

Rev 01
1st Jun
2012

NOTICE INVITING TENDER

(Document No PS:MSX:NIT)

TENDER NO.: BHEL/NR/SCT/HPCL VIZAG/SS94 CIVIL/1177

NAME OF WORK: CIVIL WORKS COMPRISING OF SUPER
STRUCTURE WORKS AND ARCHITECTURAL WORKS OF SWGR
CUM CELLAR BUILDING (SS94) FOR 1X75 MW COMBINED CYCLE
CAPTIVE POWER PLANT FOR VISAKH REFINERY
MODERNIZATION PROJECT AT HPCL VISAKHAPATNAM, ANDHRA
PRADESH.

Bharat Heavy Electricals Limited



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NOTICE INVITING E-TENDER (NIT)

BIDDER TO SUBMIT OFFERS ON PORTAL

<https://bhel.abcprocure.com>

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To

Dear Sir/Madam

Sub : NOTICE INVITING E-TENDER

Sealed offers in two part bid system are invited from reputed & experienced bidders (meeting PRE QUALIFICATION CRITERIA as mentioned in Annexure-I) for the subject job by the undersigned on the behalf of BHARAT HEAVY ELECTRICALS LIMITED as per the tender document. Following points relevant to the tender may please be noted and complied with.

1. Salient Features of NIT

SL NO	ISSUE	DESCRIPTION
i	TENDER NUMBER	BHEL/NR/SCT/HPCL VIZAG/SS94 CIVIL/1177
ii	Broad Scope of job	CIVIL WORKS COMPRISING OF SUPER STRUCTURE WORKS AND ARCHITECTURAL WORKS OF SWGR CUM CELLAR BUILDING (SS94) FOR 1X75 MW COMBINED CYCLE CAPTIVE POWER PLANT FOR VISAKH REFINERY MODERNIZATION PROJECT AT HPCL VISAKHAPATNAM, ANDHRA PRADESH.
iii	DETAILS OF TENDER DOCUMENT	
a	Volume-IA	<i>Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc</i> Applicable
b	Volume-IB	<i>Special Conditions of Contract (SCC)</i> Applicable
c	Volume-IC	<i>General Conditions of Contract (GCC)</i> Applicable
d	Volume-ID	<i>Forms and Procedures</i> Applicable
e	Volume-II	<i>Price Schedule (Absolute value).</i> Applicable
iv	Issue of Tender Documents	From BHEL website (www.bhel.com) and https://bhel.abcprocure.com Tender documents will be available at website till due date of submission Applicable
v	DUE DATE & TIME OF OFFER SUBMISSION	Date : 02/12/2019 , Time : 15:00 HRS Place : on https://bhel.abcprocure.com Applicable
vi	OPENING OF TENDER	At due date / time Date : 02/12/2019 , Time : 15:30 HRS Notes: (1) In case the due date of opening of tender becomes a non-working day, then the due date & time of offer submission and opening of tenders get Applicable

		extended to the next working day. (2) Bidder may depute representative to witness the opening of tender. However it being an e-tender it shall be opened online	
vii	EMD AMOUNT	Rs. 15,16,000/-	Applicable (for all bidders including MSEs)
viii	COST OF TENDER	Rs 2000/-.	Applicable (for all bidders including MSEs)
ix	LAST DATE FOR SEEKING CLARIFICATION	Five days before bid submission due date. Along with soft version also, addressing to contact address given below 1) Name: G.V. RAJA SEKHAR Designation: Sr. Manager Deptt: SCT Address: BHEL-PSNR, PLOT NO. 25, SECTOR – 16A, NOIDA - 201301 Phone: (Landline) 0120-2416232 Email : gvr@bhel.in 2) Name: DESHRAJ YADAV Designation: Sr. Engineer Deptt: SCT Address: BHEL-PSNR, PLOT NO. 25, SECTOR – 16A, NOIDA - 201301 Phone: (Landline) 0120 - 2416261 Email : deshraj@bhel.in	Applicable
x	SCHEDULE OF Pre Bid Discussion (PBD)		Not applicable.
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)	Please refer clause no.15a.	Applicable
xii	Latest updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.bhel.com -->Tender Notifications →View Corrigendums) & portal https://bhel.abcpocure.com and not in the newspapers . Bidders to keep themselves updated with all such information	
xiii	Tender submission	on portal https://bhel.abcpocure.com	

2. The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, **Rates/Price including discounts/rebates, if any, mentioned anywhere/in any form in the techno-commercial offer other than the Price Bid, shall not be entertained.**
3. Unless specifically stated otherwise, bidder shall remit cost of tender and courier charges if applicable, in the form of Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, payable at Power Sector Regional HQ at Noida issuing the Tender, along with techno-commercial offer. Bidder may also choose to deposit the Tender document cost by cash at the Cash Office as stated above against sl no iv of 1, on any working day;

and in such case copy of Cash receipt is to be enclosed with the Techno Commercial offer. Sale of tender Documents shall not take place on National Holidays, holidays declared by Central or State Governments and BHEL PS HQ at Noida, Sundays and second/ last Saturdays.

As this tender is an E-Tender and no paper bids will be accepted therefore the scanned copy of the Demand Draft or the Cash Receipt issued by BHEL PSNR should be uploaded in the E procurement portal. Hard Copy of the demand draft should reach BHEL PSNR HQ Noida before the due date and time of bid submission. BHEL shall not be responsible for postal or any other delays in this regard.

4. Unless specifically stated otherwise, tender must be accompanied by the prescribed amount of Earnest Money Deposit (EMD) in the manner described in Clause no. 1.9 of General Conditions of Contract.

'One Time EMD' will not be considered for this tender. All the bidders who have 'One Time EMD' with BHEL and want to participate in this tender, would also submit the requisite amount of EMD as mentioned in Clause No. 1, Salient Features of NIT, Sl. No. (vii) above.

However, the One Time EMD can be adjusted against the EMD applicable against this tender on specific request of bidder.

For Electronic Fund Transfer the details are as below:-

a) **Name of the Beneficiary** -: Bharat Heavy Electricals Limited

b) **Bank Particulars**

i).	Bank Name :-	STATE BANK OF INDIA
ii).	Bank Telephone No.(with STD code):-	011-23475566
iii).	Branch Address:-	CAG II BRANCH, NEW DELHI 4 th & 5 th FLOOR, REDFORT CAPITAL, PARASNATH TOWERS, BHAI VEER SINGH MARG, GOLE MARKET, NEW DELHI-110001
iv).	Bank Fax No. (with STD code) :-	011-23475566
v).	Branch Code :-	17313
vi).	9 Digit MICR Code of the Bank Branch :-	110002562
vii).	Bank Account Number :-	10813608647
viii).	Bank Account Type :-	CASH CREDIT
ix).	11 Digit IFSC Code of Beneficiary Branch:-	SBIN0017313

(Note:- In case of E-Tenders, no paper bids shall be accepted, therefore, the scanned copy of the Banker's Cheque/ Demand Draft/ Pay Order/ Details of payment made through Electronic Fund Transfer/ Fixed Deposit Receipt (FDR) / Bank Guarantee should be uploaded in the E-Procurement Portal and hard copy of the same should reach BHEL-PSNR HQ Noida before the due date and time of bid submission. BHEL shall not be responsible for postal or any other delays in this regard.)

5. **Procedure for Submission of Tenders**: This is an E-tender floated online through our E-Procurement Site <https://bhel.abcprocure.com>. The bidder should respond by submitting their offer online only in our e-Procurement platform at <https://bhel.abcprocure.com>. Offers are invited in two-parts only.

Documents Comprising the e-Tender

The tender shall be submitted online ONLY EXCEPT TENDER FEE & EMD (in physical form) as mentioned below:

a. Technical Tender (UN priced Tender)

All Technical details (eg. Eligibility Criteria requested (as mentioned below)) should be attached in e-tendering module, failing which the tender stands invalid & may be REJECTED. Bidders shall furnish the following information along with technical tender (preferably in pdf format):

- Tender Cost and Earnest money Deposit (EMD) furnished in accordance with NIT Clause 3.0 & 4.0.
- Technical Bid (without indicating any prices).

b. Price Bid:

- i. Prices are to be quoted in the attached Price Bid format online on e-tender portal.
- ii. The price should be quoted for the accounting unit indicated in the e-tender document.
- iii. Note: It is the responsibility of tenderer to go through the Tender document to ensure furnishing all required documents in addition to above, if any. Any deviation would result in REJECTION of tender and would not be considered at a later stage at any cost by BHEL.
- iv. A person signing (manually or digitally) the tender form or any documents forming part of the contract on behalf of another shall be deemed to warrantee that he has authority to bind such other persons and if, on enquiry, it appears that the persons so signing had no authority to do so, the purchaser may, without prejudice to other civil and criminal remedies, cancel the contract and hold the signatory liable for all cost and damages.
- v. A tender, which does not fulfil any of the above requirements and/or gives evasive information/reply against any such requirement, shall be liable to be ignored and rejected.
- vi. In case offer is sent through hard copy/fax/telex/cable/electronically in place of e-tender, same shall not be considered.

DO NOT'S

Bidders are requested NOT to submit the hard copy of the Bid. In case offer is sent through hard copy/fax/telex/cable/electronically in place of e-tender, the same shall not be considered. **Also, uploading of the price bid in prequalification bid or technical bid may RESULT IN REJECTION of the tender.**

Digital Signing of e-Tender

Tenders shall be uploaded with all relevant PDF/zip format. The relevant tender documents should be uploaded by an authorized person having Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION digital signature certificate (DSC).

The Requirement:

1. A PC with Internet connectivity &
2. DSC (Digital Signature Certificate)(**Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION**)

BHEL has finalized the e-procurement service Provider:-

M/s AbcProcure, Ahmedabad

A-202/208, Wall Street-II, Opp. Orient Club, Nr. Gujarat College,
Ellis Bridge, Ahmedabad-380006

The contact details of the service provider are given below:

Name	Contact Nos.	e-mail ID	Role	Location
Swapnil Hamilton	+91 79 40270549	swapnil.h@eptl.in	Support Executive	HO – Ahmedabad
Hardik Oza	+91 79 40270560	Hardik.oza@eptl.in	Support Executive	HO – Ahmedabad
Ankur Bhatt	+91 79 40270590	ankur.bhatt@eptl.in	Support Executive	HO – Ahmedabad
Prashant Rajyaguru	+91 79 40270545 / 9016859416	prashant@eptl.in	Ast. Manager – Implementation & Support	HO – Ahmedabad
Dharam Rathod	+91 79 40270596 / 9374519754	dharam@eptl.in	Manager – Implementation & Support	HO – Ahmedabad
Pradip Parmar	+91 79 40270532 / 9328657215	pradip@eptl.in	Sr Manager – Implementation & Support	HO – Ahmedabad
Devang Patel	+91 79 40270576 / 99983 05442	devang@eptl.in	Sr Manager – Implementation & Support	HO – Ahmedabad

The process of utilizing e-procurement necessitates usage of **DSC (Digital Signature Certificate) (Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION)** and you are requested to procure the same immediately, if not presently available with you. Please note that only with DSC, you will be able to login the e-procurement secured site and take part in the tendering process.

1. The contact details of the DSC Certifying Authority as given below

1	GNFC	www.ncodesolutions.com
2	e-Mudhra	http://www.e-Mudhra.com
3	Safescrypt	www.safescrypt.com

Vendors are also requested to go through seller manual available on <https://bhel.abcpocure.com>.

6. **Not Used**

7. Deviation with respect to tender clauses and additional clauses/suggestions in Techno-commercial bid / Price bid shall NOT be considered by BHEL. Bidders are requested to positively comply with the same.

8. BHEL reserves the right to accept or reject any or all Offers without assigning any reasons thereof. BHEL also reserves the right to cancel the Tender wholly or partly without assigning any reason thereof. Also BHEL shall not entertain any correspondence from bidders in this matter (except for the refund of EMD).

9. **Assessment of Capacity of Bidders:**

Bidder's capacity for executing the job under tender shall be assessed 'LOAD' wise and 'PERFORMANCE' wise as per the following:

- I. **LOAD**: Load takes into consideration **ALL** the contracts of the Bidder under execution with BHEL Regions, irrespective of whether they are similar to the tendered scope or not. The cut off month for reckoning 'Load' shall be the 3rd Month preceding the month corresponding to the 'latest date of bid submission', in the following manner -

(**Note:** For example, if latest bid submission is in Jan 2017, then the 'load' shall be calculated up to and inclusive of Oct 2016)

Total number of Packages in hand = Load (P)

Where 'P' is the sum of all unit wise identified packages (refer table-1) under execution with BHEL Regions as on the cut off month defined above, including packages yet to be commenced, excepting packages which are on Long Hold.

- II. **PERFORMANCE**: Here 'Monthly Performance' of the bidder for all the packages (under execution/ executed during the 'Period of Assessment' in all Power Sector Regions of BHEL) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced shall be taken into consideration. The 'Period of Assessment' shall be 6 months preceding and including the cut off month. The cut off month for reckoning 'Period of Assessment' shall be the 3rd Month preceding the month corresponding to 'latest date of bid submission', in the following manner:

(**Note:** For example, if 'latest date of bid submission' is in Jan 2017, then the 'performance' shall be assessed for a 6 months' period up to and inclusive of Oct 2016 (i.e. from May 2016 to Oct 2016), for all the unit wise identified packages (refer Table -1))

- i). **Calculation of Overall 'Performance Rating' for 'Similar Package/Packages' for the tendered scope under execution at Power Sector Regions for the 'Period of Assessment':**

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for all the similar Package/packages', divided by the total number of Package months for which evaluation should have been done, as per procedure below:

- $P_1, P_2, P_3, P_4, P_5, \dots, P_N$ etc. be the packages (under execution/ executed during the 'Period of Assessment' in all Regions of BHEL) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced. Total number of similar packages for all Regions = P_T (i.e. $P_T = P_1 + P_2 + P_3 + P_4 + \dots + P_N$)
- Number of Months ' T_1 ' for which 'Monthly Performance Evaluation' as per relevant formats, should have been done in the 'Period of Assessment' for the corresponding similar package P_1 . Similarly T_2 for package P_2, T_3 for package P_3 , etc. for the tendered scope. Now calculate cumulative total months ' T_T ' for total similar Packages ' P_T ' for all Regions (i.e. $T_T = T_1 + T_2 + T_3 + T_4 + \dots + T_N$)
- Sum ' S_1 ' of 'Monthly Performance Evaluation' Scores ($S_{1-1}, S_{1-2}, S_{1-3}, S_{1-4}, S_{1-5} \dots S_{1-T_1}$) for similar package P_1 , for the 'period of assessment' ' T_1 ' (i.e. $S_1 = S_{1-1} + S_{1-2} + S_{1-3} + S_{1-4} + S_{1-5} + \dots + S_{1-T_1}$). Similarly, S_2 for package P_2 for period T_2 , S_3 for package P_3 for period T_3 etc. for the tendered scope for all Regions. Now calculate cumulative sum ' S_T ' of 'Monthly Performance Evaluation' Scores for total similar Packages ' P_T ' for all Regions (i.e. ' S_T ' = $S_1 + S_2 + S_3 + S_4 + S_5 + \dots + S_N$.)
- Overall Performance Rating ' R_{BHEL} ' for the Similar Package/Packages** (under execution/ executed during the 'Period of Assessment') in all the Power Sector Regions of BHEL

$$= \frac{\text{Aggregate of Performance scores for all similar packages in all the Regions}}{\text{Aggregate of months for each of the similar packages for which performance should have been evaluated in all the Regions}}$$

$$= \frac{S_T}{T_T}$$

- Bidders to note that the risk of non-evaluation or non-availability of the 'Monthly Performance Evaluation' reports as per relevant formats is to be borne by the Bidder.

- Table showing methodology for calculating 'a', 'b' and 'c' above

Sl. No.	Item Description	Details for all Regions							Total
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
1	Similar Packages for all Regions → (under execution/ executed during period of assessment)	P_1	P_2	P_3	P_4	P_5	...	P_N	Total No. of similar packages for all Regions = P_T i.e. Sum (Σ) of columns (iii) to (ix)
2	Number of Months for which 'Monthly Performance Evaluation' as per relevant formats should have been done in the 'period of assessment' for corresponding Similar Packages (as in row 1)	T_1	T_2	T_3	T_4	T_5	...	T_N	Sum (Σ) of columns (iii) to (ix) = T_T

Sl. No.	Item Description	Details for all Regions							Total
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
3	Monthly performance scores for the corresponding period (as in Row 2)	S ₁₋₁ , S ₁₋₂ , S ₁₋₃ , S ₁₋₄ , ... S _{1-T1}	S ₂₋₁ , S ₂₋₂ , S ₂₋₃ , S ₂₋₄ , ... S _{2-T2}	S ₃₋₁ , S ₃₋₂ , S ₃₋₃ , S ₃₋₄ , ... S _{3-T3}	S ₄₋₁ , S ₄₋₂ , S ₄₋₃ , S ₄₋₄ , ... S _{4-T4}	S ₅₋₁ , S ₅₋₂ , S ₅₋₃ , S ₅₋₄ , ... S _{5-T5}	S _{N-1} , S _{N-2} , S _{N-3} , S _{N-4} , S _{N-TN}	-----
4	Sum of Monthly Performance scores of the corresponding Package for the corresponding period (as in row-3)	S ₁	S ₂	S ₃	S ₄	S ₅	...	S _N	Sum (Σ) of columns (iii) to (ix) = S _T

- ii). Calculation of Overall 'Performance Rating' (R_{BHEL}) in case at least 6 evaluation scores for 'similar Package/Packages' for the tendered scope ARE NOT AVAILABLE, during the 'Period of Assessment':

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for ALL the packages, divided by the total number of Package months for which evaluation should have been done. ' R_{BHEL} ' shall be calculated subject to availability of 'performance scores' for at least 6 'package months' in the order of precedence below:

- 'Period of Assessment' i.e. 6 months preceding and including the cut-off month
- 12 months preceding and including the cut-off month
- 24 months preceding and including the cut-off month

In case, R_{BHEL} cannot be calculated as above, then Bidder shall be treated as 'NEW VENDOR'. Further eligibility and qualification of this bidder shall be as per definition of 'NEW VENDOR' described in 'Explanatory Notes'.

- iii). Factor "L" assigned based on Overall Performance Rating (R_{BHEL}) at Power Sector Regions:

Sl. no.	Overall Performance Rating (R_{BHEL})	Corresponding value of 'L'
1	=60	NA
2	> 60 and \leq 65	0.4
3	> 65 and \leq 70	0.35
4	> 70 and \leq 75	0.25
5	> 75 and < 80	0.2
6	\geq 80	NA

III. 'Assessment of Capacity of Bidder':

'Assessment of Capacity of Bidder' is based on the Maximum number of packages for which a vendor is eligible, considering the performance scores of similar packages, as below:

Max number of packages $P_{Max} = (R_{BHEL} - 60)$ divided by corresponding value of 'L', i.e. $(R_{BHEL} - 60)/L$

Note:

- In case the value of P_{Max} results in a fraction, the value of P_{Max} is to be rounded off to next whole number
- For $R_{BHEL} = 60$, $P_{Max} = '1'$
- For $R_{BHEL} \geq 80$, there will be no upper limit on P_{Max}

The Bidder shall be considered 'Qualified' as per 'Assessment of Capacity of Bidder' for the subject Tender if $P \leq P_{Max}$
(Where P is calculated as per clause 'I' above)

Note: For the transition period of 1 year (i.e. for all the NITs floated between 11th May 2019 to 10th May 2020), in addition to above, 'Assessment of Capacity of Bidder' shall also be calculated considering 'performance scores' till 36 months as per Sl. no II ii).

Higher of the results obtained out of both shall be considered for 'Assessment of Capacity of Bidder'.

IV. **Explanatory note:**

- i). Similar package means Boiler or ESP or Piping or Turbine or Civil or Structure or Electrical or C&I etc. at the individual level irrespective of rating of Plant and irrespective of whether the subject tender is a single package or as part of combined/composite packages. Normally Boiler, ESP, Piping, Turbine, Electrical, C&I, Civil, Structure etc. is considered individual level of package. For example, in case the tendered scope is a Boiler Vertical Package comprising of Boiler, ESP and Power Cycle Piping (i.e. the 'identified packages as per Table-1 below), the 'PERFORMANCE' part against sl.no. II above, needs to be evaluated considering all the identified packages (i.e. Boiler, ESP and Power Cycle Piping) and finally the Bidder's capacity to execute the tendered scope is assessed in line with III above.

- ii). Identified Packages (Unit wise)

Table-1

Civil	Electrical and C&I	Mechanical
i). Enabling works	i). Electrical	i). Boiler & Aux (All types including CW Piping if applicable)
ii). Pile and Pile Caps	ii). C&I	ii). Power Cycle Piping/Critical Piping
iii). Civil Works including foundations	iii). Others (Elect. and C&I)	iii). ESP
iv). Structural Steel Fabrication & Erection		iv). LP Piping
v). Chimney		v). Steam Turbine Generator set & Aux
vi). Cooling Tower		vi). Gas Turbine Generator set & Aux
vii). Others (Civil)		vii). Hydro Turbine Generator set & Aux
		viii). Turbo Blower (including Steam Turbine)
		ix). Material Management
		x). Others (Mechanical)

- iii). Bidders who have not been evaluated for at least six package months in the last 24 months preceding and including the Cut-off month in the online BHEL system for contractor performance evaluation in BHEL PS Regions, shall be considered "NEW VENDOR".

A 'NEW VENDOR' shall be considered qualified subject to satisfying all other tender conditions.

A 'NEW VENDOR' if awarded a job (of package/packages identified under this clause) shall be tagged as "FIRST TIMER" on the date of first LOI/LOA from BHEL.

The "FIRST TIMER" tag shall remain till completion of all the contracts against which vendors has been tagged as First Timer or availability of 6 evaluation scores within last 24 months preceding and including the cut-off month in the online BHEL system for contractor performance evaluation in BHEL PS Regions.

A Bidder shall not be eligible for the next job as long as the Bidder is tagged as "FIRST TIMER" excepting for the Tenders which have been opened on or before the date of the bidder being tagged as 'FIRST TIMER'.

After removal of 'FIRST TIMER' tag, the Bidder shall be considered 'QUALIFIED' for the future tenders subject to satisfying all other tender conditions including 'Assessment of Capacity of Bidders'.

- iv). Consequent upon applying the criteria of 'Assessment of Capacity of Bidders' detailed above on all the bidders qualified against Technical and Financial Qualification criteria, if the number of qualified bidders reduces to less than four, then for further processing of the Tender, BHEL at its discretion reserves the right to also consider the bidders who are "not qualified" as per criteria of 'Assessment of Capacity of Bidders' and for this, procedure described in following three options shall be followed:

- All the bidders having Overall Performance Rating ('R_{BHEL}') ≥60 shall be considered qualified against criteria of 'Assessment of Capacity of Bidders'.
- If even after using option "a", the number of qualified bidders remains less than four, then in addition to bidders considered as per option "a", "First timer" bidders having average of available performance

scores ≥ 60 upto and including the Cut Off month shall also be considered qualified against criteria of 'Assessment of Capacity of Bidders'.

- c) If even after using option "a" and "b", the number of qualified bidders remains less than four, then in addition to bidders considered as per option "a" and "b", "First timer" bidders for whom no performance score is available in the system upto and including the Cut Off month, shall also be considered qualified against criteria of 'Assessment of Capacity of Bidders'.

Note:- In case, the number of bidders qualified against Technical and Financial Qualification criteria itself is less than four, then all bidders (a)- having Overall Performance Rating ('R_{BHEL}') ≥ 60 , (b)- First timer" bidders having average of available performance scores ≥ 60 upto and including the Cut Off month, (c)- "First timer" bidders for whom no performance score is available in the system upto and including the Cut Off month, shall be considered qualified against criteria of 'Assessment of Capacity of Bidders' for further processing of tender.

- v). 'Under execution' shall mean works in progress as per the following:
- a. Up to execution of 90% of anticipated Contract Value in case of Civil, MM, Structural and Turbo Blower Packages
 - b. Up to Steam Blowing in case of Boiler/ESP/Piping Packages
 - c. Up to Synchronization in all Balance Packages

Note: BHEL at its discretion can extend (or reduce in exceptional cases in line with Contract conditions) the period defined against (a), (b) and (c) above, depending upon the balance scope of work to be completed.

- vi). Contractor shall provide the latest contact details i.e. mail-ID and Correspondence Address to SCT Department, so that same can be entered in the Contractor Performance Evaluation System, and in case of any change/discrepancy same shall be informed immediately. Login Details for viewing scores in Contractor Performance Evaluation System shall be provided to the Contractor by SCT Department.
- vii). Performance Evaluation for Activity Month shall be completed in Evaluation Month (i.e. month next to Activity Month) or in rare cases in Post Evaluation Month (i.e. month next to Evaluation Month) after approval from Competent Authority. In case scores are not acceptable, Contractor can submit Review Request to GM Site/ GM Project latest by 25th of Evaluation Month or 3 days after approval of score, whichever is later. However, acceptance/rejection of 'Review Request' solely depends on the discretion of GM Site/GM Project. After acceptance of Review Request, evaluation score shall be reviewed at site and the score after completion of review process shall be acceptable and binding on the contractor.
- viii). Project on Hold due to reasons not attributable to bidder -
- a. **Short hold:** Evaluation shall not be applicable for this period, however Loading will be considered.
 - b. **Long hold:** Short hold for continuous six months and beyond or hold on account of Force Majeure shall be considered as Long Hold. Evaluation as well as Loading shall not be considered for this period.
- ix). Performance evaluation in CL 9 above is applicable to prime bidder and Consortium partner (or Technical tie up partner) for their respective scope of work.

10. Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions.
11. For any clarification on the tender document, the bidder may seek the same over e-procurement portal as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.

