



Construction of Biotech Science Cluster at Faridabad, Haryana

TENDER DOCUMENT

(Document No : A091-TENDER_DOC-A091-000-24-42-PK-T-7005)



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REGIONAL CENTRE FOR BIOTECHNOLOGY
an institution of education, training and research

Established by the Dept. of Biotechnology, Govt. of India
Under the Auspices of UNESCO
180 Udyog Vihar Phase 1, Gurgaon - 122016, India

CONSTRUCTION OF PHASE-II WORKS OF NCR BIOTECH SCIENCE CLUSTER AT FARIDABAD

**(BIDDING DOCUMENT NO. UKM/A091-000-PK-TN-7005/1001)
(DOMESTIC COMPETITIVE BIDDING)**

BIDDING DOCUMENT FOR

**COMPOSITE WORK FOR CONSTRUCTION OF NCR
BIOTECH SCIENCE CLUSTER PHASE-II WORKS AT
FARIDABAD, HARYANA**

**VOLUME I OF II
(COMMERCIAL)**

Prepared & Issued by:

**इंजीनियर्स
इंडिया लिमिटेड**  **ENGINEERS
INDIA LIMITED**
(भारत सरकार का उपक्रम) (A Govt. of India Undertaking)

Regd. Office : Engineers India Bhawan, 1, Bhikaiji Cama Place, New Delhi - 110066

MASTER INDEX

NAME OF WORK : **COMPOSITE WORK FOR CONSTRUCTION OF NCR
BIO-TECH SCIENCE CLUSTER PHASE-II WORKS AT
FARIDABAD, HARYANA**

BIDDING DOCUMENT NO. : **UKM/A091-000-PK-TN-7005/1001**

(COMMERCIAL SECTION)

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**DOMESTIC NOTICE FOR INVITATION FOR BIDS FOR
CONSTRUCTION OF NCR BIOTECH SCIENCE CLUSTER PHASE-II WORKS
AT FARIDABAD, HARYANA**

Engineers India Ltd. (EIL) on behalf of Regional Centre for Biotechnology (RCB) invites e-bids from eligible bidders for following work:

Name of Work	Bidding Document on website	Bid Due Date / Time
Composite work for construction of NCR Biotech Science cluster Phase-II works at Faridabad, Haryana (Bidding Document No.: UKM/A091-000-PK-TN-7005/1001)	20.01.2017 to 13.02.2017	13.02.2017 Up to 1200 Hrs.(IST)

The detailed IFB & Bidding Document with contact details can be viewed and downloaded from e-tender website: <http://eprocure.gov.in/eprocure/app> or from RCB's website: <http://www.rcb.res.in>; <http://www.rcb.ac.in>. All amendments, time extension, clarifications etc. will be uploaded in the website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated.

AGM(C&P), EIL, Gurgaon

**DOMESTIC NOTICE FOR INVITATION FOR BIDS (IFB) FOR
COMPOSITE WORK FOR CONSTRUCTION OF NCR BIOTECH SCIENCE
CLUSTER PHASE-II WORKS AT FARIDABAD, HARYANA
BIDDING DOCUMENT No.: UKM/A091-000-PK-TN-7005/1001
(DOMESTIC COMPETITIVE BIDDING)**

1.0 **INTRODUCTION**

Regional Centre for Biotechnology (RCB) has established NCR Biotech Science Clusters at Village Bhankari, Faridabad Haryana and is constructing Phase-II works. RCB has appointed Engineers India Limited (EIL) as Project Management Consultants (PMC) for implementation of Phase-II works of NCR Biotech Science Clusters.

EIL on behalf of RCB invites e-bids (Through Government of India's Central Public Procurement portal <http://eprocure.gov.in/eprocure/app>) for "**COMPOSITE WORK FOR CONSTRUCTION OF NCR BIOTECH SCIENCE CLUSTER PHASE-II WORKS AT FARIDABAD, HARYANA**" under single stage two part system (Part-I: Techno-commercial Part & Part-II: Price Part) from competent agencies meeting the Bidder's Qualification Criteria (BQC) as stated under para 6.0 below.

2.0 **BRIEF SCOPE OF WORK**

2.1 The brief scope of work shall generally comprise of but not be limited to the following:

Section-I: Execution Phase

- i) Civil, Structural and Architectural works.
- ii) Internal and external Electrical works.
- iii) Internal plumbing, sanitary & water supply works.
- iv) External water supply, sewerage and drainage works.
- v) Air conditioning works of Office of Connectivity building.
- vi) Installation of standby AHU's in existing SAF building.
- vii) Elevators.
- viii) Fire fighting/ suppression and fire detection works.
- ix) Solar panels.
- x) BMS works in existing buildings viz. RCB 4th wing and ATPC building including integration with existing BMS system and up-gradation of existing BMS system.
- xi) Covered parking lots.
- xii) Steel foot over bridge.
- xiii) External development works such as development of water body, landscaping & horticulture works, construction of roads and foot paths, boundary wall, fencing, bituminous carpeting of existing/new roads etc.

Section-II: Maintenance Phase

- i) 3 years comprehensive maintenance starting after completion of one year of Defect Liability Period for Elevators, BMS works and HVAC works
- ii) 5 years comprehensive maintenance starting after completion of one year of Defect Liability Period is to be provided for Solar PV works

Any other works not specifically mentioned above; but, required for achieving overall completion of work.

2.2 General Features of The Proposed Buildings are enumerated below:-

SI No.	Building Name	No. of Floors	Built up area. (Sq. M)
1.	Office of Connectivity	G+2	2700
2.	BSL-3	G+1	1250
Total Built - up area			3950

Areas mentioned above may vary based on the actual requirements during execution.

The detailed scope shall be specified in the bid document.

3.0 **TIME PERIOD:**

Eighteen (18) Months from the date of issue of Letter of Acceptance (LOA).

Comprehensive maintenance for a period of 03 years of Elevators, HVAC System & BMS system and for a period of 05 years of Solar PV System. Period of Comprehensive Maintenance will start after completion of one year of Defect Liability Period.

4.0 **SALIENT FEATURES OF BIDDING DOCUMENT**

- i) Bidding Document on website : From **20.01.2017 to 13.02.2017**
- ii) Earnest Money Deposit (EMD) : Rs. 38.04 Lakh (Rupees Thirty Eight lakh Four Thousand Only)
- iii) Pre – Bid Meeting : A Pre-Bid Meeting shall be held at 1100 Hrs (IST) on **30.01.2017** at EIL, Gurgaon office. Bidder may submit their queries, if any, latest by **29.01.2017** addressed to Mr. U.K.Mishra, AGM(C&P) at email: uk.mishra@eil.co.in / mitesh.patel@eil.co.in.
- iv) Last Date and time of submission of Bids : **1200 Hrs. (IST) on 13.02.2017** Through Government of India's e-Procurement / e-Tendering System: <http://eprocure.gov.in/eprocure/app>
- v) Opening of Techno-Commercial (Unpriced) Bid : **1400 Hrs. (IST) on 14.02.2017** at EIL, Gurgaon.
In presence of authorized representatives of participating Bidders.
- vi) Mode : Through Government of India's e-Procurement/e-Tendering System: <http://eprocure.gov.in/eprocure/app>

If any of the days mentioned above happens to be EIL holiday, the next working day shall be implied.

e-Bids are required to be submitted through Government of India's Central Public Procurement portal <http://eprocure.gov.in/eprocure/app> only, on or before the Bid-Submission Date & Time. In order to perform e-procurement activities, the bidders are required to enroll/register themselves at <http://eprocure.gov.in/eprocure/app>. No enrollment/registration fee would be charged from the bidders for the same.

No Manual Bids/Offeres shall be permitted. The offers submitted through the designated e-tendering system shall only be considered for evaluation & ordering. Bids submitted in physical form or sent in any other form such as through Fax / E-Mail / CD/DVD/Pen Drive etc. shall not be accepted.

Bidders to please refer the Annexure – I to Instructions to Bidders of Bidding Document regarding E- Tendering guidelines.

5.0 **BID SECURITY/ EARNEST MONEY DEPOSIT (EMD)**

5.1 Bids must be accompanied with the Bid Security / Earnest Money Deposit (EMD) as mentioned above. EMD shall be submitted in the form of crossed Demand Draft/Pay Order in favour of “**Regional Centre for Biotechnology – Account EIL**” payable at **New Delhi** or Bank Guarantee (BG) in name of “**Engineers India Limited, New Delhi**”. BG shall be valid for two months beyond bid validity, i.e., **5 (Five) months** from the due date of opening of Techno-commercial Bids and shall be submitted from any Indian Scheduled bank or from any Indian Branch of an International Bank in the format included in Bidding Document. Bids without the requisite EMD as mentioned above shall be rejected.

5.2 Indian Central Public Sector Undertakings / Enterprises are exempted from submitting EMD subject to submission of required declaration in this regard.

In case the bidder is a Micro or Small Enterprise registered with District Industries Centers or Khadi and Village industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicraft and Handloom or Micro or Small Enterprises (MSEs) having Udog Aadhar Memorandum or any other body specified by Ministry of Micro, Small and Medium Enterprises, then they shall be exempted from submission of EMD, subject to submission of valid certificate.

If the MSE bidder does not provide the appropriate document or any evidence to substantiate the above, then it will be presumed that he does not qualify for any preference admissible in the Public Procurement Policy, 2012.

Bidders are required to upload the scanned copy of EMD/ duly certified MSME Certificate/ Declaration by CPSU on E-Tendering website along with the e-bid.

5.3 In case an MSE bidder has submitted NSIC certificate/ Udyog Aadhar Memorandum but authenticated document is not uploaded, the same can be accepted provided a valid MSE certification is available on Government portal (www.nsicpronline.com) or Government Udyog Aadhar portal.

5.4 Bidders are required to submit EMD in original by the due date and time of bid submission, in sealed envelope. If the Bidder is unable to submit EMD physically in original within the due date & time for Bid Submission, his bid shall be rejected and not considered for further evaluation, irrespective of their status/ ranking in tender and notwithstanding the fact that a copy of EMD was earlier uploaded by the bidder.

6.0 **BIDDER’S QUALIFICATION CRITERIA (BQC):**

Bidder shall fulfill the following Bidder’s Qualification Criteria in order to qualify for subject work:

6.1 **EXPERIENCE /TECHNICAL CRITERIA:**

6.1.1 The bidder should have successfully completed works as mentioned below during previous 7 (Seven) years ending previous day of last date of submission of bids.

- **THREE** similar works, each having contract value not less than **Rs. 12.43 Crore** (Rupees Twelve Crore and Forty Three Lakh only)
OR
- **TWO** similar works, each having contract value not less than **Rs. 18.64 Crore** (Rupees Eighteen Crore and Sixty Four Lakh only)
OR
- **ONE** similar work, having contract value not less than **Rs. 24.86 Crore** (Rupees Twenty Four Crore and Eighty Six Lakh only)

6.1.2 “Similar work” mentioned in clause 6.1.1 shall mean work involving “**Construction of RCC framed buildings including Electrical & HVAC works**”.

6.1.3 In case experiences in HVAC works is not met on its own by the bidder under the works executed as per Cl. No. 6.1.1 above, then the bidder shall fulfil the following Criteria:

- The bidder should have carried out and completed HVAC work in any other executed work for value not less than **Rs. 2.14 Crore** (Rupees Two Crore and Fourteen Lakh only) during previous 7 (Seven) years ending previous day of last date of submission of bids.

OR

- Bidder may engage a Sub-contractor who has successfully completed one single contract of HVAC Works in either same work or separate work of value not less than **Rs. 2.14 Crore** (Rupees Two Crore and Fourteen Lakh only) during previous 7 (Seven) years ending previous day of last date of submission of bids. The proposed HVAC Works Sub-Contractor shall be identified by the Bidder at the bidding stage itself and shall submit with bid, the Memorandum of Understanding (MoU) with the proposed Sub-Contractor for executing the HVAC works.

6.1.4 The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple 7% per annum, calculated from the date of completion to the last date of receipt of bids.

6.1.5 **DOCUMENTS REQUIRED WITH BID:**

- a) Copies of work order(s) indicating the activities as defined under “similar work”.
- b) Work completion certificates.
- c) If work order/ completion certificate does not indicate all activities as defined under “similar work”, then bidder should either submit a certificate to this effect from the client correlating the work order/ completion certificate number or furnish the detailed Schedule of Rates (SOR) pertaining to the works/ AFC drawings approved by client to verify that all the salient works have been undertaken while executing the contract.
- d) In case experiences in HVAC works is not met on its own by the bidder, then bidder should submit Memorandum of Understanding (MoU) with the proposed Sub-Contractor for executing the HVAC works along with copies of work order(s) and work completion certificates as mentioned in Cl. No. 6.1.3.

6.2 **FINANCIAL CRITERIA:**

6.2.1 **Annual turnover**

Annual Turnover of the Bidder shall not be less than **Rs. 20.50 Crore (Rupees Twenty Crore Fifty Lakh Only)** as per the audited annual financial results in at least one of the immediate preceding three financial years as on the due date of submission of Bids.

6.2.2 **Net Worth**

The Net-worth of the bidder as per the immediate preceding year’s Audited financial results should be positive.

6.2.3 **Working Capital**

Bidder should have minimum working capital equal to **Rs. 2.05 Crore (Rupees Two Crore Five Lakh Only)** as per the immediate preceding year’s audited financial results.

In case Bidder is unable to meet the working capital requirement as above, the Bidder can supplement the working capital with a fund based line of credit from any scheduled bank in India or a commercial bank having Net worth more than equivalent INR 1000 Million. In such a case, bidder shall furnish a declaration from the bank for availability of unutilized fund based line of credit for the shortfall in working capital below Rs. 2.05 Crore, in the format enclosed in the Bidding Document.

7.0 **GENERAL**

- 7.1 Bidder should not be on Holiday / Negative list of OWNER / EIL.
- 7.2 Bidder shall not be under liquidation, court receivership or similar proceedings.
- 7.3 Unincorporated Joint Venture/Consortium Bids/Bids from Wholly Owned Subsidiary relying on Parent company's experience shall not be accepted.
- 7.4 Experience of only the bidding entity shall be considered. A job executed by a bidder for its own plant/projects shall not be considered as experience for the purpose of meeting requirement of experience criteria of the Bidding Document. However, jobs executed for Subsidiary / Fellow Subsidiary / Holding company will be considered as experience for the purpose of meeting experience criteria subject to submission of tax paid invoice(s) duly certified by Statutory auditor of the bidder towards payments of statutory tax in support of the job executed for Subsidiary / Fellow Subsidiary / Holding company. Such bidders shall submit these documents in addition to the documents specified in the Bidding Documents to meet 'Experience Criteria'.
- 7.5 In case of composite works (i.e. works comprising of more than one discipline) which included the qualifying work stated above, then such qualifying work out of completed composite work, shall be considered for the purpose of evaluation.
- 7.6 A job completed by a bidder as a sub-contractor shall be considered for the purpose of meeting the experience criteria of BQC subject to submission of following documents in support of meeting the "Bidder Qualification Criteria":
- a) Copy of work order along with schedule of rates issued by main contractor.
 - b) Copies of completion certificates from the end user/ Owner/PMC and also from the main Contractor. The Completion Certificates shall have details like work order no. /date, brief scope of work, ordered & executed value of the job, completion date etc.
 - c) However, in case bidder is not able to furnish the completion certificates from the end user/ Owner/PMC in his name then completion certificate issued in the name of main Contractor shall also be considered as proof of completion.
- 7.7 Bidder shall submit the all relevant documents towards meeting the experience criteria. Bidder shall also furnish complete audited annual financial year statements including audit report, balance sheets, profit & loss accounts statement and all other schedules etc. for the immediate preceding three financial years, in support of meeting the financial criteria as mentioned above.
- For working capital in case Bidder opts for supplementing the working capital with a fund based line of credit as per requirement specified in Financial Criteria above, the Bidder shall furnish the declaration letter from the Bank for availability of line of credit.
- 7.8 In case the last financial year closing date is within 9 Months of Bid Due Date and audited annual report of immediate preceding financial year is not available, bidder has the option to submit the financial details of the three previous years immediately prior to the last financial year. Otherwise, it is compulsory to submit the financial details of the immediate three preceding financial years.
- Example, In case, audited annual report of immediate preceding financial year (year ending 31st March) is not available and where bid closing date is upto 31ST December, the financial details of the three previous years immediately prior to the last financial year may be submitted. However, in case the bid closing date is after 31ST December, it is compulsory to submit the financial details of the immediate three preceding financial years only.
- 7.9 In case a Bidder (a parent company) is having wholly owned subsidiaries but only a single consolidated annual report is prepared and audited which includes the financial details of their wholly owned subsidiaries, consolidated audited annual report shall be considered for establishing the financial criteria subject to statutory auditor of the bidder certifying that separate annual report of Bidder (without the financial data of subsidiaries) is not prepared and audited.
- Further, in case a Bidder is a subsidiary company and separate annual report of the

- Bidder is not prepared and audited, but only a consolidated annual report of the Parent company is available, consolidated audited annual report shall be considered for establishing the financial criteria subject to statutory auditor of the Parent Company certifying that separate annual report of the Bidder is not prepared and audited.
- 7.10 Bidder shall furnish the required documents in support of qualification criteria, in the first instance itself.
- Bidder are required to submit all such past experience (s) (PTR) meeting the BQC alongwith relevant supporting documents in the first instance itself, alongwith the bid. Accordingly, only such past experience (s) shall be considered for qualification, details of which are provided in the bid by the bidder and subsequently no additional past experience PTR) shall be sought from the Bidder.
- OWNER / EIL reserve the right to complete the evaluation based on the details furnished without seeking any additional information.
- 7.11 All documents furnished by the Bidder in support of meeting the BQC including the documents against MSE, if any, shall be signed and stamped by the bid signatory and shall be:
- either
- submitted duly certified by Statutory Auditor of the bidder or a practicing Chartered Accountant (not being an employee / Director and not having any interest in the bidder's company) where audited accounts are not mandatory as per law
- or
- Bidder shall submit documents duly notarized by any notary public in the bidder's country or certified true copies duly signed, dated and stamped by an official authorized for this purpose in Indian Embassy/ High Commission in Bidder's country
- or
- Bidder shall submit self-certified documents from any one out of CEO or CFO or Company Secretary of the bidder (Limited company only) along with Self-Certification as per the annexure attached in Bidding Document. This option shall not be applicable to Proprietorship/ Partnership firms.
- Requirement of above certification shall not be applicable to published audited annual financial statements in English, if original booklets are submitted.
- All the certified documentation against BQC (including the documents against MSE / declaration by CPSU, if any) shall be uploaded by the bidder at the designated place in the Govt. of India's e-procurement/e-tendering website in a sequential manner with an index.
- 7.12 Submission of authentic documents is the prime responsibility of the bidder. Wherever OWNER/EIL has concern or apprehension regarding the authenticity/ correctness of any document, OWNER/EIL reserves a right of getting the document cross verified from the document issuing authority.
- 7.13 In the event of submission of any document/ certificate by the bidder in a language other than English, the bidder shall get the same translated into English and submit the same after getting the translation duly authenticated by local Chamber of Commerce of bidder's country.
- 7.14 OWNER / EIL reserve the right to assess bidder's capability and capacity to execute the work using in-house information.
- 7.15 The complete Bidding Document is available on e-tender website: <http://eprocure.gov.in/eprocure/app> and on RCB's website: <http://www.rcb.res.in> ; <http://www.rcb.ac.in>. Bidders are required to submit their bid through Government of India's e-Procurement/e-tendering system <http://eprocure.gov.in/eprocure/app> only.
- 7.16 All amendments, time extension, clarifications etc. will be uploaded in the websites only and will not be published in newspapers. Bidders should regularly visit the above websites to keep themselves updated. No extension in the bid due date / time shall be considered on account of delay in receipt of any document by mail.

- 7.17 Bidding Document is non-transferable.
- 7.18 Bidder may note that Bid shall be submitted on the basis of “ZERO DEVIATION” and shall be in full compliance to the requirements of Bidding Document, failing which bid shall be considered as non-responsive and may be liable for rejection.
- 7.19 Time and date of opening of Price Bids shall be notified to the qualified and acceptable bidders at a later date.
- 7.20 OWNER / EIL shall not be responsible for any expense incurred by bidders in connection with the preparation & delivery of their bids, site visit, participating in the discussion and other expenses incurred during the bidding process.
- 7.21 Purchase Preference to Central Public Sector Undertakings shall be allowed as per prevailing Government Policy.
- 7.22 OWNER/ EIL reserves the right to reject any or all the bids received and to annul the bidding process at its discretion without assigning any reason whatsoever.
- 7.23 Canvassing in any form by the bidder or by any other agency on their behalf may lead to disqualification of their bid.
- 7.24 In case any bidder is found to be involved in cartel formation, his bid will not be considered for further evaluation / placement of order. Such bidder’s EMD will be encashed & also debarred from bidding in future for OWNER/EIL.
- 7.25 For detailed specifications, terms and conditions and other details, refer Bidding Document.
- 7.26 Clarification, if any, can be obtained from Asst. General Manager (C & P) through Telephone – 0124-3802102 / 2141, E-mail – uk.mishra@eil.co.in / mitesh.patel@eil.co.in.

ASST. GENERAL MANAGER (C&P)
ENGINEERS INDIA LIMITED, GURGAON

PROFORMA FOR ACKNOWLEDGEMENT LETTER

E-MAIL # : uk.mishra@eil.co.in / mitesh.patel@eil.co.in

(PLEASE E-MAIL TO EIL WITHIN THREE DAYS ON RECEIPT OF BIDDING DOCUMENT)

AGM (C&P)

Tower I - First Floor
Engineers India Limited
Sector-16, Gurgaon, Haryana

Kind Attention : Mr. U.K. MISHRA
Bidding Document No. : UKM/A091-000-PK-TN-7005/1001
Name of Work : COMPOSITE WORK FOR CONSTRUCTION OF NCR BIOTECH SCIENCE CLUSTER PHASE-II WORKS AT FARIDABAD, HARYANA
Due Date : 13.02.2017 upto 1200 Hrs. (IST)
Client : REGIONAL CENTRE FOR BIOTECHNOLOGY

Dear Sirs,

We acknowledge with thanks receipt of your above cited Bidding Document alongwith enclosures. We undertake that the contents of the above Bidding Document shall be kept confidential including all the drawings, specifications and documents and the said documents shall be used only for the purpose, for which they are intended.

Further, our response is as under:- (Bidders to put a tick ✓, as applicable).

1. We will submit the bid within due date.
2. We regret to submit our offer/quote because of the following reasons:
 - a. _____
 - b. _____

Thanking you,

Very truly yours,

Name of Bidder :
Contact Person :
Contact Person Mobile No :
Bidder's Address :
Bidder's Phone No. :
Bidder's Fax No. :
Bidder's E-mail :

(to be typed on bidder's letter head)
COVERING LETTER FOR SUBMISSION OF OFFERS

From:

Our Ref: ----- dated -----

To
ASST. GENERAL MANAGER (C&P),
TOWER I - FIRST FLOOR
ENGINEERS INDIA LIMITED
SECTOR-16, GURGAON, HARYANA

NAME OF WORK : **COMPOSITE WORK FOR CONSTRUCTION OF NCR BIOTECH
SCIENCE CLUSTER PHASE-II WORKS AT FARIDABAD,
HARYANA**

BIDDING DOCUMENT NO. : **UKM/A091-000-PK-TN-7005/1001**

ATTN: Mr. U.K. Mishra, AGM (C&P)

Dear Sir,

Please find herewith our offer in line with requirement of EIL Bidding Document. We confirm that:

1. We have downloaded the full document from the website.
2. Earnest Money Deposit is submitted by BG /Demand Draft/ Pay Order as follows:

EMD Amount	No. & date	Drawn on Bank
Rs. 38.04 Lakh (Rupees Thirty Eight lakh Four Thousand Only)		

3. Offer is in complete compliance with technical as well as commercial requirements of bidding document and there is no technical or commercial deviation in the offer.
4. We understand that any technical or commercial deviation in the offer shall render our offer liable for rejection.
5. Our offer shall remain valid for a period of 3 (Three) Month from the date of opening of tender.

We declare that the statement made and the information provided in our offer is true and correct in all respect. In case, it is found that the information/ documents provided by us are incorrect/ false, our application shall be rejected by EIL without any reference to us.

Thanking you,

Very Truly Yours,

(Signature of Authorised person)

Full Name :

Designation:

Company Seal :

**PROFORMA FOR LETTER OF AUTHORITY FOR ATTENDING UNPRICED / PRICED BID
OPENING**

(TO BE SUBMITTED IN BIDDER'S OWN LETTER HEAD)

To
AGM (C&P)
Engineers India Ltd.
R&D Complex, Sec-16, Tower-1, 1st Floor
Gurgaon – 122001

Date :

ATTN : U.K. MISHRA , AGM (C & P)

Bidding Document No.: **UKM/A091-000-PK-TN-7005/1001**

Subject: **COMPOSITE WORK FOR CONSTRUCTION OF NCR BIOTECH SCIENCE CLUSTER
PHASE-II WORKS AT FARIDABAD, HARYANA**

Dear Sir,

We _____ hereby authorize following representative(s) to attend Un-priced / Price bid opening against your Bidding Document No.....

1. Name & Designation _____ Signature _____

We confirm that we shall be bound by all commitments made by aforementioned authorised representatives.

Yours faithfully,
Signature

Name & Designation

For and on behalf of

NOTES:

- A. This letter of authority should be on the letterhead of the bidder and should be signed by a person competent and having the power of attorney to bind the bidder.
- B. Not more than one person is permitted to attend techno –commercial un-priced and price bid opening.
- C. Bidder's authorized executive is required to carry a copy of this authority letter while attending the un-priced bid opening and price bid opening and submit the same to EIL.

INSTRUCTIONS TO BIDDER

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A GENERAL

1.0 INTRODUCTION

- 1.1 Regional Centre for Biotechnology (RCB) has established NCR Biotech Science Clusters at Village Bhankari, Faridabad Haryana and is constructing Phase-II works. RCB has appointed Engineers India Limited (EIL) as Project Management Consultants (PMC) for implementation of Phase-II works of NCR Biotech Science Clusters on "Depository Concept"
- 1.2 Engineers India Ltd. (EIL), Government of India Public Sector Undertaking, is a premier consultancy organisation in South Asia. The regd. Office is located at 1, Bhikaiji Cama Place, R.K. Puram, New Delhi-110066.

2.0 DEFINITIONS

- 2.1 With respect to this document, the following definitions shall apply:
- i) The "Owner" shall mean "Regional Centre for Biotechnology (RCB)" or its authorized representative (s).
 - ii) "EIL" means Engineers India Limited, a company incorporated in India & having its registered office at 1, Bhikaiji Cama Place, New Delhi – 66.
 - iii) "Instructions to Bidders" shall mean the documents describing the manner in which Bidder shall prepare and submit his bid.
 - iv) "Letter Inviting Bid" (LIB)/ "Invitation for Bid" (IFB) shall mean EIL's request to Bidder for a Bid/ Tender together with the Bidding Document.
 - v) "Tender" or "Bid" shall mean Bidder's offer to perform the Work, in accordance with Bidding Document.
 - vi) "Tender Document" or "Bidding Document" shall mean the documents issued to the bidder including any subsequent addenda to enable bidder submit his Bid.
 - vii) "Bidder" or "Tenderer" shall mean the person or company who receives the Tender Document or Bidding Document and submits Tender or Bid to EIL.
 - viii) "day" means calendar day.
- 2.2 It shall be bidder's responsibility to have thorough understanding of the reference documents and specifications included in the Bidding Document.

3.0 ELIGIBLE BIDDERS:

- 3.1 Bidder shall, as part of their bid, submit a written Power of Attorney authorizing the signatory of the Bid to commit the bidder.
- 3.2 The invitation of bid is open to any Indian bidder meeting the Bidder Qualification Criteria (BQC).
- 3.3 Bidder should not be under liquidation, court receivership or similar proceedings.
- 3.4 The bidder shall not be on Holiday / negative list/ Suspension / banning list of Owner /EIL as on the due date of submission of bid. If the documents were issued inadvertently / downloaded from website, offers submitted by such bidders shall not be considered for opening / evaluation / award.
- 3.5 If the bidder is on holiday / negative list/ Suspension / banning list of Owner /EIL on due date of submission of bids / during the process of evaluation of the bids, the offer of such a bidder shall not be considered for bid opening/evaluation/ award.

4.0 COST OF BIDDING

- 4.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, including costs and expenses related to visits to the site and the Owner/EIL will in no case be responsible or liable for these costs regardless of the outcome of the bidding process.

5.0 ACKNOWLEDGEMENT & CONFIRMATION

- 5.1 After downloading of Bidding Document, Bidder shall immediately acknowledge and confirm his intention to bid for the tendered work as per proforma "Acknowledgement-Cum-Consent Letter" enclosed in Bidding Document. Bidder also must intimate their intention of not quoting if they are not submitting the Bid.

6.0 SPLIT-UP OF WORK

- 6.1 No Split up of work is envisaged. Total work shall be awarded to one bidder only.

7.0 SITE VISIT

- 7.1 The site of work is located at:
NCR Biotech Science Cluster,
3 rd Milestone, Faridabad- Gurgaon Expressway,
Faridabad- Haryana.
- 7.2 Bidder is advised to visit and examine the site, its surroundings and familiarise himself with the existing facilities and environment, and collect all other information which he may require for preparing and submitting the bid and entering into the Contract. Claims and objections due to ignorance of existing conditions or inadequacy of information will not be considered after submission of the Bid and during implementation.
- 7.3 Any loss to the property / life of the visitor due to visitor's negligence shall be the visitor's responsibility. Visitor shall keep Owner/EIL indemnified from any legal consequences arising there from.
- 7.4 Bidder may contact Mr. Jitendra Singh, Manager (Construction) – 9818631159 for site visit purpose.

B BIDDING DOCUMENT, CLARIFICATIONS AND AMENDMENT**8.0 BIDDING DOCUMENT**

- 8.1 The Bidding Document can be downloaded from the designated website(s) given in LIB/IFB.
Bidder shall submit the Master Index of the bidding document duly signed and stamped in token of having received, read and complied to all parts of Bidding Document. The Bidding Document shall be read in conjunction with any Amendment.
- 8.2 The Bidder is expected to examine the Bidding Document, including all instructions, forms, terms, specifications in the Bidding Document. Failure to furnish all information required as per the Bidding Document or submission of a bid not substantially responsive to the Bidding Document in every respect may result in the rejection of the Bid.
- 8.3 Bidding documents once downloaded are non-transferable in other name and shall at all times remain the exclusive property of EIL with a licence to the Bidder to use the Bidding Documents for the limited purpose of submitting the bid.
- 8.4 Bidder shall treat the Bidding Document and contents thereof as confidential. If

at any time, during the bid preparation stage, Bidder decides to decline to Bid, all documents must be immediately returned to EIL.

9.0 CLARIFICATION OF BIDDING DOCUMENT

- 9.1 The enquiry is issued on “**Zero Deviation Bidding**” basis wherein no post bid correspondence of any nature shall be entertained. Bidders in their own interest are advised to take part in the pre-bid meeting seriously by issuing their genuine queries and also by attending the pre-bid meeting by their competent personnel. This will help bidder not only to cut short of the evaluation time leading to requirement of shorter bid validity. This will enable the bidder to submit their best prices based on the clear techno-commercial scope.
- 9.2 Bidder shall submit their queries strictly within cut-off date after which, EIL shall reserve the right not to entertain any queries.
- 9.3 Bidder’s authorized representative(s) shall attend the pre bid meeting on the prescribed day at the given venue. During the pre-bid meeting, all the technical and commercial issues shall be discussed and concluded to ensure that the bid received subsequent to pre bid meeting shall be without any deviations to terms and conditions. Hence, bidders shall treat the pre bid meeting as utmost important and depute competent & senior person capable of taking on the spot decision to sort out all the technical and commercial issues.
- 9.4 Conclusion agreed in this meeting shall be uploaded as “Record Notes of Pre-bid Meeting / Reply to Pre-bid Queries” on EIL/NIC/Owner website. Record Notes of Pre-bid Meeting/Reply to Pre-bid Queries shall be considered as part of enquiry document.
- 9.5 The offer of the bidders who have not participated in the pre-bid meetings, shall be considered for evaluation only if their offer is in line with the bid requirement without any deviations.
- 9.6 Although the details presented in this Bidding document have been compiled with all reasonable care, it is the Bidder’s responsibility to ensure that the information provided is adequate and clearly understood and it includes all documents as per the Index.
- 9.7 In order to ensure fruitful discussions during pre-bid meeting, the bidder is requested to submit any queries / clarification / information pertaining to Bidding Document, as per the proforma enclosed as **Form-F to ITB**, in writing delivered by hand or by fax / e-mail as per format enclosed in the Bidding Document so as to reach cut-off date/two days prior to Pre-bid meeting. These queries shall be replied during pre-bid meeting. The editable soft copies of the queries shall also be e-mailed to enable Owner/EIL to prepare replies to the queries against each query in the same format expeditiously.
- 9.8 The bidders are required to participate in the pre-bid meeting with the following essential documents, so that the same can be reviewed & discussed during the meeting to avoid any techno-commercial clarifications / discussions post bid :
- i. Latest annual report including Profit & loss account.
 - ii. Details of works experience meeting the BQC
 - iii. Technical details, documents, design, filled datasheets as per Scope of Work document (if applicable).
 - iv. Any other relevant document / details.
- 9.9 Any modification to the Bidding Document, which may become necessary as a result of the pre-bid discussions shall be intimated to all the bidders through the issue of an Addendum / Amendment.

- 9.10 Based on the pre-bid discussions, a no-deviation form / techno-commercial compliance (Form-C to ITB) shall be signed and uploaded by the bidders as part of their offer. After pre-bid meeting, no deviation shall be accepted and if any deviation is found in the bid of any bidder, the offer shall be liable to be rejected without raising any technical / commercial queries.
- 9.11 Technical / Commercial queries (TQ / CQ) shall not be issued once the bid have been opened. However, wherever CQ / TQ are unavoidable, the same shall be raised only once and the cut-off date given for CQ / TQ replies shall be adhered to. Offers shall be evaluated based on the information available upto cut-off date for CQ / TQ replies.
- 9.12 Extension in bid due date shall not generally be granted.
- 9.13 During the pre-bid meeting, a comprehensive training shall also be arranged to make bidders familiar with E-Tendering system. Also, bidders queries related to E-Tendering system will be answered during the meeting.

10.0 AMENDMENT OF BIDDING DOCUMENT

- 10.1 EIL may, for any reason whether at his own initiative or in response to the clarification requested by the prospective bidder(s), issue amendment in the form of Addendum during the bidding period or subsequent to receiving the bids. Any Addendum thus issued shall become part of Bidding Document and Bidder shall submit a copy of the Addendum duly signed and stamped in token of his acceptance. Any addendum issued shall be part of the Bidding Documents and shall be uploaded on Government of India's Central Public Procurement portal <http://eprocure.gov.in/eprocure/app> and on RCB's website: <http://www.rcb.res.in>; <http://www.rcb.ac.in>.
- 10.2 In case Addendum is issued during the bidding period, Bidder shall consider its impact in his bid. In case Addendum is issued subsequent to receipt of bids, Bidder shall follow the instructions issued along with Addendum with regard to submission of impact on quoted price / revised price, if any.

11.0 CONFIDENTIALITY OF BIDDING DOCUMENT

- 11.1 The Bidding Document is and shall remain the exclusive property of the Owner/EIL without any right to Bidder to use them for any purpose except for the purpose of Bidding.
- 11.2 On no account will any agency to whom Bidding Documents is issued, part with possession thereof or copy or take copies or tracings of any drawing, plan etc. It should be understood that the information therein is confidential, and that the Bidding Documents are therefore being issued to bidders in the strictest confidence.

C PREPARATION OF BID

12.0 LANGUAGE OF BID

- 12.1 The Bid prepared by the Bidder, all correspondence and documents relating to the bid exchanged by the Bidder and the EIL shall be written in the English language. Any printed literature/certificate/any other document furnished by the Bidder may be in another language, provided they are accompanied by an accurate translation of the relevant passages in the English language, in which case, for purpose of interpretation of the Bid the English translation shall prevail.
- 12.2 In the event of submission of any document/ certificate by the Bidder in a language other than English, the bidder shall get the same translated into English and submit the same after getting the translation duly authenticated by

Local Chamber of Commerce of bidder's country.

13.0 COMPLIANCE TO BID REQUIREMENT

13.1 ZERO DEVIATION:

13.1.1 Bidder to note that this is a ZERO deviation bidding document. Owner/EIL will appreciate submission of offer based on the terms and conditions in the enclosed Bidding Document to avoid wastage of time and money in seeking clarifications on technical / commercial aspect of the offer.

13.1.2 Accordingly, Bidder must submit format for "Compliance to Bid requirement" as per **Form-C** duly filled in along with Unpriced part of Bid.

13.1.3 Notwithstanding to the above, bids with the following deviation(s) to the bid conditions shall be summarily rejected without any post bid reference to the bidder:

- (a) Time Schedule
- (b) Schedule of Prices / Schedule of Rates
- (c) Defect Liability Period/ Warranty Period
- (d) Arbitration / Claims and Dispute Resolution
- (e) Scope of Work / Scope of Supply
- (f) Contract Performance Bank Guarantee (CPBG)
- (g) Termination of Contract /Suspension of work
- (h) Force Majeure
- (i) Bid Security/EMD
- (j) Bid Validity
- (k) Bank Guarantees
- (l) Compensation For Delay/ Liquidity Damages/ Penalty/ Price Reduction due to delay in completion

13.1.4 Any other condition specifically mentioned in the tender documents elsewhere that non-compliance of the clause lead to rejection of the bid.

13.1.5 In case Bidder stipulate deviations, Owner/EIL have the right to reject such bid at its absolute discretion without giving any opportunity for such Bidder to make good such deficiency.

14.0 DOCUMENTS COMPRISING BID

14.1 Bidders should submit their bid through Govt. of India's Central Public Procurement Portal (CPPP) <http://eprocure.gov.in/eprocure/app> only. Bidder shall follow the guidelines as given in Annexure-I to ITB of the Bidding Document for submission of their bid in CPP Portal <http://eprocure.gov.in/eprocure/app>.

14.2 The e-Bid should be prepared by the Bidder and shall be submitted on the aforesaid website in two parts as per the following details:

- i) PART – I : Earnest Money Deposit / Bid Security & Techno-Commercial / Unpriced Bid
- ii) PART - II : Price Bid

14.3 PART- I

14.3.1 This Part shall contain scanned copies of Earnest Money Deposit / Bid Security, as per provisions of the bid document. In case of exemption of EMD as per provision given in IFB/LIB, the relevant document as per provisions of IFB (Invitation for Bids) / LIB (Letter Inviting Bids) is required to be uploaded on e-procurement portal.

14.3.2 Further this part shall also contain scanned copies of Technical and Unpriced Commercial bid, which shall comprise the following, and shall be serially numbered and arranged in the order :

- i) Covering letter of Bid on bidder's letter head as per the proforma given in the Bidding document.
- ii) Master Index and copies of all technical and commercial amendments/addendums issued (if any), duly e-signed as a token of having received and read all parts of the bidding document and having accepted and considered the same in preparing their bid.
- iii) Power of Attorney in favour of Authorized signatory of the bid. For proprietorship agency, it should be clearly specified in the Bidder's letter head that it is a proprietary firm and the Bidder is the sole owner. For partnership firm, power of attorney by all other partners in the name of the partner who will sign their offer.

Note:- All documents/files of the bid shall be signed and uploaded by using the digital signature issued in the name of the person having valid Power of Attorney at the time of bid submission.

- iv) Bidders General Information as per **Form-I** to ITB of Proposal Forms.
- v) Details of experience meeting the Experience Criteria of BQC by the Bidder along with copies as mentioned in IFB/NIT.

Only such past experiences (PTR) shall be considered for qualification, details or documents of which are enclosed in the bid.

Bidders are required to submit all such past experience(s) (PTR) meeting the BQC along with relevant supporting documents in the first instance itself, alongwith the bid. Accordingly, only such past experience(s) shall be considered for qualification, details of which are provided in the bid by the bidder and subsequently no additional past experience (PTR) shall be sought from the bidder.

In case, a Bidder does not meet the BQC based on experience documents submitted by bidder in support of meeting the BQC, bids shall be rejected however, in CQs/TQs are issued to the bidder, bidders can be allowed to submit additional documents for any of the work out of the past experience(s) (PTR) list already submitted along with the bids, to support their meeting the BQC.

- vi) Details of Financial Capability as per **Form-A** of Proposal Forms along with financial documents required as per IFB/LIB.

For working capital in case Bidder opts for supplementing the working capital with a fund based line of credit as detailed in IFB, the Bidder shall upload the declaration letter from the Bank for availability of unutilized fund based line of credit for shortfall in working capital, as per **Form-A1** of Proposal Forms in their unpriced bid..

Note: All the documents submitted towards meeting the bidder's qualification criteria (including the documents against MSE, if any) shall be authenticated in line with provisions of IFB enclosed with the Bidding Document. In case of certification by CEO or CFO or Company Secretary of the Bidder the declaration shall be submitted as per **Form-B** of Proposal Forms.

- vii) Compliance to Bid requirement as per **Form-C** of Proposal Forms.
- viii) Check List of submission of bid as per **Form-D** of Proposal Forms.

- ix) Commercial Questionnaire as per **Form-E** of Proposal Forms.
- x) Declaration by Bidder as per **Form-G** of Proposal Forms.
- xi) Details of P.F. and ESI Registration as per **Form-H (1)** of Proposal Forms.

In case Bidders establishment is not registered with PF & ESI Authorities, the Bidder shall furnish an undertaking, as per **Form-H (2)** of Proposal Forms, that in the event their establishment falls under the purview of PF & ESI Act during the execution of Contract then the Bidder shall get their establishment registered under PF & ESI and they shall also be solely responsible to fulfil the obligation of PF & ESI at no extra cost to EIL.

- xii) Bank Account Particulars as per **Form-J** of Proposal Forms.
- xiii) Organization details:
- In case of a proprietorship firm, the name and address of proprietor, and self-declaration.
 - In case Bidder is a partnership firm, certified copy of the partnership deed.
 - In case of company (whether private or public), certified copy of the 'Certificate of Incorporation' together with certified Memorandum/ Articles of Association.
- xiv) As a token of confirmation that prices are quoted in the requisite format strictly complying to the requirement, unpriced copy of Schedule of rates/ Prices, i.e., Summary of Prices (FORM SP-1), Statement for Details of Service Tax (FORM SP-2A) and Statement for Details of taxes included in quoted price (FORM SP-2B) as uploaded in the price bid, with prices/rate/percentage being replaced by word "quoted", shall be uploaded along with the un-priced bid.
- xv) Any other information required in the Bidding Documents or considered relevant by the bidder.
- xvi) In addition to above, MSE bidder shall also upload the following:
- a) Documentary evidence that the Bidder is a Micro or Small Enterprises registered with District Industries Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or Micro or Small Enterprises having Udyog Aadhar Memorandum or any other body specified by Ministry of Micro, Small and Medium Enterprises.
 - b) If the MSE is owned by SC/ST Entrepreneurs, the bidder shall furnish appropriate documentary evidence in this regard.
- If the MSE bidder does not provide the appropriate document or any evidence to substantiate the above, then it will be presumed that he does not qualify for any preference admissible in the Public Procurement Policy, 2012.

14.4 PART - II - PRICE BID

- 14.4.1 This Part shall contain duly filled in Schedule of Rates at the designated place of the Govt. of India's Central Public Procurement Portal (CPPP) <http://eprocure.gov.in/eprocure/app>.

- 14.4.2 Amounts must be filled in excel file of the Schedule of Rates after downloading the 'Schedule of Rates' file uploaded in the website of EIL <http://eprocure.gov.in/eprocure/app> as RAR file.
- 14.4.3 Bidder to note that the Schedule of Rates (SOR) file uploaded on the website <http://eprocure.gov.in/eprocure/app> contain the following Forms. Bidder shall download the SOR file available as a RAR file, fill these forms and then shall upload the SOR file (after conversion into RAR format) at the designated place of the CPP Portal <http://eprocure.gov.in/eprocure/app> in their Price bid :
- Summary of Prices (FORM SP-1)
 - Statement of Service Tax (FORM SP-2A)
 - Details of taxes & duties included in the quoted prices for statutory variations (FORM SP-2B)
- 14.4.4 The format of the files uploaded by bidder in RAR-file of Schedule of Rates should be the same as the format of the files available in the EIL/NIC/Owner website.
- 14.4.5 If any file(s) of the price part is not provided in Excel format, the print out of the given files shall be duly filled, signed and stamped and scanned copies of the same shall be uploaded at the place designated for price bid.
- 14.4.6 If scanned copies are submitted, then there shall not be any overwriting in Price Part of the Bid.
- 14.4.7 Deviation to terms and conditions, presumptions, overwriting etc. shall not be stipulated in Price part of bid. In case of any conditions stipulated in price bids, the bids of such bidders shall be summarily rejected and shall not be considered for further evaluation. Evaluation shall be carried out excluding such bidder(s).

15.0 **BID PRICES**

- 15.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the total works as described in Bidding Document, based on the Schedule of Rates submitted by the Bidder and accepted by the Owner/EIL.
- 15.2 Rates/Amounts must be filled in the 'Schedule of Rates' after downloading the file uploaded in the NIC/Owner/EIL website. In case separate file is uploaded, and any variation in item description, unit & quantity are noticed; the bid is liable to be rejected. In any case, Bidder shall be presumed to have quoted against the tendered description of work and the same shall be binding on the Bidder.
- 15.3 Bidder shall quote a single consolidated percentage increase / decrease in the estimated price and the same percentage shall be applicable to all the items of the Schedule of Rates (Form-SP-0). Bidder shall be presumed to have quoted against the tendered description of work as per the Schedule of Rates and the same shall be binding on the Bidder.
- 15.4 The quoted Price shall be deemed to be inclusive of all taxes and duties except Service Tax, Swachh Bharat Cess (SBC) & Krishi Kalyan cess (KKC). For details of Taxes & Duties, please refer Special Conditions of Contract.
- It is for the bidder to assess and ascertain the rates of applicable Taxes & Duties for the tendered work. It is clearly understood that Owner/EIL will not have any additional liability towards payment of applicable Taxes & Duties as a result of Bidder's wrong assessment / interpretation of applicable taxes & duties. Bidder must note that Owner/EIL shall not issue any concessional form (C Form) against Sales Tax / CST / VAT.
- 15.5 Prices quoted by the bidder, shall remain firm and fixed and valid until completion of the Contract, unless otherwise mentioned elsewhere in the

Bidding Document, and will not be subject to variation on any account except as otherwise specifically provided in the Contract documents.

- 15.6 Alternative bids shall not be considered.
- 15.7 Discount, if any, must be indicated in the space provided in Schedule of Rates (Summary of Prices) only. Conditional discount, if offered, shall not be considered for evaluation.

16.0 CURRENCIES OF BID & PAYMENT

- 16.1 The Bidder shall quote in Indian Rupees and shall be paid in Indian Rupees only.

17.0 BID VALIDITY

- 17.1 Bid submitted by Bidder shall remain valid for a minimum period of 03 (Three) months from the date of opening of Bid Security and Techno-Commercial (Part-I) Bids. Bidders shall not be entitled during the bid validity period, without the consent in writing of the Owner/EIL, to revoke or cancel their Bid or to vary the Bid given or any term thereof. In case of Bidders revoking or cancelling their Bid or varying any terms in regard thereof without the consent of Owner/EIL in writing, Owner/EIL shall forfeit EMD paid by them along with their bids. Such Bidder may also be put on Holiday list/Negative list.
- 17.2 EIL may solicit the bidders consent to an extension of the period of validity of bid. The request and the responses there to shall be made in writing. If the Bidder agrees to the extension request, the validity of Bank Guarantee towards EMD shall also be suitably extended. However, bidders agreeing to the request for extension of validity of bid will not be permitted to modify the bid.

18.0 BID SECURITY / EARNEST MONEY DEPOSIT (EMD)

- 18.1 The Bid must be accompanied by Earnest Money (interest free) as per provisions mentioned in IFB.
- 18.2 If a bidder submits more than one bid either directly (as a single bidder or as a member of consortium) or indirectly (as a sub-contractor), EMD, if any, submitted by the bidder shall be forfeited.
- 18.3 If the Bidder, after submission, revokes his Bid or modifies the terms and conditions thereof during the validity of his Bid except where Owner/EIL has given opportunity to do so, the earnest money shall be liable to be forfeited. Owner/EIL may at any time cancel or withdraw the Bidding Process without assigning any reason and in such cases the earnest money submitted by Bidder will be returned to him.
- 18.4 Owner/EIL shall not pay any Interest on Bid Security furnished. Further, in case bank guarantee submitted is found to be fake, bid of such bidder shall be rejected and may initiate action as deemed necessary as per Owner/EIL Policy.
- 18.5 In case the successful Bidder, fails to accept arithmetical corrections as given in ITB, EMD submitted by them shall be forfeited.
- 18.6 The successful Bidder shall be required to submit Contract Performance Bank Guarantee (CPBG) and execute the Contract Agreement with Owner/EIL in the manner and within the time period indicated in Conditions of Contract. Should the successful Bidder fail or refuse to sign the agreement or furnish the Contract Performance Bank Guarantee (CPBG) within the specified period, the earnest money shall be liable to be forfeited without prejudice to his being liable to any further loss or damage incurred in consequence by Owner/EIL.
- 18.7 EMD/ Bid Securities of unsuccessful bidders will be returned upon placement of

order/ award. Also EMD of late bids/ where unpriced bids not opened, shall be returned after priced bid opening. In case of the successful Bidder the same will be returned after the order/ contract is effective and Contract Performance Bank Guarantee is submitted. However, in case Owner/EIL decides to cancel/ annul the Enquiry/ Bidding Document at any stage during the bidding process but before the award of work, EMD of the bidders shall be returned at the earliest from the date of such decision.

18.8 The bid Security shall be forfeited :

- a) If a bidder withdraws its bid during the period of bid validity, or any extension thereto provided by the bidder; or submits multiple bids/alternative bids.
- b) Does any breach of tendering terms and conditions; or
- c) On his own modifies his bid during the period of bid validity; or
- d) If the successful bidder fails to;
 - i) Sign the Contract in accordance with Clause 34.0 of ITB; and/or
 - ii) Furnish a Contract performance Bank Guarantee in accordance with Clause 35.0 of ITB.
 - iii) To accept arithmetical corrections pursuant to clause 29.0 of ITB.
- e) If the Information/documents forming basis of evaluation submitted by the bidder in the bid is found to be false/forged in accordance with relevant provisions provided in Bidding Document

19.0 FORMAT AND SIGNING OF BID

19.1 The bidder shall submit e-bid as per the provisions given in this bidding document in Govt. of India's Central Public Procurement Portal (CPPP) <http://eprocure.gov.in/eprocure/app> as per the guidelines given in the bidding document.

19.2 The e-bid shall be signed (e-signed) by the person duly authorised to sign on behalf of the bidder and having valid POA for the same at the time of bid submission. The digital signature used for signing the bid shall be issued in the name of such authorised person and the certificate details, available from the e-signed documents, should indicate the details of the signatories. All documents/files of the bid shall be signed by using the digital signature issued in the name of the person having valid Power of Attorney (POA) at the time of bid submission. Any consequences resulting due to such signing (e-signing) shall be binding on the bidder.

20.0 CHECK LIST FOR SUBMISSION OF BID

20.1 To assist Bidder in ensuring the completeness of bid, a checklist for submission of various documents/details in un-priced commercial part of bid has been enclosed.

20.2 Bidder is required to fill the checklist and submit along with the bid for ready reference.

D BID SUBMISSION

21.0 ONE BID PER BIDDER

21.1 A bidder (i.e., the bidding entity) shall, on no account submit more than one bid either directly (as a single bidder or as a member of consortium) or indirectly (as a sub-contractor) failing which following actions shall be initiated:

- a) All bids submitted by such bidder (say 'A') directly & indirectly, shall stand rejected and EMD, if any, in case of direct bid submitted by bidder 'A' shall be forfeited.
- b) If another bidder (say 'B') has proposed bidder 'A' as a sub-contractor then bidder 'B's bid shall also be rejected. However, in case the bidder 'B' has also proposed an alternative sub-contractor who is other than the bidder 'A', then bidder 'B's bid shall be evaluated with the proposed alternative sub-contractor only. Hence, every bidder shall ensure in his own interest that his proposed sub-contractor is not submitting alternative/ multiple bids.

Note: However, in case EIL has proposed a list of sub-contractors/ sub-vendors in the enquiry document itself which shall be common for all the bidders, the provision at (b) above shall not be applicable as long as only the sub-contractors/ sub-vendors are common in case of various bidders. However, if any of such sub-contractors/ sub-vendors happens to be a bidder also, clause (b) above shall be applicable.

22.0 MARKING AND SUBMISSION OF BIDS

- 22.1 E-Bid shall be submitted in the following manner with file names as per the details given below:

Part-I – Techno-commercial / un-priced bid including Scanned copies of Bid security, Power of Attorney and the documents against BQC (including documents against MSE/Declaration by CPSU, if any) duly authenticated in line with IFB.

Part-II - Priced Bid shall be uploaded as per the requirement of CPP Portal <http://eprocure.gov.in/eprocure/app>.

Original Bid security shall be submitted in physical form within final bid due date & time.

- 22.2 Bid Security (EMD) in physical form: Original bid security shall be submitted in sealed envelope clearly super scribing "Bid Security- Original". Scanned copies of the same shall be uploaded in the e-bid along with un-priced bid with file name "Bid Security/Earnest Money Deposit".
- 22.3 All the certified documentation against BQC (including valid MSE certificate/Declaration by CPSU, if any) shall be uploaded by the bidder at the designated place in the CPP Portal <http://eprocure.gov.in/eprocure/app> in a sequential manner with an index in a separate folder titled as "Documentation against Bidder Qualification Criteria (Technical & Commercial)".

Bids must be received online by EIL through Govt. of India's Central Public Procurement Portal (CPPP) <http://eprocure.gov.in/eprocure/app>.

Original Bid Security / EMD must be received by EIL within final bid due date & time at the following address:

Attn: Sh. Mr. U. K. Mishra, AGM(C&P)

Engineers India Ltd.

Dispatch Section - Tower II – Ground Floor

Sector-16, Gurgaon – 122 001, Haryana

- 22.4 Envelope containing documents in physical form shall indicate Bid Document No., Name of work, Name & address of the bidder to enable the bid to be returned unopened, if required.
- 22.5 If the envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

23.0 DEADLINE FOR SUBMISSION OF BID

- 23.1 The bid must be submitted on line at e-tender site of Govt. of India's Central Public Procurement Portal (CPPP) <http://eprocure.gov.in/eprocure/app> within due date and time for bid submission as specified in LIB/ IFB. All envelopes containing the documents in physical form should also be submitted within the bid due date & time.
- 23.2 EIL/Owner may, in exceptional circumstances and at its discretion, on giving reasonable notice by e-mail / fax or any written communication to all prospective bidders who have downloaded the bid document extend the deadline for the submission of bids in which case all rights and obligations of the Employer / Consultant and bidders, previously subject to the original deadline will thereafter be subject to deadline as extended.
- 23.3 Bidders in their own interest are requested to register on e- tendering portal and upload their bid well in time.
- 23.4 Bidders should avoid the last hour rush to the website for registration of user id & password, enabling of user id and mapping of digital signature serial number etc. since this exercise require activities from EIL & M/s National Informatics Centre (NIC) (Service Provider for Govt of India's CPP Portal) and needs time. In the event of failure in bidder's connectivity with EIL/Service Provider during the last few hours, bidder is likely to miss the deadline for bid submission. Due date extension request due to above reason may not be entertained.

24.0 LATE BIDS / UNSOLICITED BIDS / BID SUBMISSION AT OTHER PLACE

- 24.1 E-system of EIL shall close immediately after the deadline for submission of bid prescribed in the LIB/ IFB.
- 24.2 Unsolicited bids or bids being submitted in physical form / to address other than one specifically stipulated in the bid document will not be considered for opening / evaluation / award and will be returned to such bidders.

25.0 MODIFICATION AND WITHDRAWAL OF BIDS

- 25.1 The bidder may modify, re-submit or withdraw its e-bid after the bid submission, but, before the due date of submission as per provision of e-tendering system of EIL. No bid can be modified after the deadline for submission of bid.
- 25.2 No bid shall be allowed to be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity. Withdrawal of a bid during this interval shall result in the bidder's forfeiture of its bid security in line with the provision of the bidding document.

E BID OPENING AND EVALUATION**26.0 BID OPENING**

- 26.1 EIL will open the un-priced techno – commercial bids in the presence of bidders' designated representatives at date & time as stipulated in LIB/ IFB at the address given in the bidding document. The bidder's representatives who are present shall sign bid-opening statement evidencing their attendance.
- 26.2 Bidder's names, the presence (or absence) and amount of bid security, and any other such details as Owner/EIL may consider appropriate will be announced during un priced bid opening.
- 26.3 In case bidder has not complied with Bid Security requirement, such bidder's offer is not proceeded for further opening and rejected out rightly.

27.0 EVALUATION OF TECHNO-COMMERCIAL BIDS

27.1 Prior to detailed evaluation of bids, the Owner/EIL will determine whether each bid (i) is accompanied by required EMD (ii) totally comply to the requirement of bidding document.

27.2 The Owner/EIL will examine the bids to determine whether they are complete and whether the bids are generally in order. Prior to detailed Bid evaluation, the OWNER/EIL will determine the qualification of bidder with respect to the qualification criteria as stated in the Notice for Invitation for Bids.

27.3 DEVIATIONS, RESERVATIONS, AND OMISSIONS

During the evaluation of bids, the following definitions apply:

- a) "Deviation" is a departure from the requirements specified in the Bidding Documents;
- b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and
- c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Documents.

27.4 DETERMINATION OF RESPONSIVENESS

Owner/EIL's determination of a bid's responsiveness is to be based on the contents of the bid itself, as defined in Clause 14.0 of ITB.

A substantially responsive bid is one that meets the requirements of the Bidding Documents without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,

(a) if accepted, would:

- i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
- ii) limit in any substantial way, inconsistent with the Bidding Documents, EIL's rights or the bidder's obligations under the proposed Contract; or
- iii) would unfairly affect the competitive position of other bidders presenting substantially responsive bids.

27.5 No stipulation, deviation, terms & conditions, presumption, basis etc. shall be stipulated in the bid. Any conditions, if stipulated, shall be treated as null and void and shall render the bid liable for rejection.

27.6 CLARIFICATION OF BIDS

Bidders should ensure that the Bid submitted is substantially responsive Bid in the first instance itself. Evaluation may be completed based on the content of the Bid itself without seeking any subsequent additional information which may result in rejection of Bid. However, EIL may, at its discretion, may request bidder to submit the necessary information or documentation, within a reasonable period of time, to withdraw material deviation, reservation, or rectify omission in the bid related to documentation requirements. Requesting information or documentation on such account shall not be related to any aspect of the price of the Bid. EIL's request for clarification and the response shall be in writing.

No change, including any voluntary increase or decrease, in the prices shall be sought, offered, or permitted. Bidder shall not be allowed to submit any price implication or revised price after submission of Bid unless the same is called for by Owner/EIL in writing.

Failure of the bidder to comply with the request may result in the rejection of its Bid.

If a bidder does not provide clarifications of its bid by the date and time set in EIL's request for clarification, its bid shall be evaluated with available information which may result in rejection of their bid.

All responses from the Bidders shall be in writing, and no change in the price shall be permitted unless specifically sought by EIL.

No revision/implication in quoted price shall be allowed should the deviations stipulated by the Bidder are considered not acceptable and are required to be withdrawn by the Bidder in favour of stipulations of Bidding Document. Bids retaining unacceptable deviations will be rejected.

27.7 Owner/EIL reserve the right to assess Bidder's capability and capacity to execute the work using in-house information including taking into account other aspects such as past performance etc.

27.8 UNSOLICITED POST TENDER MODIFICATIONS

Bidders are advised to quote strictly as per terms and conditions of the bidding document and not to stipulate any deviations/exceptions. Once quoted, the bidder shall not make any subsequent price changes, whether resulting or arising out of any technical / commercial clarifications sought on any deviations or exceptions mentioned in the bid. Similarly, no revision in quoted price shall be allowed should the deviations stipulated by him are not accepted by Owner/EIL and are required to be withdrawn by him in favour of stipulation of the bidding document. Any proposed price changes is likely to render the bid liable for rejection.

In case of unsolicited price increase, such offer(s) of the Bidders shall be rejected. In case of unsolicited price decrease, the Bidder(s)'s offer shall be compared as per originally quoted prices and if the Bidder happens to be the recommended Bidder, the decrease in prices shall be taken into account for ordering.

27.9 COMPLETE SCOPE OF WORK

The complete scope of work has been defined in the bidding document. Only those bidders who take complete responsibility for the complete scope of work as contained in the bidding document shall be considered as acceptable.

28.0 **OPENING OF PRICE BID**

28.1 Priced commercial part of only those bidders who meets the qualification criteria and whose bids is determined to be technically and commercially acceptable to the Owner/EIL shall be opened. Bidders selected for opening of their price bids shall be informed about the date of price bid opening. Bidders may depute their authorised representative to attend the opening. During price bid opening, only total price and rebate, if any, as quoted by the bidders shall be read out.

29.0 **ARITHMETIC CORRECTIONS**

29.1 The price quoted by bidders shall be checked for arithmetic correction, if any, based on rate and amount filled by the bidder in the SOR/price schedule formats. The same shall be dealt as follows :

29.2 RATE AND AMOUNT IN FIGURES AND WORDS

- a. When there is a discrepancy between the rate in figures and in words for an item, the rate which corresponds to the amount shall be taken as correct.
- b. When the rate quoted by the bidder in figures and words tallies but the amount is incorrect, the rate quoted by the tenderer shall be taken as correct.

- c. When it is not possible to ascertain the correct rate as detailed above, the rate quoted for the item in words shall be adopted as the quoted rate.

29.3 RATE AND AMOUNT IN FIGURES ONLY

When rate and amount are in figures only, in case of discrepancy the rate quoted by bidder shall be taken as correct.

29.4 LUMPSUM AMOUNT ONLY IN FIGURES AND WORDS

When a lumpsum amount is quoted in figures and words but not unit rates are not required to be quoted, amount quoted in words shall be taken as correct.

29.5 PERCENTAGE TENDERS

- a) In case bidder has quoted percentage increase or decrease and the total amount in the summary of prices, but there is discrepancy in total amount quoted and the amount arrived at after calculating the percentage increase/decrease quoted by the bidder over EIL estimate, then the total amount shall be corrected based on the EIL estimate and the quoted percentage.
- b) In case bidder has quoted the percentage and the total amount in the summary of prices, but increase or decrease (“+” or “-”) has not been indicated by the bidder against the % figure, then the amount quoted by bidder shall be considered and the percentage increase/decrease shall be calculated based on the total amount quoted by the bidder & EIL estimate.
- c) In case bidder has quoted the percentage in the summary of prices, but the total amount has not been quoted and increase or decrease (“+” or “-”) has not been indicated against the % figure, then the ‘+’ shall be considered for the % figure.
- d) In case the bidder left the % & amount Blank, % increase/decrease shall be considered as NIL.

Bidder shall be requested to accept correction of arithmetic errors. Failure to accept the correction in accordance with clause 29.1 above of ITB, shall result in rejection of the Bid and Bid Security shall be forfeited.

30.0 EVALUATION OF PRICE BIDS

- 30.1 Based on percentage increase / decrease to the estimated cost as per FORM SP-1, total quoted price will be calculated after considering Arithmetic Corrections, if any, in line with Clause 29.0 of ITB.
- 30.2 If a Bidder does not quote any increase / decrease over the EIL estimated amount, the increase / decrease shall be considered as NIL for the purpose of evaluation. Further, the percentage increase/decrease quoted shall be applicable for all items of the Schedule of Rates (SOR) without exception. The offers of Bidders quoting separate / different rates and / or separate / different percentages for different items, shall be summarily rejected, without reference to correspondence with the Bidder.
- 30.3 Service Tax, SBC & KKC as quoted by Bidder in FORM SP-2A, to be arrived / calculated as per the following, shall be considered for evaluation.
- a) For Part-1 of SOR (Execution Phase) : Service Tax, SBC & KKC @ 15% on ceiling amount of services (subject to maximum 40% of Total quoted price for Part-1 of SOR) as per FORM SP-2A after arithmetic corrections shall be considered for evaluation.
- b) For Part-2 of SOR (Maintenance Phase) : Service Tax, SBC & KKC @ 15% on ceiling amount of services (subject to maximum 70% of Total quoted price

for Part-2 of SOR) as per FORM SP-2A after arithmetic corrections shall be considered for evaluation.

100% of Service Tax, SBC & KKC amount as above shall be added to the total quoted price to arrive at the Evaluated price.

- 30.4 Work shall be awarded to the bidder whose total evaluated price, as mentioned above, is the lowest.
- 30.5 Any uncalled for lump sum / percentage or adhoc reduction / increase in prices, offered by the Bidders after submission of price Bid, shall not be considered. However, if reduction is from the recommended Bidder, such reduction shall be taken into account for arriving at the contract value.
- 30.6 In case, discounts and prices etc. are not filled up in the Priced Bid (Schedule of Rates/Prices) and are not as per the requirements of the Bidding document, the same shall not be considered for evaluation.
- 30.7 Optional items shall not be considered for the purpose of arriving at the total cost. However, in case the rates quoted by the selected Bidder for optional items are considered high, the same shall be negotiated.
- 30.8 Purchase Preference to Central Public Sector Undertakings shall be allowed as per existing Government Policy.
- 30.9 Internet Based Reverse Auctioning may be adopted, in which case bidders shall be intimated accordingly. The terms & conditions applicable for reverse auctioning shall be as per Annexure – II to ITB. However, the % reduction of evaluated price in the Reverse Auction w.r.t. the evaluated price based on price quoted by the bidder in e-bid shall be considered as a uniform discount applicable on all the items of SOR (including form SP-2A & 2B). The estimated Contract Value for award will be excluding Service Tax, SBC & KKC. Service Tax, SBC & KKC shall be paid in line with provisions of Special Conditions of Contract.

31.0 CONTACTING THE OWNER/EIL

- 31.1 Bidders are advised not to contact Owner/EIL on any matter relating to its bid from the time of Bid opening to the time Contract is awarded, unless requested to in writing. Any effort by a Bidder to influence Owner/EIL in any of the decision in respect of Bid evaluations or Award of Contract will result in the rejection of Bid.

32.0 AWARD OF CONTRACT

32.1 OWNER'S/EIL'S RIGHT TO ACCEPT OR REJECT ANY BID

The Owner/EIL reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or without any obligation to inform the affected Bidder or Bidders of the grounds or the reasons for the Owner's/EIL's action.

33.0 NOTIFICATION OF AWARD

- 33.1 The Owner/EIL will notify the successful Bidder in writing by Letter of Acceptance that their bid has been accepted. The Letter of Acceptance will constitute the formation of a Contract until the Contract agreement has been signed.

34.0 CONTRACT AGREEMENT

- 34.1 The Contractor shall execute a formal contract with the OWNER within specified period from the date of issue of Detailed Letter of Acceptance on a non-judicial stamp paper, purchased from Delhi/Haryana, of appropriate value (Rs. 100/-). The cost of non-judicial stamp paper shall be borne by the Contractor.

- 34.2 Contract documents for agreement shall be prepared after the acceptance of bid. Until the final contract documents are prepared and executed this bid document together with the annexed documents, modifications, deletions agreed upon by the Owner and bidders acceptance there of shall constitute a binding contract between the successful Bidder and the Owner based on terms contained in the aforesaid documents and the finally submitted and accepted prices.
- 34.3 The Contract document shall consist of the following:
- i) Original Bidding Document along with its enclosures issued.
 - ii) Amendment/Corrigendum to original Bidding Document issued, if any.
 - iii) Letter of Acceptance.
 - iv) Detailed letter of Award/Acceptance along with enclosures attached therewith.
- 34.4 At the start of Comprehensive Maintenance period, a separate agreement, as per proforma (to be provided later) shall be entered between Owner & Contractor for Comprehensive Maintenance period. Agreement shall be entered on a non-judicial stamp paper of appropriate value, minimum Rs. 100/- of Delhi/Haryana State .The cost of non-judicial stamp paper shall be borne by the Contractor.
- 35.0 PERFORMANCE SECURITY/ CONTRACT PERFORMANCE BANK GUARANTEE**
- 35.1 The successful Bidder shall be required to submit Contract Performance Bank Guarantee (CPBG) with Owner in the manner and within the time period indicated in Special Conditions of Contract. Should the successful Bidder fail or refuse to sign the agreement or furnish the Contract Performance Bank Guarantee (CPBG) within the specified period, the earnest money shall be forfeited without prejudice to his being liable to any further loss or damage incurred in consequence by Owner.
- 36.0 CLARIFICATION REQUESTS FROM BIDDERS**
- 36.1 A bidder may seek clarifications regarding the bidding document provisions, bidding process and / or rejection of his bid. Owner / EIL shall respond to such requests within a reasonable time.

E-TENDERING METHODOLOGY

Instructions for Online Bid Submission:

The bidders are required to submit soft copies of their bids electronically on the CPP Portal (URL: <http://eprocure.gov.in>) only, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More detailed information useful for submitting online bids on the CPP Portal may be obtained at:

<http://eprocure.gov.in/eprocure/app> .

REGISTRATION

- 1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <http://eprocure.gov.in/eprocure/app>) by clicking on the link “Click **here to Enroll**” on the CPP Portal is free of charge.
- 2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- 3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process and submit in EIL tender portal for updation of records (<http://tenders.eil.co.in>) . These details would be used for any communication from the CPP Portal.
- 4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (DSC) (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.
- 5) Foreign Bidders have to refer “DSC details for foreign Bidders” for Digital signature Certificates requirements which comes under Download Tab at <http://eprocure.gov.in/eprocure/app> and the remaining part is same as above and below.
- 6) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- 7) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

- 1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.
- 2) Once the bidders have selected the tenders they are interested in, the same can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

- 1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- 3) To avoid Network congestion, Bidder is recommended to upload file size of up to Maximum 35 MB per part. However, in case file size exceeds 35 MB, bidder may compress the files by scanning with 75 dpi setting as per s.no 4 below and can use additional 25 MB space (“My Documents”) provided to the bidder as per s.no 5 below.
- 4) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document and generally, they can be in PDF / XLS / RAR / DWF formats. **Bid documents may be scanned with 75 dpi with black and white option. However, Price Schedule / SOR shall be strictly in RAR format without altering any contents of the formats uploaded by EIL in their Bidding Document.**
- 5) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Documents” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

- 1) Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3) Bidder has to select the payment option as “offline” to pay the tender fee / EMD as applicable and enter details of the instrument.
- 4) Bidder should prepare the EMD as per the instructions specified in the tender document. The original EMD/Bid Security shall be submitted in physical form within final bid due date & time. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- 5) A Price Bid format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the Price Bid file, open it and complete the cells with their respective financial quotes and other

details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the Price Bid file is found to be modified by the bidder, the bid will be rejected.

- 6) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 7) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.
- 8) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 9) Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 10) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

RETENDER

Please note that if Tender has been retendered, than it is mandatory for the bidder to submit their offer again on CPP Portal.

WITHDRAWAL OF BID

It may please be noted that bidders now have an additional feature of withdrawing their bids before due date and time. After submitting the bid on the CPP Portal, if the bidder wishes to withdraw his bid, he can do so. However, if the bidder withdraws his bid, he will be exempted from further participation in the tender and won't be able to submit his bid again for that particular tender.

ASSISTANCE TO BIDDERS

- 1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- 2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24 x 7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800-3070-2232 and Mobile Nos +91-7878007972, +91-7878007973.

ANNEXURE-II TO ITB

TERMS & CONDITIONS FOR REVERSE AUCTION

Terms and conditions for Reverse Auction

- 1 Owner / Purchaser reserves the right to go in for reverse auction among the technically and commercially acceptable bidders. The decision to conduct reverse auction or not, will be conveyed to short listed bidders prior to opening of price bid. In view of this, the bidders must quote most competitive prices in the first instance itself.
- 2 Once the decision to conduct Reverse Auction is conveyed to the bidders, it will be mandatory for the bidders to participate in Reverse Auction, failing which, the bidder shall be liable for punitive action including but not limited to rejection of offer, encashment of bid security, wherever applicable, etc. For this purpose, even log-in to the system shall be construed as participation.

3 Schedule for Reverse Auction

The Reverse Auction shall be scheduled for a duration of two hours. If a bidder places a Bid in the last 5 minutes of scheduled closing time of the Auction, the Auction time shall get extended automatically for another 5 minutes from the time of the last Bid placed. In case, there is no Bid in the last 5 minutes of closing of the Auction, the Auction shall be closed automatically without any extension.

The above provision shall apply to the bids in extended time also.

4 Auction process

- Each Bidder shall be assigned a Unique User Name & Password. The Bidders are requested to change the Password and edit the information in the Registration Page after the receipt of initial Password. All bids using the Login ID given to the bidder will be deemed to have been submitted by the bidders. During the auction, bidders will be referred by proxy names as B₁, B₂, B₃, etc. and identity will not be disclosed.
- The Reverse Auction shall be conducted based on the lowest evaluated price out of all the techno-commercially acceptable bidders, based on the prices submitted along with the bid, as the opening price. The Bidder shall be able to bid lower than the opening price in multiples of the decrement, but a Bidder must always bid lower than the Lowest Bid.
- Only one bidder shall be at a particular position / rank, which means only one L1.

- The Bidder shall be able to view the following on his screen along with the necessary fields:
 - i) Opening Price.
 - ii) Leading Bid in the Auction, i.e., the lowest bid.
 - iii) Bid placed by him.

At no point of time will any bidder see the names of other bidders, or the prices of bidders other than the lowest bid.
- A bidder can continue to revise his bid till the auction ends. However, the Bidder cannot quote / Bid equal to the Leading / Lowest Bid. He must always quote lower than the Leading / Lowest Bid.
- The evaluation criteria is based on Price alone. The Bidder who quotes the lowest evaluated Price is determined as the lowest bidder.
- However, if Reverse Auction does not lead to any bid, EIL shall reserve the right to award the job based on the lowest prices quoted in sealed envelope.
- Apart from the participating bidders, the Reverse Auction shall be visible, while in progress to authorized officials of Owner / Purchaser, who are monitoring the process.

5 Bid Price

The price shall be based on the scope, technical specifications and commercial terms & conditions and other part of Bidding document agreed upto the date of reverse auction.

The Opening Price and the Bid Decrement shall be displayed on the auction site at the start of the auction. However, the bidders shall be able to view the auction details, generally, 15 to 30 minutes before the start of actual auction.

6 Bid Decrement

Shall be 0.1% of the Opening Price. The bidder to lower the bid in multiples of the bid decrement.

7 Bidding Currency

Bidding will be conducted in Indian Rupees (INR).

8 Bid Validity

The Bid Price submitted in the reverse auction shall be firm and valid for acceptance for a period of 15 days from the date of reverse auction and shall not be subject to any change whatsoever.

9 Bids once placed, binding on the Bidder

The bid of the bidder will be taken to be an offer to sell. Bids once submitted by the bidder cannot be cancelled. The bidder is bound to sell the material/services at the price that they bid. Should any bidder back out and not accept the order as per the rates quoted, Owner / Purchaser reserves the right to take action as considered appropriate, including encashment of bid security and placement on Holiday / Negative list etc.

10 Lowest bid of a Bidder

During the process of reverse auction, the bidder may submit several bids. In case the bidder submits such multiple bids, the lowest bid will be considered as the bidder's final offer to sell.

11 Submission of final prices by successful bidder

Successful bidder shall be required to submit the final prices, quoted during the Reverse Auction in an appropriate format within two days of the completion of Auction to EIL, duly signed and stamped as token of acceptance without any new condition. However, in case the reverse auction is for a package, within 2 working days after completion of the online event of Reverse Auction, the successful bidder would submit their cost break down as per the price format for the final price arrived at after reverse auction.

12 General

- The bidders may quote from their own offices/ place of their choice. Internet connectivity shall have to be ensured by each agency on its own. In extreme case of failure of internet connectivity, (due to unforeseen circumstances other than power failure), communication shall have to be sent by fax/E-mail/ phone immediately. Owner / Purchaser shall extend the bidding time, in such a case, appropriately (generally by half an hour) but not more than once per bidder.
- The Bidder, himself or any of his representatives, shall not involve in Price manipulation of any kind directly or indirectly by communicating with other bidder.

- The Bidder shall not divulge either his Bids or any other exclusive details of Owner / Purchaser to any other party.
- Bidders agree to non-disclosure of trade information regarding the purchase, identity of EIL, bid process, bid technology, bid documentation and bid details.
- Owner / Purchaser can decide to extend, reschedule or cancel any Auction. No bidder can claim any kind of compensation on account of the same.
- Owner / Purchaser shall not have any liability to Bidders for any interruption or delay in access to the site irrespective of the cause.
- Owner / Purchaser shall not be responsible for any direct / indirect / consequential losses / damages, on account of systems problems, inability to use the system, loss of electronic information etc.
- Owner / Purchaser shall be at liberty to cancel the reverse auction process / tender at any time, before ordering, without assigning any reason.
- Owner / Purchaser's decision on award of Contract shall be final and binding on all the Bidders.

PROPOSAL FORMS

FORMAT FOR FINANCIAL CAPABILITY OF THE BIDDER

A. FINANCIAL DETAILS:

S no.	Description	Year	Value Currency (_____)
1.	Turnover	Latest financial year :	
		Preceding 1 st year :	
		Preceding 2 nd year :	
2.	Net Worth	Latest financial year :	(*)
3.	Working Capital	Latest financial year :	

(*) – Indicate Positive or Negative (Value is not Mandatory)

Note:

- Networth calculation:** Networth means paid up share capital, Share Application Money pending allotment* and reserves# less accumulated losses and deferred expenditure to the extent not written off. Networth has been calculated using the following formula, as per provisions of the enquiry document:

Reserves to be considered for the purpose of networth shall be all reserves created out of the profits and securities premium account but shall not include reserves created out of revaluation of assets, write back of depreciation and amalgamation.

*Share Application Money pending allotment will be considered only in respect of share to be allotted.

Paid up share capital	XXXX
Add: Share Application Money pending allotment	XXX
Add: Reserves (As defined Above)	XXXX
Les: Accumulated Losses	XX
Less: Deferred Revenue Expenditure to the extent not written off	<u>XX</u>
Networth	<u>XXXX</u>

- Working Capital calculation:** Working Capital shall be Current Assets minus Current Liabilities.
- Turnover:** Turnover shall be calculated including Excise Duty but excluding other Incomes.
- Networth, Working Capital and Turnover has been calculated using the above mentioned formulae and after giving effect to the impact of Audit Qualifications given in the Audit Report.

Date:

[Signature of Authorized Signatory]

Name:

Designation:

Seal:

(To be printed on Letter Head of bank)

DECLARATION FROM THE BANK FOR AVAILABILITY OF UNUTILIZED LINE OF CREDIT

Ref: _____

Date: _____

We _____, a Bank firm having our registered office address _____ confirm that the Company M/s _____, having its registered office at _____ is having account with our bank.

Presently, the credit limits of the company are as follows:

Fund Based Line of Credit (towards Working Capital like CC Limit)	Amount in (Currency_____)
Sanctioned Line of Credit	
Utilized Line of Credit	
Balance Line of Credit	

[Bank to specify as applicable]

We declare that we are scheduled bank in India; OR

We declare that we are a commercial bank having Net worth more than equivalent INR 1000 Million as per latest audited financial statements.

Yours Faithfully,

Signature
Name & Designation
e-mail ID
Fax number

SELF-CERTIFICATION

I, _____ S/o/D/o of _____, working as CEO/CFO/Company Secretary (indicate, as applicable) of the Company _____ having its registered office at _____ certify that all the details including documents pertaining to Bidder Qualification Criteria signed by undersigned vide our offer reference _____ against your Enquiry document _____, are true, authentic, genuine and exact copy of its original.

It is certified that none of the documents are false/forged or fabricated. All the documents submitted has been made having full knowledge of (i) the provisions of the Indian laws in respect of offences including, but not limited to those pertaining to criminal breach of trust, cheating and fraud and (ii) provisions of bidding conditions which entitle the Owner/EIL to initiate action in the event of such declaration turning out to be a misrepresentation or false representation.

I further certify that further documents, if any, required to be submitted by our company, shall be submitted under my knowledge and those documents shall also be true, authentic, genuine, exact copy of its original and shall not be false/forged or fabricated.

DECLARATION

I, _____ S/o/D/o of _____, working as CEO/CFO/Company Secretary (indicate, as applicable) of the Company _____ having its registered office at _____ with reference to our bid _____ against your Enquiry document _____, declare that in case, at a later date, any of the document submitted in our bid referred above is found to be false/forged or fabricated, I, shall be held responsible for the same and EIL/Owner has every right to take action against me and my company, as deemed fit as per provisions of the bidding documents including EIL/Owner's right to put our company on Holiday/Black list for future business with EIL/Owner.

Specimen Signature of authorized representative

Signature

Name & Designation (CEO or CFO or Company Secretary)

COMPLIANCE TO BID REQUIREMENT

NAME OF WORK : **COMPOSITE WORK FOR CONSTRUCTION OF NCR BIOTECH SCIENCE CLUSTER PHASE-II WORKS
AT FARIDABAD, HARYANA**
BIDDING DOCUMENT NO. : **UKM/A091-000-PK-TN-7005/1001**

We hereby confirm that our Bid complies with the total techno-commercial requirements/ terms and conditions of the bidding document and subsequent addendum/corrigendum (if any) without any deviation/ exception/ comments/ assumptions.

We also confirm that we have quoted for all items of schedule of rates and prices have been filled without any condition and deviation.

SIGNATURE OF BIDDER : _____
NAME OF BIDDER : _____
COMPANY SEAL : _____

CHECK LIST FOR SUBMISSION OF BID

Bidder is requested to fill this check list and ensure that all details/documents have been submitted as called for in the Bidding Document along with duly filled in, signed & stamped checklist

Please tick (✓) the box and ensure compliance:

(A) UNDER SECTION -I

(A.1) Bid Forwarding Letter

Submitted

(A-2) EMD/ BID BOND / BID SECURITY

Bidder to confirm that EMD/ Bid Bond/ Bid Security has been submitted by them as per Tender Proforma.

Submitted

(1) BY BANK GUARANTEE

BG No. _____ Dt. _____ From
Bank _____ Branch _____
For Rs. _____
Valid till _____

(2) BY DEMAND DRAFT

DD No. _____ Dt. _____
Drawn on _____
For Rs. _____

(3) Registration Certificate for MSE (if applicable)

Submitted

(4) If the MSE is owned by SC/ST Entrepreneurs

Yes, Documentary evidence submitted No

(A.3) Power of Attorney in Favour of the e-bid signatory.

Submitted

(B) UNDER SECTION -2

(B.1) Financial Details as per FORM-A

Submitted

(B.2) Audited Financial year Statements including audit report, Balance Sheet, profit and loss account and all other schedules submitted for the immediate

preceding three financial years.

YES

NO

- (B.3) Self Certification as per FORM-B Submitted (If applicable)
- (B.4) Declaration regarding PF & ESI as per FORM-H (1) & H (2). Submitted
- (B.5) Bank Account Particulars as per Form-J Submitted
- (B.6) Bidder's General information as per Form-I Submitted
- (B.7) Partnership Deed in case of partnership firm and Article of Association in case of limited company. In case of a proprietorship firm, the name and address of proprietor, and certified copy of 'Certificate of Registration of firm' Submitted

C) UNDER SECTION - 3

- (C.1) Compliance to Bid Requirement as per FORM-C. Submitted
- (C.2) Reply to commercial questionnaire as per FORM-E with Bidder's reply/ confirmation for each Sl. No. Submitted
- (C.3) Declaration by Bidder as per FORM-G. Submitted
- (C.4) Unpriced copy of Price Part, i.e., Schedule of rates, Statement for Details of Service Tax with prices/percentage/rate replaced by word "Quoted" Submitted
- (C.5) Reply to Technical questionnaire (if enclosed in bidding document) with Bidder's Reply/ Confirmation for each Sl. No. Submitted

(D) UNDER SECTION - 4

- (D.1) Technical Details/ Documents specified in Bidding Document. Submitted Not Applicable

(E) CONFIRM THE FOLLOWING

(E.1) Master Index of Bidding Document, Compliance Letter for Addendum/ Amendment, if any, duly signed, has been submitted along with offer.

YES

(E.2) All Documents pertaining to BQC are duly authenticated as specified in the bidding document.

YES

SIGNATURE OF BIDDER : _____
NAME OF BIDDER : _____
COMPANY SEAL : _____

COMMERCIAL QUESTIONNAIRE

Bidder's reply/ confirmation as furnished in the Commercial Questionnaire (CQ) shall supersede the stipulations mentioned elsewhere in their bid.

SL. NO.	EIL'S QUERY	BIDDER'S REPLY/ CONFIRMATION
1.0	Confirm that your Bid is valid for 03 (Three) months from the date of opening of Unpriced Part of Bid.	
2.0	Confirm that Earnest Money Deposit (EMD) as per bid stipulations have been furnished along with bid.	
3.0	Confirm your compliance to total Scope of Work mentioned in the Bidding Document.	
4.0	Confirm that the following documents are Submitted with Part-I:	
a)	All documents as per CHECK LIST.	
b)	Master Index as issued is submitted, duly signed, in unpriced part.	
c)	Compliance letter for Addendum / Amendments as a token of acceptance (Applicable, if issued).	
5.0	Confirm your compliance to critical stipulations of Bidding Document as mentioned in ITB/IFB	
6.0	Schedule of Rates/Price	
a)	Confirm that the Price Part of e-Bid as per Schedule of Rates format enclosed with Bidding Document has been duly filled in for each item and submitted.	
b)	Confirm that the quoted price is for complete scope of work, supply of all material, labour, consumables etc. as applicable as per the Scope of Work.	
7.0	Confirm that you have studied complete Bidding Document and your Bid is in accordance with the requirements of the Bidding Document.	
8.0	Confirm your acceptance for 'Scope of Supply' mentioned in the Bidding Document and confirm that all materials shall be supplied as per Standards and Specification.	
9.0	Confirm your acceptance for Time Schedule as mentioned in Bidding Document.	
10.0	Confirm that your quoted price includes all taxes, duties as applicable for this Work except Service Tax, Swachh Bharat Cess (SBC) & Krishi Kalyan cess (KKC) in accordance with the provision of SCC.	
11.0	Confirm that your quoted price includes all types of insurance as per the provisions of Bidding document.	
12.0	Confirm that all costs resulting from safe execution of Work, such as safety induction, use of protective clothing, safety glasses and helmet, safety precaution taken during monsoon, or any other safety measures to be undertaken by the Contractor for execution of work are included in the quoted rates.	

SL. NO.	EIL'S QUERY	BIDDER'S REPLY/ CONFIRMATION
13.0	Confirm your compliance to the Minimum Construction Equipments and Manpower, Qualification & Experience requirement of Key personnel to be deployed as per the provisions of Bidding document.	
14.0	Confirm that you shall deploy adequate project/site organisation with qualified supervisory personnel having requisite experience including personnel responsible for safety, planning, stores, QA/QC etc.	
15.0	Confirm that while submitting your price, you have taken consideration of scope of supplies, scope of work and technical requirement mentioned in Bidding Document.	
16.0	Confirm that you have your own QA/QC programme for executing this work. In case of award of work, you will submit all QA/QC documents as given in the Bidding Document.	
17.0	Confirm that all authenticated documents submitted for meeting the BQC are certified as per authentication requirement defined in the bidding document.	
18.0	<p>Confirm that you are not involved in any Litigation/ Arbitration</p> <p>OR</p> <p>Confirm that the current Litigation/ Arbitration, in which bidder is involved will not have any impact in work being tendered or in entering into contract during the validity of offer and performing the contract till all the contractual obligations under contract are performed.</p> <p>(Note: In case Bidder(s) affirms that present litigations/ arbitrations have impact on their obligations to perform the Contract or doesn't provide the affirmation as above, their bids shall be rejected)</p>	
19.0	Confirm that Bidder is not under Liquidation, court receivership or similar proceedings.	
20.0	Confirm that bidder is not on Holiday/ Negative/ suspension/banning list of EIL/Owner or black listed by any Government Department/ Public Sector on due date of submission of bid.	
21.0	We confirm that the content of the Bidding Document including schedule of rates/ prices and Corrigendum / Addendum (if any) have not been altered or modified.	

SIGNATURE OF BIDDER : _____

NAME OF BIDDER : _____

COMPANY SEAL : _____

BIDDER'S QUERIES

SL. NO.	BIDDING DOCUMENT			SUBJECT	BIDDER'S QUERY	OWNER'S REPLY
	PART / VOL.	PAGE NO.	CLAUSE NO.			

NOTE :

1. Bidder's Queries may be sent by e-mail to uk.mishra@eil.co.in / mitesh.patel@eil.co.in
2. Technical & Commercial queries, if any, must be submitted separately in editable format as per this format.

SIGNATURE OF BIDDER : _____
NAME OF BIDDER : _____
COMPANY SEAL : _____

DECLARATION BY THE BIDDER

We _____ (Name of the Bidder) hereby confirm that we have gone through and understood the Bidding Document and that our Bid has been prepared accordingly in compliance with the requirement stipulated in the said documents.

We are submitting Master Index of Bidding Document as part of our Bid duly signed in token of our acceptance. We undertake that the Bidding Document shall be deemed to form part of our bid and in the event of award of work to us, the same shall be considered for constitution of Contract Agreement. Further, we shall sign and stamp each page of this bidding document as a token of Acceptance and as a part of the Contract in the event of award of Contract to us.

We further confirm that we have indicated prices in Schedule of Rates, i.e., Summary of Price and submitted in Price Bid in the prescribed location of the e-tendering website. We confirm that price quoted by us includes price for all works/activities/supply etc. as mentioned in Item Description of the respective SOR Item(s) in Schedule of Rates as enclosed in the bidding document.

SIGNATURE OF BIDDER : _____
NAME OF BIDDER : _____
COMPANY SEAL : _____

NOTE : This declaration should be signed by the Bidder's representative who is signing the e-Bid.

DETAILS OF P.F. & ESI REGISTRATION

Bidder to furnish details of Provident Fund & ESI Registration:

PF REGISTRATION NO. :

DISTRICT & STATE :

ESI REGISTRATION NO. :

DISTRICT & STATE :

We hereby confirm that the above PF & ESI Account is under operation presently and shall be used for all PF & ESI related activities for the personnel(s) engaged by us in the present work (if awarded to us).

SIGNATURE OF BIDDER : _____
NAME OF BIDDER : _____
COMPANY SEAL : _____

**NAME OF WORK : COMPOSITE WORK FOR CONSTRUCTION OF NCR BIOTECH SCIENCE CLUSTER PHASE-II WORKS
AT FARIDABAD, HARYANA**

BIDDING DOCUMENT NO. : UKM/A091-000-PK-TN-7005/1001

UNDERTAKING

In case our establishment falls under the purview of PF & ESI Act during the execution of Contract, we shall get our establishment registered under PF & ESI and shall be solely responsible to fulfil the obligation of PF & ESI at no extra cost to EIL.

STAMP AND SIGNATURE OF BIDDER: _____

NAME OF BIDDER: _____

NOTE: To be signed by the authorised e-bid signatory and Submitted along with Techno-commercial-part.

BIDDER'S GENERAL INFORMATION

To
Engineers India Limited,
Tower-I, First Floor,
Sector-16, Gurgaon - 122001

1-1 Bidder Name: _____

1-2 Number of Years in Operation: _____

1-3 Address of Registered Office: _____

City _____ District _____

State _____ PIN/ZIP _____

1-4 Operation Address
if different from above: _____

City _____ District _____

State _____ PIN/ZIP _____

1-5 Telephone Number: _____

(Country Code) (Area Code) (Telephone Number)

Mobile Number _____

1-6 E-mail address: _____

1-7 Website: _____

1-8 Fax Number: _____

(Country Code) (Area Code) (Telephone Number)

1-9 ISO Certification, if any {If yes, please furnish details}

1-10 Banker's Name : _____

1-11 Branch : _____

1-12 Branch Code : _____

1-13 Bank account number : _____

1-14 Excise Registration number : _____

1-15 Excise Range : _____

1-16 Excise Division : _____

1-17 Excise Collectorate : _____

1-18 Service Tax Registration No. _____

1-19 Local ST No. : _____

1-20 CST No. : _____

1-21 PAN No. : _____

1-22 Whether SSI Registered Or not : _____

(SIGNATURE OF BIDDER WITH SEAL)

BANK ACCOUNT PARTICULARS

1. BIDDER'S NAME :
2. ADDRESS OF BIDDER :
3. PARTICULAR OF BANK ACCOUNT :
 - a). NAME OF THE BANK
 - b). NAME OF THE BRANCH
 - c). BRANCH CODE
 - d). ADDRESS OF THE BANK
 - e). 9 DIGIT CODE NUMBER OF THE BANK & BRANCH
(as appearing in MICR Cheque issued by the Bank)
 - f). TYPE OF ACCOUNT (SB, CURRENT, CASH, CREDIT)
 - g). ACCOUNT NUMBER
 - h). WHETHER BRANCH IS RTGS/INTERNET ENABLED
(if yes, then Bank's IFSC Code number)

I hereby declare that the particulars given above are correct and complete and accord our consent for receiving payment through electronic mechanism.

(_____)
Signature of the authorised signatory(ies) & Designation

Place:
Date:

Official seal of the company

BANK CERTIFICATION

Certified that the particulars furnished above are correct as per our records.

Bank's Stamp

Place:
Date:

Signature of the authorised official of the bank

GENERAL CONDITIONS OF CONTRACT



Preface

The General Conditions of Contract shall be read in conjunction with respective provisions specified in Special Conditions of Contract, Specifications, Drawing and any other Part of the Contract. In case of irreconcilable conflicts the provisions under clause no 2.1 herein of General Conditions of Contract shall prevail.



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1 DEFINITIONS AND INTERPRETATION

1.1 Definitions

In the Contract, capitalised words and expression defined by way of inclusion in “parenthesis”, shall have the meaning so ascribed thereto. Further, in the Contract, unless repugnant to the context thereof, the following words and expressions used in these General Conditions of Contract and elsewhere in the Contract, shall have the meanings assigned to them hereunder:

“**Affected Party**” shall have the meaning ascribed to it in Clause 27.2.

“**Agreed Variations**” shall mean the statement of agreed variations annexed to the detailed Letter of Acceptance and any document signed by EIL and the Contractor as an amendment of contract.

“**Applicable Laws**” means all laws in force and effect, including Tax laws but excluding direct Tax laws (which includes income tax, corporate tax, profession tax and wealth tax), as of the Base Date and which may be promulgated or brought into force and effect hereinafter including any revisions, amendments or re-enactments including without limitation regulations, rules and notifications made thereunder and judgments, decrees, injunctions, writs, orders and notifications issued by any court or Authority, as may be in force and effect during the subsistence of the Contract and applicable to either Party, their obligations or this Contract from time to time.

“**Appendix**” means formats/enclosures attached to the General Conditions of Contract.

“**Approval**” and its grammatical variations shall mean approved or confirmed in writing by Engineer-in-Charge.

“**Arbitration Act**” means the (Indian) Arbitration and Conciliation Act, 1996.

“**Authority**” means the Government of India, any state government or any local authority or any department, instrumentality or agency thereof or any corporation (to the extent acting in a legislative, judicial or administrative capacity and not as a contracting party with EIL or the Contractor) or commission under the direct or indirect control of such central, state or local government or any political sub-division thereof or any court, tribunal or judicial body within India.

“**Base Date**” means the date 7 (seven) days prior to the last date for submission of the Bid/revised Bid, if any.

“**Background Information**” means all and any materials, data, documents, drawings, plans, surveys, reports or other information relating in any way to the Site or the Facility, whether or not made available by EIL and/or its agents to the Contractor.

“**Bid**” means the Contractor’s signed offer for the Works and all other documents submitted along with the Bid.

“**Bidding Documents**” mean the Notice Inviting Bids/ Letter Inviting Bids, the instruction to bidders (including annexures), form of bid (including appendices), the Contract Agreement, the General Conditions of Contract, the Special Conditions of Contract, the Specifications and all

other reports, surveys, drawings and documents including amendments, if any, provided to the Contractor by EIL.

“**Billing Schedule**” means the schedule submitted by the Contractor in accordance with Clause 23.3.1, in terms of which EIL shall be required to make progressive payments to the Contractor.

“**Bill of Quantities**” means the bill of quantities as per the provisions of the Contract.

“**Business Day**” means a day other than a Sunday or a public holiday on which banks are open for business in New Delhi and any other place mentioned in the Contract.

“**Change in Law**” means the occurrence of any of the following after the Base Date:

- (a) The enactment of any new law in India;
- (b) The repeal, modification or re-enactment of any existing Indian law;
- (c) The commencement of any Indian law which has not entered into effect until the date of signing of the Contract;
- (d) Change in the interpretation or application of any Indian law by Government Authority via issuance of circulars/ clarifications or by a court which has become final conclusive and binding;
- (e) Increase/ Decrease in the rate of Taxes in force after the Base Date;
- (f) Change in the basis of computation of Taxes in force after the Base Date,

in such a manner that it has a material effect (positive or negative) on the Contract.

Notwithstanding anything mentioned above, Change in Law will not include any change in direct tax laws (which includes income tax, corporate tax, profession tax and wealth tax) for which the Contractor is the responsible party

“**Clause**” means a clause of this Contract.

“**Code-1 Approval**” means final approval of drawings/documents incorporating all comments of EIL (including any consultant appointed by EIL).

“**Code-2 Approval**” means tentative approval of the drawings/documents by EIL (including any consultant appointed by EIL) with comments to be incorporated by Contractor, with the intent that subject to incorporation of and/or rectification in accordance with such comments, construction/manufacture can proceed based on commented drawings/documents pending their re-submission and grant of Code-1 Approval.

“**Code-3 Approval**” means that on review of the drawings/documents by EIL (including any consultant appointed by EIL) the same have not been found in accordance with the applicable codes, standards, design basis and contractual stipulations and must therefore be re-submitted for review and approval after appropriate correction and/or re-preparation.

“**Commissioning**” shall have the meaning assigned to it in Clause 16.

“**Completion**” shall mean the successful provision of all materials and inputs and the successful completion and conclusion of all activities and tests (including the Tests on Completion) required to complete the Works in accordance with the Contract, but shall not include the obligation to rectify defects during the Defect Liability Period.

“**Completion Certificate**” shall have the meaning assigned to it in Clause 17.3.

“**Confidential Information**” means the Contract and everything contained therein, all documentation, data, particulars of the Works and technical or commercial information made by (or on behalf of) EIL or obtained directly or indirectly from EIL by the Contractor or which is generated or obtained by the Contractor or any Subcontractor in relation to the Works or any information or data that the Contractor receives or has access to as a result of the Contract, other than information:

- (a) which is generally available in the public domain other than by any unauthorised actions or fault of the Contractor; or
- (b) that is in the possession of the Contractor with a right to disclose.

“**Contract**” means the agreement between EIL and the Contractor for execution of the Works and includes the Contract Agreement, the General Conditions of Contract, the Special Conditions of Contract, the other Bidding Documents, the Specifications, the Price Schedule, and such further documents which are listed in the Contract Agreement and/or these General Conditions of Contract and includes any amendment thereto made in accordance with the provisions hereof.

“**Contract Agreement**” means the agreement entered into between EIL and the Contractor along with the Price Schedule and other annexures and includes any amendments thereto made in accordance with the provisions thereof.

“**Contract Performance Bank Guarantee**” means a duly executed, irrevocable, unconditional on demand bank guarantee that is to be procured and maintained by the Contractor in accordance with Clause 9.4.2, to secure the due and proper performance of the Contract.

“**Contract Validity Period**” means the period commencing from the Effective Date up to the end of the Extended Defects Liability Period.

“**Contract Price**” means the total price payable to the Contractor for performing the Works based on the rates and breakdown of prices provided by the Contractor in the Price Schedule, subject to such additions thereto and deductions there from as may be made under the Contract and as adjusted by the actual quantities, if applicable, of the items mentioned in the Price Schedule utilized in the execution of the Works.

“**Contract Spares**” shall have the meaning assigned to it in Clause 9.23.

“**Contractor's Documents**” means the documents to be prepared by the Contractor under the Contract including, without limitation, such technical documents specified in the Specifications and such data, designs, information, calculations, specifications, schedules, plans, test plans,

programs, the Drawings and Designs, the Billing Schedule, Test Records, As-Built-Drawings and all other information and documents including eye readable or computer readable data relating to the execution of the Works or otherwise for the performance of the Contract.

“**Contractor's Equipment**” means all machinery, apparatus, equipment, material, vehicles, plant and all other things of whatsoever nature required for the execution and Completion of the Works and remedying of any defects, but does not include Plant, Goods and Materials and any other thing intended to form or forming a part of the Permanent Works.

“**Contractor's Event of Default**” shall have the meaning assigned to it in Clause 32.2.

“**Contractor's Insurance**” has the meaning assigned to it in Clause 33.2.

“**Contractor's Personnel**” means the Contractor's Representative and all personnel whom the Contractor utilizes on Site, who may include the staff, labour and other employees of the Contractor and of each Subcontractor, and any other personnel assisting the Contractor in the execution of the Works.

“**Contractor's Representative**” means the person nominated by the Contractor to act on its behalf for the purposes of the Contract and notified as such in writing to EIL.

“**Cost**” means all expenditure reasonably and properly incurred by the Contractor, whether on or off the Site and includes overhead, profit and similar charges.

“**Defect**” means any defect, imperfection or other fault in the Facility or any part thereof arising from or in connection with the execution of the Works or any defect, imperfection or other shortcoming in the Contractor's Documents, or a breach of the Contract or the neglect or failure of the Contractor to comply with any of its obligations, express or implied, under the Contract and the term ‘**Defective**’ shall be construed accordingly.

“**Defect Liability Period**” means the period specified in Clause 18.1 for notifying defects in the Works, calculated from the date of Completion as specified in the Completion Certificate for the Works or part of the Works.

“**Dispute**” shall have the meaning assigned to it in Clause 35.2.

“**Design Data**” means all specifications, sketches, plans, graphs, details, dimensions, models and calculations provided by EIL as a part of the Bidding Documents and verified by the Contractor.

“**Drawings and Designs**” means the drawings and designs provided by Engineer-in-Charge or prepared by the Contractor on the basis of the Design Data and submitted to and Approved by the Engineer-in-Charge in accordance with Clause 9.13 & 10.5, in accordance with which the Contractor shall proceed with the execution of the Works.

“**Effective Date**” means date of issuance of Fax of Acceptance/Letter of Award of Work.

“**EIL**” means Engineers India Limited, a company incorporated under the Companies Act, 1956 with its registered office at 1, Bhikaiji Cama Place, R.K Puram, New Delhi-110066 (INDIA).

“**EIL's Insurance**” shall have the meaning assigned to it in Clause 33.1.

“**EIL's Personnel**” means all staff and employees of EIL.

“**Engineer-in-Charge**” means the Person designated by EIL to act as the Engineer-in-Charge for the purposes of this Contract and notified in writing to the Contractor.

“**Extended Defect Liability Period**” shall have the meaning assigned to it in Clause 18.7.

“**Facility**” means the facility to be construed under and in accordance with this Contract and as described in greater detail in the Specifications.

“**Final Completion**” shall mean the successful completion and discharge of all obligations of the Contractor under the Contract, including the obligation to rectify Defects, if any, during the Defects Liability Period and the Extended Defects Liability Period, if any.

“**Final Completion Certificate**” means the certificate issued by EIL to the Contractor under Clause 19.

“**Final Bill**” has the meaning assigned to it in Clause 23.5.1.

“**Force Majeure**” has the meaning assigned to it in Clause 27.2.

“**Format-I**” has the meaning assigned to it in Clause 15.4.

“**Format-III**” has the meaning assigned to it in Clause 15.5.

“**Format-IV**” has the meaning assigned to it in Clause 15.10.3.

“**Format-V**” shall have the meaning assigned to it in Clause 16.1.3.

“**Free Issue Materials**” means any equipment, machinery, apparatus, accessories, auxiliaries, spare parts, tools and tackles and articles and things provided by EIL to the Contractor for incorporation in the Permanent Work and which shall be bailed to the Contractor upon their delivery at Site in accordance with Clause 9.29.

“**General Conditions of Contract**” means these general conditions of contract.

“**Goods and Materials**” means things of all kinds (other than Plant) intended to form or forming a part of the Permanent Work, including materials (if any) to be supplied by the Contractor under the Contract.

“**Good Industry Practice**” means the exercise of that degree of skill, diligence, prudence and foresight in compliance by the Contractor with the undertakings and obligations under the Contract, which would be expected from a skilled and experienced professional person engaged in works that are of the type, nature and scope similar to the Works.

“**Guaranteed Performance Levels**” means the guaranteed levels of performance set out in the Contract that are needed to be met by the Plant, Goods and Materials, the Works and the Facility on conduct of the Tests on Completion.

“**Intellectual Property**” means copyright, registered and unregistered trademarks and service marks, registered and unregistered designs, circuit layouts, all rights conferred under statute, common law or equity in relation to inventions (including patents), proprietary information and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields.

“**INR**” or “**Rupees**” means the legal currency of the Republic of India.

“**Key Date**” means a date identified for the completion of a Stage set out in the Works Completion Schedule, relating to execution of the Works, unless revised in accordance with the terms of the Contract.

“**Key Personnel**” shall have the meaning assigned to it in Clause 12.2.

“**Letter of Award/ Fax of Acceptance**” means the Letter of Award / Fax of Acceptance issued by EIL to the Contractor, awarding the Works to the Contractor.

“**Mechanical Completion**” shall have the meaning assigned to it under Clause 15.1.

“**Mobilisation**” means the organisation of sufficient and adequate resources, including labour, materials and equipment (including Contractor's Equipment and Goods and Materials) by the Contractor for execution of the Works.

“**Mobilization Advance**” means the amount specified in the Payment Schedule that is paid by way of advance by EIL to the Contractor pursuant to Clause 23.

“**Mobilization Advance Guarantee**” means a duly executed, irrevocable, unconditional on demand bank guarantee that is to be procured and maintained by the Contractor as security for the **Mobilization Advance** received by the Contractor.

“**Monthly Progress Reports**” means the monthly progress reports submitted by the Contractor in accordance with the scope of Works / Contract.

“**Operation and Maintenance Manuals**” means the operation and maintenance manual submitted by the Contractor in accordance with Clause 10.7.

“**Payment Milestones**” means the milestones listed in the Payment Schedule.

“**Payment Schedule**” means the document containing the terms of payment of the Contract Price to the Contractor as annexed to the Contract Agreement.

“**Performance Compensation**” means the compensation to be paid by the Contractor to EIL as compensation for failure of the Facility and the Works to meet the Guaranteed Performance Levels under Clause 20.1.

“**Performance Tests**” means the tests described in the Specifications which are to be carried out by the Contractor in accordance with the Contract in order to demonstrate compliance with the Guaranteed Performance Levels.

“**Performance Guarantee Test Run**” means the continuous operation of the Facility for a period, in accordance with the Contract, on full load during the Trial Operations.

“**Permanent Works**” means the permanent works to be executed by the Contractor (including all permanent structures and all work intended to form a continuing function after Completion of the Works) in accordance with the Contract.

“**Person**” or “**person**” means an individual, partnership, limited partnership, corporation, trust, joint stock company, unincorporated association, joint venture or Authority.

“**Plant**” means any and all permanent plant, equipment, machinery, apparatus, articles and things of all kinds to be provided for incorporation or intended to be incorporated (whether later incorporated in the Facility or otherwise, including Contract Spares) in the Facility whether or not supplied from outside India or from within India, but does not include consumables, Contractor's Equipment and Goods and Materials.

“**Pre-Commissioning**” shall have the meaning assigned to it in Clause 14.

“**Price Schedule**” or “**Schedule of Rates**” shall mean the price schedule annexed to the Contract Agreement.

“**Project**” means the development, design, procurement, engineering and construction, erection, commissioning, testing, operation and maintenance of the Facility as applicable.

“**Punch List**” shall have the meaning assigned to it in Clause 15.6.

“**Punch-list Items**” means items of works of a minor or snagging nature which do not affect the operations of the Facility which remain incomplete on the date of issuance of Format-III.

“**Quality Assurance Plan/Project Quality Plan**” means the Approved quality assurance plan and manual developed by Contractor in accordance with Clause 9.19.

“**Related Dispute**” shall have the meaning assigned to it in Clause 35.2.6.

“**Review Period**” means the period of 14 (fourteen) days unless specified elsewhere in the Contract, within which the Engineer-in- Charge or his authorized engineer must complete his review of the Contractor's Documents, as calculated from the date of submission of the relevant Contractor's Document.

“**Running Bill**” means the fully supported invoice delivered to EIL by the Contractor at the times set out in the Payment Schedule, containing all the requisite information and complying with all the requirements set out at Clause 23.3.2.

“**Safety Code**” means the safety code set out at Appendix 3 (Safety Code).

“**Secured Advance**” means the amount specified in the Payment Schedule that is paid by EIL to the Contractor pursuant to Clause 23.2

“**Site**” means the land, location, right of way and/or places provided by EIL where the Works are to be executed and to which Plant and Goods and Materials are to be delivered and any

other place as may be specifically designated in the Contract as forming part of the Site or designated as such by the Engineer-in-Charge.

“**Special Conditions of Contract**” means the special conditions of contract setting out specific deviations from the General Conditions of Contract and other relevant provisions and data, which are to be read in conjunction with the General Conditions of Contract.

“**Specifications**” means all general and technical specifications and directions attached to and forming a part of the Bidding Documents which describe the purpose, scope, design and technical criteria of the Works including, the method and manner of performing the Works, the quality and quantity of the Works to be performed and the materials to be supplied under the Contract and includes all modifications or amendments made thereto by EIL.

“**Stage**” means the level of progress of the Works identified as such in Works Completion Schedule.

“**Subcontract**” means any contract awarded to a Subcontractor.

“**Subcontractor**” means any person named in the Contract as a subcontractor or an original manufacturer, supplier of any Goods and Materials, Plant, labour or services for the Works or any person to whom a part of the Works has been subcontracted by the Contractor with the prior Approval of Engineer- in- Charge, as the case may be, and the permitted legal successors in title to such person, but not any assignee of such person.

“**Submissions Schedule**” has the meaning assigned to it in Clause 9.13.1.

“**Suspension Order**” shall have the meaning assigned to it in Clause 26.1.

“**Taxes**” means all taxes, duties, imposts, levies and charges pursuant to any law (whether currently in force or coming into force on or after the date of base date as defined above), including income tax, capital gains tax, Value Added Tax (“VAT”), Central Sales Tax (“CST”), works contract tax (WCT), customs duty, service tax, excise duty, fees, cess, octroi, entry tax, fringe benefit tax and any interest, surcharge, penalty or fine in connection therewith.

“**Temporary Works**” means all temporary and ancillary works including enabling works and maintenance works connected with the Works and required for the execution and completion of the Permanent Works.

“**Tests on Completion**” mean the tests which are specified in the Contract and designated as such and any includes any other tests that have to be carried out before the Works, or any part thereof is taken over by EIL.

“**Time for Completion**” means the period specified in the Contract Agreement or the Special Conditions of Contract for Completion of the Works, calculated from the Effective Date.

“**Time for Mobilisation**” means the period specified in Clause 9.3.2 for completion of Mobilisation, as calculated from the Effective Date.

“**Trial Operation**” means the integrated operation of the Facility in automatic control system for a continuous period specified in the Contract or the Specifications.

“**Variation**” means any alteration and/or modification to the Specifications, which is instructed by the Engineer-in-Charge or as suggested by the Contractor and Approved as a variation by the Engineer-in-Charge in accordance with Clause 24.

“**Variation Order**” shall have the meaning assigned to it in Clause 24.1.

“**Week**” means a period of any consecutive seven days.

“**Working Day**” means a day other than a Sunday or a public holiday on which EIL is open for business.

“**Works**” means:

- (a) all work and services required in connection with the turnkey design, engineering, procurement, permitting, fabrication, manufacture, construction, construction management, coordination of Subcontractors work, inspection, expediting, transportation, shipment, delivery, import, erection, installation, commissioning, start-up, testing and completion of the Facility, completion of all Performance Tests, in accordance with this Contract;
- (b) the provision of all Plant, Goods and Materials, Contract Spares, machinery, tools, labor, utilities, chemicals, lubricants consumables, transportation, administration, oversight, incidentals and other services and items related to the foregoing in accordance with this Contract;
- (c) the correction of defects in the Facility; and
- (d) the performance of all other obligations and services that are described in, or necessarily implied by, this Contract.

“**Works Completion Schedule**” means the schedule for the performance of the Works and fulfilment of the Parties' obligations as annexed to the Contract Agreement/Special Conditions of Contract, as may be revised in accordance with the terms of the Contract.

“**Works Programme**” means the program showing the sequence, method and timing of the design, procurement, construction, erection, installation, testing, commissioning of the Works (and related activities in the form and content prescribed by the Specifications, or any amended or varied version thereof, as submitted by the Contractor and for which the Engineer-in-Charge has issued a notice of no objection.

1.2 Interpretation

In the Contract, except where the context requires otherwise:

- (a) References to any statute or statutory provision or order or regulation made thereunder shall include that statute, provision, order or regulation as amended, modified, re-enacted or replaced from time to time whether before or after the date hereof.
- (b) References to persons shall include corporate bodies, unincorporated associations, partnerships and any organisation or entity having legal capacity.

- (c) Headings of General Conditions of Contract or of the Specification or of any other Bidding Document are solely for the purpose of giving general guidance for convenience in reading and segregating the general subject matter of various clauses and are not a summary of contents thereof and shall not form part of the operative provisions of the Contract and shall not govern the meaning or importation of the clauses thereunder.
- (d) References to Clauses or Schedules are, unless the context otherwise requires, references to recitals, clauses of, or, schedules to these General Conditions of Contract.
- (e) Unless the context otherwise requires, reference to one gender includes a reference to the other, words importing the singular include the plural and *vice versa*.
- (f) References to the words “include” or “including” shall be construed as being suffixed by the term “without limitation”.
- (g) Reference to an agreement, deed, instrument or other document include the same as amended, novated, supplemented, varied or replaced from time to time.
- (h) Words indicating the singular also include the plural and words indicating the plural also include the singular.
- (i) Provisions of the Contract including the word “agree”, “agreed” or “agreement” require the agreement to be recorded in writing.
- (j) The expression “writing” or “written” shall include communications by telex, e-mail, telegram, facsimile (fax) and letter.
- (k) If any provision in Clause 1.1 is a substantive provision conferring a right or imposing an obligation on any Party, effect shall be given to it as if it were a substantive provision in the body of the Contract.
- (l) The Schedules shall form an integral part of the Contract and shall be in full force and effect as though they were expressly set out in the body of the Contract.
- (m) Where the day on or by which any thing is to be done is not a Business Day or a Working Day, as the case may be, that thing must be done on or by the immediately occurring next Business Day or Working Day, as the case may be.
- (n) The rule of construction, if any, that a contract should be interpreted against the party responsible for the drafting and the preparation thereof, shall not apply to the Contract.
- (o) No verbal agreement, assurance, representation or understanding given by any employee or officer of EIL or so understood by the Contractor, whether given or understood before or after the execution of the Contract, shall bind EIL or alter the Contract documents unless specifically given in writing and signed by the Engineer-in-Charge/ EIL and the Contractor’s authorised representative as an agreed variation and amendment of the relative term(s) in the Contract.

