EPC PACKAGE FOR LARA SUPER THERMAL POWER PROJECT, STAGE-II (2x800 MW)
Amendment No. 04 to Technical Specifications Section-VI of Bidding Document No.: CS-9587-001R-2

S. No.	SPECIFICATION REFERENCE				Instead of	Read as
	Section / Part	Sub-Section	Clause No.	Page No.		
Gen-01	VI/A	I	4.02.00	5 of 9	Pre-commissioning and commissioning activities The contractor's scope shall …..…… ……. ……both the units. These quantities for both coal and fuel oil shall be compared with the respective quantities as quoted by various bidders. The quantities over & above the base value (minimum among the quoted figures for coal & fuel oil) shall be used as a loading factor and corresponding computed price (total for coal & fuel oil) shall be added to the quoted bid price for deriving the total bid price. The cost of coal & fuel oil shall be used as Rs. 1790/Ton (Rupees one Thousand seven Hundred and ninety only per ton of coal) Rs. 40,000/KL (Rupees Forty Thousand per KL of fuel oil) for such purpose. Further, during execution ……..	Pre-commissioning and commissioning activities The contractor's scope shall …..…… ……. ……. both the units. **These quantities for both coal and fuel oil shall be considered for purpose of evaluation.** The cost of coal & fuel oil shall be used as Rs. 1790/Ton (Rupees one Thousand seven Hundred and ninety only per ton of coal) **and** Rs. 40,000/KL (Rupees Forty Thousand per KL of fuel oil) **respectively** for such purpose. Further, during execution ……..
MH-47	VI/A	IIA-16	1.01.08 (b)	11 of 15	**Two (2) numbers** secondary crushers **(1Working +1 Standby)** at the outlet of each Belt weigh feeder to discharge the bottom ash to Mixing tank shall be provided, total **12 numbers** for both units.	Secondary crusher at the outlet of each Belt weigh feeder to discharge the bottom ash to Mixing tank shall be provided, total **6 numbers** of secondary Crushers for both units.

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MH-48	VI	ANNEXURE_LHP-PART B	2.0.0	1 of 12	**Unloading**, **Crushing and conveying System for Limestone** Two (2) numbers…….facilities. A mechanized……. crusher. "As received" limestone shall be fed on the single stream conveyors from where the same shall be conveyed upto the crushers. The crushed limestone shall be conveyed by single stream conveyors/Bucket elevators up to the limestone storage Silo. From the limestone storage Silo, crushed limestone and feed the same onto **double** stream conveying system up to the limestone day silos.	**Unloading**, **Crushing and conveying System for Limestone** Two (2) numbers…….facilities. A mechanized……. crusher. "As received" limestone shall be fed on the single stream conveyors from where the same shall be conveyed upto the crushers. The crushed limestone shall be conveyed by single stream conveyors/Bucket elevators up to the limestone storage Silo. From the limestone storage Silo, crushed limestone and feed the same onto **Single** stream conveying system up to the limestone day silos.
MH-49	VI/A	VI- Mandatory Spares	CHAPTER-04 COAL HANDLING PLANT 1 (O) (g)	9 of 20	Coupling bolts & nuts (with bushes) 2 sets - 1 sets each type & size	Coupling bolts & nuts (with bushes) - **2** sets each type & size