12. BHEL may decide holding of pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.
13. In the event of any conflict between requirement of any clause of this specification/ documents/drawings/data sheets etc or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error/missing pages/ other clerical errors in the tender documents, noticed must be pointed out before pre-bid meeting/submission of offer, else BHEL's interpretation shall prevail.
14. Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including PBD.
15. Bidders shall submit Integrity Pact Agreement (Duly signed by authorized signatory who signs in the offer), **if applicable**, along with techno-commercial bid. This pact shall be considered as a preliminary qualification for further participation. **The names and other details of Independent External Monitor (IEM) for the subject tender is as given at Clause No. 1, Salient Features of NIT, Sl. No. (xi) above.**

15a **Integrity Pact (IP)**

- i) IP is a tool to ensure that activities and transactions between the Company and its Bidders / Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitor (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

Sl. No.	IEM	Address	Email
1.	Shri Arun Chandra Verma, IPS (Retd.)	Flat No. C -1204, C Tower, Amrapali, Platinum Complex, Sector 119, Noida (U.P.)	acverma1@gmail.com
2.	Shri Virendra Bahadur Singh, IPS (Retd.)	H. No. B-5/64, Vineet Khand, Gomti Nagar, Lucknow - 226010	vbsinghips@gmail.com

- ii) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.
- iii) Please refer Section-8 of the IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to the above IEM. All correspondence with the IEM shall be done through email only.

Note:

No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are as per **Clause No. 1, Salient Features of NIT, Sl. No. (ix) above.**

16. The Bidder has to satisfy the Pre-Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of satisfying the Pre-Qualification Criteria specified in this NIT as per Annexure-I (as applicable), past performance etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right not to consider offers of parties under HOLD.
17. In case BHEL decides on a 'Public Opening', the date & time of opening of the PRICE BID shall be intimated to the qualified bidders and in such a case, bidder may depute one authorised representative to witness the price bid opening. BHEL reserves the right to open 'in-camera' the 'PRICE BID' of any or all Unsuccessful/Disqualified bidders under intimation to the respective bidders-
18. Validity of the offer shall be for **six months** from the latest due date of offer submission (including extension, if any) unless specified otherwise
19. (a) BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.
- (b) Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).
- (c) The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. **The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.**
- (d) If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).
- (e) If reverse auction process is unsuccessful, sealed envelope price bids of all the techno-commercially qualified bidders shall be opened and the tender shall be processed accordingly. However, the envelope sealed bid(s) of techno-commercially acceptable bidder(s) who had agreed to participate in the RA and had failed to submit the online sealed bid shall not be opened.
20. On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.
21. In case the bidder is an "Indian Agent of Foreign Principals", 'Agency agreement has to be submitted along with Bid, detailing the role of the agent along with the terms of payment for agency commission in INR, along with supporting documents.
22. The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.
23. **Not Applicable**

24. The bidder shall upload documents in support of possession of 'Qualifying Requirements' duly self-certified and stamped by the authorized signatory, indexed and properly linked in the format for PQR. In case BHEL requires any other documents/proofs, these shall be submitted immediately.
25. The bidder may have to produce original document for verification if so decided by BHEL.
26. It may please be noted that guidelines/rules in respect of Suspension of Business dealings', 'Vendor evaluation format', 'Quality, Safety & HSE guidelines', milestone/ completion certificate, etc may undergo change from time to time and the latest one shall be followed. The abridge version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' is available on www.bhel.com on "supplier registration page".
27. The offers of the bidders who are on the banned/ hold list as also the offer of the bidders, who engage the services of the banned/ hold firms, shall be rejected. The list of **banned/ hold firms** is available on BHEL web site www.bhel.com
- 27.1 Integrity commitment, performance of the contract and punitive action thereof:
- 27.1.1 **Commitment by BHEL:**
BHEL commits to take all measures necessary to prevent corruption in connection with the tender Process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.
- 27.1.2 **Commitment by Bidder/ Supplier/ Contractor:**
- (i) The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.
 - (ii) The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.
 - (iii) The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.
- If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the prices or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extant guidelines of the company available on www.bhel.com and / or under applicable legal provisions.
28. **NOT APPLICABLE.**
29. The Bidder along with its associate/ collaborators/ sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.
30. **PREFERENCE TO MAKE IN INDIA:**
For this procurement, Public Procurement (*Preference to Make in India*), Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent Orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/ PO/ WO against this NIT.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable.

31. Order of Precedence

In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:

- a. Amendments/Clarifications/Corrigenda/Errata etc issued in respect of the tender documents by BHEL
- b. Notice Inviting Tender (NIT)
- c. Price Bid
- d. Technical Conditions of Contract (TCC)—Volume-1A
- e. Special Conditions of Contract (SCC) —Volume-1B
- f. General Conditions of Contract (GCC) —Volume-1C
- g. Forms and Procedures —Volume-1D

for BHARAT HEAVY ELECTRICALS LTD

(SCT)

Enclosure:-

- (i) Annexure-1: Pre Qualifying criteria.
- (ii) Annexure-2: Check List.
- (iii) Annexure-3: Authorization of representative who will participate in the online Reverse Auction Process
- (iv) Annexure-4: Feedback form
- (v) Annexure-5: Integrity Pact.
- (vi) Other Tender documents as per this NIT.

ANNEXURE - 1**PRE QUALIFYING REQUIREMENTS**

JOB	CIVIL WORKS COMPRISING OF SUPER STRUCTURE WORKS AND ARCHITECTURAL WORKS OF SWGR CUM CELLAR BUILDING (SS94) FOR 1X75 MW COMBINED CYCLE CAPTIVE POWER PLANT FOR VISAKH REFINERY MODERNIZATION PROJECT AT HPCL VISAKHAPATNAM, ANDHRA PRADESH.
TENDER NO.	BHEL/NR/SCT/HPCL VIZAG/SS94 CIVIL/1177

SL NO	NAME AND DESCRIPTION OF PRE QUALIFICATION CRITERIA	
A	Submission of Integrity Pact	Applicable
B	Assessment of Capacity of bidder to execute the work as per clause 9.0 pf NIT	Applicable – by BHEL
C	<p><u>Technical</u></p> <p><u>Bidder who wish to participate should have experience as follows::</u></p> <p>C-1 Bidder should have executed Similar work for any one of the following in the last seven years from latest date of bid submission:</p> <p>One (1) work of value not less than Rs. 607 Lakhs.</p> <p style="text-align: center;">OR</p> <p>Two (2) works each of value not less than Rs. 379 Lakhs.</p> <p style="text-align: center;">OR</p> <p>Three (3) works each of value not less than Rs. 303 Lakhs.</p> <p style="text-align: center;">AND</p> <p>C-2 Civil Works: Execution of: At least 1363 Cum RCC completed within a period of Twelve Consecutive Months in cumulative of two running/completed contracts.</p> <p style="text-align: center;">OR</p> <p>At least 908 Cum RCC completed within a period of Twelve Consecutive Months in one running/completed contracts.</p> <p style="text-align: center;">AND</p> <p>C-3 Completed at least one RCC framed Two or more storied building with minimum 500cum concreting.</p>	Applicable

D	<u>FINANCIAL</u>	Applicable
D-1	<p><u>TURNOVER:</u></p> <p>Bidders must have achieved an average annual financial turnover (Audited) of Rs. 227 Lakhs or more over last three Financial Years (FY) i.e. (2016-2017, 2017-2018, 2018- 2019). Bidder shall submit audited accounts (balance sheets and profit & loss account) in support of this.</p> <p>In case audited financial statements have not been submitted for all the three years as indicated above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years i.e. total divided by three</p> <p>If Financial Statements are not required to be audited statutorily, then instead of audited financial statements, financial statements are required to be certified by Chartered Accountant.</p>	Applicable
D-2	<p><u>NET WORTH</u></p> <p>Net worth (only in case of companies) of the Bidder based on the latest Audited Accounts as furnished for 'D-1' above should be positive.</p> <p>Net Worth = Paid up share capital* + Reserves.</p> <p>(*: Share Capital OR Partnership Capital OR Proprietor Capital as the case may be.)</p>	Applicable
D-3	<p><u>PROFIT</u></p> <p>Bidder must have earned profit in any one of the three financial years as applicable in the last three financial years defined in 'D-1' above.</p> <p>PROFIT shall be PBT earned during any one year of last three financial years as in 'D-1' above.</p>	Applicable
D-4	Bidder must not be under Bankruptcy Code Proceedings (IBC) by NCLT or under Liquidation / BIFR, which will render him ineligible for participation in this tender, and shall submit undertaking to this effect.	Applicable
E	Approval of Customer	Applicable
F	Consortium Criteria	Not Applicable

Explanatory Notes for QR 'C'

- For evaluation of PQR, the credentials of the bidder alone, and not that of the Group Company shall be considered.
- Time period for achievement of the Qualification Requirements is in the last 7 years ending on the 'latest date of Bid Submission' of Tender.
- 'Executed' means the bidder should have achieved this criteria, even if the total contract has not been completed or closed. Actual executed value shall be considered, irrespective of completion status of contract (s) under consideration.
- Piling or Civil or Structure or 'Civil and Structural works' or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or any combination of these shall be considered as '**similar works.**'

5. For sl.no. 'C-1' above Value of work is to be updated with indices for "All India Avg. Consumer Price index for industrial workers" and "Monthly Whole Sale Price Index for All Commodities" with base month as per last month of work execution and indexed up to three (3) months prior to the month of latest due date of bid submission as per following formula.

$$P = \{R + 0.425 \times R \times (X_N - X_0) / X_0 + 0.425 \times R \times (Y_N - Y_0) / Y_0\}$$

Where

P = Updated value of work

R = Value of executed work

X_N = All India Avg. Consumer Price index for industrial workers for the month, three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 03-Apr-17, then bid submission month shall be reckoned as April'17 and index for Jan'17 shall be considered).

X_0 = All India Avg. Consumer Price index for industrial workers for last month of work execution

Y_N = Monthly Whole Sale Price Index for All Commodities for the month, three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 03-Apr-17, then bid submission month shall be reckoned as April'17 and index for Jan'17 shall be considered).

Y_0 = Monthly Whole Sale Price Index for All Commodities for last month of work execution.

BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT INCLUSIVE OF WORK ORDER AND WORK COMPLETION CERTIFICATE ETC IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.

ANNEXURE - 2**CHECK LIST****NOTE: - Tenderers are required to fill in the following details and no column should be left blank**

1	Name of the Tenderer		
2	Address of the Tenderer		
3	Type of the Firm/ Company		
(i)	In case of Individual Tenderer	His / her full name, address and place & nature of business shall be furnished along with the offer.	
(ii)	In case of Partnership Firm	The names of all the partners and their addresses, A copy of the partnership deed/instrument of partnership duly certified by the Notary Public shall be furnished along with the offer..	
(iii)	In case of Companies	a) Date and place of registration including date of commencement certificate in case of Public Companies (certified copies of Memorandum and articles of Association are also to be furnished). b) Nature of business carried on by the Company and the provisions of the Memorandum relating thereof.	
4.a	Details of Contact person for this Tender	Name : Mr/ Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
4.b	Details of alternate Contact person for this Tender	Name : Mr/ Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
5	EMD DETAILS	Mode of payment: Demand Draft/ NEFT/ RTGS/ OTHER Details of Transaction:	
6	Validity of Offer	TO BE VALID FOR SIX MONTHS FROM DUE DATE	
	DESCRIPTION	APPLICABILITY (BY BHEL)	ENCLOSED BY BIDDER
7	Whether all pages of the Tender documents including annexures, appendices etc are read and understood	Applicable	YES / NO
8	Whether the format for compliance with PRE QUALIFICATION CRITERIA (ANNEXURE – 1) is understood and filled with proper supporting documents referenced in the specified format	Applicable	YES / NO
9	Audited Balance Sheet and profit & Loss Account for the last three years	Applicable	YES / NO
10	Copy of PAN Card	Applicable	YES / NO
11	Copy of GST registration	Applicable	YES / NO

SL. NO.	DESCRIPTION	APPLICABILITY (BY BHEL)	ENCLOSED BY BIDDER
12	Organization Chart of the tenderer's organization, including the names, addresses and contact information of the Directors/Partners shall be furnished along with the offer.	Applicable	YES / NO
13	Integrity Pact	Applicable	YES / NO
14	Offer forwarding letter / tender submission letter [Form No. F-01 (Rev 00)]	Applicable	YES / NO
15	Declaration by Authorised Signatory [Form No: F-02 (Rev 00)]	Applicable	YES / NO
16	Declaration by Authorised Signatory regarding Authenticity of submitted documents [Form No: F-02A (Rev 00)]	Applicable	YES / NO
17	No Deviation Certificate [Form No: F-03 (Rev 00)]	Applicable	YES / NO
18	Declaration confirming knowledge about Site Conditions [Form No: F-04 (Rev 00)]	Applicable	YES / NO
19	Declaration for relation in BHEL [Form No: F-05 (Rev 00)]	Applicable	YES / NO
20	Non-Disclosure Certificate [Form No: F-06 (Rev 00)]	Applicable	YES / NO
21	Bank Account Details for E-Payment [Form No: F-07 (Rev 00)]	Applicable	YES / NO
22	Format for seeking clarification [Form No: F-08 (Rev 00)]	Applicable	YES / NO
23	Capacity Evaluation of Bidder for current Tender [Form No: F-09 (Rev 00)]	Applicable	YES / NO
24	Power of Attorney for Submission of Tender/Signing Contract Agreement [Form No: F-25 (Rev 00)]	Applicable	YES / NO
25	Analysis of Unit rates [Form No: F-26 (Rev 00)]	Applicable	YES / NO
26	Tie Ups/Consortium Agreement are submitted as per format [Form No: F-22 (Rev 00)]	Not Applicable	YES / NO

NOTE : STRIKE OFF 'YES' OR 'NO', AS APPLICABLE. TENDER NOT ACCOMPANIED BY THE PRESCRIBED **ABOVE APPLICABLE DOCUMENTS** ARE LIABLE TO BE SUMMARILY REJECTED.

DATE :

AUTHORISED SIGNATORY
(With Name, Designation and Company seal)

ANNEXURE - 3**Authorization of representative who will participate in the on line Reverse Auction Process;**

1	NAME & DESIGNATION OF OFFICIAL	
2	POSTAL ADDRESS (COMPLETE)	
3	TELEPHONE NOS. (LAND LINE & MOBILE BOTH)	
4	FAX NO.	
5	E-MAIL ADDRESS	
6	NAME OF PLACE/ STATE/ COUNTRY, WHEREFROM S/HE WILL PARTICIPATE IN THE REVERSE AUCTION	

ANNEXURE – 4**Feedback Form: From where did you get information reg. this tender**

1	NEWSPAPER ADVERTISEMENT (NAME)	
2	BHEL WEBISTE (TENDER NOTIFICATION)	
3	CENTRAL PUBLIC PROCUREMENT PORTAL OF GOVERNMENT OF INDIA (CPP PORTAL)	
4	EMAIL COMMUNICATION FROM BHEL	
5	ANY OTHER SOURCE	

BHEL-IP

INTEGRITY PACT

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

_____, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for

_____. The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1- Commitments of the Principal

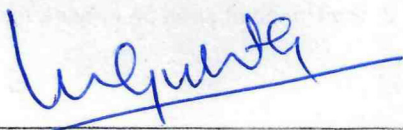
1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

1.1.3 The Principal will exclude from the process all known prejudiced persons.

1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.



Section 2 - Commitments of the Bidder(s)/ Contractor(s)

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
- 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Indian Penal Code (IPC) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and will await their decision in the matter.

Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 4 - Compensation for Damages

- 4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to

demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

Section 5 - Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 - Equal treatment of all Bidders/ Contractors / Sub-contractors

- 6.1 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors. In case of sub-contracting, the Principal contractor shall be responsible for the adoption of IP by his sub-contractors and shall continue to remain responsible for any default by his sub-contractors.
- 6.2 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section 7 - Criminal Charges against violating Bidders/ Contractors / Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 - Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality in line with Non- disclosure agreement.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

- 8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.
- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter should be examined by the full panel of IEMs jointly as far as possible, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to CMD, BHEL, at the earliest. They may also send their report directly to the CVO and the Commission, in case of suspicion of serious irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.9 IEM should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the organization should be looked into by the CVO of the concerned organisation.
- 8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.
- 8.12 The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration

- 9.1 This Pact shall be operative from the date IP is signed by both the parties till the final completion of contract for successful bidder and for all other bidders 6 months after the contract has been awarded. Issues like warranty / guarantee etc. should be outside the purview of IEMs.
- 9.2 If any claim is made/ lodged during currency of IP, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 - Other Provisions

- 10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.



BHEL-IP

- 10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- 10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- 10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders / contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

For & On behalf of the Principal

(Office Seal)

Place-----

Date-----

Witness:-----

(Name & Address) -----

For & On behalf of the Bidder/

Contractor

(Office Seal)

Witness:-----

(Name & Address) -----

V.K. Gupta

 **वी. के. गुप्ता / V. K. GUPTA**
अध्यक्ष महाप्रबंधक (उप संचिदा एवं क्रय)
Addl. General Manager (SCP)
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, पावर सेक्टर-उत्तरी क्षेत्र
Bharat Heavy Electricals Ltd., Power Sector-Northern Region
प्लॉट सं.25, सेक्टर-16ए, नोएडा/Plot No.25, Sec.16A, Noida

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1.0	PROJECT SYNOPSIS AND GENERAL INFORMATION
1.1	<p>LOCATION AND APPROACH</p> <p>The site of Work is located within the premises of the existing Visakh Refinery, Visakhapatnam in the state of Andhra Pradesh.</p> <p>Nearest Railway Station- Visakhapatnam (15 Km), Nearest Town/ City Visakhapatnam (15 Km), Nearest Airport Visakhapatnam (10 Km), Nearest Sea Port Visakhapatnam (16 Km), Nearest National Highway- NH5</p> <p>Rainy season: June, July during S/W monsoon. Also rain occurs in Nov/Dec at the time of N/E monsoon.</p> <p>Source of Water: Fresh Water Visakh Municipal Corporation Cooling Water Sea Water from Bay of Bengal. Maximum wind velocity is for cyclone prone region. Wind pressure shall be based on IS: 875</p> <p>Ambient temperature – Maximum 45°C and minimum 12.5°C</p> <p>Relative humidity - Maximum 60% and minimum 95%</p> <p>Rainfall data for 1-hour period - 80 -100 mm</p> <p>Maximum Rainfall in 24-hour period - 293 mm</p> <p>Wind Velocity - Maximum 185 km/hr. and minimum 1-5 km/hr.</p>
2.0	SCOPE OF THE CONTRACT
2.1	<p>Work includes all Civil works comprising of super structure works and architectural works of SWGR cum cellar building</p> <p>Filling, levelling and grading, Micro Grading & disposal of surplus and unserviceable material beyond HPCL VIZAG complex's compound wall. Contractor to assess the lead by physically visiting the Plant site.</p>
2.2	Mix design for all concreting shall be carried out either at site or from a reputed institute, approved by BHEL / Customer. Contractor may add admixture for minimizing the cement content in line with IS 456 as advised by BHEL / Customer time to time without any additional cost.
2.3	The works to be performed under this contract consist of providing all labour, supervision, material, scaffolding, construction equipment, tools and plants, temporary works, supplies including POL, transportation and all incidental items not shown or specified but reasonably implied or necessary for the proper completion of work in all respects. Testing of all materials, concrete, earthwork other allied works, preparation of bar bending schedules on the basis of construction drawings, preparation of fabrication drawings etc. are included on the rates of items of work.
2.4	The scope shall also include setting up by the bidder a testing laboratory (one AC lab size 4mtr x 4mtr and 1 non AC lab 4 mtr x 4 mtr.) in the field to carry out all relevant tests. Detail of laboratory equipment as per Annexure-A is to be arranged by the contractor within quoted rate. For conducting day to day one Qualified quality engineer to be deployed.
2.5	All quality standards, tolerances, welding standards & other technical requirements shall be strictly adhered to. The Bidder shall fully apprise himself of the prevailing conditions at the proposed site, climatic conditions including monsoon pattern, soil conditions, local conditions and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may not have been specifically brought out in the specifications.
2.6	<p>The area of work shall be cleared of all vegetation, rubbish and other objectionable matter and materials remove, shall be burnt or otherwise disposed of as directed by the Engineer-in-Charge.</p> <p>No separate payment for these operations shall be made. The cost of all these operations shall be deemed to have been included in the unit rates rendered for the different items under bill of quantities.</p>
2.7	<p>The unit rates shall include all material equipment, fixtures, labour construction plant, temporary works and everything whether of permanent or temporary nature necessary for the completion of job in all respects (excluding cost of reinforcement steel).</p> <p>(Reinforcement Steel shall be supplied by BHEL Free of cost).</p>
2.8	The unit rates for various items of B.O.Q shall include all the stipulations mentioned in technical specifications and nothing extra over B.O.Q rates shall be payable.

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2.9	The bidder should fully apprise himself of the prevailing conditions at the proposed site, climatic conditions including monsoon pattern, local conditions, soil strata and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may have not been specifically brought out in the specifications.
2.10	<p>PROMOTION AND DEVELOPMENT OF MICRO AND SMALL ENTERPRISES</p> <p>For facilitating promotion and development of micro and small enterprises, EIL / HPCL is committed to promote the procurement of supplies / services from MSEs in Orders / contracts awarded by EIL / HPCL. Accordingly, bidders are also encouraged to promote the same by considering MSE sub-suppliers / sub-contractors to the extent possible under the Orders/Contracts awarded on them by EIL / HPCL. After award of work, supplier / contractor shall furnish statement along with copies of orders / FOAs placed by them on their sub-suppliers / sub-contractors who are MSEs, to EIL Project Manager / RCM, as applicable.</p>
3.0	SITE VISIT
3.1	Contractor should visit site and acquire full knowledge & information about site conditions prevailing at site regarding entry to site, safety regulations etc. and surroundings of plant premises together with all the statutory, obligatory, mandatory requirements of various authorities before submission of the bid. In line with the above, site visit confirmation will be required to be submitted by the bidder with the technical bid.
3.1	OPEN SPACE FOR OFFICE & STORAGE
3.1.1	Open spaces for temporary site office (1 no. Porta Cabin Type) may be allocated inside the plant only. Contractor has to make his own arrangements for material storage yard, construction of temporary site office & labour colony including Electricity and water for the labour colony nearby outside the plant.
3.1.2	Construction of necessary stores and storage of materials shall be in contractor's scope. Security of stores & work place shall be in Contractor's scope.
3.1.3	REMOVAL OF TEMPORARY FACILITIES
	When the Work is completed all temporary structures and facilities built by the contractor during progress of work shall be removed from the Site and the area shall be finished as per drawing / restored to its original condition.
3.2	WATER
3.2.1	<p>No water is available inside the plant. Contractor has to bring construction & drinking water required for their work from outside.</p> <p>BHEL shall not be responsible for any inconvenience or delay caused due to any interruption of water supply. Contractor may make standby arrangement for water for which no separate payment shall be made by BHEL.</p>
3.2.2	Contractor will have to arrange for storage of water to meet the day-to-day requirement. Bidder will ensure adequate supply of construction water to meet the requirement.
3.2.3	To reduce the water requirement, vendor may use approve curing compound instead of traditional water curing in concrete & other work involving cement and maintain a joint register as a proof.
3.3	ELECTRICITY
3.3.1	<p>BHEL will not Provide Construction Power. Contractor has to make arrangement of adequate Diesel Generator for which no separate payment shall be made by BHEL.</p> <p>On receipt of construction power from customer, chargeable 415V construction Power may be provided at one point within 100 M from his work place, bidder has to make his own distribution arrangement to draw electricity.</p> <p>BHEL shall not be responsible for any inconvenience or delay caused due to any interruption of power supply / variation in voltage level and no compensation for delay in work can be claimed by the contractor due to such non-supply on the grounds of idle labour, machinery or any other grounds.</p>

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	<p>The bidder will have to procure & install adequate area illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with sufficient DG back-up for area lighting at different working areas for execution of the work & safety of workmen within the quoted rate.</p> <p>The illumination should be such that minimum illumination requirement as specified in specification or any-where for general illumination is maintained.</p>
3.3.2	The contractor should ensure that the work in critical areas is not held up in the event of power breakdown. In the event of breakdown in the electric supply, if the progress of work is hampered, it will be the responsibility of the contractor to step up the progress of work after restoration of electric supply so that overall progress of work is not affected.
3.3.3	The bidder shall have to provide earth leakage circuit breaker at each point wherever human operated electrical drives / T&Ps are deployed.
4.0	TOOLS & PLANTS
4.1	All the tools and plants required for execution of the above work shall have to be provided by the contractor (detailed in Clause no. 32)
5.0	MATERIAL HANDLING & BHEL ISSUED MATERIAL
5.1.1	Reinforcement Steel (TMT bar), earthing MS Steel rod & Structural Steel will be issued free of cost by BHEL for use in the work covered in this contract. shall be issued free of cost by BHEL for use in the work covered in this contract. All other materials required for proper completion of job shall be provided by contractor and quoted rates shall be inclusive of this.
5.1.2	Consignment of steel will be directly issued to the contractor as received by BHEL, on weight basis from its supplier, as per delivery challan of supplier.
5.1.3	Handling of steel will be in vendor's scope for which no separate payment will be given by BHEL.
5.1.4	It would be the responsibility of the contractor to keep in constant contact with BHEL/ site to find out the delivery status, arrival of the consignments and arrange for escort to accompany the truck/ trailer for transportation of above materials by BHEL'S supplier, as necessary. The lorry, truck way bill for the consignment as shall be received by BHEL would be handed over to the contractor immediately for unloading of materials including all arrangement for necessary gate passes etc. All arrangement for necessary gate passes etc. shall be the responsibility of contractor.
5.1.5	Payment of all demurrages that may result due to contractor's fault/ delay would be the responsibility of the contractor. If BHEL have to make payment of demurrage together with freight, the amount so paid as demurrages for the reasons stated above, shall be recovered from the bills of the contractor. The decision of BHEL's engineer in this regard will be final and binding on the contractor. However the contractor has to clear all such charges, if any in this regard and complete the job without waiting for BHEL's decision.
5.1.6	It would be the responsibility of the contractor to sign on the delivery book acknowledgement slip of supplier/ transport authorities etc.
5.1.7	Consignments coming on Sundays and holidays are also required to be handled/ unloaded by the contractor. Since the offices and stores will probably remain closed on such days, it will be the responsibility of the contractor to contact BHEL engineers at their residence and obtain instructions.
5.1.8	Since the consignments are expected to arrive during any time of the day or night, contractor shall have, his workmen round the clock at site as well as other places as required to unload the materials immediately on arrival.
5.1.9	Unloading of materials at the storage yard or at places designated by BHEL, stacking & restacking, shifting & re-shifting, using contractor's own cranes, trailers and other equipment with the valid road permit for their operation, unloading and stacking etc. shall be responsibility of the contractor under this contract. All materials/equipment shall be stacked, stored above ground level by use of concrete or wooden sleepers. No materials shall remain on ground at any time. All concrete sleepers required for stacking the materials shall be arranged by contractor (successful bidder of this package). All other

