

**Pre-bid Clarifications No. 4 Dated 05.02.2025 to Pre-bid queries on stipulations of Bid Document against NIB No. 457 Dated 25-10-2024 for "Package-I: Construction of Civil Works on Item Rate for Tato-I Hydro Electric Project, Arunachal Pradesh, comprising of Headworks & allied works, Head Race Channel, Head race Pipe, Intake, Headrace tunnel, Surge shaft, Pressure shaft, Valve house, Power house & allied works and Infrastructure works"**

**(This Pre-bid Clarifications shall supersede the corresponding stipulations of the Bid Document, wherever these are at variance.)**

Sl. No.	Reference to Bid Document Clause	Provision of Bid document	Pre-Bid queries of Bidders	NEEPCO's Clarifications
1	2 <sup>nd</sup> Pre-Bid Meeting Dtd. 04.02.2025 in Virtual Mode  Sl. No. 5 and 31 of Corrigendum No. 4 Dtd. 22.01.2025	Modified Form-N: Undertaking for Non-Participation in Electronic Reverse Auction (e-RA)	In the Pre-Bid Meeting, bidder requested for correction in Corrigendum No. mentioned in issued Modified Form-N: Undertaking for Non-Participation in Electronic Reverse Auction (e-RA)	Corrigendum No. mentioned in Modified Form-N: Undertaking for Non-Participation in Electronic Reverse Auction (e-RA), issued vide Corrigendum No. 04 Dtd. 22.01.2025, is corrected and Corrected Modified Form-N: Undertaking for Non-Participation in Electronic Reverse Auction (e-RA) is attached below.
2	2 <sup>nd</sup> Pre-Bid Meeting Dtd. 04.02.2025 in Virtual Mode  Part-7: Tender Forms and Data Sheet	Data Sheet-15: Check-List of Documents to be Submitted with Techno- Commercial Bids	In the Pre-Bid Meeting, bidder requested for updating Data Sheet-15: Check-List of Documents to be Submitted with Techno - Commercial Bids incorporating the Modified Form-N	Updated <b>Data Sheet-15: Check-List of Documents to be Submitted with Techno -Commercial Bids</b> , incorporating the Modified Form-N, is attached herewith.
3	2 <sup>nd</sup> Pre-Bid Meeting Dtd. 04.02.2025 in Virtual Mode  Sl. No. 10 of Corrigendum No. 7 Dtd. 01.02.2025	Revised BOQ for the entire scope of work is provided at <b>Annexure-D</b> for reference only, rates of each item of which shall be drawn from the rates quoted by the bidders in the BOQ appearing in the tender portal	In the Pre-Bid Meeting, bidder requested for Correction of Unit of BOQ Item No. 20.01: a) Drilling and blasting (Rate as per BOQ Item No. 2.07) to m <sup>3</sup> .	There is minor correction in <b>BOQ Item Sl. No.</b> at Annexure-D. Accordingly, Annexure-D is modified/corrected and attached herewith.  As explained during the course of 2 <sup>nd</sup> Pre-Bid Meeting, the <b>Annexure-D: Revised BOQ for the entire scope of work</b> is only for reference.  The said BOQ shall only be used at the time of awarding of contract.



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Sl. No.	Reference to Bid Document Clause	Provision of Bid document	Pre-Bid queries of Bidders	NEEPCO's Clarifications
4	2 <sup>nd</sup> Pre-Bid Meeting Dtd. 04.02.2025 in Virtual Mode  Sl. No. 4 of Corrigendum No. 7 Dtd. 01.02.2025	Project Land Zone Layout : Tato-I HEP	In the Pre-Bid Meeting, bidder requested for incorporation the tentative alignment of approach road from Tato-Monigong road to the right abutment of the bridge at the upstream of the Tato-I power house.	The drawing “Project Land Zone Layout : Tato-I HEP is revised incorporating the tentative alignment of approach road from Tato-Monigong road to the right abutment of the bridge at the upstream of the Tato-I power house and attached herewith. This drawing shall be referred for land zones, permanent roads network and scope of construction of permanent roads.
5	2 <sup>nd</sup> Pre-Bid Meeting Dtd. 04.02.2025 in Virtual Mode  Part-4: General Conditions of Contract (GCC) (FIDIC Conditions of Contract for Construction, 1 <sup>st</sup> Edition, 1999, Red Book), Particular Conditions of Contract (PCC), Appendix to Tender)  Cl. 18.2 CAR Policy	The Contractor shall take Contractor's All Risk (CAR) insurance policy for the Works for a period from the Date of commencement of Works up to the date of expiry of Defects Notification Period. Further, the insurance policy shall have a provision of extension of policy period beyond the Defects Notification Period, if so required by Employer, for which premium shall be borne by Employer.	During the 2 <sup>nd</sup> pre-bid meeting, few prospective bidders informed that after the recent catastrophe in some of the Hydro Power Projects, such as Teesta III, Tapovan etc. and based on market assessment, it has been observed that insurance companies are reluctant to provide full coverage as per the specified contract terms. Further, it was also informed that insurers are offering policies with higher deductible and reduced risk coverages. The bidders request NEEPCO to review and reconsider the insurance provisions of Bid stipulation and requested to procure insurance i.e. CAR policy by the employer as per agreed terms with the insurer.	The existing Bid Stipulation for Insurance Policy is being reviewed by NEEPCO.  A Corrigendum in this regard shall be issued shortly.

*Handwritten signatures and initials:*  






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(This Pre-bid Clarifications shall supersede the corresponding stipulations of the Bid Document, wherever these are at variance.)

Sl. No.	Reference to Bid Document Clause	Provision of Bid document	Pre-Bid queries of Bidders	NEEPCO's Clarifications
6	Part-4: General Conditions of Contract (GCC) (FIDIC Conditions of Contract for Construction, 1 <sup>st</sup> Edition, 1999, Red Book), Particular Conditions of Contract (PCC), Appendix to Tender) Annexure-I	Mechanism for determination of Cost related to extension of Time for Completion due to the events entitle cost claims to the Contractor under various sub-clauses of GCC/PCC	In Annexure-I : Mechanism for Computation of Time Related Cost is provided, which is does not include the provision for payment on following heads: 1. Cost of Labour 2. Cost of Site Staff 3. Interest on Mobilization Advance Therefore, we request you to include these heads also for computation of time related cost.	Due to typographical error, the same is omitted in the Bid Document.  Accordingly, corrected Annexure-I: Mechanism for determination of Cost related to extension of Time for Completion due to the events entitle cost claims to the Contractor under various sub-clauses of GCC/PCC is attached herewith.

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Package-I: Civil Works pertaining to Tato-I Hydro Electric Project (186 MW), Arunachal Pradesh	 IS: 9001, 14001 & 45001	Bid document Part-7: Tender Forms and Data Sheets
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**Modified**

**FORM N: UNDERTAKING FOR NON-PARTICIPATION IN ELECTRONIC REVERSE AUCTION (e-RA)**

(To be submitted in the Company Letter Head)

To,

The Executive Director,  
Contract & Procurement,  
NEEPCO LTD., Brookland Compound,  
Lower New Colony, Shillong-793003  
Email id: [contract@neepco.co.in](mailto:contract@neepco.co.in)

**Sub: Undertaking for Non-Participation in electronic Reverse Auction (e-RA)**

Dear Sir,

This has reference to the Terms for the e- Reverse Auction mentioned in the Corrigendum No. 4 Dtd. \_\_\_\_\_ against NIB No. \_\_\_\_\_ Dated \_\_\_\_\_ for the Works of **“Package-I: Construction of Civil Works on Item Rate for Tato I Hydro Electric Project, Arunachal Pradesh, comprising of Headworks & allied works, Head Race Channel, Head race Pipe, Intake, Headrace tunnel, Surge shaft, Pressure shaft, Valve house, Power house & allied works and Infrastructure works”**.

This letter is to confirm that:

- 1) The undersigned is authorized representative of the company.
- 2) We have studied the instruction to Bidders governing the Reverse Auction as mentioned in Cl. No. 23.3.2 of Part-3: Instruction to Bidder, of the Bid Documents and its subsequent amendment issued vide Corrigendum No. \_\_\_\_\_ Dtd. \_\_\_\_\_ against NIB No. \_\_\_\_\_ Dated \_\_\_\_\_ of the Employer and confirm our agreement to them.
- 3) We confirm herewith that we will not participate in e-RA, which shall be conducted for a short duration after opening of price bid as per system requirement for further processing of the instant tender.
- 4) We hereby confirm that we will honour the above commitment (3), failing which our bid shall be liable for rejection as well as EMD shall be forfeited and that the Employer may debar us from participating in future tenders for 2 years from date of issue of such notice to the bidder.

With regards,

Signature with company seal

Date: Name –

Company / Organization –

Designation within Company/organization -

Address of Company / Organization –



# DATA SHEET-15: CHECK-LIST OF DOCUMENTS TO BE SUBMITTED WITH TECHNO- COMMERCIAL BIDS

Name of Bidder: .....

Sl. No.	List of documents to be submitted by the Bidder with Techno-Commercial Bid	Ref. to Bid Document	Compliance (Yes/No)	Required action by Bidder
1	Bid Fee	Cl.11.3, Part-I	Yes/No	Bidders shall submit/upload e-receipt of money paid against Bid Fee with online Techno-Commercial bids.
2.	Fulfills General Technical Qualifying Requirement	Cl. 6, Part-I	Yes/No	Bidders shall submit/upload required supporting documents, duly signed and stamped with online Techno-Commercial bids.
3	Fulfills Financial Qualifying Requirement	Cl. 6, Part-I	Yes/No	Bidders shall submit/upload required supporting documents, duly signed and stamped with online Techno-Commercial bids.
4.	FORM- A: Bid Form	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload Form-A, duly filled up, signed and stamped with online Techno-Commercial bids.
5	FORM-B: Warranty Form	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload Form-B, duly filled up, signed and stamped with online Techno-Commercial bids.

6	FORM-C: Bid Security/EMD Form	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload Bid Security/ EMD with online Techno-Commercial bids including its physical submission in original
7.	FORM-D: Power of Attorney Form	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload Power of Attorney with online Techno-Commercial bids including its physical submission in original.
8	FORM-E: Joint-Venture Agreement Form	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload Joint-Venture Agreement Form with online Techno-Commercial bids including its physical submission in original.
9	Form-F: Undertaking by the Parent/Holding Company	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders (in case of Subsidiary bidders) shall submit/upload Form-F, duly filled up, signed, stamped with online Techno-Commercial bids
10	Form-H: Joint Deed of undertaking by Bidder and sub- contractor	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload Form-H, duly filled up, signed, stamped with online Techno-Commercial bids including its physical submission in original.
11	Form-I: Undertaking by Sub-contractor	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload Form-I, duly filled up, signed, stamped with online Techno-Commercial bids including its physical submission in original.



12	FORM-J: Documents for verification of local content, as per Clause 3(viii)(III), Part-3 of Bid Document	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload Form-J, duly filled up, signed, stamped along with required certificate with online Techno-Commercial bids.
13	FORM-K: Declaration of Bidder covering Clause 2(A), Part-3 of Bid Document	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload the said Declaration with online Techno-Commercial bids.
14	FORM-L: Declaration of Bidder covering Clause 2(B), Part-3 of Bid Document	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload the said Declaration with online Techno-Commercial bids.
15	FORM-M: Certificate regarding Compliance as per Clause 4(x) (IV), Part-3 of Bid Document	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload Form-M, duly filled up, signed, stamped along with required certificate with online Techno-Commercial bids.
16	Form-N: Undertaking for Non-Participation in Electronic Reverse Auction (e-RA)	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload Modified Form-N, duly filled up, signed, sealed with online Techno-Commercial bids.
17	Data Sheet-1: Technical and Supervisory Personnel proposed for the Work	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload duly filled up, signed and sealed Data Sheet-1 with online Techno-Commercial bids.
18	DATA SHEET-2: Equipment Capabilities	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload duly filled up, signed and sealed Data Sheet-2 with online Techno-Commercial bids.

