

**OFFICE OF THE EXECUTIVE ENGINEER
ANAND AGRICULTURAL UNIVERSITY
ANAND**

LIST OF MATERIAL TO BE USED FOR WORK :-

NAME OF WORK: CONSTRUCTION OF CLASSROOM & STAFF ROOM ON FIRST FLOOR OF INTERNATIONAL AGRI-BUSINESS MANAGEMENT INSTITUTE AT A.A.U., ANAND.

| Sr. no. | MATERIAL | MAKE/PLACE |
|---------|--------------------|---|
| 1 | TMT BAR FE 500D | TATA TISCO, KAMDHENU, NATIONAL, GALENT, NRE, NILKANTH, VINAYAK, GERMEN MAKE ONLY. |
| 2 | CEMENT | O.P.C- ONLY MAJOR PLANT - ULTRA TECH CEMENT, HATHI, SIDDHI, AMBUJA, WONDER, J K, DURAGAURD, COROMANDEL, KAMAL MAKE. |
| 3 | KAPACHI/ METAL | BLACK TRAP ONLY |
| 4 | SAND | SANKHEDA / BADALPUR / BODELI ONLY |
| 5 | POLISH KOTAH | GREEN COLOUR ONLY |

Only above said material is to be used as per site condition/situation.

Contractor's sign

Executive Engineer

**OFFICE OF THE EXECUTIVE ENGINEER
ANAND AGRICULTURAL UNIVERSITY
ANAND**

LIST OF MATERIAL TO BE USED FOR ELECTRIFICATION WORK :-

Name of work: CONSTRUCTION OF CLASSROOM & STAFF ROOM ON FIRST FLOOR OF INTERNATIONAL AGRI-BUSINESS MANAGEMENT INSTITUTE AT A.A.U., ANAND.

| Sr. no. | DETAILS OF MATERIALS TO BE USED IN THE WORK | NAME OF BRAND |
|----------------|--|-----------------------------------|
| 1 | WIRING | |
| 1.1 | MODULAR TYPE SHOCK PROOF ACCESSORIES | Anchor (roma), Havells (Crabtree) |
| 1.2 | RIGID PVC PIPES and Fitting (MMS) Size | Precision, Nihir, Polycab |
| 1.3 | CASING CAPPING / TRUNKING | Precision, M.K., Polycab |
| 1.4 | FRLS FLEXBLE / PVC / INDUSTRIAL WIRES | Anchor, Vinay, R.R. |
| 2 | LAMPS AND FITTINGS | |
| 2.1 | T-5 LED 20W 4ft Tube Light | Panasonic, C & S, Havells |
| 2.2 | 12W LED DOWN LIGHT (ROUND TYPE) | Panasonic, C & S, Havells |
| 3 | SWITCH GEAR AND DISTRIBUTION BOARD | |
| 3.1 | METAL CLAD WITH HRC FUSE | L & T, C & S, Siemens |
| 3.2 | MCCB | Hegar, Legrand, C & S |
| 3.3 | MCB & MCB DISTRIBUTION BOX | Hegar, Legrand, C & S |
| 3.4 | ELCB & RCCB | Hegar, Legrand, C & S |
| 3.5 | BUS-BAR CHAMBER | K.E.W. Stenly |
| 4 | CABLES & WIRES | |
| 4.1 | ALL TYPE OF ALLUMINIUM AND COPPER CABLE | R.R., Polycab, Finolex |
| 5 | FANS | |
| 5.1 | ENERGY SAVING CEILING FANS | Oreant, Havells |
| 5.2 | EXHAUST FANS | Oreant, Havells |
| 5.3 | 1200mm CEILING FAN | Oreant, Havells |
| 6 | STREET LIGHTS | |
| 6.1 | LED STREET LIGHTS | Philips, C & S, Havells |
| 7 | WOODEN BOARD 3mm THICKNESS METAL PLATE | ISI |
| 8 | Air Condition unit (Split / Cassate) | Daikan, Mitsubishi, Hitachi |

Contractor's sign

Executive Engineer
A.A.U., Anand.

Articles of Agreement made onbetween the Anand Agricultural University
(here in after called the 'University') of the one part and contractors
(here in after called the ('Contractor's) of the other part.

WHERE AS the University is desirous of Construction of classroom & staff room on
first floor of International Agri-business management institute at A.A.U., Anand.
in all estimated to cost Rs.....

and has caused Rs.

drawings and specifications for the work to be done by the University and has invited
tenderers and WHERE AS in response to the invitation the contractors, after having
examined the plans and specification , have agreed to execute the said work subject to the
conditions set forth in the schedule (Tender form filled in by contractors) attached here
to, the work shown upon the said drawings and described in the said specifications and
schedule B of quantities, for such sum as may be ascertained to be payable in terms of the
bill of quantities.

Now it is hereby agreed as follows.

1. In considerations of the said sum to be paid at times and in the manner set forth in
the said specifications, the contractor shall upon and subject to the said schedule B and
specifications execute and complete the work shown upon the said drawings and
described in the said schedule B of quantities and specifications.

2. The University shall pay the contractors the said sum such other sum as shall
become payable here in after at times and in the manner specified in the said schedule B
and specifications.

3. The said schedule B and specifications shall be read and constructed as forming part
of this agreement, and the parties here to shall respectively abide by and submit
themselves to the said schedule B and specifications and perform the agreement on their
parts respectively in such conditions as contained therein.

4. That the contractors here by agree to complete the work of

(Name of work)

in all respect within months as per work order and explicitly agree
to pay the penalty as per clause 2 to the University in the case of their failure to complete
the work before the above date.

5. That the contractors here by bind themselves to carry out the above mentioned work
as per schedule B and specification of the Executive Engineer of the University.

6. The contractor holds themselves entirely responsible for any defect or damage to
the work during the period of the work. In case if any defect is found in the work at any
time

within twelve months after the completion of the said work. The contractors here by bind themselves to make good any such damage and remedy the defects, and in the case of their failure to do so the Executive Engineer to the University will have the full authority to get it done at the contractor expenses and recover the amount payable to the contractor by the University and also from the security deposit paid by the contractor in this behalf and also from the other amount or property or assets of the contractor laying with the University.

7. That in case of any dispute between the parties, the contractors here by bind themselves to abide by the decision of the Vice Chancellor/ UCC which shall be final.

8. That the University will pay for the work done as per running bills from to time to time after due satisfaction and approval of the Executive Engineer of the University or his authoursied Assistant.

9. That the contractors will pay one percent of the bill as water charge only. If water is supplied at the nearest existing source with the University's own drawing arrangements. The amount of the security deposit may be refunded at the discretion of the University on completion of twelve months from the date of completion of work.

10. In witness there of, the Executive Engineer of the University and contractor have here to respectively set their hands on the day and year first above written.

Signed & delivered by

Signed & delivered by

Executive Engineer
Anand Agricultural University
Anand

Contractor

Witness

1.....
.....

2.....
.....

**NAME OF WORK: CONSTRUCTION OF CLASSROOM & STAFF ROOM ON FIRST
FLOOR OF INTERNATIONAL AGRI-BUSINESS MANAGEMENT INSTITUTE AT
A.A.U., ANAND.**

DECLARATIONS

I have visited the site and fully acquainted myself with the local situation regarding materials, labour and other factors pertaining the work and study the plans and estimates before submitting this tender.

I have carefully studied the conditions of contract, specifications and other documents of this work and I agree to execute the same accordingly.

I do understand that this is Government work of STATE IMPORTANCE, I, therefore, solemnly pledge that I shall be sincere in discharging my duties as responsible contractor and complete the work within the prescribed time limit. I shall submit detailed construction program with target dates for various item and stages of work keeping in view the time limit and equipments etc punctually. In case there are deviation from the construction program, I shall abide by the program and shall be arrange for labours, materials, equipments accordingly.

Signature of Contractor

Executive Engineer
Anand Agriculture University
Anand

SPECIFICATION INDEX

NAME OF WORK: CONSTRUCTION OF CLASSROOM & STAFF ROOM ON FIRST FLOOR OF
INTERNATIONAL AGRI-BUSINESS MANAGEMENT INSTITUTE AT A.A.U., ANAND.

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| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| A | CIVIL WORK | | | | | |
| 1 | Demolition of R.C.C. work etc. completed as directed by EIC. | i | 20.3 | 1.0 to 2.2 | 147,148 | ----- |
| 2 | Dismantalling of PCC including stacking of serviceable material and disposal of unserviceable material from site of work with all lead and lift etc. completed as directed by EIC. | i | 20.1 (ii) | 1.0 to 2.2 | 147,148 | Demolition shall be carried out as per instruction of EIC. |
| 3 | Demolition of Brick Work in cement mortar etc. completed as directed by EIC. | i | 20.11 (II) | 1.0 to 2.1 | 148 | ----- |
| 4 | Dismantalling of terrace (Brick tile covering with china mosaic water proofing) etc. completed as directed by EIC. | i | 20.21 | 1.0 to 2.2 | 148 | ----- |
| 5 | Removing and scraping of old deteriorated plaster of any thickness from wall / R.C.C member including stacking of serviceable material and disposal of unserviceable from site of work with all lead and lift etc. | ii | Spe.-1 | ----- | 2 | ----- |
| 6 | Dismantalling of Tiles of stone flooring laid in mortar including stacking of serviceable material and disposal of unserviceable material from site of work with all lead and lift etc. completed as directed by EIC. | i | 20.23 | 1.0 to 2.2 | 148 | Demolition shall be carried out as per instruction of EIC. |

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| 7 | Dismantling doors, windows, ventilators etc. (wood or steel) shutters including chowkhats architraves, holdfasts and other attachment etc. complete and stacking them within all lead and lift. (i) Not exceeding 3 Sq.M. in area. complete as per detail drawings and as directed by E.I.C. | i | 20.49 (i) | 1.0 to 2.4 | 150 | Demolition shall be carried out as per instuction of EIC. |
| 8 | Dismantling doors, windows, ventilators etc. (wood or steel) shutters including chowkhats architraves, holdfasts and other attachment etc. complete and stacking them within all lead and lift. (i) Exceeding 3 Sq.M. in area. complete as per detail drawings and as directed by E.I.C. | i | 20.49 (ii) | 1.0 to 2.2 | 150,151 | Demolition shall be carried out as per instuction of EIC. |
| 9 | Dismantalling Steel work etc. complete as directed by Engineer in charge. | i | 20.43 | 1.0 to 2.6 | 150 | ----- |
| 10 | Excavation for foundation upto 1.50m depth for loose or soft soil.... etc complete. | i | 4.0.0.(A) | 1.0 to 6.2 | 29 | Read all lead & lift instead of 50m Lead & lift. |
| 11 | Excavation for foundation from 1.50 to 3.00m depth for loose or soft soil.... etc complete. | i | 4.001(B) | 1.0 to 2.3 | 32 | Read all lead & lift instead of 50m Lead & lift. |
| 12 | Providing and laying C.C. 1:3:6 excluding cost of formwork in foundation & plinth.... etc complete. | i | 5.3.2(A) | 1.0 to 2.7.2 | 38 | ----- |
| 13 | Providing and laying C.C. M250 including cost of formwork for Footing.... etc complete. | i i i | 5.8.3(A) 9.1(A)(I) 17.58(I) | 1.0 to 2.2 1.0 to 1.1 1.0 to 2.3.4 | 47 64 119 | Plastering should be done on exterior honey combing faces. |

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| 14 | Providing and laying C.C. M250 including cost of formwork for Column upto Plinth.... etc complete. | i i i | 5.8.3(D) 9.1(G)(i) 17.58(I) | 1.0 to 2.2 1.0 to 1.1 1.0 to 2.3.4 | 47 65,66 119 | Plastering should be done on exterior honey combing faces. |
| 15 | Providing and laying C.C. M250 including cost of formwork for Ground & Plinth beam.... etc complete. | i i i | 5.8.3(C) 9.1(H)(1) 17.58(1) | 1.0 to 2.2 1.0 to 2.1 1.0 to 2.3.4 | 47 65 119 | Plastering should be done on exterior honey combing faces. |
| 16 | Providing and laying C.C. M200 including cost of formwork for Plinth slab.... etc complete. | i i i | 5.8.2(C) 9.1(I)(i) 17.58(I) | 1.0 to 2.2 1.0 to 1.1 1.0 to 2.3.4 | 47 65 119 | Plastering should be done on exterior honey combing faces. |
| 17 | Providing and Filling available Excavated Earth in plinth.... etc complete. | i | 4.12 | 1.0 to 2.2 | 35 | ----- |
| 18 | P/L & constructing Brick work using burnt clay conventional brick in C.M. 1:6 upto P.L.... etc complete. | i | 6.13(B) | 1.0 to 3.2 | 51 | ----- |
| 19 | Providing and laying C.C. M250 including cost of formwork for Column above P.L. to floor Two lvl.... etc complete. | i i i | 5.8.3(D) 9.1(G)(i) 17.58(I) | 1.0 to 2.2 1.0 to 1.1 1.0 to 2.3.4 | 47 65,66 119 | Plastering should be done on exterior honey combing faces. |
| 20 | Providing and laying C.C. M250 including cost of formwork for Column from floor Two level to floor Three level.... etc complete. | i i i i | 5.8.3(D) 9.1(G)(i) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.1 1.0 to 2.3.4 1.0 to 2.2 | 47 65,66 119 46 | Plastering should be done on exterior honey combing faces. |
| 21 | Providing and laying C.C. M250 including cost of formwork for Column from floor Three level to floor Four level.... etc complete. | i i i i | 5.8.3(D) 9.1(G)(i) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.1 1.0 to 2.3.4 1.0 to 2.2 | 47 65,66 119 46 | Plastering should be done on exterior honey combing faces. |