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	material handling equipment like winches, d-shackles, slings of various sizes, max puller, pulley blocks, jacks, trucks, tailors etc. required for such material handling of steel. shall be arranged by contractor within quoted/accepted rates.
5.1.10	It will be the responsibility of the contractor to submit computerized account of all such consignments of materials received by them, daily to BHEL.
5.1.11	BHEL reserve the right to recover from the contractor any loss arising out of damage/ theft or any other causes of the materials issued to him at any point.
5.1.12	<p>Open land for storage shall have to be arranged by the bidder at their cost.</p> <p>You shall maintain one centralized fenced store cum bar bending yard. Hard surfacing of this yard and all round drain shall be carried out by you at your own cost within the accepted rate.</p> <p>Batching plant area shall be arranged by you and you shall make use of the area for installation and operation of the Batching Plant at your own cost.</p> <p>You shall make complete arrangement of necessary security personnel, to safeguard all such materials in your custody. Materials issued will be used only for construction of permanent work. You shall take care of material issued by BHEL and shall protect the same from theft, damage and weathering.</p> <p>Barbed wire fencing of the steel storage yard, batching plant area, reinforcement bending yard area etc. are to be done by the contractor at his own cost. Contractor shall also remove grass, bushes, trees etc. wherever required off the land provided to him and shall make proper continuous up-keep-ment of the open yard / land by removing grass, bushes trees etc. and same is included under the scope of his work & no extra payment shall be made to the contractor in this regard.</p>
5.1.13	No material shall be issued to the contractor except as those indicated above, i.e. steel unless otherwise expressly provided for in the contract. Contractor will have to make his own arrangement at his own cost for procurement of any other material as required for the works and of such quality as acceptable to BHEL.
5.1.14	The contractor shall maintain proper store account for all the BHEL issued materials and shall give three copies of monthly computerized reconciliation statement of such account to the BHEL.
5.1.15	Contractor shall carry out in complete association with BHEL, material management functions and execution like day to day update of materials, issued to contractor, accounting for surplus/ scrap material returned etc. These functions shall also be carried out through computerised system utilizing suitable software. Contractor shall provide experienced software personnel to associate on dedicated basis for efficient discharge of the same.
5.1.16	The contractor shall solely be responsible for the safety & quality of material after it is handed over and issued to contractor by BHEL.
5.1.17	BHEL issued materials shall not under any circumstances be taken out of the project site unless otherwise permitted by BHEL.
5.1.18	All the necessary lifting tackles, cranes, tools & plants including tractors, trailers, trucks, pulley blocks, jacks, winches, wire ropes etc, of suitable capacities and other equipment incidental to carry out this work shall have to be arranged by the contractor including calibration / fitness certificate from approved agency of BHEL /customer at his cost. BHEL engineer reserves the right to inspect lifting tackles and equipment before allowing their use. Such approval however shall not relieve the responsibility of the contractor to ensure safe handling of equipment taking the precautions to avoid any accident and damage to other equipment and personnel.
5.1.19	No separate rate will be applicable for the above job. The contractor will quote the rate for the items inclusive of all charges for the above job.
5.1.20	Bidder's scope of handling of steel under the scope of this tender includes stacking/ storing of materials over concrete sleepers. Bidder scope shall include provision of concrete sleepers for this purpose and

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	no separate payment against the same will be made by BHEL. After completion of the job bidder shall take back the sleepers. Bidder's quoted rate/ price shall be in consideration to this.
5.2	ISSUE OF MATERIALS
5.2.1	ISSUE OF STEEL
5.2.1.1	The steel shall be issued to the contractor free of cost on the following basis.
5.2.1.1.1	Structural steel (MS plate, angle, channel, ISMB, Stainless steel plate/Liner, chequered plate and EOT crane rails) – Weighment basis (unit – MT).
5.2.1.1.2	Reinforcement steel(TMT) and earthing rod (MS round) – Weighment basis (unit – MT).
5.2.1.2	All the steel (structural steel, reinforcement, earthing MS rod) issued by BHEL shall be properly accounted for. The total quantity of steel required for the work will be calculated from the approved Bar Bending schedule, fabrication drawings, approved laps, chairs and lugs. The measurement for payment as well as for accounting shall be based on the sectional weights as indicated in the following IS specifications. IS: 808-1989 - Beams, channels and angles IS: 1730-1961 - Plates Reinforcements - Fe-500 confirming to IS: 1786. or grade-1 of IS:432 (part-I)
5.2.1.3	In case any such sectional weights are not available in the above documents, the manufacturer recommendation shall be binding.
5.2.1.4	The steel issued to the contractor shall be mainly in standard length and sections as received from the supplier. However, the contractor shall be bound to accept the steel in length as available in the project stores no claims for extra payment because of issue of non-standard length will be entertained.
5.2.2	In case MS flats as required in the fabrication of structures are not available, you shall cut such width out of the available MS plates to make flats at no extra cost till such material is available and procured by BHEL.
5.2.3	The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by contractor from BHEL stores.
5.2.4	Quarterly requirement of steel must be positively submitted by the contractor at the last month of the previous quarter, However, the contractor shall submit to the engineer, a statement indicating estimated quantity of steel required at least two months in advance . In addition, the contractor shall also furnish the estimated requirement of steel during a month by the third week of the previous month indicating his requirement.
5.2.5	Bidders to ensure that no lamination materials are taken over by them from BHEL. Fabrication wastage, if any due to above, shall not be compensated by BHEL
5.2.6	Bidder to note that all fasteners like MS / HT / HSFG bolts / nuts, lock nuts, washers etc. shall be supplied by the contractor as per applicable item of Price Schedule.
5.2.7	Bidder to note that steel required for his enabling job like store / site office etc. shall be arranged at his own cost.
5.3	RETURN OF STEEL MATERIALS
5.3.1	RETURN OF STEEL INCLUDING SCRAP
5.3.1.1	All surplus steel and all wastage materials will be taken back on weighment basis.
5.3.1.2	Surplus, unused and un-tampered steel shall be sorted section-wise and returned separately for a place directed by BHEL/ engineer within the project area. Return of such materials will not be entitled to any handling and incidental charges.
5.3.1.3	All wastage/ scrap (including wastage, unusable scrap) shall be returned to the stores on weighment basis and a receipt obtained for material accounting purposes. Return of such material will not be entitled to any additional cost due to handling and transportation and incidental charge.
5.3.1.4	Scrap for reinforcement steel and structural steel shall be returned separately
5.4	STEEL CONSUMPTION AND WASTAGE
5.4.1	REINFORCEMENT STEEL & EARTHING MS ROUND CONSUMPTION

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5.4.1.1	The theoretical consumption of various diameters of reinforcement and earthing MS round shall be based on approved construction drawing and bar bending schedule. Weight shall be calculated considering the sectional weights as per Indian standards. No extra cost shall be payable to the contractor for any deviation in weights for the different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.		
5.4.1.2	Actual consumption = Issue – Surplus.		
5.4.1.3	Surplus = Un-tampered and unused quantity of steel returned by the contractor to BHEL store along-with relevant documents.		
5.4.1.4	Wastage = Actual consumption – Theoretical consumption.		
5.4.2	REINFORCEMENT STEEL & EARTHING MS ROUND WASTAGE		
5.4.2.1	Allowable wastage – Three Percent (+3%) of the theoretical consumption shall be considered as allowable wastage.		
5.4.2.2	Wastage and scrap shall be as per actual weightment basis.		
5.4.2.3	Sl no	Reinforcement steel & earthing rod 40 mm ms round	Basis of issue & penal recovery
	R-1	Theoretical consumption (without considering wastage and scrap or loss)	Free
	R-2	Wastage limited to plus three percent (+3%) of aforesaid theoretical consumption (R-1) towards allowable wastage.	Free
	R-3	Wastage beyond three percent (+3%) of the theoretical consumption above (R-1).	Penal rate
5.4.3	STRUCTURAL STEEL CONSUMPTION		
5.4.3.1	The theoretical consumption of various sections shall be based on approved drawings. Weights shall be calculated considering the sectional weights as per Indian standard as mentioned in relevant clause. No extra shall be payable to the contractor for any deviation in weights for the two different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.		
5.4.3.2	Actual consumption = Issue – Surplus.		
5.4.3.3	Surplus = Untempered, unused, uncut quantity of steel returned by the contractor to BHEL store.		
5.4.3.4	Wastage = Actual consumption – Theoretical consumption.		
5.4.4	STRUCTURAL STEEL WASTAGE		
5.4.4.1	Allowable wastage – 4 % (four percent) of the theoretical consumption shall be considered. Wastage is further classified as cut pieces and scrap measured as per actual weightment basis. Invisible wastage (loss of materials due to gas cutting, straightening of edges etc) shall be limited to 0.5 % (zero point five percent) of theoretical consumption and shall be considered for reconciliation purposes only. But this invisible wastage shall be considered to be included in allowable wastage (i.e. four percent).		
5.4.4.2	Sl no	Structural steel materials	Basis of issue & penal recovery
	S-1	Theoretical consumption (without considering any wastage, scrap or loss) as per specification & drg.	Free
	S-2	Wastage limited to plus four percent (+4%) of the aforesaid theoretical consumption (S-1) towards allowable wastage.	Free
	S-3	Wastage beyond four percent (4%) of the aforesaid theoretical consumption (S-1).	Penal rate
5.4.4.3	All wastage reinforcement, MS round (for earthing), structural steel shall be returned to BHEL.		
5.5	RECONCILIATION OF BHEL ISSUED MATERIALS		
5.5.1	The contractor shall submit a reconciliation statement of cement and steel issued to him once in two months. The same may be submitted along with each RA bill.		
5.5.2	At the time of submission of bills, the contractor shall properly account for the material issued to him as specified herein to the satisfaction of BHEL certifying that the balance material are available with contractor's custody at site.		

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5.5.3	If it is noticed by BHEL that the wastage is high and calls recovery at the penal rate, then BHEL will proceed for recovery for the excess wastage as per penal recovery rates as specified.	
5.5.4	The approved drawings/ bar bending schedules are to be considered for the purpose of reconciliation of materials.	
5.6	RECOVERY OF MATERIAL	
5.6.1	If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly RA bill at the penal rate stipulated below.	
5.6.2	PENAL RATE OF MATERIALS	
	Item	Penal rate (Rs)
5.6.2.1	Reinforcement steel and earthing rod etc.	65,000/- per MT.
5.6.2.2	Stainless steel plate / Liner	6,00,000/- per MT
5.6.2.3	Structural steel materials	70,000/- per MT.
5.7	PROCUREMENT & HANDLING OF CEMENT	
5.7.1	Acceptance of Cement manufacturer shall be subject to compliance of following	
5.7.1.1	Cement manufacturers having valid BIS certificate and listed in the BIS website as on the date of procurement of cement shall be allowed for supply of cement and contractor shall procure cement from them with prior intimation to Engineer-in-charge.	
5.7.1.2	Tests after receipt of cement at site: Each batch of cement (week wise as mentioned on cement bags) supplied by the contractor after delivery at site shall be subject to the tests and analysis required by the relevant Indian Standard codes. The contractor shall carry out and bear the COST.	
5.7.1.3	The contractor shall construct waterproof cement store (capacity minimum 300 MT) for storing and stacking of cement, CGI / asbestos roofing (slope) with brick masonry wall, PCC flooring. Materials required for the same shall be provided by contractor at his own cost. Cement has to be kept over wooden raised platform. Stacking of cement is to be done as per IS codes with proper illumination and locking arrangements.	
6.0	INSPECTION, TESTING AND INSPECTION CERTIFICATES	
6.1	The engineer, his authorized representative and / or an outside inspection agency acting on behalf of BHEL / owner shall have access at all reasonable times to inspect & examine the materials & workmanship of the works during its manufacture and if part of the works is being manufactured or assembled on other premises or works, the vendor shall obtain permission for the engineer and for their authorized representative to inspect the works where manufactured or assembled. Necessary arrangement for carrying out inspection including supply of labour, IMTEs, area illumination and scaffolding, if required will be vendor's responsibility and same has to be carried out within the quoted price.	
6.2	To facilitate advance planning of inspection in addition to giving inspection notice the vendor shall furnish quarterly inspection program indicating schedule dates of inspection at customer hold point and final inspection stages. Updated quarterly inspection plans shall be made for each 3 consecutive months and to be furnished before beginning of each calendar month.	
6.3	Before any plant / equipment leaves the place of manufacture, BHEL shall be given the option of witnessing inspections & tests for compliance with specifications & related standards. The vendor shall give the engineer / inspector 15 days written notice of any material being ready for testing. Such test shall be to the vendor's account except for the expenses of the inspector. The engineer / inspector, unless the inspection is waived will attend such tests within 15 days of the date on which the equipment is notified as being ready for test / inspection, failing which the vendor may proceed with test which shall be deemed to have been made in the inspector's presence and he shall forthwith forward to the Inspector duly certified copies of test reports.	
6.4	The engineer or inspector shall within 15 days from the date of inspection as defined herein give notice to the vendor of any objection w.r.t. drawing / equipment / workmanship which in his opinion not in accordance with the specification / contract. The vendor shall either make modification as may be	

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	necessary to meet the said objection or explain to the engineer/ inspector giving reasons that no modifications are necessary to comply with the contract.
6.5	When the factory tests have been completed at the vendor's or sub-vendor's works, the engineer or inspector shall issue a certificate to this effect within reasonable time after completion of tests but if the tests are not witnessed by the engineer or Inspector the certificate shall be issued within 15 days of the receipt of vendor's test certificate by the engineer inspector. Completion of these tests or the issue of the certificates shall not bind BHEL to accept the equipment should it on further tests after erection be found not to comply with the contract.
6.6	In all cases where the vendor provides the tests at the premises of the vendor or any sub-vendor, the vendor except where otherwise specified shall provide free of charge such items as labour, materials, electricity, fuel, water, stores, apparatus and instruments as may be reasonably demanded by the engineer/ inspector to carry out effectively such tests on the equipment in accordance with the contract and shall give facilities to the engineer/ inspector to accomplish testing.
6.7	The Engineer-in-Charge/Site-in-Charge and Officers from Central or State Government will have full power and authority to inspect the works at any time wherever in progress, either on the site or at the Contractor's premises/workshops of any person, firm or corporation where work in connection with the contract may be in hand or where the materials are being or are to be supplied, and the Contractor shall afford or procure for the Engineer-in-Charge/Site-in-Charge every facility and assistance to carry out such inspection. The Contractor shall, at all times during the usual working hours and at all other times at which reasonable notice of the intention of the Engineer-in-Charge/Site-in-Charge or his representative to visit the works shall have been given to the Contractor, either himself be present to receive orders and instructions, or have a responsible agent, duly accredited in writing, present for the purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the Contractor himself. The Contractor shall give not less than seven days' notice in writing to the Engineer-in-Charge/Site-in-Charge before covering up or otherwise placing beyond reach of inspection and measurement any work in order that the same may be inspected and measured. In the event of breach of above, the same shall be uncovered at Contractor's expense for carrying out such measurement and/or inspection.
6.8	No material shall be removed and dispatched by the Contractor from the site without the prior approval in writing of the Engineer-in-charge. The contractor is to provide at all times during the progress of the work and the maintenance period proper means of access with ladders, gangways, etc. and the necessary attendance to move and adapt as directed for inspection or measurements of the works by the Engineer-in-Charge/Site-in-Charge.
7.0	INSURANCE
7.1	BHEL shall arrange comprehensive MCE (marine cum erection) Insurance Policy for total project supply & services including balance of plant package covering transit risks & loss, destruction or damage during handling at Site, Storage, civil works ,erection, testing and commissioning up to trial operation completion of unit including theft, sabotage, fire, lightning and other natural calamities.
7.2	Contractor shall report to BHEL in writing any damages to equipment/components on receipt, storing, and during withdrawal of the materials from stores, in transit to site and unloading at place of work and during erection and commissioning till trial operation completion including handing over. The above report shall be as prescribed by BHEL site management. Any consequential loss arising out of non-compliance of this stipulation will be borne by contractor.
7.3	The contractor will take necessary precautions/ due care to protect the material at Project site, while in his custody from any damage/ loss till the same is handed over to BHEL/ customer at Project site. For lodging/ processing of insurance claim the contractor will submit necessary documents. BHEL will reserve the right to recover the loss from the contractor as detailed below in case the damage/loss is due to negligence/ carelessness on the part of the contractor. In case of theft of material under contractor's custody, the same shall be reported to police by the contractor immediately and copy of FIR and subsequently police investigation report shall be submitted to BHEL/ customer for taking up

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	with insurance. However, this will not relieve the contractor of his contractual obligation for the materials in his custody.
7.4	In case the damage/loss/theft of materials are attributable to negligence/failure in discharging the duties and obligations of the contractor, the expenses incurred for repair/replacement of such components in excess of the amount realized from the underwriters, limited to Normal Excess (Deductible Franchise) shall be recovered from the contractor.
7.5	Other conditions of Insurance shall be as per relevant clause of GCC/SCC.
8.0	DEVIATIONS/ CLARIFICATIONS
8.1	Normally no deviation with respect to tender is acceptable to BHEL. However, in case of unavoidable circumstances, the bidder may submit their query for seeking clarifications of BHEL as per modality stipulated in NIT or may submit the same along with his offer as per prescribed schedule/ format without any ambiguity. Any assumptions, presumptions, deviations etc. indicated or implied anywhere by the bidder except those indicated in the deviation schedule/ format will not be recognized and will not form a part of consideration/ offer. In the absence of such filled-up schedule/ format it will be understood and agreed that the bidder's offer is based on strict conformance to the specification and no negotiation would be allowed in this regard. BHEL reserve the right not to recognize any/ all deviations submitted after opening of the bid.
9.0	DEWATERING
9.1	Contractor shall ensure at all times that ground of his work area & approach / access roads are free from accumulation of water, so that the materials are safe and the erection / progress schedule are not affected. No separate claim in this regard shall be admitted by BHEL. No separate payments for dewatering of subsoil, surface water or catchments water, if required, at any time during execution of the work including monsoon period shall be considered by BHEL.
10.0	TIME SCHEDULE/ COMPLETION PERIOD
10.1	The entire work under the scope of work shall be successfully completed in all respect within 7 (Seven) months from date of start of work, as certified by Construction Manager, BHEL. Mobilization at site shall be done within 15 days from date of written intimation from BHEL. The exact date of start of work shall be reckoned based on certificate of Construction Manager, BHEL.
11.0	TERMS OF PAYMENT
11.1	The 'Engineer' will certify regarding the actual work executed in the measurement books and bills, which shall be accepted by the contractor in measurement book.
11.2	The Contractor shall be paid monthly running bill as per chapter – X of SCC and Clause Nos. 2.22 & 2.23 of GCC. The format for billing shall be approved by BHEL before raising invoices.
11.3	The contractor on certification of the engineer at site is entitled for payments of his running bills which shall be subject to any deduction/retention specifically under clauses 2.22 of GCC and chapter- X of SCC.
12.0	MOBILISATION ADVANCE / IBRA- As per GCC
13.0	TAXES, DUTIES ETC
13.1	Price quoted should be inclusive of all applicable Taxes/charges but Excluding GST and BOCW Cess. The Contractor shall pay all other taxes, fees, royalty, commission etc. which may be levied on the

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	<p>contractor in executing the contract. In case BHEL is forced to pay any of such taxes, it shall be recovered from Contactor's bills or otherwise as deemed fit.</p> <p>GST Shall be payable extra as per following :</p>
13.2	Contractor/Vendor has to issue invoice indicating HSN/SAC code, Description, Value, Rate, applicable tax and other particulars in compliance with the provisions of relevant GST Act and Rules made thereunder. With the implementation of e way bill provisions, contractor shall comply with same as applicable.
13.3	Vendor has to submit GST compliant invoice within seven days from the due date of invoice as per GST Law. In case of delay, BHEL reserves the right of denial of GST payment if there occurs any hardship to BHEL in claiming the input thereof. In case of goods, vendor has to provide scan copy of invoice & GR/LR/RR to BHEL before movement of goods starts. Special care should be taken in case of month end transactions.
13.4	<p>GST amount claimed in the invoice shall be released on fulfilment of all the following conditions by the Contractor : -</p> <ol style="list-style-type: none"> Supply of goods and/or services have been received by BHEL. Original Tax Invoice has been submitted to BHEL. Respective invoice has appeared in BHEL's GSTR - 2A for the month corresponding to the month of invoice. Alternatively, BG of appropriate value may be furnished which shall be valid at least one month beyond the due date of confirmation of relevant payment of GST on GSTN portal or sufficient security is available to adjust the financial impact in case of any default by the contractor.
13.5	TDS under GST law as applicable shall be deducted.
13.6	Contractor shall be solely responsible for discharging his GST liability according to the provisions of GST Law and BHEL will not entertain any claim of GST/interest/penalty or any other liability on account of failure of contractor in complying the provisions of GST Law or discharging the GST liability in a manner laid down thereunder
13.7	In case declaration of any invoice is delayed by the vendor in his GST return or any invoice is subsequently amended/altere/deleted on GSTN portal which results in any adverse financial implication on BHEL, the financial impact thereof including interest/penalty shall be recovered from the Contactor's due payment.
13.8	Any denial of input credit to BHEL or arising of any tax liability on BHEL due to non-compliance of GST Law by the Contractor in any manner, will be recovered along with liability on account of interest and penalty (if any) from the payments due to the Contactor.
13.9	The admissibility of GST, taxes and duties referred in this chapter or elsewhere in the contract is limited to direct transactions between BHEL & its Contractor. BHEL is not responsible for any liability that may arise due to any transaction beyond the direct transaction between BHEL & its Contractor.
13.10	<p>Variation in Taxes & Duties:</p> <p>Any upward variation in GST shall be considered for reimbursement provided supply of goods and services are made within schedule date stipulated in the contract or approved extended schedule for the reason solely attributable to BHEL. However downward variation shall be subject to adjustment as per actual GST applicability.</p> <p>In case the Government imposes any new levy/tax on the output service/goods after price bid opening, the same shall be reimbursed by BHEL at actual. The reimbursement under this clause is restricted to</p>

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	<p>the direct transaction between BHEL and its contractor only and within the contractual delivery period only.</p> <p>In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer but before opening of the price Bid, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of price bid. Claim for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.</p>
13.11	<p><u>Modalities of Tax Incidence on BHEL:</u></p> <p>Where GST law permits more than one option or methodology for discharging liability of tax/ levy/ duty; the contractor shall approach BHEL before choosing any option to discharge his tax liability. BHEL shall have the right to direct the contractor to adopt the appropriate option considering the amount of tax liability on BHEL as well as procedural simplicity with regard to assessment of the liability.</p> <p>The option chosen by BHEL shall be binding on the contractor for discharging the obligation of BHEL in respect of the tax liability to the contractor.</p>
13.12	<u>BUILDING & OTHER CONSTRUCTION WORKERS WELFARE CESS:</u>
13.13	In case Building & Other Construction Workers welfare Cess is applicable, the applicable cess will be paid extra at actual against the documentary proof of submission of BOCW to relevant authority.
14.0	IDLE CHARGES
14.1	Not applicable.
15.0	PRICE VARIATION CLAUSE
15.1	The price shall remain firm throughout the contract period including extension period, if any.
16.0	OVER RUN CHARGES / RATE REVISION
16.1	No overrun charges/ rate revision will be admissible/ applicable for this contract.
17.0	PROJECT MANAGEMENT/ CONSTRUCTION MANAGEMENT
17.1	To meet the need of Project Management /Construction management at site, contractor shall provide all relevant services within quoted/ accepted rates:
17.2	The contractor's site office must have facilities of communications like E-mail, and telephone with STD facility within a month from LOI.
17.4	HOUSEKEEPING
17.4.1	Contractor is required to adopt the Concept of "Built Clean" throughout the project execution which shall include cleanliness of the Equipment's/ bulk material during storage, handling and erection at site. Contractor shall also be responsible for the total disposal of construction waste materials (on daily basis inside refinery) and final site clearance including removal of temporary facilities in compliance with local regulations and as per directions of OWNER/ PMC. As regards to left over useable material including bulk material, Contractor shall duly codify the same as per the OWNER's guidelines and return to the OWNER without any extra cost to OWNER.
17.4.2	It is the responsibility of the Package Contractor to maintain general cleanliness and proper housekeeping at work site. Package Contractor shall organize disposal of excavated earth /garbage/ rubbish/scrap, etc. on day to day basis to identified disposal areas/safe areas and forward daily report for the same indicating the details of men and machinery deployed for the purpose.
17.4.3	Wastage and unserviceable scrap generated during dismantling and regular works shall be segregated and dumped in designated locations. Earth and land fill materials shall be dumped outside the refinery and the required fees charged by the local authorities shall be borne by the PACKAGE Contractor. Steel

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	scrap serviceable and non-serviceable shall be segregated and stacked in "HPCL stock yard" within the refinery premises.	
17.4.4	All dismantled piping items, & equipment (after stripping of insulation & cladding) with its internals shall be disposed off at safe area provided by HPCL in their premises which included their APT area.	
17.4.5	All concrete material which is having reinforcement imbedded into it, shall be made free of its steel reinforcement and then disposed off. Steel thus recovered shall be disposed off at HPCL stock yard inside the refinery.	
17.4.6	Metallic scrap to be disposed by contractor as advised by EIC at designated place inside the Refinery/ATP.	
17.4.7	Surplus Earth, Cable sheet, Insulation, Empty painting drums ,packing material, garbage and wooden material to be disposed by Contractor to outside the Refinery.	
17.4.8	All the loose items of instrumentation and electrical items (serviceable items) shall be tagged and packed in boxes and delivered in the covered storage of the Owner. Electrical and instrumentation panels and the transformer shall be transported and stacked in the HPCL Stock yard. For hazardous waste like asbestos, suitable methodology shall be devised and the same shall be disposed of in the area designated by the HPCL. For this, non-pilferage containment by chain link fencing shall be constructed by the PACKAGE Contractor if so required.	
17.5	BARRICADING	
17.5.1	Since the faculties defined in the tender needs to be developed adjacent to the running refinery, Contractor is required to properly barricade the area for ensuring safety during execution. For designing of the barricading for area segregation safety analysis needs to be carried out by the contractor and height of the barricading to be decided by carrying out thorough safety analysis, Results of the safety analysis will be reviewed by OWNER / PMC and height of the barricades shall be decided accordingly. As per the requirement total area is required to be barricaded from minimum three sides, however details shall be firmed up only after safety study as required to be carried out by the contractor during the performance of the contract.	
17.6	ROYALTY	
17.6.1	Unless otherwise specified, the Contractor shall pay all tonnage and other royalties, rents and other payments or compensation (if any) for getting stone, sand, gravel, clay, bricks or other materials required for the works or any temporary works and the price quoted shall be deemed to be inclusive of such payment. The Contract Price shall include the royalty on different applicable items as per the prevailing State Government rates. In case OWNER is able to obtain the exemption of royalty from the State Government, the Contractor shall pass on the same to the OWNER for all the items involving royalty. Any increase in prevailing rates of royalty shall be borne by the Contractor at no extra cost to the OWNER	
17.7	MONSOON WORK	
17.7.1	Contractor shall submit within 15 days of award of work, to the Engineer-in Charge / OWNER, his contingency plan for work during monsoon clearly stating their methodology/ strategy to progress uninterruptedly during monsoon mentioning the deployment of resources viz, numbers, capacity, category of equipment and manpower on a weekly basis for approval. During monsoon and other periods, it shall be the responsibility of the Contractor to keep the construction work site free from water at his own cost by deploying suitable dewatering pumps. The Contractor shall adhere to the Special Conditions. The detailed procedure / precautions to be followed during Monsoon season is explained in Annexure-1 to TCC.	
17.8	PLANNING & MONITORING	
17.8.1	The bidder shall prepare detail construction schedule (L-3) as per completion dates given in this document. This schedule must include all milestone and key activities for each subsystem / components in the areas of engineering (wherever applicable), procurement, manufacture (wherever applicable), excavation / construction / erection. This network must conform to the overall project schedule. The bidder should also ensure monitoring of these activities at least weekly basis to start with and on daily basis whenever required by BHEL.	

