This is downloadable

INDIAN INSTITUTE OF ENGINEERING SCIENCE AND TECHNOLOGY, SHIBPUR

BIDDING DOCUMENT

(Project Code: DRC/DST/CEGESS/KDB/004/21-22)

Ref.: Advt. No. CGE 1788, dated 07.11.2022

For Supply of

One Set:
Construction of Demo Model of Solar Powered Washroom

Under

Ministry of Science and Technology
Govt. of India (New Delhi)

School of Advanced Materials, Green Energy and Sensor Systems (SAMGESS)

November 07, 2022

Office of the Dean of Research and Consultancy
Indian Institute of Engineering Science and Technology (IIEST) Shibpur
P.O. Botanic Garden, Howrah – 711 103, West Bengal, India

(Institute Project Code: DRC/DST/CEGESS/KDB/004/21-22)

School of Advanced Materials, Green Energy and Sensor systems (SAMGESS)
Indian Institute of Engineering Science and Technology (IIEST) Shibpur
P.O. Botanic Garden, Howrah – 711 103, West Bengal, India

Ref.: Tender Advt. No. CGE 1788, dated 07.11.2022

Complete sealed quotations are invited for the supply of items listed below as per specification mentioned. The quotation should include the delivery charges of the items to Indian Institute of Engineering Science & Technology, Shibpur, and should mention a firm delivery period.

1.	**Important Information:**	
	Location of supply:	School of Advanced Materials, Green Energy and Sensor systems (SAMGESS) Indian Institute of Engineering Science and Technology Shibpur, P.O. Botanic Garden, Howrah 711 103
	Name of Work:	Supply and Installation of One Set: Construction of Demo Model of Solar Powered Washroom
	Estimated value of the equipment	**₹ 3.00 Lakhs**
	Estimated time of supply:	**Within two months of placement of order**
	Earnest Money Deposit	2% of the estimated cost in favour of "The Registrar, IIEST Shibpur" payable at Kolkata.
	Date of publishing tender	**22.11.2022**
	Last date of submission of bid	**15 Days from the date of publication till 6.00PM IST; 7th December 2022**
	Bids shall be submitted offline to:	**Prof. Konika Das Bhattacharyya** **School of Advanced Materials, Green Energy and Sensor systems (SAMGESS)** **Indian Institute of Engineering Science and Technology, Shibpur, Howrah – 711103, West Bengal**
	Date of Opening of Technical Bid	**Next day of last date (except holidays) at 11.30AM IST**
	Clarification needed on Bidding Documents may be inquired to	Prof. Konika Das Bhattacharya, Professor, Deptt. of Electrical Engineering, IIEST Shibpur
	Officer Inviting Bid:	Assistant Registrar (Store & Purchase) , IIEST Shibpur
	Validity	90 days from the date of opening.

2. **Technical bid shall consist of the following Information and supporting documents towards:**	
1	Name of the firm
2	Address of the Registered Office
3	Contact Phone No/ Contact E-mail address
4	Constitution or legal status of Bidder
5	Place of registration
6	Principal place of business
7	Power of attorney of signatory
8	Valid Trade License
9	PAN and GST
10	Authorization letter (in case of dealer)
11	Earnest Money Deposit
12	IT clearance certificate for last three years
13	Bidder quotation no. and date

Dean (R & C)

(A. Code DRC-T017/22-23)

4. Terms and conditions:

i. All rates quoted should be **inclusive** of all taxes, levies, duties, transportation, Packing, forwarding and Insurance Charges (if any). The rates should be quoted both in figures and words. **Request for inclusion of any tax/levy at later stage will not be entertained.**

ii. **The Institute reserves the right to accept or reject all or any of the tenders without assigning any reason whatsoever. The decision of the Institute shall be final in case of any dispute.**

iii. **The vender must complete the work within 60 days from the date of receiving the order.**

iv. The EMD of the successful vendor will be converted as performance security and to be refunded after satisfactory completion of the installation. **The hard copy of EMD (demand draft) should reach to Office of the Registrar, IIEST Shibpur on or before last date of submission of tender.**

v. Materials & accessories used should be as per specification and of Approved Quality (B.I.S.) or by the authorized officer of I.I.E.S.T. Shibpur.

vi. **The vender should quote all the items (as per specification) considering as one complete set.**

vii. **Missing of quotation(s) for one or many items from the set will not be considered and will be summarily rejected.**

viii. Bidder shall furnish an undertaking for providing Comprehensive onsite warranty for any manufacturing defect for a period of three years against each furnished item from the date of supply/installation on their letterhead, failing which, their offer will not be considered.

ix. Bills, Challans in Triplicate & installation report should be presented for payment within 15days of supply/completion of work.

x. The Order no. is to be noted on both challan and Bill.

xi. All bills are to be accompanied by order copies and challans as received.

xii. Payment will be made within 60 days of Submission of proper bills; challans etc. by A/c payee cheque or NEFT, no cash payment will be made under any circumstances.

xiii. Company's Bank account no. with IFSC code, Scanned copy of PAN Card, Certificate of VAT will be attached with e-Tender technical cover.

xiv. All payments are subjected to statutory deductions as and when applicable.

xv. Scanned copy of the latest Income Tax, Sales Tax, Professional Tax clearance certificate, Trade License.

xvi. SELECTION WILL BE MADE PURELY ON ESSENTIAL TECHNICAL DOCUMENTS. The IIESTS authority will evaluate and compare the quotations (the gross amount i.e. inclusive of all taxes, other charges etc.) determined to be substantially responsive i.e. which- (a) meet the qualification criteria specified in the tender, (b) Are properly signed, and (C) Conform to the terms and conditions, specifications without deviations.

xvii. Based on our specifications, image/drawing of item to be provided and Model Name/No. (if applicable) and Brand (if applicable) must be clearly mentioned in the quotation, without which quotation will not be considered.

xviii. In case of non supply of material within the due date i.e. within the date of delivery, the Director, IIEST Shibpur will have the right to impose penalty like forfeiture of performance security and removal of the name from the list of the vendor and resort to risk purchase in full or part thereof at his/her discretion, his/her decision shall be final and bind.

(Seal and signature of bidder)

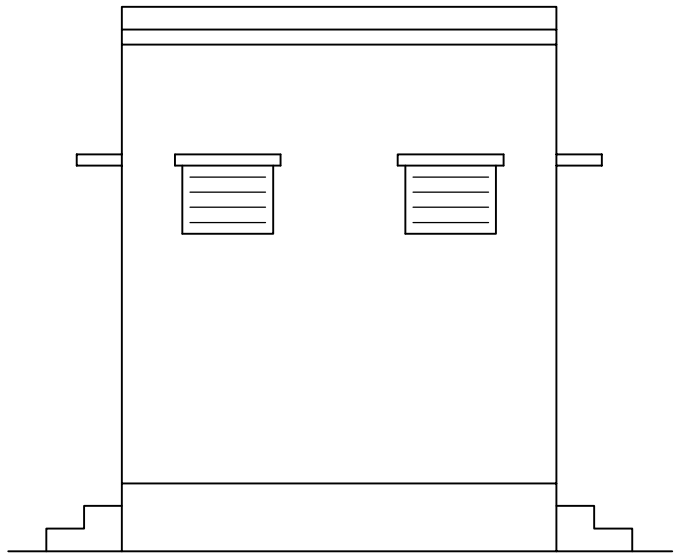
Sd/-
Assistant Registrar
IIEST Shibpur

TECHNICAL SPECIFICATIONS:

One Set: Construction of Demo Model of Solar Powered Washroom

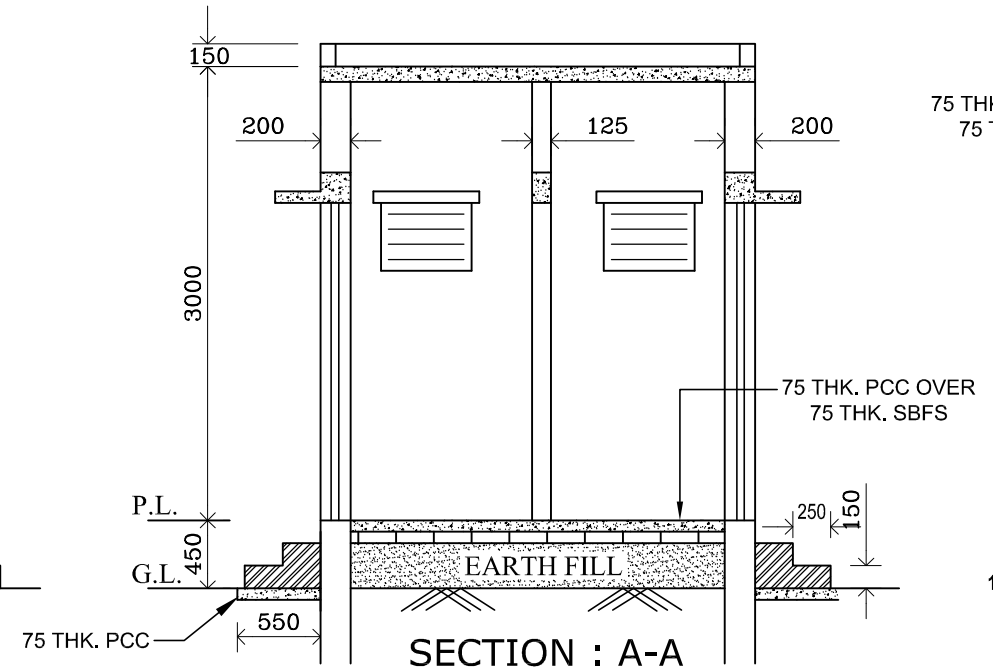
Quantity - 1 Set

* Inclusive of of all taxes, levies, duties, transportation, Packing, forwarding and Insurance Charges (if any).