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| 22 | Providing and laying C.C. M250 including cost of formwork for Beam above P.L. to floor Two lvl.... etc complete. | i i i | 5.8.3(C) 9.1(H)(1) 17.58(I) | 1.0 to 2.2 1.0 to 2.1 1.0 to 2.3.4 | 47 65 119 | Plastering should be done on exterior honey combing faces. |
| 23 | Providing and laying C.C. M250 including cost of formwork for Beam from floor Two level to floor Three level.... etc complete. | i i i i | 5.8.3(C) 9.1(H)(1) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 2.1 1.0 to 2.3.4 1.0 to 2.2 | 47 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 24 | Providing and laying C.C. M250 including cost of formwork for Beam from floor Three level to floor Four level.... etc complete. | i i i i | 5.8.3(C) 9.1(H)(1) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 2.1 1.0 to 2.3.4 1.0 to 2.2 | 47 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 25 | Providing and laying C.C. M200 including cost of formwork for Sill above P.L. to floor Two lvl.... etc complete. | i i i i | 5.8.2(C) 9.1(B)(1) 9.1(I)(i) 17.58(I) | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 | 47 64 65 119 | Plastering should be done on exterior honey combing faces. |
| 26 | Providing and laying C.C. M200 including cost of formwork for Sill from floor Two level to floor Three level.... etc complete. | i i i i i | 5.8.2(C) 9.1(B)(1) 9.1(I)(i) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 1.0 to 2.2 | 47 64 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 27 | Providing and laying C.C. M200 including cost of formwork for Sill from floor Three level to floor Four level.... etc complete. | i i i i i | 5.8.2(C) 9.1(B)(1) 9.1(I)(i) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 1.0 to 2.2 | 47 64 65 119 46 | Plastering should be done on exterior honey combing faces. |

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| 28 | Providing and laying C.C. M200 including cost of formwork for Lintel above P.L. to floor Two lvl.... etc complete. | i i i | 5.8.2(C) 9.1(H)(1) 17.58(I) | 1.0 to 2.2 1.0 to 2.1 1.0 to 2.3.4 | 47 65 119 | Plastering should be done on exterior honey combing faces. |
| 29 | Providing and laying C.C. M200 including cost of formwork for Lintel from floor Two level to floor Three level.... etc complete. | i i i i | 5.8.2(C) 9.1(H)(1) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 2.1 1.0 to 2.3.4 1.0 to 2.2 | 47 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 30 | Providing and laying C.C. M200 including cost of formwork for Lintel from floor Three level to floor Four level.... etc complete. | i i i i | 5.8.2(C) 9.1(H)(1) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 2.1 1.0 to 2.3.4 1.0 to 2.2 | 47 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 31 | Providing and laying C.C. M200 including cost of formwork for Chhajja above P.L. to floor Two lvl.... etc complete. | i i i i | 5.8.2(C) 9.1(B)(1) 9.1(I)(i) 17.58(I) | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 | 47 64 65 119 | Plastering should be done on exterior honey combing faces. |
| 32 | Providing and laying C.C. M200 including cost of formwork for Chhajja from floor Two level to floor Three level.... etc complete. | i i i i i | 5.8.2(C) 9.1(B)(1) 9.1(I)(i) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 1.0 to 2.2 | 47 64 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 33 | Providing and laying C.C. M200 including cost of formwork for Chhajja from floor Three level to floor Four level.... etc complete. | i i i i i | 5.8.2(C) 9.1(B)(1) 9.1(I)(i) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 1.0 to 2.2 | 47 64 65 119 46 | Plastering should be done on exterior honey combing faces. |

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| 34 | Providing and laying C.C. M250 including cost of formwork for Slab above P.L. to floor Two lvl.... etc complete. | i i i i | 5.8.3(C) 9.1(B)(1) 9.1(I)(i) 17.58(I) | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 | 47 64 65 119 | Plastering should be done on exterior honey combing faces. |
| 35 | Providing and laying C.C. M250 including cost of formwork for Slab from floor Two level to floor Three level.... etc complete. | i i i i i | 5.8.3(C) 9.1(B)(1) 9.1(I)(i) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 1.0 to 2.2 | 47 64 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 36 | Providing and laying C.C. M250 including cost of formwork for Slab from floor Three level to floor Four level.... etc complete. | i i i i i | 5.8.3(C) 9.1(B)(1) 9.1(I)(i) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 1.0 to 2.2 | 47 64 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 37 | Providing and laying C.C. M250 including cost of formwork for Staircase above P.L. to floor Two lvl.... etc complete. | i i i i | 5.8.3(C) 9.1(M) 9.1(B)(1) 17.58(I) | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 | 47 66 65 119 | Plastering should be done on exterior honey combing faces. |
| 38 | Providing and laying C.C. M250 including cost of formwork for Staircase from floor Two level to floor Three level.... etc complete. | i i i i i | 5.8.3(C) 9.1(M) 9.1(B)(1) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.1 1.0 to 1.1 1.0 to 2.3.4 1.0 to 2.2 | 47 66 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 39 | Providing and laying C.C. M250 including cost of formwork for Walls above Foundation level to floor Two lvl.... etc complete. | i i i | 5.8.3(B) 9.1(C) 17.58(I) | 1.0 to 2.2 1.0 to 1.0 1.0 to 2.3.4 | 47 65 119 | Plastering should be done on exterior honey combing faces. |

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| 40 | Providing and laying C.C. M250 including cost of formwork for Walls from floor Two level to floor Three level.... etc complete. | i i i i | 5.8.3(B) 9.1(C) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.0 1.0 to 2.3.4 1.0 to 2.2 | 47 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 41 | Providing and laying C.C. M250 including cost of formwork for Walls from floor Three level to floor Four level.... etc complete. | i i i i | 5.8.3(B) 9.1(C) 17.58(I) 5.4.13 | 1.0 to 2.2 1.0 to 1.0 1.0 to 2.3.4 1.0 to 2.2 | 47 65 119 46 | Plastering should be done on exterior honey combing faces. |
| 42 | P/L T.M.T. bar reinforcement 500D for R.C.C. work in foundation up to floor Two level.... etc complete. | i | 5.4.11 | 1.0 to 3.2 | 45 | Read T.M.T. bars instead of HYSD bars |
| 43 | P/L T.M.T. bar reinforcement 500D for R.C.C. work from floor Two level to floor Three level.... etc complete. | i i | 5.4.11 5.4.13(A) | 1.0 to 3.2 1.0 to 1.1 | 45 46 | Read T.M.T. bars instead of HYSD bars |
| 44 | P/L T.M.T. bar reinforcement 500D for R.C.C. work from floor Three level to floor Four level.... etc complete. | i i | 5.4.11 5.4.13(A) | 1.0 to 3.2 1.0 to 1.1 | 45 46 | Read T.M.T. bars instead of HYSD bars |
| 45 | P/L & constructing Brick work using burnt clay conventional brick in C.M. 1:6 above P.L. to floor Two lvl.... etc complete. | i | 6.19(B) | 1.0 to 2.2 | 53 | Read C.M. 1:6 instead of C.M.1:5 |
| 46 | P/L & constructing Brick work using burnt clay conventional brick in C.M. 1:6 from floor Two lvl. to floor Three lvl.... etc complete. | i i | 6.19(B) 6.20 | 1.0 to 2.2 1.0 to 2.3 | 53 53,54 | Read C.M. 1:6 instead of C.M.1:5 |

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| 47 | P/L & constructing Brick work using burnt clay conventional brick in C.M. 1:6 from floor Three lvl. to floor Four lvl.... etc complete. | i i | 6.19(B) 6.20 | 1.0 to 2.2 1.0 to 2.3 | 53 53,54 | Read C.M. 1:6 instead of C.M.1:5 |
| 48 | P/L & constructing Half Brick work using burnt clay conventional brick in C.M. 1:4 above P.L. to floor Two lvl.... etc complete. | i | 6.30(I)(B) | 1.0 to 2.1 | 54 | ----- |
| 49 | P/L & constructing Half Brick work using burnt clay conventional brick in C.M. 1:4 from floor Two lvl. to floor Three lvl.... etc complete. | i i | 6.30(I)(B) 6.33(B) | 1.0 to 2.1 1.0 to 2.2 | 54 56 | ----- |
| 50 | P/L & constructing Half Brick work using burnt clay conventional brick in C.M. 1:4 from floor Three lvl. to floor Four lvl.... etc complete. | i i | 6.30(I)(B) 6.33(B) | 1.0 to 2.1 1.0 to 2.2 | 54 56 | ----- |
| 51 | Providing 20mm thick double coat MALA CEMENT PLASTER on interior brick / concrete work for plastering on walls above Plinth level to floor Two level comprising of base coat of 12mm thick cement plaster in CM 1:4 (1 cement: 4 coarse sand) in rough finishing and 8mm thick top coat of CM 1:2 (1 cement: 2 coarse sand) finished with trowel including scaffolding, curing and providing & fixing 150mm wide strip of chicken net at vertical and horizontal joints of RCC and masonry... etc., complete as directed by E.I.C. | i | 17.95 | 1.0 to 3.2 | 122 | Read 20mm thick Double coat Mala cement plaster on interior side of brick / concrete work instead of 20mm thick sand faced cement plaster on exterior side. Read 12mm thick base coat in CM (1:4) and 8mm thick top coat in CM (1:2) instead of 12mm thick base coat of CM (1:3) and 8mm thick finishing coat in CM (1:1). Item shall be carried out as per Mala cement plaster instead of sand faced plaster. Item shall be carried out by fixing chicken net of 150mm wide strip at joint of masonry & RCC. Item shall be carried out on interior wall surfaces. |

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| 52 | Providing 20mm thick double coat MALA CEMENT PLASTER on interior brick / concrete work for plastering on walls from floor Two level to floor Three level comprising of base coat of 12mm thick cement plaster in CM 1:4 (1 cement: 4 coarse sand) in rough finishing and 8mm thick top coat of CM 1:2 (1 cement: 2 coarse sand) finished with trovel including scaffolding, curing and providing & fixing 150mm wide strip of chicken net at vertical and horizontal joints of RCC and masonry... etc., complete as directed by E.I.C. | i | 17.95 | 1.0 to 3.2 | 122 | Read 20mm thick Double coat Mala cement plaster on interior side of brick / concrete work instead of 20mm thick sand faced cement plaster on exterior side. Read 12mm thick base coat in CM (1:4) and 8mm thick top coat in CM (1:2) instead of 12mm thick base coat of CM (1:3) and 8mm thick finishing coat in CM (1:1). Item shall be carried out as per Mala cement plaster instead of sand faced plaster. Item shall be carried out by fixing chicken net of 150mm wide strip at joint of masonry & RCC. Item shall be carried out on interior wall surfaces. |

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| 53 | Providing 20mm thick double coat MALA CEMENT PLASTER on interior brick / concrete work for plastering on walls from floor Three level to floor Four level comprising of base coat of 12mm thick cement plaster in CM 1:4 (1 cement: 4 coarse sand) in rough finishing and 8mm thick top coat of CM 1:2 (1 cement: 2 coarse sand) finished with trovel including scaffolding, curing and providing & fixing 150mm wide strip of chicken net at vertical and horizontal joints of RCC and masonry... etc., complete as directed by E.I.C. | i | 17.95 | 1.0 to 3.2 | 122 | Read 20mm thick Double coat Mala cement plaster on interior side of brick / concrete work instead of 20mm thick sand faced cement plaster on exterior side. Read 12mm thick base coat in CM (1:4) and 8mm thick top coat in CM (1:2) instead of 12mm thick base coat of CM (1:3) and 8mm thick finishing coat in CM (1:1). Item shall be carried out as per Mala cement plaster instead of sand faced plaster. Item shall be carried out by fixing chicken net of 150mm wide strip at joint of masonry & RCC. Item shall be carried out on interior wall surfaces. |
| 54 | INTERNAL PLASTER: Providing & applying 15mm THICK CEMENT PLASTER in single coat on fair side of brick or concrete wall for interior / exterior plastering from floor Three level to floor Four level finished even and smooth in CM 1:4 (1 Cement : 4 Sand) including finishing with floating coat of neat cement slurry including necessary curing, scaffolding in true line and level including providing & fixing 150mm wide strip of chicken net at vertical and horizontal joints of RCC and masonry... etc., complete as directed by E.I.C. | i i i i | 17.58(II) 17.69 17.94(I) 17.94(III) | 1.0 to 2.2 1.0 to 2.3 1.0 to 2.3 1.0 to 2.2 | 120 121 122 122 | Read 15mm thick instead of 10mm thick. Item shall be carried out by fixing chicken net of 150mm wide strip at joint of masonry & RCC. |

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| 55 | Providing 20mm thick double coat MALA CEMENT PLASTER on interior brick / concrete work for plastering on ceiling surfaces above Plinth level to floor Two level comprising of base coat of 12mm thick cement plaster in CM 1:4 (1 cement: 4 coarse sand) in rough finishing and 8mm thick top coat of CM 1:2 (1 cement: 2 coarse sand) finished with trowel including scaffolding, curing... etc., complete as directed by E.I.C. | i | 17.95 | 1.0 to 3.2 | 122 | Read 20mm thick Double coat Mala cement plaster on interior side of brick / concrete work instead of 20mm thick sand faced cement plaster on exterior side. Read 12mm thick base coat in CM (1:4) and 8mm thick top coat in CM (1:2) instead of 12mm thick base coat of CM (1:3) and 8mm thick finishing coat in CM (1:1). Item shall be carried out as per Mala cement plaster instead of sand faced plaster. Item shall be carried out by fixing chicken net of 150mm wide strip at joint of masonry & RCC. Item shall be carried out on interior ceiling surfaces. |