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17.8.2	The bidder shall also prepare progress report indicating progress on key activities, management summary for critical activities and list of actions requiring attention of BHEL. This schedule is to be preferably made in PRIMAVERA / MS PROJECTS, so that the same is compatible with BHEL's project management software.
17.9	CONSTRUCTION CAMPS
	<p>The location of work places, camps, areas of storage and installation of works, compression, regulation and communication stations shall be located on levelled land, avoiding areas with non-cohesive soils to avoid erosive processes.</p> <p>Health conditions in the camp shall be controlled in order to prevent contamination of adjacent groundwater or surface water resources. Domestic sewage generated at the construction sites shall be eliminated by two systems of septic/absorption tanks or chemical toilets located on the sites.</p> <p>Solid combustible garbage shall be collected and secured daily, until disposal, to prevent the attraction of livestock, vermins and wild animals. Residue shall be disposed of, along with non-combustible garbage, in a disposal location approved by the Authorities.</p> <p>Upon abandonment, the camp site area shall be cleared of all trailers, piping, cable, insulation, lumber, blockage, metal wastes, etc., and re-graded according to the landscaping concept. These guidelines and procedures for the management of domestic and other waste shall be specified in a plan.</p>
17.10	PROGRESS REPORTING
17.10.1	The bidder shall submit daily, weekly and monthly progress reports for work force, materials reports, consumables (cement / steel / gases / electrodes) report and other reports as per pro-forma considered necessary by BHEL. In case of any failure on contractor's part to comply with this, BHEL may at its discretion, consider to withhold part payment against their RA bills.
17.10.2	The progress report shall indicate the progress achieved against planned with reasons indicating delays, if any, and shall give the remedial actions which the contractor intends to take to make good the slippage or lost time, so that further works again proceed as per the original program and the slippages do not accumulate and effect the overall program.
17.10.3	The daily work force reports shall clearly indicate the work force deployed, category-wise specifying also the activities in which they are engaged.
17.10.4	Weekly progress review meetings will be held at site during which actual progress during the week vis-à-vis scheduled program shall be discussed or actions to be taken for achieving targets. For discussions, the contractor shall present program of subsequent week. The contractor shall constantly update/revise his work program to meet the overall requirement.
17.10.5	Periodic progress reviews on the entire activities of execution in respect of supply and works in scope of bidder will be held once in a month at Kolkata / site. These meetings will be attended by reasonably higher officials of the contractor and will be used as a forum for discussing all areas where progress needs to be speeded up. The contractor shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings.
17.10.6	Successful bidder has to provide for electronic/ computerized storing and re-production / printing / plotting of various data, log sheets, protocols, measurements etc. These may be stored in CD (as per requirement) and handed over to BHEL as per requirement.
17.11	PHOTOGRAPHS
17.11.1	The Contractor shall furnish to the Employer one (1) hard copies (and two (2) soft copies in .jpeg or .pdf format on separate CDs/DVDs) of each photograph taken to show shop assembly of equipment and the monthly stages of equipment installation. Each photograph shall show upon its face, the date, the Contractor's name, and description of the view taken. Photographs shall be taken of each assembly or sub- assembly to indicate the progress of the Work. Additional photographs shall be taken when and where required as directed by Employer and/or the Engineer. Shop photograph shall be not smaller than 120 mm by 150 mm in size.
17.12	SITE ORGANIZATION

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17.12.1	The contractor shall maintain a site organization of adequate strength in respect of manpower, construction machinery and other implements at all time for smooth execution of the contract headed by a competent construction manager for site operations with sufficient level of authority to take site decisions. The vendor will submit organization chart (showing the name of SITE-IN-CHARGE) with individual bio-data indicating various levels of experts to be posted for supervision in the fields of supervision and execution, quality, material management, planning, safety, etc. The organization shall be reinforced from time to time, as required to make up slippage (if any) from the schedule without any commercial implication to BHEL. The organization chart is to be submitted within 10 days from the date from start of work.	
17.12.2	Apart from the qualified and competent Site-in-charge, following (minimum) engineering manpower with power plant construction background to be deployed at site by the successful vendor for their day to day supervision etc.	
17.12.2.1	Qualified safety officers with assistants (exclusive for safety supervision for project jobs).	
17.12.2.2	Engineer & Supervisors for quality inspection.	
17.12.2.3	Site supervising engineer and supervisors for civil works	
17.12.2.5	Quality engineer for Civil Laboratory	
17.12.2.6	Planning Engineer (exclusively for planning)	
17.12.3	Deputation of above man-power shall be jointly decided at site in line with construction schedule.	
17.12.4	Engineer / supervisor for other functions like store & purchase, material management, fin, administration etc. are to be provided as per site requirement and not considered above .	
17.12.5	In the event of non-deputation of engineer/ supervisor by the bidder as per above agreed schedule, BHEL shall reserve the right to deduct Rs. 50000/- per month for engineer, Rs. 40000/- per month for the supervisor / safety officer / safety supervisor from RA bills. Further induction of manpower regarding site supervisor & site engineer will be decided at site as per requirement without any financial implication.	
17.12.6	BHEL reserves the right to reject or approve the list of personnel proposed by the contractor. The persons whose bio-data have been approved by BHEL will have to be posted at site and deviation in this regard will not be permitted unless specific & reasonable justification is made.	
17.12.7	In addition to above, a well experienced qualified engineer to be designated, as 'Project Co-coordinator', shall be deployed by the contractor. Such engineer shall have adequate exposure on the job and shall remain fully involved in all planning activities, guidance etc. to contractor's own team during the complete execution period of contract.	
17.12.8	The contractor should also submit to BHEL for approval a list of T&Ps along with their fitness certificates. The tools & tackles shall not be removed from site without written permission of BHEL.	
17.12.9	The contractor should also submit network programs for the erection of various items. These networks shall show the Customer / BHEL hold points, which have to be cleared by Customer / BHEL, or their authorized representatives before further erection can take place. These programs for the erection would clearly identify responsibilities of the contractor and Customer / BHEL. It is the responsibility of the contractor to get the Networks approved by BHEL within four weeks of the date of finalization of award of work/ placement from start of work.	
17.13	DAMAGE TO PROPERTY	
17.13.1	Contractor shall be responsible for making good to the satisfaction of the Owner any loss of and any damage to all structures and properties belonging to the Owner or being executed or procured by the Owner or of other agencies within the premises of the work of the Owner, if such loss or damage is due to fault and/or the negligence or willful acts or omission of the Contractor, his employees, agents, representatives or sub-contractors.	
17.13.2	The Contractors shall indemnify and keep the Owner harmless of all claims for damage to Owner's property arising under or by reason of this contract.	
18.0	CONSTRUCTION SCHEDULE	

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18.1	Entire work shall be carried out in accordance with the broad construction schedule given below, within the stipulated completion period. Within 15 days from start of work, the contractor shall discuss with BHEL site engineer & furnish detail construction schedule (L-3/ L-4) indicating all milestones on the basis of major activities and get it approved from BHEL engineer. This schedule will undergo review and based on progress vis-à-vis project requirement, contractor shall have to submit revised schedule for approval of BHEL. Major Milestones given below	
	Description	Completion period from date of start of work
18.1.1	1 st Floor Slab at 103.55 m	1.5 months
18.1.2	2 nd Floor Slab at 109.55 m-----M1	3.5 months
18.1.3	3 rd Floor Slab at 113.15 m	4.5 months
18.1.4	4 th Floor Slab at 119.15 m-----M2	06 months
18.1.5	Finishing works/Other Miscellaneous works required for the completion of Civil works comprising of super structure works and architectural works of SWGR cum cellar building (SS94).	07 months
18.2	Contractor shall establish mix design for all concreting from a reputed institution approved by BHEL / Customer.	
18.3	The contractor shall plan his work in such a manner so as to meet the overall project schedule, in consultation with BHEL / Customer engineer.	
18.4	Contractor shall submit daily work program based on construction schedule. Deferment of above schedule is not acceptable. Contractor will adhere to schedule and resource planning to be augmented to ensure completion as per schedule.	
18.5	Periodic progress reviews on the entire activities of execution in respect of supply & works in scope of contractor will be held once in a month at noida / site. These meetings will be attended by reasonably higher officials of the contractor and will be used as a forum for discussing all areas where progress needs to be speeded up. The contractor shall be further responsible for ensuring that suitable steps are taken to meet various targets decided upon such meetings.	
19.0	GUARANTEE / WARRANTY	
19.1	The contractor will be responsible for the quality of workmanship, quality of materials / items and design for which the contractor is responsible.	
19.2	Guarantee period shall be 12 months from the date start of guarantee period as per relevant clause of GCC. Commencement of guarantee period shall be from the date completion of work under the contract as certified by BHEL	
20.0	EMPLOYMENT LIABILITY TOWARDS WORKERS EMPLOYED BY THE CONTRACTOR	
20.1	The Contractor shall be solely and exclusively responsible for engaging or employing persons for the execution of work. All persons engaged by the contractor shall be on Contractor's pay roll and paid by Contractor. All disputes or differences between the Contractor and his / their employees shall be settled by Contractor.	
20.2	Owner has absolutely no liability whatsoever concerning the employees of the Contractor. The Contractor shall indemnify Owner against any loss or damage or liability arising out of or in the course of his / their employing persons or relation with his / their employees. The Contractor shall make regular and full payment of wages and on any complaint by any employee of the Contractor or his sub-contractor regarding non-payment of wages, salaries or other dues, Owner reserves the right to make payments directly to such employees or subcontractor of the Contractor and recover the amount in full from the bills of the Contractor and the contractor shall not claim any compensation or reimbursement thereof. The Contractor shall comply with the Minimum Wages Act applicable to the area of work site with regard to payment of wages to his employees and also to employees of his sub-contractor.	
20.3	The Contractor shall advise in writing or in such appropriate way to all of his employees and employees of sub-contractors and any other person engaged by him that their appointment/employment is not by	

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	the Owner but by the Contractor and that their present appointment is only in connection with the construction contract with Owner and that therefore, such an employment/appointment would not enable or make them eligible for any employment/appointment with the Owner either temporarily or/and permanent basis.
21.0	Not used.
21.1	Not used.
21.2	Not used.
22.0	QUALITY CONTROL & QUALITY ASSURANCE
22.1	Contractor's engineers & supervisors shall be adequately qualified and also inclined to do a quality job. The quality assurance engineer shall co-ordinate all aspects of quality control, inspection, implementation of quality assurance procedures laid down in Quality Plan and technical specification by BHEL. He shall fill up quality assurance log sheets / formats and submit to BHEL for joint inspection and acceptance. The contractor shall fill up, maintain & preserve the quality records in computerized media. BHEL's authorized representative shall be given free access at all time to such quality related records etc. for inspection, review etc.
23.0	QUALITY ASSURANCE PROGRAMME
23.1	The contractor shall arrange for suitable quality assurance programme to control all activities pertaining to the scope of work, as necessary. Such programs shall be outlined by the contractor & shall be finally accepted by BHEL. A quality assurance programme of the contractor shall generally cover the following
23.2	Organization structure and qualification data for key personnel of the contractor for the management and implementation of proposed quality assurance programme
23.3	The procedure for source inspection, incoming raw material inspection, verification of material purchased etc.
23.4	System for maintenance of records.
24.0	GENERAL REQUIREMENTS – QUALITY ASSURANCE
24.1	All materials, components and equipment covered under the specification shall be procured, manufactured, erected, commissioned and tested, as applicable, at all stages as per comprehensive quality assurance program. An indicative program for inspection / test, to be carried out by the contractor, for some of the major items is given in the respective technical specification.
24.2	Field quality plan will detail out the quality practices and procedures etc. to be followed by the contractor's site quality control organization, during various stages of site activities from receipt of material / equipment at site.
24.3	BHEL reserves the right to carry out quality audit and quality surveillance of the systems and procedures of contractor's quality management. Contractor shall provide all necessary assistance to enable BHEL to carry out such audit.
24.4	Quality audit / approval of the results of test & inspection will not prejudice the right of BHEL to reject an equipment service not giving desired performance and shall not in any way limit the liabilities and responsibilities of the contractor in earning satisfactory performances of equipment/ service as per specification.
24.5	Repair / rectification procedure to be adopted to make any job acceptable shall be subject to the approval of BHEL.
24.6	All the latest relevant codes as per technical specification should be available with the contractor at site within 15 days from the date of placement from start of work or otherwise specified by Construction Manager/ Project Manager, BHEL.
24.7	TESTS FOR QUALITY OF WORK
24.7.1	All workmanship shall be of the respective kinds described in the contract documents and in accordance with the instructions of the Engineer-in-Charge / Site-in- Charge and shall be subjected from time to time to such tests at Contractor's cost as the Engineer-in-Charge/Site-in-Charge may direct at the place of manufacture or fabrication or on the site or at all or any such places. The Contractor shall provide

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	assistance, instruments, labour and materials as are normally required for examining, measuring and testing any workmanship as may be selected and required by the Engineer-in-Charge/Site-in-Charge.
24.7.2	All the tests that will be necessary in connection with the execution of the work as decided by the Engineer-in-charge/Site-in-Charge shall be carried out at the contractors cost and expenses.
24.7.3	If any tests are required to be carried out in connection with the work or materials or workmanship to be supplied by the owner, such tests shall be carried out by the Contractor as per instructions of Engineer-in-Charge/Site-in-Charge and expenses for such tests, if any, incurred by the contractor shall be reimbursed by the Owner. The contractor should file his claim with the owner within 15 (fifteen) days of inspection/test and any claim made beyond that period shall lapse and be not payable.
25.0	WORK & SAFETY REGULATIONS
25.1	FIRST AID AND INDUSTRIAL INJURIES
25.1.1	Contractor shall maintain first aid facility for his employees and those of his sub-contractors.
25.1.2	Contractor shall make arrangements for ambulance service and for the treatment of all types of injuries. Names and telephone numbers of those providing such services shall be furnished to Owner prior to start of construction and their name board shall be prominently displayed in Contractor's field office.
25.1.3	All industrial injuries shall be reported promptly to owner and a copy of contractor's report covering each personal injury requiring the attention of a physician shall be furnished to the Owner.
25.2	SAFETY CODE
25.2.1	The Contractor shall at his own expenses arrange for the Safety provisions as may be necessary for the execution of the work or as required by the Engineer-in-Charge in respect of all labours directly or indirectly employed for performance of the works and shall provide all facilities in connections therewith. In case the contractor fails to make arrangements and provide necessary facilities as aforesaid, the Owner shall be entitled to do so and recover the cost thereof from the Contractor.
25.2.2	From the commencement to the completion of the works, the contractor shall take full responsibility for the care thereof and of all the temporary works (defined as meaning all temporary works of every kind required in or for the execution, completion or maintenance of the works). In case damage, loss or injury shall happen to the works or to any part thereof or to temporary works or to any cause whatsoever repair at his (Contractor's) own cost and make good the same so that at the time of completion, the works shall be in good order and condition and in conformity in every respect with the requirement of the contract and Engineer-in-Charge's instructions.
25.2.3	In respect of all labour, directly or indirectly employed in the work for the performance of the Contractor's part of this agreement, the contractor shall at his own expense arrange for all the safety provisions as per relevant Safety Codes of C.P.W.D Bureau of Indian Standards, the Electricity Act/I.E. Rules. The Mines Act and such other Acts as applicable.
25.2.4	The Contractor shall observe and abide by all fire and safety regulations of the Owner. Before starting construction work, the Contractor shall consult with Owner's Safety Engineer or Engineer-in-Charge/Site-in-Charge and must make good to the satisfaction of the Owner any loss or damage due to fire to any portion of the work done or to be done under this agreement or to any of the Owner's existing property.
25.2.5	The Contractor will be fully responsible for complying with all relevant provisions of the Contract Labour Act and shall pay rates of Wages and observe hours of work/conditions of employment according to the rules in force from time to time.
25.2.6	The Contractor will be fully responsible for complying with the provision including documentation and submission of reports on the above to the concerned authorities and shall indemnify the Corporation from any such lapse for which the Government will be taking action against them.
25.2.7	Owner shall on a report having been made by an inspecting Office as defined in the Contract Labour Regulations have the power to deduct from the money due to the Contractor any sum required or estimated to be required for making good the loss suffered by a worker(s) by reasons of non-fulfillment of conditions of contract for the benefit of workers no-payment of wages or of deductions made from his

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	or their wages which are not justified by the terms of contract or non-observance of the said contractor's labour Regulation.
25.3	INSURANCE AND LABOUR
25.3.1	Contractor shall at his own expense obtain and maintain an insurance policy with a Nationalized Insurance Company to the satisfaction of the Owner as provided Hereunder
25.4	EMPLOYEES STATE INSURANCE ACT
25.4.1	The Contractor agrees to and does hereby accept full and exclusive liability for the compliance with all obligations imposed by Employees State Insurance Act, 1948, and the Contractor further agrees to defend indemnify and hold Owner harmless from any liability or penalty which may be imposed by the Central, State or local authority by reason of any asserted violation by Contractor, or sub-contractor of the Employees' State Insurance Act, 1948 and also from all claims, suits or proceedings that may be brought against the Owner arising under, growing out of or by reason of the work provided for by this contract whether brought by employees of the Contractor, by third parties or by Central or State Government authority or any political sub-division thereof.
25.4.2	The Contractor agrees to file with the Employees State Insurance Corporation, the Declaration forms and all forms which may be required in respect of the Contractor's or sub-contractor's employee whose aggregate emuneration is within the specified limit and who are employed in the work provided or those covered by ESI Act under any amendment to the Act from time to time.
25.4.3	The Contractor shall deduct and secure the agreement of the sub-contractor to deduct the employee's contribution as per the first schedule of the Employee's State Insurance Act from wages and affix the employee's contribution cards at wages payment intervals. The Contractor shall remit and secure the agreement of the sub-contractor to remit to the State Bank of India, Employee's State Insurance Corporation Account, the Employee's contribution as required by the Act ii. The Contractor agrees to maintain all records as required under the Act in respect of employees and payments and the Contractor shall secure the agreement of the sub- contractor to maintain such records. Any expenses incurred for the contributions, making contribution or maintaining records shall be to the Contractor's or sub-contractor's account.
25.4.4	The Owner shall retain such sum as may be necessary from the total contract value until the Contractor shall furnish satisfactory proof that all contributions as required by the Employees State Insurance Act, 1948, have been paid.
25.5	WORKMAN'S COMPENSATION AND EMPLOYEE'S LIABILITY INSURANCE
25.5.1	Provide Insurance for all the Contractor's employees engaged in the performance of this contract. If any of the work is sublet, the Contractor shall ensure that the sub- contractor provides workmen's compensation and Employer's Liability Insurance for the latter's employees who are not covered under the Contractor's insurance.
25.6	AUTOMOBILE LIABILITY INSURANCE
25.6.1	Contractor shall take out an Insurance to cover all risks to Owner for each of his vehicles plying on works of this contract and these insurances shall be valid for the total contract period. No extra payment will be made for this insurance. Owner shall not be liable for any damage or loss not made good by the Insurance Company, should such damage or loss result from unauthorised use of the vehicle. The provisions of the Motor Vehicle Act would apply.
25.7	FIRE INSURANCE
25.7.1	Contractor shall within two weeks after award of contract insure the Works, Plant and Equipment and keep them insured until the final completion of the Contract against loss or damage by accident, fire or any other cause with an insurance company to be approved by the Employer/Consultant in the joint names of the Employer and the Contractor (name of the former being placed first in the Policy). Such Policy shall cover the property of the Employer only
25.8	ANY OTHER INSURANCE REQUIRED UNDER LAW OR REGULATION OR BY OWNER

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25.8.1	Contractor shall also provide and maintain any and all other insurance which, may be required under any law or regulations from time to time. He shall also carry and maintain any other insurance which may be required by the Owner.	
25.8.2	The aforesaid insurance policy/policies shall provide that they shall not be cancelled till the Engineer-in-Charge has agreed to their cancellation.	
25.8.3	The Contractor shall satisfy to the Engineer-in-Charge/Site-in-Charge from time to time that he has taken out all insurance policies referred to above and has paid the necessary premium for keeping the policies alive till the expiry of the defects liability period.	
25.8.4	The contractor shall ensure that similar insurance policies are taken out by his sub-contractor (if any) and shall be responsible for any claims or losses to the Owner resulting from their failure to obtain adequate insurance protections in connection thereof. The contractor shall produce or cause to be proceed by his sub-contractor (if any) as the case may be, the relevant policy or policies and premium receipts as and when required by the Engineer-in-Charge/Site-in-Charge.	
	Contractor shall at his own expense cover all the workmen engaged under him under “Pradhan Mantri Surksha Bima Yojana (PMSBY)” and submit proof of the same to HPCL.	
25.9	LABOUR AND LABOUR LAWS	
25.9.1	The contractor shall at his own cost employ persons during the period of contract and the persons so appointed shall not be construed under any circumstances to be in the employment of the Owner.	
25.9.2	All payments shall be made by the contractor to the labour employed by him in accordance with the various rules and regulations stated above. The contractor shall keep the Owner indemnified from any claims whatsoever inclusive of damages/costs or otherwise arising from injuries or alleged injuries to or death of a person employed by the contractor or damages or alleged damages to the property.	
25.9.3	No labour below the age of eighteen years shall be employed on the work. The Contractor shall not pay less than what is provided under the provisions of the contract labour (Regulations and Abolition) Act, 1970 and the rules made thereunder and as may be amended from time to time. He shall pay the required deposit under the Act appropriate to the number of workman to be employed by him or through sub-contractor and get himself registered under the Act. He shall produce the required Certificates to the Owner before commencement of the work. The Owner recognises only the Contractor and not his sub-contractor under the provisions of the Act. The Contractor will have to submit daily a list of his workforce. He will also keep he wage register at the work site or/and produce the same to the Owner, whenever desired. A deposit may be taken by the Owner from the Contractor to be refunded only after the Owner is satisfied that all workmen employed by the Contractor have been fully paid for the period of work in Owner's premises at rates equal to or better than wages provided for under the Minimum Wages Act. The contractor shall be responsible and liable for any complaints that may arise in this regard and the consequences thereto.	
25.9.4	The Contractor will comply with the provisions of the Employee's Provident Fund Act and the Family Pension Act as may be applicable and as amended from time to time.	
25.9.5	The Contractor will comply with the provisions of the payment of Gratuity Act, 1972, as may be applicable and as amended from time to time.	
25.10	IMPLEMENTATION OF APPRENTICES ACT, 1961	
25.10.1	The Contractor shall comply with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued thereunder from time to time. If he fails to do so, his failure will be a breach of the contract and the Engineer-in- Charge may, at his discretion, cancel the contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provision of the Act.	
25.11	MODEL RULES FOR LABOUR WELFARE	
25.11.1	The Contractor shall at his own expenses comply with or cause be complied with Model rules for Labour Welfare as appended to those conditions or rules framed by the Government from time to time for the protection of health and for making sanitary arrangements for worker employed directly or indirectly on the works. In case the contractor fails to make arrangements as aforesaid the Engineer-in-Charge/Site-in-Charge shall be entitled to do so and recover the cost thereof from the contractor.	