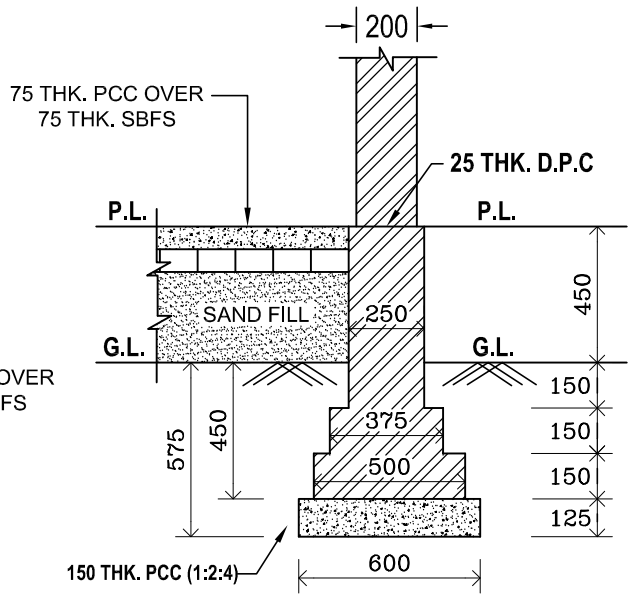
FRONT ELEVATION

SCALE - 1 : 50



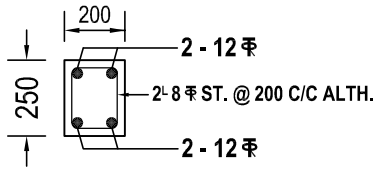
SECTION : A-A

SCALE - 1 : 50



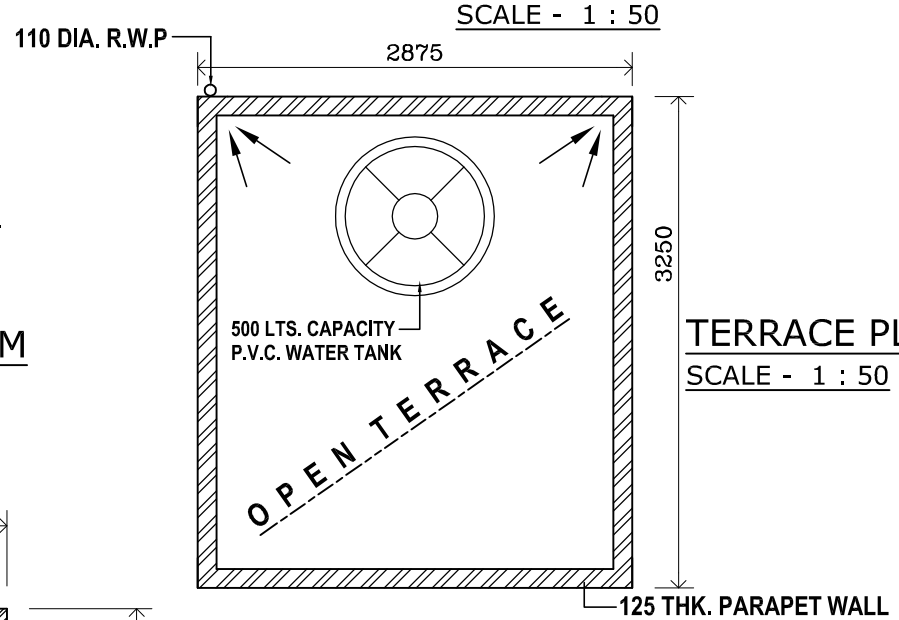
C/S DETAILS OF FOUNDATION

SCALE - 1 : 25



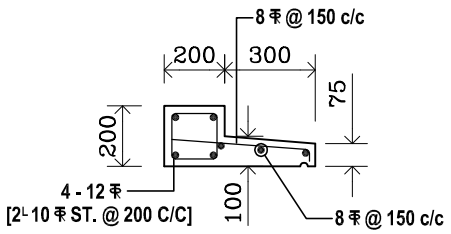
C/S DETAILS OF TIE BEAM

SCALE - 1 : 25



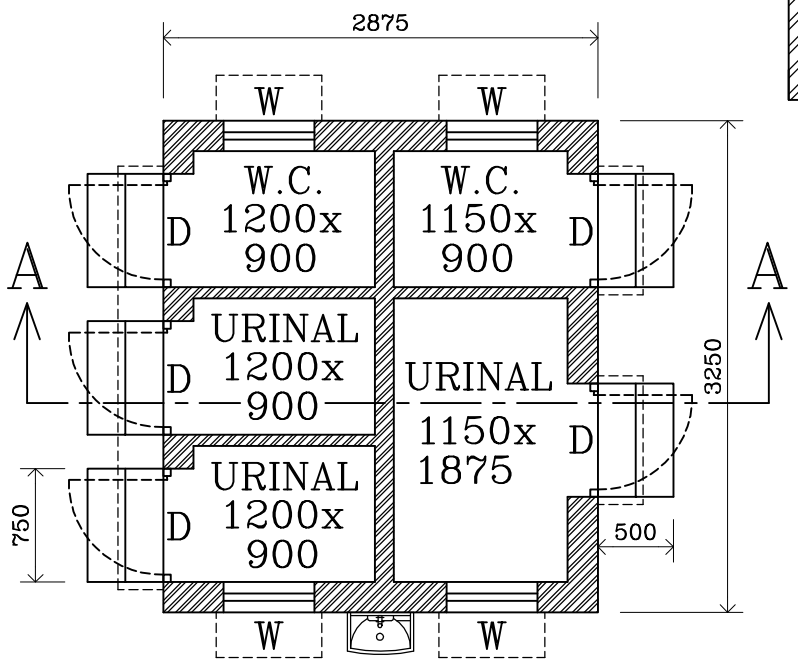
TERRACE PLAN

SCALE - 1 : 50



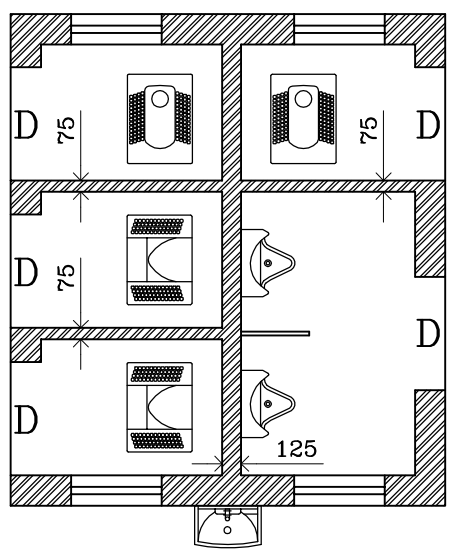
C/S DET. OF LINTEL & CHAJJA

SCALE - 1 : 25



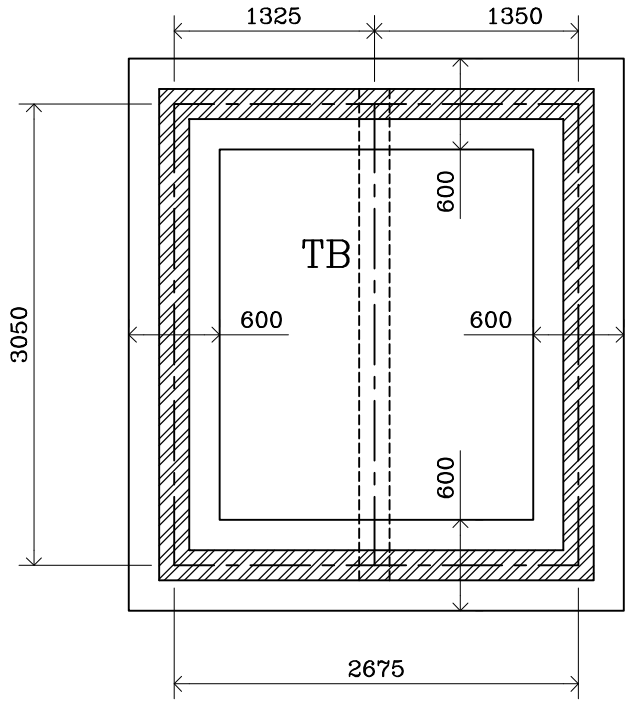
PROPOSED GROUND FLOOR PLAN

SCALE - 1 : 50



ARRANGEMENT OF W.C & URINAL

SCALE - 1 : 50



FOUNDATION TRENCH LAYOUT PLAN

SCALE - 1 : 50

SPECIFICATION & NOTES :-

1. ALL DIMENSIONS ARE IN "MM" UNLESS OTHERWISE
2. GRADE OF CONCRETE FOR R.C.C. WORK - M 20.
3. GRADE OF STEEL FOR R.C.C. WORK - Fe 500. H.Y.S.D. BARS CONFORMING TO IS:1786 - 2008.
4. COVER TO MAIN REINFORCEMENT :- SLAB - 20mm ; BEAM - 30mm.
5. FOUNDATION BRICKWORK WITH 1ST CLASS BRICKS IN CEMENT - SAND MORTAR (1:6).
6. THICKNESS OF ALL OUTER WALLS ARE 200 MM.
7. THICKNESS OF ALL PARTITION WALLS ARE 125 & 75 MM.
8. LAP LENGTH :- 70 x DIA. OF BAR. NOT MORE THAN 50% OF THE BARS SHALL BE SPLICED AT ONE SECTION.
9. SPACING OF STIRRUP SHALL BE PROVIDED AS PER IS:13920-2016 FOR DUCTILE DETAILING REQUIREMENT.
10. ALL BUILDING MATERIALS SHALL CONFORM TO I.S. CODES NATIONAL BUILDING CODE - 2016.

SCHEDULE OF DOORS & WINDOWS.

MKD.	LENGTH	HEIGHT	DESCRIPTION
D	750	2100	SINGLE LEAF PVC DOOR
W	600	450	2-TRACK ALUMINIUM WINDOW

AREA STATEMENT

FLOOR	AREA (SQM)
TOILET AREA	9.34 [100.5 SFT]

CERTIFIED THAT THE FOUNDATION AND THE SUPER - STRUCTURE HAVE BEEN SO DESIGNED THAT IT IS SAFE IN ALL RESPECT INCLUDING THE CONSIDERATION OF BEARING CAPACITY AND SETTLEMENT OF SOIL.

