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Name of Work: Installation and commissioning of sub surface Drip irrigation system at Delhi School of Management Lawn, DTU, Bawana Road, Delhi.

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DTU

NOTICE INVITING TENDER

N.I.T. No.	DTU/Engg. Cell/2017-18/07	
Name of work	Installation and commissioning of sub surface Drip irrigation system at Delhi School Of Management Lawn, DTU, Bawana Road, Delhi.	
Estimated Cost	Rs. 4,92,116 /-	
Earnest Money	Rs. 9,842 /- (In favour of Registrar DTU, Delhi.) (2% of Estimated Cost)	
Performance Guarantee	5% of tendered and accepted value of the work.	
Security Deposit	2.5% of the Gross Amount of the bill.	
Time Allowed	45 Days	

This NIT for work amounting to Rs. 4,92,116/- (Rupees Four Lakh Ninety Two Thousand One Hundred and Sixteen only) contains pages from 1 to 48 (One to Forty Eight) only.

Junior Engineer, Civil

Executive Engineer (DTU)

J.E(C)

Correction.....
Deletion.....
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INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR E-TENDERING FORMING PART OF BID DOCUMENT AND TO BE POSTED ON WEBSITE

(Applicable for inviting open bids)

The Executive Engineer, Delhi Technological University, Bawana Road, Delhi invites on behalf of Delhi Technological University online percentage rate bids from specialized agencies and eligible contractors of CPWD, DDA enlisted in appropriate category and those of appropriate list of M.E.S., BSNL, Railway and State Govt.'s Departments registered under GST on works contract act dealing with building and road works for the following work(s):

S.No.	NIT No.	Name of work & Location	Estimated cost put to tender	Earnest money	Period of completion	Last date & time of submission of bid. EMD, e-tender processing fee and other documents as specified in the Press Notice.	Time & date of opening of bid
1	2	3	4	5	6	7	8
1.	DTU/Engg. Cell/2017-18/07	Installation and commissioning of sub surface Drip irrigation system at Delhi School Of Management Lawn, DTU, Bawana Road, Delhi.	Rs . 4,92,116 /-	9,842 /-	45 days	Up to 03.00 PM On 09.07.2018	At 03.30 PM On 09.07.2018

1. The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
2. Information and Instructions for bidders posted on website shall form part of bid document.
3. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website <http://govtprocurement.delhi.gov.in> free of cost.

J.E(C)

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4. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.
5. The intending bidder must have valid class and above digital signature to submit the bid.
6. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the comparative bid sheets.
7. Contractor can upload documents in the form of **JPG** format and **PDF** format.

List of Documents to be scanned and uploaded within the period of bid submission:

1. EMD shall be in favour of the '**Registrar DTU**', in the form of Demand Draft/Pay order or Banker`s Cheque/FDR of any Scheduled Bank are acceptable.
2. Enlistment Order/Registration Certificate of B & R Contractor and/or Specialized Agency.
3. Affidavit as per clause 1.2.1 on Non Judiciary Stamp Paper duly attested by Notary.
4. Certificate of Registration for G.S.T.
5. Scanned copy of self attested PAN number.
6. Scanned copy of Certificates of Work Experience of "Installation and commissioning of Sub surface drip irrigation system in Parks/Land Scapes." from the client for successfully completed similar works preferably in educational university/PSU`s, semi-govt. or private sector for reckoning towards works experience during last seven years ending previous day of last date of submission of bid.
 - a) Three similar work not less than 40% of estimated cost put on tender.
 - OR
 - b) Two similar work not less than 60% of estimated cost put on tender.
 - OR
 - c) One similar work not less than 80% of estimated cost put on tender.

CPWD-6 FOR E-TENDERING

Percentage rate bids are invited on behalf of Delhi Technological University from specialized agencies and eligible contractors of CPWD, DDA enlisted in appropriate category and those of appropriate list of M.E.S., BSNL, Railway and State Govt.'s Departments registered under GST on works contract act dealing with building and road works for the following work(s): **Installation and commissioning of sub surface Drip irrigation system at Delhi School Of Management Lawn, DTU, Bawana Road, Delhi.**

1. The enlistment of the contractors should be valid on the last date of submission of bids.
In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.
- 1.1 The work is estimated to cost **Rs. 4,92,116/-**.
- 1.1.1 Intending bidder is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:-

Criteria of eligibility for submission of bid documents

- 1.2.1 Three similar works each of value not less than 40% of estimated cost put to tender or two similar works of value not less than 60% of estimated cost put to tender or one similar work of value not less than 80% of estimated cost put to tender in last **7 years ending previous day of last date of submission of bids.**

“Similar work shall mean “Installation and commissioning of sub surface Drip irrigation system in parks and landscapes”

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

To become eligible for bid, the bidders shall have to furnish an affidavit as under:-

I/We undertake and confirm that eligible similar works(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for bidding in DTU in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee. (Scanned copy to be uploaded at the time of submission of bid)

- 2 Agreement shall be drawn with the successful bidders on prescribed Form No. **CPWD 7/8** (or other Standard Form as Mentioned) which is available as a Govt. of India Publication and also available on website **www.cpwd.gov.in**. Bidders Shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
3. The time allowed for carrying out the work will be 45 days from the date of start as defined in schedule 'F' or from the first date of Handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
4.
 - (i) **The site for the work is available.**
 - (ii) **The architectural and structural drawings shall be made available in phased manner, as per requirement of the same as per approved program of completion submitted by the contractor after award of work.**
- 5 The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set Of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website <http://govtprocurement.delhi.gov.in> **free of cost.**
6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
8. **Bids are invited in under two bid system i.e. Technical bid and Financial bid.**

J.E(C)

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9. **Earnest Money in the form of Demand Draft or Pay order or Banker's Cheque or Fixed Deposit Receipt (drawn in favour of the "Registrar, DTU", Bawana Road, Delhi.** (Modified vide OM DG/MAN/303dt. 28.03.2014). The original EMD should be deposited in the office of **Executive Engineer, DTU** inviting bids within the period of submission. The EMD receiving Executive Engineer shall issue a receipt of deposition of EMD to the bidder. This receipt shall also be uploaded to the e-tendering website by the intending bidder upto the specified bid submission date and time.

A part of earnest money is acceptable in the form of bank guarantee also. In such case, **minimum** 50% of earnest money or Rs. 20 lac, whichever is less, **shall** have to be deposited in shape prescribed above, and balance **may be deposited** in shape of Bank Guarantee of any scheduled bank **having validity for six months or more from the last date of receipt of bids** which is to be scanned and uploaded by the intending bidders. (Modified vide OM DG/MAN/307 dt. 27.05.2014)

Copy of Enlistment Order and certificate of work experience and other documents as specified in the press notice shall be scanned and uploaded to the e-Tendering website within the period of bid submission. **However, all bidders shall submit, certified copy of all the scanned and uploaded documents as specified in press notice in the tender box placed in the office of Executive Engineer/ DTU for technical evaluation.**

Online bid documents submitted by intending bidders shall be opened only of those bidders, whose EMD deposited in the office of E.E. /DTU and other documents scanned and uploaded are found in order.

The bid submitted shall be opened on **09.07.2018 at 03:30 PM**

10. The bid submitted shall become invalid if:

- (i) The bidder is found ineligible.
- (ii) The bidder does not deposit original EMD with all documents in office of Executive Engineer, DTU.
- (iii) The bidder does not upload required documents as mentioned above.
- (iv) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the entire bidder in the office of bid opening authority.
- (v) If a tenderer quotes NIL rates against each items in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section/sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

11. The contractor whose bid is accepted will be required to furnish **performance guarantee of 5% (Five Percent)** of the tendered and accepted value of the work amount within the period specified in Schedule F. This guarantee shall be in the form of Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/ Pay order of any Scheduled Bank of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. **The earnest money deposited along with bid shall be returned after receiving the aforesaid Performance guarantee.** The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW welfare board and program chart (Time & progress) with in the period specified in Schedule F.

12. The description of the work is as follows: Name of Work: - Installation and commissioning of sub surface Drip irrigation system at Delhi School Of Management Lawn, DTU, Bawana Road, Delhi.

Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidders shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents.

J.E(C)

Correction.....
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Insertion.....

Submission of a bid by a bidders implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

13. The competent authority on behalf of the Delhi Technological University does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.
14. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
15. The competent authority on behalf of the Delhi Technological University reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
16. The contractor shall not be permitted to bid for works in the DTU (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of E.E. and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Delhi Technological University or in the Govt. of NCT of Delhi. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
17. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.
18. **The bid for the works shall remain open for acceptance for a period of Sixty (60) days from the date of opening of bids.** If any bidders withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidders shall not be allowed to participate in the rebidding process of the work. (Modified vide OM DG/CON/279 Dt. 09.05.2014)
19. This notice inviting Bid shall form a part of the contract document. The successful bidders/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
 - (a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - (b) Standard C.P.W.D. Form 7/8 or other Standard C.P.W.D. Form as applicable.

20. For Bids

20.1.1 The bid document will include following two components:

Part A:- CPWD-6, CPWD-7/8 including schedule A to F for the work, Standard General Conditions of Contract for CPWD 2014 as amended/modified up to the last date of submission of bid, including extension, if any.

Part B:- General / specific conditions, specifications and schedule of quantities of the work.

20.1.2 The eligible bidders shall quote rates for all items of work.

20.1.3 After acceptance of the bid by competent authority, the EE of the work shall issue letter of award on behalf of the Delhi Technological University. After the work is awarded, the contractor will have to enter into an agreement with EE.

20.1.4 Security Deposit will be worked out on the basis of estimated cost put to tender for work.

GUIDELINES REGARDING SIGNING OF INTEGRITY PACT BY THE BIDDER AT THE TIME OF SUBMISSION OF BID (Vide No. DG/CON/255A dated 10.08.2011)

Sub: Clarification regarding Introduction of Integrity Pact introduced vide OM No. CON255 dated 23.05.2011

A new provision of Integrity Pact (IP) was introduced in GCC-2014 vide OM No. CON/255 dated 23.05.2011. In the OM it is mentioned that at the time of submission of bid, it shall be mandatory to sign the pact by the bidder failing which the bidder will stand disqualified from the tendering process and such bid would be summarily rejected.

Some field Units has raised their doubts regarding submission of duly signed Integrity Pact by the bidder at the time of submission of bid. In this regard it is clarified that:-

- 1. Submission of duly signed Integrity Pact by the bidder is applicable in case of manual tendering where e-tendering is not followed.**
- 2. In case of manual tendering Executive Engineer should sign the first page addressed to the intending bidder at the time of issue of tender form and before submission of the bid, each bidder shall sign IP at respective places and submit the bid. If duly signed IP is not submitted by the bidder, such bid shall not be considered.**
- 3. In case of e-tendering, Integrity Pact shall be treated in the same manner as other components of the bid document. In e-tendering, the intending bidder does not sign any document physically and entire bid document is submitted through digital signature. Since IP is a part of bid document no separate physical submission is required with other documents to be submitted in the office of tender opening authority. In addition to other component of bid document, the Integrity Pact shall also be signed between Executive Engineer and successful bidder after acceptance of bid.**

Form of Earnest Money Deposit (Bank Guarantee Bond)

WHEREAS, contractor..... (Name of contractor) (Hereinafter called "the contractor") has submitted his tender dated (date) for the construction of (name of work) (Hereinafter called "the Tender")

KNOW ALL PEOPLE by these presents that we..... Registered office at (Hereinafter called "the Bank") are bound unto **Executive Engineer, DTU, Bawana road, Delhi** in the sum of Rs.

for which payment well and truly to be made to the said **Executive Engineer, DTU, Bawana road, Delhi** the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this..... day of 20.... THE CONDITIONS of this obligation are:

- (1) If after Technical Bid opening of tender; the Contractor withdraws, his tender during the period of validity of tender (including extended validity of tender) specified in the Form of Tender;
- (2) If the contractor having been notified of the acceptance of his tender by **Executive Engineer, DTU, Bawana road, Delhi**
 - (a) Fails or refuses to execute the Form of Agreement in accordance with the Instructions to contractor, if required;
OR
 - (b) Fails or refuses to furnish the Performance Guarantee, in accordance with the provisions of tender document and Instructions to contractor,
OR
 - (c) Fails or refuses to start the work, in accordance with the provisions of the contract and Instructions to contractor,
OR
 - (d) fails or refuses to submit fresh Bank Guarantee of an equal amount of this Bank Guarantee, against Security Deposit after award of contract.

We undertake to pay to the **Executive Engineer, DTU, Bawana road, Delhi** either up to the above amount or part thereof upon receipt of his first written demand, without **Executive Engineer, DTU, Bawana road, Delhi** having to substantiate his demand, provided that in his demand The **Executive Engineer, DTU, Bawana road, Delhi** will note that the amount claimed by him is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date 6 months after the deadline for submission of tender as such deadline is stated in the Instructions to contractor or as it may be extended by **Executive Engineer, DTU, Bawana road, and Delhi notice of which extension** to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE

SIGNATURE OF THE BANK

WITNESS

SEAL

(SIGNATURE, NAME AND ADDRESS).

*Date to be worked out on the basis of validity period of 6 months from last date of receipt of tender.

CPWD -7

DTU

TENDER

I/We have read and examined the notice inviting tender, schedule, **A, B, C, D, E & F** Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, of **2014** with amendments up to the last date of submission of tenders, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work **Installation and commissioning of sub surface Drip irrigation system at Delhi School Of Management Lawn, DTU, Bawana Road, Delhi.** I/We hereby tender for the execution of the work specified for the President of India within the time specified in Schedule 'F' viz., schedule of quantities and in accordance in all respect with the specifications, designs, drawing and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract of **2014** with amendments up to the last date of submission of tender and with such materials as are provided for, by, and in respect of accordance with, such conditions so far as applicable.