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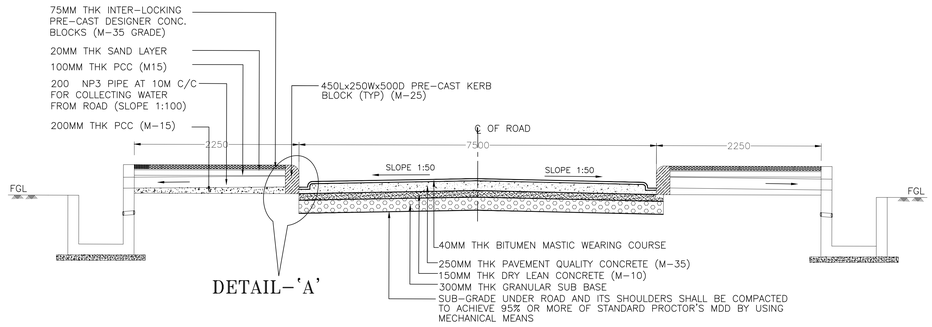
S. No.	SPECIFICATION REFERENCE				Instead of	Read as
	Section / Part	Sub-Section	Clause No.	Page No.		
PIP2-01	Amendment no 2 to technical specification **PIP1-05**				15b) safety valves, relief valves and safety relief valves up to 50 NB size (if applicable) — 02 nos. of each type, material, size & class per unit 15c) Steam trap & Y strainer above 50 NB (if applicable) — 02 nos. of each type, material, size & class per unit	15b) **Steam trap & Y strainer above 25 NB & up to 50 NB** (if applicable) — **05** nos. of each type, material, size & class per unit 15c) Steam trap & Y strainer above 50 NB (if applicable) — 02 nos. of each type, material, size & class per unit
WS3-01	VI/A	I-B	Annexure -IIIA	09 OF 22	Raw water Analysis	Raw water Analysis revised as placed at **Appendix-I** to this amendment.
D4-01	VI/B	**D-1-5**	**5.05.05**	**35 OF 86**	**The Silo utility building complex** shall be fenced with chain linked fencing, if placed inside the plant boundary and shall be confined with boundary wall if placed outside plant boundary. Gates shall be provided for rails, truck movement and transformers. The boundary wall shall be of one brick thick of height 2.4 m ……	**The Silo Area complex including Dewatering Bin area** shall be fenced with chain linked fencing, if placed inside the plant boundary and shall be confined with boundary wall if placed outside plant boundary. Gates shall be provided for rails, truck movement and transformers. **Fencing/Boundary with gate shall be located such that independent access to the area is available.** The boundary wall shall be of one brick thick of height 2.4 ……

<table>
<tr><th rowspan="2">S. No.</th><th colspan="4">SPECIFICATION REFERENCE</th><th>Instead of</th><th>Read as</th></tr>
<tr><th>Section / Part</th><th>Sub-Section</th><th>Clause No.</th><th>Page No.</th><th></th><th></th></tr>
<tr><td>D4-02</td><td colspan="4">TECHNICAL AMENDMENT D2-13</td><td>At the entrance of all common control rooms in MPH G.I. framed with fire resistant glass, sliding doors shall be provided……</td><td>Electrically operated, self operable/closing, aluminium framed with tinted glass, sliding doors shall be provided at the entrance of all common control rooms, entrance lobby of facility building.
At the entrance of all common control rooms in MPH G.I. framed with fire resistant glass, sliding doors shall be provided……..</td></tr>
<tr><td>D4-03</td><td colspan="4">TECHNICAL AMENDMENT D3-01</td><td>9587-001-POC-A-06 Rev -B</td><td>9587-001-POC-A-06 Rev -C</td></tr>
<tr><td>SG1-41</td><td>VI/A</td><td>VI- Mandatory Spares</td><td>CHAPTER -01 SG Auxiliaries 1.10.00 A) (8)</td><td>10 of 38</td><td><table><tr><td>8</td><td>Air Motor</td><td>nos. each for PAPH & SAPH</td></tr></table></td><td><table><tr><td>8</td><td>Air Motor</td><td>2 nos. each for PAPH & SAPH</td></tr></table></td></tr>
</table>

Appendix-I

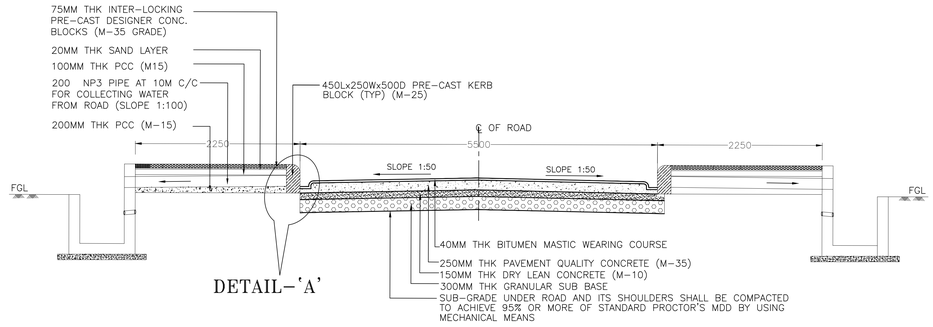
RAW WATER ANALYSIS- Lara stg-II (2x800MW)