SIGNATURE OF CONSULTING ENGINEER

DRAWING NO. :- DST/IIEST/ST/1

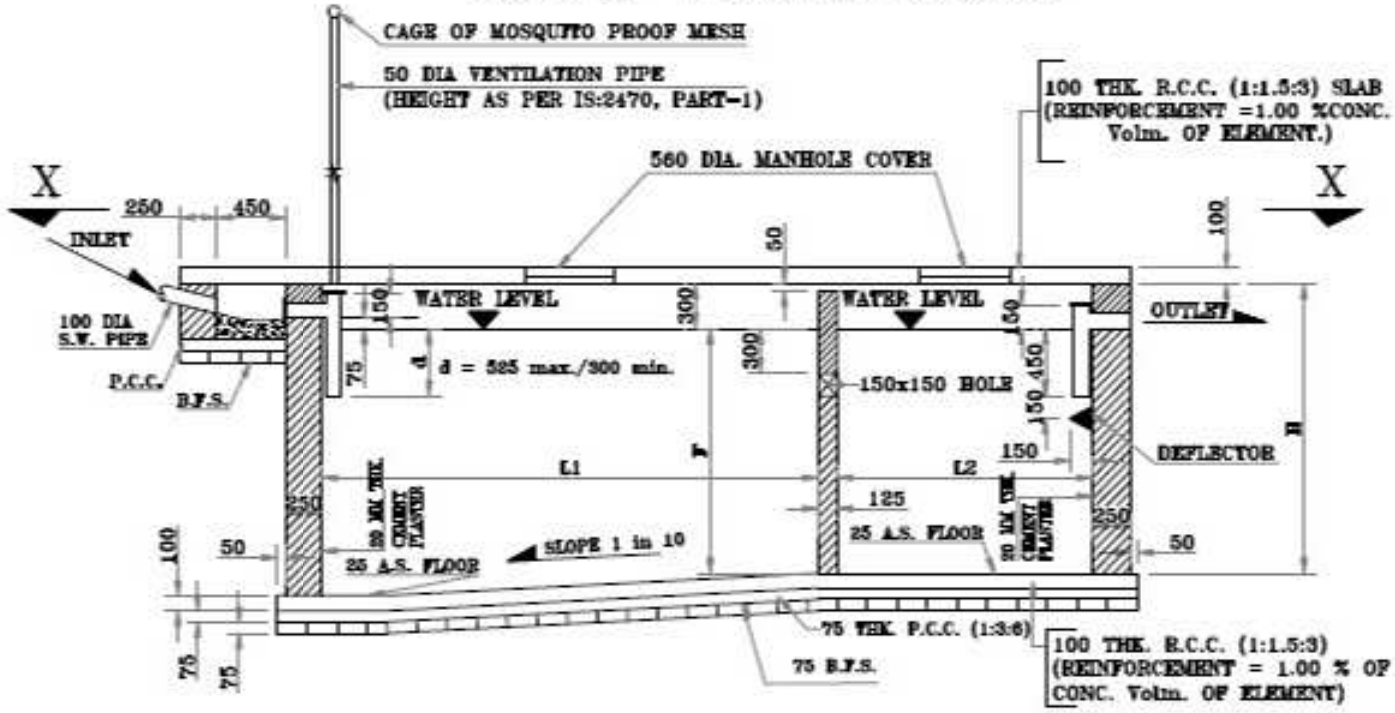
TOILET BLOCK TYPE - I

NAME OF PROJECT :-

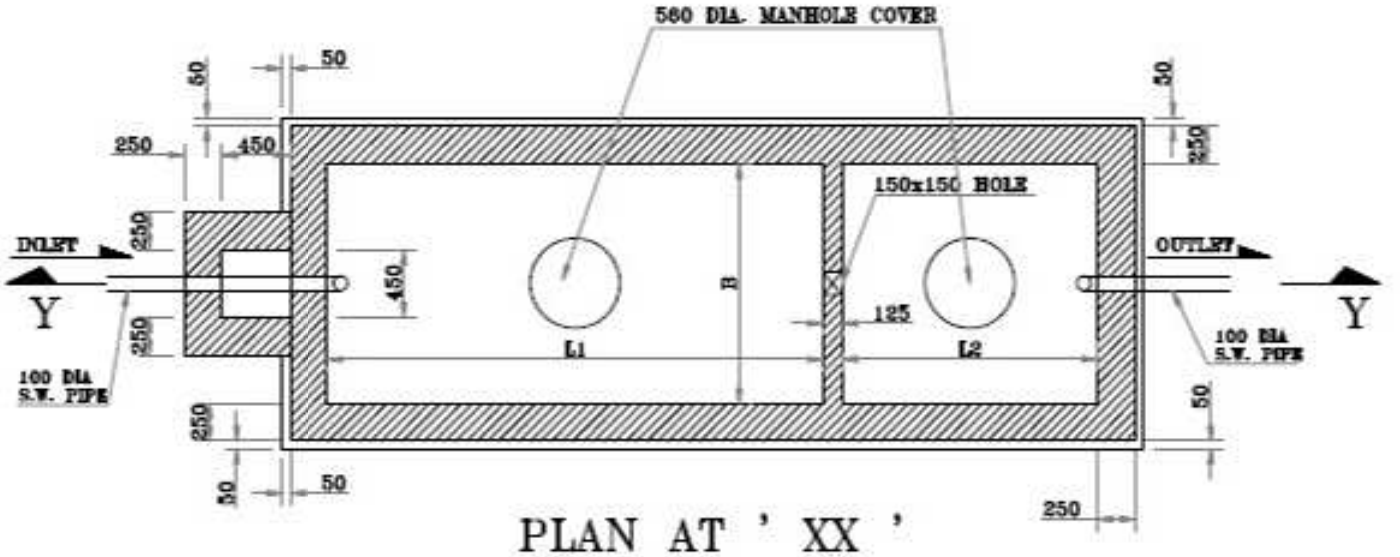
DST, GOI, ***"GOING REMOTE -- SOLAR ENERGY FOR LIGHTING AND HYGIENE SANITATION WITH SMART EXHAUST SYSTEM FOR RURAL APPLICATIONS."***

INDIAN INSTITUTE OF ENGINEERING SCIENCE & TECHNOLOGY, SHIBPUR. HOWRAH - 711 103, WEST BENGAL, INDIA.

SECTION (C) – V :-DRAWING OF SEPTIC TANK



SECTION ON ' YY '



PLAN AT ' XX '

NO. OF USER	L1	L2	B	F	H
200	5900	3000	2700	1400	1700
100	3800	1900	2100	1400	1700
50	3300	1700	1600	1300	1600
30	2000	1000	1500	1300	1600
20	1500	800	1100	1300	1600
10	1300	700	900	1000	1300

DETAILS OF SEPTIC TANK

SCALE :– 1 : 50

ALL DIMENSIONS ARE IN MM

⋙ **Building Works** :--

1) Clearing compound premises of shurbs, plants, jungles etc. by cutting and removing as directed. (Payment to be made on area cleared).

Construction adjacent areas :	1	x	6.00	x	7.00	x	--	=	**42.00 Sq.M**

2) Earth work in excavation of foundation trenches or drains, in all sorts of soil (including mixed soil but excluding laterite or sandstone) including removing, spreading or stacking the spoils within a lead of 75 m as directed. The item includes necessary trimming the sides of trenches, levelling, dressing and ramming the bottom, bailing out water as required complete. Depth of excavation not exceeding 1,500 mm.

Foundation trench :	1	x	11.45	x	0.60	x	0.575	=	3.95 Cu.M
Below stairs :	5	x	0.75	x	0.10	x	0.075	=	0.03 Cu.M
									3.98 Cu.M

3) Earth work in filling in foundation trenches or plinth with good earth, in layers not exceeding 150 mm including watering and ramming etc. layer by layer complete. (Payment to be made on the basis of measurement of finished quantity of work). **With earth obtained from excavation of foundation.**

Foundation trench :	1/5	x	3.98	x	--	x	--	=	0.8 Cu.M
Plinth filling :	1	x	1.125	x	2.85	x	0.30	=	0.96 Cu.M
	1	x	1.15	x	2.85	x	0.30	=	0.98 Cu.M
									2.74 Cu.M

4) Single Brick Flat Soling of picked jhama bricks including ramming and dressing bed to proper level and filling joints with local sand.

Underfloor :	1	x	1.125	x	2.85	x	--	=	3.21 Sq.M
	1	x	1.15	x	2.85	x	--	=	3.28 Sq.M
Tie beam :	1	x	0.25	x	2.85	x	--	=	0.71 Sq.M
									7.20 Sq.M

5) Ordinary Cement concrete (mix 1:2:4) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement,if any, in ground floor as per relevant IS codes. **Pakur Variety.**

Foundation :	1	x	11.45	x	0.60	x	0.125	=	0.86 Cu.M
Underfloor :	1	x	1.125	x	2.85	x	0.075	=	0.24 Cu.M
	1	x	1.15	x	2.85	x	0.075	=	0.25 Cu.M
Stairs :	5	x	0.55	x	0.75	x	0.075	=	0.15 Cu.M
Door clamp fixing :	5	x	0.125	x	0.125	x	0.125	=	0.01 Cu.M
									1.51 Cu.M

6) Ordinary Cement concrete (mix 1:1.5:3) with graded stone chips (20 mm nominal size) excluding shuttering and reinforcement if any, in ground floor as per relevant IS codes. **Pakur Variety.** Ground floor.