We agree to keep the tender open for sixty (60) days from the date of opening of technical bid and not to make any modification in its terms and conditions.

A sum of **Rs. 9,842/-** is hereby forwarded in fixed deposit receipt of scheduled bank/demand draft of a scheduled bank as earnest money. If I/We fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said DTU or his successors representatives, in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that DTU or the successors representatives in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said the performance guarantee absolutely. The said performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in **Clause 12.2 and 12.3** of the tender form. Further, I/We agree that in case of forfeiture of Earnest Money & Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for tendering in DTU in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/ Performance Guarantee.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated:**.....

Signature of Contractor **

Witness: **

Address: **

Postal Address **

Occupation: **

J.E(C)

Correction.....
Deletion.....
Insertion.....

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for an on behalf of the **Delhi Technological University** for a sum of Rs.....*
(Rupee.....*
.....).

The letters referred to below shall form part of this contract agreement:-

- (a) *
- (b) *
- (c) *

For & on behalf of Delhi Technological University

Signature*

Dated:*

Designation*

**PROFORMA OF SCHEDULES
(FOR MAJOR COMPONENT)**

SCHEDULE 'A'

Schedule of quantities for Works as per Page No. 44-48

SCHEDULE 'B'

Schedule of materials to be issued to the contractor.

S. No.	Description of item	Quantity	Rates in figures & words at Which the material will be charged to the contractor	Place of issue
NIL				

SCHEDULE 'C'

Tools and plants to be hired to the contractor

S.No.	Description	Hire charges per day	Place of Issue
NIL			

SCHEDULE 'D'

Extra schedule for specific requirements /document for the work, if any.

SCHEDULE 'E'

Reference to General Conditions of Contract: General Conditions of Contract 2014 read along with correction slips/amendments issued up to the last date of submission of tender including extension, if any.

Name of work	Installation and commissioning of sub surface Drip irrigation system at Delhi School Of Management Lawn, DTU, Bawana Road, Delhi.
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Estimated cost of work

I.	Civil Components	Rs. 4,92,116/-
II.	Earnest Money	Rs. 9,842/-
I.	Performance Guarantee :	5% of tendered and accepted value of the work.
II.	Security Deposit	2.5% of Gross Amount of bill.

SCHEDULE 'F' (GENERAL RULES & DIRECTIONS)

**Officer inviting tender: Executive Engineer, DTU, Bawana Road Delhi,
Email id: eecivildtu@gmail.com**

J.E(C)

Correction.....
Deletion.....
Insertion.....

Definitions:

1.	Engineer-in-Charge	The Executive Engineer, DTU, Bawana Road, Delhi.
2.	Accepting Authority	Vice Chancellor, DTU, Bawana Road, Delhi.
3.	Percentage on cost of materials and Labour cover all to overheads and profits	15%
4.	Standard Schedule of Rates	DSR 2016(Civil), read along with correction slips/amendments issued up to the last date of submission of tender including extension, if any, or Market Rate for those items which are not available in DSR-2016
5.	Department	Delhi Technological University.
6.	Standard CPWD Contract Form GCC 2014	CPWD Form 7 & GCC 2014 read along with correction slips/amendments issued up to the last date of submission of tender including extension, if any.

Clause 1

1.	Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance	07 (Seven) days
2.	Maximum allowable extension beyond the period provided in (i) above	3 (Three) days with late fee @ 0.1% per day of the PG amount.

Clause 2

Authority for fixing compensation under clause 2	Vice Chancellor, DTU, Bawana Road, Delhi.
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Clause 2A

Whether Clause 2A shall be applicable	No
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Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of start	10 (Ten) days or date of handing over of site whichever is later
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Mile stones for Civil work

S. No	Description of Milestone (Financial)	Time allowed in months (from date of start)	Amount to be with-held in case of non-achievement of each mile stone (% of contract amount of Civil component)
1	25% of Contract amount	15 Days	1% of contract amount.
2	50 % of Contract amount	25 Days	--do--
3	75% of Contract amount	35 Days	--do--
4	100% of Contract amount & completion of work.	45 Days	--do--

J.E(C)

Correction.....
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Time allowed for execution of work- **45 Days**

Authority to decide:

(i)	Extension of time :-	Vice Chancellor, DTU, Bawana Road, Delhi.
(ii)	Rescheduling of mile stones :-	Vice Chancellor, DTU, Bawana Road, Delhi.
(iii)	Shifting of date of start in case of delay in handing over of site:	Vice Chancellor, DTU, Bawana Road, Delhi.

Clause 6, 6A

Clause applicable - (6 or 6A)	6A (computerized measurement book to be submitted by agency)
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Clause 7

Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment	<u>Rs. 2.5 lacs for work</u>
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Clause 10A

List of testing equipment to be provided by the contractor in the lab at each site of work as per [TABLE-1] of Annexure-I attached.

Clause 10 B (ii)

Whether Clause 10 B (ii) shall be applicable	Yes
--	-----

Clause 10C

Component of labour expressed as percent of value of work	Not Applicable
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Clause 10CA: - Not-Applicable

Clause 10CC

Schedule of component of other materials, Labour, POL etc. for price escalation:-

Component of civil materials (Except materials covered under clause 10CA)

Component of labour expressed as percent of total value of work.

Component of P.O.L. expressed as percent of total value of work.

} **Not Applicable**

Clause 11

Specifications to be followed for execution of work	CPWD Specifications 2009 volume- I & II read along with up to date correction slips/amendments issued up to the last date of submission of tender including extension, if any.
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J.E(C)

Correction.....
Deletion.....
Insertion.....

Clause 12

Type of work

It is a maintenance work. Restriction of completion cost up to 1.25 times of tender cost shall be applicable. For the purpose of derivation of rates of extra, substituted, deviations beyond specified limit it shall be treated as maintenance work.

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2, 12.3 : Please refer below

12.2. & 12.3	Deviation limit beyond which clauses 12.2 & 12.3 shall apply for building work	50% (Thirty percent only)
12.5	i) Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work	100% (One Hundred percent only)

Clause 16

Competent Authority for deciding reduced rates.	Vice Chancellor, DTU, Bawana Road, Delhi.
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Clause 18

List of mandatory machinery, tools & plants to be deployed by the contractor at site:- All plants, equipments and machinery required for smooth and efficient progress of work as per direction of Engineer-in-Charge.

Clause 25

Constitution of Dispute Redressal Committee: - This contract will be subject to Delhi High Court jurisdiction only.

Clause 36 (i)

S. No.	Minimum qualification of Technical Representative	Discipline	Designation (Principal technical / Technical representative)	Minimum experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 36(I)	
						Figures	Words
1	Graduate Engineer	Civil	Principal technical representative	5 Years	1	Rs. 25,000/- (Per month)	Rs. Twenty Five thousand per month
2	Graduate Engineer Or Diploma Engineer	Civil	Project/Site Engineer and Project Planning/billing Engineer	2 Years 5 Years	2 2	Rs. 15,000/- (Per month)	Rs. Fifteen thousand per month

Assistant Engineer retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.

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Diploma holder with minimum 10 years relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

Clause 42

(i)	(a)	Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates	DSR 2016 will read along with correction slips/amendments issued up to the last date of submission of tender including extension, if any.
(ii)		Variations permissible on theoretical quantities:	
	(a)	Cement	
		For works with estimated cost put to tender more than Rs. 5 lakh.	2% (Two percent) plus / minus .
		Bitumen for all works	2.5% (Two point five percent) plus only and nil on minus side.
	(b)	Steel Reinforcement and structural steel sections for each diameter, section and category	2% (Two percent) plus / minus
	(c)	All other materials	Nil

ANNEXURE –I**(TABLE-1)****Equipment's for Testing of Materials & Concrete at Site Laboratory (on each site of work)**

Note: individual school shall be considered as a separate site of work.

All necessary equipment for conducting all necessary tests shall be provided at the site in the well-furnished site laboratory of minimum size 25 feet X 15 feet by the contractor at his own cost The following minimum laboratory equipment shall be set up at site office laboratory:-

Sl. No.	Equipment	Numbers (Minimum)
1.	100 MT compression testing machine, electrical-cum-manually operated)	1
2.	Slump cone, steel plate, tamping rod, steel scale, scoop	3
3.	Vicat's apparatus with Desk pot	1
4.	Weighing scale platform type 100 Kg capacity	1
5.	Graduated glass measuring cylinder	As per requirement
6.	Sets of sieves of 450mm internal dia for coarse aggregate [100mm, 80mm, 40mm; 20mm; 12.5mm, 10mm; 4.75mm complete with lid and pan]	1
7.	Sets of sieves of 200mm internal dia for fine aggregate [4.75mm; 2.36mm; 1.18mm; 600 microns; 300 microns & 150 micron , with lid and pan]	1
8.	Sieve Brushes and sieve shaker capable of 200mm and 300mm dia sieves , manually operated with timing switch assembly	1
9.	Cube moulds size 70mmx70mmx70mm	6
10.	Cube moulds size 150mmx150mmx150mm	30
11.	Hot air oven temp. Range 50°C to 300°C- sensitivity 1 degree	1
12.	Electronic balance 600gx0.1g., 10 kg and 50 kg each	1 Each
13.	Physical balance weight upto 5 kg	1
14.	Air Content of concrete testing machine	1
15.	Measuring jars 100ml, 200ml, 500ml	3 nos each size
16.	Gauging trowels 100mm & 200mm with wooden handle	2
17.	Spatula 100mm & 200mm with long blade wooden handle	2
18.	Vernier calipers 12" & 6" size	1 each
19.	Digital PH meter least count 0.01mm	1each
20.	Digital Micrometer least count. 0.01mm	1 each
21.	Digital paint thickness meter for steel 500 micron range	1
22.	GI tray 600x450x50mm, 450x300x40mm,300x250x40mm	1 no each
23.	Electric Motor mixer 0.25 cum capacity	1
24.	Screw gauge 0.1mm-10mm, least count 0.05	2
25.	Water testing kit	1

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26.	Motorized sieve shaker	1
27.	Pruning Rods 2 Kg weight length 40 cm and ramming face 25 mm ²	1
28.	Extra Bottom plates for 15 cm cube mould	4
29.	Standard Vibration Table for gauging the cubes	1
30.	Pocket concrete pernetrometer 0 to 50kg/ sq.cm	1
31.	Concrete temperature measuring thermometer with Brass protection sheath 0-100 degree centigrade	1
32.	Mortar Cube vibrator	1
33.	Dial type spring balance preferable with zero correction knob capacity 100 kgs reading to ½ kg.	1
34.	Counter scale capacity 1 kg and 10 kg	1
35.	Iron Weight of 5 kg, 2 kg, 1 kg, 500 gm, 200 gm, 100 gm	1 each
36.	Brass Weight of 50 gm, 20 gm, 10 gm, 5 gm, 2 gm, 1 gm	1 each
37.	Measuring cylinder TPX or Poly propylene capacity 100 ml, 500 ml, 250 ml, 100 ml	1 each
38.	Pyrex, corning or Borosil beakers with cover capacity 500 ml, 200 ml, 50 ml	1 each
39.	Wash Bottles capacity 500 ml	1
40.	Thermometers 1-100 degree centigrades/ max. and Min/ Dry and wet with table	1
41.	Set of box spanner ratchet	1
42.	Hammer 1lb& 2lb	2 each
43.	Rubber Hammer	2
44.	Hacksaw with 6 blades	2
45.	Measuring tape 2 mtr	5
46.	Depth gauge 20cm	3
47.	Shovels& Spade	3
48.	Steel plates 5 mm thick 75x75 cm	2
49.	Plastic or G.I. Buckets 15 ltr, 10 ltr, 5 ltr	1 each
50.	Wheel Barrow	1
51.	Floor Brushes, hair dusters, scrappers, wire brush, paint brushes, shutter steel plat oil, kerosene with stove etc.	2 each
52.	Any other equipment for site tests as outlined in BIS codes and as directed by the Engineer-in-charge.	

List of mandatory machinery, tools & plants to be deployed by the contractor at site

(Table -2)

All plants, equipment's and machinery required for smooth and efficient progress of work as per direction of Engineer-in-Charge.

(TABLE- 3)

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

S.No.	Description of Item	Rates in figures and words at which recovery shall be made from the Contractor	
		Excess beyond permissible variation	Less use beyond permissible variation
1.	Cement (OPC)	Nil	Not permitted
2.	Steel Reinforcement TMT Bar of all diameters	Nil	Not permitted
3.	Structural Sections	Nil	Not permitted

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1.0 SPECIAL CONDITIONS

GENERAL

1.1 The Contractors are advised to inspect and examine the site and its surroundings and satisfy themselves with the nature of site, the means of access to the site, the constraints of space for stacking material / machinery, labour etc. constraints put by local regulations, if any, weather conditions at site, general ground / subsoil conditions etc. or any other circumstances which may affect or influence their tenders. The Contractor shall carry out survey of the work area, at his own cost, setting out the layout and fixing of alignment of the building as per architectural and Structural drawings in consultation with the Engineer-in-Charge. Any discrepancy between the architectural drawings and actual layout at site shall be brought to the notice of the Engineer-in-charge. It shall be responsibility of the Contractor to ensure correct setting out of alignment. Nothing extra shall be payable on this account. No claims, whatsoever, shall be entertained at a later date for any errors found, on plea that the information supplied by the Department in the tender is insufficient or is at variance with the actual site conditions.