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| 56 | Providing 20mm thick double coat MALA CEMENT PLASTER on interior brick / concrete work for plastering on ceiling surfaces from floor Two level to floor Three level comprising of base coat of 12mm thick cement plaster in CM 1:4 (1 cement: 4 coarse sand) in rough finishing and 8mm thick top coat of CM 1:2 (1 cement: 2 coarse sand) finished with trowel including scaffolding, curing... etc., complete as directed by E.I.C. | i | 17.95 | 1.0 to 3.2 | 122 | Read 20mm thick Double coat Mala cement plaster on interior side of brick / concrete work instead of 20mm thick sand faced cement plaster on exterior side. Read 12mm thick base coat in CM (1:4) and 8mm thick top coat in CM (1:2) instead of 12mm thick base coat of CM (1:3) and 8mm thick finishing coat in CM (1:1). Item shall be carried out as per Mala cement plaster instead of sand faced plaster. Item shall be carried out by fixing chicken net of 150mm wide strip at joint of masonry & RCC. Item shall be carried out on interior ceiling surfaces. |

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| 57 | Providing 20mm thick double coat MALA CEMENT PLASTER on interior brick / concrete work for plastering on ceiling surfaces from floor Three level to floor Four level comprising of base coat of 12mm thick cement plaster in CM 1:4 (1 cement: 4 coarse sand) in rough finishing and 8mm thick top coat of CM 1:2 (1 cement: 2 coarse sand) finished with trowel including scaffolding, curing... etc., complete as directed by E.I.C. | i | 17.95 | 1.0 to 3.2 | 122 | Read 20mm thick Double coat Mala cement plaster on interior side of brick / concrete work instead of 20mm thick sand faced cement plaster on exterior side. Read 12mm thick base coat in CM (1:4) and 8mm thick top coat in CM (1:2) instead of 12mm thick base coat of CM (1:3) and 8mm thick finishing coat in CM (1:1). Item shall be carried out as per Mala cement plaster instead of sand faced plaster. Item shall be carried out by fixing chicken net of 150mm wide strip at joint of masonry & RCC. Item shall be carried out on interior ceiling surfaces. |
| 58 | Providing & applying 20mm THICK SAND FACED CEMENT PLASTER using wooden Gutki on wall upto all height from ground level consisting of 12mm thick backing coat of CM 1:3 (1 cement : 3 sand) and 8mm thick finishing coat of CM 1:1 (1 cement : 1 sand) including curing, necessary scaffolding in true line and level including providing & fixing 150mm wide strip of chicken net at vertical and horizontal joints of RCC and masonry... etc., complete as directed by E.I.C. | i | 17.95 | 1.0 to 3.2 | 122 | Item should be carried out using wooden Gutki. Item shall be carried out by fixing chicken net of 150mm wide strip at joint of masonry & RCC. |
| 59 | P/A BRICK STAMPING on exterior face of the structure as per sample approved by the architect and/or EIC.... etc complete. | ii | Spe.-2 | ----- | 3,4 | ----- |

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| 60 | P/A Cement VATA (10cm x 10cm size) quarter round in C.M. 1:1..... etc complete. | i | 17.0.0.1 | 1.0 to 2.2 | 124 | ----- |
| 61 | P/A Throating or plaster drip and moulding to r.c.c. chajja and plaster work etc complete | i | 5.4.18 | 1.0 to 2.1 | 39 | ----- |
| 62 | P/L 8/10mm thick Vitrified Tiles flooring over 20mm average th. base of C.M.1:6 etc complete. | i | 14.29 | 1.0 to 3.2 | 96,97 | Read 8/10mm thick Vitrified tiles instead of 6mm thick White Glazed tiles. |
| 63 | P/L 18mm thick Polished Granite Stone (hand cut) slab (Minimum 1.50m long peice) flooring over 20mm average th. base of C.M.1:6 etc complete. | i | 14.43(A) | 1.0 to 3.2 | 98,99 | Item should be carried out including Minimum 1.50m long peice. Read Polished Polished Granite stone instead of Kotah stone. |
| 64 | P/L Ceramic tiles flooring over 12mm average th. base of C.M.1:3 etc complete. | i | 14.29 | 1.0 to 3.2 | 96,97 | Read Ceramic tiles instead of White glazed tiles. |
| 65 | Providing & laying 60mm th. Colour Paver block..... etc complete as directed by EIC. | ii | Spe.-3 | ----- | 5 | ----- |
| 66 | P/L 8/10mm thick Vitrified Tiles in riser of step, skirting laid over 10mm average th. base of C.M.1:3 etc complete. | i | 14.32 | 1.0 to 3.2 | 97 | Read 10mm thick Vitrified tiles instead of 6mm thick White Glazed tiles. |
| 67 | P/L 18mm thick Polished Granite Stone (hand cut) slab (Minimum 1.50m long peice) in riser of step, skirting laid over 10mm average th. base of C.M.1:3 etc complete. | i | 14.44 | 1.0 to 3.2 | 99 | Item should be carried out including Minimum 1.50m long peice. Read Polished Polished Granite stone instead of Kotah stone. |

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| 68 | P/L 8mm thick White Glazed tiles in Dado over 12mm average th. base of C.M.1:3 etc complete. | i | 14.32 | 1.0 to 3.2 | 97 | 1) Read 8mm White Glazed tiles instead of 6mm thick White glazed tiles. 2) Read 12mm th CM instead of 10mm thick CM. |
| 69 | P/F 30mm th. Both side Laminated water proof Flush Door shutter including oil paint etc.... complete. | ii | Spe.-4 | ----- | 6,7 | Item should be carried out as per detailed drawing. |
| 70 | P/F M.S. Door with grill Ventilator in position including priming and painting ...etc complete. | i i i | 10.100(A) 19.2 19.19 | 1.0 to 3.2 1.0 to 3.5 1.0 to 2.1 | 76 139 140 | Read M.S. Door with grill ventilator Instead of M.S. Grill. Item shall be carried out as per openable grill door. No extra cost will be given for openable arrangement. |
| 71 | Providing & fixing Gray Granite stone at window sill, jams & soffit.... etc complete as directed by EIC. | ii | Spe.-5 | ----- | 8,9 | Item should be carried out as per detailed drawing. |
| 72 | Providing and fixing fully glazed Three track aluminium sliding window (2 shutters of Glass & 1 shutter of mosquito net zali)..... etc complete as directed by EIC. | ii | Spe.-6 | ----- | 10 to 13 | Item shall be carried out including fixing mosquito net zali in one shutter and glass in two shutters. |
| 73 | Providing and fixing Aluminium chanel plus PVC blades LOUVERED GLASS VENTILATOR etc complete as directed by EIC. | ----- | ----- | ----- | ----- | Item shall be carried out as per description in Schedule-B |

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| 74 | Providing and fixing fully glazed 15 micron colour anodized Aluminium FIXED MOSQUITO NET SHUTTERS using Aluminum Section of "Jindal Aluminium Ltd.," with outer periphery section 21515 (18.00x40.00x2.00 @ 0.696 kg/m), intermediate section 20567 (18.80x50.00x1.50 @ 0.601 kg/m) with S.S. jali having S.S. wire of average aperture 1.40mm and wire dia. of 0.63mm fixing with C channel (3/4) (Aluminium) including wall fixtures and fastening, aluminium cleats, Silicon sealant, screw and nails also painted/powder coated etc. complete. as per detail drawing and as directed by the EIC. | ----- | ----- | ----- | ----- | Item should be carried out as per discription in schedule-B. |
| 75 | Proving and fixing anodized Aluminum Glazing (Fixed / openable) of alluminum section..... etc complete. | ii | Spe.-7 | ----- | 14 to 17 | ----- |
| 76 | P/F M.S. Grill in possition including priming and painting ...etc complete. | i i i | 10.100(A) 19.2 19.19 | 1.0 to 3.2 1.0 to 3.5 1.0 to 2.1 | 76 139 140 | Item should be carried out as per detailed drawing. |
| 77 | Providing, making & fixing Steel work welded in build up sections for trusses & trussed purlins including priming coat of Synthetic enamel paint..... etc complete as directed by EIC. | i i | 11.4(D) 19.19 | 1.0 to 2.2 1.0 to 3.2 | 81 140 | Item shall be carried out using rectangle, square and round hollow tube section without any extra cost. |
| 78 | Providing, applying (two coats) LAPY (PUTTY) and two coats of Plastic Emulsion paint of Asian/Berger on internal wall surafce of required shadeetc complete. | i | 18.57 | 1.0 to 3.2 | 136,137 | ----- |

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| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 79 | Providing, applying (two coats) LAPY (PUTTY) and two coats of Plastic Emulsion paint of Asian/Berger on internal ceiling surface of required shadeetc complete. | i i | 18.57 18.60 | 1.0 to 3.2 1.0 to 2.2 | 136,137 137 | ----- |
| 80 | P/A two coats of Asian apex ultima paint on external wall surface with one (base) coat of primeretc complete. | i | 18.51 | 1.0 to 3.2 | 135 | Read Asian apex ultima paint instead of water proof cement paint |
| 81 | P/L white glazes tiles equal size pieces for China mosaic water proofing treatment to the terrace including vata.....etc complete. | ii | Spe.-8 | ----- | 18,19 | ----- |
| 82 | P/A chemical water proofing treatment to the terrace including vata.....etc complete. | ii | Spe.-9 | ----- | 20 to 23 | ----- |
| 83 | P/A chemical water proofing treatment to the terrace including vata.....etc complete. | ii | Spe.-10 | ----- | 24,25 | ----- |
| 84 | P/L Cinder filling in sunk slab at all floor lvl.....etc complete. | ii | Spe.-11 | ----- | 26 | ----- |
| 85 | Providing and laying C.C. 1:3:6 excluding cost of formwork at floor Two lvl. to floor Three lvl..... etc complete. | i i | 5.3.2(A) 5.4.13 | 1.0 to 2.7.2 1.0 to 2.2 | 38 46 | ----- |
| 86 | Providing and fixing PVC water tank (Sintex) readymade one piece moulded water tank antibacterial typeetc complete. | ii | Spe.-12 | ----- | 27,28 | ----- |

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| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 87 | Carring out plinth treatment to post construction/existing structure by spraying chemical solution for termite control treatment including labour and material consistant with I.S.I. specification. Using Chlordene and chiorpurfiles 20 EC. as per 6131_paret-II consentration weight one percent is recommended i.e. one litre 20 EC chemical emulsion with 19 litre give 1% concentration inclusive of one litre chemical emulsion appiciation at the rate of 5 Litre chemical / Sq.m of surface is recommended as per I.S. etc. complete as directed by EIC. | i | 22.00.7 | 1.0 to 3.2 | 156 | ----- |
| 88 | Fixing the new reinforcement having 8 / 10 mm dia. with existing concreting with REBARING including boring holes of appropriate dia. and a depth of 150mm in concrete, cleaning the holes, fitting the reinforcement in possition and fill up FISCHER chemical in the remainng gap in proper manner etc. complete as directed by EIC. (Reinforcement will be paid separately) | ii | Spe.-13 | ----- | 29 | ----- |
| 89 | Fixing the new reinforcement having 12 mm dia. with existing concreting with REBARING including boring holes of appropriate dia. and a depth of 150mm in concrete, cleaning the holes, fitting the reinforcement in possition and fill up FISCHER chemical in the remainng gap in proper manner etc. complete as directed by EIC. (Reinforcement will be paid separately) | ii | Spe.-13 | ----- | 29 | Read 12mm dia. Instead of 8 / 10 mm dia. |

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| 90 | Fixing the new reinforcement having 16 mm dia. with existing concreting with REBARING including boring holes of appropriate dia. and a depth of 150mm in concrete, cleaning the holes, fitting the reinforcement in position and fill up FISCHER chemical in the remaining gap in proper manner etc. complete as directed by EIC. (Reinforcement will be paid separately) | ii | Spe.-13 | ----- | 29 | Read 16mm dia. Instead of 8 / 10 mm dia. |
| 91 | Extra for additional height of Proping and Centring for the height more than 4.0m and upto 5.0m... etc complete. | i i | 9.1(B)(I) 9.1(B)(II) | 1.0 to 2.2 1.0 to 2.2 | 64 64 | ----- |
| 92 | Extra for additional height of Proping and Centring for the height more than 5.0m and upto 6.0m... etc complete. | i i | 9.1(B)(I) 9.1(B)(II) | 1.0 to 2.2 1.0 to 2.2 | 64 64 | ----- |
| 93 | Extra for additional height of Proping and Centring for the height more than 6.0m and upto 7.0m... etc complete. | i i | 9.1(B)(I) 9.1(B)(II) | 1.0 to 2.2 1.0 to 2.2 | 64 64 | ----- |
| B | PLUMBING AND SANITATION WORK | | | | | |
| 1 | Providing and fixing to wall, ceiling and floor 40mm dia. U-PVC plumbing pipe line with all necessary fittings.....etc complete as directed by E.I.C. | i | 23.4 (D) | 1.0 to 3.5 | 161,162 | Read U-PVC plumbing pipe instead of G.I. pipe. |
| 2 | Providing and fixing to wall, ceiling and floor 25mm dia. U-PVC plumbing pipe line with all necessary fittings.....etc complete as directed by E.I.C. | i | 23.4 (C) | 1.0 to 3.5 | 161,162 | Read U-PVC plumbing pipe instead of G.I. pipe. |