- (p) Subject to Clause 2 below, All documents forming part of the Contract are to be read together as a whole and are to be taken as mutually explanatory.

2 CONTRACT

2.1 The documents forming the Contract are to be taken as mutually explanatory of one another. If there is an ambiguity or discrepancy in the documents, the Engineer-in-Charge shall issue necessary clarifications or instructions to the Contractor, and the order of precedence of the documents shall be as follows:

- (a) Contract Agreement
- (b) Detailed Letter of Acceptance along with its enclosures
- (c) Letter of Award / Fax of Acceptance
- (d) Job Specifications
- (e) Drawings
- (f) Technical Specifications
- (g) Special Conditions of Contract
- (h) Instruction to Bidders
- (i) General Conditions of Contract
- (j) Other Documents

3 COMMUNICATION

- 3.1 No verbal agreement, assurance, representation or understanding given by any employee or officer of EIL or so understood by the Contractor, whether given or understood before or after the execution of the Contract shall bind EIL or alter the Contract unless specifically given in writing.
- 3.2 Any consent, approval, authorization, certificate, report, information, notice or request from or by any Party or the Engineer-in-Charge shall be effective and valid only when made in writing under the hand of a duly authorized representative of such Party or the Engineer-in-Charge, as the case may be, and delivered by hand against receipt, sent by the recognized courier, registered mail or transmitted by facsimile transmission, e-mail to the address for the recipient's communication as stated in Clause 3.3 below. In case any notice is delivered by registered mail and/or courier, it shall be deemed to be duly served within forty eight (48) hours after posting and a notice or demand sent by facsimile, e-mail shall be deemed to have been served at the time of its transmission and in proving service of the same, it will be sufficient to prove, in the case of a letter, that such letter was sent by registered airmail, addressed and placed in the post and in the case of a facsimile transmission, e-mail that such facsimile/ e-mail was duly transmitted to a current facsimile number/ e-mail of the addressee at the address referred above.
- 3.3 Any contractual notice, instruction, decision, order, report, certificate or other communication that is to be exchanged between the Parties shall be served by sending the same by e-mail or facsimile transmission, with a confirmation copy by courier or registered post to the following addresses:

If to EIL:

Address: [■]
Attention: [■]
e-mail: [■]
Fax: [■]

If to the Contractor:

Address: [■]
Attention: [■]
e-mail: [■]
Fax: [■]

If to the Engineer-in-Charge

Address: [■]
Attention: [■]
e-mail: [■]
Fax: [■]

- 3.4 Any change in the address for communication shall be duly notified by EIL and/or the Contractor to the other Party in accordance with the provisions of this Clause 3.

4 STAMP DUTY

Stamp duties, registration fees (if any) and any related charges payable under the Applicable Laws in relation to the Contract shall be borne by the Contractor.

5 CONFIDENTIALITY AND CONFIDENTIAL INFORMATION

- 5.1 Both Parties shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out obligations under it or to comply with Applicable Laws. The Contractor shall not publish, permit to be published, or disclose any particulars of the Works in any trade or technical paper or elsewhere without prior consent of EIL.
- 5.2 The Contractor shall treat the Confidential Information as private and confidential, save in so far as may be necessary for the fulfilment of its obligations under the Contract, and shall not use, copy, publish, disclose or otherwise deal with, nor cause nor permit its Subcontractors or any persons for whom it is contractually or otherwise responsible for, to use, copy, publish, disclose or otherwise deal with the Confidential Information, without prior consent in writing of EIL. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract the same shall be referred to the decision of EIL, whose award shall be final.

Without limiting the generality of the foregoing paragraph:

- (a) the Contractor shall take all practicable steps to ensure that no photographs, drawings or other image of the Site or of the Works or any part thereof or any property of EIL or any physical or virtual model thereof, are taken or made, except as may be expressly

directed or Approved beforehand in writing by EIL;

- (b) the Contractor shall not in regard to anything concerning the Works publish any information, drawing or photograph and shall not give interviews to or comment to the press or to any person associated with the news media or take part in radio or television schedules except with the express prior written consent of EIL and subject to such conditions as it may prescribe;
 - (c) the Contractor shall not use any part of the Site for the purpose of any advertisement, except by way of notice boards approved (as to location, number and content) by EIL; and
 - (d) the Contractor shall use its reasonable endeavours to procure that its servants and agents comply with this sub-Clause.
- 5.3 The Contractor shall procure that each and every Subcontractor shall contain confidentiality undertakings on the part of the Subcontractor in substantially similar terms to those entered into by the Contractor, and shall use all reasonable endeavours to enforce them.
- 5.4 In the event that the Contractor is lawfully required or requested by order of any competent Authority to disclose any Confidential Information, then the Contractor shall, to the extent permitted by the Applicable Laws, prior to disclosure immediately notify EIL so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the Contractor may disclose to the competent Authority that portion of the Confidential Information which it is legally required to disclose and shall use all reasonable endeavours to obtain assurances that confidential treatment will be accorded to any Confidential Information so disclosed.
- 5.5 The Contractor agrees that, upon request at any time by EIL, the Contractor shall promptly, but in any event within 5 (five) days of receipt of written notification from EIL:
- (a) return all Confidential Information that is in tangible form (including, without limitation, Confidential Information contained in software or on computer disc) furnished to the Contractor, together with all copies or extracts thereof; and
 - (b) destroy all analysis, compilations, studies or other documents which have been prepared upon or reflect in any way the Confidential Information.
- 5.6 The provisions of this Clause 5 shall survive the expiration or termination of the Contract.

6 COMPLIANCE WITH APPLICABLE LAWS

- 6.1. The Contractor shall, in performing the Contract, comply with all Applicable Laws.
- 6.2. Without prejudice to the foregoing, the Contractor shall be responsible for bearing all registration and statutory inspection fees payable under any Applicable Laws in respect of the Works executed or completed pursuant to the Contract. If the Contractor defaults in complying with the Applicable Laws, the Contractor shall, at its own risk and Cost, bear any and all additional fees, fines, penalties or charges. However, EIL shall make reasonable efforts to assist

the Contractor in rectifying any such default under Applicable Laws upon the Contractor's specific request, including any specific request to issue letters to the relevant Authorities on behalf of the Contractor.

- 6.3. The Contractor shall not be absolved from any of its obligations under Applicable Laws or the Contract or claim any additional amount from EIL or seek any extension of the Time for Completion due to its ignorance of any Applicable Law. This Clause 6.3 shall not however restrict the right of the Contractor to claim increase in cost due to Change in Law in accordance with the provisions of Clause 25.

7 BACKGROUND INFORMATION

- 7.1. Should there be any doubt or ambiguity in the interpretation of the Contract or contradiction in the various documents that comprise the Contract or should there be any discernable error or omission in any document comprising the Contract, the Contractor shall, prior to commencing the Work likely to be affected by such ambiguity, error or omission, apply in writing to the Engineer-in-Charge for resolving the ambiguity or rectifying the error, as the case may be. If the Contractor fails to apply to the Engineer-in-Charge prior to commencing the relevant Work, the Contractor shall perform such Work at its own risk and if the Work are at variance with the requirements of the Contract, then such Work shall be deemed to Defective Work and the provisions of Clause 9.16 shall apply.
- 7.2. The decision of the Engineer-in-Charge on any application under Clause 7.1 shall be in writing and shall be final and binding on the Contractor and shall form part of the Contract.
- 7.3. The Parties agree that any ambiguity, discrepancy, inconsistency, divergence, impracticality or omission as aforesaid shall not vitiate the Contract.
- 7.4. As soon as possible following a request from the Engineer-in-Charge to do so, the Contractor shall provide such reasonable information as the Engineer-in-Charge may request to assist it in resolving the ambiguity or rectifying the error, including if so requested, the Contractor's proposals for overcoming the ambiguity, discrepancy, inconsistency, divergence, impracticality or omission (as the case may be) but the Engineer-in-Charge shall not be obliged to adopt or instruct the same.
- 7.5. The Contractor is required to make all necessary inquiries and fully acquaint himself with all Background Information, and the Contractor acknowledges that any failure to acquaint itself with the Background Information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing its obligations under the Contract and EIL shall have no responsibility to the Contractor (whether in contract, tort, for breach of statutory duty or howsoever other arising) for or in relation to such Background Information whether as to its accuracy, adequacy, sufficiency or completeness.

8 GENERAL OBLIGATIONS OF EIL

8.1 Access to and Possession of the Site

- 8.1.1 EIL shall provide access the Site to the Contractor for the execution of the Works. In the event of delay in transfer of the Site by EIL to the Contractor, for reasons not attributable to the Contractor, the Contractor shall only be entitled to a reasonable extension of the Time for

Completion pursuant to Clause 14. The Contractor shall take all necessary precautions to ensure that no damage is caused to any building or establishment within the Site. The Contractor shall be liable for any loss suffered by EIL on account of damage to the Site or any building or establishment within the Site. The Contractor shall ensure that day to day activities of EIL are not hampered because of Works executed by the Contractor. The Contractor shall ensure that until the issuance of the Completion Certificate (EIL shall start operations from COD upon completion of the Trial Operations), in accordance with Clause 17 by EIL, EIL's Personnel, their representatives and assignees shall have the right to visit the Site at any time and inspect or audit the Contractor's books and records relating to the execution and completion of the Works.

- 8.1.2 Without prejudice to Clause 8.1.1 above, the Contractor agrees that the Site will be handed over to the Contractor in stages with a view that the Contractor shall plan the Works in a manner so as to achieve Completion in a sequential manner, without affecting the Time for Completion and without starting all the Works at the same time. To this end, within 28 (twenty eight) Working Days from the Effective Date, the Contractor shall finalize, in agreement with the Engineer-in-Charge, sequential requirement of the Site, taking into account the other works concurrently being undertaken by EIL at or about the Site or on the performance of which depends the Contractor's performance of the Works.

8.2 Permits, Licenses or Approvals

Without prejudice to the obligations of the Contractor, contained in the Contract, if requested by the Contractor, EIL shall use its reasonable endeavours to assist the Contractor in obtaining in a timely and expeditious manner all permits, approvals and/or licenses necessary for the execution of the Contract from all local, state or national government authorities or public service undertakings, in India that such authorities or undertakings require the Contractor or Subcontractors or the personnel of the Contractor or Subcontractors, may require, as the case may be, pursuant to Applicable Law in India.

8.3 EIL's Personnel

Without prejudice to the obligations of the Contractor under the Contract, EIL shall be responsible for ensuring that EIL's Personnel:

- (a) co-operate with the Contractor's and the Contractor's Personnel; and
- (b) take actions similar to those which the Contractor is required to take under Clause 9.16, on the Site, in respect of any other works undertaken by EIL at the Site..

8.4 Engineer-in-Charge

EIL shall appoint the Engineer-in-Charge to act on behalf of EIL in connection with the Contract. The Engineer-in-Charge shall have the powers and duties specified in the Contract. The Engineer-in-Charge shall have no authority to amend the Contract or to relieve either Party of any of its duties, obligations or responsibilities under the Contract, unless expressly authorised by EIL by way of a notice to the Contractor.

9 GENERAL OBLIGATIONS OF CONTRACTOR

9.1 General Obligations

- 9.1.1 The Contractor shall execute the Works, as described in greater details in the Specifications, in accordance with the Contract, the Specifications, the Safety Code and Applicable Laws. The Works shall be fit for the purposes for which they are intended, as defined in the Contract. The Works shall include any work which is necessary to satisfy the Specifications, or as implied by the Contract, or arises from any obligation of the Contractor, and all works not mentioned in the Contract but which are necessary for stability, completion or the safe, reliable and efficient operation of the Facility.
- 9.1.2 The Contractor agrees and acknowledges that at any time after acceptance of the Bid, EIL shall have the right to add, amend or delete any item of the Works in the overall interest of the Project. Further, EIL shall have the right to split the scope of Works under this Contract between two or more contractors without assigning any reasons thereof.
- 9.1.3 The Contractor shall execute the Works in accordance with the Works Completion Schedule and shall complete each Stage within the relevant Key Date and the entire Works within the Time for Completion and for this purpose the Contractor shall provide such necessary resources, Goods and Materials, Plant and Contractor's Personnel having the requisite experience for the purposes stated in the Contract.
- 9.1.4 The Contractor agrees and acknowledges that it shall perform all of its obligations and responsibilities under the Contract at its own risk, Cost and expense. EIL shall have no obligation or responsibility whatsoever with respect to the Completion of the Works or the fulfillment of other obligations of the Contractor under the Contract, except as expressly provided in the Contract.
- 9.1.5 The Contractor shall provide all superintendence, Goods and Materials and Contractor's Equipment and all other things, whether of a temporary or permanent nature, required for the execution of the Works.
- 9.1.6 Wherever applicable, the Contractor shall submit within 56(fifty six) days from the Effective Date, a detailed Bill of Quantities, specifying the materials which, on a preliminary determination made by the Contractor, will be required for incorporation in the Permanent Work. Each item entered in the Bill of Quantities shall be priced, to the extent possible, in conformity with the details given the Bid. EIL shall review or cause to be reviewed the adequacy, sufficiency, validity and/or suitability of the materials listed in the Bill of Quantities and of the prices indicated in the Bill of Quantities in this regard. Such review shall be performed in conjunction with design, engineering and other technical reviews to be done by EIL and all provisions applicable to review of critical drawings and designs shall be applicable to the review of the Bill of Quantities. However, no such review or Approval of the priced Bill of Quantities by EIL shall absolve the Contractor of its obligation to supply all Goods and Materials required to be incorporated in the Permanent Work, within the price quoted for such Goods and Materials in the Price Schedule.
- 9.1.7 The Contractor shall supply all materials, works, labour and other services, which although not specifically mentioned in the Contract:

- (a) can be reasonably inferred from and is necessary for the execution of the Works, in accordance with Good Industry Practice, including where the Contract describes any portion of the Works in general terms but not in complete detail; or
- (b) that are necessary in order for the Contractor to cause the Facility to satisfy the Guaranteed Performance Levels and the warranties set forth in the Contract or as otherwise necessary in order to meet the purposes for which the Facility is being developed,

as if such superintendence, materials, works, labour and other services were expressly mentioned in the Contract. The performance of such obligations by the Contractor shall not be construed as a Variation and the Contractor shall not be entitled to any revision of the Contract Price or extension of the Time for Completion.

- 9.1.8 The Contractor shall take full responsibility for the methods of construction, adequacy, stability and safety of the operations carried out at the Site relating the execution of the Works, all Contractor's Documents, Goods and Materials, Contractor's Equipment, irrespective of any Approval or consent by the Engineer-in-Charge.
- 9.1.9 The Works shall be free of all Defects in materials and workmanship and shall be adequate, stable, safe and strictly compliant with the instructions of Engineer-in-Charge, the Drawings and Designs, the Specifications and Good Industry Practice, such that the Facility when complete shall be capable of meeting the Guaranteed Performance Levels.
- 9.1.10 The Contractor shall use proven and reliable technologies, configurations and architecture and exercise strict professional standards of skill, care and diligence, adhered to by experienced and competent contractors specializing in performing services of the same type and magnitude.
- 9.1.11 Within 30 (thirty) days of the Effective Date, the Contractor shall, to the extent necessary, register itself and the Contract, at its own Cost, with Reserve Bank of India, Income Tax Authorities, Sales Tax Authorities, Excise Authorities and other relevant statutory Authorities and provide copies of all documents related to such registrations to EIL for record.
- 9.1.12 Notwithstanding anything contained herein, the Contractor shall obtain and maintain all permits, licenses and approvals required for the execution of the Works as per Applicable Laws.
- 9.1.13 (a) If there is any doubt or ambiguity in the interpretation of the Contract or error, omission or contradiction therein or any of them, the Contractor shall prior to commencing the relative work, apply in writing to the Engineer-in-Charge for his decision in resolution of the doubt, ambiguity, contradiction or correction of the error or omission, as the case may be. Should the Contractor fail to apply to the Engineer-in-Charge for his decision, as aforesaid, prior to commencing the relative Work, the Contractor shall perform the said work at his own risks, and the provisions of Clause 9.1.13 (b) hereof shall apply to any such Work performed by the Contractor.
- (b) In the event of the Contractor having already performed or executed any Work at variance with the decision of the Engineer-in-Charge as aforesaid, then, notwithstanding payment in respect of such Work having made to the Contractor, such Work shall be deemed to be Defective Work and the relevant provisions hereof and

associated Clauses thereunder shall apply thereto.

- 9.1.14 The Contractor is deemed to have satisfied itself as to the correctness and sufficiency of the Specifications and other terms of the Contract relating to its risks, liabilities and obligations set out in or implied by the Contract and all matters and things necessary for the proper execution of the Works.
- 9.1.15 The Contractor shall take all steps to cause minimum disturbance of vehicular traffic and other movement of the public, on or in the vicinity of the Site.
- 9.1.16 Without prejudice to the provisions of the Contract and notwithstanding any testing or certification pursuant to this Contract, EIL shall at any time during the subsistence of this Contract, have the right (but not the obligation) to reject any part of the Works, the Plant, the Goods and Materials, or the Contractor's Equipment, which is found not to be in compliance with the requirements of this Contract including, the Specifications.
- 9.1.17 In such a situation, EIL may instruct the Contractor to:
- (a) remove from the Site and replace the rejected Plant, Goods and Materials or Contractor's Equipment or re-instate the Works; or
 - (b) execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise,
- in accordance with the requirements of this Contract, the cost of which shall be to the sole account of the Contractor. The Contractor shall comply with the instruction within a reasonable time, which shall be the time (if any) specified in the instruction, or immediately if urgency is of the nature specified under paragraph (b).
- 9.1.18 If the Contractor fails to proceed with the repair or replacement of the rejected item of the Works or the Contractor's Equipment within reasonable time, EIL may, by contract with third Persons or otherwise, repair or replace such part of the Works and/or terminate this Contract pursuant to Clause 32.2 and the Contractor shall be liable to reimburse EIL upon demand for all costs and damages incurred by EIL relating to such repair or replacement by a third party.
- 9.1.19 If EIL requires the Works, Goods and Materials, Contractor's Equipment or workmanship to be retested after such remedy of the Defect therein or replacement, the tests required to be conducted under this Contract and as instructed by EIL shall be repeated under the same terms and conditions. If the rejection and retesting cause EIL to incur additional costs, the Contractor shall pay these costs to EIL.
- 9.1.20 The Contractor shall provide, comply with and require and ensure that its Subcontractors also provide and comply with such documentation/information or any other support as may be requested by EIL from time to time as may reasonably be deemed fit by EIL for meeting its obligation under any Applicable Laws for the time being in force or in relation to the said Works, as also matters including but not limited to exemptions, concessions etc as may be availed, sought to be availed by EIL.

- 9.1.21 The Contractor shall furnish to EIL, promptly upon request, such information concerning the Contractor, its Subcontractors and their respective employees or the Works as EIL may be required to furnish to any competent Authority for the procurement of any licences, permits or approvals mentioned in Clause 8.2.
- 9.1.22 To the extent possible, the information regarding existing structures/ overhead lines, existing pipelines and utilities are already indicated on alignment sheets forming part of the Background Information. However, the Contractor may encounter other structures/ pipelines/ optical fiber cables etc. that may not be appearing on alignment sheets, for which, the Contractor is required to collect information on his own before commencing the Work. The Contractor shall execute the Works in such a manner that the said structures, utilities, pipelines etc. are not disturbed or damaged, and shall indemnify and keep indemnified EIL from and against any destruction thereof or damages thereto.

9.2 Contractor's Representative

- 9.2.1 The Contractor shall, within 30 (thirty) days of the Effective Date, appoint the Contractor's Representative with the prior written Approval of EIL (and such Approval shall not be unreasonably withheld) and vest in him the authority to act on behalf of the Contractor for all purposes of the Contract. If the consent is withheld or subsequently revoked, or if the appointed person fails to act as the Contractor's Representative, the Contractor shall submit the name and particulars of another suitable person for such appointment.
- 9.2.2 The Contractor shall not, without the prior consent of EIL, revoke the appointment of the Contractor's Representative or appoint a replacement.
- 9.2.3 The Contractor's Representative shall coordinate all matters relating to the Contract with EIL, receive all instructions from Engineer-in-Charge and shall devote substantially all of his time to the performance of the Contractor's obligations under the Contract.

9.3 Mobilisation

- 9.3.1 The Contractor shall be responsible for Mobilisation including, setting up of offices at the Site with infrastructure facilities such as power, water, communication, conveyance etc., procuring an adequate strength of skilled, semi-skilled and unskilled workers, who, with such infrastructure facilities shall be in a position to commence and execute the Works. The Contractor shall carry out the Mobilisation in accordance with the agreed quality standards and Applicable Laws.
- 9.3.2 The Contractor shall complete Mobilisation in accordance with the terms of the Contract within the Time for Mobilisation, which is 21 days from the Effective Date.

9.4 Security

9.4.1 Mobilization Advance Guarantee

- (a) The Contractor shall furnish the Mobilization Advance Guarantee for a sum equal to 10% (ten percent) of 110% (one hundred and ten percent) of the Contract Price, to cover the Mobilization Advance to be received by the Contractor under the Contract from and Indian nationalized / scheduled bank / Indian branch of an international bank acceptable

to EIL, in the form set out at Appendix 2 (Form of Mobilization Advance Guarantee). The Mobilization Advance Guarantee shall have a claim period of 90 (ninety) days beyond validity.

- (b) The mobilization advance guarantee shall remain valid until the earlier of the following:
 - i) Upto the date when the mobilization advance has been fully recovered; or
 - ii) Upto the date of Final Completion;
- (c) If the Mobilization Advance Guarantee is or becomes invalid for any reason (other than its expiry), the Contractor shall immediately notify the Engineer-in-Charge and obtain within 7 (seven) days a replacement Mobilization Advance Guarantee in the form appearing in Appendix 2 (Form of Mobilization Advance Guarantee).
- (d) EIL shall have an unqualified option under the Mobilization Advance Guarantee to draw on the guarantee and claim the amount there under in the event of the inadequate adjustment of the Mobilization Advance in accordance with Clause 23.1.3.
- (e) The provision, maintenance or renewal, as the case may be, of the Mobilization Advance Guarantee by the Contractor in accordance with the terms of the Contract shall be a condition precedent to any payment by EIL to the Contractor.
- (f) If the Contractor fails to provide, maintain or renew the Mobilization Advance Guarantee in accordance with the Contract, then EIL may, without prejudice to any other rights and remedies to which it may be entitled, by written notice forthwith terminate the Contract.
- (g) The Contractor agrees and acknowledges that EIL shall be entitled to assign the Mobilization Advance Guarantee in favour of any party to whom this Contract may be assigned by EIL.
- (h) EIL shall endeavour to release the Mobilization Advance Guarantee to the Contractor, within 30 days after total recovery of the Mobilization Advance, including any interest/charges, as applicable, on request of Contractor.

9.4.2 Contract Performance Bank Guarantee

- (a) Within fifteen (15) days of the Effective Date, the Contractor shall furnish to EIL, the Contract Performance Bank Guarantee from any Indian Nationalized / Scheduled Bank / Indian branch of an International Bank acceptable to EIL for an amount equivalent to 10% (ten percent) of the awarded Contract Price in types and proportions of currencies in which the Contract Price is payable in accordance with the Contract. The Contractor shall procure the Contract Performance Bank Guarantee in the form set out in Appendix 1 (Form of Contract Performance Bank Guarantee). The Contractor shall maintain the Contract Performance Bank Guarantee at its own expense, and shall ensure it shall remain valid for a period of not less than 3 (three) months after the expiry of the Extended Defects Liability Period. The Contract Performance Bank Guarantee shall be extended by such period as EIL may require if the Completion is delayed beyond the Time for Completion and/or the Final Completion is delayed beyond the scheduled date of Final Completion and any extension thereof as per directions of the Engineer-in-Charge. In the event that the Contract Price is increased during the Contract Validity Period for any reason whatsoever, the value of the Contract Performance Bank Guarantee

shall be increased proportionately by the Contractor within 7 (seven) Business Days to ensure that it remains an amount which is equivalent to 10% of the revised Contract Price, as determined by the Engineer-in-Charge.

- (b) EIL shall have an unqualified option under the Contract Performance Bank Guarantee to draw on the security and claim the amount there under in the event of the Contractor's failure to honor any of its obligations, responsibilities or commitments under the Contract or in respect of any amount due from the Contractor to EIL. Provided however that, nothing stated under this Clause shall make it incumbent upon EIL to utilize the Contract Performance Bank Guarantee in preference to any other remedy which EIL may have, nor shall it be construed as confining the claims of EIL against the Contractor to the value of the Contract Performance Bank Guarantee.
- (c) If the Contract Performance Bank Guarantee is or becomes invalid for any reason (other than its expiry), the Contractor shall immediately notify the Engineer-in-Charge and obtain within 7 (seven) days a replacement Contract Performance Bank Guarantee in the form appearing in Schedule 1 (Form of Contract Performance Bank Guarantee).
- (d) Without prejudice to the obligation of the Contractor under sub-clause (a) above, not later than 30 (thirty) Business Days before the expiry of the Contract Performance Bank Guarantee, the Contractor shall, upon request of the Engineer-in-Charge obtain extension of the validity of such Contract Performance Bank Guarantee for the period stated in such request by the Engineer-in-Charge and provide a copy of such renewed security. If the Contractor fails to extend the Contract Performance Bank Guarantee, EIL shall be entitled to receive the un-drawn amount there under pending the completion of the Works, provided that the amount so received shall be treated as a cash retention and to the extent that there are no outstanding claims thereto, shall be released upon submission of a new Contract Performance Bank Guarantee acceptable to EIL.
- (e) The Contract Performance Bank Guarantee shall be returned to the Contractor after 3 (three) months from the expiry of Extended Defect Liability Period.
- (f) If the Contractor fails to provide, maintain or renew the Contract Performance Bank Guarantee in accordance with the Contract, then EIL may, without prejudice to any other rights and remedies to which it may be entitled, by written notice terminate the Contract forthwith.
- (g) The Contractor agrees and acknowledges that EIL shall be entitled to assign the Contract Performance Bank Guarantee in favour of any party to whom this Contract may be assigned.

9.5 Site Data

- 9.5.1 EIL has made available to the Contractor all the relevant data in EIL's possession on hydrological and subsurface conditions relating to the Site. The accuracy or reliability of the data/studies/reports and of any other information supplied at any time by Engineer-in-Charge is not warranted and the Contractor shall be solely responsible for the consequences of its interpretation of all such data/studies/reports. The Contractor shall conduct further investigations considered necessary by it at its own Cost and any error or discrepancies, if found in the data made available by EIL at any stage shall not constitute ground for extension of the Time for Completion or any monetary claim.

- 9.5.2 The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the execution of the Works.
- 9.5.3 The Contractor shall be deemed to have inspected and examined the Site, its surroundings, the studies/reports/data mentioned in Clause 9.5.1 above and other available information with respect to the viability of its design and the execution of Works and satisfied itself by careful examination before submitting its Bid, as to all the relevant matters including:
- (a) The form and nature of the Site, including the surface strata, sub-soil, sub-surface conditions, local conditions;
 - (b) The hydrological and climatic conditions;
 - (c) The extent, nature and magnitude of the Work, availability of the Plant and Goods and Materials necessary for the execution of the Works and remedying any defects;
 - (d) Applicable Laws;
 - (e) The Contractor's requirement for access, accommodation, facilities, personnel, supply of power and water, availability of labour, transport and other services;
 - (f) The risk of injury or damage to property adjacent to the Site and to the occupiers of such property or any other risk;
 - (g) The state of traffic both of passengers and vehicles on, along and adjacent to the Site at all times of the day, during various seasons, festivals, etc.; and
 - (h) The suitability of any building, structure, foundation or means of access to the Site to be provided by EIL for reception, movement, commissioning and maintenance of the Works within the time or times indicated in the Works Programme.
- 9.5.4 The Contractor now hereby agrees that the Contractor shall not be relieved from any risks or obligations imposed on or undertaken by it in relation to the Works on the grounds of any misunderstanding or misapprehension in respect of the matters referred to in paragraphs (a) to (h) above or on the ground that it did not or could not reasonably have been expected to foresee any such matter stated above which may, in fact, affect or have affected the Completion of the Works and remedying of any Defects therein or the meeting of its obligations in respect of the Works under the Contract.
- 9.5.5 The Site shall be handed over to the Contractor free from any encroachment and the Contractor shall satisfy itself to such effect prior to taking over the Site for the execution of the Works. It is clarified for the avoidance of doubt that after handing over of the possession of the Site or part of the Site, it shall be the sole obligation of the Contractor to ensure that the Site or part of the Site handed over remains free from any encroachment or squatters and the Contractor shall take all necessary steps at its Cost and expense to give effect to its obligations under this Clause.

9.6 Access Routes

- 9.6.1 The Contractor shall be deemed to have satisfied itself as to the suitability and availability of the access routes to the Site. The Contractor shall be responsible for the maintenance of such access routes. The contractor shall construct, if necessary, at his own cost and initiative, temporary access road to site from main public feeder roads. The Contractor shall provide at its own Cost, signs or directions which it may consider necessary or as instructed by the Engineer-in-Charge for the guidance of its employees, labourers, representatives and others. Upon the request of the Contractor and at the risk and Cost of the Contractor, EIL may assist the Contractor to obtain any permission, concessions and related easement right that may be required from the relevant authorities for the use of such routes, signs and directions.
- 9.6.2 EIL shall not be responsible for any claims which may arise from the use or otherwise of any access route. EIL does not guarantee the suitability or availability of any particular access route, and shall not be liable to any claim for any non-suitability or non-availability for continuous use during the execution of the Works of any such route.
- 9.6.3 All transport operations for the execution of the Works shall be carried out as stipulated in the Specifications. The Contractor shall indemnify EIL in respect of all claims, demands, proceedings, damages, costs, charges and expenses whatsoever arising out of or in relation to any such matters.
- 9.6.4 The Contractor shall take all reasonable measures to ensure that the transportation of the Contractor's Personnel, Goods and Materials or Contractor's Equipment do not interfere with local traffic in the vicinity of the Site.

9.7 Rights of Way and Facilities

EIL shall provide a non-exclusive right of way for access to the Site. The Contractor shall bear all Costs and charges for special or temporary rights of way which it may require including those for access to the Site. The Contractor shall also obtain, at its risk and Cost, any additional facility outside the Site which it may require for the purpose of the execution of Works. EIL reserves the right to make use of these service roads/rights of way for itself working in the area, as and when necessary without any payment to the Contractor.

9.8 Sufficiency of Contract Price

- 9.8.1 The Contractor in fixing the rates/prices specified in the Price Schedule shall be deemed to have independently obtained all information necessary for the purpose of preparing the Bid and executing the Works and to have satisfied itself as to the correctness and sufficiency of the Bid and the Contract Price. Any error in description of the quantity or quality of the Works or omission of any item of work shall not vitiate the Contract or release the Contractor from its obligation to perform the Works at the prices specified in the Price Schedule and the Contractor shall be deemed to have known the scope, nature and magnitude of the Works and the materials, equipment and labour required for executing the Works.
- 9.8.2 Unless otherwise stated in the Contract, the Contract Price and the rates and prices stated in Contract shall, except as otherwise provided for in the Contract, cover all its obligations under and in relation to the Contract, including the obligation to supply Contract Spares; and all matters and all things necessary for the proper execution of the Works. The Contract Price shall not be adjusted save as expressly provided in the Contract, and includes any and all direct,

indirect and ancillary charges and costs of whatsoever nature, all profit, all licenses, royalty and other fees, the cost of all spare parts required for the execution of the Works. The Contractor acknowledges and agrees that the Contractor shall be liable to arrange and obtain any and all licenses on Intellectual Property rights required to execute the Works and to perform the Contract, and that any fees associated with such licenses shall be included within the Contract Price and shall be the sole responsibility of the Contractor.

9.9 Works Programme

- 9.9.1 The Contractor shall submit a detailed Works Programme to the Engineer-in-Charge not later than 30 (thirty) days from the Effective Date. The Contractor shall also submit a revised Works Programme whenever the Engineer-in-Charge finds that the previous Works Programme is inconsistent with actual progress as provided in the Specifications/ scope of Work.
- 9.9.2 No alteration to the Works Programme, or to such arrangements and methods specified therein, shall be made without obtaining prior written consent of the Engineer-in-Charge. If the progress of the Works does not conform to the Works Programme, the Engineer-in-Charge may instruct the Contractor to revise the Works Programme, showing the modifications necessary to achieve Completion within the Time for Completion. The Contractor shall then follow the revised Works Programme at its own Cost.
- 9.9.3 The consent by the Engineer-in-Charge to the Works Programme shall not relieve the Contractor of any of its responsibilities or obligations under the Contract. If the Works Programme indicate that a Key Date has not, or shall not be met, it shall not, by itself entitle the Contractor to an extension of time in relation to such Key Date.

9.10 Progress Reports

- 9.10.1 The Contractor shall submit to the Engineer-in-Charge, by the end of each month, Monthly Progress Report which shall, amongst other things, highlight actual or potential departures from the Works Programme and state the measures which the Contractor proposes to take in order to make good or reduce any delay.
- 9.10.2 The Contractor shall continue to submit the Monthly Progress Report until the end of the Extended Defects Liability Period. Each Monthly Progress Report shall include:
- (a) An executive summary;
 - (b) Charts showing the status of the Works;
 - (c) For the execution of each main part of the Works, the extent of progress (percentage of the whole), the actual or expected dates of commencement, anticipated completion date of the Stage, inspections and Tests on Completion to be carried out by the Contractor;
 - (d) Records of manpower and Contractor's Equipment on the Site;
 - (e) Copies of quality assurance documents or reference thereto, test results and certificates;
 - (f) Safety statistics, including details of any hazardous incidents and activities relating to environmental aspects;

- (g) Comparisons of actual progress against the planned progress, variance analysis and reasons for the variance and steps taken to mitigate the same, with details of any aspects which may jeopardize the Completion of the Works in accordance with the Contract, and the measures being (or to be) adopted to overcome such aspects;
- (h) Inspection reports of regulatory authorities; and
- (i) Status and details of Licenses/registrations/approvals/permits obtained/ required to be obtained under Applicable Laws.

9.10.3 The Contractor shall also submit to the Engineer-in-Charge such other reports as may reasonably be required by it or any relevant authority or public body.

9.10.4 The Contractor hereby acknowledges and accepts that any programme, Monthly Progress Report, schedule, plan, daily report or any other information to be submitted by it in accordance with this Clause shall not constitute the notices which it is required to give under any provision of the Contract.

9.11 Packing and Forwarding

9.11.1 Imported Supplies

- (a) The Contractor shall, wherever applicable, after proper painting, pack and crate all materials for shipment in a manner suitable for export, in accordance with internationally accepted export practices and in such manner so as to protect the supplies from damage and deterioration in transit by road, rail and/or sea and during storage at Site. Without prejudice to any other liabilities or obligations of the Contractor, the Contractor shall be responsible for all damage to the supplies due to improper packing.
- (b) The Contractor shall notify EIL and the Engineer-in-Charge of the date of each shipment from the port of loading as well as the expected day of arrival of such shipment at the designated port of arrival.
- (c) The Contractor's notification shall give complete shipping details with regard to the weight, size and content of each package, along with any other information which EIL may require.
- (d) The following documents shall be sent to EIL within [3 (three)] days from the date of dispatch of the shipment to EIL or any other person designated by EIL:
 - (i) Invoices (2 copies) or any other document of title evidencing sale in transit
 - (ii) Packing list (2 copies)
 - (iii) Test certificate (4 copies)
 - (iv) Insurance certificate (2 copies)
 - (v) Third party inspection certificate as per Quality Assurance Plan Approved by EIL/Engineer-in-Charge (2 copies).

9.11.2 Domestic Supplies

- (a) The Contractor shall, wherever applicable, after proper painting, pack and crate all materials for in such manner so as to protect the supplies from damage and deterioration in transit by road and/or rail and during storage at Site. Without prejudice to any other liabilities or obligations of the Contractor, the Contractor shall be responsible for all damage to the supplies due to improper packing.
- (b) The Contractor shall notify EIL and the Engineer-in-Charge of the date of each shipment from the works, factory or warehouse and expected date of arrival at the Site.
- (c) The Contractor's notification shall give complete shipping details with regard to the weight, size and content of each package, along with any other information which EIL may require.
- (d) The following documents shall be sent to EIL within [3 (three)] days from the date of dispatch of the shipment to EIL or any other person designated by EIL:
 - (i) Invoices (2 copies) or any other document of title evidencing sale in transit
 - (ii) Packing list (2 copies)
 - (iii) Test certificate (4 copies)
 - (iv) Insurance certificate (2 copies)
 - (v) Third party inspection certificate as per approved Project Quality Plan/Quality Assurance Plan Approved by EIL/Engineer-in-Charge (2 copies).

9.12 Contractor's Equipment

9.12.1 All Contractor's Equipment and Temporary Works provided by the Contractor or any Subcontractor shall, when brought on to the Site, be deemed to be exclusively intended for execution of the Works and not be removed without the consent, in writing, of the Engineer-in-Charge. Such consent shall not be unreasonably withheld or delayed by the Engineer-in-Charge.

9.12.2 (a) Upon Completion of the Works, the Contractor shall remove from Site, the entire Contractor's Equipment, Temporary Works and surplus materials as defined in sub-clause 9.12.2(b) below, as per the directions of the Engineer-in- Charge.

(b) Surplus materials

Surplus civil construction materials comprising sand, cement, bricks, stones, aggregates and the products of dismantling the Temporary Works erected by the Contractor shall vest in and belong to the Contractor upon Completion of the Works and/or earlier termination of the Contract for any cause. The Contractor shall have the right, subject to the other terms & conditions of the Contract, to remove the surplus civil construction material from the Site, subject to satisfactory proof of supply. No other surplus material will be allowed to be removed from the Site and shall be deemed to be the property of EIL and the same shall be transported properly to EIL's store or as directed by EIL. The Contract Price quoted by the Contractor shall be deemed to include the cost of all surplus materials which are deemed to be the property of EIL.

- 9.12.3 EIL shall not at any time be liable for the loss or damage to any of the Contractor's Equipment, Temporary Works or materials brought on Site by the Contractor for execution of the Works.
- 9.12.4 The Contractor shall be responsible for obtaining physical clearance from the customs, if any required for constructional plant, materials and other things required for the execution of the Works.
- 9.12.5 The Contractor shall, upon written request by the Engineer-in-Charge, produce to the Engineer-in-Charge, all documents evidencing title to or the contractual arrangement giving the right to the Contractor to use the Contractor's Equipment. In the event of failure to comply with such request within 15 (fifteen) days, then without prejudice to any other rights, EIL shall be entitled to withhold the payments due to the Contractor under the Contract.
- 9.12.6 The Contractor shall be responsible for maintaining the Contractor's Equipment at the Site in a safe and reliable working condition.
- 9.12.7 The Contractor shall be liable for loss of or damage to any of the Contractor's Equipment or to any Persons, as a result of handling, storage or use of the Contractor's Equipment which may occur at any time during the execution of the Works or the remedying of Defects therein.
- 9.12.8 Notwithstanding anything contained to the contrary in any or all of the Clauses of this Contract, where any goods, materials or equipment for the execution of the Contract are procured with the assistance of any Authority either by issue from the Authority stocks or purchased under orders, permits or licenses issued by the Authority, the Contractor shall use such goods, materials or equipment economically and solely for the purpose of the Contract and shall not dispose of them without the prior written permission of EIL.

9.13 Contractor's Documents

- 9.13.1 The Contractor shall submit to EIL a detailed list of the Contractor's Documents to be submitted as well as a schedule for submissions of the Contractor's Documents (taking into account the requirement for Approval by EIL, the Engineer-in-Charge or any third party consultant appointed by EIL) within 3 (three) months from the Effective Date, which shall be subject to Approval by EIL.

EIL shall, within 21 (twenty one) Working Days of the date of submission of such schedule, either Approve the same or reasonably require amendments to such schedule by a written notice to the Contractor. Where EIL requires amendments to be made to the submission schedule, the Contractor shall make such changes and submit a fresh schedule for submissions. If EIL does not notify its refusal to Approve such schedule within 30 (thirty) Working Days of the receipt of such schedule, then it shall be deemed to be Approved by EIL. The latest revision of the Approved schedule for the submission of Contractor's Documents shall be the “**Submissions Schedule**” and shall form a Contract Document.

The Contractor shall comply with the Submissions Schedule for the purposes of submissions of the Contractor's Documents and shall, in any event, ensure the submission of the Contractor's Documents in relation to any element of the Works simultaneously with the performance of that element of the Works. Failure by the Contractor to do so shall entitle EIL to reject that element of the Works and the consequences thereof shall be borne by the Contractor at its own Cost.

- 9.13.2 The Contractor's Documents shall be prepared in sufficient detail and shall satisfy all regulatory approvals. The Engineer-in-Charge shall have the right to inspect/review the preparation of the Contractor's Documents, wherever they are being prepared.
- 9.13.3 Each of the Contractor's Documents shall, when considered ready for use, be submitted to the Engineer-in-Charge for his review. Unless otherwise stated in the Specifications or elsewhere in the Contract, each review by the Engineer-in-Charge shall not exceed the Review Period.
- 9.13.4 If the Engineer-in-Charge during the Review Period, gives notice to the Contractor that a Contractor's Document fails (to the extent stated) to comply with the Specifications, it shall be rectified, resubmitted and reviewed (and if specified, Approved) by the Engineer-in-Charge, at the Contractor's Cost within such time as the Engineer-in-Charge may specify to the Contractor.
- 9.13.5 Design, procurement, construction, manufacture and/or installation of any part of the Works shall not commence prior to the expiry of the Review Period for Contractor's Documents which are relevant for the execution of such part of the Works.
- 9.13.6 If the Contractor wishes to modify any Contractor's Document which has previously been submitted for such pre-construction review, the Contractor shall immediately notify the Engineer-in-Charge, and based on the Engineer-in-Charge's Approval, shall subsequently submit revised Contractor's Documents to the Engineer-in-Charge in accordance with the procedure set out in Clause 9.13.1.
- 9.13.7 If the Engineer-in-Charge instructs that further Contractor's Documents are required to be submitted by the Contractor which is necessary for carrying out the Works, the Contractor shall promptly and at Contractor's Cost prepare such documents.
- 9.13.8 If any errors, omissions, ambiguities, inconsistencies, inadequacies and other defects are found in the Contractor's Documents at any time, then such errors, omissions, ambiguities, inadequacies or other defects shall be rectified by the Contractor at its own Cost and any Approval or consent or review by the Engineer-in-Charge, of the Contractor's Documents shall not relieve the Contractor from any obligations or responsibility under the Contract.
- 9.13.9 Notwithstanding anything contained in this Contract in relation to the Contractor's Documents, the Contractor shall be fully responsible for the adequacy of the Contractor's Documents for the execution of the Works, any failure of the Contractor to comply with the Contract, or otherwise, for any ambiguity, inconsistency, deficiency, lack of fitness for purpose, errors and/ or omissions in such Contractor's Documents.
- 9.13.10 The Contractor's Documents shall be in the custody and care of the Contractor during the Contract. Unless otherwise stated in the Specifications, the Contractor shall provide 6 (six) copies of the Contractor's Documents along with a soft copy of the Contractor's Documents for the use of the Engineer-in-Charge and his assistants.
- 9.13.11 The Contractor shall keep on the Site, 1 (one) complete set of all relevant documents, including the Contract and all documents related to Variations, other communications given or issued from time to time under the Contract and all the Contractor's Documents Approved by the Engineer-in-Charge. EIL, the Engineer-in-Charge shall have the right to access these documents at all reasonable times.

9.13.12 If a Party becomes aware of an error or Defect of a technical nature in the Drawings and Designs or in the Contractor's Documents or any other document which was prepared for use in executing the Works, such Party shall promptly give notice to the other Party of such error or Defect.

9.13.13 As-Built-Drawings: The Contractor shall prepare, and keep up to date, a complete set of "as-built records" of the execution of the Works, showing the exact "as-built" locations, sizes and details of the Works as executed, with cross references to relevant specifications and data sheets in accordance with Clause 10.5.

9.13.14 Test-Reports: After the Performance Tests have been conducted in respect of the Facility, the Contractor shall furnish the test reports to the Engineer-in-Charge for evaluation in accordance with Clause 16.2.

9.14 Subcontractors

9.14.1 The Contractor shall not subcontract the whole of the Works and unless otherwise specifically stated:

- (a) The Contractor shall not be required to obtain consent for purchases of Goods and Materials which are in accordance with the Approved vendor list/ Approved makes specified in the Contract or for provisions of labour or for the subcontracts for which the Subcontractors are named in the Contract Agreement/ Contract;
- (b) The prior consent of Engineer-in-Charge shall be obtained for subcontracting any part of the Works other than as specified under Clause 9.14.1(a) provided that the execution of the Works (or any part thereof) by petty contractors or on piece work basis under the supervision of the Contractor (or its representative) shall not be deemed to be Subcontracting under the Contract; and
- (c) Not less than [30 (thirty)] days before the intended date of each Subcontractor commencing work, the Contractor shall notify the Engineer-in-Charge of such intention.

9.14.2 The Contractor shall be responsible for observance by all Subcontractors of any Applicable Laws and all the provisions of the Contract. The Contractor shall be entirely responsible for the acts or defaults of any Subcontractor, its representatives or employees, as if they were the acts, omissions or defaults of the Contractor, its representatives or employees and nothing contained in Clause 9.14.1(a) shall constitute a waiver of the Contractor's obligations under the Contract. The Contractor shall provide to the Engineer-in-Charge, certified true copies of all the executed Subcontracts containing complete terms and conditions, and annexures other than the price. The Contractor shall make timely payments to the Subcontractors and resolve all matters and differences with any Subcontractor speedily, without affecting the execution of the Works in any manner.

9.14.3 The terms and conditions of any Subcontract shall impose on the Subcontractor such terms and conditions of the Contract as are applicable and appropriate to the part of the Works to be executed by the Subcontractor, to enable the Contractor to comply with its obligations under the Contract.

- 9.14.4 Notwithstanding any consent to the selection of the Subcontractor given by the Engineer-in-Charge, the Engineer-in-Charge shall have full power to order the Contractor to terminate any Subcontractor and substitute such Subcontractor with any other sub-contractor and the Contractor shall be bound to follow such order, provided that such order is provided in writing by Engineer-in-Charge, clearly specifying the reasons for such termination.
- 9.14.5 EIL shall, under no circumstances be liable to any Subcontractor and the Contractor shall indemnify and keep indemnified EIL against all liabilities, costs, claims and demands of whatsoever nature by any Subcontractors.
- 9.14.6 The Contractor shall be solely responsible for the payments to be made to the Subcontractors in accordance with their respective Subcontracts and ensure proper and uninterrupted execution of the Works. EIL shall not interfere in the day to day management of the Subcontract between the Contractor and its Subcontractor, but if any complaint is received by EIL (or Engineer-in-Charge) from any Subcontractor regarding non-payment or delay in payment by the Contractor to such Subcontractor, then EIL may, by a written notice, require the Contractor to resolve such complaint within a reasonable period (to be specified in the notice) and provide the details of the steps taken by the Contractor to resolve the complaint, to EIL. If the issue is not satisfactorily resolved and the details provided by the Contractor are not considered satisfactory, EIL may, at its sole discretion, make direct payment to the Subcontractor as per its claim and recover such payments from any payment due to the Contractor under the Contract.

9.15 Setting Out

9.15.1 The Contractor shall be responsible for:

- (a) The accurate setting out of the Works in relation to the original points, lines and levels of reference given by the Engineer-in-Charge in writing;
- (b) The correctness of position, levels, dimensions and alignments of all parts of the Works;
- (c) The provisions of all necessary instruments, equipment, apparatus and labour in connection with the foregoing responsibilities; and
- (d) Carefully protecting and preserving all bench marks, sight rails, pegs and other things used in setting out the Works.

9.15.2 The Contractor shall first review, validate and undertake its own due diligence of EIL's alignment survey reports and fix the alignment of the Works, pier locations, maintaining vertical and horizontal clearances keeping in view the important Site references and obligatory locations, in consultation with the Engineer-in-Charge. The Contractor shall establish, at suitable points and at its own Cost, additional reference lines and benchmarks as may be necessary for the proper execution of the Works while ensuring, at all times, that the reference lines, points and benchmarks fixed by the Engineer-in-Charge are not disturbed and/ or damaged and the Contractor shall be liable to make good any damage thereto. The verification/ inspection of any setting out or of any line or level by the Engineer-in-Charge shall not in any way relieve the Contractor of its responsibility for the accuracy or correctness thereof and the Contractor shall carefully protect and preserve all benchmarks, sigh-rails, pegs and other things used in setting out the works.

9.15.3 If at any time during the execution of the Works, an error appears in the positions, levels, dimensions or alignment of any part of the Works, the Contractor, on being required to do so by the Engineer-in-Charge, shall, at Contractor's Cost, rectify such error to the satisfaction of the Engineer-in-Charge.

9.16 Safety of Works

9.16.1 The Contractor shall throughout the execution of the Works:

- (a) Take full responsibility for the adequacy, stability, safety and security of the Works, Plant, Contractor's Equipment, Temporary Works, operations on the Site and methods of manufacture, construction and transportation;
- (b) Have full regard for the safety of all persons on or in the vicinity of the Site (including persons to whom access to the Site has been allowed by the Contractor), comply with the Safety Code, all relevant safety regulations, including provision of safety gear. Insofar as the Contractor is in occupation or otherwise is using areas of the Site, the Contractor shall keep the Site and the Works (so far as the same are not completed and occupied by EIL) in an orderly state appropriate for the avoidance of injury or accident to all persons on and in the vicinity of the Site and shall keep EIL indemnified against all costs, charges, losses and damages that may be suffered by EIL in any manner whatsoever as a result of any injury or accident to any person on or in the vicinity of the Site in connection with the execution of the Works;
- (c) Provide and maintain all lights, guards, fences and warning signs and watchmen when and where necessary or as required by the Engineer-in-Charge or by any Applicable Laws or by any relevant Authority for the protection of the Works and for the safety and convenience of the public and all Persons on or in the vicinity of the Site;
- (d) Where any part of the Works would otherwise be carried out in darkness, ensure that all parts of the Site where such part of the Works is being carried out are so lighted as to ensure the safety of all Persons on or in the vicinity of the Site and of such part of the Works;
- (e) The Contractor shall ensure that its employees and the employees of the Subcontractors wear identification badges (cards), uniforms, helmets, safety shoes, gum boots and other safety/protection wear as directed by the Engineer-in-Charge, and to be provided by the Contractor.

9.16.2 The Contractor shall submit a detailed and comprehensive contract specific Site safety plan and system safety assurance plan in accordance with the Specifications.

9.16.3 The Engineer-in-Charge's consent or rejection of the safety plans and/or supplements thereto shall be without prejudice to the Contractor's obligations with respect to safety measures required to be undertaken or implemented in accordance with the Safety Code and shall not excuse any failure by the Contractor to adopt proper and recognized safety practices throughout the execution of the Works.

- 9.16.4 The Contractor shall provide all necessary access, assistance and facilities to enable the Engineer-in-Charge or any other third party safety audit agency to carry out inspections to verify that the safety plans are being properly and fully implemented.
- 9.16.5 The Works, including materials to be used for execution of the Works shall be protected from exposure to and damage due to water.
- 9.16.6 The execution of the Works shall not be carried out in weather conditions that may adversely affect the execution of the Works or damage the Works (or any part thereof) unless proper protection is provided, to the satisfaction of the Engineer-in-Charge.
- 9.16.7 During the execution of the Works, storm restraint systems shall be provided by the Contractor where necessary to the satisfaction of the Engineer-in-Charge.
- 9.16.8 The Contractor shall ensure that the Execution of the Works is carried out in such manner that there is no damage to or interference with:
- (a) watercourses and drainage systems on and in the vicinity of the Site;
 - (b) utility services on and in the vicinity of the Site;
 - (c) structures (including foundations), roads, street fixtures, etc. on and in the vicinity of the Site;
 - (d) public or private, vehicular or pedestrian access routes and roads on and in the vicinity of the Site; and
 - (e) monuments, graves or burial grounds other than to the extent that is necessary for them to be removed or diverted for the execution of the Works. Heritage structures shall not be damaged or disfigured on any account. The Contractor shall inform the Engineer-in-Charge, as soon as practicable, of the structures or roads which are not stated in the Contract to be removed or diverted but which the Contractor considers necessary to be removed or diverted. The Contractor shall not remove or divert any such structure or roads until the consent of the Engineer-in-Charge to such removal or diversion has been obtained.

9.17 Security of the Site

The Contractor shall be wholly responsible for security of the Site and the Works. Unless otherwise stated in the Contract:

- (a) The Contractor shall be responsible for keeping unauthorized persons off the Site; and
- (b) Authorized persons shall be limited to the employees, workmen or consultant or representative of the Contractor and its Subcontractor or persons authorized by the Engineer-in-Charge.

9.18 Contractor's Operations on Site and Clearance of Site

- 9.18.1 The Contractor shall confine his operations to the Site, and to any additional areas which may

be obtained by the Contractor and agreed by EIL as working areas. The Contractor shall take all necessary precautions to keep Contractor's Equipment and Contractor's Personnel within the Site and these additional areas, and to restrain them from encroaching on adjacent land.

- 9.18.2 At all times during the execution of the Works, the Contractor shall keep the Site clean, safe, in a workmanlike condition and free from all unnecessary obstruction, and shall safely store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site any wreckage, rubbish and Temporary Works which are no longer required in accordance with Good Industry Practice, Applicable Laws and instructions of the Engineer-in-Charge, unless required to be maintained at the Site as per the express instructions of Engineer-in-Charge.
- 9.18.3 Upon Completion of the Works, the Contractor shall leave the Site and the Works in a clean and safe condition. However, the Contractor may retain on Site, during the Defects Liability Period, such Goods and Materials or Contractor's Equipment as are required for the Contractor to fulfil its obligations under the Contract.
- 9.18.4 The Contractor shall not sell or otherwise dispose of or remove except for the purpose of performing the Works, the sand, clay, ballast, earth, rock or other substances or materials obtained from any excavation made for the purposes of the Works or any building or produce that was on the Site at the time of handing over of the Site to the Contractor and all such substances, materials, buildings and produce shall be the property of EIL, provided that the Contractor may use such substances, materials, buildings for the performing the Works with the prior permission of the Engineer-in-Charge at the rates determined by the Engineer-in-Charge.

9.19 Quality Management System

- 9.19.1 Unless otherwise agreed with EIL, the Contractor's proposed quality system shall fully satisfy all the elements of ISO 9001 – 2000 "Quality Management Systems Requirement". As evidence of compliance with ISO 9001 – 2000 "Quality Management Systems Requirement", the Contractor shall be required to submit either the current certificate of quality system registration with ISO 9001 or a recent compliance audit recommending registration from a Registrar acceptable to EIL. The quality management system developed by the Contractor shall provide for the planned and systematic control of all quality related activities for execution of the Works. Implementation of the quality management system shall be in accordance with the standard specification for quality management system provided with the Bidding Documents.
- 9.19.2 As a part of the quality management system to be developed and implemented by the Contractor, the Contractor shall prepare and submit the Project Quality Plan/ Quality Assurance Plan for the Engineer-in-Charge's review, comments (if any) and approval within 21 (twenty one) days after the Effective Date. The Engineer-in-Charge shall review the Project Quality Plan/Quality Assurance Plan and provide any comments to the Contractor within 21 (twenty one) Working Days after its receipt of such draft. Within 14 (fourteen) days after its receipt of the Engineer-in-Charge's comments, the Contractor shall implement such comments re-submit the Project Quality Plan/Quality Assurance Plan to the Engineer-in-Charge for Approval. This procedure shall be repeated until the Project Quality Plan/ Quality Assurance Plan is approved by the Engineer-in-Charge. Any compliance by the Contractor with the Engineer-in-Charge's comments shall neither constitute a Variation nor entitle the Contractor to any extension of the Time for Completion or increase in the Contract Price. No proposed change to the Project Quality Plan/ Quality Assurance Plan shall be effective unless the Engineer-in-Charge approves

of such proposed change. Notwithstanding any comments provided by the Engineer-in-Charge, the Contractor shall remain fully responsible for the Project Quality Plan/ Quality Assurance Plan, including rectifying all defects therein.

- 9.19.3 The Contractor shall follow and comply with the Approved Project Quality Plan/ Quality Assurance Plan and shall not amend it without the prior written consent of the Engineer-in-Charge. EIL may, at any time during performance of the Works, conduct a compliance audit with respect to the Project Quality Plan/ Quality Assurance Plan. If such audit demonstrates non-compliance with any aspect of the Quality Assurance Plan, EIL may notify the Contractor of such non-compliance and the Contractor shall promptly undertake appropriate remedial action, at Contractor's sole risk, Cost and expense.

9.20 Fossils

- 9.20.1 All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site shall, as between the Contractor and EIL, be deemed to be the absolute property of EIL. The Contractor shall take reasonable precautions to prevent the Contractor's Personnel or any other person from retaining or damaging any such article or thing and shall, immediately upon discovery thereof and before removal, acquaint EIL with such discovery and carry out EIL's instructions for dealing with the same.

- 9.20.2 If, by reason of complying with EIL's instructions under Clause 9.20.1, the Contractor incurs any costs and/or any delay, then EIL shall, after following the procedure set forth at Clause 24, treat the same as a Variation.

9.21 Land, Power, Water and Other Facilities

The Contractor shall be responsible to provide within the scope of Work all facilities necessary for performance of the Works including (but not limited to) water (including water for hydrostatic testing, if any), power, transportation, handling and construction equipment, vehicles, vessels and any additional land at or about the Site required for the Contractor's field office(s), camps, godowns, workshops and residential accommodation for the Contractor's staff, quarry rights, borrow areas and access roads, to or about the Site and the Contractor's offices, camps, godown, workshops, accommodations, and Temporary Works and facilities whatsoever required for execution and Completion of the Works.

9.21.1 Water

- 9.21.1.1 Subject to availability, EIL may endeavour to provide water to the Contractor, at the cost specified in the Bidding Documents, for construction purposes at one point at the Site which is convenient to EIL. In such case, the Contractor shall, at its own Cost, provide for water meters approved by EIL/the Engineer-in-Charge for measurement of the quantity of water supplied to the Contractor for determination of payment due thereon to EIL. Such meters shall be in custody of EIL. The Contractor shall also provide at its own Cost and initiative other pipe net works etc. from source of supply to the Site and such distribution pipe network shall have prior approval of the Engineer-in-Charge so as not to interfere with the layout and progress of the other construction works.

- 9.21.1.2 In the event of failure or defect of meters, water charges will be calculated on the consumption determined by the Engineer-in-Charge (whose decision shall be final both as regards the existence of a defect or failure and as regards to the water consumed). The amount due to EIL in respect of the water supplied shall, without prejudice to any other mode of recovery available to EIL, be deductible from the Running Bills/Final Bill of the Contractor and/or any monies due or becoming due to the Contractor from time to time.
- 9.21.1.3 EIL may without notice or specifying any cause suspend or discontinue water supply to the Contractor and such suspension or discontinuation shall not entitle the Contractor to any compensation or damages or constitute a basis or ground for extension of the Time for Completion.
- 9.21.1.4 The Contractor shall forthwith on Completion of the Work or earlier determination of the Contract or during the execution of the Works, if so required by the Engineer-in Charge, on grounds of hindrance or obstruction caused thereby or other cause whatsoever at its own Cost and initiative remove or re-route, as the case may be, any installation, pipes and/or other equipment put up or erected by the Contractor for the transportation and/or distribution of water, and fill any trenches, ditches or other excavations done by the Contractor for the purpose thereof and restore the Site to the same condition in which it was prior to the installation.
- 9.21.2 **Power**
- 9.21.2.1 Subject to availability of power supply, EIL may, at its discretion provide for supply of power to the Contractor for execution of the Work from EIL's convenient & nearest substation, from which source the Contractor shall at his own Cost and initiative make arrangements for temporary distribution of power to Contractor's Works at the Site.
- 9.21.2.2 All arrangements for the distribution of power from source aforesaid and the work relative thereto shall be made, performed and/or installed in conformity with Indian Electricity Act and other Applicable Laws governing the supply and transmission, distribution of electricity and shall be subject to prior approval by the Engineer-in-Charge.
- 9.21.2.3 The Contractor shall, at his own Costs and initiative on Completion or prior determination of the Contract or otherwise during execution of the Work, if required by the Engineer-in-Charge because of hindrance caused thereby or for any other cause, forthwith remove or re-route the distribution lines, installations and/or works or part(s) thereof, as the case may be required to be removed or re-routed.
- 9.21.2.4 EIL shall recover from the Contractor for the power consumed by the Contractor from EIL's source(s) of supply the cost thereof to EIL as determined by EIL in this behalf from time to time. The amount due to EIL in respect of such power supplied shall, without prejudice to any other mode of recovery available to EIL, be deductible from the Running Bill/Final Bill(s) of the Contractor and/or any monies due or becoming due to the Contractor from time to time.
- 9.21.2.5 The Contractor shall provide at his own Cost suitable electric meters approved by the Engineer-in- Charge for measurement of the power units supplied to the Contractor for determination of the payment due thereon to EIL. Such meters shall be under the custody and control of EIL.

- 9.21.2.6 In the event of failure or defect of meter(s), power charges shall be calculated on the consumption determined by the Engineer-in-Charge (whose decision shall be final both as regards the existence of a defect or failure and as regards the power consumed).
- 9.21.2.7 EIL may at any time without notice and without specifying any cause, suspend or discontinue power supply as aforesaid to the Contractor, and such suspension or discontinuance shall not entitle the Contractor to any compensation or damages or constitute a basis for extension of Time for Completion.
- 9.21.2.8 Power supplied by EIL to the Contractor shall be entirely at the risks of Contractor as to the continuity and regularity of supply, maintenance of voltage and adequacy of load and frequency without any warranty by or liability to EIL in respect thereof and without entitlement to the Contractor to claim compensation from EIL on grounds of discontinuance, fluctuation of voltage or inadequacy of load or frequency or any other cause whatsoever.

9.21.3 Land

9.21.3.1 Land for Contractor's Field Office, Godown and Workshop

EIL may, at his own discretion and convenience and for the duration of the execution of the Works make available near the Site, land for construction of Contractor's temporary field office, godowns, workshops and assembly yard required for the execution of the Contract. The Contractor shall at his own Cost construct all these temporary buildings and provide suitable water supply and sanitary arrangement and get the same approved by the Engineer-in-Charge. On Completion of the Works undertaken by the Contractor, it shall remove all Temporary Works erected by it and have the Site cleaned as directed by Engineer-in-Charge.

If the Contractor shall fail to comply with these requirements, the Engineer-in-Charge may at the Cost of the Contractor remove such surplus, and rubbish materials and dispose off the same as he deems fit and get the Site cleared as aforesaid; and Contractor shall forthwith pay the amount of all expense so incurred and shall have no claim in respect of any such surplus materials disposed off as aforesaid. The Engineer-in-Charge reserves the right to ask the Contractor any time during the pendency of the Contract to vacate the land by giving 7 days notice on security reasons or on national interest or otherwise. Rent may be charged by EIL for the land so provided to and occupied by the Contractor, which may be deducted from the Running Bills/Final Bill of the Contractor or from any other amount due or that becomes due to the Contractor.

The Contractor shall put up temporary structures as required by it for their office, fabrication shop and construction stores only in the area allocated to them on the Site by EIL or his authorised representative. In addition, for uninterrupted fabrication work, the Contractor shall put up temporary covered structures at its Cost within area allocated to it within the Site by EIL or its authorised representative. No tea stalls/canteens should be put up or allowed to be put up by any Contractor on the allotted land or complex area without written permission of EIL.

No unauthorised buildings, constructions or structures should be put up by the Contractor anywhere on the Site.

No person except for authorised watchman shall be allowed to stay on the Site, including on any area allotted to the Contractor pursuant to this Clause 9.21.3 after completion of the day's work without prior written permission from the Engineer-in-Charge.

9.21.3.2 Land for Residential Accommodation

No Land shall be made available for residential accommodation for staff and labour of Contractor.

9.22 Access for the Engineer-in-Charge

The Contractor shall allow the Engineer-in-Charge or its assistant or any other person authorized by the Engineer-in-Charge, access to the Site at all times, and to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where Goods and Materials or Plant are being manufactured, fabricated, constructed and/or assembled for incorporation in the Facility, during usual working hours and beyond usual working hours, upon prior intimation. The Contractor shall ensure that the Subcontracts, if any, shall contain provisions entitling the Engineer-in-Charge or any person authorized by him to have such access.

9.23 Contract Spares

The Contractor shall procure and supply:

- (a) all spare parts required during pre-commissioning and commissioning of the Facility and associated systems;
- (b) all mandatory spares required for the Facility and specified in the Bidding Documents;
- (c) all operation and maintenance spares, required during the Defects Liability Period

(collectively the “**Contract Spares**”).

The Contract Price shall include the cost of procuring and supplying the Contract Spares, unless otherwise specified in the Contract.

9.24 Avoidance of Damage

9.24.1 While transporting any Plant, Goods and Material, Contractor's Equipment or any other equipment, the Contractor shall comply with Applicable Laws and take all steps necessary to ensure that roads, viaducts and bridges on any route leading to the Site, including access and link roads to the Site as well as any third party properties, are not damaged.

9.24.2 In case the transportation of any Plant, Goods and Material, Contractor's Equipment or other equipment by the Contractor is likely to cause damage to any road, viaduct or bridge on any route leading to the Site, including access and link roads to the Site and any third party property, it shall inform the concerned Authorities before transporting such Plant, Goods and

Material, Contractor's Equipment or other equipment and obtain all necessary approvals and permits from the relevant Authorities as may be required, or give its proposal for strengthening such roads, viaducts or bridges. Any Cost incurred in this regard shall be borne by the Contractor.

- 9.24.3 The Contractor shall indemnify and keep EIL indemnified against all losses, damages and claims incurred by EIL due to any damage caused to any bridge or road or any other structure or street furniture leading to the Site, arising from the transportation of any Plant, Goods and Material, Contractor's Equipment or other equipment.

9.25 Quality Control

- 9.25.1 All Goods and Materials to be supplied under the Contract shall be constructed, and all Works shall be executed by the Contractor, in the manner set out in the Contract. Where the manner of manufacture, construction and the execution is not set out in the Contract, the Works shall be executed in a proper, workman like and careful manner, with properly equipped facilities and non-hazardous materials, and in accordance with recognized and internationally accepted industrial standards and Good Industry Practice. The successful execution of the Works is the sole responsibility of the Contractor.
- 9.25.2 EIL shall be entitled at all times, at the risk of the Contractor, to inspect and/or test by itself or through an independent person(s) or agency(ies) appointed by Engineer-in-Charge and/or to direct the Contractor to inspect and/or test or to get inspected and/or tested, all materials, items and components, whatsoever supplied or proposed for supply for incorporation in the works, inclusive during the course of manufacture or fabrication by the Contractor and/or at the Contractor's or his sub-vendors' works or otherwise, of such material, item or component. The inspection and/or tests shall be conducted at the expense of the Contractor and may be directed by Engineer-in-charge to be conducted by authorized representatives of Engineer-in-charge or third party inspection agency(ies) appointed by EIL. EIL may also require that all the inspections and tests conducted by the Contractor at his works or his sub-vendors' works be carried out in the presence of authorized representatives of Engineer-in-charge/ third party inspection agency(ies) appointed by EIL. The Contractor shall provide Engineer-in-charge and/or their representatives/Agents every facility of assistance necessary for carrying out or witnessing, as the case may be the Test(s) / Inspection(s).
- 9.25.3 The Contractor shall be responsible for procurement, transport, receiving, unloading and safe keeping of all Goods and Materials and other things at the Site required for the successful execution of the Works.
- 9.25.4 The Contractor shall provide all documents and other information necessary for testing of the Goods and Materials and such assistance, labour, materials, electricity, fuel, stores, apparatus and instruments as are necessary to carry out such tests efficiently.
- 9.25.5 The Contractor shall agree with the Engineer-in-Charge, the time and place for the testing of any Goods and Materials and other parts of the Works as specified in the Contract.
- 9.25.6 If the Engineer-in-Charge does not attend at the time and place agreed, or if the Contractor and the Engineer-in-Charge agree that the Engineer-in-Charge shall not attend, the Contractor may proceed with the tests, unless the Engineer-in-Charge instructs the Contractor otherwise, such tests shall be deemed to have been made in Engineer-in-Charge's presence.

- 9.25.7 The Contractor shall promptly forward to the Engineer-in-Charge duly certified reports of the tests. If the Engineer-in-Charge has not attended the tests, he shall accept the readings as accurate, except where there is a manifest error.
- 9.25.8 If, as a result of inspection, examination or testing, any Goods and Materials is found to be defective or otherwise not in accordance with the Contract, the Engineer-in-Charge may reject the same within 15 (fifteen) Working Days of such inspection, examination or testing by giving notice to the Contractor with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item after rectification complies with the Contract.
- 9.25.9 If the Engineer-in-Charge requires such Goods and Materials to be retested, the tests shall be repeated under the same terms and conditions. If such rejection and retesting causes EIL to incur additional costs, such costs shall be recoverable from the Contractor by EIL, and may be deducted by EIL from any monies payable to the Contractor under the Contract.
- 9.25.10 The Contractor shall not be released from any of its liabilities or obligations under the Contract by reason of any such inspection or testing or witnessing of testing, or by the submission of reports of inspection or testing to the Engineer-in-Charge.
- 9.25.11 Subject to Clause 11.5, each item of the Goods and Materials shall become the property of EIL upon the earlier of: (i) delivery of such item to the Site; or (ii) payment for such item, either in part or full, by EIL. The Contractor shall however continue to bear the risk and responsibility in respect of such items which continue to remain in its possession until the date of issuance of the Completion Certificate.
- 9.26 Covering up of Works**
- 9.26.1 No Works or part of the Works shall be covered up or put out of view, without the prior Approval of the Engineer-in-Charge or his assistant.
- 9.26.2 The Contractor shall provide full opportunity to the Engineer-in-Charge to examine part of the Works which is to be covered up and to examine foundations before the Permanent Works are executed at such place. The Contractor shall also give due notice to the Engineer-in-Charge, whenever any such work or foundation is ready for examination and the Engineer-in-Charge shall without unreasonable delay, examine and/or measure such work.
- 9.26.3 The Contractor shall uncover any part or parts of the Works, or make openings in or through the same, as the Engineer-in-Charge may from time to time direct, and shall reinstate and make good such part or parts, to the satisfaction of the Engineer-in-Charge. If any such part or parts have been covered up, or put out of view and the Works are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating and making good the same, shall be borne by EIL, but if the Works are found to be defective, costs shall be borne by the Contractor.
- 9.26.4 In case after completion of a part of the Works, such part of the Works is not fully consistent with the Specifications and in the view of the Engineer-in-Charge cannot be changed or removed, then such part of the Works in its present condition (provided it has no implication on safety and operation) shall be accepted only after suitable reduction (as reasonably determined by the Engineer-in-Charge) has been made from the Contract Price.

9.27 Samples

The Contractor shall submit at its own Cost the following samples and relevant information to the Engineer-in-Charge for pre-construction and/or pre-manufacture review:

- (a) Manufacturer's standard samples of Goods and Materials;
- (b) Samples (if any) specified in the Specifications.

Each sample shall be labelled as to its origin and intended use in the Works.

9.28 Records

The Contractor shall from time to time maintain at the Site (in addition to any other records or registers required to be maintained by the Contractor under any Applicable Law) such records and registers with respect to the Works as the Engineer-in-Charge or EIL may require the Contractor to keep and/or maintain from time to time. The failure to maintain or submit any record or register required pursuant to this Clause 9.28 shall disentitle the Contractor from submitting any Running Bill pursuant to Clause 23.3 and shall constitute a breach of this Contract.

The review or acceptance of any record or register maintained by the Contractor pursuant to this Clause 9.28 shall be without prejudice to the rights and remedies of EIL and obligations and liabilities of the Contractor under this Contract and shall not otherwise operate as an estoppel against EIL by reason only of the fact that no notice of or objection to any information contained in any such record or register was taken.

9.29 Free Issue Materials

9.29.1 If EIL has undertaken in the Bidding Documents to procure and supply Free Issue Materials, the supply of Free Issue Materials to the Contractor shall be on the following terms and conditions:

- (a) Deliveries shall be either from the storage of EIL or from the factory/storage of a supplier designated by EIL or from nearest suitable railhead or other point(s) of collection as may be determined by EIL taking into account the source(s) of supply of the Free Issue Materials.
- (b) It shall be the responsibility of the Contractor at his own risks and Costs to take delivery of the Free Issue Materials from the stores, factory, railhead or other collection point, as the case may be, and to arrange for its loading, transportation to the Site and unloading at the Site or other place of storage. The Contractor shall in taking delivery ensure compliance with any conditions for delivery applicable to deliveries from EIL's or supplier's factory/stores or railways or other transporters concerned, and shall be exclusively responsible to pay and bear any demurrage or penalty or other charges payable by virtue of any failure or delay by the Contractor in lifting the supplies and/or any failure by the Contractor to observe the conditions of supply as aforesaid, and shall keep EIL indemnified from and against all consequences thereof.

- (c) The Contractor shall inspect the Free Issue Materials supplied to it at the time of taking delivery thereof and satisfy itself of the quality, quantity and condition thereof prior to taking delivery and EIL shall not be liable for any claims or complaints whatsoever in respect of quality, quantity or conditions of the Free Issue Materials once the Contractor has taken delivery thereof.
- (d) The Contractor shall on receiving and opening the packing cases or other packaging of Free Issue Materials on behalf of EIL, verify and tally the actual contents with the packing list and bring any discrepancies to the notice of the Engineer-in-Charge. The Contractor shall also sort out and segregate and hand over to EIL's stores, the instruction manuals, operation and maintenance manuals, special maintenance tools, erection spares, commissioning spares, and maintenance spares and other extras, if received with the main equipment. The erection spares may be got issued from EIL's stores if required, after getting authorization from the Engineer-in-Charge. The commissioning spares may be got issued from EIL's stores, if commissioning is included in the Contractor's scope.
- (e) The Free Issue Materials supplied or procured by EIL shall be utilized by the Contractor only for incorporation in the Permanent Works and even so shall not unless specifically authorized by EIL in this behalf) be utilized for manufacturing any item(s) which can be obtained in finished form from standard manufactures.
- (f) The Contractor shall furnish to the Engineer-in-Charge sufficiently in advance a detailed statement showing his requirement of the types and quantities of Free Issue Materials agreed to be supplied by EIL, indication of the time when relative types and quantities thereof shall be required by it for the Works so as to enable EIL to verify the quantities of Free Issue Materials specified by the Contractor and to enable EIL to make arrangements for the supply thereof.
- (g) EIL shall not be responsible for any delay in the supply of any Free Issue Materials supplied or procured or agreed to be supplied or procured by EIL, and no such delay or failure shall anyway render EIL liable for any claim for damages or compensation by the Contractor notwithstanding that an increase in the time of performance of the contract be involved by virtue of such delay and notwithstanding any labour, machinery or equipment brought upon the Site by the Contractor for the performance of the Work being rendered idle by such delay or failure, provided that if such delay shall in the opinion of the Contractor, necessitate an extension of Time For Completion, the provisions of clause 14 hereof relating to extension of time and associated provisions thereof shall apply.
- (h) The Contractor shall maintain a day to day account of all Free Issue Materials supplied to it by EIL indicating the daily receipt(s), consumption and balance(s) in hand of each Free Issue Material and category thereof. Such account shall be maintained in such form (if any) as shall be prescribed by the Engineer-in-Charge and shall be supported by all documents necessary to verify the correctness of the entries in the account. Such account shall be maintained at the Contractor's office at the Site, and shall be open for inspection and verification (by verification of documents in support of the entry as also by physical verification of the stocks) at all times by the Engineer-in-Charge without notice and for this purpose the Engineer-in-Charge shall be permitted and enabled without obstruction to enter into any godown or other place or premises where the Free

Issue Materials or any part thereof shall be stored and to inspect the same and to take by himself and/or through his representative(s) an inventory thereof.

- (i) All Free Issue Materials supplied by EIL shall be taken delivery of, held, stored and utilized by the Contractor as trustee of EIL, and delivery of Free Issue Materials to the Contractor shall constitute an entrustment thereof by EIL to the Contractor, with the intent that any utilization, application or disposal thereof by the Contractor otherwise than for incorporation in the Permanent Works in terms hereof shall constitute a breach of trust by the Contractor.
- (j) The Contractor shall hold and store any Free Issue Materials supplied by EIL only at such place and/or premises as may be approved by the Engineer-in-Charge, provided that no such approval shall absolve the Contractor in whole or part of his full liabilities in respect of such Free Issue Material, and the Contractor shall be and remain responsible at all times at his own risk and cost to ensure that the Free Issue Materials supplied by EIL is/are retained at all times in premises that are air and water tight and otherwise suitable for the storage of the concerned Free Issue Materials so as to prevent damage or deterioration for any cause whatsoever or theft or other loss, and shall arrange such watch and ward therefore as shall be necessary to ensure the safety thereof.
- (k) The Engineer-in-Charge may at his discretion require that all premises in which any Free Issue Materials supplied by EIL are stored, shall be double locked with the keys to one lock retained by Engineer-in-Charge or his representative and the other with the Contractor with the intent that all issues of EIL supplied Free Issue Materials shall be with concurrence of the Engineer-in-Charge or his representative, as the case may be, provided that any such double-locking and/or concurrence as aforesaid shall be an additional precaution and shall not anyway absolve the Contractor of his full liabilities or responsibilities in respect of such Free Issue Materials.
- (l) The Free Issue Materials supplied by EIL shall be insured by EIL against normal risks during transit, storage and erection. The Contractor shall, however, be responsible forthwith to make and pursue on behalf of EIL any and all claims under the policy(ies) and to fulfill all formalities required to obtain payment thereunder and/or to assist EIL in making or pursuing any such claim(s) and/or in obtaining payment thereunder.
- (m) Wherever the Contractor is required to take out any material supplied by EIL to a location outside the Plant premises, the Contractor shall be required to take out at his own Cost and initiative and keep in force at all times during the pendency of the Works, policy(ies) of insurance against the risks of fire, lightning, earthquake, riot, strike and theft and against any other damage or loss, for the full value (on reinstatement value basis) of the Free Issue Materials lying in the Contractor's custody and/or storage pending utilization/ incorporation in the Permanent Work and during incorporation in the Permanent Work. The insurance shall be kept valid till the Completion of the Works and till the Free Issue Materials is duly accounted for to the satisfaction of EIL.
- (n) Such insurance policy(ies) shall be in the joint names of EIL and the Contractor with exclusive right of EIL to receive all money(ies) due in respect of such policy(ies), and with right in EIL (but without obligation to do so) to take out and/or pay the premium for any such policy(ies) and deduct the premium and any other costs and expenses in this behalf from the money(ies) for the time being due to the Contractor.

- (o) Notwithstanding anything stated above, it shall be the responsibility of the Contractor to lodge with insurers and follow up claim(s), if any, under any policy(ies) of insurance aforesaid, and nothing herein provided shall absolve the Contractor from his full liabilities under the provisions of this clause and associated provisions hereof.
- (p) Where the Free Issue Materials are being stored within the battery area under the security and gate-pass control of EIL and are covered by the Overall Storage-cum-insurance Policy taken by EIL for the Works, EIL may, at his sole discretion, permit the Contractor to furnish an Indemnity Bond in the proforma prescribed by EIL, for the entire value of EIL supplied Free Issue Materials and for the entire duration during which the Free Issue Materials shall be lying in the storage and custody of the Contractor.
- (q) No such Insurance(s), as aforesaid, shall absolve the Contractor from his full liabilities hereunder, with the intent that the same shall be held merely by way of additional security and not by way of substitution of liability. The Contractor shall at all times be exclusively responsible for any and all loss(es), damage(s), deterioration, misuse, theft or other application or disposal of the Free Issue Materials, supplied by EIL or any of them contrary to the provisions hereof and shall keep EIL indemnified from and against the same and shall forthwith at his own Cost and expense replace any such Free Issue Materials lost, damaged, deteriorated, misused, stolen, applied and/or disposed as aforesaid, with other equipment or material of equivalent quality and quantity to the extent that the same is not covered by any insurance as above, and if covered, payment under the relative policy(ies) is for any reason not available to EIL.
- (r) The Contractor shall use the Free Issue Materials supplied by EIL for incorporation in the Permanent Works, carefully and judiciously with no wastage or the minimum possible wastage, wherever some wastage is inevitable or unavoidable, in any case within the wastage limit, if any, specified by EIL in respect of any such Free Issue Materials. For any excess wastage or scrap, due to misuse or injudicious, careless or wrong use of the Free Issue Materials, or in case of loss, damage or deterioration of the Free Issue Materials during storage with the Contractor, as to all of which the decision of the Engineer-in-charge shall be final and binding on the Contractor, the Contractor shall be bound to replace the Free Issue Materials with materials of equivalent quantity and grade, acceptable to EIL within the time limit specified by EIL, and where this is not possible, practicable or advisable, in the opinion of EIL, which shall be final and binding on the Contractor, EIL shall be compensated by the Contractor for the loss caused, for the replacement costs, which shall be worked out by EIL based on the assessed landed cost plus the costs of procurement at 15% (fifteen percent) of the assessed landed costs for EIL. This amount shall forthwith be remitted by the Contractor within a week of demand made by EIL, failing which EIL shall be entitled to recover/adjust the amount demanded from any money(ies) due from EIL to the Contractor and / or from any security or any other deposits of the Contractor lying with EIL, under this and/or any other contract, without any further notice to the Contractor. The decisions of EIL in respect of the actions contemplated in this clause shall be final and binding on the Contractor.

- (s) Notwithstanding anything herein provided and notwithstanding the transfer of all risks in respect of such Free Issue Materials to the Contractor, the ownership in respect of all the Free Issue Materials shall at all times be and remain with EIL.
- (t) The excess equipment and material and the scrap material generated from the Work, in so far as the Free Issue Materials are concerned, shall be returned to EIL's Stores. On Completion of the Work, the Contractor shall duly render accounts for the materials and equipment issued by EIL, to the satisfaction of EIL. Any shortages, losses and/or damages shall be to the Contractor's account and all the conditions stipulated under sub-clause (r) above shall apply in this case also.

9.30 EIL may do part of the Works

Upon failure of the Contractor to comply with any instructions given in accordance with the Contract, EIL shall have the right to deploy additional labour force, tools, equipment and materials for such part of the Works as EIL may designate and/or engage another contractor to carry out the Works. In such cases, EIL shall deduct from the amount which might otherwise become due to the Contractor the cost of deploying additional labour or materials of the cost of engaging another contractor to complete the Works along with an additional 10% of such cost to cover all other expenses and departmental charges incurred by EIL in this regard. Should the total amount thus calculated exceed the amount due to the Contractor, the difference shall be recovered from the Contractor as a debt due.

10 DESIGN, PLANS AND MANUALS

10.1 Design Data

- 10.1.1. EIL shall prepare or cause to be prepared the Design Data required by the Contractor for preparing the Drawings and Designs and for the execution of the Works. The Design Data shall be supplied to the Contractor prior to commencement of the Works.
- 10.1.2. The Design Data and all other information forming a part of the Bidding Documents have been provided by EIL in good faith with a view to assist the Contractor in preparing the Drawings and Designs and executing the Works. EIL assumes no responsibility for the accuracy or adequacy of the Design Data and the Contractor is expected to undertake a complete and independent survey of all factors relevant to the performance of the Works and to verify the Design Data. The Contractor shall proceed with the use of the Design Data only after satisfying itself of its sufficiency and appropriateness for use.
- 10.1.3. The Design Data shall be in the custody and care of EIL. Unless otherwise stated in the Contract, 2 (two) copies of the Design Data shall be supplied to the Contractor, who may make or request further copies at the Cost of the Contractor.

10.2 Contractor's General Obligations

- 10.2.1 The Contractor shall design and provide all necessary specifications for the Works, strictly in accordance with the Specifications and the Design Data. Any design detail, plan, drawing, specifications, notes, annotations and information required shall be provided in sufficient detail, size and scale and within such time as may be required to ensure effective execution of the Works and/or as otherwise required by the Specifications.

- 10.2.2 All Drawings and Designs, assumptions, calculations, schedules, patterns, models and other relevant information provided by the Contractor or as may be required under the Specifications or as may be required by the Contractor for the execution of the Works, or as the Engineer-in-Charge may require for a full appreciation of any design, methods of construction and installations proposed by the Contractor, shall be submitted to the Engineer-in-Charge for acceptance in accordance with Clause 9.13 prior to implementation. Any acceptance by the Engineer-in-Charge shall not however relieve the Contractor of any of his responsibilities for the accuracy, suitability, adequacy, performance and practicality of any such Design and Drawings, assumptions, calculations, schedules, patterns, etc. and any subsequent amendment thereof. The cost of all necessary remedial works in relation to any Works required as a result of any inaccuracy, inadequacy or impracticality in the Contractor's proposals and any subsequent amendments at any time during and after the execution of the Works, shall be the entire responsibility of and shall be borne by the Contractor.
- 10.2.3 The Engineer-in-Charge shall have full power and authority to require the Contractor to amend or modify any Drawings and Designs (including related calculations, design documents or other affected particulars) if he finds any shortcomings thereto and the Contractor shall without delay, correct such shortcomings at its own Cost and submit all revised Drawings and Designs, calculations, design documents or other affected particulars to the Engineer-in-Charge for his Approval in accordance with the provisions of Clause 9.13. Such instructions shall not however in any way relieve the Contractor of any of its responsibilities for the accuracy, suitability, adequacy, performance and practicality of the amended or modified Drawings and Designs.
- 10.2.4 EIL shall have no liability whatsoever for the cost of orders placed or of manufacturing, construction or installation commenced by the Contractor, other than orders placed or of manufacturing, construction or installation commenced following the acceptance of the Engineer-in-Charge as provided under Clause 10.2.2.
- 10.2.5 The Contractor confirms that the Contractor possesses the experience and capability necessary for the design in relation to the Works. The Contractor undertakes that the Contractor (and its employees) shall be available to attend discussions with the Engineer-in-Charge to enable the Engineer-in-Charge to seek Approval of EIL at all reasonable times during the Contract Validity Period.
- 10.3 Contractor's warranty of Design**
- 10.3.1 The Contractor shall be fully responsible, for the suitability, adequacy, integrity, durability and practicality of the Drawings and Designs.
- 10.3.2 The Contractor warrants that the Drawings and Designs meet the Specifications and are fit for the purpose thereof. Where there is any inadequacy, insufficiency, impracticality or unsuitability in or of the Specifications of the Design Data or any part thereof, the Drawings and Designs shall take into account, address or rectify such inadequacy, insufficiency, impracticality or unsuitability at Contractor's own Cost.
- 10.3.3 The Contractor warrants that the Works have been and/or shall continue to be executed in accordance with the standards specified in the Specifications and utilising proven up to date technology, systems, procedures, high quality goods, materials and equipments and high standards of workmanship and fabrication, in accordance with Good Industry Practice.

- 10.3.4 The Contractor warrants that the execution of the Works have taken or shall have taken full account of the effects of the transportation of material and equipment, and other logistics movement, Site constraints, traffic constraints, climatic conditions, intended construction and manufacturing methods, Temporary Works and Contractor's Equipment.
- 10.3.5 The Contractor shall indemnify EIL against any damage, expense, liability, loss or claim, which EIL might incur, sustain or be subject to, arising from any breach of the Contractor's design responsibility and/or warranty set out in this Clause 10.3.
- 10.3.6 No claim for additional payment or extension of the Time for Completion shall be entertained and/or the Contractor shall not be relieved from any obligation/liability under the Contract, for any delay, suspension, impediment to or adverse effect upon the progress of the Works due to any mistake, inaccuracy, discrepancy or omission in the Design Data provided by EIL, the Drawings and Designs or any failure by the Contractor to prepare any Drawings and Designs or submit the same to the Engineer-in-Charge in due time and the Contractor shall promptly make good any such Defect at its own Cost.
- 10.3.7 For each part of the Work, and except to the extent that the Parties otherwise agree:
- (a) execution of such part of the Work shall not commence prior to the expiry of the Review Periods for all the Drawings and Design which are relevant to its design and execution;
 - (b) execution of such part of the Work shall be in accordance with the relevant Drawings and Designs, as Approved by the Engineer-in-Charge. Where any Work or part of the Work executed by the Contractor is not in conformity with the Approved Drawings and Designs, the Engineer-in-Charge shall be entitled to require the Contractor to repair, rectify, dismantle and/or reconstruct such Work or part of the Work, as the case may be and all costs and expenses for such rectification, repair, dismantling and/or reconstruction of such Work or part of the Work shall be borne by the Contractor;
 - (c) if the Contractor wishes to modify any Drawings and Designs which has previously been submitted for review, the Contractor shall immediately give notice to the Engineer-in-Charge. Thereafter, the Contractor shall submit the revised documents to the Engineer-in-Charge in accordance with the above procedure.

10.4 Technical Standards and Regulations

The Contractor's Documents (including Drawing and Designs) shall, in addition to complying with the Specifications, comply with the technical standards, building construction, safety and environmental regulations and other standards specified under or defined by Applicable Laws.

10.5 As-Built Drawing and Documents

- 10.5.1 The Contractor shall prepare, and keep up to date, a complete set of "as-built records" of the execution of the Works, showing the exact "as-built" locations, sizes and details of the Works as executed, with cross references to relevant specifications and data sheets. These records shall be kept on the Site and shall be used exclusively for the purposes of this Contract. One original copy, 6 (six) hard copies of such "as built" records, together with a soft copy of such "as built" records shall be submitted to the Engineer-in-Charge prior to the commencement of the Tests on Completion.

- 10.5.2 In addition, the Contractor shall prepare and submit to the Engineer-in-Charge “as-built drawings” of the Works, showing all Works as executed by the Contractor. The drawings shall be prepared as the Works proceed, and shall be submitted to the Engineer-in-Charge for his review and inspection. The Contractor shall obtain the consent of the Engineer-in-Charge as to their size, the referencing system, and other pertinent details.
- 10.5.3 Prior to the issue of the Completion Certificate, the Contractor shall submit to the Engineer-in-Charge one soft copy, one full-size original copy and six (6) printed copies of the relevant “as-built drawings”, and any further Contractor's Documents specified in the Specifications. The Works shall not be considered to be completed and the Completion Certificate shall not be issued under Clause 0 until the documents referred above have been submitted to the Engineer-in-Charge in accordance with this Clause 10.5.3.

10.6 Alteration in Specifications, Plans, Drawings and Designs, Extra- Works

- 10.6.1 The Engineer-in-Charge shall have the power, by written notice to the Contractor, at any time prior to or during the execution of the Works, to alter, amend or modify any Specification. To the extent that such alteration, amendment or modification requires any corresponding amendment to the Drawings and Designs or any other Contractor's Document, the Contractor shall make such amendments to the Drawings and Designs or, as the case may be, the relevant Contractor's Document.
- 10.6.2 Contractor shall be bound to carry out such altered/extra/new items of work in accordance with any instruction which may be given to it by the Engineer-In-Charge.
- 10.6.3 Subject to Clause 24.10.2, if any alteration, amendment or modification of the Specifications pursuant to Clause 10.6.1 shall, in the opinion of the Contractor and/or EIL, result in an increase, reduction or change in the Works that are covered in the Price Schedule, which would render the Contract Price unreasonable, EIL and the Contractor shall negotiate a suitable increase or, as the case may be, reduction in the Contract Price. If EIL and the Contractor fail to agree on a revised Contract Price, the Engineer-in-Charge shall, as an interim measure, decide on an appropriate adjustment to the Contract Price and pending a final decision on the quantum of increase or, as the case may be, reduction in the Contract Price under Clause 35, the Contractor shall be bound to execute the Works on the basis of the revised Contract Price determined by the Engineer-in-Charge.

For the avoidance of doubt, it hereby clarified that if the rate(s) of any additional, altered or substituted item of Work are specified in the Price Schedule, the Contractor shall be bound to carry on the additional, altered or substituted items of Work at the same rate(s) as are specified in the Price Schedule.

- 10.6.4 If any alteration, amendment or modification of the Specifications pursuant to Clause 10.6.1 shall, in the opinion of the Contractor and/or EIL, necessitate any additional, altered or substituted items of Work that are not covered in the Price Schedule, the remuneration for such additional, altered or substituted items of Work that are not covered in the Price Schedule shall be determined by the Engineer-in-Charge in the following manner:
- (a) If it is possible to derive the rate(s) for such additional altered or substituted items of Work from any of the items of Work covered in the Price Schedule, the rate(s) for such

additional altered or substituted items of Work shall be the rate(s) arrived at on the basis of such derivation. The opinion of the Engineer-in-Charge as to whether the rate(s) for the additional altered or substituted items of Work can be derived from the rate(s) of items already covered in the Price Schedule shall be final and binding on the Contractor.

- (b) If, in the opinion of the Engineer-in-Charge, it is not possible to derive the rate(s) for the additional altered or substituted items of Work from any of the items of the Work covered in the Price Schedule, then the rate(s) for such items of Work shall be determined by taking:
- (i) the issue rate(s) of materials supplied by EIL, if applicable;
 - (ii) materials supplied by the Contractor and incorporated in the Permanent Works at the rate(s), if any, specified in the Price Schedule;
 - (iii) labour cost at rate(s) for labour, if any, specified in the Price Schedule;
 - (iv) if the additional altered or substituted items of Work involve the use of any material or labour not covered in the Price Schedule, for the purpose of determining the rates under sub-paragraph (ii) and/or (iii) above, the prevailing market rate(s) shall be taken into account for determining the rate(s) of such materials and/or labour and an additional 15% (fifteen percent) shall be added to the market rate(s) to cover the Contractor's, supervisions, overheads and profits.
 - (v) the opinion of the Engineer-in-Charge as to the quantity or quality of materials and/or labour involved in executing the additional altered or substituted items of Work or as to whether the additional altered or substituted items of Work involve the use of materials and/or labour that are not covered in the Price Schedule and if not, as to the market rate(s) that shall be applicable shall be final and binding on the Contractor.

10.7 Operations and Maintenance Manuals

10.7.1 The Contractor shall prepare and submit to the Engineer-in-Charge, the Operation and Maintenance Manuals in accordance with the Specifications and in sufficient detail for EIL to operate, maintain, dismantle, reassemble, adjust and repair the Facility. The Contractor shall not be entitled to receive the Completion Certificate unless the Operation and Maintenance Manuals have been submitted to the Engineer-in-Charge and received his consent.

10.7.2 The Operation and Maintenance Manuals submitted by the Contractor shall, if required, be updated by the Contractor during the Defect Liability Period and re-submitted for review by the Engineer-in-Charge in accordance with Clause 9.13.

11 TRANSFER OF TITLE AND RISK

11.1. Subject to Clause 11.5 below, the title of domestic supply of Goods and Material and Plant shall pass to EIL in the manner set out below:

11.1.1 In the event the Contractor is the manufacturer of the domestic Goods and Material and Plant (including the mandatory spares etc), the title to such domestic Goods and Material and Plant

shall be transferred to EIL ex factory, ex works or ex warehouse basis i.e. upon the dispatch of such goods by the Contractor from its premises.

11.1.2 In the event the Contractor is not the manufacturer of the domestic Goods and Material and Plant (including the mandatory spares etc), and instead procures the same from a Subcontractor/ vendor / original manufacturer, then the title shall be transferred in the following manner:

- (a) If pursuant to the above arrangement between EIL and the Contractor and between the Contractor and its Subcontractor/ vendor, the goods move from outside the state where the Site is located to the Site, the title shall be transferred by the Contractor to EIL during the transport of such goods from the Subcontractor/ vendor/ original manufacturer's premises, as the case may be, to the Site, by endorsement of documents of title by the Contractor in favour of EIL.
- (b) If pursuant to the above arrangement between EIL and the Contractor and between the Contractor and its sub-contractor/ vendor, the goods move within the state where the Site is located, then the title shall be transferred to EIL upon the dispatch of the goods by the Contractor or its Subcontractor/ vendor / original manufacturer, as the case may be, from its premises.

Notwithstanding the transfer of title of the domestic Goods and Material and Plant (including the mandatory spares etc), the responsibility for care and custody thereof together with the risk of loss or damage thereto shall remain with the Contractor until the issuance of Completion Certificate by EIL. However, the risk for any defect or shortcoming in such Goods and Materials and Plant shall continue to remain with the Contractor until issuance of the Final Completion Certificate.

11.2. Subject to Clause 11.5 and 11.6 below, the title of Goods and Material and Plant imported by the Contractor or its Subcontractor for supply to EIL for the execution of Works shall be transferred by the Contractor in favour of EIL by effecting appropriate sales through endorsement of the Bill of Lading or such other documents of title in relation to such imported Goods and Material and Plant before the same cross the customs frontiers of India on high sea sale basis or FOB (free on board basis) at the port of loading of the Goods and Material and Plant, as may be agreed between the Parties.

The Contractor and its Subcontractor/ vendor shall accordingly execute such documents as may be necessary for effecting the transfer of title in favour of EIL in a manner indicated herein above, such that the Contractor has proper title over the imported Goods and Material and Plant before it transfers the title over such imported Goods and Material and Plant in favour of EIL.

Notwithstanding the passing of title as mentioned hereinabove such passing of title to EIL shall not in any way absolve, diminish, or dilute the responsibilities and obligations of the Contractor under the Contract.

Notwithstanding the transfer of title as above, the Contractor shall continue to be responsible for the risk to, quality and performance of such imported Goods and Material and Plant and for their compliance with the performance guarantees and the technical specifications until the issuance of the Completion Certificate by EIL. However, the risk for any defect or shortcoming in such Goods and Materials and Plant shall continue to remain with the Contractor till issuance of the Final Completion Certificate.

The Contractor warrants that all imported Goods and Material and Plant supplied by the Contractor shall be free of any encumbrance or lien.

- 11.3. The title of the Contractor's Equipment used by the Contractor or its Subcontractor in connection with the Contract shall remain with the Contractor or its Subcontractor, as the case may be.
- 11.4. Notwithstanding anything to the contrary contained in the foregoing provisions of this Clause 11, the title of all Consumables, shall only be deemed to be transferred by the Contractor to EIL, upon Final Completion, subject to the provisions of Clause 9.12.2.

For the purposes of the foregoing, "**Consumables**" shall mean and include all raw material and consumables, comprised in the Goods and Materials and Plant, including, without limitation, such as sand, bricks, stones, tiles, cement, reinforcement steel, structural steel, and civil construction materials, subject to CENVAT credit for such items, not being available under Applicable Laws in India.

- 11.5. Further, the Contractor shall ensure that all Goods and Material and Plant procured by the Contractor from the Subcontractors/ vendor / original manufacturer, or otherwise supplied by the Contractor are consigned by the Subcontractor/ vendor / original manufacturer or the Contractor (as applicable) directly to the Site, unless otherwise agreed between the Parties.
- 11.6 Notwithstanding anything to the contrary contained in Clause 11.1 and 11.2 above, but subject to Clause 11.4:
- (i) title in respect of any Goods and Materials and/ or Plant, which are consigned, in breach of the foregoing provisions of this Clause 11.5, to any location other than the Site, shall only be deemed to be transferred to EIL, in accordance with the provisions of Clause 11.1 or 11.2 above, where the said Goods and Material and/ or Plant are duly consigned to the Site; and
 - (ii) notwithstanding transfer of title in accordance with Clause 11.1 above, Contractor shall retain care, custody, and control of all such Goods and Materials and/or Plant and exercise due care thereof until Completion. Further, such transfer of title shall in no way affect EIL's rights under any other provision of this Contract
 - (iii) Contractor shall, in order to protect EIL's interest in all Goods and Materials and/or Plant to which title has passed to EIL but which remains in the possession of the Contractor or any another party, take or cause to be taken all steps necessary under the Applicable Laws to protect EIL's title and to protect EIL against claims by other parties with respect thereto. Contractor shall fully indemnify EIL in this regard. Further, to the extent reasonably required, Contractor shall cause such Goods and Materials and/or Plant to be suitably marked with an identifying mark or symbol indicating that such Goods and Materials and/or Plant are the property of EIL.

12 CONTRACTOR'S PERSONNEL

- 12.1. The Contractor shall make arrangements for the engagement of staff and labour for the execution of the Works at its own Cost. The Contractor shall, if required by the Engineer-in-Charge, deliver to the Engineer-in-Charge or his assistant, a report in detail, in such form and at

such intervals as the Engineer-in-Charge may prescribe, showing the number of personnel employed in different categories by the Contractor on the Site.

- 12.2. The Contractor shall designate and propose suitable, adequately skilled and qualified persons as key personnel (“**Key Personnel**”), whose identities and resumes will be submitted by the Contractor to EIL within 30 (thirty) days of the Effective Date, to supervise the execution of the Works and to liaise with EIL, his authorized Engineer or any competent Authority, as appropriate.

Should the Contractor intend to make any change in Key Personnel appointed pursuant to this Clause 12.2, it shall immediately notify the Engineer-in-Charge of such intended change and seek Approval for replacement of such Key Personnel.

- 12.3. The Contractor shall ensure that the Contractor's Personnel shall be sufficient and competent in number, suitably qualified and experienced for the purpose of execution of the Works at the Site and that it shall provide such numbers of Contractor's Personnel at the Site until Completion has been achieved and that the selection of the Contractor's Personnel shall maximise productivity and prevent slow-downs, work stoppages or other disruptive concerted actions of the Contractor's Personnel.
- 12.4. Throughout the execution of the Works, and as long thereafter as is necessary to fulfil the Contractor's obligations, the Contractor shall provide all necessary superintendence to plan, arrange, direct, manage, inspect and test the Works. Superintendence shall be given by a sufficient number of persons with adequate knowledge of the language for communications and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.
- 12.5. If and whenever any of the Contractor's or Sub-Contractors agents, sub-agents, assigns, consultants or employees shall in the opinion of the Engineer-in-Charge (whose opinion in this behalf shall be final) or his authorized person be guilty of misconduct or be incompetent or not qualified for, or negligent in, the performance of his/their duties, or if in the opinion of the Engineer-in-Charge (which shall be final) it is undesirable for any reason (which need not be disclosed to the Contractor) for such person(s) to be employed in the Works, the Contractor, if so directed by the Engineer-in-Charge or his authorized person shall forthwith remove or cause to be removed such person(s) from employment thereon, and any person(s) so removed shall not be re-employed in the Works except with the prior permission in writing of the Site. Should the Contractor be requested to repatriate any person removed from the Works; the Contractor shall do so forthwith at its own Cost. Any person(s) so removed from the Works shall be immediately replaced at the expense of Contractor by a qualified and competent substitute.
- 12.6. The Contractor shall make itself aware of all labour regulations and their impact on the cost and build up the same in the Contract Price. Subject to Clause 25, during the Contract Validity Period no extra amount in this regard shall be payable to the Contractor, for any reason whatsoever.
- 12.7. In the event of default being made in the payment of any money in respect of wages of any person employed by the Contractor or any of its Subcontractor of any tier in and for carrying out of the Contract and if a claim thereof is filed in the office of the labour Authorities and proof thereof is furnished to the satisfaction of the labour Authorities, EIL may, failing payment

of the said money by the Contractor or the Subcontractor, as the case may be, make payment of such claim on behalf of the Contractor, to the said labour Authorities and any sums so paid shall be recoverable by EIL from the Contractor. If the Contractor fails to pay any amount required to be paid to EIL as aforesaid, within 7 (seven) days of its demand, EIL shall be entitled to recover the amount from any moneys due or accruing to the Contractor under the Contract.

- 12.8. The establishment of the Contractor and its sub-contractors shall be duly registered under the Employees' Provident Fund and Miscellaneous Provisions Act, 1952 and the Employees' State Insurance Act, 1948 and the Contractor shall duly and timely pay and ensure payment by its subcontractors of contributions and its/their employees to the Authorities prescribed under the said Acts and any schemes framed thereunder in respect of all labour employed by it for the execution of the contract. Copies of challans/receipt of such payments along with the list showing persons employed together with emoluments paid for the purpose of provident fund deductions shall be submitted to EIL before the end of every calendar months. In case the relevant provident fund Authority's receipt/challans referred to above are not furnished, EIL shall deduct 5% (five percent) of the payable amount from the Running Bill and retain the deducted amount as a security for the contribution to provident fund. Such retained amounts shall be released to the Contractor only on production of challan/receipts of the relevant provident fund Authority for the period covered by the related deduction.
- 12.9. The Contractor and Subcontractor(s) shall obtain from the Authority(ies) designated in this regard under any Applicable Law, including but not limited to the Factories Act, 1948 and Contract Labour (Regulation & Abolition Act, 1970 (in so far as applicable) any and all such licence(s), consent(s), registration(s) and/or other authorization(s) as shall from time to time be or become necessary for or relative to the execution of the Works or any part or portion thereof or the storage or supply of any material(s) or otherwise in connection with the performance of the Contract and shall at all times observe and ensure due observance by the Subcontractors, servants and agents of all terms and conditions of the said license(s), consent(s), regulation(s) and other authorization(s) and laws, rules and regulations applicable thereto.
- 12.10. Without prejudice to the responsibility of the Contractor to comply with the Applicable Laws under the Contract, the Contractor shall, in relation to the execution of the Works, comply and shall ensure that the Subcontractors comply with all labour laws, including but not limited to the Factories Act, 1948, the Workmen's Compensation Act, 1923, the Payment of Wages Act, 1936, the Minimum Wages Act, 1948, the Industrial Disputes Act, 1947, the Employees' State Insurance Act 1948, the Weekly Holidays Act, 1942, the Employees State Insurance Act, 1948, the Employees Provident Funds Scheme, 1952, the Employees Provident Funds and Miscellaneous Provisions Act, 1952, the Maternity Benefit Act, 1962, the Contract Labour (Regulation and Abolition) Act, 1970, the Equal Remuneration Act, 1976, the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979, the Labour Laws (Exemption from Furnishing Returns and Maintaining Registers by Certain Establishments) Act, 1988, the Children (Pledging of Labour) Act, 1933, the Child Labour Prohibition and Regulation Act, 1951, the provisions of the Income Tax Act, 1961, Environment Protection Act, 1986, Maritime Act, 2008, Wild life (Protection) Act, 1972 and any other Applicable Law relating to the employment of workmen, employees or labour or any subsequent modification or re-enactment thereof.
- 12.11. Without prejudice to the generality of the scope of Clause 12.8 above, the Contractor shall comply with the provisions of the Apprentices Act, 1961 and the Rules and Orders issued there

under from time to time. Any failure to comply with the Apprentices Act, 1961 shall amount to a breach of the Contract and EIL may, at his discretion, terminate the Contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation of the Apprentices Act, 1961 by him.

- 12.12. (a) In order to govern welfare and working conditions of labourers engaged in construction activities, the Building and other Construction Workers' (Regulation of Employment and Conditions of Service Act, 1996, hereinafter referred to as the "RE & CS") came into force. The RE&CS Act is applicable in respect of building and other construction work. Wherever applicable, the Contractor shall strictly comply with the provisions pertaining to RE&CS Act. The Contractor must be registered with the concerned authorities under the RE&CS Act, or in case of non-registration the Contractor should obtain registration within one month of the award of the Contract.
- (b) The Contractor shall comply with the Building and Other Construction Workers' Welfare Cess Act, 1996, the Building and other Construction Workers' Rules, 1998 and the Building and Other Construction Workers Welfare Cess Rules, 1998.

Cess as per the prevailing rate, shall be deducted at source from bills of the Contractor by the Engineer-in-Charge of the contract and remitted to the "Secretary, Building and Other Construction Workers Welfare Board" of the concerned State. The Contractor shall be responsible to submit final assessment return of the cess amount to the assessing officer after adjusting the cess deducted at source.

12.13. The Contractor shall and shall cause its Subcontractors to comply with the following:

- (a) the provision and maintenance of such temporary accommodation, canteen facilities and other amenities as may be reasonably necessary for all of the Contractor's Personnel employed at the Site, including fencing, first aid, water supply (both for drinking and other purposes), electricity supply, sanitation, fire prevention and fire-fighting equipment, a creche where 10 or more women workers may keep their children below the age of 6 years, any other facility/utility as may be required under the Contract as well as under the applicable statutory provisions and other general requirements in connection with such accommodation or amenities, provided that the Contractor's Personnel shall not maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works;
- (b) due regard shall be given to all recognised festivals, days of rest and religious or other customs prevalent in the location where the Site is situated, in all dealings with the Contractor's Personnel;
- (c) no work shall be carried out on the Site outside the normal working hours, unless, permitted by EIL or if the work is unavoidable or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately intimate EIL/Engineer-in-Charge;
- (d) all reasonable precautions shall at all times be taken to prevent any unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel and to preserve peace at the Site and to ensure the protection of all persons (including the Contractor's Personnel) and property at or in the neighbourhood of the Site, against any such

disruption. If EIL is required to maintain special police force/security personnel in consequence of unlawful, riotous or disorderly conduct by or amongst the Contractor's Personnel, all costs and damages incurred by EIL in this regard shall be borne by the Contractor; and

- (e) the Contractor shall not employ, for the purposes of Works, any Person below the age as is statutorily forbidden.

12.14. The Contractor shall keep EIL indemnified from and against all personal and third party claims whatsoever (inclusive of all costs incurred between attorney and client) arising out of any act, omission or inter-omission on part of any Sub-Contractor or agent, sub-agent, consultant or employee of the Contractor or any Sub-Contractor, whether committed, omitted or arising within or without the scope of the Contract, Sub-Contract, agency or employment, as the case may be.

12.15. If, the Contractor directly or through petty contractors or Subcontractors supplies any labour to be used wholly or partly under the direct orders and control of the Engineer-in-Charge or EIL, whether in connection with any work being executed by the Contractor or otherwise for the purposes of EIL, such labour shall, for the purpose of this Clause, be deemed to be persons employed by the Contractor.

12.16. The Parties hereto agree that the employment of the personnel and/or workmen by the Contractor, Subcontractor in relation to the execution of the Works shall not constitute any EIL-employee relationship between EIL and such personnel and/or workmen as employed by the Contractor and the Subcontractor in relation to the execution of the Works.

12.17. (a) The Contractor shall ensure that local labour, skilled and/or unskilled, to the extent available shall be employed in this work. In case of non - availability of suitable labour in any category out of the above persons, labour from outside may be employed.

- (b) The Contractor shall not recruit personnel of any category from among those who are already employed by the other agencies working at Site.

12.18. All foreign nationals coming to India for execution of the Contract will have to apply for employment visa only and that grant of employment visa would be subject to strict adherence of following norms:

- (a) Employment visa is granted only for the skilled and qualified professionals or to a person who is being engaged or appointed by a company, organization, industry or undertaking etc. in India on contract or employment basis at a senior level or at a skilled position such as technical expert, senior executive or in managerial position etc.
- (b) Request for employment visa for jobs for which large number of qualified Indians are available, is not considered.
- (c) Under no circumstances an employment visa is granted for routine, ordinary secretarial/ clerical jobs.

The Contractor must check the latest visa rules from Indian Embassy/ High Commission in their country in case foreign nationals are required to be deputed to India during execution of the Contract.

13 TIME FOR COMPLETION AND PRICE REDUCTION DUE TO DELAY IN COMPLETION

13.1 Time for Completion

Time is the essence of the Contract. The Parties agree and acknowledge that it is of paramount importance that the Works are executed strictly in accordance with the Works Completion Schedule, as may be revised from time to time and completed in accordance with the Specifications, within the Time for Completion.

13.2 Price Reduction due to delay in completion

13.2.1 If the Contractor fails to complete the Works within the Time for Completion, and/or if completion of any specific work(s) in respect of which a separate progress schedule has been established is not achieved by the date of completion thereof specified in the Works Completion Schedule (each of the said date(s) is hereinafter referred to as the “starting date for discount calculation) other than due to an event of Force Majeure or any reason solely attributable to EIL, then the Contract Price shall be reduced by 1 % (one percent) per week of delay or part thereof subject to a maximum deduction of 10% (ten percent) of the Contract Price. After any adjustments made to the Contract Price pursuant to this Clause 13.2.1, if any amount is due to EIL from the Contractor, then such amount will either be set-off against any amount due or that becomes due to the Contractor or be recovered by invoking the Contract Performance Bank Guarantee.

The decision of the Engineer-in-Charge in regard to applicability of price reduction shall be final and binding on the Contractor.

13.2.2 The reduction of Contract Price shall not relieve the Contractor from its obligations to complete the Works and the Facilities, or from any of its other duties, obligations or responsibilities under the Contract. The Contractor shall use and continue to use its best endeavour to avoid or reduce further delay to the Works, or the issue of the Completion Certificate.

13.2.3 It is specifically acknowledged that the provisions of Clause 13.2 constitute purely a provision for price adjustment and/or fixation and are not to be understood or construed as a provision for liquidated damages or penalty under Section 74 of the Indian Contract Act, 1872 or otherwise.

13.2.4 Application of price reduction under this Clause 13.2 above shall be without prejudice to any other right of EIL, including the right of termination under Clause 32.2 and associated clauses thereunder.