1.2 The Contractor shall, if required by him, before submission of the tender, inspect the drawings in the Office of The Executive Engineer, DTU, Bawana, road Delhi. Department shall not bear any responsibility for the lack of knowledge and also the consequences, thereof to the Contractor. The information and data shown in the drawings and mentioned in the tender documents have been furnished, in good faith, for general information and guidance only. The Engineer-in-Charge, in no case, shall be held responsible for the accuracy thereof and/or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor. No claim, whatsoever, shall be entertained from the Contractor, if the data or information furnished in tender document is different or in-correct otherwise or actual working drawings are at variance with the drawings available for inspection or attached to the tender documents. It is presumed that the Contractor shall satisfy himself for all possible contingencies, incidental charges, wastages, bottlenecks etc. likely during execution of work and acts of coordination, which may be required between different agencies. Nothing extra shall be payable on this account.

1.3 The nomenclature of the item given in the schedule of quantities gives in general of the work content but is not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out, all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and/or described in the specifications, provided that the same can be reasonably inferred there from may be several incidental works, which are not mentioned in the nomenclature of each item but will be necessary to complete the item in all respect. All these incidental works / costs which are not mentioned in item nomenclature but are necessary to complete the item shall be deemed to have been included in the rates quoted by the contractor for various items in the schedule of quantities. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation / change in actual working drawings. Also, no adjustment of rates shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of Engineer-in-Charge. Nothing extra shall be payable on this account.

1.4 The contractor(s) shall give to the local body, police and other authorities all necessary notices etc. that may be required by law and obtain all requisite licenses for temporary obstructions, enclosures etc. and pay all fee, taxes and charges which may be available on account of these operations in executing the contract. He shall make good any damage to the adjoining property whether public or private and shall supply and maintain lights either for illumination or for cautioning the public at night.

1.5 The contractor(s) shall execute the work simultaneously at all sites. He has to establish site office along with all necessary arrangements at all sites simultaneously.

1.6 The contractor(s) shall cordon off the area suitably so that the college remains functional during execution of the work.

1.7 Staff/ labour shall be deployed for each site of work independently by the contractor.

1.8 **The contractor shall obtain a User's Certificate from HOD of department, Chief Warden/Hostel In-charge or Flat occupant after completion of job where work has been executed. The Payment shall be made to the Agency only after submission of User's Certificate.**

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BY-LAWS AND REGULATIONS

All work shall conform to the statutory Bye-laws and Regulations of the concerned authority/Municipality, Delhi Fire Services as applicable to the Project. If the tender specifications and drawings are more stringent than required as per the Local Authorities then the tender specifications and drawings shall be followed. In the other case, if the local authorities more stringent specifications than those specified in the tender specifications, then the set by-laws and regulations shall be followed at no extra cost.

Proper temporary barricading by fencing with G.I. sheets, shall be carried out by the Contractor at the start of work to physically define the boundaries of the plot for restricted entry to only those involved in the work and also to prevent any accidents, at the same time without causing any inconvenience to the traffic and the users of the buildings in the adjacent plots. It shall be done by providing, erecting, maintaining temporary protective barricading of minimum 2.0 metres in height, made in panels, with each panel having MS frames / MS scaffolding pipes of suitable size and stiffness, with 24 gauge thick GI corrugated sheet or suitably stiffened plain GI sheet fixed on frames. Such panels shall be suitably connected to each other for stability with nuts and bolts, hooks, clamps etc. and fixed firmly to the ground at about 2 metres spacing, for the entire duration till completion of the work. He shall also provide and erect temporary protective barricades within the plot, if required, to prevent any accident. Temporary protective roofing near the Entrance to the building, under construction, shall be made to protect the visiting officials from getting hurt by falling debris etc. Also, one or more coat of enamel paint of shade as approved and directed by the Engineer-in-Charge shall be applied on the panels and "DTU" shall be painted over that in suitable sizes, shapes and numbers as directed by the Engineer-in-Charge. It shall be dismantled and taken away by the Contractor after the completion of work at his own cost with the approval of the Engineer-in-Charge. Nothing extra shall be payable on this account.

1.8 The Contractor(s) shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night. In case of any accident of labours/ contractual staffs the entire responsibility will rest on the part of the contractor and any compensation under such circumstances, if becomes payable, shall be entirely borne by the contractor.

1.9 The work shall generally be carried out in accordance with the "CPWD Specifications 2009 Vol. I & II" with correction slips issued upto the last date of submission of tender, additional/Particular Specifications, architectural/Structural drawings, mechanical, electrical, plumbing and as per instructions of Engineer-in-Charge. Any additional item of the work, if taken up subsequently, shall also conform to the relevant CPWD specifications as mentioned above.

1.10 The several documents forming the tender are to be taken as mutually complementary to one another. Detailed drawings shall be followed in preference to small scale drawings and figured dimensions in preference to scale dimensions.

1.11 There be any difference or discrepancy between the description of items as given in the schedule of quantities, particular specifications for individual items of work (including special conditions) and I.S. Codes etc., the following order of preference shall be observed.

Description of items as given in Schedule of quantities

Particular specifications

Special conditions

Additional Condition

Tender drawings attached

CPWD Specifications including correction slips issued up to the last date of uploading/submission of tender.

General Conditions of Contract for CPWD works including correction slips issued up to the last date of submission of tender.

Indian Standards Specifications of B.I.S.

ASTM, BS, or other foreign origin code mentioned in tender document.

Manufacturer's specifications and as decided by the Engineer-in-Charge.

Sound Engineering practices or well established local construction practices.

1.12 The works to be governed by this contract shall cover delivery and transportation up to destination, safe custody at site, insurance, erection, testing and commissioning of the entire works.

The works to be undertaken by the contractor shall inter-alia include the following:

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Preparation of detailed SHOP drawings and AS BUILT drawings wherever applicable.

Obtaining of Statutory permissions where-ever applicable and required.

Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.

Warranty obligation for the equipments and / or fittings/fixtures supplied by the contractor. Contractor shall provide all the shop drawings or layout drawings for all the coordinated services before starting any work or placing any order of any of the services etc. These shop drawings/layout drawings shall be got approved from Engineer-in-charge before implementation and this shall be binding on the contractor. The contractor shall submit material submittals along with material sample for approval of Engineer-in-Charge prior to delivery of material at site.

1.13 The work shall be carried out in accordance with the approved architectural drawings, structural drawings, MEP services drawings to be issued from time to time, by the Engineer-in-Charge, and approved shop drawings prepared by the Contractor. Before commencement of any item of work the contractor shall correlate all the relevant architectural and structural drawings, nomenclature of items and specifications etc. issued for the work and satisfy himself that the information available from there is complete and unambiguous. The figure and written dimension of the drawings shall be superseding the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in-charge before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and or incomplete information and no claim whatsoever shall be entertained by the department on this account.

1.14 Unless otherwise provided in the Schedule of quantities the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building and nothing extra shall be payable to him on this account.

1.15 The Contractor(s) shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, services and compound walls are to be constructed. The stacking shall take place as per stacking plan however, if any change is required, the same shall be done with the approval of Engineer-in-Charge.

1.16 The contractor shall engage specialized agency for carrying out specialized items as listed in para 1.48 below, covered in the schedule of Quantity Immediately after award of work, the contractor shall submit for the approval of NIT approving authority, the name of the agency along with their working experience and credentials, presentation on method statement and materials being used for execution of such items etc. Delay on the part of contractor in submitting the proposal for approval of competent authority shall be his responsibility and no extension of time shall be granted on this account.

1.17 The Contractor shall bear all incidental charges for cartage, storage and safe custody of materials, if any, issued by department as well as to those materials also arranged by the contractor.

1.18 Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items and nothing extra shall be payable or extra cement considered in consumption on this account.

1.19 The contractor shall give performance test of the entire installation(s) as per the specifications in the presence of the Engineer-in-charge or his authorized representative before the work is finally accepted and nothing extra what-so-ever shall be payable to the contractor for such test.

1.20 Water tanks, taps, sanitary, water supply & drainage pipes, fittings & accessories should conform to bye-laws of local body/corporation, where CPWD specifications are not available. The Contractor should engage approved, licensed plumbers for the work and get the materials (fixtures/fittings) tested, by the municipal Body/ Corporation authorities wherever required at his own cost. The Contractor shall submit for the approval of the NIT approving authority, the name of the plumbing agency (along with their working experience in recent past) proposed to be engaged by him.

1.21 The contractor shall make his own arrangements for water and for obtaining electric connections if required and make necessary payments directly to the State Govt. departments concerned. Contractor shall get the water tested from laboratory approved by the Engineer-in-charge at regular interval as per the CPWD Specifications 2009. All expenses towards collection of samples, packing, transportation etc. shall be borne by the contractor. Agency shall neither be allowed to use existing bore well, if any. They may have to arrange water through tankers from any outside source after taking due permission from concerned authority.

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1.22 PREVENTION OF NUISANCE AND POLLUTION CONTROL

The contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupiers of adjacent properties and to the public in general and to prevent any damage to such properties from pollutants like smoke, dust, noise. The contractor shall use such methodology and equipment so as to cause minimum environmental pollution of any kind during and minimum hindrance to road users and to occupants of the adjacent properties or other services running adjacent/near vicinity. The contractor shall make good at his cost and to the satisfaction of the Engineer-in-Charge, any damage to roads, paths, cross drainage works or public or private property whatsoever caused due to the execution of the work or by traffic brought thereon by the contractor. All waste or superfluous materials shall be carried away by the contractor, without any reservation, entirely to the satisfaction of the Engineer-in-Charge.

Control on Air Pollution of dust from construction and demolition activities : Guidelines of National Green Delhi and DPCC, Delhi issued time to time shall be followed by the agency for which nothing extra shall be paid.

1.23 Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the nearby occupants/users of building(s), if any.

1.24 SECURITY AND TRAFFIC ARRANGEMENTS

In the event of any restrictions being imposed by the Security agency, CPWD, Traffic or any other authority having jurisdiction in the area on the working or movement of labour /material, the contractor shall strictly follow such restrictions and nothing extra shall be payable to the contractor on such accounts. The loss of time on these accounts, if any, shall have to be made up by augmenting additional resources whatever required.

1.25 If as per the rules of the local authority, the huts for labour are not to be erected at the site of work by the contractors, the contractors are required to provide such accommodation as is acceptable to local bodies and nothing extra shall be paid on this account. No accommodation is available at the site of work. The labour huts shall not be erected on the plot and the Contractor shall make his own arrangements to provide such accommodation as per the rules of the local bodies. He shall make his own arrangements for stores, field office etc. Before tendering, he shall visit the site and assess the manner in which he is able to arrange the above facilities. The Engineer-in-Charge shall in no way be responsible for any delay on this account and no claim, whatsoever, on this account shall be entertained.

1.26 No payment shall be made for any damage caused by rain, snowfall, flood or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the govt. property and the work for which payment has been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P/Machinery brought to the site by him.

1.27 The contractor shall construct suitable godowns, yard at the site of work for storing all other materials so as to be safe against damage by sun, rain, damages, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose at his cost.

1.28 All materials obtained from contractor shall be got checked by the representative of Engineer-in-Charge on receipt of the same at site before use.

1.29 Royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, shingle sand and bajri etc. collected by him for the execution of the work, direct to the Revenue authority or authorized agent of the State Government concerned or Central Government.

1.30 The contractor shall be responsible for the watch and ward/guard of the buildings, safety of all fittings and fixtures including all equipments, services provided by him against pilferage and breakage during the period of Installations and thereafter till the building is physically handed over to the Engineering Cell of DTU, New Delhi – the Client Department. No extra payment shall be made on this account and no claim shall be admissible on this account.

1.31 The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye-laws laid down by Collector / DDA / MCD and any other statutory bodies shall be adhered to, by the contractor, during the execution of work. The Contractor shall also adhere to all

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traffic restrictions notified by the local authorities. The extra sewerage charges (one time charges for commencement of work) required to be paid to the Municipal Corporation/ other statutory bodies shall be paid by the department and need not be considered by the contractor. All statutory taxes, levies, charges (including water and sewerage charges, charges for temporary service connections and / or any other charges) payable to such authorities for carrying out the work, shall be borne by the Contractor. The water charges (for municipal water connection as well as tanker water) shall be borne by the contractor. Also, if the contractor obtains water connection for the drinking purposes from the municipal authorities or any other statutory body, the consequent sewerage charges shall be borne by the contractor. The General conditions of contract for CPWD works is not applicable to the tender. The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and shall pay to such authority all the fees that is required to be paid for the execution of work. He shall protect and indemnify the Department and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts. The fee payable to statutory authorities for obtaining the various permanent service connections and Occupancy Certificate for the building shall be borne by the Department.

1.32 For works below ground level the contractor shall keep that area free from water. If dewatering or bailing out of water is required the contractor shall do the same at his own cost and nothing extra shall be paid except otherwise provided in the items of Schedule of Quantities.

1.33 The Contractor shall make all necessary arrangements for protecting from rains, fog or likewise extreme weather conditions, the work already executed and for carrying out further work, during monsoon including providing and fixing temporary shelters, protections etc. Nothing extra shall be payable on this account and also no claims for hindrance shall be entertained on this account.

1.34 In case of flooding of site on account of rain or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained notwithstanding any other provisions elsewhere in the contract agreement. Also, the Contractor shall make good, at his own cost, the damages caused, if any. Further, no claims for hindrance shall be entertained on this account.

1.35 The contractor will take reasonable precautions to prevent his workman and employees from removing and damaging any flora (plant/vegetation) from the project area.

