Construction of Agri-Business Centre with all Modern Facilities (including Public Toilets) in Thannithode Gram Panchayat

Detailed Project Report (DPR)

SUBMITTED TO KERALA LOCAL GOVERNMENT SERVICE DELIVERY PROJECT (KLGSDP)

Prepared By
Centre for Rural Management (CRM), Kottayam, Kerala

Construction of Agri-Business Centre with all Modern Facilities (including Public Toilets) in Thannithode Gram Panchayat

Detailed Project Report (DPR)

Submitted to Kerala Local Government Service Delivery Project (KLGSDP)

Prepared By
Centre for Rural Management (CRM), Kottayam, Kerala

CONTENT

Chapter 1

INTRODUCTION & PROFILE OF THE GRAM PANCHAYAT

INTRODUCTION

The document features a Detailed Project Report (DPR) for the ***Construction of Agri-Business Centre with all Modern Facilities (including Public Toilets) which*** has been prepared for the Thannithodu Gram Panchayat of Pathanamthitta District in Kerala with the technical support of Centre for Rural Management, (CRM) Kottayam. The project is finalized by the joint sitting of the Project Management Unit of the Kerala Local Government Service Delivery Project (KLGSDP) and the functionaries of the Thannithodu Gram Panchayat. It is identified based on the socio economic conditions, the index of backwardness and the aspirations of the local citizens of the Panchayat. Participatory rural rapid appraisal tools were applied for the identification and prioritization of the Project.

PROFILE OF THANNITHODU GRAM PANCHAYAT

The Panchayat has at present 13 wards spread out in an area of 43.54 sq km surrounded by thick forest on all sides. The density of the population is only 299, which is much below than the state as well as district average. The total population of the Panchayat is 13012 with 6187 males and 6825 females. The sex ratio comes to 1035. The SC population of the Panchayat comes to 1348 with 636 males and females outnumbering males with 712. The population of the category from the Scheduled Tribe is only 65. As in the case of other social groups, here also the females have a higher strength of 39 over the male members. The recorded literacy of the Panchayat is 87.93 per cent with 87.68 per cent literate females and 88.22 per cent literate males which is much below the state as well as the district average.

A special feature of the Thannithodu Panchayat is the existence of SC colonies, 14 in number in all the wards except ward No.1. The highest concentration of SC households is in Poochakkulam ward (ward No.III) with 23 households. Next comes ward No.IV, Vatamon colony with 22 households. About tribal households the number comes to 14. *Malampandaram* live in interior forest and comes out only rarely. Their share to the total households of the Panchayat is very small, only 11 in number. Officially, though they do not have the status of 'primitive tribe' the socio cultural profile of them is par with any of the primitive tribes in the State. As per the records from the Panchayat, 14 *Malavedan* households live in Thannithodu-Moozhi in Ward No.XII. Though transferred institutions such as Krishi Bhavan, Veterinary Hospital, PH Centre, Govt. Homeo -Dispensary, Ayurveda Dispensary are there in the Panchayat, the benefits of these institutions have yet to reach all sections of the people. The other public institutions are Continuing Education Centres (3), Libraries (3) and Milk Cooperative Societies (5). There are 24 *Anganwadis* in the Panchayat.

SECTOR PRIORITY (AGRICULTURE)

Sector priority was made by the Panchayat with the support of Centre for Rural Management (CRM), Kottayam. The purpose was to assess the backwardness and to identify sector and essential projects which have the potential for sustainable local economic development and ensuring social justice. The potential projects under sectors were identified through FGDs conducted in different parts of the GP and followed by transect walk. Discussions/consultations with the senior citizens and social workers in the Panchayat were also arranged to gather expert opinion.

To begin with the sector analysis in very precise, the consulting team (Centre for Rural Management) had a detailed discussion with the President, Vice President and other members of the GP on 31 May 2016. Subsequently, four Focus Group Discussions (FGDs) in different parts of the GP on 9th & 10th June were conducted and followed by transect walk on the same dates. Representatives of the political parties, members from

community based organizations; teachers, *anganwadi* workers as well as members from *kudumbasree* were invited for active participation in the FGDs and to share their views and suggestions in prioritizing the projects. While assessing the socio economic conditions and the index of backwardness of the Panchayat, all the sectors were analyzed in detail. And based on the detailed sector analysis, Agriculture was identified as one of the priority sectors.

PROJECT RATIONAL OF THE *CONSTRUCTION OF AGRI-BUSINESS CENTRE WITH ALL MODERN FACILITIES (INCLUDING PUBLIC TOILETS)*

The consulting team inquired about the economic condition of the farmers. The statistics made the situation very clear. The total area under cultivation is 5535.72 acre and it is covered by two minor irrigation schemes. Out of the total of 8165 members in the farming community only 710 (less than 10%) owned land above 2 acres. Of this only three (0.45%) had land above 5 acres. The highest segment of 34.12 per cent owned only 25-50 cent of land. The number of holdings with land between one acre and fifty cents came to 20.47 per cent. A number as large as 1412 (17.21%) had only ten cents of land.

The team found it surprising that all the small holders together have agri- business centre, authorized agriculture produce worth Rs 6.00 lakhs on last Wednesday, the day fixed for weekly agri- business centre authority. The team curiously inquired further about the price situation in the local Wednesday agri -business centre authority in compared to the agri -business centres at district headquarters. The items brought to the agri- business centre authority yard included vegetables, plantains, tapioca and other root crops. All produce came in bulk on Wednesdays.