14 EXTENSION OF TIME

14.1. Without prejudice to, and subject Clause 14.3 below, to the extent that any of the following events cause the Contractor to suffer a delay in the critical path progress of the Works, which in turn prevents the Contractor from completing the Works within the Time for Completion, the Contractor may apply for an extension of the Time for Completion of the Works:

(a) Occurrence of a Force Majeure event;

- (b) There is delay in handing over the possession of the Site (save and except sequential handing over of Site as per provisions of Clause 8.1.2) to the Contractor not caused due to default of the Contractor;
 - (c) Instruction of the Engineer-in-Charge to suspend the Works and the Contractor not being in default;
 - (d) Any order of Court restraining the performance of the Contract in full or in any part thereof, unless such order is attributable to any default, breach or non-compliance by the Contractor;
 - (e) Under Clause 24.7 due to EIL's Variation;
 - (f) Delay in Approval of the Contractor's Document in terms of Clause 9.13;
 - (g) Under Clause 9.29 due to EIL's failure to supply the Free Issue Materials, as agreed by Engineer-in-Charge;
 - (h) Under Clause 25 due to Change in Law;
 - (i) Under Clause 17.6 due to taking of possession of the Works or any part thereof by the Engineer-in-Charge prior to Completion.
- 14.2. Except as specified in Clause 14.1 above, the Contractor shall not be entitled to any extension of the Time for Completion for any reason whatsoever. Provided, notwithstanding anything contained in Clause 14.1 or otherwise, the Contractor shall not be entitled to any extension of time:
- (a) where the instructions or acts of Engineer-in-Charge are necessitated by or intended to cure any default of or breach of the terms of the Contract committed by the Contractor;
 - (b) where any delay is due to:
 - (i) The failure of its Subcontractor, to commence or to carry out the part of the Works in due time; or
 - (ii) Non-availability, or shortage of Contractor's Equipment, labour, utility services, Plant and Goods and Materials; or
 - (iii) Inclement weather conditions or the occurrence of an event of Force Majeure.
- 14.3. The Contractor shall, as soon as reasonable practicable and in any event within 7 (seven) days, after the Contractor knew or ought reasonably to have known of its occurrence of any of the events specified in Clause 14.1, provide to EIL, in writing, the full particulars of such event and the probable material adverse effect that such event is likely to have on the performance of its obligations under the Contract.
- 14.4. Any notice issued pursuant to Clause 14.3 shall include full particulars of:
- (a) The nature and extent of each such event which is the subject of any claim for relief

under Clause 14.3 with evidence in support thereof;

- (b) The estimated duration and the effect or probable effect which such event is having or shall have on the Contractor's performance of its obligations under the Contract;
- (c) The measures which the Contractor is taking or proposes to take, to alleviate the impact of such event; and
- (d) Any other information relevant to the Contractor's claim.

The Engineer-in-Charge shall not consider any claim for relief from the Contractor, if the Contractor fails to comply with the provisions of Clause 14.3 and this Clause 14.4.

14.5. The Parties agree and acknowledge that:

- (a) the Contractor shall constantly use its reasonable endeavours to prevent and/or minimise delay in the progress of the Works, howsoever caused, and to prevent delay in the performance of Works beyond the Works Completion Schedule and the Contractor shall not be entitled to an extension of the Works Completion Schedule in respect of any cause of delay nor for any period of delay which by the exercise of reasonable endeavours could be avoided or reduced (to the extent that such delay could have been reduced). The onus of proving that the Contractor has exercised all reasonable endeavours, and that despite such endeavours, the delay could not be avoided or reduced, shall in all cases rest with the Contractor;
- (b) the Contractor shall not under any circumstances be entitled to an extension of the Works Completion Schedule where the delay or likely delay is, or would be, attributable to the default, breach, negligence, improper conduct or lack of endeavour of the Contractor or any persons for whom it is contractually or otherwise responsible for and further the Contractor shall not be entitled to an extension of the Time for Completion where delay arises as a consequence of the termination of a Sub-contractor's employment by the Contractor;
- (c) if there are two or more concurrent causes of delay and only one of those concurrent causes is a delay which would entitle the Contractor to an extension of the Works Completion Schedule, the Contractor would not be entitled to an extension of the Works Completion Schedule for the period of that concurrence;
- (d) it is a further condition precedent to the Contractor's entitlement to an extension of the Works Completion Schedule that the critical path progress of the Works is affected in a manner which might reasonably be expected to result in a delay to the Contractor in the performance of the Works as per the Works Completion Schedule; and
- (e) no relief shall be granted to the Contractor to the extent that any failure or delay in the performance of the Works by the Contractor, would nevertheless have been experienced by the Contractor, had an event of Force Majeure or other relevant event(s) specified in Clause 14.1 entitling the Contractor to otherwise claim an extension of time, not occurred.

- 14.6. If the delay in the completion of the Works or a portion thereof, for which an earlier completion period is stipulated, is due to the Contractor's failure or fault, and the Engineer-in-Charge is of the view that the remaining Works can be completed by the Contractor in a reasonable and acceptable short time, then EIL may allow the Contractor an extension of the Time for Completion at its discretion with or without a reduction in the Contract Price, as it may decide.
- 14.7. The extension of time shall be the sole remedy of the Contractor for any cause or event of delay mentioned in Clause 14.1 or elsewhere in the Contract and other than as provided in the Contract, the Contractor shall not be entitled to claim any damages or compensation in addition to or in lieu of such extension of time.
- 14.8. Notwithstanding anything to the contrary contained in the Contract, to the extent that this Contract is entered into by EIL pursuant to a contract awarded to EIL for the development of the Facility (the "**Main Contract**"), the extension of time and/or Cost awarded to the Contractor under this Contract shall be proportionate to the extension of time and/or cost awarded to EIL under the Main Contract and in no event shall such the extension of time and/or Cost awarded under this Contract exceed the extension of time and/or cost awarded to EIL under the Main Contract.

15 MECHANICAL COMPLETION AND PRE-COMMISSIONING

- 15.1. For the purposes of this Contract, "**Mechanical Completion**" shall mean the completion of the following activities in relation to the Facility:
- (ii) the construction of the Facility has been completed, checklist generated & punched with minor exceptions, Flushing, chemical cleaning including all other Pre-commissioning activities, MRT (Mechanical Run Test for Machine) & final boxup excluding system dry out and catalyst loading;
 - (iii) all Plant, equipment and machinery are installed and aligned;
 - (iv) all piping and instrumentation work and loop testing is complete;
 - (v) all electrical work is complete, electrical systems are energized and motor no load runs are complete;
 - (vi) all hydrostatic/pneumatic testing is completed;
 - (vii) safety valves and pressure relief valves are set and checked;
 - (viii) speed and direction of rotation of all prime movers are checked; and
 - (ix) DCS system (if applicable) is complete.
- 15.2. As soon as the conditions mentioned in Clause 15.1 have been satisfied in the opinion of the Contractor, the Contractor shall notify EIL in writing that the Facility is mechanically complete.
- 15.3. The Contractor shall divide the Facility into systems/subsystems as per the process/pre-commissioning requirement mentioned in the Specifications.
- 15.4. The Contractor shall issue a certificate in the format set out at Appendix V ("**Format-I**") for each system for inspection and verification by the Engineer-in-Charge that construction has been completed in accordance with the Specifications.
- 15.5. Except for any deviation or modification agreed between EIL, the Engineer-in-Charge and the Contractor, if the Engineer-in-Charge is not satisfied that the relevant system/subsystem has

achieved Mechanical Completion, it may endorse Format-I accordingly, stating in what way the system/subsystem has not achieved Mechanical Completion in accordance with the Contract. The Contractor shall then expeditiously complete or rectify the list of outstanding items in accordance with the Engineer-in-Charge's suggestions and issue a certificate in the format set out at Appendix VI ("**Format-III**"), with agreed Punch-list Items to be attended to later.

- 15.6. The Contractor shall prepare and submit to the Engineer-in-Charge along with each Format-III, a preliminary, but as definitive as possible a list containing all the outstanding Punch-list Items and procedures that require completion or rectification before the taking over of the Facility by EIL (the "**Punch List**").
- 15.7. Upon the submission of the Punch List by the Contractor pursuant to Clause 15.6, the Engineer-in-Charge shall either approve such list or require such additions to and/or amendments of such list as it may reasonably consider necessary.
- 15.8. When Format-IV for all systems/sub-systems comprising the Facility is issued, the Facility will be deemed to have achieved Mechanical Completion.
- 15.9. The Contractor shall thereafter be responsible for ensuring that:
- (a) the Punch-list Items are completed before the Facility is taken over by EIL unless otherwise agreed between the Parties; and
 - (b) any pre-commissioning and commissioning procedures needed before the Facility is put into use are safely carried out.

15.10 Pre-Commissioning

15.10.1 For the purposes of this Contract, "**Pre-Commissioning**" shall mean performance of those activities, which are required to be performed after acceptance of system on liquidation of all the punch point to make the Facility ready for commissioning and includes the completion of the following activities in relation to the Facility:

- (a) system checking as per Specifications;
- (b) Site modifications, if necessary;
- (c) internal inspection of Plant and equipment;
- (d) flushing/steam blowing;
- (e) air blowing of pipelines including gasket blowing;
- (f) purging of systems using inert gas;
- (g) leak test both for low/high pressure systems;
- (h) calibration of instruments;
- (i) checking of the electrical equipment for proper earthing;
- (j) conducting operability test on individual equipment/system;
- (k) charging of lubes and other chemicals;
- (l) Integration of all control systems of the unit with the control system of the Plant
- (m) Chemical Cleaning/De greasing where ever applicable
- (n) any other pre-commissioning activities mentioned in the Specifications.

15.10.2 Contractor will start Pre-Commissioning activities after acceptance of Format -III for all systems/subsystems comprising the Facility by EIL/Engineer-in-Charge. The Contractor shall

also be responsible for any fabrication and supply of temporary facilities such as temporary bypasses, spools, blinds, jump-overs, vents, strainers, screens etc. which will be required to carry out Pre-Commissioning activities.

15.10.3 The Contractor shall issue a 'ready for commissioning' certificate for the Facility to the Engineer-in-Charge for its Approval, in the format set out at Appendix VII ("**Format-IV**"). If the Engineer-in-Charge is not satisfied that the Facility is ready for commissioning, it may endorse Format-IV accordingly, stating in what way the Facility is not ready for commissioning in accordance with the Specifications. The Contractor shall then expeditiously complete or rectify the list of outstanding items in accordance with the Engineer-in-Charge's suggestions and once all such outstanding items are completed to the satisfaction of the Engineer-in-Charge, the Engineer-in-Charge shall declare the Facility to be ready for commissioning.

16 TESTS ON COMPLETION

16.1 Commissioning, Trial Operation and Performance Guarantee Test Run

For the purpose of this Contract, '**Commissioning**' shall mean the successfully putting in to service the Plant, equipment, vessels, tanks, pipelines, machines, systems, sub systems, controls, monitoring, shutdown comprising the Facility in accordance with the procedures set out in the relevant operating manuals and/or as per the requirement of the process licensor and /or detailed engineering contractor/EIL and relevant statutory agencies after successful testing, pre commissioning and the trial runs and the documentation as per EIL format system.

16.1.1 As soon as:

- (a) all parts of the Facility has been demonstrated to have achieved Mechanical Completion pursuant to Clause 15 and the Contractor has issued Format-III relating to all systems/subsystems comprising the Facility in accordance with the provisions of Clause 15.5;
- (b) the Contractor has completed all Pre-Commissioning activities and has issued Format-IV;
- (c) Facility is ready for the conduct of the Trial Operation and Performance Tests in relation thereto; and
- (d) all the services and facilities which are necessary for the conduct of the Trial Operation and/or Performance Tests are available,

the Contractor shall notify EIL and the Engineer-in-Charge that it is ready to commence Trial Operation. Such notification must be sent by the Contractor to EIL and the Engineer-in-Charge within 7 (seven) days of the issuance of Format-IV under Clause 15.10.3. Unless otherwise agreed the Trial Operation shall commence on such day as the Contractor shall notify to EIL and the Engineer-in-Charge (which shall not be more than 10 (ten) days after EIL's/Engineer-in-Charge's receipt of the above-mentioned notice from the Contractor) and shall be conducted in accordance with the Contractor's Documents relating to the same as Approved by the Engineer-in-Charge pursuant to Clause 9.13.

- 16.1.2 The Trial Operation of the Facility shall be carried out for 14 (fourteen) days in accordance with the Contractor's Documents. During the Trial Operation the Parties shall arrange for the conduct of Performance Guarantee Test Run (PGTR). The PGTR shall be conducted only after the Facility has been on stable operation, with all controls and safety systems in normal operation, for a period of not less than 72 hours. The load at which the Facility is operated during the PGTR shall be determined by the Engineer-in-Charge at its discretion.
- 16.1.3 Upon successful completion of the PGTR, to the satisfaction of the Engineer-in-Charge, the Engineer-in-Charge shall direct EIL to issue a certificate to the Contractor in the format set out at Appendix VIII (“**Format-V**”).
- 16.1.4 The Contractor shall at its own Cost arrange for all tools, equipments, gadgets, facilities or other things as may be deemed necessary by the Engineer-in-Charge for carrying out the Tests on Completion.

16.2 Performance Tests

- 16.2.1 The Performance Tests shall be conducted within 30 (thirty) days (or as directed by Engineer-in-Charge) of the successful completion of the Trial Operation of the Facility or before the expiry of such other period as may be agreed between EIL and the Contractor, to ascertain whether the Facility is capable of meeting the Guaranteed Performance Levels and is ready for continuous, safe and stable commercial operation. The Contractor will give EIL and the Engineer-in-Charge at least 7 (seven) days advance written notice of the expected date of such Performance Tests. In the event that there is a delay in carrying out the Performance Tests, the Contractor shall notify EIL and the Engineer-in-Charge of such delay. If the Engineer-in-Charge fails to attend at any time or place duly appointed for conducting any Performance Tests, the Contractor shall be entitled to proceed in its absence and the relevant Performance Tests shall be deemed to have been made in the presence of the Engineer-in-Charge. The Contractor shall forward to EIL and the Engineer-in-Charge duly certified copies of the results of each Performance Test.
- 16.2.2 After the Performance Tests have been conducted in respect of the Facility, the Contractor shall furnish the test reports to the Engineer-in-Charge for evaluation. Within 7 (seven) Working Days of receipt of the test reports, the Engineer-in-Charge shall, after evaluating the test reports, decide whether the Facility complies with the Guaranteed Performance Levels.
- 16.2.3 Upon such evaluation, if the Engineer-in-Charge is of the opinion that the Facility has not achieved 100% (hundred percent) of the Guaranteed Performance Levels, then:
- (a) the Contractor shall at its own risk, Cost and expense be responsible for the repair or replacement of the Works for the Facility if required by EIL/Engineer-in-Charge in accordance with the provisions of this Contract, within 3 (three) months of the conduct of such Performance Tests; and
 - (b) the Contractor shall be required to re-conduct the Performance Tests within such reasonable period of time as may be required by Engineer-in-Charge.

The period for repairing or replacing the Works or for re-conducting the Performance Tests shall not amount to an extension of the Works Completion Schedule or be deemed to entitle the Contractor to an increase in the Contract Price. The re-conduct of the Performance Tests shall

not prejudice any rights or remedies of EIL in respect of defective Works under the Contract and shall not be construed as a waiver thereof.

16.2.4 If, despite the repetition of the Performance Tests in accordance with Clause 16.2.3 above, the results of the Performance Tests indicate that 100% (hundred percent) of the Guaranteed Performance Levels have not been satisfied, then the following consequences shall follow:

- (a) Where the Facility and the Works achieves more than 90% (ninety percent) of the Guaranteed Performance Levels, EIL shall be entitled to levy the Performance Compensation in accordance with Clause 20 and EIL may further require the Contractor to make additional repairs or remedy the Works within 3 (three) months of the completion of the repeated Performance Tests, at the Contractor's Cost; or
- (b) Where the Facility achieves less than or equal to 90% (ninety percent) of the Guaranteed Performance Levels, EIL shall have the right (but not an obligation) to reject the Works by giving notice thereof within 15 (fifteen) Working Days of the receipt of the results of the Performance Tests.

In the event that EIL does not exercise its right to reject the Works in accordance with paragraph (b) above, then the consequences at paragraph (a) above shall also apply to such defective Works. EIL shall be entitled to enforce the Performance Guarantee for recovering the sums due from the Contractor under Clause 16.2.4 (a).

16.2.5 Upon the issuance of a notice by EIL under Clause 16.2.4(b), a Contractor Event of Default shall be deemed to have occurred and this Contract shall stand terminated forthwith. The provisions of Clause 32 shall apply upon such termination.

16.2.6 The acceptance and use by EIL of the Works, or any part thereof, for Trial Operation shall not absolve the Contractor from the fulfilment of other obligations under the Contract.

17 COMPLETION

17.1 Where the Contract is a lump-sum turnkey contract

When the Contractor has:

- (a) successfully completed Trial Operation and PGTR, as demonstrated by issuance of Format-V by EIL;
- (b) successfully completed the Performance Tests;
- (c) completed all Punch-list Items;
- (d) submitted the Contract Performance Bank Guarantee in accordance with Clause 9.4.2;
- (e) provided to EIL such certification by the Contractor or other written evidence, as EIL may reasonably require, to demonstrate that the Contractor has complied with all relevant Applicable Laws and has obtained all relevant clearances in connection with the Works which it is the Contractor's responsibility to comply with or to obtain; and

- (f) provided to EIL all such documentation and information such as manuals, systems descriptions, computer programs, access codes etc. that are necessary to enable EIL to properly test and use any part of the Works in accordance with Good Industry Practice and in compliance with the laws and regulations relating to environment, safety etc. and in order to attain the Guaranteed Performance Levels by EIL,

the Contractor shall so notify EIL in writing.

17.2 Where the Contract is an item rate contract

When the Contractor has successfully completed the total Works as per the scope of Works defined in the Contract and the Specifications and the Facility is ready for commercial operations, the Contractor shall so notify EIL in writing.

17.3 EIL shall, subject to provisions of Clause 17.1, Clause 17.2 and Clause 17.4, within 30 (thirty) Working Days of receipt of a notification from the Contractor pursuant to Clause 17 or, as the case may be Clause 17.2, along with all the documents mentioned in Clause 17.4 (b) below:

- (a) inspect the Works and if it is satisfied that the Works are complete in all respects in accordance with the Specifications and free of all Defects, issue a completion certificate to the Contractor (“**Completion Certificate**”) and the Works shall be taken over by EIL on the date of issue of the Completion Certificate; or
- (b) if the Engineer-in-Charge is not satisfied that the Works are complete in all respects in accordance with the Specifications or discovers any Defects in the Works, notify the Contractor of the reasons why it considers that the notice given pursuant to Clause 17 or Clause 17.2 was improperly or prematurely issued and notify the Contractor of:
- (i) any items of work which are in EIL's or the Engineer-in-Charge's reasonable opinion required to render the Facility ready for being taken over; or
- (ii) any Defects in the Facility which are required to be rectified and following completion such items or, as the case may be, rectification of such Defects, the Contractor shall submit a fresh notice to EIL to which the provisions of this Clause 0 shall apply mutatis mutandis.

17.4 Notwithstanding anything contained in Clause 17.3, EIL shall not issue the Completion Certificate until:

- (a) the Contractor has cleared the Site of all scaffolding, wiring, pipes, surplus materials, Contractor's labour, equipment and machinery, demolished, dismantled and removed all the Contractor's Site offices and quarters and other Temporary Works, structures and constructions and other items and things whatsoever brought upon or erected at the Site and not incorporated in the Permanent Works, removed all rubbish from the Site, cleared and leveled the Site to the satisfaction of the Engineer-in-Charge and put EIL in undisputed custody and possession of the Site, free & clear of all encumbrances and encroachments; and

- (b) the Contractor has submitted the following documents to EIL:
- (i) the technical documents according to which the Work was carried out;
 - (ii) complete set of “as-built” drawings showing therein corrections and modifications (if any) made during the course of execution of the Works, signed by the Engineer-in-Charge;
 - (iii) Statement of final levels as set for various works, signed by the Engineer-in-Charge;
 - (iv) Records of the final test as maintained jointly and signed by the representative of the Contractor and the Engineer-in-Charge or Format-III (if Commissioning is not within the Contractor's scope of Work) and Format -V (if Performance Tests are not within the Contractor's scope of Work) and Performance Test certificate issued by the Engineer-in-Charge upon successful completion of the Performance Tests (if Performance Tests are within the Contractor's scope of Work).;
 - (v) Item-wise list of surplus materials including the quantity & estimated value of each surplus item (out of the Free Issue Materials or materials brought on the Site by the Contractor) returned to EIL's or otherwise disposed of, duly signed by the Engineer-in-Charge;
 - (vi) Materials-at-site accounting for the Free Issue Materials supplied to the Contractor under the Contract, signed by the Engineer-in-Charge;
 - (vii) Discharge in respect of EIL supplied equipment and machinery, signed by the Engineer-in-Charge; and
 - (viii) Declaration by the Contractor that it has duly cleared any and all of the dues payable by it to its labourers, employees, piece rate workers (PRWs), and other personnel, Subcontractors, suppliers, vendors, income Tax, sales tax, octroi, entry tax, service tax, excise, customs duty, provident fund, employees state insurance (ESI) and royalties, or other amounts payable under any Applicable Law (if any).

17.5 Upon the issuance of the Completion Certificate, EIL shall take over the possession, care, custody and control thereof from the Contractor.

17.6 Notwithstanding anything to the contrary contained in the Contract, the Engineer-in-Charge shall have the right to take possession of or use any completed or partially completed Work or part of the Works. Such possession or use shall not be deemed to be an acceptance of any Works. If such prior possession or use by the Engineer-in-Charge delays the progress of Work, equitable adjustment in the Time for Completion shall be made in accordance with Clause 14.

18 DEFECT LIABILITY PERIOD

18.1. The Defect Liability Period shall be a period of 12 (twelve) months from the date of Completion mentioned in the Completion Certificate.

18.2. The Contractor warrants that during the duration of the Defect Liability Period, the Works shall be free of all Defects.

18.3. If, during the Defect Liability Period, any Defects are discovered in the Works or any part thereof; or the Works or any part thereof fails to meet the Guaranteed Performance Levels, EIL will notify the Contractor of such Defects or failure. Upon receipt of such notice, the Contractor

shall promptly repair or replace such Work (including any necessary uncovering, covering and recovering) in accordance with the Contract, Good Industry Practices and Applicable Laws. At EIL's option and Contractor's expense, EIL shall have the right to provide labour in connection with such repair or replacement to the extent that such labor can be provided by EIL's then-current permanent employees working at during normal working hours. The Contractor shall provide for all additional labor required for such repair or replacement and shall bear all Costs and expenses associated with repairing or replacing any Work, including costs incurred by EIL in relation to providing labor, employees and personnel for any such repairs or replacement. Upon completion of any repair or replacement work, the Contractor shall, at its own expense, and with EIL's coordination and Approval, perform such tests as necessary to demonstrate that pursuant to cure of Defects under this Clause 18.3, the Works meet the Guaranteed Performance Levels.

- 18.4. If the Contractor fails to rectify any Defects in the Work during the Defect Liability Period, EIL (at its sole discretion) may:
- (a) Carry out the work itself or by others, in a reasonable manner at the risk and Cost of the Contractor; In addition to the costs, EIL shall be entitled to claim 15% (fifteen percent) of such costs towards the genuine pre-estimated damages suffered by EIL; or
 - (b) If the Defect or damage is such that EIL has been deprived of substantially the whole of the benefit of the Works or part of the Works, terminate the Contract in respect of such parts of the Works as cannot be put to the intended use. Without prejudice to any other rights, under the Contract or otherwise, EIL shall then be entitled to recover all sums paid for such parts of the Works together with the cost of dismantling the same, clearing the Site and returning Goods and Materials to the Contractor and the provisions of Clause 32 shall not apply.
- 18.5. If the Defect or damage is such that it cannot be remedied expeditiously on the Site and if EIL gives consent, the Contractor may, remove from the Site for the purpose of repair any part of the Works, which is defective or damaged. The consent may require the Contractor to increase the amount of Contract Performance Bank Guarantee by the full replacement cost of items which are to be replaced or to provide other appropriate security acceptable to EIL.
- 18.6. If the repair or remedy of any Defect or damage is such that it may affect the performance of the Works, EIL may, within 30 (thirty) Working Days after such repair or remedy, require that certain tests be repeated as may be necessary to demonstrate compliance with the Guaranteed Performance Levels.
- 18.7. If any part of the Works has been replaced, renewed or repaired during the Defect Liability Period, the Defect Liability Period in respect of such part shall start again for a period of 12 (twelve) months from the date on which such replacement, renewal or repair has been completed to the satisfaction of the Engineer-in-Charge (“**Extended Defect Liability Period**”).

19 FINAL COMPLETION CERTIFICATE

Upon the expiry of the Defect Liability Period (or Extended Defect Liability Period, as applicable), but subject to there being no outstanding obligation of the Contractor to rectify the defects notified during such period, EIL shall issue the Final Completion Certificate to the Contractor (“**Final Completion Certificate**”). The Contract shall not be considered to have

been completed until the Final Completion Certificate has been signed by EIL and delivered to the Contractor, stating the date on which the Contractor has completed its obligations under the Contract. Only the Final Completion Certificate shall be deemed to constitute Approval of the Works by EIL.

20 COMPENSATION

20.1. If the Works and the Facility, or any part thereof, fails to meet the Guaranteed Performance Levels, then the Contractor shall pay to EIL Performance Compensation at the rates specified in the Contract (“**Performance Compensation**”). The liability of the Contractor towards Performance Compensation under this Clause 20.1 shall not exceed a sum that is greater than 10% (ten percent) of the Contract Price. The Parties acknowledge that the Performance Compensation are a genuine pre-estimate of and reasonable compensation for the losses and damages that will be suffered by EIL in the event that the Works, or any part thereof, fail to meet the Guaranteed Performance Levels and the Contractor irrevocably undertakes that it will not, whether by legal proceedings or otherwise, contend that the amount of the Performance Compensation are not reasonable.

20.2. EIL may:

- (a) deduct and retain the amount of the Performance Compensation becoming due under Clause 20.1 from any sums due or which become due to the Contractor; or
- (b) invoke the Contract Performance Bank Guarantee submitted by the Contractor to EIL; or
- (c) require the Contractor to pay such amount to EIL within 28 (twenty eight) days from the date receipt of a written notice for such payment from EIL,

notwithstanding any Dispute between the Parties as to the amount due or the liability to make payment of the same.

20.3. The payment of the Performance Compensation does not in any way relieve the Contractor from any of its obligations to perform the Works or from any other obligations and liabilities of the Contractor under the Contract.

20.4. The Contractor agrees that the payment of Performance Compensation shall not affect the right of EIL to recover damages resulting from the breach of any other terms of this Contract, seek specific performance, or terminate the Contract pursuant to any other provisions hereof.

21 CONTRACT PRICE

21.1. In consideration of the full and complete discharge of the Contractor's obligations under the Contract, EIL shall pay to the Contractor the Contract Price at the time and in the manner set forth in the Payment Schedule, subject to such deductions and adjustments as may be permissible under the Contract.

21.2 For Lump-Sum Contract

The Contract Price is a fixed lump-sum price inclusive of all Taxes and shall not be subject to

any escalation, variation or alteration whatsoever throughout the Contract Validity Period, except as provided in the Contract or the Bidding Document; and includes any and all direct, indirect and ancillary costs, including profits, license, royalty and other fees, cost of all Goods and Materials, Plant and Contractor's Equipment and all other charges arising out of or in connection with the execution of the Works. The Contractor acknowledges and agrees that the lump-sum price and the rates set out in the Price Schedule and the Contract Price shall hold good till the completion of the Works and shall not be adjusted for any fluctuation in the market costs of labour or materials.

21.3 For Item Rate Contract

21.3.1 The Contract Price shall be deemed to include and cover the following:

- (a) all costs, expenses, outgoings and liabilities of every nature and description and all risks whatsoever to be taken or which may occur in relation to the acquisition, loading, unloading, transporting, storing, fabricating any Plant, equipment or system or the execution, completion, testing, commissioning and/or handing over of the Facility to EIL;
- (b) cost of all construction, Plant, Goods and Materials and all other items, materials and things required for incorporation in the Permanent Works or otherwise in execution of the Works, including cost of procuring Contractor's Equipment, supply of water and power, construction of Temporary Works/ Facilities, temporary roads, cost of labour, spares, fuel, stores and supplies to be provided or arranged in connection with the execution of the Works;
- (c) cost of all Drawings and Designs, Contractor's Documents, plans, models, studies and other documents required to be prepared and furnished by the Contractor under the Contract;
- (d) cost of mobilisation including, mobilisation of vehicles, machinery, equipment, tools, consumables and other items, goods and personnel necessary to commence the execution of the Works;
- (e) cost of all Taxes, other than to the extent provided in Clause 22.0 below;
- (f) cost of all rents, royalties, licenses, permits, permissions and other fees, duties, penalties, levies and damages payable on the performance of the Works including, the excavation, removal or transportation of any material or acquisition or use of any right of way or other rights, permits or privileges in connection with the performance of the Works;
- (g) cost of all insurance(s) (including insurance premium) required to be obtained and maintained by the Contractor in terms of the Contract;
- (h) cost of all inspections, tests and cost of items, instruments and/or tools required to conduct such inspections or tests;
- (i) cost of all escalations including, Taxes, labour costs, cost of materials and other inputs;

- (j) cost of supervision, establishment overheads and financing;
- (k) cost of all Contractor's indemnities under the Contract; and
- (l) cost of all deductions, discounts, adjustments and withholdings whatsoever under or in connection with the Contract.

22 TAXES AND DUTIES

- 22.1. All the Taxes and levies payable in India whether under Central, State or Local laws applicable in India as well as those leviable outside India, shall form part of the Contract Price. The Contractor shall bear all the Taxes, duties, levies on the supply of Goods and Material and Plant (including customs duties payable on imported Goods and Materials and Plant) and on performance of the services, under Central, State or Local laws applicable in India as well as those leviable outside India.
- 22.2. In respect of Goods and Material and Plant to be supplied by the Contractor from within India the Ex-factory value of such Goods and Material and Plant and all the indirect Taxes leviable on the transaction between 'EIL and Contractor' shall be separately indicated in the Price Schedules (as indicated in the Price Schedule) along with the rate of Tax so applied in computing such indirect Taxes.
- 22.3. The Contract Price comprises the base price of the Goods and Material, Plant and services and the Taxes thereon and therefore the Contractor is mandatorily required to indicate the Taxes in the format prescribed under Price Schedules.
- 22.4. The customs duty shall be to the account of the Contractor and the Contractor shall be responsible for the timely payment of the custom duties to the relevant Government Authorities. EIL shall assist in provision of all necessary documents required by the Contractor to clear the Goods and Material and Plant on availing the benefit of any concessional rate of customs duty available.

The Contractor shall be responsible for, and shall exercise due diligence in properly classifying the Goods and Material and Plant, undertaking the payment of customs duties, and/ or otherwise complying with all Applicable Laws with respect to any import of the Goods and Material and Plant. In case EIL is exposed to any penal action (interest and/ or penalties) by the customs Authorities for incorrect declaration and/ or valuation of the Goods and Material and Plant by the Contractor, or otherwise on account of any breach of Applicable Laws in the course of the import of the Goods and Material and Plant, the Contractor shall indemnify and hold harmless, EIL for any and all costs, expenses or losses suffered or incurred by EIL in this regard.

- 22.5. EIL shall issue in accordance with relevant legislation, the requisite sales tax declaration forms (including but not limited to Form C for materials other than raw materials/consumables as defined elsewhere in the contract) to the Contractor in order to get the benefit of any concession in the rate of VAT/ CST, as the case may be. The Contractor shall provide relevant statutory declaration forms to EIL in accordance with relevant legislation, within the period specified under the relevant sales tax legislation.

- 22.6. Unless otherwise provided for in the Contract, the Contractor shall be solely liable for payment of the following amounts:
- (a) all Taxes imposed and assessments made in relation to the Contractor's Equipment and the Works (including any Taxes applicable to the Works performed by the Subcontractors) which are payable in India;
 - (b) all contributions payable under Applicable Laws, awards or pursuant to any contract with an industrial or trade union or other association of employees; or otherwise with respect to or ascertained by reference to the wages, salaries or other compensation paid to the employees of the Contractor or any Subcontractor in respect of the Works, including Taxes or contributions for workers' compensation, unemployment or sickness benefit, old age benefit, welfare funds, pensions and disability insurance;
 - (c) all harbour dues, pilotage fees, port fees, wharf fees, unloading costs incurred in India in respect of any imported Contractor's Equipment;
 - (d) all direct Taxes, including income tax, profession tax and wealth tax for which the Contractor is the responsible party.
- 22.7. The Contractor and its Subcontractor/ vendor/ original manufacturer shall issue proper invoice, as stipulated under the customs, excise, VAT/CST, service tax and other Applicable Laws, and other necessary documents as may be relevant from time to time to enable EIL or any person designated by EIL to avail the credit of such Taxes, wherever applicable, paid by the Contractor or any Subcontractor/ vendor/ original manufacturer within the time period specified under the applicable legislation in this regard.
- If EIL is not able to avail the credit (as indicated in the Price Schedule, unless otherwise mentioned in this Contract), partially or entirely because the Contractor or any Subcontractor/ vendor/ original manufacturer issued a defective invoice or failed to produce the requisite documents, then the Contractor shall immediately indemnify EIL for such loss of Tax credit which would be otherwise available to EIL. EIL, in such case, may, in its sole discretion, decide to recover such loss by way of deduction from payment due to the Contractor or invoking the Contract Performance Bank Guarantee.
- 22.8. The benefit of any Tax exemption, concessions, rebate or any other incentives available when the Contractor or its Subcontractors/ vendor are performing their obligations under the Contract, shall be passed on to EIL.
- 22.9. Contractor agrees for withholding from wages and salaries of its agents, servants or employees all sums, required to be withheld by the laws of the Republic of India or any other agency having jurisdiction over the area where Contractor is conducting operations, and to pay the same promptly and directly when due to the proper authority. Contractor further agrees to comply with all accounting and reporting requirements of any Nation having jurisdiction over the subject matter hereof and to confirm to such laws and regulations and to pay the cost of such compliance. If requested by EIL/PMC, Contractor will furnish EIL/PMC the evidence of payment of applicable Taxes, in the country (ies) of the Contractor's and his sub-Contractor(s) and expatriate employees.

EIL shall issue a Tax deduction or withholding certificate to the Contractor evidencing the Tax deducted or withheld and deposited by EIL on payments made to the Contractor to enable the Contractor to claim the credit of the Tax deducted or withheld by EIL.

- 22.10. The Contractor shall be solely responsible for all procedural compliances related to the payment of Taxes under the Contract and it shall protect, indemnify and hold harmless EIL, from any and all cost, penalty, claims or liability:
- (a) to pay any Taxes assessed or levied by any competent Authority on the Contractor or its Subcontractors/ vendor / original manufacturer or on EIL for or on account of any act or omission on the part of the Contractor or its Subcontractors/ vendor/ original manufacturer; or
 - (b) on account of the Contractor's or its Sub-contractor's/ vendor's failure to file Tax returns as required by Applicable Laws or comply with reporting or filing requirements under Applicable Laws relating to Taxes; or
 - (c) arising directly or indirectly from or incurred by reason of any misrepresentation by or on behalf of the Contractor or its Subcontractors to any competent Authority in respect of Taxes; or
 - (d) arising from any proceedings initiated against EIL by any competent Authority in respect of any non-compliance, non-payment, short-payment of Taxes.
- 22.11. In case the Contractor is a foreign entity, it is mandatory to furnish the Contractor's Permanent Account Number (PAN), as per the Indian Income Tax requirements, failing which the Contractor shall be responsible for any additional Tax deduction at source as per the provisions of the Indian Income Tax Act/Rules. The PAN shall be furnished before release of any payment or within one month of award of work, whichever ever is earlier.

22.12 Taxes, Duties and Levies in Foreign Countries

The Contractor shall accept full and exclusive liability at his own Cost for the payment of any and all Taxes, duties, cesses and levies howsoever designated, as are payable to any government, local or statutory authority in any country other than India as are now in force or as are hereafter imposed, increased or modified and as are payable by Contractor, his agents, Sub-Contractors and its/their respective employees for or in relation to this performance of this contract. The Contractor shall be deemed to have been fully informed with respect to all such liabilities and considered and included the same in its bid and the quoted price shall not be varied in any way on this account.

23 TERMS OF PAYMENT

23.1 Mobilization Advance

- 23.1.1 Contractor may ((if specified by it in its Bid and accepted by EIL) be provided a recoverable interest bearing Mobilization Advance up to a maximum of 10% (ten percent) of the awarded Contract Price towards Mobilisation and execution of the Works. Mobilization advance shall carry an interest rate as defined in the Contract.

23.1.2 Mobilisation Advance shall be paid to the Contractor in two instalments subject to the fulfilment of the following conditions:

(a) First Instalment

5% (five percent) of awarded Contract Price shall be payable as the first instalment of Mobilization Advance, within 15 (fifteen) Business Days, after fulfilling the following formalities by the Contractor:

- (i) Signing of the Contract Agreement by the Contractor;
- (ii) Submission of the Contract Performance Bank Guarantee in accordance with Clause 9.4.2; and
- (iii) Submission of the Mobilization Advance Guarantee in accordance with Clause 9.4.1. The Contractor may submit 2 (two) separate Mobilization Advance Guarantees, one against each instalment of the Mobilisation Advance (5% each instalment).

(b) Second Instalment

Balance 5% (five percent) Mobilisation Advance shall be payable to the Contractor after the Contractor has constructed a site office, storage shed, fabrication yard, etc. and has physically mobilised construction equipments and is ready to start the Works to the entire satisfaction of the Engineer-in-Charge and commencement of work at Site. Where the Contractor elects to submit 2 (two) separate Mobilization Advance Guarantees, one against each instalment of the Mobilization Advance, the second instalment of the Mobilization Advance will be released by EIL only upon receipt of the second Mobilization Advance Guarantee.

23.1.3 Recovery of Mobilisation Advance

The Mobilisation Advance together with the interest accrued, thereon, shall be recovered from each Running Bill @ 12% (twelve percent) of gross amount of each Running Bill in such a manner that the total Mobilization Advance and interest accrued thereon is recovered by the time approximately 85% (eighty five percent) of the Contract Price is paid to the Contractor. Balance amount, if any, shall be deducted in full from the pre-final Bill. Mobilization advance Bank Guarantee will be reduced accordingly on quarterly basis against the request of the Contractor.

23.1.4 If the Mobilization Advance has not been fully adjusted against the Running Bills within 30 (thirty) days of the expiration of the Time for Completion or pre-final bill whichever is earlier or immediately prior to termination under Clause 32, the whole of the balance of the Mobilization Advance then outstanding shall immediately become due and payable by the Contractor to EIL and EIL shall be entitled to call upon the Mobilization Advance Guarantee.

23.2 Secured Advance

23.2.1 EIL may provide a Secured Advance to the Contractor for non-perishable, non-fragile and non-combustible Goods and Materials brought on the Site for execution of the Works, in the following manner:

- (a) in the case of steel, 75% of the value of the Goods and Materials on receipt

of the Goods and Materials at the Site or 75% of the quoted value of corresponding SOR item in which the Goods and Materials are to be incorporated, whichever is lower, and Approval of the Goods and Materials by EIL/Engineer-in-Charge. **For cement, the Secured Advance will be released only when the Contractor has established proper storage and handling facility at the Site;**

- (b) in the case of non-perishable Goods and Materials other than steel, 75% of the landed cost on receipt of the Goods and Materials at the Site or 75% of the quoted value of corresponding SOR item in which the Goods and Materials are to be incorporated, whichever is lower, and Approval of the Goods and Materials by EIL/Engineer-in-Charge (as per the list for Category B Items provided in SCC in the Bidding Document),

against submission of the following documents:

- (a) vendor's/manufacturer's invoice with proof of full payment, indicating quantity, unit rate and amount of the procured Goods and Materials, with the lot/batch numbers, as applicable;
- (b) in the case of imported Goods and Materials, copy of bill of lading, proof of payment of customs duty;
- (c) original factory test and inspection certificate with the lot/batch numbers, wherever applicable;
- (d) inspection release note signed by EIL/Engineer-in-Charge;
- (e) an indemnity bond in the format set out at Appendix IV;
- (f) copy of IMIR (Incoming Material Inspection Report) document duly authenticated;
- (g) copy of insurance policy for full value of the Goods and Materials for which the Secured Advance is being provided (in respect of specific goods and materials mentioned elsewhere in the contract), including landed cost at the Site, during storage and erection against all risk insurance, obtained in the joint names of EIL and the Contractor with EIL as the first beneficiary.

23.2.2 The Secured Advance shall not be payable for items not mentioned in the Specifications or Contract or for such items payment on the supply of which is covered in the payment schedule.

23.2.3 The Secured Advance will be recovered from the Running Bills proportionate to the extent that the Goods and Materials in respect of which the Secured Advance was provided are incorporated in the Permanent Work. The balance amount if any will be recovered completely on the earlier of:

- (a) 90% of the Contract Price being paid to the Contractor; and
- (b) Submission of the Final Bill.

23.2.4 No interest shall be levied on the Secured Advance, provided that the Goods and Materials for which the Secured Advance is provided are incorporated in the Permanent Work within the agreed Works Completion Schedule. If there is any inordinate and inexcusable delay in incorporation of the Goods and Materials for which the Secured Advance is provided in the Permanent Work, EIL may levy interest at the rate as defined in the contract on the value of the

unutilised Goods and Materials from the date on which such Goods and Materials were scheduled to be incorporated in the Permanent Work as per the Works Completion Schedule till the date on which the Goods and Materials are incorporated in the Permanent Work.

23.3 Progressive Payments/On Account Payment

23.3.1 (a) Where the Contract is a lump-sum Contract,

The Contractor shall submit to EIL, within 30 (thirty) days of the Effective Date, the Billing Schedule, which shall be taken into account by EIL when releasing payment of Running Bills.

Within 30 (thirty) Working Days of the receipt of such Billing Schedule, the Parties shall mutually agree upon the same. In the event that the Parties are not able to reach an agreement, EIL's decision regarding the Billing Schedule shall be final and binding on the Parties. Such Billing Schedule shall be deemed to be a Contractor's Document and shall form the basis of progressive payments of the Contract Price as stated in the payment terms, in accordance with this Clause 23.3.

(b) Where the Contract is an item rate contract:

- (i) The Contractor may raise Running Bills, as specified below, every alternate month and if an ad hoc payment is made by EIL in respect of the intervening month, for the amount certified by the Engineer-in-Charge on the basis of a summary assessment made by the Engineer-in-Charge of the value of the Works performed by the Contractor during the intervening month, such ad hoc payment(s) shall be deducted from the amount(s) certified by the Engineer-in-Charge as payable on the next Running Bill raised by the Contractor.
- (ii) Where a lump sum rate is stipulated in the Schedule of Rate(s) or otherwise in respect of any particular Work or part thereof and the Works are not, at any intervening stage, capable of measurement, the Running Bill to be prepared by the Contractor shall be prepared on the basis of a value assessment of the percentage of the particular Work or part thereof completed by the Contractor for which the lump-sum rate is stipulated in the Schedule of Rates, as certified by the Engineer-in-Charge.

23.3.2 (a) Within 7 (seven) days after completion of a Payment Milestone (in case of a lump-sum contract)/ individual item of Work (in case of an item rate contract), the Contractor must submit to EIL's Representative a Running Bill. Each Running Bill must set out:

- (i) the estimated value of the Works executed by the Contractor and the Contractor's Documents produced until the date of the Running Bill (including Variations);
- (ii) any amounts to be deducted on a pro rata basis towards the adjustment of the Mobilization Advance in accordance with Clause 23.1 above;
- (iii) any interim ad-hoc payments made by EIL in accordance with Clause 23.3.1(b)(i) above;

- (iv) any other additions or deductions which may have become due under the Contract or otherwise, including those under Dispute; and
 - (v) the deduction of amounts certified in all previous Running Bills and paid by EIL to the Contractor in accordance with Clause 23.
- (b) Each Running Bill must contain the Contractor's certification with supporting documentation:
- (i) that each obligation, item of cost or expense mentioned in that Running Bill has been properly incurred and is a proper charge and that all physical progress is as represented;
 - (ii) that it has reviewed all financial and budget data contained in the Running Bill and the same is true and complete;
 - (iii) that the quality of all completed Works is in accordance with the Specifications;
 - (iv) that each obligation, item of cost or expense has not been the basis of any previous payment (unless the amount of the payment was subsequently reimbursed to EIL); and
 - (v) that all the requisite original statutory declarations or forms or documents, challans, required for availing of any Tax concessions or rebate or refund or credits or set-off or discounts as prescribed under any of the Applicable Laws for the time being in force in India have been submitted.
- (c) Within 30 (thirty) Business Days after receipt of a Running Bill submitted in full compliance with Clause 23.3.2 and not more than once a month, EIL shall endeavour to pay the amount requested or pay a lesser amount as it or the Engineer-in-Charge determines is properly due, in each case less any amounts retained, withheld or set off in accordance with the terms of the Contract subject to EIL's right under Clause 23.7 to set off against amounts due from the Contractor. If less than the full amount of the Running Bill is paid, EIL shall state in writing the reasons for paying the lesser amount. Notwithstanding anything contained in this Clause 23.3.2 (c), EIL may, at its sole discretion, release 75% of the amount of a Running Bill, as certified by the Engineer-in-Charge, within 7 (seven) Business Days from the receipt of the Running Bill.

23.4 Payments Withheld

EIL may withhold from any payment due to the Contractor amounts EIL deems reasonably necessary or appropriate because of any one or more of the following reasons:

- (a) Defects and deficiencies in any Works, whether or not payment has been made in relation to that part of the Works;

- (b) failure by the Contractor to provide certificates of insurance or insurance policies in accordance with the terms of the Contract;
- (c) reasonable evidence that completion of the Works will not occur within the Time for Completion;
- (d) failure, in any material respect, to perform the Works or any of the Contractor's other obligations under the Contract;
- (e) any overpayments made by EIL in a previous payment;
- (f) any payment required to be withheld under any Applicable Laws;
- (g) a dispute exists as to the accuracy or completeness of any Running Bill (but only with respect to the amount then in dispute);
- (h) amount of Taxes which EIL may have to pay if conditions of Clause 22 are not fulfilled; and
- (i) any amount expected to be paid by EIL to any person, on behalf of the Contractor or its affiliates under any agreement or any Applicable Laws for the time being in force or any court order or any other reason or purpose.
- (j) Any amount otherwise specified under the Contract, as being deductible from the payments to be made by EIL to the Contractor.

23.5 Final Payments

23.5.1 Within 15 (fifteen) days after receipt of the Completion Certificate, the Contractor must submit a payment claim and endorse it as the “**Final Bill**”. The Contractor must include in that claim:

- (a) statements for the Contract Price, summarising and reconciling all previous payments made by EIL and adjustments in the Contract Price; and
- (b) any further sums which the Contractor considers to be due to it under the Contract.

23.5.2 Except as provided in Clause 23.5.4, within 90 (ninety) Business Days after the receipt of the Final Bill complete in all respects in accordance with the Contract, EIL must pay to the Contractor the amount mentioned in the Final Bill and certified by the Engineer-in-Charge, less any disputed amounts, subject to EIL's right under Clause 23.7 to set off against amounts due from the Contractor. If the amount that the Contractor owes to EIL under Clause 23.7 is greater than the amount mentioned in the Final Bill and certified by the Engineer-in-Charge, then the Contractor must pay the excess amount which is a debt due and payable to EIL within 90 (ninety) days after EIL's receipt of the Final Bill.

23.5.3 After the expiry of the 15 (fifteen) days period referred to in Clause 23.5.1, a claim which the Contractor was entitled to make, but has not made in the Final Bill, is barred and the Contractor waives any right to bring such a claim.

- 23.5.4 The amount certified in the Final Bill will not become due under Clause 23.5.2 until the Contractor submits to EIL:
- (a) a certificate of release certifying that the Contractor waives all rights to bring any claims which the Contractor is entitled to make, but which are not included in the Final Bill;
 - (b) if requested by EIL, other data establishing payment or satisfaction, including receipts, releases, and waivers as may be required by EIL;
 - (c) a confirmation from the Contractor that there has been no Change of Law that it has not notified EIL which may result in a reduction in the Contract Price; and
 - (d) any and all outstanding documentation required to be given to EIL by the Contractor.
- 23.6. No interim payment by EIL constitutes acceptance by EIL of the Works or any part thereof, or releases the Contractor from any of its obligations or liabilities under the Contract.
- 23.7. Payment of the amount mentioned in the Final Bill by EIL shall not mean release of the Contractor from all of its liabilities under the Contract. The Contractor shall be liable to fulfill and discharge all his liabilities and responsibilities under the Contract until the end of the Contract Validity Period and release of the Contract Performance Bank Guarantee.
- 23.8. Without limiting Clause 23.4 and 23.5, EIL may at any time deduct from any moneys which are or may be payable to the Contractor (including security), any sums which may be or are payable by EIL pursuant to the Contract. Nothing in this Clause 23.8 affects the right of EIL to recover from the Contractor, the whole of the debt or any balance that remains owing after any deduction.
- 23.9. If the Contractor fails to pay a Subcontractor on time such sum as is properly due under the agreement between the Contractor and such Subcontractor, then EIL may, on behalf of the Contractor, make the payment direct to the Subcontractor and the amount so paid will be a debt due and payable from the Contractor to EIL.

23.10 Mode of Payment

- 23.10.1 Subject to the other provisions of the Contract, if the execution of the Works shall necessitate the importation into India of materials, plant or equipment or if the Works or any part thereof are to be executed by labour from outside India, a portion of the payments to be made under the Contract shall be made in the appropriate foreign currencies as requested in the Bid and accepted by EIL.
- 23.10.2 All payments required to be made by EIL to the Contractor shall be made by wire transfer to an account or accounts to be designated by the Contractor, which is maintained by the Contractor: (a) for payments in Indian currency, with a bank or banks in India; and (b) for payments in foreign currency, with a bank or banks in the country in which the payment is to be received. EIL's liability to make payment shall be deemed to have been discharged when the amount due is deposited in the accounts or accounts designated by the Contractor for this purpose and subject to all acts necessary to initiate the relevant wire transfer being completed within the time stipulated for making payment of the amount due, any delay within the international or

domestic banking system in the transfer of such amount to the Contractor's account or accounts shall not give rise to a claim that EIL is in breach of its payment obligations under the Contract.

23.11 Measurement

23.11.1 All measurements under this Contract shall be in the metric system and except where expressly indicated to the contrary in the Contract, all measurements shall be taken in accordance with the procedure set out in the Contract notwithstanding any provision(s) in the relative standard method of measurement or any other general or local custom to the contrary.

23.11.2 All measurements shall be taken jointly by the Engineer-in-Charge or his representative on the one hand and the Contractor or the Contractor's Representative on the other hand and the Contractor shall be bound to present the Contractor's Representative for measurement(s) whenever so required by the Engineer-in-Charge and the Contractor's Representative shall remain present throughout the time required for joint measurements.

23.11.3 If the Contractor absents itself for any reason whatsoever on the date appointed for joint measurements, the measurements shall be taken by the Engineer-in-Charge or its representative in the absence of the Contractor and such measurements signed by the Engineer-in-Charge or its representative shall be final and binding upon the Contractor.

23.11.4 Measurements shall be signed and dated on each page by the Contractor or the Contractor's Representative and the Engineer-in-Charge or his representative. If the Contractor objects to any of the measurements recorded, including the mode of measurement, such objection shall be noted in the measurement book against the item objected to and such note shall be signed by the Contractor's Representative and the Engineer-in-Charge or its representative. In the absence of any noted objections, the Contractor shall be deemed to have accepted the relative measurements as entered in the measurement book and shall be barred from making or recording any objection in respect of the measurements recorded in the measurement book.

23.11.5 All measurement(s) relative to which any objection(s) have been noted in the measurement book shall be submitted to the Engineer-in-Charge for its decision and the decision of the Engineer-in-Charge shall be final and binding on the Contractor.

23.11.6 In case of discrepancy between measurement of work specified in the special conditions of contract, Standard Specification/ Job Specification, Schedule of Rates etc., precedence shall be given in following order:

- a) Measurement of works as specified in Special Conditions of Contract.
- b) Measurement of works as mentioned in Standard Specification/ Job Specification.
- c) Measurement of works in accordance with item description of relevant item mentioned in Schedule of Rates.

In case the clarity is not available through (a), (b) & (c) above, then it shall be as prescribed by the Bureau of Indian Standards ("BIS") and if it does not so prescribed by BIS, then measurement of works shall be as decided by Engineer-in-Charge, which shall final and binding upon the Contractor.

23.11.7 Wherever the unit of items has been indicated as lumpsum, the payment shall be made on lumpsum basis on completion & no mode of measurement shall be applicable.

24 VARIATION

- 24.1. EIL may at any time during the performance of the Works instruct the Contractor, by issuing a written notice, to carry out a Variation (“**Variation Order**”); and the Contractor must perform and be bound by a Variation. EIL shall not propose a Variation which:
- (a) will have a material adverse effect upon the Contractor's ability to cause the Works to meet the Guaranteed Performance Levels upon completion of the Facility;
 - (b) is not technically feasible, such feasibility being determined in accordance with Good Industry Practice.
- 24.2. The Contractor may propose to EIL any Variation which the Contractor considers necessary or desirable to improve the quality, efficiency, reliability, operability, maintainability or safety of the Facility. EIL may, in its absolute discretion, Approve or reject any Variation proposed by the Contractor. Any Approval must be notified to the Contractor.
- 24.3. Notwithstanding anything contained in Clauses 24.1 and 24.2, a Variation made necessary due to any act, omission or default of the Contractor in the performance of its obligations under the Contract will not result in any payment to the Contractor or an increase in the Contract Price.
- 24.4. No Variation shall invalidate the Contract. The Contractor agrees that a Variation may involve the omission of any part or parts of the Works and the Contractor agrees that EIL may engage others to perform that part or parts of the Works which have been omitted. The Contractor further acknowledges that any omission or omissions will not constitute a basis to allege that EIL has repudiated the Contract no matter the extent or timing of the omission or omissions.
- 24.5. Within 15 (fifteen) days of receipt of the direction referred to in Clause 24.1, the Contractor must prepare and submit to the Engineer-in-Charge a statement setting out:
- (a) detailed particulars of the Variation;
 - (b) the work required or no longer required;
 - (c) an estimate of the increase or decrease in the Contract Price;
 - (d) any requisite adjustment to Works Completion Schedule; and
 - (e) any proposed modifications to the Contract and/or any effect such Variation would have on the Works and/or on any other provisions of the Contract.
- 24.6. EIL may accept the offer given under Clause 24.5 or request the Contractor to submit revised estimates. If EIL accepts any offer it shall issue an instruction identifying the offer that is being accepted and requesting the Contractor to proceed with the Variation.
- 24.7. If agreement of an estimate is not reached under Clause 24.6, EIL may issue an instruction to the Contractor to proceed with the Variation and:
- (a) the Variation will be valued under Clause 24.8(b);
 - (b) the Contractor's right to an extension of the Time for Completion will be determined under Clause 14.

24.8. The valuation of the Variation shall be calculated as follows:

- (a) by agreement by making reference to the cost of similar or analogous work being executed by the Contractor under the Contract; or
- (b) failing agreement under Clause 24.8(a), the Engineer-in-Charge will determine the valuation.

Clause 35 shall apply to this Clause 24.8.

24.9. If a Variation results in a reduction of the time required to complete the Works, the Engineer-in-Charge may determine a reasonable reduction and notify the Contractor of the revised Time for Completion and other dates as set out in the Works Completion Schedule.

24.10 Quantity of Works

24.10.1 The quantities set out in the Price Schedule are estimated quantities for the execution of the Works and such quantities shall not be taken as the actual and correct quantities required for the execution of the Works. The Contractor shall be paid only for the actual quantities of Works executed by it on the basis of the rates set out in the Price Schedule and in accordance with the Payment Schedule and other relevant provisions of the Contract.¹

24.10.2 Notwithstanding anything to the contrary in Clause 21 and this Clause 24.10, variations in the quantities of the items set out in the Price Schedule shall be paid for by EIL in the following manner:²

- (a) There shall be no variation in the rates of the items specified in the Price Schedule as a result of any increase in the total Contract Price up to 25% (twenty five percent);
- (b) If the increase in the total Contract Price is likely to be more than the limit specified in Clause 24.10.2 (a) above, the rates for the additional quantities shall be mutually agreed between EIL and the Contractor, duly accounting for savings, if any, that may be available to the Contractor in case of increased quantities.

24.10.3 The Contractor shall be bound to notify the Engineer-in-Charge at least 15 (fifteen) Working Days before the necessity arises for the variation in the quantities of item(s) set out in the Price Schedule, in excess of the limits of variation specified above. If the Engineer-in-Charge and the Contractor are unable to agree on the revised rates on account of variation in quantities of item(s) in excess of the limits mentioned above, the revised rates of such varied quantities of item(s) shall be determined in accordance with Clause 35, pending which the Contractor shall be bound to perform the Works in relation to such varied quantities in accordance with the Contract.

24.10.4 There shall be no variation in the rates of the items specified in the Price Schedule, unless specifically, mentioned else where in the Bidding Document as a result of any decrease in the total Contract Price and the Contractor shall not be entitled for any compensation in this regard.

¹ This Clause is not applicable if the Contract is a lump-sum price contract

² This Clause is not applicable if the Contract is a lump-sum price contract

- 24.10.5 Except as provided in Clause 24.10.2 above, the quantities of the Works stated in the Price Schedule are indicative and as such (in case of item rate tender) do not form part of the Contract and EIL shall neither be liable for any increase or decrease in the actual quantities of the Works performed, nor shall such increase or decrease in the actual quantities of the Works performed form the basis of any alteration of the rates quoted in the Price Schedule or for any claim for additional compensation, damages or loss of profits. Notwithstanding the quantities mentioned in the Price Schedule and the Contract Price mentioned in the Letter of Award, the Contractor shall only be entitled to payment in respect of actual quantities of the Works performed by it.
- 24.10.6 The quantities of the Works and the gross value of the Works actually performed by the Contractor as valued on finalisation of all dues to the Contractor is the sole liability of EIL towards the Contractor and the Contractor shall not be entitled to any compensation in addition to such amounts.

25 CHANGE IN LAW

- 25.1. In the event that the Contractor reasonably considers that there is a Change in law as a result of which the Contractor suffers an increase in Cost or reduction in net financial burden payable with respect to execution of the Works, the Contractor shall give notice to the Engineer-in-Charge as soon as is reasonably practicable with:
- (a) details of the Change in Law;
 - (b) any other information which the Engineer-in-Charge reasonably requires (including the Contractor's estimate of any increase or decrease in the Contract Price incurred by it as a consequence of a Change of Law, any Variation for making the Works compliant with the Change in Law and/or changes to the Works Programme that will be incurred in complying with that Change of Law).
- 25.2. If the Change of Law requires a Variation or the Contractor is beneficially affected by a Change of Law, the Engineer-in-Charge must within 14 (fourteen) Working Days of receiving the Contractor's notification under Clause 25.1 provide a direction to either:
- (a) proceed with the Variation as proposed by the Contractor or as deemed appropriate by EIL; or
 - (b) vary the Works on a different basis as directed by EIL; or
 - (c) not proceed with the Works in which event the Contractor will be relieved of its obligations to comply with the subject of the Change in Law.
- 25.3. If the Engineer-in-Charge provides a direction under Clauses 25.2(a) and 25.2(b), such direction will be treated as a Variation to which the provisions of Clause 24 will apply.
- 25.4. To the extent that a Change of Law causes the Contractor to incur more Cost or less Cost than it would otherwise have incurred, the difference shall be compensated by EIL or the benefit of lower Costs shall be passed on to EIL by the Contractor, as the case maybe. The Contractor shall produce sufficient proof and estimate of increase in Costs for EIL's consideration.

26 SUSPENSION

- 26.1. The Engineer-in-Charge may at any time by issuing a written order (“**Suspension Order**”) to the Contractor (with a copy to EIL) suspend the execution of part or all of the Works including: (a) delivery of Contractor's Equipment which is ready for delivery to the Site; or (b) the erection of the Plant or part thereof which has been delivered to the Site; or (c) testing and commissioning of the Works.
- 26.2. The Suspension Order may be issued by the Engineer-in-Charge under the following circumstances:
- (a) Due to Contractor's default under the following circumstances:
 - (i) any act, default, omission or breach by the Contractor or for some default or breach by the Contractor reasonably anticipated by the Engineer-in-Charge; or
 - (ii) for the proper execution of the Works; or
 - (iii) existence of any emergency on the Site or at any place where the Works (or any part thereof) are being executed leading to unsafe conditions; or
 - (iv) as a consequence of any action by a statutory authority; or
 - (v) failure to furnish Contract Performance Bank Guarantee or Mobilization Advance Guarantee or renewal of such guarantees.
 - (b) For any other reason which the Engineer-in-Charge thinks reasonable.
- 26.3. Upon issuance of any Suspension Order under Clause 26.1, the Contractor shall protect, store and secure such part or whole of the Works or any Plant or Contractor's Equipment to which the Suspension Order relates to, against any deterioration, loss or damage and shall not remove any goods or equipment (including any Goods and Materials and Plant) from the Site without the prior written consent of the Engineer-in-Charge, during the entire suspension period. The Contractor shall take all steps to minimize cost and losses to EIL due to suspension and shall meet the Engineer-in-Charge on a regular basis.
- 26.4. On issuance of the Suspension Order due to events specified in Clause 26.2(a), the Contractor shall within 10 (ten) days undertake all necessary steps (including such steps as instructed by the Engineer-in-Charge) to remedy the circumstances leading to Suspension Order and immediately inform the Engineer-in-Charge on completion of such actions. Within 7 (seven) Working Days of receipt of such intimation from the Contractor, if the Engineer-in-Charge is satisfied that his instructions above have been fulfilled and complied with, issue a letter instructing the Contractor to resume the Works or such part of the Works that are subject of a Suspension Order. If the Engineer-in-Charge is of the view that such instructions have not been complied, the Engineer-in-Charge shall identify by means of further written notice the additional action required to be taken by the Contractor before any instruction to resume can be given.
- 26.5. The Engineer-in-Charge may at any time instruct the Contractor to resume the Works or such part of the Works that are subject of a Suspension Order, in which case the Contractor shall do

so as soon as is reasonably practicable and in any event within 5 (five) days of receiving such instructions. The Contractor shall, after notice to the Engineer-in-Charge, and together with the Engineer-in-Charge, examine the Works, Plant, Goods and Materials affected by the Suspension Order. The Contractor shall make good any deterioration or Defect in or loss of/ to the Works, Plant, Goods and Materials, which has occurred during the suspension.

- 26.6. The Contractor shall under no circumstances be entitled to any extension of the Time for Completion or claim for any monetary compensation where Suspension Order has been issued by the Engineer-in-Charge under Clause 26.2(a).
- 26.7. Notwithstanding anything contained in the Contract, the Contractor shall not be entitled to any Costs for preserving the Works during the period of suspension caused due to any Force Majeure event.

27 FORCE MAJEURE

- 27.1. Neither Party is responsible for any failure to perform its obligations under the Contract, if it is prevented or delayed in performing those obligations by an event of Force Majeure.
- 27.2. An event of Force Majeure is an event or circumstance which is beyond the control and without the fault or negligence of the party affected (“**Affected Party**”) and which by the exercise of reasonable diligence the Affected Party was unable to prevent and which is not caused or contributed by the Affected Party, provided that event or circumstance is limited to the following:
- (a) act of terrorism;
 - (b) riot, war, invasion, act of foreign enemies, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection of military or usurped power;
 - (c) ionising radiation or contamination, radio activity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radio active toxic explosive or other hazardous properties of any explosive assembly or nuclear component;
 - (d) epidemics, earthquakes, flood, fire, hurricanes, typhoons or other physical natural disaster, but excluding weather conditions regardless of severity; and
 - (e) freight embargoes, strikes at national or state-wide level or industrial disputes at a national or state-wide level in any country where Works are performed, and which affect an essential portion of the Works but excluding any industrial dispute which is specific to the performance of the Works or the Contract.

For the avoidance of doubt, inclement weather, third party breach, delay in supply of materials (other than due to a nationwide transporters’ strike) or commercial hardship shall not constitute a Force Majeure event.

- 27.3. Where there is an event of Force Majeure, the Affected Party must notify the other Party in writing as soon as possible and in any event within [10(ten)] days of becoming aware of or the date it ought to have become aware of the occurrence of an event of Force Majeure giving full particulars of the event of Force Majeure and the reasons for the event of Force Majeure preventing the Affected Party from, or delaying the Affected Party in performing its obligations under the Contract. The Affected Party must use its reasonable efforts to mitigate the effect of the event of Force Majeure upon its performance of its obligations under the Contract and

notify the other party of the measures being taken to mitigate the effect(s) of the event of Force Majeure.

- 27.4. Upon completion of the event of Force Majeure the Affected Party must as soon as reasonably practicable recommend the performance of its obligations under the Contract. Where the Affected Party is the Contractor, the Contractor must provide an amended Works Programme rescheduling the Works to minimise the effects of the prevention or delay caused by the event of Force Majeure.
- 27.5. An event of Force Majeure does not relieve a party from liability for an obligation which arose before the occurrence of that event, nor does that event affect the obligation to pay money in a timely manner which matured prior to the occurrence of that event.
- 27.6. The Contractor has no entitlement and EIL has no liability for:
- (a) any costs, losses, expenses, damages or the payment of any part of the Contract Price during an event of Force Majeure; and
 - (b) any delay costs in any way incurred by the Contractor due to an event of Force Majeure.
- 27.7. If an event of Force Majeure occurs and its effect continues for a period of 180 (one hundred eighty days or more in a continuous period of 365 (three hundred sixty five) days after notice has been given under this Clause 27, either Party may terminate the Contract by issuing a written notice of 30 (thirty) days to the other Party.
- 27.8. In the event that the Parties are unable to agree in good faith about the existence or occurrence of a Force Majeure event, such dispute shall be finally settled in accordance with the dispute resolution mechanism provided herein; provided however that the burden of proof as to the occurrence or existence of such Force Majeure event shall be upon the Party claiming relief on account of such Force Majeure event.

28 INTELLECTUAL PROPERTY

- 28.1. The Contractor (with full title guarantee) hereby grants to EIL a royalty-free, irrevocable, non-exclusive licence to use, modify and reproduce the Contractor's Documents and any Intellectual Property contained in the Facility, the Works and the Contractor's Documents for any purpose whatsoever connected with the Facility; and the licence hereby granted shall carry the right to grant sub-licences and shall be transferable to third parties. This licence does not include a licence to reproduce the Intellectual Property contained in the Works and the Contractor's Documents for any other project undertaken by EIL or any third person.
- 28.2. EIL shall grant or shall grant to the Contractor a royalty-free, exclusive licence to use the Background Information and any Intellectual Property contained in the Background Information for the sole purpose of the performance of the Contractor's obligations under this Contract. The Contractor shall have no right to create any copies of, reproduce or to disclose the Background Information to any third Persons without the prior written consent of EIL, except in favour of the Contractor's Personnel and its Subcontractors (provided that the Contractor's Personnel and its Subcontractors shall be bound by the terms of the license granted under this Clause 28.2).

- 28.3. The Contractor warrants and represents that:
- (a) it has all rights and licences necessary to grant, assign and transfer to EIL licences to the Contractor's Documents and any Intellectual Property contained in the Works and the Contractor's Documents in accordance with this Contract;
 - (b) it has no title or ownership to the Background Information and shall make no claim against or create any encumbrance over the Background Information or any Intellectual Property therein;
 - (c) no infringement of any Intellectual Property of any kind of any third Person will result from the performance of this Contract; and
 - (d) it has paid all royalty on any and all Intellectual Property licensed by it
- 28.4. The Contractor acknowledges that the Contractor is the author of the Contractor's Documents referred to in Clause 28.1 and the Contractor waives any moral rights which the Contractor might otherwise possess and the Contractor shall obtain a waiver of all rights that any of its employees, agents or Subcontractors may have pursuant to Applicable Laws in relation to the Contractor's Documents.
- 28.5. The Contractor shall, if so requested by EIL, at any time, execute such documents and perform such acts as may be required fully and effectively to assure to EIL the rights referred to in this Clause 28.
- 28.6. If, consequent to an infringement of Intellectual Property, the Contractor is prevented from performing the Works, or EIL is prevented from using the Works or the Contractor's Documents, the Contractor shall at its own expense and at its option:
- (a) procure for EIL the right to continue using the Works and the Contractor's Documents or any portion thereof;
 - (b) re-perform the Works or part thereof, or replace the Contractor's Documents or part thereof with a non-infringing plant and equipment or part thereof; or
 - (c) modify the Contractor's Documents or part thereof so it becomes non-infringing.
- 28.7. The Contractor shall indemnify EIL, the Engineer-in-Charge and their officers, employees, agents from and against all claims, liability, loss, damage costs and expenses (including but not limited to legal costs) arising out of any claim that any Intellectual Property contained in the Works or the Contractor's Documents or any use of such Intellectual Property by or on behalf of EIL infringes the Intellectual Property of a third party.
- 28.8. The Contractor shall pay all royalties and license fees, if any, for materials, apparatus, methods, processes, systems, software or other Intellectual Property rights purchased or used by Contractor or any Subcontractor for execution of the Works. The Contractor represents and warrants that except for amounts included in the Contract Price, no royalties or other payments are due or payable by EIL or any other Person in respect of the Intellectual Property used by the Contractor or any Subcontractor in relation to the Works.

29 REPRESENTATIONS AND WARRANTIES

29.1 General Representations and Warranties

The Contractor makes the following representations and warranties to EIL each of which is true and correct during the term of the Contract:

- (a) it has been incorporated as a company under the laws of India and is validly existing under those laws;
- (b) it has power to enter into the Contract and comply with its obligations under it;
- (c) the Contract and the transactions under it do not contravene its constituent documents or any Applicable Law or obligation by which it is bound or to which any of its assets are subject or cause a limitation of powers or the powers or its directors to be exceeded;
- (d) it has in full force and effect the authorisations necessary for it to enter into the Contract and the transactions under it;
- (e) its obligations under the Contract are valid and binding and are enforceable against it in accordance with the terms of the Contract;
- (f) it is not in breach of any Applicable Law or obligation affecting it or its assets in a way which may result in a material adverse effect on the business or financial condition of the Contractor;
- (g) there is no pending or threatened proceeding affecting the Contractor or any of its assets that would affect the validity or enforceability of the Contract, the ability of the Contractor to fulfil its commitments under the Contract in any material respect, or that could result in any material adverse change in the business or financial condition of the Contractor;
- (h) there are no reasonable grounds to suspect that it is unable to pay its debts as and when they become due and payable;
- (i) it has the necessary skills and experience to perform the Works in accordance with the Contract;
- (j) it owns or has the right to use or provide to EIL all Intellectual Property necessary to perform its obligations under the Contract; and
- (k) it will perform its obligations under the Contract and conduct its business with a high level of integrity which is reasonably expected of an international contractor of similar size and profile, conducting a similar line of business, and will not engage in any corrupt or fraudulent practices.

29.2 Warranties related to Works

Without prejudice to any other warranties expressed elsewhere in the Contract, and despite any inclusion of EIL's documents in the Contract (including in the Specifications) or any Approval

given or withheld by EIL under the Contract, the Contractor warrants:

- (a) the Works will be performed with all the skill and care to be expected of appropriately qualified and experienced contractors with experience in performing works and services of a similar size, type, nature and complexity to the Works and in accordance with Good Industry Practice;
- (b) the Works will be performed in accordance with, all the requirements in the Contract and the Specifications, by properly qualified and accredited personnel, for the Contract Price and by the Time for Completion;
- (c) the Works will be performed with the highest regard for safety and protection of the environment and so that the Facility is capable of being operated and utilised in accordance with all Applicable Laws and the Contract;
- (d) the Works will be fit for their intended purpose as described in, or reasonably inferable from, the Contract;
- (e) the Works utilise proven technology, being a technology that has operated commercially at other coal fired power stations of similar net output capacity and which, as of the date of the Contract, is capable of being insured on a reasonable commercial basis; and
- (f) the Works will comply with all Applicable Laws.

30 INDEMNITY

- 30.1. The Contractor shall indemnify and hold harmless EIL, the Engineer-in-Charge, their advisors, representatives and employees from and against all actions, suits, proceedings, claims, damages, losses, expenses and demands of every nature and description, by reasons of any breach of the provisions of the Contract by the Contractor or any act or omissions of the Contractor, its representative or its employees, agents, and sub-contractors in the execution of the Works, including any professional services provided by the Contractor.
- 30.2. These indemnification obligations shall include but not be limited to claims, damages, losses, damage proceedings, charges and expenses which are attributable to:
 - (a) Sickness, disease or death of, or injury to any person;
 - (b) Loss of, or damage to, or destruction of any property;
 - (c) Loss, damage or costs arising from the carriage of Goods and Materials and/or ownership or chartering of marine vessels by the Contractor, or Subcontractor of any tier.

The Contractor shall also indemnify and hold harmless EIL from and against all claims and proceedings on account of infringements of patents rights, design, trademark, etc., as detailed out in Clause 28.

- 30.3. All sums payable by way of compensation under these conditions shall be considered reasonable compensation payable to EIL with reference to the actual loss or damage sustained by EIL. The decision of the Engineer-in-Charge as to compensation claimed shall be final and binding.
- 30.4. Notwithstanding anything in the Contract to the contrary, no liabilities owed by the Contractor to EIL that is covered by insurance obtained by the Contractor or EIL pursuant to Clause 33 is included in the Contractor's aggregate liability for the purpose of determining the limit of the Contractor's liability under the Contract.
- 30.5. Neither Party shall be liable to the other Party for any kind of indirect or consequential loss or damage including, loss of use, loss of profit, loss of production or business interruption which is connected with any claim arising under the Contract.

30.6 Contractor's Care of the Works

The Contractor shall take full risk and responsibility for the care of the Works, or any part thereof, including full risk and responsibility for the care of the Works being constructed/ installed, or stored off-Site for inclusion in the Works, until the date of issue of the Completion Certificate, when risk and responsibility shall pass to EIL.

31 LIMITATION OF LIABILITY

- 31.1 The aggregate total liability of the Contractor to EIL under the Contract shall not exceed the total Contract Price, except that this Clause 31 shall not limit the liability of the Contractor for following:
- (a) In the event of breach of any Applicable Law;
 - (b) In the event of fraud, willful misconduct or illegal or unlawful acts, or gross negligence of the Contractor or any person acting on behalf of the Contractor; or
 - (c) In the event of acts or omissions of the Contractor which are contrary to the most elementary rules of diligence which a conscientious Contractor would have followed in similar circumstances; or
 - (d) In the event of any claim or loss or damage arising out of infringement of Intellectual Property; or
 - (e) For any damage to any third party, including death or injury of any third party caused by the Contractor or any person or firm acting on behalf of the Contractor in executing the Works.
- 31.2 Neither Party shall be liable to the other Party for any kind of indirect or consequential loss or damage including, loss of use, loss of profit, loss of production or business interruption which is connected with any claim arising under the Contract.

32 TERMINATION

32.1 Termination for Convenience

EIL shall, in addition to any other right enabling it to terminate the Contract, have the right to terminate the Contract at any time by giving prior written notice of at least 14 (fourteen) days to the Contractor. Such termination shall be without prejudice to the rights of the Parties that have accrued on or before the date of termination of the Contract.

32.2 Termination Due to Contractor's Default

The Contract may be terminated by EIL, at its sole and absolute discretion, upon the occurrence of any of the following events/acts committed by the Contractor (each a “**Contractor's Event of Default**”) by issuing a notice to the Contractor, stating the intention of EIL to terminate the Contract:

- (a) fails to complete Mobilisation within the Time for Mobilisation under Clause 9.3;
- (b) commits a material breach of its obligations under the Contract;
- (c) abandons or repudiates the Contract or suspends the execution of the Works during the subsistence of any Dispute under the Contract;
- (d) fails to adhere to the Specifications and/or Variations in terms of the Contract;
- (e) the Contract Price is reduced to the maximum extent specified in Clause 13.2, yet the delay in respect of which the reduction was made continues to subsist;
- (f) a petition for the winding up of the Contractor has been admitted and a liquidator or provisional liquidator has been appointed or an order of bankruptcy or an order for the winding up or dissolution of the Contractor has been made by a Court of competent jurisdiction, except voluntary change in partnership/ constitution of Contractor's organisation (if a partnership/ Company) or liquidation for the purpose of amalgamation or reconstruction subject to EIL's acceptance to continue the Contract with the re-constituted firm/ company.
- (g) Contractor fails to replace or remedy Defective Work pursuant to Clause 9.1.18;
- (h) Contractor's liability for compensation under Clause 20 reaches 10 % (ten percent) of the Contract Price and the Defect for which the compensation are/were charged continues to exist;
- (i) gives any warranty or makes any representation under the Contract which is found to be false or misleading;
- (j) fails to furnish or renew the Contract Performance Bank Guarantee;
- (k) fails to obtain and maintain insurance in accordance with its obligations under the Contract; or

- (l) commits any default under any Applicable Law.

32.3. If the Contractor fails to remedy or rectify the default stated in the notice issued by EIL under Clause 32.2 within 30 (thirty) days of receipt of such notice, EIL shall be entitled to terminate the Contract by issuing a termination notice and expel the Contractor from the Site (but without thereby releasing the Contractor from any of its obligations or liabilities under the Contract, or affecting the rights and powers conferred on EIL under the Contract up to the date of termination). However, in case of events specified in Clause 32.2 (c) and (f), EIL shall be entitled to immediately terminate the Contract without giving any notice to the Contractor.

32.4 Procedure on Termination

32.4.1 Upon termination of the Contract under Clause 32.3:

- (a) EIL may complete the Works and/or arrange for other entities to do so at the risk and Cost of the Contractor. EIL and its entities may then use the access roads, the Contractor's Documents and all other facilities made by or on behalf of the Contractor;
- (b) Call upon the whole or such portion of the Contract Performance Bank Guarantee amount as EIL may consider fit;
- (c) Recover from the Contractor the cost of carrying out the balance Works in excess of the sum which the Contractor would have been paid according to the Final Bill, if the Works had been carried out and completed by the Contractor under the terms of the Contract. The amount to be recovered may be deducted by EIL from any amount due to the Contractor under the Contract. Any amount outstanding to EIL under this Clause 32.4.1(c) shall be recovered from the Contractor as a debt due;
- (d) Enter upon the Site and expel the Contractor. EIL may, to the exclusion of any right of the Contractor, take over and use, without payment to the Contractor, any Contractor's Equipment, materials, goods, machinery or other items which are on the Site in connection with the Works for any reasonable period as EIL considers necessary for the performance and completion of the Works.

32.4.2 Upon termination of the Contract under Clause 32.3, the Contractor must either immediately or upon any date as is specified in the notice of termination:

- (a) cease all further work, except for any work EIL may specify in the notice of termination;
- (b) terminate all Subcontracts, except those to be assigned or novated to EIL in accordance with paragraph (d) below;
- (c) deliver to EIL the parts of the Works performed by the Contractor up to the date of termination;
- (d) to the extent legally possible assign or novate to EIL all right, title and benefit of the Contractor to the Works as at the date of termination, and, as may be required by EIL, in any subcontracts between the Contractor and its Subcontractors;

- (e) subject to Clause 32.4.1(d), remove all Contractor's Equipment, surplus materials (as per Clause 9.12.2 (b), scaffolding from the Site, dismantle and remove its Site offices and quarters and other Temporary Works and structures and repatriate the Contractor's Personnel from the Site, remove from the Site any wreckage, rubbish and debris of any kind, and leave the whole of the Site in a clean and safe condition; and
- (f) deliver to EIL all documents prepared by the Contractor in connection with the Works as at the date of termination.

Should the Contractor fail to comply with the provisions of sub-Clause (e) above, EIL shall have the right, at the sole risk and Cost of the Contractor, to clear the Site of all rubbish, scaffolding, surplus materials, Contractor's Equipment, machinery, dismantle and remove the Contractor's Site offices and other Temporary Works and store, sell, dispose of and/or otherwise deal with any of the above and the Contractor shall forthwith on demand pay EIL the costs and expense incurred by EIL in this regard with an additional amount equivalent to 15% (fifteen percent) of such costs and expenses to cover EIL's overheads. EIL shall have the right to recover such amounts from: (i) the proceeds of any sale or disposal of the Contractor's Equipment, machinery, surplus materials, Temporary Works or other items removed from the Site; and (ii) any amounts due to the Contractor under the Contract.

Nothing contained in this Clause or otherwise in the Contract shall constitute EIL as a trustee or bailee for or in respect of any of the Contractor's Equipment, surplus materials, machinery or other items or things removed, cleared, demolished or dismantled as mentioned above and EIL shall not be bound by any duty of care in respect thereof.

32.4.3 Notwithstanding anything contained in Clause 32.4.2 above, upon termination of the Contract, EIL may require the Contractor to:

- (a) complete or take to an intermediary stage of completion any item of the Works already commenced by the Contractor; and
- (b) take such steps as are considered necessary by the Engineer-in-Charge for properly protecting and securing the Works already completed by the Contractor.

32.5 Payment on Termination

32.5.1 If the Contract is terminated under Clause 27.7 or 32.1, the Contractor is entitled to be paid:

- (a) the Contract Price attributable to the Works performed as at the date of termination, or in the case of a termination under Clause 27.7, the commencement of the relevant event of Force Majeure; and
- (b) the costs, if any, necessarily incurred in performing the work (if any) specified in the notice of termination issued by EIL under Clause 31 or as instructed by EIL pursuant to Clause 32.4.3; and
- (c) if the Contract is terminated in accordance with Clause 31, additionally (but without duplication):
 - (i) the costs reasonably incurred by the Contractor in terminating any subcontracts

as a result of the termination of the Contract; and

- (ii) the costs reasonably incurred by the Contractor in the repatriation of the Contractor's and the Subcontractor's employees,

less the aggregate of all previous payments allocated to the Works. Any sums due to EIL from the Contractor accruing prior to the date of termination or the commencement of the relevant event of Force Majeure (as the case may be) will be deducted from the amount to be paid to the Contractor under the Contract. If, as a result of any such deductions, there is a negative amount payable to the Contractor, then the Contractor must pay an amount equal to that negative sum to EIL within 15 (fifteen) days of EIL raising an invoice for that amount.

The Contractor agrees and acknowledges that payment of termination compensation in terms of this Clause 32.5.1 shall be the sole and exclusive liability of EIL and the sole and exclusive remedy of Contractor, with respect to a termination of the Contract under Clause 32.1 or Clause 27.7.

32.5.2 If the Contract is terminated under Clause 32.3, EIL will not be bound to make any further payment to the Contractor until the full and final cost of completion of the Works by EIL or other contractors and all damage, loss or expense suffered or incurred by EIL as a result of the termination of the Contract have been ascertained.

32.5.3 Upon all cost, damages, loss and/or expense being ascertained under Clause 32.5.2, the Engineer-in-Charge must issue a certificate stating the total amount of the cost of completing the Works and any damage, loss or expense suffered or incurred by EIL as a result of the termination of the Contract.

32.5.4 If the Contract Price attributable to the Works performed as at the date of termination less the aggregate of: (a) all previous payments allocated to the Works which have been paid to the Contractor; and (b) the amount stated in the certificate under Clause 32.5.3,

- (a) is a positive amount payable to the Contractor, then EIL must pay such amount to the Contractor within 15(fifteen) Business Days of the issuance of the certificate pursuant to Clause 32.5.3; or
- (b) is a negative amount payable to the Contractor, then an amount equal to that negative sum will be a debt due and payable to EIL by the Contractor and the Contractor must pay such amount to EIL within 15 (fifteen) days of EIL raising an invoice for that amount.

33 INSURANCE

33.1. EIL shall at its own Cost, take out and maintain in effect, or cause to be taken out and maintained in effect, during the execution of the Works, a comprehensive Erection All Risks Policy (“**EIL's Insurance**”).

33.2. Without prejudice to Clause 33.1, the Contractor shall be required to take out and maintain at all times during the subsistence of this Contract, adequate insurance coverage in respect of:

- (a) any damages or compensation against claims, demands, proceeding, costs, charges and expenses, whatsoever in respect or in relation thereto, payable under Applicable Laws in respect or any consequence of any accident or injury to any Contractor's Personnel during or pursuant to their employment by the Contractor or by the Contractor's Subcontractors, save and except an accident or injury resulting from any act or fault of EIL;
- (b) all Contractor's Equipment brought on to the Site by the Contractor or its Subcontractors for use in connection with the Works, to the extent of their full value against all loss or damage from whatever cause arising; and
- (c) third party liability for physical loss of or damage to any third party property or injury to or death of any third party which may arise out of or in connection with the execution of the Works at the Site by the Contractor or EIL, (collectively "**Contractor's Insurance**").
- 33.3. EIL's Insurance and the Contractor's Insurance shall each be composite policies in the joint names of the Parties, for their respective rights and interests. The terms of EIL's Insurance and the Contractor's Insurance shall entitle the respective Parties to maintain the policies in force after termination of the Contract.
- 33.4. Either Party shall, at the request of the other Party, produce within 7 (seven) days of request, such evidence as the other may reasonably require and as is obtainable from insurers that EIL's Insurance or the Contractor's Insurance (as relevant) have been effected, which evidence may include sight of the insurance policies and confirmation of the payment of all premiums to keep the policies in force.
- If either Party fails upon request to produce to the other satisfactory evidence in accordance with this Clause 33.4 that there is in force any of EIL's Insurance or the Contractor's Insurance (as relevant), the other Party may effect and keep in force any such insurance and the Party failing to evidence insurance shall pay to the other all reasonable costs incurred by the other for such purpose.
- 33.5. Each Party shall ensure that it and its personnel, Subcontractors, servants and agents at all times:
- (a) Comply with the terms and conditions of EIL's Insurance or the Contractor's Insurance, as relevant;
- (b) Comply with the procedures for claims notification and administration there under; and
- (c) Do nothing nor omit to do anything which might entitle any insurer to refuse to pay any claim under, or which might otherwise prejudice any of EIL's Insurance or the Contractor's Insurance.
- 33.6. EIL's Insurance as well as the Contractor's Insurance, shall wherever possible, provide for 30 (thirty) days written notice of any cancellation, non-renewal or material modification of any such policy to be given by the insurers to the insured persons. Further, EIL's Insurance and the Contractor's Insurance shall contain a clause to the effect that the insurers have agreed to waive all rights of subrogation against the persons assured (including all beneficiaries thereof).

- 33.7. Regardless of the extent of settlement of claims for insurance proceeds under EIL's Insurance or under the Contractor's Insurance or the time taken for settlement of such claims, the Contractor shall promptly make good any loss or damage for which it is responsible under the terms of this Contract. The Contractor shall be reimbursed to the extent that any insurance proceeds are received and payable to the Contractor.

34 GOVERNING LAW AND JURISDICTION

- 34.1 The Contract shall be governed by and construed in accordance with the laws of India and the courts at Delhi shall have exclusive jurisdiction over all Disputes arising under or in connection with the Contract.

35 CLAIMS AND DISPUTE RESOLUTION

35.1 Claims

- 35.1.1. If the Contractor intends to claim any additional payment on the occurrence of any event which entitles the Contractor to claim such additional payment, the Contractor shall give notice to the Engineer-in-Charge as soon as possible and in any event within 10 (ten) days of the Contractor becoming aware of such event.
- 35.1.2. The Contractor shall keep such contemporary records as may be necessary to substantiate any claim. Without admitting EIL's liability, the Engineer-in-Charge may on receipt of a notice pursuant to Clause 35.1.1 above, inspect such records and may instruct the Contractor to produce and maintain further records. The Contractor shall permit the Engineer-in-Charge to inspect all such records and shall (if instructed) submit copies to the Engineer-in-Charge.
- 35.1.3. Within 30 (thirty) days of issuing a notice pursuant to Clause 35.1.1, the Contractor shall send to the Engineer-in-Charge an account, giving detailed particulars of the amount and basis of the claim.
- 35.1.4. If the Contractor fails to comply with this Clause 33, the Contractor shall not be entitled to claim any additional payment.
- 35.1.5. Notwithstanding anything to the contrary in this Contract, EIL shall not be liable for any claim arising out of or in connection with the Contract or the execution of the Works, unless the Contractor shall have given notice of such claim within 60 (sixty) days from the date of issuance of the Completion Certificate.
- 35.1.6. The Contractor shall be entitled to additional costs as the Engineer-in-Charge considers due, after taking Approval from EIL. If the particulars supplied are insufficient to substantiate the whole of the claim, the Contractor shall be entitled to payment for such part of the claim as has been substantiated by the Engineer-in-Charge and agreed to by EIL.

35.2 Dispute Resolution

- 35.2.1. If any disagreement arises out of or in connection with the validity, application or interpretation of the Contract (the "Dispute"), the Parties shall endeavour in good faith to resolve the Dispute

through negotiation within 7 (seven) days of a written notice setting out the nature of such Dispute.

- 35.2.2. In the event that any Dispute is unable to be resolved between the Parties pursuant to Clause 35.2.1 within 21 (twenty-one) days of receipt of the notice under Clause 35.2.1, then such Dispute shall be referred to arbitration.
- 35.2.3. The arbitration will be conducted as per the Arbitration Act. The arbitral tribunal shall comprise of a sole arbitrator whom shall be appointed by EIL. The place of arbitration for any Disputes and Related Disputes shall be Delhi (save and except where otherwise specified under the Main Contract for the Related Dispute, in which event the place of arbitration shall be the place of arbitration for such Related Dispute). The language to be used in the arbitral proceedings shall be English. The arbitral award shall be final and binding upon both the Parties.
- 35.2.4. Responsibility of payment for all costs of arbitration, excepting counsel fees, shall be as per the arbitration award.
- 35.2.5. While any Dispute under this Contract is pending; and except where this Contract has been terminated in accordance with the terms of this Contract, the Parties shall continue to perform all of their respective obligations under this Contract without prejudice to the final determination in accordance with the provisions under this Clause 35.
- 35.2.6. Where, in EIL's absolute discretion, it is beneficial for the completion of the Facility for any Dispute between EIL and the Contractor, in respect of which an arbitration notice has been given, to be resolved in the same arbitration proceedings as a dispute between EIL and any other party or parties engaged in relation to the completion of the Facility (the "**Related Dispute**") then:
- (a) if a notice to concur in the appointment of an arbitrator has been served in the Related Dispute, the Contractor hereby agrees that, at EIL's sole option, the Dispute between EIL and the Contractor shall be referred to the arbitrator appointed or to be appointed in respect of the Related Dispute and be determined at the same time as such Related Dispute;
 - (b) where an arbitrator has already been appointed in connection with the Related Dispute, the Contractor hereby agrees that, at EIL's sole option, the Dispute between EIL and the Contractor shall be referred to and be determined by the arbitrator so appointed contemporaneously with the Related Dispute.

35.3 Settlement of dispute between Govt. Dept./ Public Sector Undertaking

- 35.3.1 If the Contractor is a PSU or Enterprise or is a Govt. Department, any disputes or differences between the Contractor and EIL hereto arising out of any notified claim of the Contractor in terms hereof and/or arising out of any amount claimed by EIL (whether or not the amount claimed by EIL or any part thereof shall have been deducted from the final bill of the Contractor or any amount paid by EIL to the Contractor in respect of the work), then in suppression of the provisions of clause no 35.2 of the General Conditions of Contract, the following provisions shall apply, namely; such disputes or differences shall be resolved amicably by mutual consultation or through the good offices or empowered agencies of the Government. If such resolution is not possible, then the unresolved disputes or differences

shall be referred to arbitration of an arbitrator to be nominated by the Secretary, Department of legal affairs (Law Secretary) in terms of the Office Memorandum No. **DPE/4(10)/2001-PMA-GL-I dated 22nd January, 2004** issued by the Cabinet Secretariat (Department of Cabinet Affairs) as modified from time to time. The Arbitration Act shall not be applicable to the arbitrator under this clause. The award of the arbitrator shall be binding upon parties to the dispute, provided, however any party aggrieved by such award may make a further reference for setting aside or revision of the award to Law Secretary whose decision shall bind the parties finally and conclusively. The parties to the dispute will share equally the cost of arbitration as intimated by the arbitrator.

35.3.2 Notwithstanding the existence of any dispute or arbitration in terms hereof or otherwise, the Contractor shall continue and be bound to continue and perform the Works to completion in all respects according to the Contract (unless the Contract or Works be determined by EIL) and the Contractor shall remain liable and bound in all respects under the Contract.

36 MISCELLANEOUS

36.1 Personal Acts and Liabilities

- (a) No director, officer or other employee of EIL shall in any manner be personally bound or liable to the Contractor for acts, commissions or obligations of EIL under the Contract or otherwise or be personally answerable to the Contractor for any default or omission in the performance of any act(s), deed(s) or things to be observed and/or performed by EIL under the Contract.
- (b) The Contractor shall not be entitled to any increase in the rate(s) mentioned in the Price Schedule or to any other payment by reason of any representation, explanation or assurance given or alleged to have been given by the Engineer-in-Charge or any employee, representative, consultant or agent of EIL.
- (c) No director, officer or other employee of EIL shall be personally liable to the Contractor for any representation, explanation, statement or assurance given or alleged to have been given by him to the Contractor in connection with the Contract.
- (d) The Contractor shall not, under any circumstances, pay or advance to any officer(s), servant(s) or agent(s) of EIL any money on any account without the prior Approval of EIL and any payment without such Approval shall be entirely at the risk of the Contractor and EIL shall have no liability in this regard.
- (e) Any money paid to any director, attorney, agent, officer or employee of the Contractor and any receipt, settlement, acknowledgement of liability or other arrangement, agreement or document whatsoever signed by any such director, attorney, agent, officer or employee of the Contractor or erstwhile director, attorney, agent, officer or employee (without notice of his cessation of interest) or by any person held to be a director, attorney, agent, officer or employee of the Contractor authorised to act on behalf of the Contractor shall, as between the Contractor and EIL, be binding upon the Contractor and shall constitute a full release and discharge to EIL and/or a valid settlement, acknowledgement of obligation of the Contractor, as the case may be.

- (f) Any money paid to or dealing had with any partner or member of the Contractor (if a firm or consortium) and any receipt, settlement, acknowledgement of liability or other arrangement, agreement or document whatsoever signed by any one of the partners of the firm or members of the consortium or erstwhile partner of the firm or member of the consortium (without notice of the cessation of his interest) or with any person held to be a partner of the firm or member of the consortium shall be binding on the Contractor and shall constitute a full release and discharge to EIL and/or a valid settlement, acknowledgement of obligation of the Contractor, as the case may be, provided that EIL shall always have the right to call upon all or any of the partners/members of the Contractor's firm/consortium to sign any receipt, settlement, acknowledgement or other document and all or any of the partners of the firm or members of the consortium shall, when called upon to do so by EIL, immediately sign the receipt, settlement, acknowledgement or other document required to be so signed.

36.2 Assignment

The Contractor shall not assign, novate or charge the whole or any part of the Contract or create any encumbrance over the Facility, without the prior written consent of EIL. In the event of an assignment or novation by the Contractor, any stamp duty and all costs and expenses payable in respect of such documents, required to be signed by EIL, shall be to the account of the Contractor. EIL shall be entitled to assign and/or transfer its rights and obligations under the Contract to any party, without requirement of any further consent of the Contractor.

36.3 Partnership

Nothing contained or implied in Contract shall constitute or be deemed to constitute a partnership or agency between the Parties and none of the Parties shall have any authority to bind, commit or make any representations on behalf of the other Party.

36.4 Severability

If any provision of the Contract shall be determined to be invalid, illegal or unenforceable under Applicable Laws, all other provisions of the Contract shall continue in full force and effect unless such invalidity or unenforceability adversely affects the underlying intent of the Contract or unless the invalid or unenforceable provision comprises an integral part of, or is inseparable from the remainder of the Contract. In such circumstances the Parties shall negotiate in good faith with a view to agreeing upon one or more provisions which may be substituted for such invalid, illegal or unenforceable provisions, as nearly as is practicable. Provided failure to agree upon any such provisions shall not be subject to dispute resolution under this Contract or otherwise.

36.5 Entire Agreement

The Contract contains all covenants stipulations and provisions agreed by the Parties, and constitutes the entire Contract between the Parties hereto and supersedes any oral or written representations, understandings, proposals, or communications heretofore entered into by or on account of the Parties and may not be changed, modified, or amended except in writing and signed by the Parties hereto.

36.6 Reservation of Rights

No forbearance, indulgence, relaxation or inaction by EIL at any time to require performance of any of the provisions of the Contract shall in any way affect, diminish or prejudice the right of EIL to require performance of that provision, and no delay in exercising or omission to exercise any right, power or remedy accruing to EIL upon any default or otherwise under the Contract shall impair any such right, power or remedy or shall be construed to be a waiver thereof or any acquiescence in such default, nor shall the action or inaction of EIL in respect of any default or any acquiescence by it in any default, affect or impair any right, power or remedy of EIL in respect of any other default.

36.7 Abnormally High Rates (AHR items)

In item rate contract where the quoted rates for the items exceed 50% (fifty percent) of the EIL's estimated rates, such items will be considered as Abnormally High Rates Items (AHR) and payment of AHR items beyond the contracted quantities shall be made at the lower of the following rates:

- (a) Rates as per the Schedule of Rates, quoted by the Contractor.
- (b) Rate of the item, derived as follows:
 - (i) Based on rates of machine and labour as available from the Contract (which includes Contractor's supervision, profit, overheads and other expenses).
 - (ii) In case rates are not available in the Contract, rates will be calculated based on prevailing market rates of machine/equipments, material and labour plus 15% (fifteen percent) to cover Contractor's supervision profit, overhead & other expenses.

36.8 Corrupt and Fraudulent Practices

36.8.1 Bidders are required to furnish the complete and correct information/ documents required for evaluation of their bids. If the information/ documents forming basis of evaluation is found to be false/ fake/ forged, the same shall be considered adequate ground for rejection of the bids and forfeiture of earnest money deposit.

36.8.2 EIL requires that the Contractor observes the highest standard of ethics during the execution of Contract. In pursuance of this policy, EIL defines, for the purposes of this provision, the terms set forth below as follows:

- (a) "Corrupt Practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of public official in contract execution; and
- (b) "Fraudulent Practice" means a misrepresentation of facts in order to influence the execution of a Contract to the detriment of EIL, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive EIL of the benefits of free and open competition.
- (c) "False/Fake" means to make or construct falsely. "Faked alibi" is a made, manufactured, or false alibi. Something that is not what is purports to be; counterfeit, an imposter.
- (d) "Forgery" means the false making or the material altering of a document with the intent to defraud. A signature of a person that is made without the person's consent and without the person otherwise authorizing it. A person is guilty of forgery if, with the

purpose to defraud or injure anyone or with knowledge that he is facilitating a fraud or injury to be perpetrated by anyone, the actor (i) alters any writing of another without his authority (ii) makes, completes, authenticates, executes, issues or transfers any writing, so that it purports to be the act of another who did not authorize that act or to have been executed at a time or place or in a numbered sequence other than was in fact the case, or to, be a copy of an original when no such original exists. Utters any writing which he knows to be false in a manner specified in (i) & (ii) above.

- 36.8.3 EIL may terminate the Contract if it discovers subsequently that the Contractor had engaged in Corrupt Practices, or Fraudulent Practices in competing for the Contract.
- 36.8.4 The Contractor is required to execute the “Integrity Pact” attached in the Bid Document as a condition precedent to execution of the Contract.
- 36.8.5 In case, the information/ document furnished by the Contractor forming basis of evaluation of its Bid is found to be false / fake/ forged after the award of the Contract, EIL shall have the right to terminate the Contract and get the remaining Works executed by a third party at the risk & Cost of the Contractor and without any prejudice to other rights available to EIL under the Contract such as forfeiture of the Contract Performance Bank Guarantee, withholding of payment etc.
- 36.8.6 In case, this issue of submission of false/fake documents comes to the notice after execution of the Works, EIL shall have full right to forfeit any amount due to the Contractor along with forfeiture of the Contract Performance Bank Guarantee furnished by the Contractor.
- 36.8.7 Further, any Contractor which is found guilty of any Corrupt or Fraudulent Practice or submission of false/fake /forged documents, shall be put on the negative/ holiday list of EIL debarring them from future business with EIL.

36.9 Integrity Pact

The Integrity Pact forming a part of the Bidding Document, duly signed by the authorized person(s) of EIL and the Contractor, will form part of the Contract. If the Contract has been terminated according to provisions of the Integrity Pact, or, if EIL is entitled to terminate the Contract according to provisions of Integrity Pact, EIL shall be entitled to demand and recover from Contractor an amount specified in the Integrity Pact, which amount may be recovered by forfeiting the Contract Performance Bank Guarantee.

36.10 Liability of Government of India

- (a) It is expressly understood that Govt. of India is not a party to this Contract and has no liability, obligations or rights hereunder. It is expressly understood that EIL is an independent legal entity with power and authority to enter into the Contract solely on its behalf under the Applicable Laws and general principles of contract law.
- (b) The Contractor expressly agrees and acknowledges and understands that EIL is not an agent, representative or delegatee of Government of India.

36.11 Computerized Contractor's Billing System

Contractor should follow the following billing system:

- (a) The Running Bills will be prepared by the Contractor on their personal computers as per the standard formats and codification scheme proposed by EIL. The Contractor will be provided with data entry software to capture the relevant billing data for subsequent processing. The Contractor will submit these data to EIL in an electronic media along with the hard copy of the bill, necessary enclosures and documents. The Contractor will also ensure the correctness and consistency of data so entered with the hard copy of the bill submitted for payment.
- (b) EIL will utilize this data for processing and verification of the Running Bills of the Contractor.

36.12 Terms applicable to Consortium Contractors

Where the Contractor is a consortium, the lead member of the consortium shall represent the Contractor in all dealings with EIL and shall do all acts, deeds, matters and things required to be done by the Contractor under the Contract, including (but not limited to) exchange of correspondence, raising invoices, drawings, documents and receiving payments.

- (a) All dealings had with and/or all acts, deeds, matters and things and things done by or payments made to and invoices/documents drawn and/or negotiated by the lead member shall be binding upon the Contractor and each member of the consortium, and in so far as EIL shall require a discharge in respect of any dealing had or act, deed, matter or thing done or payment made as aforesaid, the same shall constitute a valid discharge to EIL.
- (b) Each and every member of the consortium shall be jointly and separately liable to EIL for and in respect of all liabilities obligations of the Contractor under the Contract.

The constitution of the Consortium or the relative distribution of the Work(s) and/or activities amongst the consortium members as approved by EIL shall not be altered or assigned, as the case may be except with the prior written consent of EIL and any contrary alteration or re-assignment shall be deemed to be an unauthorized assignment of the Contract with attendant liabilities including termination of the Contract.

36.13 Government Controlled Materials

In respect of all Government controlled or other scarce/imported materials in respect of which licenses, release orders, permits or authorizations have been granted in the name of EIL, the Contractor shall be deemed to be acting on behalf of EIL and as agent of EIL in respect of deliveries taken by the Contractor against any licences, release orders, permits, or authorizations issued in the name of EIL for Government controlled materials. The ownership in such materials shall (without prejudice to the responsibility/liability of the Contractor in respect thereof as set out in the various conditions hereof) vest in EIL from the point of time when it would have ordinarily vested in EIL on a direct delivery to EIL.

36.14 Distinction Between Foundation and Superstructure

To distinguish between work in foundations and superstructures, the following criteria shall apply:

- (b) For all equipment pedestals, pipe racks, other foundation and R.C.C. Structures, work done upto 300 mm level above finished grade level will be taken as work in foundations and work above this level will be treated as work in superstructures and payments would be made accordingly.
- (c) For buildings only, all works up to plinth level corresponding to finished floor level shall be treated as 'work in foundation' and all works above the finished floor level shall be treated as "work in superstructure".
- (d) Irrespective of what has been stated above, all pavements, R.C.C. retaining wall, all pipe sleepers and any similar item would be taken as work done in foundations irrespective of locations, nomenclature and levels given anywhere.
- (e) Where not specifically pointed out all works in cellars/ sumps, tank pads, cable trenches, or such similar item would be taken as work in foundation.

36.15 Excavation by Blasting

The Contractor shall obtain licence from the relevant Authorities for undertaking blasting work as well as for obtaining and storing the explosive as per Explosive Rules 2008 (as made under the Explosives Act, 1884), as amended from time to time. The Contractor shall purchase the explosives, fuses, detonators etc. only from a licensed dealer and shall be responsible for the safe custody and proper accounting of the explosive materials. The Engineer-in-Charge and his authorized representative shall have access to check the Contractor's store of explosives and its accounts. In case where the explosives are required to be transported and stored at Site, relevant clauses of the Explosives Rules 2008 as amended subsequently shall apply. The Contractor shall be responsible for any accident to workman, public or property, due to blasting operations.

36.16 Import Licence

Contractor shall arrange for the import of all materials required for permanent incorporation in the Works as well as construction equipment as per the guidelines laid down by the Government of India. EIL shall not provide import licence.

36.17 Retired Government or Company Directors

No Director of EIL is allowed to tender for a contract to be awarded by EIL for a period of 2 (two) years after his retirement from the employment of EIL, without the previous permission of EIL. The Contract if awarded is liable to be cancelled if the Contractor is found at any time to be such a person and has not obtained the permission of the EIL before submission of the tender. Any tender by a person aforesaid shall carry a disclosure thereof on the tender, and shall be accompanied by a copy of the document by which the requisite consent is given. Such disqualifications shall apply to every partner of a partnership firm.

36.18 Other Contractors

The Contractor agrees and acknowledges that that access to the Site and access routes thereto, has been granted to the Contractor on a non-exclusive basis, and that EIL, may at its sole discretion, grant access thereto, to other Persons (“**Other Contractors**”) to undertake thereon, any works other than those contemplated under the Contract. Further, the Contractor shall at all times undertake its works in such manner, as to not cause minimal disturbance to the Other Contractors, in the performance of the works allocated to such Other Contractors.³

36.19 Survival

The termination of the Contract shall not relieve the Contractor or EIL of any obligations hereunder which expressly or by implication survives termination. Further, except as otherwise provided in any provision of the Contract expressly limiting the liability of either Party, the termination of the Contract shall not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of or caused by acts or omission of such Party prior to the effectiveness of such termination or arising out of such termination.



Appendix 1**FORM OF CONTRACT PERFORMANCE BANK GUARANTEE**

[ON APPROPRIATE STAMP PAPER]

Beneficiary: Engineers India Limited**Bank Guarantee No. [.....●]**

THIS DEED OF GUARANTEE is executed on this [.....*insert day*] day of [.....*insert month and year*] at [.....*insert place*] by [.....*INSERT NAME OF BANK*] having its head/registered office at [.....*insert address*], (hereinafter referred to as the "**Guarantor**", which expression shall unless it is repugnant to the subject or context thereof include successors and assigns)

IN FAVOUR OF:

ENGINEERS INDIA LIMITED, a public limited company incorporated under the Indian Companies Act, 1956, having its registered office at [.....■], (hereinafter referred to as the "**EIL**", which expression shall unless it is repugnant to the subject or context thereof include successors and assigns).

WHEREAS

- A. EIL has entered into a Engineering, Procurement and Construction Contract dated [.....■] (the "**Contract**") with [.....*insert name of Contractor*], a company incorporated under the Indian Companies Act, 1956 and having its registered office at [.....■] (the "**Contractor**", which expression shall, unless it be repugnant to the context or meaning thereof, include its successors-in-title and permitted assigns), for the Project.
- B. In terms of the Contract, the Contractor is required to furnish to EIL, an unconditional, irrevocable, on demand bank guarantee for an amount equal to 10% of the Contract Price as security for due and punctual performance/discharge of the Contractor's obligations under the Contract for the Contract Validity Period.
- C. At the request of EIL and for sufficient consideration, the Guarantor has agreed to provide an unconditional, irrevocable and on-demand bank guarantee, for the due and punctual performance/discharge by the Contractor of its obligations under the Contract during the Contract Validity Period.

NOW THEREFORE THIS DEED WITNESSETH AS FOLLOWS:

1. Capitalised terms used herein but not defined shall have the meaning ascribed to them in the Contract.
2. The Guarantor hereby irrevocably and unconditionally guarantees and secures (as primary obligor and not merely as guarantor) to EIL the payment in full of all amounts at any time that

may be due, owing or payable to EIL from the Contractor for the failure of the Contractor to duly and punctually perform all of its obligations under the Contract (the "**Guarantee**"), without any demur, reservation, protest or recourse, immediately on receipt of a demand from EIL.

The Guarantee is given in consideration for consideration received from the Contractor (the receipt and sufficiency of which is hereby acknowledged).

The Guarantor agrees that the value of the Guarantee shall at all times be maintained at the amount of Rs. [.....insert amount] (the "**Guaranteed Amount**").

The Guarantor further agrees that this Guarantee does not limit the number of claims that may be made by EIL against the Guarantor. Upon a payment being made under this Guarantee, the amount of the Guarantee shall automatically be replenished to the full Guaranteed Amount.

Any payment made hereunder shall be made free and clear of and without deduction for, or on account of, any present or future Taxes, deductions or withholdings of any nature whatsoever and by whomsoever imposed, and where any withholding on a payment is required by any Applicable Law, the Guarantor shall comply with such withholding obligations and shall pay such additional amount in respect of such payment such that EIL receives the full amount due hereunder as if no such withholding had occurred.

3. The Guarantor shall, pay to EIL sums not exceeding the Guaranteed Amount, within 5 (five) Business Days of receipt of a written demand from EIL stating that the Contractor has failed to meet its performance obligations under the Contract. The Guarantor shall not be required to go into the veracity of any breach or failure on the part of the Contractor or validity of demand so made by EIL and shall pay the amount specified in the demand notwithstanding any direction to the contrary given or any dispute whatsoever raised by the Contractor or any other Person. The Guarantor's obligations hereunder shall subsist until all such demands are duly met and discharged in accordance with the provisions hereof.
4. The obligations of the Guarantor herein are absolute and unconditional, irrespective of the value, genuineness, validity, regularity or enforceability of the Contract or the insolvency, bankruptcy, reorganization, dissolution or liquidation of the Contractor or any change in ownership of the Contractor or any purported assignment by the Contractor or any other circumstance whatsoever which might otherwise constitute a discharge or defence of a guarantor or a surety.

Further, this Guarantee is in no way conditional upon any requirement that EIL first attempt to procure the Guaranteed Amount from the Contractor, or any other Person, or resort to any other means of obtaining payment of the Guaranteed Amount, prior to make any recourse to this Guarantee.

5. In order to give effect to this Guarantee, EIL shall be entitled to treat the Guarantor as the principal debtor. The obligations of the Guarantor under this Guarantee shall not be affected by any act, omission, matter or thing which, but for this provision, would reduce, release or prejudice the Guarantor from any of the Guaranteed Amount or prejudice or diminish the Guaranteed Amount in whole or in part, including (whether or not known to it, or EIL):
 - (a) any time or waiver granted to, or composition with, the Contractor or any other Person;

- (b) any incapacity or lack of powers, EIL or legal personality of or dissolutions, or insolvency, or bankruptcy, or change in the status of the Contractor or any other Person;
- (c) any variation of the Contract so that references to the Contract in this Guarantee shall include each variation;
- (d) any unenforceability, illegality or invalidity of any obligation of any Person under the Contract or any unenforceability, illegality or invalidity of the obligations of the Guarantor under this Guarantee or the unenforceability, illegality or invalidity of the obligations of any Person under any other document or guarantee, to the extent that each obligation under this Guarantee shall remain in full force as a separate, continuing and primary obligation, and its obligations be construed accordingly, as if there were no unenforceability, illegality or invalidity;
- (e) the partial or entire release of any Guarantor or other Person primarily or secondarily liable or responsible for the performance, payment or observance of any of the Contractor's obligations during the Construction Period; or by any extension, waiver, or amendment whatsoever which may release a guarantor or Guarantor (other than performance or indefeasible payment of a Guaranteed Amount); or
- (f) any part performance of the Contract by the Contractor or by any failure by EIL to timely pay or perform any of its obligations under the Contract.
6. If, and to the extent that, for any reason the Contractor enters or threatens to enter into any proceedings in bankruptcy or reorganization or otherwise, or if, for any other reason whatsoever, the performance or payment by the Contractor of the Guaranteed Amount becomes or may reasonably be expected to become impossible, then the Guaranteed Amount shall be promptly paid by the Guarantor to EIL on demand.
7. So long as any sum remains owing by the Contractor to EIL, the Guarantor shall not exercise any right of subrogation or any other rights of a guarantor or enforce any guarantee or other right or claim against the Contractor (whether in respect of its liability under this Guarantee or otherwise) or claim in the insolvency or liquidation of the Contractor or any such other Person in competition with EIL. If the Guarantor receives any payment or benefit in breach of this Clause 7, it shall hold the same upon trust for EIL.
8. This Guarantee shall remain in full force and effect from the date hereof until the end of the Contract Validity Period i.e., up to midnight of {..... *insert date* } plus additional 90 days to enable claims to be made i.e., up to midnight of {..... *insert date* }, unless discharged/ released earlier by EIL in accordance with the provisions of the Contract. No claim made after such date shall be valid against the Guarantor.
- Notwithstanding the foregoing, this Guarantee shall continue in effect until the sums payable under this Guarantee have been indefeasibly paid in full and the Guarantor receives written notice thereof from EIL (such notice to be issued promptly upon such occurrence).
9. The Guarantor represents and warrants to EIL that:
- (a) it has the power to execute, deliver and perform the terms and provisions of this Guarantee and has taken all necessary action to authorize the execution, delivery and

- performance by it of this Guarantee;
- (b) the Guarantor has duly executed and delivered this Guarantee, and this Guarantee constitutes its legal, valid and binding obligation enforceable in accordance with its terms except as the enforceability thereof may be limited by applicable bankruptcy, insolvency, moratorium or other similar laws affecting the enforcement of creditors' rights generally and by general equitable principles;
 - (c) neither the execution, delivery or performance by the Guarantor of this Guarantee, nor compliance by it with the terms and provisions hereof will: (i) contravene any material provision of any law, statute, rule or regulations or any order, writ, injunction or decree of any court or governmental instrumentality; (ii) conflict or be inconsistent with or result in any breach of any of the material terms, covenants, conditions or provisions of, or constitute a default under any agreement, contract or instrument to which the Guarantor is a party of by which it or any of its property or assets is bound; or (iii) violate any provision of the Guarantor's constituent documents; and
 - (d) no order, consent, approval, license, authorization or validation of, or filing, recording or registration with (except as have been obtained or made prior to the date hereof), or exemption by, any governmental or public body or EIL, or any subdivision thereof, is required to authorize, or is required in connection with: (i) the execution, delivery and performance of this Guarantee; or (ii) the legality, validity, binding effect or enforceability of this Guarantee.
10. This Guarantee is a continuing one and all liabilities to which it applies or may apply under the terms hereof shall be conclusively presumed to have been created in reliance hereon. No failure or delay on the part of EIL in exercising any right, power or privilege hereunder and no course of dealing between EIL and the Guarantor, or the Contractor, shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, power or privilege.
11. The rights, powers and remedies expressly provided in this Guarantee are cumulative and not exclusive of any rights, powers or remedies which EIL would otherwise have. No notice to or demand on the Guarantor in any case shall entitle the Guarantor to any other further notice or demand in similar or other circumstances or constitute a waiver of the rights of EIL to any other or further action in any circumstances without notice or demand.
12. If any one or more of the provisions contained in this Guarantee are or become invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby, and the Guarantor shall enter into good faith negotiations with EIL to replace the invalid, illegal or unenforceable provision.
13. The Guarantor hereby agrees to execute and deliver all such instruments and take all such actions as may be necessary to make effective fully the purposes of this Guarantee.
14. This Guarantee may be executed in one or more duplicate counterparts, and when executed and delivered by the Guarantor and EIL shall constitute a single binding agreement.
15. Any notice, request or other communication to be given or made under this Guarantee shall be

in writing addressed to the Guarantor at the location set opposite its signature hereto and in the manner as set out in respect of notices under the Contract.