1.36 SETTING OUT

(i) The Contractor shall carry out survey of the work area, at his own cost, setting out the layout of building in consultation with the Engineer -in-Charge & proceed further. Any discrepancy between the Engineer-in-charge, architectural drawings and actual layout at site shall be brought to the notice of the Engineer -in-charge. It shall be responsibility of the Contractor to ensure correct setting out of alignment. Total station survey instruments only shall be used for layout, fixing boundaries, and centre lines, etc., Nothing extra shall be payable on this account.

(ii). The Contractor shall establish, maintain and assume responsibility for grades, lines, levels and benchmarks. He shall report any errors or inconsistencies regarding grades, lines, levels, dimensions etc. to the Engineer -in-Charge before commencing work. Commencement of work shall be regarded as the Contractor's acceptance of such grades, lines, levels, and dimensions and no claim shall be entertained at a later date for any errors found.

(iii). If at any time, any error appears due to grades, lines, levels and benchmarks during the progress of the work, the Contractor shall, at his own expense rectify such error, if so required, to the satisfaction of the Engineer -in-Charge. Nothing extra shall be payable on this account.

(iv). Though the site levels are indicated in the drawings the Contractor shall ascertain and confirm the site levels with respect to benchmark from the concerned authorities. The Contractor shall protect and maintain temporary/ permanent benchmarks at the site of work throughout the execution of work. These benchmarks shall be got checked by the Engineer-in-Charge or his authorized representatives. The work at different stages shall be checked with reference to bench marks maintained for the said purpose. Nothing extra shall be payable on this account.

(v). The approval by the Engineer-in-Charge, of the setting out by the Contractor, shall not relieve the Contractor of any of his responsibilities and obligation to rectify the errors/ defects, if any, which may be found at any stage during the progress of the work or after the completion of the work.

(vi). The Contractor shall be entirely and exclusively responsible for the horizontal, vertical and other alignments, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be carried out by the Contractor at his own cost to the entire satisfaction of the Engineer - in-Charge.

(vii). The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work (including marking of reference points, center lines of buildings), construction and maintenance of reference bench mark(s), taking spot levels, construction of all safety and protection devices, barriers, barricading, signage, labour safety, labour welfare and labour training measures, preparatory works, working during monsoon, working at all depths, height and location etc. and any other incidental works required to complete this work. Nothing extra shall be payable on this account.

(viii) The contractor(s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters at site. However, no claim on the alleged inadequacy or incorrectness of the soil data supplied by the department shall be entertained.

1.37 A site laboratory with the minimum equipments as specified in CPWD specifications/in this agreement shall be established, made functional and maintained within a week from the award of work as per without any extra cost to the department. In case of non compliance / delay in compliance in this, a recovery @ Rs. 500/- per day will be imposed which will be recovered from the immediate next R/A Bill of the Contractor.

1.38 COORDINATED DRAWINGS

Before taking up the work, the contractor shall prepare shop drawings for the works listed below for various civil and electrical services showing details of lay out in plan including sections & elevations & large scale details and contractor shall plan and mobilize his resources as per these drawings and as per actual site conditions to facilitate convenient execution, installation as well as maintenance of these items.. Nothing extra shall be payable on this account.

SHOP DRAWINGS

The bill of quantities, technical specifications and drawings together shall be considered as a tender requirement and the work shall be carried out as per good for construction (GFC) drawings, issued by Engineer-in-charge. The contractor shall study the GFC drawings and taking into account actual site conditions and selected material and requirements shall prepare shop drawings for the following works, as fully coordinated drawings, as given above.

- Aluminum work.
- Expansion joint work
- Suspended ceiling work, coordinated with all ceiling related services.
- Marble, granite, vitreous, ceramic, tile work
- All Electrical work
- All Sanitary work
- All steel fabrication work.
- PUF panel ceiling/roofing work.

The shop drawings shall be prepared timely by contractor and submitted for approval to achieve the milestones provided.

Within the time frame agreed with the Engineer-in-charge, the contractor shall prepare shop drawings using latest version of Auto CAD. Shop drawings shall show all layouts, details in plans & sections showing all connections, junctions, bends, supports, clearances. Fixing arrangements with dimensions room, etc shall be prepared by the contractor on AutoCAD based on the architectural drawings and site measurements. All measurable items quantities shall be mentioned on each shop drawing being submitted for approval by the contractor. 3 sets of shop drawings (soft copy also) shall be submitted for approval and Seven sets of final shop drawings after approval by Engineer-in-charge shall be submitted by the contractor along with the soft copy. The shop drawings, shall be prepared as per schedule given in CPM/PERT Chart.

Technical submittals of manufacturer’s catalogues and technical data shall be submitted for approval. The contractor shall designate an Engineer responsible for issue and preparation of shop drawings and control of GFC drawings.

1.39 TOOLS AND PLANTS

The bidder should have own constructions equipment required for the proper and timely execution of the work. Nothing extra shall be paid on this account.

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No tools and plants including any special T&P etc. shall be supplied by the Department and the Contractor shall have to make his own arrangements at his own cost. No claim of hindrance (or any other claim) shall be entertained on this account.

1.40 SCAFFOLDING

For the execution of work, all the scaffolding shall be provided and suitably fixed, by the Contractor. It shall be provided strictly with steel double scaffolding system, suitably braced for stability, with all the accessories, gangways, etc. with adjustable suitable working platforms to access the areas with ease for working and inspection. It shall be designed to take all incidental loads. It should cater to the safety features for workmen. Nothing extra shall be payable on this account. It shall be ensured that no damage is caused to any structure due to the scaffolding except for the work of vertical extension where vertical & horizontal scaffolding along with screen to prevent pollution and debris from following along with proper access to be provided for which payment shall be made.

1.41 The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot so as to achieve early completion. The agency to deploy adequate equipment, machinery and labour as required for the completion of the entire work within the stipulated period specified. Also ancillary facilities shall be provided by contractor commensurate with requirement to complete the entire work within the stipulated period. Nothing extra shall be payable on this account. Adequate number/sets of equipment in working condition, along with adequate stand-by arrangements, shall be deployed during entire construction period. It shall be ensured by the Contractor that all the equipment, Tools & Plants, machineries etc. provided by him are maintained in proper working conditions at all times during the progress of the work and till the completion of the work. Further, all the constructional tools, plants, equipment and machineries provided by the Contractor, on site of work or his workshop for this work, shall be exclusively intended for use in the construction of this work and they shall not be shifted/ removed from site without the permission of the Engineer-in-Charge.

1.42 The Contractor shall maintain all the work in good condition till the completion of entire work. The Contractor shall be responsible for and shall make good, all damages and repairs, rendered necessary due to fire, rain, traffic, floods or any other causes. The Engineer-in-Charge shall not be responsible for any claims for injuries to person/workmen or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the Contractor or of any other of his representatives, in his employment during the execution of the work. The compensation, if any, shall be paid directly to the Department / authority / persons concerned, by the Contractor at his own cost.

1.43 ROYALTY

Royalty at the prevalent rates shall be paid by the Contractor to the RMC supplier as per the terms of supply between them, on all materials such as boulders, metals, all sizes stone aggregates, brick aggregates, coarse and fine sand, moorum, river sand, gravels and bajri etc. collected by him for the execution of the work, directly to the revenue authority of the state government concerned. Further, contractor needs to submit proof of submission of full royalty to the state government or local authority. Nothing extra shall be payable on this account.

1.44 PRESERVATION AND CONSERVATION MEASURES

(i) Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services, if any, encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. In case the same are to be removed and diverted, expenditure incurred in doing so shall be payable to the contractor. The contractor shall work out the cost, get the same approved by Engineer-in-Charge before taking up actual execution. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services.

(ii) All fossils, coins, articles of value of antiquity, structures and other remains or things of geological or archaeological interest discovered on project location during excavation/construction shall be the property of the Government, and shall be dealt with as per provisions of the relevant legislation. The contractor will take reasonable precaution to prevent his work men or any other persons from removing and damaging any such article or thing. He will, immediately upon discovery thereof and before removal acquaint the Engineer-in-charge of such discovery and carry out the official instructions of Engineer-in- charge for dealing with the same, till then all work shall be carried out in a way so as not to disturb/damage such article or thing.

1.45 RESPONSIBILITY

(i) He shall protect and indemnify the Department / DTU and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts.

(ii) The fee payable to statutory authorities for obtaining the various permanent service connections and Building Use Certificate for the building shall be borne by the DTU.

(iii) The Contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the Department from any and all damages and claims that may arise on any account. The Contractor shall indemnify the Department against all claims in respect of patent rights, royalties, design, trademarks- of name or other protected rights, damages to adjacent buildings, roads or members of public, in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising from such claims and shall indemnify the Department in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.

1.46 CO-OPERATION WITH OTHER CONTRACTORS/SPECIALIZED AGENCIES/ SUB-CONTRACTORS

(i) The Contractor shall take all precautions to abide by the environmental related restrictions imposed by any statutory body having jurisdiction in Delhi as well as prevent any pollution of streams, ravines, river bed and waterways. All waste or superfluous materials shall be transported by the Contractor, entirely to the satisfaction of the Engineer- in-Charge and disposed at designated places only. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints, lack of public transport, , inadequate availability of skilled, semi-skilled or unskilled workers in the near vicinity, non-availability of construction machinery spare parts and any other constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Tenderers are advised to visit site and get first-hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

(ii) The Contractor shall cooperate with and provide the facilities to the sub-Contractors and other agencies working at site for smooth execution of the work. The contractor shall indemnify the Department (DTU) against any claim(s) arising out of such disputes. The Contractor shall:

- (a) Allow use of scaffolding, toilets, sheds etc.
 - (b) Properly co-ordinate their work with the work of other Contractors.
 - (c) Provide control lines and benchmarks to his Sub-Contractors and the other Contractors.
 - (d) Provide electricity and water at mutually agreed rates.
 - (e) Provide hoist and crane facilities for lifting material at mutually agreed rates.
 - (f) Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
 - (g) Adjust work schedule and site activities in consultation with the Engineer-in- Charge and other Contractors to suit the overall schedule completion.
 - (h) Resolve the disputes with other Contractors/ sub-contractors amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator.
- (iii) The work should be planned in a systematic manner so as to ensure proper co-ordination of various disciplines viz. sanitary & water supply, drainage, rain water harvesting, electrical, fire fighting, information technology, communication & electronics and any other services.

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(iv) Other agencies as employed by the contractor, will also simultaneously execute and install the works of sub-station / generating sets, air-conditioning, lifts, etc. for the work and the contractor shall afford necessary facilities for the same. The contractor shall leave such recesses, holes, openings trenches etc. as may be required for such related works and includes provision of inserts and the contractor shall fix the same at time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.

(v) The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-In-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and in a proper co-ordination manner and shall perform it in proper sequence to the complete satisfaction of others.

1.47 SUPERVISION OF WORK

The Contractor shall depute Site Engineer & skilled workers as required for the work. He shall submit organization chart along with details of Engineers and supervisory staff. It shall be ensured that all decision making powers shall be available to the representatives of the Contractor at New Delhi itself to avoid any likely delays on this account. The Contractor shall also furnish list of persons for specialized works to be executed for various items of work. The Contractor shall identify and deploy key persons having qualifications and experience in the similar and other major works, as per the field of their expertise. If during the course of execution of work, the Engineer-in-Charge is of the opinion that the deployed staff is not sufficient or not well experienced; the Contractor shall deploy more staff or better-experienced staff at site to complete the work with quality and in stipulated time limit.

1.48 Specialized Agencies

(i) The tender comprises of two main components: viz. civil works. The list of specialized agencies for civil works is as below:

- Water proofing treatment.
- Interior works - false ceiling works.
- Fabrication & erection of all steel work.
- Laying of granite stone.
- Aluminum doors and windows, aluminum partition.
- Fabrication and erection of PUF sheet roofing.
- Stainless steel work and stainless steel railing.
- PVC Doors
- All plumbing work
- Signage's works

The contractor shall submit the credential of specialized agency well in advance for the approval of NIT Approving Authority as per the direction of Engineer-in-charge. After verification of the same, written approval will be conveyed to main contractor in this regard. The quantum of credentials will be broadly in line with CPWD guidelines. The main contractor shall not change the specialized agency. However, if the change is warranted, he may do so, with permission of NIT approving authority. However before making any such change he has to enter into similar agreement as with previous agency & submit the same to Engineer - in - Charge for approval. This shall however be without any change in the accepted rates of the contract agreement and without any cost implications to the Department.

(ii) It shall be the responsibility of main contractor to sort out any dispute / litigation with the Specialized Agencies without any time & cost overrun to the Department. The main contractor shall be solely responsible for settling any dispute / litigation arising out of his agreement with the Specialized Agencies. The contractor shall ensure that the work shall not suffer on account of litigation/ dispute between him and the specialized agencies / sub- contractor(s). No claim of hindrance in the work shall be entertained from the Contractor on this account. No extension of time shall be granted and no claim what so ever, of any kind, shall be entertained from the Contractor on account of delay attributable to the selection/rejection of the Specialized Agencies or any dispute amongst them.

1.49 RATES

The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work, profile, setting lay out on ground, establishment of reference bench mark(s), installing various signage, taking spot levels, survey with total station, construction of all safety and protection devices, compulsory use of helmet and safety shoes, and other appropriate safety gadgets by workers, imparting continuous training for all the workers, barriers, preparatory works, construction of clean, hygienic and well ventilated workers housings in sufficient numbers as per drawing supplied by Engineer in charge, working during monsoon or odd season, working beyond normal hours, working at all depths, height, lead, lift, levels and location, implementation of green building norms to achieve desired GRIHA Rating etc. and any other unforeseen but essential incidental works required to complete this work. Nothing extra shall be payable on this account and no extension of time for completion of work shall be granted on these accounts.