The space available is narrow, quite insufficient to display the quality of the products. Lack of space compelled for immediate sale at a low price . Many farmers pointed out that if there was sufficient space and facilitate for proper grading and storage, they could have sold their products at a higher price, may be even at double the amount of the 6.24 lakhs which they received on a single agri- business centre authority day sales, on an

average. The items agri -business centre authorized in a particular day for which the data was made available vegetables came to 3000 kgs and fruits 3400 kgs. The prices of these perishables have much variation. All the produces are fresh from the farm of high quality which could have fetched a much higher price if an agri- business centre authority yard with needed facilities were in the Panchayat area. The lack of agri -business centre authoritying facilities is mapped as the one of the reasons for the backwardness of the agriculture sector. Therefore, the economic rationality for the construction of an agro – business centre with all modern facilities is clearly manifested by the situation analysis in the Panchayat. The proposed activity, the agro – business centre has ranked as one of the top priority items in the visioning and prioritization exercise conducted in the focus group discussions (FGDs) in the Panchayat .

Chapter 2

PROJECT NAME, LOCATION AND OBJECTIVES

NAME OF THE PROJECT: ***Construction of Agri-business Centre with all Modern Facilities (including Public Toilets) in Thannithode Gram Panchayat***

MAIN OBJECTIVE OF THE PROJECT

1. Construction of Agri-Business Centre with all Modern Facilities

SUB OBJECTIVES

- To elevate the economic condition of the farmers
- Enhancing the available space in the local market
- To ensure proper grading and storage
- To establish agro clinic for the farming community
- To make available infrastructure for farmer's business hub
- To construct provision for solid & liquid waste management, and
- To construct a comfort station
- To provide facilities for public gathering
- To establish an outlet for *Kudubashree* produces

PROJECT LOCATION

There are two centres in the project one is *'Construction of Agri-Business Centre with all Modern Facilities (including Public Toilets)'*in the ward No. 5 in the Thekkuthodu area of Thannithodu GP. The second one is at Thannithodu *in ward No. 13 with Fish, Meat and Vegetable stall.*

Survey Number (Ward No.5):87/196

Survey Number (Ward No.13):222/3

LAND DETAILS

Ownership particular: The land for the proposed construction is owned by the Gram Panchayat

Land size (Ward No.5):19 R

Land size (Ward No.13):20 R

Boundary of the land: Site plan attached

Sketch plan: (Attached)

PHYSICAL INFRASTRUCTURE

The project has the following component

Agri- Business Center structure:

Solar power unit:

Solid and liquid waste management unit:

Rain water harvest:

Comfort Stations

PROJECT DESIGNS

Drawing for the Agri Business Center:

Plan of the Agri Business Centre, Block 1, 2 & 3

Plan of the Agri Business Centre, Hall:

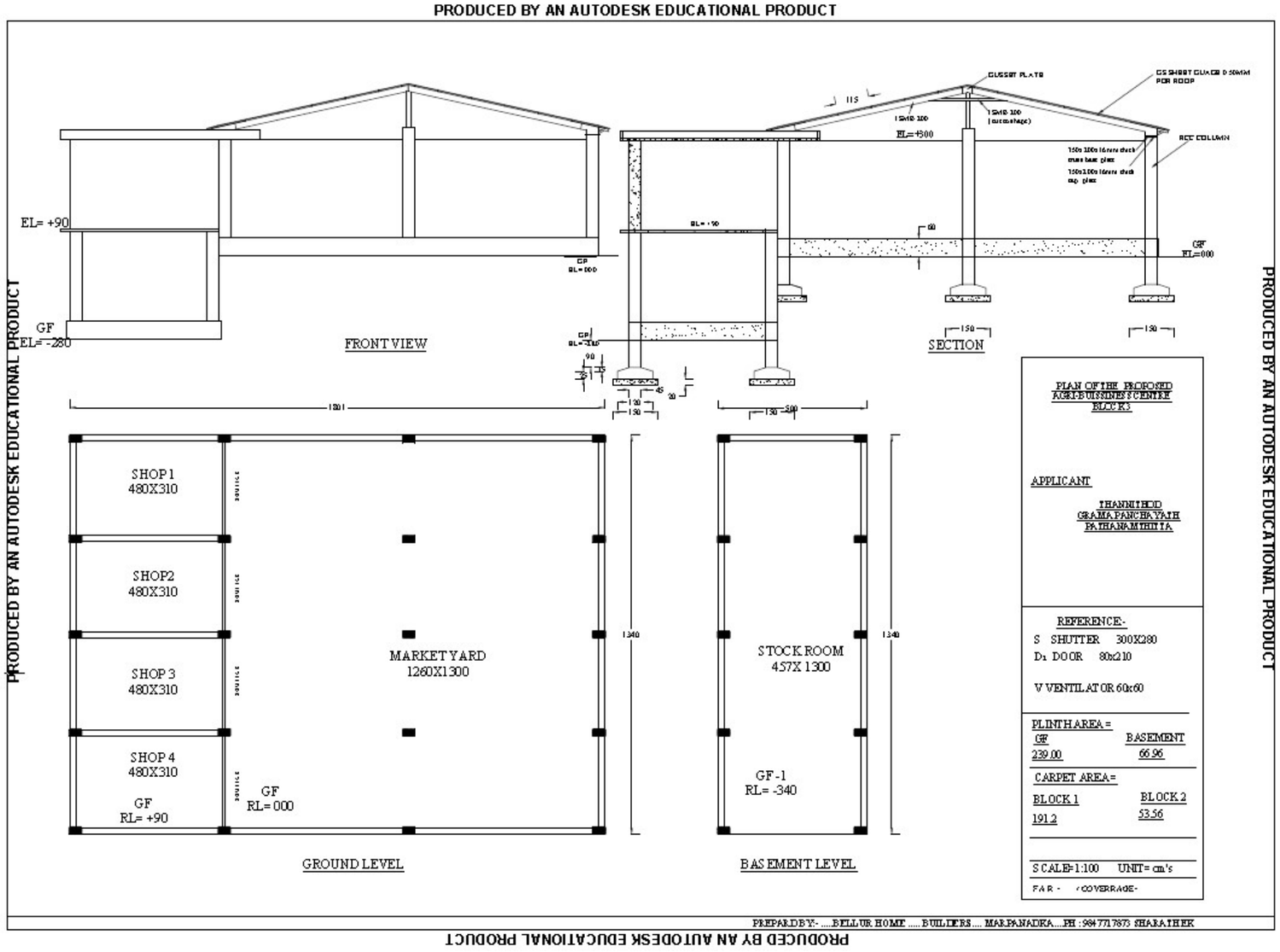
Drawing for Solar Power Unit: (Inbuilt in the Drawing)