16. This Guarantee shall be governed by, and construed in accordance with, the laws of India. The Guarantor irrevocably agrees that any legal action, suit or proceeding arising out of or relating to this Guarantee may be brought in the courts in Delhi.
17. EIL may assign or transfer all or any part of its interest herein to any other person with prior notification to the Guarantor. The Guarantor may not assign or transfer any of its rights or obligations under this Guarantee.

IN WITNESS WHEREOF the Guarantor has set its hands hereunto on the day, month and year first hereinabove written.

Signed and delivered by [.....insert name of Bank] Bank by hand

Name:

Designation:



Appendix 2
FORM OF MOBILIZATION ADVANCE GUARANTEE

[ON APPROPRIATE STAMP PAPER]

Beneficiary: Engineers India Limited

Bank Guarantee No. [.....●]

THIS DEED OF GUARANTEE is executed on this [.....insert day] day of [.....insert month and year] at [.....insert place] by [.....INSERT NAME OF BANK] having its head/registered office at [.....insert address], (hereinafter referred to as the "**Guarantor**", which expression shall unless it is repugnant to the subject or context thereof include successors and assigns)

IN FAVOUR OF

Engineers India Limited, a company incorporated under the (Indian) Companies Act, 1956, with its registered office at [.....■] (hereinafter referred to as the "**EIL**", which expression shall unless repugnant to the context thereof, be deemed to include its successors-in-interest and permitted assigns).

WHEREAS

- A. [.....■] with its registered office at [.....■] (hereinafter referred to as the "**Contractor**", which expression shall unless repugnant to the context thereof, be deemed to include its successors-in-interest and permitted assigns) has been awarded a contract by EIL for [the engineering, procurement, construction, testing and commissioning] of the Facility ("**Contract**").
- B. In terms of Clause 9.4.1 of the Contract, Contractor is required to furnish a Mobilization Advance Guarantee to EIL in the form of an unconditional, irrevocable, on demand bank guarantee for securing the Mobilization Advance made to Contractor in accordance with the Contract ("**Mobilization Advance Guarantee**") for INR [.....insert amount] or US\$ [.....insert amount] ("**Guaranteed Amount**").
- C. At the request of the Contractor and for sufficient consideration, the Guarantor has agreed to issue this guarantee in favour of EIL.

NOW THEREFORE THIS DEED WITNESSETH AS FOLLOWS:

1. Capitalised terms used herein but not defined shall have the meaning ascribed to them in the Contract.
2. The Guarantor shall upon a written demand from EIL informing the Guarantor that the Mobilization Advance made to the Contractor has not been adequately adjusted, pay to EIL, within 5 (five) days of receipt of such written demand from EIL, without further proof or conditions and without contest, recourse, demur or protest and without any enquiry to EIL or the Contractor, forthwith and in full amount, without any deductions or set off or counter

claims whatsoever, the sum claimed by EIL in such demand not exceeding an amount equivalent to the Guaranteed Amount. The Guarantor will pay the amount specified in the demand notwithstanding any direction to the contrary given or any dispute raised by the Contractor or any other person.

The Guarantor agrees that this Mobilization Advance Guarantee does not limit the number of claims that may be made by EIL against the Guarantor provided that such claims taken together shall not exceed the Guaranteed Amount.

Any payment made hereunder shall be made free and clear of and without deduction for, or on account of, any present or future Taxes, deductions or withholdings of any nature whatsoever and by whomsoever imposed, and where any withholding on a payment is required by any Applicable Law, the Guarantor shall comply with such withholding obligations and shall pay such additional amount in respect of such payment such that EIL receives the full amount due hereunder as if no such withholding had occurred.

3. This Mobilization Advance Guarantee shall be a continuing guarantee during its currency and shall remain in force and effect until the earlier of: (i) date when the Mobilization Advance has been fully recovered; and (ii) [.....insert date], upon which the obligations of the Guarantor under this Mobilization Advance Guarantee shall stand discharged.

4. The obligations of the Guarantor herein are absolute and unconditional, irrespective of the value, genuineness, validity, regularity or enforceability of the Contract or the insolvency, bankruptcy, reorganisation, dissolution or liquidation of the Contractor or any change in ownership of the Contractor or any purported assignment by the Contractor or any other circumstance whatsoever which might otherwise constitute a discharge or defence of a guarantor or a surety.

Further, this Mobilization Advance Guarantee is in no way conditional upon any requirement that EIL first attempts to procure the Guaranteed Amount from the Contractor or any other person, or resort to any other means of obtaining payment of the Guaranteed Amount, prior to making recourse to this Guarantee.

5. The Guarantor shall not be required to go into the veracity of any breach or failure on the part of the Contractor or validity of demand so made by EIL and shall pay the amount specified in the demand notwithstanding any direction to the contrary given or any dispute whatsoever raised by the Contractor or any other Person. The Guarantor's obligations hereunder shall subsist until all such demands are duly met and discharged in accordance with the provisions hereof.

6. The Guarantor hereby agrees that its liability under this Mobilization Advance Guarantee shall not be discharged by virtue of any agreement between the Contractor and EIL, whether with or without the Guarantor's knowledge, or by reason of EIL showing any indulgence or forbearance to the Contractor.

7. The Guarantor's obligations under this Mobilization Advance Guarantee for the Guaranteed Amount is primary, independent and absolute and not by way of surety only.

8. The obligations of the Guarantor under this Mobilization Advance Guarantee shall not be affected by any act, omission, matter or thing which, but for this provision, would prejudice or

diminish the Guaranteed Amount in whole or in part, including (whether or not known to it or EIL):

- (a) any time or waiver granted to, or composition with, the Contractor or any other person;
- (b) any incapacity or lack of powers, authority or legal personality of or dissolutions, or insolvency or bankruptcy, or change in the status of the Contractor or any other Person;
- (c) any variation of the Contract so that references to the Contract in this Mobilization Advance Guarantee shall include each variation;
- (d) any unenforceability, illegality or invalidity of any obligation of any person under the Contract or any unenforceability, illegality or invalidity of the obligations of the Guarantor under this Mobilization Advance Guarantee or the unenforceability, illegality or invalidity of the obligations of any person under any other document or guarantee, to the extent that each obligation under this Mobilization Advance Guarantee shall remain in full force as a separate, continuing and primary obligation, and its obligations be construed accordingly, as if there were no unenforceability, illegality or invalidity;
- (e) any extension, waiver, or amendment whatsoever which may release a guarantor or the Guarantor (other than performance or indefeasible payment of a Guaranteed Amount); or
- (f) any part performance of the Contract by the Contractor or by any failure by EIL to timely pay or perform any of its obligations under the Contract.

9. So long as any sum remains owing by the Contractor to EIL, the Guarantor shall not exercise any right of subrogation or any other rights of a guarantor or enforce any guarantee or other right or claim against the Contractor (whether in respect of its liability under this Mobilization Advance Guarantee or otherwise) or claim in the insolvency or liquidation of the Contractor or any such other person in competition with EIL. If the Guarantor receives any payment or benefit in breach of this Clause, it shall hold the same in trust for EIL.

10. The Guarantor represents, warrants and undertakes to EIL that:

- (a) it has the power to execute, deliver and perform the terms and provisions of this Mobilization Advance Guarantee and has taken all necessary action(s) to authorize the execution, delivery and performance by it of this Mobilization Advance Guarantee;
- (b) the Guarantor has duly executed and delivered this Mobilization Advance Guarantee, and this Mobilization Advance Guarantee constitutes its legal, valid and binding obligation enforceable in accordance with its terms except as the enforceability thereof may be limited by applicable bankruptcy, insolvency, moratorium or other similar laws affecting the enforcement of creditors' rights generally and by general equitable principles;
- (c) neither the execution, delivery or performance by the Guarantor of this Mobilization Advance Guarantee, nor compliance by it with the terms and provisions hereof will: (i) contravene any material provision of any law, statute, rule or regulations or any order, writ, injunction or decree of any court or governmental instrumentality; (ii) conflict or be inconsistent with or result in any breach of any of the material terms, covenants, conditions or provisions of, or constitute a default under any agreement, contract or instrument to which the Guarantor is a party or by which it or any of its property or assets is bound; or (iii) violate any provision of the Guarantor's constituent documents;

- (d) no order, consent, approval, license, authorization or validation of, or filing, recording or registration with (except as have been obtained or made prior to the date hereof), or exemption by, any governmental or public body or authority, or any subdivision thereof, is required to authorize, or is required in connection with: (i) the execution, delivery and performance of this Mobilization Advance Guarantee; or (ii) the legality, validity, binding effect or enforceability of this Mobilization Advance Guarantee; and
- (e) this Mobilization Advance Guarantee will be enforceable when presented for payment to a Scheduled Bank (as defined by the Reserve Bank of India Act, 1934) in [.....*Insert name of place*].
11. This Mobilization Advance Guarantee is a continuing one and all liabilities to which it applies or may apply under the terms hereof shall be conclusively presumed to have been created in reliance hereon. No failure or delay on the part of EIL in exercising any right, power or privilege hereunder and no course of dealing between EIL and the Guarantor, or the Contractor, shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, power or privilege.
12. If any one or more of the provisions contained in this Mobilization Advance Guarantee are or become invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby, and the Guarantor shall enter into good faith negotiations with EIL to replace the invalid, illegal or unenforceable provision.
13. The Guarantor hereby agrees to execute and deliver all such instruments and take all such actions as may be necessary to make effective fully the purposes of this Mobilization Advance Guarantee.
14. This Mobilization Advance Guarantee may be executed in one or more duplicate counterparts, and when executed and delivered by the Guarantor and EIL shall constitute a single binding agreement.
15. Any demand, notice, request or other communication to be given or made under this Mobilization Advance Guarantee shall be deemed to have been duly given or served:
- (i) Upon EIL, at [.....*insert address*] marked for the attention of [.....*insert name*];
- (ii) Upon a Scheduled Bank (as defined by the Reserve Bank of India Act, 1934), at [.....*insert*], India.
16. The Guarantor:
- (a) acknowledges that the Lenders will review this Mobilization Advance Guarantee and may require changes thereto as a condition of granting financing and/or providing political risk insurance; and
- (b) shall consider any such requirements in good faith.

17. This Mobilization Advance Guarantee shall be governed by, and construed in accordance with, the laws of India. The Guarantor irrevocably agrees that any legal action, suit or proceeding arising out of or relating to this Mobilization Advance Guarantee may be brought in the courts in Delhi.
18. EIL may assign or transfer all or any part of its interest herein together with the Contract to any other person with prior intimation to the Guarantor. The Guarantor may not assign or transfer any of its rights or obligations under this Mobilization Advance Guarantee.

IN WITNESS WHEREOF the Guarantor has set its hands hereunto on the day, month and year first hereinabove written.

Signed and delivered by [.....*insert name of*
Guarantor] Guarantor by hand

Name:

Designation:



Appendix 3
SAFETY CODE
[To be inserted]

1. GENERAL

- 1.1 The CONTRACTOR shall adhere to safe construction practices and guard against hazardous and unsafe working conditions and shall comply with EIL's safety rules as set forth herein.
- 1.2 In addition, the CONTRACTOR shall adhere to and be bound by the "Safety Practices during Construction" (OISD-GDN-192 and OISD-207) formulated by the Oil Industry Safety Directorate from time to time. A copy of the existing "Safety Practices During Construction" as presently formulated by the Oil Industry Safety Directorate is annexed hereto as Appendix III
- 1.3 In the event of any irreconcilable conflict between the "Safety Practices during Construction" prescribed by the Oil Industry Safety Directorate and the Safety provisions set out herein, the "Safety Practices during Construction" established by the Oil Industry Safety Directorate shall prevail to the extent of the irreconcilable conflict.
- 1.4 In this Section any reference to the Facility shall wherever applicable include any existing plant, unit or installation in or adjacent to which the Site or any part thereof is located.

2. FIRST AID AND INDUSTRIAL INJURIES

- 2.1 The Contractor shall maintain first aid facilities for its employees and those of its sub-contractors.
- 2.2 The Contractor shall make outside arrangements for ambulance service and for the treatment of industrial injuries. Names of those providing these services shall be furnished to the Engineer-in-Charge prior to start of construction, and their telephone numbers shall be prominently posted in Contractor's field office.
- 2.3 All critical industrial injuries shall be reported promptly to the Engineer-in-Charge, and a copy of Contractor's report covering each personal injury requiring the attention of a physician shall be furnished to EIL.

3. GENERAL RULES

Carrying/Striking of matches, lighters within the Site, smoking within the Site, tank, farm, or dock limits are strictly prohibited. Violators of the "No Smoking" rules shall be discharged immediately. Within the operation area, no hot work shall be permitted without valid gas safety/fire permits. The Contractor shall be held liable and responsible for all lapses of his subcontractors/employees in this regard.

4. CONTRACTOR'S BARRICADES

- 4.1 The CONTRACTOR shall erect and maintain barricades required in connection with his operation to guard or protect:
- (i) Excavation
 - (ii) Hoisting areas
 - (iii) Areas adjudged hazardous by the Contractor's or EIL's inspectors.
 - (iv) EIL's existing property liable to damage by Contractor's operations, in the opinion of Engineer-in-Charge.
 - (v) Railroad unloading spots.
- 4.2 The Contractor's employees and those of its sub-contractors shall become acquainted with EIL's barricading practices and shall respect the provisions thereof.
- 4.3 Barricades and hazardous areas adjacent to but not located in normal routes of travel shall be marked by red flasher lanterns at nights.

5. SCAFFOLDING

- 5.1 Suitable scaffolding shall be provided for workmen for all works that cannot safely be done from the ground or from solid construction except such short period work as can be done safely from ladders. When a ladder is used, an extra person shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1 in 4 (1 horizontal 4 vertical).
- 5.2 Scaffolding or staging more than 12' (twelve feet) above the ground floor, swung or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise rewinded at least 3' high above the floor or platform of scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
- 5.3 Working platforms, gangways and stairways should be so constructed that they should not sag unduly or unequally and if the height of the platform or the gangway or the stairway is more than 12' above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in Clause 5.2 above.
- 5.4 Every opening in the floor of a building or in a working platform shall be provided with suitable fencing or railing whose minimum height shall be 3 feet to prevent the fall of persons or materials by providing.
- 5.5 Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 30' in length while the width between the side rails in rung ladder shall in no case be less than 11.5" for ladder up to and including 10' in length. For longer ladders this width would be increased by at least ¼" for each additional foot of length. Uniform step spacing shall not exceed 12". Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any site of work shall be so stacked or placed as to cause danger or inconvenience to any person or public. The Contractor shall also provide all necessary fencing and lights to protect the workers

and staff from accidents, and shall be bound to bear the expenses of defense of every suit, action or other proceedings, that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay damages and costs which may be awarded in any such suit or action or proceedings to such person, or which may with the consent of the Contractor be paid to compromise any claim by any person.

6. EXCAVATION AND TRENCHING

- 6.1 All trenches 4' (Four feet) or more in depth, shall at all times be supplied with at least one ladder for each 100' length or fraction thereof.
- 6.2 The Ladder shall be extended from bottom of the trench to at least 3' 3" above the surface of the ground. The site of the trenches which is 5' (Five feet) or more in depth shall be stepped back to give suitable slope, or securely held by timber bracing, so as to avoid the danger of sides to collapse. Cutting shall be done from top to bottom. Under no circumstances shall undermining or undercutting be done.

7. DEMOLITION

- 7.1 Before any demolition work is commenced and also during the process of such works all roads and open areas adjacent to the Site shall either be closed or suitably protected.
- 7.2 No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.
- 7.3 All practical steps shall be taken to prevent danger to persons employed, from risk of fire or explosion or flooding. No floor or other part of the building shall be so overloaded with debris or material as to render it unsafe.

8. SAFETY EQUIPMENT

- 8.1 All necessary personal safety equipment as considered adequate by the Engineer-in-Charge should be made available for the use to the persons employed on the Site and maintained in a condition suitable for immediate use, and the Contractor should take adequate steps to ensure proper use of equipment by those concerned.
- 8.2 Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective gloves.
- 8.3 Those engaged in white washing and mixing or stacking of cement bags or any materials which are injurious to the eyes shall be provided with protective goggles.
- 8.4 Those engaged in welding and cutting works shall be provided with protective face and eye-shields, and gloves, etc.
- 8.5 Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- 8.6 When workers are employed in sewers and manholes, which are in use, the Contractor shall ensure that the manhole covers are opened and are ventilated at least for an hour before the

workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident.

8.7 The Contractor shall not employ men below the age of 18 years and women on the work of painting or products containing lead in any form. Wherever men above the age of 18 years are employed on the work of lead painting, the following precautions should be taken:

- (a) No paint containing lead product shall be used except in the form of paste or readymade paint.
- (b) Suitable face masks shall be supplied for use by the workers when paint is applied in the form of spray or if a surface having lead paint dry rubbed and scrapped.
- (c) Overalls shall be supplied by the Contractor to workmen and adequate facilities shall be provided to enable the working painters to wash during and on cessation of Work.

9. RISKY PLACES

When the work is done near any place where there is a risk of drowning, all necessary safety equipments shall be provided and kept ready for use and all necessary steps taken for prompt rescue of any person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

10. HOISTING EQUIPMENT

Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions:

- (a) These shall be of good mechanical construction, sound materials and adequate strength and free from patent defect and shall be kept in good condition and in good working order.
- (b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength and free from patent defects.
- (c) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding winch or to give signals to the operator.
- (d) In case of every hoisting machine and of every chain, ring, hook, shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
- (e) Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load and the condition under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
- (f) In case of departmental machines, the safe working load shall be notified by the Engineer-in-Charge. As regards Contractor's machines, the Contractor shall notify the safe working load of the machine to the Engineer-in-Charge, whenever he brings any machinery to Site of work and get it verified by the Engineer-in-Charge concerned.

11. ELECTRICAL EQUIPMENT

Motor, Gearing, Transmission, wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum, the risk of accidental descent of the load. Adequate precautions shall be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves and boots as may be necessary shall be provided. The workers shall not wear any rings, watches and carry keys or other materials which are good conductors of electricity.

12. MAINTENANCE OF SAFETY DEVICES

All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe conditions and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near the place of work.

13. DISPLAY OF SAFETY INSTRUCTIONS

These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at the Site. The person responsible for compliance of the safety code shall be named therein by the CONTRACTOR.

14. ENFORCEMENT OF SAFETY REGULATIONS

To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangements made by the Contractor shall be open to inspection by the Welfare Officer, Engineer-in-Charge or Safety Engineer of EIL or their representatives.

15. NO EXEMPTION

- 15.1 Notwithstanding anything provided in this Appendix 3, the Contractor shall be bound by the provisions of any other Act or rules in force in the Republic of India, with a view that the provisions hereof shall be in addition thereto and not in lieu thereof.
- 15.2 The works throughout including any temporary works shall be carried on in such a manner as not to interfere in any way whatsoever with the traffic on any roads or footpaths at the Site or in the vicinity thereof or with any existing works whether the property of EIL or of a third party.
- 15.3 The Contractor shall also arrange to obtain valid gate passes for his men and equipment from the concerned Authorities.
- 15.4 No man/material/equipment not covered by valid passes shall be permitted within the Site no material/equipment shall be permitted to be taken out of the Site, unless authorized by the concerned Authorities. The Contractor shall be held fully responsible for any or all delays/ losses/ damages that may result consequent on any lapse(s) that may occur on the part of his subcontractors/employees in this regard.

16. ENTRY PASSES

- 16.1 The CONTRACTOR has to apply for photo Entry Passes for his workers and staff and the workers and staff of his Sub-Contractors in a prescribed proforma provided by EIL. The Application shall be accompanied by a Statement and Declaration in the form prescribed by EIL signed by the employees for whom the Entry Passes are sought and confirmed by the employer. The photo Entry Passes shall be issued by EIL for a maximum period of 3 (three) months, which will be extendable upon the Contractor's application. As a special case, Temporary Passes may be issued for a maximum period of 7 (seven) days.
- 16.2 Unutilized/expired Entry Passes/Identity Cards shall have to be immediately surrendered to EIL.
- 16.3 In case of the loss of an Entry Pass/Identity Card, the Contractor shall immediately lodge an FIR with the local police station and inform the Engineer-in-Charge of the loss and shall pay a charge of Rs.150/- against Entry Pass/Identity Card lost. The Contractor is required to keep an account and track of all Entry Passes issued and surrendered.

Gate Passes/Identity Cards issued by the Security Section should always be displayed by the Contractor's or Sub-contractor's employees while working inside the Plant.

17. GATE PASSES

- 17.1 To bring materials, equipment, tools and tackle and other things inside the Site for construction Work, the Contractor has to produce proper documents of title or authority relative thereto for inspection by EIL's personnel at the gate. These shall be checked thoroughly by EIL's personnel at the Gate and recorded in their Register before permitting the same to be brought inside within the Site. It is the Contractor's responsibility to see that the entry is duly recorded in the Register with proper Entry Number, date and signature of EIL's authorized representative and that the supporting challans/documents are stamped and signed by EIL's personnel at the gate at the time of entry.

Those materials which need repairing/ replacement as per Site condition will be allowed to move beyond EIL's battery limit only after exchange of good equivalent material.

18. WORK PERMIT

- 18.1 In order to keep EIL informed of the various jobs being undertaken within the Site and to enable EIL to regulate the same to ensure the observance of safety regulations relative thereto, when Work is to be carried out in hazardous areas, a Hot Work Permit is to be obtained by the Contractor from EIL before start of Work on jobs which are capable of generating a flame, spark or heat e.g., gas cutting, grinding, welding, use of any electrical, diesel, petrol or battery operated prime mover, machine, tool or equipment or generator set, mixer machine, drilling machine, pump, crane, fork lift or hand truck or trailer or chipping or breaking of rocks or concrete or hacksaw cutting and drilling. Similarly the Contractor shall obtain a Cold Work Permit from EIL for jobs which do not come under the category of hot work and in respect of which there is no risk of fire, e.g., transportation, backfilling of ordinary soil by manual process, pile testing, hydro-testing, shuttering, fixing of reinforcement, hand mixed concreting, plastering and brickwork.
- 18.2 Depending on the nature of the Work and the equipments and tools involved, the Contractor

shall apply for Cold/Hot Permit in a prescribed format at least 7(seven) days before the Work is planned to start. No Work Permit shall be issued by EIL unless proper arrangement is made by the Contractor to ensure safe performance of the Work inside the Site limit. Job-wise and area-wise permits shall be issued to the Contractor and for Work against each permit the Contractor shall post at Site at least one Construction Supervisor and one Safety Supervisor of required level to ensure the due observance of all safety requirements.

19. VEHICLE PERMIT

Permits are to be obtained separately for entry/use of vehicles/trailers and other mobile equipment inside the Site limits. All the Contractor's vehicles should have a valid 'PUC Certificate'. The following requirements are to be met to obtain vehicle permit:

- (i) Vehicle/Equipment shall be in good condition and fitted with spark arrestor.
- (ii) Vehicles should carry, wherever applicable, valid Road Tax Certificate and Fitness Certificate from the competent authority and insurance policy.
- (iii) Valid operating/driving license of driver/operator.

20. VALIDITY OF THE PERMIT

- (i) Any Hot or Cold Work Permit issued is valid only for 24 hours.
- (ii) Thereafter the validity of the Permit must be renewed for each shift (morning & evening) by the shift in-charge/ shift representative of EIL.
- (iii) The permit may be renewed for a maximum period of one month from the date of issue and if extension is required, the Contractor has to apply for a fresh permit.
- (iv) A permit is not valid for Work on holidays unless special permission of EIL is obtained for the purpose.

21. SPECIAL SAFETY REGULATIONS

21.1 REGARDING WORK PERMIT

- (a) The Work shall be carried out inside the Site to conform to the EIL's safety section and in accordance with any instructions of the Engineer-in-Charge issued from time to time. Sometimes working hours may be drastically reduced or increased to satisfy safety requirements and the Contractor shall meet these requirements without any time and cost implications. No claim for idling of machinery, plant, manpower or equipment shall be entertained for reason of delay in the issue of a Work Permit and it shall be the exclusive responsibility of the Contractor to apply for, pursue and obtain the requisite Work Permit(s) well in advance of the relative requirement(s).
- (b) The Contractor shall abide by all safety regulations of the Plant and ensure that safety equipment for specific jobs as stipulated in the Factories Act Safety Handbook is issued to all employees during the execution of Work, failing which all the works at Site shall be suspended.
- (c) HSE specifications, OISD and other requirements shall be followed in totality.

21.2 REGARDING HOT WORK

- (a) When doing hot work inside the plant, the Contractor must ensure that the fire hose is

hooked up with the fire water system and extended to the Site. In addition, at least one fire extinguisher must be kept near the working spot. The area around and below the place of hot work must be adequately protected from sparks and hot metals by a booth made of asbestos cloth/sheet and by wetting with water. In addition, depending on the location and hazard of the work, the Contractor shall at its own Cost arrange sufficient number of additional fire hoses and such fire fighting equipment of approved quality as may be required to carry out hot job inside the plant.

- (b) Welding & electrical cables should be of approved quality and no jointing or loose connection shall be permitted.
- (c) At the end of the working day the Contractor must inform the electrical section to switch off power at sub-station end.
- (d) The Contractor must provide cotton clothes, safety shoes, safety helmet, safety belt, and hand gloves of approved quality to his workers to meet the safety requirement of various jobs to be carried out inside the Plant.

21.3 REGARDING USE OF VEHICLE

- (a) Vehicle must not ply on any road within the Site at a speed exceeding 20 KM/hr.
- (b) Mobile cranes, loaded trucks and trailers must not exceed the speed limit of 15 KM/hr inside the plant.
- (c) No crane is allowed to move inside the plant with load.
- (d) No vehicle is allowed to be parked inside the plant.
- (e) Limited number of vehicles will be permitted inside the battery area due to security reasons.

22. DEDUCTIONS FROM CONTRACT PRICE

- 22.1 In addition to price reduction and deductions as provided for, EIL shall be entitled to deduct from any payment due to the Contractor, any amount claimed by EIL under the Contract and any costs, damages or expenses for which the Contractor is liable under the Contract.
- 22.2 In addition to price reduction and deductions as provided for in the Contract, EIL shall be entitled to deduct from any payment due to the Contractor, for violations of safety provisions, as per details given below:
 - (i) Violation of applicable safety, health and environment related norm, a price reduction of INR5000/- per occasion
 - (ii) Violation as above resulting in (a) Any physical injury - a price reduction of 0.5% of the Contract Price (maximum of INR 2,00,000) per injury in addition to INR 5,000/-; or (b) Fatal accident - a price reduction of 1% of the Contract Price (maximum of INR 10,00,000) per fatality in addition to INR 5,000/-

23. SPECIAL CONTRIBUTIONS

With a view to ensure the formulation and enforcement of a safety code by the Contractor, it is

stipulated that in the event of any act, omission or accident at the Site which results in the death of a person, the Contractor shall contribute a sum of INR 5,00,000/- (Rupees five lakh only), or which results in the permanent disablement of a person, the Contractor shall contribute a sum of INR 3,00,000/- (Rupees three lakh only) in addition to any other sum(s) required to be paid by the Contractor under any law or other contract, to a welfare fund to be established by EIL for, inter alia, such contributions, and until such fund is established, to a charity nominated by EIL.



APPENDIX IV**INDEMNITY BOND****(TO BE NOTORISED AND ON STAMP PAPER OF APPROPRIATE VALUE)**

To

Engineers India Limited
(Address as applicable)

Dear Sirs,

WHEREAS EIL and address
(hereinafter called "the Indemnified" which expression shall include its successors and assigns) has awarded to M/s..... a Partnership Firm/ Sole Proprietor Business/ a company having its Registered Office at (hereinafter called "the Indemnifier", which expression shall include its successors and assigns) a contract for conditions set out, inter-alia, in "the Indemnified" Purchase Order No. dated..... (hereinafter referred to as "the said Contract") to "the Indemnifier".

AND WHEREAS "the Indemnified" has agreed to supply to "the Indemnifier" raw material/ components to the value of INR..... (Rupees..... only) for incorporation in fabrication by "the Indemnifier" in terms of "the said contract", the components/ raw material to be supplied by "the Indemnified" to "the Indemnifier" for the said fabrication, (hereinafter, or the sake of brevity, referred to as "the said material") and pending fabrication and delivery at job-site of the completed fabricated work(s) incorporating "the said material" and accounting for "the said material" shall be under the sole custody and charge of "the Indemnifier" and shall be kept, stored, altered, worked upon and/ or fabricated at the sole risk and expenses of "the Indemnifier".

As a Pre-condition to the supply of "the said material" by "the Indemnified" to "the Indemnifier", the Indemnified" has required "the Indemnifier" to furnish to "the Indemnified" security in the manner and upon terms and conditions hereinafter indicated:

NOW THEREFORE, in consideration of the premises aforesaid "the Indemnifier" Shri....., Shri..... all Directors/ Partners/ Sole proprietor of "the Indemnifier" in consideration of aforesaid "contract" hereby irrevocably and unconditionally and jointly and severally undertake to indemnify and always keep "the Indemnified" from and against all loss, damage and destruction (inclusive but not limited to any or all loss or damage or destruction to or of "the said material" or any item or part thereof) by theft, fire, flood, storm, tempest, lightning, explosion, storage, chemical or physical action or reaction, bending, wrapping, exposure, rusting, faulty workmanship, faulty fabrication or faulty method of technique of fabrication, riot, civil commotion or other act of omission or commission whatsoever within or beyond the control of "the Indemnifier", misuse and misappropriation by "the Indemnifier's" servants and/or agents whatsoever to, of or in "the said material" or any part or item thereof between the date that the same or relative part or item thereof was supplied to "the Indemnifier" up to and until the return to "the Indemnified" on due dates of "the said material" or relative part or item thereof or completed fabricated work(s) incorporating the said material AND jointly and severally undertake to pay to "the indemnified" forthwith on first demand in writing without protest or demur the value of "the said

material” or item part thereof lost, damaged, destroyed, misused and/or misappropriated, as the case may be, inclusive of “the Indemnified” ’s cost and expenses (inclusive but not limited to handling, transportation, cartage, insurance, freight, packing and inspection costs and/ or expenses) as specified in the said demand.

AND “the Indemnifier” hereby agree with “the Indemnified” that :

1. This Indemnity shall remain valid and irrevocable until the settlement of all claims of “the Indemnified” arising hereunder.
2. This Indemnity shall be in addition to any other Indemnity, Guarantee or Security whatsoever that “the Indemnified” may now or any time anywise have in relation to “the Indemnifier” ’s obligations/ liabilities under and/ or in connection with the said contract inclusive of “the said material” and “the Indemnified” shall have full authority to take recourse to or enforce this security in preference to the other security (ies) at its sole discretion, and no failure on the part of “the Indemnified” in enforcing or requiring enforcement of any other security shall have the effect of releasing “the Indemnifier” from its full liability hereunder:
3. “The Indemnified” shall be at liberty without reference to “the Indemnifier” and without affecting the full liability of “the Indemnifier” hereunder to take any other such security in respect of “the Indemnifier’s” obligations and/or liabilities under or in connection with the “said contract” inclusive of “the said material” and to vary the terms vis-a-vis “the Indemnifier” of “the said contract” or to grant time and/or indulgence to “the Indemnifier” or to reduce or to increase or otherwise vary the prices or the total contract value or the quantity, quality, description or value of the said material or to release or to forbear from endorsement of all or any of the obligations of “the Indemnifier” under the said contract (inclusive of anything in respect of “the said material”) and/or to remedies of “the Indemnified” under any other security (ies) now or hereinafter held by “the Indemnified” and no such dealing(s), variations(s), reduction(s), increase (s) or other indulgence (s) or arrangement(s) with “the Indemnifier” or release “the Indemnifier” from their full liability to “the Indemnified” hereunder or of anywise prejudicing rights of “the Indemnified” against “the Indemnifier” and “the Indemnifier” hereby waive all rights, if any, at any time, inconsistent with the terms of this Indemnity.
4. This Indemnity shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or bankruptcy or insolvency of “the Indemnifier” and the obligations of “the Indemnifier” in terms hereof shall not be anywise affected or suspended by reason of any dispute or disputes having been raised by “the Indemnifier” (whether now pending before any Arbitrator, Officer, Tribunal or Court) or any denial of liability by “the Indemnifier” or any other order or communication whatsoever by “the Indemnifier” or any other order or communication whatsoever by “the Indemnifier” stopping or preventing or purporting to stop or prevent any payment by “the Indemnifier” to “the Indemnified” in terms hereof.
5. The mere statement made by or on behalf of “the Indemnified” in any notice or demand or other writing addressed to “the Indemnifier” as to any of “the said material” or item or part thereof supplied to “the Indemnifier” having been lost, damaged, destroyed, misused or misappropriated while in the custody of “the Indemnifier” before or after completion of the completed fabricated work(s) incorporating “the said material” and delivery at job site thereof shall as between “the Indemnifier” and “the Indemnified” be conclusive of the factum of “the said material” or item or part thereof having been supplied to “the Indemnifier” and/or the loss, damage, destruction, misuse or misappropriation thereof, as the case may be, while in the custody of “the Indemnifier” and/or

prior to the completion of the completed fabricated work(s) and delivery to job site thereof without necessity on the part of “the Indemnified” to produce any documentary proof or other evidence whatsoever in support of this.

6. The amount stated in any notice of demand addressed by “the Indemnified” to “the Indemnifier” as the value of any of “the said material”, lost, damaged, destroyed or misused or misappropriated, inclusive relative to the cost and expenses incurred by “the Indemnified” in connection therewith shall as between “the Indemnifier” and “the Indemnified” be conclusive of the value of such “said material” and the said costs and expenses as also of the amount liable to be paid by “the Indemnifier” to “the Indemnified” in terms and for the purpose of, without necessity for “the Indemnified” to produce any voucher, bill or other documentation or evidence whatsoever in support thereof.

In witness whereof “the Indemnifier” have hereunto set and subscribed his hand this day and year first hereinabove written in the presence of witnesses.

Yours faithfully,

1.

2.

3.

WITNESSES:

1.

2.



APPENDIX V**PART A****FORMAT-I****INTIMATION REGARDING SYSTEM COMPLETION**

PROJECT: _____ CUSTOMER: _____

UNIT: _____

Following system/sub-system has been mechanically completed in all respects with exceptions noted below. The system/sub-system can be taken up for checking and preparation of checklist.

SYSTEM NO.**SYSTEM DESCRIPTION:****EXCEPTIONS:**

SIGNATURE

DATE

CONTRACTOR'S CONSTRUCTION:

CO-ORDINATOR

The system is ready/ not ready for Check listing

EIL/PMC



PART B**FORMAT-II****CHECKLIST**

PROJECT: _____ CUSTOMER: _____ UNIT: _____
SYSTEM/SUB-SYSTEM _____

CHECKLIST TYPE**PRELIMINARY/FINAL****SL.NO.****CHECKLIST ITEMS****REMARKS**

PMC/EIL:

SIGNATURE

DATE



APPENDIX VI
FORMAT-III
READY FOR PRE-COMMISSIONING CERTIFICATE

PROJECT: _____ CUSTOMER: _____ UNIT: _____
SYSTEM/SUB-SYSTEM _____

This is to certify that the following Plant/system/sub-system as detailed below is completely installed and all the Checklist points are carried out except for minor details s given in the attached list.

DESCRIPTION ON PLANT/SECTION/SUB-SECTION

SIGNATURE	DATE
CONTRACTOR'S CONTRACTION CO-ORDINATOR:	

CONTRACTOR'S COMMISSIONING CO-ORDINATOR:

The system is ready/ not ready for Check listing
PMC/EIL:



APPENDIX VII
FORMAT-IV
READY FOR COMMISSIONING CERTIFICATE

PROJECT: _____ CUSTOMER: _____ UNIT: _____
 SYSTEM/SUB-SYSTEM _____

This is to certify that all the necessary pre-commissioning activities for the system/sub-system as detailed below have been completed and the system/sub-system is ready for commissioning except for the minor details as given below which will not effect the commissioning trial runs.

DESCRIPTION	ON	PLANT/SECTION/SUB-SECTION

SIGNATURE

DATE

CONTRACTOR'S COMMISSIONING:
 CO-ORDINATOR

SIGNATURE

DATE

PMC/EIL:



**APPENDIX VIII
FORMAT-V**

COMPLETION OF COMMISSIONING CERTIFICATE

PROJECT: _____ CUSTOMER: _____ UNIT: _____
SYSTEM/SUB-SYSTEM _____

This is to certify that the system/sub-system as detailed below has been successfully commissioned and is under operational control of Client's Production department. The minor items, which will not effect the normal operation of the system/sub-system, are given in the attached list.

DESCRIPTION	ON	PLANT/SECTION/SUB-SECTION

DATE	<u>SIGNATURE</u>
------	------------------

CONTRACTOR'S COMMISSIONING:
CO-ORDINATOR

DATE	<u>SIGNATURE</u>
PMC/EIL:	



APPENDIX-IX
PROFORMA OF BANK GUARANTEE
EARNEST MONEY DEPOSIT / BID SECURITY

(To be submitted on non-judicial stamp paper of appropriate value to be purchased in the name of the issuing Bank)

To
M/s Engineers India Ltd.
Engineers India Bhavan,
1, Bhikaiji Cama Place,
R.K.Puram, New Delhi - 110066

BG No. : _____

Date of Issue : _____

Date of Expiry : _____
(5 Months as per provision)

Date of Claim : _____

Bank Name : _____

Dear Sirs,

- In consideration of Engineers India Limited established under the Company's Act, 1956 having its registered office at 1, Bhikaiji Cama Place, New Delhi-110 066, India (hereinafter referred to as the "**Company**" which expression shall unless repugnant to the context or meaning thereof, include all its Successors, Administrators, Executors and permitted Assignees), has floated/issued a Tender/ Bidding Document for

_____ [Bidding Document No.: _____]
(Name of work) through press notification/ on limited basis, (hereinafter referred to as the "**Tender**" which expression shall include all the amendments thereto) and M/s _____ (Name of Bidder) having its Head/Registered Office at _____

_____ (herein after referred to as the "**Bidder**" which expression unless repugnant to the context or meaning thereof, shall include all its successors, administrators, executors and permitted assignees) have submitted a Bid in response to the Tender enquiry and the Bidder having agreed to furnish as a condition precedent for participation in the said Tender an unconditional and irrevocable Bank Guarantee [hereinafter shall be referred to as this "**Guarantee**"] of value _____ [in fig. as per currency indicated in Notice/Letter Inviting Bid] [in words _____] for the due performance of the Bidder's obligations as contained in the Instructions to Bidder [ITB] and other terms and conditions contained in the Tender document supplied by the Company which amount is liable to be forfeited on the happening of any of the contingencies mentioned in the said Tender document.

- We _____ (Name of Bank)

established /registered under the laws of _____ (Name of the Country and Act/Laws) having its registered office at _____ (hereinafter referred to as the “Bank” which expression shall, unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and permitted assignees) do hereby guarantee on behalf of the Bidder and undertake to pay immediately on demand signed by the Company’s duly authorized officer, to the Company any money or all money up to the extent of the value of this Guarantee, at the time but in any case not exceeding _____ (in Fig. with Currency) _____ (in words with Currency) in aggregate at any time without any demur, reservation, recourse, contest and/or without any reference to the Bidder. Any such demand made by the Company on the Bank shall be conclusive and binding on the Bank irrespective of any dispute or difference raised by the Bidder or any dispute pending before any Court, Tribunal, Arbitrator or any other authority.

3. The Bank confirms that this Guarantee has been issued in accordance with the appropriate laws in India [the country of issue]¹.
4. The Bank also agrees that this Guarantee herein contained shall be irrevocable and shall continue to be enforceable in accordance with the Indian Laws and subject to exclusive jurisdiction of Indian Courts as per the conditions stipulated in Tender Document.
5. The Bank also agrees that the Company at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the Bidder and without any reference to the Bidder and notwithstanding any security or other Guarantee that the Company may have in relation to the Bidder’s liabilities.
6. The Bank further agrees that this Guarantee herein contained shall remain in full force up to and including two months after the expiry of the Period of Bid validity i.e. upto _____ [02 Months beyond the bid validity] that is taken as the obligation of the Bidder as per Tender document and it shall continue to be enforceable until all the dues of the Company, if any, under or by virtue of this Guarantee have been fully paid and its claim satisfied or discharged.
7. The Bank further agrees that this Guarantee shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the Bidder during the period this Guarantee is in force, but shall be in all respects and for all purposes be binding and operative until payment of all money due to the Company in respect of such liability or liabilities is paid or no claim is lodged by the Company to the Bank within the claim period after the Guarantee expires.
8. The Bank further agrees that this Guarantee shall not be affected by any change in the Bank’s Constitution. The Bank also undertakes not to revoke this Guarantee during its currency.
9. The Bank further agrees that to fulfill the Bidder’s liability during the bidding process, and if requested by the Bidder in writing, the Bank shall issue an amendment to this Guarantee, as and when required, incorporating the extended date of validity and/or other amendment.
10. Notwithstanding anything contained herein above:

¹ Note: Please confirm if this is to be India, or any other country would be acceptable.

- a. The Bank's liability under this Guarantee is limited to - _____ (in Fig with currency) _____ (in words with currency) in aggregate;
- b. This Guarantee shall remain in full force up to and including 60 (sixty) days after the expiry of the Period of Bid validity i.e. up to _____ [Date] and any extension(s) thereof on written instruction from the Bidder on whose behalf this Guarantee has been given, in which case it shall remain in full force up to and including 60 (Sixty) days after the extended date; and
- c. The Bank shall be released and discharged from all its liabilities and obligations under this Guarantee unless a written claim or demand is issued to the Bank on or before _____ [Date] or within the 60 (Sixty) days of the date of expiry of the extended date and the Company's right under this Guarantee will cease.
11. The Bank further agrees that all claims under this Guarantee are payable to the Company in favour of the above said account number at New Delhi
12. The Bank has the power to issue this Guarantee under its Memorandum and Articles of Association and the undersigned is authorized to sign this Guarantee on behalf of the Bank and to bind the Bank thereby.

IN WITNESS whereof, the Bank _____ has executed this Guarantee at _____ (Place) on _____ (Date)

Signed and Sealed by Constituted Attorney
(Signature of a person authorized to sign on behalf of the Bank)

Name:
Designation:
Bank Name:

In presence of witness:

1. Signature _____
Name & Designation:

2. Signature _____
Name & Designation:

[Note: The Bank shall issue the confirmation letter of providing this Guarantee on behalf of the Contractor directly to the beneficiary at the above mentioned address]

APPENDIX-X
PROFORMA OF CONTRACT AGREEMENT

This Contract Agreement (“**Contract Agreement**”) for the work OF _____
DATED _____ 20____ (Two Thousand____) (“**Effective Date**”) between M/s _____ under the Indian Companies Act, and having its registered office at _____ in the town of _____ (hereinafter referred to as the “**Contractor**” which expression shall unless excluded by or repugnant to the subject or context include its successors and permitted assignees) as one part and Engineers India Limited, (hereinafter referred to as “**EIL**” which term shall, unless excluded or repugnant to the subject or context including its successors and assignees) as other part.

(EIL and Contractor, are hereinafter collectively referred to as “**Parties**” and individually as “**Party**”)

WHEREAS:

- A.** EIL being desirous of having provided and executed certain works mentioned, enumerated or referred to in the Bidding Document No. _____ dated _____ (the “**Bidding Document**”, which expression shall include all amendments and/ or modifications thereto) to undertake certain works and services as specified under Bidding Document (the “**Works**”).
- B.** The Contractor has inspected the site and surroundings of the works specified in the Bid Documents and has satisfied himself by careful examination, before submitting his tender, as to the nature of the surface strata, soil, sub-soil and ground, the form and nature of site and local conditions, the quantities, nature and magnitude of the work, the availability of labour and materials necessary for the execution of work, the means of access to site, the supply of power and water thereto and the accommodation it may require and has made local and independent enquiries and obtained complete information as to the matters and things referred to, or implied in the tender documents or having any connection therewith, and has considered the nature and extent of all probable and possible situations, delays, hindrances or interferences to or with the execution and completion of the work to be carried out under the Contract, and has examined and considered all other matters, conditions and things and probable and possible contingencies, and generally all matters incidental thereto and ancillary thereof affecting the execution and completion of the work and which might have influenced him in making his Bid.
- C.** The Contractor submitted the highest evaluated bid, for the provision and the execution of the said Work, at the rates stated in the Schedule of Quantities of Works and finally approved by EIL (hereinafter called the “**Price Schedule**”) upon the terms and subject to the conditions of Contract, and was selected by EIL as the selected Bidder vide the Letter of Award/ Fax of Acceptance dated _____.
- D.** EIL is desirous of granting to the Contractor, and the Contractor is desirous of undertaking for EIL, the Works, on the on the terms and conditions set forth hereinafter.

NOW THEREFORE, in consideration of the mutual covenants, terms and conditions and understandings set forth in this Agreement and other good and valuable consideration (the receipt and adequacy of which are hereby mutually acknowledged), the Parties with the intent to be

legally bound, hereby agree as follows:

1. In consideration of the payment of the Contract Price, of _____ [*insert amount in figures and numbers*], the Contractor hereby covenants with EIL that the Contractor shall duly provide, execute and complete the Works and shall do and perform all other acts and things in the Contract mentioned or described or which are to be implied therein or may be reasonably necessary for the completion of the said Works, and at the said times and in the manner and subject to the terms, conditions and stipulations mentioned in the Contract.
2. In consideration of the due provision, execution and completion of the said works, EIL does hereby agree with the Contractor that EIL will pay to the Contractor the respective amounts for the Work actually done by it and approved by EIL at the Schedule of Rates and such other sum payable to the Contractor under the provisions of the Contract; such payment to be made at such time and in such manner as provided for in the Contract.
3. In consideration of the due provision, execution and completion of the said works, the Contractor does hereby agree to pay such sums as may be due to EIL for the service rendered by EIL to the Contractor, such as power supply, water supply and others as set-forth in the said contract and such other sums as may become payable to EIL towards the controlled items of consumables materials or towards loss, damage to the equipment, materials, construction plant and machinery of EIL; such payments to be made at such time and in such manner as is provided in the Contract. It is specifically and distinctly understood and agreed between EIL and the Contractor, that the Contractor shall have no right, title or interest in the site made available by EIL for execution of the works or in the building structures or works executed on the said site by the Contractor or in the goods, articles, materials, etc. brought on the said site (unless the same specifically belongs to the Contractor) and the Contractor shall not have or deemed to have any lien whatsoever or any charge for unpaid bills nor will be entitled to assume or retain possession or control of the site or structures and EIL shall have an absolute and unfettered right to take full possession of the site and to remove the Contractor, his servants, agents and materials belonging to the Contractor and lying on the site.

The Contractor shall be allowed to enter upon the site for execution of the works only as a licensee simplicitor and shall not have any claim, right, title or interest in the site or the structure erected thereon and EIL shall be entitled to terminate such license at any time without assigning any reason.

The materials including sand, gravel, stone, loose, earth, rock, etc. dug up or excavated from the site shall, unless otherwise expressly agreed under this contract, exclusively belong to the EIL and the Contractor shall have no right to claim over the same and such excavations and materials should be disposed of on account of EIL according to the instructions in writing issued from time to time by the Engineer-in-Charge.

4. Each of the Parties agrees and undertakes to perform their respective obligations, and give effect to the rights and entitlements of the other Party, in the manner and subject to the terms, conditions and stipulations mentioned in the Agreement, and to otherwise comply with the terms of the Agreement.
5. The Parties agree and acknowledge that this Contract shall be effective on and from the date of issuance of the Letter of Award/ Fax of Acceptance, i.e. on and from _____

6. All the terms and conditions of the letter of acceptance and its enclosures including bidding document and addendum(s) (if any) thereto shall be applicable and binding on the Parties to this Contract Agreement.
7. Capitalised terms utilised herein but not defined shall, unless repugnant to the context thereof, have the meaning ascribed thereto in the Contract.

IN WITNESS whereof the parties have executed these presents in duplicate the day and the year first above written.

SIGNED AND DELIVERED FOR
AND ON BEHALF OF
*CONTRACTOR

SIGNED AND DELIVERED FOR AND ON
BEHALF OF ENGINEERS INDIA LTD.

DATE : _____

DATE : _____

PLACE : _____

PLACE : _____

In the presence of :

1. Name: _____

1. Name: _____

2. Address: _____

2. Address: _____



(Witness)

(Witness)

* In the case of partnership to be signed by all partners or by one partner holding a General Power of Attorney.

**SPECIAL CONDITIONS
OF
CONTRACT**

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1.0 GENERAL

1.1 The "Owner" shall mean the Authorized Representative, Regional Centre for Biotechnology (RCB) having its office at Regional Centre for Biotechnology, NCR Biotech Science Cluster, 3rd Milestone, Faridabad-Gurgaon Expressway, Faridabad and shall include its successor and assigns or Engineers India Ltd. (EIL) on behalf of RCB.

EIL means "Engineers India Limited", a company incorporated in India and having its registered office at 1, Bhikaiji Cama Place, New Delhi- 66.

1.2 The definition of Owner and EIL wherever in the General Conditions of Contract (GCC) stands replaced with the definitions as per subclause 1.1 above.

1.3 Special Conditions of Contract shall be read in Conjunction with the General conditions of Contract, Schedule of Rates, specification of work, Drawings and any other document forming part of this Contract wherever the context so require.

1.4 Notwithstanding the sub-division of the document into these separate sections and volumes every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the Contract so far as it may be practicable to do so.

1.5 Where any portion of the General Conditions of Contract is repugnant to or at variance with any provisions of the Special Conditions of Contract, then unless a different intention appears, the provision(s) of the special Conditions of Contract shall be deemed to over-ride the provision(s) of the General Conditions of Contract only to the extent that such repugnancies, of variations, prevail.

1.6 Wherever it is mentioned in the specifications that the Contractor shall perform certain work or provide certain facilities, it is understood that the Contractor shall do so at his own cost and the value of contract shall be deemed to have included cost of such performances and provisions, so mentioned.

1.7 It will be Contractor's responsibility to bring to the notice of Engineer-In-Charge any irreconcilable conflict in the contract documents before starting the work (s) or making the supply with reference to, which the conflict exists.

2.0 SCOPE OF WORK

The scope of work covered in this contract will be as described in **Annexure-I to SCC**.

3.0 SCOPE OF SUPPLY

The scope of supply covered in this contract will be as described in **Annexure-II to SCC**.

4.0 SUPPLY OF WATER, POWER & OTHER UTILITIES

Provisions of clause no. 9.21 of GCC stands modified to the following extent:

4.1 Construction Water and Construction Power shall not be provided to the Contractor by the Owner. The Contractor shall make his own arrangements for construction water and construction power at his own cost. Contractor shall make his own arrangements for establishing distribution network of Construction Power and water within the quoted rates.

Owner shall make power available to the contractor at one point only if surplus power is available with them on chargeable basis at the rate approved by Engineer-in-Charge/ Owner.

Power supply for all equipment during comprehensive maintenance period shall be

provided by owner.

Land for batching plant and labour hutment shall not be provided by Owner/EIL.

- 4.2 The contractor shall make necessary efforts to ensure efficient use of potable water during construction and reduce the use of water by using suitable curing compound/ admixtures and wet jute bags for curing (if applicable).
- 4.3 All supply & installations / fixtures & fittings / cabling for construction power shall be in the scope of the contractor without any additional cost to the Owner.
- 4.4 If required, the Contractor shall keep acoustic DG sets of adequate capacity at his cost at different locations to keep the work in progress.
- 4.5 OWNER shall provide space for Contractor field office, stores & storage yard at site as per availability of land free of cost to the Contractor.
- 4.6 The CONTRACTOR shall remove all temporary buildings / facilities etc. before leaving the site after completion of works in all respect and handing over to Owner.

5.0 TIME OF COMPLETION

- 5.1 The work shall be executed strictly as per time Schedule mentioned in **Annexure-X to SCC**.

6.0 TAXES & DUTIES

- 6.1 All taxes and duties including Works Contract tax, Excise duty, VAT, Sales tax, Custom duty, Octroi, entry tax, Education cess and other levies payable by the Contractor under the Contract, or for any other cause, shall be included in the prices as per Schedule of Rates except Service Tax, Swachh Bharat Cess (SBC) & Krishi Kalyan Cess (KKC). Owner/EIL reserve the right to seek proof of payment of the taxes, duties, cess etc., if required. In such cases, further payment due to the contractor shall be released after furnishing documentary proof of the same.

6.2 EXCISE DUTY

- 6.2.1 Excise Duty is not cenvatable to owner & the same is to be included by bidder in the quoted prices and details of the same shall be furnished in the Form SP-2B (enclosed with priced part). The amount indicated in Form SP-2B shall form the basis for calculating the statutory variation (increase or reduction) in the non cenvatable excise duty payable by Owner/EIL to the CONTRACTOR.

6.3 SERVICE TAX INCL. EDUCATIONAL CESS

- 6.3.1 Service Tax, Swachh Bharat Cess (SBC) & Krishi Kalyan cess (KKC) on services shall not be included in the Quoted Price.
- 6.3.2 Bidder shall decide the applicability of service tax considering 02 options, i.e., actual service portion or deemed service portion, as per the service tax rules.
- 6.3.3 No free issue material will be supplied by Owner/EIL against the subject works.
- 6.3.4 Service Tax, if applicable, including Swachha Bharat Cess & Krishi Kalyan Cess shall be paid by Owner/EIL to the Contractor against invoices issued in accordance with the provisions of the prevailing Service Tax Rules which state that the each invoice shall be serially numbered and shall contain the following details-
- i) the name, address and service tax registration of the person;
 - ii) the name, address of the person receiving the taxable service;
 - iii) the description, classification and value of taxable service provided or to be provided;
 - iv) the service tax payable there on.

- 6.3.5 The Service Tax including Swachha Bharat Cess & Krishi Kalyan Cess shall include both, namely, (i) the amount of Service Tax payable by the bidder and reimbursable by Owner (ii) the amount of Service Tax, if any, directly payable by Owner, as applicable to recipient of service, as per the reverse charge rule of Service Tax.

The Service Tax including Swachha Bharat Cess & Krishi Kalyan Cess, if any, to be payable by the Owner under reverse charge rule shall not be paid to the Contractor but shall be directly submitted to the Service Tax Authorities by Owner. If the same has already been reimbursed / paid to the Contractor for whatsoever reason, the said amount, as submitted by the Owner to Service Tax Authorities, shall be deducted / recovered / adjusted from the payment due to the Contractor.

6.4 VALUE ADDED TAX (VAT)

- 6.4.1 Input credit on VAT is not available to Owner & the same is to be included by bidder in the quoted prices and details of the same shall be furnished in the Form SP-2B (enclosed with priced part). The amount indicated in Form SP-2B shall form the basis for calculating the statutory variation (increase or reduction) in the VAT payable by Owner/ EIL to the CONTRACTOR.

6.5 CENTRAL SALES TAX

- 6.5.1 The CONTRACTOR shall pay and bear any central sales tax payable in India on the interstate sale of materials & include the same in their quoted prices.
- 6.5.2 Owner/EIL will not issue any Form "C".
- 6.5.3 The amount of CST included & indicated in Form SP-2B (enclosed with priced part) shall form the basis for calculating the statutory variation (increase or reduction) in the Central Sales Tax payable by Owner/EIL to the CONTRACTOR.

6.6 VAT ON WORKS CONTRACT

- 6.6.1 State VAT on works contract, as applicable shall be included in the quoted price.
- 6.6.2 Input credit on VAT on Works Contract is not available to Owner & the same is to be included by bidder in the quoted prices and details of the same shall be furnished in the Form SP-2B (enclosed with priced part). The amount indicated in Form SP-2B shall form the basis for calculating the statutory variation (increase or reduction) in the WCT-VAT payable by Owner/ EIL to the CONTRACTOR.

6.7 ENTRY TAX/ OCTROI

- 6.7.1 Octroi / Entry, as applicable shall be included in the quoted price.
- 6.7.2 Road permits shall not be issued by Owner/EIL.

6.8 CONSTRUCTION WORKERS CESS / LABOUR CESS

- 6.8.1 The Contractor shall comply with the Building and Other Construction Workers' Welfare Cess Act, 1996, the Building and other Construction Workers' Rules, 1998 and the Building and Other Construction Workers Welfare Cess Rules, 1998.
- 6.8.2 Prices quoted by the bidder shall deemed to be inclusive of construction workers cess / labour cess.
- 6.8.3 Cess as per the prevailing rate, shall be deducted at source from bills of the Contractor and remitted to the "Secretary, Building and Other Construction Workers Welfare Board" of the concerned State by the Owner as per the regulations. The Contractor shall be responsible to submit final assessment return of the cess amount to the assessing officer after adjusting the cess deducted at source.

6.9 INCOME TAX

6.9.1 The CONTRACTOR shall be exclusively responsible and liable to pay all direct Taxes, including income tax, profession tax and wealth tax on any payments arising out of the Contract, whether payable in India or in any other jurisdiction.

6.9.2 The Indian CONTRACTOR shall be responsible for ensuring compliance with all provisions of the direct tax laws of India including, but not limited to, the filing of appropriate Returns and shall promptly provide all information required by the owner for discharging any of its responsibilities under such laws in relation to or arising out of the CONTRACT.

Tax shall be deducted at source by Owner/EIL from all sums due to an Indian tax resident Contractor in accordance with the provisions of the Income Tax Act, as in force at the relevant point of time.

6.9.3 Corporate Tax Liability if any shall be to Contractor's account.

6.9.4 Owner/EIL shall issue a Tax deduction or withholding certificate to the Contractor evidencing the Tax deducted or withheld and deposited by EIL on payments made to the Contractor to enable the Contractor to claim the credit of the Tax deducted or withheld by EIL.

6.10 STATUTORY VARIATIONS

6.10.1 Statutory Variation on taxes & duties, included in the quoted prices and indicated in form SP-2B, shall be payable upto 90% of the contractual time for completion/extended Time for Completion (by Owner/EIL due to reason attributable to EIL/Owner) subject to submission of documentary evidence and/ or recovered from the CONTRACTOR in case of decrease.

However, Statutory Variation on Service Tax, SBC, KKC indicated in form SP-2A, shall be payable upto the contractual time for completion/extended Time for Completion (by Owner/EIL due to reason attributable to EIL/Owner) subject to submission of documentary evidence and/ or recovered from the CONTRACTOR in case of decrease.

6.10.2 Any statutory variation for taxes & duties indicated in FORM SP-2B after the 90% of contractual time for completion/extended Time for Completion (by Owner/EIL due to reason attributable to EIL/OWNER) and Service Tax after the contractual time for completion/extended Time for Completion (by Owner/EIL due to reason attributable to EIL/OWNER) shall be to Contractor's account. However, any decrease in amount of the duties and taxes after the contractual completion, as above, will be recovered from contractor.

6.11 NEW TAXES & DUTIES

6.11.1 All new taxes/ duties/ cess/ levies notified after the date of unpriced bid opening/ submission of any subsequent price implication/ revised prices, but within Time for Completion/extended Time for Completion (by Owner/EIL due to reason attributable to EIL/Owner), shall be to Owner/EIL's account. These shall be reimbursed against documentary evidence.

However, in case of delay attributable to contractor, any new or additional taxes and duties imposed after Time for Completion, as above, shall be to contractor's account.

However, if such new taxes are in substitution of other taxes, same shall be considered on merit of each case.

6.12 ANY OTHER TAXES AND DUTIES AND OTHER LEVIES

6.12.1 Except as herein specified above, the CONTRACTOR shall be liable for and shall pay any and all Indian fees, cesses, taxes, duties and levies assessable against CONTRACTOR in respect of or pursuant to the Contract.

6.13 General

- 6.13.1 The benefit of any Tax exemption, concessions, rebate or any other incentives available when the Contractor or its Subcontractors/ vendor are performing their obligations under the Contract, shall be passed on to Owner/EIL.
- 6.13.2 Any error of interpretation of applicability of taxes/ duties by the contractor shall be to bidder's account.
- 6.13.3 The classification of goods as per Central Excise/ Customs Tariff and state VAT act should be correctly done by the contractor.

7.0 FIRM PRICE

- 7.1 The contracted prices shall be firm and fixed except as per the provisions stated in the Bidding Document till the completion of works in all respect and no escalation in prices on any other account shall be admissible to the contractor.

8.0 PROVIDENT FUND

- 8.1 The Contractor shall strictly comply with the provisions of Employees Provident Fund Act and register themselves with RPFC before commencing work. The Contractor shall deposit Employees and Employers contributions to the RPFC every month. The Contractor shall furnish along with each running bill, the challan/ receipt for the payment made to the RPFC for the preceding months.

9.0 MOBLISITION ADVANCE

- 9.1 Mobilization advance shall be granted in line with the provisions indicated in GCC and modified to the extent as indicated below:

Contractor shall be paid recoverable interest bearing Mobilization Advance up to maximum of 10 % of the **Contract Price excluding cost towards Comprehensive Maintenance** as per the provisions of General Conditions of Contract (GCC) against the submission of Mobilization Advance Guarantee in accordance with proforma enclosed with General Conditions of Contract.

The mobilization advance will attract interest rate @ 14.7% p.a. on reducing balance basis.

The mobilization advance paid to the contractor shall be used for execution of this contract only and the contractor shall be required to furnish details of expenditure incurred towards mobilization within two months of receipt of the mobilization advance, failing which Owner reserve the right to deduct/ encash the Bank Guarantee to the extent mobilization advance has not been utilized.

10.0 STATUTORY APPROVALS

- 10.1 Obtaining statutory approvals, required as defined in Contractor's scope under Technical Scope of Work, shall be the responsibility of the Contractor. Contractor shall arrange the inspection of the works by the authorities and necessary co-ordination and liaison work in this respect. The application on behalf of the Owner for submission to relevant authorities along with copies of required certificates complete in all respects shall be prepared and submitted by the Contractor well ahead of time so that the actual construction / commissioning of the work is not delayed for want of the approval / inspection by concerned authorities.
- 10.2 Statutory fee paid, if any, for all such inspections and approvals by authorities shall be deemed to be included in the quoted prices, if not specified otherwise.
- 10.3 Any change / addition required to be made to meet the requirements of the statutory authorities shall be carried out by the Contractor free of charge. The inspection and acceptance of the work by statutory authorities shall however, not absolve the

Contractor from any of his responsibilities under this contract,

- 10.4 All statutory approvals other than specified under 10.1 above shall be obtained by Owner/EIL and provided to the Contractor.

11.0 CONSTRUCTION EQUIPMENT AND ORGANIZATION

Provisions of GCC stands modified to the following extent:

11.1 CONSTRUCTION EQUIPMENT

- 11.1.1 The Contractor shall without prejudice to his overall responsibility to execute and complete the work as per specifications and time schedule, progressively deploy **construction equipment and tools & tackles** as specified in **Annexure-IX to this SCC** as and when required and augment the same as decided by the Engineer-in-Charge depending on the exigencies of the work so as to complete all works within the contracted time schedule and without any additional cost to Owner. No construction equipment shall be supplied by the Owner.

11.2 SITE ORGANISATION

- 11.2.1 Subject to the provisions in the contract document and without prejudice to Contractor's liabilities and responsibilities to provide adequate qualified skilled, semiskilled and unskilled personnel on the work, contractor shall deploy the minimum **supervisory personnel** as specified in **Annexure-VIIIb to this SCC** and augment the same as decided by the Engineer-in-Charge depending upon the site requirement & the exigencies of work so as to complete all works within the contracted time schedule and without any additional cost to OWNER.

- 11.2.2 Qualification and experience requirement and penalty for non-mobilization of Key Supervisory Personnel to be deployed for this work shall be as per **Annexure-VIIIa to this SCC**.

12.0 MEASUREMENT OF WORKS

- 12.1 In addition to the provisions of relevant clause of General Conditions of Contract (GCC) and associated provisions thereof, the provisions of **Annexure-VII to SCC** shall also apply.

13.0 TERMS OF PAYMENT

- 13.1 Basis and terms of payment for making "On Account Payment" shall be as set out in **Annexure-VI to SCC**. All payments will be made through EFT.

14.0 ROUNDING OFF

- 14.1 All payments to and recoveries from the bill of CONTRACTOR shall be rounded off to the nearest Rupee. Wherever the amount to be paid/ recovered consists of a fraction of a Rupee (Paise), the amount shall be rounded off to the next higher rupee if the fraction consists of 50 (fifty) paise or more and if the fraction of a Rupee is less than 50 (fifty) paise, the same shall be ignored.

15.0 QUALITY ASSURANCE/ QUALITY CONTROL

Provisions of GCC stands modified to the following extent:

- 15.1 The Contractor shall establish and maintain an effective quality assurance system outlined in recognised codes and as per the direction of Engineer in charge.
- 15.2 In case contractor fails to follow the instructions of Engineer-in-charge with respect to above clauses, next payment due to him shall not be released unless until he complies with the instructions to the full satisfaction of Engineer-in-charge.
- 15.3 The Contractor shall adhere to the quality assurance system as per EIL Specification

enclosed in the Bidding Document as **Annexure-III to SCC.**

16.0 HEALTH SAFETY AND ENVIRONMENT (HSE) MANAGEMENT

16.1 The Contractor, during entire duration of the Contract, shall adhere to HSE requirement as enclosed in the Bidding Document as **Annexure-IV to SCC.**

16.2 Safety Regulations

The Contractor shall abide by all safety regulations and ensure that safety equipment for specific job as stipulated in the factory act/ safety handbook is issued to workers during execution of work, failing which all the works at site shall be suspended.

16.3 Security

The Contractor shall make proper security arrangement at his own cost for the materials at site & the works till Handing Over of the works to the Owner/EIL.

17.0 COORDINATION WITH OTHER AGENCIES

17.1 Work shall be carried out in such a manner that the work of other agencies operating at the site is not hampered due to any action of the Contractor. Proper coordination with other agencies will be Contractor's responsibility. In case of any dispute, the decision of Engineer-in-Charge shall be final and binding on the Contractor.

18.0 EMPLOYMENT OF LOCAL LABOUR

18.1 The CONTRACTOR shall ensure that local labour, skilled and/or unskilled, to the extent available shall be employed in this work. In case of non-availability of suitable labour in any category out of the above persons, labour from outside may be employed.

18.2 The CONTRACTOR shall not recruit personnel of any category from among those who are already employed by the other agencies working at site but shall make maximum use of local labour available.

19.0 EXECUTION OF ELECTRICAL WORKS

19.1 The Contractor shall engage an approved electrical agency for execution of electrical works, holding valid electrical Contractor licence. In case Contractor himself executes electrical works then he shall arrange valid electrical Contractor licence before start of electrical works at site. The contractor shall engage electrician having valid electrical license/certificate to carry out the electrical works pertaining to the contract.

20.0 MAKE OF MATERIALS

20.1 The materials required to be supplied by the Contractor under this contract shall be procured only from EIL approved vendors. Where the makes of materials are not indicated in the Bidding document Contractor shall furnish the details of makes and shall obtain prior approval of Engineer-in-Charge of vendors / sub vendors before placing order.

20.2 Procurement of Steel, Cement & TMT bars shall be done as follows :

20.2.1 Structural Steel and TMT Bar: The methodology for procurement of structure steel shall be as per **Annexure-V** of this SCC.

20.2.2 Cement: The list of approved manufacturers of cement and the methodology for procurement of cement by the contractor from manufacturers other than the approved manufacturers, shall be as per **Annexure-V** of this SCC.

21.0 GENERAL GUIDELINES DURING AND BEFORE ERECTION

- 21.1 The CONTRACTOR shall be responsible for organising the lifting of the equipment in the proper sequence for orderly progress of the work and to ensure that access routes for erecting the other equipments are kept open. The installation of machines at different floor levels /terrace and at basement shall be carried out by contractor with due care not to damage the existing finishes of the building and shall augment if required, necessary machineries/lifting crane for installation purpose. The quoted prices shall include the cost towards the same.
- 21.2 Orientation of all foundations, elevations, lengths and disposition of anchor bolts and diameter of holes in the supports and saddles shall be checked by the CONTRACTOR well in advance of the installation. Rectifications, including chipping of foundations, shall be carried out where necessary in consultation with the Engineer-in-Charge. If a structural member needs to be dismantled to facilitate the equipment erection, this shall be done by the CONTRACTOR after ensuring proper stability of the main structure in consultation with the Engineer-in-Charge. All such dismantled members shall be put back in position to the satisfaction of Engineer-in-Charge after the completion of the equipment erection.
- 21.3 During the performance of the work the CONTRACTOR shall at his own cost keep structures, materials and equipment adequately braced by guys, struts or other approved means which shall be supplied and installed by the CONTRACTOR as required till the installation work is satisfactorily completed. Such guys, shoring, bracing, strutting, planking supports etc. shall not interfere with the work of other agencies and shall not damage or cause distortion to other works executed by the CONTRACTOR or other agencies.
- 21.4 The CONTRACTOR shall duly comply with manufacturer(s) recommendations and detailed specifications for the installation of the various equipment and machines.
- Various tolerances required as marked on the drawings and/or in accordance with the specifications and/or instructions of the Engineer-in-charge shall be maintained. Verticality shall be verified with the Theodolite and shall be maintained.

22.0 REGISTRATION OF THE CONTRACT WITH STATUTORY AUTHORITIES

- 22.1 Before submission their first invoice for Running payment, the Contractor shall register themselves and the contract at their own cost with the Reserve Bank of India, Income Tax, Sales Tax and such other statutory authorities, as may be required under the rules and regulations governing in India. The Contract Price shall be deemed to include all costs towards the same. A copy of all documents related to all such registration shall be submitted to Owner for record.

23.0 SECURED ADVANCE ON MATERIALS

- 23.1 CONTRACTOR shall be allowed Secured Advance on the materials in line with the provisions indicated in the General Conditions of Contract (GCC). Items qualifying for Secured Advance are listed in **Annexure-XII** to SCC. Decision of Engineer-in-Charge regarding the extent of materials required for incorporation in permanent works as well as the cost of materials, shall be final and binding on the CONTRACTOR.
- 23.2 If there is any inordinate and inexcusable delay in incorporation of the Goods and Materials for which the Secured Advance is provided in the Permanent Work, EIL shall levy interest @ 14.7% p.a on the value of the unutilised Goods and Materials from the date on which such Goods and Materials were scheduled to be incorporated in the Permanent Work as per the Works Completion Schedule till the date on which the Goods and Materials are incorporated in the Permanent Work.
- 23.3 However, wherever secured advance is paid for the material, the contractor shall submit the Bank Guarantee for an equivalent amount of materials at the time of release of secured advance valid till the fixing/installation/erecting of materials at

site/adjustments in respect of advance paid.

24.0 PRICE REDUCTION SCHEDULE

24.1 PRICE REDUCTION DUE TO DELAY IN COMPLETION OF WORK DURING EXECUTION PHASE (PART-1 OF SOR)

24.1.1 The existing clause no. 13.2.1 of GCC stands replaced with following:

If the Contractor fails to complete the Works within the Time for Completion, and/or if completion of any specific work(s) in respect of which a separate progress schedule has been established is not achieved by the date of completion thereof specified in the Works Completion Schedule (each of the said date(s) is hereinafter referred to as the "starting date for discount calculation) other than due to an event of Force Majeure or any reason solely attributable to EIL, then the **Contract Price excluding cost towards Comprehensive Maintenance** shall be reduced by 0.5 % (Point Five percent) per week of delay or part thereof subject to a maximum deduction of 5% (Five percent) of the **Contract Price excluding cost towards Comprehensive Maintenance**. After any adjustments made to the Contract Price pursuant to this Clause 13.2.1, if any amount is due to EIL from the Contractor, then such amount will either be set-off against any amount due or that becomes due to the Contractor or be recovered by invoking the Contract Performance Bank Guarantee.

The decision of the Engineer-in-Charge in regard to applicability of price reduction shall be final and binding on the Contractor.

24.1.2 Following new Sub-Clause 13.2.5 is added in Clause 13.2 of GCC:

"Also in case Time extension is granted during execution of the contract pending detailed delay analysis, Payment against RA bill shall be released to the contractor without deducting PRS subject to condition that Contractor submits the additional BG to cover the PRS amount."

24.2 Price reduction During Comprehensive Maintenance period (Part-2 of SOR):

24.2.1 The owner shall, at its own discretion, impose a price reduction on delay in stipulated services during the CMC period. Applicable price reduction/penalty shall be imposed as mentioned in the Technical Part.

24.2.2 The price reduction shall be affected from the RA bill due to the contractor for CMC period/ Security Deposit(s). The decision of the owner in this case shall be final and binding upon the contractor. However, shutdown for routine maintenance of the system, taken by the contractor with prior permission of the owner shall not be considered as breakdown.

25.0 INSURANCE

25.1 Before commencing the execution of work, the Contractor shall obtain "Contractor's All Risk" (CAR) Policy for the contract value at his own cost & expense in the joint names of Owner & Contractor (Owner shall be the first beneficiary). However, wherever the contractor already has the Insurance policies for their worker/equipments/vehicles etc. proposed to be used at project site, the contractor shall have the option either to get a new Insurance policy in the Joint name of Owner and contractor or get the endorsement of existing policies from Insurers in the Joint name of owner and contractor.

25.2 All other insurance required under Indian Law and Regulations including workmen compensation, employer's liability insurance, Third Party Liability etc. if these are not covered in "CAR" policy shall be taken by Contractor. The Contractor shall keep all the Insurance Policies as mentioned above valid till the Completion of work.

26.0 CONTRACT PERFORMANCE BANK GUARANTEE / SECURITY DEPOSIT

26.1 SECURITY DEPOSIT (SD) FOR EXECUTION PHASE (I.E. PART-1 OF SOR)

26.1.1 The Contractor shall within 15 days of award (i.e. issue of FOA / LOA), deposit with the EIL an interest free Security Deposit (SD) for an amount equivalent to 10% of the **contract value excluding cost towards Comprehensive Maintenance** in the form of Bank draft/ Pay Order/ Bank Guarantee (BG). If the Security Deposit is submitted in the form of Bank Guarantee, the bank guarantee towards security deposit shall be from a Scheduled Bank and kept valid till 3 months beyond the expiry of the Extended Defects Liability period. It shall be submitted as per the format included in the Bidding document. This CPBG shall be reduced to PBG of 5% after completion and acceptance of works towards performance during defect liability period.

26.1.2 Alternatively, Contractor shall have the option of converting the EMD into initial Security deposit. In such a case, Contractor shall, within 15 days of issue of FOA / LOA, furnish a letter exercising the option of converting EMD in to Initial Security deposit. The Bank Guarantee furnished towards EMD shall appropriately be amended including extension till three months beyond the expiry of the Extended Defects Liability period for claim period so that the same can be treated as initial security deposit.

In addition to the above initial security deposit, from each RA bills a differential amount in percentage (equal to 10% of estimated Part-1 of Schedule of Rates value minus EMD amount) shall be deducted towards security deposit. Thus, RA bill payments shall be released to the Contractor after deduction of the security deposit. Non-refundable interest @ 14.7% p.a. shall be charged from the date the BG towards security deposit becomes due and shall be chargeable on the reducing balance left after apportioning the SD amount accumulated from each running bill, till complete SD amount is recovered from the bills.

26.1.3 However, contractor shall have the option to submit a BG towards SD valid till 3 months beyond the expiry of the Extended Defects Liability period for claim period, for an amount equivalent to 10% of value of Part-1 of Schedule of Rates at any time during the pendency of the contract. Pursuant to this, the amount so far retained in lieu of security deposit along with BG towards initial security deposit shall be released immediately. The interest so charged shall not be refunded.

26.1.4 In case contractor do not opt for submission of BG towards security deposit till completion of works, the amount retained on account of SD along with BG towards initial security deposit, shall be released only after expiry of the Extended Defects Liability period and settlement of all dues in all respects, to the satisfaction of the Engineer-in-Charge and submission of 'No dues Certificate' & 'No claim Certificate' by the Contractor. The Owner/EIL reserves the right to deduct any amount due to the Owner/EIL from the Security Deposit at the time of expiry of Contract/ Termination of Contract.

26.1.5 The Bank guarantee towards SD (or the Initial Security deposit, as the case may be) shall be extended by such period as Owner/EIL may require if the completion is delayed/ extended beyond the schedule time as per direction of the Engineer-in-Charge. In the event, if value of Part-1 of Schedule of Rates is increased during the Contract Validity Period for any reason whatsoever, the value of the Bank Guarantee towards SD shall be increased proportionately by the Contractor within 7 (Seven) Days to ensure that it remains valid for an amount which is equivalent to 10% of the revised Part-1 value, as determined by the engineer-in-Charge else amount equivalent to the 10% of such differential between estimated Part-1 value and executed Part-1 value shall be withheld/ deducted from the RA bills on account of increase in SD.

26.1.6 If the Contractor fails to provide, maintain or renew the Security Deposit in accordance with the Contract, then Owner/EIL may, without prejudice to any other rights and remedies, to which it may be entitled, by giving written notice, terminate the Contract

forthwith.

- 26.1.7 In case Contractor does not furnish Bank guarantee towards security deposit as per clause 26.1.1 or does not exercise the option of converting EMD towards Initial security deposit as per clause 26.1.2 above, then the EMD submitted by the contractor shall be liable to be forfeited.
- 26.1.8 In case Contractor, after confirming that he will exercise the option of converting EMD into initial security deposit, does not submit the amended bank guarantee, payment shall not be released unless the amended BG is submitted, unless full amount of security deposit along with accrued interest thereon is recovered from the running bill.
- 26.1.9 Contract Agreement shall be signed on receipt of SD from the contractor or a letter from him exercising the option of converting EMD into initial security deposit.

26.2 SECURITY DEPOSIT (SD) FOR COMPREHENSIVE MAINTENANCE WORK

- 26.2.1 The Contractor, after completion of works (i.e. execution phase Part-I), shall submit to Owner/EIL a Security Deposit in favour of RCB, towards Comprehensive Maintenance Work in form of Bank Draft/Pay Order/Bank Guarantees for value of 10% of maintenance phase cost (i.e. Part-2 of SOR) and shall be valid upto a period of 3 (three) months beyond the end of the Maintenance period.
- 26.2.2 If the SD is submitted in the form of BG, the same shall be submitted from any Indian Scheduled bank or any Indian Branch of International Bank in an approved format provided by Owner / PMC.
- 26.2.3 This SD for CMC shall be in addition to the SD submitted earlier (in line with Clause 26.1 of SCC) towards the performance of the Contract during Construction works and defect liability period.
- 26.2.4 The SD submitted by the Contractor for the Contract (in line with Cl. No. 26.1 of SCC) shall be released subject to the submission of the SD for CMC. In case the Contractor fails to submit the required SD for CMC, Owner reserve the right to revoke the CPBG submitted earlier for execution of the contract, as per Clause No 26.1, and recover the required amount towards SD for CMC.
- 26.2.5 In case of non-fulfilment of contractual obligation by the Contractor during CMC period, Owner at its sole discretion, may revoke the SD for CMC in part or full after serving one month's written notice to the Contractor. Owner also has the right to forfeit the CMC SD in the event the Contractor withdraws from the Contract on a later date during the CMC period in addition to the recovery from other dues from the Contractor.
- 26.2.6 The SD for CMC shall be returned to the Contractor by Owner on successful completion of CMC.

27.0 ALTERATION IN SPECIFICATIONS, PLANS, DRAWINGS AND DESIGNS, EXTRA-WORKS

- 27.1 Provisions mentioned in the General Conditions of Contract (GCC) stands modified to the following extent:
- 27.1.1 The work covered under this contract having to be executed by the Contractor on a lumpsum firm price / item rate quoted by him, Owner / EIL will not accept any proposals for changes in value of contract or extension in time on account of any such changes which may arise to the Contractor's scope of work as a result of detailed engineering and thereafter during the execution of Work. The only exception to this will be case where Owner / EIL requests in writing to the Contractor to upgrade the specifications or the size of any major pieces of equipments, plant or machinery beyond what is normally required to meet the scope of work as defined in the Contract document.

In such cases, a change order will be initialled by the Contractor at the appropriate time for Owner / EIL's prior approval giving the full back-up data for their review and for

final settlement of any impact on price within 30 (thirty) days thereafter.

27.1.2 The ENGINEER-IN-CHARGE shall have to make any alterations in, omission from, additions to or substitutions for, the Schedule of Rates, the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the WORK and the CONTRACTOR shall be bound to carry out the such altered/ extra/ new items of WORK in accordance with any instructions which may be given to him in writing signed by the ENGINEER-IN-CHARGE, and such alterations, omissions, additions or substitutions shall not invalidate the CONTRACT and any altered, additional or substituted work which the CONTRACTOR may be directed to do in the manner above specified as part of the WORK shall be carried out by the CONTRACTOR on the same conditions in all respects on which he agreed to do the main WORK. The time of completion of WORK may be extended for the part of the particular job at the discretion of the ENGINEER-IN-CHARGE, for only such alterations, additions or substitutions of the WORK, as he may consider as just and reasonable. The rates for such additional, altered or substituted WORK under this clause shall be worked out in accordance with the following provisions:-

- a) If the rates for the additional, altered or substituted WORK are specified in the CONTRACT for the WORK, the CONTRACTOR is bound to carry on the additional, altered or substituted WORK at the same rates as specified in the CONTRACT.
- b) If the rates for the additional, altered or substituted WORK are not specifically provided in the CONTRACT for the WORK, the rates will be derived from the rates for similar class of WORK as are specified in the CONTRACT for the WORK. The opinion of the ENGINEER-IN-CHARGE, as to whether or not the rates can be reasonably so derived from the items in this CONTRACT will be final and binding on the CONTRACTOR.
- c) If the rates for the altered, additional or substituted WORK cannot be determined in the manner specified in sub-clause (a) and (b) above, then the CONTRACTOR shall, within 7 days of the date of receipt of instruction to carry out the WORK, inform the ENGINEER-IN-CHARGE of the rates which it is his intention to charge for such class of WORK, supported by analysis of the rate or rates claimed, and the ENGINEER-IN-CHARGE shall determine the rate or rates on the basis of the prevailing market rates, labour cost at schedule of labour rates plus 15% to cover contractor's supervision, overheads and profit and pay the CONTRACTOR accordingly. The opinion of the ENGINEER-IN-CHARGE as to current market rates of materials and the quantum of labour involved per unit of measurement will be final and binding on the CONTRACTOR.
- d) Where the item of work will be executed through nominated specialist agency as approved by the ENGINEER-IN-CHARGE, then the actual amount paid to such nominated agency supported by documentary evidence and as certified by ENGINEER-IN-CHARGE shall be considered plus 15% (Fifteen percent) to cover all contingencies, overhead, profits to arrive at the rates.
- e) Provisions contained in the Sub-clause (a) & (d) above shall, however, not apply for the following:-

Where the value of additions of new items together with the value of alterations, additions/deletions or substitutions does not exceed plus (+) 50% or is not less than minus (-) 25% of the VALUE OF CONTRACT, the item rates in the Schedule of Rates shall hold good for all such variations between the above mentioned limits, irrespective of any increase/decrease of quantities in the individual items of Schedule of Rates. Where the value of addition of new items together with the value of alterations, additions/deletions or substitutions reduces more than 25% of the contract value but is within the following limits the

tenderer shall be paid compensation for decrease in the value of work, as follows:

S.No.	Range of Variation	Percentage compensation for decrease in the value of work in the respective
a)	Between (-) 25% up to & inclusive of (+) 50%	No increase/decrease applicable for the Schedule of Rates (The rates of the Schedule of Rates shall be valid for this increase/decrease).
b)	Beyond (-) 25% upto & inclusive of (-) 50%	For reduction beyond -25% contractor shall be compensated by an amount equivalent to 10% of the reduction in value of the contract as awarded. For example if the actual contract value is 70% of awarded value then compensation shall be 10% of (75-70) i.e. 0.5% of awarded

28.0 ALTERNATIVE DISPUTE RESOLUTION

Clause 35.2 & 35.3 of GCC stands replaced with following:

28.1 ALTERNATIVE DISPUTE RESOLUTION - CONCILIATION & ARBITRATION

28.1.1 If Any dispute or difference or disagreement arises between the parties out of any notified claim of the SELLER/ CONTRACTOR included in his final bill and /or arising out of any amount claimed by the EIL (whether or not the amount claimed by the PURCHASER or any part thereof shall have been deducted from the Final bill of the supplier/ Contractor or any amount paid by the EIL to the SELLER/ Contractor in respect of the work) or arises out of or in connection with the validity, application or interpretation of the Contract/ Purchase order (the "**Dispute**"), the Parties shall endeavour in good faith to resolve the Dispute through negotiation within 7 (seven) days of a written notice setting out the nature of such Dispute.

28.1.2 In the event that any Dispute is not resolved between the Parties pursuant to Clause 28.1.1 within 21 (twenty-one) days of receipt of the notice under Clause 28.1.1, then such Dispute shall be referred to Conciliation as per clause 28.1.3 below.

28.1.3 Dispute Resolution through Conciliation by Outside Expert Committee

A) Engineers India Limited has framed the EIL Conciliation Rules 2012 in conformity with Part - III of the Indian Arbitration and Conciliation Act 1996 for speedier, cost effective and amicable settlement of disputes through conciliation. A copy of the said rules has been made available on EILs' web site www.engineersindia.com for reference.

B) Any dispute(s)/difference(s)/issue(s) of any kind whatsoever between/ amongst the Parties arising under/ out of/ in connection with this contract, which cannot be mutually resolved within a reasonable time, shall be settled in accordance with the aforesaid EIL Conciliation Rules 2012. This shall also include all such issues where Engineer-in-Charge's decision is said to be final & binding on any issue raised by the Contractor.

C) In case of any dispute(s)/ difference(s)/ issue(s), a Party shall notify the other Party(ies) in writing about such a dispute(s) / difference(s) / issue(s) between / amongst the Parties and that such a Party wishes to refer the dispute(s)/ difference(s)/ issue(s) to Conciliation. Such Invitation for Conciliation shall contain sufficient information as to the dispute(s)/difference(s)/ issue(s) to enable the other Party (ies) to be fully informed as to the nature of the dispute(s)/ difference(s)/ issue(s), the amount of monetary claim, if any, and apparent cause(s) of action.

D) The Parties shall freeze claim(s) of interest, if any, and shall not claim the same during the pendency of Conciliation proceedings. The Settlement Agreement, as and when reached/agreed upon, shall be signed between the Parties and Conciliation proceedings shall stand concluded on the date of the Settlement Agreement.

28.1.4 In the event that any Dispute between the Parties is not resolved pursuant to Clause 28.1.3, then such Dispute shall be referred to Arbitration as per clause 28.1.5 below.

28.1.5 Dispute Resolution through Arbitration

A) The arbitration will be conducted as per the Arbitration & Conciliation Act, 1996. The arbitral tribunal shall comprise of a sole arbitrator whom shall be appointed by EIL. The place of arbitration for any Disputes and Related Disputes shall be Delhi (save and except where otherwise specified under the Main Contract for the Related Dispute, in which event the place of arbitration shall be the place of arbitration for such Related Dispute). The language to be used in the arbitral proceedings shall be English. The arbitral award shall be final and binding upon both the Parties.

B) Responsibility of payment for all costs of arbitration, excepting counsel fees, shall be as per the arbitration award.

28.1.6 While any Dispute under this Contract/ Order is pending; and except where this Contract/ Order has been terminated in accordance with the terms of this Contract/ Order, the Parties shall continue to perform all of their respective obligations under this Contract/ Order without prejudice to the final determination in accordance with the provisions under this clause 28.1.

28.1.7 Where, in EIL's absolute discretion, it is beneficial for the completion of the Facility for any Dispute between EIL and the Contractor/ Seller, in respect of which an arbitration notice has been given, to be resolved in the same arbitration proceedings as a dispute between EIL and any other party or parties engaged in relation to the completion of the Facility (the "Related Dispute") then:

A) if a notice to concur in the appointment of an arbitrator has been served in the Related Dispute, the Contractor/ Seller hereby agrees that, at EIL's sole option, the Dispute between EIL and the Contractor/ Seller shall be referred to the arbitrator appointed or to be appointed in respect of the Related Dispute and be determined at the same time as such Related Dispute;

B) Where an arbitrator has already been appointed in connection with the Related Dispute, the Contractor/ Seller hereby agrees that, at EIL's sole option, the Dispute between EIL and the Contractor/ Seller shall be referred to and be determined by the arbitrator so appointed contemporaneously with the Related Dispute.

28.2 Settlement of dispute between Govt. Dept./ Public Sector Undertaking

28.2.1 If the Contractor/ seller is a CPSU or CPSE or is a Govt. Department, any disputes or differences between the Contractor/ seller and EIL hereto arising out of any notified claim of the Contractor/ Seller in terms hereof and/or arising out of any amount claimed by EIL (whether or not the amount claimed by EIL or any part thereof shall have been deducted from the final bill of the Contractor or any amount paid by EIL to the Contractor in respect of the work), then in suppression of the provisions of clause no. 28.1 above, the following provisions shall apply, namely; such disputes or differences shall be resolved amicably by mutual consultation or Conciliation or through the good offices or empowered agencies of the Government.

28.2.2 In the event that any Dispute does not resolved between the Parties is not resolved amicably by mutual consultation, then such Dispute shall be referred to Conciliation as per clause 28.1.3 above.

28.2.3 If such resolution is not possible through conciliation, then the unresolved disputes or

differences shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises inline with applicable DPE guidelines for settlement of commercial dispute between CPSEs or CPSEs & Government Departments issued by Department of Public Enterprises and as modified from time to time. The Arbitration Act shall not be applicable to the arbitrator under this clause. The award of the arbitrator shall be binding upon parties to the dispute, provided, however any party aggrieved by such award may make a further reference for setting aside or revision of the award to Law Secretary Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary/Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the parties finally and conclusively. The parties to the dispute will share equally the cost of arbitration as intimated by the arbitrator.

28.2.4 Notwithstanding the existence of any dispute or arbitration in terms hereof or otherwise, the Contractor/ seller shall continue and be bound to continue and perform the Works to completion in all respects according to the Contract (unless the Contract or Works be determined by EIL) and the Contractor/ seller shall remain liable and bound in all respects under the Contract.

29.0 INTEGRITY PACT

29.1 Provisions mentioned in the General Conditions of Contract (GCC) stands modified to the following extent that the Integrity Pact is not applicable for the subject Bidding Document.

30.0 SECURITY AND SECURITY ARRANGEMENT

30.1 Contractor shall provide adequate number of watch and ward personnel on round the clock basis with limited/ restricted access to the site through gates manned by the Security personnel. The responsibility of safe custody of materials, works in progress, site office for Owner/ PMC/ Engineer-in-charge/ Contractor, building and all services etc. lies with the Contractor only, till handing over to Owner. Security plan shall be in line with the requirement of Owner or security agency appointed by Owner. Contractor shall follow strictly to the procedures, rules and regulations laid down by Owner. Contractor shall ensure adequate illumination of worksite on a continuous basis to ensure safe working and to avoid pilferage/ theft of materials lying in project site. The rates quoted shall be deemed to be inclusive of this scope and the Contractor is not eligible for any additional payment in this regard. All construction areas of the project site during execution shall be properly barricaded with GI/MS sheets of at least 3.0 meters height with proper supports/ foundations to isolate the construction area from surroundings to avoid any disturbance and to avoid the entry of unauthorized personnel.

31.0 ENGAGEMENT OF SPECIALISED AGENCY AND SUBCONTRACTOR

31.1 The contractor shall engage the specialized agencies after obtaining approval from Engineer-in-charge in respect of the following works to be carried at site:-

- Anti-termite treatment
- Water proofing works.
- Painting Works
- Structural Glazing/ Spider Glazing works
- Electrical / Communication/IT works
- Elevators Works
- HVAC/BMS Works
- Fire management system
- Piling Works

- Horticulture works
- Any other work as directed by Engineer-in-Charge

32.0 SUB CONTRACTING

- 32.1 If the CONTRACTOR is required to engage a Sub-Contractor for any part of work, then such Sub-Contractors shall have prior proven experience of similar work and shall require specific approval by Engineer-in-charge.
- 32.2 Following the notification of Acceptance of Bid the CONTRACTOR will submit to the EIL for approval the details of Sub-Contractors for as per the format attached with SCC (**Annexure-XI** to SCC). CONTRACTOR shall ensure that very competent and resourceful agencies with proven track record and performance should be proposed for the work to be sub-contracted.

33.0 SAMPLES OF MATERIALS

- 33.1 The contractor shall submit to the Engineer-in-Charge samples of materials as per specifications to be used in the work for approval before bringing bulk supplies and before commencing the work. These approved samples shall be preserved and retained in the custody of the Engineer-in-Charge as standard of materials till the completion of the work. The cost of such samples shall be borne by the contractor and nothing shall be payable on this account.
- 33.2 Sub-standard Material/ Work: In case any material/ work is found sub-standard the same shall be rejected by the Engineer-in-Charge and the same shall be removed from the site of work within 48 hours, failing which the same shall be got removed by the Engineer-in-Charge at the risk and cost of the contractor without giving any further notice and time.
- 33.3 Testing of Materials: Even ISI marked materials may be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/ material. Whenever ISI marked materials are brought to the site of work the contractor shall, if required by the Engineer-in-Charge, furnish manufacturer test certificate or test certificate from approved testing laboratory to establish that the material procured by the contractor for incorporation in the work satisfy the provisions of IS Codes relevant to the material and/ or the work done.
- 33.4 The contractor shall arrange carrying out of all tests required under the agreement through the laboratory as approved by the Engineer-in-Charge. The cost of tests shall be borne by the contractor. In addition contractor shall establish a laboratory at site of work at his own cost. The laboratory shall be equipped with all necessary equipment as per requirement of specification or as per direction of Engineer-in-Charge. Establishing the laboratory at site shall not absolve the contractor from fulfilling the criteria of getting the test done in independent Lab. The decision of the Engineer-in-Charge of allowing any test in the site laboratory or any other laboratory shall be final.
- 33.5 Before execution of finishing items like plaster, flooring & painting etc, the contractor shall make samples for finishing items and get the approval well in advance from the Engineer-in-Charge.

34.0 LIGHTING ARRANGEMENT AT SITE

- 34.1 The contractor shall provide uninterrupted lighting of the work place and surrounding areas during the night hours. No additional payment shall be made on this account and the cost in this regard is deemed to be included in the quoted rates.

35.0 PROMOTION OF MSE

- 35.1 For facilitating promotion and development of micro and small enterprises, EIL is committed to promote the procurement of supplies/ services from MSEs in Orders/ contracts awarded by EIL. 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. After award of work, supplier/ contractor shall furnish a statement alongwith copies of orders/ FOAs placed by them on their sub-suppliers/ sub-contractors who are MSEs, to EIL Project Manager/ RCM, as applicable.

36.0 SUSPENSION OF WORKS

36.1 Clause 26.0 of GCC is modified to the following extent:

Beyond 5 days of continuous suspension or beyond 30 days of Cumulative suspension, Contractor shall be entitled for an extension of the time equal to the period of suspension plus 25%.

In case continuous suspension exceeds 30 days, a contractor shall be entitled for both Time and Cost compensation. The cost compensation shall be worked based on mutual discussions and acceptance.

The above clause of suspension will be applicable only if it is done for the reasons solely attributable to OWNER.

37.0 CALIBRATION REQUIREMENT AT SITE

37.1 Calibration requirement of monitoring and measuring devise at site shall be as per **Annexure- XIII** to SCC.

38.0 FORM OF CONTRACT PERFORMANCE BANK GUARANTEE

38.1 The 'FORM OF CONTRACT PERFORMANCE BANK GUARANTEE' attached as Appendix 1 to General Conditions of Contract (GCC) stands replaced with **Annexure-XIV** to the Special Conditions of Contract (SCC).

39.0 MODIFICATION TO GCC

39.1 Modification to GCC is attached as a new **Annexure-XV** to the SCC.

SCOPE OF WORK

[ANNEXURE - I TO SPECIAL CONDITIONS OF
CONTRACT]

Scope of work shall be as specified in Technical Section of the Bidding Document.

SCOPE OF SUPPLY
[ANNEXURE-II TO SPECIAL CONDITIONS OF CONTRACT]

SCOPE OF SUPPLY

1. All materials, equipment, consumables etc. required for successful completion of the works are to be supplied by the Contractor at their sole cost and expense.
2. Owner **shall not** issue or supply any materials either as “Free Issue or on chargeable basis”.

**SPECIFICATION FOR QUALITY
MANAGEMENT SYSTEM
REQUIREMENTS FROM BIDDERS**

[ANNEXURE - III TO SPECIAL CONDITIONS OF CONTRACT]

बोलीकर्ता से गुणवत्ता प्रबंधन
प्रणाली अपेक्षाओं हेतु विनिर्देश

**SPECIFICATION FOR QUALITY
MANAGEMENT SYSTEM
REQUIREMENTS FROM BIDDERS**

Rev. No	Date	Purpose	Prepared by	Checked by	Approved by
0	04.06.09	Issued as Standard Specification	QMS Standards Committee	QMS Standards Committee	SCT ND
					Standards Committee Convenor Standard Bureau Chairman

Abbreviations:

MR	-	Material Requisition
PR	-	Purchase Requisition
PO	-	Purchase Order
QA	-	Quality Assurance
QMS	-	Quality Management System
ISO	-	International Organization for Standardization
CV	-	Curriculum Vitae

QMS Standards Committee

Convenor: Mr. S.C. Tyagi

Members: Mr. Chandra Kant (Insp.)
Mr. R.K. Trivedi (Engg.)
Mr. R.K. Sabharwal (C&P)
Mr. M.P. Jain (Projects)
Mr. Ravindra Kumar (Const.)
Mr. Mukesh Meena (CQA)

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Attachment

Format for Concession/Deviation Permit : Format No.5-0000-0180-F1

1.0 SCOPE

This specification establishes the Quality Management System requirements to be met by BIDDER for following purpose:

- QMS requirements to be met by suppliers/contractors after award of work/during contract execution.

2.0 DEFINITIONS

2.1 Bidder

For the purpose of this specification, the word "BIDDER" means the person(s), firm, company or organization who is under the process of being contracted by EIL / Owner for delivery of some products (including service). The word is considered synonymous to supplier, contractor or vendor.

2.2 Project Quality Plan

Document tailored from Standard Quality Management System Manual of BIDDER, specifying how the quality requirements of the project will be met.

2.3 Owner

Owner means the owner of the project for which services / products are being purchased and includes their representatives, successors and assignees.

3.0 REFERENCE DOCUMENTS

6-78-0002	Specification for Documentation Requirements from Contractors
6-78-0003	Specification for Documentation Requirements from Suppliers

4.0 QUALITY MANAGEMENT SYSTEM – GENERAL

Unless otherwise agreed with EIL / Owner, the BIDDER proposed quality system shall fully satisfy all relevant requirements of ISO 9001 "Quality Management Systems – Requirements." Evidence of compliance shall be current certificate of quality system registration to ISO 9001 or a recent compliance audit recommending registration from a registrar. The quality system shall provide the planned and systematic control of all quality related activities for execution of contract. Implementation of the system shall be in accordance with BIDDER'S Quality Manual and PROJECT specific Quality Plan.

5.0 QUALITY SYSTEM REQUIREMENTS

5.1 BIDDER shall ensure that the responsible authority for execution of the order / contract has communicated the PO / contract requirements including any identified or intended statutory and regulatory requirements to all concerned in their organization and sub-contractor's organization who are contributing to the execution of the PO/ contract.

5.2 BIDDER shall establish a documented Quality Policy and Quality Objectives to achieve the specified and intended requirement of PO / contract.

- 5.3 BIDDER shall identify and communicate the responsibilities and authorities of the personnel contributing to the execution of the PO / contract.
- 5.4 BIDDER shall deploy competent and trained personnel for various activities for fulfillment of PO / contract. BIDDER shall arrange adequate infrastructure and work environment to ensure that the specification and quality of the deliverable are maintained.
- 5.5 BIDDER shall do the quality planning for all activities involved in delivery of order. The quality planning shall cover as minimum the following:
- Resources
 - Product / deliverable characteristics to be controlled.
 - Process characteristics to ensure the identified product characteristics are realized
 - Identification of any measurement requirements, acceptance criteria
 - Records to be generated
 - Need for any documented procedure
- The quality planning shall result into the quality assurance plan, inspection and test plans (ITPs) and job procedures for the project activities in the scope of bidder. These documents shall be submitted to EIL/Owner for review/approval, before commencement of work.
- 5.6 Requirements for sub-contracting / purchasing of services specified in contract / tender shall be adhered to. Wherever requirements are not specified, the sub-contractor shall establish and maintain a system for purchasing / sub-contracting to ensure that purchased product / service conforms to specified requirements. Criteria for selection of sub-contractor, evaluation, re-evaluation, maintenance of purchasing data and verification of purchased product (sub-contractor services), constitute important components of this requirement.
- 5.7 BIDDER shall plan and carry production and service provision under controlled conditions. Controlled conditions shall include, as applicable
- a) the availability of information that describes the characteristics of the product
 - b) the availability of work instructions
 - c) the use of suitable equipment
 - d) the availability and use of monitoring and measuring devices
 - e) the implementation of monitoring and measurement
 - f) the implementation of release, delivery and post delivery activities
- 5.8 BIDDER shall validate any processes for production and service provision where resulting output cannot be verified by subsequent monitoring and measurement. This includes any process where deficiencies become apparent only after the product is in use or service has been delivered.
- 5.9 BIDDER shall establish a system for identification and traceability of product / deliverable throughout product realization. Product status with respect to inspection and testing requirements shall be identified.
- 5.10 BIDDER shall identify, verify, protect and safeguard EIL / Owner property (material / document) provided for use or incorporation into the product. If any Owner / EIL property is lost, damaged or otherwise found to be unsuitable for use, this shall be reported to the EIL / Owner.

- 5.11 BIDDER shall preserve the conformity of product / deliverable during internal processing and delivery to the intended destination. Requirements mentioned in the tender shall be adhered to.
- 5.12 BIDDER shall establish system to ensure that inspection and testing activities are carried out in a manner that is consistent with the inspection and testing requirements. Where necessary, measuring equipments shall be calibrated at specified frequency, against national or international measurement standards; where no such standard exists, the basis used for calibration shall be recorded. The measuring equipments shall be adjusted or re-adjusted as necessary, identified to enable the calibration status to be determined. The measuring equipments shall be protected from damage during handling, maintenance and storage.
- 5.13 BIDDER shall ensure effective monitoring, using suitable methods, of the processes involved in production and other related processes for delivery of the scope of contract.
- 5.14 BIDDER shall monitor and measure the characteristics of the product/deliverable to verify that product requirement has been met. The inspection (stage as well as final) by BIDDER and EIL / Owner personnel shall be carried out strictly as per the ITPs forming part of the contract. Product release or service delivery shall not proceed until the planned arrangements have been satisfactorily completed, unless otherwise approved by relevant authority and where applicable by Owner / EIL.
- 5.15 BIDDER shall establish and maintain a documented procedure to ensure that the product which does not conform to requirements is identified and controlled to prevent its unintended use or delivery
- 5.16 All non-conformities (NCs) / deficiencies found by the BIDDER'S inspection / surveillance staff shall be duly recorded, including their disposal action shall be recorded and resolved suitably. Effective corrective and preventive action shall be implemented by the BIDDER so that similar NCs including deficiencies do not recur.
- 5.17 All deficiencies noticed and reported by EIL / Owner shall be analyzed by the BIDDER and appropriate corrective and preventive actions shall be implemented. BIDDER shall intimate EIL / Owner of all such corrective and preventive action implemented by him.
- 5.18 BIDDER should follow the standards, specifications and approved drawings. Concessions/Deviations shall be allowed only in case of unavoidable circumstances. In such situations Concession/deviation request must be made by the BIDDER in attached Format No. 5-0000-0180-F1.
- 5.19 BIDDER shall have documented procedure for control of documents.
- 5.20 All project records shall be carefully kept, maintained and protected for any damage or loss until the project completion, then handed over to EIL / Owner as per contract requirement (Refer Specification Nos. 6-78-0002 - Specification for Documentation Requirements from Contractors and 6-78-0003 - Specification for Documentation Requirements from Suppliers), or disposed as per relevant project procedure.
- 5.21 BIDDER shall prepare and submit for review and approval, Project Quality Plan / Quality Assurance Plan for contracted scope / job. The BIDDER'S Quality Plan shall address all of the applicable elements of ISO 9001, identify responsible parties within BIDDER'S organization, for the implementation / control of each area, reference the applicable procedures used to control / assure each area, and verify the documents produced for each area. The Project Quality Plan shall necessarily define control or make reference to the relevant procedures, for design and engineering, purchase, documentation, record control, bid evaluation, inspection, production/manufacturing, preservation, packaging and storage,

quality control at construction site, pre-commissioning, commissioning and handing over (as applicable) in line with contract requirement and scope of work.

6.0 AUDITS

BIDDER shall plan and carry out the QMS audit for the job. Quality audit programme shall cover design, procurement, construction management and commissioning as applicable including activities carried out by sub-vendors and sub-contractors. This shall be additional to the certification body surveillance audits carried out under BIDDER'S own ISO 9001 certification scheme.

The audit programmes and audit reports shall be submitted to EIL / Owner as per specified documentation requirements. EIL or Owner's representative reserves the right to attend, as a witness, any audit conducted during the execution of the WORKS.

In addition to above EIL, Owner and third party appointed by EIL/Owner may also perform Quality and Technical compliance audits. BIDDER shall provide assistance and access to their systems and sub-contractor / vendor systems as required for this purpose. Any deficiencies noted shall be immediately rectified by BIDDER.

7.0 DOCUMENTATION REQUIREMENTS

BIDDER shall submit following QMS documents immediately after award of work (Within one week) for record / review by EIL / Owner.

- Organization chart (for complete organization structure and for the project)
- Project Quality Plan/Quality Assurance Plan
- Job specific Inspection Test Plans
- Job Procedures
- Inspection/Test Formats

In addition to above QMS documents, following documentation shall be maintained by the BIDDER for submission to EIL / Owner on demand at any point of time during execution of the project.

- Quality Manual
- CVs of the personnel in BIDDER'S QA Organogram
- Certificate of approval for compliance to ISO: 9001 standard
- Procedure for Control of Non-conforming Product
- Procedure for Control of Documents
- Sample audit report of the QMS internal and external audits conducted during last one year
- Customer satisfaction reports from at least 2 customers, during the last one year
- Project audit report
- Corrective action report on the project audits
- Technical audit reports for the project

Documents as specified above are minimum requirements. BIDDER shall submit any other document/data required for completion of the job as per EIL/Owner instructions.

CONCESSION/DEVIATION PERMIT

(USE ONLY THIS PAGE FOR COMMUNICATION WITH VENDOR/CONTRACTOR)

TO BE FILLED BY ORIGINATOR	Project _____		Originator Ref. _____	
	Job No. _____		Order/Contract No. _____	
	Equipment Title _____		Item No. _____	
	Originator: Vendor/Contractor _____			
	Caution : Originator to note that any delay in processing of concession/deviation permit shall be to originator's account and shall not be used as a reason for extension in delivery			
	Requirement as per specification		Description of Concession/Deviation sought	
	Why the Concession/Deviation is required? Supporting evidence/calculations enclosed/not enclosed			
	Contractual implications if Concession/Deviation is granted:			
	* Time impact		More/Less/No change	
* Cost impact		More/Less/No change		
* Performance Warranty/Guarantee		Affected/Not affected		
Under present constraints requested Concession/deviation is most optimum for the project and does not involve any hazard, and shall meet the stipulated performance requirements.				
Date: _____		Signature Vendor /Contractor (with seal)		

Decision on Concession/Deviation including decision, on time and cost implications

(To be filled by the Inspection engineer [at RPO/HO] or RCM, responsible for conveying the decision to the originator, after resolution)

Date: _____

Signature _____

Location : _____

Name _____



Opinion from EIL site supervisor/inspection engineer
(Specify whether post-facto approval required for regularization)

Date : _____

Name : _____
RPO/Site Name _____

Original forward to : _____
(Target division/department/group)

Copy to : _____
(Project Manager)

Date : _____

Name : _____

Disposal by target division/department

Whether any vendor/contractor made 'Technically not Acceptable' during bid evaluation, on the aspect of which this concession/deviation is sought-----YES/NO

Date : _____

Name : _____

Final decision of Project Manager along with overall review
(Client's decision required/not required)

Date : _____

Name : _____

Client's decision, if required

Date : _____

Signature : _____
Name : _____

ठेकेदारों से प्रलेखन
अपेक्षाओं हेतु विनिर्देश

SPECIFICATION FOR
DOCUMENTATION REQUIREMENTS
FROM CONTRACTORS

1	12.03.15	General Revision	QMS Standards Committee	QMS Standards Committee	MPJ	SC
0	04.06.09	Issued as Standard Specification	QMS Standards Committee	QMS Standards Committee	SCT	ND
Rev. No	Date	Purpose	Prepared by	Checked by	Standards Committee Convener	Standards Bureau Chairman
Approved by						

Abbreviations:

DCI	-	Document Control Index
eDMS	-	Electronic Document Management System
FOA	-	Fax of Acceptance
HOD	-	Head of Division / Department
IC	-	Inspection Certificate
IRN	-	Inspection Release Note
ITP	-	Inspection and Test Plan
LOA	-	Letter of Acceptance
MOU	-	Memorandum of Understanding
QMS	-	Quality Management System
URL	-	Universal Resource Locator

QMS Standards Committee

Convener: Mr. M.P. Jain

Members: Mr. A.K. Chaudhary (Insp.)
Mr. S.K. Kaul (C&P)
Mr. R.K. Trivedi (Engg.)
Mr. Ravindra Kumar (Const.)
Mr. Tilak Raj (Projects)
Mr. Vinod Kumar (CQA)

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Attachments

Format for completeness of Final Documentation : Format No. 3-78-0004

1.0 SCOPE

This specification establishes the Documentation Requirements from Contractors

All documents/data against the Tender / Contract shall be developed and submitted to EIL/Owner by the contractor for review / records, in line with this specification.

2.0 DEFINITIONS

2.1 Contractor

For the purpose of this specification, the word "CONTRACTOR" means the person(s), firm, company or organization who is under the process of being contracted by EIL / Owner for delivery of some products and services. The word is considered synonymous to bidder, supplier or vendor.

2.2 Owner

Owner means the owner of the project for which services / products are being purchased and includes their representatives, successors and assignees.

3.0 REFERENCE DOCUMENTS

6-78-0001 Specification for Quality Management System Requirements from Bidders

4.0 DOCUMENTATION REQUIREMENTS

4.1 Documents/Data to be submitted by the Contractor

4.1.1 The contractor shall submit the documents and data against the Tender/Contract as per the list specified in respective Tender/Contract.

4.1.2 Review of the contractor drawings by EIL would be only to review the compatibility with basic designs and concepts and in no way absolve the contractor of his responsibility/contractual obligation to comply with Tender/Contract requirements, applicable codes, specifications and statutory rules/regulations. Any error/deficiency noticed during any stage of manufacturing/execution/installation shall be promptly corrected by the contractor without any extra cost or time, whether or not comments on the same were received from EIL during the drawing review stage.

4.1.3 Unless otherwise specified, submission of documents for Review/Records shall commence as follows from the date of Fax of Intent / Letter of Intent/ Fax of Acceptance (FOA)/ Letter of Acceptance (LOA):

QMS	- 1week
Drawing/Document Control Index	- 2weeks
Other Documents/Drawings	- As per approved Drawing/Document Control Index/Schedule

4.1.4 Documents as specified in Tender/Contract are minimum requirements. Contractor shall submit any other document/data required for completion of the job as per EIL/Owner instructions.

4.2 Style and Formatting

- 4.2.1 All Documents shall be in ENGLISH language and in M.K.S System of units.
- 4.2.2 Before submitting the drawings and documents, contractor shall ensure that the following information are properly entered in each drawing:

Tender Number
Name of Equipment / Package
Equipment / Package Tag No.
Name of Project
Owner
Main Contractor (if work is sub-contracted)
Drawing / Document Title
Drawing / Document No.
Drawing / Document Revision No. and Date

4.3 Review and Approval of Documents by Contractor

- 4.3.1 The Drawing/Documents shall be reviewed, checked, approved and duly signed/stamped by contractor before submission. Revision number shall be changed during submission of the revised contractor documents and all revisions shall be highlighted by clouds. Whenever the contractor require any sub- contractor drawings to be reviewed by EIL, the same shall be submitted by the contractor after duly reviewed, approved and stamped by the contractor. Direct submission of sub-contractor's drawings without contractor's approval shall not be entertained.

4.4 Document Category

4.4.1 Review Category

Following review codes shall be used for review of contractor Drawings/Documents:

Review Code 1	-	No comments. Proceed with manufacture/ fabrication/ Construction as per the document.
Review Code 2	-	Proceed with manufacture/ fabrication/ Construction as per commented document. Revised document required
Review Code 3	-	Document does not conform to basic requirements as marked. Resubmit for review
R	-	Document is retained for Records. Proceed with manufacture/ fabrication
V	-	Void

4.5 Methodology for Submission of Documents to EIL/Owner

4.5.1 Document Control Index (DCI)

Contractor shall create and submit Document Control Index (DCI) for review based on PO/PR/MR along with schedule date of submission of each drawing/document on EIL eDMS. The DCI shall be specific with regard to drawing/document no. and the exact title. Proper sequencing of the drawings/documents should be ensured in schedule date of submission.

4.5.2 Submission of Drawings/Documents

Drawings/documents and data shall be uploaded on the EIL eDMS Portal. The detail guidelines for uploading documents on EIL eDMS Portal are available on following URL

<http://edocx.eil.co.in/vportal>

4.5.3 Statutory Approvals

Wherever approval by any statutory body is required to be taken by Contractor, the Contractor shall submit copy of approval by the authority to EIL.

4.5.4 Details of Contact Persons of Contractor

After placement of order contractor shall assign a Project Manager for that order. The details are to be filled online through the portal. The details include e-mail address, mailing address, telephone nos., fax nos. and name of Project Manager. All the system generated emails pertaining to that order shall be sent to the assigned Project Manager.

4.5.5 Schedule and Progress Reporting

Contractor shall submit monthly progress report and updated procurement, engineering and manufacturing status (schedule vs. actual) every month. First report shall be submitted within 2 weeks from FOA/LOA. In case of exigencies, EIL/Owner can ask for report submission as required on weekly/fortnightly/adhoc basis depending upon supply status and contractor shall furnish such reports promptly without any price implication. Format for progress report shall be submitted by the contractor during kick off meeting or within one week of receiving FOA/LOA, whichever is earlier.