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| 3 | Providing and fixing to wall, ceiling and floor 15mm dia. U-PVC plumbing pipe line with all necessary fittings.....etc complete as directed by E.I.C. | i | 23.4 (A) | 1.0 to 3.5 | 161,162 | Read U-PVC plumbing pipe instead of G.I. pipe. |
| 4 | P/F brass Ball Cock of 40mm dia...etc complete. | i | 23.00.5(A)(II) | 1.0 to 3.2 | 173 | Read 40mm dia. instead of 50mm dia. |
| 5 | P/F 40mm dia. Zoloto bronze full way handle valveetc complete. | i | 23.99(E) | 1.0 to 3.2 | 171 | Read Zoloto bronze full way handle valve instead of gun metal check or non return valve. |
| 6 | P/F 25mm dia. Zoloto bronze full way handle valveetc complete. | i | 23.99(C) | 1.0 to 3.2 | 171 | Read Zoloto bronze full way handle valve instead of gun metal check or non return valve. |
| 7 | P/F 15mm dia. brass polished bright screw down Bib Tapetc complete. | i | 23.92(C)(I) | 1.0 to 2.1 | 170 | Read Brass polished bright screw down instead of gun metal screw down |
| 8 | P/F 15 mm dia. brass screw down Stop Tapetc complete. | i | 23.96(A) | 1.0 to 3.2 | 171 | ----- |
| 9 | P/F wash down European type W.C.pan with integral P or S trap.....etc complete. | i i i | 23.112(A)(I) 23.113(A) 23.96(A) | 1.0 to 3.3 1.0 to 3.2 1.0 to 3.2 | 165 165 171 | Item shall be carried out including integral P or S trap, seat cover, jet spray and concealed stop cock without any extra cost. |
| 10 | P/F 25mm dia. C.P. brass push up Flush Cocketc complete. | i | 23.00(II) | 1.0 to 3.2 | 171 | Read push up flush cock instead of half turn flush cock. |

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| 11 | P/F Urinal white earthenware flat back or corner type of 440mm x 265mm x 315mm size....etc complete. | i | 23.122(A) | 1.0 to 3.2 | 172 | Read size of Urinal 440mm x 265mm x 315mm instead of 430mm x 260mm x 350mm |
| 12 | P/F white colour flat vetrious china clair Wash Basin 500mm x 400mm size including pillar trap ...etc complete. | i | 23.127 | 1.0 to 3.2 | 167 | Item shall be carried out including C.I. or M.S. bracket, pillar tap, stop tap, 32 mm dia. C.P.brass waste pipe & coupling for the same, rubber plug & all other fittings without any extra cost. |
| | | i | 23.135(A) | 1.0 to 3.2 | 168 | |
| | | i | 23.95(A) | 1.0 to 3.2 | 171 | |
| | | i | 23.96(A) | 1.0 to 3.2 | 171 | |
| | | i | 23.134 | 1.0 to 3.1 | 172 | |
| 13 | P/F 600mm x 450mm bevelled edge Mirror ...etc complete. | i | 23.143 | 1.0 to 3.1 | 169 | ----- |
| 14 | P/F PVC Nahni Trap of (110x75mm) nominal diameter with greeting zali 100mm size....etc complete. | ii | Spe.-14 | ----- | 30 | ----- |
| 15 | Providing, laying and jointing 110mm int. dia. PVC pipe for drainage line in floors or fitted in wallsetc complete. | ii | Spe.-15 | ----- | 31 | ----- |
| 16 | Providing, laying and jointing 75mm int. dia. PVC pipe for drainage line in floors or fitted in wallsetc complete. | ii | Spe.-15 | ----- | 31 | Read 75mm dia. PVC pipe instead of 110mm dia. PVC pipe. |
| 17 | Providing, laying and jointing 40mm int. dia. PVC pipe for drainage line in floors or fitted in wallsetc complete. | ii | Spe.-15 | ----- | 31 | Read 40mm dia. PVC pipe instead of 110mm dia. PVC pipe. |

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| 18 | P/F 110 mm dia. PVC Cowl Ventetc complete. | ii | Spe.-16 | ----- | 32 | ----- |
| 19 | P/F 75 mm dia. PVC Cowl Ventetc complete. | ii | Spe.-16 | ----- | 32 | Read 75mm dia. PVC cowl vent instead of 110mm dia. PVC cowl vent. |
| 20 | Providing, laying and jointing 110mm int. dia. PVC pipe for Rain water fitted in wallsetc complete. | ii | Spe.-15 | ----- | 31 | Read PVC pipe for Rain water instead of PVC pipe for Drainage line. |
| | | | | | | |

Sign of contractor

Executive Engineer, AAU, Anand

S P E C I F I C A T I O N

Note:

The Various items of works shall be carried out in general as per relevant ISS specification and that or the latest addition of P.W.D. hand book volumes I and II along with the following specification where there is contradiction between the following specifications and P.W.D. hand book the following specification and P.W.D hand book the following specification shall be govern in matters or interpretation etc. the design of the Director of purchase and Properties / Architect shall be final and binding on the contractor.

- 1) The contractor is to allow for executing any work which in the Engineer/ Architect opinion is like to cause and annoyance to occupants in the vacantly at times as the Architects may directs.
- 2) The contractor shall deliver daily to the Engineer in charge of works a report as to the number of operative employed in all traders and deliver to the side.
- 3) The treasure-trove coins or objects of a quantity which may be found on the site shall handed over to the employees.
- 4) The contractor is to provides at all times curing the progress of work and maintenance period proper mean of the access with leaders and gang ways etc. the necessary attendance to move and as per as directed for the inspection or measurement of the work by architect consulting Engineer structural engineer and D.P.P. authorities or their representatives.
- 5) The contractor is to allow for general attendance upon sun contractor including the free use of plot and scaffolding and the provision and special scaffolding required and is allow their operative the use of latrine water closest meets room & lock up shop for each.
- 6) The contractor is to set up and level the work and will be responsible for the security of same. He is approved all instruments and attendance require by the Architect consulting Engineer and University authorities or their representatives for checking their work.
- 7) The Contractor is to cover up[and protected the works from weather and is to suspend all set operations during weather which is in the Engineer/Architects opinion will be detrimental to the work.
- 8) The contractor is to allow for general foreman to be constantly on the works through out the period of their execution and for supervision as required under the conditions of contract.

9) The contractor shall provide erect and maintain proper shades and temporary buildings for the storage and protection of materials etc. and for the execution of works which may be fabricated or brought on the site.

10) The contractor shall provide and erect and maintain proper shade mess rooms for the operatives with adequate lighting and attendance etc.

11) The contractor shall provide and erect in approved positions all necessary sanitary conveniences with the rules and regulations of the authority maintain in a clean and or decent condition.

12) The Contractor shall provide erect and maintain an office for the general foreman with desk drawers etc and adequate lighting and attendance.

13) The contractor shall provide erect and maintain for the Engineer in charge with desk drawers on office etc. and adequate lighting and attendance.

14) The Contractor shall provide erect and maintain office with desk, drawers etc. and adequate lighting and attendance for the architects representatives.

15) The contractor shall allow for paying all rates, taxes and other charges which may be made by local or other authorities in the condition with offices sheds and other temporary building erected for the purpose of the contractor.

16) Board:

A board of size approximately 8 X 6 as per drawings shall be made and be up to at approved place on the site. This board shall be painted in approved colors the name of :

1. The Proposed construction and the employer.
2. The Architects.
3. The buildings contractors.
4. The structural consultants.
5. Any other specialist consultant and
6. Consulting Engineer as directed by the Architects. This shall be provided by the contractor at his own expenses.

17) Samples of each class of materials and workmanship shall be submitted by the contractor for the approval of the Engineer /Architects and after such approval these samples shall be deposited in the office of the Engineer in charge and the contractor will be required to perform all the works of his contract in accordance with these samples.

18) If the contractor wants to make any item No. of at his workshop or at any other place and not on site written application for permission to do so shall have to be submitted to the Engineer In charge /stating clearly the item of work place of its making etc. If the said application is rejected by the Engineer in charge the same item of work shall have to be carried out on site at no extra cost.

19) On completion all works must be cleaned down rubbish removed and the works and land cleared of rubbish surplus materials and other accumulations and ever their left in a clean and orderly condition./The contractor shall to this work at his own expenses as per the instructions of the Engineer in charge.

20) The contractor shall prepare a sample of any work required by the Engineer/Architects and get in the Engineer/architects approval before proceeding with the quantity work. The contractor shall remove same from the site at his cost shall remove the rejected sample. The contractor shall not be eligible for any compensation for preparing for removing the sample.

21) No extra shall be paid on any item on account of the floor lead except where specifically mentioned.

22) All quantities mentioned in the schedule of quantities are only approximate and the contractor shall not be eligible for any claim due to any variation in or commission of any item of works.

Contractors Signature

Executive Engineer

Place :

Date:

-: SPECIFICATION :-

All the works shall be done as per the specification laid down in the Bombay P.W.D. hand book Volume, I, II 9th edition and latest I.S.S. specifications and according to the order of the Executive Engineer, Anand in conformity with the following addition and alterations. In case of dispute, the decision of the Executive Engineer, Anand Agricultural University, Anand shall be considered as final and binding to the contractor.

All the materials required for the work is to be used as per details specification attached with the tenders for material's or approved by Executive Engineer.

MEASUREMENTS:-

Mode of measurement has been specified in each item however in case where details are not provided standard procedure.

1. All damages to floor, walls, roads sides of buildings etc. during the process of fixing water supply, drainage and Sanitary installations shall be restored to the original condition by the contractor of his own cost.
2. All the pipes, fittings and appliances shall be thoroughly cleaned before fixing and particular care shall be taken to see that no materials gets into them during fixing.
3. All the joints shall be of the same diameters of the inside before expect wherever mentioned.
4. All the joints shall be rendered leak proof and tested for the same to ensure efficient functioning of pipes and appliances.
5. All diameters of pipes shall be of the same diameters of the inside before expect wherever mentioned.
6. Entire water supply and sanitary items arrangements shall be subjected to pressure test in accordance to IS Code at the contractors cost prior to commissioning.
7. All the water supply and sanitary items shall be carried out by the experienced plumber to the entire satisfaction of Engineer-in-charge.
8. Rate of each items are including of testing of its and connection and pipe etc. for no leakage.

Contractor

Executive Engineer

SPECIAL CONDITIONS

PROCEDURE TO BE FOLLOWED FOR EXECUTION OF ELECTRICAL WORK

- The Electrical work as per part-II of quantities shall be carried by Electrical contractor registered in R & B Electrical Division in "D and Above" class and same document shall be required to be submit along with tender document during P.Q. and work shall be carried out by same electrical contractor during work execution.
- The Electrical works as per part-II of quantities shall be supervised billed for and passed by the Executive Engineer, Anand Agricultural University, Anand.
- The payment of bill of electrical work duly passed by the Executive Engineer, Anand Agricultural University, Anand after performing required general security.
- So far as Electrical work is concern, the decision and instruction given by the Executive Engineer, Anand Agricultural University, Anand shall be binding to the contractor and be shall be liable to act in accordance with the instruction issued for the quality & workmanship etc.
- Quality of work and part rate / reduce rate etc. for electrical work shall be decided by the Executive Engineer, Anand Agricultural University, Anand and shall be binding to the contractor.
- The contractor shall observe the prevailing rules procedure for the electrical work before during and after execution of electrical works as directed by the Executive Engineer, Anand Agricultural University, Anand.
- Electrical work shall be carried out completed simultaneously with civil work.
- Approved product make for electrical items should be consider as Mentioned in schedule-B & if not written in schedule-B than consider as per tender booklet.
- Electrical contractor have to assist for MGVCL power supply as instructed by engineer in charge.

Signature of Contractor

Executive Engineer

THE FOLLOWING CLAUSE SHALL BE DEEMED TO HAVE BEEN INCLUDED IN ALL TENDERS FOR BUILDING WORKS.

NOMINATED ELECTRICAL SUB-CONTRACTORS

- (1) The main contractor shall identify in his bid / offer and name Electrical Contractor who will execute electrical items of the contract. Such Electrical contractor will be referred to as "Nominated Electrical sub Contractor" The Electrical sub-contractor shall fulfill the following condition.
 - 1.1 He should be Registered in "D" and above class as Electrical contractor by any Electrical Division of Road and Building Department or Narmada and water Resource Department of Government of Gujarat.
 - 1.2 He should be holding currently valid registration certificate issued by the above specified Electrical Division.
 - 1.3 He should have spare capacity to execute the electrical component of the contract work taking into consideration his contract works on hand. For this purpose, he should furnish the statement showing the details of contract works on hand, total value of such works executed up to the month of submission of this offer and the balance value of contract works in progress yet to be executed.
- (2) The main Contractor should produce with his offer "Memorandum of understanding" with the Electrical sub-contractor disclosing the terms and conditions specifying the obligation regarding performance of the contract work pertaining must contain, besides other terms the following provision. "that in respect of work, goods, materials or services the subject of the sub contract, The obtained electrical sub contractor will undertake towards the contractor the like obligations and liabilities as are imposed on the contractor towards the employer by the terms of the contract".
- (3) The nominated electrical sub contractor shall be approved subject to the following conditions.
 - 3.1 The works, goods, materials, services and electrical items to be executed by the nominated electrical sub contractor will be subject to approval and supervision of Executive Engineer (Electrical).
 - 3.2 The rates, quantities as measured and amount payable for electrical items of work will be certified by the executive.
 - 3.3 The main contractor and nominated electrical sub contractor will be jointly responsible for quality of electrical portion of contract work and for rectification of defective work up to defect liability period as per condition of contract i.e. on in the tender document.
 - 3.4 Prior approval of the engineer in charge will be necessary for relieving nominated electrical sub contractor before contract work is accepted as completed and for appointment of new electrical sub contract. The approval will be given subject to such conditions as the engineer in charge may consider necessary for satisfactory

and finally completion of electrical portion of contract. The Engineer in charge will have powers to reject the premature relief of nominated electrical sub contractor if he is not satisfied with reasons for relieving the nominated electrical sub contractor and after such refusal, the main contractor shall be deemed to have committed default in performance of the contract if he do not restore the originally approved nominated electrical sub contractor. The approval of new electrical sub contractor will be subject to fulfillment of all requirements prescribed for approval of electrical sub contractor.