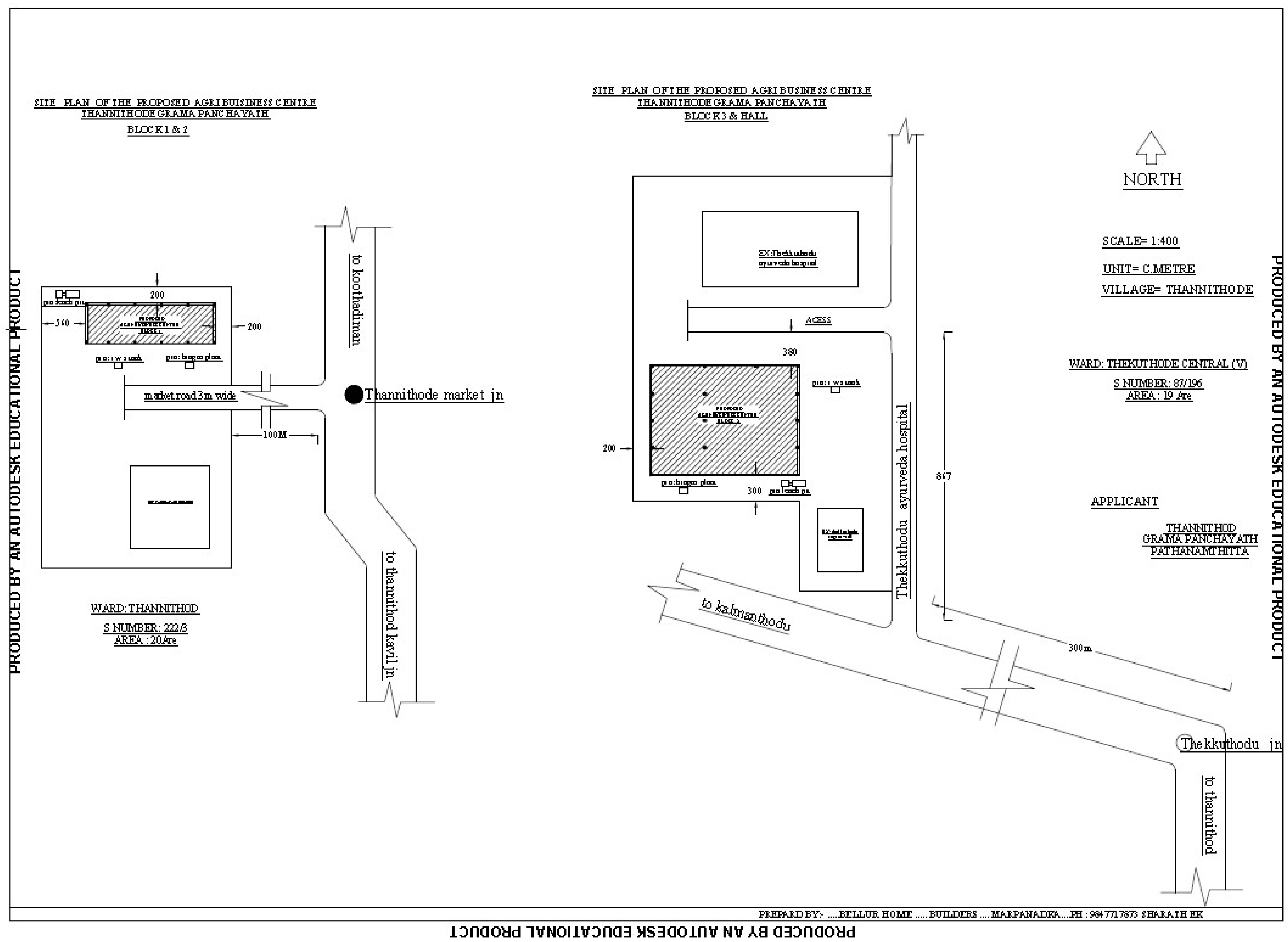
Drawing for Solid and Liquid Waste Management Unit: (Inbuilt in the Drawing)

Drawing for Rain Water Harvest: (Inbuilt in the Drawing)

Drawing of Comfort Stations: (Inbuilt in the Drawing)

