

Corrigendum - 3 dated 23/06/2025 to CPC Tender No. BHEL/CPC/SNG/MPB CVL/26/021

Corrigendum - 3 dated 23/06/2025 to CPC Tender No. BHEL/CPC/SNG/MPB_CVL/26/021 for the work of “Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancheria, Telangana”.

A) Time Extension: Clause No. 1.0 Salient Features of NIT in NOTICE INVITING TENDER is revised as below:

Sl. No.	Clause No.	Existing in Tender	Revised Vide Corrigendum - 2	Revised As
1	Sl. No. v) DUE DATE & TIME OF OFFER SUBMISSION.	Date:16/06/2025, Time: 10:00 Hrs	Date: 23/06/2025, Time: 10:00 Hrs	Date: 27/06/2025, Time: 10:00 Hrs
2	Sl. No. vi) OPENING OF TENDER	Date: 16/06/2025, Time: 16:30 Hrs	Date: 23/06/2025, Time: 16:30 Hrs	Date: 27/06/2025, Time: 16:30 Hrs

B) Modification in PRE-QUALIFYING REQUIREMENTS (PQR): Some clauses of existing PRE-QUALIFYING REQUIREMENTS (PQR) (Annexure – 1) of NIT are **revised** as mentioned below;

Sl. No.	PQR Clause No.	Existing clause in Tender	Revised clause
1	B-1.1	Executed One (1) work of value not less than Rs. 25600 Lakhs against Single Work Order	Executed One (1) work of value not less than Rs. 24400 Lakhs against Single Work Order
2	B-1.2	Executed Two (2) works each of value not less than Rs. 16000 Lakhs against two work orders	Executed Two (2) works each of value not less than Rs. 15250 Lakhs against two work orders

Corrigendum - 3 dated 23/06/2025 to CPC Tender No. BHEL/CPC/SNG/MPB CVL/26/021

Sl. No.	PQR Clause No.	Existing clause in Tender	Revised clause
3	B-1.3	Executed Three (3) works each of value not less than Rs.12800 Lakhs against three work orders	Executed Three (3) works each of value not less than Rs.12200 Lakhs against three work orders
4	C-1	TURNOVER: Bidders must have achieved an average annual financial turnover (Audited) of Rs. 9600 lakhs or more over last three Financial Years (FY) ending on 31.03.2024 (i.e., FY 2021-22, 2022-23, 2023-24).	TURNOVER: Bidders must have achieved an average annual financial turnover (Audited) of Rs. 9150 lakhs or more over last three Financial Years (FY) ending on 31.03.2024 (i.e., FY 2021-22, 2022-23, 2023-24).
5	C-5	<p>1. a) The bidder shall submit a certificate (Annexure-11 or Annexure-12) for any of the below mentioned instruments of value/limit not less than Rs. 3200 Lakhs from any Scheduled Commercial Non-Cooperative Bank/ Nationalised Bank/ Indian Post Office, as on date not earlier than the date of NIT:</p> <ul style="list-style-type: none"> i). Cash ii). Bank Guarantee iii). Fixed Deposit iv). Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. <p align="center">OR</p> <p>1. b) The bidder shall submit a certificate (Annexure-13) for Insurance Surety Bond from any Insurance Company (IRDA approved) for a value not less than Rs. 3200 lakhs, as on date not earlier than the date of NIT.</p> <p align="center">AND</p> <p>2. a) The bidder shall submit a 'Certificate of Solvency' (Annexure-14) for a value not less than Rs. 6400 lakhs from any Scheduled Commercial Non-Cooperative Bank/ Nationalized Bank as on date, not earlier than the date of NIT.</p> <p align="center">OR</p>	<p>1. a) The bidder shall submit a certificate (Annexure-11 or Annexure-12) for any of the below mentioned instruments of value/limit not less than Rs. 3050 Lakhs from any Scheduled Commercial Non-Cooperative Bank/ Nationalised Bank/ Indian Post Office, as on date not earlier than the date of NIT:</p> <ul style="list-style-type: none"> i). Cash ii). Bank Guarantee iii). Fixed Deposit iv). Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. <p align="center">OR</p> <p>3. b) The bidder shall submit a certificate (Annexure-13) for Insurance Surety Bond from any Insurance Company (IRDA approved) for a value not less than Rs. 3050 lakhs, as on date not earlier than the date of NIT.</p> <p align="center">AND</p> <p>4. a) The bidder shall submit a 'Certificate of Solvency' (Annexure-14) for a value not less than Rs. 6100 lakhs from any Scheduled Commercial Non-Cooperative Bank/ Nationalized Bank as on date, not earlier than the date of NIT.</p> <p align="center">OR</p>

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Sl. No.	PQR Clause No.	Existing clause in Tender	Revised clause
		2. b) The bidder should furnish a letter for Unutilized line of credit (Annexure-15) from any Scheduled Commercial Non-Cooperative Bank/ Nationalized Bank, confirming the availability of unutilized line of credit limit (both fund based and non fund based) for a value not less than Rs. 6400 lakhs as on date, not earlier than the date of NIT.	3. b) The bidder should furnish a letter for Unutilized line of credit (Annexure-15) from any Scheduled Commercial Non-Cooperative Bank/ Nationalized Bank, confirming the availability of unutilized line of credit limit (both fund based and non fund based) for a value not less than Rs. 6100 lakhs as on date, not earlier than the date of NIT.

C) Modification in TECHNICAL CONDITIONS OF CONTRACT (TCC): Some clauses of existing TCC are revised as mentioned below;

Sl. No.	TCC Clause No.	Existing clause in Tender	Revised clause
1	2.5.13	Medical/First aid center/medicine purchased for emergency/Doctor purpose along with ambulance services with fuel and operator (round the clock) shall be arranged by BHEL for handling medical emergencies. Cost against these facilities shall be distributed / shared among the vendors working in Raghunathpur Project site proportionately based on contract value.	Medical/First aid center/medicine purchased for emergency/Doctor purpose along with ambulance services with fuel and operator (round the clock) shall be arranged by BHEL for handling medical emergencies. Cost against these facilities shall be distributed / shared among the vendors working in Project site proportionately based on contract value.
2	2.6.6	New Clause Added	Manpower hired/deployed by contractor for this project shall be monitored through online project monitoring system. All Personnel entering in to project site premises for carrying out any work shall be tracked. Tracking devices shall be provided by BHEL on first instance on free of cost basis to contractor limited 1000 number of manpower. In case of damage or missing of issued worker tag, Rs. 1000/- per tag will be charged for issuing new worker tag.
3	Chapter-X, PART B	% weightage of individual items of BOQ CUM RATE SCHEDULE w.r.t. the total price (as quoted by the bidder in "Part C of Vol-II-Price Bid")- attached separately.	Revised (Rev01) BOQ cum Rate Schedule is attached along with this corrigendum: % weightage of individual items of BOQ CUM RATE SCHEDULE w.r.t. the total price (as quoted by the bidder in "Part C of Vol-II-Price Bid")

Corrigendum - 3 dated 23/06/2025 to CPC Tender No. BHEL/CPC/SNG/MPB CVL/26/021

D) Some of the Bidders had asked queries in the published tender specification. The clarifications issued by BHEL are as below;

Sl. No.	Section/ Clause No	Specification	Bidder's Query	BHEL Clarification
1		Painting: Touch-up Painting (Applicable for Shop Fabricated Structure): All structures/ components shall be supplied from BHEL units/ designated workshops with finish coats of paint. Therefore, final painting is not applicable in the scope of contractor for Unit supplied items (until specifically mentioned in the tender). However, touch up painting (wherever required), incidental to the work, shall have to be done. Payment for application of Primer & Paint, including its supply, for touch-up works in shop fabricated structure shall be paid separately as per BOQ. Scaffolding & other consumables for such works has to be arranged by Contractor within the quoted rates.	<p>This is about painting quantity mentioned in the Price schedule vide SI No A2302, A2305, B2305 the quantity mentioned as 18,541 MT and as per the below mentioned items the quantity of painting has to be 1405 MT only – Pls clarify.</p> <p>1. Clause 2.9.11 states that final painting is excluded from the contractor's scope.</p> <p>2. As per rate schedule Painting activities applicable for Extra over ST A2301, B2301.</p> <p>A2301 - refers Erection of shop fabricated materials supplied from BHEL unit with Final Painting.</p> <p>B2301 - refers execution of both Fabrication& Erection activities material Issued by BHEL on Free basis</p> <p>Painting system i.e (Blasting, Primer, MIO, Final painting applicable for ST no B2301 Total qty 1405 MT only.</p>	Refer Revised (Rev01) BOQ cum Rate Schedule attached along with this corrigendum.
2			<p>As mentioned in Technical Qualification clause B.2.3 - 'Bidder should have completed & Handed over one STD deck > 190MW for mechanical erection in any power plant' we are not able to meet the qualification norms as required.</p> <p>We have completed 2 no's 75MW TG deck at Captive Power plant under private steel plant. Where as we are having vast experience to handle the major deck stab and we have been completed such a huge civil structure successfully with engaging enormous</p>	Tender Conditions shall prevail.

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Sl. No.	Section/ Clause No	Specification	Bidder's Query	BHEL Clarification
			scaffolding materials i.e. CW pump hose pump floor slab, Track hopper slab. under various BHEL projects. Hence, we hereby request you to amend the qualification clause with omitting TG accordingly and oblige.	
3			In continuation to the trial mail, we request your good self to kindly arrange the drawings for the subject work (scope of work involved in this project) towards rate analysis at an early date.	Drawings shall be released progressively during construction.

- 1) All other terms and conditions against this NIT shall remain unchanged.
- 2) This corrigendum is to be submitted duly signed and stamped along with the Techno-commercial bid (Part- I).

**for BHARAT HEAVY ELECTRICALS LTD
Sr. Manager/ SCT**

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A1.1	Construction of Worker's Accommodation sheds(120-125 workers) having adequate no. of rest rooms along with toilets etc. including associated civil and structural works on built, own and operate basis (ownership of sheds shall be in line with TCC) as per attached drawing, Standard Guidelines for Worker's Accommodation / Establishments at Project Site and Clause 3.11 & 3.12 of TCC for development of labour colony. Payment shall be released on completion of each shed/set as per attached drawing. Cement & Steel shall be in bidder's scope.	Set	18	50,00,000	9,00,00,000	
A1.2	Payment for Lease of land provided for labour colony area including all statutory clearances, expenses for agreement and any other incidental charges, etc. Mode of measurement:- Say Duration is 3 years, land lease area is 5 acres and Cost per acre of land for 1 year is Rs A. Unit Rate(per acre per month) shall be = Rs A / 12 and Total Amount payable finally - Rs A / 12 x 36 months(3 years) x 5 Acres. Note:- In case, land is provided by BHEL/Customer, this BOQ item shall not be operated.	acre-month	180	30,000	54,00,000	
A2	Deployment of QA/QC Engineer B.E (Civil with min. 3 years of experience) or Diploma holders with min. 5 years of experience in Civil construction quality management either in construction field or any NABL-Laboratories or any research institute like NCCBM/SERC/CGCRI/NTH or equivalent. Preference - Part time experience in QA/QC lab.	Man-Months	72			0.3146872211%
A3	Deployment manpower for QA/QC Testing Fresh B.E with min. 70% marks or Diploma holder with 3 years of experience in Civil construction quality management either in construction field or any NABL-Laboratories or any research institute like NCCBM/SERC/CGCRI/NTH or equivalent.	Man-Months	144			0.5034995538%
A4	Deployment of Laboratory Technician Previous experience of working as a Lab. Assistant in Civil construction quality management either in construction field or any NABL-Laboratories or any research institute like NCCBM/SERC/CGCRI/NTH or equivalent.	Man-Months	216			0.3776246653%
100	EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, equipments etc complete as per specification, drawing and as directed by engineer- in-charge for the following.					
101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, removing of surface water accumulated due to rain but excluding dewatering to lower the ground water table, dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level.					
a	Depth from ground level but not exceeding 2 m	CUM	243230			0.8032119367%
b	Depth exceeding 2 m but not exceeding 4 m	CUM	144281			0.5979046841%
c	Depth exceeding 4 m but not exceeding 6 m	CUM	74554			0.3861924458%
d	Depth exceeding 6 m but not exceeding 8 m	CUM	47726			0.3090280312%
e	Depth exceeding 8 m but not exceeding 10 m	CUM	11792			0.0916244867%
A102	Extra over ST No. 101,103,105 & 106 for dewatering of ground water by sump pump method/deep well systems per IS 9759. Ground water table shall be lowered up to 1 m below the founding level to make the site workable for foundation construction till backfilling up to ground level. Mode of measurement shall be the quantity of excavation of soil including ash below ground water table to founding level of the footing.	CUM	167052			1.1898362680%
103	Earth work in excavation in soft rock including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, removing of surface water accumulated due to rain or any other reason (but excluding dewatering to lower the ground water table), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.					
a	Depth from ground level but not exceeding 2 m	CUM	100			0.0004888660%
b	Depth exceeding 2 m but not exceeding 4 m	CUM	1343			0.0078785637%
c	Depth exceeding 4 m but not exceeding 6 m	CUM	15719			0.1106565678%
d	Depth exceeding 6 m but not exceeding 8 m	CUM	6305			0.0532621408%
e	Depth exceeding 8 m but not exceeding 10 m	CUM	6466			0.0628155358%
105	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, removing of surface water accumulated due to rain or any other reason (but excluding dewatering to lower the ground water table), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.					
c	Depth exceeding 4 m but not exceeding 6 m	CUM	100			0.0020040266%
d	Depth exceeding 6 m but not exceeding 8 m	CUM	1442			0.0346870141%
e	Depth exceeding 8 m but not exceeding 10 m	CUM	3153			0.0871755475%
106	Earth work in excavation in hard rock requiring chiselling including setting out, levelling, removing of surface water accumulated due to rain or any other reason (but excluding dewatering to lower the ground water table), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 1Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.					
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1211			0.0405916109%
A107	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300mm compacted thickness using/with selected materials from compulsorily excavated earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.					

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
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ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
a	at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	213569			0.7190918984%
A108	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm compacted thickness using/with selected earth directly from excavation within a lead upto 1Km and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following:					
a	at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	8190			0.0234395359%
A109	Extra over ST No. 101, 103 to 106, A107and A108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.					
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	334767			0.1408960556%
A111	Supplying and filling clean and well graded natural river sand (conforming to IS 383 with grading zone I to III) upto any depth under floors, around foundations, plinths, paving, tank foundations, etc. in layers not exceeding 300mm compacted thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.	CUM	95210			7.2529942761%
B111	Supplying and filling clean sand manufactured from other than natural sources upto any depth under floors, around foundations, plinths, paving, tank foundations, etc. in layers not exceeding 300mm compacted thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.	CUM	95210			4.4880406570%
112	Extra over item no. 101 for shoring and strutting in trenches including packing cavities (wherever required as instructed by engineer) all complete as per specification and as directed by engineer in charge.					
a	upto depth of 2m	SQM	50			0.0005503789%
b	Depth exceeding 2 m but not exceeding 4 m	SQM	50			0.0006879736%
200	CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) and equipment for handling, transportation, batching, mixing, placing,vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.					
A201	Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224)	CUM	10825			1.4782480774%
A202	Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224)	CUM	2533			0.3459032222%
A203	Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors, plinth protection etc. complete below finished floor level of ground floor upto depth of 10m from FFL of ground floor. (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224)	CUM	586			0.0800234063%
A204	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 10-20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete below finished ground level upto depth of 10m from FGL. (For depth greater than 10m from FGL , extra over for additional depth to be paid in Item No A224).	CUM	650			0.0887631640%
A205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, trenches, under floors, duct banks etc for any shape, position or thickness etc complete all including with addition of high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/STP/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete complete as per specification & drawing below finished floor level of ground floor upto a depth of 10m from FFL of ground floor (For depths greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224), for the following.					
a	M 20 Grade	CUM	16878			2.4693131334%
b	M 25 Grade	CUM	25600			3.7636073639%
c	M 30 Grade	CUM	45131			6.6700421885%
d	M 35 Grade	CUM	2343			0.3481751862%
A206	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with sand and graded hard stone aggregate of 20mm nominal size in superstructure for any shape, position or thickness etc complete including with addition of high performance PCE-based BIS approved water reducing admixture of Type-G as per ASTM C-494 of approved make FOSROC/STP/SIKA/BASF or Equivalent having minimum water reduction capability of 30% to achieve required slump in concrete all complete as per specification & drawing upto 10m level above finished floor level of ground floor (For height greater than 10m from FFL of ground floor, extra over for additional height to be paid in Item No A225), for the following.					
b	M 25 Grade	CUM	8337			1.2618399093%
c	M 30 Grade	CUM	1186			0.1804276017%
A207	Providing and laying Design Mix cement concrete confirming to IS:456 & IS 10262-2009 for reinforced concrete works of grade mentioned below in machine foundations for TG, ID/FD/PA fans, BFP, Mills, FGD,etc at all elevations below/above finished floor level of ground floor (except top decks supported over vibration isolation system,BFP deck and TG deck) but including TG foundation Columns, BFP foundation Columns with addition of suitable plasticizer conforming to IS 9103(latest) or ASTM C494 to achieve a slump in the range of 100 mm -150 mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing all complete.					
a	M 30 Grade	CUM	11734			1.9340247313%
b	M 35 Grade	CUM	3390			0.5614913581%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL

% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE

SCOPE - "Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building, Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities / system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..

ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
B208	Providing and laying of M50 grade of concrete as per IS:456 & Design Mix of concrete as per IS 10262-2009 by using suitable % of supplementary cementitious materials like Micro-silica conforming to IS:15388 / Micro fine-GBFS conforming to IS:16714 along with OPC-43 grade cement as per IS-269-2015 [The OPC-43 cement content shall not be more than 450 kg/cum of concrete as per IS:456] for reinforced concrete works by using graded aggregate in top deck of all machine foundations supported / not supported on vibration isolation system (excluding supply and installation of vibration isolation system) and top deck of TG foundation at all levels including addition of suitable superplasticiser conforming to IS-9103 & ASTM C-494, Type-G category to achieve medium to high flow concrete as per EFNARC-specifications (Slump flow by Abrams cone shall be 650 -800 mm & T50 cm slump flow should be 2-5 sec) as per manufacturer's recommendation, preparation of scheme for concreting, getting it approved by engineer in charge, labour, materials, equipment, handling, batching, transporting, mixing, pumping, placing, levelling, vibrating, compacting, curing, testing, cleaning and rendering the exposed surface with cement sand mortar to give a smooth and even surface, maintaining and submitting records of concreting, petrographic examination and potential reactivity of aggregate as per IS-2386, Part-VII & Part-VIII etc. all complete as per specification, drawing and instructions of engineer in charge, including ultra-sonic pulse velocity (UPV) testing as directed by engineer in charge, rectification of the defects in concreting observed by UPV testing by cement/epoxy grout etc., but excluding formwork, staging, reinforcement, embedments and temperature control of concrete. Payment Breakup: - a) After casting 75% ; b) After receipt of ultrasonic pulse velocity (UPV) test report - 25%.	CUM	2097			0.5768006971%
A209	Extra over St. No. A205, A206,A207, A208,B208 for controlling of temperature of fresh concrete to less than 25 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	CUM	17221			0.8073089571%
A210	Extra over ST Nos. A205, A206, A207 for conducting UPV test for concrete at all levels including all equipments, making necessary arrangements, staging, submission of report etc. all complete as directed by engineer in charge and as per specification.	CUM	1858			0.0484233055%
211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades					
b	M 25 Grade	CUM	975			0.1331447460%
c	M 30 Grade	CUM	45			0.0067596563%
A212	Screed concrete conforming to IS 456 with sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof upto 10m level above finished Ground level (For height greater than 10m from FGL, extra over for additional height to be paid in Item No A225) or thickness, drains etc complete as per following.					
a	01:02:04	CUM	314			0.0428794361%
213	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.					
c	M30	CUM	768			0.1900368933%
A214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer conforming to IS 9103 and crystalline waterproofing cement additives to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and crystalline waterproofing conforms to limits of permeability as per ACI212-3R10(chapter-15,PRAH), BS8102 Type-B and IS 2645 and specification with 20 mm nominal size graded aggregate upto depth of 10m from FFL of ground floor, (For depth greater than 10m from FFL of ground floor, extra over for additional depth to be paid in Item No A224). for following grades.Crystalline waterproofing additive reduces permeability by more than 90%,tested as per DIN 1048-V, ensuring waterproof concrete with self-healing capabilities for cracks up to 0.5 mm with valid test results. The recommended dosage rate should be 0.8% by weight of total cementitious content or such lower dosages, allowing the concrete to withstand 16 bars of hydrostatic pressure and reduces chloride diffusion coefficient more than 45%, tested as per ASTM C 1556, resistant to sulphate attack and resistance to Alkali-Silica Reaction (ASR).The product should certified under NSF 61, and accredited from IRC & MoRTH.Watertightness is to be ensured including structural grouting if required.					
b	M30	CUM	1096			0.1752872572%
215	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.					
a	Plain cement concrete of all grades	CUM	417			0.0173481043%
b	Reinforced cement concrete of all grades	CUM	506			0.0323050390%
216	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .	CUDM	2478			0.0072203235%
217	Extra over and above St No 216 for cutting of reinforcement , all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	488			0.0001263929%
218	Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.	CUDM	293			0.0020489635%
A222	Cutting of groove of 8mm X 65mm size with groove cutting machine in concrete paving all complete.	RM	500			0.0013273844%
223	Cutting of existing concrete/ RCC work inside control room/ pump house or anywhere inside boundary using power tools of (DD2E of HILTI/ BOSCH make) with low noise and dust including cutting reinforcements, removing the rubbish within a lead of 1 km, including making good the broken edges/ surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/ supporting at any level, all complete and as directed by Engineer (measurements shall be taken as per cutting surface area).	SQM	1250			0.1212047617%
A224	Extra over item no. A201 to A205 and A214 for depth below FFL of ground floor (Finished floor level of ground floor) as per following:					
(a)	Depth exceeding 10m from FFL of ground floor but not exceeding 20m	CUM	100			0.0011816958%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities / system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A225	Extra over item no. A206, A207, 211 and A212 for height above FFL of ground floor (Finished floor level of ground floor) as per following:					
(a)	Height exceeding 10m from FFL of ground floor but not exceeding 20m	CUM	1000			0.0147954794%
(b)	Height exceeding 20m from FFL of ground floor but not exceeding 30m	CUM	1465			0.0389872214%
(c)	Height exceeding 30m from FFL of ground floor but not exceeding 40m	CUM	687			0.0243769931%
(d)	Height exceeding 40m from FFL of ground floor but not exceeding 50m	CUM	610			0.0252390806%
(e)	Height exceeding 50m from FFL of ground floor but not exceeding 60m	CUM	500			0.0221770315%
(f)	Height exceeding 60m from FFL of ground floor	CUM	500			0.0243947347%
300	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.					
A301	Fairface form work with good quality water proof ply wood with Film face of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams & slabs(for which scaffolding work not required for vertical support of bottom face of formwork), mass concrete, trenches, grade slab, paving etc.including chamfering of edges as per drawing, specification and instruction of engineer in charge.					
a	Upto Depth 10m From FGL	SQM	144054			3.2599830360%
b	Depth exceeding 10m From FGL	SQM	200			0.0049728351%
A302	Fairface form work with good quality water proofply wood with Film face of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended/intermediate floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing,for all heights as per specification, drawing and instruction of engineer in charge.					
a	For Height Upto 20m from FGL	SQM	40827			1.1102981016%
b	For Height More Than 20m from FGL	SQM	400			0.0120435850%
A303	Plywood Formwork with Film face of required thickness and smooth surface for TG superstructure (above base raft level for columns, connected beams & TG Deck only) including preparation of scheme, designing, submission and approval of staging drawing with sufficient props, braces and ties at every tier of height of approx. 4m for all heights complete including chamfering of edges, deshuttering as per drawing,specification, and instruction of engineer in charge..	SQM	4686			0.9899098431%
304	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.					
a	Upto 150 mm depth	Each	200			0.0016187614%
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	200			0.0026482937%
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	400			0.0092852155%
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	400			0.0144005016%
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	300			0.0154624091%
f	Pockets of depths more than 1500mm and upto 2000 mm depth	Each	50			0.0033961615%
305	Extra over item no.301 and 302 for curved form work for foundations, footings, beams, walls, trenches, domes, arches etc as per specification.					
a	Extra for Curve Shuttering for Item No. 301/ A301	SQM	250			0.0011331330%
b	Extra for Curve Shuttering for Item No. 302/ A302	SQM	250			0.0013597596%
400	REINFORCEMENT WORK : Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.					
401	Providing, straightening, cutting, bending, placing in position at any level, binding of mild steel reinforcements conforming to grade 1 of IS:432 part 1 in concrete including cost of reinforcement and binding wire, labour, scaffolding, transportation to & from stores etc. all complete as per specifications & drawings.	MT	5			0.0137402089%
A403	Transportation, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 / Fe-500D/ 500EQR/Fe 550 D or any other Grade confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores,loading, Unloading etc complete all as per specifications, drawings and as directed by Engineer (BHEL to supply steel free of cost)	MT	11661			4.2974714891%
405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcementnet bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall beconducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402, 403, 405 as applicable.					
a	12mm Reinforcement bar	Nos.	50			0.0010327698%
b	16mm Reinforcement bar	Nos.	50			0.0016786556%
c	20mm Reinforcement bar	Nos.	50			0.0024313797%
Ad	25mm Reinforcement bar	Nos.	50			0.0037990307%
406	Supply and fixing reinforcement bar couplers (of approved manufacturer's as per the relevant IS code) in position for steel reinforcements of TMT steel of grade Fe-500D or 500EQR or any other Grade confirming to IS:1786 including, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.(Agency has to supply reinforcement bar couplers).					
b	16mm dia	Nos.	105			0.0002141621%
c	20mm dia	Nos.	105			0.0002685525%
d	25mm dia	Nos.	75			0.0002840926%
e	28mm dia	Nos.	50			0.0002347204%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE ~Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
f	32mm dia	Nos.	30			0.0001777400%
g	36mm dia	Nos.	50			0.0003885027%
407	Transportation from BHEL yard, straightening, cutting, bending, welding / binding in position of old cut piece TMT steel reinforcements confirming to IS:1786 including binding wire, labour for placing in concrete, chair and other misc. works complete all as per bar bending schedule and as directed by Engineer. [Old cut piece TMT Reinforcement steel will be issue by BHEL Store free of cost]	MT	50			0.0240709824%
408	Straightening, cutting, bending of TMT steel reinforcement (Grade Fe-500D or 500EQR) of already fixed/embedded TMT in concrete binding in position including cost of binding wire, labour, scaffolding, etc complete all as per specifications, drawings and as directed by Engineer.[Measurement for payment shall be done for the exposed steel used in concreting. Additional/new TMT Reinforcement steel used in this item will be paid seperately in the relevant Item No 401-403]	MT	25			0.0023925294%
A409	Supply and Fixing of Hard Drawn Steel Wire fabric including straightening, cutting, bending, placing in position at grade slabs / plinth levels / pavings etc. binding in position of grade Fe-500 (min.) confirming to IS:1566 including cost of steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	10			0.0269157937%
500	Roof Treatment works: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge.					
502	Providing and laying underbed/topping grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 15 mm including preparation of surface, batching, mixing, leveling etc all complete.	SQM	13403			0.0733333567%
A506	Providing and applying PU based 100% solid content of approved make water proofing treatment with epoxy based or equivalent material based primer with an application rate of minimum 200gm persqm and two successive liquid coatings of high solids content urethane pre-polymers or equivalent material based finish coats as per relevant IS/ASTM standards to form an elastomeric membrane with overall dry film thickness 1.5 mm subject to minimum 500 gm/sqm/coat application rate.The coating shall be applied with a total consumption of 1.6kg/sqm to achieve total system DFT of min.1.5mm .The elastomeric membrane shall be of two component, instant setting, spray applied hybrid polyurea polyurethane liquid elastomeric seamless waterproofing membrane.Item includes surface preparation.The coating shall have high viscosity, more than 450% elongation and forming a perfectly smooth permanently flexible seamless membrane which should have good adhesion to roof substrates.The cured film should have a very low water absorption rate (0.5% maximum at ambient temperature after 7 days), reinforcing layer of polyscrim cloth (non woven polyscrim cloth of 100% polyester with min. weight of 40gsm/sqm) or geo-textile non woven polyester (150 gsm), polymerised mastic base preparation, primer, making of fillets, cleaning & preparation of surface, vacuum removal of loose sand, expansion joints & sealing at suitable intervals, application by using a pneumatic machine as per manufactures recommendations.grouting the porous area with cementitious grout, proper coving between slab and wall junctions and priming the surface with two component solvent free epoxy primer etc. all complete as per specifications, drawings and direction of engineer in charge. The application of waterproofing treatment shall be carried by authorised applicator of approved Manufacturer of Waterproofing materials.	SQM	13094			0.4955639320%
A507	Providing and laying wearing course consisting of 20 mm thick plain cement mortar 1:4 (1 cement : 4 sand)) cast in panels of maximum size 1.2mx1.2m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon /elastomeric compound etc all complete.	SQM	12494			0.2176189045%
A510	Providing and laying cement concrete chequered and designed roof / floor tiles of 22 mm thickness and size min. 200x200 mm conforming to IS 13801 with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment in pathway or entire area with fine joints including sealing of joints (silicon/elastomeric sealant) and providing expansion gap in both directions including underbed (as per drawings) filled up with (silicon/elastomeric) joint sealant etc all complete. (Water proofing paid elsewhere) (including cost of cement for tiles making).	SQM	3724			0.0868070527%
511	Providing and applying two coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm)with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	SQM	8575			0.0660729851%
A511	Providing and applying two coats of bitumen paint of minimum 150 micron total DFT with suitable primer, conforming to IS 9862 with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces including surface preparation etc. all complete.	SQM	250			0.0019263261%
513	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.					
A513	Providing and mixing Integral waterproofing Compounds conforming to IS:2645 along with crystalline admix in concrete or cement mortar all complete.the crystalline admixture confirming to ASTM C-494 / IS9103 used for underground structures, concrete roof where water proofing is required, sustain 16 bar hydrostatic presuure and NSF certification with CE approval; as per EN 934-2.	KG	31191			0.0595791294%
A514	Providing and applying two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT followed by epoxy phenolic coating (solid by volume minimum 63%) of minimum 400 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique on beams,wall, column, slab, basin floor, basin wall, fill supporting beams and columns, internal surfaces of fan stack, underside of fan deck roof slab etc on concrete surfaces as per IS 9862 and IS 3384 complete all as per specifications & drawings.	SQM	500			0.0102403720%
B514	Providing and applying Food grade epoxy coating complying to FDA Tittle 21, Part 175.300 of minimum 400 micron DFT over absolutely dry, clean and dust free surafe of water retaining structures storing drinking water. This coat shall be applied by airless spray technique and shall conform to as per relevant IS standard ,complete as per specifications & drawings.	SQM	500			0.0113597296%
A 517	Providing and laying Cinder / foam concrete blocks in the toilets,pantry,sunken slab etc. after water proofing and laying of plumbing pipes complete as directed by engineer in charge.	CUM	150			0.0121421212%
A518	Providing and laying water proofing treatment for wet areas like toilets,kitchen,pantry for sunken slab etc.material with min.two coats of Acrylic Polymer Modified Flexible Cementitious Waterproofing Coating material like Danocrete I-protect flex, penetron SF-50 or equivalent make applied @ 0.70 to 0.8 0 Kg./m2 per coat .The First layer shall be of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm.The Second layer shall be of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm.The integral waterproofing coat applied (confirming to IS 2645) , while maintaining a gap of 4 to 8 hours between the coats all complete with water ponding test as per IS Code and as directed by engineer in charge	SQM	400			0.0079840163%

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ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A521	Providing and laying an angular fillet around parapet wall junction at roof level of min.50mm x 50mm, shall be trowel applied in cement-sand mortar in 1:3 proportion. A latex based bonding agent should be added (10% by weight of cement) and also a glass cloth must be inserted while the angle fillet is being constructed.	RM	1000			0.0198298695%
600	JOINTS AND FILLERS: joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.					
601	Supplying & installation of bitumen impregnated fibre board confirming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.					
a	12 mm wide joints.	SQM	125			0.0025738307%
b	20 mm wide joints.	SQM	125			0.0030837405%
c	25 mm wide joints	SQM	1021			0.0365920049%
d	50 mm wide joints	SQM	986			0.0735163091%
A601	Supplying & installation of engineering grade polystyrene foam backer rod (circular cross section) at 12 mm depth with minimum density of 22 kg/cum and compressive strength of 0.40 kg/sqm having dia. 25% more than the expansion joint width as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.					
a	12 mm wide joints.	RM	50			0.0003252901%
b	20 mm wide joints.	RM	150			0.0014110420%
c	25 mm wide joints	RM	1820			0.0188327067%
d	50 mm wide joints	RM	237			0.0041690646%
A603	Providing and applying polysulphide based sealant conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:					
a	12mm X 25mm	RM	300			0.0029883631%
b	20mmX25mm	RM	3600			0.0597672618%
c	25mmX25mm	RM	1991			0.0413182703%
d	50mmX25mm	RM	800			0.0312615206%
604	Supplying and filling in position hot applied bitumin sealing compound (Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.					
a	10mm X 40mm	RM	100			0.0002233891%
b	12mm X 25mm	RM	1100			0.0021367651%
c	20mmX25mm	RM	319			0.0008055604%
A605	Supply and installation of Polystyrene flexible board confirming to IS 4671 (type-1), 20 Kg/ Cum. as joint filler at joint of concrete including nailing, coating of both faces with coal tar pitch /butimen etc. all complete.					
a)	100 mm thick	SQM	2100			0.1561390237%
b)	50mm thick	SQM	200			0.0112926675%
A610	Providing and fixing ribbed PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)					
b	230 mm wide and 8 mm thick	RM	1619			0.0259456700%
bb	230 mm wide and 10 mm thick	RM	250			0.0046073997%
c	150 mm wide and 6 mm thick	RM	100			0.0007413927%
d	230 mm wide and 6 mm thick	RM	100			0.0011331330%
A615	Providing and fixing 300 mm wide Stainless steel strips (316 GRADE) over expansion joints with minimum lap of 50mm length including stainless steel screws, rawl plugs etc. all complete	Kg	200			0.0042346799%
700	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
701	Supply, fabricating and fixing of mild steel embedments , inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	64			0.2086352966%
A701	Supply, fabricating and fixing of mild steel embedments , inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting, including preparation of surface by manual cleaning and provided with Primer Coat of Chlorinated Rubber based zinc phosphate primer of minimum 50 micron dry film thickness (DFT) etc. all complete as per specification. Payment Breakup: 1. On Supply & receipt of materials at site - 60% 2. On completion of fabricating, fixing, welding, etc. complete as per description/specification - 40%	MT	328			1.1227186897%
A702	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffener plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete. All threaded and other surfaces of foundation bolts shall be coated with temporary rust preventive fluid and during execution of civil works, the dried film of coating shall be removed using organic solvents. Payment Breakup: 1. On Supply & receipt of materials at site - 60% 2. On completion of fabricating, fixing, welding, etc. complete as per description/specification - 40%	MT	145			0.6155730442%
B702	Extra over above ST NO. 701 & A702 for finishing the bolts/inserts with hot dipped galvanisation @ 610 gm/sqm.	MT	40			0.0492699178%
C702	Applying priming coat: With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works	sqm	100			0.0002182090%
A703	Same as above items A701 & A702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.					

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	74			0.0658668196%
B	Mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc.	MT	45			0.0419364429%
704	Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.					
a	MS pipes of all diameters	kg	4554			0.0165129205%
b	PVC pipes / conduits of all diameters	kg	785			0.0095558724%
c	UPVC pipes / conduits of all diameters	kg	250			0.0038364464%
d	Expansion anchor fasteners (galvanised) of HILTI make(HUD-1 Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:					
i	8mm Dia	Nos	100			0.0001651137%
ii	10mm Dia	Nos	100			0.0002104390%
iii	12mm Dia	Nos	100			0.0002622394%
iv	14mm Dia	Nos	50			0.0002007264%
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:					
i	HST M8	Nos	100			0.0008967938%
ii	HST M10	Nos	100			0.0012399713%
iii	HST M12	Nos	100			0.0022338908%
iv	HST M16	Nos	50			0.0019635576%
v	HST M20	Nos	50			0.0034188241%
vi	HST M24	Nos	50			0.0068085106%
f	Chemical Expansion fasteners (galvanised)of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod,nuts,washers,chemicals all complete,etc:					
i	HAS-E5.8 M8	Nos	50			0.0008757499%
ii	HAS-E5.8 M10	Nos	50			0.0010683825%
iii	HAS-E5.8 M12	Nos	50			0.0013613784%
iv	HAS-E5.8 M16	Nos	50			0.0023115913%
v	HAS-E5.8 M20	Nos	50			0.0036049817%
vi	HAS-E5.8 M24	Nos	50			0.0049615038%
706	Supply and installation of approved 25mm thick vibration damping resilient pads on/around foundation of vibrating equipment and at other locations all complete.	SQM	10			0.0007248814%
707	Providing, laying and fixing rails(52kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.	MT	82			0.2746517545%
800	GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level , drawings and as directed by engineer - in - charge.					
801	Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at maximum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.	SQM	50			0.0014957356%
802	Providing & grouting of pocket holes , pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand) using non shrink admixture etc. all Complete.	CUM	5			0.0041861170%
803	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	10			0.0082754322%
804	Providing & grouting of pocket holes , pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with Conbextra GP-1 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	119			0.1959189219%
805	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with Conbextra GP-2 or equivalent as per specification, drawing and direction of engineer-in-charge.(Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	10			0.0161063524%
806	Providing Chemical (epoxy) injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved chemical, admixture, curing etc. all complete . Payment shall be made as per the consumption of chemical grout.	Kg	100			0.0062646067%
900	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
901	Providing and fixing wooden frame conforming to IS 4021 made of best quality seasoned CP teakwood free from large or loose knots, cracks or other defects including sand paper smoothening, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place. (Finish painting / polishing paid separately)	CUM	1			0.0075579000%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
902	Providing and fixing teak wood frame panel door shutter as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked panels of teakwood with proper wood joinery including beading, preperation of working drawings,godrej or equivalent make mortice lock with handles on both sides,approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt ,knobs, (all fitting shall be anodised aluminium color dyed), screws, primer and finish painting / polishing etc. all complete. (Finish painting / polishing paid separately)	SQM	30			0.0080118978%
A903	Providing, fitting and fixing solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, partial board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handles on both sides,approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish flat oil paint confirming to IS: 137 over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges. (Finish painting paid separately) (Note: All particle board shall have recycled content. The bidder is required to provide material cutsheet sample/ declaration from manufacturer mentioning the percentage of recycled rate (0.5% maximum at ambient temperature after 7 days), reinforcing laye	SQM	10			0.0024965186%
904	Providing and fixing single or double steel door shutters with 45mm thk flush design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, side, top & bottom edges of shutter shall be reinforced by continous pressed steel chanel with min 18G, shop and final painting etc all complete.	SQM	160			0.0748774285%
A904	Providing and fixing single or double steel door shutters with 35mm (min) thk flush design shutter comprising of two outer sheets of 16 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 18 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	136			0.0658945089%
A905	Providing and fixing electrically operated, self operable/closing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 (Grade of Aluminium shall be Alloy 63400) and anodized and electro color coating of required shade as per IS 1868 (minimum anodized coating of grade AC15), fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures,Dorma. Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. Weight of aluminium section only shall be measured. (Glazing l cementitious content or	SQM	25			0.0128659641%
906	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 (minimum anodized coating of grade AC15). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)	KG	458			0.0076363451%
A906	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 2 mm wall thickness as per IS:1285, IS:733,(Grade of Aluminium shall be Alloy 63400) and anodized (15 micron coating thickness) and electro color dyed of required shade as per IS 1868 (minimum anodized coating of grade AC15). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear toughened glass of 8/10 mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately) Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	KG	660			0.0155502373%
907	Providing and fixing fire proof steel doors (single or double shutter) with vision panel, panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, NBC 2016 & TAC requirements and as per specification. Vision panel shall be provided with interlayered fire rated glass. Minimum ratings shall be 2 Hrs. Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	SQM	210			0.0848693953%
A907	Acoustic Wooden Fire Door : Providing of Single / Double Leaf both side laminated finish fully insulated wooden fire door of 120 min. fire rating, of min.50mm thickness, comprising of 75mm x 50mm hardwood internal timber frame work, with infill of 96 kg/m3, ceramic fiber blankets, coated with FR intumescent coating on both sides for insulation. The coated insulation shall be sandwiched between 12mm thick, Matrix Mineral Engineered Boards on both sides (edge to edge on internal Hardwood frame) and claddded with 3mm ply on both sides, with 55mm x 14mm teak wood lippling all round the shutter the main door frame will be made out of Hardwood of section 120 x 70mm and coated with Fire reatrdent Primer.The rebate shall be of 20mm x 57mm in Door Frame to accommodate the shutter in frame.Both frame and shutter shall be fitted with fire & smoke intumescent seal of size 20 x 4mm on all the three sides except bottom.The pasting of the ply/veneer/laminate should be done using automatic machine and should be free from ipt of material at site - 50% b) On complete execution as per item description - 50%bars of hydrostatic pressure and reduces chloride diffusion coefficient more than 45%, tested as per ASTM C 1556, resistant to sulphate attack and resistance to Alkali-Silica Reaction (ASR).The product should certified under NSF 61, and accredited from IRC & MoRTH.Watertightness is to be ensured including structural grouting if required.ecification, drawing and instructions of engineer in charge, including ultra-sonic pulse velocity (UPV) testin	SQM	120			0.0974933561%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL

% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE

SCOPE ~Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..

ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (I QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
B907	Providing and fixing automatically closing fire proof steel flush insulated doors along with frame of minimum 44mm thk flush shutter design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm center to center of approved make conforming to IS:3614 (part 1) & CBRI tested- ISI marked for both Single leaf & Double leaf, comply IS/ISO 3008,satisfying LPA regulations and shall carry a unique label with certification/test report number,fire rating embossment, fixed at all elevations, with or without removable panels,with panic bar,panic trim,smoke seal with following fire rating using galvanised MS sheets for frames conforming to IS 277, made out of minimum 1.6mm (16 SWG) for both frame and shutter, G.I. sheet (min.zinc coating 120 gsm), and leaves, mineral wool / PUF/ any other fire retardant insulation material filled with required density, mastic caulking and grouting the frame, reinforcing and insulating the shutters with fire retardant material, with panic devices, including all fittings, fire rated vision glass, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (min.64 kg/cum density) complete and shall be fire proof as per IS:3614, NBC, LPA requirements and as per specification.Shop drawings shall be submitted by the fabricator/manufacturer for approval before execution. Minimum ratings shall be 2 Hrs. All hardware fittings shall be 2 Hours fire rated. Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	SQM	100			0.0974933591%
908	Providing and fixing steel windows/ventilator with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)					
a	Openable type	SQM	50			0.0047850588%
b	fixed type	SQM	50			0.0030659341%
B908	Providing and fixing anodised aluminium Grills in windows/ventilator of approved design.	kg	200			0.0037280076%
C908	Extra over Item 908 for providing pre-coated (polyster painted) steel windows/ventilators	SQM	50			0.0001129086%
909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic protection etc. including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision foring the frame, reinforcing and insulating the shutters with fire retardant material, with panic devices, including all fittings, fire rated vision glass, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulat	Kg	200			0.0048821845%
A909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections(of minimum 2mm wall thickness) including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285,(Grade of Aluminium shall be Alloy 63400) anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic protection etc. including preparation of fabrication/working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc. of Dorma, doorset or equivalent.), CP brass/stainless steel screws of SS304 Grade, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately).Weight of aluminium section only shall be measured. Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	Kg	14600			0.3563994655%
B909	Providing and fixing aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections(of minimum 2mm wall thickness) including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285,(Grade of Aluminium shall be Alloy 63400) powder coated to required shade (minimum thickness of powder coating 50 micron) fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalic protection etc. including preparation of fabrication/working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc. of Dorma, doorset or equivalent.), CP brass/stainless steel screws of SS304 Grade, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately).Weight of aluminium section only shall be measured. Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	Kg	14600			0.3742194388%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (I QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A910	Providing, fabricating, designing, supplying and fixing of Aluminium composite panel cladding (ACP) in pan shape in solid or metallic colour of approved shades made out of 4mm thick aluminium composite panel (weight of panel should be minimum 8.1 kg/sqmt) material consisting of 3mm thick FR grade Class A2 as per EN 13501,mineral core sandwiched between two Aluminium sheets (each 0.5mm thick BMT).The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF conforming to AAMA 2605 or Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc. The top coated surface of ACP shall comply with the "specification for coated coil for the exterior building application" issued by ECCA (European Coil Coating Association). The aluminium composite panel top and bottom skin should conform to Aluminium Alloy 5005 (AlMg 1) marine grade series and H 22/24 temper with mechanical properties conforming to EN 485-2 standard. The ACP product must conform as per EN-13501-1.The manufacturer must furnish the FPC and Certificate of conformity of EN13501-1 for Class A2,s1,d0 from the certifiers and Product must be supplied from the Certified Unit which has been mentioned on the FPC and COC.The panel shall be designed for 12mm groove in horizontal & in verticals with close joint system. Vertical & Horizontal groove shall be filled by non-staining high performance weather sealant. ACP panel shall have sub frame all around panel and aluminium stiffener profile as per structural requirements. The finished surface of ACP shall be protected with a self-adhesive (Rubber based) peel off foil with 70 microns thickness white or black, tested to withstand up to 6 months' exposure to local weather condition without losing the original peel off characteristic or causing stain or other damages on the coated surface of the aluminium composite panel. Installation of ACP Coping/facia at terrace level sealing the top gap of the parapet wall and ACP Panel shall have GI stiffeners below with required aluminium grid work with necessary MS HDG / aluminium alloy brackets & SS fasteners.2nd barrier of 1mm thick GI sheet laid continuously below the coping to seal the parapet wall. Overlap of GI sheet shall be properly sealed with weather sealant, All shade shall be as per Architect's Approval.as per approved sample from Alucobond Plus,Aludecor, Alubond or equivalent. The system shall be designed to withstand a wind pressure of 200kg/Sqm or as per design requirement and shall be fixed to the Masonry/RC walls or aluminium frame with necessary clamps, brackets and anchor fasteners etc. All clamps and brackets shall be Hot dip galvanized minimum 80 microns thick and shall conform to IS: 4759-1996. The extruded aluminium section shall be anodized in approved colour with a anodic coating of minimum 20 microns. Extruded section shall be 6063 T5 or T6 alloy conforming to ASTM B221. Any other festering straps, nuts, bolts, rivets, washers, etc. shall be in stainless steel SS316 grade. EPDM gaskets, open cell polyethylene backer rods, weather sealant etc. shall be provided as per requirement. Item shall include aluminium base frame with all fixing arrangements to wall/RC members, fastening material and hardware(festering straps, nuts, bolts, rivets, washers etc.), EPDM gaskets, open cell polyethylene backer rods, weather sealant, scaffolding, approach to all height, material handling, transportation, labour, T&P, preparation of working drawings etc.all complete as per drawing, specification & instructions of engineer in charge. Measurement of payment shall be outer finished area of ACP panel.The contractor shall provide the material cutsheet/ declaration from manufacturer mentioning the recycled content used in mauufacturer of ACP. Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	SQM	5247			0.8979477476%
911	Providing and fixing of door closers as per IS 3564 .of approved make & quality all complete of following type :					
a	Over head hydraulic door closures	Each	35			0.0024656974%
b	Floor mounted Hydraulic door closers	Each	35			0.0051772847%
A912	Providing and fixing pressed steel frames (complying general requirements of IS 4351) fabricated from 1.6 mm thick M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars ,paintings etc all complete as per specifications.	Kg	5029			0.0315861147%
A913	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides of 75mm wide and 3mm thick(min.) and arrangements for inside and outside locking with push and pull operation including wire springs, top/hood cover 0.9mm thick (min.) , factory galvanized, primed & field painted, partly grilled (as required) with approved enamel paint etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.(partly coiled and lath/full lath).					
b	Mechanically Operated	SQM	60			0.0090637690%
c	Electrically & Mechanically operated	SQM	267			0.0515971463%
A914	Providing and fixing Solid core PVC doors (25 thk double skin) with PVC frame of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	55			0.0052778098%
915	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.					
Ab	4 mm thick plain or tinted float glass	SQM	70			0.0040452848%
c	5.5 mm thick clear float glass	SQM	120			0.0077389746%
Ae	3mm thick Polycarbonate sheet with profile matching with metal sheeting shall be provided. The Polycarbonate sheets shall be fire and u/v resistant, and suitable for continuous use up to a temperature of 1000C. Suitable aluminium beading shall be used. The open ends of the sheet shall be sealed as per manufacturer's recommendations .	SQM	1866			0.1310011902%
Ag	6 mm thick tinted heat reflecting toughened type float glass	SQM	120			0.0090046834%
h	6 mm thick clear toughened safety glass	SQM	331			0.0265225966%
h (a)	6 mm thick clear reflective toughened safety glass of Saint Gobain(India) or Asahi (India) or equivalent make and should have solar factor 25% or less, Maximum U-vlaue 3.3W/SQMK, VLT min 30%, light reflection internal 10 to 15%, light reflection external 10 to 20%, shading coefficient (0.25-0.28), values varies as per manufacturer specifications.	SQM	1000			0.0989377964%
AhA	6 mm thick reflective toughened glass conforming to IS 5437 2553 Reflective toughened glass, with technical characteristics: Solar factor 45% or less, U-value less than 5.7 W/m2.K, VLT min 40% shall be used. The glass to be used should be from the manufacturers of glass like Saint Gobain (India) or ASAHI (India) or equivalent. The glass should be free from distortion and thermal stress.	SQM	50			0.0052187816%
AhB	8 mm thick clear toughened glass	SQM	884			0.0909593855%
AhC	8 mm thick clear toughened fire resistant glass	SQM	472			0.2271990046%

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AhD	6 mm thick clear toughened glass conforming to IS 5437	SQM	3569			0.2824869881%
i	Two nos. 6 mm thick clear toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	74			0.0101987797%
I(a)	composite double glazing, 25 mm thick 2 hr fire rated, with one outer 6 mm thick tinted heat-reflecting type toughened glass and one inner 11mm thick clear toughened glass hermetically sealed and seperated by 8 mm thick gap for thermal insulation (only single elevation area to be measured) with suitable frame of min 1.6mm galvenised steel sheet. The glass to be used should be from the manufacturers of glass like Glavebel (Belgium), Saint Gobain (France) or Fort (USA) Or equivalent. The glass should be free from distortion and thermal stress.	SQM	100			0.0946662519%
I(b)	composite double glazing of fire resistant glass MIN.30 mm thick Hermetically sealed double glazed unit of one Fire resistant glass of min.14mm thick (outer side) clear, toughened, interlayered glass with 120 minute fire rated for both integrity & radiation control (EW 120) with symmetrical (Bi-Directional) fire protection and 6 mm thick toughened tinted glass (Inner side) with 10 mm air gap etc all complete as per specification.	SQM	636			0.6326914661%
I(C)	One outer 6mm thick tinted heat-reflecting toughened glass and one inner 6mm thick clear toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).The glazing to be used in all exterior walls shall be of Saint Gobain or equivalent.The glazing to be used should comply to mentioned standards VLT (Visible Light Transmittance) ≥62 %, SHGC/ SF (Solar Heat Gain Coefficient/ Solar Factor) 0.2 ≤ 0.32 and U- Value 1.2 TO 2.5 W/MSq K.The properties of performance glass shall be as per detail design values as approved by engineer incharge.The glass to be used should be from the approved manufacturers of glass and should be free from distortion and thermal stress.	SQM	600			0.6239575216%
I (d)	Fire rated glass min.14mm thick fire resistant clear, toughened, interlayered clear 120 min fire rated for Integrity, Radiation control (EW 120) and partially insulation (EI 20) Non Wired Toughened Interlayered glass complying to BS476 Part22 or (EN-1634-1 :1999) with a light transmission of 86% according to EN410 standards and sound reduction of >=37 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested and certified for no formation of bubbles or yellowing after 5000 hours of exposure to UV radiation by TUV Rheinland as per EN 12543-4 The glass shall provide bidirectional (Symmetrical) fire protection. as per specification and instruction of engineer in charge.	SQM	200			0.2117956823%
An	8 mm thick laminated toughened glass	SQM	50			0.0052972436%
o	10 mm thick clear toughened safety glass	SQM	230			0.0199680419%
Aq	6mm thick laquered glass as per approved shade colour and design.	SQM	25			0.0023307878%
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	250			0.0025171740%
917	Providing and fixing 12 mm thick BWP particle board , decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	SQM	100			0.0055167389%
919	Providing and fixing 1 mm thk. MS sheet sliding shutters with frame and diagonal braces of 50X50X6 angle iron, 3 mm MS gusset plates at junction and corners, 25 mm dia pulley, 50X50X6 angle and T-iron guide at the top and bottom respectively including painting etc. all complete.	SQM	50			0.0090780141%
A920	Providing and erecting Roof skylight structure with 4mm thick embossed clear translucent polycarbonate IR sheet, both side UV coated, minimum 55% light transmission, solar control, approved make, texture and shade, fixed to powder coated Aluminium section with 60mm width top & bottom with EPDM rubber gasket in approved shape like dome, pyramidal etc, sealing of joints with sealent, screws with pvc cap, self tapping screws, EPDM rubber gasket.etc as per drawing, standards, specification, instruction of engineer in charge etc all complete.(Structural Steel will be paid separately)	SQM	1664			0.1526958745%
A921	Providing & fixing Fully Glazed non load bearing fixed partition with 120 minutes Fire Rating.with valid fire test certificate from national or international lab with Partition Frame manufactured from cold rolled profiles of minimum 1.5 mm steel sheet pressed to form a profile of nominal size 50mm x 50 mm on all sides & fixed to the supporting construction by means of M 10 X 120 or bigger steel bolts at 150mm from the edges & every 500mm c/c. The frame shall be finished with etch primer for scratch resistance and shall be powder coated of approved shade and color. The glass panels shall beToughened interlayered minimum 14mm thick,Contraflam Lite, Non Wired, with 120 minute fire rating for integrity and radiation control (EW 120) and insulation (I 20),with 30minute full insulation, with a light transmission of 86% and a sound reduction of 38 dB and manufactured in Intertek & TUV audited facility and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested for 5000 hours of UV resistance as per EN ISO 12543-4.The glass shall provide bi-directional (symmetrical) fire protection. The glass should be held in its place with the help of 1.25 mm cold rolled steel beading and Kerafix 2000 ceramic tape or as per the test evidence with cross section of 4 x 15 mm as per the test evidence. The beading shall be clipped on using stainless steel self-tapping screws fixed at a distance of 70 mm from the edges and 150 mm c/c henceforth. The glass panes are to be supported on non- combustible 5 mm thick calcium silicate setting blocks. The installation shall be through trained and certified by Vetrotech certified Installer.The maximum glazing size shall be as per details design and drawings. The profile has to be fixed to the supporting construction by means of M10 or bigger steel bolts at every 150 mm from the edges and every 500 mm (approx.) c/c.The partitions shall offer C4 level of wind resistance when tested as per EN12211 and shall provide class 4 level of air permeability as per EN 1026.The partitions shall also be tested for class 5 of impact resistance when tested as per EN 13049.The partitions shall have water tightness level of 8A when tested as per EN 1027. The item shall include intumescent putty and fire resistant acrylic sealants and the total assembly shall satisfy the fire resistance criteria of stability, integrity & radiation control and partial insulation (EW120).Fire Rated partition shall be of Makes- Saintgobain,Navvair, Matrix or equivalent. all complete as per specification.(item includes the cost of glazing) Design,Shop drawings along with hardwares for the item with all construction and anchoring details, etc.along with fire rating test reports shall be got approved before execution.Design, Shop drawings along with hardwares for the item with all construction and anchoring details, etc. along with fire rating test reports shall be got approved before execution.	SQM	300			0.2778560538%
A922	Providing and fixing electrically operated, self operable/closing, approved anodized aluminium framed glass door with 10 mm thk. tinted glass, all complete. Automatic Sliding operating system comprising of Advanced DC brushless motor, Automatic Reversing Safety Device, Suitable for door weight 100 kg, Opening speed : 90-110cm /sec (adjustable), Closing Speed : 40-110cm/sec (adjustable), opening time : within1-9 seconds after door stopped in opening, controller : 8 Bit micro computer, Motor (Dortexor equivalent) : DC12V, 35W brushless motor, Power Voltage : AC 110V - 240V. 50Hz - 60Hz, Power Consumption : 45W including Infra Red Sensors 2No both sides, rails & top & bottom as required, any other accessories as required etc. all complete of best make and quality as approved by Engineer in charge. The door shall be double panel sliding door of approx. area 5 sq.m. to 7.5 sq.m. each.	SQM	100			0.1925415294%

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A923	Providing and fixing Electrically operated sliding doors , self operable/closing, G.I. framed with fire resistant glass, with Fire resistant glazed door system shall be of uniform profile 50X50 mm with 14mm EI 20 glass for Interior application. Fire Resistant Glazed Door System shall have 120 minutes of integrity and radiation control (EW 120) with symmetrical (Bi-Directional) fire protection. The frames shall be cold rolled profiles as per EN standard EN 10327/ Indian Standard IS 513. The door frames are cold rolled from 1.6 mm steel sheet to form a profile of 50 mm x 50 mm on all sides. The door shutter shall have the top rail, side rail and bottom rail dimensions of 50 mm x 50 mm. The glass must be minimum 14mm clear,120 min fire rated for Integrity, Radiation control (EW 120) and partially insulation (EI 20) Non Wired Toughened Interlayered glass with a light transmission of 86% and a sound reduction of 38 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification and compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass shall be tested and certified for no formation of bubbles or yellowing after 5000 hours of exposure to UV radiation by TUV Rheinland as per EN 12543-4. The shutters shall be fixed to the frame using Weld-on hinges of dimensions 179mm X 20mm. The profiles shall have grooves to incorporate Fire Resistant gaskets. The glass shall be held in its place with the help of 1.5 mm cold rolled steel beading and Kerafix 2000 ceramic tape with cross section of 4 x 15 mm as per the test evidence. Beading shall be clipped on using Stainless Steel selftapping screws fixed at a distance of 70 mm from the edges and 150 mm c/c henceforth. The glass panes are to be supported on non-combustible 6 mm Calcium Silicate setting blocks. The door shall be fitted with offset pull handle and door closer of Dorma (TS 73V, TS 83V, TS93V), Geze (TS 2000NV) or equivalent. The inactive leaf (in case of double leaf only)shall be fixed to the frame using a tower bolt at meeting edge at top or as per the tested evidence. The doors shall be manufactured in a TUV audited facility. The maximum glazing size shall be as per the test certification. The profile has to be fixed to the supporting construction by means of M10 or bigger steel bolts at every 150 mm from the edges and every 500 mm (approx.) c/c. The doors shall offer C4 level of wind resistance when tested as per EN12211 and shall provide class 4 level of air permeability as per EN 1026. The door shall also be subjected to durability tests as per EN 12400 for C5 classification (200,000 cycles) all complete as per specification. The door shall have water tightness level of 8A when tested as per EN 1027. Fire Rated Door shall be of Makes- Saintgobain,Nauvair, Matrix or equivalent. all complete as per specification.(item includes the cost of glazing) Design,Shop drawings along with hardwares for the item with all construction and anchoring details, etc.along with fire rating test reports shall be got approved before execution. Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	SQM	75			0.2166092206%
A925	Providing and fixing 3M privacy film on glass door, partiton etc.having Project / Purchaser's Logo and other detail design as per details and direction all complete as per specification and approved by Engineer incharge	SQM	50			0.0031120232%
A926	Providing & fixing 120 minutes Fire Rated, Fully Glazed non load bearing fixed partition with valid fire test certificate from national or international lab with Partition Frame manufactured from 1.6 mm galvanized steel sheet (zinc coating not less than 120 gm/sqm) pressed to form a suitable profile & fixed to the supporting construction by means of M 10 X 120 or bigger steel bolts at 150mm from the edges & every 500mm c/c. The frame shall be finished with etch primer for scratch resistance and shall be powder coated of min. 30 micron of approved shade and color.The glass panels shall be interlayered minimum 14mm thick, 120 minute fire rating and partially insulated (EW120), with min.30 minute full insulation, Non Wired Toughened Interlayered glasshaving a sound reduction of greater than 37dB, light transmission of 87% and compliant to class 1(B)1 category of impact resistance as per EN 12600. The glass should be manufactured in UL & TUV audited Facility and including UL-EU Certification. The glass shall be held in position with minimum 1.6mm G.I Beading, clamped or bolted to the frame profile by 4mm x 35mm steel screws at every 250 mm c/c and a ceramic tape of cross section of 5mm x 20mm on both sides of the glass. The item shall include intumescent putty and fire resistant acrylic sealants and the total assembly shall satisfy the fire resistance criteria of stability, integrity & radiation control and partial insulation (EW120)all complete as per specification. Design,Shop drawings for the item with all construction and anchoring details along with fire rating test reports shall be got approved before execution. Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	SQM	150			0.1419993780%
A927	Providing & fixing minimum 30mm thick Hermetically sealed double glass (DGU) consisting of Fire resistant glass of minimum 14mm thick, clear, toughened,interlayered borosilicate glass,120 minutes fire rated for both integrity & radiation control ,remain transparent under both fire and non fire condition and 6mm thick toughened tinted glass with min.10mm air gap filled with inert gas. The partitions shall be 120 minutes Fire Rated,Fully Glazed non load bearing fixed partition with valid fire test certificate from national or international lab with Partition Frame manufactured from cold rolled profiles Min.1.5 mm galvanized steel sheet (zinc coating not less than 120 gm/sqm) pressed to form a profile of nominal size 50mm x 50 mm on all sides or suitable profile to accomodate the glass & fixed to the supporting construction by means of M 10 X 120 or bigger steel bolts at 150 mm from the edges & every 500mm c/c .The frame shall be finished with etch primer for scratch resistance and shall be powder coated of min. 30 micron of approved shade and color.The glass panels shall be interlayered minimum 14mm thick, 120 minute fire rating and partially insulated (EW120), with 30minute full insulation, Non Wired Toughened Interlayered glass having a sound reduction of greater than 37dB, light transmission of 87% and compliant to class 1(B)1 category of impact resistance as per EN 12600. The glass should be manufactured in UL & TUV audited Facility and including UL-EU Certification.The glass shall be tested for 5000 hours of UV resistance as per EN ISO 12543-4.The glass shall provide bi-directional (symmetrical) fire protection. The glass should be held in its place with the help of 1.25 mm cold rolled steel beading and Kerafix 2000 ceramic tape or as per the test evidence with cross section of 4 x 15 mm as per the test evidence. The beading shall be clipped on using stainless steel self-tapping screws fixed at a distance of 70 mm from the edges and 150 mm c/c henceforth. The glass panes are to be supported on non- combustible 5 mm thick calcium silicate setting blocks. The installation shall be through trained and certified by Vetrotech certified Installer.The maximum glazing size shall be as per details design and drawings. The profile has to be fixed to the supporting construction by means of M10 or bigger steel bolts at every 150 mm from the edges and every 500 mm (approx.) c/c.The partitions shall offer C4 level of wind resistance when tested as per EN12211 and shall provide class 4 level of air permeability as per EN 1026.The partitions shall also be tested for class 5 of impact resistance when tested as per EN 13049.The partitions shall have water tightness level of 8A when tested as per EN 1027.The item shall include intumescent putty and fire resistant acrylic sealants and the total assembly shall satisfy the fire resistance criteria of stability, integrity & radiation control and partial insulation (EW120) all complete as per specification.Fire Rated partition shall be of Makes- Saintgobain,Nauvair, Matrix or equivalent. all complete as per specification.(item includes the cost of glazing)Design,Shop drawings for the item with all construction and anchoring details along with fire rating test reports of complete system shall be got approved before execution. Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%	SQM	250			0.2326543480%