4.5.6 Quality Assurance Plan/Inspection and Test Plan

Inspection and test plans attached if any, to the tender are generic and indicative only. Immediately after receipt of the order, contractor shall submit within one week of receiving FOA/LOA, job specific ITPs based on the indicative ITPs. Further, contractor shall also submit Quality Assurance Plan for project activities in the scope of contract, starting from manufacturing to handing over/ commissioning, these plans shall cover/identify the activities, relevant procedure, if any, code of conformance, resources for performance and checking/monitoring, approval requirements and authority, records to be generated and audit scope by EIL/Owner.

For EPCC/LSTK/Package contracts, the contractor shall prepare a list of items/ equipments and their inspection categorization plans for all items included in the scope of supply immediately after receipt of order and obtain approval for the same from EIL. The items shall be categorized into different categories depending upon their criticality for the scope of inspection of TPIA and/or EIL.

4.5.7 Inspection Release Note (IRN)/ Inspection Certificate (IC)

Contractor shall ensure that all documents viz. documents reviewed, manufacture's test certificate etc., mentioned in Inspection Release Note(IRN), issued by EIL/third party against the materials supplied by contractor., are sent to EIL along with the IRN.

IRN/ IC shall be issued by EIL Inspector/ third party inspection agency only after all the drawings/documents as per DCI are submitted and are accepted under review code-1 & code R. Material/Equipments dispatch from contractor's/sub vender's works shall not commence till above condition is met.

Note: Non fulfilling above requirement shall result into appropriate penalty or withholding of payment as per conditions of Tender/Contract.

4.6 Final Documentation

4.6.1 As built Drawings

Shop/Site changes made by contractor after approval of drawings under 'Code 1' by EIL and deviations granted through online system, if any, shall be marked in hard copies of drawings which shall then be stamped 'As-built' by the contractor. These 'As-built' drawings shall be reviewed and stamped by EIL Inspector/Site engineer/TPIA also. Format for completeness of final documents (Format No. 3-78-0004) is attached with this specification. Contractor shall prepare scanned images files of all marked – up 'As – built' drawings. Simultaneously contractor shall incorporate the shop/site changes in the native soft files of the drawings also.

4.6.2 As built Final Documents

As built final documents shall be submitted as listed in Tender/Contract.

4.6.3 Packing/Presentation of Final Documents

Final Documents shall be legible photocopies in A4, A3 size only. Drawings will be inserted in plastic pockets (both sides transparent, sheet thickness minimum 0.1 mm) with an extra strip of 12 mm wide for punching so that drawings are well placed.

Final Documentation shall be bound in hard board plastic folder(s) of size 265 mm x 315 mm (10¹/₂ inch x 12¹/₂ inch) and shall not be more than 75 mm thick. It may be of several volumes and each volume shall have a volume number, index of volumes and index of contents of that particular volume. Where numbers of volumes are more, 90mm thickness can be used. Each volume shall have top PVC sheet of minimum 0.15 mm thick duly fixed and pressed on folder cover and will have 2 lever clips. In case of imported items documents, 4 lever clip shall also be accepted. All four corners of folders shall be properly metal clamped. Indexing of contents with page numbering must be incorporated by contractor. Spiral/Spico bound documents shall not be acceptable. As mentioned above, books should be in hard board plastic folders with sheets punched and having 2/4 lever clips arrangement.

Each volume shall contain on cover a title block indicating Tender No., name of project, name of customer, package equipment tag no. & name (if applicable). Each volume will have hard front cover and a reinforced spine to fit thickness of book. These spines will also have the title printed on them. Title shall include also volume number (say 11 of 15) etc.

4.6.4 Submission of Soft copies

Contractor shall submit to EIL, the scanned images files as well as the native files of drawings/documents, along with proper index.

In addition to hard copies, contractor shall submit electronic file (CD-ROM) covering soft copies of all the final drawings and documents, all text documents prepared on computer, scanned images of all important documents (not available as soft files), all relevant catalogues, manuals available as soft files (editable copies of drawings/text documents, while for catalogues/manuals/proprietary information and data PDF files can be furnished).

All the above documents shall also be uploaded on the EIL eDMS portal.

4.6.5 Completeness of Final Documentation

Contractor shall get the completeness of final documentation verified by EIL/TPIA and attach the Format for Completeness of Final Documentation (Format No. 3-78-0004) duly signed by EIL or TPIA as applicable to the document folder.

COMPLETENESS OF FINAL DOCUMENTATION

Name of Supplier/Contractor :
Customer :
Project :
EIL's Job No. :
Purchase Order No./
Contract No. :
Purchase Requisition No./
Tender No. :
Name of the Work/
Equipment :
Tag. No. :
Supplier's/ Contractor's
Works Order No. :

Rev. No. :

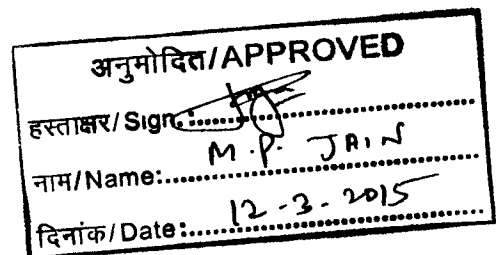
Certified that the Engineering Documents/ Manufacturing & Test Certificates submitted by the supplier are complete in accordance with the Vendor Data Requirements of Purchase Requisition.

Signature :
Date :
Name :
Designation :
Department :

Signature :
Date :
Name :
Designation :
Department :

Supplier/Contractor

EIL/TPIA



**STANDARD SPECIFICATION
FOR
HEALTH, SAFETY & ENVIRONMENT
(HSE) MANAGEMENT
AT CONSTRUCTION SITES**

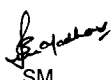


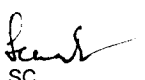
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**SAFETY MEASURES FOR
ELECTRICAL INSTALLATIONS
DURING CONSTRUCTION**

[ANNEXURE - IV TO SPECIAL CONDITIONS OF CONTRACT]

निर्माण स्थल पर
स्वास्थ्य, सुरक्षा एवं पर्यावरण
प्रबंधन हेतु मानक विनिर्देशन

STANDARD SPECIFICATION FOR
HEALTH, SAFETY & ENVIRONMENT
(HSE) MANAGEMENT
AT CONSTRUCTION SITES

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Abbreviations:

AERB	:	Atomic Energy Regulatory Board
ANSI	:	American National Standards Institute
BARC	:	Bhabha Atomic Research Centre
BS	:	British Standard
EIL	:	Engineers India Limited
ELCB	:	Earth Leakage Circuit Breaker
EPC	:	Engineering, Procurement and Construction
EPCC	:	Engineering, Procurement, Construction and Commissioning
ESI	:	Employee State Insurance
GCC	:	General Conditions of Contract
GM	:	General Manager
GTAW	:	Gas Tungsten Arc Welding
HOD	:	Head of Department
HSE	:	Health, Safety & Environment
HV	:	High Voltage
IS	:	Indian Standard
IE	:	Indian Electricity
JSA	:	Job Safety Analysis
LOTO	:	Lock Out & Tag Out
LPG	:	Liquefied Petroleum Gas
LSTK	:	Lump Sum Turn Key
MV	:	Medium Voltage
PPE	:	Personal Protective Equipment
RCM	:	Resident Construction Manager or Site-in-Charge, as applicable
ROW	:	Right of Way
SCC	:	Special Conditions of Contract
SLI	:	Safe Load Indicator
TBM	:	Tool Box Talks

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1.0 SCOPE

This specification establishes the Health, Safety and Environment (HSE) management requirement to be complied by Contractors/Vendors including their sub-contractors/sub vendors during construction.

This specification is not intended to replace the necessary professional judgment needed to design & implement an effective HSE system for construction activities and the contractor is expected to fulfill HSE requirements in this specification as a minimum. It is expected that contractor shall implement best HSE practices beyond whatever are mentioned in this specification.

Requirements stipulated in this specification shall supplement the requirements of HSE Management given in relevant Act(s)/legislations, General Conditions of Contract (GCC), Special Conditions of Contract (SCC) and Job (Technical) Specifications. Where different documents stipulate different requirements, the most stringent shall apply.

2.0 REFERENCES

The document should be read in conjunction with following:

- General Conditions of Contract (GCC)
- Special Conditions of Contract (SCC)
- Building and other construction workers Act,
- Indian Factories Act
- Job (Technical) specifications
- Relevant International / National Codes (refer Appendix-A for standards/codes on HSE)
- Relevant State & National Statutory requirements.
- Operating Manuals Recommendation of Manufacturer of various construction Machineries

3.0 REQUIREMENTS OF HEALTH, SAFETY & ENVIRONMENT (HSE) MANAGEMENT SYSTEM TO BE COMPLIED BY BIDDERS

3.1 Management Responsibility

3.1.1 HSE Policy & Objectives

The Contractor should have a documented HSE policy duly & objectives to demonstrate commitment of their organization to ensure health, safety and environment aspects in their line of operations.

HSE Policy of the contractor shall be made available to Owner / EIL at the place of execution of specific contract works, as a valid document.

3.1.2 Management System

The HSE management system of the Contractor shall cover the HSE requirements & commitments to fulfill them, including but not limited to what are specified under clause 1.0 and 2.0 above. The Contractor shall obtain the approval of its site specific HSE Plan from EIL / Owner prior to commencement of any site works. Corporate as well as Site management of the Contractor shall ensure compliance of their HSE Plan at work sites in its entirety & in true spirit.

3.1.3 Indemnification

Contractor shall indemnify & hold harmless, Owner/EIL & their representatives, free from any and all liabilities arising out of non-fulfillment of HSE requirements or its consequences.

3.1.4 Deployment & qualifications of Safety personnel

The Contractor shall designate/deploy various categories of HSE personnel at site as indicated below in sufficient number. In no case, deployment of safety Supervisor / Safety Steward shall substitute deployment of Safety Officer / Safety Engr what is indicated in relevant statute of BOCW Act i.e deployment of safety officer/Safety Engineer is compulsory at project site. The Safety supervisors, Safety stewards etc. would facilitate the HSE tasks at grass root level for construction sites and shall assist Safety Officer / Engineers.

a) Safety Steward

For every 250 workmen, one safety steward shall be deployed.

As a minimum, he shall preferably possess School leaving Certificate (of Class XII with Physics & Chemistry etc.) and trained in fire-fighting as well as in safety/occupational health related subjects, with minimum two year of practical experience in construction work environment and preferably have adequate knowledge of the language spoken by majority of the workers at the construction site.

b) Safety Supervisor

For every 500workmen, one safety Supervisor shall be deployed.

As a minimum, he shall possess a recognized Degree in Science (with Physics & Chemistry) or a diploma in Engg. or Tech. with minimum Two years of practical experience in construction work environment and should possess requisite skills to deal with construction safety & fire related day-to-day issues.

c) Safety Officer / Safety Engineer

One for every 1000 workers or part thereof shall be deployed.

Safety officer/Engineer Should Possess following Qualification & Experience :

- (i) Recognized degree in any branch of Engg. or Tech. or Architecture with practical experience of working in a building or other construction work in supervisory capacity for a period of not less than two years, **or** possessing recognized diploma in any branch of Engg. or Tech with practical experience of building or other construction work in supervisory capacity for a period of not less than five years.
- (ii) Recognized degree or diploma in Industrial safety with one paper in Construction Safety
- (iii) Preferably have adequate knowledge of the language spoken by majority of the workers at the construction site.

Alternately

- (i) Person possessing Graduation Degree in Science with Physics & Chemistry and degree or diploma in Industrial Safety (from any Indian institutes recognized by

AICTE or State Council of Tech. Education of any Indian State) with practical experience of working in a building, plant or other construction works (as Safety Officer, in line with Indian Factories Act, 1958) for a period of not less than five years, may be considered as Safety Officer, in case Owner/Client of the project agrees for /approves the same.

d) HSE In-Charge

In case there is more than one Safety Officer at any project construction site, one of them, who is senior most by experience (in HSE discipline), may be designated as HSE In-Charge. Duties & responsibilities of such person shall be commensurate with that of relevant statute and primarily to coordinate with top management of Client and contractors.

In case the statutory requirements i.e. State or Central Acts and / or Rules as applicable like the Building and Other Construction Workers' Regulation of Employment and Conditions of Service- Act,1996 or State Rules (wherever notified), the Factories Act, 1948 or Rules (wherever notified), etc. are more stringent than above clarifications, the same shall be followed.

Contractors shall ensure physical availability of safety personnel at the place of specific work location, where Hot Work Permit is required / granted. No work shall be started at any of the project sites until above safety personnel & concerned Site Engineer of Contractor are physically deployed at site. The Contractor shall submit a HSE organogram clearly indicating the lines of responsibility and reporting system and elaborate the responsibilities of safety personnel in their HSE Plan.

The Contractor shall verify & authenticate credentials of such safety personnel and furnish Bio-Data/ Resume/ Curriculum Vitae of the safety personnel as above for EIL/Owner's approval, at least 1 month before the mobilization. The Contractor, whenever required, shall arrange submission of original testimonials/certificates of their Safety personnel, to EIL/Owner (for verification/scrutiny, etc.)

Imposition / Realization of penalty shall not absolve the Contractor from his/her responsibility of deploying competent safety officer at site.

Adequate planning and deployment of safety personnel shall be ensured by the Contractor so that field activities do not get affected because of non-deployment of competent & qualified safety people in appropriate numbers.

3.1.5 Implementation, Inspection/Monitoring

- The Contractor shall be fully responsible for planning, reporting, implementing and monitoring all HSE requirements and compliance of all laws & statutory requirements.
- The Contractor shall also ensure that the HSE requirements are clearly understood & implemented conscientiously by their site personnel at all levels at site.
- The Contractor shall ensure physical presence of their field engineers / supervisors, during the continuation of their contract works / site activities including all material transportation activities. Physical absence of experienced field engineers / supervisors of Contractor at critical work spot during the course of work, may invite severe penalization as per the discretion of EIC, including halting / stoppage of work.
- Contractor shall furnish their annual Inspection Plan, with regard to project issues /subjects, frequency and performers to EIL/Owner.
- The Contractor shall regularly review inspection report internally and implement all practical steps / actions for improving the status continuously.

- The Contractor shall ensure important safety checks right from beginning of works at every work site locations and to this effect format No: HSE-10 “Daily Safety Check List” shall be prepared by field engineer & duly checked by safety personnel for conformance.
- The Contractor shall carry out inspection to identify various unsafe conditions of work sites/machinery/equipments as well as unsafe acts on the part of workmen/supervisor/engineer while carrying out different project related works.
- Adequate records for all inspections shall be maintained by the Contractor and the same shall be furnished to EIL/Owner, whenever sought.
- The Contractor shall not carry-out work by engaging single worker anywhere without any supervisor anytime during day or night.
- To demonstrate involvement/commitment of site management of Contractor, at least one Safety Walk through in a month shall be carried out by Contractor’s head of site (along with his area manager/field engineers) and a report shall be furnished to EIL/Owner as per format No: HSE-1” Safety walk through report” followed by compliance for unsatisfactory remarks.
- As a general practice lifting tools/tackles, machinery, accessories etc. shall be inspected, tested and examined by competent people (approved by concerned State authorities) before being used at site and also at periodical interval (e.g. during replacement,extension, modification, elongation/reduction of machine/parts, etc.) as per relevant statutes. Hydra, cranes, lifting machinery, mobile equipments / machinery / vehicles, etc. shall be inspected regularly by only competent / experienced personnel at site and requisite records for such inspections shall be maintained by every contractor. Contractor shall also maintain records of maintenance of all other site machinery (e.g. generators, rectifiers, compressors, cutters, etc.) & portable tools/equipments being used at project related works (e.g. drills, abrasive wheels, punches, chisels, spanners, etc.). The Contractor shall not make use of arbitrarily fabricated ‘derricks’ at project site for lifting / lowering of construction materials.
- Site facilities /temporary. installations, e.g. batching plant, cement godown, DG-room, temporary electrical panels/distribution boards, shot-blasting booth, fabrication yards, etc. and site welfare facilities, like labour colonies, canteen/pantry, rest-shelters, motor cycle/bicycle-shed, site washing facilities, First-aid centers, urinals/toilets, etc. should be periodically inspected by Contractor (preferably utilizing HR/Admn. personnel to inspect site welfare facilities) and records to be maintained.

3.1.6 Behaviour Based Safety

- The contractor shall develop a system to implement Behaviour-Based Safety (BBS) through which work groups can identify, measure and change the behaviours of employees and workers
- The BBS process shall include the following:
 - Identify the behaviours critical to obtaining required safety performance.
 - Communicate the behaviours and how they are performed correctly to all
 - Observe the work force and record safe/at risk behaviours. Intervene with workers to give positive reinforcement when safe behaviours are observed. Provide coaching/correction when at risk behaviours are observed
 - Collect and record observation data
 - Summarize and analyze observation data
 - Communicate observation data and analysis results to all employees
 - Provide recognition or celebrate when safe behaviour improvements occur
 - Change behaviours to be observed or change activators or change consequences as appropriate.
 - Communicate any changes to workforce
- Contractor through its own HSE committee shall implement the above process.
- The necessary procedures and reporting formats shall be developed by the contractor for approval by EIL/Owner.

- The HSE committee of contractor shall observe individual's behavior for safe practices adapted for utilization/execution of work for following as a minimum:-
 - PPE
 - Tools & equipment
 - Hazard Identification & control
 - House keeping
 - Confined space entry
 - Hot works
 - Excavation
 - Loading & unloading
 - Work At height
 - Stacking & storage
 - Ergonomics
 - Procedures

3.1.7 Awareness and Motivation

- The Contractor shall promote and develop awareness on Health, Safety and Environment protection among all personnel working for the Contractor.
- Regular awareness programs and fabrication shop / work site meetings at least on monthly basis shall be arranged on HSE activities to cover hazards/risks involved in various operations during construction.
- Contractor to motivate & encourage the workmen & supervisory staff by issuing / awarding them with tokens/ gifts/ mementos/ monetary incentives / certificates, etc.
- Contractor shall assess & recognize the behavioral change of its site engineers / supervisors periodically and constantly motivate / encourage them to implement HSE practices at project works

3.1.8 Fire prevention & First-Aid

- The Contractor shall arrange suitable First-aid measures such as First Aid Box (Refer Appendix-B for details), trained personnel/nurse (male) to administer First Aid, stand-by Ambulance vehicle and
- The Contractor shall arrange installation of fire protection measures such as adequate number of steel buckets with sand & water and adequate number of appropriate portable fire extinguishers (Refer Appendix-C for details) to the satisfaction of EIL/Owner.
- The Contractor shall deploy trained supervisory personnel / field engineers to cater to any emergency situation.
- In case the number of workers exceeds 500, the Contractor shall position an Ambulance / vehicle and nurse on round the clock basis very close to the worksite.
- The Contractor shall arrange FIRE DRILL at each site at least once in three months, involving site workmen and site supervisory personnel & engineers. The Contractor shall maintain adequate record of such fire drills at project site

3.1.9 Documentation

The Contractor shall evolve a comprehensive, planned and documented system covering the following as a minimum for implementation and monitoring of the HSE requirements and the same shall be submitted for approval by owner/EIL.

- HSE Organogram
- Site specific HSE Plan
- Safety Procedures, forms and Checklist. Indicative list of HSE procedures is attached as Appendix :H
- Inspections and Test Plan
- Risk Assessment & Job Safety Analysis for critical works.

- The monitoring for implementation shall be done by regular inspections and compliance of the observations thereof. The Contractor shall get similar HSE requirements implemented at his sub-contractor(s) work site/office. However, compliance of HSE requirements shall be the responsibility of the Contractor. Any review/approval by EIL/Owner shall not absolve contractor of his responsibility/liability in relation to fulfilling all HSE requirements.

3.1.10 Audit

The Contractor shall submit an Audit Plan to EIL/Owner indicating the type of audits and covering following as minimum:

- Internal HSE audits regularly at least on quarterly-basis by engaging internal qualified auditors (viz safety officers/Construction personnel having 5 years experience in construction safety and Lead Auditor Course :OSHA 18001certification).
- External HSE audits regularly at least on every six months by engaging qualified external auditors (viz safety officers/Construction personnel having 10 years experience in construction safety and Lead Auditor Course :OSHA 18001certification).

All HSE shortfalls/ non-conformances on HSE matters brought out during review/audit, shall be resolved forthwith (generally within a week) by Contractor & compliance report shall be submitted to EIL/Owner.

In addition to above audits by contractor, the contractor's work shall be subjected to HSE audit by EIL/Owner at any point of time during the pendency of contract. The CONTRACTOR shall take all actions required to comply with the findings of the Audit Report and issue regular Compliance Reports for the same to OWNER/ EIL till all the findings of the Audit Report are fully complied.

Failure to carry-out HSE Audits & its compliance (internal & external) by Contractor, shall invite penalization.

3.1.11 Meetings

- The Contractor shall ensure participation of his top most executive at site (viz. Resident Construction Manager / Resident Engineer / Project Manager / Site-in-Charge) in Safety Committee / HSE Committee meetings arranged by EIL/Owner usually on monthly basis or as and when called for. In case Contractor's top most executive at site is not in a position to attend such meeting, he shall inform EIL/Owner in writing before the commencement of such meeting indicating reasons of his absence and nominate his representative – failure to do so may invite very stringent penalization against the specific Contractor, as deemed fit in Contract. The obligation of compliance of any observations during the meeting shall be always time bound. The Contractor shall always assist EIL/Owner to achieve the targets set by them on HSE management during the project implementation.
- In addition, the Contractor shall also arrange internal HSE meetings chaired by his top most executive at site on weekly basis and maintain records. Such internal HSE meetings shall essentially be attended by field engineers / supervisors (& not by safety personnel only) of the Contractor and its associates. Records of such internal HSE meetings shall be maintained by the Contractor for review by EIL/Owner or for any HSE Audits.
- Agenda of internal HSE meeting should broadly cover: -

- a) Confirmation of record notes / minutes of previous meeting
- b) Discussion on outstanding subjects of previous points / subjects, if any
- c) Incidents / Accidents (of all types) at project site, if any
- d) Current topics related to site activities / subjects of discussion
- e) House keeping
- f) Behavioral Safety
- g) Information / views / deliberations of members / site sub Contractors
- h) Report from Owner / Client
- i) Status of Safety awareness, Induction programs & Training programs

The time frame for such HSE meeting shall be religiously maintained by one and all.

3.1.12 Intoxicating drinks & drugs and Smoking

- The Contractor shall ensure that his staff members & workers (permanent as well casual) shall not be in a state of intoxication during working hours and shall abide by any law relating to consumption & possession of intoxicating drinks or drugs in force.
- The Contractor shall not allow any workman to commence any work at any locations of project activity who is/are influenced / effected with the intake of alcohol, drugs or any other intoxicating items being consumed prior to start of work or working day.
- Awareness about local laws on this issue shall form part of the Induction Training and compulsory work-site discipline.
- The Contractor shall ensure that all personnel working for him comply with “No-Smoking” requirements of the Owner as notified from time to time. Cigarettes, lighters, auto ignition tools or appliances as well as intoxicating drugs, dry tobacco powder, etc. shall not be allowed inside the project / plant complex.
- Smoking shall be permitted only inside smoking booths exclusively designated & authorized by the Owner/EIL.

3.1.13 Penalty

The Contractor shall adhere consistently to all provisions of HSE requirements. In case of non-compliances and also for repeated failure in implementation of any of the HSE provisions, EIL/Owner may impose stoppage of work without any cost & time implication to the Owner and/or impose a suitable penalty.

The amount of penalty to be levied against defaulted Contractor shall be up to a cumulative limit of

2.0% (Two percent) of the contract value for Item Rate or Composite contracts with an overall ceiling of 1, 00, 00, 000 (Rupees One crore)

0.5% (Zero decimal five percent) of the contract value for LSTK, OBE, EPC, EPCC or Package contracts with an overall ceiling of 10, 00,00,000 (Rupees ten crores)

This penalty shall be in addition to all other penalties specified elsewhere in the contract. The decision of imposing stop-work-instruction and imposition of penalty shall rest with EIL/Owner. The same shall be binding on the Contractor. Imposition of penalty does not make the Contractor eligible to continue the work in unsafe manner.

The amount of penalty applicable for the Contractor on different types of HSE violations is specified below:

Sl. No.	Violation of HSE norms	Penalty Amount
1.	For not using personal protective equipment (Helmet, Shoes, Goggles, Gloves, Full body harness, Face shield, Boiler suit, etc.)	Rs 500/- per day/ Item / Person.
2.	Working without Work Permit/Clearance	Rs 20000/- per occasion
3.	Execution of work without deployment of requisite field engineer / supervisor at work spot	Rs. 5000/- per violation per day
4.	Unsafe electrical practices (not installing ELCB, using poor joints of cables, using naked wire without top plug into socket, laying wire/cables on the roads, electrical jobs by incompetent person, etc.)	Rs 10000/- per item per day.
5.	Working at height without full body harness, using non-standard/ rejected scaffolding and not arranging fall protection arrangement as required, like hand-rails, life-lines, Safety Nets etc.	Rs. 10000/- per case per day.
6.	Unsafe handling of compressed gas cylinders (No trolley, jubilee clips double gauge regulator, and not keeping cylinders vertical during storage/handling, not using safety cap of cylinder).	Rs 500/- per item per day.
7.	Use of domestic LPG for cutting purpose / not using flash back arresters on both the hoses/tubes on both ends.	Rs. 3000/- per occasion.
8.	No fencing/barricading of excavated areas / trenches.	Rs. 3000/- per occasion.
9.	Not providing shoring/strutting/proper slope and not keeping the excavated earth at least 1.5M away from excavated area.	Rs.5, 000/- per occasion.
10.	Non display of scaffold tags, caution boards, list of hospitals, emergency services available at work locations.	Rs.1000/- per occasion per day
11.	Traffic rules violations like over speeding of vehicles, rash driving, talking on mobile phones during vehicle driving, wrong parking, not using seat belts, vehicles not fitted with reverse horn / warning alarms / flicker lamps during foggy weather.	Rs. 2000/- per occasion per day
12.	Absence of Contractor's RCM/SIC or his nominated representative (prior approval must be taken for each meeting for nomination) from site HSE meetings whenever called by EIL/Owner & failure to nominate his immediate deputy (in the site-organogram) for such HSE meetings.	Rs10000/- per meeting.
13.	Failure to maintain HSE records by Contractor Safety personnel, in line with approved HSE Plan/Procedures/Contract specifications..	Rs 10000/- per month.
14.	Failure to conduct daily site safety inspection (by Contractor's safety engineers/safety officers), internal HSE meeting, internal HSE Awareness/Motivation Program, Site HSE Training and HSE audit at predefined frequencies (as approved in HSE Plan).	Rs.10000/- per occasion.

Sl. No.	Violation of HSE norms	Penalty Amount
15.	Failure to submit the monthly HSE report by 5 th of subsequent month to Project's Engineer-in-Charge / Owner	Rs. 10000/- per occasion and Rs. 1000/- per day of further delay.
16.	Poor House Keeping	Rs. 5000/- per occasion per subject
17.	Failure to report & follow up accident (including Near Miss) reporting system within specific time-frame.	Rs. 20000/- per occasion
18.	Degradation of environment (not confining toxic spills, spilling oil/lubricants onto ground)	Rs10000/- per occasion
19.	Not medically examining the workers before allowing them to work at height / to work in confined space / to work in shot-blasting / to work for painting / to work in bitumen or asphalt works, not providing ear muffs while allowing them to work in noise polluted areas, made them to work in air polluted areas without respiratory protective devices, etc.	Rs 5000/- per occasion per worker
20.	Violation of any other safety condition as per job HSE plan / work permit and HSE conditions of contract (e.g. using crowbar on cable trenches, improper welding booth, not keeping fire extinguisher ready at hot work site, unsafe rigging practices, non-availability of First-Aid box at site, not using hood with respiratory devices by blaster for shot//grit blasting, etc.)	Rs. 5000/- per occasion
21.	Failure to carry-out Safety audit in time (internal & external), close-out of identified shortfalls of Observations of Safety Aspects(OSA),etc	Rs. 20,000/- per occasion
22.	Carrying out sand blasting instead of grit/shot blasting	Rs. 50,000/- per day
23.	Failure to deploy adequately qualified and competent Safety Officer	Rs. 10000/- per day per Officer
24.	Utilization of hydra/ back-hoe loader for material shifting or any other unauthorized /unsafe lifting works	Rs 25,000/- per occasion
25.	Any incident / accident at project site has been caused because of willful negligence or gross violation of safety measures / provisions on the part of the Contractor or any of its sub-agencies	Rs 10,00,000/-per occasion
26.	Any violation not covered above	To be decided by EIL/Owner.

- The Contractor shall make his field engineers/supervisors fully aware of the fact that they keep track with the site workmen for their behavior and compliance of various HSE requirements. Safety lapses / defects of project construction site shall be attributable to the concerned job supervisor / engineer of the Contractor, (who remains directly responsible for safely executing field works). For repeated HSE violations, concerned job supervisor / engineer shall be reprimanded or appropriate action, as deemed fit, shall be initiated (with an information to EIL & Owner) by the concerned Contractor.

Contractor shall initiate verbal warning shall be given to the worker/employee during his first HSE violation. A written warning shall be issued on second violation and specific training shall be arranged / provided by the Contractor to enhance HSE awareness/skill including feedback on the mistakes/ flaws. Any further violation of HSE stipulations by the erring individuals shall call for his forthright debar from the specific construction site. A record of warnings for each worker/employee shall be maintained by the Contractor, like by punching their cards / Gate passes or by displaying their names at the Project entry gate. Warnings, penalizations, appreciations etc. shall be discussed in HSE Committee meetings by site Head of the Contractor.

3.1.14 Accident/ Incident investigation

All accidents / incidents shall be informed to EIL/Owner at least telephonically by Contractor immediately and in writing within 24 hours on Format No. HSE-2 as applicable , by Contractor. Thereafter, a Supplementary Accident / Incident investigation Report on Format No. HSE-3 shall be submitted to EIL/Owner within 72 hours. Near Miss incident(s), Dangerous accidents/incident shall also be reported on Format No. HSE-4 within 24 hours. The accident/ incident shall be investigated by a team of Contractor's senior Site personnel (involving Site-in-Charge or at least by his deputy) for establishing root-cause and recommending corrective & preventive actions. Findings shall be documented and suitable actions taken to avoid recurrences shall be communicated to EIL/Owner. Owner/EIL shall have the liberty to independently investigate such occurrences and the Contractor shall extend all necessary help and cooperation in this regard. EIL/Owner shall have the right to share the content of this report with the outside world.

3.2 House Keeping

The Contractor shall ensure that a high degree of house keeping is maintained and shall ensure inter alia; the followings:

- a) All surplus earth and debris are removed/disposed off from the working areas to designated location(s).
- b) Unused/surplus cables, steel items and steel scrap lying scattered at different places within the working areas are removed to identify location(s).
- c) All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from work place to identified location(s).
- d) Roads shall be kept clear and materials like pipes, steel, sand, boulders, concrete, chips and bricks etc shall not be allowed on the roads to obstruct free movement of men & machineries.
- e) Fabricated steel structural, pipes & piping materials shall be stacked properly for erection.
- f) Water logging on roads shall not be allowed.
- g) No parking of trucks/trolleys, cranes and trailers etc shall be allowed on roads, which may obstruct the traffic movement.
- h) Utmost care shall be taken to ensure over all cleanliness and proper upkeep of the working areas.
- i) Trucks carrying sand, earth and pulverized materials etc. shall be covered while moving within the plant area/ or these materials shall be transported with top surface wet.
- j) The contractor shall ensure that the atmosphere in plant area and on roads is free from particulate matter like dust, sand, etc. by keeping the top surface wet for ease in breathing.
- k) At least two exits for any unit area shall be assured at all times – same arrangement is preferable for digging pits / trench excavation / elevated work platforms / confined spaces etc.
- l) Welding cables and the power cable must be segregated and properly stored and used .The same shall be laid away from the area of movement and shall be free from obstruction.
- m) Schedule for upkeep/cleaning of site to be firmed up and implemented on regular basis

The Contractor shall carry-out regular checks (minimum one per fortnight) as per format No: HSE-11 for maintaining high standard of housekeeping and maintain records for the same.

3.3 HSE Measures

3.3.1 Construction Hazards

The Contractor shall ensure identification of all Occupational Health, Safety & Environmental hazards in the type of work he is going to undertake and enlist mitigation measures. Contractor shall carry out Job Safety Analysis (JSA)/Risk Analysis specifically for high risk jobs/critical jobs like

- a) Working at height (+2.0 Mts height) for cold (incl. colour washing, painting, insulation etc.) & hot works.
- b) Work in confined space,
- c) Deep excavations & trench cutting (depth > 2.0 mts.)
- d) Operation & Maintenance of Batching Plant.
- e) Shuttering / concreting (in single or multiple pour) for columns, parapets & roofs.
- f) Erection & maintenance of Tower Crane.
- g) Erection of structural steel members / roof-trusses / pipes at height more than 2.0 Mts. with or without crane.
- h) Erection of pipes (full length or fabricated) at height more than 2.0 Mts. height with Crane of 100T capacity.
- i) All lifts using 100T Crane plus mechanical pulling.
- j) All lifts using two cranes in unison (Tandem Lifting).
- k) Any lift exceeding 80% capacity of the lifting equipments (hydra, crane etc.).
- l) Laying of pipes (isolated or fabricated) in deep narrow trenches – manually or mechanically.
- m) Maintenance of crane / extension or reduction of crane-boom on roads or in yards.
- n) Erection of any item at >2.0 Mts. height using 100T crane or of higher capacity
- o) Hydrostatic test of pipes, vessels & columns and water-flushing.
- p) Radiography jobs (in-plant & open field)
- q) Work in Live Electrical installations / circuits
- r) Handling of explosives & Blasting operations
- s) Demolishing / dismantling activities
- t) Welding / gas cutting jobs at height (+2.0 Mts.)
- u) Lifting / placing roof-girders at height (+2.0 Mts.)
- v) Lifting & laying of metallic / non-metallic sheet over roof/structures.
- w) Lifting of pipes, gratings, equipments/vessels at heights (+2.0 Mts) with & without using cranes
- x) Calibration of equipment, instruments and functional tests at yards / work-sites.
- y) Operability test of Pump, Motors (after coupling) & Compressors.
- z) Cold or Hot works inside Confined Space.
- aa) Transportation & shifting of ODC consignments into project areas.
- bb) Working in “charged/Live” elect. Panels
- cc) Stress Relieving works (Electrically or by Gas-burners).
- dd) Pneumatic Tests
- ee) Card board blasting
- ff) Chemical cleaning

and take feedback from EIL/Owner. The necessary HSE measures devised shall be put in to place, prior to start of an activity & also shall be maintained during the course of works, by the Contractor. Copies of such JSAs shall be kept available at work sites by the Contractor to enable all concerned carrying out checks / verification.

A list of typical construction hazards along with their effects & preventive measures is given in **Appendix-E**.

3.3.2 Accessibility

- The Contractor shall provide safe means of access (in sufficient numbers) & efficient exit to any working place including provisions of suitable and sufficient scaffolding at various stages during all operations of the work for the safety of his workmen and EIL/Owner.
- The Contractor shall implement use of all measures including use of “life line”, “fall-arresters”, “retractable fall arresters”, “safety nets” etc. during the course of using all safe accesses & exits, so that in no case any individual remains at risk of slip & fall during their travel.
- The access to operating plant / project complex shall be strictly regulated. Any person or vehicle entering such complex shall undergo identification check, as per the procedures in force / requirement of EIL/Owner.
- Accessibility to ‘confined space’ shall be governed by specific system / regulation, as established at project site.

3.3.3 Personal Protective Equipments (PPEs)

- The Contractor shall ensure that all their staff, workers and visitors including their sub-contractor(s) have been issued (records to be kept) & wear appropriate PPEs like nape strap type safety helmets preferably with head & sweat band with $\frac{3}{4}$ ” cotton chin strap (made of industrial HDPE), safety shoes with steel toe cap and antiskid sole, full body harness (CC marked and conforming to EN361), protective goggles, gloves, ear muffs, respiratory protective devices, etc. All these gadgets shall conform to applicable IS Specifications/CE or other applicable international standards. The Contractor shall implement a regular regime of inspecting physical conditions of the PPEs being issued / used by the workmen of their own & also its sub-agencies and the damaged / unserviceable PPEs shall be replaced forthwith.
- Owner/EIL may issue a comprehensive color scheme for helmets to be used by various agencies. The Contractor shall follow the scheme issued by the owner/EIL and shall choose any colour other than white (for Owner) or blue (for EIL) All HSE personnel shall preferably wear dark green band on their helmet so that workmen can approach them for guidance during emergencies. HSE personnel shall preferably wear such dresses with fluorescent stripes, which are noticeable during night, when light falls on them.
- For shot blasting, the usage of protective face shield and helmets, gauntlet and protective clothing is mandatory. Such protective clothing should conform relevant IS Specification.
- For off-shore jobs/contracts, contractor shall provide PPEs (new) of all types to EIL & Owner's personnel, at his (contractor's) cost. All personnel shall wear life jacket at all time.
- An indicative list of HSE standards/codes is given under **Appendix-A**.
- Contractor shall ensure procurement & usage of following safety equipments/ accessories (conforming to applicable IS mark / CE standard) by their staff, workmen & visitors including their subcontractors all through the span of project construction / pre-commissioning/ Commissioning:-‘

- a. PPEs (Helmet, Spectacle, Ear-muff, Face shield, Hand gloves, Safety Shoes, Gum boot)
- b. Barricading tape / warning signs
- c. Rechargeable Safety torch (flame-proof)
- d. Safety nets (with tie-chords)
- e. Fall arresters
- f. Portable ladders (varying lengths)
- g. Life-lines (steel wire-rope, dia not less than 8.0 mm)
- h. Full body harness (double lanyard)
- i. Lanyard
- j. Karabiner
- k. Retractable fall arresters (various length)
- l. Portable fire extinguishers (DCP type) – 5 kg capacity
- m. Portable Multi Gas detector
- n. Sound level meter
- o. Digital Lux meter
- p. Fire hoses & flow nozzles
- q. Fire blankets / Fire retardant cloth (with eyelets)

3.3.4 Working at height

- The Contractor shall issue permit for working (PFW) at height after verifying and certifying the checkpoints as specified in the attached permit (Format No. HSE-6). He shall also undertake to ensure compliance to the conditions of the permit during the currency of the permit including adherence of personal protective equipments. Contractor's Safety Officer shall verify compliance status of the items of permit document after implementation of action is completed by Contractor's execution / field engineers at work site. Job Safety Analysis (JSA) for specific works at height duly commented by EIL/Owner, shall be kept attached with particular Permit for Work (PFW) at site for ready reference & follow-up.
- Such PFW shall be initially issued for one single shift or expected duration of normal work and extended further for balance duration, if required. EIL/Owner can devise block-permit system at any specific area, in consultation with project specific HSE Committee to specify the time-period of validity of such PFW or its renewal. This permit shall be applicable in areas where specific clearance from Owner's operation Deptt. /Safety Deptt. is not required. EIL / Owner's field Engineers/Safety Officers/Area Coordinators may verify and counter sign this permit (as an evidence of verification) during the execution of the job.
- All personnel shall be medically examined & certified by registered doctor, confirming their 'medical fitness for working at height. The fitness examination shall be done once in six months.
- In case work is undertaken without taking sufficient precautions as given in the permit, EIL /Owner Engineers may exercise their authority to cancel such permit and stop the work till satisfactory compliance/rectification is arranged made. Contractors are expected to maintain a register for issuance of permit and extensions thereof including preserving the used permits for verification during audits etc.
- The Contractor shall arrange (at his cost) and ensure use of Fall Arrester Systems by his workers. Fall arresters are to be used while climbing/descending tall structures or vessels / columns etc. These arresters should lock automatically against the anchorage line, restricting free fall of the user. The device is to be provided with a double security opening system to ensure safe attachment or release of the user at any point of rope. In order to

avoid shock, the system should be capable of keeping the person in vertical position in case of a fall.

- The Contractor shall ensure that Full body harnesses conforming EN361 and having authorized CE marking is used by all personnel while working at height. The lanyards and life lines should have enough tensile strength to take the load of the worker in case of a fall. One end of the lanyard shall be firmly tied with the harnesses and the other end with life line. The harness should be capable of keeping the workman vertical in case of a fall, enabling him to rescue himself.
- The Contractor shall provide Roof Top Walk Ladders for carrying out activities on sloping roofs in order to reduce the chances of slippages and falls.
- The Contractor shall ensure that a proper Safety Net System is used wherever the hazard of fall from height is present. The safety net, preferably a knotted one with mesh ropes conforming to IS 5175/ ISO 1140 shall have a border rope & tie cord of minimum 12mm dia. The Safety Net shall be located not more than 6.0 meters below the working surface extending on either side up to sufficient margin to arrest fall of persons working at different heights.
- In case of accidental fall of person on such Safety Net, the bottom most portion of Safety Net should not touch any structure, object or ground.
- The Contractor shall ensure positive isolation while working at different levels like in the pipe rack areas. The working platforms with toe boards & hand rails shall be sufficiently strong & shall have sufficient space to hold the workmen and-tools & tackles including the equipments required for executing the job. Such working platforms shall have mid-rails, to enable people work safely in sitting posture.

3.3.5 Scaffoldings & Barricading

- Suitable scaffoldings shall be provided to workmen for all works that cannot be safely done from the ground or from solid construction except such short period work that can be safely done using ladders or certified (by 3rd party competent person) man-basket. When a ladder is used, an extra workman shall always be engaged for holding the ladder.
- The Contractor shall ensure that the scaffolds used during construction activities shall be strong enough to take the designed load. Main Contractor shall always furnish duly approved construction-design details of scaffold & SWL (from competent designers) free of charge, before they are being installed / constructed at site. Owner/EIL reserves the right to ask the Contractor to submit certification and or design calculations from his Head office / Design/ Engineering expert regarding load carrying capacity of the scaffoldings.
- All scaffolds shall be inspected by a competent Scaffolding Inspector of the Contractor. He shall paste a GREEN tag (duly signed by competent Scaffolding Inspector) on each scaffold found safe and a RED tag (duly signed by competent Scaffolding Inspector) on each scaffold found unsafe. Scaffolds with GREEN tag only shall be permitted to be used and Scaffolds with RED ones shall immediately be made inaccessible. Work being found continuing on scaffolds with RED tag shall be considered unauthorized work by Contractor and may invite penalization from EIL/Owner. For every 120-125 m² /m³ area / volume or its parts thereof minimum one TAG shall be provided.
- The Contractor shall ensure positive barricading (indicative as well as protective) of the excavated, radiography, heavy lift, high pressure hydrostatic & pneumatic testing and other such areas. Sufficient warning signs shall be displayed along the barricading areas.

- Scaffolding shall be constructed using foot seals or base plates only.

3.3.6 Electrical installations

- All electrical installations/ connections shall be carried out as per the provisions of latest revision of following codes/standards, in addition to the requirements of Statutory Authorities and IE/applicable international rules & regulations:
 - OISD STD 173 : Fire prevention & protection system for electrical installations
 - SP 30 (BIS) : National Electric Code
- All electrical installations shall be approved by the concerned statutory authorities.
- All temporary electrical installations / facilities shall be regularly checked by the licensed/competent electricians of the Contractor and appropriate records shall be maintained in format no: HSE-12” Inspection of temporary electrical booth/installation at project construction site”. Such inspection records are to be made available to EIL/Owner, whenever asked for.

3.3.6.1 The Contractor shall meet the following requirements:

- a. Shall make Single Line Diagram (SLD) for providing connection to each equipments & machinery and the same (duly approved by EIL/Owner) shall be pasted on the front face of DBs (distribution boards) or JBs (Junction boxes) at every site. (A typical Switch Board Sketch is attached as Appendix -G)
- b. Ensure that electrical systems and equipment including tools & tackles used during construction phase are properly selected, installed, used and maintained as per provisions of the latest revision of the Indian Electrical/ applicable international regulations.
- c. Shall deploy qualified & licensed electricians for proper & safe installation and for regular inspection of construction power distribution system/points including their earthing. A copy of the license shall be submitted to EIL / Owner for records. Availability of at least one competent (ITI qualified) / licensed electrician (by State Elec. authorities) shall be ensured at site round the clock to attend to the normal/emergency jobs.
- d. All switchboards / welding machines shall be kept in well-ventilated & covered shed/ with rain shed protection. The shed shall be elevated from the existing ground level to avoid water logging inside the shed . Installation of electrical switch board must be done taking care of the prevention of shock and safety of machine.
- e. No flammable materials shall be used for constructing the shed. Also flammable materials shall not be stored in and around electrical equipment / switchboard. Adequate clearances and operational space shall be provided around the equipment.
- f. Fire extinguishers and insulating mats shall be provided in all power distribution centers.
- g. Temporary electrical equipment shall not be employed in hazardous area without obtaining safety permit.
- h. Proper housekeeping shall be done around the electrical installations.
- i. All temporary installations shall be tested before energizing, to ensure proper earthing, bonding, suitability of protection system, adequacy of feeders/cables etc.

- j. All welders shall use hand gloves irrespective of holder voltage.
- k. Multilingual (Hindi, English and local language) caution boards, shock treatment charts and instruction plate containing location of isolation point for incoming supply, name & telephone No. of contact person in emergency shall be provided in substations and near all distribution boards / local panels.
- l. Operation of earth leakage device shall be checked regularly by temporarily connecting series test lamp (2 bulbs of equal rating connected in series) between phase and earth. ELCB tester /test meter shall be used for testing ELCBs
- m. Regular inspection of all installations at least once in a month. (Ref. **Format HSE-12**).

3.3.6.2 The following features shall also be ensured for all electrical installations during construction phase by the contractor:

- Each installation shall have a main switch with a protective device, installed in an enclosure adjacent to the metering point. The operating height of the main switch shall not exceed 1.5 M. The main switch shall be connected to the point of supply by means of armoured cable.
- The outgoing feeders shall be double or triple pole switches with fuses / MCBs. Loads in a three phase circuit shall be balanced as far as possible and load on neutral should not exceed 20% of load in the phase.
- The installation shall be adequately protected against overload, short circuit and earth leakage by the use of suitable protective devices. Fuses wherever used shall be HRC type. Use of rewirable fuses shall be strictly prohibited. The earth leakage device shall have an operating current not exceeding 30 mA.
- All connections to the hand tools / welding receptacles shall be taken through proper switches, sockets and plugs.
- All single phase sockets shall be minimum 3 pin type only. All unused sockets shall be provided with socket caps.
- Only 3 core (P+N+E) overall sheathed flexible cables with minimum conductor size of 1.5 mm² copper shall be used for all single phase hand tools.
- Only metallic distribution boxes with double earthing shall be used at site. No wooden boxes shall be used.
- All power cables shall be terminated with compression type cable glands. Tinned copper lugs shall be used for multi-strand wires / cables.
- Cables shall be free from any insulation damage.
- Minimum depth of cable trench shall be 750 mm for MV & control cables and 900 mm for HV cables. These cables shall be laid over a sand layer and covered with sand, brick & soil for ensuring mechanical protection. Cables shall not be laid in waterlogged area as far as practicable. Cable route markers shall be provided at every 25 M of buried trench route. When laid above ground, cables shall be properly cleated or supported on rigid poles of at least 2.1 M high. Minimum head clearance of 6 meters shall be provided at road crossings.

- Under ground road crossings for cables shall be avoided to the extent feasible. In any case no under ground power cable shall be allowed to cross the roads without pipe sleeve.
- All cable joints shall be done with proper jointing kit. No taped/ temporary joints shall be used.
- An independent earthing facility should preferably be established within the temporary installation premises. All appliances and equipment shall be adequately earthed. In case of armoured cables, the armour shall be bonded to the earthing system.
- All cables and wire rope used for earth connections shall be terminated through tinned copper lugs.
- In case of local earthing, earth electrodes shall be buried near the supply point and earth continuity wire shall be connected to local earth plate for further distribution to various appliances. All insulated wires for earth connection shall have insulation of green colour.
- Separate core shall be provided for neutral. Earth / Structures shall not be used as a neutral in any case.
- ON/OFF position of all switches shall be clearly designated / painted for easy isolation in emergency.

3.3.7 Welding/ Gas cutting

- Contractor shall ensure that flash back arrestors conforming to BS: 6158 or equivalent are installed on all gas cylinders as well as at the torch end of the gas hose, while in use.
- All cylinders shall be mounted on trolleys and provided with a closing key. Empty & filled-up gas cylinders shall be stored separately with TAG, protecting them from direct sun or rain. Minimum 2 nos. of Portable DCP type fire extinguishers (10 kg) shall be maintained at the gas cylinder stores. Stacking & storing of compressed gas cylinders shall be arranged away from DG set, hot works, Elect. Panels / Elec. boards, etc
- The burner and the hose placed downstream of pressure reducer shall be equipped with Flash Back Arrester/Non Return Valve device.
- The hoses for acetylene and oxygen cylinders must be of different colours. Their connections to cylinders and burners shall be made with a safety collar.
- At end of work, the cylinders in use shall be closed and hoses depressurized.
- Cutting of metals using gases, other than oxygen & acetylene, shall require written concurrence from Owner.
- All welding machines shall have effective earthing at least at distinctly isolated two points.
- In order to help maintain good housekeeping, and to reduce fire hazard, live electrode bits shall be contained safely and shall not be thrown directly on the ground.
- The hoses of Acetylene and Oxygen shall be kept free from entanglement & away from common pathways / walkways and preferably be hanged overhead in such a manner which can avoid contact with cranes, hydra or other mobile construction machinery.
- Hot spatters shall be contained / restricted appropriately (by making use of effective fire-retardant cloth/fabric) and their flying-off as well as chance of contact with near-by flammable materials shall be stopped.
- The Contractor shall arrange adequate systems & practices for accumulation / collection of metal & other scraps and remnant electrodes and their safe disposal at regular interval so as to maintain the fabrication and other areas satisfactorily clean & tidy.
- All gas cylinders must have a cylinder cap on at all times when not in use.

3.3.8 Ergonomics and tools & tackles

- The Contractor shall assign to his workmen, tasks commensurate with their qualification, experience and state of health.
- All lifting tools, tackles, equipment, accessories including cranes shall be tested periodically by statutory/competent authority for their condition and load carrying capacity. Valid test & fitness certificates from the applicable authority shall be submitted to Owner/EIL for their review/acceptance before the lifting tools, tackles, equipment, accessories and cranes are used.
- The contractor shall not be allowed to use defective equipment or tools not adhering to safety norms.
- Contractor shall arrange non-sparking tools for project construction works in operating plant areas / hydrocarbon prone areas.
- Wherever required the Contractor shall make use of Elevated Work Platforms (EWP) or Aerial Work Platforms (mobile or stationary) to avoid ergonomical risks and workmen shall be debarred to board such elevated platform during the course of their shifting / transportation.
- Contractor shall ensure installation of Safe Load Indicator (SLI) on all cranes (while in use) to minimize overloading risk. SLI shall have capability to continuously monitor and display the load on the hook, and automatically compare it with the rated crane capacity at the operating condition of the crane. The system shall also provide visual and audible warnings at set capacity levels to alert the operator in case of violations.
- The contractor shall be responsible for safe operations of different equipments mobilized and used by him at the workplace like transport vehicles, engines, cranes, mobile ladders, scaffoldings, work tools, etc.
- The Contractor shall arrange periodical training for the operators of hydra, crane, excavator, mobile machinery, etc. at site by utilizing services from renowned manufacturers

3.3.9 Occupational Health

- The contractor shall identify all operations that can adversely affect the health of its workers and issue & implement mitigation measures.
- For surface cleaning operations, sand blasting shall not be permitted even if not explicitly stated elsewhere in the contract.
- To eliminate radiation hazard, Tungsten electrodes used for Gas Tungsten Arc Welding shall not contain Thorium.
- Appropriate respiratory protective devices(hood with respiratory devices) shall be used to protect workmen from inhalation of air borne contaminants like silica, asbestos, gases, fumes, etc.
- Workmen shall be made aware of correct methods for lifting, carrying, pushing & pulling of heavy loads. Wherever possible, manual handling shall be replaced by mechanical lifting equipments.
- For jobs like drilling/demolishing/dismantling where noise pollution exceeds the specified limit of 85 decibels, ear muffs shall be provided to the workers.
- To avoid work related upper limb disorders (WRULD) and backaches, Display Screen Equipments' workplace stations shall be carefully designed & used with proper sitting postures. Power driven hand-held tools shall be maintained in good working condition to

minimize their vibrating effects and personnel using these tools shall be taught how to operate them safely & how to maintain good blood circulation in hands.

- The Contractor shall arrange health check up (by registered medical practitioner) for all the workers at the time of induction. Health check may have to be repeated if the nature of duty assigned to him is changed necessitating health check or doubt arises about his wellness. EIL/Owner reserves the right to ask the contractor to submit medical test reports. Regular health check-ups are mandatory for the workers assigned with Welding, Radiography, Blasting, Painting, Heavy Lift and Height (>2m) jobs. All the health check-ups shall be conducted by registered Medical practitioner and records are to be maintained by the Contractor.
- The Contractor shall ensure vaccination of all the workers including their families, during the course of entire project span.

3.3.10 Hazardous substances

- Hazardous, inflammable and/or toxic materials such as solvent coating, thinners, anti-termite solutions, water proofing materials shall be stored in appropriate containers preferably with lids having spillage catchment trays and shall be stored in a good ventilated area. These containers shall be labeled with the name of the materials highlighting the hazards associated with its use and necessary precautions to be taken. Respective MSDS (Material Safety Data Sheet) shall be made available at site & may be referred whenever problem arises.
- Where contact or exposure of hazardous materials are likely to exceed the specified limit or otherwise have harmful effects, appropriate personal protective equipments such as gloves, goggles/face-shields, aprons, chemical resistant clothing, respirator, etc. shall be used.
- The work place shall be checked prior to start of activities to identify the location, type and condition of any asbestos materials which could be disturbed during the work. In case asbestos material is detected, usage of appropriate PPEs by all personnel shall be ensured and the matter shall be reported immediately to EIL/ Owner.

3.3.11 Slips, trips & falls

The contractor shall establish a regular cleaning and basic housekeeping programme that covers all aspects of the workplace to help minimize the risk of slips, trips & falls. The contractor shall take positive measures like keeping the work area tidy, storing waste in suitable containers & harmful items separately, keeping passages, stairways, entrances & exits especially emergency ones clear, cleaning up spillages immediately and replacing damaged carpet/ floor tiles, mats & rugs at once to avoid slips, trips & falls.

3.3.12 Radiation exposure

- All personnel exposed to physical agents such as ionizing & non-ionizing radiation, including ultraviolet rays or similar other physical agents shall be provided with adequate shielding or protection commensurate with the type of exposure involved.
- For Open Field Radiography works , requirements of Bhabha Atomic Research Centre (BARC)/ Atomic Energy Regulatory Board (AERB) shall be followed.
- The Contractor shall implement an effective system of control (as described in the AERB regulations) at site for handling radiography-sources & for avoiding its misuse & theft.

- The contractor shall generate the Format No: HSE-8 “Permit for radiation work” before start of work.
- In case the radiography work has to be carried out at day time, suitable methodology to be used so that other works, people are not affected.

3.3.13 Explosives/Blasting operations

- Blasting operations shall be carried out as per latest Explosive Rules (Indian / International) with prior permission. The Contractor shall obtain license from Chief Controller of Explosives (CCoE) for collection, transportation, storage of explosives as well as for carrying out blasting operations.
- The Contractor shall prepare exclusive method statement (in cognizance with statutory requirements) for diffusing unfired explosives, if any, at project site before carrying out actual task. Nowhere blasting shall be carried out by the Contractor or its agency without the involvement of competent supervisor and licensed blaster / shot blaster.

3.3.14 Demolition/ Dismantling

- The contractor shall adhere to safe demolishing/ dismantling practices at all stages of work to guard against unsafe working practices.
- The contractor shall disconnect service lines (power, gas supply, water, etc.)/ make alternate arrangements prior to start of work and restore them, if required as directed by EIL/ Owner at no extra cost.
- Before carrying out any demolition/ dismantling work, the contractor shall take prior approval of EIL/Owner and generate the Format No.HSE-9. For revamp jobs in operating plants where location of underground utilities is not known with certainty, the contractor shall depute an experienced engineer for supervision and shall make adequate arrangements for Fire fighting & First-Aid during the execution of these activities.
- The Contractor shall arrange approved Job Safety Analysis (JSA) / Method Statement for the specific demolition / dismantling task and corresponding action plan commensurate with hazards / risks associated therein. In no case any activity related to demolition / dismantling shall be carried out by the Contractor without engaging own supervision / field engineer.

3.3.15 Road Safety

- The Contractor shall ensure adequately planned road transport safety management system.
- The vehicles shall be fitted with reverse warning alarms & flashing lights / fog-lights and usage of seat belts shall be ensured.
- The Contractor shall also ensure a separate pedestrian route for safety of the workers and comply with all traffic rules & regulations, including maintaining speed limit of 20 kmph or indicated by owner for all types of vehicles / mobile machinery. The maximum allowable speed shall be adhered to.
- In case of an alert or emergency, the Contractor must arrange clearance of all the routes, roads, access. The Contractor shall deploy sufficient number of traffic controllers at project site routes / roads/ accesses, to alert reversing movement of vehicles & machinery as well as pedestrians.
- Dumpers, Tippers, etc. shall not be allowed to carry workers within the plant area and also to & from the labour colony to & from project sites.
- Hydras shall only be allowed for handling the materials at fabrication/ storage yards and in no case shall be allowed to transport the materials over project / plant roads.

- The Contractor shall not deploy any such mobile machinery / equipments, which do not have competent operator and / or experienced banks-man / signal-man. Such machinery / equipments shall have effective limit-switches, reverse-alarm, front & rear-end lights etc. and shall be maintained in good working order.
- The Contractor shall not carry-out maintenance of vehicles / mobile machinery occupying space on project / plant roads and shall always arrange close supervision for such works.
- For pipeline jobs, the contractor shall submit a comprehensive plan covering transportation, loading / unloading of pipes, movement of side booms, movement of vehicles on the ROW, etc.
- Contractor's shall arrange /install visible road signs, diversion boards, caution boards, etc on project roads for safe movement of men and machinery.

3.3.16 Welfare measures

Contractor shall, at the minimum, ensure the following facilities at work sites:

- A crèche at site where 10 or more female workers are having children below the age of 6 years.
- Adequately ventilated / illuminated rooms at labour camps & its hygienic up-keeping.
- Reasonable canteen facilities at site and in labour camps at appropriate location depending upon site conditions. Contractor shall make use of "industrial" variety of LPG cylinder & satisfactory illumination at the canteens. Necessary arrangement for efficient disposal of wastes from canteens & urinals /toilets shall also be made and regular review shall be made to maintain the ambience satisfactorily hygienic & shall also comply with all applicable statutory requirements.
- Adequately lighted & ventilated Rest rooms at site (separate for male workers and female workers).
- Urinals, Toilets, drinking water, washing facilities, adequate lighting at site and labour camps, commensurate with applicable Laws / Legislation.

3.3.17 Environment Protection

Contractor shall ensure proper storage and utilization methodology of materials that are detrimental to the environment. Where required, Contractor shall ensure that only the environment friendly materials are selected and emphasize on recycling of waste materials, such as metals, plastics, glass, paper, oil & solvents. The waste that cannot be minimized, reused or recovered shall be stored and disposed of safely. In no way, toxic spills shall be allowed to percolate into the ground. The contractor shall not use the empty areas for dumping the wastes.

The contractor shall strive to conserve energy and water wherever feasible.

The contractor shall ensure dust free environment at workplace by sprinkling water on the ground at frequent intervals. The air quality parameters for dust, poisonous gases, toxic releases, harmful radiations, etc. shall be checked by the contractor on daily basis and whenever need arises.

The contractor shall not be allowed to discharge chemicals, oil, silt, sewage, sullage and other waste materials directly into the controlled waters like surface drains, streams, rivers, ponds. A discharge plan suggesting the methods of treating the waste before discharging shall be submitted to EIL/Owner for approval.

For pipeline jobs, top soil shall be stacked separately while making ROW through fields. This fertile soil shall be placed back on top after backfilling.

For offshore construction barges, arrangements shall be made for safe disposal of human, food & other wastes and applicable laws in this regard shall be followed.

3.3.18 Rules & Regulations

All persons deployed at site shall be knowledgeable of and comply with the environmental laws, rules & regulations relating to the hazardous materials, substances and wastes. Contractor shall not dump, release or otherwise discharge or disposes off any such materials without the express authorization of EIL/Owner. An indicative list of Statutory Acts & Rules relating to HSE is given under Appendix-D.

3.3.19 Weather Protection

Contractor shall take appropriate measures to protect workers from severe storms, rain, solar radiations, poisonous gases, dust, etc. by ensuring proper usage of PPEs like Sun glasses, Sun screen lotions, respirators, dust masks, etc. and rearranging/ planning the construction activities to suit the weather conditions. Effective arrangement (without creating inconvenience to project facilities & permanent installations) for protecting workmen from hailstorm, drizzle in the form of temporary shelter shall be made at site.

3.3.20 Communication

All persons deployed at the work site shall have access to effective means of communication so that any untoward incident can be reported immediately and assistance sought by them.

All health & safety information shall be communicated in a simple & clear language easily understood by the local workforce.

For information to all, typical subjects that should be communicated are: -

Inside the company (Top to down)

- a. Quality Policy
- b. HSE Policy contents
- c. Environment Policy
- d. HSE Objectives
- e. Safety Cardinal Rules
- f. HSE Target – reached or missed
- g. Praises & Warnings to personnel for HSE Management
- h. Safety Walk Through Reports and safety defects / shortfalls (by management)
- i. HSE Audit results
- j. Revised Statutory Health & Safety provisions, if any
- k. H & S publicity
- l. Suggestions

Inside the Company (Bottom to up)

- a. Complaints
- b. Compliances on safety defects / shortfalls
- c. Suggestions
- d. Proposals for changes & improvements
- e. HSE Reports (including near-miss reports)

3.3.21 Confined Space Entry

The contractor shall generate a work permit (Format No. HSE -7) before entering a confined space. People, who are permitted to enter into confined space, must be medically examined & certified by registered doctor, confirming their 'medical fitness for working in confined space'. All necessary precautions mentioned therein shall be adhered to. An attendant shall be positioned outside a confined space for extending help during an emergency. All appropriate PPEs and air quality parameters shall be checked before entering a confined space. It shall be ensured that the piping of the equipment which has to be opened is pressure- free by checking that blinds are in place, vents are open and volume is drained. Inside confined space works, only electrical facilities / installations of 24V shall be permitted. Contractor shall ensure usage of safe & suitable arrangement of oxygen supply for individual workmen (during the course of work in confined space), if oxygen concentration is found to be less than 19.5% (v/v) there.

3.3.22 Heavy Lifts

- The contractor shall submit detailed rigging studies plan for EIL/ Owner approval prior to lifting equipment which cannot be erected with a crane of approx. 100 MT capacity due to constraints of its dimensions, location of foundation height, approach & weight.
- Contractor shall generate the format no:HSE-15 "Permit for heavy lift/critical erection"
- Prior to actual lifting activities, contractor shall check the validity of the crane inspection certificate issued by statutory/ competent authority. This requirement shall also apply to all rigging equipments utilized for the job.
- The contractor shall, at all times, be responsible for all rigging activities.
- The Contractor shall ensure medical fitness of all workmen who are engaged / involved in erection of equipments, vessels etc. and such fitness checks shall be carried-out every six months interval with the help of a registered medical practitioner & record shall be maintained
- Adequate safety measures such as positive barricading, usage of appropriate PPEs, permit to work, etc. shall be taken during all heavy or critical lifts.
- For lifting any material (irrespective of shape, size or volume), at any height, it is always advisable to prepare a Plan of Erection (PoE) taking into consideration hazards & risks associated therein – this can enable people to put their own experiences of various natures & side-by-side establish a practical method for risk-free erection / lifts. The contractor shall prepare PoE & shall document the same, when risks are identified as "medium" or "high" and the same shall be approved by its competent / qualified engineer.

3.3.23 Key Performance Indicators

The contractor shall measure an activity in both leading & trailing indicators for statistical and performance measurement. The activities pertaining to key performance indicators are covered in Monthly HSE Report (Format No. HSE-5). The contractor shall try to achieve a statistically fair record and strive for its continual improvement.

Leading Indicators viz:-:

- Number of Safety Inductions carried-out at site (for workmen & staff members)
- Number of HSE inspections carried out
- Number of "Safety Walk Through" carried-out by site-head.

- Number of HSE shortfalls / lapses identified per contractor & closed-out in time.
- Number of Safety Meetings conducted (in-house / with contractors)
- Number of HSE Audits made (internal & external) vis-à-vis non conformances raised
- Number of HSE Awareness / Motivational program conducted by contractors
- Number of HSE Trainings conducted at site for supervisors & workmen
- Study of Near miss case reported
- Encouragements / Awards / Recognitions to workmen, job supervisors & field engineers.
- Suggestions for improvement

Trailing Indicators viz:-:

- Calculation of HSE statistics viz frequency rate, severity rate, LTA free manhours, etc
- Analysis of incidents / accidents (nature, severity, types etc.)
- Study of Incident / Accident with respect to :-
 - Variety
 - Period of the year / project span
 - Timings of the incident / accident
 - Age profile of victims
 - Body parts involved
 - Penalty levied for causing incident / accident

3.3.24 Unsuitable Land Conditions

Contractor shall take appropriate measures and necessary work permits/clearances if work is to be done in or around marshy areas, river crossings, mountains, monuments, etc. The Contractor shall make right assessment and take all necessary action for developing work areas to make them safe & suitable for crane operations or other vehicular movement before carrying out any project related activity / operation. Contractor shall take all necessary actions to make the surroundings of its site establishments (site office, stores, lay-down area etc.) work-worthy safe and secure.

3.3.25 Under Water Inspection

Contractor shall ensure that boats and other means used for transportation, surveying & investigation works shall be certified seaworthy by a recognized classification society. It shall be equipped with all life saving devices like life jackets, adequate fire protection arrangements and shall possess communication facilities like cellular phones, wireless, walkie-talkie. All divers used for seabed surveys, underwater inspections shall have required authorized license, suitable life saving kit. Number of hours of work by divers shall be limited as per regulations. EIL/ Owner shall have the right to inspect the boat and scrutinize documents in this regard.

3.3.26 Excavation

The Contractor shall obtain permission from competent authorities prior to excavation wherever required.

The Contractor shall locate the position of buried utilities (water line, cable route, etc.) by referring to project / plant drawing / in consultation with EIL/Owner. The Contractor shall start digging manually to locate the exact position of buried utilities & thereafter use mechanical means.

The Contractor shall keep soil heaps at least 1.5 M away from edge or a distance equal to depth of pit (whichever is more)

The Contractor shall maintain sufficient “angle of repose” during excavation – shall also provide slope or suitable bench as decided by EIL / Owner.

The Contractor shall arrange “battering” or “benching” wherever required for preventing collapse of edge of excavations.

The Contractor shall identify & arrange de-watering pump or well-point system to prevent earth collapse due to heavy rain / influx of underground water.

The Contractor shall arrange protective fencing / barricading with warning signal around excavated pits, trenches, etc. along with minimum 2 (two) entries, exits / escape ladders.

The Contractor must avoid “underpinning” / under-cutting to prevent collapse of chunk of earth during excavation

The Contractor shall use “stoppers” to prevent over-run of vehicle wheels at the edge of excavated pits / trenches.

The Contractor shall arrange strengthening of “shoring” & “strutting” proactively to avoid collapse of earth / edges due to vehicular movement in close proximity of excavated areas / pits / trenches, etc.

3.4 Tool Box Talks (TBT)

Contractor shall conduct daily TBT with workers prior to start of work and shall maintain proper record of the meeting. A suggested format is given below. The TBT is to be conducted by the immediate supervisor of the workers

The Contractor shall conduct TBT before start of every morning or evening shift or night shift activities, for alerting the workers on specific hazards and their appropriate dos & don'ts. The Contractor shall provide sufficient rests to the site workmen and their foremen to avert fatigue & thereby endangering their lives during the course of site works.

TOOL BOX TALK RECORDING SHEET		
Date & Time		
Work Location		
Subject (Nature of work)		
Presenter		
Hazards involved		
Precautions to be taken		
Worker's Name	Signature	Section
Remarks, in any		

The topics during TBT shall include

- Hazards related to work assigned on that day and precautions to be taken.
- Any forthcoming HSE hazards/events/instruction/orders, etc.

The above record can be kept in local language, which workers can read. These records shall be made available to EIL/ Owner whenever demanded.

3.5 Training & Induction Programme

- Initial induction of workers into Construction oriented activities and appraising them about the methodology of works and how to carry-out safely and the same should not be inter mixed with Tool Box Talks or HSE Training. In this regard careful action should be made & maintained for imparting HSE induction to every individual, irrespective of his task/designation/level of employment, whereas, HSE Training should be imparted to specific person/group of people who are to carry-out that specific task more than once – for example, Riggers must be trained for working at heights, welders must be trained for work in confined space, fitters/carpenters, mesons must be trained for work at heights, etc.
- Contractor shall conduct Safety induction programme on HSE for all his workers and maintain records. The Gate Pass shall be issued only to those workers who successfully qualify the Safety induction programme.
- The Contractor shall brief the visitors about the HSE precautions which are required to be taken before their proceeding to site and make necessary arrangements to issue appropriate PPEs like Aprons, hard hats, ear-plugs, goggles & safety shoes etc., to his visitors. The Contractor shall always maintain relevant acknowledgement from visitor on providing him brief information on HSE actions.
- Contractor shall ensure that all his personnel possess appropriate training to carry out the assigned job safely. The training should be imparted in a language understood by them and should specifically be trained about
 - Potential hazards to which they may be exposed at their workplace
 - Measures available for prevention and elimination of these hazards

The topics during training shall cover, at the minimum: -

- Why safety should be considered during work - explanation
- Education about hazards and precautions required
- Employees' duties & responsibilities
- Emergency and evacuation plan
- HSE requirements during project activities
- Fire fighting and First-Aid
- Use of PPEs
- Occupational health issues – dos & don'ts
- Local laws on intoxicating drinks, drugs, smoking in force
- Common environmental subjects – lighting, ventilation, vibration, smoke/fumes etc.
- Records of the training shall be kept and submitted to EIL/ Owner.
- The Contractor shall make regular program for conducting Safety Training on various topics related to various activities & their safe-guarding utilizing experienced persons / outside agency / faculty. A program for Safety Training (indicative list as per Appendix –F) shall be furnished by the Contractor in its HSE Plan .
- For offshore and jetty jobs, contractor shall ensure that all personnel deployed have undergone a structured sea survival training including use of lifeboats, basket landing, use of radio communication etc. from an agency acceptable to Owner/EIL.

3.6 ADDITIONAL SAFETY REQUIREMENTS FOR WORKING INSIDE A RUNNING PLANT

As a minimum, the contractor shall ensure adherence to following safety requirements while working in or in the close vicinity of an operating plant:

- a) Contractor shall obtain permits for Hot work, Cold work, Excavation and Confined Space from Owner in the prescribed format.
- b) The contractor shall monitor record and compile list of his workers entering the operational plant/unit each day and ensure & record their return after completing the job.
- c) Contractor's workers and staff members shall use designated entrances and proceed by designated routes to work areas only assigned to them. The workers shall not be allowed to enter units' area, tanks area, pump rooms, etc. without work authorization permit.
- d) Work activities shall be planned in such a way so as to minimize the disruption of other activities being carried out in an operational plant/unit and activities of other contractors.
- e) The contractor shall submit a list of all chemicals/toxic substances that are intended to be used at site and shall take prior approval of the Owner.
- f) Specific training on working in a hydrocarbon plant shall be imparted to the work force and mock drills shall be carried out for Rescue operations/First-Aid measures.
- g) Proper barricading/cordoning of the operational units/plants shall be done before starting the construction activities. No unauthorized person shall be allowed to trespass. The height and overall design of the barricading structure shall be finalized in consultation with the Owner and shall be got approved from the Owner.
- h) Care shall be taken to prevent hitting underground facilities such as electrical cables, hydrocarbon piping during execution of work.
- i) Barricading with water curtain shall be arranged in specific/critical areas where hydrocarbon vapors are likely to be present such as near horton spheres or tanks. Positioning of fire tenders (from owner) shall also be ensured during execution of critical activities.
- j) Emergency evacuation plan shall be worked out and all workmen shall be apprised about evacuation routes. Mock drill operations may also be conducted.
- k) Flammable gas test shall be conducted prior to any hot work using appropriate measuring instruments. Sewers, drains, vents or any other gas escaping points shall be covered with flame retardant tarpaulin.
- l) Respiratory devices shall be kept handy while working in confined zones where there is a danger of inhalation of poisonous gases. Constant monitoring of presence of Gas/ Hydrocarbon shall be done.
- m) Clearance shall be obtained from all parties before starting hot tapping, patchwork on live lines and work on corroded tank roof.
- n) Positive isolation of line/equipment by blinding for welding/cutting/grinding shall be done. Closing of valve will not be considered sufficient for isolation.

- o) Welding spatters shall be contained properly and in no case shall be allowed to fall on the ground containing oil. Similar care shall be taken during cutting operations.
- p) The vehicles, cranes, engines, etc. shall be fitted with spark arresters on the exhaust pipe and got it approved from Safety Department of the Owner.
- q) Plant air should not be used to clean any part of the body or clothing or use to blow off dirt on the floor.
- r) Gas detectors should be installed in gas leakage prone areas as per requirement of Owner's plant operation personnel.
- s) Experienced full time safety personnel shall be exclusively deployed to monitor safety aspects in running plants.

3.7 Self Assessment And Enhancement

The contractor shall develop a method of check & balance through self assessment & enhancement techniques and shall explore the opportunities for continual improvement in the HSE system.

3.8 HSE Promotion

The contractor shall encourage his workforce to promote HSE efforts at workplace by way of organizing workshops/seminars/training programmes, celebrating HSE awareness weeks & National Safety Day, conducting quizzes & essay competitions, distributing pamphlets, posters & material on HSE, providing incentives for maintaining good HSE practices and granting incentives / bonus for completing the job without any lost time accident.

3.9 Lock Out and Tag Out (LOTO) for isolation of energy source

- Contractor shall follow the LOTO/Isolation procedure of owner for all energy source isolations installed/under purview by /of owner ie. "Brown field"
- For all the other energy source (not under purview of client/owner) i.e "Green field" Contractor shall develop a system to ensure the isolation of equipments, pipelines, Vessel, electrical panels from the energy source covering following as minimum:-
 - Identification of all energy source viz electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravitational, radiation and other forms of stored or kinetic energy.
 - Establishing the energy isolation devices viz: manually operated electrical circuit breakers, disconnection switches, blind flanges, etc
 - Installation of Lock Out devices for preventing the inadvertent release of stored energy and Tag Out devices ("Danger", "Do Not operate" or Do not Remove" tags) to indicate that testing, maintenance or servicing is underway and the device cannot be operated until the tag out device is removed.
 - Lock Out and Tag out log book
 - Permit for isolation and de-isolation of energy source as per format NO: HSE-16
 - Availability of competent persons like experienced operators at substations, pump house, units, etc, ; supervisors,etc.
- Contractor shall ensure that all the sources are locked out and tagged properly before giving clearance to start the job.
- After the completion of job, contractor shall ensure all tools and tackles are removed and nobody is present in the working area and signing on LOTO log book.

- Only on confirmation of above the contractor will remove their lock and tag from the isolation points and give instructions for energizing the same. Only the person carrying out the task shall himself carry the key for the lock in /Lock out.

4.0 DETAILS OF HSE MANAGEMENT SYSTEM BY CONTRACTOR

4.1 On Award Of Contract

The Contractor shall submit a comprehensive Health, Safety and Environment Plan or programme for approval by EIL/Owner prior to start of work. The Contractor shall participate in the pre-start meeting with EIL/Owner to finalize HSE Plans which shall including the following:

- HSE policy & Objectives
- Job procedure to be followed by the Contractor for construction activities including handling of equipments, scaffolding, electric installations, etc. describing the risks involved, actions to be taken and methodology for monitoring each activity. Indicative list of procedures is enclosed as Annexure-H
- EIL/Owner review/audit requirement.
- Organization structure along with responsibility and authority, on HSE activities.
- Administrative & disciplinary steps involving implementation of HSE requirements
- Emergency evacuation plan/ procedures for site and labour camps
- Job Safety Analysis for high risk jobs
- Procedures for reporting & investigation of accidents and near misses.
- HSE Inspection
- HSE Training programmes at project site
- HSE Awareness programmes, at project site
- Reference to Rules, Regulations and statutory requirements.
- HSE documentation viz reporting, analysis & record keeping.

4.2 During Job Execution

Contractor shall implement approved Health, Safety and Environment management programme including but not limited to as brought out under para 3.0. Contractor shall also ensure:

- to arrange workmen compensation insurance, registration under ESI Act, third party liability insurance, registration under BOCW Act, etc, as applicable.
- to arrange all HSE permits before start of activities (as applicable), like permits for hot work, working at heights (Refer Format No. HSE-6), confined space (Refer Format No. HSE-7), Radiation Work Permit (Refer Format No. HSE-8), Demolishing/ Dismantling Work Permit (Refer Format No. HSE-9), Permit for erection/modification & dismantling of scaffolding (Refer Format No: HSE-14), Permit for heavy lift/critical erection (Refer Format No: HSE-15) ,Permit for energy Isolation & De-isolation” (HSE-16) ,storage of chemical / explosive materials & its use and implement all precautions mentioned therein. In this regard, requirements of *Oil industry Safety Directorate Standard No. Std -105 "Work Permit Systems"* shall be complied with while working in existing Oil or Gas processing plants. List of the persons involved shall be maintained as annexure to the work permit issued for a particular activity.
- to submit, timely, the completed checklist on HSE activities in Format No.HSE-1, Monthly HSE report in Format No.HSE-5 (use of web based package (www.eil.co.in/conthse) is compulsory wherever the facility is available else a hard copy is to be submitted), accident/incident reports, investigation reports etc. as per EIL/Owner requirements. Compliance of instructions on HSE shall be done by Contractor and informed urgently to EIL/Owner.

- that his top most executive at site attends all the Safety Committee/HSE meetings arranged by EIL/Owner and carries out safety walk through regularly. Only in case of his absence from site that a second senior most person shall be nominated by him, in advance, and communicated to EIL/Owner for performing the above tasks.
- display at site office and at prominent locations HSE Policy, caution boards, list of hospitals, emergency services available, safety signs like Men at work, Speed Limits, Hazardous Area, various do's & don'ts, etc.
- provide posters, banners for safe working to promote safety consciousness.
- identify, assess, analyze & mitigate the construction hazards & incorporate relevant control measures before actually executing site works. (HIRAC = Hazard Identification, Risk Analysis and Control).
- arrange testing, examination, inspection of own as well as borrowed construction equipments / machinery (stationary & mobile) before being used at site and also at periodical interval, through own resources and also by 3rd party competent agencies (as deemed fit in statutes). Records of such test, examination etc. shall be maintained & shall be submitted to EIL/Owner as & when asked for.
- carryout audits/inspection (internal & external) at his works as well as sub contractor works as per approved HSE plan/procedure/programme & submit the compliance reports of identified shortfalls for EIL/Owner review.
- arranging HSE training for site workmen (of his own & sub contractors) through internal or external faculty at periodical intervals.
- assistance & cooperate during HSE audits by EIL/Owner or any other 3rd party and submit compliance report.
- generate & submit of HSE records/report as per this specification.
- apprise EIL/Owner on HSE activities at site regularly.
- carry-out all dismantling activities safely, with prior approval of EIL/Owner representative.
- The Contractor shall ensure that "Hot works" and painting works do not continue at the same place / location at project site for which chance or probability of "fire" incident exists.

4.3 During Short Listing Of The Sub-Contractors

The contractor shall review the HSE management system of the sub-contractors in line with the requirements given in this specification. The contractor shall be held responsible for the shortcomings observed in the HSE management system of the sub-contractor(s) during execution of the job.

5.0 RECORDS

At the minimum, the contractor shall maintain/ submit HSE records in the following reporting formats/:

Safety Walk Through Report	HSE-1
Accident/ Incident Report	HSE-2
Supplementary Accident/ Incident Investigation report	HSE-3
Near Miss Incident Report	HSE-4
Monthly HSE Report	HSE-5
Permit for working at height	HSE-5
Permit for working in confined space	HSE-7
Permit for radiation work	HSE-8
Permit for demolishing/ dismantling	HSE-9
Daily Safety checklist	HSE-10
House keeping Assessment & compliance	HSE-11
Inspection of temporary electrical booth/installation	HSE-12
Inspection for scaffolding	HSE-13
Permit for erection/modification & dismantling of scaffolding	HSE-14
Permit for heavy lift/critical erection.	HSE-15
Permit for Energy isolation and de-isolation.	HSE-16
Permit for Excavation	HSE-17
Inspection reports of Equipment/tools/tackles	*
Report of Toolbox talks	As indicated in specification
PPE issue report/register	*
Site inspection reports	*
Training records	*

(*) The formats shall be developed in consultation with EIL/Owner

APPENDIX-A
(Sheet 1 of 2)

A. IS CODES ON HSE

SP: 53	Safety code for the use, Care and protection of hand operated tools.
IS: 838	Code of practice for safety & health requirements in electric and gas welding and cutting operations
IS: 1179	Eye & Face precautions during welding, equipment etc.
IS: 1860	Safety requirements for use, care and protection of abrasive grinding wheels.
IS: 1989 (Pt -II)	Leather safety boots and shoes
IS: 2925	Industrial Safety Helmets
IS: 3016	Code of practice for fire safety precautions in welding & cutting operation.
IS: 3043	Code of practice for earthing
IS: 3764	Code of safety for excavation work
IS: 3786	Methods for computation of frequency and severity rates for industrial injuries and classification of industrial accidents
IS: 3696	Safety Code of scaffolds and ladders
IS: 4083	Recommendations on stacking and storage of construction materials and components at site
IS: 4770	Rubber gloves for electrical purposes
IS: 5121	Safety code for piling and other deep foundations
IS: 5216 (Pt-I)	Recommendations on Safety procedures and practices in electrical works
IS: 5557	Industrial and Safety rubber lined boots
IS: 5983	Eye protectors
IS: 6519	Selection, care and repair of Safety footwear
IS: 6994 (Pt-I)	Industrial Safety Gloves (Leather & Cotton Gloves)
IS: 7293	Safety Code for working with construction Machinery
IS: 8519	Guide for selection of industrial safety equipment for body protection
IS: 9167	Ear protectors
IS: 11006	Flash back arrestor (Flame arrestor)
IS: 11016	General and safety requirements for machine tools and their operation
IS: 11057	Specification for Industrial safety nets
IS: 11226	Leather safety footwear having direct moulded rubber sole
IS: 11972	Code of practice for safety precaution to be taken when entering a sewerage system
IS: 13367	Code of practice-safe use of cranes
IS: 13416	Recommendations for preventive measures against hazards at working place

APPENDIX-A
(Sheet 2 of 2)

B. INTERNATIONAL STANDARDS ON HSE

Safety Glasses	:	ANSI Z 87.1, ANSI ZZ 87.1, AS 1337, BS 2092, BS 1542, BS 679, DIN 4646/ 58311
Safety Shoes	:	ANSI Z 41.1, AS 2210, EN 345
Hand Gloves	:	BS 1651
Ear Muffs	:	BS 6344, ANSI S 31.9
Hard Hat	:	ANSI Z 89.1/89.2, AS 1808 , BS 5240, DIN 4840
Goggles	:	ANSI Z 87.1
Face Shield	:	ANSI Z 89.1
Breathing Apparatus	:	BS 4667, NIOSH
Welding & Cutting	:	ANSI Z 49.1
Safe handling of compressed: P-1		(Compressed Gas Association Gases in cylinders 1235 Jefferson Davis Highway, Arlington VA 22202 - USA)
Full body harness	:	EN-361
Lanyard	:	EN-354
Karabiner	:	EN-362 and EN-12275

APPENDIX-B

DETAILS OF FIRST AID BOX

SL. NO.	DESCRIPTION	QUANTITY
1.	Small size Roller Bandages, 1 Inch Wide (Finger Dressing small)	6 Pcs.
2.	Medium size Roller Bandages, 2 Inches Wide (Hand & Foot Dressing)	6 Pcs.
3.	Large size Roller Bandages, 4 Inches Wide (Body Dressing Large)	6 Pcs.
4.	Large size Burn Dressing (Burn Dressing Large)	4 Pkts.
5.	Cotton Wool (20 gms packing)	4 Pkts.
6.	Antiseptic Solution Dettol (100 ml.) or Savlon	1 Bottle
7.	Mercurochrome Solution (100 ml.) 2% in water	1 Bottle
8.	Ammonia Solution (20 ml.)	1 Bottle
9.	A Pair of Scissors	1 Piece
10.	Adhesive Plaster (1.25 cm X 5 m)	1 Spool
11.	Eye pads in Separate Sealed Pkt.	4 pcs.
12.	Tourniquet	1 No.
13.	Safety Pins	1 Dozen
14.	Tinc. Iodine/ Betadin (100 ml.)	1 Bottle
15.	Polythene Wash cup for washing eyes	1 No.
16.	Potassium Permanganate (20 gms.)	1 Pkt.
17.	Tinc. Benzoine (100 ml.)	1 Bottle
18.	Triangular Bandages	2 Nos.
19.	Band Aid Dressing	5 Pcs.
20.	Iodex/Moov (25 gms.)	1 Bottle
21.	Tongue Depressor	1 No.
22.	Boric Acid Powder (20 gms.)	2 Pkt.
23.	Sodium Bicarbonate (20 gms.)	1 Pkt.
24.	Dressing Powder (Nebasulf) (10 gms.)	1 Bottle
25.	Medicinal Glass	1 No.
26.	Duster	1 No.
27.	Booklet (English & Local Language)	1 No. each
28.	Soap	1 No.
29.	Toothache Solution	1 No.
30.	Vicks (22 gms.)	1 Bottle
31.	Forceps	1 No.
32.	Note Book	1 No.
33.	Splints	4 Nos.
34.	Lock	1 Piece
35.	Life Saving/Emergency/Over-the counter Drugs	As decided at site

Box size: 14" x 12" x 4"

Note : The medicines prescribed above are only indicative. Equivalent medicines can also be used.
A prescription, in this regard, shall be required from a qualified Physician.

APPENDIX-C

TYPE OF FIRES VIS-À-VIS FIRE EXTINGUISHERS

Fire Extinguisher Fire	Water	Foam	CO ₂	Dry Powder	Multi purpose (ABC)
Originated from paper, clothes, wood	✓	✓	can control minor surface fires	can control minor surface fires	✓
Inflammable liquids like alcohol, diesel, petrol, edible oils, bitumen	×	✓	✓	✓	✓
Originated from gases like LPG, CNG, H ₂	×	×	✓	✓	✓
Electrical fires	×	×	✓	✓	✓

LEGEND : ✓ : CAN BE USED

× : NOT TO BE USED

Note: Fire extinguishing equipment must be checked at least once a year and after every use by an authorized person. The equipment must have an inspection label on which the next inspection date is given. Type of extinguisher shall clearly be marked on it.

APPENDIX-D

List of Statutory Acts & Rules Relating to HSE

- The Indian Explosives Act and Rules
- The Motor Vehicle Act and Central Motor Vehicle Rules
- The Factories Act and concerned Factory Rules
- The Petroleum Act and Petroleum Rules
- The Workmen Compensation Act
- The Gas Cylinder Rules and the Static & Mobile Pressure Vessels Rules
- The Indian Electricity Act and Rules
- The Indian Boiler Act and Regulations
- The Water (Prevention & Control & Pollution) Act
- The Water (Prevention & Control of Pollution) Cess Act
- The Mines & Minerals (Regulation & Development) Act
- The Air (Prevention & Control of Pollution) Act
- The Atomic Energy Act
- The Radiation Protection Rules
- The Indian Fisheries Act
- The Indian Forest Act
- The Wild Life (Protection) Act
- The Environment (Protection) Act and Rules
- The Hazardous Wastes (Management & Handling) Rules
- The Manufacturing, Storage & import of Hazardous Chemicals Rules
- The Public Liability Act
- The Building and Other Construction Workers (Regulation of Employment and Condition of service) Act
- Other statutory acts Like EPF, ESIS, Minimum Wage Act.

APPENDIX-E (Sheet 1 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
(A) EXCAVATION Pit Excavation upto 3.0m	Falling into pit	Personal injury	Provide guard rails/ barricade with warning signal Provide at least two entries/ exits. Provide escape ladders.
	Earth Collapse	Suffocation/ Breathlessness Buried	Provide suitable size of shoring and strutting, if required. Keep soil heaps away from the edge equivalent to 1.5m or depth of pit whichever is more. Don't allow vehicles to operate too close to excavated areas. Maintain at least 2m distance from edge of cut. Maintain sufficient angle of repose. Provide slope not less than 1:1 and suitable bench of 0.5m width at every 1.5m depth of excavation in all soils except hard rock. Battering/benching the sides.
	Contact with buried electric cables Gas/ Oil Pipelines	Electrocution Explosion	Obtain permission from competent authorities, prior to excavation, if required. Locate the position of buried utilities by referring to plant drawings. Start digging manually to locate the exact position of buried utilities and thereafter use mechanical means.
Pit Excavation beyond 3.0m	Same as above plus Flooding due to excessive rain/ underground water	Can cause drowning situation	Prevent ingress of water Provide ring buoys Identify and provide suitable size dewatering pump or well point system
	Digging in the vicinity of existing Building/ Structure	Building/Structure may collapse Loss of health & wealth	Obtain prior approval of excavation method from local authorities. Use under-pining method Construct retaining wall side by side.
	Movement of vehicles/ equipments close to the edge of cut.	May cause cave-in or slides. Persons may get buried.	Barricade the excavated area with proper lighting arrangements Maintain at least 2m distance from edge of cut and use stop blocks to prevent over-run Strengthen shoring and strutting

APPENDIX-E: (Sheet 2 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES (...Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
Narrow deep excavations for pipelines, etc.	Same as above plus Frequent cave-in or slides	May cause severe injuries or prove fatal	Battering/benching of sides Provide escape ladders
	Flooding due to Hydro- static testing	May arise drowning situation	Same as above plus Bail out accumulated water Maintain adequate ventilation.
Rock by excavation blasting	Improper handling of explosives	May prove fatal	Ensure proper storage, handling & carrying of explosives by trained personnel. Comply with the applicable explosive acts & rules.
	Uncontrolled explosion	May cause severe injuries or prove fatal	Allow only authorized persons to perform blasting operations. Smoking and open flames are to be strictly prohibited
	Scattering of stone pieces in atmosphere	Can hurt people	Use PPE like goggles, face mask, helmets etc.
Rock excavation by blasting (Contd)	Entrapping of persons/ animals.	May cause severe injuries or prove fatal	Barricade the area with red flags and blow siren before blasting.
	Misfire	May explode suddenly	Do not return to site for at least 20 minutes or unless announced safe by designated person.
Piling Work	Failure of pile-driving equipment	Can hurt people	Inspect Piling rigs and pulley blocks before the beginning of each shift.
	Noise pollution	Can cause deafness and psychological imbalance.	Use personal protective equipments like ear plugs, muffs, etc.
	Extruding rods/casing	Can hurt people	Barricade the area and install sign boards Provide first-aid
	Working in the vicinity of 'Live-Electricity'	Can cause electrocution/ Asphyxiation	Keep sufficient distance from Live-Electricity as per IS code. Shut off the supply, if possible Provide artificial/rescue breathing to the injured
(B) CONCRETING	Air pollution by cement	May affect Respiratory System	Wear respirators or cover mouth and nose with wet cloth.
	Handling of ingredients	Hands may get injured	Use gloves & other PPE.
	Protruding reinforcement rods.	Feet may get injured	Use Provide platform above reinforcement for movement of workers.

APPENDIX-E : (Sheet 3 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES (...Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
	Earthing of electrical mixers, vibrators, etc. not done.	Can cause electrocution/ asphyxiation	Ensure earthing of equipments and proper functioning of electrical circuit before commencement of work.
	Falling of materials from height	Persons may get injured	Use hard hats Remove surplus material immediately from work place. Ensure lighting arrangements during night hours
	Continuous pouring by same gang	Cause tiredness of workers and may lead to accident.	Insist on shift pattern Provide adequate rest to workers between subsequent pours.
	Revolving of concrete mixer/ vibrators	Parts of body or clothes may get entrapped.	Allow only mixers with hopper Provide safety cages around moving motors Ensure proper mechanical locking of vibrator
Super-structure	Same as above plus Deflection in props or shuttering material	Shuttering/props may collapse and prove fatal	Avoid excessive stacking on shuttering material Check the design and strength of shuttering material before commencement of work Rectify immediately the deflection noted during concreting.
	Passage to work place	Improperly tied and designed props/planks may collapse	Ensure the stability and strength of passage before commencement of work. Do not overload and stand under the passage.
(C) REINFOR- CEMENT	Curtailment and binding of rods	Persons may get injured	Use PPE like gloves, shoes, helmets, etc. Avoid usage of shift tools
	Carrying of rods for short distances/at heights	Workers may get injured their hands and shoulders.	Provide suitable pads on shoulders and use safety gloves. Tie up rods in easily liftable bundles Ensure proper staging.
	Checking of clear distance/ cover with hands	Rods may cut or injure the fingers	Use measuring devices like tape, measuring rods, etc.
	Hitting projected rods and standing on cantilever rods.	Persons may get injured and fell down	Use safety shoes and avoid standing unnecessarily on cantilever rods Avoid wearing of loose clothes

APPENDIX-E: (Sheet 4 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES (...Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
	Falling of material from height	May prove fatal	Use helmets Provide safety nets
	Transportation of rods by trucks/ trailers	Protruded rods may hit the persons	Use red flags/lights at the ends Do not protrude the rods in front of or by the side of driver's cabin. Do not extend the rods 1/3 rd of deck length or 1.5m whichever is less
(D)WELDING AND GAS CUTTING	Welding radiates invisible ultraviolet and infra-red rays	Radiation can damage eyes and skin.	Use specified shielding devices and other PPE of correct specifications. Avoid thoriated tungsten electrodes for GTAW
	Improper placement of oxygen and acetylene cylinders	Explosion may occur	Move out any leaking cylinder Keep cylinders in vertical position Use trolley for transportation of cylinders and chain them Use flashback arrestors
	Leakage/ cuts in hoses	May cause fire	Purge regulators immediately and then turn off Never use grease or oil on oxygen line connections and copper fittings on acetylene lines Inspect regularly gas carrying hoses Always use red hose for acetylene & other fuel gases and black for oxygen
	Opening-up of cylinder	Cylinder may burst	Always stand back from the regulator while opening the cylinder Turn valve slowly to avoid bursting Cover the lug terminals to prevent short circuiting
	Welding of tanks, container or pipes storing flammable liquids	Explosion may occur	Empty & purge them before welding Never attach the ground cable to tanks, container or pipe storing flammable liquids Never use LPG for gas cutting

APPENDIX-E: (Sheet 5 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES ...(Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
(E) RADIOGRAPHY	Ionizing radiation	Radiations may react with the skin and can cause cancer, skin irritation, dermatitis, etc.	Ensure Safety regulations as per BARC/AERB before commencement of job. Cordon off the area and install Radiation warning symbols Restrict the entry of unauthorized persons Wear appropriate PPE and film badges issued by BARC/AERB
	Transportation and Storage of Radiography source	Same as above	Never touch or handle radiography source with hands Store radiography source inside a pit in an exclusive isolated storage room with lock and key arrangement. The pit should be approved by BARC/AERB. Radiography source should never be carried either in passenger bus or in a passenger compartment of trains. BARC/AERB has to be informed before source movement. Permission from Director General of Civil Aviation is required for booking radio isotopes with airlines.
	Loss of Radio isotope	Same as above	Try to locate with the help of Survey Meter. Inform BARC/AERB (*)
(F) ELECTRICAL INSTALLATION AND USAGE	Short circuiting	Can cause Electrocutation or Fire	Use rubberized hand gloves and other PPE Don't lay wires under carpets, mats or door ways. Allow only licensed electricians to perform on electrical facilities Use one socket for one appliance Ensure usage of only fully insulated wires or cables Don't place bare wire ends in a socket Ensure earthing of machineries and equipments Do not use damaged cords and avoid temporary connections Use spark-proof/flame proof type field distribution boxes.

(*) Atomic Energy Regulatory Board (AERB),
Bhabha Atomic Research Centre (BARC)
Anushaktinagar, Mumbai – 400 094

APPENDIX-E: (Sheet 6 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES (...Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
			Do not allow open/bare connections Provide all connections through ELCB Protect electrical cables/equipment's from water and naked flames Check all connections before energizing
	Overloading of Electrical System	Bursting of system can occur which leads to fire	Display voltage and current ratings prominently with 'Danger' signs. Ensure approved cable size, voltage grade and type Switch off the electrical utilities when not in use Do not allow unauthorized connections. Ensure proper grid wise distribution of Power
	Improper laying of overhead and underground transmission lines/cables	Can cause electrocution and prove fatal	Do not lay unarmoured cable directly on ground, wall, roof of trees Maintain at least 3m distance from HT cables All temporary cables should be laid at least 750 mm below ground on 100 mm fine sand overlying by brick soling Provide proper sleeves at crossings/ inter-sections Provide cable route markers indicating the type and depth of cables at intervals not exceeding 30m and at the diversions/termination
(G) FIRE PREVENTION AND PROTECTION	Small fires can become big ones and may spread to the surrounding areas	Cause burn injuries and may prove fatal	In case a fire breaks out, press fire alarm system and shout "Fire, Fire" Keep buckets full of sand & water/ fire extinguishing equipment near hazardous locations Confine smoking to 'Smoking Zones' only. Train people for using specific type of fire fighting equipments under different classes of fire Keep fire doors/shutters, passages and exit doors unobstructed Maintain good housekeeping and first-aid boxes (for details refer Appendix-B) Don't obstruct access to Fire extinguishers. Do not use elevators for evacuation during fire. Maintain lightning arrestors for elevated structures Stop all electrical motors with internal combustion

APPENDIX-E : (Sheet 7 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES (...Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
			Move the vehicles from dangerous locations Remove the load hanging from the crane booms Remain out of the danger areas.
	Improper selection of Fire extinguisher	It may not extinguish the fire	Ensure usage of correct fire extinguisher meant for the specified fire (for details refer Appendix-C). Do not attempt to extinguish Oil and electric fires with water. Use foam cylinders/CO ₂ /sand or earth.
	Improper storage of highly inflammable substances	Same as above	Maintain safe distance of flammable substances from source of ignition Restrict the distribution of flammable materials to only min. necessary amount Construct specifically designed fuel storage facilities Keep chemicals in cool and dry place away from heat. Ensure adequate ventilation Before welding operation, remove or shield the flammable material properly Store flammable materials in stable racks, correctly labeled preferably with catchment trays. Wipe off the spills immediately
	Short circuiting of electrical system	Same as above Can cause Electrocutation	Don't lay wires under carpets, mats or door ways Use one socket for one appliance. Use only fully insulated wires or cables Do not allow open/bare connections Provide all connections through ELCB Ensure earthing of machineries and equipments
(H) VEHICULAR MOVEMENT	Crossing the Speed Limits (Rash driving)	Personal injury	Obey speed limits and traffic rules strictly Always expect the unexpected and be a defensive driver Use seat belts/helmets Blow horn at intersections and during overtaking operations. Maintain the vehicle in good condition Do not overtake on curves, bridges and slopes
	Adverse weather condition	Same as Above	Read the road ahead and ride to the left Keep the wind screen and lights clean Do not turn at speed. Recognize the hazard, understand the defense and act correctly in time.

APPENDIX-E : (Sheet 8 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES (...Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
	Consuming alcohol before and during the driving operation	Same as above	Alcohol and driving do not mix well. Either choose alcohol or driving. If you have a choice between hitting a fixed object or an on-coming vehicle, hit the fixed object Quit the steering at once and become a passenger. Otherwise take sufficient rest and then drive. Do not force the driver to drive fast and round the clock. Do not day dream while driving
	Falling objects/ Mechanical failure	May prove fatal	Ensure effective braking system, adequate visibility for the drives, reverse warning alarm.. Proper maintenance of the vehicle as per manufacturer instructions
(I) PROOF TESTING (HYDROSTATIC /PNEUMATIC TESTING)	Bursting of piping Collapse of tanks Tanks flying off	May cause injury and prove fatal	Prepare test procedure & obtain EIL/owner's approval Provide separate gauge for pressurizing pump and piping/equipment Check the calibration status of all pressure gauges, dead weight testers and temperature recorders Take dial readings at suitable defined intervals and ensure most of them fall between 40-60% of the gauge scale range Provide safety relief valve (set at pressure slightly higher than test pressure) while testing with air/ nitrogen Ensure necessary precautions, stepwise increase in pressure, tightening of bolts/nuts, grouting, etc. before and during testing Keep the vents open before opening any valve while draining out of water used for hydro-testing of tanks. Pneumatic testing involves the hazard of released energy stored in compressed gas. Specific care must therefore be taken to minimize the chance of brittle failure during a pneumatic leak test. Test temperature is important in this regard and must be considered when the designer chooses the material of construction.

APPENDIX-E : (Sheet 9 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES (...Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
			A pressure relief device shall be provided, having a set pressure not higher than the test pressure plus the lesser of 345 KPa (50 psi) or 10% of the test pressure. The gas used as test fluid, if not air, shall be nonflammable and nontoxic.
(J) WORKING AT HEIGHTS	Person can fall down	May sustain severe injuries or prove fatal	Provide guard rails/barricade at the work place Use PPE like full body harness, life line, helmets, safety shoes, etc. Obtain a permit before starting the work at height above 3 meters Fall arrest and safety nets, etc. must be installed Provide adequate working space (min. 0.6 m) Tie/weld working platform with fixed support Use roof top walk ladder while working on a slopping roofs Avoid movement on beams
		May hit the scrap/material stacked at the ground or in between	Keep the work place neat and clean Remove the scrap immediately
	Material can fall down	May hit the workers working at lower levels and prove fatal	Same as above plus Do not throw or drop materials or equipment from height. I.e. do not <i>bomb</i> materials All tools to be carried in a tool-kit Bag or on working uniform Remove scrap from the planks Ensure wearing of helmet by the workers working at lower levels
(K) CONFINED SPACES	Suffocation/drowning	Unconsciousness, death	Use respiratory devices, if reqd. Avoid over crowding inside a confined space Provide Exhaust fans for ventilation Do not wear loose clothes, neck ties, etc Fulfill conditions of the permit

APPENDIX-E: (Sheet 10 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES (...Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
			Check for presence of hydrocarbons, O ₂ level Obtain work permit before entering a confined space Ensure that the connected piping of the equipment which is to be opened is pressure free, fluid has been drained, vents are open and piping is positively isolated by a blind flange
	Presence of foul smell and toxic substances	Inhalation can pose threat to life	Same as above plus Check for hydrocarbon and Aromatic compounds before entering a confined space Depute one person outside the confined space for continuous monitoring and for extending help in case of an emergency
	Ignition/ flame can cause fire	Person may sustain burn injuries or explosion may occur	Keep fire extinguishers at a hand distance Remove surplus material and scrap immediately Do not smoke inside a confined space Do not allow gas cylinders inside a confined space Use low voltage (24V) lamps for lighting Use tools with air motors or electric tools with max. voltage of 24V Remove all equipments at the end of the day
(L) HANDLING AND LIFTING EQUIPMENTS	Failure of load lifting and moving equipments	Can cause accident and prove fatal	Avoid standing under the lifted load and within the operating radius of cranes Check periodically oil, brakes, gears, horns and tyre pressure of all moving machinery Check quality, size and condition of all chain pulley blocks, slings, U-clamps, D-shackles, wire ropes, etc. Allow crane to move only on hard, firm and leveled ground. Allow lifting slings as short as possible and check gunny packings at the friction points Do not allow crane to tilt its boom while moving Install Safe Load Indicator Ensure certification by applicable authority

APPENDIX-E : (Sheet 11 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES (...Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
	Overloading of lifting equipments	Same as above	Safe lifting capacity of derricks and winches written on them shall be got verified The max. safe working load shall be marked on all lifting equipments Check the weight of columns and other heavy items painted on them and accordingly decide about the crane capacity, boom and angle of erection Allow only trained operators and riggers during crane operation.
	Overhead electrical wires	Can cause electrocution and fire	Do not allow boom or other parts of crane to come within 3m reach of overhead HT cables Hook and load being lifted shall preferably remain in full visibility of crane operators.
(M) SCAFFOLDING, FORMWORK AND LADDERS	Person can fall down	Person May sustain severe injuries and prove fatal	Provide guard rails for working at height Face ladder while climbing and use both hands. Ladders shall extend about 1m above landing for easy access and tying up purpose Do not place ladders against movable objects and maintain base at 1/4 unit of the working length of the ladder. Suspended scaffolds shall not be less than 500 mm wide and tied properly with ropes No loose planks shall be allowed Use PPE, like helmets, safety shoes, etc
	Failure of scaffolding material	Same as above	Inspect visually all scaffolding materials for stability and anchoring with permanent structures. Design scaffolding for max. load carrying capacity. Scaffolding planks shall not be less than 50X250 mm full thickness lumber or equivalent. These shall be cleated or secured and must extend over the end supports by at least 150mm and not more than 300mm Don't overload the scaffolds Do not splice short ladders to make a longer one. Vertical ladders shall not exceed 6m.
	Material can fall down	Persons working at lower level gets injured	Remove excess material and scrap immediately Carry the tools in a tool-kit bag only Provide safety nets

APPENDIX-E: (Sheet 12 of 12)

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES (...Contd.)

ACTIVITY	TYPE OF HAZARD	EFFECT OF HAZARD	PREVENTIVE MEASURES
(N) STRUCTURAL WORKS	Personal negligence and danger of fall	Can cause injury or casualty	Do not take rest inside rooms built for welding machines or electrical distribution system. Avoid walking on beams at height Wear helmet with chin strap and full body harness while working at height. Use hand gloves and goggles during grinding operations Cover or mark the sharp and projected edges Do not stand within the operating radius of cranes
	Lifting/ slipping of material	Same as above	Do not stand under the lifted load Stack properly all the materials. Avoid slippage during handling Control longer pieces lifted up by cranes from both ends Remove loose materials from height Ensure tightening of all nuts & bolts
(O) PIPELINE WORKS	Erection/ lowering failure	Can cause injury	Do not stand under the lifted load Do not allow any person to come within the radii of the side boom handling pipes Check the load carrying capacity of the lifting tools & tackles Use safe Load Indicators Use appropriate PPEs
	Other	Same as above	Wear gum boots in marshy areas Allow only one person to perform signaling operations while lowering of pipes Provide night caps on pipes Provide end covers on pipes for stoppage of pigs while testing/ cleaning operations
(P) GRIT BLASTING	Pollution in neighboring area, hit by grits and high pressure air	Can cause personal injury	Ensure the blasting is done in enclosed shed. Keep safe distance while blasting operations. Wear positive pressure blast hood or helmet with view –window, ear-muff/plug, gloves, overall or leather coat /apron, rubber shoes.

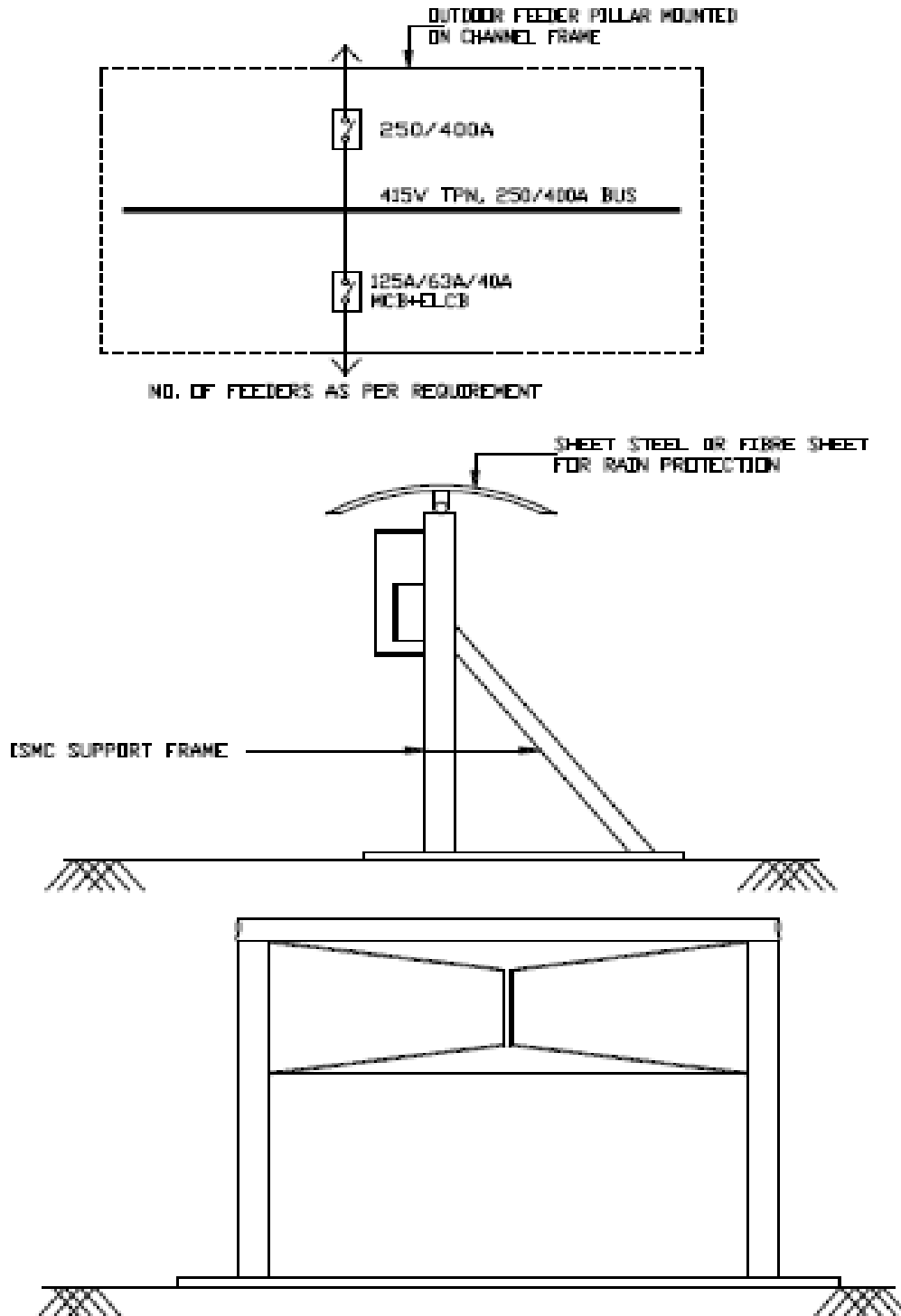
APPENDIX-F

TRAINING SUBJECTS / TOPICS
(For contractors' personnel)

1. The Law & Safety – Statutory Requirement / Applicable statutes / Duties of employer / employee
2. Policy & Administration – Why HSE? / Duties & Responsibilities of Safety Personnel at project site / Effect of incentive on accident prevention
3. HSE & Supervision – Duties of Supervisor / HSE integrated supervision / Who should be held responsible for site accidents?
4. Safety Budget / Cost of Accidents – Direct costs / Indirect costs
5. Hazard Identification / Type of hazards / HIRAC
6. Behavioural Safety & Motivation
7. Housekeeping – Storage / Stacking / Handling of materials / Hydra handling
8. Occupational Health in Construction sector
9. Personal Protective Equipments – Respiratory & Non- respiratory
10. Electricity & Safety – ELCB / Fuse / Powered tools / Project illumination
11. Handling of Compressed Gas – Transportation / Storage / FBAs / Fire prevention
12. Machine Safety – Machine guarding / Maintenance
13. Transportation – Hazards & risks in transp. of materials / ODC consignments
14. Cranes & Other Lifting machinery – Legal requirements vis-à-vis essential safety requirements.
15. Communication – HSE Induction / TBTs / Safety Committee / Safety meeting / Safety propaganda / Publicity.
16. Excavation – Risks & Dangers / Safety measures
17. Working at Heights – Use of ladder / Work on roofs / Scaffolds / Double harness lanyards / Life-line / Fall arrester / Safety Nets / Floor openings
18. Hazards in Welding & important safety precautions
19. Gas Cutting – Hazards & safety measures
20. Fire prevention & fire protection

APPENDIX - G

CONSTRUCTION POWER BOARD(typ)



NOTES:-

- 1 CONTRACTOR TO INSTALL TEMPORARY CONST. POWER BOARD AS SHOWN IN THE DRG. ITS LOCATION SHALL BE EASILY ACCESSABLE.
- 2 POWER DISTRIBUTION BOARD SHALL BE EARTHED AT TWO POINTS BY MINIMUM 40X5MM GI STRIP FROM THE AVAILABLE GRID OR DIRECTLY CONNECTED TO TWO DIRECTLY DRIVEN EARTH ELECTRODES.
- 3 DISTRIBUTION BOARD SHALL BE FABRICATED BY USING 14MM CRCA SHEET STEEL WITH HINGED DOORS AND ALL COMPONENT MOUNTED IN IT.
4. ALL INCOMING AND OUTGOING CABLES SHALL HAVE BOTTOM ENTRY.

APPENDIX-H

LIST OF PROCEDURES (MINIMUM) TO BE FORMING PART OF HSE PLAN:-

A. HSE Management Procedures:

- HSE Risk Management (including JSA/HIRA)
- HSE Legal Compliance and Other Requirements
- HSE Objectives & Performance
- HSE Training and Competence (including Induction)
- HSE Motivation & Award Scheme
- HSE Audits
- HSE Meetings
- HSE Sub Contractor Management
- HSE Emergency Management
- HSE Incidents Reporting and Management
- HSE Reports
- HSE Management System Review
- HSE Change Management
- HSE procedure for Behaviour based Safety
- First Aid & Management
- Roles, Responsibility, accountabilities and Authorities

B. Job procedures/Safe Operating procedures

- Setting Up Site & Signage's
- Handling of Electrical Appliances
- Working at Height
- Confined Space Entry
- Permit to Work (including hot works)
- Housekeeping
- Lifting Operations
- Transportation of materials including Manual Handling
- Compressed Air Tools and Units
- Earthmoving Operations & excavation
- Scaffolding
- Fire Prevention/Protection
- Hazardous Substance handling & Storage
- Radiation Hazard
- Personal Protective Equipment

FORMAT NO. : HSE-1 REV 0

(Sheet 1 of 6)

SAFETY WALK-THROUGH REPORT

(Name & signature of walk through performer to be inserted at the bottom of each page)

Project : _____ Report no. : _____
 Date : _____ Contractor : _____
 Inspection by : _____ Owner : _____
 Frequency : Monthly Job no. : _____

Note : Write 'NA' wherever the item is not applicable

SL. NO.	ITEM	Satisfactory / Yes	Non satisfactory/ No	Remarks	Action
1.	HOUSEKEEPING				
a)	Waste containers provided and used				
b)	Sanitary facilities adequate and Clean				
c)	Passageways and Walkways Clear				
d)	General neatness of working areas				
e)	Other				
2.	PERSONNEL PROTECTIVE EQUIPMENT				
a)	Goggles; Shields				
b)	Face protection				
	Hearing protection				
	Foot protection				
e)	Hand protection				
f)	Respiratory Masks etc.				
g)	Full body harness conforming to CC, EN 361				
h)	Hard hat (HDPE)				
i)	Other				
3.	EXCAVATIONS/OPENINGS				
a)	Openings properly covered or barricaded				
b)	Excavations shored				
c)	Excavations barricaded				
d)	Overnight lighting provided				
e)	Other				

Safety walk-through performer (Name & Signature).....