PROJECT DESIGNS





SITE PLAN OF THE PROPOSED AGRI BUISINESS CENTRE
THANNITHODE GRAMA PANCHAYATH
BLOCK 1 & 2
SITE PLAN OF THE PROPOSED AGRI BUISINESS CENTRE
THANNITHODE GRAMA PANCHAYATH
BLOCK 3 & HALL
NORTH
SCALE= 1:400
UNIT= C.METRE
VILLAGE= THANNITHODE
to koothadiman
Thannithode market jn
market road 3m wide
100M
to thannithod kavil jn
WARD: THANNITHOD
S NUMBER: 222/3
AREA : 20Are
ACESS
Thekkuthodu ayurveda hospital
to kalmanthodu
300m
WARD: THEKUTHODE CENTRAL (V)
S NUMBER: 87/196
AREA : 19 Are
APPLICANT
THANNITHOD
GRAMA PANCHAYATH
PATHANAMTHITTA
Thekkuthodu jn
to thannithod
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

ENVIRONMENTAL ISSUES (IF ANY) AND PROTECTIVE MEASURES

The construction and its operation of the center do not create any environmental issues. The biodegradable waste in the form of solid & liquid and the proposed unit attached will address it, scientifically. Capacity of the solid & liquid waste management unit is decided and designed by assessing the total volume of the waste to be produced in the proposed center. This building is planned in a such a manner that it minimizes environmental impact and takes advantages of the site upon which it is built with environmental landscaping, rainwater harvesting, solar power generation, and other relevant features.

QUALITY ASSURANCE

Quality Assurance Plans are a key component of a systematic planning process. And it applied to provide a framework for assurance in the context of the specific objectives of the project. It also describes the procedures that will be implemented to obtain data of known and adequate quality. A well-planned assurance system helps ensure that collected data can be used in decision making. A two- tier quality management mechanism has been suggested for the proposed construction of the market. The first level of quality management mechanism is in -house quality control at the level of implementing agency. The second level ensures quality monitoring through Panchayat level monitoring committee. Photographs of all the important stages of the work will be ensured as another mechanism to assure quality. After the construction, quality assurance is important in the case of maintenance. As in the case of quality assurance at the construction stage, a two-tier quality management mechanism has been suggested for the maintenance of the agri business center. The first tier quality management mechanism is at the stakeholder level whereas the second tier provides for quality monitoring through the Panchayat Committee. Quality assurance and quality control are integral components in the Quality Assurance Project Plan. In addition, there are four key elements: project management, measurement/data acquisition, assessment and oversight, and data validation and usability which are examined in a later stage in this report.

Chapter 3

FINANCIAL DETAILS

Details on Cost Estimate

WORK NAME: CONSTRUCTION OF AGRI- BUSINESS CENTRE THANNITHODE GRAMA PANCHAYATH, PATHANAMTHITTA																						
DETAILED ESTTIMATE & ABSTRAT																						
I	BLOCK 1																					
Sl No:	Code No: DSR 14	Specification	Nos:					x	L	x	B	x	H	≈	Qnty			Rate		/Unit		Amount
1	DSR 15.7.4	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50metres lead as per direction of Engineer-in-charge In cement mortar																				
		Wall all round	(	1	x	1	)	x	68.00	x	0.20	x	2.70	≈	36.72	m3						
		Net qnty													38.00	m3	x	Rs:	1098.80	/m3	≈	41754
2	15.28.2	Dismantling roofing including ridges, hips, valleys and gutters etc., and stacking the material within 50 metres lead of Asbestos sheet																				
		Wall all round	(	1	x	1	)	x	15.00	x	5.00			≈	75.00	m2						
		Net qnty													75.00	m2	x	Rs:	42.98	/m2	≈	3224

3	2.6.1	Earth work in Excavation by mechanical means(Hydraulic Excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.50m, disposed earth to be leveled and neatly dressed. DAR 2.6.1 All kinds of soil																			
		Pillar	(	1	x	12	)	x	1.50	x	1.50	x	1.50	≈	40.50	m3						
		Wall all round	(	1	x	1	)	x	41.00	x	0.40	x	0.40	≈	6.56	m3						
		Inside wall all	(	1	x	1	)	x	18.00	x	0.30	x	0.30	≈	1.62	m3						
		Sock pit	(	1	x	1	)	x	1.20	x	1.20	x	1.30	≈	1.87	m3						
		Total													50.55	m3						
		Net qnty													52.00	m3	x	Rs:	226.72	/m3	≈	11790
4	4.1.8	Providing and laying in position cement concrete of specific grade excluding the cost of centering and shuttering (1:4:8 cement concrete using 40 mm metal) watering curing etc. complete.																			
		Pillar	(	1	x	12	)	x	1.50	x	1.50	x	0.20	≈	5.40	m3						
		Floor concrete	(	1	x	1	)	x	76.44	m2		x	0.08	≈	6.12	m3						
		varanda	(	1	x	1	)	x	15.60	m2		x	0.08	≈	1.25	m3						
		Total													12.76	m3						
		Deduction																				
		Inside wall area	(	1	x	1	)	x	3.51	x	0.40	x	0.08	≈	0.11	m3						
		deduction total													0.11	m3						
															12.65							
		Net qnty													13.00	m3	x	Rs:	6267.206	/m3	≈	81474

5	7.1 & 7.1.1	Random rubble masonry with hard stone in foundation and plinth including leveling up with cement concrete 1:6:12 (1 cement: 6 coarse sand: 12 graded stone aggregate 20 mm nominal size) up to plinth level with: 7.1.1 Cement mortar 1:6 (1 cement: 6 coarse sand)																			
		Foundation Wall all round	(	1	x	1	)	x	41.00	x	0.40	x	0.65	≈	11.00	m3	x	Rs:	5709.10	/m3	≈	62800
6	OD	Dry rubble masonry with hard stone in superstructure plinth level and upto floor five level including cost of all materials, labour etc :																			
		Foundation Inside Wall all	(	1	x	1	)	x	18.00	x	0.30	x	0.55	≈	2.97	m3						
		Sock pit Wall all	(	1	x	1	)	x	6.60	x	0.45	x	1.50	≈	4.46	m3						
															7.43	m3						
		Total													8.00	m3	x	Rs:	3692.09	/m3	≈	29537
7	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.																			
		floor area	(	1	x	1	)	x	80.00			x	0.60	≈	50.00	m3	x	Rs:	163.778	/m3	≈	8189
8	5.1.2	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)																			