The rates quoted by the tenderer, shall be firm and inclusive of all taxes and levies (including GST as applicable).

No foreign exchange shall be made available by the Department for importing (purchase) of equipment, plants, machinery, materials of any kind or any other items required to be carried out during execution of the work. No delay and no claim of any kind shall be entertained from the Contractor, on account of variation in the foreign exchange rate.

Ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp required to be made for working at the basement level, temporary structure for plants and machineries, water storage tanks, installation and consumption charges of temporary electricity, telephone, water etc. required for execution of the work, liaison and pursuing for obtaining various No Objection Certificates, completion certificates from local bodies etc., protection works, testing facilities / laboratory at site of work, facilities for all field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in-Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts. Before start of the work, the Contractor shall submit to the Engineer-in-Charge, a site / construction yard layout, specifying areas for construction, site office, positioning of machinery, material yard, cement and other storage, steel fabrication yard, site laboratory, water tank, etc.

For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the Contractor may have to pay extra amounts for any reason, to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.

All material shall only be brought at site as per program finalized with the Engineer-in- Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.

1.50 SAFETY PRACTICES

i) **WARNING/ CAUTION BOARDS:** All temporary warning / caution boards / glow signage display such as "Construction Work in Progress", "Keep Away", "No Parking", Diversions & protective Barricades etc. shall be provided and displayed during day time by the Contractor, wherever required and as directed by the Engineer-in-Charge. These glow signage and red lights shall be suitably illuminated during night also. The Contractor shall be solely responsible for damage and accident caused, if any, due to negligence on his part. Also he shall ensure that no hindrance, as far as possible, is caused to general traffic during execution of the work. This signage shall be dismantled & taken away by the Contractor after the completion of work, only after approval of the Engineer – in – Charge. Nothing extra shall be payable on this account.

ii) **SIGN BOARDS:** The Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in-Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, Client/Owner, Engineer-in-charges, Structural Consultants, Department etc. besides providing space for names of other Contractors, Sub-Contractors and specialized agencies within 15 days from issue of award letter. Nothing extra shall be payable on this account. In case of non compliance/delay in compliance in this, a penalty @ Rs. 500/- per day will be imposed which will be recovered from the immediate next R/A Bill of the Contractor.

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iii) Necessary protective and safety equipments shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and to be used at site.

iv) No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules / instructions issued by the relevant authorities and as per the direction of Engineer -in- Charge in this regard. Also all precautions and safety measures shall be taken by the Contractor for safe handling of the P.O.L products stored at site. All consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.

1.51 QUALITY ASSURANCE

The proposed building is a prestigious project and quality of work is of paramount importance. Contractor shall have to engage well-experienced skilled labour and deploy modern T&P and other equipment to execute the work. Many items like specialized flooring work, Polysulphide sealant and backer rod fixing in expansion joints, factory made door- window shutters, proper slope maintaining in toilet units, sanitary- water supply installation, textured finishing, grit plastering with aluminum channel insertions, water proofing treatment with APP Extruded Polystyrene insulation boards, will specially require engagement of skilled workers having experience particularly in execution of such items.

The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set out tolerance limit shall be summarily rejected by the Engineer-in-charge & contractor shall be bound to replace / remove such sub-standard / defective work immediately. If any material, even though approved by Engineer-In-Charge is found defective or not conforming to specifications shall be replaced / removed by the contractor at his own risk & cost.

In addition to the supervision of work by DTU engineers, the Consultants deployed by the DTU shall also be carrying out regular and periodic inspection of the ongoing activities in the work and deficiencies, shortcomings, inferior workmanship pointed out by them shall be communicated by DTU engineers to the contractor. Upon receipt of instructions from Engineer in Charge these are also to be made good by necessary improvement, rectification, replacement upto his complete satisfaction. Special attention shall be paid towards line and level of internal and external plastering, exposed smooth surface of RCC members by providing fresh shuttering plates, rubberized linings to all the shuttering joints, accurate joinery work in wooden doors and windows, thinnest joints in stone/ tiling / cladding work, non-hollowness in floor and dado tiles work, protection of scratches over flooring by impounding layer of plaster of Paris, water tight pipe linings, absence of hollow vertical joints in brick masonry, proper compaction of filled up earth etc. to achieve an Institution of International standards and up keeping of quality assurance shall be of paramount importance, as such.

The Contractor shall submit, within 07 (Seven) days after the date of award of work, a detailed and complete method statement for the execution, testing and Quality Assurance, of such items of works, as directed by the Engineer-in-Charge. All the materials to be used in the work, to give the finished work complete in all respects, shall comply with the requirements of the specifications and shall pass all the tests required as per specifications as applicable or such specifications / standards as directed by the Engineer-in- Charge. However, keeping the Quality Assurance in mind, the Contractor shall submit, on request from the Engineer-in- Charge, his own Quality Assurance procedures for basic materials and such items, to be followed during the execution of the work, for approval of the Engineer-in-Charge.

All materials and fittings brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-charge which shall be preserved till the completion of the work. If a particular brand of material is specified in the item of work in Schedule of Quantity, the same shall be used after getting the same approved from Engineer-In-Charge. Wherever brand / quality of material is not specified in the item of work, the contractor shall submit the samples as per suggested list of brand names given in the tender document / particular specifications for approval of Engineer-In-Charge. For all other items, materials and fittings of ISI Marked shall be used with the prior approval of Engineer-In-Charge. Wherever ISI Marked material / fittings are not available, the contractor shall submit samples of materials / fittings manufactured by firms of repute conforming to relevant specifications or IS codes and use the same only after getting the approval of Engineer-In-Charge.

The Contractor shall procure and provide all the materials from the manufacturers / suppliers as per the list attached with the tender documents, as per the item description and particular specifications for the work. The equivalent brand for any item shall be permitted to be used in the work, only when the specified makes are not available. This is, however, subject to documentary evidence produced by the contractor for non-availability of the brand specified and also subject to independent verification by the Engineer-in-Charge. In exceptional cases, where such approval is required, the decision of Engineer-in-Charge as regards equivalent make of the

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material shall be final and binding on the Contractor. No claim, whatsoever, of any kind shall be entertained from the Contractor on this account. Nothing extra shall be payable on this account. Also, the material shall be procured only after written approval of the Engineer-in-Charge.

All materials whether obtained from Govt. stores or otherwise shall be got checked by the Engineer-in-Charge or his authorized supervisory staff on receipt of the same at site before use.

The tests, as necessary, shall be conducted in the following laboratory. The samples shall be taken for carrying out all or any of the tests stipulated in the particular specifications and as directed by the Engineer-in-Charge or his authorized representative.

- IIT Delhi.
- CRRI, Delhi.
- National Council for Cement and Building Materials, Ballabh Garh.
- Delhi Technological University (Formerly known as Delhi College of Engineering).
- CPWD Lab, Delhi.
- Shree Ram Testing Laboratories Delhi
- Any other NABL approved lab as approved by the NIT approving authority.

All the registers of tests carried out at Construction Site or in outside laboratories and all material at site (MAS) registers including cement register shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-charge. All the entries in the registers will be made by the designated Engineering Staff of the contractor and same should be regularly reviewed by J.E/Consultant(Civil)/EE. Contractor shall be responsible for safe custody of all the registers.

The Contractor shall at his own risk and cost make all arrangements and shall provide all such facilities including material and labour, the Engineer-in-Charge may require for collecting, preparing, forwarding the required number of samples for testing as per the frequency of test stipulated in the contract specifications or as considered necessary by the Engineer-in-Charge, at such time and to such places, as directed by the Engineer-in-Charge. Nothing extra shall be payable for the above.

The Contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorized representative is not present or does not associate him, the result of such tests and consequences thereon shall be binding on the Contractor. The Contractor or his authorized representative shall remain in contact with the Engineer-in-Charge or his authorized representative associated for all such operations. No claim of payment or claim of any other kind, whatsoever, shall be entertained from the Contractor.

All the testing charges shall be borne by the contractor/ department in the manner indicated below:

- (a) By the contractor, if the results show that the material does not confirm to relevant specifications and BIS codes or any other relevant code for which confirmatory test is carried out.
- (b) By the department, if the results show that the material confirms to relevant specifications and BIS codes or any other relevant code for which confirmatory test is carried out.
If contractor brings the material in smaller lots than specified frequency as per specification, the testing charges shall be born by the contractor in respect of extra numbers of tests required to be carried out on this account irrespective of test result.
- (c) The contractor shall get the water tested with regard to its suitability and conforming to the relevant I.S. Code. The contractor shall obtain written approval from the Engineer-in-Charge before proceeds by using the same for execution of work. The testing charges shall be borne by the contractor.

All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested as per the design conditions before covering and their measurements in computerized measurement book duly test checked shall be deposited with Engineer in charge or his authorized representative, prior to hiding these items.

Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should confirm to bylaws and municipal body / corporation where DTU Specifications are not available. The contractor should engage licensed plumbers for the work and get the materials (fixtures/fittings) tested by the Municipal Body/Corporation authorities wherever required at his own cost.

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The contractor shall give performance test of the entire installation(s) as per the standing specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.

The contractor shall have to execute guarantee bonds in respect of water proofing works and other specialized works as per Performa enclosed.

The Contractor shall arrange electricity at his own cost for testing of the various electrical installations as directed by Engineer-in-Charge and for the consumption by the contractor for executing the work. Also all the water required for testing various electrical installations, fire pumps, fire fighting/ fire fighting equipments, fire sprinklers etc. and also testing water supply, sanitary and drainage lines, water proofing of underground sump, overhead tanks, water proofing treatment etc. shall be arranged by the contractor at his own cost. Nothing extra shall be payable on this account.

The quality of water in the nearby areas is not fit for construction work, therefore, water treatment plant of suitable capacity shall be installed by the contractor at each site of work. He would also be required to create capacity for storage for a period not less than 3 days for construction and curing purpose, for which nothing extra shall be paid to the contractor.

1.52 SUBMISSION AND DOCUMENTATION

(i) The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc under various labour laws and other regulations applicable to the works, at his site office. He should also keep at site at least one set of BIS Codes and other relevant codes at site and produce the same if asked for by Engineer-In-Charge. In case of non compliance, these codes will be purchased from the Market and actual cost of purchase will be recovered from the next RA Bill of the Contractor.

(ii) The Contractor shall make available four (04) sets of completed Building Drawings, "As Built Drawings" along with literatures, manuals, warranty certificates etc. of various installed fittings, fixtures and equipment for the completed projects. This shall be the prerequisite for payment of final bill.

(iii) The Contractor shall make available three (03) sets of all services drawings including Electrical & HVAC work internal and external services i.e. Water Supply, Sanitary line and Drainage lines. This shall be the prerequisite for payment of final bill. These drawings shall have the following information:

(iv) Run off for all piping and their diameters including soil, waste pipes and vertical stacks.

(v) Ground and invert level of all drainage pipes together with locations of all manholes and connections, up to outfall.

(vi) Run off for all water supply lines with diameters location of control valves, access panels etc.

(vii) The contractor shall make available four (04) sets of computerized Standard Measurement Books (SMBs) having measurement of all the permanent standing in a building.

(viii) The Performance Guarantee shall not be released to the contractor until the aforesaid drawings are submitted to the Engineer-in-Charge.

(ix) The contractor will submit computerized measurement sheet for the work carried out by him for making payment as per Clause – 6A of the CPWD General Conditions of Contract 2014 (with correction slips up to the last date of submission of tender). For casting of RCC members and other hidden items the corrected and duly test checked measurement sheets of reinforcement or that of other hidden items shall be deposited with Engineer in charge or his authorized representative, before casting of RCC or other hidden items. The delay in submission of corrected and duly checked measurement sheet may, therefore, delay casting of RCC or execution of hidden item for which no hindrance shall be recorded.

(x) To avoid delay, contractor should submit all samples well in advance so as to give timely orders for procurement.

1.53 Program Chart:

The Contractor shall prepare an integrated program chart within seven days of issue of award letter including civil as well as E & M activities for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower,

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equipment and machinery required for the fulfillment of the program within the stipulated period and submit the same for approval of the Engineer-In-Charge within seven days of the award of the work. These shall be submitted by the contractor through electronic media besides forwarding hard copies of the same. The integrated program chart so submitted should not have any discrepancy with the physical milestones attached in the contract agreement. The program chart should include the following: -

- (i) Descriptive note explaining sequence of various activities.
- (ii) Construction Program prepared on PRIMAVERA Software or any other equivalent software decided by the Engineer-in-Charge, which will indicate resources in financial terms, manpower and specialized equipment for every important stage.
- (iii) Program for procurement of materials by the contractor.
- (iv) Program for arranging and deployment of manpower both skilled and unskilled so as to achieve targeted progress.
- (v) Program of procurement of machinery/equipment having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor.
- (vi) Program for achieving fortnightly micro milestones and periodic milestones.
- (ix) If at any time, it appears to the Engineer-In-Charge that the actual progress of work does not conform to the approved program referred above, the contractor shall produce a revised program showing the modifications to the approved program by additional inputs to ensure completion of the work within the stipulated time.
- (x) The submission for approval by the Engineer-In-Charge of such program or the furnishing of such particulars shall not relieve the contractor of any of his duties or responsibilities under the contract. This is without prejudice to the right of Engineer-In-Charge to take action against the contractor as per terms and conditions of the agreement.
- (xi) Apart from the above integrated program chart, the contractor shall be required to submit fortnightly progress report of the work in a computerized form on 1st and 16th of every month. The progress report shall contain the following, apart from whatever else may be required as specified above:
 - (a) Construction schedule of the various components of the work through a bar chart for the next fortnight (or as may be specified), showing the micro- milestone/milestones, targeted tasks (including material and labour requirement) and up to date progress. At least 10 digital photographs showing all the parts of construction site along with at least 5 minutes video of executions of different items in soft copy has to be submitted in every fortnightly progress report.
 - (b) Progress chart of the various components of the work that are planned and achieved, for the fortnight as well as cumulative up to the fortnight under reckoning, with reason for deviations, if any in a tabular format.
 - (c) Plant and machinery statement, indicating those deployed in the work.
 - (d) Manpower statement indicating:
 - Individually the names of all the staff deployed on the work, along with their designations.
 - No. of skilled workers (trade wise) and total no. of unskilled workers deployed on the work and their location of deployment i.e. blocks.
 - (e) Financial statement, indicating the broad details of all the running account payment received up to date, such as gross value of work done, advances taken, recoveries effected, amount withheld, net payments details of cheque payment received, extra/substituted/deviation items if any, etc.
- (xii) In case of non compliance / delay in compliance in submission of fortnightly, a penalty @ Rs. 1000/- per fortnightly report will be imposed which will be recovered from the immediate next R/A Bill of the Contractor.