Tie Beam :	1	x	3.25	x	0.20	x	0.25	=	0.16 Cu.M
200 Wide Lintel - Door :	1	x	3.25	x	0.20	x	0.20	=	0.13 Cu.M

	2	x	1.25	x	0.20	x	0.20	=	0.10	Cu.M
Window :	4	x	1.00	x	0.20	x	0.20	=	0.16	Cu.M
125 Wide Lintel :	1	x	3.25	x	0.125	x	0.20	=	0.08	Cu.M
Chajja --- W :	2 x 2	x	0.70	x	0.30	x	0.088	=	0.07	Cu.M
Chajja --- Door :	1	x	3.25	x	0.30	x	0.088	=	0.34	Cu.M
	2	x	0.85	x	0.30	x	0.088	=	0.09	Cu.M
Slab :	1	x	2.875	x	3.25	x	0.11	=	1.03	Cu.M
									2.16	**Cu.m**

7) Reinforcement for reinforced concrete work in all sorts of structures including distribution bars, stirrups, binders etc initial straightening and removal of loose rust (if necessary), cutting to requisite length, hooking and bending to correct shape, placing in proper position and binding with 16 gauge black annealed wire at every intersection, complete as per drawing and direction. **Tor steel. (JSW / JSPL / SHYAM / SRMB / BMASL / ELCTROSTEEL / SSL)**

For works in foundation and upto roof of ground floor.

Vol. of R.C. as per Item - 6 :	1	x	2.16	x	0.85%	x	7.85	=	0.144	M.T
Add extra for lapping :	1	x	0.144	x	5.00%	x	--	=	0.007	M.T
									0.151	**M.T**

8) Hire and labour charges for shuttering with centreing and necessary staging upto 4 m using approved stout props and thick hard wood planks of approved thickness with required bracing for concrete slabs, beams, columns, lintels curved or straight including fitting, fixing and striking out after completion of works. **25 mm to 30 mm thick wooden shuttering as per decision & direction of Engineer-In-Charge.**

8.1) Shuttering without staging in foundation upto plinth.

Tie beam :	1	x	2	x	3.25	x	0.25	=	**0.50**	**Sq.M**

8.2) Ground floor :-

200 Wide Lintel - Door :	1	x	2	x	3.25	x	0.20	=	1.30	Sq.M
	2	x	2	x	1.25	x	0.20	=	1.00	Sq.M
Window :	4	x	2	x	1.00	x	0.20	=	1.60	Sq.M
125 Wide Lintel :	1	x	2	x	3.25	x	0.20	=	1.30	Sq.M
Chajja --- W :	2 x 2	x	0.70	x	0.30	x	--	=	0.84	Sq.M
	4 x 2	x	0.30	x	--	x	0.10	=	0.24	Sq.M
Chajja --- Door :	1	x	3.25	x	0.30	x	--	=	3.90	Sq.M
	2	x	0.30	x	--	x	0.10	=	0.12	Sq.M
	1 x 2	x	0.85	x	0.30	x	--	=	0.51	Sq.M
	2 x 2	x	0.30	x	--	x	0.10	=	0.12	Sq.M
Slab :	1	x	2.475	x	2.85	x	--	=	7.05	Sq.M
	1	x	12.25	x	--	x	0.11	=	5.39	Sq.M
									23.37	**Sq.M**

9) Brick work with 1st class bricks in cement mortar (1:6).

9.1) In foundation and plinth.

Foundation upto plinth :	1	x	11.45	x	0.50	x	0.15	=	0.86	Cu.M
	1	x	11.45	x	0.375	x	0.15	=	0.64	Cu.M
	1	x	11.45	x	0.25	x	0.60	=	1.72	Cu.M
Stair :	5	x	0.75	x	0.50	x	0.15	=	0.28	Cu.M

	5	x	0.75	x	0.25	x	0.15	=	0.14	Cu.M
									3.64	**Cu.M**

9.2) In superstructure, Ground floor.

External main walls :	1	x	11.45	x	0.20	x	2.69	=	6.16	Cu.M
Deductions --- W :	4	x	0.60	x	0.20	x	0.45	=	-0.22	Cu.M
Door --- D :	5	x	0.75	x	0.20	x	2.10	=	-1.58	Cu.M
									4.36	**Cu.M**

10) 125 mm thick brick work with 1st class bricks in cement mortar (1:4). In Ground floor.

Internal partition wall :	1	x	2.85	x	--	x	2.69	=	7.67	Sq.M
Parapet wall :	1	x	11.75	x	--	x	0.15	=	1.76	Sq.M
									9.43	**Sq.M**

11) 75 mm thick brick work with 1st class bricks set in cement, sand mortar (1:4) in ground floor including H.B. netting in every alternate layers.

Internal partition wall :	1	x	3.55	x	--	x	2.89	=	**10.26**	**Sq.M**

12) Supplying, fitting & fixing 1st quality Ceramic tiles in walls and floors to match with the existing work & 4 nos. of key stones (10mm) fixed with araldite at the back of each tile & finishing the joints with white cement mixed with colouring oxide if required to match the colour of tiles including roughening of concrete surface, if necessary or by synthetic adhesive & grout materials etc.

12.1) **Floor -** With Sand Cement Mortar (1:4) 20 mm thick & 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg/Sq.m & joint filling using white cement slurry @ 0.20 kg/Sq.m. **Area of each tile upto 0.09 Sq.m. Coloured decorative.**

Ladies W.C :	1	x	1.20	x	0.90	x	--	=	1.08	Sq.M
Gents W.C :	1	x	1.15	x	0.90	x	--	=	1.04	Sq.M
Ladies Urinal :	2	x	1.20	x	0.90	x	--	=	2.16	Sq.M
Gents Urinal :	1	x	1.15	x	1.875	x	--	=	2.16	Sq.M
Door sill :	5	x	0.75	x	0.20	x	--	=	0.75	Sq.M
									7.19	**Sq.M**

12.2) **Wall -** With Sand Cement Mortar (1:3) 15 mm thick & 2 mm thick cement slurry at back side of tiles using cement @ 2.91 Kg/Sq.m & joint filling using white cement slurry @ 0.20 kg/Sq.m. **Area of each tile upto 0.09 Sq.m. Coloured decorative.**

Ladies W.C :	1	x	(1.20	+	0.90)	x	2	x	0.90	=	3.78	Sq.M
Gents W.C :	1	x	(1.15	+	0.90)	x	2	x	0.90	=	3.69	Sq.M

Ladies Urinal :	2	x	(1.20	+	0.90)	x	2	x	0.90	=	7.56	Sq.M
Gents Urinal :	(2	x	0.45	+	1.875)	x	1.20			=	3.33	Sq.M
Basin front :	1	x	0.90	x	--	x	0.60			=	0.54	Sq.M
Deductions --- Door - D :	4	x	0.75	x	--	x	0.90			=	-2.70	Sq.M
											16.20	**Sq.M**

13) 25 mm thick damp proof course with cement concrete with stone chips (1:1.5:3) [with graded stone aggregate 10 mm nominal size] and admixture of water proofing compound as per manufacturer's specification followed by two coat of polymer based paint, (1st coat after 4 to 5 days of concrete laying and 2nd coat just before brick masonry work) as directed (cost of water proofing compound & polymer based paint to be paid separately). (Chequering not required over concrete or painted surface).

