

PMAY-G MODEL NO.1

BAMBOO TECHNOLOGY WITH MUD BLOCKS



PROPOSED PRADHAN MANTRI AWAAS YOJANA (PMAY-G) RURAL HOUSE MODELS

MODEL NO.1 - BAMBOO TECHNOLOGY WITH STABILISED MUD BLOCKS

S.No.	GENERAL SPECIFICATIONS:-	DESCRIPTIONS
1.	Foundation	Strip foundation with stone masonry and stub footing for bamboo props.
2.	Plinth Walls	Stone Masonry plinth with earth back-filling.
3.	Columns	100-125 mm dia. Bamboo Columns. (Treated Bamboos)
4.	Superstructure	Bamboo frame Structure with bamboo roof truss as per designed.
5.	Wallings	Stabilized adobe Mud Block 115mm thick at a height of 1 metres from P.L. & upper portions of bamboo wall panels fixed to main bamboo structural supports and 100 mm thick Bamboo Strip - Chicken mesh Ekra Walling at a height of 1.9 metres. [Note: Brick wall can also be used in place of Mud Blocks]
6.	Doors	Local wood/ Timber framed full panelled doors.
7.	Windows	Local wood/ Timber framed with glass panes.
8.	Ventilators	Local wooden frame ventilators with glass panes.
9.	Flooring	Plain cement flooring over RCC bed on a back filled plinth stone masonry walls.
10.	Roof Structure	Hipped Roof with Bamboo roofing members (Rafters, ties and purlins) with an angle of slope of 30 degrees.
11.	Roof Cover	CGI Sheets used as roof cover and are fastened using J-bolts.

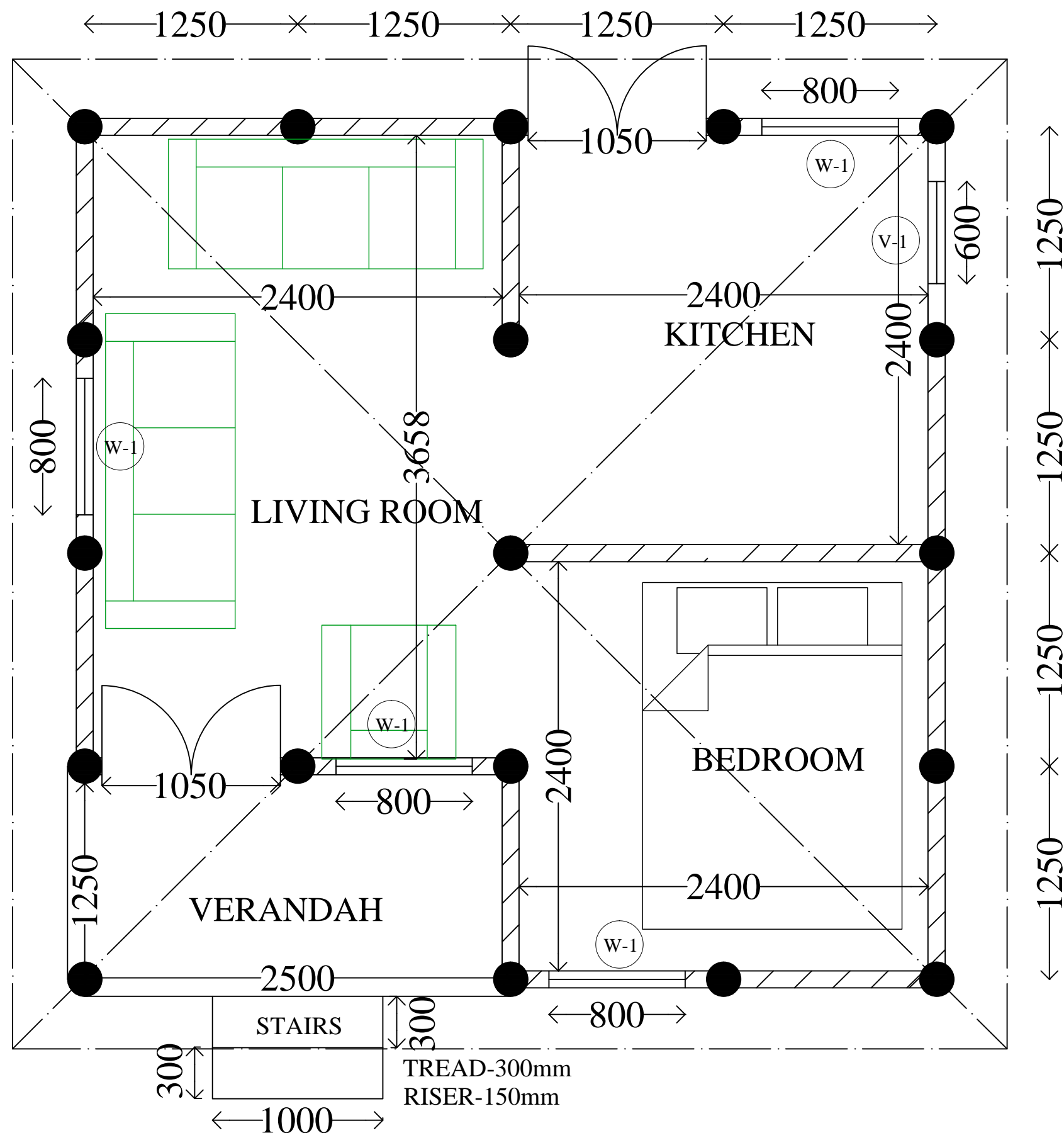
Note: Initial Minimum Recurring cost will incurred for the purchase of chemicals such as Boric acid and Borax powder for the treatment of Bamboos. Quantity of Borax & Boric for the treatment will be in the ratio 1:1.5 in 10 Litres of water [i.e. 1kg of Borax with 1.5 kgs of Boric acid powder to be mixed in 10 Litres of water thoroughly] (Soaking Method for Treatment of Bamboos). **Cost of Borax – Rs.240/kg and Cost of Boric – Rs.250/kg.**