		Pillar foottings	(	1	x	12	)	x	1.20	x	1.20	x	0.20	≈	3.46	m3						
		Pillar foottings	(	1	x	12	)	x	0.90	x	0.90	x	0.15	≈	1.46	m3						
		Pillar up to plinth level	(	1	x	12	)	x	0.40	x	0.23	x	1.55	≈	1.71	m3						
		Plinth Beam all length	(	1	x	1	)	x	59.00	x	0.23	x	0.35	≈	4.75	m3						
		Septic tank wearing coat	(	1	x	1	)	x	4.40	x	0.90	x	0.08	≈	0.30	m3						
		Sock pit Slab	(	1	x	4	)	x	2.10	x	0.53	x	0.12	≈	0.53	m3						
		Total													12.21	m3						
		Net qnty													13.00	m3	x	Rs:	9078.020	/m3	≈	118014
9	OD	Solid block masonry using pre cast solid blocks (Factory made) of size 30x20x15cm or nearest available size for super structure above floor two level up to floor five level with thickness 15cm in: CM 1:6 (1 cement : 6 coarse sand) etc complete																				
		Wall all round	(	1	x	1	)	x	41.00	x	0.20	x	3.00	≈	24.60	m3						
		Inside wall	(	1	x	1	)	x	18.00	x	0.20	x	3.00	≈	10.80	m3						
		A single row on the plinth beam	(	1	x	1	)	x	59.00	x	0.20	x	0.15	≈	1.77	m3						
		Wall	(	1	x	1	)	x	12.20	x	0.20	x	3.00	≈	7.32	m3						
		Wall	(	1	x	1	)	x	2.40	x	0.20	x	2.10	≈	1.01	m3						
		Total													45.50	m3						
		Deduction																				
		wall stair	(	1	x	1	)	x	2.40	x	0.20	x	3.00	≈	1.44	m3						
		Wall at pillar portions	(	1	x	12	)	x	0.40	x	0.20	x	3.10	≈	2.98	m3						
		R shutter 300x255	(	1	x	4	)	x	3.00	x	0.20	x	2.55	≈	6.12	m3						

		Ventilation 60 x 50 cm 1Nos:	(	1	x	1	)	x	0.60	x	0.20	x	0.50	≈	0.06	m3						
		Bath room Opening 80 x 210 cm 1 Nos:	(	1	x	1	)	x	0.80	x	0.10	x	2.10	≈	0.17	m3						
															10.76							
		total													34.73							
		Total													35.00	m3	x	Rs:	6136.00	/m3	≈	214760
10	9.1	Providing wood work (Anjili wood) in frames of doors, windows ,clerestory windows and other frames ,wrought framed and fixed in position with hold fast lugs or with dash fastners of required dia& length (hold fast lugs or dash fastner shall be paid for separately)																				
		Ventilation 60 x 50 cm 1 Nos: HM	(	2	x	1	)	x	0.60	x	0.10	x	0.07	≈	0.01	m3						
		Ventilation 60 x 50 cm 1Nos: VM	(	2	x	1	)	x	0.50	x	0.10	x	0.07	≈	0.01	m3						
		Total													0.02	m3	x	Rs:	94888.89	/m3	≈	1898

11	10.6.1	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointedtogether at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - 1 and M.S. top cover of required thickness for rolling shutters 80x1.25 mm M.S. laths with 1.25 mm thick top cover.																			
		Wall all round	(	1	x	4	)	x	3.00	x	3.00			≈	36.00	m2	x	Rs:	3121.25	/m2	≈	112365
12	5.8	Reinforced cement concrete work in vertical and horizontal fins individually or forming box louvers, facials and eaves boards up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement with 1:1½:3 (1 cement : 1½ coarse sand : 3 graded stone aggregate 20mm nominal size).																			
		Shade	(	1	x	1	)	x	15.60	x	0.60	x	0.07	≈	0.66	m3						
		Pillar	(	1	x	12	)	x	0.40	x	0.23	x	3.00	≈	3.31	m3						
		Beam top	(	1	x	1	)	x	41.00	x	0.23	x	0.45	≈	4.24	m3						
		Beam top	(	1	x	1	)	x	18.00	x	0.23	x	0.45	≈	1.86	m3						
		Beam top	(	1	x	1	)	x	14.60	x	0.23	x	0.45	≈	1.51	m3						
		cantilever	(	1	x	6	)	x	1.00	x	0.23	x	0.45	≈	0.62	m3						
		Stair case footting	(	1	x	1	)	x	1.20	x	0.45	x	0.45	≈	0.24	m3						
		Stair first flight	(	1	x	1	)	x	3.59	x	1.20	x	0.12	≈	0.52	m3						
		Stair second flight	(	1	x	1	)	x	1.59	x	1.20	x	0.12	≈	0.23	m3						