External wall :	1	x	11.45	x	0.20	x	--	=	**2.29 Sq.M**

14) Extra rate for using water proofing and plasticising admixture @ 0.2% by weight of cement (or at manufacturer's specified rate) for concrete of various grades.

Cement @ 0.286 m^3/m^3 =	1	x	2.29	x	0.025	x	0.286	=	0.02 Cu.M
Water proofing =	0.02	/	0.7	x	1000	x	0.20%	=	**0.06 Kg**
and plasticising admixture									

15) Applying 2 coats of bonding agent with synthetic multi functional rubber emulsion having adhesive and water proofing properties by mixing with water in proportion (1 bonding agent : 4 water : 6 cement) as per Manufacturer's specification.

Damp proof course :	From Item No. 13	=	**2.29 Sq.M**

16) Labour for Chipping of concrete surface before taking up Plastering work.

Slab soffit :	1	x	2.475	x	2.85	x	--	=	**7.05 Sq.M**

17) Plaster (to wall, floor, ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary. [Excluding cost of chipping over concrete surface]. **In ground floor.**

17.1) **Internal plaster :-**

17.2) **With 1:4 cement mortar, 10 mm thick.**

Ladies W.C :	1	x	1.20	x	0.90	x	--	=	1.08 Sq.M
Gents W.C :	1	x	1.15	x	0.90	x	--	=	1.04 Sq.M
Ladies Urinal :	2	x	1.20	x	0.90	x	--	=	2.16 Sq.M
Gents Urinal :	1	x	1.15	x	1.875	x	--	=	2.16 Sq.M
									6.44 Sq.M

17.3) **With 1:6 cement mortar, 20 mm thick.**

Ladies W.C :	1	x	(1.20	+	0.90)	x	2 x 2.89	=	12.14 Sq.M
Gents W.C :	1	x	(1.15	+	0.90)	x	2 x 2.89	=	11.85 Sq.M

Ladies Urinal :	2	x	(1.20	+	0.90)	x	2 x 2.89	=	24.28 Sq.M
Gents Urinal :	1	x	(1.15	+	1.875)	x	2 x 2.89	=	17.48 Sq.M
Deductions --- Door - D :	5	x	0.75	x	1/3	x	2.10	=	-2.63 Sq.M
Windows --- W :	4	x	0.60	x	1/3	x	0.45	=	-0.36 Sq.M
Wall tiles area :			From Item No. 11.2					=	-16.20 Sq.M
									46.56 Sq.M

17.4) **External plaster :-**

17.5) **With 1:6 cement mortar, 15 mm thick.**

Building --- Front & Back :	2	x	2.875	x	--	x	3.60	=	20.70	Sq.M
Building --- Sides :	2	x	3.25	x	--	x	3.60	=	23.40	Sq.M
Stair treads :	5	x	0.75	x	0.25	x	2	=	1.88	Sq.M
Stair sides :	5	x	0.50	x	--	x	0.15	=	0.38	Sq.M
	5	x	0.25	x	--	x	0.15	=	0.19	Sq.M
Parapet -- Top & Inside :	1	x	11.75	x	0.125	x	--	=	1.47	Sq.M
	2	x	2.75	x	--	x	0.15	=	0.83	Sq.M
	2	x	3.125	x	--	x	0.15	=	0.94	Sq.M
Chajja --- W :	4	x	2	x	0.70	x	0.30	=	1.68	Sq.M
	4	x	2	x	0.30	x	0.10	=	0.24	Sq.M
Chajja --- Door :	1	x	2	x	3.25	x	0.30	=	1.95	Sq.M
	1	x	2	x	0.30	x	0.10	=	0.06	Sq.M
	2	x	2	x	0.85	x	0.30	=	1.02	Sq.M
	2	x	2	x	0.30	x	0.10	=	0.12	Sq.M
Deductions --- Door - D :	2	x	0.75	x	1/3	x	2.10	=	-1.05	Sq.M
	3	x	0.75	x	1/3	x	2.10	=	-1.58	Sq.M
Windows --- W :	4	x	0.60	x	1/3	x	0.45	=	-0.36	Sq.M
									51.87	Sq.M
Add extra for design (L.S) :	1	x	51.87	x	5.00%	x	--	=	2.59	Sq.M
									54.46	**Sq.M**

18) Neat cement punning about 1.5 mm thick in wall, dado, window sill, floor etc. NOTE : Cement 0.152 cu.m per 100 sq.m.

Plinth dado --- Front & Back :	2	x	2.875	x	--	x	0.45	=	2.59	Sq.M
Sides :	2	x	3.25	x	--	x	0.45	=	2.93	Sq.M
Stair treads :	5	x	0.75	x	0.25	x	2	=	1.88	Sq.M
Stair sides :	4	x	0.50	x	--	x	0.15	=	0.30	Sq.M
	4	x	0.25	x	--	x	0.15	=	0.15	Sq.M
									7.85	**Sq.M**

19) Supplying, Fitting & Fixing Factory made P.V.C. door frame of size 50 mmx47 mm with a wall thickness of 5 mm, made out of extruded 5 mm, PVC sheet miter cut at two corners and joined with two nos of 1.5 mm long brackets of 15 mm x15 mm M.S. square tube. The two vertical door profiles are to be reinforced with 19 mmx 19 mm M.S. Square tube of 19 gauge, weather seal to be provided through out the frame. The door frame shall be fixed with the wall using 65/100 mm long M.S. Screws through the frame by using P.V.C fasteners. A minimum of 4 Nos of screws to be provided for each vertical member and minimum 2 Nos for horizontal member etc. complete as per Manufacturer‟s specification and direction of Engineer-in-Charge.

Ground floor - D :	5	x	4.95	x	--	x	--	=	**24.75**	**Mtr.**

20) Supplying, Fitting & Fixing **30 mm thick** Factory made solid Panel PVC Door Shutter consisting of outer frame made out of M.S. tubes of 19 gauge thickness and size 19 mmx19 mm for styles, top and bottom rails, M.S. frame shall have cost of steel primers of approved make and manufacture, M.S. frame covered with 5 mm th. heat moulded PVC "C" channel of size 30 mm th, 70 mm width out of which 50 mm shall be flat and 20 mm shall be tapered in 45 degree angle on either sides forming styles; and 5 mm th. 95 mm wide PVC sheet out of which 75 mm shall be flat and 20 mm tapered in 45 degree on the inner side to form top & bottom rail and 115 mm wide PVC sheet out of which 75mm shall be flat and 20 mm shall be tapered on both sides to form lock rail. Top, bottom and lock rails shall be provided either side of the panel with 10 mm (5 mmx2) th.,20 mm wide cross PVC sheet as gap insert for top rail and bottom rail. Paneling of 5 mm th. both side PVC sheet to be fitted in the M.S. frame welded/sealed to the styles &rails with 7 mm (5 mm+2 mm) th.x15 mm wide PVC sheet beading on inner side and joined together with solvent cement adhesive. An additional 5 mm th. PVC strip of 20 mm which is to be stuck on the interior side of the "C" channel using PVC solvent adhesive etc. complete excluding all necessary hardwares as per direction of Engineer-in-Charge. In ground floor.