19	DATA SHEET-3: Equipment Mobilisation/Demobilisation Schedule	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload duly filled up, signed and sealed Data Sheet-3 with online Techno- Commercial bids.
20	DATA SHEET-4: Financial Datasheet	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload duly filled up, signed and sealed Data Sheet-4 with online Techno- Commercial bids.
21	DATA SHEET-5: Proposed Site Organisation	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload duly filled up, signed and sealed Data Sheet-5 with online Techno- Commercial bids.
22	DATA SHEET-6: Construction Programme	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload duly filled up, signed and sealed Data Sheet-6 with online Techno- Commercial bids.
23	DATA SHEET-7A: Construction Methodology for Civil Works	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload duly filled up, signed and sealed Data Sheet-7A with online Techno- Commercial bids.
25	DATA SHEET-8: Confirmation of Site Visit and Project Appreciation by Bidder	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/upload duly filled up, signed and sealed Data Sheet-8 with online Techno- Commercial bids.



26	DATA SHEET-9: Description of Quality Assurance at Site	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/ upload duly filled up, signed and sealed Data Sheet-9 with online Techno- Commercial bids.
27	DATA SHEET-10: Description of Safety Planning at Site	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/ upload duly filled up, signed and sealed Data Sheet-10 with online Techno- Commercial bids.
28	DATA SHEET-11: Description of Environmental Protection Planning	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/ upload duly filled up, signed and sealed Data Sheet-11 with online Techno- Commercial bids.
29	DATA SHEET-12: Existing commitment of works	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/ upload duly filled up, signed and sealed Data Sheet-12 with necessary supporting documents alongwith online Techno- Commercial bids
30	DATA SHEET 13: Planning for maintenance of Contractor's Equipment required during execution of the Works	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/ upload duly filled up, signed and sealed Data Sheet-13 with online Techno- Commercial bids
31	DATA SHEET 14: Source of Material	Part-7: Tender Forms & Data Sheets	Yes/No	Bidders shall submit/ upload duly filled up, signed and sealed Data Sheet-14 with online Techno- Commercial bids

32	INTEGRITY PACT	Clause 10.1 (i) (R) of Part-3	Yes/No	Bidders shall submit/ upload INTEGRITY PACT, duly filled up, signed, sealed with online Techno- Commercial bids including its physical submission of two copies in Original.
33	Bank details for E-PAYMENT:	Clause 34, Part-3	Yes/No	Bidders shall submit/ upload Bidder's Bank details for payment through e-payment system with online Techno-commercial bids.
34	Any other documents	Any relevant Bid conditions	Yes/No	Bidders shall submit/ upload any other documents, which are required in terms of relevant bid conditions with online Techno-commercial bids.

N.B Bidders shall refer to various Clauses of Bid Document for filling up the Check List for Bid Submission. However, submission of data/ documents as per the above Check list shall not absolve the bidders from his responsibility of submission of all information/data/documents, complete in all respects, as per the respective Clauses of Bid Document.

Dated \_\_\_\_\_

Signature\_\_\_\_\_



**Item Rate BoQ****ANNEXURE-D (for reference only)**

Tender Inviting Authority: Executive Director, Contracts and Procurement, NEEPCO, Shillong

Name of Work: Package-I: Construction of Civil Works on Item Rate for Tato-I Hydro Electric Project, Arunachal Pradesh, comprising of Headworks & allied works, Head Race Channel, Head race Pipe, Intake, Headrace tunnel, Surge shaft, Pressure shaft, Valve house, Power house & allied works and Infrastructure works.

Contract No: NIB No.457 Dated 25.10.2024.

<b><u>PRICE SCHEDULE</u></b>						
<b>Sl. No.</b>	<b>Item Description</b>	<b>Quantity</b>	<b>Units</b>	<b>RATE inclusive of all applicable Taxes, Duties, Levies, Cess etc. in Figures INR</b>	<b>TOTAL AMOUNT (inclusive of all applicable Taxes, Duties, Levies, Cess etc.) INR</b>	<b>TOTAL AMOUNT In Words</b>
<b>1</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
1	<b>CONTROL OF WATER, CONSTRUCTION DRAINAGE AND DEWATERING</b>					
1.01	Control of water, dewatering of surface/underground construction sites including all construction works, labor, plants and materials necessary to keep the construction sites free of water during the contract period. Complete in all respect as per technical specification, drawings and as directed by Engineer-in-Charge.					
1.02	Dewatering of surface construction sites	200000.000	kWhr			
1.03	Dewatering of underground construction sites	250000.000	kWhr			
2	<b>SURFACE EXCAVATION AND BACKFILL</b>					
2.01	Surface excavation including loading, transport, all lift and lead up to 3.0 km from the excavation area/working site, unloading at disposal sites or stockpiles and maintenance of the disposal sites or stockpiles. Construction of required haul roads and its maintenance. Complete in all respect as per technical specification, drawings and as directed by Engineer-in-Charge.					
2.02	<b>Weir, Channel intake, approach channel, head race channel, escape channel, Head Race pipe, Powe Intake &amp; River Diversion Works and permanent roads</b>					
2.03	Clearing of excavation areas, disposal areas and stockpiles	10000.000	m <sup>2</sup>			
2.04	Excavation in soil including stripping of top soil	74454.000	m <sup>3</sup>			
2.05	Excavation in soft and disintegrated rock	98048.000	m <sup>3</sup>			
2.06	Excavation in hard rock					
2.07	a) Drilling and blasting	101433.000	m <sup>3</sup>			
2.08	b) Line-drilling	500.000	rm			
2.09	Cost of Haulage excluding loading & unloading of excavated materials Katcha Track beyond initial lead of 3.00km	30000.000	Cum/km			
2.1	<b>WCS including HRT,ADITS,HPT, Surge Shaft and Valve House.</b>					
2.11	Clearing of excavation areas, disposal areas and stockpiles	10000.000	m <sup>2</sup>			
2.12	Excavation in soil including stripping of top soil	26416.000	m <sup>3</sup>			
2.13	Excavation in soft and disintegrated rock	36810.000	m <sup>3</sup>			
2.14	Excavation in hard rock					
2.15	a) Drilling and blasting	50960.000	m <sup>3</sup>			
2.16	b) Line-drilling	500.000	rm			
2.17	Haulage excluding loading & unloading of excavated materials Katcha Track beyond initial lead of 3.00km	10000.000	Cum/km			
2.18	<b>Power House &amp; Tail Race System</b>					
2.19	Clearing of excavation areas, disposal areas and stockpiles	15000.000	m <sup>2</sup>			
2.2	Excavation in soil including stripping of top soil	24176.000	m <sup>3</sup>			

2.21	Excavation in soft and disintegrated rock	108429.000	m <sup>3</sup>			
2.22	Excavation in hard rock					
2.23	a) Drilling and blasting	245580.000	m <sup>3</sup>			
2.24	b) Line-drilling	500.000	rm			
2.25	Cost of Haulage excluding loading & unloading of excavated materials Katcha Track beyond initial lead of 3.00km	15000.000	Cum/km			
2.26	<b>Backfilling</b>					
2.27	Random backfill	71378.000	m <sup>3</sup>			
2.28	Selected backfill	10000.000	m <sup>3</sup>			
2.29	Sand-gravel backfill	14451.000	m <sup>3</sup>			
2.3	Construction of embankment using available excavated muck including all handling, lead , lift and compaction complete for river diversion and other area.	36000.000	m <sup>3</sup>			
3	<b>UNDERGROUND EXCAVATION</b>					
3.01	Underground excavation of Head Race Tunnel, Power Tunnel and Construction Adit including excavation by drill and blast, mechanical, manual or conventional methods; including all survey and setting-out, all lifts, transportation and unloading at disposal sites upto 3.0 km from the nearest portal and including maintenance of the disposal sites or stockpiles. Construction of required haul roads and its maintenance. Complete in all respect as per technical specification, drawings and as directed by Engineer-in-Charge.					
3.02	<b>Head Race Tunnel &amp; Construction Adits</b>					
3.04	a) Excavation in class 2	38240.000	m <sup>3</sup>			
3.05	b) Excavation in class 3	103950.000	m <sup>3</sup>			
3.06	c) Excavation in class 4A & 4B	26990.000	m <sup>3</sup>			
3.07	d) Excavation in class 5	18663.000	m <sup>3</sup>			
3.08	e) Excavation in class 6	7961.000	m <sup>3</sup>			
3.09	<b>Pressure Tunnel excluding the Vertical Shaft Portion</b>					
3.11	a) Excavation in class 2	2616.000	m <sup>3</sup>			
3.12	b) Excavation in class 3	7049.000	m <sup>3</sup>			
3.13	c) Excavation in class 4A & 4B	1434.000	m <sup>3</sup>			
3.14	d) Excavation in class 5	525.000	m <sup>3</sup>			
3.15	e) Excavation in class 6	416.000	m <sup>3</sup>			
3.16	<b>Vertical Shaft Portion of the Pressure Tunnel</b>					
3.17	a) Excavation in all Classes	4957.000	m <sup>3</sup>			
3.18	<b>Surge Shaft</b>					
3.19	a) Excavation in all Classes	21694.000	m <sup>3</sup>			
3.2	<b>Loading, transport including all lift and lead and unloading of accepted geological overbreak upto 3.0 km from the nearest portal</b>					
3.21	a) Head Race Tunnel, construction Adits and pressure tunnel	6101.000	m <sup>3</sup>			
3.22	b) Vertical Shaft Portion of the Pressure tunnel and surge shaft	4022.000	m <sup>3</sup>			
3.23	Haulage excluding loading & unloading of excavated materials Katcha Track beyond initial lead of 3.00km	29371.000	Cum/km			
4	<b>ROCK SUPPORT</b>					
4.01	Rock support for underground excavation of Head Race Tunnel, Surge shaft, vertical shaft, Adits & Pressure Tunnel including all plants, materials and labour. Complete in all respect as per technical specification, drawings and as directed by Engineer-in-Charge.					
4.02	Shotcrete Grade M25					
4.03	a) Without Steel Fibre Reinforcement	2892.000	m <sup>3</sup>			
4.04	b) With Steel Fibre Reinforcement	4872.400	m <sup>3</sup>			
4.05	Precast R.C.C. laggings	954.000	m <sup>3</sup>			
4.06	Resin/cement based capsule grouted rock bolts					
4.07	a) 25mm dia	108821.000	rm			
4.08	a) 32mm dia	10000.000	rm			