		Stair steps	(	0.5	x	18	)	x	1.20	x	0.28	x	0.15	≈	0.45	m3							
		Stair landing	(	1	x	1	)	x	2.40	x	1.20	x	0.12	≈	0.35	m3							
		Messanin roof slab	(	1	x	1	)	x	16.20	x	6.20	x	0.12	≈	12.05	m3							
		FF roof slab	(	1	x	1	)	x	3.00	x	5.20	x	0.12	≈	1.87	m3							
		total													27.92	m3							
		Deduction																					
		Stair room opening	(	1	x	1	)	x	9.00	m2		x	0.12	≈	1.08	m3							
		total deduction													1.08	m3							
															26.84								
		Net qnty													27.00	m3	x	Rs:	9749.2	/m3	≈	263228	
13	5.22.6	A Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.																					
		13.00	m	3	x	95			kg/m3						1235.00	kg	x	Rs:	99.22851	/kg	≈	122547	
14	5.22A.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level. Thermo mechanically treated bars																					
		27.00	m	3	x	95			kg/m3						2565.00	kg	x	Rs:	99.22851	/kg	≈	254521	
15A	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for : Foundations, footings, bases of columns, etc. for mass concrete.																					
		Pillar foottings	(	4	x	12	)	x	1.50			x	0.20	≈	14.40	m2							
		Pillar foottings	(	4	x	12	)	x	1.20			x	0.20	≈	11.52	m2							
		Pillar foottings	(	4	x	12	)	x	0.90			x	0.15	≈	6.48	m2							

														32.40							
														33.00	m2	x	Rs:	286.25	/m2	≈	9446
15B	5.9.5	Centering and shuttering including strutting, propping etc. and removal of form for : Lintels, beams, plinth beams, girders, bressumers and cantilevers.																			
		Plinth Beam all length	(	1	x	2	)	x	59.00			x	0.35	≈	41.30	m2						
		Beam top side	(	2	x	1	)	x	41.00			x	0.45	≈	36.90	m2						
		Beam top side	(	2	x	1	)	x	18.00			x	0.45	≈	16.20	m2						
		Beam top side	(	2	x	1	)	x	14.60			x	0.45	≈	13.14	m2						
		cantilever	(	6	x	1	)	x	1.00			x	1.13	≈	6.78	m2						
															114.32							
															115.00	m2	x	Rs:	484.00	/m2	≈	55660
15C	5.9.6	Centering and shuttering including strutting, propping etc. and removal of form for : Columns, Pillars, Piers, Abutments, Posts and Struts.																			
		Pillar up to plinth level	(	1	x	12	)	x	1.26			x	1.55	≈	23.44	m2						
		Pillar	(	1	x	12	)	x	1.26			x	3.00	≈	45.36	m2						
															68.80							
															70.00	m2	x	Rs:	660.60	/m2	≈	46242
15D	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for : Suspended floors, roofs, landings, balconies and access platform.																			
		Sock pit Slab	(	2	x	4	)	x	2.10			x	0.12	≈	2.02	m2						
		Sock pit Slab	(	2	x	4	)	x	0.53			x	0.12	≈	0.51	m2						
		Stair landing	(	1	x	1	)	x	2.40	x	1.20			≈	2.88	m2						

		Messanin roof slab	(	1	x	1	)	x	16.20	x	6.20				100.44	m2						
		FF Roof slab	(	1	x	1	)	x	3.00	x	5.20			≈	15.60	m2						
		total													121.44	m2						
		Deduction																				
		Stair room opening	(	1	x	1	)	x	9.00	x	1.00			≈	9.00	m2						
															9.00	m2						
															112.44	m2						
															113.00	m2	x	Rs:	585.24	/m2	≈	66132
15E	5.9.7	Centering and shuttering including strutting, propping etc. and removal of form for : Stairs, (excluding landings) except spiral-staircases.																				
		Stair first flight	(	1	x	1	)	x	3.59	x	1.50			≈	5.39	m2						
		Stair second flight	(	1	x	1	)	x	1.59	x	1.50			≈	2.39	m2						
		Stair steps	(	1	x	18	)	x	1.20			x	0.15	≈	3.24	m2						
															11.01	m2						
															12.00	m2	x	Rs:	576.50	/m2	≈	6918
15F	5.9.19	Centering and shuttering including strutting, propping etc. and removal of form for : Weather shade, Chajjas, corbels etc., including edges.																				
		Shade	(	1	x	1	)	x	15.60	x	1.00			≈	16.00	m2	x	Rs:	717.40	/m2	≈	11478
16	9.48	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.																				

		Ventilation 60x 50 cm 1 Nos: HM 12mm road	(	4	x	1	)	x	0.50	x	0.888	kg	/m	≈	1.78	kg						
		Ventilation 60 x 50 cm 1 Nos:	(	8	x	1	)	x	0.60	x	1.200	kg	/m	≈	5.76	kg						
															7.54							
															8.00	kg	x	Rs:	172.50	/kg	≈	1380
17	9.5.1.2	Providing and fixing panelled or panelled and glazed shutters for doors, windows and clerestory windows, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws, excluding panelling which will be paid for separately, all complete as per direction of Engineer-in-charge. 30 mm thick shutter																				
		Ventilation 60 x 50 cm 1Nos:	(	1	x	1	)	x	0.50			x	0.40	≈	0.20	m2						
		total													0.20	m2	x	Rs:	3506.22	/m2	≈	701
18	9.117.2	Providing and fixing factory made u PVC door frame made of uPVC extruded sections having an overall dimension as below (tolerance ±1mm), with wall thickness 2.0 mm (± 0.2 mm), corners of the door frame to be Jointed with galvanized brackets and stainless steel screws, joints mitred and plastic welded. The hinge side vertical of the frame reinforced by galvanized M.S. tube of size 19 X 19 mm and 1 mm wall thickness and 3nos Stainless steel hinges fixed to the frame complete Extruded section profile size 42x50 mm DAR 9.117.2																				
		Door 080 x 200 cm 1 Nos: HM	(	1	x	1	)		0.80					≈	0.80	m						