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ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A928	Providing and fixing of fully glazed steel fire door (single/ double leaf) with 120 minutes fire rating, of integrity and radiation control (EW 120) fabricated with min.1.5 mm thick galvanized steel sheet. The door frames are manufactured from cold rolled min.1.5 mm thk. galvanized steel sheet (zinc coating not less than 120 gm/sqm) pressed to form a profile of 50 mm x 50 mm on all sides. The door shutter would have the top rail, side rail and bottom rail dimensions of 50 mm x 50 mm. The overall door opening shall be as per tested evidence and tested as per EN 1634-1 in an accredited international laboratory.The frame shall be finished with approved fire resistant primer or Powder coating of min. 30 micron as per approved shade.The sections have a special insulating infill.The test is conducted in IFTS as per EN 1634-1: 1999.The glass panels shall be interlayered minimum 14mm thick, 120 minute fire rating and partially insulated (EW120), with 30 minute full insulation, Non Wired Toughened Interlayered glass, with a light transmission of 86% and a sound reduction of 37 dB and manufactured in UL & TUV audited Facility and including UL-EU Certification. The glass should be compliant to class 1(B)1 category of Impact Resistance as per EN 12600. The glass should be held in its place with the help of 1.6 mm GI beading and a special ceramic tape with cross section of 5 x 20 mm as per the test evidence. The shutters should be fixed to the frame using weld-on hinges of dimensions 179mm X 20mm. The profiles shall have grooves to incorporate fire-resistant gaskets. The doors shall incorporate drop down seal at the bottom. The glass should be held in its place with the help of 1.25 mm cold rolled steel beading and Kerafix 2000 ceramic tape with cross section of 4 x 15 mm or as per the test evidence. The beading shall be clipped on using stainless steel self-tapping screws fixed at a distance of 70 mm from the edges and 150 mm c/c henceforth. The glass panes are to be supported on non-combustible 5 mm thick calcium silicate setting blocks. The door should be fitted with offset pull handle and door closer of Dorma (TS 73V, TS 83V, TS93V), Geze (TS 2000NV), Concealed door closer or equivalent. The inactive leaf should be fixed to the frame using a tower bolt at meeting edge at top or as per the tested evidence. The doors shall be manufactured in a Intertek & TUV audited facility.The door shall also be subjected to durability tests as per EN 12400 for C5 classification (200,000 cycles). The shutters should be fixed to the frame using Dorma SS Ball Bearing Hinges of size 100 mm x 89 mm and 3 mm thickness or equivalent. Beading should be attached using 4 mm x 35 mm SS screws at a distance of 75 mm from the edges and 150 mm c/c henceforth. The door should be fitted with Dorma Mortise Sash lock 952F and door closer TS 68 of Dorma make or equivalent. The inactive leaf should be fixed to the frame using 1200mm long tower bolt.all complete as per specification and Design,Shop drawings, along with hardwares for the item with all construction and anchoring details along with fire rating test reports shall be got approved before execution. Payment Breakup: a) On receipt of material at site - 60% b) On complete execution as per item description - 40%	SQM	75			0.0863359836%
A929	Providing and fixing frameless fully glazed (single/ double leaf) doors and Mullion-less glass partiton with 12mm thk toughened float glass fixed with Dorma make stainless steel patch fittings including cutting, making holes, cutouts in the glass of required shape and size to accommodate fittings and fixing the fittings in floors, soffits, jams including necessary fixtures, screws, ss handels 1000mm long ,C Shape (both side),sealant wherever required and SS cover over patch fittings.The glass panels shall be easily removed and refitted (during breakage) without using any special tools. The junction of glass to glass shall be properly secured using extruded PVC or sealant.Shop drawings for the item with all construction and anchoring details shall be got approved before execution. Payment Breakup: a) On receipt of material at site - 60% b) On complete execution as per item description - 40%	SQM	65			0.0287449225%
A930	Providing and fixing motorized curtain (operated with remote control also) mechanism at all heights. Payment Breakup: a) On receipt of material at site - 60% b) On complete execution as per item description - 40%	SQM	25			0.0237027398%
A931	Provide & Install SS Logo/ Signature ICON of SCCL as per Guidelines of "Client" complete in all aspects. Logo to be fabricated in Stainless steel finish as per approved pattern and Shades of Client Guidelines along with proper provision of fixing arrangement of Logo on Partition Surface/Glass Surface/Acrylic Surface etc.Shop drawings for the item with all construction and anchoring details shall be got approved before execution, all complete as per specification and approved by Engineer incharge. Payment Breakup: a) On receipt of material at site - 60% b) On complete execution as per item description - 40%	SQM	10			0.0055004136%
A933	Providing, fabricating, designing, supplying and fixing of 8mm thick Suede Finish exterior grade High Pressure Laminates (HPL) made up of 1300mm x 3050mm in size and manufactured under EN438-2&3:2005 standard, including supply and fixing of all necessary supporting arrangements, etc. all complete as per drawing, specification & instructions of engineer-in-charge. Measurement of payment shall be outer finished area of HPL.	SQM	50			0.0005729036%
A934	Providing and fixing dry wall partition up to ceiling height with 12.5 mm thick double skin fire rated Glass Reinforced Gyproc plaster board conforming to IS: 2095: Part 1:2023 (Board with BIS certification marks) Type F / EN520:2004-TYPE-F / ASTM C473/C1396-TYPE X, having thermal conductivity 0.24w/m ² k, with 100 mm overall thickness of partition, consisting of G.I. frame and required board, including providing and fixing of frame work made of special section power pressed/ roll form G.I. sheet with zinc coating of 120 gms/sqm(both side inclusive), consisting of floor and ceiling channel 50mm wide having equal flanges of 32 mm and 0.50 mm thick, fixed to the floor and ceiling at the spacing of 610 mm centre to centre with dash fastener of 12.5 mm dia. meter 50 mm length or suitable anchor fastener or metal screws with nylon plugs and the studs 48 mm wide having one flange of 34 mm and other flange 36 mm and 0.50 mm thick fixed vertically within flanges of floor and ceiling channel and placed at a spacing of eld in position with minimum 1.6mm GI Beading, clamped or bolted to the frame profile by 4mm x 35mm steel screws at every 250 mm c/c and a ceramic tape of cross section of 5mm x 20mm on both sides of the glass. The item shall include intumescent putty and fire resistant acrylic sealants and the total assembly shall satisfy the fire resistance criteria of stability, integrity & radiation control and partial insulation (EW120).all complete as per specification. Design,Shop drawings for the item with all construction and anchoring details along with fire rating test reports shall be got approved before execution. Payment Breakup: a) On Supply & receipt of material at site - 50% b) On complete execution as per item description - 50%combustible 6 mm Calcium Silicate setting blocks. The door shall be fitted with offset pull handle and door closer of Dorma (TS 73V, TS 83V, TS93V), Geze (TS 2000NV) or equivalent. The inactive leaf (in case of double leaf only)sh	SQM	400			0.0154267325%
A935	Providing and fixing MIN.12.5 mm thick water resistant , fire resistant Cementitious board consists of higher density core with an aerated gypsum core with glass fibre and other additives encased encased in, and firmly bonded to strong paper liners and conforming to IS 2095 Part 1:2023 Type F / EN520:2004-Type-F / ASTM C473/C1396-Type X, having thermal conductivity 0.24w/m ² k. Partition wall with GI Framework and 12 mm thick bison board cladding on either side of GI section (50x38mm) in horizontal & vertical framework 600 mm c/c spacing as required for suitable rigidity & fixed above false ceiling partition walls as required all complete, including Additional support and height adjustment clips shall be provided for light fixtures, A.C. ducts etc. jointing and finishing to a flush finish with recommended jointing compound, jointing tape, angle beads at corners joint finisher and two coats of primer suitable for board as per manufacture's specification and direction of engineer in charge all complete.The work with a light transmission of 86% and a sound reduction of 37 dB and man	SQM	100			0.0188187550%
1000	BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.					

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.					
a	Using table moulded/machine made fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25% (including cost of cement for brick making)	CUM	2577			0.5847676257%
A1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm upto 10m level above finished grade level (For height greater than 10m from FGL , extra over for additional height to be paid in Item No 1014), places and position above plinth including raking out joints, curing, scaffolding etc complete but excluding plastering and painting.					
a	Using table moulded/machine made fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25% (including cost of cement for brick making)	CUM	6809			1.9434248789%
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	255			0.0901190386%
A1003	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm upto 10m above finished ground level (For height greater than 10m from FGL , extra over for additional height to be paid in Item No 1015), places and position above or below plinth/graded level including providing two nos. 6 mm diameter MS bars at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification. (Reinforcement payment shall be made seperately as per applicable BOQ in 400 Series)					
a	Using table moulded/machine made fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25% (including cost of cement for brick making)	SQM	396			0.0138462377%
B1003	Providing factory made composite modular light weight aerated concrete panels of minimum 75mm thick and minimum 2 hours of fire rating, consisting of two fiber reinforced cement sheets(min. 4 mm thick) on either side of light weight concrete core, having min. compressive strength of 35 Kg/Cm2 and density in the range of 700-900 Kg/Cu.M. to provide external wall and internal partition at all levels. The panels shall be fixed in position through tongue and groove jointing system by screwing the panels to top & bottom U channels (channels min. 1.25 mm thick and galvanized to min. grade 180 as per IS:277), fixing U profiled top & bottom channels to concrete/primary steel members which are placed at max vertical spacing of 4.5 M with the help of galvanized steel expansion fasteners, filling the joints from both faces with silicon acrylic paste and making the same water tight by covering with fiber glass tape(min. 50 mm wide & min. 0.5 mm thick) or by any other suitable material, so as to ensure that entire construction done is weather proof and panel surfaces are fush for painting, creating opening for doors/windows/ventilators/ducts/pipes/fans/AC etc. and finishing the opening with same U profiled galvanized steel channel which is used at top & bottom. The wall must be capable of sustaining wind pressure of 4.5 M height within limiting deflection of span/250.	SQM	4190			0.3403594239%
1005	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	60			0.0040481986%
A1006	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar of 1:6 upto 10m level above finished grade level (For height greater than 10m from FGL, extra over for additional height to be paid in Item No 1014). Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid separately)	CUM	50			0.0118460961%
1007	Providing and laying 75 mm thick bed of dry brick aggregate including of excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects as directed by the engineer.	SQM	10			0.0000893556%
1008	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.	CUM	12			0.0009366801%
1009	Supply and placing in position mild steel wire fabric(Chicken Wire Mesh) of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	220			0.0015028581%
A1009	Supply and placing in position GI of 0.9 mm welded wire mesh/ chicken wire mesh for encasing of steel sections in concrete/ brick/ plaster at the junction of RCC and brickworks including cutting, bending, fixing etc. complete.	SQM	500			0.0034155866%
1010	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar 1:6, painting, finishing to match with existing finishing, scaffolding/supporting at any level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	3			0.0001285944%
1011	Providing and filling brick bats in soak pits all complete.	CUM	11			0.0006100464%
A1012	Providing Autoclaved Aerated Concrete (AAC) block masonry with blocks having dimensions of 625 mm x 250 mm. thickness ranging from 100 mm to 300 mm conforming to IS 2185(part-III). The jointing cement sand mortar in the composition of 1: 6 (Cement: sand) shall be used with suitable plasticizer(optional). Sand having modulus of fineness 1.1 shall be used. The horizontal and vertical joint thickness shall be approximately 10 mm. In case of partition walls (100 mm /125 mm thick) the joint reinforcement i.e. 1 number of 6-8 mm diameter bars shall be placed at every alternate course to be anchored properly with the main structure. All other structural requirements like stiffening of masonry, joint reinforcement etc. in the AAC masonry work strictly be carried out as per instructions laid down in IS 6041, IS 1905 etc all complete as per specification. Note: Cement for making of AAC blocks is in the scope of contractor. Payment Breakup: a) On Supply & receipt of AAC Blocks at site - 50% b) On complete execution as per item description - 50%	CUM	2230			0.6153329818%
1014	Extra over item no. A1002,B1002, A1006, A1012 for height above FGL (Finished Ground Level) as per following:					
a	Height exceeding 10m from FGL but not exceeding 20m	CUM	150			0.0042152548%
b	Height exceeding 20m from FGL but not exceeding 30m	CUM	40			0.0020228043%
c	Height exceeding 30m from FGL but not exceeding 40m	CUM	20			0.0013487520%
d	Height exceeding 40m from FGL and above	CUM	20			0.0015734361%
1015	Extra over item no. A1003, B1003 for height above FGL (Finished Ground Level) as per following:					
a	Height exceeding 10m from FGL but not exceeding 20m	SQM	100			0.0001780638%
b	Height exceeding 20m from FGL but not exceeding 30m	SQM	20			0.0000641030%
c	Height exceeding 30m from FGL but not exceeding 40m	SQM	20			0.0000854706%
d	Height exceeding 40m from FGL and above	SQM	20			0.0000940177%
1100	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.					

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities / system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
1101	Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg/sqm shall be applied one before & one after the DPC.					
b	50mm thick	SQM	1576			0.0214808346%
1200	PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.					
1201	Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar as applicable upto 10m above finished floor level (For height greater than 10m from FFL, extra over for additional height to be paid in Item No 1206) on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete					
a	Cement Mortar 1:6	SQM	8215			0.1273960385%
AA1201	Providing 18mm thick plaster in two layers outside the building/boundary wall/rough surface of internal wall in cement mortar 1:6 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.					
A1201	Providing 18mm thick plaster in two layers outside the building/boundary wall/rough surface of internal wall in cement mortar as applicable upto 10m above finished ground level (FGL) (For height greater than 10m from FGL -, extra over for additional height to be paid in Item No A1206) on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete					
a	Cement Mortar 1:6	SQM	41684			0.6464244030%
1202	Providing 12mm thick plaster internal/external surfaces of building/boundary wall in cement mortar as applicable above finished Ground level (For height greater than 10m from FGL, extra over for additional height to be paid in Item No 1206) on walls finished to a smooth finish as per specification all complete.					
a	Cement Mortar 1:6	SQM	40938			0.5420792358%
1203	Providing 12mm thick plaster in cement mortar 1:6 on walls with rough finish all complete.	SQM	450			0.0057692657%
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	18228			0.2171699248%
1205	Providing 12mm thick plaster in walls, drains/culverts with a paste of neat cement @ 1kg/sqm and rubbed smooth with trowel etc. all complete.	SQM	2700			0.0166959053%
A1206	Extra over Item A1201, 1202 for plastering on exterior/interior walls over & above 10m height from FGL.					
a	Height exceeding 10m from FGL but not exceeding 20m	SQM	723			0.0011469572%
b	Height exceeding 20m from FGL as applicable but not exceeding 30m	SQM	723			0.0020598415%
c	Height exceeding 30m from FGL but not exceeding 40m	SQM	253			0.0009665301%
d	Height exceeding 40m and above from FGL					0.0000000000%
B1206	Providing and making decorative plaster of all types and design on walls, ceilings, arcs, columns with various thickness upto 18 mm including finishing all complete.	SQM	150			0.0010203053%
1207	Forming groove of uniform size from 12X12 mm upto 25X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battons, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	880			0.0011680982%
1208	Providing and laying encasement to box type steel beams at all levels with lath plaster 50 mm nominal thickness with cement plaster (1:4) over chicken wire mesh including all labour, materials, equipment, handling, transporting, mixing, placing, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of enginner in charge (chicken wire mesh to be paid separately)	SQM	1000			0.0246375489%
1209	Ruled pointing in masonry in Cement Mortar 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	225			0.0015224451%
1210	Providing drip course in cement mortar(1:4) in parapet, chajjas, windor/door heads, architectural facias, fns,etc all complete with all labour, T&Ps as per specification, drawing and instructution of engineer.	RM	1000			0.0011331330%
A1210	Providing moldings and cornices on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	525			0.0008700939%
1300	FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
1301	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	19571			0.0268653013%
1303	Providing and applying two or more coats of oil bound destemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	200			0.0007284426%
1304	Two or more coats of acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	993			0.0040025009%
A1304	Two or more coats of Low VOC (volatile organic compound, less than 50g/L) acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge	SQM	32072			0.1292731219%
1305	Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	688			0.0037264665%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL

% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE

SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities / system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..

ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFTER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A1305	Providing and applying two or more coats of low VOC (volatile organic compound) acrylic emulsion paint as per IS 15489, relevant latest code of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline. Note: The paint should have VOC content limit less than 50 grams per litre. All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge.	SQM	3961			0.0225269775%
1306	Providing and applying 2 or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer confirming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	300			0.0037519652%
A1306	Providing and applying 2 or more coats of oil resistant paint (epoxy based & minimum 150 micron thickness) of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	956			0.0089671969%
B1306	Providing and applying 2 or more coats of epoxy based acid/alkali chemical resistant paint (minimum 150 micron thickness) on epoxy primer of approved manufacturer Berger,Naya Rangoli,or equivalent, approved finish, shade and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer complete all as per manufacturer's recommendations and approved by engineer, at all heights above or below grade level, all complete as per specifications.	SQM	3332			0.0416718272%
1307	Providing and applying two coats of Epoxy coating with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 150 micron thickness over epoxy primer.	SQM	260			0.0022483301%
1308	Providing and applying 2 or more coats of Chlorinated Rubber paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying chlorinated rubber zinc phosphate primer confirming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, inclusive of intermediate coat of Titanium dioxide / micaceous iron oxide complete as per specifications.	SQM	96			0.0007387768%
1309	Two or more coats of fire resistant transparent paint (@3.5 sqm per litre per coat) as per IS 162 on all woodwork over french polish as per IS 348 or flat oil paint as per IS 137 of approved grade and manufacture to give an even shade as per specifications. French polish payment will be made separately.	SQM	150			0.0025524630%
A1311	Two or more coats of synthetic enamel paint of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete. Note: The paint should have VOC content limit less than 150 grams per litre All necessary documentation (certificates, manufacturer declarations) should be provided by the contractor to engineer in charge.	SQM	150			0.0010987343%
1312	Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.	SQM	750			0.0030108963%
A1313	Providing and applying ready made Epoxy Paint over areas other than steel structure/flooring with suitable pigments of approved shade as per specification and direction of Engineer. Epoxy Painting shall be provided with surface preparation of concrete substrate with Captive Shot Blasting Machine OR Light Grinding to form the required anchor profile on the floor substrate followed by application of epoxy resin based moisture barrier underlay of 2 mm thickness including filling of saw cut joints with epoxy cementitious resin based moisture barrier underlay as per manufacturer specification. Application of self smoothing epoxy floor topping of epoxy based resin of 2 mm thickness over epoxy resin based moisture barrier underlay including application of solvent free epoxy resin based two component primer shall include application of PU Sealant at Expansion and Isolation joint respectively including surface preparation of the joint, fixing of backup strip and application of sealant etc all complete as per specification. The epoxy coating shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 4 mm thickness.	SQM	500			0.0136583240%
A1314	Providing and applying resin bonded granular textured premium Acrylic paint finish,shall consist of crushed stone/special quality Silica quartz chips of 5 mm to 2.5 mm size, and of approved natural color/shade and bonded with synthetic resins, Silicone additives, acrylic modified exterior adhesives and additives altogether in a single pack mix, applied on primer base coat, after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc.cured and dried plaster surface with a dry film nominal thickness of 2.5 mm from approved manufacturer Asian ,Luxture, Berger or equivalent.The final finished coating shall be fungus resistant, UV resistant, water resistant & repellant and extremely durable with color fastness as per manufacturer's specifications including warranty as per specification ,instructions and instruction of Engineer-in-charge	SQM	100			0.0054209083%
A1315	Providing and applying three coats of Solvent based (100% pure acrylic co-polymer resin based) paint (shall not contain any water sensitive ingredients)of approved brand and manufacture and required shade over one coat of primer or one coat of cement paint after necessary cleaning/ washing, removing loose & flaking materials, removing mould, algae, organic growth & grease, preparing the surface using coir brush/ wire brush, sand paper, including all required tools, material, scaffolding and other painting accessories, filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish. The final finished coating shall be fungus resistant, UV resistant, water resistant & repellant and extremely durable with color fastness as per the specifications/manufacturer's specifications, instructions and satisfaction of Engineer-in-charge	SQM	1735			0.0335340998%
1316	Providing and applying 2 mm thick plaster of paris punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	5176			0.0237285043%
1317	Providing and applying 2 mm thick white cement punning on walls including preparation of surface, staging, etc to achieve a smooth even surface all complete as per specification and as directed by engineer.	SQM	1744			0.0077861648%
A1317	Providing and applying 2 mm thick Acrylic wall putty punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	34883			0.1557366887%
1318	Providing and applying Synthetic plaster for external applications composed of synthetic fibre and petroleum based chemical similar to RENOVO or equivalent and of approved natural color/shade applied on cured and dried plaster surface.The final finish Paint shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	87			0.0020519258%
A1319	Providing and applying two or more coats of Premium Acrylic Smooth weather resistant Paint with Silicone additives, over and including base coat, of approved brand and manufacture and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with external water resistant putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant and extremely durable with color fastness as manufacturer's specifications, including warranty as per specification.(Asian / Nerolac / Berger / Equivalent as per selection).	SQM	19455			0.1077690581%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL

% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE

SCOPE - "Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities / system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..

ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
1320	Providing and applying acid alkali and oil resistant high build, solvent free, self smoothing, seamless epoxy based amine cured floor finish 150 microns over primer on C.C. flooring	SQM	950			0.0119119797%
A1323	Providing,Designing & fixing GRC in approved design ,customized Screens and Dome in shapes , size, texture, thickness, pattern and color upto any height as per the architectural drawing & approval,including necessary scaffoldings required for installation.Glass Reinforced Concrete (G.R.C) Screens shall casted with 'Spray Mix' concrete design in approved size, pattern, thickness of 50mm on the outer Border & 25-30mm for Internal member and shade. The Screens should be made from '53 grade' White Portland Cement manufactured by 'JK Cement' or 'Birla white', White Quartz fine graded sieved Silica Sand, Alkali Resistant Glass Fibre manufactured by 'NEG Japan, Owen Corning 'Saint Gobain' or equivalent, Super Plasticizers manufactured by 'Karochem' or equivalent, Polymers manufactured by 'Nova Polychem' or equivalent and U.V resistant Synthetic inorganic pigments shall be used for pigmentation manufactured by 'Phenochem industries or equivalent. The Screens casting shall take place with layering methodology using- Direct Power Spray machines. The GRC Screens flexural strength average L.O.P shall be above or equivalent to 6 N/mm2 & M.O.R shall be above or equivalent to 12 N/mm2 for tests done on 28 days cured samples Installation to be done by specialized vendor in strict supervision if required as per the manufacture's specification.The fixing of Screens shall be done using 'Dry fixing' method onto structural supportmembers i.e. R.C.C, Brick work, MS Framework. SS / MS Galvanized CLAMPS & PINS also if required fasteners to be used of Wurth, Hilti & Fischer or equivalent. All cast in socket to be epoxy primer coated. Electrodes to be used of advani, mangalam, esab or Victor brand or equivalent.GRC Customized Screens,dome shall be of Unistone make or equivalent.Installation to be done by specialized vendor in strict supervision if rrequired as per the manufacture's specification and as directed by Engineer.The colour, texture and pattern finish shall be as finalized by Architect engineer.	SQM	175			0.0426438717%
1400	FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
A1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2(1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges etc. all complete The ratio of approved quality metallic hardening compound and cement shall be 1:4.(Quoted item rate shall be inclusive of providing glass joint strips).	SQM	43775			0.9382033657%
B1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with non- metallic hardener pigmented topping 12mm thick uniform graded hardener in flooring. Under layer of 38mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 12mm thick hardener concrete of mix 1:2(1 cement hardner mix with approved quality non-metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including as per manufacturer specification, cement slurry, rounding off edges etc. all complete.The ratio of approved quality hardening compound and cement shall be 1: 4 as per approved sample and manufacturer specification. (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	5050			0.1082336264%
1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates) flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5 mm 20 well graded) and top layer of 10mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete as per specification.	SQM	637			0.0116107606%
A1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates) with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 10mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, etc. all complete as per specification.The ratio of approved quality metallic hardening compound and cement shall be 1: 4. as per approved sample and manufacturer specification.	SQM	200			0.0036454507%
B1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates) with Non-metallic hardener pigmented topping of 10 mm thick uniform graded in skirting and dado. Under layer of 15mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 10mm thick with hardener concrete of mix 1:2 (1 cement hardner mix with approved quality hardening compound :2 stone aggregate 6mm nominal size) by volume as per manufacturer specification including,cement slurry, rounding off edges etc. all complete as per specification.The ratio of approved quality hardening compound and cement shall be 1: 4 as per approved sample and manufacturer specification.	SQM	400			0.0072909015%
C1402	Providing and laying 25 mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates) with 10 mm thick uniform graded particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5 mm well graded) and top layer of 10mm thick cement mortar 1:2 (1 cement :2 sand) by volume including cement slurry, rounding off edges etc. all complete as per specification.	SQM	50			0.0008657945%
A1403	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum/quartz chips topping pigment content is 3.5 kg per 50 Kg of white Cement) of size 300X300X25mm thick of approved shade as per IS 1237, including minimum 20mm cement mortar bedding of 1:3 (1 cement : 3 sand) jointed with neat cement slurry@4.4 kg/sqm,labour,materials, etc. all complete with pigment to match the shade of the tiles including rubbing, curing, grinding and polishing complete with laying as per IS 1443 etc.(inclusive of cost of cement for tiles manufacturing) all complete for following: Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
a	Laid in floors	SQM	6782			0.3139833836%
b	Laid in skirting	SQM	31			0.0019109155%
A1404	Providing and laying interlocking M35 Grade concrete blocks in paving with approved colour and pattern and should be laid on the subbase and bedding of sand minimum 20mm thick as per specifications and recommendations of manufacturer.(Inclusive of cost of cement for paver manufacturing) Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
a	60mm					
b	80mm	SQM	5788			0.2021914606%
A1412	Providing and laying 18-20mm thick Mirror polished (6 layers of polish)/Flame finish (making top surface rough by burning / shot blasting)Granite stone of approved color and texture in flooring and skirting. Under bed shall average 30mm thk of 1 cement : 1.5 sand : 3 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, moulding, cornice, curing, grinding, granite polishing etc. all complete. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%	SQM	1839			0.2787988044%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities / system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (I QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
B1412	Providing and laying 18-20mm thick Mirror polished Granite stone slabs in approved shade/color /design in staircase tread ,riser, landing/skirting and corridors over minimum 30 mm thick underbed of 1 cement : 2 sand by volume mixed with sufficient water to form a stiff workable mass. The slabs shall be laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including moulded nosing, pigments, curing, grinding, making corners, granite polishing etc.all complete. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%	SQM	580			0.0879300199%
1414	Providing and laying polished Granite stone 18-20mm thk in skirting and dado with 6mm thick projection from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete. including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%	SQM	550			0.0766742537%
A1416	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 with Matt/ Glazed from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 average 40mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following:- Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
b	9mm (Minimum) thick tiles In flooring	SQM	2450			0.1099365634%
d	9mm (Minimum) thick tiles In skirting and dado upto specific height	SQM	100			0.0047057395%
B1416	Providing and laying heavy duty Antiskid full body vitrified tiles 18-20 mm thick of size 600x600mm in flooring, of approved shade, colour, pattern and make from reputed / approved manufacturer as Simpolo,Varmora or equivalent ,complete including underbed of cement mortar 1:3 minimum 30mm thick for flooring with neat cement slurry @3.3Kg/sqm etc.all complete. Full body Vitrified Tiles shall be laid on properly laid levelled floor, with joints 3 to 5mm wide & 8 to 10mm deep & shall be filled with approved Epoxy Grout mix of 0.70kg of organic coated filler of desired shade (0.10kg of hardener and 0.20kg of resin per kg). Full body Vitrified Tiles shall have water absorption less than 0.5%, Modulus of Rupture more than 38N/mm2, Breaking strength more than 7500N, Moh's scale more than 6, Abrasion resistance less than 144 mm3 and coefficient of friction more than 0.4. Vitrified Tiles shall generally conform to IS: 15622. All complete (including cost of epoxy grouting)as per engineer incharge. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%	SQM	646			0.0642843144%
C1416	Providing and laying digitally glazed vitrified ceramic tiles of polished and matt variety of size 800x800 from reputed / approved of approved shade, colour, pattern and make from reputed / approved manufacturer as Simpolo,Varmora or equivalent ,complete including underbed of cement mortar 1:3 with neat cement slurry etc. all complete for following NOTE: All vitrified tiles to be used should be with appropriate % of recycled content. The contractor should provide the material sample/ declaration from manufacturer mentioning the recycled content used in manufacturing of vitrified tiles to be used to engineer in charge) Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
a	9mm (minimum) thick tiles In flooring	SQM	405			0.0195420764%
b	9mm (minimum) thick tiles In skirting and dado upto specific height	SQM	55			0.0027740553%
D1416	Providing and laying digitally glazed vitrified ceramic tiles of polished and matt variety of size 600x600 / 800x800 of approved shade, colour, pattern and make from reputed / approved manufacturer as Simpolo,Varmora or equivalent , complete including 40mm average thick underbed of cement mortar 1:4 for flooring with neat cement slurry and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc.,3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout SP- 100 of Laticrete, Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
a	9 mm (min.) thick tiles in flooring	SQM	100			0.0048252041%
b	9 mm (min.) thick tiles In skirting and dado upto specific height	SQM	20			0.0010087474%
A1417	Providing and laying Digitally vitrified ceramic tiles of matt finish of size 600x600mm from reputed / approved manufacturer Simpolo, varmora or equivalent complete including minimum 40 mm thick underbed of cement mortar 1:4 for flooring and 12mm thick underbed of cement mortar 1:3 for dado / skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
b	9.00 mm (min.) thick tiles In flooring	SQM	430			0.0207483774%
d	9.00 mm (min.) thick tiles In skirting and dado upto specific height	SQM	25			0.0012609342%
B1417	Providing and laying vitrified ceramic tiles of matt finish variety of size 1000X1000 from reputed / approved manufacturer, complete including 40mm average thick underbed of cement mortar 1:4 for flooring with neat cement slurry and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc. with 3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout SP- 100 of Laticrete,Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
a	9.5 mm thick tiles In flooring	SQM	237			0.0167318589%
c	9.5 mm thick tiles In skirting and dado upto specific height	SQM	200			0.0148256978%
C 1417	Providing and laying vitrified ceramic tiles of matt finish polished variety of size 1000X1000 from reputed / approved manufacturer Simpolo,varmora or equivalent, complete including 40mm average thick underbed of cement mortar 1:4 for flooring with neat cement slurry and 12mm thick underbed for dado/skirting with cement mortar 1:3 with neat cement slurry @3.3Kg/sqm etc. with 3mm groove joints as per approved pattern pointed neatly with 3X4 mm stainless epoxy grout SP- 100 of Laticrete,Luxture or approved equivalent in approved colour to match colour of tile etc. all complete for following. . Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
a	10 mm thick tiles In flooring	SQM	200			0.0142990316%
c	10 mm thick tiles In skirting and dado upto specific height	SQM	100			0.0074128489%
A1418	Providing and laying 10 mm thk non-skid fully vitrified tiles of approved manufacturer simpolo, varmora or equivalent in flooring and skirting over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, cement slurry 3.3kg/sqm complete as per specification laid in pattern of following Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
a	400X400 mm	SQM	81			0.0041328922%
b	600X600 mm	SQM	300			0.0164433786%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities / system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
1419	Providing and laying granite stone slab of 20mm thickness single piece for wash basin / sink slab /facia of black or approved colour including 20mm underbed of cement mortar 1:3 with cutting,making corners,moulding and opening etc. all complete.	SQM	100			0.0181722158%
1420	Providing and laying Heavy Duty dust pressed Ceramic Tiles of 7mm thick of reputed manufacturer of approved finish shade and colour including 20mm underbed of cement mortar 1:3 with neat cement slurry @3.3kg/sqm etc. all complete.					
a	300X300 mm	SQM	437			0.0164399468%
A1420	Providing and laying Heavy Duty dust pressed Ceramic Tiles of 7mm thick Designer glazed/matt finish of reputed manufacturer Sempolo,varmora or equivalent of approved finish shade and colour on walls, skirting etc.including 20 mm underbed of cement mortar 1:4 in flooring and cement mortar of 1: 3 for skirting/dado with neat cement slurry etc. all complete.					
b	600X600 mm	SQM	19			0.0007516881%
A1421	Providing and laying Heavy Duty anti skid (grade-5) Ceramic Tiles (Matt Finish) of size 600x600mm(approved size) , vitrified tiles min.7mm thick on floor, skirting and dado of reputed / approved manufacturer Sempolo,varmora or equivalent of approved finish, shade and colour. The tiles shall be scratch resistance of minimum 5 on Mohr's scale and shall have a bending strength of 350 Kg./sqm,with Under bed shall average 43mm thk of 1 cement : 3 sand by volume and brought to proper level including cement mortar,12mm thick underbed for dado / skirting with neat cement slurry @3.3Kg/sqm etc. all complete. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%	SQM	8108			0.3530602844%
A1422	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles comply to IS:4457 and shall be laid over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied in flooring/Dado of reputed / approved manufacturer Sempolo,varmora or equivalent of approved finish, shade and colour with 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing, pointing joint of bedding 20mm deepx6mm wide with epoxy/Furane mortar etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
Aa	12mm thick	SQM	853			0.0686104687%
a	20mm thick	SQM	1121			0.1186406113%
b	38mm thick	SQM	68			0.0077075059%
1423	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles conforming to IS:4457 in flooring/Dado beded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.					
a	20mm thick	SQM	10			0.0019117572%
Ac	75mm thick	SQM	100			0.0348407385%
A1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (115mm thick) conforming to IS:4860 in the floor of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 18mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%	SQM	1368			0.2753555143%
B1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) tiles (75mm thick) conforming to IS:4457 in the floor of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by min.12mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR tiles shall be filled with resin type mortar of reputed / approved manufacturer Naya Rangoli,Berger or equivalent conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%	SQM	1380			0.2104325103%
A1427	Providing and fixing Designer digitally glazed ceramic tiles of approved color and design as per IS: 15622 of size 300x300mm / 300x450mm, 300X600 of reputed / approved manufacturer Sempolo,varmora or equivalent of approved finish,size in dado, projecting 6mm uniformly from adjacent plaster or wall finish. The mix for 20mm thick underbed plaster shall consist of 1part cement and 3 parts sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry @ 3.3kg/sqm including pigments, curing etc all complete as instructed by engineer incharge for following thickness:- Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
a	5mm thick	SQM	95			0.0034970103%
b	7mm thick	SQM	957			0.0386049347%
A1428	Providing and laying 2mm thick heavy duty antistatic PVC(Virgin) tile in flooring / skirting of approved shade,from reputed / approved manufacturer Naya Rangoli,robina or equivalent as per IS:3462 and laying as per IS:5318 all complete as per specifaitions.	SQM	200			0.0051489563%
A1429	Providing and fixing Removable type flooring system (raised access floor) consisting of fire resistant Cementitious panels of 600 x 600x 35 mm and Laminated with 1.2 mm thick fire retardant food grade antistatic laminate top finish to ensure max bonding to the steel surface. Cementatious panels shall be steel welded construction, with an enclosed bottom pan of 64 hemispherical and top plain sheet which are fuse welded at multiple location to form a panel. The panel is coated with 40-60-micron epoxy coat after cleaning, de-greasing, phosphate by several tank processes & is heated to achieve max adhesion to the panel surface & corrosion resistance. The inner empty core of the panel is injected with a light weight fire retardant, non-combustible cementatious compound at high pressure to fill in all the crevices of the panel and ensures support of not less than 90% of the top surface area of the panel. Pedestal (300mm – 800 mm) must be 25mm dia. pipe with min.2.0 mm thickness with bottom plate of 100x100x min.2.0mm thick & top plate must be 75x75x3.0 mm. All pedestal shall be tightening to Stringer of 20x30x575x1.0 mm Rectangular tube. The system shall be design and taken approval for Uniformly distributed load (UDL) of 13 KN (1300 kg/ sqm), for the same all complete as per specification. Cavity area below the false flooring shall be made dust proof by using Polyurethane paint etc complete as per specification.	SQM	100			0.0224748836%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities / system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A1431	Providing and fixing, laying min.11mm wooden panel flooring and skirting of pergo, robina, bekker or equivalent multi-layered engineered wooden planks treated with VOC free lacquers and stains to provide extra strengthening, longevity and durability to planks. In all planks each layers are arranged at cross grain to each other for provide the balancing and stability to all three layers. Top layer of flooring is made up of about 3.0 mm thick thermosetting re-polish able natural veneer setting on a core of about 10 mm thick pine wood that produce natural characteristic of wood with 2.0mm thick bottom ply based veneer balancing layer. The planks are joint to each other through plankloc system with glue less technology system and laid on 2mm thick dual barrier underlay protecting sheet having anti-bacterial, Anti-termite, fire-resistant, noise reduction, high wear and abrasion resistance, water resistant properties. The system includes all accessories like beading, Quadrant, Veneered/solid wood skirting, end profile etc.as per as per manufacturer specification and approved by Engineer Incharge.	SQM	100			0.0092670879%
B1431	Providing and laying minimum 50 mm thick wooden flooring, consisting of 37 mm thick hardwood planks, finished with min.11mm thick laminated wooden flooring and skirting of pergo,bekker,greenlam, or equivalent with plank size min.193x1195mm as per manufacturer (material class shall be 34 as per EN13329) of approved pattern, colour, shade, design over 2 mm expanded polystyrene foam and polythene sheet under laying,along with all accessories like beading, Quadrant, Veneered/matching skirting, end profile etc.as per as per manufacturer specification and approved by Engineer Incharge.	SQM	75			0.0160724099%
C1431	Providing and fixing, laying min.14mm wooden panel flooring and skirting of pergo, robina, bekker or equivalent multi-layered engineered wooden planks treated with VOC free lacquers and stains to provide extra strengthening, longevity and durability to planks. In all planks each layers are arranged at cross grain to each other for provide the balancing and stability to all three layers. Top layer of flooring is made up of about 3.0 mm thick thermosetting re-polish able natural veneer setting on a core of about 10 mm thick pine wood that produce natural characteristic of wood with 2.0mm thick bottom ply based veneer balancing layer. The planks are joint to each other through plankloc system with glue less technology system and laid on 2mm thick dual barrier underlay protecting sheet having anti-bacterial, Anti-termite, fire-resistant, noise reduction, high wear and abrasion resistance, water resistant properties. The system includes all accessories like beading, Quadrant, Veneered/solid wood skirting, end profile etc.as per as per manufacturer specification and approved by Engineer Incharge.	SQM	100			0.0115838599%
A1432	Providing and laying Decorative/designer pre-polished, plain and pigmented, high wearing resistance concrete tiles of 20mm thickness (minimum) in various non-standard interlocking patterns of approved color,shade all complete as per specification.	SQM	150			0.0040184717%
A1433	Providing and laying Tactile, tac liner & tac button fully vitrified unglazed porcelain tile (for guiding band/s for visually impaired persons), size 300x300 15mm thick having Tile body 10mm thick plus profile 4.5mm thick. Low water absorption below 0.5%, MOR > 38NCM2, MOH Hardness >7 & Breaking strength > 4000 N. Tile confirming RNIB (The royal national institute for the blind, UK) , DETR (Department of the environment, transport and the regions, UK), & ADA (American With Disabilities Act, USA) , high stain and chemical resistance. Confirming IS 4457: 2007. Tile will be laid on 20mm thick cement & sand mortar with cement slurry having 4mm spacer & pointing with 3X4mm stainless epoxy grout / polymer based SP- 100 of Laticrete or approved equivalent in approved colour.	SQM	50			0.0024708188%
A1434	Providing and fixing carpet flooring over cement concrete floor. The carpet shall be of tile/roll form, machine/hand made tupled un-cut loop pile and lay with under lay of 10mm thick and shall be laid as per manufacturer's recommendations, in matching grains, treated with anti fungus and anti-termite before laying etc all complete as per specification.(Cement concrete flooring to be paid separately)	SQM	100			0.0034175185%
A1435	Providing and fixing Glass mosaic tiles at finished plain wall surface of size 24 mm x 24 mm x 3.8 mm thick (minimum) in in decorative murals and pattern of approved colour, shade, design , fixing in customize design, as per direction of Engineer-in- Charge. The glass mosaic tiles to be fixed on the vertical wall surface with the help of approved adhesive applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operation, material and required pattern approved by Engineer-in- Charge:.	SQM	340			0.0322266609%
B1435	Providing,Designing and fixing FRP decorative murals in pattern of approved colour, shade, design , fixing in customize design, as per direction of Engineer-in- Charge. The FRP Murals to be fixed on the vertical wall surface with the help of approved adhesive, dry cladding applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operation, material and required pattern approved by Engineer-in- Charge:.	SQM	50			0.0356127514%
C1435	Providing,Designing and fixing GRC decorative murals in pattern of approved colour, shade, design , fixing in customize design, as per direction of Engineer-in- Charge. The GRC Murals to be fixed on the vertical wall surface with the help of approved adhesive, dry cladding applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operation, material and required pattern approved by Engineer-in- Charge:.	SQM	50			0.0062322315%
A1436	Providing and fixing Rubber flooring over cement concrete floor min. 4mm thick conform to IS 809, consist of 100% virgin elastomer reinforcing agents, resins, curing agents, anti-oxidants and pigments.The rubber flooring shall be of tile/roll form, machine/hand made tupled un-cut loop pile and lay with suitable under lay and shall be laid as per manufacturer's recommendations, in matching grains, treated with anti fungus and anti-termite before laying etc all complete as per specifications. Rubber flooring shall have excellent abrasion resistance,comply to class-I fire rating,acid & alkali resistant and shall be of anti static grade.(Cement concrete flooring to be paid separately)	SQM	1000			0.0879893508%
A1437	Providing Dielectric epoxy based coating as per IS: 15652 shall be provided with suitable primer. The minimum dielectric strength for insulating floor (for all switchgear rooms up to and including 11 KV switchgear) shall be 45 KV ac rms (Class B as per Table-4 of IS-15652: 2006). The minimum thickness of insulation coating shall be 2000 microns for switchgear rooms up to 11 KV or as per the lab certificate fulfilling the dielectric strength requirement, whichever is higher. Dielectric test reports as per IS-2584 from a NABL accredited laboratory shall be submitted. Further, test reports for adhesion, tensile strength, scratch hardness, shore hardness, abrasion resistance shall be submitted in line with requirement of relevant national/international standard. The coating shall be high gloss finish and top color of coating shall be decided during the detailed engineering. Arc flash boundary and golden yellow safe boundary shall be provided. The item includes preparation and submission of procedure of coating and conducting dielectric testing in a NABL accredited laboratory on a sample prepared during application at site, all complete as per specification.	SQM	569			0.0389440748%
A1438	Providing and fixing, laying min.5mm thick vinyl flooring over cement concrete floor, shall have excellent abrasion resistance acid & alkali resistant and shall be of anti static grade.The vinyl flooring shall be of roll form, machine/hand made tupled un-cut loop pile and lay with suitable under lay and shall be laid as per manufacturer's recommendations, in matching grains, treated with anti fungus and anti-termite before laying etc all complete as per specifications. (Cement concrete flooring to be paid separately)	SQM	50			0.0011336179%
1500	ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, lps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.					