4.09	Steel rib	782.000	MT			
4.1	Forepoling, grouted anchor bars	70.000	MT			
4.11	Pipe Roofing:	27.000	MT			
4.12	Lattice girder, steel canopy	130.000	MT			
4.13	Welded Wire Mesh	40782.000	m <sup>2</sup>			
5	<b>SLOPE PROTECTION</b>					
5.01	Slope protection in surface excavation including all plants, materials and labour. Complete in all respect as per technical specification, drawings and as directed by Engineer-in-Charge					
5.02	Rip-Rap					
5.03	Bedding	505.000	m <sup>3</sup>			
5.04	Rip-Rap	2018.000	m <sup>3</sup>			
5.05	Rock Paving					
5.06	Dry rock paving	2000.000	m <sup>3</sup>			
5.07	Rock paving in mortar	2000.000	m <sup>3</sup>			
5.08	Boulder Protection /launching apron	5575.000	m <sup>3</sup>			
5.09	Gabions	7853.000	m <sup>3</sup>			
5.1	Masonry Walls for slope protection, water control barrier, etc.	5000.000	m <sup>3</sup>			
5.11	cement/ cement sand grouted rock support					
5.12	32mm dia rock bolt	27244.000	rm			
5.13	25mmdia rock bolt	17244.000	rm			
5.14	Self drilling anchor 32mm dia.	7714.000	rm			
5.15	Shotcrete Grade M25					
5.16	Without Steel Fibre Reinforcement	5917.000	m <sup>3</sup>			
5.17	<b>Steel wire mesh</b>					
5.18	Welded Wire Mesh	39387.000	m <sup>2</sup>			
5.19	Chain link wire mesh	23300.000	m <sup>2</sup>			
5.2	Grouted anchor bar					
5.21	25mm dia	13437.000	rm			
5.22	32mm dia	21370.000	rm			
5.23	Pre stressed cable Anchor					
5.24	Supply and installation of pre stressed Tendons of High tensile strands of nominal sizes upto 15.2mm dia. in Rock Anchors with Anchor Guide, Spacer, Centraliser, Sheathing, grout pipe, Anchor Block, Bearing Plate, Grip wedge and Anchor cap complete with corrosion protection including stressing and all types of tests as per the Technical specification and direction of the Engineer-in-Charge.	6.000	MT			
5.25	Drilling					
5.26	a) 99mm dia hole	1050.000	rm			
5.27	b) Re-drilling 99mm dia hole	350.000	rm			
5.28	Grouting	52800.000	Kg.			
5.29	PVC pipes conforming to IS 4985:2000 in Free length part of Cable Anchors					
5.3	90 mm outer dia., 6 kg/sqcm & class 3	438.000	rm			
5.31	Medium duty GI pipes conforming to IS 1239-2005 in Free length part of Cable Anchors					
5.32	a) 80mm Nominal Bore	350.000	rm			
5.33	b) 100mm Nominal Bore	88.000	rm			
5.34	Extra for core recovery	50.000	rm			
5.35	Providing and Laying of Topsoil & seeding including all transportation and handling	2500.000	m <sup>3</sup>			
5.36	Landscaping including plantation. Maintenance etc complete.	2000.000	m <sup>2</sup>			
5.37	Laying of Geotextile for erosion protection	2000.000	m <sup>2</sup>			
6	<b>CONCRETE</b>					
6.01	Complete in all respect with all plants, materials, labour, all lead and lift etc. as per technical specification, drawings and as directed by Engineer-in-Charge.					
6.02	Plain/reinforced cement concrete in Weir, channel intake and Approach channel , River diversion, HRC & escape channel excluding formwork					

6.03	M10A150	9550.000	m <sup>3</sup>			
6.04	M10A40	7407.000	m <sup>3</sup>			
6.05	M15A40	9982.000	m <sup>3</sup>			
6.06	M20A40	2975.000	m <sup>3</sup>			
6.07	M20A20	3250.000	m <sup>3</sup>			
6.08	M25A20	47459.000	m <sup>3</sup>			
6.09	Concrete block for launching apron (M 15A40)	371.000	m <sup>3</sup>			
6.1	High Performance Concrete					
6.11	M40A20	418.000	m <sup>3</sup>			
6.12	Second stage concrete in blockout including formwork					
6.13	M30A20	154.000	m <sup>3</sup>			
6.14	Reinforced cement concrete M25 in HRP including inner formwork	23012.000	m <sup>3</sup>			
6.15	Plain/ RCC concrete in Underground structure including formwork					
6.16	<b>Head Race Tunnel, Pressure Tunnel excluding vertical shaft portion, Construction Adits</b>					
6.17	a) Backfilling upto pay line/ behind steel liner with M20A20 concrete	2800.000	m <sup>3</sup>			
6.18	b) Backfilling upto Pay Line with M25A20 Concrete	2165.000	m <sup>3</sup>			
6.19	c) Concrete lining with M25A20 Concrete	31347.000	m <sup>3</sup>			
6.2	<b>Surge shaft</b>					
6.21	a) Backfill up to payline with M20 Concrete	126.000	m <sup>3</sup>			
6.22	b) Concrete lining grade M25	5148.000	m <sup>3</sup>			
6.23	<b>Vertical shaft portion of HPT</b>					
6.24	a) Backfilling upto Pay Line with M20 Concrete	939.000	m <sup>3</sup>			
6.25	b) Backfill behind steel liner with M20 Concrete	939.000	m <sup>3</sup>			
6.26	Backfilling accepted Geological overbreak including required formwork					
6.27	Backfilling with M15 concrete for Head Race Tunnel, Adits & Pressure Tunnel	6101.000	m <sup>3</sup>			
6.28	Backfilling with M15 concrete for Surge shaft & Vertical Shaft portion of Pressure Tunnel	1469.000	m <sup>3</sup>			
6.29	Plugging of Adits with M20 concrete	1900.000	m <sup>3</sup>			
6.3	Plain/ RCC Concrete in Overground structure in WCS - Intake, Adit portals, Anchor block, Surge shaft, vertical shaft etc, excluding formwork					
6.31	M20A20	196.000	m <sup>3</sup>			
6.32	M25A40	5350.000	m <sup>3</sup>			
6.33	M25A20	5350.000	m <sup>3</sup>			
6.34	M10A40	363.000	m <sup>3</sup>			
6.36	Plain/ RCC Concrete in Power House, Tail race and valve house excluding formwork					
6.37	M10A150	24.000	m <sup>3</sup>			
6.38	M10A40	13233.000	m <sup>3</sup>			
6.39	M-15A40	471.000	m <sup>3</sup>			
6.4	M25A20	17500.000	m <sup>3</sup>			
6.41	M20A40	9000.000	m <sup>3</sup>			
6.42	M20A20	8000.000	m <sup>3</sup>			
6.43	Concrete Block M10	471.000	m <sup>3</sup>			
6.44	Second stage Concrete in blockout including formwork					
6.45	M-30A20	1190.000	m <sup>3</sup>			
7	<b>FORMWORK</b>					
7.01	Formwork for cast-in-situ concrete works, complete in all respect with all plants, materials, labour, all lead and lift etc. complete in all respect as per technical specification, drawings and as directed by Engineer-in-Charge. For all formed surfaces where the formwork is not included in the payment of concrete.					
7.02	F1 Surface finish	10400.000	m <sup>2</sup>			
7.03	F2 Surface finish	21000.000	m <sup>2</sup>			



7.04	F3 Surface finish	15000.000	m <sup>2</sup>			
7.05	F1C Surface finish	2700.000	m <sup>2</sup>			
7.06	F2C Surface finish	3000.000	m <sup>2</sup>			
7.07	F3C Surface finish	3000.000	m <sup>2</sup>			
8	<b>STEEL FOR REINFORCEMENT</b>					
8.01	High yield strength deformed reinforcement bar/ wire of Fe500 grade complete in all respect with all plants, materials, labour, all lead and lift etc. as per technical specification, drawings and as directed by Engineer-in-Charge.					
8.02	Weir & channel intake, approach channel, escape channel, Heard race power channel, power Intake, River diversion and permanent roads	4978.000	MT			
8.03	HRT,Construction Adits, Surge shaft, vertical shaft & pressure tunnel	995.000	MT			
8.04	Power House & Tail Race and valve house	1942.000	MT			
9	<b>JOINTS AND SEALANTS</b>					
9.01	Complete in all respect with all plants, materials, labour, all lead and lift etc.as per technical specification, drawings and as directed by Engineer-in-Charge.					
9.02	PVC Waterstops 300 mm	206.000	rm			
9.03	PVC Waterstops 230 mm	764.000	rm			
9.04	Pre-moulded joint filler in expansion joints - 25mm thick	1400.000	m <sup>2</sup>			
9.05	Polysulphide joint sealant including surface preparation	310.000	rm			
10	<b>DRILLING</b>					
10.01	Complete in all respect with all plants, materials and labour as per technical specification, drawings and as directed by Engineer-in-Charge.					
10.02	<b>Percussion drilling</b>					
10.03	Weir & Intake/Power House					
10.04	a) Drill holes up to ø 48 mm, length < 10 m	5087.000	rm			
10.05	b) Drill holes up to ø 48 mm, length 10 - 30 m	5177.000	rm			
10.06	c) Drill holes up to ø 76 mm, length upto 30m	20643.000	rm			
10.07	Head Race Tunnel / Pressure Tunnel/Surge Shaft/Vertical shaft/Construction Adit					
10.08	a) Drill holes up to ø 48 mm, length < 10 m	18984.000	rm			
10.09	b) Drill holes up to ø 48 mm, length 10 - 30 m	5953.000	rm			
10.1	<b>Rotary drilling</b>					
10.11	<b>Weir &amp; Intake</b>					
10.12	a) Drill holes up to ø 76/80 mm, length < 30 m	150.000	rm			
10.13	b) Drill holes up to ø 99 mm, length < 30 m	100.000	rm			
10.14	<b>Head Race Tunnel / Pressure Tunnel/Surge Shaft/Construction Adit/Power House</b>					
10.15	a) Drill holes up to ø 76/80 mm, length < 30 m	100.000	rm			
10.16	b) Drill holes up to ø 99 mm, length < 30 m	100.000	rm			
10.17	Extra for core recovery	100.000	rm			
10.18	<b>Installation of pipes</b>					
10.19	Supply and installation of PVC pipes (plain or slotted) in drilled holes including fittings and accessories					
10.2	32mm dia	15086.000	rm			
10.21	65mm dia	20643.000	rm			
11	<b>GROUTING &amp; WATER PRESSURE TEST</b>					
11.01	Complete in all respect with all plants, materials and labour as per technical specification, drawings and as directed by Engineer-in-Charge.					
11.02	<b>Head Race Tunnel /Pressure Tunnel/Surge Shaft/Construction Adit</b>					
11.03	Contact grouting	8346.000	Bag			
11.04	Sand to be used in sand-cement grouting	200.000	Cum			
11.05	Consolidation grouting	23237.000	Bag			
11.06	Pre grouting with cement	1000.000	Bag			
11.07	Pre-grouting with Micro-fine Cement	10000.000	Kg			
11.08	<b>Weir &amp; Intake/ River diversion</b>					
11.09	Contact/ fill/ permeation grouting	750.000	Bag			
11.1	Curtain grouting	1406.000	Bag			

11.11	Consolidation grouting	7392.000	Bag			
11.12	Sand to be used in sand-cement grouting	200.000	cum			
11.13	Water pressure test					
11.14	Simple water pressure tests	50.000	No.			
11.15	Comprehensive water pressure tests	50.000	No.			
12	<b>INSTRUMENTATION AND MONITORING</b>					
12.01	Complete in all respect with all plants, materials and labour as per technical specification, drawings and as directed by Engineer-in-Charge.					
12.02	Stress meter in Tunnel etc.	50.000	No.			
12.03	Load Cell for rock bolt and anchor	50.000	No.			
12.04	Load Cell for steel support	20.000	No.			
12.05	Extra cable length	100.000	rm			
12.06	Portable readout units	1.000	No.			
12.07	Tape extensometer station	4.000	No.			
12.08	Optical convergence measurement station	80.000	No.			
12.09	Inclinometer	1.000	No.			
12.1	Automatic Water Level Meter with Radar tyoe sensor	4.000	No.			
12.11	Automatic weather station	1.000	No.			
12.12	Strong Motion Accelerograph, complete	1.000	No.			
13	<b>METALWORKS</b>					
13.01	Supply, fitting and fixing of metal works in all structures. Complete in all respect with all plants, materials and labour as per technical specification, drawings and as directed by Engineer-in-Charge.					
13.03	Black steel pipe of 75mm dia	100.000	rm			
13.04	Miscellaneous fabricated minor steel structures like handrailing, ladder, cable tray etc.	12.000	MT			
13.05	Water tight steel cover with support frame	500.000	kg			
13.06	Steel gratings	500.000	kg			
13.07	Steel chequered plates excluding frame	15.000	MT			
13.08	Rail (90R section)	200.000	rm			
13.09	Providing & fixing Bolts including Nuts & washer Plates, etc. complete in all respect (if not supplied by E/M or H/M Contractor)	500.000	kg			
13.1	Erection/installation of Metal Works supplied by others	5.000	MT			
14	<b>BUILDING AND ARCHITECTURAL WORKS</b>					
14.01	Power House main and auxiliary buildings, valve house, Weir control room etc Complete in all respect with all plants, materials and labour as per technical specification, drawings and as directed by Engineer-in-Charge.					
14.02	Masonry Work and backfill					
14.04	a) 230mm thick Brick Wall in cement mortar with 1st class brick in Proportion 1:4 (1 Cement: 4 Sand)	1150.000	m <sup>3</sup>			
14.05	b) 112 mm thick 1st Class Brick Nogged WallIn cement mortar in proportion 1:4 (1 cement: 4 sand)	700.000	m <sup>2</sup>			
14.06	c) Random Rubble Stone masonry in cement mortar in proportion 1:6(1 cement: 6 coarse sand)	1249.000	m <sup>3</sup>			
14.07	d) Course rubble Stone masonry (first sort) in cement mortar in proportion 1:6 (1 cement: 6 coarse sand)	150.000	m <sup>3</sup>			
14.08	e) Course rubbleStone masonry (second sort) in cement mortar in proportion 1:6 (1 cement: 6 coarse sand)	150.000	m <sup>3</sup>			
14.09	f) Compacted Backfill with selected materials	9500.000	m <sup>3</sup>			
14.1	g) Gravel Fill	750.000	m <sup>3</sup>			
14.11	Cement Plaster using Fine Sand in single coat including rises or rounded angles not exceeding 80mmgirth and finished even and amooth including curing complete as per technical specification and as directed by the Engineer-in-Charge					
14.12	a) 12 mm Thick Cement Plaster of Mix 1:4 (1 Cement: 4 Fine Sand)	5500.000	m <sup>2</sup>			
14.13	b) 15 mm Thick Cement plaster on the rough side of single or half brick wall of mix 1:4 (1 Cement: 4 Fine Sand)	5000.000	m <sup>2</sup>			
14.14	c) 6mm Thick Plaster of Mix 1:3 (1 Cement: 3 Fine Sand)	562.000	m <sup>2</sup>			