- (4) The Bidder shall have to confirm that the electrical Sub-contractor shall execute the Electrical item to the contract fulfilling following requirement.

- 4.1 All equipments, materials and other accessories to be provided by the contractor under the terms of this contract shall confirm to the relevant I.S.S. samples of the Engineer in charge well before they are used on the work. The make of these shall be preferred from the approval list of material for use on work for relevant S.O.R. or at appendix of the tender document as may apply.
- 4.2 The installation shall also be carried out strictly in conformity with the requirement of Indian Electricity Act.-1910 as amended and the Indian electricity rules 1956 as well other statutory regulations that may be relevant to such electrical installations.
- 4.3 In this electrical work, erection, testing and commissioning shall comply with relevant Indian standards and code practice in force.
- 4.4 Good workmanship is the essence of this contract and shall be observed during execution of work at all times. A qualified and an experienced supervisor shall be charged by the contractor immediately free of cost.
- 4.5 After completion of work / installation necessary tests will be carried out as may require under relevant rules including.
 - [A] Insulation resistance test with 500V / 1000V meger for 250V / 415V, system respectively and the test result should not be less than 1 meger ohm value.
 - [B] Resistance to earth of any point in grounding system the test result should not exceed one (1) Ohm.
- 4.6 On completion of the electrical installation work the contractor shall submit six copies of "RECORD PLAN" indicating very clearly the runs of various size of mains, sub mains position and circuit of all points with their subjective controls etc. Duly signed by the licensed electrical supervisor & contractor under whose supervision this work has been carried out.
- 4.7 The electrical contractor shall furnish the test certificate / test reports in prescribed Performa duly signed as may require and arrange to obtain electrical power connection from the licensee of the region on completion of this work without any delay.
- 4.8 Any other clause that may be thought proper and applicable by the Govt. shall be binding on the bidder.

- (5) The Employer will not be responsible for financial settlement and disputes settlements between the main contractor and electrical sub contractor.
- (6) Before issuing the completion certificate or preparation of the final bill the Engineer in charge shall be entitled to demand from the main contractor reasonable proof that all payments. Less retentions, security for performance, tax Deductions in respect of work or goods, materials or services rendered by or supplied by nominated Electrical sub contractor have been paid or discharge by the contractor to nominated Electrical sub contractor. If the main contractor cannot satisfy the employer by furnishing reason for nonpayment or dues to the nominated Electrical sub contractor, the Engineer-in-charge shall be entitled to retain the disputed amount as security deposit which will be released only after production mutually agreed settlement of account or the award of the Arbitrator to be nominated by electrical sub contractor.

Also the security deposit along with performance bond of electrical sub contractor shall become refundable only after getting no obtain certificate from concerned authority.

(7) For testing of Material

- (A) Material to be used in work should be got approval by in charge E.E.
- (B) Sample of material to be used in the work is required to be tested at GERI or BVM, Vidhyanagar Laboratory / or from the approved Govt. research institute, which is must. Samples required to be submit as per requirement of GERI or BVM, Vidhyanagar Laboratory, in case of cable and wire 3 meters of sample and for Fluorescent fitting 5 no.s of ballast with 2 no.s Fluorescent Lamp may be required for testing. No payment will be made on account of sample material, so it is requested to tenders / agency consider cost of sample material consideration while quoting the tender. Actual paid by agency for testing of material will be paid by the Department. Agency is requested to contact GERI or BVM, Vidhyanagr Laboratory to understand there requirement for testing of material.

Signature of Contractor

Executive Engineer

**GENERAL TECHNICAL SPECIFICATIONS
FOR
BUILDING WORKS

VOLUME – II**

SPECIFICATION OF CIVIL WORK:-

SPECIFICATION-1 (ITEM NO. - 5)

Removing and scraping of any type of **Cement Plaster** of any thickness from wall / RCC member including stacking of serviceable material and disposal of unserviceable material from site of work with all lead and lift etc. completed as directed by E.I.C.

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Workmanship:-

The relevant specification of item no. 20.1 (I) shall be followed except that the dismantling of plastering work shall be done. All unserviceable materials, rubbish etc, shall be stacked as directed by the engineer in charge. Any serviceable material obtained during dismantling or demolition shall be separated out and stacked properly.

Mode of measurement and payment:-

The relevant specification of item no. 20.1 (I) shall be followed except that the plastering work shall be measured in sq.m.

The rate shall be for a unit of one square meter.

SPECIFICATION-2 (ITEM NO. - 59)

Providing and applying **BRICK STAMPING** on exterior face of the structure as per sample approved by the architect and/or engineer - in - charge including cleaning and brushing the surface, providing requisite base coat and top coat as per the requirement of the design, cleaning the surface and making good and finishing with weatherproof coat etc. complete with all necessary material, labour, tools, tackles, hardware, accessories, scaffolding etc. all to the satisfaction of the architect and/or engineer - in - charge. The rate shall be for a complete item and applying at all heights, all floors and all levels (a) Luxture "Decorcem" - Exposed BRick Finish etc., complete as directed by E.I.C.

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Material:-

Materials to be used for this item shall be as per standard manufacturer's specifications as approved by Architect/Engineer in charge.

Workmanship:-

The work shall be carried out as per the prevailing best practices in the industry. It shall be carried out as per recommended by standard manufacturer's procedure.

Mode of measurement and payment:-

All the work shall be measured in the decimal system as under;

- (a) Dimensions shall be measured to the nearest 0.01 m.
- (b) Area in individual items shall be worked out to the nearest 0.01 m.

All works shall be measured in sq. mt. In jambs, soffits, sills etc, and for opening not exceeding 0.5 m² each in area, for ends of joints, posts, beams, girders, steps, etc not exceeding 0.5 m² each in area and for openings exceeding 0.5 m² and not exceeding 3.0 m² each in area, deductions and additions shall be made as under:

(1) No deduction shall be made for ends of joints, beams posts, etc. and for openings not exceeding 0.5 m² each. No addition shall be made for reveals, jambs, soffits, sills etc. of these opening nor for finish around ends of joints, beams, posts etc.

(2) Deductions for openings exceeding 0.5 m² but not exceeding 3.0 m² each shall be made as follows and no addition shall be made for reveals, jambs, soffits etc. of these openings:

(a) When both the faces of walls are provided with the same finish, deduction shall be made for one face only.

SPECIFICATION VOLUME-II

(b) when each face of wall is provided with a different finish, deduction shall be made for that side of frame for door, windows, etc. on which width of reveals is less than that of the other side. Where width of reveals on both faces of wall are equal, deduction of 50% of area of opening on each face shall be made from total area of finish.

(c) When only one face of wall is treated and the other face is not treated, full deduction shall be made if when width of reveal on the treated side is less than that on the untreated side, but if the width of reveals is equal or more than on the untreated side neither deduction nor additions to be made for reveals, jambs, soffits, sills. etc.

(3) In case of area of openings deduction shall be made for opening but jambs, soffits shall be measured.

(4) No deductions shall be made for attachment such as casing, conduits, pipe, electric wiring and the like.

Corrugated surface shall be measured flat as fixed and not girth. The quantities measured shall be increased by the following percentage and the resultant shall be included with the general areas:

- (a) Corrugated steel sheets 14%
- (b) Corrugated A.C. Sheets20%
- (c) Semi Corrugated A.C. Sheets10%
- (d) Nainital pattern roof (Plain sheeting with rolls)10%
- (e) Nainital pattern roof (With Corrugated sheets)25%

Cornices and other wall features, when they are picked out in a different finish / colour shall be girthed and included in the general area.

The rate shall include the cost of all materials, labour, scaffolding, protective measures etc. required for the above specified operation, at all floors, at any height, in any position. Priming and Alkali resistant treatments, scrapping of surface washing etc. surface spoiled by smoke soot, removal of oil and grease spots, treatments for infection with not be paid extra. This shall also include conveyance, delivery, handling unloading, storing work etc.

The rate shall be for a unit of one sq. meter.

SPECIFICATION - 3 (ITEM NO. - 65)

Providing and fixing pre-cast Rubber Dye / steel Dye inter locking **CONCRETE BLOCK** 60mm thick with grade of concrete **M300** pneumatic compressed / vibrated mechanically and as per approved design Confirming to IS 15658 : 2006 including 35 mm Sand layer for levelling and filling the joint with sand in proper line and level as per guidelines of IRC : SP 63-2018 etc. complete as directed by EIC.

In general, the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Material:-

Paver block shall be of approved quality and conforming to IS specifications. The edges of Paver block shall sharp, enough and at proper angles for interlocking. Paver block shall have no defects. Paver block shall have uniform colour. Paver block shall free from broken edges. Paver block shall have uniform thickness of 60mm with tolerance of 3mm. Paver block shall not have concrete grade less than M-40.

Workmanship:-

Reflective interlocking cement concrete rubber dry made Paver block shall fixed on the P.C.C. (1:4:8) bed with the help of interlocking arrangement method. The interlocking shall do in proper manner. Paver block shall bid in true line and level or slope as per detailed drawing and guidance of engineer in charge. No porosity shall found between two paver block. The different colour Paver block shall placed in such a manner descended in detailed drawings.

Mode of measurement and payment:-

The rate includes all tools, plants and labour involved in satisfactory completion of work.

The rate shall be for unit of one square meter of actual work done.

The work shall be carried out as per detailed drawings and directed by engineer in charge.

Measurement shall be in square meter of actual work done.

SPECIFICATION - 4 (SR. NO. - 69)

Providing and fixing 30mm thick Both Side Laminated Water Proof **FLUSH DOOR** shutters of Archid/Anchor/Green Ply make including first class hardwood and cross band, block board core with plywood face panels, 6mm thick batten patti all around the shutter including 1mm thk. laminate on both the side including S.S. AISI 304 grade fixtures of Kich make (1) S.S. Hinges without bearing 125x62x2mm - 4 no.s, (2) S.S. Tower Bolt flat 150mm - 1 no.s, (3) S.S. Handle 2mmx150mm - 2 no.s, (4) S.S. Aldrop combi. of satin & glossy finish 16mm dia. x 250mm - 2 no.s with necessary screws including providing and applying primer coat Asian / Berger make and two coats of oil painting of Asian / Berger make to edges of flush door shutter etc. complete as per detail drawings and as directed by EIC.

In general, the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Materials: -

The flush door shutter shall be confirmed M-30 (30.1 to 30.6 / P.16 / V.1). The fixtures and fastening as describe above description shall be confirmed M-43 (43.1 to 43.15.1 / P.19,20 / V.1). The Oil paint of door shutter shall be confirmed M-44 (44.1 (A) to 44.1.3 / P.21 / V.1). The laminate of door shutter must be of ISI mark and good in design, color and in fining with approved brand subject to as per description of item in schedule -B.

Workmanship:-

The fixing of laminates on flush door as describes bellow.

Clean surfaces of flush door from dust, dirt and other particles, spread of fixer solutions evenly all over surfaces flush door shutter, past laminates on flush door shutter and pressed with weight and fixed by 0 sizes nails for 1-2 days, after removing nails the air babuls if found the laminates must be removed and fix it again. Fix Indian teak wood beading patti all around the flush door shutter.

The workmanship of Flush door shutter shall be confirm to 10.30 on page no.-72 para no.-2.0 to 2.2, priming coat shall be confirmed to 19.59 (C) on page no.-141 para no.-2.0 to 2.1, and painting shall be confirmed to 19.71 on page no-142 para no.-2.0 to 2.2 of specification vol.-I.

Fixtures and fastening: -

The rate shall include (1) S.S. Hinges without bearing 125x62x2mm - 4 no.s, (2) S.S. Tower Bolt flat 150mm - 1 no.s, (3) S.S. Handle 2mmx150mm - 2 no.s, (4) S.S. Aldrop combi. of satin & glossy finish 16mm dia. x 250mm - 2 no.s; all this fixing with iron screws and fitting as per table given in annexure I-II of specification vol.-I. on page 188,189 and as per detailed drawing given by architect at the time of work execution.

Mode of measurement and payment:-

The rate including cost of all materials, tools, plants and labour involved in satisfactory completion of work including cost of primers & painting etc.

The rate shall be for unit of one sq.m as per actual work done.

The work shall be carried out as per detailed drawings and as directed by EIC.

SPECIFICATION - 5 (ITEM NO. – 71)

Providing & fixing 18mm thick **GRANITE STONE** single or sandwich type at door / window sill, jams, soffit etc. fixing with CM 1:2 (1 cement: 2 coarse sand), Araldite and screws if necessary including mirror polishing and making quarter round molding on both the sides, making gissi in wall / RCC for resting and finishing with colour cement etc. complete as directed by E.I.C. (Measurement shall be done as per each & every stone used with its length & width)

In general the work shall be carried out as per standard specification of P.W.D / C.P.W.D., relevant drawing & as per the instruction of EIC.

Materials:

The polished Granite stone shall be approved quality, free from defects and dressed in fashion & sated under specification. The thickness shall be as stated in description with 3mm tolerance. The stone shall be of uniformed in color with straight edges. The sides of machine cut and machine polished stones shall have perfect right angles and surface on earth.