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities / system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II , Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (I QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A1502	METAL DECK SHEET Type-I , Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour over roof purlins for cast-in-situ roof slab as per relevant IS code and Grade as per specification. Bare metal thickness(BMT) of deck plate shall be minimum 0.8mm with minimum trough depth of 44mm (or as per design whiever is higher) of grade G250 as per AS1397/grade SS255 as per ASTM A653M/ grade S250GD as per EN 10326 with zinc coating to class Z275 and shall serve as permanent shuttering to the roof slab 40mm - 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 100 kg/sqm (for two span condition) during construction between beams as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint or super polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) over primer coat of minimum 5 micron(nominal) and minium 10 micron (nominal) SMP or super polyester paint over primer coat of minium 5 micron (nominal) on other face. SMP and polyester paint system sahl be of idutrial finish of product type 4 of AS/NZ2728, including fixing of sheet to top flange of beam with drawn arc welding of headed shear anchor studs @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant.The shear anchor studs shall confirm to type B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 16 mm dia & 65 mm length manufactured from cold drawn round steel bars confirming to ASTM A 29 of grade designation 1010 through 1020 of standard quality with either semi killed or killed welded by drawn arc stud welding through metal deck sheet. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%					
a	Span Upto 1800mm	SQM	4856			0.2199739822%
b	Span Exceeding 1800mm and upto 2500 mm	SQM	200			0.0090598839%
B1502	METAL DECK SHEET Type-II , Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour over roof purlins for cast-in-situ roof slab as per relevant IS code and Grade as per specification. Bare metal thickness(BMT) of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm (or as per design whiever is higher) of grade G250 as per AS1397/grade SS255 as per ASTM A653M/ grade S250GD as per EN 10326 with zinc coating to class Z275 and shall serve as permanent shuttering to the floor slab 150 mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 100 kg/sqm (for two span condition) during construction between beams as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint or super polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) over primer coat of minimum 5 micron(nominal) and minium 10 micron (nominal) SMP or super polyester paint over primer coat of minium 5 micron (nominal) on other face. SMP and polyester paint system sahl be of idutrial finish of product type 4 of AS/NZ2728, including fixing of sheet to top flange of beam with drawn arc welding of headed shear anchor studs @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant.The shear anchor studs shall confirm to type B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 19 mm dia & 100 mm length manufactured from cold drawn round steel bars confirming to ASTM A 29 of grade designation 1010 through 1020 of standard quality with either semi killed or killed welded by drawn arc stud welding through metal deck sheet. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%					
a	Span Upto 1800mm	SQM	29000			1.3549939637%
b	Span Exceeding 1800mm and upto 2500 mm	SQM	1393			0.0650864342%
A1503	Providing and fixing shear anchor studs for fixing metal deck sheet to floor structural beams conforming to Type-B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 19mm diameter and 100mm length manufactured from cold drawn round steel barsconforming to the requirement of ASTM A 29, of grade designation 1010 through 1020, of standard quality with either semi-killed or killed, welded by Drawn Arc Stud Welding through metal deck sheet etc all complete as per specification.	QUINTAL	14			0.0214402361%
B1503	Providing and fixing shear anchor studs for fixing metal deck sheet to roof structural purlins conforming to Type-B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 16mm diameter and 65mm length manufactured from cold drawn round steel bars conforming to the requirement of ASTM A 29, of grade designation 1010 through 1020, of standard quality with either semi-killed or killed, welded by Drawn Arc Stud Welding through metal deck sheet etc all complete as per specification.	QUINTAL	91			0.1393615345%
A1504	Designing, providing and fixing External sheet of Permanent colour coated metal cladding with troughed M.S. sheets of 0.6mm bare metal thickness having minimum yield strength 250 MPa complying AS1397 and zinc-aluminium alloy coating not less than 275 gm/sqm total on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently colour coated with silicon modified polyester (SMP with silicon content of 30% to 50%) paint or Super Polyester paint of minimum dry film thickness (DFT) 20 microns(nominal) over suitable primer coat of 5mm DFT(nominal). Inner face of the sheet shall be provided with suitable pre-coating of minimum DFT 10 microns(nominal) over suitable primer of 5mm DFT(nominal). The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	SQM	2000			0.0966724323%
A1505	Designing, providing and fixing External/ Inner sheet of Permanent colour coated metal cladding / roofing with troughed M.S. sheets of minimum 0.5 mm bare metal thickness of min. grade G350 as per AS1397/grade SS340 class 4 or as per ASTM A792M/ grade S350 GD as per EN 10326 with zinc coating to class Z275 / aluminium zinc alloy coating to class AZ150 on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing, etc. all complete over columns, beams, bracings etc. at all levels. The exposed face the sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint or super polyester paint of minimum 20 micron DFT on exposed surface over primer coat of minimum 5 micron and minium 10 micron SMP or super polyester paint over primer coat of minimum 5 micron on other face. SMP and polyester paint system sahl be of industrial finish of product type 4 of AS/NZ2728. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	SQM	27259			1.0634322064%
1512	Providing and fixing insulation of resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including wrapping in black polythene black supported over weld mesh 75X75X1.6 MM dia to hold in position and application of glue & tying with lacing wire, for glass/rock wool as per manufacturer's recommendation.					
a)	For insulation in Sandwich Cladding	SQM	500			0.0181948784%
A1514	Providing and fixing underdeck insulation with resin bonded rock wool /Mineral wool 50 mm nominal thickness conforming to IS 8183 having a density of 48kg/cum with minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.6 mm dia and 25 mm mesh GI wire netting, fixed with 2mm wire ties at various elevations with rawl plugs including clips, etc complete as per specifications and instructions of the engineer incharge.	SQM	1428			0.0512248636%
1516	Providing and fixing non metal opaque PVC sheet similar to ONDEX roofing or equivalent including all fixing accessories.	SQM	250			0.0105705121%
1517	Providing and fixing 1 mm thick corrugated/semicorrugated G.I. sheet in roofs, cladding of minimum galvanisation of 275 gsm total on both sides with minimum 150mm overlapping, 8 dia G.I. hook bolts or 'J' Bolts and nuts @305 mm c/c along with G.I. and bitumen washers including cutting of sheets for opening etc. all complete.	SQM	500			0.0239900443%
1518	Supply & fixing FRP (fibre reinforced plastic) sheets 2 mm thick including GI hooks/ J or L bolts, nuts, washers, bitumen washers etc. complete including overlap 100mm.	SQM	200			0.0145041024%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL

% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE

SCOPE ~Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..

ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A1519	Designing, providing and fixing Factory made (Continuous Line) prefabricated sandwiched Permanent colour coated metal cladding comprising top sheet as troughed(minimum depth of trough shall be 30 mm) permanently colour coated sheet & bottom sheet as plain permanently colour coated for covering of exposed metal/concrete / brick surfaces with insulation shall be of Polyurethane type of minimum 50mm thick (excluding trough). The polyurethane shall be Chlorofluorocarbon (CFC) free and self-extinguishing and shall conform to IS 12436: 1988. It shall have Modular Density 40 +/- 2 Kg/m3 and Thermal Conductivity @ 10 Deg.C 0.017 - 0.020 W/M 0k, Water absorption (% by vol) 3.1, Critical Oxygen Index 23 and Compressive Strength 1.2 Kg/sq.cm, sandwiched between the two sheets, each sheet shall be high strength tensile steel sheet 0.5mm bare metal thickness (minimum) of YS350 as per IS 15961 /grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 with zinc coating to class Z 275 / aluminium-zinc alloy coating to class AZ150 on both sides, both sheet shall be permanently coated with silicon modified polyester (SMP with silicon content of 30% to 50%) paint of minimum 20 micron DFT on exposed surface on 5 microns (min.) epoxy primer/phosphate primer coat and 10 micron (min.) SMP on 5 micron (min.) epoxy primer/phosphate primer on other face, SMP paint system shall be of industrial finish of product type 4 of AS/NZS 2728, troughed sheet shall be of approved profile, sectional properties, (suitable for the specified loading / deflection and purlins / runner spacing), colour and shade, at all levels, including all labour, materials, equipment, handling, transportation, special coated fastener conforming to corrosion resistant Class 3 of AS3566 and tested for 1000 hours salt spray test, fixing insulated sandwiched metal sheet with the structural members below for supporting the sheeting system, scaffolding, equipment, end and side laps, cutting of openings, preparation of working drawings, testing, etc., all complete, as per specifications. Sealant used for cladding shall be butyl based, two parts poly sulphide or equivalent approved, non stainless material and be flexible enough not to interface with fit of the sheets. Coated surface shall be provided with a protected guard film (polyethylene) of about 40 microns to avoid any damage to the coating during handling. Overlap shall be min. 100 mm or as specified by manufacturer. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	SQM	2000			0.1884238299%
1600	FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge.					
1601	Providing and fixing glass fibre reinforced gypsum plaster board (GRG) ceiling (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.					
aa	12.5mm thick GRG board confirming to IS: 2095 with galvanised light gauge steel load bearing supporting GI frame (minimum 0.8mm thk and grid size of 600x1200mm.) and finished flat (seamless).	SQM	150			0.0062412966%
b	12 mm thick GRG board in profile (dome ,curved profiled etc.) with galvanised light gauge steel load bearing supporting GI frame and finished smooth (seamless).	SQM	25			0.0014860230%
A1601	Providing and fixing 12.5 mm thick tapered/square edge glass fibre reinforced gypsum board conforming to IS:2095 having fine texture finish including providing and fixing of frame work at all levels, for all kind of work, consisting of light weight galvanised steel member (minimum 0.8 mm thick and galvanised as per IS : 277) having maximum grid size of 1200 mm x 600 mm for supporting panels of specified size, suspended from RCC slab/ structural steel or catwalkway grid above, with 4 mm (minimum) galvanised wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm width along the perimeter of ceiling, supporting grid system (minimum 0.8 mm thick and galvanised as per IS : 277) , expansion fasteners for suspension arrangement from RCC, providing openings for AC ducts, return air grills, light fixtures, etc., all complete. (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.	SQM	50			0.0032692506%
A1602	Providing, fixing and laying light weight mineral fiber tile false ceiling of minimum thickness 15 mm and exposed surface semi-perforated with depth of perforation as 4 mm and humid resistance of 95% RH and fire performance of class 0/1 as per BS 476 with metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 1.2m) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc.The size of tiles shall be 600 X 600 mm or 600 X 1200 mm. Required M.S. channel shall be measured & paid extra under respective item unit rate.(All mineral fiber board to be used should be with appropriate % of recycled content.	SQM	357			0.0261209819%
A1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour of Luxalon Hunter douglas, Newage or approved equivalent with corrosion resistant aluminium alloy (grade 3105,5005) panels of size 600 mm x 600 mm and min.0.6 mm thk. with clip on torsion spring system ,perforation patterns in combination with built in nonwoven tissue, acoustic fleece for providing good acoustic properties with NRC 0.7 and installed with silhouette T-Grid (of profile 24 mm) in same or contrasting colours or with 6 mm recess joints. The whole system shall be level adjusting arrangement and shall be suspended as per manufacturer. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301) Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	SQM	2579			0.4527972588%
B1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour of Luxalon 150C,300C, of Hunter douglas, Newage or approved equivalent with corrosion resistant aluminium alloy (grade 3105,5005) panels of of minimum thickness 0.6mm with perforation patterns in combination with built-in non-woven tissue, acoustic fleece for providing good acoustic properties with NRC 0.55. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc.(Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)	SQM	100			0.0175570864%
A1604	Providing, fixing and laying permanently colour coated Designer metal aluminium false ceiling of approved colour with stove enamel finish of approved make of Luxalon Hunter douglas,Newage or approved equivalent in LINEAR, RECTANGULAR, SQUARE, CURVILINEAR , OPEN GRID type etc.as per detail engineering drawing , with corrosion resistance aluminium alloy (grade 3105) panels of minimum thickness 0.6mm,with perforation patterns in combination with built-in non-woven tissue, acoustic fleece for providing good acoustic properties with NRC 0.7. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc.Suitable M.S. channel (minimum MC 75) grid 1200 mm C/C maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Structural steel works for platform for movement is separately payable under relevant items of BOQ)	SQM	175			0.0266536015%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building, Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
B1604	Providing, fixing and laying permanently colour coated Designer metal Batten panel aluminium false ceiling of colour with stove enamel finish of approved make of Luxalon Hunter douglas, Newage or approved equivalent in combination with demountable translucent stretch ceiling memebres etc.as per detail engineering drawing & manufacturer specification with corrosion resistance aluminium alloy (grade 3105) panels of minimum thickness MIN. 0.6mm. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc.Suitable M.S. channel (minimum MC 75) grid 1200 mm C/C maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Structural steel works for platform for movement is separately payable under relevant items of BOQ)	SQM	100			0.0179647753%
1606	Providing and Fixing 12mm thick Gypsum board plain/perforated false ceiling tiles(600x600mm) of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movment platform.The work to be complete as per specifications, drawings and direction of engineer.(Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No D2301)	SQM	100			0.0045940449%
1607	Providing and Fixing 12mm thick Gypsum board plain/ mineral fibre based acoustic ceiling board in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movment platform. The work to be complete as per specifications, drawings and direction of engineer. Payment Breakup: - a) On receipt of Gypsum board false ceiling at site - 50%; b) On completion of erection & fixing - 50%.	SQM	25			0.0012286399%
A1607	Providing and Fixing 12mm thick water resistant Calcium silicate board, gyproc or equivalent in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete as per architectural design and detail. Metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) and nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated. Suspension system shall be as per manufacturer's specification. Movement platform of structural steel shall be provided if required for the movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Structural steel works for platform for movement is separately payable under relevant items of BOQ). Work shall include 25mm thick resin bonded mineral wool insulation (as per IS:8183) bound in polythene bags on top of ceiling. The work to be complete as per specifications, drawings and direction of engineer. Payment Breakup: - a) On receipt of Gypsum board false ceiling at site - 50%; b) On completion of erection & fixing - 50%.	SQM	285			0.0224602177%
1608	Providing & fixing 12.5 mm thick glass fibre reinforced gypsum plastic board in plan curve or in elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete, as per architectural design and detail, metal suspension system as per ASTM C-635 shall be hot dipped MS galvanized (grade 180 as per IS:277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movment platform. The work to be complete as per specifications, drawings and direction of engineer.	SQM	25			0.0012723465%
A1608	Providing and fixing Pre-Painted Coil coated Steel false ceiling system , at all level, for all kind of works, in approved pattern,consisting of 0.5 mm thick galvanised as per IS 277 including 50mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels, , along with galvanised supporting steel members exposed faces of galvanised member to be pre-painted with regular modified polyester coating / super polyester coating minimum 20 DFT, to form panels of specified size for tile type panels and roll formed stove enamelled 0.6 mm thick steel carrier, for fixing of lineal type panels by clip on arrangement, suspended from RCC slab / structural steel or catwalk way steel channel grid above with 4 mm (minimum) galvanised wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm leg width along the perimeter of ceiling, including all labour, material, supporting grid system (members minimum 0.8 mm thick and galvanised as per IS 277) anchor fasteners for making suspension arrangement from RCC, providing openings for AC ducts, return air grills, insulation light fixtures, etc., all complete.(Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No D2301) Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	SQM	2578			0.1511521071%
A1609	Providing and fixing stainless Steel false ceiling system in lineal/tile shape , approved colour Luxalon hunter douglas or approved equivalent, lineal pattern (closed type) of 100 mm nominal width , bright finish at all level, for all kind of works, consisting of 0.5 mm thick stainless steel sheet, along with galvanised supporting steel members exposed faces of galvanised member to be pre-painted with regular modified polyester coating / super polyester coating minimum 20 DFT and roll formed stove enamelled 0.6 mm thick steel carrier, for fixing of lineal type panels by clip on arrangement, suspended from RCC slab / structural steel or catwalkway steel channel grid above with 4 mm (minimum) galvanised wires (rods), with special height adjustment clips, providing angle section of minimum 25 mm leg width along the perimeter of ceiling, including all labour, material, supporting grid system (members minimum 0.8 mm thick and galvanised as per IS 277) anchor fasteners for making suspension arrangement from RCC, providing openings for AC ducts, return air grills, insulation light fixtures, etc., all complete.(Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No D2301) Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	SQM	500			0.0855880955%
A1611	Providing , Design and fixing Aluminium ceiling trap door in the false ceiling matching with false ceiling material with min. 2mm thick powder coated inner and outer aluminum frame, corner fitting plate with stainless steel of 2mm thick fixture are with self-drilling screws and sealing strip of 6mm width and 6mm thick. Hinge operated through Push-lock mechanism.	SQM	100			0.0167444682%
1700	RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc as per specification, drawings and as directed by engineer - in - charge.					
A1704	Providing and fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over acoat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	RM	5177			0.3523089849%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities / system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
B1704	Providing and fixing galvanised MS down take pipes of 200 mm dia- Medium quality as per IS:1239(part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over acoat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	RM	787			0.0814405265%
C1704	Providing and fixing galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239 (part-I)with welded joints and provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anti corrosive painting over a coat or primer all complete.Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 360 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	RM	262			0.0133935673%
1800	MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.					
A1801	Providing and Filling in trenches, plinths, area paving, grade slab and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 200 mm in compacted thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum/non expansive soil and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	25097			1.9809264658%
B1801	Providing and Filling in trenches, plinths, area paving, grade slab and other underground structures with graded stone aggregate of 40 mm size rammed,consolidated in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected fine sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	2139			0.1688329964%
C1801	Providing and laying stone aggregate in switch yard areas in 75mm thick layer using 20 mm aggregates size in layer I and 75mm thick layer using 40mm size aggregate in layer II making overall thickness of stone aggregate as 150mm. Before laying the stone aggregates , the yard surface shall be treated with antiweed treatment all complete as per Customer's specification and direction of Engineer in Charge. (The rate shall be inclusive of all materials ,labour,loading,unloading and surface preparation, compaction, micro grading etc. required for aggregate laying and antiweed treatment)	SQM	47000			0.7609700335%
D1801	Removing, cleaning and washing of existing laid gravel, stacking and respreading of stones in switchyard. (The rate shall be inclusive of all labour, stacking, levelling, dressing, compaction, etc. all complete required for aggregate laying.)	Sqm	2500			0.0295423960%
1802	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	896			0.0967133546%
1803	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	70			0.0081766877%
A1804	Providing and fixing weep holes in drains consisting of 75 mm dia HDPE pipe sleeves including sand (250sq x 150 mm thick), aggregates (250sq x 150 mm thick), 200mm dia geo-textiles (pasted on concrete surface) etc. all complete as per specifications, drawings and guided by engineer-in-charge. (item is inclusive the cost of materials like HDPE pipe, sand, aggregates, etc.).	EACH	7687			0.0599772800%
1807	Anti termite chemical treatment of soil with Chlorpyrifos/Lindane E.C. 20% with 1% concentration conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment). Drilling 12mm dia hole @300 c/c using material one liter per hole.	SQM	12179			0.1096148184%
1808	Laying of earthing mats/rods including risers, transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. (Excavation & Back filling shall be paid separately under respective item of earth work. Earthing mats/rods shall be supplied by BHEL free of cost)	MT	150			0.0797936069%
1809	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items & cement/steel to be supplied by BHEL free of cost)	NO	100			0.0405823489%
1810	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items & cement/steel to be supplied by BHEL free of cost)	NO	100			0.0310543192%
1811	Construction of below ground earthing system earth electrodes as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items & steel shall be supplied by BHEL free of cost.)	NO	100			0.0028101698%
1812	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items& steel shall be supplied by BHEL free of cost.)	NO	100			0.0023342540%
1813	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.	NO	100			0.1230550060%
1814	Construction of below ground earthing system test pits as per drawing/ sketches including brickwork, plaster, providing & fixing GI strips/pipes, GI wires, covers etc as per drawing & specification including associated earthwork.	NO	100			0.0714100415%
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	200			0.0008741312%
A1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 610 g/sqm etc. all complete.	Kg	850			0.0033435517%
1816	Providing and fixing PVC pressure release valve of minimum dia 90mm in water retaining structure including 160 mm dia housing pipe of minimum length 3.75 m with perforation as per IS4558, nylon jali, perforated end plug, collar, graded filter, excavation, fixing in concrete slab/wall etc. all complete.	NO	50			0.0196776639%
1818	Fire proofing of steel structures with VERMICULITE cementitious coating including supply of all materials for vermiculite materials, reinforcement mesh (3mm thick wire, 50x50 size mesh) , nuts, tie wires, weldings, suface preparation, curing, staging, compatible paintings etc. all complete.	CUM	5			0.0211925008%
1819	Supply & fixing expanded metal steel sheet conforming to IS:412. Size of mesh shall be 10mmX40mm with strands of 2.5mm width and 1mm thickness to the structural steel for facilitating fireproofing works.	SQM	150			0.0024087170%
1820	Supply and laying fire clay refractory brick work with fire clay mortar conforming to IS: 6 & 195 including curing etc. all complete on tank pads & in building walls.	CUM	5			0.0084887849%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
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ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
1821	Sprinkling of water by water tanker fitted with perforated GI pipe (portable tanker minimum 3000 litre capacity) for roads and miscellaneous area within plant boundary, for dust supression and reduction of suspended material at site for day to day work, as directed by BHEL site engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of Tank-hour put in actual use for water sprinkling).	TANK-HR	2000			0.0725852623%
1822	Providing & filling Bentonite Powder (Sodium base) mixed with water in electronic earthing pit as per drawing & direction below ground level including all materials, transportation, labour, incidental etc all complete as per specification.	CUM	5			0.0028511245%
1823	Providing and laying cinder filling in the toilets,roads,etc complete as directed by engineer in charge.	CUM	25			0.0014415070%
1827	Anti weed chemical treatment of soil with suitable chemical etc all complete.	SQM	2500			0.0003237523%
1835	Firecrete for FO tank pad	CUM	5			0.0084156169%
1836	Flame arrestor in refinery area CRWS and OWS system	Each	3			0.0028283971%
A1857	Providing & laying Bitumen primer as per IS:158 followed by 12 mm thick bituminastic layer on Surfaces, curing etc. shall be done all complete as per specification.	SQM	50			0.0002751894%
1849	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm downgraded stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M or equivalent to 8% to 10% by volume including compaction. Separation layer of one tack coat @ 1Kg/sqm shall be spray after first layer of 30mm and sand shall be sprayed on the final surface of 20mm @ 0.5 cum/100 sqm. etc. all complete as per specification ans as guided by engineer-in-charge.	SQM	383			0.0084318045%
1850	Providing 50mm thick anti corrosive layer laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celcius or A65 grade bitumen for softening point above 45 degree celcius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete.	SQM	383			0.0088533947%
1851	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	400			0.0034447243%
1852	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including brass / aluminium screws, rawl plugs etc. all complete.	Kg	500			0.0097773190%
A1860	Providing and installation of Bio-Toilet near all the modular worker's sheds/accommodation etc all complete as per specification.	Nos	1			0.0017808787%
A1861	Providing engineering consultancy services for Architectural design & drawings of CCR (Central control room in powerhouse building) in harmony with the overall plant and presented in the form of presentation drawings, including 3-D perspective rendered views,panoramic views, walkthrough, with color schemes, lighting design, as per specification including preparation of integrated services drawings in co-ordination with electrical, HVAC & fire systems etc. and taking approval on drawings from BHEL/customer (All complete).Perspective coloured views shall be submitted in Hard Copy in Laminated A-1 Size (Two Numbers) as required in the desired format. Structural design & drawing, of buildings & foundations are in scope of BHEL, and not included in scope of bidder.The scope of bidder shall include coordination with respect to HVAC, electrical & fire fighting systems & space requirements for electrical facilities in consultation with BHEL/customer.Engineering services of acoustic design, interior architecture, PAvoiding openings for AC ducts, return air grills, insulation light fixtures, etc., all complete.(Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No D2301) Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40% product type 4 of AS/NZ2728, including fixing of sheet to top flange of beam with drawn arc welding of headed shear anchor studs @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant.The shear anchor studs shall confirm to type B studs specified in	LS	1			0.0995847426%
A1862	Supplying and installation of pipes in concrete / Duct bank for all kind of works, including setting material in concrete, layout, cutting, forming, grinding, jointing etc. all complete as per specification and as guided by engineer-in-charge for the following: (Concrete, Reinf. paid separately)					
a	200 mm dia HDPE Pipes	RM	1975			0.1258360382%
b	200 mm dia PVC pipe ISI mark 6 Kg/cm2	RM	802			0.0367403806%
A1864	Providing and fixing Semi Unitised STRUCTURAL GLAZING to fixed panels with no aluminium section exposed to outside and only glass panels with silicon joint visible from outside. The system specially designed with aluminium sections of grade 63400 WP IS: 733 and IS: 1285 pure polyester powder coated 50- 60 microns make; Akzo Nobel applicator only in approved colour with mullion fixed to beams / columns through adequately designed MS powder coated. The member and bracket shall be fixed with appropriate bolts and expansion fasteners, so as to withstand the dead load of the structural glazing as well as stresses due to wind pressure. The Structural glazing system shall be designed as per BIS code for required wind pressure IS: 875 part III (the system must passed the proof test at 1.5 times design Wind pressure without any failure), with as per the prevailing site conditions and building profiles.), including functional design of the aluminium sections for fixing glazing panels of various thicknesses, aluminium cleats, sleeves and splice plates etc. gaskets, screws, toggles, nuts, bolts, clamps etc., structural and weather silicone sealants, flashings, fire stop (barrier)- cum-smoke seals, microwave cured EPDM gaskets for water tightness, pressure equalisation& drainage and protection against fire hazard including, Fabrication and supplying serrated M.S. hot dip galvanised / Aluminium alloy of 6005 T5brackets of required sizes, sections and profiles etc. to accommodate 3 Dimensional movement for achieving perfect verticality and fixing structural glazing system rigidly to the RCC/ masonry/structural steel framework of building structure using stainless steel anchor fasteners/ bolts, nylon separator to prevent bimetallic contacts with nuts and washers etc. of stainless steel grade 316, of the required capacity and in required numbers and use of aluminium section alloy as per IS : 8147. System design to strictly consider for thermal movements, air infiltration, water penetration, seismic movement and structural movement, submit the calculation for review and approval of shop / fabrication/shop drgs,cutting plan, from BHEL.Silicon sealant structural grade and weather grade shall be GE/Dow corning or Equivalent.The contractor shall submit structural stability report of the structural glazing system from a consultant to be get approved by the engineer incharge.Providing and fixing G.I. flashing at soffit level /sill level made out of 1.5mm thick G.I. Sheet with powder coated bent to required profile and shape to seal the soffit area.Openable glazing panel where ever required shall be with two point locking with friction stays, as per detail design requirement,provided with approved hardware of Dorma/Gieeze or equivalent make, all complete as per techncial specification. (Payment for Glass shall be made separately)	KG	100			0.0034054747%
A1865	Providing, fixing and Fabricating shadow box of required size and shape, for fixing in the spandrel portion of the structural glazing, in linear as well as curvilinear portions of the building by providing semi-rigid, inorganic, non-combustible fibre glass wool insulation 50 mm thick,conforming to IS: 8183 and BS: 3958 Part 5. The insulation layer shall have facing (factory bonded on surface # 1 of the fibre glass insulation layer), of black non-woven fibre glass tissue of nominal thickness 0.5 mm and nominal mass not less than 60 gm /sqm, made of randomly oriented glass fibres distributed in a binder by a wet-lay process including fixing 1.5	SQM	50			0.0034959581%
2000	FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge.					

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
A2001	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 4 mm thick (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 2.5 mm. The PVC coated chain link will be stretched by the clips at 0.5m intervals to three strands of galvanised high tensile spring steel wire (HTSSW) of 2.5 mm diameter interwoven with chain link wire mesh and kept under tension which in turn are attached to the fence post with security nuts and bolts. GI barbed wire fencing of height of 450 mm conforming to IS 298 at top of chain link fencing shall be provided with 3 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be paid separatelm cleats, sleeves an	RM	3520			0.3271814693%
A2003	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 4 mm diameter (including PVC coating) of mesh size 75mm x 75mm . The diameter of the hot dip galvanised steel wire for chain link fencing (excluding PVC coating) shall not be less than 2.5 mm . The PVC coated chain link will be stretched by the clips at 0.5m intervals to three strands of galvanised high tensile spring steel wire (HTSSW) of 2.5 mm diameter interwoven with chain link wire mesh and kept under tension which in turn are attached to the fence post with security nuts and bolts. Concertina of height of 600 mm at top of chain link fencing shall be provided with all accessories. Concertinal shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be paid separately under ST No. A2008)	RM	1475			0.1436901673%
A2008	Supply, fabrication and fixing of mild steel posts for fencing including painting with chlorinated rubber paint over a suitable primer etc all complete. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%	MT	117			0.4195517841%
2009	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	16			0.0649162182%
2010	Supply, fabrication and installing in position and testing MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	11			0.0426195602%
2100	WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck/body bib cocks including sockets, union, nuts etc all complete - 15mm nominal bore.	NOS	5			0.0001759594%
A2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks with flow rate less than 5 LPM (litres per minute) at 45 psi, including sockets, union, nuts etc all complete -15mm nominal bore.(Note: Flow rate of all faucets at 45 psi should be less than 5 lpm. The contractor should submit the cutsheets/ declaration from the manufacturers mentioning the same to Engineer in charge.)	NOS	100			0.0035191873%
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	NOS	105			0.0032838194%
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality including all specials etc all complete for following sizes:					
a	25mm nominal bore.	NOS	50			0.0017595937%
b	50mm nominal bore.	NOS	50			0.0025414554%
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:					
a	15 mm nominal bore.	RM	500			0.0081909328%
b	20 mm nominal bore.	RM	1000			0.0179358766%
c	25 mm nominal bore.	RM	1000			0.0212381499%
d	50 mm nominal bore.	RM	500			0.0142127253%
B2104	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, confirming to IS 15778, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings shall be concealed, complete for internal works with sockets, unions, elbows, tees, nipples etc of approved manufacturer supreme,prakash,ajay pipes or equivalent and clamps including cutting and making good the walls etc all complete for following sizes:					
a	15 mm nominal bore.	RM	100			0.0016116389%
b	20 mm nominal bore.	RM	75			0.0013053692%
c	25 mm nominal bore.	RM	75			0.0015229307%
Ac	32mm nominal bore	RM	25			0.0005983752%
Bc	40mm nominal bore	RM	25			0.0007479690%
d	50 mm nominal bore.	RM	75			0.0028048836%
2105	Providing and fixing GI pipes class B complete for external work with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete for following sizes:					
a	15 mm nominal bore.	RM	550			0.0068732610%
b	20 mm nominal bore.	RM	550			0.0077279670%
c	25 mm nominal bore.	RM	550			0.0095442174%
d	50 mm nominal bore.	RM	550			0.0134972328%
A2106	Providing and fixing 600mm x 900mm x 6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws , edge mounting with teak beading and minimum 12 mm thick plywood backing etc all complete.	EACH	50			0.0034027921%
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P brackets etc all complete.	NOS	14			0.0004450946%
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	NOS	55			0.0024750862%
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	NOS	100			0.0028231199%
2111	Providing and fixing stainless steel / C.P. liquid soap dispenser . Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.	NOS	100			0.0022824536%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
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SCOPE -"Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (I QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. all complete.	NOS	50			0.0013354782%
A2113	Providing and fixing rotating type chromium plated brass shower rose with 15 or 20 mm inlet all complete.	NOS	40			0.0010165822%
B2113	Providing and fixing rotating type Emergency safety shower,conforming to IS 10592 latest code, head with water column of height 210 to 240 cm is provided from the standing level.water column provided with a minimum spray pattern diameter of 50 cm at 150 cm height from standing level and the centre of the spray pattern shall be located at least 40 cm from any obstruction or emergency. Shower head shall be so designed that it produces a straight water column. Emergency shower head shall deliver a minimum of 76 l/min of water and substantially dispersed throughout the pattern,complete with installation,with accessories etc all complete.	NOS.	5			0.0075219069%
2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.					
a	500 litres capacity	NOS	10			0.0026806689%
b	1000 litres capacity	NOS	6			0.0032168027%
c	2000 litres capacity	NOS	5			0.0053613378%
d	5000 litres capacity	NOS	10			0.02680666892%
2115	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	NOS	10			0.0263013119%
A2116	Providing and fixing glass shelves 600mmx127mmx4 mm with chromium plated brackets all complete.	EACH	10			0.0003179247%
A2117	Providing and fixing metal storing cabinets all complete.	EACH	10			0.0050156130%
A2118	Providing and fixing electric operated hand dryer with photo voltaic control etc all complete.	EACH	10			0.0016719837%
A2120	Providing and fixing stainless steel (SS304) Grab bars min.32mm dia, min.38 inches long, U-Shaped, swing type adjusts both horizontally and vertically, barrier-free access for disabled, appropriate fittings and fixtures for toilets for handicapped etc. all complete.	EACH	50			0.0033436263%
2200	SANITARY: Sanitary work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
2201	Supply and fixing glazed vitreous china Wash Basin of approved make conforming to IS:2556 part 4 of oval shape with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug, 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc all complete.					
a	White	EACH	5			0.0024869032%
b	Colored	EACH	19			0.0095990934%
A2201	Supply and fixing coloured glazed vitreous oval shape china wash basin 450x550mm conforming to IS: 2556 mounted over 18 to 20 mm thk granite beveled edge counter. The Basin shall be fitted with approved shape bib cock, photo-voltic control system for water control with flow rate less than 5 LPM (litres per minute) at 45 psi,CP brass chain with rubber plug, 40mm CP brass waste and bottle trap as per IS: 2556 with angle valve,taps,32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required,necessary union including cutting of notch in granite counter slab etc.all complete as per specification	EACH	100			0.0497380636%
A2202	Providing and fixing approved vitreous china laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5) with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, 40mm heavy duty CP brass waste bottle trap and 15mm CP brass pillar tap (hot and cold dual function) with elbow,operated level ISI marked, with necessaary union,elbow,angle valve,tees, junctions,extension pipes complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	5			0.0016563167%
A2203	Providing and fixing stainless steel kitchen sink of size 610 x 510 mm, bowl depth 200 mm as per approved manufacturer with drain board of at least 450 mm length with trap, hot and cold water mixer, conforming to IS: 13983 including all fittings, necessaary union,elbow,angle valve,tees, junctions,extension pipes etc. all complete.	EACH	5			0.0014910411%
B2203	Providing and fixing stainless steel Eye wash sink of size size 610 x 510 mm, bowl depth 200 mm as per approved manufacturer with drain board of at least 450 mm length with trap, water mixer, conforming to IS 10592 latest code including all fittings, necessaary union,elbow,angle valve,tees, junctions,extension pipes etc. all complete.	EACH	1			0.0002982082%
A2204	Providing and fixing colour glazed vitreous china European type water closet of approved make conforming to IS:2556 with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC,dual flushing system) with valveless fittings,2 way angle valve, with health faucet necessary C.P connections, water faucet etc all complete.					
a	Floor mounted	EACH	10			0.0036095142%
b	Wall mounted	EACH	40			0.0232700192%
2205	Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, 2 way bibcock with health faucet necessary C.P connections etc all complete.	EACH	50			0.0142418630%
A2205	Providing and fixing colour glazed vitreous china Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, necessary C.P connections etc all complete having flow rate of 6/3 LPP (litres per flush) or less at 45 psi.	EACH	50			0.0149539562%
A2206	Providing and fixing white/coloured water efficient flat black glazed vitreous china urinals of size 610x375x390mm with photo voltaic control flushing systems of approved manufacturer simpolo, varmora or equivalent per IS: 2556(pt-6 sec-1) with flush pipes, lead pipes, gratings, traps and necessary C.P fitting etc. all complete as per specification having flow rate of 2 LPP (litres per flush) or less at 45 psi.	EACH	100			0.0824176192%
2207	Supply, laying and jointing UPVC pipes of class 3 as per IS:4985 including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.					
a	75mm dia pipes	RM	300			0.0044095061%
b	110mm dia pipes	RM	200			0.0046620329%
c	160mm dia pipes	RM	200			0.0064297204%
d	200mm dia pipes	RM	200			0.0093693911%
2208	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following. Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
a	200mm dia	RM	735			0.0313152635%
b	300mm dia	RM	963			0.0660024395%
c	450mm dia	RM	692			0.0604450696%