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25.12	TRAINING OF APPRENTICES
25.12.1	The CONTRACTOR shall if so required by law, himself engage and/or procure engagement by his subcontractor(s) of such number of apprentices and for such period as may be required in this behalf in accordance with the provisions of the Apprentices Act, 1961 and any other act, rule and/or regulation having the force of law, regulating upon the employment of apprentices, and the CONTRACTOR shall be responsible at his own cost and initiative and without entitlement to any extra compensation or remuneration from the OWNER in this behalf, to fulfill all obligations of the employer under the said Act, including liability for payment to apprentices as required thereunder
25.13	HEALTH, SAFETY AND ENVIRONMENT (HSE) MANAGEMENT / SAFETY NORMS
25.13.1	In addition to the, OISD Guidelines-192, OISD Guideline-207(enclosed as Annexure-XIV), EIL specifications on Health, Safety and Environment (HSE) Management included in Technical specification and OWNER prescribed work permit system and job safety analysis procedure shall be followed before under taking any work inside OWNER's premises.
	Considering the above, the CONTRACTOR shall establish, document and maintain an effective Health, Safety and Environment (HSE) management system.
25.13.2	The Engineer-in Charge is responsible for ensuring that contractor conforms to the safety requirements as set forth in the Contract documents at all times. In the event of contractor violations of the safety requirements, and violations that result in physical injury or fatality, OWNER has the right to deduct from any payment due to contractor.
25.13.3	In the event of violation by the contractor of any stipulation mentioned in the above documents or violation of any statutory provisions related to HSE, EIL shall impose immediate stoppage of work without any time or cost implication to the OWNER, till the contractor takes remedial action to the satisfaction of up to Engineer in charge. The decision for stoppage of work shall be final and binding on the contractor.
25.13.4	The contractor may take suitable Insurance Policy with a view to cover themselves against the above penalties and submit a copy of the said policy to the Engineer-in-charge.
25.13.5	In case of conflict between the requirements of the various specifications and/or the requirements specified in the bidding document including penalties, the more stringent requirement shall be followed.
25.14	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE SUB-CONTRACTORS HPCL-VISAKHAPATNAM, R0 DATED: 31.03.2018 (Attached with tender document) to be strictly followed at site.
26.0	LIQUIDATED DAMAGE / PENALTY
26.1	Intermediate Milestones
26.1.1	In case delay in achieving the Milestone as mentioned in Clause 18.1.2 above, is solely attributable to the contractor, 0.5% per week of executable contract value*, limited to maximum 2% of executable contract value, will be withheld.
26.1.2	In case delay in achieving the Milestone as mentioned in Clause 18.1.4 above, is solely attributable to the contractor, 0.5% per week of executable contract value*, limited to maximum 3% of executable contract value, will be withheld.
26.1.3	Amount already withheld, if any against slippage of clause 18.1.2 above, shall be released only if there is no delay attributable to contractor in achievement of Milestone as mentioned in clause 18.1.4 above.
26.1.4	Amount to be withheld on account of slippage of identified intermediate milestone(s) shall be withheld out of respective payments.
26.1.5	Final deduction towards LD (if applicable), on account of delay attributable to contractor shall be based on final delay analysis on completion / closure of contract. Withheld amount, if any due to slippage of identified intermediate milestone(s) shall be adjusted against LD or released as the case may be.
26.1.6	In case of termination of contract due to any reason attributable to contractor before completion of work, the amount already withheld against slippage of intermediate milestones shall not be released and be converted into recovery.

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Note:-	*Executable Contract value- Value of work for which inputs/fronts were made available to contractor and were scheduled for execution till the date of achievement of that milestone.
26.2	Overall Completion
26.2.1	Apart from the LD specified at clause no 26.1 above and other recoveries specified elsewhere in the tender, If the completion of work is delayed beyond the overall completion period as referred in cl. no. 18.1 above due to reasons attributable to the contractor, they shall pay to BHEL as penalty a sum @ 0.5 % of contract price per week of delay or part thereof subject to a maximum of 10 % of total contract price.
26.2.2	The liability shall not in any case exceed 10% (Ten Percent) of the contract value.
26.3	In case of LD recovery, the applicable GST shall also be recovered from you.
26.4	All other terms & conditions shall be as per GCC.
27.0	PERFORMANCE BOND
27.1	Performance bond is not applicable.
28.0	CERTIFICATE TOWARDS COMPLETION
28.1	The work under the scope of the contractor shall be deemed to have been completed in all respects only when so certified by BHEL / owner. The decision of BHEL in this regard shall be final and binding on the contractor.
29.0	CIVIL LABORATORY
29.1	Most of the civil construction materials like cement, reinforcement bars, aggregates, bricks, structural steel are available locally. The CONTRACTOR shall establish and maintain a civil material testing laboratory with necessary equipment (as per Annexure-A) for carrying on field tests during execution of contracts at no extra cost to BHEL / OWNER. All the test equipment deployed shall have valid test /calibration certificates traceable to international reference standards. Any testing required to be carried out at site as per joint discussion at site and technical specification have to be arranged by you for all the works at your own cost.
30.0	EXTENSION OF TIME FOR COMPLETION
30.1	If the completion of work as detailed in the scope of work gets delayed beyond the contract/ completion period due to reasons not attributable to contractor, the contractor shall make request for an extension of the contract and BHEL at its discretion may extend the contract. However such extension shall not entitle the vendor for price revision or price compensation as this being FIRM price contract.
30.2	Based on review of agreed & jointly signed L-2 / construction schedule (as enumerated in the tender), the balance work at the end of original contract period less the backlog attributable to the contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the contractor is bound to complete the portion of backlog attributable to contractor. Further 'Time extension' or 'Time extensions' at the end of previous extension shall be worked out similarly.
30.3	However if any 'Time extension' is granted to the contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the contractor alone, then it shall be without prejudice to the rights of BHEL to impose penalty / LD for the delays attributable to the contractor, in addition to any other actions BHEL may wish to take at the risk and cost of contractor.
30.4	A joint program shall be drawn for the balance amount of work to be completed during the period of 'Time Extension', along with matching resources to be deployed by the contractor as per specified format. Review of the programme and record of shortfall shall be done.
30.5	During the period of 'Time extension', contractor shall maintain their resources as per mutually agreed program
30.6	At the end of total work completion as certified by BHEL engineer, and upon analysis of the total delay, the portion of time extensions attributable to (i) Contractor, (ii) Force majeure conditions, and (iii) BHEL, shall be worked out and shall be considered to be exhausted in the same order. The total period of time extensions shall be the sum of (i), (ii) and (iii) above and shall be equal to period between the scheduled date of completion and the actual date of completion of contract. LD shall be imposed/ levied for the

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	portion of time extensions attributable solely to contractor after adjusting delay attributable to BHEL & Force majeure and recoverable from the dues payable to the contractor.	
31.0	PAYMENT FOR ADDITIONAL/EXTRA ITEMS FOR WORKS	
31.1	It shall be as per relevant clause of the GCC/SCC	
32.0	TOOLS & PLANTS (TO BE PROVIDED BY CONTRACTOR)	
32.1	Tentative list of T&P to be deployed by contractor for successful completion of work is detailed below. No T&P shall be provided by BHEL. Vendor has to submit the details of T & P to be mobilized at site before actual mobilization and get the approval from BHEL / Customer. Further calibration / fitness certificate to be submitted before actual use at site.	
32.2	It may be noted that the list is not exhaustive and is only for general guidance. The contractor is required to provide all necessary T&P (other than those specified to be provided by BHEL, if any) measuring (calibrated) instruments & handling equipment to maintain work progress for timely completion of total work as per contract. In case of project requirement, some activities may have to pre-pone. In such cases the contractor may have to deploy additional T&P. Quoted rate shall be inclusive of such emerging requirements. However, contractor shall submit deployment plan of all T&P along with tender bid.	
32.3	In the event of any failure on the part of the contractor to deploy T & P to sustain desired work progress, BHEL may at his discretion also terminate the contract on this ground and take out any or whole amount of the contract from the scope of the contractor. In the event of failure of contractor to deploy necessary and sufficient T&P/ IMTEs to maintain work progress, BHEL will be at liberty to arrange the same at the risk & cost of contractor including transportation cost of same from any of BHEL site/ other agency & charges as applicable shall be deducted from contractor's RA bill. Decision of BHEL in this regard will be final & binding on contractor.	
32.4	Following Major T&Ps to be arranged by contractor(A)	
	Major T&P items	
32.4.1	Tower Crane 5/10 T	1 No.
32.4.2	40/45 T crawler crane	APR
32.4.3	Hydraulic Excavator / Poclain	1 No.
32.4.4	Dozer	1 No.
32.4.5	Dumper	2 No.
32.4.6	Vibromax /earth compactor	APR
32.4.7	Jack Hammer with Compressor	APR
32.4.8	18/20 T Tyre mounted crane	APR
32.4.9	2 nos hydra (10 / 12 T capacity) or equivalent	APR
32.4.10	Welding rectifier	APR
32.4.11.1	Stationary automatic batching plant with printing facility (approx. 30 Cum/Hr.) OR RMC	APR
32.4.11.2	Stationary automatic batching plant with printing facility (approx. 15 Cum/Hr.)	APR
32.4.12	Transit mixer (6 M3 capacity)	2 No.
32.4.13	Mobile concrete pump (20 cum/ hr. min capacity)/Boom Placer	1 No.
32.4.14	Self-priming dewatering pump 5 HP (diesel/ electric)	1 No.
32.4.15	Self-priming dewatering pump 3 HP or higher(diesel/ electric)	2 No.
32.4.16	Reinforcement bending machine	1 No.
32.4.17	Reinforcement cutting machine	2 No.
32.4.18	Concrete vibrators with adequate needle (2 Nos. diesel driven + 2 Nos. electric driven)	4 No.
32.4.19	DG set 50KVA	1 No.

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32.4.20	Trailer 20 MT				1 No.
32.4.21	Water Tanker – 3000 Ltr. Capacity				2 nos.
32.4.22	Drinking water tank – 2000 lit.				1 No.
32.4.23	Scaffolding Pipe 2m, 3m, 4m & 6m				APR
32.4.24	Steel Shuttering Material in good working condition				APR
32.4.25	Portable fire extinguishers:				Soda acid – 2 sets. Dry chemical powder – 2 sets CO2 – 2 sets. Water & sand bucket (4 buckets in one stand) – 2 sets. Fire hose with nozzle (50 M length) – 2 sets
<p>32.5.</p> <p>NOTES:</p> <p>1. The above list – (A) is only indicative and these T&Ps may not be required for entire contract period but contractor will ensure that these T & Ps are provided as per the work requirement. T&P Deployment schedule will be finalized at site based on the work fronts and in consultation with BHEL Engineer. Contractor have to mobilize / maintain the T& P as per the schedule notified time to time by BHEL Engineer.</p> <p>2. If any one of T&P mentioned above is not needed for proper execution of scope of work, provided contractor has not utilized BHEL free issued T&P for completing such work, no recovery from contractor shall be applicable.</p> <p>3. Any additional item required in addition to above mentioned T&P for proper execution of scope of work, contractor has to arrange such T&P within quoted rate on the instruction of BHEL in writing in a reasonable period within two weeks from the written instruction from BHEL.</p> <p>4. In case deployment of T&P w.r.t requirement, is delayed or deployed for a shorter period or abnormal down time of T&P or in case T&P w.r.t requirement was not deployed by the contractor as per instruction of BHEL and BHEL had to deploy either its own T&P or from outside, the recovery shall be done from the contractor as under:</p> <p>a. In case BHEL had to deploy its own T&P, hire charges of T&P applicable for outside agencies as per extant guidelines for “Hire Charges on issue of Capital Tools & Plants” shall be recovered.</p> <p>b. In case BHEL had to deploy the T&P from outside, actual hiring cost plus applicable overheads shall be recovered.</p> <p>c. In case the contractor does not deploy or delays deployment or major T&P with reference to schedule specified or T&P deployed is out of service for continuous more than 5 days, BHEL will recover non-refundable penalty per day in the following manner.</p> <p>i) In respect of each 40 MT/ 50MT crane - @ Rs. 5000/- per day</p> <p>ii) In respect of each hydra 12T/ 14T/ 18T - @ Rs. 3000/- per day</p> <p>iii) In respect of each trailer 20MT - @ Rs. 2000/- per day</p> <p>For the daily recovery rate for other T&P/ IMTEs BHEL Engineer decision shall be final and binding on the contractor.</p> <p>5. All the tools and tackles/measuring instruments shall be duly tested/calibrated and valid certificate to that effect should be submitted to BHEL site in-charge before the start of work.</p> <p>6. Other terms and conditions regarding above items please also refer clause for T&P/IMTEs in SCC.</p> <p>7. All the tools and plants required for this scope of work, except the Tools & Plants provided by BHEL, if any are to be arranged by the contractor within the quoted rates. The list is suggestive in nature. Any additional T & P required to meet BHEL commitments/schedule shall be arranged without any extra cost by the contractor.</p> <p>8. If the work related to T & Ps mentioned above list - (A) is completed then, Engineer I / C can release the T & P during contract period / extended period if any. However, written permission shall be taken by contractor from BHEL construction Manager before releasing T&P.</p>					

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32.6 LIST OF IMTEs/MMEs REQUIRED:

32.6.1

SL NO	EQUIPMENT
1	TOTAL STATION
2	AUTO LEVEL AND STAFF
3	COMPRESSION STRENGTH TESTING EQUIPMENT
4	CONSTRUCTION MATERIAL TEST EQUIPMENT
5	CONCRETE CUBE MOULDS (150 X 150 X 150) mm
6	CONCRETE SLUMP CONE
7	COARSE AGGREGATE SIEVES & SAND SIEVER
8	SIEVES AND SIEVE SHAKER
9	AGGREGATE IMPACT TEST MACHINE
10	LE CHATELEIR'S APPROATUS AUTO CLAVE EQUIPMENT
11	LOS ANGELES ABRASION TESTING MACHINE
12	AGGREGATE CRUSHING VALUE APPRATUS
13	THICKNESS GAUGE FOR MEASURING FLAKINESS INDEX
14	ELONGATION GAUGE
15	PYCNOMETER (FOR SPECIFIC GRAVITY OF AGGREGATES)
16	MOTORISED VIBRATION MACHINE FOR CEMENT TESTING
17	PHYSICAL BALANCE FOR LAB WORK
18	RAPID MOISTURE METER
19	VICAT APPARATUS WITH PLUNGERS FOR CEMENT TESTING
20	TOTAL STATION
21	DUMPY LEVEL UP TO 350 MM
22	CORE CUTTER TEST APPARATUS
23	CUBE MOULDS (70MM SIZE)
PROCESS CONTROL ACCESSORIES	
1	HOT AIR OVEN (TEMPERATURE RANGE 50° C TO 300°C)
2	ELECTRONIC BALANCE OF REQUIRED CAPACITY & SIZE
3	PHYSICAL BALANCE OF REQUIRED CAPACITY & SIZE
4	THERMOMETRE (RANGE 0°C TO 150°C)
5	POKER THERMOMETER (CONCRETE ROAD) OF REQUIRED RANGE
6	MEASURING JARS (100ml, 200ml, 500ml & 1000ml)
7	DIGITAL pH METER
8	DIGITAL MICROMETER
9	DIGITAL PAINT THICKNESS METER FOR STEEL
10	SCREW GAUGE (0.1mm – 10mm, Least Count .05)
11	DIGITAL PAINT THICKNESS METER FOR MASONRY / CONCRETE PAINTING

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32.6.2:

1. The above list is only indicative and these IMTEs/MMEs may not be required for entire contract period and will be provided as per need. Contractor will assess actual quantity and period of requirement based on his experience.
2. Other terms and conditions regarding above items please also refer clause for T&P/MMEs.
3. The contractor has to establish / arrange at site the field-testing facilities for testing of civil construction materials and concrete cubes for ensuring the proper quality, grade and strength of the materials used in the construction in line with approved field quality checklist of BHEL/ its client. Contractor has to submit detailed report for testing of all material used etc. All testing shall be done as per IS code specifications/ BHEL's quality plan. If further test is required by the engineer to be carried from outside laboratory, the cost of the same shall be borne by the contractor.
4. All the IMTEs /MMEs required for this scope of work, except the IMTEs / MMEs provided by BHEL, are to be arranged by the contractor within the quoted rates. The list is suggestive in nature. Any additional IMTEs / MMEs required to be arranged by the contractor.

32.6.3 T & P being provided by BHEL free of hire charges on sharing Basis: NOT APPLICABLE

33.0 OTHER TERMS

- 33.1 The Work envisaged in this tender is presently being executed by another agency at HPCL VIZAG site. The party executing the work presently at HPCL VIZAG site shall not be eligible to quote for this tender.
- 33.2 The above TCC shall be read in conjunction with the following documents;
 1. Annexure – 1 : VOLUME-IF-CMLREV-00 (pages 1 to 304),
 2. Annexure – 2 : VOLUME-IF-CMLREV- 00 (pages 1 to 21),
 3. SITE HSE PLAN FOR HPCLVISAKHAPATNAM SITE SUB- CONTRACTORS (pages 1 to 120)
 4. PEDC standard specification 001 to 038, 040A to 040F.
- 33.3 Safety norms to be followed as per clause 25.0 above & Annexure -1. In case of any ambiguity between clauses, most stringent clause to be followed.
- 33.4 All other term & conditions of this specification shall be governed by the pertinent provisions of GCC and other volumes of this tender, as applicable.
- 33.5 **In order to give phillip to Pradhan Mantri Kaushal Vikas Yojna:**
 "The contractor shall, at all stages of work deploy skilled/semi-skilled tradesmen who are qualified and possess certificate in particular trade from CPWD Training Institute/ Industrial Training Institute/ National Institute of Construction Management and Research (NICMAR), National Academy of Construction, CIDC or any similar reputed and recognized Institute managed/ certified by State/ Central Government. The number of such qualified tradesmen shall not be less than 20% of total skilled/ semi-skilled workers required in each trade at any stage of work. The contractor shall submit number of man days required in respect of each trade, its scheduling and the list of qualified tradesmen along with requisite certificate from recognized Institute to Engineer-in-Charge for approval. Notwithstanding such approval, if the tradesmen are found to have inadequate skill to execute the work of respective trade, the contractor shall substitute such tradesmen within two days of written notice from Engineer-in-Charge. Failure on the part of contractor to obtain approval of Engineer-in-Charge or failure to deploy qualified tradesmen will attract a compensation to be paid by contractor at the rate of Rs. 100 per such tradesman per day. Decision of Engineer-in-Charge as to whether particular tradesman possesses requisite skill and amount of compensation in case of default shall be final and binding.

VOLUME-IF-CML- REV-00	TECHNICAL CONDITIONS OF CONTRACT (TCC)	PAGE 27 OF 28
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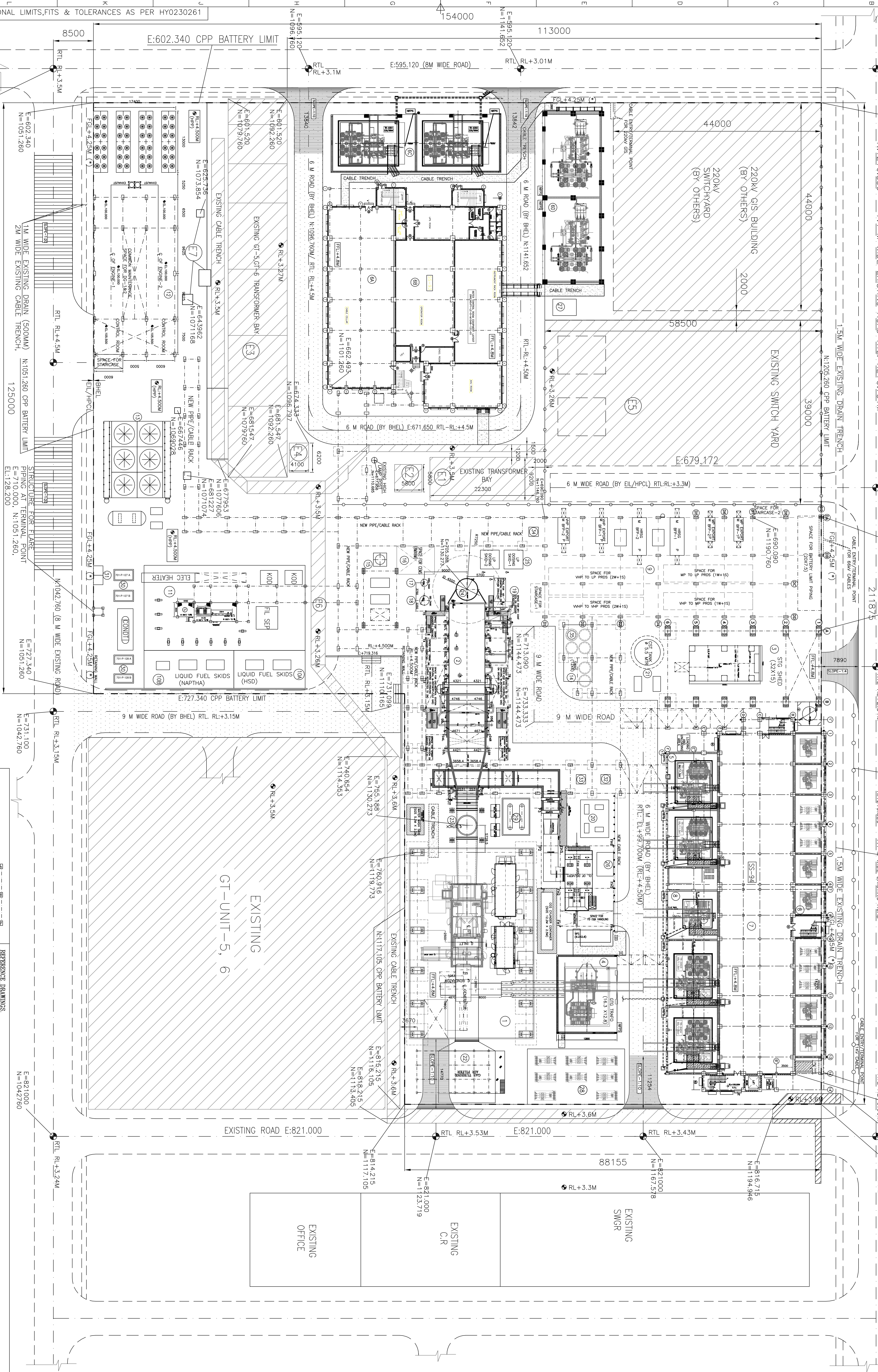
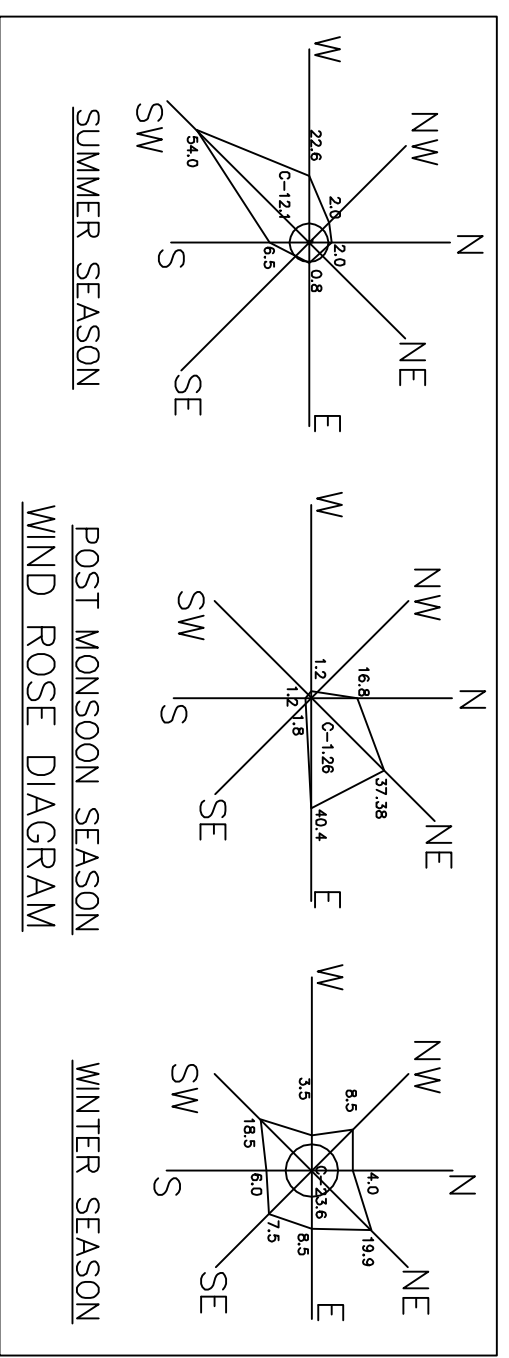
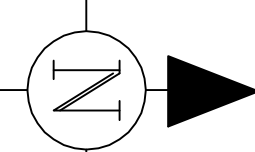
ANNEXURE- A
LIST OF EQUIPMENTS FOR CIVIL SITE LABORATORY