FORMAT NO. : HSE-1 REV 0

(Sheet 2 of 6)

SL. NO.	ITEM	Satisfactory / Yes	Non satisfactory/ No	Remarks	Action
4.	WELDING & GAS CUTTING				
a)	Gas cylinders chained upright				
b)	Cables and hoses not obstructing				
c)	Screens or shields used				
d)	Flammable materials protected				
e)	Live electrode bits contained properly				
f)	Fire extinguisher (s) accessible				
g)	Other				
5.	SCAFFOLDING & BARRICADING				
a)	Fully decked platforms				
b)	Guard and intermediate rails in place				
c)	Toe boards in place				
d)	Adequate shoring				
e)	Adequate access				
f)	Positive barricading for critical activities				
g)	Installation of warning signs				
h)	Other				
6.	LADDERS				
a)	Extension side rails 1 m above				
b)	Top of landing				
c)	Properly secured				
d)	Angle + 70° from horizontal				
e)	Other				

Safety walk-through performer (Name & Signature).....

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(Sheet 3 of 6)

SL. NO.	ITEM	Satisfactory / Yes	Non satisfactory /No	Remarks	Action
7.	HOISTS, CRANES AND DERRICKS				
a)	Condition of cables and sheaves OK				
b)	Condition of slings, chains, hooks and eyes O.K.				
c)	Inspection and maintenance log-books maintained				
d)	Outriggers used				
e)	Reverse horn installed / active / coupled with gear				
f)	Signs/barricades provided				
g)	Signals observed and understood				
h)	Qualified operators				
i)	Other				
8.	MACHINERY, TOOLS AND EQUIPMENT				
a)	Proper instruction				
b)	Safety devices				
c)	Proper cords				
d)	Inspection and maintenance				
e)	Other				
9.	VEHICLE AND TRAFFIC				
a)	Rules and regulations observed				
b)	Inspection and maintenance				
c)	Licensed drivers				
d)	Other				

Safety walk-through performer (Name & Signature).....

FORMAT NO. : HSE-1 REV 0

(Sheet 4 of 6)

SL. NO.	ITEM	Satisfactory / Yes	Non satisfactory /No	Remarks	Action
10.	TEMPORARY FACILITIES				
a)	Emergency instructions posted				
b)	Fire extinguishers provided				
c)	Fire-aid equipment available				
d)	Secured against storm damage				
e)	General neatness				
f)	In accordance with electrical requirements				
g)	Other				
11.	FIRE PREVENTION				
a)	Personnel trained & instructed to make use of facility				
b)	Fire extinguishers checked periodically & record maintained				
c)	No smoking in Prohibited areas.				
d)	Fire Hydrants not obstructed Clear				
e)	Other Regular fire drill conducted				
12.	ELECTRICAL				
a)	Use of 3-core armored cables everywhere				
b)	Usage of 'All insulated' or 'double-insulated' electrical tools				
c)	All electrical connection are routed through ELCB				
d)	Natural Earthing at the source of power (Main DB)				
e)	Continuity and tightness of earth conductor				
f)	Effective covering of junction boxes, panels and other energized wiring places				
g)	Ground fault circuit interrupters provided				
h)	Prevention of tripping hazards maintained				
f)	DCP extinguishers arranged & licensed electrician engaged at site				

Safety walk-through performer (Name & Signature).....

FORMAT NO. : HSE-1 REV 0

(Sheet 5 of 6)

SL. NO.	ITEM	Satisfactory / Yes	Non satisfactory /No	Remarks	Action
14.	HANDLING AND STORAGE OF MATERIALS				
a)	Safely stored or stacked				
b)	Passageways clear / free from obstructions				
c)	Fire fighting facility in place				
15.	FLAMMABLE GASES AND LIQUIDS				
a)	Containers clearly identified / protected from fire				
b)	Safe storage & transportation arrangement made				
c)	Fire extinguishers positioned nearby				
d)	Facilities kept away from electric spark, hot spatters & ignition source.				
16.	WORKING AT HEIGHT				
a)	Approved Erection plan and work permit in place				
b)	Safe access, Safe work platform & Safety nets provided				
c)	Life lines, Fall arrester, Full body harness and with double lanyards used;				
d)	Health Check record available for workers going up?				
e)	Protective handrails arranged around floor openings				
17.	CONFINED SPACE				
a)	Work Permit obtained from requisite authority				
b)	Test for toxic gas and sufficient availability of oxygen conducted & status				
c)	Supervisor present at site & at least one person outside the confined space for monitoring deputed				
d)	Availability of safe means of entry, exit and ventilation (register for entry & exit maintained)				
e)	Fire extinguisher and first-aid facility ensured				
f)	Lighting provision made by using 24V Lamp				
g)	Proper usage of PPEs ensured				
18.	RADIOGRAPHY				
a)	Proper storage and handling of source as per BARC/ AERB guidelines (authorized radiographer available)				
b)	Work permit obtained				

Safety walk-through performer (Name & Signature).....

FORMAT NO. : HSE-1 REV 0

(Sheet 6 of 6)

SL. NO.	ITEM	Satisfactory / Yes	Non satisfactory /No	Remarks	Action
c)	Cordoning of the area done				
d)	Use of appropriate PPE's ensured				
e)	HSE training to workers/supervisors imparted during the fortnight (indicate topic)				
f)	Minimum occupancy of workplace ensured				
19.	HEALTH CHECKS				
a)	All Workers medically examined and found be fit for working at heights (slinging, rigging, painting etc.) in confined space in excavation / trenching in shot blasting				
b)	Availability of First Aid box with contents				
c)	Proper sanitation at site, office and labour camps				
d)	Arrangement of medical facilities.				
e)	Measures for dealing with illness at site & labour camps.				
f)	Availability of Potable drinking water for workmen & staff.				
g)	Provision of crèches for children.				
h)	Stand by vehicle / ambulance available for evacuation of injured				
20.	ENVIRONMENT				
a)	Chemical and Other Effluents properly disposed				
b)	Cleaning liquid of pipes disposed off properly				
c)	Seawater used for hydro-testing disposed off as per agreed procedure				
d)	Lubricant Waste/Engine oils properly disposed				
e)	Waste from Canteen, offices, sanitation etc disposed properly				
f)	Disposal of surplus earth, stripping materials, Oily rags and combustible materials done properly				
g)	Green belt protection				

Safety walk-through performer (Name & Signature).....

FORMAT NO. : HSE-2 REV 0

(Sheet 1 of 3)

ACCIDENT / INCIDENT REPORT

(To be submitted by Contractor after every Incident / Accident within 24 hours to EIL/ Owner)

Report No.: _____ Date: _____

Project site: _____ Name of work: _____

Contractor's name: _____ Contractor's Job Engineer (name) _____

Non-disabling injury (Non-LTA)	Hospitalized but resumed duty before end of 48 hrs	
Disabling injury (other LTA)	Hospitalized & failed to resume duty within next 48 hrs	
Fatal (LTA):	Death / Expiry	
First Aid case (non LTA)	Resume duty after first aid	

Name of the injured: _____ Father's name of victim: _____

Sub Contractor's Name:

Gate Pass No.:..... Age: _____ Yrs. Victim's medical fitness exam. (Pre-empl.) date: - _____

Date & time of Accident / Incident: _____

Names of Witnesses: (1) _____ (2) _____ (3) _____

Profession of victim:

Bar bender		Carpenter		Meson	
Fitter		Helper		Gas cutter	
Grinder		Welder		Electrician	
Driver		Rigger		M/c operator	
Engineer		Manager		Other/specify	

Qualification

No formal education		Non-Matriculate		Matriculate	
Graduate		Post- grad		Other/specify	

Job Experience

NIL		Less than 2 yrs		2-5 yrs	
5-10 yrs		11-15 yrs		15 years and above	

Location where the incident happened: _____

FORMAT NO. : HSE-2 REV 0

(Sheet 2 of 3)

Activity / Works that was continuing during incident / accident: -

Excavation		Demolition		Concrete carrying	
Concrete pouring		Transportation of materials (manually)		Transportation of materials (mechanically)	
Work on or adjacent to water		Work at height (+2.0 mts)		Scaffold preparation	
Scaffold dismantling		Piling works		Welding	
Grinding		Gas-cutting		Pipe fit-ups & fabrication	
Structural fabrications		Machine works		Hydro-testing works	
Electrical works		Erection activities		Other/specify	

What exactly the victim was doing just before the incident / accident?

.....
.....

Nature of injury:

Bruise or Contusion		Abrasion (superficial wound)		Sprains or strains	
Cut or Laceration		Puncture or Open wound		Burn	
Inhalation of toxic or Poisonous fumes or gases		Absorption		Amputation	
Fracture		Other/specify			

Parts of body involved in incident / accident

Head		Face		Eyes	
Throat		Arm (above wrist)		Hand (including wrist)	
Fingers		Trunk (Abdomen / Back / Chest / Shoulder)		Throat	
Leg (above ankle)		Foot (incl. ankle)		Toes	
Multiple				Other/specify	

Accident type:

Struck against		Struck by		Fall from Elevation	
Fall on same level		caught in		caught under	
caught in between		Rubbed or abraded		Contact with (Electricity)	
Contact with (Temp./ extremes)		Contact with chemicals or oils		Vehicle accident	
Other/specify					

FORMAT NO. : HSE-2 REV 0

(Sheet 3 of 3)

Medical Aid provided: - (indicate specific aids / treatment etc.)-

.....

Actions taken to prevent recurrence of similar incident / accident:

.....

Intimation to local authorities (Dist Collector / Local Police Station / ESI authority): Yes / No / NA.

If yes, to whom

Safety Officer
(Signature and Name)

Site Head / Resident Construction Manager
(Signature and Name)
Stamp of Contractor

To : Owner
 : RCM/Site-in-charge EIL (3 copies)
 ├─> Divisional Head (Constn) through RCM
 └─> Project Manager, EIL, through RCM

FORMAT NO. : HSE-3 REV 0

(Sheet 1 of 5)

SUPPLEMENTARY INCIDENT / ACCIDENT INVESTIGATION REPORT
TICK THE APPROPRIATE ONE AS APPLICABLE (furnish within 72 hours)

Supplementary to Incident / Accident Report No: _____ (Copy enclosed)

Report No.: _____ Date: _____

Project site: _____ Name of work: _____

Contractor's name: _____ Contractor's Job Engineer (name) _____

Non-disabling injury (Non-LTA)	Hospitalized but resumed duty before end of 48 hrs	
Disabling injury (other LTA)	Hospitalized & failed to resume duty within next 48 hrs	
Fatal (LTA):	Death / Expiry	
First Aid case (non LTA)	Resume duty after first aid	

Name of the injured: _____ Father's name of victim: _____

Sub Contractor's Name:

Gate Pass No.: Age: _____ Yrs. Victim's medical fitness exam. (Pre-empl.) date: - _____

Date & time of Accident / Incident: _____

Names of Witnesses: (1) _____ (2) _____ (3) _____

Profession of victim:

Bar bender		Carpenter		Meson	
Fitter		Helper		Gas cutter	
Grinder		Welder		Electrician	
Driver		Rigger		M/c.operator	
Engineer		Manager		Other/specify	

Qualification

No formal education		Non-Matriculate		Matriculate	
Graduate		Post- grad		Other/specify	

Job Experience

NIL		Less than 2 yrs		2-5 yrs	
5-10 yrs		11-15 yrs		15 years and above	

Location where the incident happened: _____

FORMAT NO. : HSE-3 REV 0

(Sheet 2 of 5)

Activity / Works that was continuing during incident / accident: -

Excavation		Demolition		Concrete carrying	
Concrete pouring		Transportation of materials (manually)		Transportation of materials (mechanically)	
Work on or adjacent to water		Work at height (+2.0 mts)		Scaffold preparation	
Scaffold dismantling		Piling works		Welding	
Grinding		Gas-cutting		Pipe fit-ups & fabrication	
Structural fabrications		Machine works		Hydro-testing works	
Electrical works		Erection activities		Other/specify	

What exactly the victim was doing just before the incident / accident?

.....
.....

Particular of tools & tackles being used and condition of the same after incident/accident:

.....
.....

Description of Incident/Accident (How the incident was caused):

.....
.....
.....

Nature of injury:

Bruise or Contusion		Abrasion (superficial wound)		Sprains or strains	
Cut or Laceration		Puncture or Open wound		Burn	
Inhalation of toxic or Poisonous fumes or gases		Absorption		Amputation	
Fracture		Other/specify			

Parts of body involved in incident / accident

Head		Face		Eyes	
Throat		Arm (above wrist)		Hand (including wrist)	
Fingers		Trunk (Abdomen / Back / Chest / Shoulder)		Throat	
Leg (above ankle)		Foot (incl. ankle)		Toes	
Multiple				Other/specify	

FORMAT NO. : HSE-3 REV 0

(Sheet 3 of 5)

Accident type:

Struck against		Struck by		Fall from Elevation	
Fall on same level		caught in		caught under	
caught in between		Rubbed or abraded		Contact with (Electricity)	
Contact with (Temp./ extremes)		Contact with chemicals or oils		Vehicle accident	
Other/specify					

Name & Designation of person who provided First-Aid to the victim: -----

Name & Telephone number of Hospital where the victim was treated _____

Mode of transport used for transporting victim – Ambulance / Private car / Tempo / Truck / Others

How much time taken to shift the injured person to Hospital _____

In case of FATAL incident, indicate clearly the BOCW Registration No. of the victim /Company.....

Comments of Medical Practitioner, who treated / attended the victim/injured (attached / described here) _____

What actions are taken for investigation of the incident, please indicate clearly – (Video film / Photography / Measurements taken etc.....)

Immediate cause (Please tick the right applicable) –

Hazardous methods or procedures inadequately guarded		Poor housekeeping		Inadequate or improper PPE	
Environmental hazards (excess noise/space constraint/ventilation)		improper illumination/Moving on oval surface		Working on dangerous equipment	

FORMAT NO. : HSE-3 REV 0

(Sheet 4 of 5)

Failure to secure		Horse-play		Failure to use PPE	
Inattention to surroundings		Improper use of hands & body-parts		By-passing safety devices	
Unsafe mixing or placement of tools & tackles		Bypassing standard procedures		Failure in communication	
Operating without authority		Improper use of equipment or tools & tackles		drug or alcoholic influence	
excessive haste		Others(specify)			

Basic cause

Over confidence		Impulsiveness		over-exertion	
Faulty judgement or poor understanding		Failing to keep attention constantly		Nervousness & Fear	
Fatigue		Defective vision		Ill health or sickness	
Slow reaction		Others(specify)			

Root cause

Inadequate Engg		Improper Design		Inadequate Planning & organization	
Inadequate knowledge		Inadequate skill		Inadequate training	
Inadequate supervision		Improper work procedure		Inadequate compliance with standard	
Substandard performance		Inadequate maintenance		Improper inspection	
Others(specify)					

Loss of man days and impact on site works, (if any) –

Remarks from Contractor's Safety Officer / Engineer –

Was the victim performing relevant tasks for which he was engaged /employed? Yes / No
 Was the Supervisor present on work-site during the incident? Yes / No
 Have the causes of incident rightly identified? Yes / No
 Cause of Accident was _____

FORMAT NO. : HSE-3 REV 0

(Sheet 5 of 5)

Remedial measures recommended by **Safety Officer of Contractor** for avoiding similar incident in future

:

.....

.....

.....

.....

.....

.....

.....

Intimation to local authorities (Dist Collector / Local Police Station / ESI authority): Yes / No / NA.

If yes, to whom

Safety Officer
(Signature and Name)

Site Head / Resident Construction Manager
(Signature and Name)
Stamp of Contractor

To : Owner
: RCM// Site-in-charge of EIL (3 copies)
→ Divisional Head (Constn) through RCM
→ Project Manager EIL, through RCM

FORMAT NO. : HSE-4 REV 0

NEAR MISS INCIDENT/ DANGEROUS OCCURRENCE SUGGESTED PROFORMA
(to be submitted within 24 hours)

- **Near Miss** : Human injury escaped & no damage to property, equipment or interruption to work.
- **Dangerous Occurrence**: Damage to property, equipment or interruption of work, but not resulting in personal injury/illness, e.g. Fire incident, collapse of structure, crane failure, etc

Report No.: _____

Name of Site: _____

Date: _____

Name of work: _____

Contractor: _____

Incident reported by :

Date & Time of Incident :

Location :

Brief description of incident

Probable cause of incident

Suggested corrective action

Steps taken to avoid recurrence

Yes

No

To : Owner
: RCM/Site-in-charge EIL (3 copies)

└─> Divisional Head (Constn) through RCM
└─> Project Manager EIL, through RCM

FORMAT NO. : HSE-5 REV 0

MONTHLY HEALTH, SAFETY & ENVIRONMENT (HSE) REPORT

(To be submitted by each Contractor)

Actual work start Date: _____ For the Month of: _____

Project: _____ Report No: _____

Name of the Contractor: _____ Status as on : _____

Name of Work : _____ Job No : _____

(Contractor in consultation with EIL shall generate the reports through web based package(www.eil.co.in/conthse) only.

ITEM	UPTO PREVIOUS MONTH	THIS MONTH	CUMULATIVE
1) Average number of Staff & Workmen (average daily headcount, not man days)			
2) Man-hours worked			
3) Number of Induction programmes conducted			
4) Number of HSE meetings organized at site			
5) Number of HSE awareness programmes conducted at site			
6) Number of Tool Box Talks conducted			
7) Number of Lost Time Accidents (LTA)	Fatal		
	Other LTA		
8) Number of Loss Time Injuries (LTI)	Fatalities		
	Other LTI		
9) Number of Non-Loss Time Accidents			
10) Number of First Aid Cases			
11) Number of Near Miss Incidents			
12) No. of unsafe acts/ practices detected			
13) No. of disciplinary actions taken against staff/ workmen			
14) Man-days lost due to accidents			
15) LTA Free man-hours i.e. LTA free man-hours counted from the Last LTA (enter date:)			
16) Frequency Rate (No. of LTA per 2 lacs man-hours worked)			
17) Severity Rate (No. of man days lost per 2 lacs man-hours worked)			
18) Loss Time Injury Frequency (No. of LTI per 2 lacs man-hours worked)			
19) No. of activities for which Job Safety Analysis (JSA) completed			
20) No. of incentives/ awards given			
21) No. of occasions on which penalty imposed by EIL/ Owner			
22) No. of Audits conducted			
23) No. of pending NCs in above Audits			
24) Compensation cases raised with Insurance			
25) Compensation cases resolved and paid to workmen			
26) Whether workmen compensation policy taken		Yes	No
27) Whether workmen compensation policy is valid		Yes	No
28) Whether workmen registered under ESI Act, as applicable		Yes	No
Remarks, if any			

Date:

Prepared by Safety Officer
(Signature and Name)

Approved by Site Head / Resident Construction Manager
(Signature and Name)

To : - OWNER
- RCM EIL (2 copies)

FORMAT NO. : HSE-6 REV 0
PERMIT FOR WORKING AT HEIGHTS (ABOVE 2.0 METER)

(In duplicate to be issued daily for site and for office)

Permit No..... Name of Main Contractor.....
Name of work executing agency / sub agency / vendor:.....
Date..... Exact Location of work.....
Nature of work Duration of work (from) (to)
Number of workers covered within this permit.....
(List enclosed with name & gate pass numbers.)

Sl. No.	Items / Subjects	Status of compliance (Yes / No)	
1	Work areas / Equipments inspected		
2	Work area cordoned off		
3	Adequate lighting is provided		
4	Precautions against public traffic taken		
5	Concerned persons in & around have been alerted & cautioned		
6	Hazards / risks involved in routine / non-routine task assessed and control measures have been implemented at specific task		
7	ELCB provided for electrical connection & found working		
8	Ladder safely attached / fixed		
9	Scaffoldings are checked and TAGs are found used correctly		
10	Working platforms are provided and are found sound /safe for use		
11	Safe access & egress arrangements (e.g. ladders, fall arresters, life-lines etc.) are satisfactorily incorporated		
12	a. Openings on platform / floors are effectively cordoned / covered		
	b. Safety Nets are provided wherever required		
13	Use of following safety gadgets by people working at area under this permit, is checked and found satisfactory - Safety helmet Safety harness (full body) with double lanyard Safety Shoes Safety gloves Safety goggles		
14	Housekeeping of work area found satisfactorily tidy / clean & clear		
15	Adequate measures have been taken for works being continued at the ground level, when simultaneous works are permitted overhead at that very location.		
16	Materials are not thrown from heights on to ground		
17	Medical examination of workers are made & found satisfactory		
18	Responsible job engineer / supervisor found physically present at work spot for overall administration of work as well as safety of people.		

Above items have been checked & compliance has been found in place. Hence work is permitted to start / continue at the above-mentioned location. Work shall not start till identified lapses are rectified.

Additional Precautions, if any

Work Permit issued by
Contractor Engineer/RCM

Verification By
Contractor Safety Officer

AT THE END OF THE DAY/WORK:

All works at height are completed & workmen have returned safely from work location at (time)..... (date).....

(Sig. Contractor Engineer)

FORMAT NO. : HSE-7 REV 0

CONFINED SPACE ENTRY PERMIT

Project site _____ Sr.No. _____
 Name of the work _____ Date _____
 Name of Contractor _____ Nature of work _____
 Exact location of work _____

Safety Requirements POSITIVE ISOLATION OF THE VESSEL IS MANDATORY							
(A) Has the equipment been ?							
Y	NR		Y	NR		Y	NR
<input type="checkbox"/>	<input type="checkbox"/>	Isolated from	<input type="checkbox"/>	<input type="checkbox"/>	water flushed &/or	<input type="checkbox"/>	<input type="checkbox"/>
		power/steam/air			steamed		
<input type="checkbox"/>	<input type="checkbox"/>	isolated from liquid or	<input type="checkbox"/>	<input type="checkbox"/>	Man ways open &	<input type="checkbox"/>	<input type="checkbox"/>
		gases			ventilated		
<input type="checkbox"/>	<input type="checkbox"/>	depressurized &/or	<input type="checkbox"/>	<input type="checkbox"/>	cont. inert gas flow	<input type="checkbox"/>	<input type="checkbox"/>
		drained			arranged		
<input type="checkbox"/>	<input type="checkbox"/>	blanked/blinded/	<input type="checkbox"/>	<input type="checkbox"/>	adequately cooled	<input type="checkbox"/>	<input type="checkbox"/>
		disconnected					
(B) Expected Residual Hazards							
<input type="checkbox"/>	<input type="checkbox"/>	lack of O ₂	<input type="checkbox"/>	<input type="checkbox"/>	combustible gas/ liquid	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	corrosive chemicals	<input type="checkbox"/>	<input type="checkbox"/>	pyrophoric iron / scales	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	heat/ steam / frost	<input type="checkbox"/>	<input type="checkbox"/>	high humidity	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
(C) Protection Measures							
<input type="checkbox"/>	<input type="checkbox"/>	gloves	<input type="checkbox"/>	<input type="checkbox"/>	ear plug / muff	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	protective clothing	<input type="checkbox"/>	<input type="checkbox"/>	dust / gas / air line mask	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	grounded air duct/blower	<input type="checkbox"/>	<input type="checkbox"/>	attendant with SCBA/air	<input type="checkbox"/>	<input type="checkbox"/>
		/AC			mask		
<input type="checkbox"/>	<input type="checkbox"/>	Fire fighting arrangements	<input type="checkbox"/>	<input type="checkbox"/>	safety harness & lifeline	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Authorization / Renewal (It is safe to enter the confined space)							
	No. of persons allowed	Name of persons allowed	Signature		Time		Signature
			Contractor's Supervisor	Contractor's Safety Officer	From	To	Workman
Permit Closure :							
(A) Entry <input type="checkbox"/> was closed <input type="checkbox"/> stopped <input type="checkbox"/> will continue on ...							
(B) <input type="checkbox"/> Site left in a safe condition <input type="checkbox"/> Housekeeping done							
(C) Multilock <input type="checkbox"/> removed <input type="checkbox"/> key transferred							
<input type="checkbox"/> Ensured all men have come out <input type="checkbox"/> Man-ways barricaded							
Remarks, if any:							

FORMAT NO. : **HSE-8 REV 0**

RADIATION WORK PERMIT

Project : Sr.No. :
Name of the work : Date :
Name of site contractor : Job No. :

Location of work :

Source strength :

Cordoned distance (m) :

Name of Radiography agency : Approved by Owner/EIL

No. of workers engaged :
(List enclosed with name & gate pass numbers.)

The following items have been checked & compliance shall be ensured during currency of the permit:

S. No.	Item description	Done
	Safety regulations as per BARC/AERB ensured while source in use/in transit & during storage	<input type="checkbox"/>
	Area cordoned off / safe working platform provided	<input type="checkbox"/>
	Lighting arrangements for working during nights ensured	<input type="checkbox"/>
	Warning signs/ flash lights installed	<input type="checkbox"/>
	Cold work permit taken (if applicable)	<input type="checkbox"/>
	PPEs like film badges, dosimeters used	<input type="checkbox"/>

Additional precautions, if any _____

(Radiography Agency's BARC/AERB authorized Supervisor)

Permission is granted.

Permit is valid from _____ AM/PM _____ Date to _____ AM/PM _____
Date

(Signature of permit issuing authority of site contractor)

Name : _____ :Designation: _____ Date: _____

Permit renewal:

Permit extended up to		Additional precautions required, if any	Sign of issuing authority with date (of site contractor)
Date	Time		

Work completed/ stopped/ area cleared at _____ Hrs of Date _____

(Sign. of permit issuing authority)

Name & Signature of site contractor:

FORMAT NO. : HSE-9 REV 0
DEMOLISHING/DISMANTLING WORK PERMIT

Project : Sr.No. :
Name of the work : Date :
Name of contractor : Job No. :

Name of sub-contractor : No. of workers to be engaged:
(List enclosed with name & gate pass numbers.)

Line No./ Equipment No./ Structure to be dismantled :

Location details of dismantling/ demolition with sketch : (clearly indicate the area)

The following items have been checked & compliance shall be ensured during currency of the permit:

S. No.	Item description	Done	Not Applicable
	Services like power, gas supply, water, etc. disconnected	<input type="checkbox"/>	<input type="checkbox"/>
	Dismantling/ Demolishing method reviewed & approved	<input type="checkbox"/>	<input type="checkbox"/>
	Usage of appropriate PPEs ensured	<input type="checkbox"/>	<input type="checkbox"/>
	Precautions taken for neighbouring structures	<input type="checkbox"/>	<input type="checkbox"/>
	First-Aid arrangements made	<input type="checkbox"/>	<input type="checkbox"/>
	Fire fighting arrangements ensured	<input type="checkbox"/>	<input type="checkbox"/>
	Precautions taken for blasting	<input type="checkbox"/>	<input type="checkbox"/>

(Contractor's Supervisor)

(Contractor's Safety Officer)

Permission is granted.

(Permit issuing authority)

Name :
Date :

Completion report :

Dismantling/ Demolishing is completed on _____ Date at _____ Hrs.

Materials/ debris transported to identified location Tagging completed (as applicable)

Services like power, gas supply, water, etc. restored

(Permit issuing authority)

CONTRACTOR'S NAME

FORMAT NO. : HSE-10 REV 0

DAILY SAFETY CHECKLIST

(To make use of before start of day's work)

Project : Sr.No. :
Name of the work : Date :
Name of contractor : Job No. :

Description of Job decided to perform : -

• Use of PPE / Safety Gadgets

Sl. No	PPEs	Compliance (Yes / No)	Sl. No	PPEs	Compliance (Yes / No)
1	Safety Helmets		6	Face Shield	
2	Safety Shoes		7	Full body harness	
3	Hand Gloves		8	Fall Arrest System	
4	Dust Musk		9	Safety net	
5	Safety Goggles		10	Horizontal life-line made of steel wire, (dia not less than 8.0 mm.)	

(Serial No. 1 & 2 are compulsory for everyone. Specify & ensure use of other safety gadgets as required for the job)

• Identify following important unsafe conditions: -

Sl. No	Conditions	Yes / No
1	Access to work site / emergency escape clear	
2	Soil / Loose earth kept away from excavated pit / slope / ladder provided	
3	Electrical wire / welding lead lying entangled on ground / welding m/c. booth accessible	
4	Elevated work platform / open ends are protected	
5	Ground area cordoned off before lifting works or erection at height / ground area checked & cordoned-off before start of height works	
6	Structural members / erected pipes / wooden boards/pieces etc. are safely anchored at heights and are not likely to fall down on people when working beneath	
7	Rope ladders tied-up on tall steel structures, long before are removed to get rid of their use	
8	Any Other	

• Indicate actions taken, if status of any of the above items is found "No"
.....

• Specific Safety guidelines / precautions, if any (communicated thro' TBT)
.....

• Above conditions and PPE compliances are checked by undersigned and correct status are indicated after verification

Inspected by
Contractor Engineer

Verification By
Contractor Safety Officer

FORMAT NO. : HSE-11 REV 0

(Sheet 1 of 2)

HOUSEKEEPING ASSESSMENT & COMPLIANCE

Project : Sr.No. :
Name of the work : Date :
Name of contractor : Job No. :
Name of contractor : Fortnightly

Sl No.	Subjects of Review	Satisfactory/ Yes	Non satisfactory/No	Remarks	Action
1.	Cleanliness at the Main entry / access of site				
2.	Ground condition / floor areas free from water-logging / oil spillage				
3.	Ground & elevated floors free from rubbish / wastes / accumulated debris / scraps.				
4.	Manholes / openings are covered / fenced				
5.	Trenches are barricaded / walkways are in place				
6.	Drains are cleaned / not choked / not occupied by dumped materials				
7.	Sufficient CAUTION boards / instructions displayed				
8.	Construction machinery are maintained & parked in orderly manner.				
9.	Movement of site people are not obstructed because of dumping / storing of construction materials				
10.	Access / egress to Electrical Distribution Boards / Panels clear from wires / cables / earth-strips etc.				
11.	Electrical panel rooms / sheds / MCC / Control rooms / Substations etc. are clean & tidy and not used for storing dress / clothes, tiffin-box or bicycles.				
12.	Passage behind Elec. panels are free for access				
13.	Fire extinguishers / fire-buckets are accessible without any difficulty.				
14.	Stair-steps, platforms & landings are clear & tidy				
15.	Sheds / rooms & work areas have got sufficient illumination as well as ventilation				
16.	Cables / Wires / welding leads are routed / hanged appropriately & are not creating unsafe condition.				
17.	Stacking / storing of insulation materials or their packing.				
18.	Removal or cleanliness of left-over sand, concrete, brick-bats, insulation-materials, excess earth, wastes etc.				
19.	Storing / stacking of sand, metal chips, re-bars, steel pipes, valves, fittings etc.				
20.	One escape route at ground & minimum two escape routes at elevation available,				

FORMAT NO. : HSE-11 REV 0

(Sheet 2 of 2)

SI No.	Subjects of Review	Satisfactory/ Yes	Non satisfactory/No	Remarks	Action
21.	Captions / Posters / Slogans on various safety instructions are displayed legibly in local language				
22.	Cable trenches are water-free or regular arrangement for taking out accumulated water exists.				
23.	Windows of rooms / offices are regularly cleaned				
24.	Facilities for cycle sheds, drinking water, washing, rest-rooms etc. are maintained in tidy manner.				
25.	Toilet, Urinals, Canteen / kitchen / pantry etc. are maintained & free from obnoxious smell.				
26.	Construction tools / tackles are stored systematically - the items are tagged / tested / certified by competent third party.				
27.	Sufficient numbers of Dust-bins / Waste-bins found at site and are regularly emptied.				

Additional remarks, if any -

.....
.....
.....

Inspected by
Contractor Engineer

Verification By
Contractor Safety Officer

FORMAT NO. : HSE-12 REV 0

INSPECTION OF TEMPORARY ELECTRICAL BOOTH / INSTALLATION

Project : Sr.No. :
Name of the work : Date :
Name of contractor : Job No. :
Sub Station No./Booth No : Location:

SL NO	SUBJECTS	OBSERVATION (YES /NO)	ACTION TAKEN
1	Switchboards installed properly are in order and protected from rain & water-logging.		
2	Adequate illumination provided for switchboard operation during night hours & the lamps are protected from direct human contact.		
3	Voltage ratings, DANGER signs, Shock-Treatment-Chart displayed in the installation / booth		
4	Fire extinguisher (DCP or CO ₂) & Sand Bucket kept in close vicinity of Switchboards		
5	Valid License & Competent Electrician / Wireman available & name/ license no. displayed at booth / installation.		
6	General housekeeping in & around booth / installation found in order.		
7	Cable-route-markers for U/G cables provided.		
8	Monthly inspection report of Electrical hand tools available in booth / installation.		
9	Insulated Mat provided in front of Elec. Panels.		
10	Rubber hand gloves available/ used by Electricians		
11	Availability of CAUTION boards for shutdown & / or repairing works.		
12	All incoming & outgoing feeders have proper MCCB / HRC fuses / Switches.		
13	Switchboards "earthed" at two distinctly isolated locations.		
14	Switchboards have adequate operating space at the front face & at the rear face too.		
15	All connections provided through 30mA ELCB.		
16	Testing records of all ELCBs available at site		
17	Only industrial type plugs & sockets are used.		
18	Temporary connections are 3-core double insulated & free from cuts & joints and 3 rd core is earthed at both ends		
19	Socket boards are properly mounted on stand & protected from water ingress.		
20	Electrical equipments operating above 250V have two earthing / double earthing.		
21	All incoming / outgoing cables are properly glanded & terminated with "lugs".		
22	Switch-boards are of industrial variety / type.		
23	Sketch for installation / connection (SLD) made & pasted & other safety labels/display boards		
24	Labeling of incoming / outgoing feeders made.		
25	All hand lamps are protected from direct contact.		
26	All electrical cable / joints are in safe condition		

Inspected by
Contractor Engineer

Verification By
Contractor Safety Officer

FORMAT NO. : HSE-13 REV 0

(Sheet 1 of 2)

INSPECTION FOR SCAFFOLDING

Project : Sr.No. :
Name of the work : Date :
Name of contractor : Job No. :

Sl. No	Description	Yes	No	N.A	Actions taken
1	Whether work permit is obtained to take up work at height above 1.5 Mts?				
2	Whether atmospheric condition is "stormy" or "raining" and works at heights have been permitted?				
3	Whether steel pipes scaffoldings are used for units /off-site areas?				
4	Whether scaffolding has been erected on rigid/firm/leveled surfaces / ground? Whether "foot-seals" or "base-plates" are used beneath the up-rights (vertical steel pipes)				
5	Whether scaffold construction is as per IS specification with toe-board and hand-rails (top-rail as well as mid-rail)?				
6	Whether distance between two successive up-rights are less than 2.5 Mts (height of scaffold & load carrying capacity governs the distance between two uprights)				
7	Whether all uprights are extended at least 900 mm above the top most working platform (to enable fitting of handrails)?				
8	Whether vertical distance of two successive ledgers is satisfactory? (varying between 1.3 Mts. To 2.1 Mts)				
9	Whether the peripheral areas of working at height are cordoned-off? (for avoiding accident to people arising out of dropped / deflected materials)				
10	Whether platform is provided? Is it safely approachable?				
11	Whether end of scaffold platform / board are extended beyond transoms? (125mm to 150 mm)				
12	Whether CE / IS approved quality and worthy conditioned full-body safety harness (with double lanyard & karabiners) are used while working at heights?				
13	Whether life-line of safety harness is anchored to an independent secured support capable of withstanding load of a falling person?				
14	Whether the area around the scaffold is cordoned off to prohibit the entry of unauthorized person / vehicle?				
15	Whether clamps used are of good condition, of adequate strength and free from defects?				
16	Whether ladder is placed at secured and leveled surface?				
17	Whether water-pass and oil-spills are avoided around the scaffold structure?				
18	Whether ladder is extended 1.5mts. above the landing point at height?				
19	Whether more than one access/egress provided to the scaffold?				
20	Whether ladder used are of adequate length and overlapping of short ladders avoided?				
21	Whether metallic ladders are placed much away from near-by electrical transmission line?				
22	Whether rungs of ladder are inspected and found in good order?				
23	Whether fall-arresters provided on both the access/egress routes?				
24	Whether diagonal (cross) bracings are provided at regular interval on the scaffold?				
25	Whether working platform on the scaffold has been made free from "jolt" or "gap"?				
26	Whether tools or materials are removed after completion of the day's job at heights?				
27	Whether a valid Permit for Work (PFW) is obtained before taking up work over asbestos or fragile roof?				
28	Whether sufficient precaution is taken while working on fragile roof?				

FORMAT NO. : HSE-13 REV 0

(Sheet 2 of 2)

Sl. No	Description	Yes	No	N. A	Actions taken
29	Whether provision is made to arrange duck ladder, crawling board for working on fragile roof?				
30	Whether scaffold has been inspected by qualified civil engineers prior to their use?				
31	Whether the scaffolding has been designed for the load to be borne by the same?				
32	Whether the erection and dismantling of the scaffolding is being done by trained persons and under adequate supervision?				
33	Whether safety net with proper working arrangement and life-line has been provided?				
34	Whether TAGS (Green for acceptable and Red for incomplete/unsafe scaffolds) are used on scaffolds?				
35	Whether sufficient illumination is provided in and around the scaffold and access?				
36	Whether emergency rescue / response arrangements are made in place				

Inspected by
Contractor Engineer

Verification By
Contractor Safety Officer

FORMAT NO. : HSE-14 REV 0

(sheet 1 of 2)

PERMIT FOR ERECTION / MODIFICATION & DISMANTLING OF SCAFFOLDING

Project : Sr.No. :
Name of the work : Date :
Name of contractor : Job No. :
Nature of activities : Duration: From.....To.....

SL. No.	SUBJECTS / ITEMS	DONE	NOT DONE	REMARKS
1	Specific task of Erection / Modification / Dismantling of scaffolds, identified & TAGGED accordingly (before as well as after carrying-out jobs).			
2	People engaged in doing the job are identified & are certified by Job Engineer of Main Contractor as experienced / trained.			Names to be noted
3	Concerned persons are alerted by the Job Engineer of Main Contractor in connection with possible hazards & what the workmen MUST do / MUST not do.			
4	Verification by Job Engineer of Main Contractor made for confirming that all persons permitted to carry-out the jobs are making use of Helmet, Safety Shoes, Goggles, Gloves & Double lanyard safety harness and other relevant PPEs.			
5	Area of work is effectively cordoned-off / barricaded / illuminated.			
6	For taking-up / lowering down Scaffolding members / clamps / couplings etc. appropriate ropes / pulleys/ chains etc. have been arranged for use (not to throw any item) & the same have been verified as "fit for purpose".			
7	Items / members of scaffold, being lowered are removed from the area & stacked correctly.			
8	Ropes, chains, pulley blocks etc. being used for lifting or lowering scaffold items, are inspected by the Job Engineer & their certifications as well as physical conditions have been found O.K, before signing this PERMIT.			
9	Safety Net / Life-line / Fall Arresters etc. are arranged in position and Job Engineer has found working conditions favourable for activities to start.			
10	Scaffold erection or dismantling tasks are being supervised by Experienced Engineer / Competent person.			
11	Only competent & experienced people have been selected / engaged in Scaffolding erection, modification or dismantling tasks.			
12	Adequate & effective actions for traffic and movement of people around the cordoned-off area taken to avoid inadvertent incident			
13	Working platforms are protected with handrails & toe-boards.			
14	Access & Exit (for reach & escape) are safe for use by people.			
15	Tools, tackles to be used for above jobs are verified by job Engineers of Main contractor as genuinely good and tied-up at height (to prevent their fall).			
16	Site important Telephone Nos. are made known to everyone			
17	SOP (Safe Operating Procedure) for the specific task is made & followed too.			
18	Emergency vehicle has been arranged at work locations.			

- This permit for work shall be available at specific work location all the time.
- After completion of work, permit shall be returned to safety cell of main contractor, without fail.
- This Permit shall be issued maximum upto (Monday to Sunday).
- Additional Precautions, if any

- **ACCORD OF PERMISSION** (to be ticked) - YES () / NO ()

Inspected by
Contractor Engineer

Verification By
Contractor Safety Officer]

FORMAT NO. : HSE-14 REV 0

(sheet 2 of 2)

Everyday Site working conditions & performance of workmen shall be assessed / checked by Contractor Site Engr. and Safety Officer shall verify the same .

	Name / Sign.	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Site Engr.								
Safety Off.								

FORMAT NO. : HSE-15 REV 0

PERMIT FOR HEAVY LIFT/CRITICAL ERECTION

Project : Sr.No. :
Name of the work : Date :
Name of contractor : Job No. :
Nature of activities : Duration: From.....To.....
Location of work : Name /Type of crane :
Equipment/Structure to be erected: Wt. of equipment/ structure to be erected :

SL. NO.	Description of Item	COMPLIANCE STATUS			Remarks
		Yes	No	Not applicable	
1)	Is the crane type suitable for lift or as per erection procedure?				
2)	Is the crane have the correct number of counterweights fitted?				
3)	Availability of Load Certification of crane from authorized agency.				
4)	Is the load chart of crane available in crane cabin/or with Crane operator?				
5)	Is the device to check the Wind speed in crane is working? Is the safety features in crane are working?				
6)	Availability of Load certification of slings and other accessories from authorized agency				
7)	Availability of Licensee/certificate for crane operator from authorized agency.				
8)	Availability of approved JSA for the subject activities.				
9)	Availability of approved erection/rigging procedures.				
10)	Availability of temporary gratings/ platforms for critical lifting(as applicable)				
11)	Tool Box conducted before erection?				
12)	Has the area been cordoned off?				
13)	Are the authorized persons during erection are identified?				
14)	Does each person identified for erection understand their roles and responsibilities?				
15)	Is the ground on which crane will rest or outrigger support are correct?				
16)	Is hard stand requirement (if any) complied?				
17)	Is the communication system (viz walkie talkies,etc are working properly?				
18)	If more than one crane is lifting the load, is an Intermediate rigger will supervise the lift?				
19)	If there is other obstruction within the operating radius of the crane, have correct precautions been taken to prevent collision?				
20)	All the persons are wearing the requisite PPE?				

Inspected & Issued by
Contractor Engineer/RCM

Verification By
Contractor Safety Officer

FORMAT NO. : HSE-16 REV 0

PERMIT FOR ENERGY ISOLATION & DE-ISOLATION

Project : Sr.No. :
 Name of the work : Date :
 Name of contractor : Job No. :

ENERGY ISOLATION PERMIT	
<ul style="list-style-type: none"> • Clearance required from:.....HrsDate ToHrsDate • Name of equipment/ energy source etc • Nature of job to be done: • Area.....Location:..... 	
<p>PERMIT VALIDATION</p> <p>I hereby authorize thepersonnel(performer) to isolate the above equipment/energy source from all sources of power and handover the equipment/energy source for maintenance/repair.</p> <p>Issuing authority Area –Incharge/RCM Signature: _____ Date: _____ Name: _____</p>	<p>PERFORMING AUTHORITY</p> <p>The work and precautions will be carried out under my overall responsibility.(Testing/execution engineer)</p> <p>Signature: _____ Date: _____ Name: _____</p>
<p>SAFETY PRECAUTIONS FOR CLEARANCE</p> <ol style="list-style-type: none"> 1. Notify workers of intent to de- energize <input type="checkbox"/> 2. Obtain lock,tag or locking/tagging devices <input type="checkbox"/> 3. Shut down ,de energize, dissipate any residual energies. <input type="checkbox"/> 4. Apply lock ,tag and locking and/or tagging devices <input type="checkbox"/> 5. *Any other job specific precautions <input type="checkbox"/> 6. Verify effectiveness of lockout by attempting to restart. <input type="checkbox"/> 7. Proper PPE is ensured <input type="checkbox"/> <p>I certify that the energy source mentioned above is isolated from all sources and is safe to start the work.</p> <p>Tag No:..... Lock No:.....</p> <p>Issuing authority Area –Incharge/RCM Signature: _____ Date: _____ Name: _____ (*to be included by contractor in consultation with EIL/owner)</p>	<p>NORMALISING AFTER CLEARANCE</p> <ol style="list-style-type: none"> 1. Notify workers of intent to re- energize <input type="checkbox"/> 2. Conduct visual inspection to confirm that the danger zone is clear of workers <input type="checkbox"/> 3. Conduct visual inspection to confirm that tools ,equipments danger zone is clear of workers <input type="checkbox"/> 4. Reposition the safety devices(interlocks, valves, guards, covers ,sensors, as applicable, etc) <input type="checkbox"/> 5. *Any other job specific normalizing details <input type="checkbox"/> 6. Remove lock, tag and locking and/or tagging devices. <input type="checkbox"/> 7. Re energize. <input type="checkbox"/> 8. Confirm system is operating properly& safely <p>I certify that the energy source mentioned above is isolated from all sources and is safe to start the work.</p> <p>Tag No:..... Lock No:.....</p> <p>Issuing authority Area –Incharge/RCM Signature: _____ Date: _____ Name: _____ (*to be included by contractor in consultation with EIL/owner)</p>
ENERGY DE-ISOLATION PERMIT	
<p>PERMIT VALIDATION</p> <p>I hereby authorize thepersonnel(performer) to de- isolate the above equipment/energy source from all sources of power and handover the equipment/energy source for normal operation..</p> <p>Issuing authority Area –Incharge/RCM Signature: _____ Date: _____ Name: _____</p>	<p>PERFORMING AUTHORITY</p> <p>I herby certify that the equipment/energy source mentioned above has been de-isolated and is ready for normal operation.(Testing/execution engineer)</p> <p>Signature: _____ Date: _____ Name: _____ Countersigned by Issuing authority</p>

FORMAT NO. : HSE-17 REV 0

PERMIT FOR EXCAVATION

(depth 2m and above)

(Sheet 1 of 2)

Project : Sr.No. :
Name of the work : Date :
Name of contractor : Job No. :
Job Description : Location :
Size of excavation :

SL. NO.	Description of Item	COMPLIANCE STATUS			Remarks
		Yes	No	Not applicable	
1)	Suitable and sufficient risk assessments and method statements has been carried to ensure that the work shall be undertaken in accordance with specification and standard.				
2)	Are plans/details of underground services available and the same has been reviewed?				
3)	Has survey done to locate the services/obstacles, etc.				
4)	Has the live services (electrical, water line, air line, telephone line, etc) has been disabled for carrying out the job.				
5)	Is adequate barriers/fences to protect the excavation are in place?				
6)	Is Adequate warning signs are in place?				
7)	Is Assessment of ground conditions done and remedial action (if any) taken?				
8)	Safe access / egress (e.g. ramp / steps / ladders etc.) provided for site workmen & supervisors.				
9)	Is the excavation work being undertaken in proximity of structure, etc ? If Yes, it's effect is considered?				
10)	Availability of competent person for supervising the excavation work?				
11)	Adequate safe arrangement to prevent collapse of edges (e.g. shoring / strutting / benching / sloping etc.) made at site.				
12)	Hard barricades (at least 1.0M away from edge & for excavation near site access roads) with warning signs/caution boards are provided				
13)	Accumulation / passage-ways of water at periphery of excavation / trench stopped/ restricted.				
14)	Is the equipment being used for excavation has been checked for adequacy and is in good working condition having all the safety features?				
15)	Age & fitness of workmen ensured by medical test before engagement in job ?				
16)	Arrangement of Monitoring of possible oxygen deficiency or obnoxious gases done & action taken?				

PERMIT GRANTED - Yes / No

(List enclosed with name & gate pass numbers.)

Name & Signature of Site Engr
Contractor (Initiator)

Name & Signature of Safety Officer
Contractor (Issuing authority)

FORMAT NO. : HSE-17 REV 0

PERMIT FOR EXCAVATION

(Sheet 2 of 2)

NOTES: -

1. Slopes or benches for excavation beyond 2.0M depth shall be designed & approved by Contractor's site head.
2. Excavated earth to be kept at least 1.5M away from edges
3. Safety helmets, Safety shoes or gum-boots, gloves, goggles, Face shield, Safety Harness shall be essential PPEs.
4. Permit shall be made in **duplicate** and original shall be available at site of work.
5. Permit shall be issued for maximum **one week** only (Monday to Sunday)
6. After completion of works, permit shall be closed & preserved for record purpose

GRANT OF PERMIT AND EXTENSIONS

Sl. No.	Validity period From ____ To ____	Working Time From ____ To ____	Initiator (site Engr. of Main Contractor)	Issuing authority (Safety Officer of Main Contractor)	Review by EIL / Owner (Remarks with date)
1.					
2.					
3.					
4.					
5.					
6.					
7.					

Additional safety instructions if any: -

- 1.
- 2.
- 3.

ELECTRICAL POWER IS THE MAINSTAY OF ANY CONSTRUCTION ACTIVITY. AT THE SAME TIME IT REQUIRES UTMOST CARE IN IT'S UTILISATION TO AVOID ACCIDENTS DUE TO ELECTRICAL SHOCK, FIRE INCIDENTS OR ELECTRIC SHORT CIRCUITS. EXPOSURE OF ELECTRICAL INSTALLATION TO ADVERSE ENVIRONMENTAL CONDITIONS INCREASE THE RISK OF SUCH ACCIDENTS. HENCE IT IS NECESSARY TO TAKE EXTRA PRECAUTIONS FOR SUCH INSTALLATIONS TO ENSURE SAFETY OF PERSONNEL AND EQUIPMENT. THIS STANDARD ADDRESSES THE SAFETY MEASURES REQUIRED TO BE ADOPTED FOR THE ELECTRICAL INSTALLATIONS BY ALL CONTRACTORS DURING CONSTRUCTION PHASE.

1. ALL ELECTRICAL CONNECTIONS/WORK FOR ELECTRICAL INSTALLATIONS SHALL BE CARRIED OUT AS PER PROVISIONS OF THE LATEST REVISION OF THE FOLLOWING CODES AND STANDARDS IN ADDITION TO THE REQUIREMENTS OF STATUTORY AUTHORITIES AND IE RULES:
OISD-STD-173 : FIRE PREVENTION AND PROTECTION SYSTEM FOR ELECTRICAL INSTALLATIONS.
SP-30 (BIS) : NATIONAL ELECTRIC CODE.
THE INSTALLATION SHALL HAVE APPROVAL FROM CONCERNED STATUTORY AUTHORITIES.
2. ALL ELECTRICAL CONNECTIONS SHALL BE DONE BY AN ELECTRICIAN WITH VALID LICENCE AND TO THE SATISFACTION OF ENGINEER-IN-CHARGE.
3. ONE COMPETENT LICENCED ELECTRICIAN SHALL BE MADE AVAILABLE BY CONTRACTOR AT SITE ROUND THE CLOCK TO ATTEND TO THE NORMAL/EMERGENCY JOBS.
4. ALL SWITCH BOARDS/WELDING MACHINES SHALL BE KEPT IN WELL VENTILATED & COVERED SHED. THE SHED SHALL BE ELEVATED TO AVOID WATER LOGGING. NO FLAMMABLE MATERIALS SHALL BE USED FOR CONSTRUCTING THE SHED. ALSO FLAMMABLE MATERIALS SHALL NOT BE STORED IN AND AROUND ELECTRICAL EQUIPMENT/SWITCHBOARD. ADEQUATE CLEARANCES AND OPERATIONAL SPACE SHALL BE PROVIDED AROUND THE EQUIPMENT.
5. FIRE EXTINGUISHERS AND INSULATING MATS SHALL BE PROVIDED IN ALL POWER DISTRIBUTION CENTERS.
6. TEMPORARY ELECTRICAL EQUIPMENT SHALL NOT BE EMPLOYED IN HAZARDOUS AREAS WITHOUT OBTAINING SAFETY PERMIT.
7. PROPER HOUSE KEEPING SHALL BE DONE AROUND THE ELECTRICAL INSTALLATIONS.
8. ALL TEMPORARY INSTALLATIONS SHALL BE TESTED BEFORE ENERGISING, TO ENSURE PROPER EARTHING, BONDING, SUITABILITY OF PROTECTION SYSTEM, ADEQUACY OF FEEDERS/CABLES ETC.
9. ALL WELDERS SHALL USE HAND GLOVES IRRESPECTIVE OF HOLDER VOLTAGE.
10. MULTILINGUAL (ENGLISH, HINDI AND LOCAL LANGUAGE) CAUTION BOARDS, SHOCK TREATMENT CHARTS AND INSTRUCTION PLATE CONTAINING LOCATION OF ISOLATION POINT FOR INCOMING SUPPLY, NAME & TELEPHONE NO. OF CONTACT PERSON IN EMERGENCY SHALL BE PROVIDED IN SUBSTATIONS AND NEAR ALL DISTRIBUTION BOARDS/LOCAL PANELS.
11. OPERATION OF EARTH LEAKAGE DEVICE SHALL BE CHECKED REGULARLY BY TEMPORARILY CONNECTING SERIES TEST LAMP (2 BULBS OF EQUAL RATING CONNECTED IN SERIES) BETWEEN PHASE AND EARTH.
12. THE FOLLOWING DESIGN FEATURES SHALL BE ENSURED FOR ALL ELECTRICAL INSTALLATIONS DURING CONSTRUCTION PHASE.
 - 12.1 EACH INSTALLATION SHALL HAVE A MAIN SWITCH WITH A PROTECTIVE DEVICE, INSTALLED IN AN ENCLOSURE ADJACENT TO THE METERING POINT. THE OPERATING HEIGHT OF THE MAIN SWITCH SHALL NOT EXCEED 1.5 M. THE MAIN SWITCH SHALL BE CONNECTED TO THE POINT OF SUPPLY BY MEANS OF ARMoured CABLE.
 - 12.2 THE OUTGOING FEEDERS SHALL BE DOUBLE OR TRIPLE POLE SWITCHES WITH FUSES/MCBs. LOADS IN A THREE PHASE CIRCUIT SHALL BE BALANCED AS FAR AS POSSIBLE AND LOAD ON NEUTRAL SHOULD NOT EXCEED 20% OF LOAD IN THE PHASE.

1	26.09.06	REVISED & ISSUED AS STANDARAD	<i>B. Prakash</i> BP	<i>RKS/UAP</i> RKS/UAP	<i>JMS</i> JMS	<i>VC</i> VC
0	04.12.01	ISSUED AS STANDARD	UAP	AA	VPS	GRR
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convenor	Stds. Bureau Chairman
						Approved by

- 12.3 THE INSTALLATION SHALL BE ADEQUATELY PROTECTED AGAINST OVERLOAD, SHORT CIRCUIT AND EARTH LEAKAGE BY THE USE OF SUITABLE PROTECTIVE DEVICES. FUSES WHEREVER USED SHALL BE HRC TYPE. USE OF REWIRABLE FUSES SHALL BE STRICTLY PROHIBITED. THE EARTH LEAKAGE DEVICE SHALL HAVE AN OPERATING CURRENT NOT EXCEEDING 30 mA.
- 12.4 ALL CONNECTIONS TO THE HANDTOOLS/WELDING RECEPTACLES SHALL BE TAKEN THROUGH PROPER SWITCHES, SOCKETS AND PLUGS.
- 12.5 ALL SINGLE PHASE SOCKETS SHALL BE MINIMUM 3 PIN TYPE ONLY. ALL UNUSED SOCKETS SHALL BE PROVIDED WITH SOCKET CAPS.
- 12.6 ONLY 3 CORE (P+N+E) OVERALL SHEATHED FLEXIBLE CABLES WITH MINIMUM CONDUCTOR SIZE OF 1.5 MM² COPPER SHALL BE USED FOR ALL HAND TOOLS.
- 12.7 ONLY METALLIC DISTRIBUTION BOXES WITH DOUBLE EARTHING SHALL BE USED AT SITE. NO WOODEN BOXES SHALL BE USED.
- 12.8 ALL POWER CABLES SHALL BE TERMINATED WITH COMPRESSION TYPE CABLE GLANDS. LUGS SHALL BE USED FOR MULTISTRAND WIRES/CABLES.
- 12.9 CABLES SHALL BE FREE FROM ANY INSULATION DAMAGE.
- 12.10 CABLES SHALL BE LAID IN UNDERGROUND AT A MINIMUM DEPTH OF 750 MM, FOR LV & CONTROLS AND 900MM FOR HV CABLES COVERED WITH SAND, BRICK AND SOIL FOR ENSURING MECHANICAL PROTECTION. CABLES SHALL NOT BE LAID IN WATER LOGGED AREA AS FAR AS PRACTICABLE. CABLE ROUTE MARKERS SHALL BE PROVIDED AT EVERY 25 M OF BURIED TRENCH ROUTE. WHEN LAID ABOVE GROUND, CABLES SHALL BE PROPERLY CLEATED OR SUPPORTED ON RIGID POLES OF ATLEAST 2 M HIGH. MINIMUM HEAD CLEARANCE OF 6 METERS SHALL BE PROVIDED AT ROAD CROSSING.
- 12.11 UNDER GROUND CABLES SHALL NOT BE ALLOWED TO CROSS THE ROADS WITHOUT PIPE SLEEVE.
- 12.12 ALL CABLE JOINTS SHALL BE DONE WITH PROPER JOINTING KIT. NO TAPED/TEMPORARY JOINTS SHALL BE USED.
- 12.13 AN INDEPENDENT EARTHING FACILITY SHOULD PREFERABLY BE ESTABLISHED WITHIN THE TEMPORARY INSTALLATION PREMISES. ALL APPLIANCES AND EQUIPMENT SHALL BE ADEQUATELY EARTHED. IN CASE ARMoured CABLES ARE USED, THE ARMOUR SHALL BE BONDED TO THE EARTHING SYSTEM.
- 12.14 ALL CABLES AND WIRE ROPE USED FOR EARTH CONNECTIONS SHALL BE TERMINATED THROUGH TINNED COPPER LUGS.
- 12.15 IN CASE OF LOCAL EARTHING, EARTH ELECTRODES SHALL BE BURIED NEAR THE SUPPLY POINT AND EARTH CONTINUITY WIRE SHALL BE CONNECTED TO LOCAL EARTH PLATE FOR FURTHER DISTRIBUTION TO VARIOUS APPLIANCES. ALL INSULATED WIRES FOR EARTH CONNECTION SHALL HAVE INSULATION OF GREEN COLOUR.
- 12.16 SEPARATE CORE SHALL BE PROVIDED FOR NEUTRAL. EARTH/STRUCTURES SHALL NOT BE USED AS A NEUTRAL IN ANY CASE.
- 12.17 ON/OFF POSITION OF ALL SWITCHES SHALL BE CLEARLY DESIGNATED/PAINTED FOR EASY ISOLATION IN EMERGENCY.
13. ALL INSULATIONS SHALL BE INSPECTED BY ENGINEER-IN-CHARGE ATLEAST ONCE IN A MONTH.

1	26.09.06	REVISED & ISSUED AS STANDARD	<i>B. Prakash</i> BP	<i>RKS/AA</i> RKS/UAP	<i>JMS</i> JMS	<i>VC</i> VC
0	04.12.01	ISSUED AS STANDARD	UAP	AA	VPS	GRR
Rev. No.	Date	Purpose	Prepared by	Checked by	Stds. Committee Convenor	Stds. Bureau Chairman
						Approved by

VENDOR LIST FOR STEEL AND CEMENT

[ANNEXURE – V to SCC]

Annexure - V

CONTRACT CLAUSE FOR ACCEPTANCE OF STRUCTURAL STEEL AND TMT BAR MANUFACTURERS.

1. Steel manufacturers having valid BIS certificate and listed in the BIS website as on date of procurement of steel shall be allowed for supply of steel (Structural steel and TMT bars) and contractor shall procure from them with prior intimation to Engineer-in-charge.

2. Tests after receipt of structural steel at site:

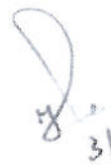
In addition to availability of valid BIS license and MTC, for each category / size of structural steel procured, one sample from every 50 MT or part thereof shall be drawn and tested in approved laboratory. The charges for such testing shall be borne by the contractor.

3. Tests after receipt of TMT bars at site:

In addition to availability of valid BIS license and MTC, sample as specified under shall be drawn and tested in approved laboratory. The charges for such testing shall be borne by the contractor.

- Under 10 mm bars one sample for each 25 MT (or part thereof) for consignment below 100 MT and one sample each 40 MT (or part thereof) for consignment above 100 MT shall be tested.
- For 10 mm to 16 mm bars, one sample for each 35 MT (or part thereof) for consignment below 100 MT and one sample each 45 MT (or part thereof) for consignment above 100 MT shall be tested.
- Over 16 mm bars one sample for each 45 MT (or part thereof) for consignment below 100 MT and one sample each 50 MT (or part thereof) for consignment above 100 MT shall be tested.


(Signature)


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Annexure - V

CONTRACT CLAUSE FOR ACCEPTANCE OF CEMENT MANUFACTURERS.

1. Cement manufacturers having valid BIS certificate and listed in the BIS website as on 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.
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 subjected to the tests and analysis required by the relevant Indian Standard Codes. The contractor shall carry out and bear the cost of all tests and analysis to ensure quality of cement before using in actual works.



 2/4/15

TERMS OF PAYMENT
[ANNEXURE- VITOSPECIAL CONDITIONS OF CONTRACT]

Progressive payments shall be released to Contractor against running account bills duly certified by Engineer-in-charge after affecting the necessary deductions/recovery, if any. The basis for payment against various items shall be as follows:

Following shall be the terms of payments for the subject work:-

1. All the payments before erecting /installation/laying shall be released against Rolling bank Guarantee for an equivalent amount of materials with a validity till erecting / installation of the same.

SL. NO.	NATURE OF WORK	PAYMENT TERMS
1.	<u>CIVIL, STRUCTURAL AND ARCHITECTURAL WORKS</u>	
1.1	Structural steel works	<p>In case of Contractor supplied material.</p> <p>a. FABRICATION AT SITE</p> <ul style="list-style-type: none"> - 05% on finalization of quantities, plan and submission of approved fabrication drawings. - 05% on issuance of sub-order and submission of equivalent bank guarantee valid till receipt and acceptance of material at site plus 03 Months claim period - 50% on receipt and acceptance of material at site. - 20% on fabrication, surface preparation and application of primer coat. - 15% on erection, alignment, welding, grouting etc. - 05% on completion of all works in all respects and issuance of completion certificate. <p>b. FABRICATION AT YARD OUTSIDE PROJECT PREMISES</p> <ul style="list-style-type: none"> - 05% on finalization of quantities, plan and submission of approved fabrication drawings. - 05% on issuance of sub-order and submission of equivalent rolling bank guarantee valid till receipt and acceptance of material at site plus 03 Months claim period. - 50% on receipt and acceptance of material at contractor fabrication yard outside the Project premises against Rolling Bank Guarantee for an equivalent amount of materials at contractor's shop with a validity till receipt of materials at Project premises plus 03 Months claim period. - 20% on fabrication, surface preparation and application of primer and receipt of fabricated structures at site. - 15% on erection, alignment, welding etc. - 05% on completion of all works in all respects and issuance of completion certificate.
1.2	Reinforcement steel	<ul style="list-style-type: none"> - 05% on issuance of sub-order and submission of equivalent bank guarantee valid till receipt and acceptance of material at site plus 03 Months claim period - 65% on receipt and acceptance of material at site. - 25% on cutting, laying and acceptance thereof. - 05% on completion of all works in all respects and issuance of completion certificate.
1.3	Precast concrete	<ul style="list-style-type: none"> - 60% on completion of casting work duly certified by Engineer-in-charge. - 35% on completion of erection, alignment, leveling etc.

SL. NO.	NATURE OF WORK	PAYMENT TERMS
	Item/ Block (Contractor supplied material)	- 05% on completion of all works in all respects and issuance of completion certificate.
1.4	Structural Steel Painting Works	- 95% (##)after completion of touch up/repair of primer and intermediate coat/coats and final coat. - 05% on completion of all works in all respects and issuance of completion certificate. (##) Further break up of payment schedule, if necessary, shall be recommended / approved by Engineer-in-charge depending on number of intermediate coats.
1.5	Composite items.	Composite items of Reinforced Cement Concrete (RCC) work inclusive of Excavation, shoring, strutting, Plane Cement Concrete (PCC), Centring and shuttering, back filling and disposal of surplus earth in sub-structure: <ul style="list-style-type: none"> - 35% on completion of earth work in excavation, PCC centering & shuttering - 45% on completion of RCC - 15% on back filling and removal of surplus earth - 05% on completion of all works in all respects and issuance of completion certificate
1.6	Composite items.	Composite items of RCC work in non-suspended slabs/pavement slabs including pedestals, ramps etc. <ul style="list-style-type: none"> - 40% on completion of sand filling, centering, shuttering and PCC - 55% on completion of RCC - 05% on completion of all works in all respects and issuance of completion certificate
1.7	Composite items.	Brick works in sub-structure <ul style="list-style-type: none"> - 50% on completion of excavation and PCC and receipt of Bricks at site - 25% on completion of Brick works - 20% on completion of back filling and disposal of surplus earth - 05% on completion of all works in all respects and issuance of completion certificate
1.8	Architectural works.	<u>Steel / Aluminium / Glazed Glass / PVC etc. Doors, Windows & Ventilators</u> <ul style="list-style-type: none"> - 10% on issuance of sub-order and submission of equivalent bank guarantee valid till receipt and acceptance of material at site plus 03 Months claim period - 65% on receipt of material at site - 20% on Installation and acceptance - 05% on completion of all works in all respects and issuance of completion certificate. <u>Roofing</u> <ul style="list-style-type: none"> - 10% on issuance of sub-order and submission of equivalent bank guarantee valid till receipt and acceptance of material at site plus 03 Months claim period - 65% on receipt of material at site - 20% on Installation and acceptance - 05% on completion of all works in all respects and issuance of completion certificate. <u>False Ceiling, False flooring,</u>

SL. NO.	NATURE OF WORK	PAYMENT TERMS
		<ul style="list-style-type: none"> - 10% on issuance of sub-order and submission of equivalent bank guarantee valid till receipt and acceptance of material at site plus 03 Months claim period - 60% on receipt of material at site - 25% on Installation in position and acceptance - 05% on completion of all works in all respects and issuance of completion certificate. <p><u>Cladding /Facades etc.</u></p> <ul style="list-style-type: none"> - 70% on receipt of material at site - 25% on Fixing/ Installation and acceptance - 05% on completion of all works in all respects and issuance of completion certificate <p><u>Modular Furniture</u></p> <ul style="list-style-type: none"> - 10 % on approval of furniture drawings at least in Code II - 60% on receipt of material at site - 25% on Fixing/ Installation and acceptance - 05% on completion of all works in all respects and issuance of completion certificate <p>The above payment terms will be applicable for Similar items in MISCELLANEOUS ITEMS. The decision of Engineer-in-charge on identification of similar items shall be binding on the Contractor.</p>
1.9	Other Civil, Structural & Architectural works	<ul style="list-style-type: none"> - 95% on completion of work as certified in progress bill. - 05% on completion of all works in all respects and issuance of completion certificate.
2.	ELECTRICAL WORK	
2.1	For Supply Items	<ul style="list-style-type: none"> - 10% on issuance of sub-order and submission of equivalent bank guarantee valid till erection/installation of material at site plus 03 Months claim period - 85% on receipt and acceptance of material at site and submission of equivalent bank guarantee valid till erection/installation of material at site plus 03 Months claim period. - 5% on completion of all works in all respects and issuance of completion certificate.
2.2	For Erection Items	<ul style="list-style-type: none"> - 80% on completion of erection / installation. - 15% on testing and acceptance. - 5% on completion of all works in all respects and issuance of completion certificate.
2.3	For Items involving both Supply & Erection	<ul style="list-style-type: none"> - 05% on issuance of sub-order and submission of equivalent bank guarantee valid till erection/installation of material at site plus 03 Months claim period - 60% on receipt and acceptance of material at site and submission of equivalent bank guarantee valid till erection/installation of material at site plus 03 Months claim period - 20% after erection /installation. - 10% after testing and acceptance.

SL. NO.	NATURE OF WORK	PAYMENT TERMS
		- 5% on completion of all works in all respects and issuance of completion certificate.
3.	INSTRUMENTATION WORK	
3.1	For Supply Items	<ul style="list-style-type: none"> - 10% on issuance of sub-order and submission of equivalent bank guarantee valid till receipt and acceptance of material at site plus 03 Months claim period - 83% on receipt and acceptance of material at site. - 02% after mechanical completion - 05% on completion of all works in all respects and issuance of completion certificate.
3.2	For Erection /Installation Items	<ul style="list-style-type: none"> a. Items not requiring loop checking <ul style="list-style-type: none"> - 93% on completion of erection / installation and testing. - 02% after mechanical completion - 05% on completion of all works in all respects and issuance of completion certificate. b. Items requiring loop checking <ul style="list-style-type: none"> - 80% on completion of erection / installation. - 13% on testing and loop checking. - 02% after mechanical completion - 05% on completion of all works in all respects and issuance of completion certificate.
3.3	For Items with supply and erection / installation	<ul style="list-style-type: none"> a. Items not requiring loop checking <ul style="list-style-type: none"> - 05% on issuance of sub-order and submission of equivalent bank guarantee valid till receipt and acceptance of material at site plus 03 Months claim period - 60% on receipt and acceptance of materials at site. - 28% on completion of erection / installation and testing. - 02% after mechanical completion - 05% on completion of all works in all respects and issuance of completion certificate. b. Items requiring loop checking <ul style="list-style-type: none"> - 05% on issuance of sub-order and submission of equivalent bank guarantee valid till receipt and acceptance of material at site plus 03 Months claim period - 55% on receipt and acceptance of materials at site - 25% on completion of erection / installation. - 08% on testing and loop checking. - 02% after mechanical completion. - 05% on completion of all works in all respects and issuance of completion certificate.
3.4	Ducts, Trays and Other Fabricated Materials (Supply in Contractor's scope)	<ul style="list-style-type: none"> - 10% on issuance of sub-order and submission of equivalent bank guarantee valid till receipt and acceptance of material at site plus 03 Months claim period - 55% after receipt and acceptance of Ducts/Trays/fabricated materials at site.

SL. NO.	NATURE OF WORK	PAYMENT TERMS
		<ul style="list-style-type: none"> - 25% after erection. - 03% after welding and final painting, if any. - 02% after mechanical completion. - 05% on completion of all works in all respects and issuance of completion certificate.
3.5	Calibrations Main Instruments	<ul style="list-style-type: none"> - 80% after calibration. - 13% after completion of recalibration during loop test, if any. - 02% after mechanical completion - 05% on completion of all works in all respects and issuance of completion certificate.
4.	IBMS WORKS CONSISTING OF BMS, FIRE ALARM, CCTV & ACCESS CONTROL SYSTEM	
4.1	For items involving both Supply & Erection (Equipment only)	<ul style="list-style-type: none"> - 70% on receipt of material at site and visual inspection on prorata basis. - 15% on installation on prorata basis. - 10% after testing and commissioning on prorata basis. - 05% on completion of all works in all respects and issuance of completion certificate.
4.2	For items involving both Supply & Erection (Cabling/ Wiring etc.)	<ul style="list-style-type: none"> - 60% on receipt of material at site and visual inspection on prorata basis. - 20% on installation on prorata basis. - 15% after testing and commissioning on prorata basis. - 05% on completion of all works in all respects and issuance of completion certificate.
4.3	For items involving both Supply & Erection (Conduiting, Cable tray, Raceway etc.)	<ul style="list-style-type: none"> - 60% on receipt of material at site and visual inspection on prorata basis. - 35% on installation on prorata basis. - 05% on completion of all works in all respects and issuance of completion certificate.
5.	ELEVATOR WORKS	
5.1	For items involving both Supply & Erection	<ul style="list-style-type: none"> - 60% on receipt of material at site and visual inspection on prorata basis. - 20% on installation and alignment on prorata basis. - 15% after testing and commissioning on prorata basis. - 05% on completion of all works in all respects and issuance of completion certificate
6.	HVAC WORKS	
6.1	For Equipment Items	<ul style="list-style-type: none"> - 70% on receipt of material at site and inspection on pro-rata basis. - 15% on installation and alignment on pro-rata basis. - 10% after testing and commissioning. - 05% on completion of all works in all respects and issuance of completion certificate.
6.2	For other items involving both Supply & Erection and not covered above	<ul style="list-style-type: none"> - 60% on receipt of material at site and inspection on pro-rata basis. - 20% after erection and alignment on pro-rata basis. - 15% after testing and commissioning. - 05% on completion of all works in all respects and issuance of completion

SL. NO.	NATURE OF WORK	PAYMENT TERMS
		certificate.
7.	FIRE FIGHTING WORKS	
7.1	For Equipment Items	<ul style="list-style-type: none"> - 70% on receipt of material at site and inspection. - 15% on installation and alignment. - 10% after testing and commissioning. - 05% on completion of all works in all respects and issuance of completion certificate.
7.2	For Items Involving Supply & Erection and not covered above	<ul style="list-style-type: none"> - 60% on receipt of material at site and inspection. - 20% after erection and alignment. - 15% after testing and commissioning. - 05% on completion of all works in all respects and issuance of completion certificate.
8.	Miscellaneous Works	<ul style="list-style-type: none"> - 95% on completion of work on pro-rata basis as certified in progress bill. - 5% on completion of all works in all respects and issuance of completion certificate.
9.	For Lump sum Rate Item	<ul style="list-style-type: none"> - 95% on completion of total work in all respects. (For all lumpsum item included in Schedule of Rate, Contractor shall furnish price breakup for quoted lumpsum prices for the approval of Engineer-in-Charge. Progressive payment for such items shall be made accordingly. In this regard decision of Engineer-in-Charge shall be final and binding to the Contractor.) - 5% on completion of all works in all respects and issuance of completion certificate.
10.	OPERATION & MAINTENANCE	<p>Annual maintenance</p> <ul style="list-style-type: none"> - Quarterly payment at the end of each quarter against quarterly progressive bills to be submitted by contractor duly certified by authorized representative of Owner.

NOTES-

- 1.0 Payments shall be made after necessary deductions on account of income tax, mobilization advance and other deductions as per the provisions of the Contract and as required under the law.
- 2.0 Payment shall be made within 30days of receipt of bill after due verification/certification.
- 3.0 Other terms of payment if any, may be mutually discussed and agreed upon in consultation with OWNER/EIL after award of Work.
- 4.0 Running account Bill
The Contractor shall submit the R.A. Bill(s) in approved pro-forma to the Engineer-in-charge of the work giving abstract and detailed measurement for the various items executed during fortnight, in the succeeding week. Running bills shall have reconciliation statements for all the items supplied/received and consumed which shall be updated in each running bill. 75% payment of the RA bill shall be released within 7 days of receipt of RA bill by Finance duly certified by Engineer-in-charge and balance as per the provision of the GCC. The above progressive payment is subject to deduction towards income tax and other recoveries as applicable as per terms and conditions of contract
- 5.0 Final Bill

The final bill shall be submitted by the Contractor within the time frame specified in the General Conditions of the Contract. No further claims shall be made by the Contractor after submission of the final bill. The Contractor shall submit the final bill complete in all respect with no claim and no dues by Contractor, no objection certificate from labour officer and other completion documents.

- 6.0 Part completion certificate whenever essential (incase of job in multi units, offloading case etc.) shall be issued with due concurrence from competent authorities to facilitate release of Final payment.
- 7.0 Wherever milestone payment is linked with sub ordering, Engineer-in-charge shall ensure that the total quantity against which the payment is released towards supply shall not exceed the final installed quantity of the item.
- 8.0 Wherever milestone payment has been recommended on receipt and acceptance of material, the same shall be released against "Incoming Material Inspection Report" issued by Owner/EIL. Engineer-in-charge shall release the progressive payment towards supply in such a way ensuring that the total quantity against which the payment is released towards supply shall not exceed the final installed quantity of the item.

MEASUREMENT OF WORK [ANNEXURE – VII TO SCC]

MEASUREMENT OF WORK

1.0 GENERAL

- 1.1 The mode of measurement shall be as mentioned in relevant standard specification incorporated in the Bidding Document. Any other mode of measurements not covered in above specifications shall be followed in accordance with relevant BIS codes /Schedule of Rates/ Specifications etc. and/or as decided by Engineer-in-Charge whose decision in this regard shall be final and binding upon the contractor.
- 1.2 Payment will be made on the basis of joint measurements taken by Contractor and certified by Engineer-in-Charge. Measurement shall be based on approved drawings to the extent that the work conforms to the drawings and details are adequate.
- 1.3 Wherever work is executed based on instructions of Engineer-in-Charge or details are not adequate in the drawings, physical measurements shall be taken by Contractor in the presence of Engineer-in-Charge.
- 1.4 Measurements of weights shall be in metric tons corrected to the nearest Kilogram. Linear measurements shall be in meters corrected to the nearest millimeters.
- 1.5 The weights mentioned in the drawing or shipping list shall be the basis for payment. If mountings for panels etc. are packed separately, their erection weights shall include all mountings.
- 1.6 No other payment either for temporary works connected with this Contract or for any other item such as weld, shims, packing plates etc. shall be made. Such items shall be deemed to have been included for in the rates quoted.
- 1.7 Measurements will be made for various items under schedule of rates on the following basis as indicated in the unit column unless otherwise specified specifically
- | | |
|-------------|-----------|
| i) Weights | MT or Kg |
| ii) Length | M (Meter) |
| iii) Number | No. |
| iv) Volume | Cu.M |
| v) Area | Sq.M |
- 1.8 Wherever the unit of items has been indicated as lump sum, the payment shall be made on lump sum basis on completion & no mode of measurement shall be applicable.

QUALIFICATION & EXPERIENCE REQUIREMENT
AND PENALTY FOR NON MOBILISATION
[ANNEXURE-VIIIa TO SPECIAL CONDITIONS
OF CONTRACT]

Note :

In case of any discrepancy in Annexure- VIII(a) & in Annexure- VIII(b), the Qualification and experience requirement mentioned in Annexure- VIII(a) shall supersede the qualification and experience mentioned in Annexure VIII(b).

प्रमुख निर्माण कार्मिकों के लिए अपेक्षित योग्यता एवं अनुभव और तैनाती न करने पर जुर्माना

QUALIFICATION & EXPERIENCE REQUIREMENT OF KEY CONSTRUCTION PERSONNEL AND PENALTY FOR THEIR NON- MOBILIZATION

Rev. No	Date	Purpose	Prepared by	Checked by	Standards Committee Convenor	Standards Bureau Chairman
0	12.06.2015	Issued as Standard	DJ	RK	MD	SC
					Approved by	

Abbreviations:

CV	:	Curriculum Vitae
EPC	:	Engineering, Procurement & Construction
EPCC	:	Engineering, Procurement, Construction & Commissioning
ISO	:	International Organization for Standardization
NDT	:	Non Destructive Testing
QA/QC	:	Quality Assurance /Quality Control
RT	:	Radiography Testing
UT	:	Ultrasonic Testing

Construction Standards Committee

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Sh. D Jana, AGM (Construction)

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1. QUALIFICATION & EXPERIENCE (POST QUALIFICATION)

CATEGORY	QUALIFICATION & EXPERIENCE (POST QUALIFICATION) REQUIRED			
Resident Construction Manager/ Resident Engineer/Site-In-Charge	Degree or Diploma in Engineering with minimum following relevant experience in construction:			
	Contract value (Rs) →	< 5 Cr. works	5-20 Cr. works	> 20 Cr. works
	Degree holders	5 yrs	10 yrs	15 yrs
	Diploma holders	8 yrs	13 yrs	20 yrs
Lead Discipline Engineer (Mechanical, Civil, Electrical, Instrumentation)	Degree or Diploma in relevant Engineering discipline with following minimum experience in Construction:			
	Contract value (Rs) →	≤ 20 Cr. works	> 20 Cr. works	
	Degree holders	5 yrs	10 yrs	
	Diploma holders	8 yrs	13 yrs	
Lead Welding/ NDT Engineer	Degree or Diploma in Mechanical Engineering/ Metallurgy with the following experience in Welding & NDT (Non Destructive Testing) and possessing valid Level-II certificate in the relevant NDT methodology (RT/UT)			
	Contract value (Rs) →	≤ 20 Cr. Works	> 20 Cr. Works	
	Degree holders	5 yrs	10 yrs	
	Diploma holders	8 yrs	13 yrs	
Lead QA/QC Engineer	Degree in Engineering with following experience (refer Note 1 also):			
	Contract value (Rs) →	≤ 20 Cr. Works	> 20 Cr. Works	
	Experience	5 yrs of construction experience of which 2 years in QA/QC	10 yrs of construction experience of which 3 years in QA/QC.	
Lead Planning Engineer	Degree in Engineering with following experience in Planning & Scheduling:			
	Contract value (Rs) →	≤ 20 Cr. works	> 20 Cr. works	
	Experience	5 yrs.	8 yrs.	
Safety Officer/ Supervisor	As per specification for HSE Management at construction sites enclosed elsewhere in the bid.			
Warehouse- In- Charge/ Materials Manager	Diploma in Engineering or Diploma in Materials Management or Graduate in any stream with min. following experience in Warehousing/ Stores Management:			
	Contract value (Rs) →	≤ 20 Cr. works	> 20 Cr. works	
	Experience	5 yrs.	10 yrs.	
Quantity Surveyor	Degree or Diploma in Engineering with minimum following experience in quantity estimation, field measurement, rate analysis, bill preparation etc. in Construction field:			
	Contract value (Rs) →	≤ 20 Cr. works	> 20 Cr. works	
	Degree holders	2 yrs.	5 yrs.	
	Diploma holders	5 yrs.	10 yrs.	
Discipline Engineer (Including welding/ NDT, QA/QC and Planning)	Degree in relevant Engineering Discipline with minimum 2 years of relevant experience in construction or Diploma in relevant Engineering Discipline with minimum 4 years of relevant experience in Construction. Welding /NDT engineer shall possess valid Level-II certificate in the relevant NDT methodology (RT/UT)			

Notes: (for Table on previous page)

1. For Mechanical, Composite, EPC or EPCC Contracts of value more than Rupees 20 crores, the Lead QA/QC Engineer shall be a qualified internal auditor for ISO 9001.
2. CVs of key construction personnel proposed to be deployed shall be submitted to Owner/Engineer-in-Charge prior to their mobilization at site. The mobilization of key personnel shall be done at site subject to prior approval of their CVs by Owner/Engineer-in-Charge.

2. PENALTY FOR NON - MOBILIZATION OF KEY CONSTRUCTION PERSONNEL

Penalty for non-mobilization per day per person after the contractual mobilisation period / mobilisation schedule agreed during Kick off Meeting / jointly agreed between contractor and PMC / owner based on front availability etc.

- Rs. 5000/- for Resident Construction Manager/ Resident Engineer/ Site-in-Charge;
- Rs. 3000/- for Lead QA/QC Engineer, Lead Planning Engineer, Warehouse In-charge Lead Discipline Engineer, Lead Welding/ NDT Engineer and the Quantity Surveyor
- Safety Officer (As per HSE Specification)

Notes: (for Penalty clauses)

- a) All intervening off days (Sundays etc.) and holidays will be counted for levy of penalty
- b) Mobilised personnel shall not be demobilised till contractual completion or based on consent of Engineer-in-Charge else penalties as above shall be applied.
- c) Total of above penalties shall not exceed 3% of the contract value.
- d) The above penalties are over & above all other contractual provisions with respect to penalties.

Indicative Key Construction personnel
[ANNEXURE-VIIIb TO SPECIAL CONDITIONS
OF CONTRACT]

Note :

In case of any discrepancy in Annexure- VIII(a) & in Annexure- VIII(b), the Qualification and experience requirement mentioned in Annexure- VIII(a) shall supersede the qualification and experience mentioned in Annexure VIII(b).

**MINIMUM QUALIFICATION & INDICATIVE KEY CONSTRUCTION PERSONNEL TO
BE DEPLOYED FOR “COMPOSITE WORK FOR CONSTRUCTION OF NCR BIO-
TECH SCIENCE CLUSTER PHASE-II WORKS AT FARIDABAD, HARYANA”.**

SL.NO.	CATEGORY	Nos
1	RESIDENT ENGINEER	1
2	LEAD QA/ QC ENGINEER	1
3	LEAD PLANNING ENGINEER	1
4	LEAD ENGINEERS	Civil- 1
5	DISCIPLINE ENGINEERS	Civil – 2 Electrical – 1 Mechanical – 1
6	LEAD SAFETY OFFICER	1
7	STORE IN CHARGE	1
8	SURVEYOR	1
9	QUANTITY SURVEYOR/ BILLING ENGINEER	1
10	SUPERVISORS	Civil – 1 Mechanical-1 Electrical-1
11	QA/QC SUPERVISOR	Civil-1

NOTES:

- The details of manpower required to be mobilized by the contractor during construction to complete the work within schedule is **INDICATIVE** only. Contractor is required to augment the above list with additional numbers/ categories of personnel as required and/ or as directed by Engineer-in-Charge to carry out the works in working hours including night shifts, and complete the work within the completion time schedule and quoted price.
- The Key Construction Personnel identified above shall be well qualified & having adequate relevant experience, as specified in document above. The other manpower shall also be qualified and experienced with their assigned work.
- CVs of key persons proposed to be deployed shall be submitted to Engineer-in-Charge prior to their mobilization at site.
- The following manpower shall be mobilized at site within 7 days of award of the work:
 - RCM/ Resident Engineer - 1 No
 - Lead Planning Engineer - 1 No
 - Discipline Engineer (Civil) - 1 No
 - Discipline Engineer (Electrical/ Mechanical) - 1 No
 - Surveyor & Team with all instruments etc. - 1 No

(STAMP & SIGNATURE OF BIDDER)

INDICATIVE LIST OF CONSTRUCTION EQUIPMENTS
[Annexure-IX to Special Conditions of Contract]

**INDICATIVE DEPLOYMENT OF EQUIPMENTS & MACHINERY TO BE DEPLOYED FOR
“COMPOSITE WORK FOR CONSTRUCTION OF NCR BIO-TECH SCIENCE CLUSTER
PHASE-II WORKS AT FARIDABAD, HARYANA”.**

PART-A

SL. NO.	DESCRIPTION OF EQUIPMENT	Numbers
1	GENERAL	
1.1	Diesel Generator	
1.1.1	125 KVA	1
1.2	Welding and cutting sets	
1.2.1	Welding Machine Transformers/ Rectifiers	1
1.2.2	Grinding Machine	1
1.2.3	Gas Cutter	1
2	CIVIL	
2.1	Survey Instrument	
2.1.1	Total Station	1
2.1.2	Auto Level	1
2.2	Earth work	
2.2.1	Earth Excavator (Poclain) including rock Breaker (0.7 Cum Capacity Bucket)	1
2.2.2	JCB	1
2.2.3	Dumpers/ Tippers	2
2.2.4	Tractors/ Tractor	2
2.2.5	Water Tanker	1
2.2.6	Plate Compactor	2
2.3	Pumps	
2.3.1	Dewatering Pump 5 HP(Diesel driven)	1
2.3.2	Dewatering Pump 3 HP(Diesel driven/ Electrical)	1
2.3.3	Dewatering Pump 1HP(Electric Driven)	2
2.4	Concrete & Steel Machinery	

SL. NO.	DESCRIPTION OF EQUIPMENT	Numbers
2.4.1	Concrete Batching Plant (Min 30 cum Per hour capacity)/ RMC Plant with computerized batch slip printing facility.	1
2.4.2	Transit Mixer	3
2.4.3	Concrete Mixers with digital Weigh Batchers (as and when required)	2
2.4.4	Concrete Pumps with necessary pipes & fittings etc. (to cater to Min 30 Cum/ hr)	1
2.4.5	Needle Vibrators 40 & 60 mm	4
2.4.6	Re-bar Bending Machine	1
2.4.7	Re-bar/ Steel Cutting Machine	1
2.4.8	Steel scaffolding pipes, clamps and related accessories.	As required
2.4.9	Shuttering materials in good working condition.	As required
2.5	Flooring work Machinery	
2.5.1	Stone (Marble/Granite) cutting Machine	2
2.5.2	Stone Polishing Machine	2
2.6	Machinery for Road work	
2.6.1	Static Roller (10 T)	1
2.6.2	Air Compressor	1
2.6.3	Bitumen mixing plant and Paver	1

PART-B

FIELD TESTING LABORATORY EQUIPMENTS & INSTRUMENTS:

Contractor shall establish a field laboratory to carry out regular testing of materials at site or at suitable location near site as approved by Engineer in charge. Laboratory testing and measuring equipments (ISI marked and calibrated) for carrying out the following field tests shall be mobilized by the contractor and maintained in good working condition till the completion of work. Field testing laboratory shall be established by the contractor within 1 month of award of work with all required equipments for following facilities.

- 1) Compressive strength of concrete cubes (Automatic/computerized cube testing machine)
- 2) Testing concrete including parameters like slump, temperature etc.

- 3) Testing of cement for initial, final setting time and compressive strength of cement mortar cubes.
- 4) Degree of compaction of soil at site during backfilling & relative density of sand for sand filling works etc.
- 5) Testing water absorption and moisture content of various items like coarse & fine aggregates, sand, bricks etc.
- 6) Sieve Analysis of coarse and fine aggregates.

Contractor shall submit a list of equipments and instruments for field laboratory **within two weeks** of award of work for approval of Engineer-in-Charge. The tests mentioned above are INDICATIVE only and the contractor is required to augment the laboratory with additional items/numbers as directed by the Engineer-in-Charge at no extra cost.

In addition to the above field tests, Contractor shall carry out testing of materials in outside laboratories as directed by Engineer-in-charge.

Field testing laboratory established by the Contractor shall have one permanent room with proper roof, flooring, lighting, air conditioning etc. to have controlled temperature requirement as per IS Codes.

NOTES:

1. The details of indicative equipments in good working condition, required to be mobilized by the Contractor, to complete the work within the schedule are shown above. Contractor shall augment the above list with additional numbers/categories of equipments, tools & tackles, as required and as directed by Engineer-In charge to complete the work within the completion time schedule and quoted price. The actual deployment schedule of Construction Equipments shall be submitted by the Contractor and approved by Engineer-in-charge.
2. Contractor to confirm that the above minimum equipments are available with him in good working condition and shall be timely mobilized at work site. Contractor has the option to hire some of these equipments from equipment-hiring agencies also.
3. EIL reserves the right to physically check & verify the availability of these equipments prior to award of work.
4. Contractor shall replace any defective/damaged equipment promptly as directed by the Engineer-in-charge and mobilize equipments in good working condition to complete the work without any additional time & cost implication.

(STAMP & SIGNATURE OF BIDDER)

Time Schedule

[Annexure-X to Special Conditions of Contract]

TIME SCHEDULE

NAME OF WORK	TIME OF COMPLETION
COMPOSITE WORK FOR CONSTRUCTION OF NCR BIO-TECH SCIENCE CLUSTER PHASE-II WORKS AT FARIDABAD, HARYANA	18 (Eighteen) Months from the date of issue of Letter of Acceptance
Comprehensive maintenance Contract for Elevators, HVAC System, BMS system & Solar PV System	Comprehensive maintenance for a period of 03 years of Elevators, HVAC System & BMS system and for a period of 05 years of Solar PV System. Period of Comprehensive Maintenance will start after completion of one year of Defect Liability Period.

Note:

1. The time of completion indicated above is for completing all the Works in all respects as per specifications, codes, drawings and instructions of Engineer-in-Charge including mobilization and demobilization, rectification of defects if any.
2. It should be noted that the time of completion given above includes period for preparation of drawings, procurement, mobilisation at site, fabrication, laying, erection/ construction, inspection, testing/ commissioning, rectifications, if any, retesting etc. and handing over of works to Owner, complete in all respects to the entire satisfaction of Owner/ Engineer-in-Charge.

(SIGNATURE OF BIDDER)

FORMAT FOR SUBCONTRACTOR

(ANNEXURE – XI TO SPECIAL CONDITIONS OF CONTRACT)

APPROVAL OF CONSTRUCTION SUB-CONTRACTOR

1.	NAME OF MAIN CONTRACTOR	:	
2.	NAME OF WORK, LOCATION	:	
3.	NAME OF PROPOSED SUB-CONTRACTOR	:	
4.	SCOPE OF WORK PROPOSED TO BE SUB-CONTRACTED (BRIEF)	:	
5.	ESTIMATED VALUE OF THE PROPOSED WORK TO BE SUB-CONTRACTED (INR):	:	
6.	QUALIFYING CRITERIA FOR SUB-CONTRACTOR:	:	
6.1	Similar Work experience :	:	
i)	1 (One) Contract of 50% or 2 (two) contracts of 30 % each of estimated value of proposed work to be sub-contracted :	:	
ii)	Annual Turnover Not less than 100% of estimated value of proposed work to be sub-contracted :	:	
iii)	Positive Networth as per latest annual balance sheet/ Profit & loss account:	:	
7.	EXPERIENCE AND FINANCIAL DETAILS OF PROPOSED SUB-CONTRACTOR	:	
i)	Contract Value of similar work executed (as evidenced by work Order & Completion Certificate) During the last 7 years	:	
ii)	Maximum Annual Turnover during last 3(three) years (as evidenced by Balance Sheets)	:	
iii)	Networth as per latest annual balance sheet/ Profit & loss account	:	
8	CRITERIA FOR QUALIFICATION OF SUB-CONTRACTOR	:	
i)	Sl.No. 7(i) > 6 (i)	:	YES / NO
ii)	Sl.No. 7 (ii) > 6 (ii)	:	YES / NO
iii)	Sl.No. 7 (iii) > 0	:	YES / NO
9	Based on above information, we M/s _____ (Name of Main Contractor) propose M/s. _____ (Name of proposed sub-contractor) as our sub-contractor for the above mentioned works. We understand that notwithstanding above approval, we shall remain fully responsible for the performance of the said sub-contractor and any failure of the sub-contractor shall not absolve/relieve us of our responsibility to complete the works as per the terms and conditions of the Contract.		

NOTE: Contractor to fill all the details in the above proforma. Further Contractor shall also fill-in the details at Sl.No.5 above based on the estimated value of the proposed work to be subcontracted.

(STAMP & SIGNATURE OF CONTRACTOR)

ITEMS QUALIFYING FOR SECURED ADVANCE
[ANNEXURE - XII TO SPECIAL CONDITIONS OF CONTRACT]

ITEMS QUALIFYING FOR SECURED ADVANCE

1. CATEGORY : 'A' -- ITEMS AGAINST WHICH SECURED ADVANCE CAN BE GRANTED

A-1 CIVIL

- i) Bricks
- ii) Stone and Brick aggregates
- iii) Stones
- iv) Finished products of brass, Iron or Steel such as doors and window frames, wiremesh, gate, G.I. Sheets.
- v) Precast RCC products such as pipes & fittings, jail, water storage tanks.
- vi) Doors and windows fitting.
- vii) Pipes and sanitary fittings of GI, CI, SCI and HCI.
- viii) Metallic doors/windows
- ix) M.S. Gratings.
- x) Reinforcement bars
- xi) Hydraulic door closures.
- xii) Structural steel.
- xiii) C.I. Flushing Cisterns
- xiv) C.I. Valves, Sluice gates etc.
- xv) Fencing, material, Chain-Link/Barbed wire etc.
- xvi) Anchor bolts and Nuts.

A-2 ELECTRICAL

- i) Steel Conduit
- ii) G.I. Pipes
- iii) C.I. Boxes
- iv) I.C. Boards
- v) Switchgears (Air circuit breakers and Air breaker switches)
- vi) A.C.S.R. Conductors.
- vii) A.C. Plant and Machinery
- viii) Pumps
- ix) Generating sets (without oil)
- x) G.I. Strips
- xi) Street light poles (Steel)
- xii) Cable Trays

A-3 MECHANICAL

- i) Structural Steel
- ii) Plates
- iii) Pumps/motors, vessels etc, Diesel engine, side entry mixers, suction heater & any other mechanical equipment.
- iv) Refractory bricks
- v) S.S. Foil
- vi) Pipes/Pipe fittings
- vii) Gratings
- viii) Valves, Hydrants, Monitors
- ix) Aluminum sheet

A-4 INSTRUMENTATION

- i) Structural steel
- ii) M.S. Sheet/G.I. Sheets
- iii) Prefabricated trays
- iv) Pipes/Tubes/fittings.

2. CATEGORY : 'B'--- ITEMS AGAINST WHICH SECURED ADVANCE CAN BE GRANTED AFTER OBTAINING INSURANCE COVER FROM THE CONTRACTOR

B-I CIVIL

- i) Kitchen sink china vitreous, flush back for wash basin vitreous china, water closet and pedestal type water closet vitreous china, urinals.
- ii) Glazed tiles, terrazo tiles and similar articles.
- iii) Marble/Kota Stone/Granite slabs
- iv) Asbestos cement products
- v) Finished timber products such as doors, windows, flush doors, particle boards (subject to the mandatory tests being satisfactory).
- vi) Bitumen in sealed drums.
- vii) Bitumen felt
- viii) Polythene pipes and fittings.
- ix) Sanitary fittings and pipes of S.W. Porcelain and chinaware materials.
- x) Laminated/safety one way vision and Bullet proof glasses.
- xi) Chemicals required for antitermite treatment (in sealed drums).
- xii) Paints, Varnishes, Distempers, pigment.
- xiii) Ceiling and false flooring frames and tiles etc.

- xiv) Acid proof tiles
- xv) Bitumen products required for mastic flooring etc.
- xvi) Waterproofing, compounds such as CICO etc.
- xvii) Materials for Grouting, Epoxy finishing etc.
- xviii) PVC Water storage Tanks, PVC tiles, PVC waterbar etc.
- xix) Cement

B-2 ELECTRICAL

- i) Transformers
- ii) Switchgears (Oil filled)
- iii) L.T. &.H.T. Cables
- iv) Fans
- v) Storage & Dry Batteries
- vi) Insulation tapes
- vii) Epoxy cable compounds
- viii) Electric light fittings
- ix) Wood battens, casing & capping and wooden boards
- x) Flexible wires
- xi) PVC materials
- xii) Rubber materials
- xiii) Glass wools, thermocol and other insulating materials.
- xiv) Porcelain H.T. and L.T. insulators
- xv) Electric heat tracing tapes
- xvi) Oil and Lubricants.

B-3 MECHANICAL

- i) Bitumen.
- ii) Wrapping & Coating material
- iii) Primer/Paints
- iv) Foam/Foam seal material
- v) Guniting material
- vi) Insulation & Refractory materials other than bricks
- vii) Electrodes

B-4 INSTRUMENTATION

- i) SS/Copper Tubes
- ii) SS/Brass Compression fittings
- iii) Control/Signal Cables
- iv) Junction boxes/Marshalling boxes
- v) Control Panels.

NOTE: The Category "B" shall cover all the above items and any other item not covered in category "A" and "C" and imperishable in nature.

3. CATEGORY : 'C' -- ITEMS AGAINST WHICH NO SECURED ADVANCE SHOULD BE GRANTED

C-1 CIVIL

- i) Glass products other than those indicated in Category 'B'.
- ii) Sand and Mooram.
- iii) Chemical compounds other than those under Category 'B'.

C-2 ELECTRICAL

- i) Glass Globes and Shades.
- ii) Bulbs and Tubes.
- iii) Petrol and Diesel.
- iv) Freon and other Refrigeration gases.

CALIBRATION REQUIREMENT AT SITE

(ANNEXURE – XIII TO SPECIAL CONDITIONS OF CONTRACT)

निर्माण स्थलों पर निगरानी और मापने के
उपकरणों की अंशांकन आवश्यकताएँ

CALIBRATION REQUIREMENTS OF
MONITORING AND MEASURING
DEVICES AT CONSTRUCTION SITES

Rev. No	Date	Purpose	Prepared by	Checked by	Standards Committee Convenor	Standards Bureau Chairman
0	28.04.2015	Issued as Standard	DJ	SMB	MD	SC
					Approved by	

Abbreviations:

ABS	:	ABS Consultancy
BIS	:	Bureau of Indian Standards
BV	:	Bureau Veritas
CEIL	:	Certification Engineers International Ltd.
DNV	:	Det Norske Veritas
IRS	:	Indian Registrar for Shipping
LRS	:	Llyod's Register Group Limited
NABL	:	National Accreditation Board for Testing and Calibration Laboratories
PMI	:	Positive Material Identification

Construction Standards Committee

Convenor: Sh. M Deshpande, ED (Construction)

Members: Sh. S N Bhatnagar, GM (Construction)
Sh. Rakesh Nanda, GM (Piping)
Sh. Rajeev Jain, DGM, (C&P)
Sh. Janak Kishore , DGM (Projects)
Sh. Ravindra Kumar , AGM (Construction)
Sh. D Jana, AGM (Construction)

Requirement for control of monitoring and measuring devices.

Sl. No.	Description	Calibration requirements	Frequency	Remarks
A.	Civil-Survey			
A.1.	Theodolite	To check for permanent adjustments by traversing and observing the closing error	once in a year or project duration whichever is earlier	Record to be maintained (See note below)
A.2.	Levels	To check by Backsight/ Foresight readings, the temporary adjustments of level	Every use	Record to be maintained (See note below)
A.3.	Steel measurement tapes	----	----	a. "Freemans" make or BIS approved make shall be used. b. Mutilated, or broken tapes shall not be used. c. Marking on the tape shall be legible
A.4.	Cross staff	---	---	Same as 3b&3c above
A.5.	Distomat	Actual Physical Verification at Site	Before using first time at site	Records to be maintained
A.6.	Total Station	To check for permanent adjustments by traversing and observing the closing error,etc.	once in a year or project duration whichever is earlier	Record to be maintained (See note below)
B.	Civil Laboratory			
B.1.	All balances-Mechanical	Check for zero error	Whenever used	---
B.2.	Weigh Batcher/Batching Plant	Calibration of scales	Once in three Months	Records to be maintained
B.3.	Cube testing machine	Calibration certificate from manufacturers or from reputed calibrating agency.	As per manufacturer specification or once a year whichever is earlier	Records to be maintained
B.4.	Moisture Meter	Calibration of scales	6 months	Records to be maintained

Note: If Error is found, it has to be sent to manufacturers or their authorized agents for rectification and certification. Reputed calibrating agency shall be NABL accredited for relevant testing.

Sl. No.	Description	Calibration requirements	Frequency	Remarks
C.	Mechanical/ Electrical/Welding			
C.1	Pressure Gauges	Calibration certificate from reputed laboratories or calibrate by dead weight testers with standard weights or with master Gauge	Once in 6 months	Records to be maintained
C.2	Dial gauges	Check for Zero Error	Whenever used	---
C.3	Dead Weight Tester	Calibration from manufacturer or reputed Calibrating agency. Calibration certificate shall not be older than one month from the date of mobilization.	As per manufacturer's recommendation or once in a six month whichever is earlier.	Records (Calibration certificate) to be maintained
C.4	Vernier caliper/ screw gauge	Check for Zero error	Whenever used	---
C.5	Holiday tester	Calibration from manufacturer or reputed calibrating agency or by calibrating by zeep meter.	Once in 6 months	Records to be maintained
C.6	Elcometer	Check with standard test films supplied by the manufactures	Before use	Records to be maintained
C.7	Universal Testing Machine	Calibration Certificate from any reputed third party inspection agency. viz, CEIL, LRS, BV, ABS, DNV or IRS.	As per manufacturer's recommendation or once a year whichever is earlier	Records to be maintained
C.8	Charpy V-notch Impact testing machine	Calibration Certificate from any reputed third party inspection agency. viz, CEIL, LRS, BV, ABS, DNV or IRS.	As per manufacturer's recommendation or once in a year whichever is earlier	Records to be maintained
C.9	Hardness Testing Machine	Check with the standard test block supplied with the machine as per manufacturer's Recommendation	Before use	Records to be maintained
C.10	Chemical Analysis ,ex :PMI etc.	Check with the standard samples	Before use	Records to be maintained
C.11	Various Digital and Analog meters	Calibration Certificate from reputed laboratories or the manufacturer	Once in Six Months or as per manufacturer's recommendation whichever is earlier.	Records to be maintained

Note: If Error is found, it has to be sent to manufacturers or their authorized agents for rectification and certification. Reputed calibrating agency shall be NABL accredited for relevant testing.

Sl. No.	Description	Calibration requirements	Frequency	Remarks
C.12	Variable current, voltage and resistance generators	Calibration Certificate from reputed laboratories	Once in Six months	Records to be maintained
C.13	Temperature/ Pressure Recorders	Calibration from manufacturer or any reputed calibrating agency	Once in Six months	Records to be maintained
C.15	Temperature gauges	Calibration Certificate from reputed laboratories	Once in Six months	To be discarded in case of damage or malfunctioning
C.16	Thermocouples	Manufacturer's Certificate or Chemical Check	---	---
C.17	Vibration probes	Calibration from reputed laboratory	Once in a year	To be discarded in case of damage or malfunctioning
C.18	Decibel-meter	Calibration from reputed laboratory	Once in a Year	- do -

Note: If Error is found, it has to be sent to manufacturers or their agents for rectification and certification & reputed laboratory shall be NABL accredited for relevant testing.

ANNEXURE-XIV

FORM OF CONTRACT PERFORMANCE BANK GUARANTEE

[ON APPROPRIATE STAMP PAPER]

Beneficiary: Engineers India Limited

Bank Guarantee No. [.....●]

THIS DEED OF GUARANTEE is executed on this [.....*insert day*] day of [.....*insert month and year*] at [.....*insert place*] by [.....**INSERT NAME OF BANK**] having its head/registered office at [.....*insert address*], (hereinafter referred to as the "Guarantor", which expression shall unless it is repugnant to the subject or context thereof include successors and assigns)

IN FAVOUR OF:

ENGINEERS INDIA LIMITED, a public limited company incorporated under the Indian Companies Act, 1956, having its registered office at [.....■], (hereinafter referred to as the "EIL", which expression shall unless it is repugnant to the subject or context thereof include successors and assigns).

WHEREAS

- A. EIL has entered into a Engineering, Procurement and Construction Contract dated [.....■] (the "Contract") with [.....*insert name of Contractor*], a company incorporated under the Indian Companies Act, 1956 and having its registered office at [.....■] (the "Contractor", which expression shall, unless it be repugnant to the context or meaning thereof, include its successors-in-title and permitted assigns), for the Project.
- B. In terms of the Contract, the Contractor is required to furnish to EIL, an unconditional, irrevocable, on demand bank guarantee for an amount equal to 10% of the Contract Price as security for due and punctual performance/discharge of the Contractor's obligations under the Contract for the Contract Validity Period.
- C. At the request of EIL and for sufficient consideration, the Guarantor has agreed to provide an unconditional, irrevocable and on-demand bank guarantee, for the due and punctual performance/discharge by the Contractor of its obligations under the Contract during the Contract Validity Period.

NOW THEREFORE THIS DEED WITNESSETH AS FOLLOWS:

1. Capitalised terms used herein but not defined shall have the meaning ascribed to them in the Contract.
2. The Guarantor hereby irrevocably and unconditionally guarantees and secures (as primary obligor and not merely as guarantor) to EIL the payment in full of all amounts at any time that may be due, owing or payable to EIL from the Contractor for the failure of the Contractor to duly and punctually perform all of its obligations under the Contract (the "Guarantee"), without any demur, reservation, protest or recourse, immediately on receipt of a demand from EIL.

The Guarantee is given in consideration for consideration received from the Contractor (the receipt and sufficiency of which is hereby acknowledged).

The Guarantor agrees that the value of the Guarantee shall at all times be maintained at the amount of Rs. [.....*insert amount*] (the "Guaranteed Amount").

The Guarantor further agrees that this Guarantee does not limit the number of claims that may be made by EIL against the Guarantor.

Any payment made hereunder shall be made free and clear of and without deduction for, or on account of, any present or future Taxes, deductions or withholdings of any nature whatsoever and

by whomsoever imposed, and where any withholding on a payment is required by any Applicable Law, the Guarantor shall comply with such withholding obligations and shall pay such additional amount in respect of such payment such that EIL receives the full amount due hereunder as if no such withholding had occurred.

3. The Guarantor shall, pay to EIL sums not exceeding the Guaranteed Amount, within 5 (five) Business Days of receipt of a written demand from EIL stating that the Contractor has failed to meet its performance obligations under the Contract. The Guarantor shall not be required to go into the veracity of any breach or failure on the part of the Contractor or validity of demand so made by EIL and shall pay the amount specified in the demand notwithstanding any direction to the contrary given or any dispute whatsoever raised by the Contractor or any other Person. The Guarantor's obligations hereunder shall subsist until all such demands are duly met and discharged in accordance with the provisions hereof.

4. The obligations of the Guarantor herein are absolute and unconditional, irrespective of the value, genuineness, validity, regularity or enforceability of the Contract or the insolvency, bankruptcy, reorganization, dissolution or liquidation of the Contractor or any change in ownership of the Contractor or any purported assignment by the Contractor or any other circumstance whatsoever which might otherwise constitute a discharge or defence of a guarantor or a surety.

Further, this Guarantee is in no way conditional upon any requirement that EIL first attempt to procure the Guaranteed Amount from the Contractor, or any other Person, or resort to any other means of obtaining payment of the Guaranteed Amount, prior to make any recourse to this Guarantee.

5. In order to give effect to this Guarantee, EIL shall be entitled to treat the Guarantor as the principal debtor. The obligations of the Guarantor under this Guarantee shall not be affected by any act, omission, matter or thing which, but for this provision, would reduce, release or prejudice the Guarantor from any of the Guaranteed Amount or prejudice or diminish the Guaranteed Amount in whole or in part, including (whether or not known to it, or EIL):

- (a) any time or waiver granted to, or composition with, the Contractor or any other Person;
- (b) any incapacity or lack of powers, EIL or legal personality of or dissolutions, or insolvency, or bankruptcy, or change in the status of the Contractor or any other Person;
- (c) any variation of the Contract so that references to the Contract in this Guarantee shall include each variation;
- (d) any unenforceability, illegality or invalidity of any obligation of any Person under the Contract or any unenforceability, illegality or invalidity of the obligations of the Guarantor under this Guarantee or the unenforceability, illegality or invalidity of the obligations of any Person under any other document or guarantee, to the extent that each obligation under this Guarantee shall remain in full force as a separate, continuing and primary obligation, and its obligations be construed accordingly, as if there were no unenforceability, illegality or invalidity;
- (e) the partial or entire release of any Guarantor or other Person primarily or secondarily liable or responsible for the performance, payment or observance of any of the Contractor's obligations during the Construction Period; or by any extension, waiver, or amendment whatsoever which may release a guarantor or Guarantor (other than performance or indefeasible payment of a Guaranteed Amount); or
- (f) any part performance of the Contract by the Contractor or by any failure by EIL to timely pay or perform any of its obligations under the Contract.

6. If, and to the extent that, for any reason the Contractor enters or threatens to enter into any proceedings in bankruptcy or reorganization or otherwise, or if, for any other reason whatsoever, the performance or payment by the Contractor of the Guaranteed Amount becomes or may reasonably be expected to become impossible, then the Guaranteed Amount shall be promptly paid by the Guarantor to EIL on demand.

7. So long as any sum remains owing by the Contractor to EIL, the Guarantor shall not exercise any right of subrogation or any other rights of a guarantor or enforce any guarantee or other right or claim against the Contractor (whether in respect of its liability under this Guarantee or otherwise)

or claim in the insolvency or liquidation of the Contractor or any such other Person in competition with EIL. If the Guarantor receives any payment or benefit in breach of this Clause 7, it shall hold the same upon trust for EIL.

8. This Guarantee shall remain in full force and effect from the date hereof until the end of the Contract Validity Period i.e., up to midnight of {..... insert date} plus additional 90 days to enable claims to be made i.e., up to midnight of {..... insert date}, unless discharged/ released earlier by EIL in accordance with the provisions of the Contract. No claim made after such date shall be valid against the Guarantor.

Notwithstanding the foregoing, this Guarantee shall continue in effect until the sums payable under this Guarantee have been indefeasibly paid in full and the Guarantor receives written notice thereof from EIL (such notice to be issued promptly upon such occurrence).

9. The Guarantor represents and warrants to EIL that:

- (a) it has the power to execute, deliver and perform the terms and provisions of this Guarantee and has taken all necessary action to authorize the execution, delivery and performance by it of this Guarantee;
- (b) the Guarantor has duly executed and delivered this Guarantee, and this Guarantee constitutes its legal, valid and binding obligation enforceable in accordance with its terms except as the enforceability thereof may be limited by applicable bankruptcy, insolvency, moratorium or other similar laws affecting the enforcement of creditors' rights generally and by general equitable principles;
- (c) neither the execution, delivery or performance by the Guarantor of this Guarantee, nor compliance by it with the terms and provisions hereof will: (i) contravene any material provision of any law, statute, rule or regulations or any order, writ, injunction or decree of any court or governmental instrumentality; (ii) conflict or be inconsistent with or result in any breach of any of the material terms, covenants, conditions or provisions of, or constitute a default under any agreement, contract or instrument to which the Guarantor is a party of by which it or any of its property or assets is bound; or (iii) violate any provision of the Guarantor's constituent documents; and
- (d) no order, consent, approval, license, authorization or validation of, or filing, recording or registration with (except as have been obtained or made prior to the date hereof), or exemption by, any governmental or public body or EIL, or any subdivision thereof, is required to authorize, or is required in connection with: (i) the execution, delivery and performance of this Guarantee; or (ii) the legality, validity, binding effect or enforceability of this Guarantee.

10. This Guarantee is a continuing one and all liabilities to which it applies or may apply under the terms hereof shall be conclusively presumed to have been created in reliance hereon. No failure or delay on the part of EIL in exercising any right, power or privilege hereunder and no course of dealing between EIL and the Guarantor, or the Contractor, shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, power or privilege.

11. The rights, powers and remedies expressly provided in this Guarantee are cumulative and not exclusive of any rights, powers or remedies which EIL would otherwise have. No notice to or demand on the Guarantor in any case shall entitle the Guarantor to any other further notice or demand in similar or other circumstances or constitute a waiver of the rights of EIL to any other or further action in any circumstances without notice or demand.