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1.54 TEMPORARY WATER/ ELECTRICITY/ TELEPHONE CONNECTION

- (i) Arrangement of temporary telephone connection, water and electricity required by Contractor, shall be made by him at his own cost and also necessary permissions shall be obtained by him directly from concerned authorities, under intimation to the Department. Also, all initial cost and running charges, and security deposit, if any, in this regard shall be borne by him. The Contractor shall abide by all the rules/ bye laws applicable in this regard and he shall be solely responsible for any penalty on account of violation of any of the rules/byelaws in this regard. Nothing extra shall be payable on this account.
- (ii) The Contractor shall be responsible for maintenance and watch and ward of the complete installation and water / electricity meter and shall also be responsible for any pilferage, theft, damage, penalty etc. in this regard. The Contractor shall indemnify the Department against any claim arising out of pilferage, theft, damage, penalty etc. whatsoever on this account. Security deposit for the work shall be released only after No Dues Certificates are obtained from the local Authorities from whom temporary electric/ water / telephone connection have been obtained by the Contractor. Nothing extra shall be payable on this account.
- (iii) The Department shall in no way be responsible for either any delay in getting electric and/or water and/or telephone connections for carrying out the work or not getting connections at all. No claim of delay or any other kind, whatsoever, on this account shall be entertained from the Contractor. Also contingency arrangement of stand-by water & electric supply shall be made by the Contractor for commencement and smooth progress of the work so that work does not suffer on account of power failure or disconnection or not getting connection at all. No claim of any kind whatsoever shall be entertained on this account from the Contractor. Nothing extra shall be payable on this account

1.55 CLEANLINESS OF SITE

- i) The Contractor shall not stack building material/malba/muck on the land or road of the local development authority or on the land owned by the others, as the case may be. So the muck, rubbish etc. shall be removed periodically as directed by the Engineer-in-Charge, from the site of work to the approved dumping grounds as per the local byelaws and regulations of the concerned authorities and all necessary permissions in this regard from the local bodies shall be obtained by the Contractor. Nothing extra shall be payable on this account. In case, the Contractor is found stacking the building material/malba as stated above, the Contractor shall be liable to pay the stacking charges/penalty as may be levied by the local body or any other authority and also to face penal action as per the rules, regulations and bye-laws of such body or authority. The Engineer –in-Charge shall be at liberty to recover, such sums due but not paid to the concerned authorities on the above counts, from any sums due to the Contractor including amount of the Security Deposit and performance guarantee in respect of this contract agreement.
- ii) The contractor shall take instructions from the Engineer-In-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, services and compound walls are to be constructed.
- iii) The site of work shall be always kept clean due to constraints of space and to avoid any nuisance to the users of buildings in the adjacent plots. The Contractor shall take all care to prevent any water- logging at site. The waste water, slush etc. shall not be allowed to be collected at site. It may be directly pumped into the creek with prior approval of the concerned authorities. For discharge into public drainage system, necessary permission shall be obtained from relevant authorities after paying the necessary charges, if any, directly to the authorities. The work shall be carried out in such a way that the area is kept clean and tidy. All the fees/charges in this regard shall be borne by the Contractor. Nothing extra shall be payable on this account.

1.56 INSPECTION OF WORK

- i) In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by Senior Officers of DTU& the representative of the Consultants .The contractor shall at times during the usual working hours and at all times at which reasonable notices of the intention of the Engineer-in-charge or other officers as stated above to visit the works shall have been given to the contractor, either himself be present to receive the orders and instructions or have a responsible representative duly accredited in writing, to be present for that purpose.
- ii) Inspection of the work by Consultant appointed by the DTU.

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The consultant appointed by DTU, shall be inspecting the works including workshops and fabrication factory to ensure that the works are in general being executed according to the design, drawings and specifications laid down in the contract. His observations shall be communicated by DTU engineering staff and compliance is to be reported to DTU.

The consultant appointed by DTU shall certify on completion of particular building that it has been constructed according to the approved drawings design and specifications.

iii) Senior Officers of DTU, Dignitaries from Central Ministry / Department, Client Authorities shall be inspecting the on-going work at site at any time with or without prior intimation. The contractor shall, therefore, keep updated the following requirements and detailing.

Display Board showing detail of work, weekly progress achieved with respect to targets, reason of shortfall, status of manpower, wages being paid for different categories of workers.

Entrance and area surrounding to be kept cleaned.

Display layout plan key plan, Building drawings including plans, elevations and sections.

Upto date displays of Bar chart, CPM and PERT etc.

Keep details of quantities executed, balance quantities, deviations, possible Extra item, substituted Item etc.

Keep plastic / cloth mounted one sets of building drawings.

Set of Helmets and safety shoes for exclusive use for officers/dignitaries visiting at site.

1.57 FINAL TESTING OF THE INSTALLATION

The Contractor shall demonstrate trouble free functioning of all the Civil and E & M installations and services. The Engineer-in-Charge or his authorized representatives shall carry out final inspection of the various Civil and E & M services and installations. Any defect(s) noticed during demonstration shall be rectified by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge. Nothing extra shall be payable on this account.

1.58 SUBMISSION OF AS BUILT DRAWINGS AND OBTAINING OCCUPATION CERTIFICATE

The contractor shall coordinate and facilitate consultant for obtaining occupation certificate / completion certificate from local bodies including getting the required site visits conducted by such authorities with a view to obtain the same.

1.59 REFUND OF PERFORMANCE GAURENTEE

The performance guarantee shall be refunded to the contractor soon after the completion of work and recording of the completion certificate by the competent authority.

1.60 DEALING WITH INCONSISTENT RATES

i) The Contractors shall quote same rates for the identical items which may inadvertently appear in more than one place if different rates are quoted by the tenderers for such identical items, the same shall be rationalized by considering the lowest quoted rate for such items, for evaluation and acceptance of tender.

ii) Wherever any reference to any Indian Standards occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued thereto or revisions thereof, if any, up to the date of receipt of tenders.

iii) Unless otherwise specified in the schedule of quantities, the rates for all items of work shall be considered, as inclusive of pumping out or bailing out water, if required throughout the construction period for which no extra payment shall be made. This shall also include water encountered from any source such as rains, floods, sub soil water table being high and/or due to any other cause whatsoever.

iv) All stone aggregate and stone ballast shall be of hard stone variety to be obtained from approved quarries.

v) Coarse sand should be obtained from approved sources. The same shall be clean and sharp angular grit type. The coarse sand shall be screened before using, if required. If the sand brought to site is dirty, it must be washed in clean water to bring the sand to the required specifications. Nothing extra shall be payable on this account.

vi) The rates for all items of work, shall unless clearly specified otherwise, include cost of all operations and all inputs of labour, material, T & P, scaffolding, wastages, watch and ward, other inputs, all incidental charges, all taxes, GST etc. required for execution of the work.

1.61 PRODUCT DELIVERY, STORAGE AND HANDLING OF CHEMICALS

The contractor shall construct storage space for Chemicals materials to ensure that the storage conditions are as recommended by the manufactures.

All the materials shall be procured and delivered in sealed containers with labels legible and intact.

All the chemicals {polymers, epoxy, water proofing compound, plasticizer, Polysulphide, SBR based elastomeric, APP (Atactic Polypropylene Polymer), all exterior and interior paints, polish etc.) shall be procured in convenient packs say 20 litres/Kgs.} capacity packing only or as approved by the Engineer-in-Charge, and not in bigger capacity containers, say 200 litres (Kgs.) drums unless otherwise specifically permitted by the Engineer-in-Charge. One sample from each lot of the chemical procured by the contractor shall be tested in a laboratory as approved by the Engineer-in-charge

All material required for the execution of the work shall be got approved, procured and deposited with the Departmental supervisory staff. The materials shall be kept in joint custody of the contractor and the Department. The watch and ward of such material shall, however, remain to be the responsibility of the contractor and no claim, whatsoever, on this account shall be entertained. Different containers of each chemical shall be serially numbered on packing and also consumed in that order. Day-to-Day account of receipt, issue and balance shall be regulated by the Department and proper account shall be maintained at site of work in the prescribed form as per the standard practice.

All the chemicals shall be procured by the contractor directly from the manufacturer. In exceptional circumstances, the contractor may be allowed to procure the materials from the authorized dealers of the manufacturers, if specifically permitted by the Engineer-in-Charge.

The original copies of challan/cash memos and manufacturer’s test reports towards the quantity of various chemicals procured shall be made available by the contractor to the Engineer-in- Charge before making payments for work consuming the said material and a copy of the same shall be kept in record.

The Name of manufacturers, manufacturer’s product identification, and manufacturer’s mixing instructions, warning for handling and toxicity and date of manufacturing and shelf life shall be clearly and legibly mentioned on the labels of the each container.

The contractor shall submit for the chemicals procured, manufacturer’s and / or authorized dealer’s certificate regarding supplying and verifying conformance to the material specifications, as specified.

All filled containers shall be handled in safe manner and in a way to avoid breaking container seals.

Empty containers of the chemicals should not be removed from site till the completion of work and shall be removed only with the written approval of the Engineer-in-Charge.

All arrangements for measuring, dosing and mixing of material / chemicals at site have to be made by the contractor.

Contractor shall suitably advise his site Engineer and all the workers as regards safe handling of chemicals. Necessary protective and safety equipments in form of hand gloves, goggles etc. shall be provided by the contractor and be also used at site.

All incidental charges of any kind including cartage, storage and wastage and safe custody of material etc. shall be borne by the contractor and no claim, whatsoever, shall be entertained on this account.

The chemicals shall be tested in an independent laboratory as approved by the Engineer-in-charge at the frequency as specified. If required, more samples may have to be tested as per the directions of the Engineer-in-Charge. Nothing extra shall be payable on this account. However testing charges shall be borne by the department for the samples satisfying the requirements specified in the tender.

1.62 De-watering

(i) De-watering required, if any, shall be done conforming to BIS Code IS: 9759 (guide lines for de-watering during construction) and / or as per the specifications approved by the Engineer-in-Charge. Design of an appropriate and suitable dewatering system shall be the Contractor’s responsibility. Such scheme shall be modified / augmented as the work proceeds based on fresh information discovered during the progress of work, at no extra cost. At all times during the construction work, efficient drainage of the site shall be carried out by the Contractor and especially during the laying of plain cement concrete, taking levels etc. The Contractor shall also ensure that there is no danger to the nearby properties and installations on account of such lowering of water table. If needed, suitable precautionary measures shall be taken by the Contractor. Also the scheme of dewatering adopted shall have adequate built in arrangement to serve as stand-bye to attend to repair of pumps etc. and disruption of power / fuel supply. Nothing extra shall be payable on this account.

(ii) In trenches where surface water is likely to get into cut / trench during monsoons, a ring bund of puddle clay or by any other means shall be formed outside, to the required height, and maintained by the Contractor. Also, suitable steps shall be taken by the Contractor to prevent back flow of pumped water into the trench. Nothing extra shall be payable on this account.

1.63 INSURANCE POLICIES

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Before commencing the execution of work, the Contractor shall, without in any way limiting his obligations and liabilities, insure at his own cost and expense against any damage or loss or injury, which may be caused to any person or property, at site of work. The Contractor shall obtain and submit to the Engineer-in-Charge proper Contractor All Risk Insurance Policy for an amount 1.25 times the contract amount for this work, with Engineer-in-Charge as the first beneficiary. The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). Also, he shall indemnify the Department from any liability during the execution of the work. Further, he shall obtain and submit to the Engineer-in-Charge, a third party insurance policy for maximum Rs.10 lakh for each accident, with the Engineer-in-Charge as the first beneficiary. The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). The Contractor shall, from time to time, provide documentary evidence as regards payment of premium for all the Insurance Policies for keeping them valid till the completion of the work. The Contractor shall ensure that Insurance Policies are also taken for the workers of his Sub-Contractors / specialized agencies also. Without prejudice to any of its obligations and responsibilities specified above, the Contractor shall within 10 days from the date of letter of acceptance of the tender and thereafter at the end of each quarter submit a report to the Department giving details of the Insurance Policies along with Certificate of these insurance policies being valid, along with documentary evidences as required by the Engineer-in-Charge. No work shall be commenced by the Contractor unless he obtains the Insurance Policies as mentioned above. Also, no payment shall be made to the Contractor on expiry of insurance policies unless renewed by the Contractor. Nothing extra shall be payable on this account. No claim of hindrance (or any other claim) shall be entertained from the contractor on these accounts.