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ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
d	600mm dia	RM	150			0.0161131512%
e	900mm dia	RM	250			0.0363169126%
2209	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following: Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
a	150mm dia	RM	100			0.0032893232%
b	250mm dia	RM	490			0.0207975230%
c	300mm dia	RM	100			0.0047850588%
d	450mm dia	RM	100			0.0067113849%
e	500mm dia	RM	50			0.0039481591%
2210	Providing, laying light duty non pressure NP4 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following: Payment Breakup: a) On Supply & receipt of materials at site - 50% b) On complete execution as per item description - 50%					
Aa	250mm dia	RM	100			0.0055757338%
Ba	300mm dia	RM	75			0.0050181604%
a	450mm dia	RM	50			0.0050181604%
b	600mm dia	RM	25			0.0030343683%
c	900mm dia	RM	25			0.0040970852%
2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	10			0.0056012383%
A2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx600mm including frame from reputed manufacture confirming to IS:4111 etc all complete as per specification.	EACH	50			0.0294065010%
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	55			0.0318306772%
2213	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber(Clay Brickwork in 1:6 mortar, 12mm plaster in 1:6 mortar & 1:2:4 Cement Concrete) and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes:					
a	100x100mm P or S Type.	EACH	55			0.0045228194%
b	150x100mm P or S Type.	EACH	30			0.0026942665%
c	150x150mm P or S Type.	EACH	25			0.0025479305%
A2214	Providing and fixing Heavy duty CP brass floor traps size 100mm with stainless steel grating etc all complete.	EACH	105			0.0082775365%
2215	Providing and fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P jalli all complete.	EACH	55			0.0038853512%
A2216	Providing and installing approved brand single tap water efficient water cooler of 50 L cooling capacity all complete.	EACH	2			0.0028282514%
B2216	Providing and installing approved brand single tap water efficient water cooler of 80 L cooling capacity all complete.	EACH	9			0.0169695084%
2217	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	EACH	2			0.0052602624%
A2217	Providing and installing approved brand single tap water efficient water cooler of 150 L cooling capacity all complete.	EACH	5			0.0131506559%
2218	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	5			0.0005966755%
2219	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	18			0.0124855069%
2220	Providing and fixing heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.					
a	75mm dia pipes	RM	25			0.0011865521%
b	100mm dia pipes	RM	25			0.0015337765%
c	150mm dia pipes	RM	50			0.0047008832%
d	200mm dia pipes	RM	100			0.0139504860%
e	250mm dia pipes	RM	100			0.0223550953%
2221	Providing, laying spun CI pipes with conforming to IS 1536 complete for following.(Excavation,backfilling,concrete to be paid seperately)					
a	75mm dia	RM	25			0.0012715371%
b	100mm dia	RM	25			0.0014989731%
c	150mm dia	RM	100			0.0092593154%
d	200mm dia	RM	50			0.0066903410%
e	250mm dia	RM	25			0.0054463228%
f	300mm dia	RM	25			0.0065835027%
2222	Providing and fixing HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.					
a	Upto 75 mm dia	RM	15			0.0002578687%
b	100 mm dia	RM	10			0.0002091440%
c	150 mm dia	RM	25			0.0010813326%
d	200 mm dia	RM	25			0.0015928612%
2223	Providing and fixing vertical wall mounted water geysers/heaters(minimum 5 star rating) of required capacity including all connections & fittings(angular stop cock and brass connection pipes, etc.) all complete as per specification.					
a	15 Litres	Each	5			0.0021994111%
b	25 Litres	Each	5			0.0028509626%
A2224	Providing and fixing suitable water meter (Maximum Working Pressure 16 bar; Maximum Liquid Temperature 60°C; Connection Flanges according to ISO, BS 10, American Water works Association (AWWA) or others; Register water consumption in cum) on 50 mm domestic water inlet pipe	NOS.	5			0.0018188527%
B2224	Providing and fixing suitable water meter (Maximum Working Pressure 16 bar; Maximum Liquid Temperature 60°C; Connection Flanges according to ISO, BS 10, American Water works Association (AWWA) or others; Register water consumption in cum) on 150 mm sewer water outlet pipe	NOS.	10			0.0036377054%
A2225	Supply, laying and jointing sand cast iron pipe conforming to IS: 1729 including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.					
a	110mm dia pipes	RM	50			0.0023530059%

Revised (Rev01) BOQ cum Rate Schedule-SINGARENI MAIN PLANT CIVIL						
% WEIGHTAGE FOR AMOUNT OF INDIVIDUAL ITEMS W.R.T. THE TOTAL PACKAGE VALUE						
SCOPE ~Civil structural & architectural works including levelling & grading of entire Main Power block area (Switch yard to FGD Absorber)- Switch yard, Main Power house building ,TG, BFP, CEP, CW pit, Mill bunker building, Mill-Bunker Bay, Boiler, Fan foundations, ESP, ESP cum FGD control room, ID ducts, Paving works, Transformer-yard, CPU regeneration building, DG building , Mill reject handling system, Labour hutment for workers, sewage water line, Roads and drains (within BTG area), including Civil Structural & Architectural works of facilities /system/sub-system within main power block BTG area related to :- LP piping , Pipe rack/Cable rack works, AC & Ventilation system , Fire protection system (FPS) etc. and works of FGD miscellaneous Tanks, Agitator etc. and related Pipe/cable rack (outside BTG area) AT SINGARENI THERMAL POWER PROJECT (1 X 800 MW), STAGE-II, Mancherial, Telangana..						
ST NO	Item Description	Unit	QTY	RATES (INR)= VALUE FOR PACKAGE- A * WEIGHTAGE / (QUANTITY*100) (ROUNDED OFF TO TWO PLACES AFER DECIMAL)	AMOUNT (INR) TOTAL QUOTED= PRICE * QUANTITY	WEIGHTAGE (IN PERCENTAGE) (% upto 10 Decimal Point)
b	160mm dia pipes	RM	50			0.0034660225%
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
A2301	Erection of shop fabricated (field connections will be bolted type) Medium and High Tensile structural steel with rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Payment Breakup:- 1) On Completion of erection-60% 2) Balance on completion of alignment,bolt tightening etc.-40%	MT	17156			10.5194861064%
B2301	Fabrication (Site Welded as per specification), transportation from fabrication yard and erection of Medium and High Tensile structural steel (Grade designation E250 Quality B0 (Fully killed), conforming to IS 2062. Plates beyond 40mm thickness shall be vacuum degassed & furnace normalised. Plates beyond 40mm thickness shall be vacuum degassed & furnace normalised and shall also be 100% ultrasonically tested as per ASTM -A578 level BS2,with rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. (Rate shall be exclusive of surface preparation and primer). Payment Breakup:- 1) On Completion of Fabrication - 60% 2) On Completion of erection-25% 3) Balance on completion of alignment,welding etc.-15%	MT	1405			1.5508719392%
A2302	Extra over ST' NO. A2301,B2301,C2301,D2301 for blast cleaning of steel structures to near white metal surface conforming to Sa 2 1/2 finish of ISO 8501-1 with surface profile 40-60 Micron and applying coat of two component moisture curing zinc (ethyl) silicate primer (having minimum 80% metallic Zinc content in dry film, solid by volume minimum 60 % +/-2%). Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer of minimum 70 micron DFT shall be applied over shot blast cleaned surface including touch-up painting etc all complete. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique.	MT	1405			0.2047934398%
A2305	Providing and applying (with airless spray technique) intermediate coat of two component polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT to be applied after an interval of minimum 24 hours (from the application of primer coat by airless spray technique) and of approved make including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	1405			0.1209923934%
B2305	Providing and applying Finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT shall be applied after an interval of minimum 10 hours (from the completion of intermediate coat). Colour and shade of the coat shall be as approved by the Employer) over steel sections already having intermediate coats including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	1405			0.1209923934%
A2307	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel conforming to IS:2062 having hot dip galvanisation,surface preparation of shot blast cleaned to Sa 2 ½ finish or cleaned by acid pickling as per ISO 8501-1, in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%					
a	Minimum galvanisation of 610 g/sqm	MT	459			1.8753312910%
2311	Providing and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade 'C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	KG	1838			0.0088663448%
2312	Providing and fixing in positing of high strength structural bolts (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	KG	177091			0.9861381938%
A2312	Providing and fixing in positing of high strength structural bolts (of property class 10.9 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete. Payment Breakup: a) On Supply & receipt of materials at site - 60% b) On complete execution as per item description - 40%	KG	255512			1.4939700452%

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2313	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	92			0.0349172019%
2314	Addition to, alterations in and/or modification of "Erection Marks" including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:					
a	In erected position	MT	92			0.0878782843%
b	In fabrication yard	MT	92			0.0731643904%
2315	Re-erection of dismantled fabricated structural steel members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required posion, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismmatled members, re-alignment of adjacent connected members(weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	92			0.0557102572%
A2317	Supply, fabrication and erection of minimum 4 mm thick stainless steel liner conforming to ASTM A 240 S304 (Type 304) ; Finish Grade 2B (Cold rolled, Annealed & Pickled and Skin passed) on M.S. plate for inside surfaces of hopper & mouth of hopper of bunkers including fixing with stainless steel studs, bolting (including countersunk), welding with electrode classification E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel, fabrication detailed drawing etc.all complete. (The measurement for the item of stainless steel liner in hopper shall be based on the actual finished weight of SS liner over hopper) Payment Breakup: 1. On Supply & Receipt at site - 60% 2. On completion of fabrication at yard - 20% 3. On completion of erection, alignment, welding, etc. complete as per description/specification - 20%	MT	83			1.1786082150%
A2318	Providing and fixing in position PTFE type sliding bearings of reputed manufacturer for required vertical load and end displacement/rotation as per approved construction drawngs. PTFE bearing shall be sliding against highly polished stainless steel and the coefficient of friction between them shall be less than 0.06 at 55 kg/sq.cm. In order to prevent cold flow in PTFE surface it shall be rigidly bonded by a special high temperature resistance adhesive to the stainless steel substrata. The stainless steel surface that slides against the PTFE is mirror polished. The stainless steel shall be bonded to the top plate by special high strength adhesive. The thickness of stainless steel plate shall be between 1.0 mm to 1.5 mm.					
a	20 Tons	EACH	5			0.0019072247%
b	25 Tons	EACH	5			0.0022151131%
c	40 Tons	EACH	6			0.0037663398%
d	50 Tons	EACH	4			0.0030035147%
e	60 Tons	EACH	8			0.0069920134%
f	100 Tons	EACH	12			0.0114732630%
A2319	Providing and fixing preformed flexible open ended bellow strap of neoprene of minimum thickness 2 mm and minimum width 200 mm under un-stretched condition with aluminium stripped edges as sealing below top of bunker and bottom of tripper floor to avoid the coal dust nuisance all complete.	RM	276			0.0409159433%
A2320	Supply/design, fabrication and fixing of knockdown stainless steel (polished) railing system conforming to SS 304 of 32 mm/40 mm/ 50mm / 60mm NB dia including buffing, decorative posts,Newel post, midrail, kick rail, toe guard, accessories,fastners, transportation, loading/unloading etc. all complete. The balustrade should be fixed onto floor with casted plate of minimum 6mm thickness. Base plate shall be concealed with suitable SS 304 cover cap so that the mounting height fasteners are not visible after installation.Baluster and handrail connector should be screwed tightened and not to be welded on site. Wall thickness of all pipes shall be min. 2 mm. along with all visible components developed in high grade SS and whenever required, joints to be filled with bushings for extra strength. Payment Breakup: 1. On Supply & Receipt at site - 60% 2. On completion of erection, alignment, welding, etc. complete as per description/specification - 40%	MT	15			0.1465126397%
2321	Supply, fabrication and fixing of MS pipe hand railing of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete. Payment Breaup: 1. On Supply & Receipt at site - 60% 2. On completion of erection, alignment, welding, etc. complete as per description/specification - 40%	MT	4			0.0174124339%
A2322	Supply, fabrication and fixing of galvanised MS pipe hand railing (Min. 1000 mm high) of 32mm/40mm/50mm dia (Medium Class) including transportation, loading/unloading, painting etc. all complete Payment Breaup: 1. On Supply & Receipt at site - 60% 2. On completion of erection, alignment, welding, etc. complete as per description/specification - 40%	MT	17			0.0796519329%
2323	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	7			0.0022979937%
2324	Conducting ultasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	7			0.0003007335%
2325	Conducting ultasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	SQM	14			0.0002619803%
2326	Conducting magnetic particle test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	7			0.0002096296%
2327	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	7			0.0002230006%

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2328	Supply, fixing lightning arrester and air terminal over roof of power house building, pump house and other structures including all materials, labour, electrodes etc complete (all materials to be supplied by the contractor).	EACH	5			0.0008977651%
A2333	Touch up paintings on damaged areas (exposed metal surface) including Surface preparation by manual tools, wire brush/ emery paper etc. Minimum 6 inches peripheral area, adjoining to damaged area to be covered. For exposed metal surface , it is to be painted with Zinc rich epoxy (70 micron) or suitable primer with existing paint scheme as per description of paint specified under item no . A2302,A2305,B2305. The mode of measurement for payment in SQM shall be the actual area of touch up paint.	SQM	987			0.0119074692%
B2333	Touch up paintings on damaged areas(surface exposed to prime coat) including surface preparation by manual tools, wire brush/ emery paper etc. Minimum 6 inches peripheral area, adjoining to damaged area to be covered. For damaged surface, intermediate & top coat to be provided as per description of paint specified under item no.A2305,B2305. The mode of measurement for payment in SQM shall be the actual area of touch up paint.	SQM	987			0.0073558915%
2400	ROAD WORKS: Road works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge.					
2401	Preparation of sub grade by excavating earth to required depth for all types of soil/ rock, dressing to camber and consolidating the base including making good the undulation etc and disposal of surplus earth within a lead upto 1 km etc. all complete.	CUM	4763			0.0112568346%
A2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using excavated soil within a lead upto1km soil and compacted so as to achieve at least 95 % maximum dry density as per IS-2720 (Part-VII) including royalty/seigniorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete.	CUM	2035			0.0075766129%
A2404	Providing & Laying granular sub-base using close graded Material conforming to MORTH specification (Table 400-1, Grading-I) , mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, for all leads & lifts, spreading in uniform layers of specified thickness on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications, drawings and directions of Engineer-in-Charge.	CUM	5079			0.4063158842%
A2406	Providing & Laying water bound macadam sub base/ base course with stone aggregate 53 mm to 22.4 mm size stone conforming to MORTH specification (Table 400-7) mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, for all leads & lifts, spreading in uniform layers of specified thickness on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications, drawings and directions of Engineer-in-Charge.	CUM	501			0.0433884719%
A2410	Providing & laying 40mm bitumen mastic wearing course over concrete pavement with industrial bitumen of grade 85/25 conforming to IS : 702, prepared by using mastic cooker and laid to required level and slope, including providing antiskid surface with bitumen fine grained hard stone chipping of approved size at the rate of 0.005 precoated cum per 10 sqm and at approximate spacing of 10 cm centre to centre in both directions, pressed into surface protruding 1 mm to 4 mm over mastic surface, including cleaning the surface, removal of debris etc. all complete as per specification, drawings and as per direction of engineer-in-charge. (Considering bitumen using 10.2% as per MORTH specification).	SQM	5906			0.2227701985%
A2413	Supplying and laying 450mmx250mmx500mm deep precast concrete kerb stone of grade M25 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:6) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	2844			0.0875120838%
B2413	Supplying and laying 300mmx250mmx150mm deep PCC block of grade M25 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:6) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	315			0.0056063784%
A2415	Supply and laying 200mm dia R.C.C NP3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	771			0.0328490724%
A2418	Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc	CUM	337			0.0460202866%
2419	Providing and laying cement concrete of grade M35 (PQC) using 20 mm nominal size stone aggregate with approved admixture (if required), provision for necessary joints including compaction, finishing to lines and grades, curing and providing & fixing forwork etc all complete. (Excluding the cost of reinforcement and dowel bar) (Cement will be supplied by BHEL free of cost as per TCC)	CUM	2477			0.3660830582%
2420	Supplying and filling sand preparation for shoulder/road sub base/subgrade in layers of 250 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/ compaction by manual/ mechanical means, dressing, royalty (if any) etc all complete.	CUM	5			0.0003046509%
A2421	Providing & laying dry lean concrete (DLC) of grade M10 with 20 mm nominal size graded stone aggregate over a prepared sub-grade including compaction, finishing, curing etc all complete. (Cement will be supplied by BHEL free of cost as per TCC)	CUM	1486			0.2029262488%
	REINFORCEMENT					
A2423	Providing and fixing in position MS dowel bar reinforcement including surface painted with epoxy, dowel end caps with cotton fills etc all complete as per specification, drawing and as directed by Engineer.	MT	15			0.0412206266%
A2424	Providing, straightening cutting, bending, placing in position at any level, binding in position of steel reinforcement of mild steel reinforcements including cost of binding wire, labour, scaffolding transportation to & from stores etc all complete as per specifications, drawings and as directed by Engineer.	MT	1			0.0027480418%
	MISCELLANEOUS					
A2425	Providing & installation of bitumen impregnated fibre board of 20mm thickness confirming to IS 1838 as joint filler including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete as per specification, drawing and as directed by engineer.	RM	2306			0.0157778376%
A2426	Providing and filling in position hot applied bitumen sealing compound (Grade A) of 20 mm thick confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.	RM	2306			0.0058232676%
A2427	Providing and laying debonding strip/tape of specified thickness before applying sealant including cleaning etc all complete as per specification, drawing and as directed by Engineer.	RM	2306			0.0040869245%

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A2428	Providing & laying 75 mm thick precast interlocking concrete pavers of grade M35 of approved colour and pattern as per specification and recommendation of manufacturer.	SQM	3339			0.1166408581%
A2429	Providing and laying 20mm thick sand layer below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	3339			0.0050872278%
A2430	Providing and laying Impermeable plastic sheeting 125 microns thick laid flat without creases as per IRC 15-2002 etc all complete as per specification, drawing and as directed by Engineer.	SQM	9906			0.0052791460%
A2431	Supplying, fixing and removing formwork for concrete road pavement oplete as per specification and as directed by the engineer-in-charge.	SQM	500			0.0090521139%
A2432	Providing and installation of Variable message signs including Cantilever type MS supports etc. all complete as per drawings, specifications, manufacturer's recommendations, indian standards.	EACH	25			0.0031766556%
2600	LEVELING & GRADING: Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge.					
2602	Earth work in stripping of top soil upto a maximum depth of 0.30m below ground level so as to exclude all debris, grass, vegetation, bushes including roots and organic materials etc for leveling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge.	SQM	100000			0.0841755941%
2609	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300mm compacted thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with selected approved soil/soft rock from compulsorily excavated earth available within a lead upto 1km and compacted as specified including re-excavation of stacked earth, all lifts, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer for the following.	CUM	30000			0.1233496206%
2610	Extra over ST No. 2601 to 2609 for carriage of unserviceable material/earth for every 500m or part thereof beyond an initial lead of 1km.	CUM	30000			0.0097125686%
2700	RAIN WATER HARVESTING					
2701	Making 250mm dia bore hole up to a maximum depth of 20 m below ground level in all types of rocks including all equipments, tools & plants, lowering casing pipes, bentonite slurry, removal of casing pipes etc. complete in all types of soil.	RM	210			0.0103721782%
2702	Supply & fixing 150mm dia perforated PVC pipe ISI mark 6 Kg/ cm2 with air vent at top as per the drawing & specification complete.	RM	722			0.0216748546%
2703	Providing & fixing 150 dia PVC pipe ISI mark 6 Kg/cm2 as per specification.	RM	146			0.0039803277%
2704	Supply & packing uniformly 6mm to 3mm size gravel in the bore hole surrounding the perforated PVC pipe.	CUM	98			0.0061393146%
2705	Supply & packing uniformly downgraded 40mm size gravel at all depth in the well dug for rain water harvesting.	CUM	242			0.0261212409%
2706	Supply & packing uniformly downgraded 40mm size pebbles at all depth in the well dug for rain water harvesting.	CUM	58			0.0067749698%
2707	Supply & laying 300mm thick coarse sand layer at all depth in the well dug for rain water harvesting.	CUM	194			0.0091448365%
2708	Supply & fixing Netlon jali/ PVT net in the well dug for rain water.	SQM	482			0.0055970046%
					₹ 0.00	99.9999999996%