		Door 080 x 200 cm 1Nos: VM	(	1	x	2	)		2.00					≈	4.00	m						
															4.80							
		Total													5.00	m	x	Rs:	294.55	/m	≈	1473
19	9.118.1	24 mm thick factory made PVC door shutters made of styles and rails of a uPVC hollow section of size 59x24 mm and wall thickness 2 mm (± 0.2 mm) with inbuilt edging on both sides. The styles and rails mitred and joint at the corners by means of M.S. galvanised/plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised M.S. tube of size 20x20 mm and 1 mm (± 0.1 mm) wall thickness. The lock rail made up of 'H' section, a uPVC hollow section of size 100x24 mm and 2 mm (± 0.2 mm) wall thickness, fixed to the shutter styles by means of plastic/galvanised M.S. 'U' cleats. The shutter frame filled with a uPVC multi-chambered single panel of size not less than 620 mm, having over all thickness of 20 mm and 1 mm (± 0.1 mm) wall thickness. The panels filled vertically and tie bar at two places by inserting horizontally 6 mm galvanised M.S. rod and fastened with nuts and washers (For W.C. and bathroom door shutter).DAR 9.118.1																					
		Details of cost for one door shutter 2.20x1.08m = 2.38 sqm	(	1	x	1	)	x	0.80	x			2.00	≈	2.00	m2	x	Rs:	3961.30	/m2	≈	7923
20	13.16	6 mm thick cement plaster of c m 1:3 one coat floated hard and trowelled smooth for under side of slabs including watering curing etc. complete.under side of floor																				

		Plinth Beam all length	(	1	x	1	)	x	41.00			x	0.60	≈	24.60	m2						
		Shade all round	(	1	x	2	)	x	15.60	x	0.60			≈	18.72	m2						
		Pillar	(	1	x	12	)	x	1.36			x	3.00	≈	48.96	m2						
		Beam top side	(	2	x	1	)	x	41.00			x	0.45	≈	36.90	m2						
		Beam top side	(	2	x	1	)	x	18.00			x	0.45	≈	16.20	m2						
		Beam top side	(	2	x	1	)	x	14.60			x	0.45	≈	13.14	m2						
		cantilever	(	2	x	6	)	x	1.00			x	0.45	≈	5.40	m2						
		Stair second flight	(	1	x	1	)	x	1.59	x	1.20			≈	1.91	m2						
		Stair steps	(	1	x	23	)	x	1.50			x	0.15	≈	5.18	m2						
		Stair landing	(	1	x	1	)	x	3.76	x	1.40			≈	5.26	m2						
		Messanin roof slab	(	1	x	1	)	x	16.20	x	6.20				100.44	m2						
		FF Roof slab	(	1	x	1	)	x	3.00	x	5.20			≈	15.60	m2						
		total													292.31	m2						
		Deduction																				
		Stair room opening	(	1	x	1	)	x	9.00	x	1.00			≈	9.00	m2						
															9.00	m2						
															283.31	m2						
		Net qnty													290.00	m2	x	Rs:	196.30	/m2	≈	56927
21	13.7.1	12 mm cement plaster finished with a floating coat of neat cement floated hard and trowelled smooth ,including watering curing etc. complete. Top side of Roof																				
		Shade all round	(	1	x	1	)	x	15.90	x	0.60			≈	9.54	m2						
		Roof slab	(	1	x	1	)	x	16.20	x	6.20			≈	100.44	m2						

			(	1	x	1	)	x	3.00	x	5.20			≈	15.60							
		total													109.98	m2						
		Deduction																				
		Stair room opening	(	1	x	1	)	x	4.25	x	3.30			≈	14.03	m2						
															14.03	m2						
															95.96							
		Net qnty													96.00	m2	x	Rs:	316.41	/m2	≈	30375
22	13.4	Plastering with 1:4,12 mmthick one coat floated hard and troweled smooth for walls inside & out side watering curing etc.complete.DAR 13.4																				
		Wall all round	(	1	x	2	)	x	41.00			x	3.00	≈	246.00	m2						
		Inside wall	(	2	x	4	)	x	4.50			x	3.00	≈	108.00	m2						
		Inside wall	(	2	x	1	)	x	2.40			x	2.00	≈	9.60	m2						
		A single row on the plinth beam	(	2	x	1	)	x	59.00			x	0.15	≈	17.70	m2						
		Total													381.30	m2						
		Deduction																				
		Wall tile area												≈	14.00	m2						
		T Junction	(	1	x	12	)	x	0.10			x	3.10	≈	3.72	m2						
		Ventilation 60 x 50 cm 1 Nos:	(	2	x	1	)	x	0.60			x	0.50	≈	0.60	m2						
		Opening 100 x 210 cm 1Nos:	(	2	x	1	)	x	2.40			x	2.55	≈	12.24	m2						

		Bath room Opening 80 x 210 cm 1 Nos:	(	2	x	1	)	x	0.80			x	2.10	≈	3.36	m2						
		RS Opening 300 x 255 cm 4 Nos:	(	2	x	4	)	x	3.00			x	2.55	≈	61.20	m2						
		Total Deduction													95.12	m2						
															286.18							
		Net qnty													290.00	m2	x	Rs:	251.06	/m2	≈	72807
23	11.38	Providing and laying ceramic floor tiles of size 300x300 mm of first quality of approved make In all colours laid on 20 mm thick bed of cement mortar 1:4 including pointing the joints with white cement and matching pigment etc. complete. DAR 11.38																				
		floor area	(	1	x	1	)	x	76.44	m2				≈	76.44	m2						
		Bath room floor	(	1	x	1	)	x	2.64	m2				≈	2.64	m2						
		steps	(	1	x	18	)	x	0.34	m2				≈	6.05	m2						
		steps	(	1	x	18	)	x	0.18	m2				≈	3.24	m2						
															88.37							
		floor total													90.00	m2	x	Rs:	1317.87	/m2	≈	118608
24	11.36	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS:15622 of approved make in all colours shades, risers of steps and dados over 12mm thick bed of cement mortar 1:3 and jointing with grey cement slurry at 3.3kg/m2 including pointing in white cment mixed with pigment of matching shade complete.																				
		Bath room floor	(	1	x	1	)	x	8.92	x			2.10	≈	8.92	m2						