14.15	15 mm Thick Cement Plaster finished with a floating coat of neat cement of mix: 1:3 (1 Cement : 3 Fine Sand)	1500.000	m <sup>2</sup>			
14.16	Providing and laying 25mm thick Damp Proof Course with cement concrete in prop 1:1.5:3 with graded stone aggregate of 10mm down nominal size including providing approved damp proof admixture in proportion as recommended by the manufacturer including curing, etc. complete in all respect as per the technical specification and as directed by the Engineer-in-Charge	75.000	m <sup>2</sup>			
14.17	<b>Floor and wall finish</b>					
14.18	Concrete Pavement & floor					
14.19	a) Providing and fixing 80 mm thick interlocking pre-cast blocks (of required shape and size) of cement concrete design mix M 35 (minimum cement @ 425 kg per Cum) smooth finish on top over 50 mm sand filling	2000.000	m <sup>2</sup>			
14.2	b) Providing & laying 65mm thick CC Floor with metallic concrete hardner topping under layer of 50mm thick cement concrete 1:2:4 (1 Cement: Coarse Sand: 4 Coarse Aggregate of 20mm & down) and top layer of 15mm thick of metallic cement hardner consisting of mix 1:2 (1 cement hardner mix: 2 stone aggregate 6mm and down) by volume with which metallic hardening compound of approved quality is mixed in the ratio of 4:1 (4 parts of cement: 1 part of metallic floor hardening compound of approved quality by weight) including finishing with curing complete as directed	434.000	m <sup>2</sup>			
14.21	<b>Vitrified Tiles</b>					
14.22	a) On Floor: Providing Vitrified Floor Tiles of approved quality of specified size, shape and thickness not less than 18mm on floors over 15mm thick base of cement mortar in prop 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile/ White Cement Slurry mixed with approved pigment to match the shade of the tiles, complete at all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 1200mm x 1600mm and above	222.000	m <sup>2</sup>			
14.23	b) On Skirting: Providing Vitrified Floor Tiles of approved quality of specified size, shape and thickness not less than 18mm on skirting over 15mm thick base of cement mortar in prop 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile/ White Cement Slurry mixed with approved pigment to match the shade of the tiles, complete at all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 1200mm x 1600mm and above	17.000	m <sup>2</sup>			
14.24	Epoxy Flooring: Providing and applying normal setting, self levelling epoxy modified cementitious floor topping Sikafloor 81 EpoCem of Sika (India) Ltd. using trowel followed by applying self smoothing epoxy floor coating Sikafloor 261(S) of Sika (India) Ltd./ Dr. Sealkit EPU Floor Self L (Asian Chemicals)/ MASTERTOP 542 ECC of BASF using serrated trowel and rolled with a spiked nylon roller after proper surface preparation and application of a priming coat of Sikafloor 80 Primer as specified and directed by the Engineer-in-Charge	1000.000	m <sup>2</sup>			
14.25	<b>Anti-Skid Tiles</b>					
14.26	a) On Floor: Providing Anti Skid Tiles of approved quality size, shape and thickness not less than 8mm on floor over a cement mortar bed of 15mm thick in prop 1:3 (1 cement: 3 coarse sand) approved make fix with Fix-a Tile/ White Cement complete at all level as specified in the technical specification and as directed by the Engineer-in-Charge Vitrified: Executive Range- 2 (Size 600mm x 600mm and above)	336.000	m <sup>2</sup>			

14.27	b) On Skirting: Providing Anti Skid Tiles of approved quality size, shape and thickness not less than 8mm on floor over a cement mortar bed of 15mm thick in prop 1:3 (1 cement: 3 coarse sand) approved make fix with Fix-a_Tile/ White Cement complete at all level as specified in the technical specification and as directed by the Engineer-in-Charge Vitrified: Executive Range- 2 (Size 600mm x 600mm and above)	30.000	m <sup>2</sup>			
14.28	Ceramic Tiles On Walls: Providing polished Ceramic Wall Tiles of approved quality, size, shape and thickness not less than 8mm on walls and skirtings over cement mortar bed 10mm thick in prop. 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-a-Tile/ White Cement Slurry mixed with approved pigment to match the shade of tiles complete as all levels as specified in the technical specification and as directed by the Engineer-in-Charge Deluxe Range: Of Size 300mm x 450mm and above	200.000	m <sup>2</sup>			
14.29	Granite Flooring: Providing Polished Granite Tiles of approved quality, size shape and thickness not less than 18mm on floors, skirtings, risers and treads of steps over 15mm thick base of cement mortar in prop 1:3 (1 cement: 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-a-Tile/ White Cement Slurry mixed with approved pigment to match the shade of tiles complete at all levels as specified in teh technical specification and as directed by the Engineer-in-Charge					
14.3	With Fix-a-Tile	100.000	m <sup>2</sup>			
14.31	Polished Granite Skirting of approved size, quality, shape and thickness not less than 20mm unless otherwise specified, laid in 1 part Cement and 3 part Coarse Sand mix; complete in all respect	21.000	m <sup>2</sup>			
14.32	Chequered precast cement concrete tiles 22mm thick jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning, etc. on 20mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand): Medium shade pigment using 50% white cement & 50% grey cement	500.000	m <sup>2</sup>			
14.33	Acid/ Alkali resistant Tiles: Providing and fixing 10mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resistant mortar bedding and joints filled with acid and/or alkali resistant cement as per IS: 4457, complete as per the direction of the Engineer-in-Charge					
14.34	a) In flooring on a bed of 10mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand)	120.000	m <sup>2</sup>			
14.35	b) In dado/ Skirting on 12mm thick mortar 1:4 (1 acid proof cement: 4 coarse sand)	164.000	m <sup>2</sup>			
14.36	Kota Stone Flooring					
14.37	a) Kota stone slab flooring over 20mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1:4 (1 cement: 4 coarse sand): 25mm thick	3400.000	m <sup>2</sup>			
14.38	b) Kota Stone slabs 20mm thick in risers of steps, skirting, dado and pillars laid on 12mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete	100.000	m <sup>2</sup>			
14.39	Dividing stripes, 4mm thick and average 40/35 mm wide in flooring work as per specifications					
14.4	a) Providing 40mm wide & 4mm thick glass strips in joints	250.000	rm			
14.41	b) Aluminium Stripes	250.000	rm			
14.42	<b>Doors &amp; Fixtures</b>					



14.43	Providing and fixing 1mm thick MS Sheet door with frame of 40x40x6mm angle iron and 3mm MS Gusset Plates at the junctions and corners, all necessary fittings complete including applying a priming coat of approved steel primer including anodised fittings 4 nos MS butt hinges 75x60x3.15mm, 1 2 nos tower bolts 300x10mm, 2 nos door handle 150mm, 1 no sliding door bolt 300x16mm, 2 nos heavy duty door closure 180x65x64mm and 1 no mortice 6 lever lock per door complete					
14.44	i) Using MS Angles for 40x40x6mm for diagonal bracings	20.000	m <sup>2</sup>			
14.45	Providing, fitting and fixing anodised aluminium framed glazed doors with anodised aluminium frame made of 100mm x 45mm x 2.5mm section of approved brand with door style of size 88mm x 45mm x 2.5mm, top rails 50mm x 45mm x 2mm, lock rails 100mm x 45mm x 2mm and bottom rails 100mm x 45mm x 2.5mm fitted with glazing clip, special type rubber gasket complete including hydraulic floor spring, pivot, tower bolt in each leaf, aluminium door handle, lock angles, cleat, etc. complete as specified and directed by the Engineer-in-Charge					
14.46	a) 6mm Clear Glass	20.000	m <sup>2</sup>			
14.47	b) 5mm Frosted Glass	20.000	m <sup>2</sup>			
14.48	Providing and fixing anodised aluminium frame double leaf doors of approved brand with styles size 45mm x 48mm x 3.2mm, top rails 50mm x 45mm x 2.5mm, lock rails 48mm x 45mm x 2.5mm, bottom rails 100mm x 45mm x 2.5mm fitted with taper clips of size 20mm x 15mm x 1.2mm complete with automatic floor mounted door closure, butterfly type handles, special cylindrical lock, concealed type aluminium tower bolt, neoprene dryset rubber gasket, door felt gasket, etc. complete in all respect as directed by the Engineer-in-Charge at all levels					
14.49	a) 5mm thick Plain Frosted Glass	20.000	m <sup>2</sup>			
14.5	b) 6mm thick Clear Glass	20.000	m <sup>2</sup>			
14.51	Providing and fixing anodised aluminium framed single leaf door of approved brand with styles 45mm x 48mm x 3.2mm, top rails 50mm x 45mm x 2.5mm, lock rails 48mm x 45mm x 2.5mm, bottom rails 100mm x 45mm x 2.5mm fitted with taper clips of size 20mm x 15mm x 1.2mm complete with automatic hydraulic mounted door closure, butterfly type handles, special cylindrical locks, concealed type tower bolt, neoprene dryset, rubber gasket, etc. complete as directed by the Engineer-in-Charge as all levels					
14.52	a) 6mm Clear Glass	20.000	m <sup>2</sup>			
14.53	b) 5mm Plain Frosted Glass	20.000	m <sup>2</sup>			
14.54	Rolling Shutter Supplying and fixing rolling shutters of approved make, made of required size 80x1.25mm MS Laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shafts with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454- Part 1 and MS 1.25 mm thick Top Cover of required thickness including all accessories for rolling shutters for power house and valve house entrances	75.000	sqm			
14.55	Windows & Fixtures					
14.56	Providing, fitting and fixing anodised aluminium windows and ventilators of standard sections of approved brand without horizontal glazing bars joints mitred and welded (manufactured to relevant IS specifications) fitted with 6mm x 3.15mm lugs 100mm long embedded in CC Blocks 150mm x 100mm x 100mm in 1:3:6 mix including providing and fixing handles, friction stays, joining cleat, bolting device, locking arrangement, spring catch as required complete as specified and directed for all levels					
14.57	Side Hung and Top Hung Windows and ventilators					
14.58	a) 6mm Clear Glass	14.000	m <sup>2</sup>			
14.59	b) 5mm Frosted Glass	14.000	m <sup>2</sup>			
14.6	Fixed windows and ventilators					
14.61	a) 6mm Clear Glass	200.000	m <sup>2</sup>			
14.62	b) 5mm Frosted Glass	7.000	m <sup>2</sup>			