	Description	Area (Sq.m)	Amount (In Rupees)
1.	Ground Floor	25	Rs.1,49,800.00
	Total		Rs.1,49,800.00

(Rupees One Lakh Forty Nine Thousand And Eight Hundred Only)

PREPARED BY:

**ASSISTANT ENGINEER (PMAY-G)
DIRECTORATE of C&RD
MEGHALAYA, SHILLONG.**



SCHEDULED OF DOORS & WINDOWS

All Dimensions Are in mm

Doors	WXH	Sill
D-1	1050X2100	0
Window	WXH	Sill
W-1	800X1500	1100
Ventilation	WXH	Sill
V-1	600X1200	1100

PROJECT : MODEL-NO.1

PROPOSED PMAY-G RURAL HOUSE
(BAMBOO COLUMNS WITH HALF
MUD BLOCKS & HALF BAMBOO
STRIP-CHICKEN MESH EKRA
WALLING WITH HIPPED ROOF CGI
SHEET COVER)

CONTENTS :

PLAN LAYOUT

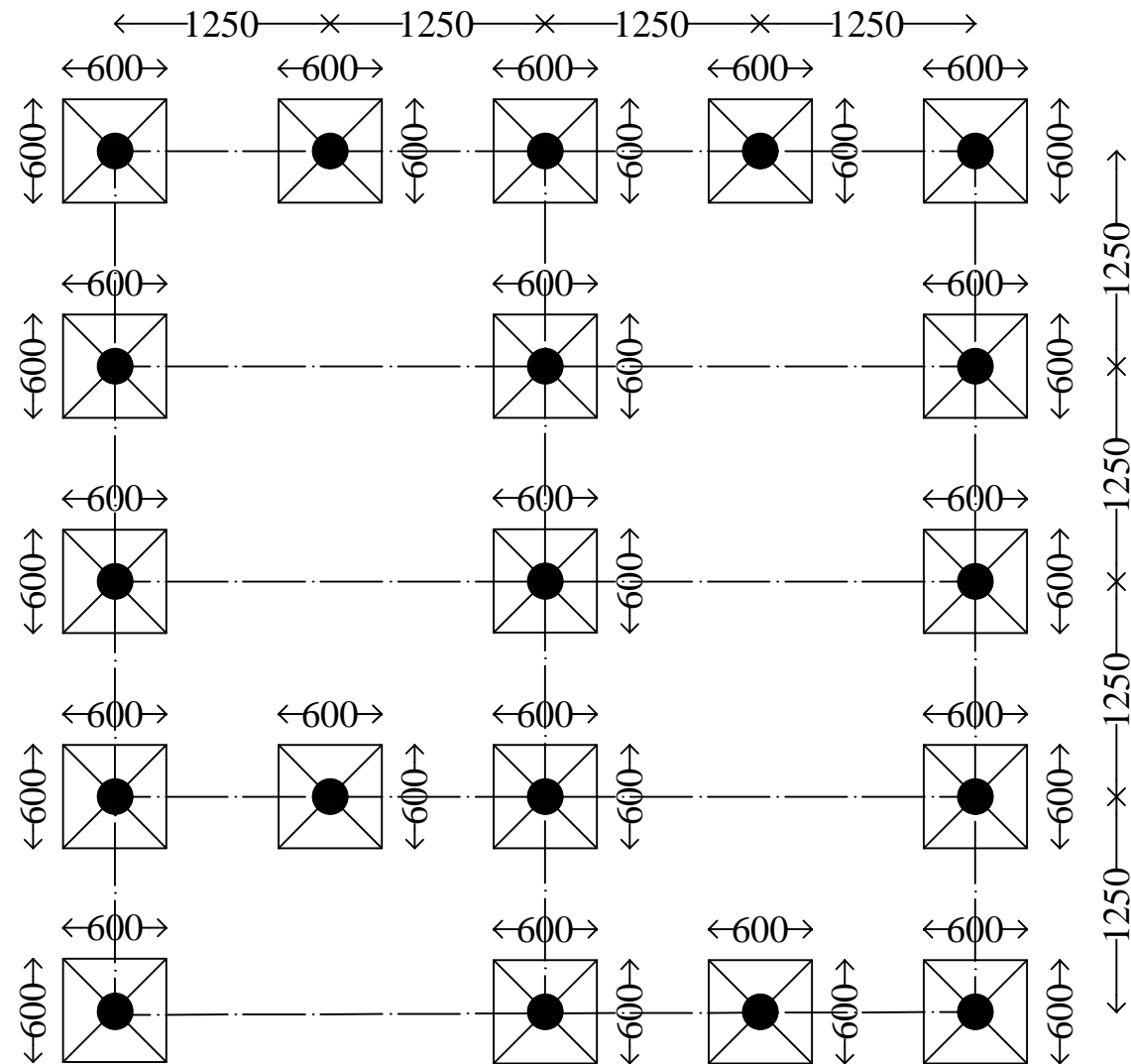
PLINTH AREA: 25 sq.m (268.75 Sq.ft.)

DRAWN BY:

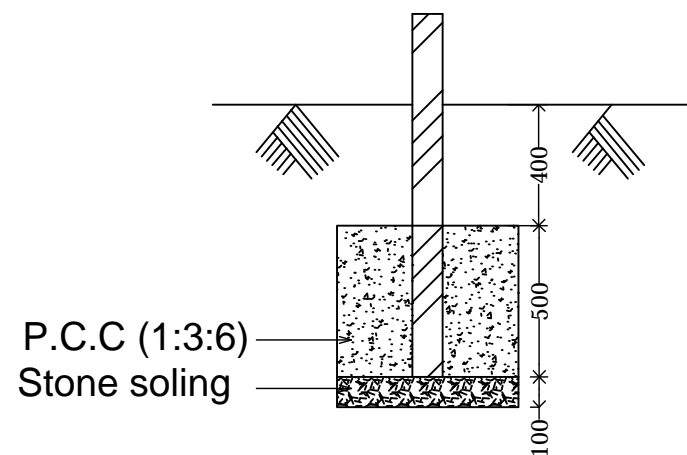
Assistant Engineer (PMAY-G)
Directorate of C&RD
Meghalaya, Shillong.

GENERAL NOTES:

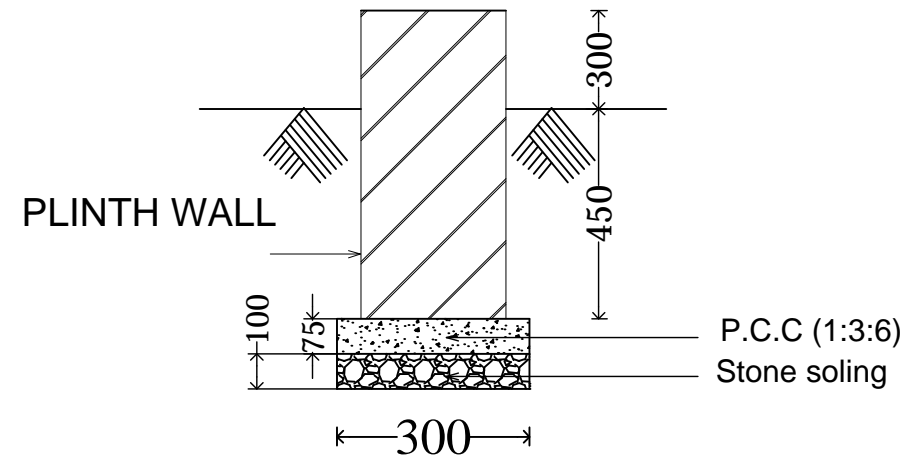
1. ALL THE DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED.
2. STRUCTURAL DRAWINGS ARE NOT TO BE SCALED.
3. BEARING CAPACITY OF SOIL= 150 KN/SQ.M. HAS BEEN ADOPTED.
4. CONCRETE MIX SHALL BE M20 i.e. 1:1.5:3
5. ROOM HEIGHT IS 3 METRES FROM PLINTH LEVEL.



FOOTING LAYOUT



DETAIL OF FOOTING



DETAIL OF PLINTH WALL

SCHEDULED OF
DOORS & WINDOWS