Door shutter - D :	5	x	--	x	0.70	x	2.075	=	**7.26 Sq.M**

21) Supplying, fitting and fixing M.S. clamps for door and window frame made of flat bent bar, end bifurcated with necessary screws etc. by cement concrete(1:2:4) as per direction. (Cost of concrete will be paid separately). **40mm X 6mm, 125 mm Length.**

Door frame : D :	5	x	3	x	2	x	--	=	**30.00 No.**

22) Anodised aluminium butt hinges of approved quality manufactured from extruded section conforming to I.S. specification (I.S. 205/66) and fitted and fixed with cadmium plated screws. **65 x 45 x 2.5mm.**

Door - D (PVC) :	5	x	3	x	--	x	--	=	**15.00 No.**

23) Anodised aluminium Aldrop/Sliding bolts of approved quality manufactgured from extruded section conforming to I.S. specification (I.S. 2681/66) fitted and fixed complete. **300 mm x 16 mm dia bolt.**

Door - D (PVC) :	5	x	1	x	--	x	--	=	**5.00 No.**

24) Anodised aluminium barrel/ tower/ socket bolt (full covered) of approved manufactured from extruded section conforming to I.S. 204/74 fitted and fixed with cadmium plated screws. **200mm long x 10mm dia. bolt.**

Door - D (PVC) :	5	x	1	+	3	x	--	=	**8.00 No.**

25) Anodised aluminium D - type handle of approved quality manufactured from extruded section conforming to I.S. specification (I.S. 230/72) fitted and fixed complete. With continuous plate base (hexagonal/round rod). **125 mm grip x 10 mm dia rod.**

Door - D (PVC) :	5	x	2	x	--	x	--	=	**10.00 No.**

26) Supplying,fitting & fixing of 2-Track / 3-Track Aluminium sliding Window of all Aluminium sections viz. window frame (top,bottom & side frame), shutter (top, bottom, side & interlock member) made of aluminium alloy extrusions conforming to IS 733-1983 & IS 1285-1975, annodised conforming to IS 1868-1983, fitted with all other accessories viz. PVC roller, EPDM gasket, maruti lock, screws etc. including labour charges for fitting & fixing of aluminium 2-track/3-track sliding window with fixing of glass (excluding cost of glass) all complete as per architectural drawings and direction of Engineer-in-charge. **10-12 Micron thickness Annodizing film. Natural white.**

2 - Track sliding window, W :	4	x	0.60	x	--	x	0.45	=	1.08	Sq.M
	1	x	1.08	x	5.50	Kg/Sq.M		=	**5.94**	**Kg**

27) Supplying bubble free float glass of approved make and brand conforming to IS: 2835-1987. **4mm thick clear glass**

Louvered window - W :	4	x	--	x	0.60	x	0.45	=	**1.08**	**Sq.M**

28) White washing including cleaning and smoothening surface thoroughly. Three coats (on new works only).

Internal wall surface :	From Item No. 17.2 & 17.3	=	**53.00**	**Sq.M**

29) Applying Exterior grade Acrylic primer of approved quality and brand on plastered or cencrete surface old or new surface to receive decorative textured (matt finish) or smooth finish acrylic exterior emulsion paint including scraping and preparing the surface throughly, complete as per manufacturer's specification and as per direction of the EIC. **One coat.**

External wall surface :	From Item No. 17.5	=	**54.46**	**Sq.M**

30) Protective and Decorative Acrylic exterior emulsion paint of approved quality, as per manufacturer's specification and as per direction of Engineer-in-Charge to be applied over acrylic primer as required. The rate includes cost of material, labour, scaffolding and all incidental charges but excluding the cost of primer. **Two coats. Super Protective 100% Acrylic Emulsion.**

External wall surface :	From Item No. 29	=	**54.46**	**Sq.M**

31)

Supplying, fitting & fixing UPVC pipes A - Type and fittings conforming to IS:13592-1992 with all necessary clamps nails, including making holes in walls, floor etc. cutting trenches in any soil through masonry concrete structures etc if necessary and mending good damages including joining with jointing materails (Spun Yarn, Valamoid/Bitumen/M-Seal etc) complete.

UPVC Pipes - 110 mm dia.

Rain water pipes :	1	x	--	x	--	x	3.30	=	**3.30**	**Mtr.**

<u>UPVC Fittings</u> :-

31.1)	Plain Tee - 110 mm :	1	x	1	x	--	x	--	=	**1.00**	**No.**
31.2)	Bend 87.5^{o} - 110 mm :	1	x	1	x	--	x	--	=	**1.00**	**No.**
31.3)	Shoe - 110 mm :	1	x	1	x	--	x	--	=	**1.00**	**No.**

⋙ **<u>Sanitary & Plumbing Works</u>** :--

32) Wash basin vitreous china of approved make (without fittings) supplied, fitted and fixed in position on 75mm X 75 mm X 75 mm wood blocks and C.I. brackets including two coats of painting of C.I. brackets. **550 mm X 400 mm size.**

Toilet outside :	1	x	1.00	x	--	x	--	=	**1.00**	**No.**

33) Supplying, fitting and fixing approved brand P.V.C. CONNECTOR white flexible, with both ends coupling with heavy brass C.P. nut, 15 mm dia. **450 mm long.**

Wash basin :	1	x	1.00	x	--	x	--	=	1.00 No.
Cistern :	2	x	1.00	x	--	x	--	=	2.00 No.
Urinal :	2	x	1.00	x	--	x	--	=	2.00 No.
									5.00 No.

34) Supplying, fitting and fixing approved brand 32 mm dia. P.V.C. waste pipe with PVC coupling at one end fitted with necessary clamps. **750 mm long.**

Wash basin :	1	x	1.00	x	--	x	--	=	1.00 No.
Urinal :	2	x	1.00	x	--	x	--	=	2.00 No.
									3.00 No.

35) Supplying, fitting and fixing pillar cock of approved make. PTMT Pillar Cock - 15 mm. (Prayag or equivalent)

Wash basin :	1	x	1.00	x	--	x	--	=	**1.00 No.**

36) Supplying, fitting and fixing Orissa pattern water closet in white glazed vitreous chinaware of approved make in position complete excluding 'P' or 'S' trap (excluding cost of concrete for fixing). **580 mm X 440 mm.**

Toilets :	2	x	1.00	x	--	x	--	=	**2.00 No.**

37) Supplying, fitting and fixing Flat back urinal (half stall urinal) in white vitreous chinaware of approved make in position with brass screws on 75 mm X 75 mm X 75 mm wooden blocks complete. **470 mm X 280 mm X 340 mm.**

Gents urinal :	2	x	1.00	x	--	x	--	=	**2.00 No.**

38) Supplying, fitting and fixing porcelain partition wall of approved make of size **618 mm X 310 mm** complete in all respect.