CONCRETE TESTING EQUIPMENT				
SL NO.	NAME OF TEST	NAME OF EQUIPMENT	SIZE OF EQUIPMENT	IS REF.
1	Initial & final setting time, Consistency of cement	Vicat Apparatus with desk pot	Standard	IS 5513
2	Aggregate crushing value test	Crushing value apparatus	Standard	IS 2386
3	Flakiness index	Thickness gauge for measuring flakiness index	Standard	IS 2386
4	Elongation Index	Elongation gauge	Standard	IS 2386
5	Bulk density, voids and bulking apparatus	Measuring cylinders	3, 5, 10 & 15 liters cylinders	
6	Concrete Compressive test	Digital / analog Compressive Testing Machine with 2000 KN capacity.	2000 KN capacity	IS 2505
7	Cement mortar cube casting	Mortar Cube mould	70.6 x 70.6 x 70.6 mm, minimum 10 sets desired.	IS 10086
8	Concrete Cube casting	Concrete Cube Mould	150x150x150mm, minimum 75 sets desired considering major concreting activity.	IS 10086
9	Workability of concrete	Slump cone	Standard, at least 04 nos.	IS 456
10	Specific gravity of aggregates	Pycnometer	Standard, at least 02 nos.	IS 383
11	Cement mortar cube vibrating	Motorised vibration machine for cement testing	Standard	IS 4031
12	Course aggregate Sieve analysis (Concrete & Road Works)	Sieve set	450mm dia. GI Frames Size: 125 mm, 90 mm, 75 mm, 63 mm, 53 mm, 40 mm, 20 mm, 16 mm, 12.5 mm, 10 mm, 4.75 mm, Pan and cover	IS 383
13	Fine aggregate sieve analysis	Sieve set	200 mm dia. Brass sieves; Size 4.75 mm, 2.36 mm, 1.18 mm 600 micron, 300 micron, 150 micron, 75 micron, Pan and cover	IS 383
14	Silt content check	Sand silt content beaker	Standard	

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SL NO.	NAME OF TEST	NAME OF EQUIPMENT	SIZE OF EQUIPMENT	IS REF.
Soil Testing Equipment (Levelling & Grading)				
1	Core Cutter test	core cutter apparatus	Rammer, 6 nos. of std. core cutter mould, dolly	IS 2720
2	Proctor density test	Std. proctor Compaction apparatus	Standard	IS 2720
3	Moisture Content	Rapid moisture meter	Standard, atleast 04 nos.	IS 2720

Process Control Accessories				
1	Hot air oven	Temperature range 50° C to 300° C	600x600x600mm (min. .size)	
2	Electronic balance	3 nos.	600gx0.01g, 10 Kg and 50 kg	
3	Physical balance	5 kg capacity	Weights upto 5 kg	
4	Thermometer 3 Nos.	Temperature range 0° C to 150° C	Digital	
5	Measuring jars	2 nos. set of each size	100ml, 200ml, 500ml & 1000 ml	
6	Gauging trowel	4 nos.	100mm & 200 mm with wooden handle	
7	Spatula	2 nos. each size	100mm & 200 mm with long blade wooden handle	
8	Stainless steel scoop	2 nos. each	2 kg and 5 kg	
9	Vernier calipers	2 nos. each	12" and 6" Sizes	
10	Digital pH meter	01 nos.	.01 mm least count	
11	Digital micrometer	01 nos.	0.01 mm least count	
12	GI tray	02 nos. each	600x450x50mm, 450x300x40mm, 300x250x40mm	
13	Screw Gauge	02 nos.	0.1 mm-10mm, Least count 0.05	

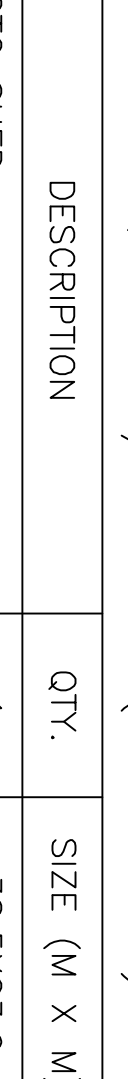
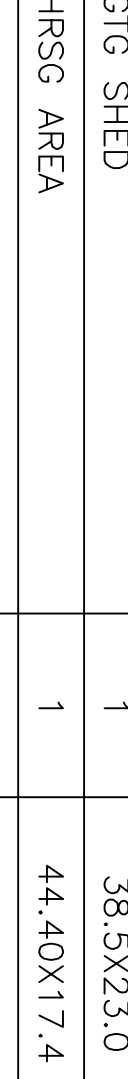
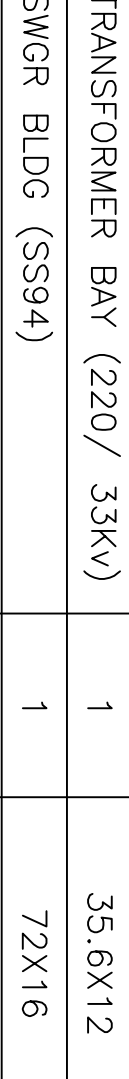
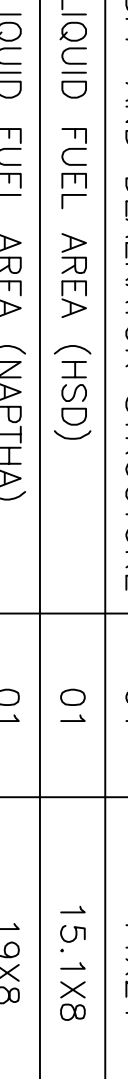
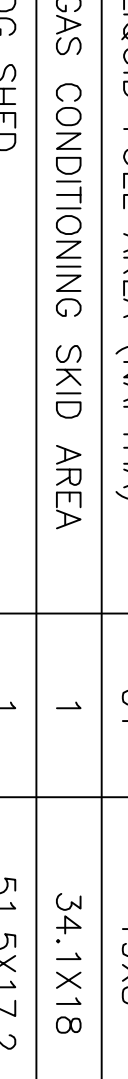
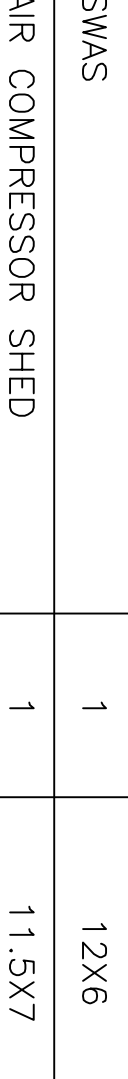
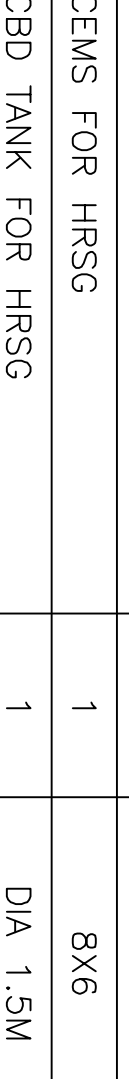
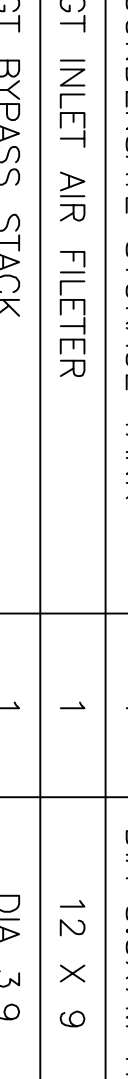
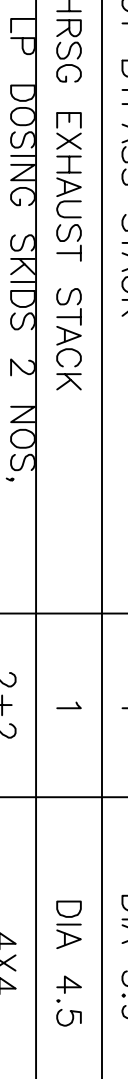
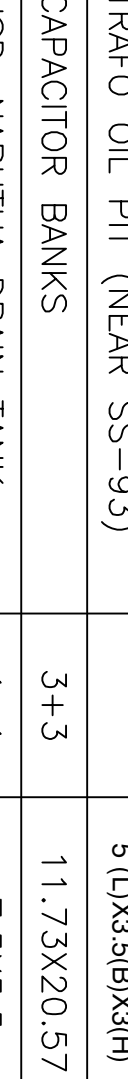
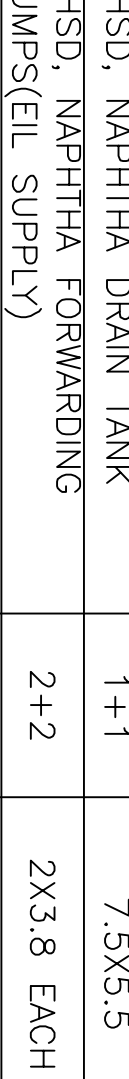
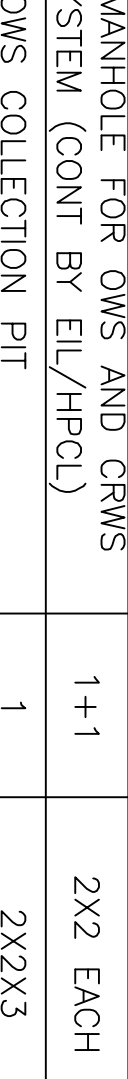
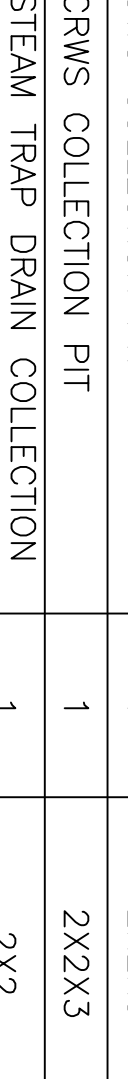
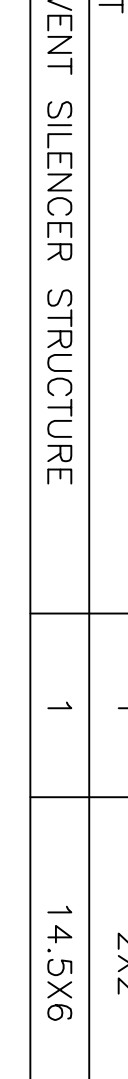
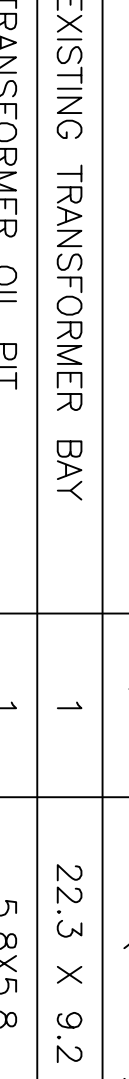
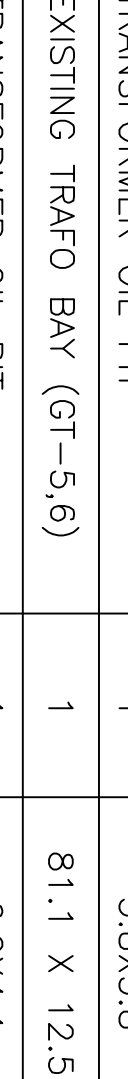
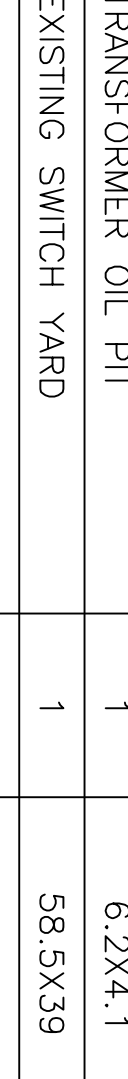
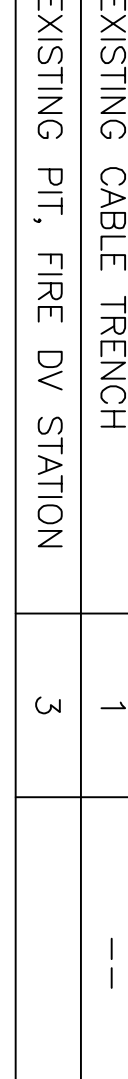
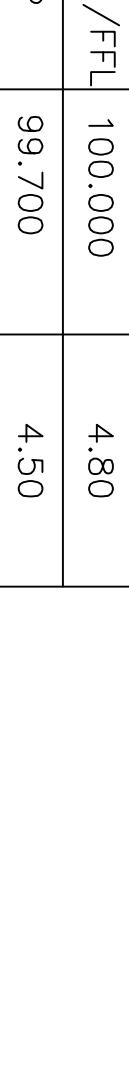
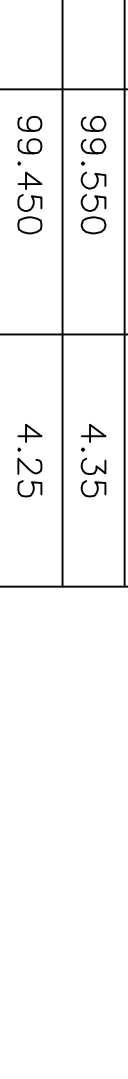
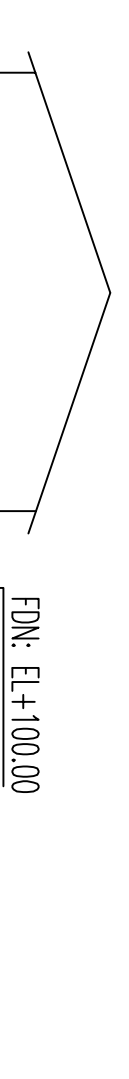
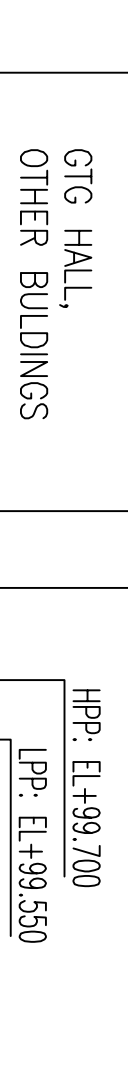
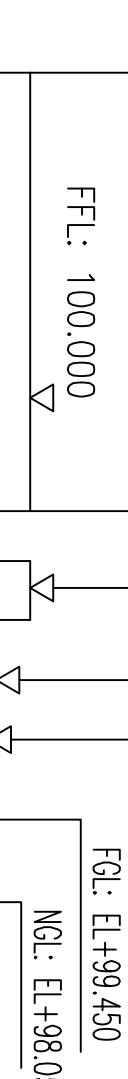
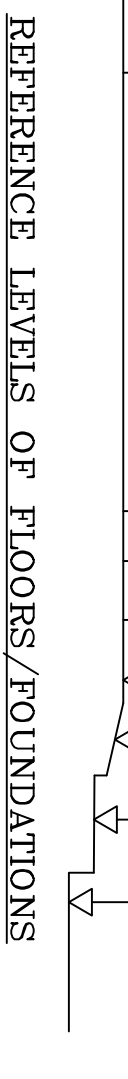
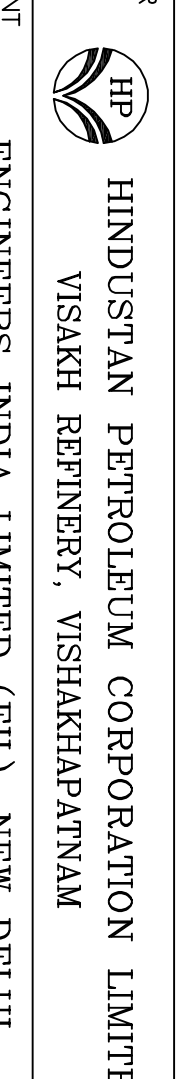


- NOTES:
1. ALL CO-ORDINATES ARE IN METERS
 2. ALL DIMENSIONS ARE IN MM
 3. ALL ROADS INSIDE THE CPP BATTERY LIMIT SHALL BE SUITABLE FOR HYDRA/CRANE MOVEMENT.
 4. EQL/NGI INSIDE CPP PLANT BOUNDARY RL +2.85M
 5. * GRADING TO LEVEL RL+4.25, UP TO EDGE OF CPP MICROGRADING SHALL BE BY BHEL.



REFERENCE DRAWINGS			
NO.	DATE	DESCRIPTION	BY
1	16-06-16	1) CPP LAYOUT & SCOPE FOR CPP	BOI-606-16-43-0010 RY/B
2	16-06-16	2) EQUIPMENT LAYOUT OF GT & GENERATOR	PR-LE-1-M104-2003-01
3	16-06-16	3) GENERAL ARRANGEMENT OF HSG	PR-LE-1-M104-2008-01
4	16-06-16	4) GENERAL ARRANGEMENT OF STG	PR-LE-1-M104-2008-01
5	16-06-16	5) BPP & DEGENERATOR AREA LAYOUT	PR-LE-1-M104-2008-01
6	16-06-16	6) GENERAL AREA LAYOUT	PR-LE-1-M104-2008-01
7	16-06-16	7) HAZARDOUS AREA LAYOUT	PR-LE-1-M104-2008-01
8	16-06-16	8) PIPE RACK GENERAL ARRANGEMENT DRAWING	PR-LE-1-M104-2031-01

ELECTRICAL			
NO.	DATE	DESCRIPTION	BY
1	16-06-16	1) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
2	16-06-16	2) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
3	16-06-16	3) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
4	16-06-16	4) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
5	16-06-16	5) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
6	16-06-16	6) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
7	16-06-16	7) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
8	16-06-16	8) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
9	16-06-16	9) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
10	16-06-16	10) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
11	16-06-16	11) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
12	16-06-16	12) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
13	16-06-16	13) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
14	16-06-16	14) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
15	16-06-16	15) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
16	16-06-16	16) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
17	16-06-16	17) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
18	16-06-16	18) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
19	16-06-16	19) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
20	16-06-16	20) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
21	16-06-16	21) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
22	16-06-16	22) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
23	16-06-16	23) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
24	16-06-16	24) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
25	16-06-16	25) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
26	16-06-16	26) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
27	16-06-16	27) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
28	16-06-16	28) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
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33	16-06-16	33) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
34	16-06-16	34) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01
35	16-06-16	35) SWAY GAS LAYOUT (SS-93)	PR-LE-1-M104-2008-01



PRICE SCHEDULE	
Civil works comprising of super structure works and architectural works of SWGR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.	
PREAMBLE	
SL NO	DESCRIPTION
1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully before filling in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender and other tender sections as applicable and shall have precedence over any contrary statement mentioned any where in this document.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with the tender are only preliminary and for tender purposes and giving some idea of the work involved. The work is to be executed as per drawings & documents, which shall be furnished during execution.
3	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule.
5	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent (both in plus side and minus side) or be deleted altogether. The quoted rates for individual items shall remain firm irrespective of any variations in the individual quantities. No compensation becomes payable in case the variation of the final executed contract value is within the limits of Minus (-) 15% of awarded contract value. All T&C for qty variation shall be as per GCC clause No. 2.14.
6	Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plus fifty percent) limit during execution, an approval to be obtained before execution of further quantity for this item.
7	In case Sealed /Paper Price Bids are opened for finalisation of the tender, for any Item Rate/BOQ based contract, possibility of variation of quantity/ addition/deletion of items can not be ruled out. Under such circumstances, after execution of work, if it is observed that standing as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebate to maintain your standing as L-1. Since this aspect can be assessed at the end of execution, necessary adjustment will be effected at the end of execution in final bill. This condition shall not be applicable where the tender is finalised through Reverse Auction.
8	BHEL reserve the right to rationalize the rates, quoted by L-1 bidder against unit rate items and/ or other optional items with respect to item-wise lowest rates (amongst the participating bidders), before placement of order.
9	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing , clearing of old structures and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same. However, if separate rate for such item is available in the rate schedule, the same shall be considered.
10	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
11	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted as per BHEL approved payment schedule/billing break-up.
12	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
13	No splitting of the job is envisaged. Decision of BHEL in this regard shall be final and binding to the bidders.
14	Bidders are not allowed to alter the Price Schedule format including item description, quantity etc. and the offer is liable for rejection if the bidders submit their prices in Price Schedules modified by them. BHEL reserves the right to reject the offers of bidders who submit offers in Price Formats which are modified/altered by them. Also putting any comments instead of rates/price in the designated column of the rate schedule shall make the offer liable for rejection.
15	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
16	Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rate schedule. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate column, taking unit as mentioned in the quantity column. Rates shall be filled in both figures and words. Amount shall be calculated based upon these rates multiplied by the mentioned quantity for the respective items.
17	Bidder's Total price shall be considered for evaluation unless stated otherwise.

PRICE SCHEDULE			
Civil works comprising of super structure works and architectural works of SWGR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.			
SCHEDULE-1- TOTAL PRICE			
SL NO	DESCRIPTION	TOTAL PRICE (IN INR)	
1.0	TOTAL PRICE FOR TENDER NO. BHEL/NR/SCT/HPCL VIZAG/SS94 CIVIL/1177	(IN FIGURE)	
		(IN WORDS)	
NOTE			
1.0	Bidder shall quote total price for total price of SCH-1- Part only at Sl No. 1 above. All other amounts / rates of each item of works in respective schedules / parts will be derived based on allocated percentages. As such, any uncalled figure/ amount noted at any other place / schedule of Volume-III will not be recknoed & will stand null & void.		
2.0	Bidder to note that total price at Sl No. 1 above shall be considered for evaluation & awarding. As such grand total price should be complete in all respect for the full scope defined and considering all terms and conditions.		
3.0	Bidder's quoted total price of SCH-3 & SCH-4 at Sl. No 1 above, respectively shall be apportioned into amount of various items of works based on allocated percentages against respective item, in respective schedules / parts. As such, bidder shall not indicate / quote any amount / rate in these schedules / parts and any amount / rate quoted against any item shall not be taken into cognizance / account and offer may be liable for rejection.		
4.0	Based on the itemwise percentage allocations, the amount for the individual items of the Bill of Quantity shall be arrived at. The rates of individual items shall be derived from the amount against each items after roundeding off .		
4.0	Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived as above.		
5.0	Based on the itemwise percentage allocations, the amount for the individual items of the Bill of Quantity shall be arrived at. The rates of individual items shall be derived from the amount against each items and its quantity after rounding off to upto 9 decimal places. However, RA bill payment shall be done after rounding off the gross amount to two decimal points. Any adjustment, if required, due to such methodology, will be effected / adjusted in final bill.		
6.0	Any item as per scope of work, if not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.		
7.0	Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer.		
8.0	The quoted price shall be excluding GST including freight on FOR site basis.		
9.0	The quantity of items may vary during execution mainly due to actual requirement etc. The unit rates work out from the overall amount quoted & accepted by BHEL shall be considered and no separate unit rates shall be allowed. Unit rates shall be valid throughout the contract period.		

Civil works comprising of super structure works and architectural works of SWGR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.