All Dimensions Are in mm

Doors	WXH	Sill
D-1	1050X2100	0
Window	WXH	Sill
W-1	800X1500	1100
Ventilation	WXH	Sill
V-1	600X1200	1100

PROJECT : MODEL-NO.1

PROPOSED PMAY-G RURAL HOUSE
(BAMBOO COLUMNS WITH HALF
MUD BLOCKS & HALF BAMBOO
STRIP-CHICKEN MESH EKRA
WALLING WITH HIPPED ROOF CGI
SHEET COVER)

CONTENTS :

FOOTING LAYOUT PLAN

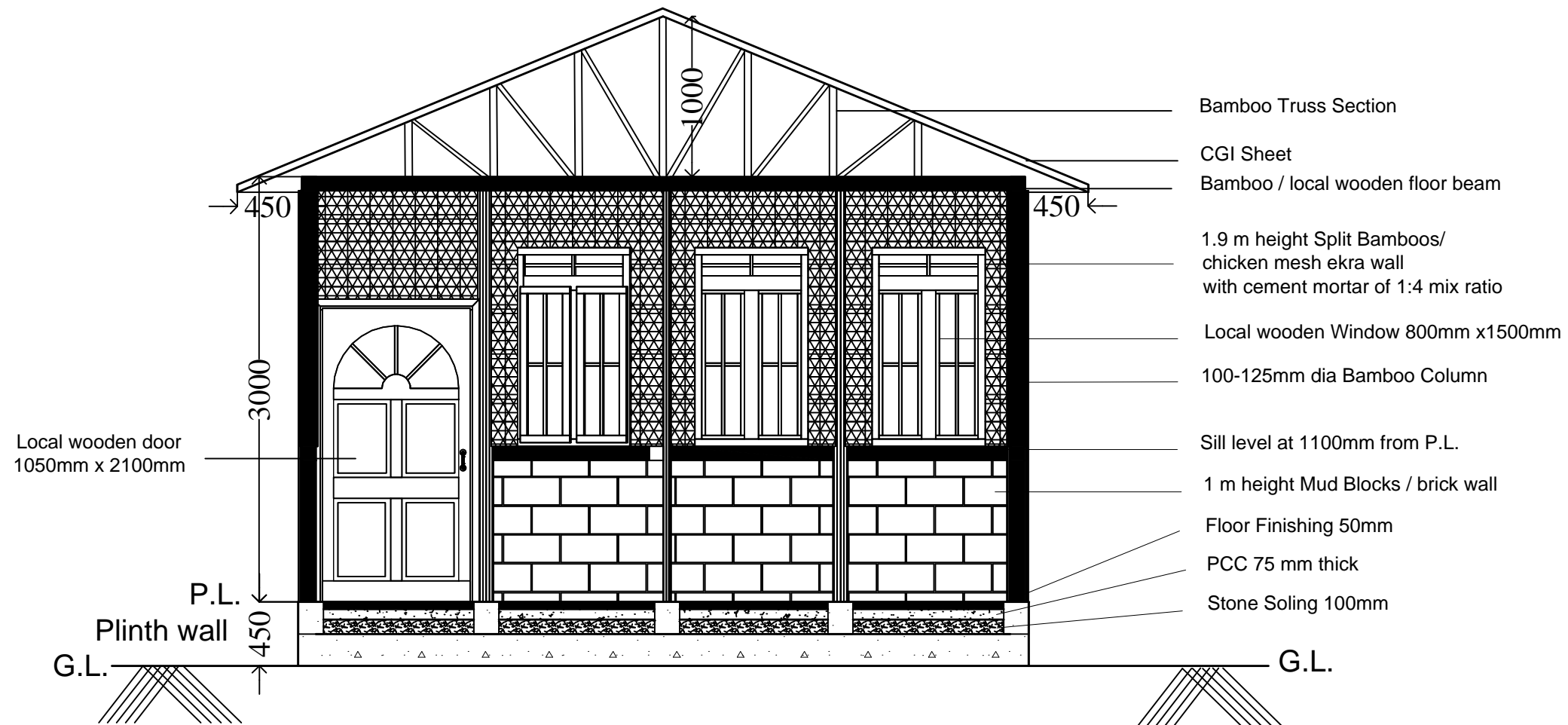
PLINTH AREA: 25 sq.m (268.75 Sq.ft.)