14.63	PVC, FRP Doors & Door Frames					
14.64	PVC Frame: Providing, fitting and fixing Syntex PVC Door frame made out of extruded PVC section in an overall size of 50mm x 60mm having multi chamber cross section with maximum wall thickness of mm, +0.3mm with special polymeric reinforcement having an overall size of 30mm x 25mm width, 150mm length at hardware location. The corner joints shall be either mitre cut and welded or joined by means on concealed cleats with necessary screws fittings	25.000	rm			
14.65	PVC Door Shutters: Providing, fitting and fixing PVC Door Shutters of 37mm (Single Panel Seamless Finish) of Syntex make, at all levels made o extruded sections in the configuration of "A". The overall dimension is 37mm x 90mm, with usual provess variation having a wall thickness of 2mm with a variation of +0.03mm provided with all plastic reinforcement to avoid rusting. The shutter frame is mitred and joined at the corners by means of stainless steel screws. The corners of the frame are being reinforced by polymeric reinforcement to the size 125mm x 250mm and the lock rail is reinforced by 45 x 18 x 255 size reinforcement	8.000	Sqm			
14.66	<b>Fire Resistant Door</b>					
14.67	a) Providing and fixing fire resistant door frames of section 143x57mm having built in rebate made out of 16 SWG GI Sheet (Zinc coating not less than 120 gm/sqm) duly filled with vermiculite based concrete mix, suitable for mounting 60 minutes fire rated door shutters. The frame is fitted with intumescent fire seal strip of size 10x4mm (minimum) around the frame and fixing with dash fastener of approved size and make, including applying coat of approved brand fire reisitant primer, etc. complete as per direction of Engineer-in-Charge	16.000	rm			
14.68	b) Providing and fixing 50mm thick glazed fire resistant door shutters of 60 minutes fire rating conforming to IS: 3614 (Part-II), tested and certified as per laboratory approved by Engineer-in-Charge, with suitable mounting on door frame, consisting of vertical styles, lock rail, top rail 100mm wide, bottom rail 200mm wide, made out of 16 SWG GI Sheet (Zinc coating not less than 120 gm/m2) duly filled FR insulation material and fixing with necessary stainless steel ball bearing hinges of approved make, including applying a coat of approved fire resistant primer, etc. all complete as per direction of Engineer-in-Charge	8.000	m <sup>2</sup>			
14.69	c) Providing and fixing glazing in fire resistant door shutters with GI beading made out of 1.6mm thick GI sheet (Zinc coating not less than 120 gm/m2) of size 20x33mm screwed with M4x38mm SS Screws at distance 75mm from the edges and 150mm c/c, including applying a coat of approved fire resistant primer/powder coating not less than 30 micron on GI beading & special ceramic tape of 5x20mm size etc. complete in all respect as per NBC 2016, IS: 16231 (part 3): 2016 and as per the direction of the Engineer-in-Charge with glass of required thickness having 60 minutes of fire resistance both integrity & radiation control (EW60) and minimum 20 minutes of Insulation (EI20).	8.000	m <sup>2</sup>			
14.7	Glass and glazing : Providing & fixing glass panes with putty & glazing clips in steel doors, windows, clerestory window or any other specified location all complete with:					
14.71	a) Clear float glass, 6 mm thick superior quality, first grade	1204.000	m <sup>2</sup>			
14.72	b) 4.0mm thick glass panes	200.000	m <sup>2</sup>			
14.73	c) 5mm thick glass panes	200.000	m <sup>2</sup>			
14.74	d) Double glazing of two 6mm thick sheet glass thermatically sealed "Penguin Pane" of Hindustan Safety Glass complete as per specification	200.000	m <sup>2</sup>			
14.75	Roofing:					
14.76	Structural steel work bolted or welded in single or built-up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete	272.000	MT			
14.77	Supply, fabrication and ertction permanently colour coated corrugated sheets of thickness 20 gauge as roof decking at various elevations including plants, labour, materials, scaffolding with all fitting and fixtures, complete in all respect	5829.000	m <sup>2</sup>			

14.78	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer, 3 mm thick water proofing membrane, black finished reinforced with glass fibre matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufactured of density at 25oC, 0.87-0.89 kg/litre and viscosity 70-160 cps. Over the primer coat, the layer of membrane shall be laid using butane torch and sealing all joints, etc. and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under: Joint strength in longitudinal and transverse direction at 23oC as 350/300 N/5 cm. Tear Strength in longitudinal and transverse direction as 60/80N. Softening point of membrane not less than 150oC. Cold flexibility shall be upto -2oC when tested in accordance with ASTM, D-5147. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane: 3mm thick	960.000	m <sup>2</sup>			
14.79	Ceiling with Exposed Metal (GI) Frame Work with E-Grid-2430: Providing & Fixing in position Suspended false Ceiling using E- Grid (Exposed Ceiling Suspension 2430 System) of grid size 600mm x 600mm/ 1200mm x 600mm with main runner 38mm x 24mm, Cross Tee 29mm x 24mm & wall angle 24mm x 24mm. Using 4mm/ 6mm thick High pressure Stem Cured Non Asbestos Fibre cement Board as per IS: 14862, to be placed in a grid of GI System duly suspended with 4mm/ 6mm dia GI/ MS bar hanger fixed with steel dash fasteners or iron purlin from the roof with adjustment clip providing positions for light fixtures, air conditioning diffusers and ducts, sprinklers, smoke detectors, etc. The main runners to be secured to structural soffit by hanger @ 1220mm maximum c/c. The last hanger at the end of each main runner should be placed at more than 450mm from the adjacent wall. Flush fitting 1220mm Cross Tee to be interlocked between main runners @ 610mm c/c so as to form 600mm x 600mm/ 1200mm x 600mm grid all complete as per the drawings/ specification and as directed by the Engineer-in-Charge					
14.8	a) Designer Ceiling as directed by the Engineer-in-Charge Using 6mm thick FC Board	331.000	m <sup>2</sup>			
14.81	b) Standard Ceiling as directed by the Engineer-in-Charge Using 6mm thick FC Board	331.000	m <sup>2</sup>			
14.82	c) Providing and fixing 15cm wide, 45cm overall semi-circular plain GS sheet gutter with iron brackets 40x3mm size, bolts, nuts and washers, etc. including making necessary connections with rain water pipes complete: 0.80mm thick with zinc coating not less than 275 gm/m2	60.000	rm			
14.83	<b>Painting</b>					
14.84	Exterior Painting including primer of approved brand as directed by E-I-C					
14.85	a) Finishing Walls with Water Proofing cement based Paint of Required Shade Two or more coats applied as per manufacturer recommendations	1000.000	m <sup>2</sup>			
14.86	b) Finishing Walls with textured exterior paint of required shade: (two or more coats applied over & including priming coat of exterior primer as per manufacturer recommendations	1000.000	m <sup>2</sup>			
14.87	c) Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade: (two or more coats applied over & including priming coat of exterior primer as per manufacturer recommendations)	3500.000	m <sup>2</sup>			
14.88	<b>Interior Painting</b>					
14.89	Finishing with deluxe Multi Surface acrylic paint System of approved brand for interiors and exteriors including primer as per manufacturers specifications and as directed by the Engineer-in-Charge					
14.9	a) Two or more coats applied on walls over and including one coat of special primer as per approved brand and manufacturer recommendations	12000.000	m <sup>2</sup>			
14.91	b) Finishing with Epoxy Paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation on surface, etc. complete as per specification and as directed by the Engineer-in-Charge: On Concrete Works	5000.000	m <sup>2</sup>			
14.92	<b>Painting of Steel Works</b>					
14.94	Painting Steel Work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied over an under coat of primer approved brand and manufacturer	500.000	m <sup>2</sup>			

14.95	Painting (two or more coats) on rain water, soil waste and vent pipes and fittings with synthetic enamel paint of approved brand and manufacturer and required colour over a priming coat of approved steel primer on new work					
14.96	a) 100mm Diameter Pipes	50.000	rm			
14.97	b) 150mm Diameter Pipes	50.000	rm			
14.98	Providing two coats of JK wall Putty (White Cement based putty for Concrete/ Mortar walls and ceiling both internal and external) after removing all loosely adhering material from the wall surface with the help of emery stone, putty blade or wire brush and moistening the wall with sufficient quantity of clean water as specified and directed by the Engineer-in-Charge (total thickness of two coats is maximum 1.5mm)	26000.000	m <sup>2</sup>			
14.99	Chemical Resistant Paint	500.000	m <sup>2</sup>			
15	Fire Resistant Paint	4500.000	m <sup>2</sup>			
15.01	Water Proof Coatings					
15.02	Applying one coat of epoxy coating followed by two coats of Polyurethane Waterproofing coating at an interval of 12 hours each for waterproofing as specified & directed by the Engineer-in-Charge	960.000	m <sup>2</sup>			
15.03	Applying 2 coats of 1mm thick acrylic polymer modified cementitious waterproofing coating of approved brand for waterproofing of structures as specified after proper surface preparation and soaking the surface with water prior to application complete in all respect as per technical specification and as directed by the Engineer-in-Charge	960.000	m <sup>2</sup>			
15.04	Hand Railing Providing, supplying, transportation and fixing polished stainless steel hand railing made out of SAIL/JINDAL or equivalent stainless steel pipes of 1.00 m height, 38 mm internal dia at 1.20 m spacing and top railing with 48 mm dia bottom horizontal pipe of 20 mm internal dia parallel to top and middle rails (two numbers) of 20 mm internal dia parallel to top & bottom, in addition 110 mm dia rounded stainless steel base for the verticals fixed to the floors. All the welding to be done using stainless steel electrode as IS:2211 (latest version) complete including carefully drilling of holes on floors of tread for vertical support grouting with white cement all round frame and fixing. All the SS section are to be finally cleaned neatly and buffed and well polished complete all material, labour, tools and plants, welding and erection charges etc. complete.	188.000	rm			
15.05	Pre- Laminated Particle Board Providing, fitting and fixing in position 62mm thick double skin partition with well seasoned Sal, Bonsum/ Sundi/ Hollock frame in size 75mm x 38mm and internal frame of 50mm x 38mm and fixing on both sides 8mm thick flat pressed melamine faced pre- laminated baggage board medium density fibre boards (MDF) bonded with phenol formaldehyde synthetic resin of approved shade as specified and directed at all levels. With bajaj- exterior grade (one side decorative) 8mm thick	142.000	sqm			
15.06	Spandrel Glass Panelling					
15.07	a) Providing, fabricating and supplying 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 50mm 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 0.5mm and nominal mass not less than 60gm/sqm, made of randomly oriented glass fibres distributed in a binder by a wet-lay process including 1.5mm thick solid aluminium sheet backing using 6mm thick cement board including SS rivets, nuts, bolts, washers, etc. complete.	1353.000	m <sup>2</sup>			
15.08	b) Providing and supplying Spandrel Glass panels comprising of 6mm thick heat strengthened monolithic float glass of approved colour and shade with reflective soft coating on surface# 2 of approved colour and shade so as to match the colour and shade so as to match the colour and shade of the IGUs in the vision panels etc. all complete for the required performances as specified, as per the Architectural Drawings, as per the approved shop drawings, as specified, and as directed by the Engineer-in-Charge.	1264.000	m <sup>2</sup>			
15.09	Plinth Protection Works					