Workmanship:

The Granite stone shall be fixed on window sill in two pieces overlapping each other as directed by EIC. The width of outer strip of Granite stone resting on sill shall be 225mm. The outer strip shall fix towards outside of wall by keeping flush with external plaster and having a half round molding of 9mm size is projected outside from external plaster. The width of inner strip of granite stone resting on outer strip shall be 100mm. The inner strip shall fix towards inside of wall by keeping 9mm projected from internal plaster. The inner side of inner strip shall have half round molding. The overlapping of outer strip & inner strip shall be 25mm and fixed by doing sandwich. The both strips shall fix with each other at overlapping by means of araldite. The outer and inner strip of granite stone shall be fixed on rough surface of wall. These two outer and inner strips are for bottom of sill only. For jams and soffit of window only one strip of 300mm wide is fixed on both the sides of window and chhajja bottom of window. This one strip is half round molded of size 9mm on both the edges and placed in such a way that both edges is projected 9mm from internal plaster and external plaster. The mortar pads of 1:2 CM of uniform width shall be stuck on to the wall at close intervals and the granite stone pressed on it firmly, the remaining cavities if any shall be filled with grout of cement mortar of the same proportion. The sound coming on gentling tapping of slab will indicate if there are hollows. If the hollow can be filled with grout and finished slab is continue give a hollow sound on taping, the slab shall be removed and reset. The stone

shall be fixed truly in line & level as shown in plans. The surface shall be protected from sun and rain and curd for ten days and shall be fairly polished.

Mode of measurement and payment:

The granite stone at sill, jams & soffit shall be considered for measuring the area of granite stone. Overlapping of granite stone is considered extra for measuring the area of granite stone. Measurement shall be taken in length and width of completed dimension. The rate includes for execution of whole item and shall be paid for a unit of one square meter of granite stone as per actual work done.

SPECIFICATION - 6 (ITEM NO. – 72)

Providing and fixing fully glazed 15 micron colour anodized Aluminium **THREE TRACK SLIDING WINDOW** (2 shutters of Glass & 1 shutter of mosquito net zali) with fix Glazing using Aluminum Section of "Jindal Aluminium Ltd.," with 3 track bottom 21516 (92.00x31.75x2.00mm @ 1.49 Kg/m), three track top and side 21517 (92.00x31.75x2.00 @ 1.273 kg/m) including sliding shutter having top and bottom section 21513 (18.00x40.00x2.00 @ 0.695 kg/m), handle side section 21515 (18.00x40.00x2.00 @ 0.696 kg/m), inter lock section 21514 (18.00x40.00x2.00 @ 0.817 kg/m) with 6mm thick plain glass Modi / Saint gobain, S.S. jali having S.S. wire of average aperture 1.40mm and wire dia. of 0.63mm fixing with C channel (3/4) (Aluminium) including wall fixtures and fastening with EPDM Jumbow rubber glass seal, glass wool, S.S. concealed lock, TPI bearing, aluminium cleats, Silicon sealant, screw and nails also painted/powder coated etc. complete.

In general the work shall be carried out as per standard specification of P.W.D / C.P.W.D., relevant drawing & as per the instruction of EIC.

Materials:

The aluminum sections material shall be confirmed M-31 (31.1 to 31.3 / P -17 / V-1) and the glass shall be M-38 (38.1 to 38.5.1 / P18, 19 / V-1). In addition Materials shall be of approved quality and shall generally conform to latest IS specifications and size of the section are as specified in the item description. The contractor shall order all the materials required for the execution of work as early as necessary and ensure that such material are on site well ahead of requirement for use in the work. The work involved calls for high standard of workmanship combined with speed and to the entire satisfaction of the consultant.

Glass in doors, windows, glazing and ventilators shall be 6mm thick float glass. Clearer tinted reflective as mentioned in the item, and shall be approved quality free from stains, scratches, bubbles and flaws of any kinds and shall be properly cut to fit framed and mullions. All windows and ventilators shall be glazed from outside with snap fit anodized aluminum beading and EPDM/ casket lining complete. The buildings shall be snap fit and shall be fitted without use of screws. No screws other than those on some of the hardware shall be visible. EPDM gaskets of approved size and profile shall be provided and installed at all location as shown and as called for to render the doors, windows, etc. absolutely air tight and weather tight open able shutters shall have single row continuous EPDM weather strip. Weather strip shall not be interrupted by any fittings.

The specification, drawing and schedule of quantities cover the major requirement only. Supply and fixing of additional fastenings, fixtures and other items of work not mentioned specifically but which are necessary for satisfactory completion of the work are deemed to be included in the rates quoted by the contractor. Nothing extra shall be paid on this account.

Weather strips, gaskets and sealant shall be of high quality material capable of resisting local environment exposure and performance requirement. Interior primary seal shall be of compression type weather seal.

The contractor shall make his own arrangement for necessary scaffolding / staging, cradle etc for erection of the aluminum doors, windows Ventilators etc.

Workmanship:

Specification for sliding and fixed (composite) windows:

The windows shall be made out of extruded aluminum section.

Each shutter shall be provided with two balls beading rollers 2 anti ratting pieces guides one each at top and bottom PVC weather strip all round.

All joints shall be mechanical & the vertical & horizontal member's joint shall be fixed at 45 degree.

Window shutter shall be provided with special locking arrangement.

6 mm thick plain float glass shall be fixed in the shutters by means of rubber gasket.

The contractor shall submit for approval to the Consultants shop drawings of each type of door, windows, glazing ventilator, etc. The shop drawing should show full size section of doors, windows, etc. thickness of metal, details of construction, anchoring details, hardware and connection of the frame work hardware such as hinges, handles, floor spring, samples of joints of fastenings and joining, etc. along with the shop drawings.

Covering channels:

The aluminum members shall be covered by suitable 15 microns anodized, aluminum channels so that no screens, etc. are visible and the quoted rate shall allow for the same.

Drainage:

The system offered by the contractor shall have a burn in provision for drainage of water.

Replacement and cleaning of glass:

The system offered by the contractor shall allow for easy of cleaning and easy replacement of glass panels.

Technical:

1. The aluminum section shall be extruded from aluminum alloy H.E.9 WP and HV 9 WP as per IS 733 and IS1285 respectively and free from all defects impairing appearance strength and durability. The permissible dimensional tolerance of the extruded section shall be such as not to impair the proper and smooth function / operation and appearance of doors and windows.
2. The aluminum section shall conform to the following parameters also.
 - a) The minimum tensile strength shall be 19 kg. / M.
 - b) The maximum allowable deviation in length from a straight line shall be 0.5 mm/meter.
 - c) The maximum allowable deviation from straight line shall be one degree.
 - d) The maximum permissible twist shall be 0.5 mm/ meter.
3. All aluminum section shall be anodized to matt finish color & shade anodizing shall be 15 microns thick prior to anodizing to all aluminum members shall be rendered uniform in appearance free from scratches stains or other blemishes.
4. All aluminum members shall be wrapped with self adhesive non staining pvc tapes.
5. All members shall be accurately machined and fitted to form hairline joints Prior to assembly- The design of the joint and accessories shall be such that the accessories are fully concealed The fabrication of doors, windows etc. shall be done in suitable section to facilitate easy transportation, handling and installation. Adequate provision shall be made in the members.

For anchoring to supports and fixing of hardware and other fixtures and approved by the Consultants.
6. Fabrication materials shall be erected in an approved manner to protect the material against any damage during transportation the loading and unloading shall be carried out with utmost care.
7. Prior to installation the doors, windows etc. shall be stacked or edge on level bearers and supported evenly the assembled doors/window etc. shall be placed in correct final position in the opening and fixed to wall as per detail and rowel cadmium plated machine screws plugs fasteners etc. of required size and spacing all the joints with approved silicon sealants.
8. In case of composite windows, and doors, the different units are to be assembled first. The assembled composite units should be checked for line, and plump before final location if the situations so warrants.
9. Where aluminum member comes into contact with masonry brick work, concrete, plaster or dissimilar metal, it shall be coated with as approved insulation lacquer paint or plastic tape to ensure that their elector chemical corrosion is avoided Insulating material shall be trimmed off to a clean flush line on completion.

10. The contractor shall be responsible for assembling units, bedding and pointing with mastic and outside, at the transoms and mullions and placing the doors, windows etc-in their respective openings, after the doors/windows etc. have been fixed in their correct assigned position the open hollow sections abutting masonry / concrete shall be filled with cement grout (1 cement : 3 coarse sand) densely packed and finished neat. Backing (grout shall be of the expanding type made by approved additive. The contractor shall be responsible for the doors, windows etc. being, set straight, plumb, level and for their satisfactory operation after fixing is complete.

11. The gap between frames & also gaps in the door & window section shall be filled with approved silicon salient or approved color & made to ensure to complete water tightness the silicon sealant shall be of such color & composition that it would not stained the masonry / concrete work shall receive paint without bleeding will not dag. For run and shall at set hand or dry out under any condition of whether silicon salient shall be apply with special guns as per mfg recommendations.

12. PVC wrapping protecting the anodized finish shall be retained till the glazing work is commenced and all work connected with installation of doors / windows are complete. All aluminum work shall be washed clean with a suitable thinner and left in a finished condition in approved uniform appearance and free from all marks and blemishes.

Mode of measurement and payment:

The clear opening in close position shall be considered for measuring the area of windows. Measurement shall be taken in length and width of completed dimension. The rate includes for execution of whole item and shall be paid for a unit of one square meter as per actual work done.

SPECIFICATION - 7 (SR. NO. – 75)

Providing and fixing 15 micron color anodized **ALUMINUM GLAZING** (Fixed / openable) of aluminum section of size 100.00x50.00x3.00mm (of Banco section no: 2007127 @ wt. of 2.332 kg/run) at top/sides/bottom of Banco make with color anodized aluminum frame with 6mm thick reflective glass of Saint Gobain make of approved color fixing with EPDM rubber gasket / ring, powder coated screws, wall fixtures & fastenings, aluminum cleats and fixtures for openable portion as per details & drawings etc., complete as directed by E.I.C.

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Materials:-

Materials shall be of approved quality and shall be generally confirmed to the latest IS specifications and size, sections are as specified in the item description. The contractor shall order all the materials required for the execution of work as early as necessary and ensure that such materials are on site well ahead of requirement for use in the work. The work involved calls for high standard or workmanship combined with speed and to the entire satisfaction of the consultant.

Reflective Glass windows glazing shall be 6mm thick reflective as mentioned in the item and shall be approved quality free from stains, scratches, bubbles and flaws of any kind and shall be properly cut to fit frames and mullions. All windows shall be glazed from outside with snap fit powder coated aluminum beading complete. The buildings shall be snap fit and shall be fitted without use of screws. No screws other than those on some of the hardware shall be visible.

The specifications, drawings and schedule of quantities cover the major requirement only. Supply and fixing of additional fastenings, fixtures and other items of work not mentioned specifically but which are necessary for satisfactory completion of the work are deemed to be included in the rates quoted by the contractor. Nothing extra shall be paid on this account.

Weather strips, gaskets and sealant shall be of high quality material capable of resisting local environment exposure and performance requirements. Interior primary seal shall be of compression type weather seal.

The contractor shall make his own arrangement for necessary scaffolding / staging, cradle etc., for erection of the aluminum windows etc.

Workmanship:-

Specification for Glazing fixed (composite) window:

The windows shall be made out of extruded aluminum sections.

All joints shall be mechanical.

6mm thick reflective glass shall be fixed in the shutters by means of rubber strip.

The contractor shall submit for approval to the consultants shop drawings of each type of door, window, glazing ventilator etc. The shop drawings should show full size section of doors, windows etc., thickness of metal, details of construction, anchoring details, hardware and connection of the framework hardware such as hinges, handles, floor springs, sample of joints of fastenings and joining etc. along with the shop drawings.

Covering channels:

The members shall be covered by suitable powder coated aluminum channels so that no screens etc. are visible and the quoted rate shall allow for the same.

Drainage:

The system offered by the contractor shall have a built in provision for drainage of water.

Replacement and cleaning of glass:

The system offered by the contractor shall allow for ease of cleaning and easy replacement of glass panels.

Technical consideration:

The aluminum sections shall be extruded from aluminum alloy HE 9 WP & HV 9 WP as per IS 733 and IS 1285 respectively and free from all defects impairing appearance strength and durability. The permissible dimensional tolerance of the extruded sections shall be such as not to impair the proper and smooth function / operation appearance of doors and windows.

The aluminum sections shall be confirmed to the following parameters also.

The minimum tensile strength shall be 19 kgf/m.

The maximum allowable deviation in length from a straight line shall be 0.5 mm/m

The maximum allowable deviation from a straight line shall be 1 degree.

The maximum permissible twist shall be 0.5 mm/m.

All aluminum section shall be powder coated with matt finish color & shade powder coating shall be 6 microns thick prior to powder coating to all aluminum members shall be rendered uniform in appearance free from scratches, stains or other blemishes.

All aluminum members shall be wrapped with self adhesive non staining PVC types.

All members shall be accurately machined and lifted to form hairline joints. Prior to assembly, the design of the joint and accessories shall be such that the accessories are fully concealed. The fabrication of doors, windows etc. shall be done in suitable sections to facilitate easy transportation, handling and installation. Adequate provision shall be made in the members for anchoring to supports and fixing of hardware and other fixtures and approved by the consultants.

Fabricated materials shall be erected in an approved manner to protect the material against any damage during transportation. The loading & unloading shall be carried out with utmost care.

Prior to installation, the doors, windows etc. shall be stacked on edge on level bearers and supported evenly. The assembled doors / windows etc. shall be stacked on edge on level bearers and supported evenly. The assembled doors / windows etc. shall be placed in correct final position in the opening and fixed to wall as per detail and rowel cadmium plated machine screws, plugs, fasteners etc. of required size and spacing. All the joints with approved silicon sealants.