Gents urinal :	1	x	1.00	x	--	x	--	=	**1.00 No.**

39) Supplying, fitting and fixing Squating plate with integral flushing in white vitreous chinaware of approved make in cement concrete (6:3:1) with jhama chips complete. (Payment of concrete will be paid seperately). **450 mm X 350 mm.**

Ladies urinal :	2	x	1.00	x	--	x	--	=	**2.00 No.**

40) Supplying, fitting and fixing 10 litre P.V.C. low-down cistern conforming to I.S. specification with P.V.C. fittings complete,C.I. brackets including two coats of painting to bracket etc.

Toilets (W.C) :	2	x	1.00	x	--	x	--	=	**2.00 No.**

41) Supplying, fitting and fixing 32 mm dia. Flush Pipe of approved make with necessary fixing materials and clamps complete. **Polythene Flush Pipe.**

Orissa pattern water closet :	2	x	1.00	x	--	x	--	=	**2.00 No.**

42) Supplying, fitting and fixing bevelled edged mirror 5.5 mm thick silver red as per I.S. 3438 / 1965 together with brass C.P. hinges. **600 mm X 450 mm.**

Basin front :	1	x	1.00	x	--	x	--	=	**1.00 No.**

43) Supplying, fitting and fixing bib cock or stop cock. PTMT (Polytetra Bib Cock / Stop Cock (Prayag or equivalent). **15 mm.**

W.C. :	2	x	2.00	x	--	x	--	=	4.00 No.
Urinal (Gents) :	2	x	1.00	x	--	x	--	=	2.00 No.
Urinal (Ladies) :	2	x	1.00	x	--	x	--	=	2.00 No.
Basin :	1	x	1.00	x	--	x	--	=	1.00 No.
									9.00 No.

44) Supplying, fitting and fixing towel rail with two brackets. C.P. over brass. **25 mm dia. and 450 mm long.**

W.C :	2	x	1.00	x	--	x	--	=	**2.00 No.**

45) Supplying, fitting and fixing soap holder. PTMT (Prayag or equivalent).

Basin front :	1	x	1.00	x	--	x	--	=	**1.00 No.**

46) Supplying P.V.C. water storage tank of approved quality with closed top with lid (Black) - Multilayer. **500 litre capacity.**

Overhead reservoir :	1	x	1.00	x	--	x	--	=	**1.00 No.**

47) Labour for hoisting plastic water storage tank. Upto 1500 litre capacity. Upto 1st storey from G.L.

Upto 1st storey from G.L. :	1	x	1.00	x	--	x	--	=	**1.00 No.**

48) Labour for punching hole in plastic water storage tank upto 50 mm dia.

Overhead reservoir :	1	x	3.00	x	--	x	--	=	**3.00 No.**

49) Supplying, fitting and fixing Peet's valve fullway gunmetal standard pattern best quality of approved brand bearing I.S.I. marking with fittings (tested to 21 kg per sq. cm.). **25 mm dia.**

Tank connection :	1	x	1.00	x	--	x	--	=	**1.00 No.**

50) Supplying, fitting and fixing PVC pipes of approved make of Schedule 80 (medium duty) conforming to ASTMD - 1785 and threaded to match with GI Pipes as per IS : 1239 (Part - I). with all necessary accessories, specials viz. socket, bend, tee, union, cross, elbo, nipple, longscrew, reducing socket, reducing tee, short piece etc. fitted with holder bats clamps, including cutting pipes, making threads, fitting, fixing etc. complete in all respect including cost of all necessary fittings as required,jointing materials and two coats of painting with approved paint in any position above ground.

50.1) For Exposed Work, PVC Pipes, **25 mm dia.**

Water inlet & branch line :	1	x	10.00	x	--	x	--	=	10.00	mtr.
	2	x	3.50	x	--	x	--	=	7.00	mtr.
									17.00	**mtr.**

50.2) For Exposed Work, PVC Pipes, **15 mm dia.**

Internal distribution line :	4	x	1.50	x	--	x	--	=	6.00	mtr.
	2	x	2.00	x	--	x	--	=	4.00	mtr.
									10.00	**mtr.**

51)

Supply of UPVC pipes (B Type) & fittings conforming conforming to IS:13592-1992.

51.1) Single Socketed 3 Meter Length, 110 mm dia.

W.C. Sewer Line :	1	x	3.00	x	--	x	--	=	3.00	Mtr.
Waste water line :	2	x	3.50	x	--	x	--	=	7.00	Mtr.
Basin waste Line :	1	x	2.00	x	--	x	--	=	2.00	Mtr.
									12.00	**Mtr.**

<u>UPVC Fittings</u> :-

51.2) Door Tee , 110 mm :	3	x	1	x	--	x	--	=	**3.00**	**No.**
51.3) Bend 87.5º , 110 mm :	3	x	1	x	--	x	--	=	**3.00**	**No.**
51.4) Vent cowl , 110 mm :	1	x	1	x	--	x	--	=	**1.00**	**No.**
51.5) Pipe Clip , 110 mm :	2	x	5	x	--	x	--	=	**10.00**	**No.**
51.6) Round Jali, 75 mm :	2	x	2	x	--	x	--	=	**4.00**	**No.**
51.7) Rubber Ring , 110 mm :	2	x	5	x	--	x	--	=	**10.00**	**No.**
51.8) Rubber Lubricant (500 ml) :	1	x	1	x	--	x	--	=	**1.00**	**No.**
51.9) Solvent cement (250 ml) :	1	x	1	x	--	x	--	=	**1.00**	**No.**

52) Labour for fitting and fixing U.P.V.C. pipes for above ground work including cost of jointing materials etc. fitting and fixing all necessary specials, cutting pipes, cutting holes in walls or R.C. floor where necessary and mending good all damages excluding the cost of masonry or concrete work, if necessary, but including the cost and fitting and fixing holder bat clamps (any floor) or for underground work including cutting trenches upto 1.5 metre and refilling the same complete as per direction of the Engineer-in-charge. (Payment will be made on centre line measurement of the total pipeline including specials. **Above ground, 110 mm dia.**

From Item No. 50.1 :	1	x	12.00	x	--	x	--	=	**12.00 Mtr.**

53) Construction of septic tank of different capacities as per approved drawing with 1st class brick work in cement mortar (1:4) including two 560 mm dia. R.C.C. manhole cover (heavy type) of approved make supplied, fitted and fixed in the 100mm thick R.C.C (1:1.5:3) top slab with necessary fittings, 20mm thick cement plaster (4 : 1) with neat cement finish to the internal surfaces and 15 mm thick cement plaster (4 : 1) to outside wall upto 200 mm below G.L floor finished with 25 mm thick grey artificial stone over 100 mm thick R.C.C (1:1.5:3) bottom slab including supplying, fitting and fixing all necessry specials, fittings, S.W. tees, C.I. foot rest etc. including excavation earth in all sorts of soil, shoring, bailing out and pumping out water as necessary, ramming, dressing the bed and fefilling the sides of the tanks with earth, removing spoils, filling up the chamber with clear water, removing foreign materials from the chamber and including constructing attached inspection pit as per approved drawing and connecting all necessary pipes, joints etc. with internal plaster work and artificial stone flooring is to be done with admixture of water proofing compound @ 0.5% by weight of cement with all costs of labour and materials. **For 20 users. With Pakur variety (JSW / JSPL / SHYAM / SRMB / BMASL / ELCTROSTEEL / SSL).**

Sewerage system :	1	x	1.00	x	--	x	--	=	**1.00 No.**