15.1	a) Providing Plinth Protection with Bricks flat laid in cement mortar 1:4 and finished with 15mm thick cement plaster in prop. 1:2 with a floating coat of neat cement finish	53.000	Sqm			
15.11	b) Providing drain with Cement Concrete (1:3:6) 10cm thick sides 10cm thick bed over brick flat soling including 15mm thick cement plastering in prop 1:3 finished with a floating coat of cement slurry as directed with necessary shuttering for sides and earth work in excavation of foundation trenches and refilling sides after completion of work etc. as specified. 300mm wide and average 250mm deep with bed slope 1 in 150 with initial depth of 100mm	105.000	Rm			
15.12	<b>Concrete Waterproofing</b>					
15.13	Providing, applying "XYPEX" Concrete Water Proofing & Durability Enhancement by Crystallization to be supported by at least two international test Reports showing clear scanning Electron Microscopic (SEM) Photographs of densified and mature crystals forming to plug all the capillary tracks and pores of the concrete permanently and permeability test as per IS: 720 conducted by CBRI. The Concrete should not absorb water more than 0.5 grams and not more than 1 mm from the concrete surface. The product to be listed in ICC-ES-EVALUATION REPORT INDEX January 2009. The treatment to be carried out on the concrete surfaces including cleaning of all RCC surfaces as per manufacturer's specification and as directed by the Engineer-in-Charge. The treatment to be carried out on the concrete surfaces including cleaning of all RCC surfaces as per manufacturer's specification/datasheet. The application to be carried out in two coats with coverage rate of 0.8 kg per coat.	2100.000	Sqm			
16	<b>PERMANENT DEWATERING, WATER SUPPLY, SEWAGE AND SANITATION WORKS</b>					
16.01	Providing, fitting & fixing Vitreous Dual Flush/ Floor Mounted Coupled/ Extended Water Closet (European type WC Pan 400mm high) with seat & lead, flushing cistern, CP Brass Hinges and rubber buffers, CI/ MS Brackets, 40mm dia flush band with fittings including painting of fittings and brackets, if required Hindware make or equivalent White One Piece Water Closet					
16.02	Altor (Cat. No. 92052) (Inclusive of Seat Cover and fittings) or equivalent	2.000	Each			
16.03	Coral (Cat. No. 92008) (Inclusive of Seat Cover and fittings) or equivalent	2.000	Each			
16.04	Elisa (Cat. No. 92046)/ Rubbic (Cat. No. 92063) (Inclusive of seat cover and fittings) or equivalent	2.000	Each			
16.05	Inox (Cat. No. 92043)/ Inox-100 (Cat. No. 92050) (Inclusive of seat cover & fittings) or equivalent	2.000	Each			
16.06	Providing, fitting and fixing vitreous flat back type lipped front urinal basin of automatic flushing cistern with standard flush pipe and CP brass spreader and brass unions, etc. complete including painting of fittings and brackets, cutting and making good the walls & floors wherever required Hindware make or equivalent White					
16.07	Aquafree Urinal (Cat. No. 60017) or equivalent	4.000	Each			
16.08	Urinal Omega E-Sense (Cat. No. 96006) or equivalent	4.000	Each			
16.09	Supplying, fitting and fixing Vitreous China Division Plate including fitting and fixing complete as directed and specified					
16.1	Hindware make or equivalent White New Division Plate (Cat. No. 61005) or equivalent	10.000	Each			
16.11	Providing Vitreous China wash basin with CI/ MS brackets, CP Brass Chain with Plug, PVC waste Pipe including painting of fittings and brackets, cutting and making good the walls wherever required Table Top Basin Jaquar make or equivalent					
16.12	Kubix (Cat. No. KUS-WHT-0552) or equivalent	2.000	Each			
16.13	JDBC (Cat. No. JDS-WHT-0550) or equivalent	2.000	Each			
16.14	JDBC (Cat. No. JDS-WHT-0547) or equivalent	2.000	Each			

16.15	Providing, fitting & fixing stainless steel kitchen sink of Parryware make with CI/ MS Brakets, CP Brass Chain with Rubber Plug, PVC Waste Pipe, etc. complete including painting the fittings, cutting & making good the walls wherever required					
16.16	Parryware make or equivalent Single Bowl with veg bowl & Drain Board (400 x 200) Flat Edge- Glossy (Cat. No. C8545) or equivalent	2.000	Each			
16.17	Providing, fitting and fixing Decorative Mirror complete as directed and specified Parryware make or equivalent Size 600mm x 450mm	10.000	Each			
16.18	Providing, fitting and fixing Glass Shelf complete as directed and specified Glass shelf with CP Guard Rail Jaquar make or equivalent Kubix 600mm long (Cat. No. AKB- 35771) or equivalent	10.000	Each			
16.19	Providing, fitting and fixing Glass Shelf complete as directed and specified Corner Glass Shelf with Brackets of Jaquar make Jaquar make or equivalent Continental (Cat. No. ACN- 1173) or equivalent	4.000	Each			
16.2	Providing, fitting and fixing CP Soap Tray/ Soap Dish complete as directed and specified Jaquar make or equivalent					
16.21	Queen's (Cat. No. AQN- 7731) or equivalent	3.000	Each			
16.22	Kubix (Cat. No. AKB- 35731) or equivalent	3.000	Each			
16.23	Providing, fitting and fixing Liquid Soap Dispenser and liquid soap container complete as directed and specified Jaquar make or equivalent					
16.24	Kubix make Glass Bottle (Cat. No. AKB- 35735) or equivalent	8.000	Each			
16.25	Providing, fitting and fixing CP towel rail complete as directed and specified Jaquar make or equivalent					
16.26	Queen's (600mm long) (Cat. No. AQN- 7711) or equivalent	8.000	Each			
16.27	Queen's (450mm long) (Cat. No. AQN- 7711A) or equivalent	8.000	Each			
16.28	Providing, fitting and fixing Chrome Plated Towel Ring complete as directed and specified Jaquar make or equivalent Queen's (Cat. No. AQN- 7721) or equivalent	6.000	Each			
16.29	Providing, fitting and fixing Chrome Plated Toilet paper Holder complete as directed and specified Jaquar make or equivalent					
16.3	Continental Toilet Paper Holder with Flap (Cat. No. CAN- 1151N) or equivalent	4.000	Each			
16.31	Queen's Toilet Paper Holder with Flap (Cat. No. AQN- 7753) or equivalent	4.000	Each			
16.32	Providing, fitting and fixing Chrome Plated Waste Coupling complete as directed and specified					
16.33	Jaquar make or equivalent 32mm (HT/FT) (Cat. No. ALD-705/ 709) or equivalent	15.000	Each			
16.34	Cera make or equivalent Waste Coupling (Full Thread) 40mm (Cat. No. CA 103) or equivalent	15.000	Each			
16.35	Providing, fitting and fixing Chrome Plated Bottle Trap complete as directed and specified Jaquar make or equivalent					
16.36	Bottle Trap (with internal partition) 32mm size with 250mm long wall connection pipe (Cat. No. ALD- 769) or equivalent	15.000	Each			
16.37	Bottle Trap (with internal partition) 32mm size with 300mm long wall connection pipe (Cat. No. ALD- 769B) or equivalent	15.000	Each			
16.38	Providing, fitting and fixing Chrome Plated Grating complete as directed and specified					
16.39	160mm Dia	15.000	Each			
16.4	110mm Dia	10.000	Each			
16.41	Supplying, fitting and fixing approved brand uPVC Pipes of different sizes, with all necessary approved uPVC Fittings such as bend, Tee, Elbow, reducer, nipple, plug, tee, long screw fitting, clamps, etc. complete at all levels including below GL as directed and specified					

16.42	Exposed or in Trenches Supreme/ Prince/ SFMC Brand or other equivalent approved brand (High Pressure pvc Pipe Sch-40)					
16.43	a) 50mm dia	300.000	rm			
16.44	b) 40mm dia	300.000	rm			
16.45	c) 32mm dia	300.000	rm			
16.46	d) 25mm dia	200.000	rm			
16.47	e) 20mm dia	50.000	rm			
16.48	f) 15mm dia	50.000	rm			
16.49	Concealed by Chiselling or breaking brick wall/ CC wall/ RC Wall and making good to the damaged structure Supreme/ Prince/ SFMC Brand or other equivalent approved brand (High Pressure PVC Pipe Sch-40)					
16.5	a) 25mm dia	100.000	rm			
16.51	b) 20mm dia	150.000	rm			
16.52	c) 15mm dia	150.000	rm			
16.53	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) Pipes, having thermal stability for hot and cold water supply including all CPVC Plain and Brass threaded fittings i/c fixing the pipe with clamps at 1.00m spacing. This includes joining of pipe. Exposed or in trenches					
16.54	50mm dia	100.000	rm			
16.55	40mm dia	100.000	rm			
16.56	32mm dia	100.000	rm			
16.57	25mm dia	100.000	rm			
16.58	Supplying, fitting and fixing CP Bib Cock 15mm dia of approved brand as directed and specified Jaquar make or equivalent					
16.59	Bib Cock Long Thread	8.000	Each			
16.6	2- Way Bib Cock	6.000	Each			
16.61	Supplying, fitting and fixing Chrome Plated (CP) Stop Cock of approved brand and size as mentioned below as directed and specified Jaquar make or equivalent					
16.62	15mm dia Angular Stop Cock	10.000	Each			
16.63	15mm dia Angular Stop Cock with long thread	10.000	Each			
16.64	15mm dia Concealed Stop Cock reduced body	10.000	Each			
16.65	Supplying, fitting and fixing CP Piller Cock of 15mm dia of approved brand as specified and directed Jaquar make or equivalent					
16.66	Continental	6.000	Each			
16.67	Long Neck with areator	6.000	Each			
16.68	Supplying, fitting and fixing Chrome Plated Sink Cock of approved brand as directed and specified Jaquar, Continental, Clarion or equivalent make or equivalent					
16.69	Sink Cock with raised J shaped swinging spout	2.000	Each			
16.7	Supplying, fitting & fixing Chrome Plated Flush Cock of approved brand as directed and specified Jaquar make or equivalent Continental/ Clarion or equivalent					
16.71	Flush Cock with wall flange 25mm with level knob	10.000	Each			
16.72	Flush Cock with wall flange 25mm with plain knob	10.000	Each			
16.73	Supplying, fitting & fixing Chrome Plated Shower 15mm dia of approved brand as directed and specified Jaquar / continental/ Queens's collection make or equivalent					
16.74	Overhead Shower (ABS Chrome Plated) with rubit cleaning system	1.000	Each			
16.75	Overhead Rose Shower with revolving joint & 150mm long swivel shower arm	2.000	Each			
16.76	Supplying, fitting and fixing Chrome Plated Wall Mixer Jaquar / continental/ Queens's collection make or equivalent					

16.77	Wall Mixer 3 in 1 system with provision for both telephonic shower and overhead shower complete with 115mm long bend pipe Cat. No. 1119	2.000	Each			
16.78	Supplying, fitting & fixing Push Bib Cock 15mm dia complete as specified & directed by the Engineer-in-Charge					
16.79	CPOCH Heavy Type	10.000	Each			
16.8	Supplying, fitting & fixing best quality ball valve of approved brand as specified and directed					
16.81	25mm dia	5.000	Each			
16.82	20mm dia	5.000	Each			
16.83	Supplying, fitting and fixing best quality Check Valve of approved brand including necessary threads to pipes					
16.84	50mm dia (Heavy Type)	10.000	Each			
16.85	40mm dia (Heavy Type)	10.000	Each			
16.86	Supplying, fitting and fixing best quality GI Foot Valve of approved brand with strainer including cutting necessary threads to pipes					
16.87	50mm dia (Heavy Type)	5.000	Each			
16.88	40mm dia (Heavy Type)	5.000	Each			
16.89	Supplying & fitting Polyethylene water storage Tank make over staging with manhole cover with locking and cleaning arrangement including providing pads of size as required for inlet & outlet pipes Sintex make					
16.9	2000 ltr Capacity	1.000	Each			
16.91	1500 ltr Capacity	1.000	Each			
16.92	1000 Ltr Capacity	1.000	Each			
16.93	Labour of erecting and placing PCVC Tank over the staging up to a height of 5.00m complete as directed					
16.94	2000 ltr Capacity	1.000	Each			
16.95	1500 ltr Capacity	1.000	Each			
16.96	1000 Ltr Capacity	1.000	Each			
16.97	Supplying, fitting & fixing uPVC Pipes of best quality of approved brand of 6kg/cm2 class including joining, fitting & fixing with clamps, etc. as necessary complete at all levels as rain water down comer and other purpose including below GL as directed and specified In exposed surfaces or in trenches					
16.98	160mm dia	250.000	rm			
16.99	110mm dia	175.000	rm			
17	Supplying, fitting & fixing 87.5 degree best quality uPVC bend of approved brand with door including joining, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches					
17.01	160mm dia	10.000	Each			
17.02	110mm dia	10.000	Each			
17.03	Supplying, fitting & fixing 45 degree PVC bend including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed & specified In exposed surfaces or in trenches					
17.04	160mm dia	10.000	Each			
17.05	110mm dia	10.000	Each			
17.06	Supplying, fitting and fixing best quality PVC single TEE of approved brand including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches					
17.07	160mm dia	10.000	Each			
17.08	110mm dia	10.000	Each			
17.09	Supplying, fitting and fixing PVC single Y with door including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	5.000	Each			