In case of composite windows and doors, the different units are to be assembled first. The assembled composite units should be checked for line, level and plumb before final location if the where aluminum member comes into contact with masonry brick work, concrete, plaster or dissimilar metal, it shall be coated with an approved insulation lacquer paint or plastic tape to ensure that their elector chemical corrosion as avoided. Insulation material shall be trimmed off to a clean flush line on completion.

The contractor shall be responsible for assembling composite units, beading and pointing with mastic inside and outside, at the transoms and mullions and placing the doors, windows etc. in their respective openings, after the doors, windows etc. have been fixed in their correct assigned position the open hollow sections abutting masonry / concrete shall be filled with cement grout (1 cement: 3 coarse sand) densely packed and finished neat backing (grout shall be of the expanding type made by approved additive). The contractor shall be responsible for the doors, windows etc. being set straight, plumb, level and for their satisfactory operation after fixing is complete.

The gap between frames & supports and also gaps in the door & window section shall be filled with approved silicon sealant of approved color and make to ensure the complete water tightness and the silicon sealant shall be of such color and composition that it would not stain the masonry / concrete work. The masonry / concrete work should receive paint without bleeding. Silicon sealant should set or dry out under any condition of weather; silicon sealant shall be applied with special guns as per manufacturer's recommendations.

The PVC wrapping protecting the powder coated finish shall be retained till the glazing work is commenced and all work connected with installation of doors / windows is complete. All aluminum work shall be washed clean with a suitable thinner and left in a finished condition in approved uniform appearance and free from all marks and blemishes.

Mode of measurement and payment:

The clear opening in close position shall be considered for measuring the area of windows.

Measurement shall be taken in length and width of completed dimension.

The rate includes for execution of whole item and shall be paid for a unit of one Sq.m as per actual work done.

The rate shall be paid per one square meter basis as per actual work done.

SPECIFICATION - 8 (SR. NO. – 81)

Providing and laying white glazed tiles equal size pieces for **CHINA MOSAIC WATER PROOFING TREATMENT** to terrace including cleaning the surface, Opening the cracks in 'V' groove pattern & filling the same with cement mortar in 1:1 (1 cement: 1 sand) including brick bat bedding as to have proper slope over a layer of CM 1:3 (1 cement: 3 sand) and filling the joints with CM 1:1 including finishing the top surface with 20mm equal size white glazed tiles pieces including round shape vata, with filling white cement in joints, using chemical water proofing as per mfg., specification & standards with cleaning top surface using acid including drip moulding at the junction of vata & plaster etc.. complete as directed by E.I.C.

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Material: -

The cement shall confirm to M-3 (3.1 / P.9 / V.1). Water shall confirm to M-1 (1.1 to 1.5 / P.9 / V.1). Sand shall confirm to M-6 (6.1 to 6.3 / P.9, 10 / V.1). Water proofing compound shall confirm to manufacturer's specification, brick bats shall confirm to M-14 (14.1 to 14.2 / P.12 / V.1) and cement mortar shall confirm to M-11 (11.1 to 11.3.2 / P.11 / V.1). White glazed tiles used for items shall be broken to proper size and shape. Material shall be got approved by Engineer in charge.

Workmanship: -

Before starting the work the surface on which the treatment to be applied, shall be cleaned off all dirt, dust, mortar drops and other foreign matter. The water proofing treatment to the terrace shall be laid directly on the R.C.C. base slab in bedding with cement solution of water proof compound as and where found necessary for filling the honey combs. The cracks in the slab shall be open in "V" groove pattern before the treatment in down and the same shall be filled with water proof cement mortar in the proportion of 1:1 (1 cement: 1 sand) as directed by Engineer in charge. Approved brick bats in C.M. 1:3 (1 cement: 3 sand) shall be laid average 25mm thick to provide necessary gradient for easy flow rain water. White glazed tiles tukdi than fixing on layer of cement mortar one by one. White glazed tiles tukdi layer shall be pressed & hampered by a wooden block in such a manner that glazed tukdi do not break. Joints of tukdi shall be filled & finished by white cement slurry. Treatment shall contribute along inner side of one parapet and other adjoining walls up to a height of 30cm in the shape of round Vata. Whole terrace shall be flooded with water with blocking the rain water spout / pipe and water leak proof test shall be carried out.

Mode of measurement and payment:-

- The rate including all the material and labour involved in the satisfactory completion of work.
- The item with all respect, the payment shall be made on square meter basis and measurement shall be taken as per the clear inside length and breadth from parapet wall and average over finishing floor as breadth.
- A guarantee bond of ten years guarantee requisite stamp paper shall be given by the contractor to the department. Any defect will be observed later on, shall be rectified by the contractor at his own risk and cost. Contractor shall be bound to carry out all such rectification work without claiming any extra. The rate shall be unit for a one square meter.

SPECIFICATION - 9 (SR. NO. – 82)

Providing & applying **CHEMICAL WATER PROOFING** treatment to the terrace including Surface cleaning: All surface shall be thoroughly cleaned with mechanical means or wire brush to remove dust dirt & all loose portion from the surface of terrace & parapet wall. & wash with water. Surface preparing: All cracks will be opened in V-shape & sealed with Dr Fixit Crack X Paste & any patch work will be repaired with polymer modified mortar, providing and applying two coat of Dr.Fixit pidifine 2K on entire inside area of sunk. Two coat of Dr.fixit pidifine 2K(10 kg Powder + 5 lit Liquid) shall be applied on ready surface in vertically & horizontally direction which is brush applied waterproofing coating & provides excellent impermeable coating & flexible enough to take care of minor cracks in concrete & plaster & good adhesion with cementitious surfaces etc. completed by EIC.

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Description:

Dr. Fixit Pidifine 2K is a acrylic cementitious, polymer modified elastomeric, waterproofing & protective coating composed of best quality Portland cement, properly selected & graded aggregates, additives & acrylic emulsion polymer as a binder. It is applied to waterproof and protect concrete and masonry substrates.

Areas of Application:

Dr. Fixit Pidifine 2K must be applied to new or old concrete substrates that are structurally sound.

- Excellent as a waterproof coating for bathrooms, kitchen sinks, balconies, etc.
- Ideal as a coating for waterproofing of chhajjas, canopies, etc.
- As waterproof coating on internal sides of domestic water tanks.
- Good for waterproofing of sloped roofs.
- As a waterproof coating for terraces of areas up to 100-150 m².

Features & Benefits:

- Elastomeric – elastomeric flexible coating that accommodate cracks up to 2 mm with an elasticity of 40-50%
- Low water permeability – excellent resistance to ingress of water
- Adhesion – excellent adhesion to concrete and masonry surfaces
- Eco-friendly – Non-toxic with low VOC content
- CFTRI certified – as a “potable water safe” coating for waterproofing for water tanks

Method of Application

1. SURFACE PREPARATION:

- The surface of application must be thoroughly prepared by mechanical means, to remove all loose particles, laitance, etc.
- Oil and grease, if any, must be de-greased with suitable solvents. It then must be washed off with jet of water and brought to touch dry state. Any surface undulations, cracks and crevices must be duly filled or repaired with cement sand mortar mixed with latex polymers such as

Dr. Fixit Pidicrete URP / Dr. Fixit Pidicrete MPB.

2. MIXING:

- Shake the liquid component well to a homogenous milky colour.
- Use heavy duty slow speed mechanical mixer fitted with a suitable paddle for mixing the two components of the material.
- In a mixing vessel, slowly add the powder component in to the liquid under continuous stirring. Continue to stir thoroughly to achieve a lump free homogenous slurry.

3. APPLICATION:

- It is important that any pipe inserts or sanitary fittings should have been fitted grouted with suitable products from the Dr. Fixit range well before taking up the application.
- To grout pipe inserts, use Dr. Fixit Pidicrete 5M, non-shrink, flow applied cementitious grout to gaps around the pipes. Water pipes however will be best grouted by filling with polymer modified mortar prepared with Dr. Fixit Pidicrete URP / MPB.
- It is mandatory that all works of plumbing and sanitation must be complete before taking up application of Dr. Fixit Pidifin 2K.
- The surface of application must be pre-wetted thoroughly with water & brought to a touch dry state. Take up the first coat application with a stiff nylon brush. Work well into the substrate, to ensure that all small undulations are completely filled with the coating.
- 6 to 8 hrs after completion of first coat, take up second coat application in a direction perpendicular to the first.
- Complete the application and leave to air cure for 2 days. A moist hessian cloth can be kept over the coated surface to protect it from the effect of direct sunlight, in case of small open balconies or terraces, in bathrooms and internal areas. Leave the coating without water curing for 2 days at least.
- In new bathrooms, typically, Dr. Fixit Pidifin 2K must be applied all over the sunken slab portion and upwards over the masonry walls up to a height of 6-7 feet, i.e. Over the splash zone of shower, etc. to ensure complete waterproofing.
- In refurbishment of bathrooms & wet areas, if brickbat coba waterproofing exists, it will have to be made good by repairing /filling cracks, etc. with polymer modified mortar using Dr.

Fixit Pidicrete URP. Again, pipe inserts etc., must be checked and refilled with Dr. Fixit Pidigrout 5M or Pidicrete URP as the case may be. Water and plumbing pipes must be concealed using polymer modified mortar made from Dr. Fixit Pidicrete URP/ Dr. Fixit Pidicrete MPB.

- Plasters used to re-level surfaces in bathrooms must be admixed with Dr. Fixit Pidiproof LW+. Dr. Fixit Pidifin 2K can then be applied all over. Tile adhesives can directly be used to lay tiles over Dr. Fixit Pidifin 2K, in walls.
- If the membrane is applied in areas exposed to foot traffic, it must be protected with a screed overlaid, during the application itself.

Precautions & Limitations

- Do not part mix. Mix the entire quantity of both the components at one go.
- Do not dilute.
- Always add powder to liquid to avoid lump formation.
- Do not cure by flooding with water.
- Cure the membrane with moist hessian cloths
- Do not conduct any ponding test before it is completely cured for 7 days
- Always protect the membrane with screed in areas exposed to foot and other traffic.

Technical Information

PROPERTIES

Nature and type
Wet density of the mix
pH of the mix
Pot life of the mix @300C in minutes
Elongation at break at DFT of 1 mm
Water permeability

RESULTS

2 component (1 part polymer & 2 part powder)
1.65 – 1.75 gm/ml
10.0 – 12.0
40 minimum
40% minimum
Excellent – no leakage observed after 24 hrs

Coverage

Approximately 0.6 – 0.75 m² / kg at 1 mm thickness in 2 coats, depending on the level of the substrate.

Packing

3 & 15 kg

Shelf Life & Storage

- Shelf life is 12 months from the date of manufacturing.
- Store in shed, protecting from direct sunlight and away from extreme temperature.
- In extremely hot temperature conditions, store in a temperature-controlled environment i.e. less than 300C.

Health & Safety Precautions

- Dr. Fixit Pidifine 2K is alkaline and should not come into contact with skin or eyes.

- Avoid inhalation of dust during mixing.
 - Gloves, goggles and dust masks should be worn, during mixing and handling the product.
- Any contact to eyes should be washed immediately with clean water and seek medical advice

Mode of measurement and payment:-

- The rate including all the material and labour involved in the satisfactory completion of work.
- The item with all respect, the payment shall be made on square meter basis and measurement shall be taken as per the clear inside length and breadth from parapet wall and average over finishing floor as breadth.
- A guarantee bond of ten years guarantee requisite stamp paper shall be given by the contractor to the department. Any defect will be observed later on, shall be rectified by the contractor at his own risk and cost. Contractor shall be bound to carry out all such rectification work without claiming any extra.
- The rate shall be unit for a one square meter.

SPECIFICATION - 10 (SR. NO. – 83)

Providing & applying **CHEMICAL WATER PROOFING** treatment to the terrace / sunk slab including cleaning the surface opening the creaks in " V " grooves patented filling the same water proof cement mortar 1:1(1 cement, 1 sand) including B.B as directed to have proper slope over a layer of C.M. 1:1 (1 cement, 1 sand) including finishing the top surface with 15mm. thick water proof cement plaster in C.M. (1:3) (1 cement, 3 sand) and finishing with a floating coat of neat cement slurry using chemical water proofing compound as per manufactures specifications and standard specifications as per indian Water proofing or equivalent including curing its with specified period as directed and thickness to vary between 75 mm x 100 mm to have proper slope and gradient including vata of 100 mm x 100 mm size on with drip mould inside periphery of the parapet / beam in C.M. 1:1 (1 cement , 1 sand) etc. completed by EIC.

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Material: -

The cement shall confirm to M-3 (3.1 / P.9 / V.1), water shall confirm to M-1 (1.1 to 1.5 / P.9 / V.1), sand shall confirm to M-6 (6.1 to 6.3 / P.9, 10 / V.1), water proofing compound shall confirm to manufacturer's specification, brick bats shall confirm to M-14 (14.1 to 14.2 / P.12 / V.1) and cement mortar shall confirm to M-11 (11.1 to 11.3.2 / P.11 / V.1).

Workmanship: -

The work shall be carried out as per general instruction given by the Engineer in charge.

The water proofing treatment to the terrace shall be laid directly on the R.C.C. base slab in bedding with cement solution of water proof compound as and where found necessary for filling the honey combs. The cracks in the slab shall be open in "V" groove pattern before the treatment in down and the same shall be filled with water proof cement mortar in the proportion of 1:1 (1 cement: 1 sand) as directed by Engineer in charge. Approved brick bats in C.M. 1:3 (1 cement: 3 sand) shall be laid to provide necessary gradient for easy flow rain water. Surface shall fully be covered with joint less water proof $\frac{3}{4}$ thick cement plaster finished smooth with trowel color cement and shall be marked in 0.30m x 0.30m False Square.

