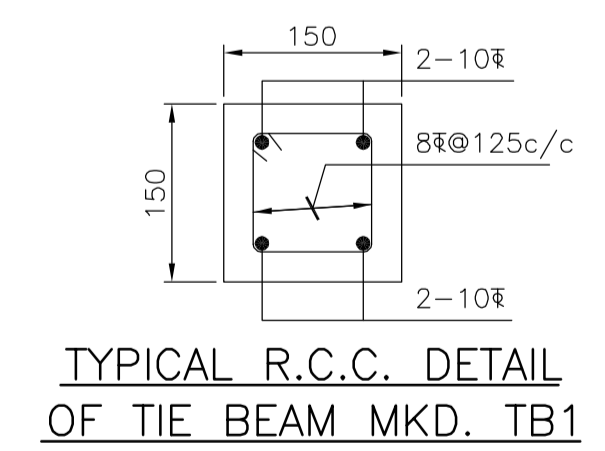
TYPICAL R.C.C. DETAIL OF MAIN DRAIN (MDR)



TYPICAL R.C.C. DETAIL OF MAIN DRAIN PIT MKD. (MDP1 TO MDP14)



TYPICAL R.C.C. DETAIL OF CATCH PIT MKD. (CP4 TO CP9)



TYPICAL R.C.C. DETAIL OF TIE BEAM MKD. TB1

- NOTES :-**
- ALL DIMENSION ARE IN MILLIMETER AND ELEVATIONS IN METERS.
 - TACK COAT TO BE APPLIED BETWEEN TOP LAYER OF 'WMM' AND 'DBM' & BETWEEN 'DBM' AND 'BC'.
 - FOR OTHER NOTES REFER DRG. NO. 7010-155-PVC-L-142.

NTPC DRG. NO. - 7010-155-PVC-B-143		REV.01														
PROJECT	PAKRI BARWADIH COAL MINING PROJECT															
PACKAGE	MECHANICAL TRANSPORT & LOADING ARRANGEMENT FROM TP-10 TO BANADAG RAILWAY SIDING															
CLIENT	NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)															
NTPC CONTRACTOR.	BTL EPC LTD (MATERIAL HANDLING PROJECT DIVISION) 2, JESSORE ROAD. KOLKATA-700028															
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NAME	S.DAS	O.SHOME	O.SHOME													
DATE	07.10.2023	07.10.2023	07.10.2023													
DRAWN	DESIGN	CHKD														
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	SCALE : 1:25															
	BTL JOB NO. MHPD-1278															
TITLE :	BTL DRG. NO.-	REV.														
	A1-1278-C-1-1-058	SHEET 1/1														

REV.	DESCRIPTION	DATE	DRN.	CHKD.	APVD.
1	REVISED AS PER NTPC COMMENTS	01.11.2023	S.DAS	O.SHOME	O.SHOME