SCHEDULE-2 BREAK-UP OF TOTAL PRICE

SL NO	DESCRIPTION	WEIGHTAGE
1.0	TOTAL SCHEDULE 3 - SERVICE	0.98259851
2.0	TOTAL SCHEDULE 4 - SUPPLY	0.01740149
3.0	GRAND TOTAL	1.00000000

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
100	EARTH WORK: Earth work In excavation, backfilling and disposal including all labour, equipments etc complete as per specification, drawing and as directed by engineer- in-charge for the following.			
101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level.			
a	Depth from ground level but not exceeding 2 m	CUM	90	0.00018348
b	Depth exceeding 2 m but not exceeding 4 m	CUM	30	0.00007658
c	Depth exceeding 4 m but not exceeding 6 m	CUM	5	0.00001593
107	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 200 mm thickness using/with selected materials from compulsorily excavated earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual / mechanical means, dressing etc all complete.for the following.			
a	Each layer compacted so as to achieve at least 90% Standard Proctor Density as per IS-2720 (Part-VII)	CUM	800	0.00112386
c	Each layer compacted so as to achieve at least 95% maximum laboratory density as per IS-2720 (Part-VIII)	CUM	50	0.00007795
108	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 200 mm thickness using/with selected materials directly from excavation within a lead upto 1Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following.			
a	Each layer compacted so as to achieve at least 90% Standard Proctor Density as per IS-2720 (Part-VII)	CUM	100	0.00004283
110	Earth work in backfilling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness so as to achieve required compaction with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying boorrowed soil, royalty / seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming / compaction by manual / mechanical means, dressing, finishing to required lines, grades and slopes, tesing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following:	CUM		
a	Each layer compacted so as to achieve at least 90% Standard Proctor Density as per IS-2720 (Part-VII)	CUM	20	0.00013808
c	Each layer compacted so as to achieve at least 95% maximum laboratory density as per IS-2720 (Part-VIII)	CUM	20	0.00015350
111	Supplying and filling sand upto any depth under floors, around foundations, plinths, trenches etc. in layers not exceeding 200 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.	CUM	50	0.00209867
112	Supplying and filling upto any depth below and around foundations etc in layers not exceeding 200mm thickness with Sand-Gravel mix (1:1) and compacted to 85% relative density as per IS:2720 Part-XIV etc. all complete.	CUM	10	0.00037776
200	CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) and equipment for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.			
200-B	Concrete of grade M5 (1 part cement, 5 part sand, 10 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/floors, at any depth below finished floor level etc.	CUM	350	0.01824644
204	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.	CUM	30	0.00221311

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors etc at all level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.			
b	M 30 Grade	CUM	5	0.00040851
c	M 35 Grade	CUM	1200	0.10215474
205-A	Extra over ST No. 205 for providing and carrying out flooring with Vacuum de-watering etc all complete.	SQM	1000	0.01236931
206	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at all level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.			
b	M 30 Grade	CUM	1000	0.08209658
210	Extra over ST Nos. 205 to 206 for conducting UPV test for concrete at all levels including all equipments, making necessary arrangements, staging, submission of report etc. all complete as directed by engineer in charge and as per specification.	CUM	100	0.00059105
212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at all level or thickness, drains etc complete as per following.			
a	01:02:04	CUM	25	0.00186782
213	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajjas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.			
b	M30	CUM	21	0.00238637
c	M35	CUM	15	0.00176083
214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives conforming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required.			
c	M35	CUM	30	0.00294705
215	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.			
a	Plain cement concrete of all grades	CUM	2	0.00003677
b	Reinforced cement concrete of all grades	CUM	2	0.00005438
216	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .	CUDM	15	0.00001156
217	Extra over and above St No 216 for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	15	0.00000103
218	Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.	CUDM	15	0.00004523

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
223	Cutting of existing concrete/ RCC slab (total thickness upto 250mm including floor finish & deck sheet if any) inside control room/ pump house or anywhere inside boundary using power tools of (DD2E of HILTI/ BOSCH make or equivalent) with low noise and dust including cutting reinforcements, removing the rubbish within a lead of 1 km, including making good the broken edges/ surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/ supporting at all level, all complete and as directed by Engineer (measurements shall be taken as per cutting surface area).	SQM	8	0.00024574
224	Providing and laying plain cement concrete (1:2:4) of 25mm min. thickness with 24 SWG chicken wire mesh (paid separately under item no. 1837) shall be laid to slope in panels not exceeding 6 sq. m. area per panel over the roof slab. The joints between panels shall be raked out neatly and filled up with an approved quality sealant compound (paid separately under item no. 616) all complete and as per EIL spec cl.1.5 of B016-606-81-41-SP-7810.	CUM	90	0.00672414
300	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centereing etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.			
301-A	Providing centering & steel shuttering including strutting, propping, bracing etc. and removal of form for beams, base of columns etc. below finished ground floor level as per drawing, specification and instruction of engineer in charge.	SQM	600	0.00655813
302-A	Providing centering & steel shuttering including strutting, propping, bracing etc. and removal of form for above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing for all heights as per specification, drawing and instruction of engineer in charge.	SQM	9400	0.12061961
304	Providing, fixing and removing formwork in block-outs / pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.			
a	Upto 150 mm depth	Each	3	0.00000987
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	14	0.00007963
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	27	0.00028031
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	24	0.00039554
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	2	0.00004794
f	Pockets of depths more than 1500mm and upto 2000 mm depth	Each	2	0.00006342
305	Extra over item no.301 and 302 for curved form work for foundations, footings, beams, walls, trenches, domes, arches etc as per specification.	SQM		
a	Extra for Curve Shuttering for Item No. 301	SQM	15	0.00002339
400	REINFORCEMENT WORK : Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.			
401	Providing, straightening, cutting, bending, placing in position at all level, binding of mild steel reinforcements conforming to grade 1 of IS:432 part 1 in concrete including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc. all complete as per specifications & drawings.	MT	1	0.00041626
402	Transporting, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D conforming to IS:1786 including cost of reinforcement steel, binding wire (18 gauge black soft annealed SWG wire), labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. (Reinforcement Steel shall be supplied by BHEL Free of cost).	MT	350	0.06307406
405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcement bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall be conducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402, 403, 405 as applicable.			
a	12mm Reinforcement bar	Nos.	8	0.00004742
b	16mm Reinforcement bar	Nos.	8	0.00007456

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
c	20mm Reinforcement bar	Nos.	8	0.00010457
406	Providing, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in brickwork including cost of reinforcement and binding wire, labour, scaffolding etc. complete all as per specifications & drawings.	MT	1	0.00041626
500	ROOF TREATMENT WORKS: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge.			
507	Providing and laying wearing course above water proofing membrane in a slope, which consisting of minimum 25mm thick plain cement concrete of grade M15 (1:2:4) with graded aggregate of 12.5mm size cast in panels of maximum size 6 sq.m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon /elastomeric compound etc all complete.	SQM	1100	0.00587971
513	Providing and mixing Crystalline water proofing compound of approved make conforming to IS:2645 in concrete or cement mortar all complete.	KG	410	0.00050574
518	ROOF TREATMENT/ WATERPROOF COATING WITH APP BITUMINOUS MEMBRANE Providing and applying the water proofing membrane a non-woven polyester membrane coated on both side with APP (Atactic polypropylene) modified bitumen over thoroughly cleaned and prepared roof surface as per specification. APP shall have a black finish with a very thin polyethylene foil on both sides It shall be in rolls of 1x10m for continuous laying on large lengths. Making 10x20mm grooves on parapet with PU sealant putty etc all complete as per EIL spec and standard. Above APP bituminous membrane treatment plain cement screed wearing course shall be provided as per item no. 507 and applying approved quality heat resistant paint etc all complete as per EIL specifications cl. no. 1.5 of B016-606-81-41-SP-7810 and EIL std 7-75-0068-rev03.	SQM	1200	0.00886067
600	JOINTS AND FILLERS: Joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.			
601	Supplying & installation of bitumen impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.			
b	20 mm wide joints.	SQM	60	0.00065479
d	50 mm wide joints	SQM	5	0.00012763
609	Providing and sealing of joints with premium grade silicon sealant (Silpruf of GE silicon or approved equivalent) including cleaning of joints, raking out groove, joint filler tapes, application of primer, curing, scaffolding etc. all complete as per manufacturer's recommendation for following size groove:			
c	20mmX25mm	RM	400	0.00294671
610	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)			
d	230 mm wide and 6 mm thick	RM	600	0.00304264
613	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	150	0.00023385
616	Providing and sealing of joints with premium grade silicon sealant (Silpruf of GE silicon or approved equivalent) including cleaning of joints, raking out groove, joint filler tapes, application of primer, curing, scaffolding etc. all complete as per manufacturer's recommendation for 6mm x 6mm V groove size.	RM	300	0.00098166
700	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
701	Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	15	0.01598905
702	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffener plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	0.3	0.00039276
703	Same as above items 701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.			
A	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	1	0.00032289

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
B	Mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc.	MT	0.3	0.00008610
704	Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.			
b	PVC pipes / conduits of all diameters	kg	250	0.00132773
c	UPVC pipes / conduits of all diameters	kg	500	0.00281822
d	Expansion anchor fasteners (galvanised) of HILTI make(HUD-1 Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:			
i	8mm Dia	Nos	25	0.00002056
ii	10mm Dia	Nos	25	0.00002441
iii	12mm Dia	Nos	25	0.00002698
iv	14mm Dia	Nos	12	0.00001706
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:			
i	HST M8	Nos	20	0.00003906
ii	HST M10	Nos	20	0.00005619
iii	HST M12	Nos	20	0.00008840
iv	HST M16	Nos	20	0.00016104
v	HST M20	Nos	20	0.00032619
f	Chemical Expansion fasteners (galvanised)of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod,nuts,washers,chemicals all complete,etc:			
i	HAS-E5.8 M8	Nos	20	0.00009114
ii	HAS-E5.8 M10	Nos	20	0.00010896
iii	HAS-E5.8 M12	Nos	20	0.00013534
iv	HAS-E5.8 M16	Nos	20	0.00021312
v	HAS-E5.8 M20	Nos	10	0.00017475
vi	HAS-E5.8 M24	Nos	10	0.00023625
706	Supply and installation of approved 25mm thick vibration damping resilient pads on/around foundation of vibrating equipment and at other locations all complete.	SQM	2	0.00004941
707	Providing, laying and fixing rails (52kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.	MT	5	0.00562067
800	GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level , drawings and as directed by engineer - in - charge.			
801	Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at maximum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.	SQM	3	0.00003145
802	Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand) using non shrink admixture etc. all Complete.	CUM	3	0.00081154
803	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	1	0.00026517
804	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with ConbextraGP-1 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	3	0.00217534
806	Providing Chemical (epoxy) injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved chemical, admixture, curing etc. all complete . Payment shall be made as per the consumption of chemical grout.	Kg	15	0.00046436

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
900	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
904-A	<p>Providing and fixing single or double pressed steel door shutters Pressed steel door shutter shall be made with 18 gauge steel sheets formed by machine bending in the form of hollow box (overall 40mm thick) welded at meeting of the sheets with pad plate of 3mm thick MS flat all along the perimeter. The shutter shall be braced with channel shaped 35mm wide horizontal stiffeners by folding 16 gauge MS sheets @ 500mm c/c fixed by flush riveting. 3mm thick MS pad plates shall be welded inside at required locations for fixing of hardware. The cavity inside shall be packed with rigid PU foam / phenolic foam or glass wool insulation to fill into the box cavity without gap. For double shutters, an MS angle (25x 45x 3mm thick) shall be welded to one of the shutter providing a minimum 25mm wide rebate for the other shutter at the meeting point. The shutters shall be fixed to the door frame by means of heavy duty MS butt hinges of 150mm size conforming to IS : 1341 @ 500mm c/c maximum. Each door shutter shall have following accessories:</p> <ol style="list-style-type: none"> 1. Spring loaded pressure die cast zinc alloy door stopper. 2. Heavy duty, MS aldop 400mm long for double shutter & 300mm long for single shutter. 3. 12mm dia, 300mm long pressure die cast zinc alloy handles on both sides. 4. 12mm dia, 250mm long MS tower bolt at top and 12 mm dia 150mm long at bottom. 5. 3- way spring loaded locking & latching system. 6. 150mm x 300mm Vision panel with 16 gauge MS beading bent to 'Z' shape & 4mm thick plain glass conforming to IS: 2853. 7. All steel doors shall be provided with heavy duty overhead door closer with adjustable spanners, metal screws etc confirming to IS: 3564 <p>The entire shutter including all accessories, fittings & fixtures etc. shall be painted with 2 or more coats of approved quality synthetic enamel paint of approved shade over a coat of approved quality red oxide zinc chromate primer. Rate shall be inclusive of all material, fittings, finishes, painting etc all complete.</p>	SQM	80	0.00821651
906-A	<p>Providing and fixing anodized extruded aluminium doors (single or double shutter) tubular / box electrostatically powder coated (min. 30 microns) Aluminium sections conforming to IS: 733 and IS: 1285 of 'HINDALCO' or 'JINDAL' or approved equivalent manufacturer with 5.5mm toughened glass conforming to I.S.: 2553 fixed with rubber lining or EPDM gasket and extruded anodised aluminium beading. Extruded aluminium sections used for various applications shall be of appropriate sections, weight etc. have minimum weights as specified in the manufacturer's catalogue and approved by EIL.</p> <p>Aluminium glazed doors shall be provided with cup pivots (of aluminium alloy conforming to IS designation NS-4 of IS 737 and IS designation of A-5-M of IS : 617) riveted to outer and inner frames to permit to swing through an angle of 85 degree.</p> <p>Following hardware shall be provided for the doors:</p> <ol style="list-style-type: none"> 1. Heavy duty & hydraulically operated double or single action adjustable door closer conforming to IS : 6315 2. 250mm and 150mm long, 10mm dia Aluminium tower bolts as per IS: 204 one each for each shutter. 3. Brass body 6 lever mortise lock as per IS : 2209 4. Aluminium door handle for each shutter for each side. <p>Rate shall be inclusive of all material, fittings, finishes etc all complete. (Glazing shall be paid separately)</p>	SQM	450	0.00320711

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
909-A	Providing and fixing Aluminium works for door frames, windows, ventilators, partitions, railing etc made of extruded tubular / box electrostatically powder coated (min. 30 microns) Aluminium sections conforming to IS: 733 and IS: 1285 of 'HINDALCO' or 'JINDAL' or approved equivalent manufacturer with 5.5mm toughened glass conforming to IS:2553 fixed with rubber lining or EPDM gasket and extruded anodised aluminium beading. Extruded aluminium sections used for various applications shall be of appropriate sections, weight etc. have minimum weights as specified in the manufacturer's catalogue and approved by EIL. Fixing shall be including with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC / neoprene felt for bi-metallic protection etc. including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing / panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass / stainless steel screws, providing and fixing hinges / pivots, and making provision for fixing of fitting wherever required including cost of PVC / neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately). Weight of aluminium section only shall be measure.	Kg	2400	0.01710460
910	Providing and fixing of aluminium composite panel (ACP) of following thickness with PVDF or polyester coating for interior partition of approved shade, color etc all complete as per specification.			
b	4mm	SQM	25	0.00122365
912-A	Providing and fixing pressed steel door frame of overall 125mm x 65mm size conforming to IS : 4351 and made of 16 SWG pressed steel sheet bent to required shape using bending machine to form solid / true mitred edges / corners, stiffened with 50 x 5mm thick MS flat spacers welded to the frame facing the wall / column @ 600mm c/c maximum vertical spacing. The frame shall be fixed to the masonry by means of 300 x 25 x 6 mm thick MS hold fast welded to the spacer and grouted with M-15 concrete in minimum 350 x 100 x 100 mm sized hole in the masonry. In case of concrete, the frames shall be fixed by 96mm long, 12 mm dia metallic counter sunk type dash fasteners through the frame & spacers. Provision for hinges, locking arrangement and other hardware shall be provided in the frame by machine cutting of required size cutouts in the frame and welding/ screwing to 3 mm thick MS pad plates already welded over the cutout from behind. The frame shall be thoroughly cleaned of rust, mill scale, dirt, oil etc. and then finished with 2 or more coats of approved quality synthetic enamel paint of approved shade over a priming coat of approved red oxide zinc chromate primer. The hollow frame shall be packed with PCC to fill the cavity without gap etc all complete as per specifications. Rate shall be inclusive of all material, fittings, finishes, painting etc all complete.	Kg	800	0.00149391
913-A	Providing and fixing in position MS rolling shutters shall conform to IS: 6248 and shall be constructed with interlocking lath sections formed out of cold rolled 0.9mm thick, 80mm wide steel strips for shutter width upto 3.5 M, or 1.25mm thick, 80mm wide steel strips for shutter width beyond 3.5 M, jointless MS channel section of 3.15mm thickness for guide, MS girders & bottom rail, shutter suspension stud with pulley & cage, top rolling springs, locking arrangement etc. all complete as per manufacturers approved drawings. The entire shutter including all accessories shall be painted with 2 or more coats of approved quality & shade synthetic enamel paint over a coat of approved quality red oxide zinc chromate primer etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.(partly coiled and lath/full lath). Rate shall be inclusive of all material, fittings, finishes, painting etc all complete.			
a	Mechanically Operated	SQM	30	0.00138872
b	Electrically operated	SQM	90	0.00449612
914	Providing and fixing PVC doors (25 thk double skin) of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	7	0.00027822
915	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.			
	4 mm thick clear sheet glass	SQM	20	0.00035909
	4 mm thick clear float glass	SQM	20	0.00036902
h	5.5 mm thick clear toughened safety glass	SQM	850	0.01922211

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
919-A	FIRE CHECK / FIRE RESISTANT / FIRE RATED WINDOWS (FWs) & PARTITIONS (FPs) FWs & FPs shall be fixed, fully glazed with steel frame and shall be of proprietary design and construction. Materials, sizes, dimensions and profiles of various components shall be in accordance with prototype test report. Overall dimension of FWs & FPs shall not exceed the overall size as indicated in test certificate or report. A. Fire Rating: Unless otherwise specified, The complete assembly of Doors shall be of 120 minutes fire rating for stability and integrity tested in accordance with either BS:476, Part-22 and IS: 3614, Part-2 or BS EN/ EN 1364-1. B. Frame: Window & Partition frame shall be fabricated with minimum 1.6mm thick galvanized steel sheet pressed to requisite profile & size with Insulation across the frame and in the hollow space of frames as indicated in the test certificate or report. C. Glass Panels in Windows & Partitions: The glass panes shall be held in position with glazing bead, glazing tape, Calcium Silicate blocks etc. in accordance with prototype test certificate or test report. Size of glass panel shall not exceed the dimensions indicated in the test certificate or report. Each Glass shall carry a non-removable marking with the name of the product & the manufacturer inscribed on it. D. Finishing: The door & shutter frame, other metallic components shall be finished with powder coating (70 micron) in desired colour. Rate shall be inclusive of all material, fittings, finishes, painting etc all complete.	SQM	20	0.00455540
923	FIRE & SMOKE CHECK GLAZED DOOR The doors shall be fully glazed type with required glass, Door & Shutter frame (stiles and rails) and Hardware. A. Fire Rating: Unless otherwise specified, The complete assembly of Doors shall be of 120 minutes fire rating for stability and integrity tested in accordance with either BS:476, Part-22 and IS: 3614, Part-2 or BS EN / EN 1634-1. B. Door Frame & Shutter frame (stiles & rails): Door & shutter frame shall be fabricated with minimum 1.6mm thick galvanized steel sheet pressed to requisite profile & size with Insulation across the door frame (both jambs and the head) and in the hollow space of door and shutter frames as indicated in the test certificate or report. They shall be provided with stiffeners for hardware/ lock mounting and other accessories. C. Glass Panels in shutter: The glass panes shall be held in position with glazing bead, glazing tape, Calcium Silicate blocks etc. in accordance with prototype test certificate or test report. Size of glass panels shall not exceed the dimensions indicated in the test certificate / report. Each Glass shall carry a non-removable marking with the name of the product & the manufacturer inscribed on it. D. Finishing: The door & shutter frame, other metallic components shall be finished with powder coating (70 micron) in desired colour. Hardware & Vision Panel for FDs: FDs of all type shall be provided with Hardware and vision panel (wherever applicable). Hardware shall be same as tested and indicated in the test certificate / report or UL listed. Vision panels shall be of dimensions as indicated in the test certificate or report. Each FD shall be provided with following Hardware as a minimum. Rate shall be inclusive of all material, fittings, finishes, painting etc all complete.	SQM	30	0.00683310
1000	BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.			
1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.			
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	40	0.00392254
1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.			
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	1050	0.11933643
1003	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 6 mm diameter MS bars (MS bar shall be paid separately) at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification.			

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	SQM	60	0.00085112
1005	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	15	0.00030067
1006	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar of 1:6. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (paid separately under item no. 1837)	CUM		
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	20	0.00204488
1008	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.	CUM	8	0.00019202
1009	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	18	0.00003577
1010	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar 1:6, painting, finishing to match with existing finishing, scaffolding/supporting at all level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	21	0.00027055
1011	Providing and filling brick bats in soak pits all complete.	CUM	4	0.00006962
1100	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.			
1101	Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.			
a	40mm thick	SQM	230	0.00109936
1200	PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge.			
1201-A	Providing 18mm thick plaster in two layers outside the building / boundary wall in cement mortar 1:4 on walls with approved acrylic waterproof compound @ 1 Kg. per 50 Kg. of cement finished to a smooth finish including providing 3mm x 3mm size grooves at junctions of two dissimilar materials all complete	SQM	3340	0.01407634
1202-A	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:4 on walls finished to a smooth finish as per specification all complete.	SQM	3820	0.01073286
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	3200	0.00767514
1207	Forming groove of uniform size from 12mm X 12mm upto 25mm X 15mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battens, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	500	0.00023128
1300	FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
1303	Providing and applying two or more coats of oil bound destemper as per IS:428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	3634	0.00411534
1305-A	Providing and applying two or more coats of plastic emulsion paint as per IS:5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	2200	0.00482437
1307-A	Providing and applying two coats of chemical resistant Epoxy coating (minimum 125 micron thickness per coat) with suitable pigments of approved shade as per specification and direction of Engineer on floors and walls up to 2.5m height. The epoxy paint shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 250 micron thickness over epoxy primer.	SQM	240	0.00117594

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1313-A	Providing and applying acrylic based textured wall coating ('Heritage' / 'Spectrum' or approved equivalent) consisting of quartz and silica aggregate chips of 0.5 mm to 2.5 mm size, inorganic pigment and other additives altogether in a single pack mix, applied on cured and dried plaster surface with a dry film thickness of minimum 2 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification / drawing / approval of engineer in charge.	SQM	50	0.00030007
1316	Providing and applying 2mm thick plaster of paris punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	2205	0.00297675
1319	Providing and applying two or more coats of Acrylic based weather coat paint of approved brand and manufacture and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant and extremely durable with color fastness as per specification.	SQM	3550	0.00712794
1322	Providing and laying Granite Stone cladding, dadoing and skirting of pre-polished (mirror-polish), hard, sound, dense, homogenous in texture, free from cracks, decay, weathering and flakes minimum 18-19mm thickness of selected premium quality (grade- I) and texture/ shade of owner's choice. Polished Granite cladding shall be with 6mm thick projection from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete. including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.	SQM	50	0.00220403
1400	FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ / contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
1406-A	Providing and laying polished Stone Flooring 25mm thk for flooring and 18mm thk for skirting/ dado/ riser. It shall be laid in minimum 40mm overall thickness over sub base (as per structural drawings/ specifications). The Kota Stone slabs shall be of selected quality and shade, hard, sound, dense, homogenous in texture, free from cracks, decay, weathering and flakes. These shall be machine cut to the requisite size and thickness and chisel dressed. Skirting shall normally be 125mm high unless specified otherwise. For steps, joints in Kota stone shall be permitted only when width / length is more than 0.6 / 2 metre. For flooring minimum size of Kota stone slab shall be 450mm x 450mm and shall be of uniform size. Preparation of base shall include making it rough, cleaning thoroughly and applying neat cement slurry @ 2.75 kg of cement per Sq.M. of area to receive the mortar. Cement mortar shall be 15mm thick 1:6 (1 cement: 6 Coarse sand by volume) for flooring and 12mm thick 1:6 (1 cement: 6 Coarse sand by volume) for skirting. The mortar shall be laid for fixing one slab at a time. The slab shall be washed clean before laying. It shall be laid over cement mortar bedding on top, pressed, tapped gently to bring it in level. It shall be then lifted and laid aside. Top surface of the mortar then shall be corrected by adding fresh mortar at hollows and depressions. The mortar then shall be allowed to harden and cement slurry of honey like consistency @ 4.4.kg of cement per Sq. M shall be spread over the mortar. The edges of the slabs shall be buttered with white cement (with necessary pigment) grout to match the shade of the slabs. The slabs shall then be gently placed in position and tapped with wooden mallets till it is properly bedded in level. The joints shall be as fine as possible. Surplus cement on the surface of the slab shall be removed. The slabs in flooring shall continue for not less than 10 mm under the plaster / skirting. The finished surface shall be true to levels and slopes as instructed by the Engineer-in-Charge. All complete as per EIL spec cl. 1.2.6 of B016-606-81-41-SP-7810.			
b	25mm thick stone in flooring	SQM	120	0.00265615
c	18mm thick stone in skirting and dado upto specific height	SQM	12	0.00024321

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1412-A	Providing and laying Granite Stone slab of pre-polished (mirror-polish), hard, sound, dense, homogenous in texture, free from cracks, decay, weathering and flakes minimum 18-19mm thickness of selected premium quality (grade- I) and texture/ shade of owner's choice. Granite Stone Flooring shall be laid in minimum 40mm overall thickness over sub base (as per structural drawings/ specifications). Preparation of base shall include making it rough, cleaning thoroughly and applying neat cement slurry @ 2.75 kg of cement per Sq. Mtr. of area to receive the mortar. It shall be laid over cement mortar(20mm thick 1:6 , 1 cement: 6 Coarse sand by volume) bedding, pressed, tapped gently to bring it in level. It shall be then lifted and laid aside. Top surface of the mortar then shall be corrected by adding fresh mortar at hollows and depressions. The mortar then shall be allowed to harden and cement slurry of honey like consistency @ 4.4.kg of cement per square metre shall be spread over the mortar. The edges of the slabs shall be buttered with white cement with or without pigment grout to match the shade of the slabs. The slabs shall then be gently placed in position and tapped with wooden mallets till it is properly bedded in level. The joints shall be as fine as possible. Surplus cement on the surface of the slab shall be removed. The slabs in flooring shall continue for not less than 10 mm under the plaster/skirting. Unevenness at meeting edge of slabs shall be grinded and finished. The finished surface shall be true to levels and slopes as instructed by the Engineer-in-Charge and EIL specification cl.no. 1.2.7 of B016-606-81-41-SP-7810.			
a	Granite stone in flooring	SQM	150	0.00716461
b	Granite stone flooring in staircase anti slip grooves	SQM	135	0.00673493
c	Granite stone in skirting, riser and dado upto specific height	SQM	27	0.00140481
1416	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 from reputed / approved manufacturer (Vitrified tiles shall conform to EN 176), complete including underbed of cement mortar 1:3 minimum 20mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following			
b	10mm thick tiles In flooring	SQM	1100	0.02252002
d	10mm thick tiles In skirting and dado upto specific height	SQM	50	0.00100394
1423	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles conforming to IS:4457 in flooring/Dado bedded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.			
a	20mm thick	SQM	50	0.00112643
1432	Heavy duty Cement concrete flooring shall be laid in overall 50mm thickness over sub base (as per structural drawings/ specifications); shall generally conform to IS:5491 in workmanship. The flooring shall be laid in panels and shall consist of (a) Base Course (Under layer): 35mm thick of cement concrete (1 cement: 1.5 coarse sand: 3.5 stone aggregates of 10mm to 6mm size by volume) laid over sub base in panels (each panel not exceeding 1 Sq. Mtr. in area) in desired shape and pattern. The panels shall be bound by 3mm x 40mm PVC strips panel dividers; fixed in position with their top at proper level maintaining the required levels, slopes, linearity etc. as required. Base course shall be laid in alternate panels. Before laying the base course, neat cement slurry @ 2.75Kg. of cement per Sq. Mtr. of area shall be applied (brushed) over the prepared sub base surface. The borders of the panels shall have mitred joints at the corners of the room and intermediate joints shall be in straight line with panel joints. Cement concrete shall be placed in position and beaten with trowel and finished smooth. Beating shall cease as soon as surface is found covered with cream of mortar. Necessary slope shall be provided. (b) Wearing Top layer/ Finishing layer: shall be of cement, hardener and stone aggregate mix of 15mm thickness laid over the base course. Unless otherwise mentioned, one part of approved quality hardener and four parts of cement by weight shall be mixed dry. This dry mixture shall be mixed with stone grit of 6mm and down size in the ratio of 1 hardener and cement mixture : 2 stone grit by volume. Just enough water shall then be added to the mix. All complete as per EIL spec cl. 1.2.3 of B016-06-81-41-SP-7810.	SQM	3450	0.03262620
	FALSE FLOORING: False flooring including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge.			