Sl. No.	Parameters	Unit	Design Values
1	pH		8.2
2	Turbidity	NTU	500
3	P-Alkalinity	mg/l as $CaCO_3$	--
4	M-Alkalinity	mg/l as $CaCO_3$	149
5	Total Hardness	mg/l as $CaCO_3$	216
6	Calcium	mg/l as $CaCO_3$	132
7	Magnesium	mg/l as $CaCO_3$	84
8	Chloride	mg/l as Cl	40
9	Sulphate	mg/l as SO_4	84
10	Total Silica	mg/l as SiO_2	24.6
11	Colloidal Silica	mg/l as SiO_2	4.8
12	Reactive Silica	mg/l as SiO_2	19.8
13	Sodium + Potassium	mg/l as Na	56
14	Total Organic Carbon (TOC)	mg/l	5
15	Chemical Oxygen Demand (COD)	mg/l	15
16	Biological Oxygen Demand (BOD)	mg/l	5
17	Equivalent Mineral Acid (EMA)	mg/l	124
18	Total Suspended Solids (TSS)	mg/l	
19	Total Iron	mg/l as Fe	0.92
20	$KMnO_4$ No.	mg/l	2.8
21	Dissolved Oxygen (DO)	mg/l	7-8
22	Temperature	Deg C	28-36
23	TDS	ppm	307
24	Total cations	mg/l as $CaCO_3$	272
25	Total anions	mg/l as $CaCO_3$	272



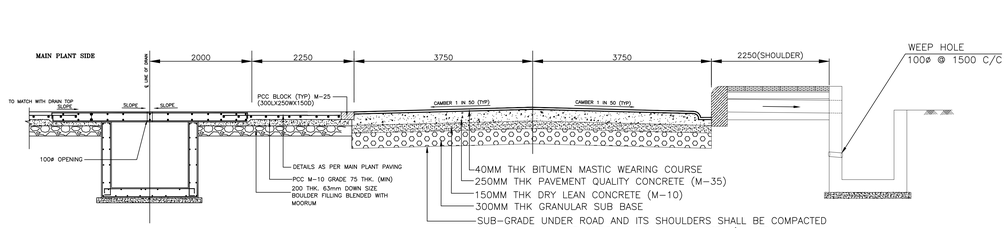
DETAIL-'A'

TYPICAL CROSS SECTION OF DOUBLE LANE ROAD (WITH RAISED SHOULDERS)

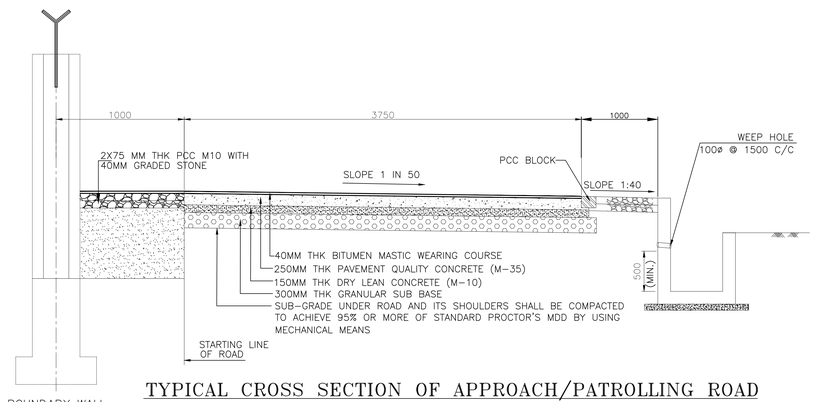


DETAIL-'A'

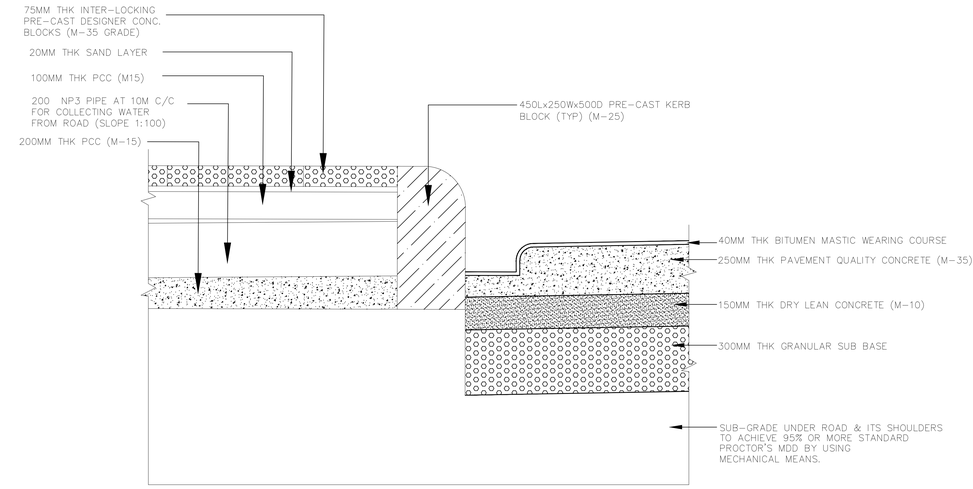
TYPICAL CROSS SECTION OF INTERMEDIATE LANE ROAD (WITH RAISED SHOULDERS)