17.1	Supplying, fitting and fixing best quality PVC Double Y with door of approved brand including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	5.000	Each			
17.11	Supplying, fitting & fixing best quality PVC Cross T with door of approved brand including joining, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm x 110mm	10.000	Each			
17.12	Supplying, fitting & fixing PVC Coupler including joining, fitting and fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 110mm dia	10.000	Each			
17.13	Supplying, fitting and fixing PVC reducer including joining, fitting & fixing, etc. as necessary complete at all levels including below GL as directed and specified In exposed surfaces or in trenches 160mm x 110mm	10.000	Each			
17.14	Supplying, fitting & fixing PVC reducing Tee with door including joining, fitting and fixing, etc. in exposed surfaces or trenches as necessary complete at all levels including below GL as directed and specified 160mm x 110mm	10.000	Each			
17.15	Supplying, fitting and fixing PVC Socket Plug including joining, fitting & fixing, etc. in exposed surfaces or in trenches as necessary complete at all levels including below GL as directed and specified 110mm	10.000	Each			
17.16	Supplying, fitting and fixing PVC cleaning pipe including joining, fitting and fixing, etc. in exposed surface or trenches as necessary complete at all levels including below GL as directed and specified					
17.17	160mm dia	10.000	Each			
17.18	110mm dia	10.000	Each			
17.19	Providing, fitting & fixing PVC Cowel of ISI make complete as directed and specified					
17.2	160mm dia PVC Cowel of ISI make	10.000	Each			
17.21	110mm dia PVC Cowel of ISI make	10.000	Each			
17.22	Providing, fitting & fixing 450mm dia 90mm thick CI man hole cover & frame of 58kg weight complete as directed and specified	5.000	Each			
17.23	Roof drain heads with horizontal gratings, complete as per specification					
17.24	For 100 mm dia. pipe	20.000	No.			
17.25	For 150 mm dia. pipe	80.000	No.			
17.26	For 200 mm dia. pipe	20.000	No.			
17.27	Cast iron floor trap Nahni or ordinary type of self cleaning design and conforming to IS:1729 complete as per specification					
17.28	75 mm size	6.000	No.			
17.29	100 mm size.	6.000	No.			
17.3	Brass gate valves solid wedge type with non-rising stem conforming to IS: complete as per specification					
17.31	25 mm NB	3.000	No.			
17.32	32 mm NB	3.000	No.			
17.33	40 mm NB	3.000	No.			
17.34	50 mm NB	3.000	No.			
17.35	Light duty non-pressure RCC pipes conforming to IS:458, complete as per specification					
17.36	500 mm NB, class NP2	15.000	rm			
17.37	600 mm NB, class NP2	30.000	rm			
17.38	Connection of drain or sewer line with existing manhole all complete	10.000	No.			
17.39	Drainage facilities					
17.4	Open surface drains d=250mm, reinforced concrete	1000.000	rm			
17.41	Open surface drains, trapezoidal channels w = 0.8m, h = 0.6m, reinforced concrete	1000.000	rm			

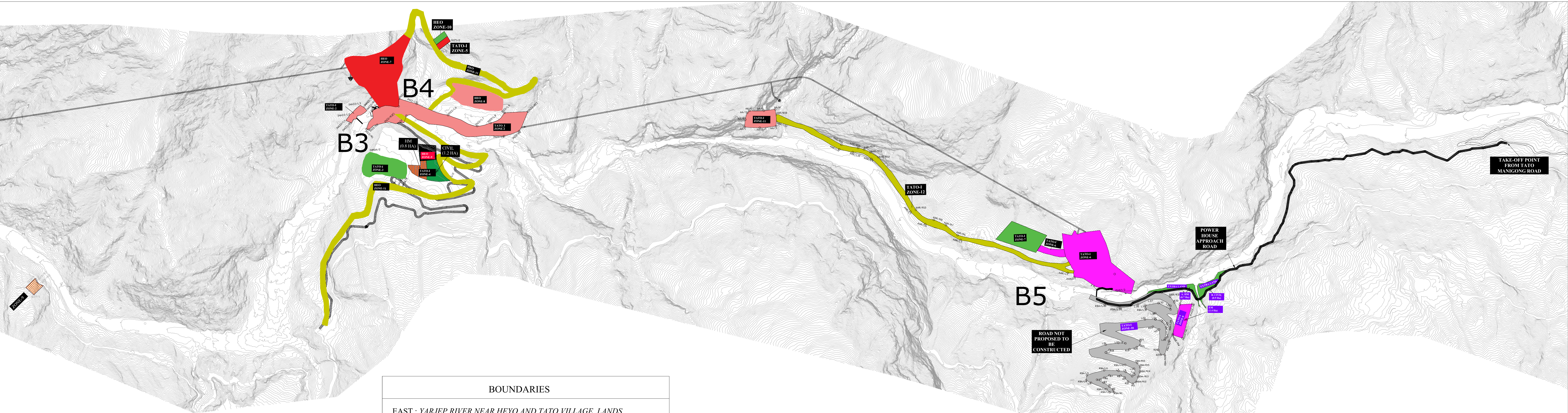
17.42	PVC pipes d= 250mm perforated or plain	200.000	rm			
17.43	Open surface drain with bricks, complete as per specification.					
17.44	a) Nominal size 15 cm X 20 cm	100.000	rm			
17.45	b) Nominal size 20 cm X 30 cm	150.000	rm			
17.46	c) Nominal size 50 cm X 20 cm	200.000	rm			
17.47	Permanent Dewatering for Head Race Tunnel					
17.48	Drain pipe 300mm diameter (cast steel)	50.000	rm			
17.49	Open drain					
17.5	a) Bottom width or pipe diameter up to 35 cm	300.000	rm			
17.51	b) Bottom width or pipe diameter 35 - 50 cm	300.000	rm			
17.52	Supply and installation of best quality non return valve of approved brand 300mm diameter	10.000	No.			
17.53	Cast iron spun pipe, class A, conforming to IS:1536 complete as per specification					
17.54	100 mm NB	10.000	rm			
17.55	150 mm NB	10.000	rm			
17.56	200 mm NB	10.000	rm			
17.57	250 mm NB	10.000	rm			
17.58	300 mm NB	10.000	rm			
17.59	Glazed stone ware pipes of approved brand grade "A" conforming to IS:651 complete as per specification					
17.6	100 mm NB	10.000	rm			
17.61	150 mm NB	10.000	rm			
17.62	200 mm NB	10.000	rm			
17.63	300 mm NB	10.000	rm			
17.64	Manhole of RCC grade M20 all complete					
17.65	Rectangular shaped manhole					
17.66	a) For depths from 0.6 to 0.9 m inside size 1.2 X 0.9 m	6.000	No.			
17.67	b) For depths from 0.9 to 2.3 m inside 2.9.1size 1.2 X 0.9 m	6.000	No.			
17.68	c) Connection of drain or sewer line with manhole	10.000	No.			
17.69	Construction septic tank as per IS:2470(part-I) complete as per specification but excluding the cost of steel reinforcement					
17.7	Size 2.3 m X 1.1 m with 1.80 m liquid depth(for 20 users)	1.000	No.			
17.71	Size 5.0 m X 2.0 m with 1.24 m liquid depth(for 50 users)	1.000	No.			
17.72	Road gully chamber of brickwork, including grating with frame, excavation filling and disposal of surplus earth all complete	3.000	No.			
18	<b>ROAD WORKS</b>					
18.01	Preparation and consolidation of subgrade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations, etc. and re-rolling the sub-grade and disposal of the surplus earth with lead upto 500m	48000.000	Sqm			
18.02	Supplying and stacking at site					
18.03	90mm to 45mm size stone aggregate	2800.000	Cum			
18.04	63mm to 45mm size stone sggregate	2800.000	Cum			
18.05	53mm to 22.4mm size stone aggregate	2800.000	Cum			
18.06	Stone Screening 13.2mm nominal size (Type A)	540.000	Cum			
18.07	Stone Screening 11.2mm nominal size (Type B)	396.000	Cum			
18.08	Construction of Subgrade and Earthen Shoulders (Construction of subgrade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2) including loading, unloading, transportation, etc.eads as such loading unloading charges are not required to be applied additionally	2748.000	Cum			
18.09	Preparation and Surface Treatment of formation. (Preparation and surface treatment of formation by removing mud and slurry, watering to the extent needed to maintain the desired moisture content, trimming to the required line, grade, profile and rolling with 8-10 tonne smooth wheeled roller, complete as per clause 310.)	14000.000	Sqm.			
18.1	Granular Sub-Base					

18.11	Construction of granular sub-base by providing close graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401) including loading, unloading, transportation, etc.					
18.12	i) for grading- V/VI Material	4752.000	Cum			
18.13	Wet Mix Macadam : Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density including loading, unloading, transportation, etc.	4287.000	Cum			
18.14	Surface dressing one coat on new surface with bitumen of specified grade at a rate of 1.95 kg/sqm of surface area with 1.5 cum of stone chippings 13.2mm nominal size per 100 sqm of road surface. Including consolidation with road roller of 6 to 8 tonne capacity, etc. complete: Using bitumen emulsion (minimum 50% bitumen content RS grade conforming to IS: 8887)	30000.000	m <sup>2</sup>			
18.15	Surface dressing one coat on old surface with bitumen of specified grade at the rate of 1.22 kg/sqm of surface area with 1.10 cum of stone chippings 11.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity etc. complete: Using bitumen emulsion (minimum 50% bitumen content- RS grade conforming to IS: 8887)	36000.000	m <sup>2</sup>			
18.16	Providing and applying tack coat using hot straight run bitumen of grade VG-10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications: On bituminous surface @ 0.50 kg/sqm	30000.000	m <sup>2</sup>			
18.17	Providing and laying bituminous concrete (Gr-2) with approved hot mix plant using crushed aggregate of specified grading, premix with bituminous binder @5.4 to 5.6% of mix and filler transporting the hot mix to work site , laying with a hydrostatic paver finisher with sensor control to the required grade level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause no 509 complete in all respect	1050.000	Cum			
18.18	Providing and laying seal coat of premixed fine aggregate (passing 2.36mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG-10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface, including rolling and finishing with road roller all complete	30000.000	m <sup>2</sup>			
18.19	Concrete Pavements					
18.20	Cement Concrete in pavements, laid to required slope and camber in panels as required including consolidation finishing and tampering complete	1000.000	Cum			
18.21	Providing & fixing in position pre-moulded joint filler in expansion joints	40000.000	per cm depth per cm width per m length			
18.22	Providing and laying in position bitumen hot sealing compound for expansion joint etc.: Using grade "A" sealing compound	40000.000	per cm depth per cm width per m length			
18.23	<b>SURFACE EXCAVATION AND BACKFILL</b>					
18.24	<b>Surface excavation including loading, transport, all lift and lead up to 3.0 km from the excavation area/working site, unloading at disposal sites or stockpiles and maintenance of the disposal sites or stockpiles.</b>					
18.25	<b>Permanent roads</b>					
18.26	Clearing of excavation areas, disposal areas and stockpiles (Rate as per BOQ Item No. 2.03)	40000.000	m2			
18.27	Excavation in soil including stripping of top soil (Rate as per BOQ Item No. 2.04)	78013.000	m3			
18.28	Excavation in soft and disintegrated rock (Rate as per BOQ Item No. 2.05)	78013.000	m3			
18.29	<b>Excavation in hard rock</b>					
18.30	a) Drilling and blasting (Rate as per BOQ Item No. 2.07)	104018.000	m3			
18.31	Sand-gravel backfill (Rate as per BOQ Item No. 2.29)	575.000	m3			