DRAWN BY:

Assistant Engineer (PMAY-G)
Directorate of C&RD
Meghalaya, Shillong.

GENERAL NOTES:

1. ALL THE DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED.
2. STRUCTURAL DRAWINGS ARE NOT TO BE SCALED.
3. BEARING CAPACITY OF SOIL= 150 KN/SQ.M. HAS BEEN ADOPTED.
4. CONCRETE MIX SHALL BE M20 i.e. 1:1.5:3
10. ROOM HEIGHT 3 METRES FROM PLINTH LEVEL.



SCHEDULED OF DOORS & WINDOWS		
All Dimensions Are in mm		
Doors	WXH	Sill
D-1	1050X2100	0
Window	WXH	Sill
W-1	800X1500	1100
Ventilation	WXH	Sill
V-1	600X1200	1100

PROJECT : MODEL-NO.1
PROPOSED PMAY-G RURAL HOUSE
(BAMBOO COLUMNS WITH WALL-
MUD BLOCKS & HALF BAMBOO
STRIP-CHICKEN MESH EKRA
WALLING WITH HIPPED ROOF CGI
SHEET COVER)

CONTENTS :
SECTION ELEVATION

PLINTH AREA: 25 sq.m (268.75 Sq.ft.)

DRAWN BY:

Assistant Engineer (PMAY-G)
Directorate of C&RD
Meghalaya, Shillong.

GENERAL NOTES:
1. ALL THE DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED.
2. STRUCTURAL DRAWINGS ARE NOT TO BE SCALED.
3. BEARING CAPACITY OF SOIL= 150 KN/SQ.M. HAS BEEN ADOPTED.
4. CONCRETE MIX SHALL BE M20 i.e. 1:1.5:3
5. ROOM HEIGHT IS 3 METRES FROM PLINTH LEVEL.



FRONT VIEW



REAR VIEW



LEFT VIEW



RIGHT VIEW

SCHEDULED OF DOORS & WINDOWS		
All Dimensions Are in mm		
Doors	WXH	Sill
D-1	1050X2100	0
Window	WXH	Sill
W-1	800X1500	1100
Ventilation	WXH	Sill
V-1	600X1200	1100

PROJECT : MODEL-NO.1
PROPOSED PMAY-G RURAL HOUSE
(BAMBOO COLUMNS WITH HALF
MUD BLOCKS & HALF BAMBOO
STRIP-CHICKEN MESH EKRA
WALLING WITH HIPPED ROOF CGI
SHEET COVER)

CONTENTS :
FRONT, BACK, LEFT & RIGHT
VIEWS

PLINTH AREA: 25 sq.m (268.75 Sq.ft.)

DRAWN BY:

Assistant Engineer (PMAY-G)
Directorate of C&RD
Meghalaya, Shillong.

- GENERAL NOTES:**
1. ALL THE DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE MENTIONED.
 2. STRUCTURAL DRAWINGS ARE NOT TO BE SCALED.
 3. BEARING CAPACITY OF SOIL= 150 KN/SQ.M. HAS BEEN ADOPTED.
 4. CONCRETE MIX SHALL BE M20 i.e. 1:1.5:3
 5. ROOM HEIGHT IS 3 METRES FROM PLINTH LEVEL.