The treatment shall contribute along inner side of 1 parapet and other adjoining walls up to a height of 30cm in the shape of round vata. The average thickness of the treatment shall be

hard and though suitable for all mortar domestic purpose and shall be cured for at least 15 days with water filled in terrace up to 15 cm depth at vata. Cement vata as directed and the requirement of parapet and other as adjoining water up to 15 cm depth at vata for 25 to 48 hours as directed.

Mode of measurement and payment:-

- The rate incl. all the material and labour involved in the satisfactory completion of work.
- The item with all respect, the payment shall be made on square meter basis and measurement shall be taken as per the clear inside length and breadth from parapet wall and average over finishing floor as breadth.
- A guarantee bond of ten years guarantee requisite stamp paper shall be given by the contractor to the department. Any defect will be observed later on, shall be rectified by the contractor at his own risk and cost. Contractor shall be bound to carry out all such rectification work without claiming any extra. The rate shall be unit for a one square meter.

SPECIFICATION - 11 (SR. NO. – 84)

Providing & Laying **CINDER FILLING in Sunk slab** including compacting manually with rammer and finishing true line & level at all floor level etc.. complete as directed by E.I.C.

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Materials:-

Cinder shall be confirmed to M-9 (9.1 to 9.3 / P.11 / V.1).

Workmanship:-

The Cinder filling shall be carried out at sunk slab and dummy portion of wall formed due to architectural treatment. The space where cinder shall be laid is cleared of all debris, brick bats, mortar dropping etc. and then filled with cinder in layer not exceeding 20cm. Each layer shall be adequately watered, rammed, and consolidated before the succeeding layer is laid. The cinder shall be rammed with iron rammers where feasible and with the butt ends of crow-bars, where cannot be used. When filling reaches finished level, the surface shall be flooded with water for at least 24 hours and allowed to dry and then rammed and consolidated.

Mode of measurement and payment:-

The payment shall be made for filling in sunk slab and dummy portion of walls. No deduction shall be made for shrinkage or voids, if consolidated as instructed above.

Rate shall include cost of material, labour for filling, compacting, ramming and watering for the satisfactory completion of works. The rate shall be for unit of one cubic meter of actual work done.

Measurement shall be in cubic meter of the actual work done.

SPECIFICATION - 12 (SR. NO. – 86)

Providing and Fixing **PVC Water Tank** of Sintex Pure Water tanks of below mentioned features : Antibacterial, Virgin plastic, Food grade plastic, 100% UV stabilised, rust proof, brighter, stronger, protection against algae formation, maintenance free, triple layer well packed lid of CCWS 0100-01-PURE of required capacity including inlet & outlet nipple etc complete.

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Material:

Polythene used for manufacture of tanks and manhole lids may be high density (HDPE), low density (LDPE) or linear low density (LLDPE) and shall conform to IS10146 polyethylene shall be compounded with white so as to make the tank resistant to ultra violet rays from the sun. the percentage of white content polyethylene shall be 2.5 + 0.5 percent and it shall be uniformly distributed. The materials used for the manufacture of tank, manhole lid and fittings shall be such that they neither contaminate the water nor impart any taste, color, odor or toxicity to water. The material used for making of tank shall be Antibacterial, Virgin plastic, Food grade plastic, 100% UV stabilised, rust proof, brighter, stronger, protection against algae formation, maintenance free and triple layer well packed lid. The tank shall have multi layer of white, black, blue and antibacterial film.

Manufacture and Finish:

The tanks shall be manufactured by rotational molding process each tank and the manhole lid shall be single piece having arrangement for fixing and locking the manhole lid with tanks. Excess material at the mould parting line and near the top rim shall be neatly cut and finished. The internal and external surface of the tanks shall be smooth, clean, and free from hidden internal defects like air bubble, pit and metallic or other foreign material inclusion. Capacity of the tank, minimum weight of the empty tank (without manhole lid) and the manufacture brand name shall be embossed on the top surface of the tank near manhole.

Shape, size & (capacity):

The tank shall be cylindrical vertical with closed top having a manhole. The diameter and height of the tank of various capacities shall be as per manufacturer's specifications and a clearance of + 3% shall be permitted on these dimensions. Capacity of the tank specified or

up to the bottom of the inlet locations whichever is less capacity of the tank shall be specified extra capacity if any, shall be ignored.

Weight and Wall Thickness:

Minimum weight of the empty tank (exclusive of manhole lid fittings) and the minimum wall thickness of top bottom and sides shall be as specified. Wall thickness shall be checked beyond 150mm of the edge where the direction or the plane of the tank surface changes.

Installation and fittings:

The flat base of the tank shall be fully supported over its whole bottom area on a durable rigid flat and level platform sufficiently strong to stand without deflection the weight of the tank when fully filled with water depending upon the capacity and location tanks may be suitably anchored as per the directions of the Engineer in charge. For inlet, outlet, overflow, wash out and other connections fully threaded GI HDPE or PVC connections with hexagonal check nuts and washers on either side of the tank wall shall be provided holes for threaded connection shall be drilled and not punched pipes entering of leveling the tank shall be provided with union and suitably supported on a firm base to avoided damage the tank wall. The lid shall rest evenly and it over the rim of the manhole so as to prevent the ingress of any foreign matter into the tank. The lid shall be providing with suitable arrangement for looking it with the tank

Mode of measurement and payment:-

The rate shall including the cost of tank, manhole lid, Charge and delivery at the place specified Hoisting, Installation, fittings, Platform and anchoring for satisfactory completion of work.

The rate shall be paid per Liter Basis as per actual work done.

Measurement shall be in Liter of actual work done.

SPECIFICATION – 13 (SR. NO. – 88)

Fixing the new reinforcement having **8 / 10 mm dia.** with existing concreting with **REBARING** including boring holes of appropriate dia. and a depth of 150mm in concrete, cleaning the holes, fitting the reinforcement in position and fill up FISCHER chemical in the remaining gap in proper manner etc. complete as directed by EIC. (Reinforcement will be paid separately)

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Material:-

Steel shall conform to M-18 (18.1 to 18.3 / P.13 / V.1), M-20 (20.1 to 20.4 / P.13, 14 / V.1), and Fischer chemical shall confirmed to specifications & approved by Engineer in charge.

Workmanship:-

Boring shall do of appropriate dia. by means of drilling machine in proper manner. The diameter of bore shall quite longer than the diameter of reinforcement to be fixed. The boring shall done in such a manner that it shall not damaged existing reinforced provided in existing concrete. The holes shall clean properly before applying the chemical. The reinforcement shall fit in the bore hole and after that the Fischer chemical shall be fitted in hole in proper manner. In remaining gap after placing the reinforcement mode of measurement of payment.

Mode of measurement and payment:-

The rate includes all the cost of all material, except reinforcement, tools & plants and labour involved in satisfactory completion of work as described above.

The rate shall be for a unit of one number basis.

The measurement shall be in number of actual work done.

SPECIFICATION OF PLUMBING AND SANITATION WORKS:-

SPECIFICATION - 14 (SR. NO. – 14)

Providing and fixing **P.V.C. Nahni Supreme Trap (110x75mm)** nominal diameter of self cleaning design with P.V.C. greeting zali 110mm in size including fixing P.V.C. reducer & rubber paking ring & jointing with adhesive solvent cement iincluding cost of cutting & making good the walls & floor and testing the same etc. complete as directed by E.I.C.

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Materials:

The Nahni trap shall confirm to M-69 (69.1 to 69.3 / P.27 /V.1) (Read P.V.C. nahni trap & greeting zali instead of cast iron nahni trap & greeting zali). It shall have capacity of 4 kg/Sq. cm internal pressure. The jointing materials for pipe i.e. adhesive solvent cement shall be of approved quality and it shall be such that by applying or using it, 100 % water proof joints can be obtained.

Workmanship:

The Nahni trap shall be fitted in pipe line with help of white lead or required material, the joint shall be leak proof and no water seepage shall be allowed. The lead joints shall be done in conformation with IS 782-1976.

Mode of Measurement and Payment:

The rate includes cost of all materials, tools, plants and labor involved in satisfactory completion of work as specified above.

The rate shall be paid per one Number basis as per actual work done.

Measurement shall be in Number of actual work done.

SPECIFICATION – 15 (SR. NO. – 15, 16, 17, 20)

Providing, laying and jointing (to level or slopes) **110mm internal dia. P.V.C. pipes of working pressure 6 kg/sq.cm (FINOLEX / SUPREME / DUTRONE / ASTRA)** for drainage-line in floors including necessary fitting such as bends, tees, clamps at interval of 2m c/c, rubber packing ring, door T, Door cap etc. testing of pipe line, jointing with adhesive solvent cement including cost of jointing materials and all other necessary fixtures, fitting air and water tight testing the line including cutting and making floors and walls as per original/good enough if require.... etc., complete. as directed by E.I.C.

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Materials:

PVC pipes shall confirm to IS 3076-1968, PVC fitting required shall be of best and approved quality.

Workmanship:

Workmanship for PVC pipe shall confirm to 23.8 (2.0 to 2.9.2 / P.162, 163 / V.1).

The pipe shall be fixed in floors or wall in proper level/slope as per detailed drawing and as directed by E.I.C. with the help of all connections with pipe. Connection of fittings shall be made with approved adhesive solvent cement and all joints shall be water tight, necessary testing shall be done. During fixing, no clipart knot building shall be damaged including cutting and making floors and walls as per original.

Mode of Measurement of Payment:

The rate includes all the cost of all materials, tools, plants and labour involved in satisfactory completion of work as described above.

The work shall be carried out as per detailed drawings and as directed by EIC.

The rate shall be for a unit of one running meter of actual work done.

Measurement shall be in running meter of actual work done.

SPECIFICATION - 16 (SR. NO. – 18 & 19)

Providing and fixing **110mm dia. P.V.C. Cowl vent** of working pressure 4 kg/sq.cm including jointing with Supreme adhesive solvent cement including fixing the same in true line and level... etc., completed by EIC

In general the work shall be carried out as per the standard specification of P.W.D., C.P.W.D., relevant drawing and as per the instruction of Engineer in charge.

Materials:

The cowl vent and necessary fittings shall be of rigid P.V.C. and of approved brand and quality having required thickness, uniform internal diameter, without any defect and having capacity of 4 kg/sq. cm internal pressure. The jointing materials for pipe i.e. adhesive solvent cement shall be of approved quality and it shall be such that by applying/using it 100% water proof joints can be obtained.

Workmanship:

The Cowl vent shall be fitted to pipe line with help of white lead or required material, the joint shall be leak proof and no water seepage shall be allowed.

Mode of measurement and payment:

The rate shall include all materials, tools, plants and labor involved in satisfactory completion of work as prescribed as above.

The rate shall be paid per one number basis as per actual work done.

Measurement shall be in number of actual work done.

ANNEXTURE - A

Rates of different materials at site required for the execution of works as per specification and wedges of labour to engaged for the satisfactory completion of the work as per detailed specification.

A) FOR LABOUR:

| Labour | Category | Rate/Unit |
|------------------------|---|-----------|
| 1) Skilled Labour | Makardam Mistry Grade-I Mason Grade-I Carpenter Grade-1 Plumber Grade-I Blacksmith Grade-I Any other, if required | |
| 2) Semi skilled Labour | Bhisti Mason Grade-II Carpenter Grade-II Plumber Grade-II Wireman Grade-II Blacksmith Grade-II Any other, if required | |
| 3) Un skilled Labour | Male Helper Female Helper | |

B) FOR MATERIALS:

| Material | Unit | Rate/Unit | Lead in Kms. |
|--|----------|-----------|--------------|
| 1) Cement | M.Tonne | | |
| 2) Tor steel | M.Tonne | | |
| 3) Mild steel | M.Tonne | | |
| 4) Conventional Brick | 1000 No. | | |
| 5) Coarse sand | Cu.m | | |
| 6) Fine sand | Cu.m | | |
| 7) Kapachi 12mm to 20mm | Cu.m | | |
| 8) Valsadi sag finished size | Cu.m | | |
| 9) Mirror polished kotah stone for flooring | Sq.m | | |
| 10) Mirror polished kotah stone for skirting | Sq.m | | |

| | |
|--|------|
| 11) Polished Kotah stone for flooring | Sq.m |
| 12) Polished Kotah stone for skirting | Sq.m |
| 13) Coloured glazed tiles for flooring | Sq.m |
| 14) Coloured glazed tiles for dado | Sq.m |
| 15) Double side polished kotah stone for cupboard partition & store racks | Sq.m |
| 16) Glass | Sq.m |
| 17) M.S. pipe for relling | Ru.m |
| 18) Galvenized pipe of medium size 15mm to 50mm dia. | Ru.m |
| 19) P.V.C. pipe of 40mm to 160mm dia. | Ru.m |
| 20) Any other major item, if required for the work | |

Signature of Contractor
Date:
Place:

Executive Engineer
Anand Agricultural University,
Anand.

**ANAND AGRICULTURAL UNIVERSITY
ANAND**

Details regarding works executed / on hand due contractor

1. Name of the Firm :
2. Partners :
3. Qualified Staff :
4. Tools Plant & Equipement :
5. Important works :
 - A) Carried out as so far :
 - B) On Hand : Employer / Architect cost
6. Additional information if any :
7. **Rate Analysis with basic rates of** :

Signature of Contractor
Date:
Place:

Executive Engineer
Anand Agricultural University,
Anand.