18.32	<b>Concreting</b>					
18.33	<b>Complete in all respect with all plants, materials, labour, all lead and lift etc. as per technical specification, drawings and as directed by Engineer-in-Charge.</b>					
18.34	<b>Plain/reinforced cement concrete for Permanent Roads excluding formwork</b>					
18.35	M10A40 (Rate as per BOQ Item No. 6.04)	600.000	m3			
18.36	M15A40 (Rate as per BOQ Item No. 6.05)	420.000	m3			
18.37	M20A40 (Rate as per BOQ Item No. 6.06)	465.000	m3			
18.38	M25A20 (Rate as per BOQ Item No. 6.08)	475.000	m3			
18.39	<b>Formwork</b>					
18.40	<b>Formwork for cast-in-situ concrete works, complete in all respect with all plants, materials, labour, all lead and lift etc. complete in all respect as per technical specification, drawings and as directed by Engineer-in-Charge. For all formed surfaces where the formwork is not included in the payment of concrete.</b>					
18.41	F-1 Surface finish (Rate as per BOQ Item No. 7.02)	900.000	m2			
18.42	<b>STEEL FOR REINFORCEMENT</b>					
18.43	<b>High yield strength deformed reinforcement bar/ wire of Fe500 grade complete in all respect with all plants, materials, labour, all lead and lift etc. as per technical specification, drawings and as directed by Engineer-in-Charge. (Rate as per BOQ Item No.8.02)</b>	101.000	MT			
18.44	<b>SLOPE PROTECTION</b>					
18.45	<b>Slope protection in surface excavation including all plants, materials and labour. Complete in all respect as per technical specification, drawings and as directed by Engineer-in-Charge</b>					
18.46	Gabions (Rate as per BOQ Item No. 5.09)	3920.000	m3			
18.47	Random Rubble Stone masonry in cement mortar in proportion 1:6 (1 cement: 6 coarse sand) (Rate as per BOQ Item No. 14.06)	605.000	m3			
18.48	M10A150 Plum Concrete (Rate as per BOQ Item No. 6.03)	5442.000	m3			
18.49	15 mm Thick Cement Plaster finished with a floating coat of neat cement of mix: 1:3 (1 Cement : 3 Fine Sand) (Rate as per BOQ Item No. 14.15)	2538.000	m2			
19	<b>MISCELLANEOUS WORKS</b>					
19.01	<b>Complete in all respect with all plants, materials and labour as per technical specification, drawings and as directed by Engineer-in-Charge.</b>					
19.02	Supply and installation of PE pipes					
19.03	25mm dia	150.000	rm			
19.04	40mm dia	50.000	rm			
19.05	Weep holes including materials and labour complete	200.000	No.			
19.06	<b>Fencing Works</b>					
19.07	Providing and fixing Chain Link Fencing including barbed wires, GI wires, staples, pins, eye bolts, etc. as per specification and drawings complete. (Cost of Posts, struts, earth work and concrete work to be paid separately).	200.000	rm			
19.08	Supplying at site angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10cm length and drilling holes upto 10mm dia. etc. complete	3000.000	kg			
19.09	<b>Dismantling &amp; Demolition</b>					
19.1	Demolishing stone masonry manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable materials within 50m lead as per direction of Engineer-in-Charge	1000.000	Cum			
19.11	Demolishing gabion manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable materials within 50m lead as per direction of Engineer-in-Charge	4926.500	Cum			

19.12	Demolishing Plain/Reinforced Cement Concrete manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable materials within 50m lead as per direction of Engineer-in-Charge	5625.000	Cum			
Total in Figures						
Quoted Rate in Words						





Sl. No.	Name of the Road	Scope
1.	Approach Road from the Tato-Mechuka Road to the Right Abutment of the Bridge at d/s of the Tato-I Weir	Under NEEPCO's Scope (to be executed by Heo HEP EPC Contractor)
2.	Approach Road from the Tato-Monigong Road to the Right Abutment of the Bridge at u/s of the Tato-I Power House	Under Civil Contractor's Scope
3.	Approach Road from the left abutment of the bridge at d/s of the Tato-I Weir to the Tato-I HRT Intake	Under Civil Contractor's Scope
4.	Approach Road from the Left Abutment of the Bridge at u/s of the Tato-I Power House to the Tato-I Power House	Under Civil Contractor's Scope
5.	Approach Road from the Left Abutment of the Bridge at u/s of the Tato-I Power House to the Adit-1	Under Civil Contractor's Scope
6.	Approach Road from the Adit-I Road to Surge Shaft	Under Civil Contractor's Scope
7.	Approach Road from the Adit-I Road to Valve House	Under Civil Contractor's Scope

BOUNDARIES				
EAST : YARJEP RIVER NEAR HEYO AND TATO VILLAGE LANDS				
WEST : YARJEP RIVER NEAR GAPO TO MENYING VILLAGE LANDS				
NORTH : MENYING TO HEYO VILLAGE LANDS				
SOUTH : BRO ROAD AND GAPO TO TATO VILLAGE LANDS				
COMPONENT WISE LAND ACQUIRED BY NEEPCO FOR TATO - I HEP (186MW)				
Sl.NO.	ITEM	SURFACE LAND (Ha)	RIVER BED (Ha)	TOTAL
1	Submergence Area	1.2	1.8	3.0
2	Intake Complex Area	8.2	0.5	8.7
3	Intake Muck Disposal Area	3.2	0.0	3.2
4	Intake Storage,Office and Colony Area	1.7	0.0	1.7
5	Intake Quarry Site	0.3	0.0	0.3
6	PH Area	8.8	0.0	8.8
7	PH Muck Disposal Area	3.2	0.0	3.2
8	PH Storage,Office and Colony Area	1.4	0.0	1.4
9	PH Quarry Site	0.5	0.0	0.5
10	PH Access Road (NOT PROPOSED TO BE CONSTRUCTED)	10.7	0.0	10.7
11	ADIT Area	1.9	0.0	1.9
12	ADIT Access Road	6.6	0.0	6.6
TOTAL TATO - I		47.7	2.3	50.0

Colony and Storage Area for Tato-I HEP (186 MW)

Sl No	Zone	Particulars	Area (Ha)			
			Civil	HM	EM	Total
1.	Zone 4	Intake Storage office and colony area	1.2*	0.8	—	2
2.	Zone 8	PH Storage, Office and Colony Area	—	—	1.4	1.4
Extra Land from Tato-II HEPs acquired land						
1.	A	Colony Area and Storage	—	0.7	—	0.7
2.	B	Colony Area and Storage	0.9	—	—	0.9
Total			2.1	1.5	1.4	5.0
Grand Total Area for Colony and Storage: 5.0 Ha						

\* 0.3 Ha has been considered from Heo HEP (240 MW)

Note : Bridge Locations denoted by B3,B4 & B5

## PROJECT LAND ZONE LAYOUT : TATO-I HEP



Package-I: Civil Works pertaining to Tato-I Hydro Electric Project (186 MW), Arunachal Pradesh	 ISO: 9001, 14001, & 45001	Bid Document Part-4: GCC (FIDIC1999), Particular Conditions of Contract, Appendix to Tender
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## ANNEXURE I - (REFER SUB-CLAUSE 3.5, APPENDIX TO TENDER)

**Mechanism for determination of Cost related to extension of Time for Completion due to the events entitle cost claims to the Contractor under various sub-clauses of GCC/PCC:**

The evaluation of time related cost claims of the Contractor shall be as given below:

**(a) Cost of owned/leased/hired Contractor's Equipment:**

Cost of Contractor's Equipment shall comprise of the following elements:

**i. Depreciation Cost**

$$\text{Annual Depreciation} = 0.9 \times \text{Book Value/Life in years.}$$

(Based on life in years)

$$\text{Depreciation cost} = \{(\text{Idle period in days}/365) \times 0.50 \times \text{Annual Depreciation}\}.$$

However, if the **Contractor's** Equipment has completed its scheduled life in years or hours, in that case the depreciation shall be considered as zero.

**ii. Interest on capital Investment: (Rate of Interest # /100) × Average Annual Cost**

The average annual cost is determined as follows:

$$\text{Average Annual Cost} = \text{Book value of Equipment} \times (n+1)/2n$$

Where:

- "n" refer for number in years of life of Equipment.
- Book value = purchase price plus freight, insurance, all taxes and duties, port clearance charges, erection and commissioning charges and other incidental charges.

# the interest rate shall be the rate of interest applicable for Contractor's Equipment advance in the Contract.

**iii. Insurance Charges**

Insurance charges in respect of insurance policy (Contractor's Plant & Machinery i.e. CPM Policy) applicable and availed for the Contractor's Equipment shall be considered as per actuals.

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**(b) Cost of Labour:**

The labour directly engaged for the Works at the Site by the Contractor or through sub-contractor, as verified by the Engineer, will be reimbursed in case Contractor produces proof that idle labour has been paid wages.

Cost of Contractor's Equipment related labour, as verified by the Engineer, will be worked out as per CWC norms limited to actual whichever is lower.

The above cost will be considered for payment based on the supporting details such as attendance sheet, receipt of deposit of provident fund duly certified by the Contractor.

In addition to actual cost of labour, indirect charges shall be considered. The indirect charges (other than salary) shall be 40% (forty percent) for skilled and unskilled labour. Indirect charges shall be applicable on the basic wages. Basic wages means component of wages on which statutory deductions like Employee Provident Fund (EPF) is deposited to the statutory authority.

**(c) Cost of Site staff**

The Cost of site executives/supervisory staff shall be considered for payment as per actual. The Site staff implies all the staff posted at the Site excluding staff posted at the Contractor's Head office. Cost of site staff shall be supported by relevant documents. The cost shall be considered for payment based on the supporting details in form of pay ledger, bank details, detailed pay slips, Form 16 of Income tax issued by the Contractor as well as Sub-Contractor's and receipt of deposit of Provident Fund duly certified by the Contractor. In this head, staff physically deployed at site shall only be considered.

**(d) Interest on Mobilization Advance**

The Contractor shall submit details of amount of expenditure along with their period duly certified by their statutory auditors towards the utilization of the mobilization advance for the Works. On the basis of the certification made by the Statutory Auditors an average investment for the period may be considered and the amount of interest on mobilization advance worked out accordingly. Further, for the purpose of calculation of interest on mobilization advance, interest rate as per Contract shall be considered. The cost of Contractor's Equipment purchased by the Contractor out of the mobilization advance on



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which interest on capital investment is already considered at Sl. No. a (ii) above shall be excluded for the purpose of working out interest on Mobilization advance.

However, where the events giving rise to admissible cost claim to the Contractor do not disrupt whole of the Works but only particular component/structure of the Project, then the admissible interest on mobilization advance payable to the Contractor shall be worked out on prorata basis.

**(e) Overheads**

Overhead costs include but not limited to office and share of head office expenses, legal charges, general establishment, watch and ward, local conveyance, travelling expenses, social welfare, salaries of managerial and clerical staff etc. and publicity etc.

$$\text{Overhead Charges} = \frac{(\text{5\% of Accepted Contract Amount}) \times (\text{authorized extension of Time for Completion entitling cost claims to the Contractor})}{\text{Time for Completion specified in Appendix to Tender}}$$


The lump-sum component of overhead as 5% shall cover all other charges not included expressly in any of the items of claim at Sl. (a) to (d) as above.

**(f) Bank Guarantees and Insurance charges**

These charges are to be considered towards cost compensation, for the period entitling cost claims to the Contractor, based upon documentary evidence of payment of premium amount by the Contractor towards Performance Bank Guarantee, Retention Money Bank Guarantee, Contractor's All Risk (CAR) Insurance Policy.

**(g) The taxes applicable on cost claims**

The applicable taxes on the above elements of cost claim shall be reimbursed to the Contractor as per actuals based on the documentary evidence.

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**Note:** Provided always that for extension of time granted towards Force Majeure events under GCC/PCC 19, the admissible Cost shall be 75% (seventy five percent) of above Costs.