12. If any one or more of the provisions contained in this Guarantee are or become invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby, and the Guarantor shall enter into good faith negotiations with EIL to replace the invalid, illegal or unenforceable provision.

13. The Guarantor hereby agrees to execute and deliver all such instruments and take all such actions as may be necessary to make effective fully the purposes of this Guarantee.

- 14. This Guarantee may be executed in one or more duplicate counterparts, and when executed and delivered by the Guarantor and EIL shall constitute a single binding agreement.
- 15. Any notice, request or other communication to be given or made under this Guarantee shall be in writing addressed to the Guarantor at the location set opposite its signature hereto and in the manner as set out in respect of notices under the Contract.
- 16. This Guarantee shall be governed by, and construed in accordance with, the laws of India. The Guarantor irrevocably agrees that any legal action, suit or proceeding arising out of or relating to this Guarantee may be brought in the courts in Delhi.
- 17. EIL may assign or transfer all or any part of its interest herein to any other person with prior notification to the Guarantor. The Guarantor may not assign or transfer any of its rights or obligations under this Guarantee.
- 18. "Notwithstanding anything contained herein:
 - (i) The Bank's liability under this guarantee/undertaking shall not exceed (Amount in figures & words);
 - (ii) This guarantee/undertaking shall remain in force upto_____ and any extension(s) thereof; and
 - (iii) The Bank shall be released and discharged from all liability under this guarantee/undertaking unless a written claim or demand is issued to the Bank on or before _____ or the date of expiry of any extension(s) thereof if this guarantee/ undertaking has been extended."

IN WITNESS WHEREOF the Guarantor has set its hands hereunto on the day, month and year first hereinabove written.

Signed and delivered by [.....insert name of Bank] Bank by hand
Name:
Designation:

ANNEXURE – XV TO SCC

OTHER MODIFICATION TO GCC

Sl. No.	Clause No.	Page No.	Subject	Addition/Deletion/Modification
1.	1.1	6	DEFINITIONS:	
2.		6	Authority	Word “EIL” appearing in third line of this Clause shall be read as “Regional Centre for Biotechnology (RCB)”.
3.		7	Billing Schedule	i) Word “EIL” appearing in second line of this Clause shall be read as “EIL on behalf of RCB”. ii) Words “from the Project Account” is added at the end of last line.
4.		8	Confidential Information	Word “EIL” appearing in third line of this Clause shall be read as “EIL on behalf of RCB”.
5.		8	Contract	Word “Agreement” appearing in the 1 st line shall be read as “agreement signed by EIL (on behalf of RCB)”.
6.		8	Contract Agreement	i) Words “agreement entered into between EIL” appearing in the 1 st line shall be replaced by “agreement signed by EIL (on behalf of RCB)”. ii) Following is added at the end of this sub-clause : “It is clarified that this Contract Agreement shall for all purposes operate as a legal valid contract between RCB and the Contractor”.
7.		9	Drawing And Designs	Following new definition is added after this sub-clause : “RCB shall mean the Owner of the Project”.
8.		10	Final Completion Certificate	i) Word “EIL” appearing in first line of this Clause shall be read as “EIL on behalf of RCB”. ii) Words “upon completion of obligations by the Contractor to the satisfaction of RCB, the Owner” is added at the end of last line of this sub clause.
9.		11	Letter Of Award/ Fax Of Acceptance	i) Word “EIL” appearing in the 2 nd line shall be read as “EIL on behalf of RCB”. ii) Words “on behalf of RCB” is added at the end of last line.

Sl. No.	Clause No.	Page No.	Subject	Addition/Deletion/Modification
10.		11	Mobilization Advance	<p>i) Word “paid” appearing in first line of this Clause shall be read as “released”.</p> <p>ii) Word “EIL” appearing in second line of this Clause shall be read as “EIL on behalf of RCB”.</p>
11.		11	Operation And Maintenance Manuals	<p>Following new definition is added after this sub-clause: “Parties” shall mean RCB and the Contractor .</p>
12.		12	Related Dispute	Words “Clause 35.2.6” in this sub clause stands replaced by “Clause 35.2”.
13.		12	Secured Advance	<p>i) Word “paid” appearing in first line of this Clause shall be read as “released”.</p> <p>ii) Word “EIL” appearing in the 1st line shall be read as “EIL on behalf of RCB, from the Project Account”.</p>
14.		12	Site	Word “EIL” appearing in the 1 st line shall be read as “EIL on behalf of RCB”.
15.	3.1	16	Communication	Word “EIL” appearing in the 3 rd line shall be read as “EIL/RCB as the case may be”.
16.	3.3	17	Communication	<p>Following is added at the end of this sub-clause: “However it is amply clarified that EIL is signing this Contract on behalf of RCB and therefore with respect of any commercial claims or disputes, Contractor shall not interpret this clause to implead EIL in its individual right as a party to such dispute.”</p>
17.	5	17	Confidentiality And Confidential Information	Words “decision of EIL, whose award shall be final” appearing in the last line of 1 st para of sub-clause 5.2 shall be replaced by “decision of Engineer in charge whose decision shall be final”.
18.	8.1	19	Access to and Possession of the Site	<p>i) In first line of Cl. No. 8.1.1, words “EIL shall” shall be read as “EIL shall on behalf of RCB”.</p> <p>ii) In sixth line of Cl. No. 8.1.1, word “EIL” shall be read as “EIL/RCB”.</p> <p>iii) Word “EIL” appearing in the 7th line of sub-clause no. 8.1.2 shall be read as “EIL on behalf of RCB”.</p>
19.	9.1	21	General Obligations	i) In fourth line of Cl. No. 9.1.18, word “EIL” and in fifth line “by EIL” is deleted.

Sl. No.	Clause No.	Page No.	Subject	Addition/Deletion/Modification
				ii) In fourth line of Cl. No. 9.1.19, word "EIL to incur" and in fifth line "to EIL" is deleted.
20.	9.4.1	24	Mobilization Advance Guarantee	<p>i) Words "release of" are added between words any and payment in the last line of sub clause 9.4.1 (e).</p> <p>ii) Word "EIL" appearing in the last line of sub clause 9.4.1 (e) shall be read as "EIL on behalf of RCB".</p> <p>iii) Word "EIL" appearing in the second line of sub clause 9.4.1 (f) shall be read as "EIL may on behalf of RCB".</p> <p>iv) Word "EIL" appearing in the last line of sub clause 9.4.1 (g) shall be read as "EIL on behalf of RCB".</p>
21.	9.4.2	25	Contract Performance Bank Guarantee	<p>i) Following is added at the end of this sub-clause: "This CPBG is being furnished to EIL to facilitate execution of the contract."</p> <p>ii) Words "to EIL" appearing in 4th line of sub clause no. 9.4.2 (b) stands deleted.</p> <p>iii) Words "which EIL may have" appearing in 6th line and Words "of EIL" appearing in 7th line of sub clause no. 9.4.2 (b) stands deleted.</p> <p>iv) Words "Contract forthwith" appearing in the end of sub clause no. 9.4.2 (f) stands replaced by "Contract on behalf of RCB forthwith".</p>
22.	9.6	28	Access Routes	<p>i) Word "EIL" appearing in the 1st line of sub clause no. 9.6.2 stands replaced by "EIL and / or RCB".</p> <p>ii) Word "EIL" appearing in the 2nd line of sub clause no. 9.6.3 stands replaced by "EIL and RCB".</p>
23.	9.12	31	Contractor's Equipment	Word "EIL" appearing in the 8 th & last lines of sub clause no. 9.12.2 (b) shall be replaced by "EIL/RCB".
24.	9.14	34	Subcontractors	<p>i) Word "EIL" appearing in the 2nd line of sub clause no. 9.14.5 shall be replaced by "EIL and RCB".</p> <p>ii) Words "from the Project Account" are added after the words "to the Sub Contractor" appearing in the 10th line of sub clause no. 9.14.6.</p>
25.	9.16	36	Safety of Works	Word "EIL" appearing in the 7 th line of sub clause no. 9.16.1 (b) shall be read as "EIL and RCB".

Sl. No.	Clause No.	Page No.	Subject	Addition/Deletion/Modification
26.	9.21.2	40	Power	In first line of sub clause No. 9.21.2.4 “to the benefit of RCB” is added after “EIL shall recover” and in third line of this sub clause “EIL” shall be read as “EIL on behalf of RCB”.
27.	9.24	42	Avoidance of Damage	In first line of sub clause No. 9.24.3 “EIL” shall be read as “EIL and RCB” and in second line “EIL” shall be read as “EIL and/or RCB”.
28.	9.25	43	Quality Control	<ul style="list-style-type: none"> i) In 3rd & 4th lines of sub clause No. 9.25.9 “EIL” shall be read as “EIL on behalf of RCB”. ii) In second line of sub clause No. 9.25.11 “EIL” shall be read as “EIL/RCB” and in third line “EIL” shall be read as “EIL on behalf of RCB”. iii) In second line of sub clause No. 9.25.11 “release of” is added before word. payment
29.	9.26	45	Covering up of Works	i) In 6 th line of sub clause No. 9.26.3 “EIL” shall be read as “EIL on behalf of RCB”.
30.	9.28	45	Records	<ul style="list-style-type: none"> i) Words “remedies of EIL” appearing in the 2nd line of 2nd para of this clause shall be read as “RCB/ EIL (on behalf of RCB)”. ii) Word “EIL” appearing in the 4th line of 2nd para of this clause shall be read as “EIL/RCB”.
31.	9.29	45	Free Issue Materials	<ul style="list-style-type: none"> i) Word “EIL” appearing in the 3rd line of sub clause no. 9.29.1 (c) shall be read as “EIL and/or RCB”. ii) Word “EIL” appearing in the 3rd line of sub clause no. 9.29.1 (g) shall be read as “EIL/RCB”. iii) Word “EIL” appearing in the 12th line of sub clause no. 9.29.1 (r) shall be read as “EIL/RCB” and Word “EIL” appearing 2nd time in the 16th line of sub clause no. 9.29.1 (r) shall be read as “EIL on behalf of RCB”. iv) Word “EIL” appearing in the 5th line of sub clause no. 9.29.1 (q) shall be read as “EIL and/or RCB”. v) Word “EIL” appearing in the 6th line of sub clause no. 9.29.1 (q) shall be read as “EIL and RCB”. vi) There shall be no free issue material.

Sl. No.	Clause No.	Page No.	Subject	Addition/Deletion/Modification
32.	9.30	49	EIL may do part of the Works	Words “on behalf of RCB “is added in second line of clause after the words “Contract, EIL shall have the right to deploy” and in fourth line of this clause, word “EIL” shall be read as “EIL shall on behalf of RCB”.
33.	10.3	50	Contractor's warranty of Design	<ul style="list-style-type: none"> i) In the 1st line of sub clause no. 10.3.5 word “EIL” shall be read as “EIL and RCB”. ii) In the 2nd line of sub clause no. 10.3.5 word “EIL” shall be read as “EIL/RCB”.
34.	11	53	Transfer of Title and Risk	<ul style="list-style-type: none"> i) In sub clause no. 11.6 (iii) in first line word “EIL's” shall be read as “RCB/ EIL's” , in second line “EIL” shall be read as “RCB/ EIL respectively”. ii) In fourth and fifth line of sub clause no. 11.6 (iii) word “EIL” shall be read as “EIL and RCB” and in last line “EIL” shall be read as “EIL/RCB”.
35.	12	55	Contractor's Personnel	<ul style="list-style-type: none"> i) Words “(on behalf of RCB)” are added after “EIL may” appearing in the 4th line of sub clause no. 12.7. ii) Word “by EIL ” appearing in the 7th line of sub clause no. 12.7 and Word “to EIL ” appearing in the 8th line of sub clause no. 12.7 are deleted. iii) Word “EIL” shall be read as “EIL on behalf of RCB” appearing in the 9th line of sub clause no. 12.7. iv) Words “on behalf of RCB” are added after “EIL shall” appearing in the 9th & 10th lines of sub clause no. 12.8. v) Word “EIL” shall be read as “EIL on behalf of RCB” appearing in the 4th line of sub clause no. 12.11. vi) Word “EIL” appearing in the 1st line of sub clause no. 12.14 shall be read as “RCB and EIL”.
36.	14	60	Extension of Time	<ul style="list-style-type: none"> i) Second line of sub clause no. 14.8 i.e. “Contract development of” stands replaced by “Contract is entered into by EIL on behalf of RCB pursuant to a contract awarded to EIL by RCB for the development of”
37.	16.2	66	Performance Tests	Words “on behalf of RCB” are added after “Guaranteed Performance Levels, EIL shall” appearing in the 2 nd line of sub clause no. 16.2.4 (a).
38.	18	70	Defect Liability Period	<ul style="list-style-type: none"> i) In second line of sub clause no. 18.4(a), word “EIL” shall be read as

Sl. No.	Clause No.	Page No.	Subject	Addition/Deletion/Modification
				<p>“EIL on behalf of RCB”.</p> <p>ii) In second line of sub clause no. 18.4(b), words “on behalf of RCB” are added after word “Contract”.</p>
39.	20	71	Compensation	<p>i) In second line of sub clause no. 20.1, word “EIL” is deleted.</p> <p>ii) In 7th line of sub clause no. 20.1, words “by EIL” are replaced by “by the Owner”.</p> <p>iii) 1st line of sub clause no. 20.2 i.e. “EIL may” stands replaced by “EIL may “on behalf of RCB”.</p> <p>iv) In sub clause no. 20.2(c) in first line, words “for the benefit of RCB” are added after “EIL”.</p> <p>v) In 2nd line of sub clause no. 20.4 i.e. “EIL” stands replaced by “RCB/ EIL on behalf of RCB”.</p>
40.	21	71	Contract Price	In sub clause no. 21.1 in second line, words “on behalf of RCB” are added after “EIL shall”.
41.	23.3	78	Progressive Payments/On Account Payment	<p>i) Words “on behalf of RCB” are added in the end of 2nd para of sub clause no. 23.3.1 (a).</p> <p>ii) In sub clause no. 23.3.2(b)(iv) in 3rd line, words “to EIL” stands deleted.</p> <p>iii) In sub clause no. 23.3.2(c) in 3rd line, words “on behalf of RCB” are added after “EIL shall endeavour to pay” and in 8th line of this sub clause, words “on behalf of RCB” are added after “EIL may”.</p>
42.	23.4	79	Payments Withheld	In first line words “on behalf of RCB” are added after “EIL may”.
43.	23.5	80	Final Payments	<p>i) In sub clause no. 23.5.2 in 2nd line, word “EIL” stands replaced by “EIL, on behalf of RCB”.</p> <p>ii) In sub clause no. 23.5.2 in 4th line, word “EIL’s” stands replaced by “the” and in 5th line and last line “to EIL” are deleted.</p> <p>iii) In sub clause no. 23.6 in first line, words “on behalf of RCB” are added after “No interim payment by EIL”.</p> <p>iv) In sub clause no. 23.7 in first line words “on behalf of RCB” are added after “Payment of the amount mentioned in the Final Bill by EIL”.</p> <p>v) In sub clause no. 23.8 in first line, words “on behalf of RCB” are added after “Without limiting Clause 23.4 and 23.5, EIL may”.</p>

Sl. No.	Clause No.	Page No.	Subject	Addition/Deletion/Modification
				vi) In sub clause no. 23.8 in third line word "EIL" appearing at two places shall be read as "EIL on behalf of RCB". vii) In sub clause no. 23.9 in second line word "EIL" appearing shall be read as "EIL (on behalf of RCB)" and in last line word "to EIL" stands deleted.
44.	23.10	81	Mode of Payment	In sub clause no. 23.10.2 in first line, word "EIL" shall be read as "EIL on behalf of RCB" and in second last line word "EIL" shall be read as "RCB/ EIL (on behalf of RCB)".
45.	25	86	Change in Law	Word "EIL" appearing in the 2 nd and 3 rd line of sub clause no. 25.4 stands replaced by "EIL (on behalf of RCB)".
46.	28	88	Intellectual Property	In sub clause no. 28.7 in first line, word "EIL" shall be read as "RCB and EIL".
47.	30	91	Indemnity	i) In sub clause no. 30.1 in first line, word "EIL," shall be read as "RCB, EIL,". ii) In last para of sub clause no. 30.2 in first line, word "EIL" shall be read as "EIL and RCB". iii) In sub clause no. 30.3 in second line, word "EIL" shall be read as "EIL on behalf of RCB". iv) In sub clause no. 30.4 in second line, words "on behalf of RCB" are added after "Notwithstanding anything in the Contract to the contrary, no liabilities owed by the Contractor to EIL".
48.	31	92	Limitation of Liability	In sub clause no. 31.1 in first line, word "EIL" stands deleted.
49.	32	93	Termination	i) In sub clause no. 32.1 in first line, words "on behalf of RCB" are added after "EIL shall". ii) In sub clause no. 32.2 in first line, word "EIL" shall be read as "EIL on behalf of RCB". iii) In sub clause no. 32.3 in second line, words "on behalf of RCB" are added after "EIL shall".
50.	32.4	94	Procedure on Termination	In sub clause no. 32.4.1(c) in fourth line, word "EIL" shall be read as "EIL on behalf of RCB".

Sl. No.	Clause No.	Page No.	Subject	Addition/Deletion/Modification
51.	32.5	96	Payment on Termination	<p>i) In sub clause no. 32.5.1(b) in second line word "EIL" appearing shall be read as "EIL (on behalf of RCB)".</p> <p>ii) In para after sub clause no. 32.5.1(c)(ii) in second line and 6th line word "to EIL" are deleted and "on behalf of RCB" is added after "amount" in last line .</p> <p>iii) In last para after sub clause no. 32.5.1(c)(ii) in second line word "EIL" appearing shall be read as "EIL (on behalf of RCB)".</p> <p>iv) In sub clause no. 32.5.2 words "EIL will not be bound to make any" stands replaced by "no" and words "is bound to be made" are added after Contractor in 2nd line.</p> <p>v) In 3rd line word " by EIL" stands deleted In sub clause no. 32.5.2.</p> <p>vi) In sub clause no. 32.5.4(a) in 1st line word "EIL" appearing shall be read as "EIL (on behalf of RCB)".</p> <p>vii) In sub clause no. 32.5.4(b) in 2nd and 3rd line word "EIL" appearing shall be read as "EIL (on behalf of RCB)".</p>
52.	35.1	98	Claims	<p>i) The following is added as new para under Clause no. 35.1 prior to sub clause no. 35.1.1 :</p> <p>"It is expressly understood by the Contractor understands that RCB is the Owner of the Project and EIL shall not incur any financial obligation in respect of the Project. It is also understood by the Contractor that EIL is acting on behalf of RCB as its constituted attorney and EIL shall not be sued in its own name for any disputes arising under the Contract and no claim/ dispute / litigation shall be raised by the Contractor on EIL in its own right in respect of matters arising under this Contract".</p> <p>ii) In sub clause no. 35.1.1 in first line, words "from RCB" are added after "If the Contractor intends to claim".</p> <p>iii) In sub clause no. 35.1.2, words "Without admitting EIL's liability," appearing in the 2nd line stands</p>

Sl. No.	Clause No.	Page No.	Subject	Addition/Deletion/Modification
				<p>deleted.</p> <p>iv) Words “be liable for” appearing in the 1st line of sub clause no. 35.1.5 stands replaced by “consider”.</p>
53.	36	100	Miscellaneous	<p>i) In sub clause no. 36.1(a) in first line, word “EIL” shall be read as “EIL/RCB”.</p> <p>ii) In sub clause no. 36.1(c) in first line, word “EIL” shall be read as “EIL/RCB”.</p> <p>iii) In sub clause no. 36.1(d) in second and fourth line, word “EIL” shall be read as “EIL/RCB”.</p> <p>iv) In sub clause no. 36.1(e) in 7th line, word “EIL” shall be read as “EIL on behalf of RCB”.</p> <p>v) In sub clause no. 36.1(f) in seventh, ninth and twelfth line, word “EIL” shall be read as “EIL/RCB”.</p>

SCHEDULE OF RATES

Name of Work: Composite work for Construction of NCR Biotech Science Cluster Phase-II works at Faridabad, Haryana

Bidding Document No. : UKM/A091-000-PK-TN-7005/1001

PART	DESCRIPTION	ESTIMATED COST (in Rs.)
1	EXECUTION PHASE	30 75 01 899
2	MAINTENANCE PHASE	32 18 496
	TOTAL	31 07 20 395

(Rupees Thirty One Crores Seven Lakhs Twenty Thousand Three Hundred Ninety Five only)

Name of Work: Composite work for Construction of NCR Biotech Science Cluster Phase-II works at Faridabad, Haryana

Part-I: Execution Phase

SECTION	DESCRIPTION	ESTIMATED COST (in Rs.)
1	CIVIL, STRUCTURAL AND ARCHITECTURAL WORKS	22 33 34 708
2	PUBLIC HEALTH ENGINEERING WORKS	50 50 336
3	ELECTRICAL WORKS	1 30 50 821
4	FIRE FIGHTING SYSTEM	17 71 925
5	ELEVATOR WORKS	32 47 416
6	CCTV, BMS & HVAC WORKS	3 04 08 345
7	SOLAR PHOTOVOLTAIC WORKS	3 06 38 348
	TOTAL	30 75 01 899

Name of Work: Composite work for Construction of NCR Biotech Science Cluster Phase-II works at Faridabad, Haryana

S.No.	Description	Unit	Qty	Rate	Amount
1.1	Earth Work				
1.1.1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm easured at a height of 1m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	Sq.m.	22 800	8	1 82 400
1.1.2	Felling trees of the girth (measured at a height of 1 m above ground level), including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material. Wood material shall be the property of the Owner and shall be disposed off as per the instructions of DCF/ Forest Department/ Owner, all complete as per specification and direction of Engineer-in-Charge.				
1.1.2.1	Beyond 30 cm girth upto and including 60 cm girth	Each	5	242	1 210
1.1.2.2	Beyond 60 cm girth upto and including 120 cm girth	Each	5	1 073	5 365
1.1.2.3	Beyond 120 cm girth upto and including 240 cm girth	Each	2	4 969	9 938
1.1.2.4	Above 240 cm girth	Each	2	9 963	19 926
1.1.3	Earth work in surface excavation not exceeding 30 cm in depth but exceeding 1.5 m in width as well as 10 Sq.m. on plan including disposal of excavated earth upto 50 m and lift upto 1.5 m, disposed soil to be levelled and neatly dressed, all complete as per drawings, specifications and directions of Engineer-in-Charge.	Sq.m.	1 000	58	58 000
1.1.4	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 Sq.m. on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed, all complete as per drawings, specifications and direction of Engineer in charge.				
1.1.4.1	All kinds of soil	Cu.m.	2 080	139	2 89 120
1.1.4.2	In Hard rock (Blasting prohibited) (The rock generated shall be transported and stacked neatly within the project premises as directed by Engineer-in-Charge. The net quantity of hard rock shall be paid after arriving at by applying deduction of 50% to allow for voids in stacks). The rock will be property of Owner.	Cu.m.	1 390	684	9 50 760
1.1.5	Earth work in excavation in all kinds of soil by mechanical means (Hydraulic Excavator)/ manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 Sq.m. on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposed earth to be levelled and neatly dressed, all complete as per drawings, specifications and direction of Engineer-in-Charge.				
1.1.5.1	All kinds of soil	Cu.m.	3 025	184	5 56 600
1.1.5.2	In Hard rock (Blasting prohibited) (The rock generated shall be transported and stacked neatly within the project premises as directed by Engineer-in-Charge. The net quantity of hard rock shall be paid after arriving at by applying deduction of 50% to allow for voids in stacks). The rock will be property of Owner.	Cu.m.	2 020	725	14 64 500
1.1.6	Excavating trenches in all kinds of soil of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating Each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m:				
1.1.6.1	Pipes, cables etc, not exceeding 80 mm dia	Metre	20	152	3 040
1.1.6.2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	Metre	665	249	1 65 585
1.1.6.3	Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm dia	Metre	20	388	7 760

S.No.	Description	Unit	Qty	Rate	Amount
1.1.7	Extra over 1.1.6 for excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 3 m. (Rate is over corresponding basic item for depth upto 1.5 Metre).				
1.1.7.1	Pipes, cables etc, not exceeding 80 mm dia	Metre	10	41	410
1.1.7.2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	Metre	10	67	670
1.1.7.3	Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm dia	Metre	10	105	1 050
1.1.8	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating Each deposited layer by ramming and watering, including re-excavating the soil stacked/ dumped earlier, for all leads and lifts.	Cu.m.	3 090	139	4 29 510
1.1.9	Extra for every additional lift of 1.5 m or part thereof in excavation/ banking excavated or stacked materials.				
1.1.9.1	All kinds of soil	Cu.m.	575	57	32 775
1.1.9.2	In Hard rock (Blasting prohibited) (The rock generated shall be transported and stacked neatly within the project premises as directed by Engineer-in-Charge. The net quantity of hard rock shall be paid after arriving at by applying deduction of 50% to allow for voids in stacks). The rock will be property of Owner.	Cu.m.	285	102	29 070
1.1.10	Providing, stacking and filling of good earth at site including royalty & carriage for all leads, lifts and levels as marked in the drawing (earth measured in stack will be reduced by 20% for payment).	Cu.m.	600	367	2 20 200
1.1.11	Supplying and filling in plinth with Jamuna sand under floors, including watering, ramming, consolidating and dressing complete.	Cu.m.	280	1013	2 83 640
1.1.12	Excavating holes more than 0.10 cum & upto 0.5 cum including getting out the excavated soil, then returning the soil as required in layers not exceeding 20 cm in depth, including consolidating Each deposited layer by ramming, watering etc, disposing of surplus excavated soil, as directed within a lead of 50 m and lift upto 1.5 m.				
1.1.12.1	All kinds of soil	Each	735	58	42 630
1.1.12.2	In Hard rock (Blasting prohibited) (The rock generated shall be transported and stacked neatly within the project premises as directed by Engineer-in-Charge. The net quantity of hard rock shall be paid after arriving at by applying deduction of 50% to allow for voids in stacks). The rock will be property of Owner.	Each	500	220	1 10 000
1.1.13	Carriage of Earth within site premises as obtained from the excavations by mechanical transport including loading, unloading and properly stacking at the location decided by Engineer-in-Charge.				
1.1.13.1	For lead beyond 50 m upto 1 km	Cu.m.	2 020	108	2 18 160
1.1.13.2	For lead beyond 1 km upto 2 km	Cu.m.	50	123	6 150
1.1.14	Carriage of rock within site premises as obtained from the excavations by mechanical transport including loading, unloading and properly stacking at the location decided by Engineer-in-Charge.				
1.1.14.1	For lead beyond 50 m upto 1 km	Cu.m.	3 405	174	5 92 470
1.1.14.2	For lead beyond 1 km upto 2 km	Cu.m.	50	197	9 850
1.2	Concrete Work				
1.2.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering:				
1.2.1.1	For all works up to plinth level:				
1.2.1.1.1	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	Cu.m.	440	5312	23 37 280
1.2.1.1.2	1:4: 8 (1 cement : 4 coarse sand : 8 graded stone aggregate 20 mm nominal size).	Cu.m.	690	4941	34 09 290
1.2.1.1.3	1:5: 10 (1 cement : 5 coarse sand : 10 graded stone aggregate 20 mm nominal size).	Cu.m.	85	4644	3 94 740
1.2.1.2	For all works at all levels and for all heights above plinth level but upto floor five level				
1.2.1.2.1	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cu.m.	220	7224	15 89 280
1.2.1.2.2	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	Cu.m.	10	6170	61 700

S.No.	Description	Unit	Qty	Rate	Amount
1.2.2	Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5mm nominal size).	Sq.m.	195	290	56 550
1.2.3	Extra for providing and mixing water proofing material in cement concrete work @ 1kg per 50 Kg of cement.	Per 50 Kg of Cement	50	53	2 650
1.2.4	Applying a coat of residual petroleum bitumen of grade of VG-10 of approved quality using 1.7kg per square Metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	Sq.m.	195	101	19 695
1.2.5	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement :3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand including finishing the top smooth.	Sq.m.	290	497	1 44 130
1.3	RCC Work				
1.3.1	Providing centring and shuttering at all levels and for all heights including strutting, propping etc. and removal of form for :				
1.3.1.1	Foundations, footings, bases of columns, etc. for mass concrete.	Sq.m.	1 055	214	2 25 770
1.3.1.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sq.m.	590	418	2 46 620
1.3.1.3	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	Sq.m.	5 140	378	19 42 920
1.3.1.4	Columns, Pillars, Piers, Abutments, Posts and Struts.	Sq.m.	3 520	516	18 16 320
1.3.1.5	Stairs (excluding landings) except spiral staircases.	Sq.m.	220	463	1 01 860
1.3.1.6	Small lintels not exceeding 1.5 m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like	Sq.m.	200	214	42 800
1.3.1.7	Edges of slabs and breaks in floors and walls.				
1.3.1.7.1	Under 20 cm wide	Metre	95	135	12 825
1.3.1.8	Weather shade, chajjas, corbels etc, including edges.	Sq.m.	10	576	5 760
1.3.1.9	Extra for shuttering in circular work				
1.3.1.9.1	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	Sq.m.	500	76	38 000
1.3.1.9.2	Columns, Pillars, Piers, Abutments, Posts and Struts.	Sq.m.	20	103	2 060
1.3.2	Providing centring and shuttering including strutting, propping etc. and removal of form for suspended floors, roofs, landings and balconies and access platforms at all levels and for following heights (Only plan area will be measured for payment):				
1.3.2.1	Height upto 3.5m	Sq.m.	4 430	466	20 64 380
1.3.2.2	Every additional height of 1 Metre or part thereof above the height of 3.5 m	Sq.m.	2 860	189	5 40 540
1.3.3	Supply and fixing of Steel reinforcement (Thermo-Mechanically Treated bars grade FE 500D as per IS:1786) for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.	kg	1 21 800	62	75 51 600
1.3.4	Supply and fixing of Steel reinforcement (Thermo-Mechanically Treated bars grade FE 500D as per IS:1786) for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.	kg	2 70 980	62	1 68 00 760
1.3.5	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	Metre	1 550	38	58 900

S.No.	Description	Unit	Qty	Rate	Amount
1.3.6	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using fly ash and cement content as per approved design mix, and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying, excluding the cost of centering, shuttering, finishing and reinforcement, including cost of admixtures in recommended proportions as per IS:9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer-in-Charge.				
	Note: (1) Cement content considered in this item is @ 330 kg/cum. Only excess/ less cement used as per design mix is payable/ recoverable separately. (2) Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS:456. Uniform blending with cement to be ensured in accordance with clauses 5.2 and 5.2.1 of IS:456 -2000 in the items of BMC and RMC.				
1.3.6.1	All works upto plinth level.	Cu.m.	880	7383	64 97 040
1.3.6.2	All works above plinth level upto floor five level.	Cu.m.	1 510	8270	1 24 87 700
1.3.7	Extra for providing richer mixes at all floor levels by providing Concrete mix M-30 by using 340 kg cement per cubic meter instead of M-25 Grade. (Excess/less cement used as per design mix is payable/recoverable separately)	Cu.m.	360	77	27 720
1.3.8	Add/ Deduct for using extra cement to be provided as per the approved mix design than the quantity specified in item no. 1.3.6 & 1.3.7.	Quintal	235	742	1 74 370
1.4	Brick Work				
1.4.1	Providing and laying brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in Cement mortar 1:4 (1 cement : 4 coarse sand)	Cu.m.	315	5484	17 27 460
1.4.2	Providing and laying brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in super structure above plinth level up to floor five level in cement mortar 1:4 (1 cement : 4 Coarse sand)	Cu.m.	145	6401	9 28 145
1.4.3	Providing and laying brick work with non modular fly ash lime bricks (FALG Bricks) conforming to IS:12894-2002, class designation 10 average compressive strength in super structure above plinth level up to floor five level in cement mortar 1:4 (1 cement : 4 Coarse sand)	Cu.m.	1 000	7016	70 16 000
1.4.4	Providing and laying half brick masonry with common burnt non modular bricks of class designation 7.5, in super structure above plinth and upto floor five level in cement mortar 1 : 4 (1 cement : 4 coarse sand)	Sq.m.	2 055	755	15 51 525
1.4.5	Extra for providing and placing in position 2 Nos. 6 mm dia. M.S. bars at every third course of half brick masonry.	Sq.m.	2 055	63	1 29 465
1.4.6	Providing brick edging 7 cm wide 11.4 cm deep to plinth protection with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 including grouting with cement mortar 1:4 (1 cement : 4 fine sand).	Metre	120	43	5 160
1.5	Stone Work				
1.5.1	Providing and laying random rubble masonry in foundation and plinth with hard stone available at site, including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level with cement mortar 1:6 (1 cement : 6 coarse sand) excluding the cost of stone but including loading, unloading, transportation & breaking of the stone boulders of any size and shape available anywhere within the project premises.	Cu.m.	2 040	3267	66 64 680

S.No.	Description	Unit	Qty	Rate	Amount
1.5.2	Providing and laying random rubble masonry in super structure above plinth level and upto floor five level with hard stone available at site, including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) at window cills, ceiling level and the like with cement mortar 1:6 (1 cement : 6 coarse sand) excluding the cost of stone but including loading, unloading, transportation & breaking of the stone boulders of any size and shape available anywhere within the project premises.	Cu.m.	885	4182	37 01 070
1.5.3	Providing and laying random rubble masonry in foundation and plinth with hard stone supplied by contractor including royalties, including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level with cement mortar 1:6 (1 cement : 6 coarse sand).	Cu.m.	50	4375	2 18 750
1.5.4	Providing and laying random rubble masonry in super structure above plinth level and upto floor five level with hard stone supplied by contractor including royalties, including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) at window cills, ceiling level and the like with cement mortar 1:6 (1 cement : 6 coarse sand).	Cu.m.	50	5290	2 64 500
1.5.5	Providing and fixing dry cladding upto 10 Metre heights with 40 mm thick gang saw cut stone with (machine cut edges) of uniform colour and size upto 1mx1m, fixed to structural steel frame work and/ or with the help of stainless steel cramps of required shape and size, pins etc. and sealing the joints with approved weather sealant including grouting the frame work/ cramps/ pins, maintaining the grooves in stone slabs as per the drawing and filling the same with non-staining, non-streaking silicon joint sealants of approved make, including backer rod, drilling, anchoring, grouting, scaffolding, edge polishing, chamfering to received tapered stone and providing and applying coating on external surface of stone with solvent based silicone sealant of approved make as per manufacturer's specifications etc., all complete as per architectural drawings and direction of Engineer in charge. (Only exposed surface will be measured for payment. The steel frame work, stainless steel cramps and pins shall be paid for separately).				
1.5.5.1	Red sand stone - 40 mm thick gang saw cut stone	Sq.m.	255	2878	7 33 890
1.5.5.2	White sand stone - 40 mm thick gang saw cut stone	Sq.m.	2 860	3003	85 88 580
1.5.6	Extra for stone work for wall lining/ dry cladding on exterior walls of height more than 10 m from ground level for every additional height of 3 m or part there of.	Sq.m.	100	95	9 500
1.5.7	Providing and fixing adjustable SS 316 grade stainless steel cramps of Axel make or approved equivalent with SS 316 grade stainless steel pin, nuts bolts and washer for dry stone cladding fixed on RCC or brick wall surface at suitable location by suitable anchor fasteners including making necessary recesses in stone slab, drilling required holes etc complete as per direction of the engineer-in-charge.	Each	15 580	240	37 39 200
1.5.8	Providing and fixing Anchor Fastener of Hilti HAS-R-10x90 or approved equivalent for fixing S.S. Cramps on RCC work as per direction of Engineer-in-Charge.	Each	6 235	105.00	6 54 675
1.5.9	Providing Anchor Fastener of Hilti HRD-10x100 or approved equivalent for Dry stone cladding for fixing S.S. Cramps on Brick work as per direction of Engineer-in-Charge.	Each	9 350	105.00	9 81 750
1.5.10	Stone work, plain in copings, cornices, string courses and plinth courses, upto 75 mm thick in Cement mortar 1:6 (1 cement : 6 coarse sand) including pointing with white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade.				
1.5.10.1	Red sand stone - 40 mm thick gang saw cut stone	Cu.m.	2	45267	90 534
1.5.10.2	White sand stone - 40 mm thick gang saw cut stone	Cu.m.	50	46121	23 06 050
1.5.11	Making chases up to 7.5x7.5 cm in walls including making good and finishing with matching surface after inserting copings, cornices, string courses and plinth courses, complete	Metre	830	95	78 850

S.No.	Description	Unit	Qty	Rate	Amount
1.5.12	Extra for making 12x12mm U/ V grooves on stones of wall cladding in horizontal or vertical direction upto floor five level with the help of grinder, cutting machine and hand tools including rubbing and polishing to achieve smooth surface required as per drawings and direction of Engineer-in-Charge.	Metre	250	261	65 250
1.5.13	Extra for pre-finished full round moulding in sand stone coping/ bands etc.	Metre	830	83	68 890
1.6	Marble and Granite Work				
1.6.1	Providing and fixing 18mm thick Granite of approved color and shade, gang saw cut mirror polished premoulded and prepolished) for wall lining (vineer work)/ 200mm wide bands backing filled with a grout of average 12 mm thick in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust) with an admixture of pigment to match the granite shade complete at all levels (To be secured to the backing by means of cramps, which shall be paid for separately). (Minimum basic cost of granite Rs 1670 per Sq.m.)	Sq.m.	61	4743	2 89 323
1.6.2	Providing and fixing 18mm thick stone of approved color and shade, gang saw cut mirror polished premoulded and prepolished machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture, at all levels, laid over 20mm thick base cement mortar 1:4 (1cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels.				
1.6.2.1	Marble work (Minimum basic cost of marble Rs 1020 per Sq.m.)				
1.6.2.1.1	Area of slab upto 0.50 Sq.m..	Sq.m.	26	2151	55 926
1.6.2.1.2	Area of slab over 0.50 Sq.m..	Sq.m.	35	2041	71 435
1.6.2.2	Granite work (Minimum basic cost of granite Rs 1670 per Sq.m.)				
1.6.2.2.1	Area of slab upto 0.50 Sq.m..	Sq.m.	35	3698	1 29 430
1.6.2.2.2	Area of slab over 0.50 Sq.m..	Sq.m.	2	3435	6 870
1.6.3	Providing edge moulding to 18mm thick stone counters, vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.				
1.6.3.1	Marble work	Metre	215	160	34 400
1.6.3.2	Granite work	Metre	50	271	13 550
1.6.4	Extra for providing and fixing 18mm thick stone work in facia and drops of width upto 150 mm with epoxy resin based adhesive including cleaning etc. using single piece in maximum length, all complete at all levels as per drawings and direction of Engineer-in-Charge.	Metre	50	294	14 700
1.6.5	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/ granite/ stone work including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	Each	35	472	16 520
1.6.6	Providing and fixing stainless steel cramps of required size & shape in RCC/ CC/ Brick masonry backing with cement mortar 1:2 (1 cement : 2 coarse sand), including drilling necessary hole in stones and embedding the cramp in the hole (fastener to be paid separately).	kg	250	575	1 43 750
1.6.7	Providing and fixing wedge expansion type hold fasteners on RCC/ CC/ Brick masonry surface backing including drilling necessary holes in stones and the cost of bolt etc., complete as required.				
1.6.7.1	Fastener with threaded dia 6 mm	Each	50	28	1 400
1.6.7.2	Fastener with threaded dia 10 mm	Each	50	28	1 400

S.No.	Description	Unit	Qty	Rate	Amount
1.6.8	Providing and laying gang saw cut 18 mm thick mirror polished prepolished machine cut granite stone of required size and shape of approved shade, colour and texture in flooring laid over 20mm average thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement mixed with matching pigment epoxy touchups etc. complete as per direction of Engineer-in-Charge. (Minimum basic cost of Granite Rs. 1670 per Sq.m.)	Sq.m.	1 178	3348	39 43 944
1.6.9	Providing and laying gang saw cut 18 mm thick mirror polished prepolished machine cut granite stone of required size and shape of approved shade, colour and texture in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete as per direction of Engineer-in-Charge. (Minimum basic cost of Granite Rs. 1670 per Sq.m.)	Sq.m.	159	3437	5 46 483
1.6.10	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear pattern, all complete as per the drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and flamed polishing etc. all complete as specified and as directed by the Engineer-in-Charge. (Minimum basic cost of Granite Rs. 1670 per Sq.m.)	Sq.m.	165	3186	5 25 690
1.6.11	Providing and fixing stone slab table rubbed, edges rounded with polished Granite Stone of approved shade and of size 75x50 cm deep and 1.8 cm thick fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.	Sq.m.	3	3124	9 372
1.7	Wood Work & PVC Work				
1.7.1	Providing and fixing 40 mm thick Factory Pressed Laminated BWP Grade Flush Door as per IS 2202 (Part1):1999, Green guard, from solid wood timber, 3.6 mm hard core and Gurjan face, matched commercial 3 ply veneering with vertical grains & cross bands, face veneers on both faces of shutters providing structural strength and dimensional stability, immune to termites and borers, Bonded with Phenol Formaldehyde resin, with jointless High Pressure Laminate IS 2046 -95, 1mm thick both sides including edges including lipping, cutting rebate in shutter, 4 Nos. ISI marked Stainless steel ball bearing hinges 102x76x3mm in size with S.S. screws of approved make etc. all complete as per direction of Engineer-in-Charge.	Sq.m.	195	5303	10 34 085
1.7.2	Extra for providing vision panel of Rectangular or square shape in all type of flush doors (Cost of glass excluded) (overall area of door shutter to be measured for payment).	Sq.m.	55	179	9 845
1.7.3	Extra for providing louvers (not exceeding 0.2 sq.m.) in flush door shutters (overall area of door shutter to be measured for payment).	Sq.m.	50	416	20 800
1.7.4	Extra for cutting rebate in flush door shutters (overall area of door shutter to be measured for payment).	Sq.m.	55	141	7 755
1.7.5	Providing and fixing 2nd class teak wood moulded beading of approved shape and size to door, window and partition frames with iron screws, plugs and priming coat on unexposed surface etc. all complete.	Metre	20	171	3 420
1.7.6	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer of approved make (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1200 mm) having life cycle of minimum 5 lacs, with double speed adjustment with necessary accessories and screws etc. complete.	Each	70	429	30 030
1.7.7	Providing and fixing 250x16mm stainless steel (Grade 316) satin finish sliding door bolts superior quality of approved make with necessary SS screws and nuts etc. complete.	Each	35	1179	41 265

S.No.	Description	Unit	Qty	Rate	Amount
1.7.8	Providing and fixing stainless steel (Grade 316) satin finish tower bolts of approved make with necessary SS screws and nuts etc. complete.			0	
1.7.8.1	300 x 10 mm	Each	85	489	41 565
1.7.8.2	150 x 10 mm	Each	80	254	20 320
1.7.9	Providing and fixing bright finished brass 100 mm mortice latch of approved make with one dead bolt and a pair of lever handles with necessary screws etc. complete.	Each	25	499	12 475
1.7.10	Providing and fixing 25mm dia, 300 mm long in cranked/ square shape stainless steel (Grade 316) satin finish pull handle of approved make with necessary screws etc. complete.	Each	275	1160	3 19 000
1.7.11	Providing and fixing Ultra Vertibolt (Vertically interlocking deadbolts) lock of approved make having one cylinder and one knob, with necessary screws etc. complete.	Each	5	898	4 490
1.7.12	Providing and fixing zinc metal in stainless steel satin finish high quality hanging floor door stopper of approved make with spring function and enhanced with high quality fixing screws and high grade PVC/ rubber strongly fixed on the rod to make better grip of door on floor, all complete as per drawings and direction of Engineer-in-Charge.	Each	110	306	33 660
1.7.13	Providing and fixing at all levels & locations, 120 minutes fire rated steel Fire door and frame of Galvanized steel conforming to IS:277 of approved make, overall door assembly conforming to IS 3614 Part-1 & Part-2 & BS 476 Part 22 or EN 1634 as required. Fire doors should be tested at CBRI or ARAI for rating of 120 minutes.				
	Door frame shall be double rebate profile of size 143 x 57 mm made with minimum 1.6mm thick galvanized steel sheet. Frames shall be mitered and field assembled with self tabs. All provisions should be mortised, drilled and tapped for receiving suitable fire rated hardware. Suitable Rubber door silencers should be provided on the striking jamb. Frames should be provided with back plate bracket and anchor fasteners for installation on a finished plastered masonry wall opening. Frame should be grouted with cement & sand slurry necessary for fire doors on the clear masonry opening.				
	Door shutter shall be made with minimum 1.2 mm thick steel pressed formed to provide a 46mm thick fully flush double skin door shell with lock seam joints at stiled edges. The internal construction or in fill material of the door to meet desired fire rating with reinforcement/rails at top, bottom, middle and vertical stile. The infill material shall be resin bonded honeycomb core or approved equivalent. The door shall be factory prepared for receiving appropriate hardware and provided with necessary reinforcement for hinges, locks, and door closers etc complete. The edges should be interlocked with a bending radius of 1.4mm. and shall have door astragals of required profile and size provided on the meeting stile for both active and inactive leaf. The shutter is to be fixed with frame with SS ball bearing butt hinges 3mm thick. Frame shall be fixed with approved dash fasteners and concrete should be poured in hollow frame section etc.				
	Vision panel wherever applicable should be of size at least 300 x 300mm provided as per manufacturer's recommendation with a beading and screws from inside with no screws and fasteners on the surface. The glass for vision panel should be 6mm clear fire rated glass of approved make & relevant rating of the door to withstand thermal shock upto 800 degree C on hose stream test. Door frames and shutters to be finished with power coating (minimum 50 micron), all complete as per the specifications and directions of Engineer-In-Charge. (Vision panel rate is inclusive of the item and Hardware i.e. locks, door closer, handle, Panic bar, etc shall be paid for separately)	Sq.m.	29	13125	3 80 625
1.7.14	Providing & fixing Fire rated door Closer of approved make certified for 120 minutes fire rating, all complete as per direction of Engineer-in-Charge.	Each	16	2529	40 464

S.No.	Description	Unit	Qty	Rate	Amount
1.7.15	Providing & fixing Fire rated Lock of approved make certified for 120 minutes fire rating, all complete as per direction of Engineer-in-Charge.	Each	16	2195	35 120
1.7.16	Providing and fixing panic bar/ latch (Double point) fitted with a single body, Trim Latch & Lock on back side of the Panic Latch of approved make certified for 120 minute fire rating, all complete as per direction of Engineer-in-Charge.	Each	16	6778	1 08 448
1.7.17	Providing and fixing 250x16 mm ISI marked oxidised M.S. sliding door bolts of approved make with nuts and screws etc. complete :	Each	6	157	942
1.7.18	Providing and fixing 250x10 mm ISI marked oxidised tower bolt black finish, (Barrel type) of approved make with nuts and screws etc. complete.	Each	12	71	852
1.7.19	Providing and fixing 125 mm ISI marked oxidised M.S. handles of approved make conforming to IS:4992 with necessary screws etc. complete.	Each	12	32	384
1.7.20	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneer on both face of boards of required thickness as per drawing complete as per direction of Engineer-in-Charge.				
	25 mm thick (for built-in cupboards) including ISI marked nickel plated bright finished M.S. piano hinges with necessary screws	Sq.m.	165	1657	2 73 405
1.7.21	Extra over 1.7.20 for providing and fixing 19 mm thick non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering on sides and partitions of built-in cupboards as per drawing complete as per direction of Engineer-in-Charge.	Sq.m.	300	1431	4 29 300
1.7.22	Extra over 1.7.20 for providing and fixing 6 mm thick non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering on backside of built-in cupboards as per drawing complete as per direction of Engineer-in-Charge.	Sq.m.	165	901	1 48 665
1.7.23	Providing and fixing teak wood marjin for following sizes				
1.7.23.1	25x3 mm	Metre	440	45	19 800
1.7.23.2	19x3 mm	Metre	496	40	19 840
1.7.24	Providing and fixing 50 mm bright finished brass cup board or wardrobe knob of approved make including fixing with necessary screws etc. complete.	Each	100	54	5 400
1.7.25	Providing and fixing triple strip vertical type magnetic catcher of approved make in cupboard/ wardrobe shutters, including fixing with necessary screws etc. complete.	Each	100	31	3 100
1.7.26	Providing and fixing 115 mm bright finished brass hasp and staple (safety type) of approved make with necessary screws etc. complete.	Each	50	97	4 850
1.7.27	Providing & fixing decorative high pressure 1.0 mm thick laminated sheet of plain/ wood grain in gloss/ matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.	Sq.m.	545	572	3 11 740
1.7.28	Providing and fixing 12mm thick commercial ply conforming to IS : 1328 BWR type plain lining with necessary screws/ nuts & bolts/ nails, including a coat of approved primer on one face, and fixed on wooden /steel frame work, complete as per direction of Engineer-incharge. (Frame work shall be paid for separately).	Sq.m.	545	1186	6 46 370

S.No.	Description	Unit	Qty	Rate	Amount
1.7.29	Providing and fixing frame work for partitions/ wall lining etc. made of 50x50x1.6 mm hollow MS tube, placed along the walls, ceiling and floor in a grid pattern with spacing @ 60 cm centre to centre both ways (vertically & horizontally) or at required spacing near opening, with necessary welding at junctions and fixing the frame to wall/ ceiling/ floors with steel dash fasteners of 8 mm dia of approved make, 75 mm long bolt wherever required, including making provision for opening for doors, windows, electrical conduits, switch boards etc., including providing with two coats of approved steel primer etc. complete, all as per direction of Engineer-in-Charge.	kg	6 010	87	5 22 870
1.7.30	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. fixed to openings /wooden frames with rawl plugs screws etc., including priming coat with approved steel primer, all complete as per direction of Engineer-in-Charge.	kg	3 420	124	4 24 080
1.7.31	Providing and fixing Kiln seasoned and chemically treated hollock wood block in the inside portion of aluminium frame for wooden door shutter) of required size in full length of frame complete in all respect as per direction of Engineer-in-Charge. The wood block shall be inserted only hinged side of the frame.	Cu.m.	2	50888	1 01 776
1.8	Steel Work				
1.8.1	Supplying, fabricating, erecting in position and testing bolted and/ or Welded Structural Steel work at all levels and at all heights, including all types of sections, builtup sections/ compound sections made out of rolled sections and/ or plates/ bent plates in trusses, purlins, wind ties, wind girders, columns, portals, racks, frameworks, bracings, floor beams, lifting beams, monorails, stoppers, brackets, side runners, sag rods, supports for equipment, posts, masts etc., including storing, cutting to required size, straightening/ bending if required, edge preparation, cleaning, preheating, bolting/ welding of joints, including sealing the joints of box sections with continuous welding, finishing edges by grinding, fixing in line and level with temporary staging & bracing and removal of the same after erection, grouting with Ordinary Grout or premix free flow Non-Shrink Grout as specified, including preparation and submission of detailed fabrication drawings, preparing the surface for painting, surface cleaning, wire brushing, removal of mill scale, dust, rust, oil or grease and surface preparation, apply in gone coat of Red Oxide Zinc Chromate primer as per the specifications, all complete as per direction of Engineer in Charge.	kg	1 60 250	75	1 20 18 750
1.8.2	Supplying, fabricating, erecting Structural steel work in single section fixed with or without connecting plate, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete	kg	17 800	64	11 39 200
1.8.3	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6mm angle iron, diagonal bracing of M.S. angles 40x40x6 mm and 3mm M.S. gusset plates at the junction and corners , all necessary fittings complete, including applying a priming coat of approved steel primer.	Sq.m.	7	3167	22 169
1.8.4	Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded, including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.				
	Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block 15x10x10 cm of cement concrete 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size).	kg	180	82	14 760
1.8.5	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 – part 1 and M.S. top cover of required thickness for rolling shutters.				
	80x1.20 mm M.S. laths with 1.20 mm thick top cover.	Sq.m.	43	2032	87 376

S.No.	Description	Unit	Qty	Rate	Amount
1.8.6	Providing and fixing ball bearing for rolling shutters.	Each	8	418	3 344
1.8.7	Extra for providing mechanical device chain and crank operation for operating rolling shutters.				
	Exceeding 10.00 Sq.m. and upto 16.80 Sq.m. in the area.	Sq.m.	43	799	34 357
1.8.8	Extra for providing grided rolling shutters manufactured out of 8 mm dia. M.S. bar instead of laths as per design approved by Engineer-in-charge. (Area of grill to be measured).	Sq.m.	16	346	5 536
1.8.9	Supplying, transporting, storing, fabricating Steel work in built up tubular Electric resistance or induction butt welded tubular (round, square or rectangular hollow tubes etc.) trusses, railings etc. sections confirming to IS : 2062 including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete as per direction of Engineer-in-Charge.	kg	2 19 100	124	2 71 68 400
1.8.10	Providing and fixing M.S. fan clamp type I or II of 16 mm dia M.S. bar, bent to shape with hooked ends in R.C.C. slabs or beams during laying, including painting the exposed portion of loop, all as per standard design complete.	Each	200	124	24 800
1.8.11	Providing and fixing circular/ Hexagonal cast iron or M.S sheet box for ceiling fan clamp of internal dia 140mm, 73mm height, top lid of 1.5mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S sheet box by means of 3.3 mm dia. round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S bar bent to shape as per standard drawing.	Each	420	144	60 480
1.8.12	Providing and fixing mild steel round holding down bolts with nuts and washer plates complete.	kg	890	75	66 750
1.8.13	Supplying and fixing in position structural steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. all complete as per drawings and direction of Engineer-in-Charge.				
1.8.13.1	In stringers, treads, landings etc. of stair cases including use of chequered plate wherever required, all complete.	kg	50	73	3 650
1.8.13.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	kg	640	95	60 800
1.8.14	Supplying and applying Finish Paint of approved quality and shade over Structural Steel Works at all levels including a coat of primer over one coat of shop primer already applied including storage, surface preparation by power tool cleaning/ wire brushing, degreasing, cleaning, drying, touching up of shop primer coat, providing temporary staging, scaffolding, testing etc., all complete as per specification and direction of Engineer-in-Charge.				
1.8.14.1	Two or more coats of Synthetic Enamel Paint	MT	125	3103	3 87 875
1.8.14.2	Two or more coats of Epoxy paint	MT	50	5068	2 53 400
1.8.15	Providing and Fixing of sky lights consisting of Multi cell/ tight cell Polycarbonate Panel System of approved uniform colour, 16mm thick (minimum) having uniform in color with an integral Tight-Cells not to exceed 4mm x 4mm, Vertical Standing Seam manufactured at both sides of the panel. Snap-on connector to interlock the panels shall have a grip-lock double tooth locking mechanism to ensure maximum uplift capability & shall be of same color as that of panel. Panel shall be factory sealed/end welded panels with additional End-cap/ Aluminium U-Profile (mill finish) for ends. Panel shall be co-extruded with special anti-glare compound and both side UV protected. The full system shall be secured using Z-type fastners having minimum three points for fastening with self drilling on MS purlins perpendicular to direction of sheeting with purlin spacing as specified by Manufacturer.				

S.No.	Description	Unit	Qty	Rate	Amount
	The rate includes cost of all the operations, labour & all materials and tests (as applicable) involved such as bolts nuts and screws etc. and labour for cutting bending to required profile, necessary scaffolding, hoisting in position etc. for proper completion of the work etc. complete as per specification drawings and direction of Engineer-in-Charge. Finished surface area of roofing fixed over steel tublar structure shall be measured for payment. MS tabular frame work shall be measured seperately for payment)	Sq.m.	45	4109	1 84 905
1.8.16	Providing and fixing carbon steel galvanized (minimum coating 5 micron) dash fastener of approved make of 10 mm dia, 80 mm long double threaded 6.8 grade (yield strength 480 N/mm2), counter sunk head, comprising of 10 m dia polyamide PA 6 grade sleeve, including drilling of hole in frame, concrete/ masonry, etc. complete as per direction of Engineer-in-charge.	Each	1 606	82	1 31 692
1.8.17	Providing and fixing satin/ brush finish stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, including fixing the railing with necessary accessories & stainless steel dash fasteners, stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per drawings, specifications and direction of Engineer-in-Charge. (For payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	kg	4 870	521	25 37 270
1.9	Flooring				
1.9.1	Providing and laying 25 mm thick Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand).	Sq.m.	1 000	1278	12 78 000
1.9.2	Providing and laying 20 mm thick Kota stone slabs in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	Sq.m.	45	1366	61 470
1.9.3	Extra for prefinished nosing in treads of steps of Marble/ Granite stone	Metre	670	338	2 26 460
1.9.4	Extra for Marble/ Granite stone in treads of steps and risers using single length up to 2 mtr.	Sq.m.	300	395	1 18 500
1.9.5	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer) of approved make and in approved colours and shades in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per Sq.m., including pointing in white cement mixed with pigment of matching shade complete. (Minimum basic cost of Ceramic Tile 190 per Sq.m.)	Sq.m.	1 165	822	9 57 630
1.9.6	Providing and fixing Medium Density Fiber (MDF) Board Laminated wooden skirting of approved make and approved shade and profile, having minimum thickness of 12 mm and height upto 100 mm, including all necessary accessories for fixing like screws, headless nails etc., all complete as per manufacturer's specifications, drawing and direction of engineer in charge.	Metre	50	321	16 050
1.9.7	Providing and laying at all levels vitrified tiles of size 600x600 mm (thickness to be specified by the manufacturer) of approved make in approved colours and shades in skirting, riser of steps and other similar locations having water absorption less than 0.08% and conforming to I.S. 15622, laid with cement based high polymer modified quick set tile adhesive (water based) conforming to IS: 15477, in average 6 mm thickness, including grouting of joints (Payment for grouting of joints to be made separately). (Minimum basic cost of Vitrified Tile 560 per Sq.m.)	Sq.m.	185	1369	2 53 265

S.No.	Description	Unit	Qty	Rate	Amount
1.9.8	Providing and laying Vitrified tiles of size 600x600 mm (thickness to be specified by the manufacturer) of approved make in approved colours and shades in flooring, tread of steps and other similar locations having water absorption less than 0.08% and conforming to IS:15622, in approved finish (polished/ satin/ antiskid Finish as approved), laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), including grouting the joints with white cement and matching pigments etc. all complete as per drawing and Engineer-in-Charge. (Minimum basic cost of Vitrified Tile 560 per Sq.m.)	Sq.m.	1 235	1290	15 93 150
1.9.9	Grouting the joints of flooring tiles of size 600x600 mm and having joints of 3 mm width, using epoxy grout mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling / grouting and finishing complete as per direction of Engineer-in-charge.	Sq.m.	1 420	184	2 61 280
1.9.10	Providing and laying anti-skid Ceramic glazed floor tiles 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand) including pointing the joints with white cement and matching pigment etc., complete. (Minimum basic cost of Ceramic Tile 190 per Sq.m.)	Sq.m.	150	759	1 13 850
1.9.11	Providing and fixing truly leveled High Density Fiber (HDF) Board Laminated wooden flooring of approved make and approved shade, over prepared hard base, having minimum thickness of 8 mm, and meeting all performance and physical parameters for classification of use 32/23 (General Commercial/ Heavy Domestic use) as per EN 13329 or equivalent, with a surface abrasion resistance of class AC 4, having installation arrangement and locking mechanism as per manufacturer's specification. The item includes providing and laying of underlayment made of all necessary accessories like End profile, Transition profile, reducer, moulding, etc. as per requirements, all complete as per manufacturer's specifications, technical specifications and direction of engineer in charge. (Skirting shall be paid separately)	Sq.m.	144	1604	2 30 976
1.9.12	Providing and laying 40 mm thick cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) at all levels, finished with a floating coat of neat cement including cement slurry, all complete.	Sq.m.	205	400	82 000
1.9.13	Providing and laying 52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturer's specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete at all levels, finished with a floating coat of neat cement including cement slurry, all complete.	Sq.m.	27	613	16 551
1.9.14	Providing and laying 18 mm thick Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.	Sq.m.	5	386	1 930
1.9.15	Providing and fixing 40mm wide and 4mm thick glass strips in joints of cement concrete floors at all levels, all complete.	Metre	335	58	19 430
1.9.16	Providing and laying 60mm thick factory made cement concrete interlocking paver block of approved make of M-30 grade cement concrete made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	Sq.m.	144	679	97 776
1.9.17	Extra for making edge chamfered of kota stone skirting as per drawing.	Metre	345	54	18 630
1.10	Roofing				

S.No.	Description	Unit	Qty	Rate	Amount
1.10.1	Making khurras 45 x 45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement: 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1mx1mx400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement rounding the edges and making and finishing the outlet complete.	Each	50	207	10 350
1.10.2	Providing and fixing pre-coated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-Charge) 0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per Sq.m. as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 Metre or as desired by Engineer-in-Charge. The sheet shall be fixed using self drilling / self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	Sq.m.	3 530	607	21 42 710
1.10.3	Providing and fixing pre-coated galvanised steel sheet roofing accessories 0.50 mm (+ 0.05 %) total coated thickness, Zinc coating 120 grams per Sq.m. as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self drilling/ self tapping screws complete :				
	Flashings/ Aprons.(Upto 600 mm)	Metre	1 285	367	4 71 595
1.10.4	Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per Sq.m. including both side) consisting of main 'T' runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross "T" of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main'T' at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross 'T' of length 600 mm and size 24 x28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to form grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size (24x24X3000 mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm cning, wire brushing, removal of mill scale, dust, rust, oil or grease and surface preparation, apply in g				
	calicum silicate ceiling tiles of approved texture in the grid ,including,cutting/ making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required. Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods with galvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main 'T' , bottom exposed with 24 mm of all T-sections shall be pre-painted with polyster baked paint, for all heights, as per specifications, drawings and as directed by Engineer-in-Charge.				
	Note:- Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/opening (cut outs) having area less than 0.30 Sq.m..The calcium silicate ceiling tile shall have NRC value of 0.50 (Minimum), light reflection > 85%,non - combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity <0.043 w/m 0 KC.	Sq.m.	1 264	1653	20 89 392

S.No.	Description	Unit	Qty	Rate	Amount
1.10.5	Providing & fixing false ceiling at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ Sq.m. (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I channels 45 x15 x 0.90mm running at the spacing of 1200 mm c/c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm Each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I wire at every junction, including fixing perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450mm				
	centre, with 25mm long dry wall screws @ 230mm interval, including fixing of Calcium Silicate Board to ceiling section and perimeter channels with the help of dry wall screws of size 3.5 x25mm at 230mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes, finishing with jointing compounds in three layers covering up to 150mm on both sides of joints and two coats of primer suitable for boards, all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, all complete as per drawings, specificaton and direction of the Engineer in charge but excluding the cost of painting with:				
	8 mm thick Calcium Silicate Board made with Calcareous & Siliceous materials reinforced with cellulose fiber manufactured through autoclaving process	Sq.m.	842	1011	8 51 262
1.10.6	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/Sq.m. (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm Each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed				
	to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with				
1.10.6.1	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- Part I .	Sq.m.	100	889	88 900

S.No.	Description	Unit	Qty	Rate	Amount
1.10.6.2	12.5 mm thick tapered edge gypsum moisture resistant board	Sq.m.	100	1058	1 05 800
1.10.7	Providing and laying roof insulation with 40 mm thick impervious sprayed,closed cell free Rigid Polyurethane foam over deck insulation conforming to IS - 12432 Pt. III (density of foam being 40-45 kg/ cum), over a coat of polyurethane primer applied @ 6-8 Sq.m. per litre, laying 400 G polythene sheet over PUF spray and providing a wearing course of 40 mm thick cement screed 1: 2 : 4 (1 cement : 2 coarse sand : 4 stone aggregate 20 mm nominal size) in chequered rough finish, in panels of 2.5 m x 2.5 m and embedding with 24 G wire netting and sealing the joints with polymerized mastic, all complete as per direction of Engineer-in-Charge.	Sq.m.	1 835	1270	23 30 450
1.11	Finishing				
1.11.1	Providing & applying plaster to wall with 12mm thick cement mortar 1:4 (1 cement: 4 coarse sand) finished smooth, including scaffolding, curing, etc. for walls, beams, ribs, sills, jambs, ceiling etc. at all floor levels, complete as per specifications and direction of Engineer-in-Charge.	Sq.m.	8 595	191	16 41 645
1.11.2	Providing & applying plaster to wall with 15mm thick cement mortar 1:4 (1 cement: 4 coarse sand) on rough side of single or half brick wall with finished smooth, including scaffolding, curing, etc. at all floor levels, complete as per specifications and direction of Engineer-in-Charge.	Sq.m.	8 750	221	19 33 750
1.11.3	Providing and applying 6 mm thick cement plaster 1:3 (1 cement : 3 fine sand) to concrete ceiling bottom surfaces with cement mortar at all levels including all labour, scaffolding, material, plant and machinery, complete as per specifications and direction of Engineer-in-Charge.	Sq.m.	4 480	159	7 12 320
1.11.4	Raised and cut pointing on stone work with cement mortar 1:3 (1 cement : 3 fine sand) :	Sq.m.	8 968	337	30 22 216
1.11.5	Providing and laying washed stone grit plaster on exterior walls height upto 10 Metre above ground level, in two layers, under layer 12 mm cement plaster 1:4 (1 cement : 4 coarse sand), furrowing the under layer with scratching tool, applying cement slurry on the under layer @ 2 Kg of cement per square Metre, top layer 15 mm cement plaster 1:1/ 2:2 (1 cement: 1/2 coarse sand : 2 stone chipping 10 mm nominal size), in panels with groove all around as per approved pattern, including scrubbing and washing the top layer with brushes and water to expose the stone chippings, complete as per specification and direction of Engineer-in-Charge (payment for providing grooves shall be made separately).	Sq.m.	1 315	643	8 45 545
1.11.6	Extra for washed grit plaster on exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.	Sq.m.	100	95	9 500
1.11.7	Forming groove of uniform size from 12x12mm and upto 25x15mm in the top layer of washed stone grit plastered surface as per approved pattern, including providing and fixing aluminum channels of appropriate size and thickness (not less than 2 mm), nailed to the under layer with rust proof screws and nails and finishing the groove complete as per specifications and direction of the Engineer-in-Charge.	Metre	2 630	79	2 07 770
1.11.8	Providing and fixing GI hexagonal chicken wire mesh of size 12mm x 22G at the junction of dissimilar surfaces of brick masonry wall and R.C.C including necessary nails for fixing etc. for all floor and all heights, all complete as per direction of Engineer-in-Charge.	Sq.m.	400	95	38 000
1.11.9	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	Sq.m.	50	96	4 800
1.11.10	Providing and applying white washing with lime to give an even shade for new work (three or more coats) all complete as per specifications and direction of Engineer-In-Charge.	Sq.m.	50	19	950
1.11.11	Providing & finishing walls of New work (Two or more coats applied @ 3.84 kg/10 Sq.m.) with water proofing cement paint "Snowcem - Plus" of M/s Snowcem India Ltd., or approved equivalent of required shade, complete as per direction of Engineer-in-Charge.	Sq.m.	50	65	3 250

S.No.	Description	Unit	Qty	Rate	Amount
1.11.12	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete	Sq.m.	16 638	131	21 79 578
1.11.13	Painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.				
	Two coats.	Sq.m.	16 638	82	13 64 316
1.11.14	Providing and finishing walls at all heights with textured exterior finish of following specifications: (i) One coat of priming coat of exterior primer @ 2.20 litre/ 10 Sq.m.. (ii) Application of 2mm thick Texture materials of approved pattern/ finish having a minimum specific gravity of 1.9kg/ litre, solid contents in the range of 82-85%. (iii) Final coats (Two or more) of Exterior paint (APEX of Asian or approved equivalent) of approved make and shade @ 3.28 litre/ 10Sq.m.. all complete as per specifications and directions of Engineer-in-Charge.	Sq.m.	850	166	1 41 100
1.11.15	Finishing with Epoxy paint (two or more coats) of approved colour and shade at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete.				
1.11.15.1	On steel work	Sq.m.	3 450	135	4 65 750
1.11.15.2	Providing and Distempering two or more coats on new work with 1st quality acrylic distemper, having VOC (Volatile Organic Compound) content less than 50 grams/ liter, of approved brand and manufacture, and of required shade and colour at all floors, including applying additional coats wherever required, to achieve even shade and colour, complete as per manufacturer's specification and direction of Engineer-in-Charge.	Sq.m.	100	55	5 500
1.11.16	Painting with synthetic enamel paint, having VOC (Volatile Organic Compound) content less than 150 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.	Sq.m.	207	83	17 181
1.11.17	Providing and fixing Glass reinforced concrete (GRC) screens synthetic rubber/ FRP moulded in size, pattern, design, thickness and colour of approved quality/ make. The screens made of 53 grade white cement, quartz, fine silica sand, alkali resistant glass fibre, super plasticiser, polymers and UV resistant synthetic inorganic pigments etc. including dry fixing with stainless steel 304 grade "L" shaped cramps, dash fasteners etc. complete.	Sq.m.	130	3100	4 03 000

S.No.	Description	Unit	Qty	Rate	Amount
1.12	Aluminium Work				
1.12.1	Providing and fixing anodised aluminium work (anodised transparent or dyed to required shade according to IS : 1868 minimum anodic coating grade AC 15) for doors, windows, ventilators, louvers and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-Charge. (Glazing, paneling and dash fasteners to be paid for separately).				
1.12.1.1	For fixed portion	kg	4 564	392	17 89 088
1.12.1.2	For shutters of doors, windows, louvers & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber/ neoprene gasket required (Fittings shall be paid for separately)	Kg	2 363	458	10 82 254
1.12.2	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber/ neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer-in-Charge. (Cost of aluminium snap beading shall be paid in basic item)				
1.12.2.1	With float glass panes of 4.0 mm thickness	Sq.m.	20	818	16 360
1.12.2.2	With float glass panes of 5.5-6.0 mm thickness	Sq.m.	215	1108	2 38 220
1.12.3	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6 mm thick toughened glass, Light transmission 30% to 35%, Reflection external 15% to 20%, Reflection Internal 10% to 15%, Solar factor less than 0.20 and U value 1.6 to 1.7) or equivalent both side, having 12 mm air gap, including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.	Sq.m.	222	3504	7 77 888
1.12.4	Providing and fixing double action hydraulic floor spring of approved make conforming to IS : 6315 and having minimum life cycles of 5 lacs, having brand logo embossed on the body/ plate with double spring mechanism and door weight upto 120 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and with stainless steel cover plate minimum 1.25 mm thickness, with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.	Each	3	2267	6 801
1.12.5	Providing and filling the gap upto 5 mm depth and 5 mm wide in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality complete as per drawings and direction of Engineer-in-Charge.	Metre	1 380	69	95 220
1.12.6	Providing and fixing stainless steel (SS 304 grade) adjustable friction window stays of approved make with necessary stainless steel screws etc. to the side hung windows as per direction of Engineer-in-Charge complete.				
1.12.6.1	355 X 19 mm	Each	160	262	41 920
1.12.6.2	510 X 19 mm	Each	265	677	1 79 405
1.12.7	Providing and fixing 100 mm brass locks of approved make for aluminium doors including necessary cutting and making good etc. complete.	Each	6	396	2 376

S.No.	Description	Unit	Qty	Rate	Amount
1.12.8	Providing and fixing anodised aluminium (anodised transparent or dyed to required shade according to IS : 1868 Minimum anodic coating of grade AC 15) sub frame work for windows and ventilators with extruded built up standard tubular sections of approved make conforming to IS : 733 and IS : 1285 fixed with rawl plugs and stainless steel screws etc.	kg	1 600	348	5 56 800
1.12.9	Providing and fixing Anodised (AC 15) aluminium casement windows fastener of approved make and required length for aluminium windows with necessary screws etc. all complete as per direction of Engineer-in-Charge.	Each	335	57	19 095
1.12.10	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved make, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, including all patch fittings, all complete as per drawings, direction of Engineer-in-charge (Door handle, lock and stopper etc. to be paid separately).	Sq.m.	12	5085	61 020
1.12.11	Providing and supplying aluminium extruded tubular and other aluminium sections as per the architectural drawings and approved shop drawings , the aluminium quality as per grade 6063 T5 or T6 as per BS 1474, including super durable powder coating of 60-80 microns conforming to AAMA 2604 of required colour and shade as approved by the Engineer-in-Charge. (The item includes cost of material such as cleats, sleeves, fasteners screws etc as desired. necessary for fabrication of extruded aluminium frame work. Nothing extra shall be paid on this account).	kg	960	373	3 58 080
1.12.12	Designing, fabricating, testing, protection, installing and fixing in position semi (grid) unitized system of structural/ curtain wall glazing (with open joints) for linear as well as curvilinear portions of the building for all heights and all levels, including:				
	a) Structural analysis & design and preparation of shop drawings for the specified design loads conforming to IS 875 part III (the system must passed the proof test at 1.5 times design wind pressure without any failure), including functional design of the aluminum sections for fixing glazing panels of various thicknesses, aluminium cleats, sleeves and splice plates etc. gaskets, screws, toggles, nuts, bolts, clamps etc., structural and weather silicone sealants, flashings, fire stop (barrier)-cum-smoke seals, microwave cured EPDM gaskets for water tightness, pressure equalization & drainage and protection against fire hazard including:				
	b) Fabricating and supplying serrated M.S. hot dip galvanized/ Aluminium alloy of 6005 T5 brackets of required sizes, sections and profiles etc. to accommodate 3 Dimensional movement for achieving perfect verticality and fixing structural glazing system rigidly to the RCC/ masonry/structural steel framework of building structure using stainless steel anchor fasteners/ bolts, nylon separator to prevent bimetallic contacts with nuts and washers etc. of stainless steel grade 316, of the required capacity and in required numbers.				
	c) Providing and filling, two part pump filled, structural silicone sealant and one part weather silicone sealant compatible with the structural silicone sealant of required bite size in a clean and controlled factory / work shop environment , including double sided spacer tape, setting blocks and backer rod, all of approved grade, brand and manufacture, as per the approved sealant design, within and all around the perimeter for holding glass				
	d) Providing and fixing in position flashings of solid aluminium sheet 1 mm thick and of sizes, shapes and profiles, as required as per the site conditions, to seal the gap between the building structure and all its interfaces with curtain glazing to make it watertight.				

S.No.	Description	Unit	Qty	Rate	Amount
	e) Making provision for drainage of moisture/ water that enters the curtain glazing system to make it watertight, by incorporating principles of pressure equalization, providing suitable gutter profiles at bottom (if required), making necessary holes of required sizes and of required numbers etc. complete. This item includes cost of all inputs of designing, labour for fabricating and installation of aluminium grid, installation of glazed units, T&P, scaffolding and other incidental charges including wastages etc., enabling temporary structures and services, cranes or cradles etc. as described above and as specified. The item includes the cost of getting all the structural and functional design including shop drawings checked by a structural designer, duly approved by Engineer-in-charge.				
	The item also includes the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working structural glazing as specified, cleaning and protection till the handing over of the building for occupation. In the end, the Contractor shall provide a water tight structural glazing having all the performance characteristics etc. all complete as required, as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer-in-Charge.				
	Note :-				
	1- The cost of providing extruded aluminium frames, shadow boxes, fire stop (barrier)-cum-smoke seals, extruded aluminium section capping for fixing in the grooves of the curtain glazing and vermin proof stainless steel wire mesh shall be paid for separately under relevant items under this sub-head. However, for the purpose of payment, only the actual area of structural glazing (including width of grooves) on the external face shall be measured in Sq.m.. up to two decimal places.				
	2- The following performance tests are to be conducted on structural glazing system if area of structural glazing exceeds 2500 Sq.m. from the certified laboratories accredited by NABL (National Accreditation Board for Testing and Calibration laboratories) Department of Science & Technologies, India. The NIT approving authority will decide the necessity of testing on the basis of cost of the work, cost of the test and importance of the work.				
	Performance Testing of Structural glazing system:				
	Tests to be conducted in the NABL certified laboratories				
	1-Performance laboratory Test for air Leakage Test (-50pa to 300pa) & (+50pa to +300pa) as per ASTM E-283-04 testing method for a range of testing limit 1to 200mVhr".				
	2- Static Water Penetration Test (50pa to 1500pa) as per ASTM E-331-09 testing method for a range upto 2000ml"				
	3- Dynamic Water penetration (50pa to 1500pa) as per AAMA 501.01-05 testing method for a range upto 2000ml				
	4- Structural Performance Deflection and deformation by static air pressure test (1.5 times design wind pressure without any failure) as per ASTM E-330-10 testing method for a range upto 50mm"				
	5- Seismic Movement Test (Upto 30mm) as per AAMA 501.4-09 testing method for Qualitative test. Tests to be conducted on site				
	6- On site Test for Water leakage for a pressure range 50 kpa to 240kpa (35psi) upto 2000ml'	Sq.m.	120	2659	3 19 080

S.No.	Description	Unit	Qty	Rate	Amount
1.12.13	Providing, assembling and supplying vision glass panels (IGUs) comprising of hermetically-sealed 6-12-6 mm insulated glass (double glazed) vision panel units of size and shape as required and specified, comprising of an outer toughened/heat strengthened(as approved) glass 6mm thick, of approved colour and shade with reflective soft coating on surface # 2 of approved colour and shade, an inner toughened/heat strengthened(as approved) clear float glass 6mm thick, spacer tube 12mm wide, desiccants, including primary seal and secondary seal (structural silicone sealant) etc. all complete for the required performances, as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer-in-Charge. The IGUs shall be assembled in the factory/ workshop of the glass processor. (Payment for fixing of IGU Panels in the curtain glazing is included in cost of item No.1.8.16 above). For payment, only the actual area of glass on face # 1 of the glass panels (excluding the areas of the grooves and weather silicone sealant) provided and fixed in position, shall be measured in Sq.m.. (To be fixed on extruded aluminium sections. and cost of aluminium sections to be paid in relevant item)				
	High performance tinted toughened/ heat strengthened (as approved) glass 6mm thick clear substrate with double silver reflective soft coating on face-2 surface, + 12mm Airgap + 6mm clear toughened//heat strengthened(as approved) Glass of approved make having properties as visible Light transmittance (VLT) of more than or equal to 40%, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, SHGC less than 0.25 and U value of less than OR equal to 1.60 W/m2 degree K etc. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	Sq.m.	120	5933	7 11 960
1.12.14	Providing and fixing self adhesive type frosted glass film of 3M make or approved equivalent, in required pattern over glass etc. as per drawings, including cleaning the receiving surface of glass etc., all complete as per manufacturer's specification and direction of Engineer in charge:				
1.12.14.1	Plain frosted film	Sq.m.	10	901	9 010
1.12.14.2	Colored frosted film	Sq.m.	20	1060	21 200
1.13	Water Proofing				
1.13.1	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying: (a) First layer of slurry of cement @ 0.488 kg/Sq.m. mixed with water proofing cement compound @ 0.253 kg/Sq.m.. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/Sq.m. mixed with water proofing cement compound @ 0.126 kg/Sq.m.. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	Sq.m.	395	329	1 29 955

S.No.	Description	Unit	Qty	Rate	Amount
1.13.2	Providing and laying integral cement based water proofing treatment with average thickness of 120 mm and minimum thickness at khurra as 65 mm. (Plan area between inner faces of parapet shall be measured for payment) including preparation of surface as required for treatment of roofs balconies, terraces etc. consisting of the following operations: (i) Applying and grouting a slurry coat of neat cement using 2.75 kg/Sq.m. of cement admixed with approved water proofing compound conforming to IS: 2645 over the RCC slab including cleaning the surface before treatment. (ii) Laying cement concrete using broken bricks/ brick bats 25 mm to 115 mm size with 50 % of cement mortar 1:5 (1 cement :5 coarse sand) admixed with approved water proofing compound conforming to IS : 2645 over 20 mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse sand) admixed with proprietary water proofing compound conforming to IS: 2645 to required slope and treating similarly the adjoining walls upto 300mm height including rounding of junctions of walls and slabs.				
	(iii) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ Sq.m. of cement admixed with approved water proofing compound conforming to IS: 2645. (iv) Finishing the surface with 20mm thick joint-less cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with approved water proofing compound conforming to IS : 2645, including laying glass fiber cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making of 300x300 mm square and 3 mm deep. (v) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge.	Sq.m.	1 835	1142	20 95 570
1.13.3	Providing and laying 3 mm thick APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3 mm thick water proofing membrane, black finished reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/Sq.m. by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ litre and viscosity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc, and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 650/ 450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D-5147. The laying of membrane shall be got done through the authorized applicator of the manufacturer of membrane, all complete as per specifications and direction of Engineer-in-Charge.	Sq.m.	135	460	62 100
1.14	Road Work				
1.14.1	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm. depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth lead upto 50 Metres.	Sq.m.	15 625	99	15 46 875
1.14.2	Supplying and stacking the following at site as per direction of Engineer-in-Charge.				
1.14.2.1	90 mm to 45 mm size stone aggregate	Cu.m.	1 950	1474	28 74 300
1.14.2.2	63 mm to 45 mm size stone aggregate	Cu.m.	1 420	1599	22 70 580
1.14.2.3	53 mm to 22.4 mm size stone aggregate.	Cu.m.	1 420	1702	24 16 840
1.14.2.4	Stone screening 13.2 mm nominal size (Type A).	Cu.m.	585	1661	9 71 685
1.14.2.5	Stone screening 11.2 mm nominal size (Type B).	Cu.m.	300	1613	4 83 900

S.No.	Description	Unit	Qty	Rate	Amount
1.14.3	Supplying and stacking moorum at site & filling the same in pit all complete, as per direction of Engineer-in-Charge.	Cu.m.	470	710	3 33 700
1.14.4	Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3 wheeled road/ vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening/ binding material to fill up interstices of coarse aggregate, watering and compacting to the required density, all complete as per drawings, specifications and direction of Engineer-in-Charge.	Cu.m.	3 900	495	19 30 500
1.14.5	Scarifying metalled (water bound) road surface including disposal of rubbish lead upto 50 m and consolidation of the aggregate received from scarifying with power road roller of 8 to 10 tonne capacity.	Sq.m.	15 625	16	2 50 000
1.14.6	Providing and applying tack coat using hot straight run bitumen of grade VG - 10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications.				
1.14.6.1	On W.B.M @ 0.75 KG/Sq.m.	Sq.m.	15 625	40	6 25 000
1.14.6.2	On Bituminous surface @ 0.5 kg /Sq.m.	Sq.m.	10 000	30	3 00 000
1.14.7	Providing and laying Semi-Dense Bituminous Concrete using crushed stone aggregates of specified grading, in 25 mm compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.	Sq.m.	780	200	1 56 000
1.14.8	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, 40/50 mm compacted thickness with bitumen of grade VG-30 @5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.	Cu.m.	500	8676	43 38 000
1.15	Softscape				
1.15.1	Supplying & stacking of dump manure at site including royalty and carriage upto all lead and lift (manure measured in stacks will be reduced by 8% for payment)				
1.15.1.1	Screened through sieve of I.S. designation 20mm	Cu.m.	75	188	14 100
1.15.2	Fine dressing of the ground as directed by Engineer-in-Charge.	Sq.m.	2 000	2	4 000
1.15.3	Spreading of sludge, dump manure and/ or good earth in required thickness as per direction of Engineer-in-Charge (Cost of sludge, dump manure and / or good earth to be paid separately).	Cu.m.	675	34	22 950
1.15.4	Mixing earth and sludge or manure in the required proportion specified or directed by Engineer-in-Charge.	Cu.m.	675	24	16 200
1.15.5	Grassing with selection No.1 grass in rows 5 cm apart in both directions including watering and maintenance of the lawn for atleast 30 days till the grass forms a thick lawn, free from weeds and fit for mowing as per direction of Engineer-in-Charge. (Grass and earth shall be paid for separately).	Sq.m.	2 000	11	22 000

S.No.	Description	Unit	Qty	Rate	Amount
1.15.6	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, levelling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and levelling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately).	Cu.m.	250	144	36 000
1.15.7	Preparation of mounds of various size and shape by available excavated/ supplied earth in layers not exceeding 20 cm in depth, breaking clods, watering of Each layer, dressing etc., lead upto 50 meter and lift upto 1.5 m complete as per direction of Officer-in-charge.	Cu.m.	500	295	1 47 500
1.15.8	Supplying and stacking of selection No.1 doob grass at site fresh and free from weeds having proper roots.	Sq.m.	2 000	56	1 12 000
1.15.9	Providing best quality Ornamental Shurbs like Calliandra, Techoma Gaudi Chaudi, Astinfolia, Chandni, Hibiscus, Jatrupha etc. suitable for Delhi NCR including transportation to site, unloading, planting complete as per the direction of the Engineer-In-Charge.	Each	3 500	183	6 40 500
1.15.10	Providing the following Ornamental trees suitable for Delhi NCR including transportation to site, unloading, planting complete as per the direction of the Engineer-In-Charge.				
1.15.10.1	Polyalthia, 4-6 Ft	Each	50	307	15 350
1.15.10.2	Variiegata (purple flower) , 4-6 Ft	Each	50	307	15 350
1.15.10.3	Gulmohar, 4-6 Ft	Each	25	307	7 675
1.15.10.4	Longifoli, 4-6 Ft	Each	20	307	6 140
1.15.10.5	Cassia Fistula, 4-6 Ft	Each	25	369	9 225
1.15.10.6	Bismalkia nobilis, 4-6 Ft	Each	30	3201	96 030
1.15.10.7	Juniperus Chinensis, 4-5 Ft	Each	20	739	14 780
1.15.10.8	Bauhinia, 4-6 Ft	Each	20	307	6 140
1.15.10.9	Washinton Robusta, 2 Ft	Each	10	739	7 390
1.16	Miscellaneous Works				
1.16.1	Providing and laying factory made chamfered edge 60mm thick M 35 grade Cement concrete paver block of approved make and in approved colour, design & pattern & size/shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of fine sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with fine sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand in footpath, parks, lawns, drive ways or light traffic parking etc. complete as per manufacturer's specifications, drawings & direction of Engineer-in-Charge.	Sq.m.	1 500	834	12 51 000
1.16.2	Providing and fixing at all levels and locations ETA approved 10mm dia universal anchor fastener HRD of Hilti make and of appropriate length suitable for tensile/ shear load range upto 1KN and usage in hollow masonry/ solid masonry/ cracked & non-cracked concrete/ Aerated Concrete blocks, comprising of polyamide PA 6 grade sleeve with flat anti-rotation wings and 6.8 grade double thread screw made of carbon steel galvanized to minimum 5 microns, with countersunk/ hex head, all complete as per direction of Engineer-in-Charge.	Each	10	185	1 850

S.No.	Description	Unit	Qty	Rate	Amount
1.16.3	Providing and fixing at all levels and locations CHEMICAL ANCHOR FASTENERS of approved make consisting of Galvanized threaded rod 5.8 grade or more, cold formed(with minimum thickness of galvanizing of 5 microns) and chemical, suitable to be used in cracked concrete as per manufacturer's specification, packed in dual foil type, to be used with the help of dispenser o, including all accessories like nuts, washers etc. of required size., testing, necessary scaffolding, drilling of the holes in concrete surface with electric drill, cleaning of holes with air blowout & wire-brush and making good any damage done to the structure etc, all complete as per direction of Engineer in charge				
1.16.3.1	with dispenser of 12mm diameter and 110mm standard embedment depth	Each	10	355	3 550
1.16.3.2	with dispenser of 16mm diameter and 125mm standard embedment depth	Each	10	481	4 810
1.16.3.3	with dispenser of 20mm diameter and 170mm standard embedment depth	Each	10	1053	10 530
1.16.4	Supplying, fabricating and fixing in position at all levels, M.S. Metal Inserts (MS grade E250A confirming to IS : 2062) with lugs, of any shape made out of plates, flats, rolled sections, pipes etc. including providing necessary templates, staging, cutting straightening if required, bolting, welding as required and embedding in position on Plain and/or reinforced cement concrete members as required, inclusive of adjusting shuttering & reinforcement/any other fixture, welding wherever necessary, tying and holding to correct level, line and position, any auxiliary dummy structures to support the heavy inserts, painting exposed surfaces with Red Oxide Zinc Chromate primer etc., all complete as per specifications and direction of Engineer-in-Charge.	MT	5	100000	5 00 000
1.16.5	Supplying, fabricating, fixing and keeping in position at all levels and locations Threaded Anchor Bolts confirming to IS : 1367 (minimum 10.9 grade) of all diameters and nomenclature, including nuts, washers, anchor plates, pipe sleeves etc. in foundations, columns, pedestals, slabs, beams, walls etc. or any other place as directed, including cutting, straightening if required, turning from relevant size MS rounds to required diameter, threading, welding, providing necessary templates and auxiliary dummy structures, if any, necessary tying and welding with reinforcement, adjustment of shuttering & reinforcement/any other fixture, greasing exposed metal surfaces, covering bolts and packing the sleeves with jute cloth etc. all complete as per specifications and direction of Engineer-in-Charge.	MT	5	111900	5 59 500
1.16.6	Carriage of rock as obtained from the excavations by manual labour including loading, unloading for upto 100 Metre lead inclusive of all lift complete as per direction of Engineer in-Charge.	Cu.m.	400	239	95 600
1.16.7	Demolishing cement concrete (Nominal concrete 1:4:8 or leaner mix (including equivalent design mix) manually/ by mechanical means including disposal of material at all leads within site premises as per direction of Engineer-in-Charge.	Cu.m.	10	679	6 790
1.16.8	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material at all leads within site premises as per direction of Engineer-in-Charge.	Cu.m.	10	1605	16 050
1.16.9	Extra for cutting reinforcement bars manually/ by mechanical means in R.C.C. or R.B. work (Payment shall be made on the cross sectional area of R.C.C. or R.B. work) as per direction of Engineer-in-Charge.	Sq.m.	10	553	5 530
1.16.10	Demolishing brick work in cement mortar manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material at all leads within site premises as per direction of Engineer-in-Charge.	Cu.m.	10	930	9 300
1.16.11	Supplying at site Angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10 cm length and drilling holes upto 10 mm dia. etc. complete.	kg	42 900	68	29 17 200
1.16.12	Supplying and fixing turn buckles and straining bolts for barbed wire fencing.	Set	1 260	166	2 09 160

S.No.	Description	Unit	Qty	Rate	Amount
1.16.13	Providing and fixing G.I. barbed wire fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires, of barbed wire weighing 9.38 kg per 100 m (minimum), between the two posts fitted and fixed with G.I. staples, turn buckles etc. complete. (Cost of posts, struts, earth work and concrete work to be paid for separately). Payment to be made per Metre cost of total length of barbed wire used.	Metre	67 420	14	9 43 880
1.16.14	Providing and fixing concertina coil fencing with punched tape concertina coil minimum 600 mm dia and 10 meter openable length, having minimum 50 nos rounds per 6 meter length, upto 3 m height of wall with existing angle iron 'Y' shaped placed 2.4 m to 3.00 m apart and with at least 9 horizontal R.B.T. reinforced barbed wire of minimum thickness 0.52 mm, stud tied with G.I. staples and G.I. clips to retain horizontal, including necessary bolts or G.I. barbed wire tied to angle iron, with reinforced barbed tape (R.B.T.), Spring core (minimum 2.5mm thick) wire of high tensile strength of 165 kg/ sq.mm or more with RBT tape and weight >43.478 gm/ meter (cost of M.S. angle shall be paid separately), all complete as per drawing and direction of Engineer-in-charge. Length of fenced perimeter shall be measured for payment.	Metre	1 245	281	3 49 845
1.16.15	Dry stone pitching 22.5 cm thick including supply of stones and preparing surface complete.	Sq.m.	180	551	99 180
1.16.16	Providing and laying tactile tile (for vision impaired persons as per relevant standards) of approved make and size 300x300x9.8mm and conforming to IS: 15622 in approved colours and shades in laid on 20mm thick base of cement mortar 1:4 (1cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white/ grey cement mixed with matching pigments etc. all complete as per drawings, specifications and direction of Engineer-in-Charge.	Sq.m.	150	1600	2 40 000
1.16.17	Providing and fixing 10x10x7.50 cm Granite stone block hand cut and chisel dressed on top, for paving in floors, drains etc. laid over 20mm thick base mortar 1:4 (1cement:4 coarse sand) with joints 10mm wide filled with same mortar including ruled pointing etc. complete as per direction of Engineer-in-Charge.	Sq.m.	200	1539	3 07 800
1.16.18	Providing and fixing G.I. chain link fabric fencing made of G.I. wire of dia. 4 mm, PVC coated to achieve outer dia not less than 5 mm in required colour and shade and of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge	Sq.m.	200	656	1 31 200
1.16.19	Providing and laying at or near ground level factory made kerb stone of approved make of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-Charge (length of finished kerb edging shall be measured for payment).	Cu.m.	130	5530	7 18 900
1.16.20	Providing, laying and making kerb channel 30 cm wide and 50 mm thick with cement concrete 1:3:6 (1 cement: 3 coarse sand:6 graded stone aggregate 20 mm nominal size) over 75mm bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including finishing the top smooth etc. complete and as per direction of Engineer-in-charge.	Sq.m.	10	422	4 220
1.16.21	Providing and fixing in position Precast Concrete Benches of M-30 grade cement concrete including joining together of all parts with galvanisd nuts, reinforcement of all components, sealing of bolts after assembly etc. all complete as per drawings and direction of Engineer-in-Charge.				
1.16.21.1	Chair Bench with Back Rest in Decorative Finish having the following specifications:				

S.No.	Description	Unit	Qty	Rate	Amount
	(i) Each bench consists of 2 Nos.L-shape base support of grey colour (thickness: 100 mm, Back height: 1000 mm, front height: 450 mm, Base width: 620 mm) and 5 Nos. reinforced concrete planks of red color of size 1500mm X 100mm X 50mm and 1 No. reinforced concrete planks of red color of size 1500mm X 200mm X 50mm				
	(ii) Overall Dimensions: Seating length of the Bench:1500 mm; Seating height of the Bench:450 mm; Total height of the Bench:1000 mm				
	(iii) Bench top and back planks are treated with special anti-corrosive, water proof coating so as to make surfaces glossy and water proof				
	(iv) All components are manufactured by using M-30 grade of Concrete using vibro compaction process	Each	20	7420	1 48 400
1.16.21.2	S-shaped Bench having the following specifications:				
	(i) Overall Dimensions: Sitting Platform size - 2825mm length X 400 mm width X 50mm Thickness; Leg size - 400mm Height X 400mm Width X 80/55mm thickness; Sitting height is 450 mm				
	(ii) Sitting Platform is of Red colour while the legs are of grey colour				
	(iii) Treated with special anti-corrosive, water proof coating so as to make the surface glossy and water proof	Each	4	7950	31 800
1.16.22	Providing and fixing in position Precast Bollards of following specifications with M-30 grade cement concrete manufactured by vibro compaction method using FRP/steel moulds, so as to achieve shuttering finish including reinforcement for anchoring to the ground, necessary nuts & bolts etc. all complete as per drawings.				
1.16.22.1	Cylindrical Bollards having overall dimensions: 950 mm height and 150 mm dia and reinforced with 4 Nos 8 mm dia 950 mm long tor steel bars, 4 Nos 12 mm dia 450 mm long tor steel bars, & 4 Nos 4 mm dia stirrups at 150mm c/c as per direction of Engineer-in-Charge.	Each	20	1590	31 800
1.16.22.2	Spherical Bollards having overall dimensions: 880 mm height with stem height 430 mm and 450 mm dia and reinforced with 4 Nos 12 mm dia TMT bars as per direction of Engineer-in-Charge.	Each	20	2650	53 000
1.16.23	Providing and fixing in position Precast Concrete Dust Bin of 750 mm height and 420 mm top diameter, manufactured from logo embedded FRP and the base manufactured from M-30 grade cement concrete including reinforcement of the base to promote long use and to prevent damage during handling & transportation, necessary nuts & bolts etc. all complete as per drawings and direction of Engineer-in-Charge.	Each	12	1590	19 080
1.16.24	Providing and fixing following park playing equipment of approved make as per direction of Engineer in charge				
1.16.24.1	Providing and fixing in position FRP Wave Slide with hand grip of approved design and make of minimum 2400mm x 600mm and overall minimum height of 1650mm from ground consisting of FRP Slide Chute, MS Platform, MS Ladder, MS Frame, support pipes and MS base plates of including fixing Each supporting leg/ anchoring arm of playing instrument with foundation angle/ base angle/ base plate etc. in concrete blocks of specified size as per drawings and direction of Engineer-in-Charge. (Excavation for concreting and Concrete work shall be measured seperately for payment)	Each	4	34238	1 36 952
1.16.24.2	Providing and fixing in position double post Swing of approved design and make of minimum 3000mm x 1200mm x 2700mm size consisting of vertical supports, horizontal top pipe, chain, S-hooks, molded anti skid rubber seat including fixing Each supporting leg/ anchoring arm of playing instrument with foundation angle/ base angle/ base plate etc. in concrete blocks of specified size as per drawings and direction of Engineer-in-Charge. (Excavation for concreting and Concrete work shall be measured seperately for payment)	Each	4	26500	1 06 000

S.No.	Description	Unit	Qty	Rate	Amount
1.16.24.3	Providing and fixing in position sea saw (4 seater) of approved design and make of minimum size 1800mm x 1500mm consisting of MS Frame, MS support pipes along with its cantilever and MS handles, 3mm thick FRP sitting seats complete with old tyres system to make it jerk proof including fixing Each supporting leg/ anchoring arm of playing instrument with foundation angle/ base angle/ base plate etc. in concrete blocks of specified size as per drawings and direction of Engineer-in-Charge. (Excavation for concreting and Concrete work shall be measured seperately for payment)	Each	4	9010	36 040
1.16.24.4	Providing and fixing in position FRP Merry Go Round (MGR) of approved design and make of minimum area 2400mm dia and overall minimum 900mm height from ground consisting of FRP platform (minimum 5mm thick) with necessary platform and center MS supports, MS railing over platform including fixing Each supporting leg/ anchoring arm of playing instrument with foundation angle/ base angle/ base plate etc. in 1:11/2:3 grade concrete block of 450mm x 450mm x 450mm size excavation for concrete block pit, curing etc. all complete. (Excavation for concreting and Concrete work shall be measured seperately for payment)	Each	2	36570	73 140
1.16.24.5	Providing and fixing in position Climbers of approved design and make of minimum size 3000mm x 1800mm x 600mm consisting of vertical supports, horizontal top pipe with hooks and frames for hanging, including fixing Each supporting leg/ anchoring arm of playing instrument with foundation angle/ base angle/ base plate etc. in concrete blocks of specified size as per drawings and direction of Engineer-in-Charge. (Excavation for concreting and Concrete work shall be measured seperately for payment)	Each	4	27560	1 10 240
1.16.25	Providing & Laying of GrassCrete GC-1,4" Grass Crete formers type, 100 mm deep laid on a consolidated sub-base with a 20mm blinding layer of sand. Steel mesh reinforcement to BS4483 reference A193 (10mm dia), weighing 4.27kgs/m2. Concrete 30MN/m2 at 28 days with air entrainment of 3%. 10mm maximum aggregated and 100mm slump placed around formers and mesh and leveled to tops of formers. Void Former size: 600x600x100mm, Paving Depth: 100mm Reinforcement: A193 ,Concrete Coverage: 15.50m2/m3 Topsoil Coverage: 18m2/m3	Sq.m.	250	2281	5 70 250
					22 33 34 708

Name of Work: Composite work for Construction of NCR Biotech Science Cluster Phase-II works at Faridabad, Haryana

S.No.	Description	Unit	Qty	Rate	Amount
2.1	Sanitary Installation				
2.1.1	Providing, fixing, testing and commissioning white vitreous china battery based infrared sensor operated urinal of make Hindware Cat no. 60018 or approved equivalent, having pre & post flushing with water (250 ml & 500 ml consumption), concealed water inlet from back side, ncluding C.I. hangers, 15mm dia inlet to built in spreaders with inbuilt waste with C.P flange, C.P Brass union and all accessories for fixing the urinal basin, cutting and making the walls and floors, wherever required. Gap between fixtures and walls shall be filled up with approved polysulphide sealant.	Each	6	18 198	1 09 188
2.1.2	Providing, fixing, testing and commissioning of white coloured vitreous china wall mounted water closet of make Hindware Cat No 20040 or approved equivalent with dual flush fitting, of flushing capacity 2 litre/ 4 litre including flush pipe, concealed cistern with lid concealo 80 mm, conforming to IS : 7231, including 15 mm CP brass heavy quality angular stop cock with wall flange of make Jaquar Cat No 5053N or approved equivalent with all fittings and fixtures complete, including cutting and making good the wall and floors wherever required. Gap between fixtures and walls shall be filled up with approved polysulphide sealant.	Each	40	15 120	6 04 800
2.1.3	Providing, fixing, testing and commissioning white Vitreous China wash basin of make Hindware Model No. 10049 or approved equivalent under counter basin, with C.I. concealed type brackets fixed to walls with GI rag bolts or approved fasteners etc., including 32 mm CP brass waste coupling of make Jaquar Model No. 709 or approved equivalent inlet connection with 80 mm height, 32 mm heavy quality CP brass bottle trap with cleaning eye, extension piece and wall flange of make Jaquar Cat. No. 769L300x190 or approved equivalent, 15 mm CP brass heavy quality angular stop cock with wall flange make Jaquar Cat No 5053N or approved equivalent, including painting of fittings and brackets including cutting and making good the wall and floors wherever required. Gap between fixtures and walls shall be filled up with approved polysulphide sealant.	Each	43	5 582	2 40 026
2.1.4	Supply, installation, testing and commissioning of CP Auto closing type Pillar Cock of Jaquar- Model No PRS-031 or approved Equivalent, with 450 mm long SS braided flexible connection pipe complete in all respect including cutting and making good the walls wherever required.	Each	35	2 006	70 210
2.1.5	Providing and fixing stainless steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I. Brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required.				
	Kitchen sink with drain board				
	510 x 1040 mm bowl depth 250 mm	Each	4	4 546	18 184
2.1.6	Providing and fixing 40 mm dia semi-rigid P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.	Each	4	90	360
2.1.7	Providing and fixing 600x450 mm beveled edge mirror of superior glass of approved quality and approved make complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	Each	43	902	38 786
2.1.8	Providing and fixing CP Double Coat Hook of make Jaquar Cat No. AKP-35761P or approved equivalent including screws, washers and rawl plug etc., all complete.	Each	40	796	31 840
2.1.9	Providing, fixing, testing and commissioning of C.P. brass health faucet assembly of Jaquar Cat No. ALD-573 or approved equivalent, including fixing of Wall hook and 1 meter long flexible tube, all complete.	Each	40	1 729	69 160
2.1.10	Providing, fixing, testing and commissioning of brass single flow shower make Jacquar Cat. No. OHS-1999 or approved equivalent with revolving ball joint and 190 mm long branch light body shower arm make Jaquar Cat. No. SHA-477 or approved equivalent in chrome finish including required accessories and fittings, all complete.	Each	20	2 709	54 180

S.No.	Description	Unit	Qty	Rate	Amount
2.1.11	Providing, fixing, testing and commissioning of wall mounted low flow bath cum shower mixer fitting with diverter lever and bend, of make Jaquar Cat No. CON-273KNUPRGA or approved equivalent, for overhead shower connection including making connections with water supply, cutting and making good the walls wherever required all complete.	Each	20	3 503	70 060
2.1.12	Providing and fixing liquid soap dispenser of make Jaquar Cat No. AKP-35735P or approved equivalent including screws, washers and rawl plug etc., all complete.	Each	7	1 672	11 704
2.1.13	Providing and fixing stainless steel soap dish holder of make Jaquar Cat No. AKP-35731P or approved equivalent including screws, washers and rawl plug etc., all complete.	Each	20	1 015	20 300
2.1.14	Providing and fixing 600x120x5mm glass shelf with edges round off supported on anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	Each	5	633	3 165
2.1.15	Providing and fixing toilet paper holder of approved make of C.P. brass.	Each	6	425	2 550
2.1.16	Providing and fixing PTMT liquid soap container of approved make 109mm wide, 125mm high and 112mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour. weighing not less than 105 gms.	Each	8	152	1 216
2.1.17	Providing, fixing, testing and commissioning 15 mm dia C.P. two way bib cock with wall flange, of make Jaquar Cat No CON-041KN or approved equivalent, all complete.	Each	35	1 205	42 175
2.1.18	Providing, fixing, testing and commissioning of 15 mm dia CP brass long body bib cock with wall flange, of make Jaquar Cat No CON-107KN or approved equivalent, all complete.	Each	52	1 205	62 660
2.1.19	Supply and fixing 15mm CP brass Sink Cock with swinging casted spout with wall flange, of make Jaquar Cat No CON-347KN or approved equivalent including suitable length CP brass extension pipe, all complete.	Each	4	1 444	5 776
2.1.20	Supply and fixing 15mm S.S braided connection pipe 450 mm long with wall flange, of make Chilly CAT No. CSS-01 or approved equivalent, including brass union including Nuts & Rubber Washers, all complete.	Each	90	306	27 540
2.1.21	Providing and fixing 25 mm nominal bore ball valve (brass) of approved quality and of approved make, High or low pressure, with plastic floats, all complete.	Each	2	366	732
2.1.22	Providing and placing on terrace polyethylene water storage tank, at all levels and at all heights, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	Each	6 000	8	48 000
2.1.23	Providing and fixing C.P. 15 mm nominal bore brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.	Each	48	602	28 896
2.1.24	Providing and fixing 15mm nominal bore C.P. brass angle valve of approved make for basin mixer and geyser points of approved quality conforming to IS:8931	Each	18	525	9 450
2.1.25	Providing and fixing 100 mm Dia stainless steel jali (grating) Anti-Scratch of make Jayana Cat. No. NR 1 or approved equivalent with SS frame with or without hole to the inlet mouth of drainage pipes/ floor traps/ floor drains, waste pipe including cutting and making good the wall and floor, wherever required, all complete.	Each	75	424	31 800
2.1.26	Providing and fixing G.I floor drain consisting of 100x50mm G.I elbow, complete as per instructions. (Grating and G.I pipe to be paid separately)	Each	34	678	23 052
2.1.27	Supply, installation, testing and commissioning of 300 mm long Grab bar of make Jaquar Cat No. AKP-35701P or approved equivalent fixed to PVC rawl plug with C.P. brass screws, making holes in walls & making good the wall wherever required.	Each	2	1 851	3 702
2.1.28	Supply, installation, testing and commissioning of 600mm long towel rail of make Jaquar Cat No. AKP-35711P or approved equivalent fixed to PVC rawl plug with C.P. brass screws, making holes in walls & making good the wall wherever required.	Each	20	2 374	47 480
2.2	Water Supply				
2.2.1	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc. (Internal work – Exposed on wall)				

S.No.	Description	Unit	Qty	Rate	Amount
2.2.1.1	20 mm dia. nominal bore	Metre	350	247	86 450
2.2.1.2	25 mm dia. nominal bore	Metre	115	273	31 395
2.2.1.3	32 mm dia. nominal bore	Metre	175	340	59 500
2.2.1.4	40 mm dia. nominal bore	Metre	175	435	76 125
2.2.1.5	50 mm dia. nominal bore	Metre	30	521	15 630
2.2.2	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, concealed pipe, including painting with anti-corrosive bitumastic paint, cutting chases and making good the wall etc.				
2.2.2.1	15 mm dia. nominal bore	Metre	335	315	1 05 525
2.2.2.2	20 mm dia. nominal bore	Metre	175	349	61 075
2.2.3	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc.				
2.2.3.1	32 mm dia. nominal bore	Metre	50	273	13 650
2.2.4	Supply, installation, testing and commissioning forged brass ball valve with hard chrome plated ball inside PTFE (Teflon) seat & ring with chrome plated centre handle with female BSP threads complete in all respects.				
2.2.4.1	20 mm dia. nominal bore	Each	25	1 643	41 075
2.2.4.2	25 mm dia. nominal bore	Each	6	2 532	15 192
2.2.4.3	32 mm dia. nominal bore	Each	7	3 889	27 223
2.2.4.4	40 mm dia. nominal bore	Each	2	6 082	12 164
2.2.5	Painting G.I. pipes and fittings with synthetic enamel white paint of approved make with two coats over a ready mixed priming coat, both of approved quality for new work.				
2.2.5.1	20 mm diameter pipe	Metre	150	13	1 950
2.2.5.2	25 mm diameter pipe	Metre	115	17	1 955
2.2.6	Painting 32 mm diameter G.I. pipes and fittings with two of anti-corrosive bitumastic paint of approved quality and approved make.	Metre	50	12	600
2.2.7	Providing and filling sand of grading zone V or coarser grade all-round 32 mm dia. G.I. pipes in external work.	Metre	50	79	3 950
2.2.8	Supply, Erection, Testing & Commissioning of Automatic water level control panel & related accessories for pumping automation of single water tank consisting of automatic water level controller, level sensor of conductive stainless steel type probe, 25 mm motorized butterfly valve, motorized valve controller etc. all complete as per drawings and direction of Engineer-n-Charge.	Set	2	22 128	44 256
2.2.9	Providing, fixing, testing and commissioning pressurized type electric water heater of 15 litres capacity and of approved make confirming to IS: 2082 with copper sheet container, 25 mm thick insulation, stove enamelled M.S. jacket thermostatically controlled immersion heater with pilot neon lamp, suitable length of electrical cable and 15 amp 3 pin plug top, complete in all respect.	Each	21	10 765	2 26 065
2.3	Drainage				
2.3.1	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion.				
2.3.1.1	110 mm OD (working pressure 4kg/ cm ²) Single socketed pipes	Metre	175	261	45 675
2.3.2	Providing and fixing on wall face unplasticised PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion.				
2.3.2.1	Bend 87.5°				
	110 mm bend	Each	18	125	2 250
2.3.2.2	Shoe				
	110 mm shoe	Each	18	108	1 944

S.No.	Description	Unit	Qty	Rate	Amount
2.3.3	Providing and fixing unplasticised PVC pipe clips of approved design to unplasticised PVC rain water pipes by means of 50x50x50mm hard wood plugs, screwed with M.S. screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.				
2.3.3.1	110 mm OD	Each	154	200	30 800
2.3.4	Providing and fixing to the inlet mouth of rain water pipes cast iron grating 15 cm diameter and weighing not less than 440 grams.	Each	26	45	1 170
2.3.5	Providing and fixing 100 mm dia. centrifugally cast (spun) iron socket & spigot (S&S) pipe as per IS: 3989 for soil, waste and vent pipes.	Metre	375	1 017	3 81 375
2.3.6	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete				
	100 mm dia. Sand cast iron S&S as per IS - 3989	Each	19	425	8 075
2.3.7	Providing and fixing plain bend of required degree.				
	100 mm dia. Sand cast iron S&S as per IS : 3989	Each	125	370	46 250
2.3.8	Providing and fixing heel rest sanitary bend				
	100 mm dia. Sand cast iron S&S as per IS : 3989	Each	18	409	7 362
2.3.9	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete. 100 x 100 x 100 mm Sand cast iron S&S as per IS - 3989	Each	14	687	9 618
2.3.10	Providing and fixing single equal plain junction of required degree 100x100x100 mm Centrifugally cast (spun) Iron S&S as per IS: 3989	Each	4	635	2 540
2.3.11	Providing and fixing double equal plain invert branch of required degree: 100x100x100x100 mm Sand cast iron S&S as per IS - 3989	Each	2	709	1 418
2.3.12	Providing and fixing 100x100x100 mm Sand cast iron S&S as per IS - 3989 single equal plain invert branch of required degree	Each	2	575	1 150
2.3.13	Providing and fixing terminal guard				
	100 mm Centrifugally cast (spun) Iron S&S as per IS: 3989	Each	18	368	6 624
2.3.14	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of 100 mm diameter.	Each	450	342	1 53 900
2.3.15	Providing and fixing M.S. stays and clamps for sand cast iron/centrifugally cast (spun) iron pipes of 100 mm diameter.	Each	18	68	1 224
2.3.16	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors : 100 mm inlet and 100 mm outlet Sand cast iron S&S as per IS: 3989.	Each	43	1 141	49 063
2.3.17	Painting 100 mm diameter sand cast iron/ centrifugally cast (spun) iron soil, waste vent pipes and fittings with two coats of synthetic enamel paint of any colour such as chocolate grey, or buff etc. over a coat of primer (of approved quality) for new work.	Metre	200	45	9 000
2.3.18	Providing and fixing 100mm dia G.I. inlet fitting consisting of 100mm dia main G.I pipe with multiple G.I. sockets (Inlets) of required diameter welded to it as required and fixing the same to C.I trap and setting in cement concrete, complete as per direction of Engineer-in-Charge.	Each	35	417	14 595
2.3.19	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 finesand) including testing of joints etc. complete :				
2.3.19.1	150 mm diameter	Metre	50	361	18 050
2.3.19.2	200 mm diameter	Metre	390	467	1 82 130
2.3.20	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand: 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design:				

S.No.	Description	Unit	Qty	Rate	Amount
2.3.20.1	150 mm diameter	Metre	50	841	42 050
2.3.20.2	200 mm diameter	Metre	390	980	3 82 200
2.3.21	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design: 180x150 mm size P type With common burnt clay (non modular) bricks of class designation 7.5	Each	14	1 883	26 362
2.3.22	Supplying, laying, jointing, testing and commissioning non pressure NP2 class (light duty) R.C.C. pipes with collar jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) as per standard design all complete. (Concrete shall be paid separately)				
2.3.22.1	150 mm dia. R.C.C. pipe	Metre	260	394	1 02 440
2.3.22.2	250 mm dia. R.C.C. pipe	Metre	980	532	5 21 360
2.3.23	Constructing masonry Chamber 30x30x50 cm inside, in brick work in cement mortar 1:4 (1 cement :4 coarse sand) for stop cock, with C. I. surface box 100x100 x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1:3 (1cement : 3 coarse sand) 12mm thick, finished with a floating coat of neat cement complete as per standard design. With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	Each	2	1 319	2 638
2.3.24	Constructing brick masonry manhole with 7.5 class designation bricks in cement mortar 1:4 (1 cement : 4 coarse sand) RCC top slab with 1:2:4 mix (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size), foundation concrete 1:4:8 mix (1 cement: 4 coarse sand: 8 graded stone aggregate 40mm nominal size) inside and outside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design. Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg)	Each	9	9 526	85 734
2.3.25	Extra for depth for manholes size 90x80 cm with bricks of class designation 7.5	Metre	2	6 309	12 618
2.3.26	Constructing brick masonry circular type manhole 0.91m internal dia at bottom and 0.56 m dia at top with 7.5 class designation bricks in cement mortar 1:4 (1cement: 4 coarse sand), inside & outside cement plaster 12 mm thick with cement mortar 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 (1 cement:3 coarse sand: 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design. 0.91 m deep with SFRC cover and frame (Heavy duty grade HD-20 grade designation) 560 mm internal diameter conforming to IS 12592, total weight of the cover and frame to be not less than 182 Kg, fixed in cement concrete 1 : 2 : 4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering shuttering all complete. (Excavation and foot rests shall be paid separately)	Each	30	9 581	2 87 430
2.3.27	Supply and applying one coat of 4 mm thick anti rust pipe protection PYPKOAT or approved equivalent including approved primer as per manufactures specifications and lap of 25 mm to make an impermeable layer on G.I./M.S Pipes in trenches or structural /masonry members complete including surface preparation.				
2.3.27.1	150 mm dia	Metre	10	385	3 850
2.3.27.2	100 mm dia	Metre	10	278	2 780

S.No.	Description	Unit	Qty	Rate	Amount
2.3.27.3	80 mm dia	Metre	10	237	2 370
2.3.28	Extra depth for circular type manhole 0.91 m internal dia (at bottom) with bricks of class designation 7.5 Beyond 0.91 m to 1.67 m	Metre	1	5 419	5 419
2.3.29	Providing M.S. foot rests with 20x20 mm square bar including fixing in manholes with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) as per standard design.	Each	30	296	8 880
2.3.30	Constructing brick masonry road gully chamber 50x45 cm upto 600 mm depth with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal 50 mm thick light duty grating with frame of approved make and quality, complete as per drawing and direction of engineer in charge	Each	20	4 461	89 220

50 50 336

Name of Work: Composite work for Construction of NCR Biotech Science Cluster Phase-II works at Faridabad, Haryana

S.No.	Description	Unit	Qty	Rate	Amount
3.1	Internal Electrical work				
3.1.1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 Sqmm FRLS PVC insulated copper conductor single core cable in surface (on surface of wall/ slab, metal decking/ trusses etc as per site conditions with suitable fixing arrangement)/ recessed steel conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 Sqmm FRLS PVC insulated copper conductor single core cable etc as required.				
3.1.1.1	Group C	Point	638	1144	7 29 872
3.1.2	Wiring for light/ power plug with 2x4 sq. mm FRLS PVC insulated copper conductor single core cable in surface (on surface of wall/ slab, metal decking/ trusses etc as per site conditions with suitable fixing arrangement)/ recessed steel conduit alongwith 1 No 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Metre	2 500	264	6 60 000
3.1.3	Wiring for light/ power plug with 4x4 sq. mm FRLS PVC insulated copper conductor single core cable in surface (on surface of wall/ slab, metal decking/ trusses etc as per site conditions with suitable fixing arrangement)/ recessed steel conduit alongwith 2 No 4 sq. mm FRLS PVC insulated copper conductor single core cable for loop earthing as required.	Metre	450	404	1 81 800
3.1.4	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface (on surface of wall/ slab, metal decking/ trusses etc as per site conditions with suitable fixing arrangement)/ recessed medium class PVC conduit as required.				
3.1.4.1	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	Metre	1 100	227	2 49 700
3.1.4.2	4 X 2.5 sq. mm + 2 X 2.5 sq. mm earth wire	Metre	150	344	51 600
3.1.4.3	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	Metre	700	357	2 49 900
3.1.4.4	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	Metre	160	572	91 520
3.1.4.5	4 X 16 sq. mm + 2 X 6 sq. mm earth wire	Metre	50	1026	51 300
3.1.5	Suplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in surface (on surface of wall/ slab, metal decking/ trusses etc as per site conditions with suitable fixing arrangement)/ recessed medium class PVC conduit as required.				
3.1.5.1	2 X 1.0 sq. mm	Metre	8 500	25	2 12 500
3.1.5.2	2 X 1.5 sq. mm	Metre	1 800	41	73 800
3.1.5.3	3 X 1.5 sq. mm	Metre	5 500	55	3 02 500
3.1.6	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connection but excluding modular plate etc. as required.	Each	40	318	12 720
3.1.7	Wiring for twin control light point with 1.5 Sqmm FRLS PVC insulated copper conductor single core cable in surface (on surface of wall/ slab, metal decking/ trusses etc as per site conditions with suitable fixing arrangement)/ recessed steel conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 Sqmm FRLS PVC insulated copper conductor single core cable etc as required.	Point	10	1102	11 020
3.1.8	Wiring for twin control light point with 1.5 Sqmm FRLS PVC insulated copper conductor single core cable in surface (on surface of wall / slab, metal decking/ trusses etc as per site conditions with suitable fixing arrangement)/ recessed medium class PVC conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 Sqmm FRLS PVC insulated copper conductor single core cable etc as required.	Point	10	893	8 930
3.1.9	Supplying and fixing GI box along with modular base, cover plate, 1 no. 16A modular switch & 2 nos. 5/6A 3 pin sockets in recess etc as required.for computer terminal points.	Each	28	500	14 000
3.1.10	Supplying and fixing suitable size/ modules, GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps. modular socket outlet and 5/6 amps. Modular switch, connections etc. as required.	Each	107	334	35 738

S.No.	Description	Unit	Qty	Rate	Amount
3.1.11	Supplying and fixing suitable size/ modules, GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps. modular socket outlet and 15/16 amps. Modular switch, connections etc. as required.	Each	123	436	53 628
3.2	Electrical Panels & DB's				
3.2.1	Design, manufacture, supply, installation, testing and commissioning of wall/ floor maounted cubicle panels made out of 2 mm thick CRCA MS sheet steel complete with moulded case circuit breakers, meters, indicating lamps, current transformer etc. complete in all respects, insulated bus bars with heat shrinkable PVC sleeve in suitable bus chambers, interconnection, bus bar shrouds at joints, wiring, name plate, danger plate, earth bus etc. & comprising of compartments with hinged door for each feeder & its accessories, cable alley with hinged doors, bus chamber with bolted door etc. The panel shall be dust & vermin proof construction with rubber gasket, attractively powder coated with grey shade and having orange peel finish. The panel shall be as per drawings, Equipment schedule, specifications including all materials, accessories, loose supplied items, etc. as per specifications of this tender and directions of Engineer-in-Charge, including all additional items for completeness of the system, majorly comprising of following:				
3.2.1.1	SDB (L&P)-1				
	Incoming:				
	125 A, 4P MCCB 36 KA - 1 No.				
	200 A TPN AL. bus bar with coloured heat shrinkable PVC sleeve-1 Set				
	Outgoings:				
	100 A 3P MCCB, 36 KA - 0 Nos.				
	63 A 3P MCCB, 36 KA - 5 Nos.				
	Indication lamp RYB with selector switch etc as req.	Each	1	59822	59 822
3.2.1.2	SDB (L&P)-2				
	Incoming:				
	160 A, 4P MCCB 36 KA - 1 No.				
	200 A TPN AL. bus bar with coloured heat shrinkable PVC sleeve-1 Set				
	Outgoings:				
	100 A 3P MCCB, 36 KA - 1 Nos.				
	63 A 3P MCCB, 36 KA - 7 Nos.				
	Indication lamp RYB with selector switch etc as req.	Each	1	96207	96 207
3.2.2	Installation, testing and commissioning of Electrical cubicle panel board complete with, Air Circuit Breaker, moulded case circuit breakers, meters, indicating lamps, current transformer etc. complete in all respects, insulated bus bars with heat shrinkable PVC sleeve in suitable bus chambers, interconnection, bus bar shrouds at joints, wiring, name plate, danger plate, earth bus etc. & comprising of compartments with hinged door for each feeder & its accessories, cable alley with hinged doors, bus chamber with bolted door etc. Only the panel shall be supplied by the Owner. This item includes taking over of the panel, testing, cartage from the Owner's store to site including all additional items for completeness of the system, majorly comprising of following:				
	MDB (Only panel to be supplied by Owner) with following				
	Incoming:				
	800 A TP ACB, - 1 Nos.				
	Outgoings:				
	630 A 3P MCCB, 36 KA - 1 Nos.				
	160 A 3P MCCB, 36 KA - 2 Nos.				
	125 A 3P MCCB, 36 KA - 3 Nos.				
	Indication lamp RYB with selector switch etc as req.	Each	1	20000	20 000

S.No.	Description	Unit	Qty	Rate	Amount
3.2.3	Supply, installation, testing and commissioning of following LT distribution Panel Boards of 2 mm thick sheet steel cubical design for indoor mounting factory fabricated suitable for operation on 440V 3 phase, 50 Hz, A.C. supply with ACB/ MCCBs/ SFU/ MCBs/ contactors and other accessories, all in compartmentalised, cubical construction complete in all respects as per approved drawing and design including internal wiring, labels, ferrules, cable termination gland plates, earth terminals, painting etc. conforming to specifications.				
	Lift Panel (For 2 no. of lifts)				
	Incoming :				
	100A, TP MCCB (36 KA) - 1 No.				
	100A Change over - 1 No.				
	Bus Bar:-				
	1 Set of 150 Amps. TPN busbars of aluminium alloy with colour coded heat PVC shrinkable sleeves.				
	Outgoing:				
	63 A TP MCCB - 36 KA - 2 Nos.				
	32 A DP MCB - 10 KA - 2 No.				
	metering and indications:				
	The incomer MCCB shall be provided with the following:				
	Three (3) Nos. LED type Phase indicating lamps with protection 2A SP MCBs.- 3 set	Set	1	29669	29 669
3.2.4	Providing and fixing following rating and breaking capacity and pole MCCB in existing cubicle panel board including drilling holes in cubical panel, making connections, etc. as required.				
	100/63 Amp, 30 KA, FP MCCB	Each	1	5914	5 914
3.2.5	Supplying and fixing 12 Way Double Door prewired vertical type TP&N MCB distribution board of steel sheet for 415 volts on surface/recess complete with loose wire box, dust protected, duly powder painted, inclusive of 200 amps tinned copper busbar, common neutral link, earth bar, din bar for mounting MCB's, terminal connectors for all incoming and outgoing circuits, duly prewired with adequate size FRLS PVC insulated copper conductor up to terminal connector/neutral link, earthing etc as required (But without MCB/RCCB/ Isolator). (Note: Prewired vertical type MCB TPDB is normally used where 3 phase outlets are required)	Each	1	16293	16 293
3.2.6	Supplying and fixing following way prewired TP&N MCB distribution board of steel sheet for 415 volts on surface/recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FRLS PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, power painted including earthing etc. as required. (But without MCB/RCCB/ Isolator)				
3.2.6.1	8 way (4 + 24), Double door	Each	5	11480	57 400
3.2.6.2	12 way (4 + 36), Double door	Each	6	14102	84 612
3.2.7	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, MCB suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
3.2.7.1	Single Pole	Each	300	191	57 300
3.2.7.2	Triple pole	Each	8	772	6 176
3.2.8	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
3.2.8.1	40 Amps	Each	5	736	3 680
3.2.8.2	63 Amps	Each	6	748	4 488
3.2.9	Supplying and fixing double pole of 40 amps, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.	Each	33	1897	62 601

S.No.	Description	Unit	Qty	Rate	Amount
3.2.10	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps "C" curve, SP MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket outlet and complete with connections, testing and commissioning etc. as required.	Each	34	1081	36 754
3.2.11	Supplying and fixing 30 amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top along with 30 amps "C" curve, TP MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket outlet and complete with connections, testing and commissioning etc. as required.	Each	3	2745	8 235
3.2.12	Providing and fixing M.V. danger plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	Each	3	164	492
3.3	Cables				
3.3.1	Supply of the following 1.1 kV grade, Aluminium conductor, XLPE insulated, PVC sheathed, steel armoured cables as per IS 7098 Part-1 and as per technical specifications of this tender and directions of Engineer-in-Charge.				
3.3.1.1	4 x 6 sq mm	Metre	200	165	33 000
3.3.1.2	4 x 10 sq mm	Metre	100	209	20 900
3.3.1.3	4 x 16 sq mm	Metre	550	237	1 30 350
3.3.1.4	4 x 25 sq mm	Metre	30	314	9 420
3.3.1.5	3.5 x 50 sq mm	Metre	50	464	23 200
3.3.1.6	3.5 x 95 sq mm	Metre	100	783	78 300
3.3.1.7	3.5 x 120 sq mm	Metre	80	978	78 240
3.3.1.8	3.5 x 300 sq mm	Metre	1 200	2230	26 76 000
3.3.2	Laying and fixing of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective brick covering and refilling the trench etc. as required.				
3.3.2.1	Upto 35 sq. mm (clamped with 1 mm thick saddle)	Metre	600	227	1 36 200
3.3.2.2	Above 35 sq mm and upto 95 sq mm	Metre	100	236	23 600
3.3.2.3	Above 95 sq mm and upto 185 sq mm	Metre	80	246	19 680
3.3.2.4	Above 185 sq mm and upto 400 sq mm	Metre	1 200	274	3 28 800
3.3.3	Laying and fixing of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 KV grade on wall/ ceiling surface with MS clamps, nut bolts etc as required.				
3.3.3.1	Upto 35 sq. mm (clamped with 1 mm thick saddle)	Metre	280	28	7 840
3.3.3.2	Above 35 sq mm and upto 95 sq mm (clamped with 25x3mm MS flat clamp).	Metre	50	79	3 950
3.3.4	Supplying and making indoor end termination with brass double compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed/ XLPE aluminium conductor cable of 1.1 KV grade as required.				
3.3.4.1	3½ X 50 sq. mm (35mm)	Each	2	391	782
3.3.4.2	4 x 10 sq mm	Each	22	224	4 928
3.3.4.3	4 x 16 sq mm	Each	35	281	9 835
3.3.4.4	4 x 25 sq mm	Each	2	285	570
3.3.4.5	3.5 x 95 sq mm	Each	4	532	2 128
3.3.4.6	3.5 x 120 sq mm	Each	2	552	1 104
3.3.4.7	3.5 x 300 sq mm	Each	6	1220	7 320
3.3.5	Supplying and laying of 100mm dia PVC pipe of following size for road/ floor crossing of cables at a depth of 600mm below ground level including sealing of joints with solvent and sealing of ends etc. complete as required.	Metre	20	122	2 440

S.No.	Description	Unit	Qty	Rate	Amount
3.3.6	Supplying and fixing of following sizes of steel conduit along with accessories in surface (on surface of wall/ slab, metal decking/ trusses etc as per site conditions with suitable fixing arrangement)/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
3.3.6.1	25 mm	Metre	3 800	162	6 15 600
3.3.6.2	32 mm	Metre	500	218	1 09 000
3.3.6	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface (on surface of wall/ slab, metal decking/ trusses etc as per site conditions with suitable fixing arrangement)/ recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
3.3.6.1	25 mm	Metre	3 800	76	2 88 800
3.3.6.2	32 mm	Metre	500	98	49 000
3.3.7	Supply and installation of connector type main telephone tag block of following sizes of approved make in sheet metal enclosure of suitable dimensions fabricated out of 16 SWG sheet steel with castle key lock, hinged type cover including termination of telephone cables, making connections, painting of box etc. complete as required.				
3.3.7.1	10 Pairs	Each	2	594	1 188
3.3.7.2	20 Pairs	Each	1	832	832
3.3.7.3	50 Pairs	Each	1	1685	1 685
3.3.8	Supply & Installation of following size 16 SWG factory fabricated MS junction box of best quality complete with accessories, painting etc., to be fixed in floor or on wall/ ceiling complete as required.				
3.3.8.1	150x150x65 mm	Each	6	737	4 422
3.3.8.2	225x225x65 mm	Each	2	922	1 844
3.3.9	Supplying and drawing 2 Pair 0.5 sq mm FRLS PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface (on surface of wall/ slab, metal decking/ trusses etc as per site conditions with suitable fixing arrangement)/ recessed steel/ PVC conduit as required.	Metre	800	20	16 000
3.3.10	Supplying & laying/ fixing of following pair, 0.5 sq. mm. FR PVC insulated copper conductor, armoured telephone cable in the existing surface/ recessed steel/ PVC conduit as required.				
3.3.10.1	10 Pair	Metre	100	148	14 800
3.3.10.2	20 Pair	Metre	50	233	11 650
3.3.11	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
3.3.11.1	Telephone socket outlet	Each	40	106	4 240
3.3.11.2	TV antenna socket outlet	Each	25	107	2 675
3.3.11.3	Computer outlet RJ-45	Each	28	546	15 288
3.3.12	Supplying and fixing of 1 or 2 Module (75mmX75mm) GI box alongwith modular base & cover plate for modular switches in recess etc as required. (for telephone, TV outlets, Bell Push etc)	Each	90	193	17 370
3.3.13	Supply and fixing of Splitter box in suitable size of G.I. enclosure with cover plate including connections and making good the damage etc. as required:-				
3.3.13.1	Four Nos. outgoing	Each	8	318	2 544
3.3.14	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Metre	350	31	10 850
3.3.15	Supplying and drawing of 1 run of UTP 4 pair CAT 6 LAN Cable in the existing surface/ recessed steel/ PVC conduit as required.	Metre	1 600	38	60 800
3.3.16	Supply, installation, testing & commissioning of following items complete with all necessary accessories as required as per approved drawings, specifications of this tender and directions of Engineer-in-Charge.				