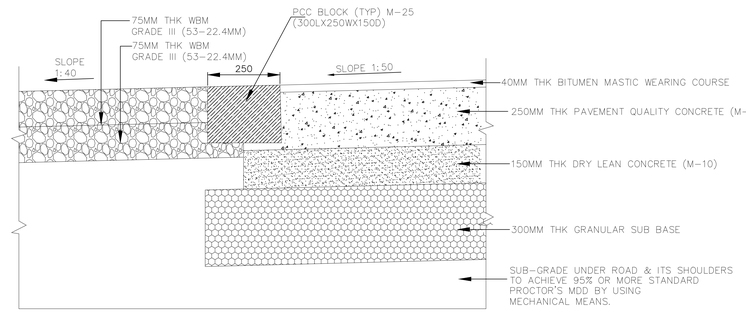
TYPICAL CROSS SECTION OF DOUBLE LANE SURROUNDING MAIN POWER HOUSE



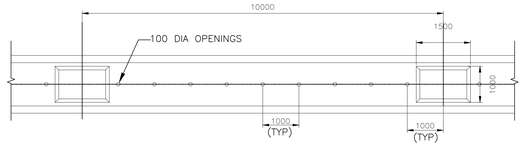
TYPICAL CROSS SECTION OF APPROACH/PATROLLING ROAD (ALONG BOUNDARY WALL)



DETAIL-'A'

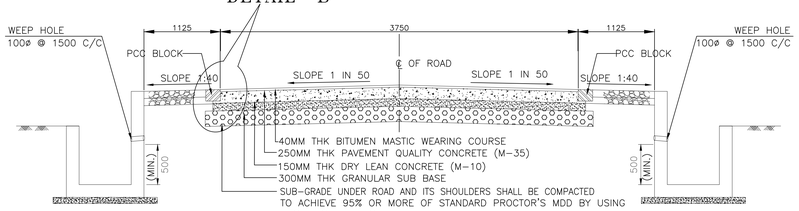


DETAIL-'B'

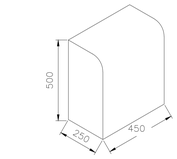


MANHOLE/DRAIN COVER LAYOUT PLAN IN MAIN PLANT AREA (TYPICAL)

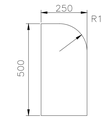
DETAIL-'B'



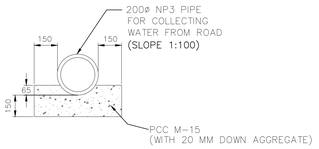
TYPICAL CROSS SECTION OF SINGLE LANE ROAD (WITH FLAT SHOULDERS)



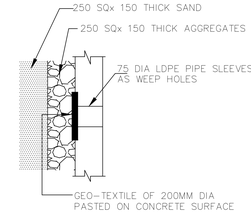
ISOMETRIC VIEW OF KERB BLOCK



DETAILS OF KERB BLOCK



SECTION B
DETAILS OF 200 DIA NP3 PIPES LAYING AT 10M C/C
(CONTINUOUS CRADLE BEDDING)



DETAILS OF WEEP HOLES

NOTES

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN METRES.
2. TOP OF ROAD CREST LEVEL SHALL BE 350MM ABOVE THE FINISHED GROUND LEVEL(FGL).
3. THE CREST LEVEL OF THE ROAD SHALL CORRESPOND TO THE LEVEL AT THE TOP OF CONCRETE PAVEMENT AT THE CENTRE OF ROAD.
4. CAMBER SHALL BE PROVIDED AT SUBGRADE LEVEL.
5. ALL EXCAVATION WORK, BACK FILLING, LAYING OF VARIOUS LAYERS OF ROAD CONSTRUCTION SHALL BE AS PER TECHNICAL SPECIFICATIONS.
6. NO MATERIAL WITH CBR VALUE LESS THAN 100% SHOULD BE USED IN BASE CONSTRUCTION.
7. THE SHOULDERS ON BOTH SIDES OF THE ROAD SHALL BE PROPERLY COMPACTED.
8. ROAD CONSTRUCTION SHALL BE DONE AS PER DETAIL DRAWING OF ROAD.
9. CONCRETE SHALL BE OF GRADE M25 FOR DRAINS AND CULVERTS AS PER IS: 456-2000.
10. CONCRETE MENTIONED IN ROAD PAVEMENT SHALL BE READ AS GEO-POLYMER CONCRETE