Detailed Estimate of Proposed PMAY-G Rural House Model No.1
(Bamboo Columns with Half Mud Blocks & Half Chicken Mesh-Bamboo Strip Ekra Wall)
Rate As Per Govt. of Meghalaya (P.W.D) Schedule Of Rates For Building
Works 2015-2016 For Khasi Hills.

Item.no	Description of items	No			L	B	H	Quantity	Area Content
1/1.1	Earthwork in excavation in foundation trenches including dressing of sides and ramming of bottom including stacking of serviceable stones and removal of excavated earth which lead upto 50m complete.....								
	a) In hard soil.								
	Footing	19	1	1	0.60	0.60	1.00	6.84	
	plinth wall	14	1	1	0.65	0.30	0.60	1.64	
		1	1	1	1.90	0.30	0.60	0.34	
							Total =	8.48	
						@	Rs. 231.00	Per Cum	Rs. 1,958.88
2/1.4	Earthwork in filling including necessary carriage,watering,ramming etc. complete as directed and specified								
(b)	Footing	19	1	1	0.60	0.60	1.00	6.84	
	Deduct Column	19	1	1	0.13	0.13	0.90	-2.14	
	Flooring	1	1	1	5.00	5.00	0.25	-1.25	
							Total =	3.45	
						@	Rs. 210.00	Per Cum	Rs. 725.03
3/2.1	Plain cement concrete works with coarse aggregates of sizes 13mm to 32mm in foundation bed for footing steps,walls,brick worketc.as directed and specified including dewatering if necessary,and curing complete(shuttering where necessary shall be measured and paid seperately)								
(b)	In prop 1:4:8								
	Footing	19	1	1	0.60	0.60	0.10	0.68	
	Plinth wall	14	1	1	0.65	0.30	0.08	0.20	
		1	1	1	1.90	0.30	0.08	0.04	
							Total =	0.92	
						@	Rs. 5,688.00	Per Cum	Rs. 5,232.96
4/2.2	Plain cement concrete floor base in prop 1:3:6 laid in alternate bays as specified with coarse aggregates of size 13mm to 32mm including dewatering if necessary,and curing etc complete.								
(b)	50 mm thick In prop 1:3:6								
	Flooring	1	1	1	5.00	5.00	-	25.00	
							Total =	25.00	
						@	Rs. 354.00	Per Sqm	Rs. 8,850.00

Item.no	Description of items	No			L	B	H	Quantity	Area Content
5/2.8	Supplying,fitting and fixing in position reinforcement bars upto 1st floor level,conforming to relevent i.s code for rcc work/R.B walling including straightening,cleaning,cutting and bending to to proper shapes and length as per details,supplying and binding with 20G annealed black wire and placing in position with proper blocks,supports,chairs,spacers etc.complete.(rates inclusive of all wastage,lappage,hooks,chairs,anchorage etc.and no measurements for the same is required)								
(a)	From primary sources like TATA/SAIL/ESSAR/JINDAL/SHYAM/RINL								
(i)	TMT corrosion resistant steel.								
	Footing jelly	19	2	1	0.60	-	0.39	8.89	
	Wall panels	1	1	1	38.40	-	0.39	14.98	
							Total =	23.87	
	Deducting the total by 100 for bamboo props & wall panels at at a length of 60 cm & 20 cm (rods)						Say =	0.24	
						@	Rs. 9,191.00	Per Qtl	Rs. 2,193.89
6/3.2	25mm thick cement concrete topping 1:2:4(1cement:2coarse sand:4coarse aggregates of 12mm nominal size)finished with a floating coat of neat cement finish(base concrete to be measured and paid seperately) to be laid in panels including curing complete as directed.								
	Floor	1	1	1	5.00	-	5.00	25.00	
							Total =	25.00	
						@	Rs. 322.00	Per Sqm	Rs. 8,050.00
7/4.1	Providing brick soling in foundation and under floor with stone/best quality picked jhama brick,sand packed and laid to level and in panel after preparing the subgrade as directed including all labour and materials and if necessary dewatering,complete..								
(c)	Stone soling of thickness 100mm								
	Footing	19	1	1	0.60	0.60	-	6.84	
	plinth wall	14	1	1	0.65	0.30	-	2.73	
		1	1	1	0.65	0.30	-	0.20	
	Flooring	1	1	1	5.00	5.00	-	25.00	
							Total =	34.77	
						@	Rs. 378.00	Per Sqm	Rs. 13,143.06
8/4.11.	Stone masonry work in retaining wall,wing wall,abutment,foundation,steps,plinth etc....								
(b)(ii)	Plinth wall	14	1	1	0.60	0.30	0.73	1.83	
		1	1	1	1.90	0.30	0.73	0.41	
	Steps	1	2	1	0.30	1.00	-	0.60	
							Total =	2.84	
						@	Rs. 4,344.00	Per cum	Rs. 12,336.96
9*	Providing mud block etc.....								
	Wall	14	1	1	1.00	-	1	14.00	