S.No.	Description	Unit	Qty	Rate	Amount
3.3.16.1	Standard size 9U Free standing cabinet with front lockable door, side panels, 230 V AC 90 CFM fan 2, three Hardware packet 1 set (containing 20 Nos each of 3), AC power strip. Cantilever Tray 1U 225D, one earthing Strip 150 mm H, 1 Cable manager 1U height.	Each	1	6777	6 777
3.3.16.2	1 Mtr Cat 6 patch cord with 24 AWG suitable for Gigabit connection (Rack end). It should be suitable to maintain the bending radius as per relevant code, tender specification and direction of Engineer-in-Charge.	Each	28	233	6 524
3.3.16.3	2 Mtr Cat 6 patch cord with 24 AWG suitable for Gigabit connection (User end). It should be suitable to maintain the bending radius as per relevant code, tender specification and direction of Engineer-in-Charge.	Each	55	318	17 490
3.3.16.4	Cat 6, 12 port loaded rack mountable Patch Panel. The panel should be fully unshielded. (Loaded for Data)	Each	1	6826	6 826
3.3.16.5	24 ports L3 Stackable Gigabit Managed Switch with 4 combo 1000 Base-T/SFP slots + 24 SFP slots fibre distribution switch loaded.	Each	1	237684	2 37 684
3.3.16.6	12 ports of 10/100/1000 Gigabit unmanaged Switch with 2 SFP ports complete as required.	Each	1	21327	21 327
3.3.16.7	6 Core Single mode Armoured fiber optic cable	Each	250	100	25 000
3.3.16.8	Cat 6 information outlets that should confirm or exceed component specifications TIA/EIA-568-B.2-1 standards for physical & electrical Specifications, should be fully unshielded type. (ToolLess)	Each	1	382	382
3.3.16.9	Single Face Plates	Each	10	90	900
3.3.17	Digging and Laying of fiber optic and hdpe pipe	Each	250	210	52 500
3.4	Cable Tray and Raceways				
3.4.1	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with bends, reducers, tees etc joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
3.4.1.1	150 mm width x 50 mm depth x 1.6 mm thickness	Metre	50	417	20 850
3.4.1.2	300 mm width x 50 mm depth x 1.6 mm thickness	Metre	50	558	27 900
3.4.1.3	450 mm width x 50 mm depth x 2.0 mm thickness	Metre	50	829	41 450
3.4.2	Supplying and installing following size of perforated pre-painted M.S. cable trays bends with perforation not more than 17.5% joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
3.4.2.1	150 mm width x 50 mm depth x 1.6 mm thickness	Each	10	757	7 570
3.4.2.2	300 mm width x 50 mm depth x 1.6 mm thickness	Each	10	1084	10 840
3.4.2.3	450 mm width x 50 mm depth x 2.0 mm thickness	Each	10	1714	17 140
3.4.3	Supplying, laying and fixing 250 mm wide and 50 mm deep Hot-Dip Galvanised Raceways having sheet thickness of 2.0mm including horizontal and vertical bends and other accessories as required and duly suspended from the ceiling with 10 mm dia fully threaded GI suspenders and galvanised 'C' channel mount fixed to ceiling with expansion bolts. Raceway shall be complete with removable 3 mm thick GI cover, knock out holes on sides and fixing accessories earthing with 8 SWG copper earth wire complete.	Metre	100	791	79 100
3.5	Supply of Light Fitting, Fans and Fixtures				
3.5.1	Supply of the following luminaries comprising of basic channel, holder, high frequency Electronic Ballast/electronic driver (for LED Fittings), starter, condenser, control gear box complete with all attachments (including decorative attachments, if any) lamps etc. required for completeness of the light fitting (the terminal connector of the fittings shall be suitable for connection of 1.5 sq mm FR wire and the entry holes in the fittings should be suitable for conduit of 25 mm for loop in/loop out purpose. Separate earthing point should be available in fitting for earth looping) as per specification and as per catalogue number giving below.				
3.5.1.1	Integral round shaped surface mounted 6W high powered LED, warmwhite light fitting with opal diffuser of Make Bajaj Cat. No. BGCML 06 01 6W LED or approved equivalent.	Each	45	1866	83 970

S.No.	Description	Unit	Qty	Rate	Amount
3.5.1.2	Integral round shaped surface mounted 12W high powered LED, warmwhite light fitting with opal diffuser of Make Bajaj Cat. No. BGCML 12 01 12W LED or approved equivalent.	Each	78	3366	2 62 548
3.5.1.3	Integral round shaped surface mounted 18W high powered LED, warmwhite light fitting with opal diffuser of Make Bajaj Cat. No. BGCML 18 095 18W LED or approved equivalent.	Each	40	4362	1 74 480
3.5.1.4	Integral round shaped surface mounted 15W high powered LED, warmwhite light fitting with opal diffuser, of Make Philips Cat. No. BBS 170 1XDLED or approved equivalent.	Each	157	2608	4 09 456
3.5.1.5	Integral 15W LED tube light fitting (Mirror Light) with aluminium diecast housing and diffuser of Make Philips Cat. No. BN 550 WLED 12-6500 or approved equivalent.	Each	33	1929	63 657
3.5.1.6	Surface/ Wall Mounted Strip type flourscent fitting suitable for and with 1 no. 28W lamps with diffuser of Make Philips Cat. No. TWG 207 1X28W HF or approved equivalent.	Each	62	769	47 678
3.5.1.7	Rcessed mounted decorative 36W LED fitting of Make Crompton Greaves Cat. No. LCTLR-36-FO-CDL or approved equivalent suitable for 600mm x 600mm modular/ gypsum ceiling.	Each	44	6482	2 85 208
3.5.1.8	70W Cylindrical Down light suitable for 1xCDMT-TD70W lamp of Make Philips MCS 2501XCDM-TD70W HF or approved equivalent.	Each	5	8024	40 120
3.5.1.9	76W LED light fitting complete with all required accessories of Make WIPRO Cat. No. CiroLED LH10-731-000-57-XX or approved equivalent.	Each	26	16393	4 26 218
3.5.1.10	60W LED street light luminaries IP:65 made out of die cast Aluminium housing and head frame, powder coated in approved color, high purity Aluminium pot reflector electrochemically brightened and anodized, heat resistant and toughened glass cover, gasket including accessories like copper ballast, electronic igniter, PF improvement Capacitor, duly wired as required of Make Crompton Cat. No. LSTO-60-CDL or approved equivalent.	Each	6	10992	65 952
3.5.1.11	Wall mounted decorative luminaire including fancy wall bracket fittings suitable for 2 pin lamps with 2X9W lamps of Make Havells Wallbrite LHDC01209017 or approved equivalent.	Each	42	1208	50 736
3.5.1.12	Cast Aluminium round or oblong type bulkhead luminaire of approved colour with GI wire guard, glass cover with 9W CFL lamp of Make Philips Cat. No. FXC101 1xPL-S / 2P 9W AC GR or approved equivalent.	Each	7	1102	7 714
3.5.2	Supplying & fixing of 32 mm dia X 2.00 metres long G.I. pipe (medium class) bracket for mounting of fluorescent/ HPMV/ HPSV street light fitting on pole including bending the pipe to the required shape, 2 nos 40 mm X 3 mm flat iron clamps with nuts, bolts and washer, painting the flat iron with primer and finish paint etc. as req.	Each	6	809	4 854
3.5.3	Supply of 240V, 50 Hz, 380 rpm 3-blade ceiling fan of size 1200 mm of approved make having minimum 225 CMM air delivery as per relevant standard including all accessories like down rod, blades, canopy etc. complete in all respect as per IS: 374-1979 as per drawings, specifications of this tender and direction of Engineer-in-Charge.	Each	60	1829	1 09 740
3.5.4	Supplying of air circulated wall fan of diameter 600 mm complete with all accessories as per drawings, specifications of this tender and direction of Engineer-in-Charge.	Each	11	5236	57 596
3.5.5	Supplying of Exhaust fans suitable for 230 Volt, 50 Hz, Single phase, A.C. supply and complete with all accessories as per (IS: 2312-1967 & IS: 3588-1987) including motor, blades, louvers frame, bracket, capacitor etc. as per drawings, specifications of this tender and direction of Engineer-in-Charge.				
3.5.5.1	300 mm dia. metal exhaust fan	Each	33	1500	49 500
3.5.5.2	450 mm dia. heavy duty type exhaust fan having 900 rpm	Each	4	4802	19 208
3.6	Installation of Light Fitting, Fans and Fixtures				
3.6.1	Installation, testing & commissioning of prewired, florescent fitting/ compact florescent fitting/ LED fitting of all types complete with all accessories and tubes etc. directly on ceiling/ wall/ false ceiling including connection with 3Cx1.5 Sqmm PVC insulated copper conductor cable & earthing etc. as required complete as per specifications and direction of Engineer-in-Charge.	Each	525	110	57 750

S.No.	Description	Unit	Qty	Rate	Amount
3.6.2	Installation, testing and commissioning of ceiling fan including wiring the down rods of standard length (upto 30 cm)/ wall bracket fan with 1.5 sq.mm FRLS PVC insulated, copper conductor, single core cable etc. as required.	Each	72	116	8 352
3.6.3	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required upto 450 mm sweep.	Each	37	247	9 139
3.6.4	Extra for fixing the louvers/ shutters complete with frame for a exhaust fan of all sizes.	Each	37	109	4 033
3.7	Earthing				
3.7.1	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required. (For Panel & Lightning Arrester Earthing)	Set	10	4774	47 740
3.7.2	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	72	387	27 864
3.7.3	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Metre	130	142	18 460
3.7.4	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Set	2	9145	18 290
3.7.5	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	12	1072	12 864
3.7.6	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	Metre	20	770	15 400
3.7.7	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ submain wiring/ cable as required.	Metre	850	25	21 250
3.7.8	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	Each	4	4051	16 204
3.7.9	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Metre	550	41	22 550
3.7.10	Providing and fixing of lightning conductor finial, made of 25 mm dia 300 mm long, copper tube, having single prong at top, with 85 mm dia 3 mm thick copper base plate including holes etc. complete as required.	Each	2	773	1 546
3.7.11	Jointing copper/ G.I. tape (with another copper/ G I tape, base of the finial or any other metallic object) by riveting / nut bolting/ sweating and soldering etc as required.	Each	2	63	126
3.7.12	Providing and fixing of copper/ G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required. (For horizontal run)	Metre	300	43	12 900
3.7.13	Providing and fixing of copper/ G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required. (For vertical run)	Metre	40	87	3 480
3.7.14	Providing and fixing testing joint, made of 20 mm X 3 mm thick copper strip, 125 mm long, with 4 nos. of tinned brass bolts, nuts, chuck nuts and spring washers etc. complete as required.	Each	2	194	388
3.7.15	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required as per specifications of this tender and directions of Engineer-in-Charge.	Each	2	367	734
3.7.16	Supplying and fixing cable route marker with 10 cm X 10 cm X 5 mm thick G.I. plate with inscription there on, bolted /welded to 35 mm X 35 mm X 6 mm angle iron, 60 cm long and fixing the same in ground as required as per specifications of this tender and directions of Engineer-in-Charge.	Each	2	297	594
3.7.17	Supply, fabrication and installation of 5 mm thick M.S. chequered plate for covering floor cut-outs/cable trenches etc., including all labour and materials, as per approved drawings, specifications of this tender and directions of Engineer-in-Charge.	Sq.m.	10	5300	53 000
3.8	Fire Detection System				

S.No.	Description	Unit	Qty	Rate	Amount
3.8.1	Supply, installation, testing and commissioning of Analogue addressable multicriteria heat and smoke detectors with short circuit isolator, base and LED and connection etc. as required (EN 54/UL LISTED)				
	Multicriteria Smoke detector	Each	144	3832	5 51 808
3.8.2	Supply, installation, testing and commissioning of Addressable fault isolating shorted ,dewired and loose circuits between to successive fault isolators with automatic resetting arrangement (base model) modules for AHU's, lifts, pressurising fans etc. (EN 54/UL LISTED)	Each	8	3450	27 600
3.8.3	Supplying fixing testing and commissioning of intelligent Addressable control output modules with short circuit isolator modules for AHU's, lifts, pressurising fans etc. (EN 54/UL LISTED)	Each	4	3434	13 736
3.8.4	Supplying fixing testing and commissioning of intelligent Addressable input modules with short circuit isolator modules for AHU's, lifts, pressurising fans etc. (EN 54/UL LISTED)	Each	4	3397	13 588
3.8.5	Supply, installation, testing and commissioning of Addressable Manual call box with short circuit isolator, break glass/ push button with built in LED for alarm indication suitable for recessed installation in wall connetion etc. as required. (EN 54/UL LISTED)	Each	13	4786	62 218
3.8.6	Supply, installation, testing and commissioning of Addressable sounders/ electronics hooters cum speakers as required for the fire detection and alarm system to be fixed at appropriate height on wall on surface or in recess as required.	Each	13	7425	96 525
3.8.7	Supply, installation, testing and commissioning of Microprocessor based 4 loop expandable analogue addressable type Fire alarm control panel with 640 characters of display 250 addressable devices per loop, the panel shall be equipped with 2 loop cards and expandable, with 1000 events history, with Four excess levels capable of taking Flash Scan / Broadcast technology and Flash EPROM sufficient number of programmable relays controls for controlling AHU, Pressurisation Fans, Ventilation Fans at Fire Pump Room monitoring fire sprinkler and hydrant pump , shall have the capability to integrate voice evacuation and fire fighters telephone system of the same make, 240 V AC Power Supply automatic Battery Charger 24 V sealed Lead Acid Batteries sufficient for 24 hours normal working and capable of operating the system for 2 hours during the Emergency Conditions as required. UL/FM Listed	Each	1	359881	3 59 881
3.8.8	Supply, installation, testing & commissioning of self contained 3W LED (minimum one hour reserve) double sided emergency signage unit for ceiling/ wall mounting & having "EXIT" or "FIRE EXTINGUISHER" or "FIRE HOSE REEL" as per actual mounting location complete with connections as required.	Each	1	8548	8 548
3.9	External Lighting				
3.9.1	Supply, installation, testing & commissioning of 7.5 mtr high MS decorative type steel tubular pole of approved make including in-built marshalling box, painting the poles with MRF polyurethane paint of approved colour, including necessary wiring, welding, anchor bolts etc. as required as per drawings, relevant standards and as per following specifications:				
	1. MS sheet thickness: 3 mm				
	2. Galvanization thickness: 65 Microns (min.)				
	3. Pole Height: 7.5 mtr				
	4. Top diameter.: 90 mm (min.)				
	5. Bottom diameter.: 140 mm (min.)				
	6. Base Plate Dimension: 300x210x25mm thick duly welded in column.				
	7. Foundation Bolts:				
	a) Nos.: 4				
	b) Length: 300 mm				
	c) Diam.: 16 mm				
	8. RCC foundation 600 x 600 x 1200mm				
	7.5 mtr high GI Polygonal pole including in-built marshalling box as described above	Each	1	39236	39 236

S.No.	Description	Unit	Qty	Rate	Amount
3.9.2	Supplying, Installation, Testing and commissioning of decorative 3.5 mtr long MS tubular pole light pole standard pole fabricated out of 70 mm dia. pipe 2.0 metre long and bottom dia of 140 mm 1.5 meter long complete with 300 mm x 210 mm x 6 mm thick MS base plate welded at bottom including necessary wiring with 3x2.5sqmm copper wire from junction box to light fitting connections etc. as required. Welding of 1 no. earth stud and drilling holes for drawing the wire etc. complete as required including cement concrete foundation, wiring and connections. A looping/ junction box shall be inbuilt into the pole.	Each	8	22885	1 83 080
3.9.3	Supply, installation, testing & commissioning of following type of prewired street light post top decorative luminaires complete with lamps, heavy duty copper wound ballast, transformers, drivers as required of following make and model or approved equivalent: Type: 70 Watt CDMT Post Top lantern fitting with 70 watt CDMT lamp in textured grey colour Make and Model No.: Philips HPS360 1 x CDMTD 70GR or approved equivalent.	Each	8	9885	79 080
3.9.4	Supply, installation, testing & commissioning of external light fixtures Phillips Cat No. CRP330 – 1xSONT-150WTP or approved equivalent, complete with 150W CDMT lamps with high pressure die cast aluminium housing pot optics reflector with toughened glass (IP65) and all other necessary accessories, all complete as per technical specifications of this tender and direction of Engineer-in-charge.	Each	6	9662	57 972
3.9.5	Supply, installation, testing & commissioning of external light fixtures Phillips Cat No. Bajaj BGEST 150MH or approved equivalent, complete with 150W CDMT lamps with high pressure die cast aluminium housing pot optics reflector with toughened glass (IP65) and all other necessary accessories, all complete as per technical specifications of this tender and direction of Engineer-in-charge.	Each	6	7950	47 700
3.10	Road Lighting Pillar				
3.10.1	Supply, installation, testing and commissioning of floor mounted, totally enclosed, compartmentalized cubicle, dust, damp, and vermin proof, outdoor type Road Lighting Pillar fabricated out of 2mm thick CRCA sheet, internally strengthened with angle iron frame work with following incoming and outgoing feeders including supplying and mounting including making connections/ inter-connections with lugs/ glands crimping tools. The rate of this item is inclusive of all materials, accessories, loose supplied items, etc. as required as per approved drawings, equipment schedule, specifications of this tender and directions of Engineer-in-Charge, and inclusive of all additional items for completeness of the system and comprising of the following: Incoming 100A TP MCCB(25KA)- 1 No. 63A, TP Contactor- 1 No. Time Switch with daily dial suitable for operation on 230V single phase 50Hz AC supply -1No. Auto Manual Selector Switch- 1 No. Bus Bars TPN bus bar of 100A rating Outgoings 20A TP MCB- 6 No. Indication lamps (LED Type)- 3 No.				
		Each	1	50944	50 944
					1 30 50 821

Name of Work: Composite work for Construction of NCR Biotech Science Cluster Phase-II works at Faridabad, Haryana

S.No.	Description	Unit	Qty	Rate	Amount
4.1	Fire Fighting System				
4.1.1	Supplying and fixing single headed hydrant valve with instantaneous S.S couplings of 63 mm dia with cast iron wheel ISI marked conforming to IS : 5290 (Type-A) with blank S.S cap and chain as required.	Each	6	7 225	43 350
4.1.2	Supplying and fixing swinging type First-Aid-Hose Reel with MS construction spray painted in Post office Red, MS drum with fixing bracket conforming to IS 884-1985 with upto date amendments, 36 m long 20 mm (nominal internal) dia water hose Thermoplastic (Textile reinforced) Type -2 as per IS: 12585, and 5 mm dia stainless steel (grade AISI 304) shut off nozzle conforming to IS:8090, connections from riser with 40mm dia stop valve & M.S Pipe. all complete.	Each	6	11 065	66 390
4.1.3	Supply, installation, testing and commissioning of 63 mm dia 15 m long non-percolating flexible hose (Rubberised Fabric Lined- type A) as per IS : 636. Type "A" with instantaneous type S.S 63 mm dia, ISI marked Male & Female couplings as per IS : 903 bound and rivetted to hose pipe with copper rivets and 1.5 mm copper wire suitable for hot ambient condition for internal hydrant.	Each	12	12 056	1 44 672
4.1.4	Supplying and fixing 63 mm dia S.S branch pipe with 20 mm (nominal internal diameter) size S.S nozzle conforming to IS : 903, suitable for instantaneous connection to interconnect hose pipe coupling as required.	Each	6	2 534	15 204
4.1.5	Providing and fixing angle iron (40 mm x 40 mm x 5 mm) door frame and M.S sheet (2 mm thick) cum glass shutter of size 1.2 mtr x 2.1 mtr (N.S.) with 25 mm x 25 mm x 3 mm angle frame all around & stiffened in between including hinges, handle, locking arrangement, painting with approved synthetic enamel paint including sign writing on glass at internal hydrant including providing and fixing M.S. Sheet 2 mm thick on remaining portion above door to close opening including painting etc. as required.	Each	6	8 464	50 784
4.1.6	Supply, installation, testing and commissioning of precharged air vessel of size 250 mm dia & 1200 mm height, shell fabricated from 8 mm thick M.S. Plate & dished end from 10 mm thick M.S. Plate for pressurization of hydrant/ sprinkler system complete with adequate pressure switches (as per design/requirement) with valve to operate as per operating sequences including drain arrangement with 25 mm dia Gunmetal wheel valve, air release valve with ball cock on top, 80 mm dia flanged inlet with isolating valve duly painted from inside and outside, all complete as required.	Each	2	7 634	15 268
4.1.7	Supply and installation of industrial type pressure gauges with stainless steel 'U' tube, ball valve, 150 mm dial diameter & calibrated with 0-15 Kg/cm ² .	Each	7	929	6 503
4.1.8	Supply, installation, testing and commissioning of 25 mm nominal bore cast brass ball valve of approved quality with tested pressure PN 1.5 MPa (screwed end).	Each	6	477	2 862
4.1.9	Supplying, fixing, testing and commissioning of 100 mm dia cast iron double flanged butterfly valves (PN 16) complete with 2 nos. matching flanges, bolts, nuts, washers 3 mm thick insertion neoprene gasket conforming to IS 13095.	Each	5	6 666	33 330
4.1.10	Providing, installation, testing and commissioning of 100 mm dia dual plate non-return valve (PN 16) conforming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc. complete as required.	Each	3	3 851	11 553
4.1.11	Supplying and fixing orifice plate made of 6 mm thick stainless steel with orifice of required size in between flange and landing valve of external and internal hydrant to reduce pressure to working pressure of 3.5 kg/cm ² complete as per specifications as required.	Each	6	1 309	7 854
4.1.12	Supplying, fixing, testing and commissioning of pipes of 150 mm dia MS 'C' class as per IS: 1239/ 3589 along with necessary clamps, vibration isolators and fittings such as bends, tees etc. but excluding valves, strainers, gauges etc. adequately supported on rigid supports duly painted/ buried in ground excavation and refilling etc. as per specification and as required complete in all respect. (For all applications below ground level)	Metre	250	2 206	5 51 500

S.No.	Description	Unit	Qty	Rate	Amount
4.1.13	Supply, laying, testing & commissioning of 'C' class heavy duty M.S. pipe conforming to IS: 1239/ 3589 including welding/ threading, jointing with all fittings like elbows, tees, bends, flanges, tappers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ ceiling with suitable clamps & structural steel support including cutting holes and chases in brick work and RCC work and painting with two coats of red oxide primer and two coats of synthetic enamel paint of required shade complete as required. (For all applications above ground level)				
4.1.13.1	25 mm dia	Metre	20	359	7 180
4.1.13.2	100 mm dia	Metre	250	2 028	5 07 000
4.2	Fire Extinguisher				
4.2.1	Supply and installation of carbon-di-oxide type fire extinguisher consisting of welded M.S. cylindrical body, squeeze lever discharge valve fitted with pressure indicating guage internal discharge tube 30 cms long high pressure discharge hose, discharge nozzle, suspension bracket, ISI marked conforming to IS:2878 finished externally with red enamel paint and fixed to wall with brackets complete with internal charge.				
4.2.1.1	Capacity 4.5 Kg.	Each	6	10 372	62 232
4.2.2	Providing and fixing of ABC Powder type (mono-ammonium phosphate base) fire extinguishers consisting of welded M.S. cylindrical body, squeeze lever discharge valve fitted with pressure indicating guage internal discharge tube 30 cms long high pressure discharge hose, discharge nozzle, suspension bracket conforming to IS:13849 finished externally with red enamel paint and fixed to wall with brackets (suitable for fighting in class 'A', B & 'C' that is wood, textile, flammable liquid, electric and gases etc.) complete with internal charge.				
4.2.2.1	Capacity 6.0 Kg.	Each	6	5 905	35 430
4.2.3	Providing and fixing 100 mm dia C.I double flanges suction strainer bucket type/ "Y" type including, nuts, bolts and 3mm thick rubber insertion complete.	Each	1	6 625	6 625
4.2.4	Supplying and fixing 2 way fire brigade connection of cast iron body with 3 Nos. Gunmetal male instantaneous inlet couplings complete with cap and chain as required for 150 mm dia MS pipe connection, conforming to IS 904 as required.	Each	2	10 857	21 714
4.2.5	Supply, installation, testing and commissioning of Fire authority approved Electrical driven horizontal terrace pump with necessary electric control panel, interconnecting pipe work, Valves and Vibration Eliminators, complete as per relevant standards, specifications and directions of Engineer-in-Charge, suitable for automatic/ manual operation consisting of the following:				
	MATERIAL OF CONSTRUCTION (M.O.C): Corrosion Resistant in general Casing — Cast Iron Impeller — Bronze Shaft — Stainless Steel				
	MOTOR Suitable HP SQ cage induction motor TEFC type suitable 2900 RPM; 3Ph 415V 50Hz Insulation Class - F Protection - IP55 Min.				
	Pump shall be capable of furnishing not less than 150% of rated capacity at a head not less than 65% of rated head. The shut off head shall not exceed 120% of rated head.				

S.No.	Description	Unit	Qty	Rate	Amount
	INTERCONNECTING PIPE WORK, VALVES AND VIBRATION ELIMINATORS Common suction & delivery headers in G.I (Heavy Class), 'Y' Strainer, Isolating valves, non return valves and vibration eliminators on suction & delivery side of pumps, all of suitable dia and rating as per technical specifications drawings and direction of Engineer-in-Charge.				
	M. S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.				
	Necessary Power and control cabling between pump, terrace control panel and remote control panel as required.				
	All necessary accessories including pressure gauges, pressure switches etc. of suitable dia and rating as per technical specifications drawings and direction of Engineer-in-Charge.				
	ELECTRICAL CONTROL PANEL Cubicle type, made out of 14 gauge MS sheet stove enamelled, for automatic/manual/remote operation of the fire pump above. Control panel (to be installed at terrace near the pump) with incoming 63A TPN switch disconnecter, DOL automatic pressure switch operated starters with push buttons for manual over ride, control wiring, ammeter, voltmeter, phase indicators, Remote Panel with push buttons for manual operation (the remote panel shall be located at ground level) all complete. (The Contractor must submit the Single Line Diagram and Fabrication drawing for approval before supplying the panel).				
	The entire package including pump, skid, interconnecting piping shall be finished in Fire Red Colour.				
	Suitable foundation bolts, Nuts and washers as required.				
	Suitable cement concrete foundation duly plastered with anti vibration pads.				
	Discharge : 450 LPM Pumping Head : 45 M	Set	2	48 630	97 260
4.2.6	Supply, installation, testing and commissioning of floor mounted electrical control panel of cubicle, dust, damp, and vermin proof, fabricated out of 2mm thick CRCA sheet, powder coated of approved shade after 7 tank treatment process cable alley, inter-connection, having switchgears and accessories mounting and internal wiring, earth terminals, numbering etc. complete in all respect, suitable for operation on 415V, 3 phase, 50 Hz AC Supply with enclosure protection class IP 42 as required as per approved drawings, equipment schedule, specifications of this tender and directions of Engineer-in-Charge, and inclusive of all additional items for completeness of the system, majorly comprising of following:				
	Common Panel in Fire Pump House				
	Incomer				
	40 Amps. TP MCCB.35KA				
	Out going				
	7.5 H.P Star Delta Starter - 2 Nos.				
	32 A TP MCCB (35KA) - 2No.	Set	1	85 214	85 214

17 71 925

Name of Work: Composite work for Construction of NCR Biotech Science Cluster Phase-II works at Faridabad, Haryana

S.No.	Description	Unit	Qty	Rate	Amount
5.1	Elevators				
5.1.1	Design, manufacturing, supply, installation, testing & commissioning of passenger elevator with Machine Room for 13 passenger/ 884 kg capacity, 1.5 meter/ second speed with approximate 7.8 mtr travel distance with 3 stops & 3 door openings with ARD including all accessories like guide rails, all structural steel, buffers at elevator pit and other works required to complete the job in all respects as per drawings, technical specifications, relevant standards and direction of Engineer-in-charge.				
	Speed: 1.5 meter/ second				
	Floors: Ground, First, Second				
	Travel: 7.8 mtrs (approx)				
	Stops & opening: 3 (Three)				
	Drive: Alternating Current Voltage Frequency				
	Controller: AC variable voltage and variable frequency				
	Automatic rescue device complete with dry maintenance free batteries as required.				
	Operation: Microprocessor based single automatic push button/ duplex selective collective with / without attendant.				
	Power: 415 V, 3 phase, 50 Hz, 4 wires system				
	Type of doors: (a) Car - Power operated centre opening horizontal sliding stainless steel moon rock finish. (b) Landing Door - Stainless steel door moon rock finish.				
	Car Finish: Brushed stainless steel finish in Walls with glass panel in the rear side and doors and Granite Flooring finish in Black Sea.				
	Hand rail not less than 600mm long 900mm above floor level to be fixed adjacent to control panel in lift car. Voice announcement system in the car to announce the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevator.				
	Passenger Lift described as above with simplex control and as per specifications of this tender.	Set	2	16 23 708	32 47 416
					32 47 416

Name of Work: Composite work for Construction of NCR Biotech Science Cluster Phase-II works at Faridabad, Haryana

S.No.	Description	Unit	Qty	Rate	Amount
6.1	CCTV System				
6.1.1	Supply, Installation, Testing & Commissioning of vandal proof Indoor Vari Focal Dome type IP Camera with 1/3" CMOS/CCD imager color camera with fixed 2.8 - 10 mm lens, picture element of 800 H x 600 V (PAL standard), The cameras shall have a wide dynamic range (WDR) of upto 60 db. It should have inbuilt camera sabotage and motion detection analytics. The Cameras shall be POE (IEEE 802.3af) with all accessories like tamper proof screws, clamps, wiring etc. complete as per specifications of this tender and directions of Engineer-in-Charge. The Cameras shall be UL Listed.	Each	20	26 622	5 32 440
6.1.2	Supply, Installation, Testing & Commissioning of vandal proof outdoor Vari focal IR Bullet Box Day/Night type IP Camera with 1/3" CMOS/CCD imager color camera with varifocal 2.8 - 10 mm lens, picture element of 800 H x 600 V (PAL standard), Low lux level (suitable for day/night operation), The cameras shall have a wide dynamic range (WDR) of upto 60 db. It should have inbuilt camera sabotage and motion detection analytics. The Cameras shall be POE (IEEE 802.3af) with all accessories like tamper proof screws, clamps, wiring etc. complete as per specifications of this tender and directions of Engineer-in-Charge. The Cameras shall be UL Listed.	Each	4	25 058	1 00 232
6.1.3	Supplying and installation of network video recorder/ video management server, 19" rack mounted with capability of recording minimum 24 IP cameras dual core 2 GHZ xeon processor, 16GB RAM with a bandwidth support of 150 MBPS having usable capacity of 4 TB complete with all accessories as per specifications of this tender and directions of Engineer-in-Charge.	Each	1	4 83 625	4 83 625
6.1.4	The workstation shall have the following specifications:- Processor Intel I7 with internal memory of 8 GB RAM. Operating system Windows 7 SP1, 32 bit version. Video graphics card 512 MB. Resolution support for cameras 2560 x 1600 display resolution capable and DirectX true colour 32 bit. Dual Link VDI outputs. Client software shall support Dual monitors each displaying 16 cameras simultaneously. A maximum of 32 cameras viewing per workstation at a time programmable to sequence.	Each	1	1 78 557	1 78 557
6.1.5	Supply, Installation, Testing & Commissioning of 42" Industrial Grade LED for 24 X 7 operation	Each	1	49 772	49 772
6.1.6	Providing and installing Laser Printer.	Each	1	11 448	11 448
6.1.7	Supply, installation, testing & commissioning of 24 port POE switch complete as required.	Each	2	22 896	45 792
6.1.8	Supplying and laying of one number Double walled corrugated high density polyethylene pipe having corrugation on the outer wall and plain surface inner wall conforming to IS: 14930 Part-I complete with necessary HDPE fitting for protection of underground cable directly in ground upto a depth of 50 cm including excavating and refilling as required.	Metre	250	117	29 250
6.2	HVAC (Ductable split units)				
6.2.1	Receiving, inspecting, transporting, installing, testing and commissioning of M/s Blue star make Ductable type Air-conditioning unit available within the campus of following capacity comprising of indoor unit of condensing unit including providing any missing spares as required mounted on framework by means of 8mm thick neoprene type vibration isolators. (Concreting, structural steel frame work and painting on frame work shall be paid separately)				
6.2.1.1	22 TR Ductable	Each	5	44 250	2 21 250
6.2.1.2	5.5TR Ductable	Each	2	24 136	48 272
6.2.1.3	3TR Ductable	Each	1	17 097	17 097

S.No.	Description	Unit	Qty	Rate	Amount
6.2.2	Supply, Installation, Testing and commissioning of Insulated refrigerant copper piping (The insulation shall be 19 mm thick for suction piping & 12 mm thick for liquid line) for Ductable type Air-conditioning unit of following capacities including making cutouts in floor/ roof for routing refrigerant pipes as per relevant standards and specifications of this tender.				
	Note: 1. Mentioned quantity is the distance between indoor and out door units, so multiple circuits (like 2 ODUs connected to one IDU of 22TR machine) will be considered as single circuit. 2. All Exposed Piping on the Terrace/ in open shall be enclosed in openable GI trays & insulation should be with UV protection. The Ref. Piping shall be properly supported at every 1.5 m distance with stands and proper supports.				
6.2.2.1	22 TR Ductable (Ref pipe with in building)	Metre	100	1 749	1 74 900
6.2.2.2	22 TR Ductable (Pipe + Cable tray + UV treatment)	Metre	30	2 385	71 550
6.2.2.3	5.5TR Ductable (Ref pipe with in building)	Metre	30	1 198	35 940
6.2.2.4	5.5TR Ductable (Pipe + Cable tray + UV treatment)	Metre	12	1 855	22 260
6.2.2.5	3TR Ductable (Ref pipe with in building)	Metre	4	1 113	4 452
6.2.2.6	3TR Ductable (Pipe + Cable tray + UV treatment)	Metre	6	1 749	10 494
6.2.3	Supply and charging/ top up of Refrigerent for above units for above ductables.	kg	120	721	86 520
6.2.4	Providing & fixing fire proof double layered canvass cloth connection for Ductable split indoor unit outlet complete with flanges made out of 22 gauge G.S.S sheet complete with nuts, bolts etc.	Each	8	1 961	15 688
6.2.5	Supplying, installation, testing and commissioning of winter heating system complete with electric strip heaters (sheathed duct type tube electric heaters complete with thyrister control) with suitable supports for strip heater, strip heaters shall be arranged in banks complete with Digital Cooling/ heating thermostats (TH), Safety stats (SF) Air flow switch, Geyser stat, interwiring including cable, thimbles. The item includes electrical panel consisting of 4 pole incomer isolator switch gear, 15m cable length from panel to heater in conduit/ cable tray, termination of cable complete with thimbles/ compression glands. Panel shall be complete with contactors, relays, MCB's, delay timers, indicating lights & safety over temp. tripping arrangement, etc as required as per drawings, specifications of this tender and directions of Engineer-in-Charge, and inclusive of all additional items for completeness of the system and comprising of the following:				
6.2.5.1	3# x0.5KW = 1.5KW DOCTORS(3TR), CONFERENCE ROOM (5.5TR) & SEMINAR ROOM (5.5TR)	Each	3	63 060	1 89 180
6.2.5.2	3# x 1KW =3KW DOUBLE HEIGHT (LOUNGE AREA) / ADMINISTRATION ROOM (22TR) & DOUBLE HEIGHT (WORKSHOP) (2# x 22TR)	Each	3	72 429	2 17 287
6.2.5.3	3# x1.5KW = 4.5KW ADMINISTRATION (22TR)	Each	1	80 959	80 959
6.2.5.4	3# x 2KW =6KW DINING ROOM (22TR)	Each	1	99 694	99 694
6.2.6	Supply, Installation, Testing and Commissioning of dry scrubber of following capacities each comprising of electrostatic precipitation technology dry type air cleaner to remove oil smoke and fumes from exhaust air of the kitchen, complete with fan section & scrubber mounted electrical panel suitable for outdoor application.				

S.No.	Description	Unit	Qty	Rate	Amount
	Electrostatic section shall be made of 16 gauge galvanized sheet, high bake epoxy powder coated, washable type aluminium mesh filters, stainless steel spiked ionizers to create high voltage DC field, aluminum collector plates which should be alternatively charged positive and negative with large collecting area with 14" deep cell, to work as magnet for charged smoke and oil particles. Average efficiency of 85 -93% in single pass as per ASHRAE Dust spot test method. Electrostatic Precipitator should be non discriminate particle arrester by charging particles from 0.01 micron to 10 microns through solid state power supply. Collector cell should be of permanent type and incorporate slide out facility for easy removal for cleaning. Power supplies shall be 100% solid state UL Listed, Module of capacity above 3000 CFM shall be equipped with Pulse width modulating (PWM)The system should be fitted with interlock switch for safety . The system should allow connection to a fan section to achieve 500 FPM velocing of following:n-Charge.				
	Operating Voltage : 220V, 50 Hz Ionizing Voltage : 12.5 to 13 KVDC Collector Cell Voltage : 6 to 6.5 KVDC Power Consumption : Not more than 50W per cell.				
	Double Skinned enclosure to accommodate electrostatic precipitator made of aluminum frame, which shall be suitably lined polymer based acoustic material to reduce the fan noise. Fitted with backward inclinedplug fan to maintain face velocity of 500 FPM across Scrubber.				
	Air Moving Capacities are as follows:				
	Air Volume: 1600 CFM, Total St. pr.: 50mm WG	Each	1	1 44 160	1 44 160
6.2.7	Supply, installation, testing and commissioning of synthetic fill pad type air washer of approved make at 500 FPM velocity across pads, DIDW Class-I Backward curved centrifugal fan with TEFC weather proof motor (IE3 efficiency) of IP:55 protection suitable for 415 +10% Volts, 3 phase, 50 cycles power supply, mounted on a common base with metallistik vibration isolators, multi sheave pullies for fan and fan motor. The fan capacity shall be based on outlet velocity not exceeding 2000 FPM. The cooler shall be of 1600 CFM capacity with external Static pressure of 15mm WG complete with 8" thick celdek fill, 3mm thick FRP steel reinforced tank, water pump 2 Nos. (1+1), cover pipe, distribution pipe, distribution pan, filters at air inlet, water piping, make up water with ball valve, drain and overflow connection,Eleminator etc. all housed in 16 G GSS casing mounted on vibration isolators complete in all respects as per specifications and drawings. Scope includes unit mounted stater panel in enclosure.	No.	1	94 533	94 533
6.2.8	Supply, installation, testing and commissioning of wall mounted axial flow exhaust air fans (Propeller fan) having 300mm dia for exhausting 250cfm complete with gravity louvers, bird screen, frame, motor suitable for 1 Phase, 230 volts, 50 Hz required for exhaust of the wash area in kitchen.	Each	2	9 865	19 730
6.2.9	Supply, installation, testing and commissioning of ventilation system for wash area of kitchen with bottom horizontal discharge fans of approved make complete with forward curved, elongated shaft, SISW centrifugal fan having bearing out of air stream, drive package, TEFC induction motor, common channel base frame for Fan and motor, vibration isolation arrangement by means of spring type vibration isolators or turret mounts.				
	The fan motor arrangement shall be powered through electrical system by means of changeover and local disconnect switch in weather proof housing and shall include unit mounted stater panel in enclosure suitable outdoor application.				
	Air Volume: 500 CFM				

S.No.	Description	Unit	Qty	Rate	Amount
	Total Static pressure: 35 mm WG	Each	1	85 958	85 958
6.2.10	Supply, Fabrication, installation, testing, balancing and commissioning of GSS sheet metal ducting of approved make of following thicknesses including necessary supports complete with elbows, split ters, vanes, hangers, supports and rubber gasket sealing complete as per specification in accordance with the approved shop drawings and required by the specifications IS- 655/ 1963 revised t ill date required for dehumidified air distribution.				
6.2.10.1	18 gauge (1.25 mm)	Sq.m.	5	1 355	6 775
6.2.10.2	22 gauge (0.80 mm)	Sq.m.	230	1 011	2 32 530
6.2.10.3	24 gauge (0.63 mm)	Sq.m.	325	870	2 82 750
6.2.11	Supply and installation of square/ rectangular exhaust duct work constructed out of 1.6 mm thick black metal sheets complete with gaskets, elbows, bends, tee, splitters, supports etc. as required for exhaust of air from Kitchen Hoods.	Sq.m.	50	1 749	87 450
6.2.12	Supplying and application of Thermal insulation on duct with 19 mm thick chemically cross linked closed cell polythene (XLPE) fire retardant grade (Class O) insulation of density not less than 30kg per cum in single layer with factory lamination of 30 micron aluminium foil including protective covering on duct after applying necessary adhesive as specified by manufacturer complete as per specifications and as required.	Sq.m.	555	719	3 99 045
6.2.13	Supply, installation & testing of 25mm thick fiber glass acoustic lining with density not less than 32 kg/cu.m. within supply and return air duct with G.I frame, tissue paper, 28G perforated all complete as per specifications.	Sq.m.	25	689	17 225
6.2.14	Supply, installation, testing & commissioning of extruded aluminium constructed continuous linear Grill of approved make.	Sq.m.	34	6 712	2 28 208
6.2.15	Supply, installation & balancing of Volume control device of approved make at supply/ return air grill complete with nuts bolts, screws, linkage, flanges etc.	Sq.m.	10	4 202	42 020
6.2.16	Supply, installation & balancing of duct mounted Volume control dampers of approved make at supply/ return air duct complete with nuts bolts, screws, linkage, flanges etc.	Sq.m.	0.5	8 050	4 025
6.2.17	Door transfer air grilles made out of extruded aluminium construction of approved make complete with nuts, bolts, screws etc. as per specifications.	Sq.m.	0.5	9 930	4 965
6.2.18	Supply, installation, testing & commissioning of Fresh air intake louvers of approved make, duly powder coated of approved colour made of extruded aluminium profiles construction, complete with Box type volume control damper in aluminium construction with 3-5% leakage at 50mm pressure differential, multi-layer wire mesh filter.	Sq.m.	1.5	10 267	15 401
6.2.19	Exhaust air diffuser of approved make of 150 X 150mm with plenum boxes	Each	3	4 273	12 819
6.3	HVAC (VRF System)				

S.No.	Description	Unit	Qty	Rate	Amount
6.3.1	Supply, Installation, Testing and commissioning of VRF system with All DC inverter compressor technology (Rotary/ Scroll). The system shall be complete with indoor unit, condensing unit with air cooled condenser with scroll/ rotary compressor, controls, Micro-processor controls, individual temp control of each indoor unit, control panel, wiring, refrigerant piping, insulated Drain pan low noise condenser fan coupled with variable speed motor, auto check-function for connection error, auto addressing Including required no. of multi connection piping kit . and all accessories required for smooth operation of the system. The condensing unit shall be mounted on framework by means of 8mm thick neoprene type vibration isolators and shall be factory charged & any top-up gas/ oil required for first charge. Refrigerant gas should be R410A and capable of cooling as well as Heating (Heat pump/ cooling only)				
	The ODU shall be with special pre-coated fins, panel, corrosion resistant & hydrophilic treatment coated condenser, variable speed based condenser fan M.S. hot dip galvanised stands / supports, electrical & microprocessor panel, sub cooler, accumulator, liquid injection system, isolating valves and all the necessary accessories for proper functioning of the units. (Concreting, structural steel frame work and painting on frame work shall be paid separately).				
6.3.1.1	ODU- (18 HP) (Ckt 1) (Heat pump)	Each	1	5 44 764	5 44 764
6.3.1.2	ODU- (16 HP) (Ckt 2) (Heat pump)	Each	1	5 11 026	5 11 026
6.3.2	Supply, Installation, Testing and commissioning of indoor units complete with blower, cooling coil, air filter of efficiency 80% down to 20 microns, insulated drain pan & drain pump (except high wall). Indoor units should have wireless/ corded Remote Controller as a standard accessory.				
6.3.2.1	CKT 1 (18HP)				
6.3.2.1.1	High wall 1.5TR	Each	9	25 400	2 28 600
6.3.2.1.2	High wall 2.0TR	Each	2	28 392	56 784
6.3.2.2	CKT 2 (16HP)				
6.3.2.2.1	High wall 1.5TR	Each	5	25 400	1 27 000
6.3.2.2.2	High wall 2.0TR	Each	5	28 392	1 41 960
6.3.3	Supply, Installation, Testing and Commissioning of touch screen type centralized controller for controlling, monitoring, scheduling all the indoor units and outdoor units.	Each	1	47 700	47 700
6.3.4	Supply, Installation, Testing and Commissioning of Y branches complete with nitrile rubber insulation including ODU. (Set = Supply + return)	Set	19	5 565	1 05 735
6.3.5	Supply, Installation, Testing and commissioning of the refrigerant piping (copper pipe thickness as specified) with nitrile rubber insulation in sleeve form. The insulation shall be 19 mm thick for suction piping & 12 mm thick for liquid line. All Exposed Piping on the Terrace/ in open shall be enclosed in openable GI trays & insulation should be with UV protection. The Ref. Piping shall be properly supported at every 1.5 m distance with stands and proper supports. The scope includes making proper cutouts in floor/ roof for routing refrigerant pipes.				
6.3.5.1	CKT 1 (18HP)				
6.3.5.1.1	Suction Line	Metre	110	901	99 110
6.3.5.1.2	Liquid Line	Metre	110	795	87 450
6.3.5.1.3	Terrace Cable tray + UV treatment	Metre	38	1 113	42 294
6.3.5.2	CKT 2 (16HP)				

S.No.	Description	Unit	Qty	Rate	Amount
6.3.5.2.1	Suction Line	Metre	110	901	99 110
6.3.5.2.2	Liquid Line	Metre	110	795	87 450
6.3.5.2.3	Terrace Cable tray + UV treatment	Metre	40	1 113	44 520
6.3.6	Hard PVC Drain piping with drain trap & insulated with 6mm thick Nitrile Rubber Sleeve insulation with necessary tees, elbows and fittings. All drain piping shall be firmly supported by M S painted angles from ceiling.				
6.3.6.1	25mm Dia	Metre	150	220	33 000
6.3.6.2	32mm Dia	Metre	10	267	2 670
6.3.6.3	40mm Dia	Metre	5	414	2 070
6.3.7	Supply, installation, testing and commissioning of Duct mounted in-line exhaust air fans comprising of Housing made out of heavy gauge galvanized sheets, SISW forward curved centrifugal fan complete with internal rotor motor suitable for 1 phase, 230 volts, 50 Hz required for the exhaust. The fan shall be complete with thermal overload release for the motor as well as terminal box for termination of external power supply.				
	Capacity : 200 CFM 5 to 8mm static	Each	3	8 328	24 984
6.3.8	Supply, installation, testing and commissioning of axial flow exhaust air fans (Propeller fan) with gravity louvers, frame, etc complete with motor suitable for 1 Phase, 230 volts, 50 Hz required for the following capacities				
	Capacity : 100 CFM 3 to 5 mm static	Each	25	8 764	2 19 100
6.4	HVAC (Electrical related)				
6.4.1	Supply & Installation of interconnecting control & transmission Copper wiring as required in PVC conduit/ cable tray between IDU & ODU.				
6.4.1.1	22 TR Ductable	Metre	150	351	52 650
6.4.1.2	5.5 TR Ductable	Metre	50	231	11 550
6.4.1.3	3 TR Ductable	Metre	12	231	2 772
6.4.2	Supply & Installation of interconnecting control & transmission Copper wiring 2C x 1.25sqmm as required in PVC conduit.	Metre	230	251	57 730
6.4.3	Supplying, installation, testing and commissioning of M.V. Panel board of cubical suitable for outdoor application including connections and inter connections complete with electrical isolator for the following:				
6.4.3.1	125Amp TPN MCCB (Motor duty) for 22TR ODU	Each	5	17 254	86 270
6.4.3.2	63Amp TPN MCB for 18HP & 16HP VRF ODU	Each	2	5 343	10 686
6.4.3.3	32Amp TPN MCB (Motor duty) for 5.5TR ODU	Each	2	4 027	8 054
6.4.3.4	25Amp TPN MCB (Motor duty) for 3TR ODU	Each	1	3 339	3 339
6.4.4	Supplying and laying of following PVC insulated Copper conductor armoured cables 650/ 1100 volts complete with cable tray, clamps, saddles, cable glands, thimble etc. including effecting proper connection to the equipment as required.				
6.4.4.1	6c x 10 Sq.mm	Metre	20	987	19 740
6.4.4.2	3.5c x 4 Sq.mm	Metre	20	462	9 240
6.4.4.3	4c x 25 Sq.mm (22TR ODU)	Metre	150	1 287	1 93 050
6.4.4.4	4c x 6 Sq.mm (5.5TR ODU)	Metre	50	487	24 350
6.4.4.5	4c x 4 Sq.mm (3TR ODU)	Metre	12	413	4 956

S.No.	Description	Unit	Qty	Rate	Amount
6.4.5	Supply and laying of 8 SWG GI wires on surface or in recess for earthing including fixing clamps and effecting proper connections to equipment etc. complete as required.	Metre	400	64	25 600
6.5	HVAC (Chillers)				
6.5.1	Supply, installation, testing and commissioning of Rotary Screw Water Chilling M/C of 70 TR (Actual) capacity Conusming not more than 0.68 (IKW) at 100 % Load at below mentioned operating conditions with R -134A refrigerant/ semihermatic/ sealed compressor, driven by suitable KW Sq.Cage induction motor complete with water cooled shell & tube condenser, insulated shell and tube flooded/ DX chiller, flow switches at condenser & chiller outlet, refrigerant piping, Refrigerant and Oil (First Charge), Microprocessor based control panel & accessories etc. (to be supplied by manufacturer of the chilling machine & Factory fitted) all mounted on M.S. frame. Motor shall be suitable for 415 volts \pm 10%, 50Hz \pm 3 %, three phase A.C. supply.				
	(One working and one stand by)				
	Condenser CDW IN - 32.2 ° C.				
	CDW OUT - 36.4 ° C.				
	Chiller CHW IN - 12.22° C.				
	CHW OUT - 6.67° C.	Set	1	16 70 295	16 70 295
6.5.2	Supply, installation, testing and commissioning of End Suction condenser water centrifugal pump sets with bronze impeller for condenser water recirculation complete with TEFC Sq. Cage induction motor with class "F" insulation, MS base plate, vibration isolators, mechanical seal etc. conforming to technical specification & as per following parameters:	Set	1	1 13 844	1 13 844
	(One working and one stand by)				
	Proposed HP of Motor 20.0				
	Capacity of each pump (LPM) 1815				
	Pump Head (Mt) 24.00				
6.5.3	Supply, installation, testing and commissioning of end suction chilled water centrifugal pumpsets with bronze impeller for chilled water recirculation complete with TEFC Sq. Cage induction motor with class "F" insulation, MS base plate, vibration isolators, mechanical seal etc. conforming to technical specification and as per following parameters. The chilled water pumps shall include thermal insulation & cladding.				
	(One working and one stand by)				
	Capacity of each pump (LPM) 1090				
	Pump Head (Mt) 28.0				
	Proposed HP of Motor 15.0	Set	1	1 01 595	1 01 595
6.5.4	Supply, installation, testing and commissioning of FRP induced draft Cooling Tower of capacity 100 TR (Heat Rejection Capacity - 453600 K Cal per hour) complete with FRP water basin, PVC fillings, statically and dynamically balanced fan, TEFC motor, suction screen, make up & quick fill arrangement, over flow & drain connection, suitable steel ladder etc. and conforming to standard specification.	Set	2	2 62 032	5 24 064
	(One working and one stand by)				
	Inlet Water Temperature 36.4 ° C				
	Outlet Water Temperature 32.2 ° C				

S.No.	Description	Unit	Qty	Rate	Amount
	AIR CIRCULATION SYSTEM				
6.5.5	Supply, installation, testing and commissioning of factory fabricated Double Skinned Chilled Water Air-handling unit horizontal type fabricated out of extruded aluminium section with 0.6mm pre-plasticized/ pre-coated Galvanised steel sheet outside & 0.6 mm plain Galvanised steel sheet inside with blower, blower section and blower motor TEFC type suitable for operation on 415 volts \pm 10%, 50 Hz \pm 5% AC supply, 4 Row cooling coil made of Aluminium finned Copper tube with coil section, pre-filter section with non woven synthetic media of 10 micron particle size with an efficiency of 90%, polished stainless steel drain pan made out of 22 G sheet duly insulated complete with motor and belt drive package etc. without face and bypass dampers. The AHU panels shall be insulated with 23mm thick & 36 Kg/m ³ density PU foam. The motor & blower assembly shall be mounted on Aluminium extruded section only. The complete AHU shall confirm to standard specification. The face velocity across cooling coil sng of following:n-Charge.and slabs.e sealant) provided and fixed in position, shall be				
	(For AHU No. Please Refer Basic Of Design Section 20 & AC Tender Drawing)				
	CMH(CFM) TR ST.Pr. C.C. ROW HP				
6.5.5.1	13,600(8000) 21 50 mm 4 7.5	Each	1	1 69 703	1 69 703
6.5.5.2	11,050(6500) 17 50 mm 4 5.5	Each	1	1 54 348	1 54 348
6.5.5.3	68,00(4000) 7 50 mm 4 3.0	Each	1	1 00 206	1 00 206
6.5.6	Supply, installation, testing and commissioning of factory fabricated Double Skinned Chilled Water Air-handling unit horizontal type fabricated out of extruded aluminium section with 0.6mm pre-plasticized/ pre-coated Galvanised steel sheet outside & 0.6 mm plain Galvanised steel sheet inside with blower, blower section and blower motor TEFC type suitable for operation on 415 volts \pm 10%, 50 Hz \pm 5% AC supply, 4 Row cooling coil made of Aluminium finned Copper tube with coil section, pre-filter section with non woven synthetic media of 10 micron particle size with an efficiency of 90%, polished stainless steel drain pan made out of 22 G sheet duly insulated complete with motor and belt drive package etc. without face and bypass dampers. The AHU panels shall be insulated with 23mm thick & 36 Kg/m ³ density PU foam. The motor & blower assembly shall be mounted on Aluminium extruded section only The complete AHU shall confirm to standard specification.The face velocity across cooling coil shall be limited ng of following:n-Charge.and slabs.e sealant) provided and fixed in po				
	The capacity of Air-handlers shall be as follows:				
	CMH(CFM) TR ST.Pr. C.C. ROW HP				
6.5.6.1	5100(3000) 6 40 mm 4 2.0	Each	1	75 019	75 019
6.5.6.2	4250(2500) 5 32 mm 4 1.5	Each	1	63 571	63 571
6.5.6.3	3400(2000) 4 32 mm 4 1.0	Each	1	56 164	56 164
6.5.7	Supply, installation, testing and commissioning of GI powder coated fan coil units made of 1.25 mm thick GI Sheet complete with fan, 3 speed motor, 4 row deep cooling coil, aluminium filters with filter box, double sandwiched insulated tray, ball valve with strainer,balancing valve, copper connection, rotary switch, supporting arrangement, electrical wiring etc. The fan shall be selected for 5 mm static pressure. The complete Fan coil unit shall be in line with the standard specification. The capacity of fan coil units shall be as follows:				
	CMH(CFM) TR ST.Pr. C.C. ROW HP				
	1020(600) 1.5 5 4 0.25	Each	12	18 291	2 19 492

S.No.	Description	Unit	Qty	Rate	Amount
6.5.8	Supply, installation, testing and commissioning of automatic control for Fan Coil Units consisting of two way motorised valves with & thermostat with snap acting Valve 1.5 TR (25 mm dia.)	Each	12	4 364	52 368
6.5.9	Supply, installation, testing and commissioning of Three Way 25mm dia motorised valves duly insulated (50 mm thick expanded Polystyrene) with modulating motor in cooling coil of air handling units with actuator & electronic modulating thermostat with digital display alongwith transformer of following size.	Each	2	21 476	42 952
6.5.9.1	32 mm dia	Each	2	21 638	43 276
6.5.9.2	40 mm dia	Each	1	24 298	24 298
6.5.9.3	50 mm dia	Each	2	27 683	55 366
6.5.10	Supply, installation, testing and commissioning of bare Chilled/ Condenser water piping of M.S. C 'Heavy' Class complete with Heavy Class fittings like elbows, tees, reducers bends, MS flanges, supports, welding etc. but excluding valves as required conforming to IS:1239/ 3589 & as per specification of this tender.				
6.5.10.1	25 mm dia	Metre	80	314	25 120
6.5.10.2	32 mm dia	Metre	120	401	48 120
6.5.10.3	40 mm dia	Metre	75	463	34 725
6.5.10.4	50 mm dia	Metre	90	726	65 340
6.5.10.5	65 mm dia	Metre	30	945	28 350
6.5.10.6	80 mm dia	Metre	20	1 155	23 100
6.5.10.7	100 mm dia	Metre	20	1 711	34 220
6.5.10.8	125 mm dia	Metre	50	2 153	1 07 650
6.5.11	Supply, installation, testing and commissioning of butterfly valves of approved make with CI body SS disc nitrile sheet & O - ring & PN 16 pressure rating as specified confirming to standards with nuts, bolts, washers, gaskets etc. all complete of following sizes as required.				
6.5.11.1	50 mm dia	Each	5	2 831	14 155
6.5.11.2	65 mm dia	Each	4	3 149	12 596
6.5.11.3	80 mm dia	Each	4	3 500	14 000
6.5.11.4	125 mm dia	Each	5	5 446	27 230
6.5.12	Supply, installation, testing and commissioning of check valves of approved make in position as specified confirming to standards with nuts, bolts, washers, gaskets etc. all complete of following sizes as required.				
6.5.12.1	80 mm dia	Each	2	3 653	7 306
6.5.12.2	125 mm dia	Each	2	6 884	13 768
6.5.13	Supply, installation, testing and commissioning of balancing valves of approved make in position as specified confirming to standards with nuts, bolts, washers, gaskets etc. all complete of following sizes as required.				
6.5.13.1	25 mm dia	Each	2	2 968	5 936
6.5.13.2	32 mm dia	Each	6	3 743	22 458
6.5.13.3	40 mm dia	Each	1	3 366	3 366
6.5.13.4	50 mm dia	Each	4	6 769	27 076
6.5.13.5	125 mm dia	Each	2	19 724	39 448

S.No.	Description	Unit	Qty	Rate	Amount
6.5.14	Supply, installation, testing and commissioning of Y-Strainer in position of approved make as specified confirming to standards with nuts, bolts, washers, gaskets etc. all complete of following sizes as required.				
6.5.14.1	25 mm dia	Each	2	1 313	2 626
6.5.14.2	32 mm dia	Each	6	1 643	9 858
6.5.14.3	40 mm dia	Each	1	2 627	2 627
6.5.14.4	50 mm dia	Each	4	3 727	14 908
6.5.14.5	125 mm dia	Each	2	10 473	20 946
6.5.15	Supply, installation, testing and commissioning of 150 mm dia Pot - Strainer of approved make in position as specified confirming to standards with nuts, bolts, washers, gaskets etc. all complete as required.	Each	1	53 423	53 423
6.5.16	Supply, installation, testing and commissioning of ball valves of approved make in position as specified confirming to standards with nuts, bolts, washers, gaskets etc. all complete of following sizes as required.				
6.5.16.1	25 mm dia	Each	4	963	3 852
6.5.16.2	32 mm dia	Each	14	1 114	15 596
6.5.16.3	40 mm dia	Each	2	1 435	2 870
6.5.17	Supply, installation, testing and commissioning of mercury filled 'V' form thermometer of approved make in position as specified confirming to standards with nuts, bolts, washers, gaskets etc. all complete as required.	Each	18	789	14 202
6.5.18	Supply, installation, testing and commissioning of pressure guage of 150mm dia of approved make in position as specified confirming to standards with nuts, bolts, washers, gaskets etc. all complete as required.	Each	16	1 076	17 216
6.5.19	Supply, installation, testing and commissioning of common pressure guage with valves across the chilled water supply/ return to AHU only as per specification.	Each	5	1 866	9 330
6.5.20	Supply, installation, testing and commissioning of condensate drain water piping of GI 'Medium' class complete with Medium Class fittings like elbows, tees, reducers bends, MS flanges, supports, welding, painting etc. as required conforming to standard specifications and of following sizes.				
6.5.20.1	25 mm dia	Metre	40	310	12 400
6.5.20.2	40 mm dia	Metre	120	462	55 440
6.5.20.3	50 mm dia	Metre	80	600	48 000
6.5.20.4	65 mm dia	Metre	20	603	12 060
6.5.21.1	Supply, installation, testing and commissioning of 15 mm dia auto air vent valve with isolated ball valve as required conforming to standard specifications.	Each	12	757	9 084
	AIR DISTRIBUTION SYSTEM				
6.5.22	FACTORY FABRICATED Rectangular / Square Ducting				
	Supply, fabrication, installation and testing of factory fabricated G.S.S. sheet metal ducting complete with Splitter Damper, vanes as required & as per specifications & as per approved shop drawings.				
6.5.22.1	24 G (0.63 mm)	Sq.m.	520	734	3 81 680
6.5.22.2	22 G (0.80 mm)	Sq.m.	180	902	1 62 360
6.5.22.3	20 G (1.00 mm)	Sq.m.	100	1 090	1 09 000

S.No.	Description	Unit	Qty	Rate	Amount
6.5.23	Supply, installation & testing of Duct/ Wall mounted GI Fire Dampers actuated with the help of 24V electric actuator and as per specifications excluding actuator inclusive of interconnection with Control Cable to Potential Free Contact in Fire Alarm Panel. The rate is inclusive of Cost of Contact Panel.	Sq.m.	4	6 852	27 408
6.5.24	Supply, installation, testing and commissioning of Motorised Spring Return Actuator for devices upto 0.8 sq. metre with with control panel & temperature sensor.	Each	12	9 090	1 09 080
6.5.25	Supply, installation, testing and commissioning of Powder coated Aluminium extruded grills as per specification & of following sizes:				
6.5.25.1	Powder coated Aluminium extruded linear grills 150 mm height for supply and return air as per specification & as per shop drawings.	Sq.m.	50	5 283	2 64 150
6.5.25.2	Fresh air intake louvers bird screen type (Aluminium extruded only) with 16 guage made VCD as per specification and sizes as per shop drawings.	Sq.m.	2	6 656	13 312
6.5.25.3	Aluminium extruded volume control dampers with key operated of anodised black painted in supply air grills as per shop drawings.	Sq.m.	15	5 640	84 600
6.5.26	Supplying and fixing of external thermal insulation on ducts with Aluminium faced 50mm thick fibre glass of density 24 Kg/m ³ with all longitudinal/ transverse joints sealed with self adhesive aluminium tape of width 50mm & finally fix 19mm PVC straps as required & as per specifications of this tender.	Sq.m.	650	550	3 57 500
6.5.27	Supplying and fixing of acoustic lining of duct with 12 mm thick fibre glass rigid board of density 48 Kg/m ³ sealed in fibre glass tissue paper and covered with 0.5mm thick perforated aluminium sheet as required & as per specifications of this tender.	Sq.m.	80	538	43 040
6.5.28	Supply and installation of insulation on chilled/ condenser water piping with pre-moulded pipe section of 50mm thick Expanded Polystyrene on 150mm dia & below, 75mm thick pre-moulded pipe size more than 150mm dia. pipe P quality expanded polystyrene duly aluminium cladded and shall be as per standard specification. (Inside The Building on surface)				
6.5.28.1	25 mm dia pipe	Metre	80	252	20 160
6.5.28.2	32 mm dia pipe	Metre	80	279	22 320
6.5.28.3	40 mm dia pipe	Metre	100	312	31 200
6.5.28.4	50 mm dia pipe	Metre	90	354	31 860
6.5.28.5	65 mm dia pipe	Metre	30	397	11 910
6.5.28.6	80 mm dia pipe	Metre	35	445	15 575
6.5.28.7	100 mm dia pipe	Metre	15	505	7 575
6.5.28.8	125 mm dia pipe	Metre	50	571	28 550
6.5.29	Supply and installation of Insulation on valves with 50mm thick expanded polystyrene duly aluminium cladded and shall be as per standard specification.				
6.5.29.1	2-way motorised valve				
6.5.29.1.1	For 25 mm dia.	Each	18	378	6 804
6.5.29.2	3-way motorised valve				
6.5.29.2.1	For 25 mm dia	Each	2	378	756
6.5.29.2.2	For 32 mm dia	Each	6	418	2 508
6.5.29.2.3	For 40 mm dia	Each	1	468	468
6.5.29.2.4	For 50 mm dia	Each	4	530	2 120
6.5.29.3	Butterfly valve				

S.No.	Description	Unit	Qty	Rate	Amount
6.5.29.3.1	50 mm dia	Each	10	530	5 300
6.5.29.3.2	65 mm dia	Each	8	595	4 760
6.5.29.3.3	80 mm dia	Each	4	668	2 672
6.5.29.3.4	125 mm dia	Each	8	857	6 856
6.5.29.4	Dual plate (NRV) valve				
6.5.29.4.1	80 mm dia	Each	2	668	1 336
6.5.29.4.2	125 mm dia	Each	2	857	1 714
6.5.29.5	Balancing valve				
6.5.29.5.1	25 mm dia	Each	2	378	756
6.5.29.5.2	32 mm dia	Each	6	418	2 508
6.5.29.5.3	40 mm dia	Each	1	468	468
6.5.29.5.4	50 mm dia	Each	4	530	2 120
6.5.29.5.5	125 mm dia	Each	2	857	1 714
6.5.29.6	Y-Strainer valve				
6.5.29.6.1	25 mm dia	Each	2	378	756
6.5.29.6.2	32 mm dia	Each	6	418	2 508
6.5.29.6.3	40 mm dia	Each	1	468	468
6.5.29.6.4	50 mm dia	Each	4	530	2 120
6.5.29.6.5	125 mm dia	Each	2	857	1 714
6.5.29.7	Ball valve				
6.5.29.7.1	25 mm dia	Each	4	378	1 512
6.5.29.7.2	32 mm dia	Each	14	418	5 852
6.5.29.7.3	40 mm dia	Each	2	468	936
6.5.30	Insulation of condensate drain water piping with 25 mm thick pre - moulded expanded polystyrene (P Quality) pipe section duly aluminium cladded and shall be as per standard specification.				
6.5.30.1	25 mm dia pipe	Metre	40	253	10 120
6.5.30.2	40 mm dia pipe	Metre	120	280	33 600
6.5.30.3	50 mm dia pipe	Metre	80	300	24 000
6.5.30.4	65 mm dia pipe	Metre	20	322	6 440
6.5.31	Supply, installation, testing and commissioning of expansion tank duly insulated with 75mm thick expanded polystyrene and made out of 3 mm thick MS sheet duly epoxy coated from outside & inside of size 0.6m x 0.6m x 0.6m complete with aluminium cladding of 24gauge with all accessories & fittings for chilled water only.	Each	1	21 853	21 853
	ELECTRICAL WORK				
6.5.32	CUBICAL PANEL BOARD	Set	1	6 63 635	6 63 635
	i) 70 TR Actual Water-Cooled Screw Chilling Machine (1W + 1S)				
	iii) 20.0 HP CDW Pumps (1W+1S)				
	iv) 12.5 HP. CHW Pumps (1W+1S)				
	v) 7.5 HP (150 TR) Cooling Tower (1W+ 1S)				
	vi) 30 KW HWG (2W)				
	vii) 3.0 HP. HWG Pumps 2W				

S.No.	Description	Unit	Qty	Rate	Amount
	Supply, installation, testing and commissioning of non draw out Cubical type sectionalised & Compartmentalised floor standing powder coated switch board of 31 MVA fault capacity at 415 V complete with 4 strip, 400 A capacity Aluminium Bus - Bar Electrolytic grade,cable alley & supplying & fixing of following switchgears as per specifications including connections & interconnections.				
	i) INCOMER				
	400 A FP MCCB Manual Draw out Microprocessor based electronic trip adjustable protection relays type with overload, short ckt., earth fault protection release & under voltage protection, selector switch, phase indication light with protection fuse on /off / trip indicating light with Protection Fuse. (Catalogue should be submitted).The Display of all Parameters I,e Current, Voltage, Power, Frequency etc. shall be through Process Controller.				
	MCCB shall be of 35 KA (Icu = Ics) SET 01				
	OUTGOINGS				
	For 2 No. 120 TR Screw Water Chilling Machine				
	250 A FP MCCB Manual Draw out Microprocessor based electronic trip adjustable protection relays type with overload,short ckt., Protection, on / off / trip indicating light with Protection use .The Display of all Parameters i,e Currant, Voltage, Power,Frequency etc. shall be through procedd controller MCCB shall be of 35 KA (Ics=Icu) SET - 02				
	For 2 Nos. 20 HP Condenser Water Pumps.				
	63 A TP MCCB with 25 A Star Delta starter , overload relay start / stop push buttons, ammeter (0-100A) with three CT, on / off / trip indication lights with protection fuse , single phase preventer with auto / manual mode selector switch & spare auxiliary Contact for BMS Use. MCCB shall be of 10 KA (Icu=Ics). SET - 02				
	For 2 Nos. 15 HP Chilled Water Pumps.				
	40 A TP MCB with 16 A Star Delta starter , overload relay start / stop push buttons, ammeter (0-40A) with three CT, on / off / trip indication lights with protection fuse , single phase preventer with auto / manual mode selector switch & spare auxiliary Contact for BMS Use. MCCB shall be of 10 KA (Icu=Ics). SET - 02				
	For 2 Nos. 7.5 HP Cooling Towers fan motor.				
	40 A TP MCB with 16 A Star Delta starter , overload relay start / stop push buttons, ammeter (0-40A) with three CT, on / off / trip indication lights with protection fuse , single phase preventer with auto / manual mode selector switch & spare auxiliary Contact for BMS Use. MCCB shall be of 10 KA (Icu=Ics). SET - 02				
	For 2 No. 30 KW Hot Water Generator				
	100 A TP MCCB with 63 A Star Delta starter , overload relay start / stop push buttons, ammeter (0-100A) with three CT, on / off / trip indication lights with protection fuse , single phase preventer with auto / manual mode selector switch , on / off / trip indication light with protection fuses.spare auxiliary Contact for BMS Use.MCCB Shall be 35 A (Icu=Ics) SET - 02				
	Controls & interlocking accessories as Complet with connection / interconnection required for above switchgears - LOT				

S.No.	Description	Unit	Qty	Rate	Amount
	40 A TP MCB with 16 A Star Delta starter , overload relay start / stop push buttons, ammeter (0-40A) with three CT, on / off / trip indication lights with protection fuse , single phase preventer with auto / manual mode selector switch & spare auxiliary Contact for BMS Use. MCCB shall be of 10 KA (Icu=Ics).-SET - 02				
6.5.33	SUB - PANELS FOR AIR HANDLING UNITS				
	Supply , installation , testing and commissioning of Cubical type sectionalised & Compartmentalised floor Standing switch board with 4 strip Alumimun Bus Bar suitable capacity, Cable alay etc of as detailed below & conforming to the specification. Including connections & interconnection etc as required.				
6.5.33.1	For AHU (Up to 5 HP Fan Motor)				
	32 A TP MCB with 16 A DOL starter , overload relay start/stop push buttons, ammeter (0-32A) ON / OFF / TRIP indication lights with Single Phase Fuse. MCB Shall be of 10 KA (Icu=Ics). SET - 01	Each	6	14 143	84 858
6.5.33.2	Supply and installation of 40 A 3 pole isolator switch for cooling towers with sheet metal enclosure, rain protection etc. as required to suit the site condition.				
	Controls & interlocking accessories as required. SET - 01	Each	2	1 748	3 496
6.5.34	REMOTE CONTROL CONSOLE				
	Supply, installation, testing and commissioning of floor mounted desk type control console with mimic diagram comprising of Start/ stop push buttons,status indication i.e.on/ off /trip for 2 no.Water- cooled screw Chilling M/c , 2 nos.Condenser Water Pump Sets, 2 nos. Chilled Water Pump Sets, 02 nos. Cooling Tower, 13 nos. AHUs 02 nos. Hot Water Generator, 02 nos.HWG pumps and 3 nos. spare etc. as per specification.				
	Common faults for each chiller such as flow switch with associated relays hooter, fault accept & reset arrangements shall be as per specification.	Each	1	2 41 394	2 41 394
	POWER & CONTROL CABLING				
6.5.35	Supply, laying, testing and commissioning of power and control cabling, as per Standard specification including end termination as required.				
6.5.35.1	Power Cabling (XLPE) insulated and PVC sheathed, armoured, Aluminium Conductor of 1.1 KV grade on cable trays).				
6.5.35.1.1	For Water cooled screw Chilling Machine				
	3C x 185 Sq. mm	Metre	40	1 040	41 600
6.5.35.1.2	For Condenser Water Pumps - 15 HP				
	3C x 10 Sq. mm	Metre	75	179	13 425
6.5.35.1.3	For Chilled Water Pumps - 12.5 HP				
	3C x 10 Sq. mm	Metre	75	179	13 425
6.5.35.1.4	For Cooling Tower - 7.5 HP				
	3C x 6 Sq. mm	Metre	100	154	15 400
6.5.35.1.5	For AHU				
	3C x 4 Sq. mm	Metre	90	134	12 060
6.5.35.2	Control Cabling (PVC insulated and PVC sheathed, armoured, Copper Conductor of 1.1KV grade on existing cable trays).				
6.5.35.2.1	3C x 1.5 Sq. mm	Metre	50	214	10 700

S.No.	Description	Unit	Qty	Rate	Amount
6.5.35.2.2	4C x 1.5 Sq. mm	Metre	20	243	4 860
6.5.35.2.3	5C x 1.5 Sq. mm	Metre	250	220	55 000
6.5.36	Earthing Strip / Wires.				
	Providing and fixing of following sizes copper strip on surface or in recess for connection etc as required.				
6.5.36.1	25 mm x 5 mm	Metre	80	445	35 600
6.5.36.2	Providing. & fixing 4.0 mm dia. Copper wire on surface or in recess , along with the exiting cable for loop earthing including connection etc as required	Metre	350	13	4 550
6.5.37	Supply & laying of rubber mat of size 1000 mm & 12 mm thick	Metre	5	1 018	5 090
6.5.38	Supply& installation of ladder type 16G MS Painted 'U' shaped channel cable tray of following sizes:(including horizontal & Vertical bends, reducers tees,cross member & other accessories as required & duly suspended from the ceiling with M.S. suspenders)				
6.5.38.1	40 x 150 x 2 mm wide	Metre	80	429.6	34 368
6.5.38.2	50 x 250 x 2 mm wide	Metre	100	512.4	51 240
6.5.38.3	50 x 450 x 2 mm wide	Metre	50	589.2	29 460
6.6	Standby AHUs in SAF building				
6.6.1	Supplying, installing, testing and commissioning of factory built Two tier Air Handling units double skin type as described below				
	AHU shall be certified for the following as per prEN 1886 / 2007. 1. Casing air leakage - L1 2. Casing strength - D1 3. Filter by pass leakage - F9 4. Thermal bridge factor - TB2 5. Casing thermal transmittance - T4				
	Construction details. 1. Inner Skin - 1mm Plain SS-304 2. Outer Skin - 0.8mm PrePainted / GSS / pre plastisized 3. Panel Insulation - +45mm thick panel with polyurethane foam (PUF) insulation having density of 42kg/cum factory injected between them by injection moulding machine or Rockwool / mineral wool Insulation With density of 50 kg/m3 4. With Thermal Break profile 5. View windows, 6. Marine Lamp & limit switch, electrically interlocked fan section with access door, 7. Fire retardant flexible joints for outlets of the units. 8. Drain connection with SS304 drain pan (1.5 mm Thick) duly insulated 9. Necessary vibration isolation arrangement to avoid any vibration etc. 10. Two bend PVC eliminators. 11. Pressure ports across filters. 12. Maximum possible size of AHU can be 6.6m (Length) x 2.5m (Width) x 4m (Height)				

S.No.	Description	Unit	Qty	Rate	Amount
	AHU shall be complete with backward curved supply / Exhaust air centrifugal fan, supply & exhaust fans shall be plug type (SWSI) direct driven with VFD, heat recovering wheels for cooling the fresh air, TEFC motors (IE3 efficiency) VFD compatible suitable for 415 + 10% volts, 50 Hz, 3 phase AC supply. Sensible and latent heat transfer efficiency of heat recovery unit shall be more than 70%. The wheel shall be made of pure aluminium foil coated with molecular sieve desiccant. The cross contamination between the two air streams shall be nil and leakage less than 0.04%. The wheels shall have non contact labyrinth seals for effective sealing between the two air streams.				
	Chilled water cooling coil with aluminium finned copper tubes (tube thickness not less than 0.5mm) connected to Copper headers (min two coils, with separate headers) Coil Casing/ supports shall be of SS- 304 The face velocity across cooling coil shall be limited to 450 FPM				
	Filter section having pre, fine & HEPA filter section (Pre filters -minimum 10 micron particle size with an efficiency of 90% filters, HEPA filters with an efficiency 99.97% down to 0.3 micron)				
	Tubular heater section in supply air of 30KW (equally distributed over the 3 phases.) The scope shall include 1. Heating thermostat (TH) for temperature control 2. Air flow switch for switching off heaters in case of no air flow, 3. Humidistats (HU) for humidity control, 4. Safety stats (SF), 5. Gyser stat, complete with interwiring including cable, switch gear & connection thimbles, clamps, earthing, etc , terminal electrical distribution board, glass insulated flexible wires for connection of heaters, fire rated fillings at duct crossing etc. as required.				
	UVGI lamps - UVC emitter (Each AHU will have combination of 2 feet long UVC lamps, each lamp shall cover effectively 4sqft of area) in coil section of AHU. The scope shall include electrical wiring and electrical isolator for following capacities. The purpose of these UVC emitters is to improve indoor air quality (IAQ) by eliminating mould, bacteria and other contaminants in down stream section. The scope shall include				
	DPR operated variable speed arrangement (V.F.D) in weather proof enclosure complete with incoming electrical isolator, for supply air fan to allow for constant air volume delivery at all filter pressure drop conditions. The scope shall include pressure drop sensors with alarm system.				
	DPR operated variable speed arrangement (V.F.D) in weather proof enclosure complete with incoming electrical isolator for Exhaust fan motor.				
	AHU mounted Contactor complete with suitable incoming electrical isolator for 30KW heaters in weather proof enclosure				
	3 Nos. of Butterfly valve - (S & R of coils + bypass of 3 way valve)				
	1 No. of Y strainer in water supply to cooling coil				
	1 No. of 3 way valve- Port 1 connected to return of 1st coil, port 2 connected to supply of 2nd coil and the 3rd port connected to return of 2nd coil.				

S.No.	Description	Unit	Qty	Rate	Amount
	Automatic pressure independent balancing cum control valve having manual override facility with proportionate thermostat and wiring for interconnection with 1.5 sq.mm copper conductor multicore armoured cable complete as per specifications and as required.				
	Cowls with louvers at intake & exhaust louvers complete with washable 10µ filters, GI bird screen, etc as required.				
	AHU's shall be mounted on P.C.C. blocks with neoprene pads in between as per specifications. & FRP sheet to cover AHU.				
	Set of each Temperature & water pressure guage (100 mm Ø) bourdon type with brass ball valve of 3/8" Ø and SS tubing, socket. Range (0-50)				
	Aut air vent on header of coil in AHU.				
	Supply, installation, testing and commissioning of humidification package comprising of 500 watt + 6000 watt heaters, stainless steel (3mm thick) fabricated tank sockets for cold water inlet of 1/2" dia., steam outlet of 2" dia., overflow and drain connections complete with isolating Brass gate valves. The humidity control shall be by means of a humidistat.				
	The capacity of Air-handlers shall be as follows:				
	SAF Terrace 8 & 9 19200 CFM / (# of rows 4 + 4) 140mm /50mm	Set	2	55 31 080	1 10 62 160
	Note: VFDs, Automatic pressure independent valve, 3 way valve, electrical heater panel, temperature sensors, thermostats, etc shall be BMS compactable				
6.6.2	Connecting the cooling coil to existing header with 80mm dia pipe including removal of existing insulation and redoing the same after completion of work, scope also includes insulation, cladding of chilled water pipe with 26 gauge GI sheet.	Metre	50	2 120	1 06 000
6.6.3	Drain water piping of 40 mm dia GI medium class conforming to IS:1239 as per specification complete with bends, tees, supports etc. as required including providing U-trap for each AHU and 25mm thick insulation on drain water piping of rigid expanded Polystyrene pipe section of TF-quality pipe sections. The piping shall be wrapped with polyethylene sheet retained by GI wire netting and finally applied with two layers of sand cement plaster 12mm thick and painted as per specs.	Metre	20	424	8 480
6.6.4	Making a cut out for chilled water pipe on vertical wall of AHU room and finishing the same as it was after completion of piping work.	Lot	2	10 600	21 200
6.6.5	Making a cut out for supply air duct & exhaust air duct on vertical wall of AHU room and finishing the same as it was after completion of ducting work.	Lot	6	15 900	95 400
6.6.6	Supply, Installation, Testing Balancing & Commissioning of G.S.S square/ rectangular factory fabricated ducting complete with gaskets, elbows, splitters, vanes, supports adjustable dampers, etc. as per drawings and as required for dehumidified air distribution of following thickness as per approved working drawings, specifications and requirement .				
6.6.6.1	Thickness 1.25 mm (18 SWG)	Sq.m.	40	1 332	53 280
6.6.6.2	Thickness 1.00 mm (20 SWG)	Sq.m.	310	1 064	3 29 840
6.6.7	Supply, installation , testing commissioning of closed cell 25mm thick EPDM Elastomeric rubber Insulation for Ducting with an insulating value not more than 0.038 W/mK at 32 deg C mean temp, fire rating of class VO as per UL 94 in specified thickness. Insulation shall be applied with adhesive and necessary accessories for installation 26 G aluminium cladding over the insulation to be provided	Sq.m.	350	2 332	8 16 200

S.No.	Description	Unit	Qty	Rate	Amount
6.6.8	Supply, fabrication, installation and testing of duple canvass (fire proof) flexible connection constructed of fiberglass weave having silicon rubber coating, Flexible connection for AHU outlet complete with flanges made out of 22G G.S.S sheet on both sides for connection to AHU and duct complete with nuts, bolts etc.	Set	4	2 650	10 600
6.6.9	Supplying, fixing, testing and commissioning of fire dampers in supply air duct/ Exhaust air duct of required sizes including control wiring. The damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be built mechanism and not externally mounted. The damper shall also be open /close on receipt of signal				
6.6.9.1	Fire damper	Sq.m.	16	7 476	1 19 616
6.6.9.2	Actuator	Each	24	6 944	1 66 656
	Note: Zero leakage dampers with motorized actuators shall also Open / close on receipt of signal from BMS system, so that AHU can be made operational for any particular floor.				
6.6.10	Electrical works - The scope includes taking taping from existing electrical panel, including cable and termination.	Lot	2	53 000	1 06 000
6.7	BMS				
6.7.1	Supply, installation, testing and commissioning of BMS Computer System: PC (Pentium i Core processor 3 GHz or better), 2GB RAM, 52X DVD Writer, 22" TFT Color monitor, 180GB HDD SATA, Microsoft Bus mouse with pad, 2serial, 1 parallel port, Windows XP / Windows 7 operating system, 104 Keybord, Expansion Bus with spare Slot, with original license, protection & restore key, includes LAN Card, USB ports	Each	1	1 00 700	1 00 700
6.7.2	Supply, installation, testing and commissioning of BMS System Software: Web Based Graphical Software meeeting the requirements as per I/O Summary and specifications of this tender including configuration and facility to create/ provide the graphic mapping for all I/O Summary points, animate the Graphics, Navigation between pages, display of logs, changing the time zones, popup alarms, configurable password protection for Building Mgmt System as per Specifications. Software shall be able to communicate with Lonworks, Bacnet, Modbus devices simultaneously, with unlimited user & Point license capacity. Same software can be utilized as programming/ commissioning software of DDC, NAC etc. The item includes integration of the system installed by the contractor with the existing BMS system, upgradation of existing BMS system and compatability of the complete system with each other. Note: All required Software with original license competent with BMS software)	LS	1	5 58 902	5 58 902
6.7.3	Web Based Router/ Network Area Controller interfacing the DDC controllers and Integerators for the system with PC. It has capacity to store trends & program backup. It should be BTL & UL Listed.	Lot	1	4 27 095	4 27 095
6.7.4	Web Based Integrator for interfacing Modbus RTU Unit, Bacnet IP / MSTP, Open Protocol Software Integration for following				
6.7.4.1	For 10 no. Lifts Interface on Modbus RTU (10 I/O's per Lift)	Each	1	2 66 548	2 66 548
6.7.4.2	For Fire Alarm System Panel on BACnet IP (300 I/O's per FAS)	Each	1	3 71 000	3 71 000
6.7.4.3	For Diesel Generator.- 3 Nos. on Modbus RTU	Each	1	2 66 548	2 66 548

S.No.	Description	Unit	Qty	Rate	Amount
6.7.5	Automation stations/ DDC Controller: The controllers shall be 16 bit microprocessor based standalone and net workable type with real time clock. The DDC's shall be capable of peer to peer communication without help of system interface controller or PC. with locable MS mounting cabinets duly powder coated connector strip, internal wiring and space to house controller & relays, connector strip current transformer, MCB, internal wiring. (Contractor shall confirm his I/O provision w.r.t requirement on basis of data point) on Lonworks.				
6.7.5.1	DDC Panel for LT/HT Panels (as per IO summary)	Lot	1	48 230	48 230
6.7.5.2	DDC Panel for Lifts & Escalators (as per IO summary)	Lot	1	1 17 660	1 17 660
6.7.5.3	DDC Panel for Plumbing (RO, Borewell & WTP) (as per IO summary)	Lot	1	48 230	48 230
6.7.5.4	DDC Panel for Effluent treatment plant, soft water pumps & fire pumps (AS per IO summary)	Lot	1	48 230	48 230
6.7.5.5	DDC Panel for Fire Fighting System (As per IO summary)	Lot	1	48 230	48 230
6.7.5.6	DDC Panel for FCU (As per IO summary)	Lot	1	48 230	48 230
6.7.6	Supply, installation, testing and commissioning of necessary Input sensor transmitters/ transducers comprising of the following:				
6.7.6.1	Differential Pressure Switches for Pumps	Each	6	21 730	1 30 380
6.7.6.2	Water level switch	Each	8	9 540	76 320
6.7.6.3	Current relay	Each	3	5 300	15 900
					3 04 08 345

Name of Work: Composite work for Construction of NCR Biotech Science Cluster Phase-II works at Faridabad, Haryana

S.No.	Description	Unit	Qty	Rate	Amount
7.1	Solar Power Generation System				
7.1.1	Supply of grid tied Solar PV System on terrace complete as required comprising of following items and as per specifications in 25kwp/50kwp/100kwp units as per space availability.	KWP	350	84 058	2 94 20 300
	24V/250Wp Solar PV Panels with Multicrystalline Modules				
	G.I Module mounting structure				
	Array Junction Box				
	Main Junction Box				
	3-Phase 440V 30KVA Solar Inverter with MPPT based operation and reverse polarity protection				
	DC Distribution Board				
	AC distribution board with metering				
	copper cables as per requirement and specifications				
	Earthing kit as per requirement and specifications				
	Lightning and overvoltage protection as per requirement and specifications				
	Any other items not specifically mentioned but is essentially required for the solar power plant. The rate shall include the cost of fabrication drawing/details showing optimum orientation, fixing details and material finishes.				
	The contractor will assist and prepare all documents required for claiming subsidy from MNRE				
7.1.2	Installation, Testing and commissioning of Solar Power Plant complete as required. It shall include Installation of solar panels, mounting structure, array boxes, junction boxes, cables, connectors, MCBs, cable glands, internal connections, flexible pipes, Earthing and Surge arrestors as required, Bus bars, Inverter, DC and AC distribution board, minor civil works as required and all other materials/ equipments essentially required but specifically not mentioned above or in specifications.	KWP	350	3 392	11 87 200
7.1.3	Supply, Installation, Testing and commissioning of Monoblock/ submersible water supply pump of suitable capacity with C-class pipe line, valves and accessories complete as required for cleaning & washing of the solar panels.	Set	2	15 424	30 848
					3 06 38 348

Part-II: Maintenance Phase

Name of Work: Composite work for Construction of NCR Biotech Science Cluster Phase-II works at Faridabad, Haryana

S.No.	Description	Unit	Qty	Rate	Amount
8.1	Comprehensive maintenance of Passenger Elevator with Machine Room for 13 Passengers/ 884 Kgs capacity, 1.5 meter per second Speed with 7.8 mtr travel distance with 3 stops & 3 door openings, installed by the contractor, starting after completion of one year of Defect Liability Period, and including routine, preventive & break down maintenance for period of one year including repair/ replacement of defetctive or worn out items/ parts. The comprehensive maintenance shall also include providing and replacing the consumables like oils, battery etc, and manufacturer's warantee/ guarantee of such items & consumables replaced/ repaired during the period of comprehensive maintenance. This shall include deployment of necessary manpower, tools & tackles and testing equipments for attending the routine, preventive & break down maintenance and complaint calls, all complete as per the requirement of the bidding document and direction of Engineer-in-Charge.				
8.1.1	First Year	LS	2	81 185	1 62 370
8.1.2	Second Year	LS	2	89 304	1 78 608
8.1.3	Third Year	LS	2	98 234	1 96 468
8.2	Annual maintenance of HVAC system installed by the contractor, starting after completion of one year of Defect Liability Period, and including routine, preventive & break down maintenance for period of one year including repair/ replacement of defetctive or worn out items/ parts. The AMC shall also include providing and replacing the consumables and manufacturer's warantee/ guarantee of such items & consumables replaced/ repaired during the maintenance period. This shall include deployment of necessary manpower, tools & tackles and testing equipments for attending the routine, preventive & break down maintenance and complaint calls, all complete as per specifications of this bidding document and direction of Engineer-in-Charge.				
8.2.1	First Year	LS	34	3 710	1 26 140
8.2.2	Second Year	LS	34	4 081	1 38 754
8.2.3	Third Year	LS	34	4 489	1 52 626
8.3	Annual maintenance of complete BMS system, starting after completion of one year of Defect Liability Period, and including routine, preventive & break down maintenance for period of one year including repair/ replacement of defetctive or worn out items/ parts. The comprehensive maintenance shall also include providing and replacing the consumables and manufacturer's warantee/ guarantee of such items & consumables replaced/ repaired during the maintenance period. This shall include deployment of necessary manpower, tools & tackles and testing equipments for attending the routine, preventive & break down maintenance and complaint calls, updating softwares etc. all complete as per specifications of this bidding document and direction of Engineer-in-Charge.				
8.3.1	First Year	LS	1	1 19 309	1 19 309
8.3.2	Second Year	LS	1	1 31 239	1 31 239
8.3.3	Third Year	LS	1	1 44 363	1 44 363

S.No.	Description	Unit	Qty	Rate	Amount
8.4	Comprehensive maintenance of complete solar PV system installed in the campus by the contractor, starting after completion of one year of Defect Liability Period, and including routine, preventive & break down maintenance for period of one year including repair/ replacement of defetctive or worn out items/ parts. The comprehensive maintenance shall also include providing and replacing the consumables and manufacturer's warantee/ guarantee of such items & consumables replaced/ repaired during the period of comprehensive maintenance. This shall include contractor meeting the guaranteed minimum generation, deployment of necessary manpower, tools & tackles and testing equipments for attending the routine, preventive & break down maintenance and complaint calls, all complete as per the requirement of the bidding document and direction of Engineer-in-Charge.				
8.4.1	First Year	LS	1	3 06 075	3 06 075
8.4.2	Second Year	LS	1	3 36 683	3 36 683
8.4.3	Third Year	LS	1	3 70 351	3 70 351
8.4.4	Fourth Year	LS	1	4 07 386	4 07 386
8.4.5	Fifth Year	LS	1	4 48 124	4 48 124
					32 18 496

**SCHEDULE OF PRICES –
RATE FILLED & SOR DETAILED
DESCRIPTION (FORM SP-0)**

SUMMARY OF PRICE

NAME OF WORK : COMPOSITE WORK FOR CONSTRUCTION OF NCR BIO-TECH SCIENCE CLUSTER PHASE-II WORKS AT FARIDABAD, HARYANA

BIDDING DOCUMENT NO. : UKM/A091-000-PK-TN-7005/1001

NAME OF BIDDER : M/s.

A	TOTAL ESTIMATED PRICE (AS PER SCHEDULE OF RATES (SP- 0))	: Rs. 31,07,20,395/-
B	Percentage increase/ decrease on Total estimated price for total work (i.e. on 'A' above), applicable on all items of SOR	: In figure _____ % In words _____ percent (Refer Note-1)
C	Amount on the basis of percentage increase/decrease on total estimated price as mentioned at "B" above	: Rs.....
D	Total amount after considering percentage Increase/ Decrease as above.	: (In fig.) Rs. _____ (In Words) Rupees _____

Notes :

- 1 Bidder shall indicate the Percentage Increase/Decrease under Sr.no.B and amount at Sr.no. C & D in Price bid only (and not in techno-commercial bid).
- 2 Bidder shall indicate (+) for increase and (-) for decrease. For no increase/decrease, 'NIL' shall be indicated. If bidder has not quoted any % under sr. no. B the same shall be considered as no increase / decrease.
- 3 The percentage should be quoted upto 2 decimal place.
- 4 **Arithmetic Corrections, if any, shall be carried out as per clause no. 29.5 of Instruction to Bidders.**

STATEMENT FOR DETAILS OF SERVICE TAX, SBC & KKC

NAME OF WORK : COMPOSITE WORK FOR CONSTRUCTION OF NCR BIO-TECH SCIENCE CLUSTER PHASE-II
WORKS AT FARIDABAD, HARYANA

BIDDING DOCUMENT NO. : UKM/A091-000-PK-TN-7005/1001

NAME OF BIDDER : M/s.

S.No.	Service Tax, Swachh Bharat Cess (SBC) & Krishi Kalyan Cess (KKC)	Ceiling Amount on which the Tax is applicable	Rate of Tax	Amount of Tax
		(in INR)	(in %age)	(in INR)
(1)	(2)	(3)	(4)	(5)
1	SERVICE TAX ON EXECUTION PHASE (SOR PART-1)		15	0.00
			(Refer Note - 2A)	
2	SERVICE TAX ON MAINTENANCE PHASE (SOR PART-2)		15	0.00
			(Refer Note - 2B)	

Notes:

- 1 Service Tax amount shall not be included by the Bidder in their quoted price and the same shall be paid by Owner against submission of required invoices as per the provisions of the Bidding Document.
- 2A Service tax on Execution Phase (Part-1 of SOR) : Bidder shall consider the rate of service tax applicable presently @15% on actual value of services. However, Service Tax shall be paid as indicated in Note 1 above, subject to ceiling amount of Service as indicated above, but limited to maximum ceiling amount of 40% of the Total Quoted Price.
- 2B Service Tax on Annual Maintenance Cost (Part-2 of SOR) : Bidder shall consider the rate of service tax applicable presently @15% on actual value of services. However, Service Tax shall be paid as indicated in Note 1 above, subject to ceiling amount of Service as indicated above, but limited to maximum ceiling amount of 70% of the Total Quoted Price.
- 3 The Service Tax amount indicated by the Bidder in this Form shall include both, namely,
 - (i) the amount of Service Tax payable by the bidder and reimbursable by Owner
 - (ii) the amount of Service Tax, if any, directly payable by EIL / Owner, as applicable to recipient of service, as per the reverse charge rule of Service Tax.
- 4 The Service Tax, if any, to be payable by the Owner under reverse charge rule shall not be paid to the Contractor but shall be directly submitted to the Service Tax Authorities by Owner. If the same has already been reimbursed / paid to the Contractor for whatsoever reason, the said amount, as submitted by the Owner to Service Tax Authorities, shall be deducted / recovered / adjusted from the payment due to the Contractor.
- 5 Total Amount of Service Tax shall be payable based on the ceiling amount of services on which Service Tax is applicable as declared by the bidder at Column (3). However, in case of any change in the contract value the amount on which Service Tax is applicable shall be adjusted accordingly.
- 6 In case the above Form duly filled in is not found uploaded in the price bid, Ceiling amount on which Service Tax is applicable as per Column (3) shall be considered as 40% of the total quoted price for Execution Phase & 70% of the total quoted price for Annual Maintenance cost (Execution Phase) as per FORM SP-1 for evaluation / award purpose, if any.

DETAILS OF TAXES & DUTIES INCLUDED IN THE QUOTED PRICES (FOR STATUTORY VARIATIONS)

NAME OF WORK : COMPOSITE WORK FOR CONSTRUCTION OF NCR BIO-TECH SCIENCE CLUSTER PHASE-II
WORKS AT FARIDABAD, HARYANA

BIDDING DOCUMENT NO. : UKM/A091-000-PK-TN-7005/1001

NAME OF BIDDER : M/s.

A) FOR CAPEX PART (PART A OF SOR)

S.No.	Description	Ceiling Amount on which Tax/ Duty is applicable considered	Rate of Tax/ Duty Considered	Amount of Tax/ Duty included based on Rate Considered
		(in INR)	(in %age)	(in INR)
(1)	(2)	(3)	(4)	(5)
1	Total Central Sales Tax without Form-C			
2	Total Excise Duty			
3	Total VAT on materials			
4	Total VAT on Works Contract			

A) FOR ANNUAL MAINTENANCE PART (SECTION B.2 OF SOR)

S.No.	Description	Ceiling Amount on which Tax/ Duty is applicable considered	Rate of Tax/ Duty Considered	Amount of Tax/ Duty included based on Rate Considered
		(in INR)	(in %age)	(in INR)
(1)	(2)	(3)	(4)	(5)
1	Total Central Sales Tax without Form-C			
2	Total Excise Duty			
3	Total VAT on materials			
4	Total VAT on Works Contract			

Notes:

- 1 The above details are sought from Contractor only for the purpose of Statutory Variation.
- 2 Statutory variation shall be made upto the ceiling amount on which Tax/ Duty is applicable, as indicated above.
- 3 The above ceiling amounts shall be subject to change on prorata basis based on executed contract value.
- 4 The above variation shall be payable subject to submission of documentary proof of variation.