1.64 Training of the Personnel

The contractor shall arrange at no extra cost to the Department to train two persons from the department (DTU) one each for civil and electrical works, on how to operate and carryout preventive maintenance of the systems (both civil and electrical) . The contractor shall arrange this training from well qualified and experience personnel for at least seven days.

1.65 The Architectural drawings given in the tender other than those indicated in nomenclature of items are only indicative of the nature of the work and materials/fixings involved unless and otherwise specifically mentioned. However, the work shall be executed in accordance with the drawings duly approved by the Engineer-in-Charge.

1.66 Recording of Hindrance & Maintenance of Hindrance Register –

i) Whenever any hindrance whether on part of department or on part of contractor, comes to the notice of the Assistant Engineer, he shall at once make a note of such hindrance in the register kept at site, and immediately make a report to the Executive Engineer within a week.

ii) The following points shall be kept in mind while entering the hindrances in the Hindrance Register:

The entry of date of start of hindrance and date of removal of hindrance shall be made on the same day as the hindrance takes place or the cause of the hindrance is removed, respectively.

The Executive Engineer shall work out the over lapping period, net if hindrance and of each hindrance within 15 days of removal of the cause of hindrance. For work outside headquarters, this shall be done as and when he visits the site.

The items of work affected due to any hindrance shall be clearly mentioned in the Hindrance Register by the Assistant Engineer, and the weightage shall be allowed on this basis.

Each hindrance shall be entered in the hindrance Register, which shall be authenticated by the Executive Engineer and Contractor.

The hindrance on part of contractor shall also to be entered in the Hindrance Register.

The hindrance shall be recorded carefully in the Hindrance Register after considering its effect on completion of work.

Review of hindrance register shall be compulsory in division office by EE and AAO at the time of payment of each Running Account Bill and final bill and certificate shall be recorded that all up to date hindrances on part of department and contractor have been recorded in the hindrance register.

The net delay on part of department or contractor shall be worked out after considering all the hindrances recorded in the hindrance register.

The Superintending Engineer shall review the hindrance Register whenever he visits site of work.

1.67 Safety, Health and Environment

Over and above the provisions made in CPWD Safety Code (part of General Conditions of contract for CPWD works 2014) the following will also be applicable:

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In respect of all workmen directly or indirectly employed in the work for the performance of the contractor's part of this agreement, the contractor shall at his expense arrange for the safety provisions as per Indian Standard Safety codes shown below and shall at his own expense provide for all facilities in connection there with. In case the contractor fails to make arrangement and provide necessary facilities, he shall be liable to pay compensations prescribed under Workmen’s Compensation Act 1923 as amended from time to time for each default and in addition the Engineer-in-charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the cost incurred on that behalf from the contractor, and no claims what so ever shall be entertained.

Details regarding some special provisions to be followed by contractor are as follows:

a) Usage of quality Personal Protection Equipments (PPEs) through approved vendors. PPEs would include amongst others the following items:

- Safety Helmets.
- Hearing Protection.
- Respiratory Protection.
- Eye Protection.
- Protective Gloves.
- Safety Footwear.
- High Visibility Clothing (Jacket) with approved Logo

All the items should be got approved before issued to the use in the work. Safety Jacket should have DTU Logo as per the size approved.

The contractor shall provide all the PPE (Personnel Protective Equipment) and safety appliances required to carry out the job to all the workmen deployed by the contractor and also ensure that his workmen use those PPE and safety appliances while on the job. The contractor shall not pay any cash amount in lieu of PPE to the workers/sub-contractors and expect them to buy and use during work. If the contractor fails to ensure provision of safety appliances and its workmen do not use the PPE and safety appliances as needed for safe working, the owner may ask the contractor to stop the work and comply with safety requirements first. The contractor shall at all time maintain a minimum of 10% spare PPEs and safety appliances and properly record and show to the Employer during the inspections. Failing to do so shall invite appropriate compensations as per the provisions of under Workmen’s Compensation Act 1923 as amended from time to time.

It is always the duty of the contractor to provide required PPEs for all visitors. Towards this required quantity of PPEs shall be kept always at the security post.

Colour coding for helmets

Safety Helmet Color Code (Every Helmet should have the LOGO* affixed /painted)	Person to use
White	DTU staffs, All Designers, Architect, Consultants, etc.
Violet	Main Contractors (Engineers / Supervisors)
Blue	All Sub-contractors (Engineers / Supervisors)
Red	Electricians (Both Contractor and Sub-contractor)
Green	Safety Professionals (Both Contractor and Sub-contractor)
Orange	Security Guards / Traffic marshals
Yellow	All workmen
White (with “VISITOR” sticker)	Visitors

Note: LOGO*

- i) Logo shall have its outer dimension 2”X2” and shall be conspicuous.
- ii) Logo shall be either painted or affixed.
- iii) No words shall come either on Top / Bottom of Logo.

b) Working at Heights

Contractor shall ensure that work at height is properly planned for any emergencies and rescue appropriately supervised, and carried out in a manner, which is reasonably practicable safe. Contractor shall ensure that work at height is carried out only when the weather conditions do not jeopardize the health or safety of persons involved in the work. Guardrail, Toe-board, Barrier or similar collective

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means of protection shall be of sufficient dimensions, of sufficient strength and rigidity for the purposes for which they are being used, and otherwise suitable.

Working Platform shall be of sufficient dimensions to permit the safe passage of persons and the safe use of any plant or materials required to be used and to provide a safe working area-having regard to the work being carried out there. Possess a suitable surface and, in particular, be so constructed that the surface of the working platform has no gap through which a person, material or object could fall and injure a person. A working platform and any supporting structure shall not be loaded so as to give rise to a risk of collapse or to any deformation, which could affect its safe use. Strength and stability calculations for scaffolding shall be carried out by the contractor. The dimensions form and layout of scaffolding decks shall be appropriate to the nature of the work to be performed and suitable for the loads to be carried and permit work and passage in safety.

A personal fall protection system designed for use with an anchor shall be securely attached to at least one anchor, and each anchor and the means of attachment thereto shall be suitable and of sufficient strength and stability for the purpose of supporting any foreseeable loading. Suitable and sufficient steps shall be taken to prevent any person falling or slipping from a personal fall protection system. Any other steps in the opinion of engineer-in-charge suggested will also be taken in Protection system

Only metal ladders shall be allowed. Any surface upon which a ladder rests shall be stable, firm, of sufficient strength and of suitable composition safely to support the ladder so that its rungs or steps remain horizontal, and any loading intended to be placed on it. A ladder shall be so positioned as to ensure its stability during use. A suspended ladder shall be attached in a secure manner and so that, with the exception of a flexible ladder, it cannot be displaced and swinging is prevented. No interlocking or extension ladder shall be used unless its sections are prevented from moving relative to each other while in use.

c) Lifting appliances and gears.

The contractor shall maintain a register for record of examinations and test details of all lifting appliances. This register should also contain a system of identification of all tools and tackles, its date of purchase, safe working load etc. Contractors can utilize the services of any competent person as defined in Factories Act, 1948 and approved by Chief Inspector of Factories with the permission of the Employer.

d) Automatic safe load indicators

Every lifting appliances and gears like cranes, hydras etc, if so constructed that the safe working load may be varied by raising or lowering of the jib or otherwise shall be attached with an automatic indicator of safe working loads approved by Bureau of Indian standards/ International certifying bodies which gives a warning to the operator and arrests further movements of the lifting parts.

e) Qualification of operator of lifting appliances and of signaler etc.

The contractor shall not employ any person to drive or operate a lifting machine like crane, hydra etc whether driven by mechanical power or otherwise or to give signals to work as a operator of a rigger or derricks unless he is above twenty-one years of age and possesses a valid heavy transport vehicle driving license as per Motor Vehicle Act and Rules, is absolutely competent and reliable, possesses the knowledge of the inherent risks involved in the operation of lifting appliances by undergoing a formal training at any institution of national importance, is medically examined periodically.

1.68 Existing Services:

Existing drains, pipes, electricity cables, overhead wires and telephone cables, sewer lines, water lines and similar services encountered in the course of the execution of the work shall be protected/ maintained against the damage by the contractor. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services. In case temporary shifting/supporting of such services is required to facilitate the work, the contractor at no extra cost shall do the same. The decision of the Engineer-in-Charge in this regard shall be final and binding.

1.69 All works pertaining to services including rerouting/diversion of services, routine testing, installation etc., completed in one or more than one process shall be subject to examination and approval to each stage thereof by the Engineer-in-charge or concerned department as would be notified by the Engineer-in-charge or his authorized representative when such stage is ready. In default of such notice the Engineer-in-Charge shall be entitled to appraise the quantity and extent thereof and the decision of Engineer-in-Charge or his authorized representative in this regard shall be final and binding.

1.70 For utilities which are required to be removed or permanently shifted to new position, in the opinion of the Engineer-in-charge, shall be removed / shifted by the contractor in consultation with the service provider agency. Payment for this shall be made as per terms and conditions of the contract. No claim for delay or otherwise due to above reasons shall be entertained on this account.

1.71 The contractor shall make his own arrangement for the disposal of the spoils, waste of bentonite, all dismantled material, slush and foul materials, surplus earth to such place where the same shall not cause nuisance or any environmental problems anywhere and should be acceptable to the authorities concerned. No extra claim whatsoever shall be entertained due to above. The road connected to site should be kept nuisance or environmental problem free.

1.72 The contractor shall make his own arrangement at his own cost for the provision of telephone facilities at the site of works or at any other place.

1.73 The contractor shall make his own arrangements for obtaining electric & water connection(s) if required and make necessary payment directly to department concerned. The department will however make all reasonable recommendations to the authority concerned in this regard.

1.74 The contractor shall bear all incidental charges for cartage, storage and safe custody of materials brought to site.

1.75 The work shall be carried out in accordance with the Architectural drawings, structural and services drawings, to be issued from time to time, by the Engineer-in-Charge. Before commencement of any item of work, the contractor shall correlate all the relevant architectural, structural drawing and services issued for the work, nomenclature of items, specifications etc. and satisfy himself that the information available there from is complete and unambiguous. The figures & the written dimensions of the drawing shall super cede the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-In-Charge for immediate decision before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and or incomplete information and no claim, whatsoever shall be entertained on this account.

1.76 GST on Works Contract as applicable shall be deducted from payment made to the contractor.

No payment shall be made to the contractor for cutting holes in 40 mm thick sand stone slab for electric installations and fixtures such as electric MCB DB's and fire fighting pipes as well as civil plumbing work being the new work unless otherwise provided in schedule of quantity.

The payment for shuttering at the edges of slab at all levels shall be made under schedule item of centering and shuttering 13.7.

2.4 Water Pollution

(i) The Contractor shall take all precautionary measures to prevent the wastewater during construction to accumulate anywhere.

(ii) The wastewater arising from the project is to be disposed off in the manner that is acceptable to the Engineer -in-charge.

2.5 Air and Noise Pollution

Contractor shall use dust screens and sprinkle water around the construction site to arrest spreading of dust in the air and surrounding areas.

(i) Contractor shall ensure that all vehicles, equipment and machinery used for construction are regularly maintained and confirm that emission levels comply with environmental emission standards/norms.

(i) For controlling the noise from Vehicles, Plants and Equipments, the Contractor shall confirm the following:

(iii) All vehicles and equipment used in construction will be fitted with exhaust silencers.

(iv) Servicing of all construction vehicles and machinery will be done regularly and during routine servicing operations, the effectiveness of exhaust silencers will be checked and if found defective will be replaced.

(v) Noise emission from compactors (rollers) front loaders, concrete mixers, cranes (movable), vibrators and saws should be less than 75 dB(A).

(vi) As per the standards/guidelines for control of Noise Pollution from Stationary Diesel Generator (DG) sets, noise emission in dB(A) from DG Set (15-500 KVA) should be less than $94 + 10 \log_{10} (KVA)$. The standards also suggest construction of acoustic enclosure around the DG Set and provision of proper exhaust muffler with insertion loss of minimum 25 dB(A) as mandatory.

(vii) Control of Air Pollution of Dust from construction and demolition activities as per NGT guidelines.

2.6 Personal Safety Measures for Labour

Contractor will provide the following items for safety of workers employed by contractor and associate agencies:

Protective footwear and gloves to all workers employed for the work on mixing, cement, lime mortars, concrete etc. and openings in water pipeline/sewer line.

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Welder's protective eye-shields to workers who are engaged in welding works.

Safety helmet and Safety harness/ belt .Provide adequate sanitation/safety facilities for construction workers to ensure the health and safety of the workers during construction, with effective provisions for the basic facilities such as sanitation, drinking water and safety equipments or machinery.

All the workers should be wearing helmet and shoes all the time on site.

Masks and gloves should be worn whenever and wherever required.

Adequate drinking water facility should be provided at site, adequate number of decentralized latrines and urinals to be provided for construction workers.

Full time workers residing on site should be provided with clean and adequate temporary hutment.

First aid facility should also be provided.

Overhead lifting of heavy materials should be avoided. Barrow wheel and hand-lift boxes should be used to transport materials onsite.

Tobacco and cigarette smoking should be prohibited onsite.

All dangerous parts of machinery are well guarded and all precautions for working on machinery are taken.

Maintain hoists and lifts, lifting machines, chains, ropes and other lifting tackles in good condition. Provide safety net of adequate strength to arrest falling material down below.

Use of durable and reusable formwork systems to replace timber formwork and ensure that formwork where used is properly maintained.

Ensure that walking surfaces or boards at height are of sound construction and are provided with safety rails and belts. Provide protective equipments such as helmets.