REFERENCE DRAWING

1. 9587-999-POC-F-001 TITLED 'GENERAL LAYOUT PLAN'
2. 9587-001-POC-A-005 TITLED 'LAYOUT OF ROADS'

FOR TENDER PURPOSE ONLY

REV.NO.	DESCRIPTION	DRN	DESIGN	CHKD.	M	E	C	C&I	ES	APPD	DATE
					CLEARED BY						
C	FOR TENDER PURPOSE ONLY	TSY	KK	VK	–	–		–	–		11.01.23
B	FOR TENDER PURPOSE ONLY	TSY	KK	VK	–	–		–	–		02.01.23
A	FOR TENDER PURPOSE ONLY	TSY	KK	VK	–	–		–	–		28.12.22
0	FOR TENDER PURPOSE ONLY	MANOJ	KK		–	–		–	–		24.08.22

एन टी पी सी NTPC

NTPC Limited
(A GOVERNMENT OF INDIA ENTERPRISE)
ENGINEERING DIVISION

PROJECT: LARA SUPER THERMAL POWER PROJECT (STAGE-II 2X800MW)

PACKAGE:

TITLE: DETAIL'S OF ROADS

SIZE	SCALE	DRG. NO.	REV. NO.
A1	NTS	9587-001-POC-A-06	C

FILE NAME: 9587-001-POC-A-06

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<tr><td>TG3-01</td><td>VI/A</td><td>IA</td><td>3.1 Sl. No. (j) Condensate Extraction Pumps (CEP)</td><td>3 of 36</td><td>
<table>
<tr><th>Name of equipment</th><th>Type of equipment</th><th>Equipment rating</th></tr>
<tr><td>Condensate Extraction Pumps (CEP)</td><td>Vertical, cannister with double suction first stage impeller for steam turbine generator sets</td><td>Capacity not less than 1025 Ton/ hr and total developed Head not less than 30 Kg/cm2
OR
Capacity not less than 880 Ton/ hr (in case drip pumps are used) and total developed Head not less than 30 Kg/cm2</td></tr>
</table>
</td><td>
<table>
<tr><th>Name of equipment</th><th>Type of equipment</th><th>Equipment rating</th></tr>
<tr><td>Condensate Extraction Pumps (CEP)</td><td>Vertical, cannister with double suction first stage impeller for steam turbine generator sets</td><td>Condensate Extraction Pump (CEP) rating not less than that supplied for minimum 660 MW size Steam Turbine Generator Unit</td></tr>
</table>
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<tr><td>TG3-02</td><td>VI/A</td><td>IA</td><td>3.1 Sl. No. (o) Boiler Feed Pumps (BFP)</td><td>3 of 36</td><td>
<table>
<tr><th>Name of equipment</th><th>Type of equipment</th><th>Equipment rating</th></tr>
<tr><td>Boiler Feed Pumps (BFP)</td><td>Horizontal, centrifugal, multistage, outer casing barrel type with end rotor removal for supercritical steam turbine generator sets</td><td>Capacity not less than 1250 Ton/ hr and total developed Head not less than 320Kg/cm2</td></tr>
</table>
</td><td>
<table>
<tr><th>Name of equipment</th><th>Type of equipment</th><th>Equipment rating</th></tr>
<tr><td>Boiler Feed Pumps (BFP)</td><td>Horizontal, centrifugal, multistage, outer casing barrel type with end rotor removal for supercritical steam turbine generator sets</td><td>Boiler Feed Pump (BFP) rating not less than that supplied for minimum 660 MW size Super-critical Steam Turbine Generator Unit</td></tr>
</table>
</td></tr>
<tr><td>TG3-03</td><td>VI/A</td><td colspan="3">Attachment-3K for
D. BOILER FEED PUMPS
Page 185 of 401</td><td>----------</td><td>New clause added:

1.15.00 Steam parameters at Turbine inlet (Main Steam Pressure(kg/cm2 (abs.)) /Main Steam Temperature(Deg. C)/ Hot Reheat Steam Temperature(Deg. C)) : ----------</td></tr>
</table>

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	Section / Part	Sub-Section	Clause No.	Page No.		
QA-01	VI/B	E-12	1.00.00 (5)	3 of 4	Visual Cavitation Test on one first stage production impeller of Boiler Feed Pump shall be carried out to demonstrate absence of Cavitation at Design Speed in Cold Water. The test will establish the cavitation characteristic of one production first stage impeller to confirm that the cavity length under dynamically scaled site conditions corresponding to design point will not exceed an agreed size. This test shall be carried out at 25%, 50%,65%,80%,100% and 125% of Design Flow.	Deleted