Item.no	Description of items	No			L	B	H	Quantity	Area Content
	Deduct door								
	D1	2	1	1	1.00	1.00	-	-2.00	
							Total =	12.00	
						@	Rs. 1,450.00	Per sqm	Rs. 17,400.00
10*	Providing & fitting chicken mesh etc...								
	Ekra Wall	15	1	1	1.00	-	1.9	28.50	
	Deduct Doors & Windows								
	D1	2	1	1	1.00	1.20	-	-2.40	
	W1	4	1	1	0.80	-	1.50	-4.80	
	V1	1	1	1	0.60	-	1.20	-0.72	
							Total =	20.58	
						@	Rs. 101.50	Per sqm	Rs. 2,088.87
11/25.2	Bamboo slit walling in timber frame with bamboo slit fitted in to the grooves of the timber frame and stiffened by means of double bamboo slits 25mm wide and not less than 6mm thick spaced at intervals of not more than 400mm apart one slit attached on each side and tied together by means of cane slit/galvd tying wire including 20 mm thick cement plaster in prop 1 cement : 6 fine sand on both sides in two coats with curing etc. complete (measurement for timber frame shall be measured and paid separately.)								
	Ekra Wall	15	2	1	1.00	1.90	-	57.00	
	Deduct door & Window								
	D1	2	1	1	1.00	1.20	-	-2.40	
	W1	4	1	1	0.80	1.50	-	-4.80	
	V1	1	1	1	0.60	1.20	-	-0.72	
							Total =	49.08	
						@	Rs. 564.00	Per sqm	Rs. 27,681.12
12/8.2	Providing wood work in frame (chowkats) of doors, windows, clerestory windows etc...								
(d)	D1	2	1	1	5.20	0.13	0.08	0.10	
	W-1	4	1	1	4.60	0.13	0.08	0.19	
	V-1	1	1	1	4.00	0.13	0.08	0.04	
							Total =	0.33	
						@	Rs. 56,179.00	Per cum	Rs. 18,539.07
13/8.19	Providing, fitting and fixing full panelled doors/windows etc...								
(d)	35mm thick								
	D1	2	1	1	1.00	2.10	-	4.20	
							Total =	4.20	

<i>Item.no</i>	<i>Description of items</i>	<i>No</i>			<i>L</i>	<i>B</i>	<i>H</i>	<i>Quantity</i>	<i>Area Content</i>
						@	Rs. 3,420.00	Per Sqm	Rs. 14,364.00
14/13.1	Providing and fixing clear sheet glass etc...								
(b)	4.00mm thick (Area of glass panes exceeding 400 sq.cm but less than 1200 sq.cm.)								
	W1	4	1	1	0.80	1.50	-	4.80	
	V1	1	1	1	0.60	1.20	-	0.72	
							Total =	5.52	
						@	Rs. 1,307.00	Per Sqm	Rs. 7,214.64
15*	providing bomboo post and trusses,purlin etc...								
	Bamboo Purlins	10	1	1	5.20	1.00	-	52.00	
	Truss Section	13	1	1	1.00	1.00	-	13.00	
							Total =	65.00	
						@	Rs. 167.00	Per nos.	Rs. 10,855.00
16/7.3	providing corrugated galvanised iron sheet etc....								
(a)	0.45mm Thick	1	1	1	5.60	5.60	-	31.36	
							Total =	31.36	
						@	Rs. 817.00	Per Sqm	Rs. 25,621.12
							Total =	Rs. 1,76,254.60	
							Deduct 15% contractor profit =	Rs. 1,49,816.41	
							Say =	Rs. 1,49,800.00	
(Rupees One Lakh Forty Nine Thousand And Eight Hundred Only)									

PREPARED BY:

ASSISTANT ENGINEER (PMAY-G)
DIRECTORATE OF C&RD
MEGHALAYA, SHILLONG.