Provide measure to prevent fire. Fire extinguisher and buckets of sand to be provided in fire-prone area and elsewhere.

Provide sufficient and suitable light for working during night.

Ensure that measures to protect workers from materials of construction, transportation, storage and other dangers and health hazards are taken

Ensure that the construction firm/division/company have sound safety policies.

Comply with the safety procedure, norms and guidelines (as applicable) as outlined in NBC 2005 (BIS 2005c).

Adopt additional best practices and prescribed norms as in NBC 2005 (BIS2005).

2.7 Identify roads on-site that would be used for vehicular traffic. Update vehicular roads (if these are unpaved) by increasing the surface strength by improving particle size, shape and mineral type that make up the surface base. Add surface gravel to reduce source of dust emission. Limit amount of fine particles (smaller than 0.075mm) to 10 -20%. Limit vehicular speed on site 10km/h. Nothing extra will be payable for this.

2.8 All material storages should be adequately covered and contained so that they are not exposed to situations where winds on site could lead to dust/particulate emissions.

2.9 Spills of dirt or dusty materials shall be cleaned up promptly so the spilled material does not become a source of fugitive dust and also to prevent of seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean - up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained/cleaned up immediately before they can infiltrate into the soil/ground or runoff in nearby areas.

2.10 Ensure that water spraying is carried out by wetting the surface by spraying water on:

- (i) Any dusty material.
- (ii) Areas where demolition work is carried out.
- (iii) Any unpaved main-haul road and.
- (iv) Areas where excavation or earth moving activities are to be carried out.

2.11 The contractor shall ensure the following:

- (i) Cover and enclose the site by providing dust screen, sheeting or netting to scaffold along the perimeter of a building.
- (ii) Covering stockpiles of dusty material with impervious sheeting.
- (iii) Covering dusty load on vehicles by impervious sheeting before they leave the site.
- (iv) Transferring, handling/storing dry loose materials like bulk cement and dry pulverized fly ash inside a totally enclosed system.
- (v) Spills of dirt or dusty materials shall be cleaned up promptly so that the spilled material does not become a source of fugitive dust and also to prevent seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean-up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained / cleaned up immediately before they can infiltrate into the soil/ground or runoff in nearby areas.
- (vi) Clear vegetation only from areas where work will start right away.
- (vii) Vegetate/mulch areas where vehicles do not ply.
- (viii) Apply gravel / landscaping rock to the areas where mulching/paving is impractical.

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- 2.12 Adopt measures to prevent air pollution in the vicinity of the site due to construction activities. There is no standard reference for this. The best practices should be followed (as adopted from international best practice documents and codes)
- 2.13 Provide sheet covering/barricading of site of not less than 3m height along the site boundary, next to a road or other public area. Nothing extra will be paid for this.
- 2.14 The contractor shall provide experienced personnel with suitable training to ensure that these methods are implemented. Prior to the commencement of any work, the method of working, plant equipment and air pollution control system to be used on -site should be made available for the inspection and approval of the Engineer -in-Charge to ensure that these are suitable for the project.
- 2.15 Employ measures to segregate the waste on-site into inert, chemical or hazardous wastes. Recycle the unused chemical/hazardous wastes such as oil, paint, batteries and asbestos. The inert waste is to be disposed off to Municipal Corporation/local bodies dump yard and landfill sites.
- 2.16 To preserve the existing landscape and protect it from degradation during the process of construction. Select proper timing for construction activity to minimize the disturbance such as soil pollution due to spilling of the construction material and its mixing with rainwater. The construction management plan including soil erosion control management plan shall be prepared accordingly for each month. The application of erosion control measures includes construction of gravel pits and tier washing bays of approved size and specification for all vehicular site entry/exits, protection of slopes greater than 10%. Sedimentation Collection System and run-off diversion systems shall be in place before the commencement of construction activity. Preserve and protect the existing vegetation by not-disturbing or damaging to specified site areas during construction.
- 2.17 The Contractor should follow the construction plan as proposed by the Engineer-in-charge / landscape consultant to minimize the site disturbance such as soil pollution due to spilling. Use staging and spill prevention and control plan to restrict the spilling of the contaminating material on site.
- 2.18 Spill prevention and control plans should clearly state measures to stop the source of the spill. Measures to contain the spill and measures to dispose the contaminated material and hazardous wastes. It should also state the designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners and petroleum products.
- 2.19 A soil Erosion and Sedimentation Control Plan (ESCP) should be prepared prior to construction and should be applied effectively.
- 2.20 The contractor shall prepare and submit 'Spill prevention and control plans' before the start of construction, clearly stating measures to stop the source of the spill, to contain the spill, to dispose the contaminated material and hazardous wastes, and stating designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners, and petroleum products.
- 2.21 The contractor shall ensure that no construction leaches (Ex: cement slurry) is allowed to percolate into the ground. Adequate precautions are to be taken to safeguard against this including reduction of wasteful curing processes, collection, basic filtering and reuse. The contractor shall follow requisite measures for collecting drainage water run-off from construction areas and material storage sites and diverting water flow away from such polluted areas. Temporary drainage channels, perimeter dike/swale, etc. shall be constructed to carry the pollutant -laden water directly to the treatment device or facility (municipal sewer line).
- 2.22 All lighting installed by the contractor around the site and at the labour quarters during construction shall be CFL bulbs of the appropriate illumination levels. This condition is a must, unless specifically prescribed otherwise.
- 2.23 All paints, adhesives and sealants should comply with the VOC limits prescribed by GRIHA, as follows:

APPROVED MAKES OF MATERIALS

The Contractor shall obtain prior approval from the Engineer-in-charge before placing order for any specific material or engaging any of the specialized agencies. The Contractor shall make a detailed submission with catalogues and proposed specifications, as well as full details of the works executed by the specialized agency, as specified.

Unless otherwise specified, the brands/makes of the material as specified in the item nomenclature, in the list of approved materials attached in the tender and in the particular specifications shall be used in the work.

In case of non-availability of the brands specified in the contract the Contractor may be allowed to use alternate equivalent brand of the material by Engineer-in-Charge with the prior approval of NIT Approving Authority subject to submission of documentary evidence of non - availability of the specified brands by contractor. The necessary cost adjustments on account of above change shall be made for the same.

3.

The contractor would submit original bills and manufacturer's test certificate for all lots of material procured for the work, payments would be released only for the items for which original bills & manufacturer's test report for the material consumed has been submitted to Engineer-in-Charge. Department shall also get random testing of material from testing Laboratory of its choice.

Sl.no.	ITEM	APPROVED MAKE/BRANDS
1	CEMENT (OPC 43)	ULTRA TECH/ A.C.C./ GUJARAT AMBUJA/ J.K. CEMENT/SHREE
2	WHITE CEMENT	J.K. WHITE/ BIRLA WHITE/ TRAVANCORE
3	PVC Pipe	Netafim, Supreme or Finolex
4	Dripnet / Poly ethylene irrigation pipe	Netafim, Rain bird or hunter.
5	PVC Ball Valve	Netafim, Rain bird or hunter

Schedule of Quantity

Name of Work: - Installation and commissioning of sub surface Drip irrigation system at Delhi School Of Management Lawn, DTU, Bawana Road, Delhi.

Item No.	Description of item	QTY	Unit	Rate(Rs.)	Amount(Rs.)
1	Excavating trenches of required width for pipes, cables etc including excavation for sockets and dressing of sides, ramming of bottoms, depth unto 1.5 mtr including getting out the excavated soil and than returning the soil as required, in layers not exceeding 20cm in depth including and disposed layer by ramming, watering etc and disposing of surplus excavated soil as directed within a lead of 50 mtr. 2.10.1 All kind of soil 2.10.1.1 Pipes, cables etc. not exceeding 80mm diameter.	315.00	Metre	138.05	43485.75
2	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.	3000.00	mtr	4.99	14970.00
3	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, lead up to 50 m and lift upto 1.5 m.	3000.00	mtr	3.77	11310.00

4	<p>Supplying, installation, Testing and Commissioning of Sub Surface Drip Irrigation System and assembling and making a single controller unit for Filters, Valves, Manifold, Venturi injector etc. and making connection to the main water supply, by Specialised trained engineers and staff. (a) Gravell Filter 2" with back wash assembly. 1 No. (Netafim, Hunter, Rainbird or equivalent)(b) Disc Filter 2" 120Mesh 1 No. (Netafim, Hunter, Rainbird or equivalent)(c) HYDROCYCLONE FILTER 2" 25M3 1 No. (Netafim, Hunter, Rainbird or equivalent)(d) AIR VACUUM RELEASE VALVE AV10 -1 1 No. (Netafim, Hunter, Rainbird or equivalent)(e) PP BALL VALVE 2.0" (63MM) FLANGED 1 No. (Netafim, Hunter, Rainbird or equivalent)(f) PRESSURE RELIEF VALVE 2" WITH COVER 1 No. (Netafim, Hunter, Rainbird or equivalent)(g) MANIFOLD 2" FOR 2"X1 FILTER(V3/4") 1 No. (Netafim, Hunter, Rainbird or equivalent)(h) PRES.GAUGE SS 304 0-7KG 1/4 BSP 2.5" 3 Nos. (Netafim, Hunter, Rainbird or equivalent)(i) VENTURI INJECTOR 1.5" 1 No. (Netafim, Hunter, Rainbird or equivalent)(J) PP BALL VALVE 2.0"(63MM) 2 No. (Netafim, Hunter, Rainbird or equivalent)(k)PP BALL VALVE 2.5" 3No. (Netafim, Hunter, Rainbird or equivalent)</p>	1.00	Each set	84849.04	84849.04
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5	Supplying ,fixing, testing and commissioning of Three phase monoblock pumpset 5 HP of make KSB/Kirloskar/Crompton or equivalent, 4 pole totally enclosed fan cooled squirrel cage horizontal electric induction motor with suitable starter (L&T make) and base frame having class insulation 'F' with cable box, suitable for operation on 3 phase, 50 Hz A.C. supply, including all electric connections and fittings required upto energy meter complete as per the direction, instruction and entire satisfaction of Engineer-in-charge.	1.00	Each	42423.79	42423.79
6	Providing and fixing PVC 63mm dia pipes, having 4 Kg/CM2 (PE-80)50M pressure for irrigation water supply including all PVC plain & brass threaded fittings including jointing of pipes & fittings with PVC solvent fixing with clamps etc. complete as per instructions, direction, entire satisfaction and sample approved by Engineer in Charge.	140.00	Metre	210.44	29461.60
7	Providing and fixing 16mm dia dripnet for drip irrigation uniformly pre-installed pressure compensating emmitters spaced every 30cm for clog resistant flow at 1.60 ltr per hour, UV resistant, pressure range 8.50 to 60 PSI including all fittings like elbow, union,tee , end cap etc. as per instructions, direction, entire satisfaction and sample approved by Engineer in Charge.	3000.00	Each	39.75	119250.00

8	Providing and fixing 16mm dia Poly ethylene irrigation pipe of make Netafim/ Supreme or equivalent including all necessary fitting required for smooth functioning etc. complete as per instructions, direction, entire satisfaction and sample approved by Engineer-in-Charge.	100.00		24.92	2492.00
9	Providing and fixing Polyvinyl Chloride (PVC) 75mm dia pipes, having 6 Kg pressure for irrigation water supply including all PVC plain & brass threaded fittings including jointing of pipes & fittings with PVC solvent fixing with clamps etc. complete as per instructions, direction, entire satisfaction and sample approved by Engineer in Charge.	45.00	Each	264.80	11916.00
10	Providing and fixing Polyvinyl Chloride (PVC) 40mm dia pipes, having 6 Kg pressure for irrigation water supply including all PVC plain & brass threaded fittings including jointing of pipes & fittings with PVC solvent fixing with clamps etc. complete as per instructions, direction, entire satisfaction and sample approved by Engineer in Charge.	130.00	Each	140.21	18227.30
11	Providing and fixing Tee flange (Threaded) for supporting pressure releif valve use for drip irrigation water supply including all UPVC plain & brass threaded fittings including jointing of pipes & fittings with PVC solvent fixing with clamps etc. complete as per instructions, direction, entire satisfaction and sample approved by Engineer in Charge.	1.00	Each	2170.61	2170.61

J.E(C)

Correction.....
Deletion.....
Insertion.....

12	Providing and fixing Polyvinyl Chloride(PVC) 40mm dia Ball valve for flushing and cleansing of all pipes including all UPVC plain & brass threaded fittings including jointing of pipes & fittings with PVC solvent fixing with clamps etc. complete as per instructions, direction, entire satisfaction and sample approved by Engineer in Charge.	4.00	Each	838.14	3352.56
13	Providing and fixing Polyvinyl Chloride(PVC) 50mm dia Ball valve for flushing and cleansing of all pipes including all UPVC plain & brass threaded fittings including jointing of pipes & fittings with PVC solvent fixing with clamps etc. complete as per instructions, direction, entire satisfaction and sample approved by Engineer in Charge.	2.00	Each	1156.85	2313.70
14	Maintenance of lawn and Operation of Sub Srface Drip Irrigation System by deploying one pump operator in one shift for eight hours working including cleaning of various Filters, Venturi, and Main Lines/Sub main Lines/ Drip Lines/ Collecting Lines, and checking of Electric Supply, Ball Valves, Pressure Guages and repairing of electric faults, minor faults and pipe Lines etc.and deploying Qualified Technician (once a week) for sevral treatments and controls including Acid Treatments of Filters and Pipe lines & fertigation of lawn with ventury injector complete as per the instruction, and direction of Engineer- in- charge.	3.00	Month	35297.99	105893.97
			Total		492116.00