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1434	FALSE (RAISED ACCESS) FLOORING False floor system shall consist of modular, removable, filled with cementitious compound, welded steel panels supported on all four edges by structural steel members bolted onto adjustable height pedestal assemblies forming a modular grid pattern. It is mandatory that all components of the false flooring system are sourced from same manufacturer. False floor understructure shall be installed to support the panels and shall be suitable to achieve a minimum finished cavity height of 600-1000mm from the existing floor level. The system shall ensure speedy assembly and removal for relocation and maintenance. The system shall also ensure easy adjustment of leveling (± 25 mm) and accurate alignment of panels in the vertical direction. False floor understructure shall consist of Base plate, pedestals, pedestal head assembly, stringers and necessary fittings, fixtures and accessories. All complete as per EIL specifications cl. no. 1.13.2 of B016-606-81-41-SP-7810 and EIL standard no. 7-75-0049.	SQM	285	0.02479396
1500	ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ / contract specification), equipment, transportation, handling, scaffolding, lops, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
1513-A	Fixing under deck Polyisocyanurate foam (PIR) insulation. The insulation slabs shall be covered on one side with glass fibre tissue/ Aluminium foil having 50mm overlap. First, holes in R.C.C. slab / beam shall be drilled and nylon rawl plugs of size 8mm x 25mm shall be inserted (5 nos. for each slab One each at 4 corners and one at center). Providing and applying a coat of bituminous primer @ 0.5 Litres/ Sq M shall be applied to bare R.C.C. surface. After the primer has dried, cold adhesive CPRX shall be applied on R.C.C. surface and to the two surface of each PIR panel and shall be pressed in position. The PIR panels shall be secured in position with the help of G.I. screws (No. 8 x 75mm long) fixed into rawl plugs and G.I washers. Facing side of the panels shall be the one covered with fibre tissue / Aluminium foil. The overlaps shall be covered with approved quality sealing compound (MAS-94 or equivalent). Chicken wire mesh 24G x 19mm (paid separately under item no. 1837) shall then be fixed to G.I screws and tightened with lacing wire. All complete as per EIL spec. cl. no. 1.13.3 of B016-606-81-41-SP-7810.	SQM	820	0.00310466
1600	FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ / contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge.			
1602	Fixing and laying light weight mineral fiber tile false ceiling of minimum thickness 15 mm and exposed surface semi-perforated with depth of perforation as 4 mm and humid resistance of 95% RH and fire performance of class 0/1 as per BS 476 with metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification including 50mm thick mineral wool insulation (density 48 kg/cum) as per IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 1.2m) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc. The size of tiles shall be 600 X 600 mm or 600 X 1200 mm. Required MS channel shall be measured & paid extra under respective item unit rate.	SQM	180	0.00101147
1605A	TRAY TYPE ALUMINUM FALSE CEILING: Fixing and laying of standard product of approved Manufacturer and shall conform to following and approved Manufacturer's specification. The system shall be installed in accordance with Manufacturer's recommendations. A. Ceiling Panels: Ceiling panels shall be minimum 0.7mm thick and of aluminium alloy AA 3105 / 3005 / 3003 / 5052 (as per ASTM 209M). Finishing of the panels shall be as specified. The panels shall be square edged, perforated or non-perforated and of following sizes as per drawings. a) 254 / 305mm x 1264mm, and b) 600mm x 600mm B. Suspension System: The suspension system shall be in accordance with approved Manufacturer's standard specification consisting of main runner profiles, hanger, perimeter profile etc. The system also includes providing perimeter angles and slit openings for fixing supply / return air grill, lighting fixtures, AC diffusers etc. All complete as per EIL standard no. 7-75-0043 and EIL specifications cl.no. 1.13.1 of B016-606-81-41-SP-7810.	SQM	180	0.00111632

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1606	Fixing 12mm thick Gypsum board in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete as per architectural design and detail. Metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per IS:277) and nominal size of T-section shall be 24 mm x 38 mm or 24 mm x 25 mm cross runners. 24 mm wide exposed flange surface shall be permanently color coated. Suspension system shall be as per manufacturer's specification. Movement platform of structural steel shall be provided if required for the movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Structural steel works for platform for movement is separately payable under relevant items of BOQ)	SQM	570	0.00223624
1700	RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc as per specification, drawings and as directed by engineer - in - charge.			
1701	Providing and fixing HCl down take pipes of 100 mm dia. with water tight lead joint, fixing clamps etc. all complete.	RM	25	0.00042188
1702	Providing and fixing HCl down take pipes of 150 mm dia with water tight lead joint etc. all complete.	RM	50	0.00140739
1705	Providing and fixing UPVC down take pipes of 110 mm diameter- Class 3 as per IS:4985 all complete.	RM	25	0.00015847
1706	Providing and fixing UPVC down take pipes of 160 mm diameter- Class 3 as per IS:4985 all complete.	RM	510	0.00456962
1800	MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ / contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.			
1801	Providing and Filling in trenches, plinths, area paving and other underground structures, below foundations with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 230 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	15	0.00019556
1802	Supply and laying approved quality Stone aggregate 40 mm size in transformer yards.	CUM	100	0.00232824
1804	Providing and fixing weep holes in Retaining wall, drains, etc consisting of 100 mm dia HDPE pipe sleeves with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening all complete.	EACH	15	0.00003469
1805	Providing and mixing approved Bipolar Concrete penetrating Corrosion inhibiting admixture phenolic base (krishna conchem or equivalent) in concrete as per detail specification of manufacturer etc. all complete. Payment shall be made per cum of concrete.	CUM	5500	0.02610061
1807	Anti termite chemical treatment of soil with Chlorpyrifos/Lindane E.C. 20% with 1% concentration conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment).	SQM	820	0.00164364
1808	Laying of earthing mats / rods including risers, transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. (Excavation & Back filling shall be paid separately under respective item of earth work. Earthing mats / rods shall be supplied by BHEL free of cost)	MT	22	0.00307893
1809	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items & Earthing strips and electrodes will be supplied by BHEL free of cost).	each	20	0.00260852
1811	Construction of below ground earthing system earth electrodes as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items & Earthing strips and electrodes will be supplied by BHEL free of cost)	NO	10	0.00028371
1812	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items & steel shall be supplied by BHEL free of cost.)	NO	5	0.00012986
1813	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete (Earthing strips and electrodes will be supplied by BHEL free of cost).	EACH	5	0.00167020
1814	Co-B206:C206nstruction of below ground earthing system test pits as per drawing/ sketches including brickwork, plaster, concreting, reinforcement, formwork, providing & fixing GI strips / pipes, GI wires, covers etc as per drawing & specification including associated earthwork (Earthing strips and electrodes will be supplied by BHEL free of cost).	EACH	4	0.00102408

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	60	0.00006270
1817	Providing and laying dry stone pitching of 230 mm thickness for slope protection in cement mortar 1:6 including hammer dressing, raking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. all complete.	SQM	329	0.00871956
1822	Providing & filling Bentonite Powder (Sodium base) mixed with water in electronic earthing pit as per drawing & direction below ground level including all materials, transportation, labour, incidental etc all complete as per specification.	CUM	1	0.00011521
1823	Providing and laying cinder filling in the toilets,roads,etc complete as directed by engineer in charge.	CUM	5	0.00014048
1824	Disposal of scrap steel, scrap wood, broken packing crates, cable scrap, debris and other civil waste, electrical waste materials etc. from project site to a designated place within 5 KM range, with all manpower T & P etc. including loading and unloading as and when directed by BHEL.			
a)	Steel scrap / metal scrap	MT	1	0.00001024
b)	Debris & Other waste materials.	CUM	2	0.00000387
1831	Providing random rubble (RR) stone masonry in foundation, super structure, boundary wall, retaining wall and embankment with cement mortar 1:6 at all elevations including all labour, material, equipment, handling, scaffolding etc. all complete.	CUM	30	0.00132293
1836	Providing & fixing flame arrestor of approved specification at the end of vent pipes upto 160 mm dia in Oily water manholes in hazardous zone of refinery area.	each	2	0.00064889
1837	Supplying and providing 24 SWG chicken wire mesh etc. all complete	Kg	1000	0.00794925
1838	Providing and applying two coats (100 microns each coat) of coal tar epoxy coating / painting on bare R.C.C. surface of concrete foundations.	SQM	500	0.00125406
1840	Supplying, laying and commissioning carbon steel pipe line grade 'A96A' below GL including coating and wrapping (paid separately under item no. 1841) , joint testing, cost of materials etc. all complete as per EIL specification no. 6922-575-16-47-DB01, 6-65-1035, 6-65-1030, 6-65-1036, 6-79-0011 and drawings. (Earthwork excavation and back filling to be measured separately).			
	a) 100 mm dia.	RM.	10	0.00022392
	b) 150 mm dia.	RM.	25	0.00074182
1841	Coating and wrapping of CS pipes including cost of materials etc. all complete as per EIL specification no. 6-79-0011.			
	a) 100 mm dia.	RM.	10	0.00004300
	b) 150 mm dia.	RM.	25	0.00016147
1842	Supplying and fixing M.S drain funnels of following diameter as per EIL drawing no. 7-65-0266 and specifications.			
	a) 150mm dia.	NOS.	6	0.00011194
	b) 200mm dia.	NOS.	3	0.00007416
1843	Supplying and embedding/ fixing G.I. pipe sleeves in concrete all complete as per specification, drawings and as directed by engineer - in - charge.			
	a) 100mm dia.	RM.	15	0.00036645
	b) 150mm dia.	RM.	30	0.00095494
1844	Supplying and embedding/ fixing UPVC pipe sleeves in concrete all complete as per specification, drawings and as directed by engineer - in - charge.			
	a) 100mm dia.	RM.	15	0.00009508
	b) 150mm dia.	RM.	30	0.00026880
	b) 200mm dia.	RM.	30	0.00040346
2000	FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge.			
2008	Supply, fabrication and fixing of mild steel posts for fencing including painting etc all complete.	MT	1	0.00110584
2010	Supply, fabrication and installing in position and testing MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings (two or more coats of synthetic enamel paint over red oxide zinc chromate primer) etc. all complete as per EIL standard no. 7-75-0051, 0052 and EIL specification cl. no. 2.5 of B016-606-81-41-SP-7810.	MT	3	0.00365883

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2011	Transformer fencing shall be made of 50mm x 50mm x 6mm M.S. Angle frame, 50mm x 50mm x 6mm M.S. Tee stiffeners, 50mm x 50mm x 8mm welded mesh fixed to the frame by 25mm x 3mm M.S. flat beading. The gate / fencing shall be fixed to the masonry / R.C.C. by M.S. hinge arrangement (consisting of 65mm x 65mm x 6mm M.S. angle, bolt, washers etc.) with M.S. holdfast grouted with M15 concrete. The gate shall have M.S. pivot arrangement (ensuring smooth operation of the gate), one heavy duty 450mm long M.S. aldrop, heavy duty M.S. tower bolts etc. complete. The entire gate / fencing with fittings / fixtures / accessories shall be finished with two or more coats of synthetic enamel paint of approved make and shade over a coat of approved red oxide zinc chromate primer. All embedded metallic parts shall be provided with primer. Reference shall be made to EIL standard no. 7-75-0051, 0052 for further details of the system.	SQM	270	0.00452388
2100	WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks including sockets, union, nuts etc all complete - 15mm nominal bore.	NOS	25	0.00028782
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	NOS	25	0.00009208
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality including all specials etc all complete for following sizes:			
a	25mm nominal bore.	NOS	12	0.00007360
b	50mm nominal bore.	NOS	12	0.00013034
2105-A	Providing and fixing full length beveled edged Mirror of 5.5mm thick float glass with 6mm thick water proof plywood or A.C sheet backing from reputed mirror manufacturer. Mirror shall be mounted with 600mm x 120mm x 4mm thick Glass shelf with CP brass bracket & guard rails fixed on wall etc all complete.	NOS	5	0.00006433
2107-A	Providing and fixing Chromium plated brass towel rail of 20 mm dia, 600mm length & 1.25mm thickness with C.P. mounting brackets all complete.	NOS	10	0.00011478
2110	Providing and fixing Chromium plated Soap holder mounted with C.P. screws etc all complete.	NOS	5	0.00003238
3111-A	Providing and fixing approved quality CP Brass Toilet paper holder (fixed to wall with wooden cleats, CP Brass screws) shall be provided with each WC all complete.	NOS	5	0.00002595
2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.			
b	1000 litres capacity	NOS	3	0.00027019
c	2000 litres capacity	NOS	1	0.00018013
2115	Providing & fixing Hand drier in position of fully automatic "no touch" ("KOPAL" or approved equivalent) etc all complete.	NOS	2	0.00058249
2116	Supplying, laying, fitting, fixing, jointing concealed GI pipes "J2A" for water lines at various elevations with all fittings stop cock, valves bends, elbows, tees, reducers etc including excavation, back filling, concrete supports, hangers, straps with all materials etc., complete as per EIL specification no. 6-65-1027, 6-65-1070 and drawings.			
a	12 mm	RM.	60	0.00031660
b	19 mm	RM.	60	0.00035669
c	25 mm	RM.	65	0.00046436
d	32 mm	RM.	66	0.00061184
e	50 mm	RM.	56	0.00062744
f	75 mm	RM.	15	0.00023539
2200	SANITARY: Sanitary work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
2201-A	Supply and fixing wash basins of counter top type and shall be provided with granite counter top with require number of tap holes and conforming to IS: 2556 Part-IV of size 550mm x 480mm. Each wash basin shall be provided with 15mm dia pillar cock of approved make, rubber plug with CP brass chain, 32mm CP Waste fitting of standard pattern with 32mm dia G.I. pipe, CP Brass bottle trap, CP Brass 15mm dia stop cock etc. complete with all related accessories, fittings and fixtures etc. all complete as per EIL specification cl. no. 1.12.4 of B016-606-81-41-SP-7810.	EACH	6	0.00048610

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2203-A	Providing and fixing stainless steel Kitchen / Laboratory sink of size 610mm x 510mm x 200mm and made of min. 1mm thick stainless steel sheet of 'Salem Steel' or equivalent conforming to IS: 13983 including all fittings etc. all complete. Also providing and painting of exposed metallic surfaces with min. two coats of synthetic enamel paint of approved make and shade over a coat of red oxide zinc chromate primer.	EACH	1	0.00008031
2204	Providing and fixing colour glazed vitreous china European type water closet conforming to IS:2556 with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete.			
a	Floor mounted	EACH	6	0.00041425
b	Wall mounted	EACH	2	0.00026736
2205	Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, necessary C.P connections etc all complete.	EACH	1	0.00006159
2206-A	Providing and fixing wall mounting Urinals of integrated photocell operated flushing system type (Integrated EFS of "Parryware" or approved equivalent) conforming to IS:2556 Part VI with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete as per EIL specification cl.no. 1.12.3 of B016-606-81-41-SP-7810.	EACH	6	0.00051458
2208	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.			
a	200mm dia	RM	15	0.00011179
b	300mm dia	RM	15	0.00014417
c	450mm dia	RM	15	0.00024978
d	600mm dia	RM	15	0.00036517
e	900mm dia	RM	3	0.00013481
2209	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following.			
a	150mm dia	RM	3	0.00001562
b	250mm dia	RM	6	0.00004667
c	300mm dia	RM	6	0.00004985
d	450mm dia	RM	6	0.00008696
e	500mm dia	RM	3	0.00005515
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	6	0.00020785
2213	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber(Clay Brickwork in 1:6 mortar, 12mm plaster in 1:6 mortar & 1:2:4 Cement Concrete) and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes:			
a	100x100mm P or S Type.	EACH	6	0.00011132
c	150x150mm P or S Type.	EACH	6	0.00012643
2214	Providing and fixing C.I. floor traps size 100 mm Inlet and 100 mm Outlet Sand Cast Iron S&S as per IS: 1729 with C.P jalli all complete.	EACH	3	0.00004795
2215	Providing and fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P jalli all complete.	EACH	3	0.00004656
2218-A	Providing and fixing Marble partitions (of minimum 19mm thick White Makrana marble / granite slab each partition in one piece) of minimum size 1000mm x 600mm all complete as per EIL specification cl.no. 1.12.3 of B016-606-81-41-SP-7810.	EACH	5	0.00011127
2220	Providing and fixing heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.			
c	150mm dia pipes	RM	15	0.00051319
d	200mm dia pipes	RM	15	0.00079844
2221	Providing, laying spun CI pipes with conforming to IS 1536 complete for following.(Excavation,backfilling,concrete to be paid seperately)			
c	150mm dia	RM	15	0.00070824
d	200mm dia	RM	15	0.00107983
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.			

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2301-A	Fabrication,erection and alignment of structural steel of Grade E350 quality BR / B0 rolled section / built up section / combination of both conforming to IS:2062, pipes of grade Yst 310 conforming to IS:1161 / IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including one coat of red oxide zinc-chromate primer at shop, connection design (shop connections shall be by weld and field / site connection shall be by permanent bolts) & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20° C for welding over 20 mm and upto 40 mm & 66° C for welding over 40 mm and upto 63 mm & 110° C for thickness over 63 mm & use of low hydrogen / radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. (Structural Steel shall be supplied by BHEL Free of cost).	MT	15	0.00518869
2302	PRIMER COAT: Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface (Sa 2 1/2) and providing and applying Inorganic zinc silicate primer in one coat of minimum 65 micron (DFT) at shop and one coat of Epoxy zinc phosphate primer 40 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete.	MT	10	0.00127531
2304-A	FINISH COAT: Providing and applying two coats of Epoxy-high build coating (polyamide cured epoxy resin medium suitably pigmented) of 100 microns (DFT) per coat topped with one coat of Acrylic polyurethane finish paint of 40 microns (DFT) per coat. Total minimum (DFT) coating shall be 240 microns (2 x 100 + 40 = 240) approved shade including protection and cleaning, scaffolding etc. all complete.	MT	15	0.00155242
2307	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.			
b	Minimum galvanisation of 900 g/sqm	MT	18	0.02616479
2309	Extra over above ST NO. 2301 for finishing the grating units / bolts / inserts with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with one coat of red oxide zinc-chromate primer all complete.	MT	8	0.00179543
2312	Providing and fixing in positing of high strength Hot dip Galvanized structural bolts (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 & IS: 4000 and high strength structural hardened and tempered Hexagonal nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.	MT	1	0.00111358
2313	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	1	0.00006040

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.				
SCHEDULE-3---SERVICES				
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2314	Addition to, alterations in and/or modification of "Erection Marks" including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:			
a	In erected position	MT	1	0.00014215
b	In fabrication yard	MT	1	0.00011544
2315	Re-erection of dismantled fabricated structural steel members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members (weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	1	0.00008986
2320-A	Supply, fabrication and fixing of Stainless steel railing of SS 304 grade, minimum 1000 mm high satin finish tubular railing of approved design in staircases, ramps, around floor cut outs etc. Consisting of: 1. 50mm dia SS pipe top handrail 2. 38mm dia SS pipe balusters (at every third step for staircase, @ maximum 1200mm c/c for ramp, floor cut-outs) 3. 3 nos minimum 18mm dia SS pipe intermediate handrails Including: a. Fixing balusters to floor with 4 nos "Hilti" bolts and 8mm thick, 100mm dia SS base plate & SS cap / collar b. Fixing top handrail to the balusters with 12mm dia SS bar connector & 6mm thick SS saddle plate c. Fixing intermediate handrails to the balusters with 12mm dia SS bar connector d. All end caps, decorative caps over balustrades, necessary bending, welding, polishing of all welded joints. All including transportation, loading / unloading etc. all complete as per EIL standard no. 7-75-0093.	MT	1	0.00456232
2321-A	Supply, fabrication and fixing of MS pipe (grade Yst 310Mpa) hand railing of 32 mm / 40 mm dia including transportation, loading / unloading, painting with double coating of approved shade and make with synthetic enamel paint over a coat of approved quality red oxide zinc chromate primer coat etc. all complete as per EIL specification cl.no. 2.7 of B016-606-81-41-SP-7810. Payments terms - a) on receipt of materials at site - 65%; b) Erection & fixing - 35%;	MT	2	0.00264494
2323	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	4	0.00023594
2324	Conducting ultrasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	2	0.00002196
2325	Conducting ultrasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	SqM	3	0.00001521
2326	Conducting magnetic particle test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	3	0.00002770
2327	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	5	0.00003863
2600	LEVELING & GRADING: Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in charge.			
2602	Earth work in stripping of top soil upto a maximum depth of 0.30m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300 mm including roots and organic materials etc for leveling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge.	SQM	100	0.00004112

Civil works comprising of super structure works and architectural works of SW GR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.

SCHEDULE-3---SERVICES

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2611	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300 mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying boorrowed soil, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following.	cum	100	0.00076751
2614	Concrete of grade M 5 (1 part cement, 5 part sand, 10 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	12	0.00062765
2616	Dismantling of 6m high temporary barricading around work area after completion of work made of 0.5mm CGI/Color-coated sheet, structural frame with 40mm dia scaffolding pipe with 600mm embedment in concrete with 4 nos horizontal runner throughout and vertical & diagonal post 1.200m apart (max) including removal of sheet, dismantling of all structural items, excavation, backfilling, braking of concrete if any & mending as required, segregating the materials and return to BHEL Store yard at BHPV area including loading, transportation, unloading & stacking all complete as per direction of engineer. (BHEL will arrange out gate pass from HPCL, Vizag Site.)	SQM	100	0.00017817
Total Amount Services (A)				0.98259851

Civil works comprising of super structure works and architectural works of SWGR cum cellar building for 1x75 MW Combined Cycle Captive Power Plant for Visakh Refinery Modernization Project at HPCL Visakhapatnam, Andhra Pradesh.

SCHEDULE-4-----SUPPLY

ST. NO	DESCRIPTION OF ITEM	UNIT	QUANTITY	WEIGHTAGE
1500	ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ / contract specification), equipment, transportation, handling, scaffolding, lps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
1513-A	Supplying under deck Polyisocyanurate foam (PIR) insulation. It shall be rigid slabs of size 1000 x 500mm and thickness of 30mm conforming to IS: 12436 having density not less than 32 kg./Cu.M., thermal conductivity (K- value) not more than 0.023 w/mk measured at 10 deg. C. The insulation slabs shall be covered on one side with glass fibre tissue/ Aluminium foil having 50mm overlap. The insulation shall be classified as 'Non Combustible' as per BS 476, part 5 and 'Class I' for surface spread of flame as per BS 476, part 7. First, holes in R.C.C. slab / beam shall be drilled and nylon rawl plugs of size 8 x 25mm shall be inserted (5 nos. for each slab One each at 4 corners and one at center). Providing and applying a coat of bituminous primer @ 0.5 Litres/ Sq M shall be applied to bare R.C.C. surface. After the primer has dried, cold adhesive CPRX shall be applied on R.C.C. surface and to the two surface of each PIR panel and shall be pressed in position. The PIR panels shall be secured in position with the help of G.I. screws (No. 8 x 75mm long) fixed into rawl plugs and G.I washers. Facing side of the panels shall be the one covered with fibre tissue/ Aluminium foil. The overlaps shall be covered with approved quality sealing compound (MAS-94 or equivalent). Chicken wire mesh 24G x 19mm (paid separately under item no. 1837) shall then be fixed to G.I screws and tightened with lacing wire. All complete as per EIL spec. cl. no. 1.13.3 of B016-606-81-41-SP-7810.	SQM	820	0.00723485
1600	FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ / contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge.			
1602	Supplying light weight mineral fiber tile false ceiling of minimum thickness 15 mm and exposed surface semi-perforated with depth of perforation as 4 mm and humid resistance of 95% RH and fire performance of class 0/1 as per BS 476 with metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification including 50mm thick mineral wool insulation (density 48 kg/cum) as per IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 1.2m) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc.The size of tiles shall be 600 X 600 mm or 600 X 1200 mm. Required MS channel shall be measured & paid extra under respective item unit rate.	SQM	180	0.00235599

S1605A	<p>TRAY TYPE ALUMINUM FALSE CEILING:</p> <p>Supplying of standard product of approved Manufacturer and shall conform to following and approved Manufacturer's specification. The system shall be installed in accordance with Manufacturer's recommendations.</p> <p>A. Ceiling Panels: Ceiling panels shall be minimum 0.7mm thick and of aluminium alloy AA 3105 / 3005 / 3003 / 5052 (as per ASTM 209M). Finishing of the panels shall be as specified. The panels shall be square edged, perforated or non-perforated and of following sizes as per drawings. a) 254 / 305mm x 1264mm, and b) 600mm x 600mm</p> <p>B. Suspension System: The suspension system shall be in accordance with approved Manufacturer's standard specification consisting of main runner profiles, hanger, perimeter profile etc. The system also includes providing perimeter angles and slit openings for fixing supply / return air grill, lighting fixtures, AC diffusers etc. All complete as per EIL standard no. 7-75-0043 and EIL specifications cl.no. 1.13.1 of B016-606-81-41-SP-7810.</p>	SQM	180	0.00260578
1606	<p>Supplying 12mm thick Gypsum board plain / perforated false ceiling tiles (600mm x 600mm) of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete as per architectural design and detail. Metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per IS :277) and nominal size of T-section shall be 24 mm x 38 mm or 24 mm x 25 mm cross runners. 24 mm wide exposed flange surface shall be permanently color coated. Suspension system shall be as per manufacturer's specification. Movement platform of structural steel shall be provided if required for the movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Structural steel works for platform for movement is separately payable under relevant items of BOQ)</p>	SQM	570	0.00520488
Total Amount Supply (B)				0.01740149