		Bath room floor	(	1	x	1	)	x	11.48	x			2.10	≈	11.48	m2						
		Bath room floor	(	1	x	1	)	x	9.54	x			2.10	≈	9.54	m2						
		Bath room floor	(	1	x	1	)	x	9.70	x			2.10	≈	9.70	m2						
															39.64							
		Bath room floor total													40.00	m2	x	Rs:	1219.08	/ m2		48763
25	13.48.1	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications : Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of special primer applied @ 0.75 ltr /10 sqm DAR 13.48.1																			
														≈	390.00	m2	x	Rs:	145.71	/m2	=	56827
26	13.48.2	Painting wood work with Deluxe Multi surface paint of required shade. : two or more coats applied @ 0.90 litr/10m2 over an under coat of primer applied @ 0.75 litr/10 m2 approved brand and manufacture																			
														≈	10.00	m2	x	Rs:	128.5162	/m2	=	1285
27	13.48.3	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/ 10 sqm over an under coat of primer applied @ 0.80 ltr/ 10 sqm of approved brand and manufacture												≈	100.00	m2	x	Rs:	131.14	/m2	=	13114
		APPENDIX - B- WORKS ARRANGED FOR PLUMBING & SANITTARY FITTINGS																			

28	17.3.1	Providing and fixing white vitreous china pedestal type water closet (European type)with seat and lid ,10 litre white vitreous china flushing cistern & CP flush bend with fittings & brackets, 40 mm flush bend , over flow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required:W.C. pan with ISI marked white solid plastic seat and lid											
			≈	1.00	Nos	x	Rs:	6971.64	/E	=	6972		
29	17.7.1	Providing and fixing wash basin with C.I brackets , 15 mmC.P brass pillartap ,32 mm C.P brass waste of standard pattern, including painting painting of fittings and brackets, cutting and making good the walls wherever required white vitreous china wash basin size 630X450 mm with a pair of 15 mm C.P brass pillar taps DAR 17.7.1											
			≈	5.00	Nos	x	Rs:	3397.00	/E	=	16985		
30	17.70.1	Providing and fixing PTMT Bottle Trap for Wash basin and sink.Bottle trap 31 mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 260 gms											
			≈	5.00	Nos	x	Rs:	721.00	/E	=	3605		
31	18.51.1	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.15 mm nominal bore DAR 18.51.1											
			≈	5.00	Nos	x	Rs:	889.78	/E	=	4449		

32	17.72	Providing and fixing PTMT towel ring trapezoidal shape 215 mm long, 200 mm wide with minimum distances of 37 mm from wall face with concealed fittings arrangement of approved quality and colour, weighing not less than 88 gms.DAR 17.72												
											≈	5.00	Nos	x	Rs:	318.38	/E	=	1592
33	18.64	Providing and fixing PTMT swivelling shower, 15 mm nominal bore, weighing not less than 40 gms. DAR 18.64												
											≈	1.00	Nos	x	Rs:	206.54	/E	=	207
34	OD 107	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 20mm dia 10Kgf/cm2- Internal work - Exposed on wall									≈	20.00	m	x	Rs:	168.12	/M	≈	3362
		20mm External work - Exposed on wall												
35	OD 157	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 20mm dia 10Kgf/cm2- Internal work - Exposed on wall									≈	15.00	m	x	Rs:	172.96	/M	≈	2594
		20mm External work - unfer trench												
36	OD 138	Providing and fixing PVC pipes including jointing of pipes with one step PVC solvent cement ,trenching, refilling & testing of joints complete as per direction of Engineer in Charge. 20 mm dia 10Kgf/cm2									≈	15.00	m	x	Rs:	125.50		≈	1883
		25mm Internal work - Exposed on												

		wall																			
37	OD 109	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 25mm dia 10Kgf/cm2- Internal work - Exposed on wall												≈	8.00	m	x	Rs:	188.00	/M	≈	1504
		25mm External work - Exposed on wall																			
38	OD 159	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 25mm dia 10Kgf/cm2- External work - Exposed on wall												≈	15.00	m	x	Rs:	196.21		≈	2943
		25mm External work - unfer trench																			
39	OD 140	Providing and fixing PVC pipes including jointing of pipes with one step PVC solvent cement ,trenching, refilling & testing of joints complete as per direction of Engineer in Charge. 25 mm dia 10Kgf/cm2												≈	15.00	m	x	Rs:	157.22		≈	2358
		32mm Internal work - Exposed on wall																			

40	OD 110	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 32mm dia 10Kgf/cm2 - Internal work - Exposed on wall											≈	8.00	m	x	Rs:	228.34	/M	≈	1827
		32mm External work - Exposed on wall																			
41	OD 160	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 32mm dia 10Kgf/cm2 - External work - Exposed on wall											≈	15.00	m	x	Rs:	237.36		≈	3560
		32mm External work - unfer trench																			
42	OD 141	Providing and fixing PVC pipes including jointing of pipes with one step PVC solvent cement ,trenching, refilling & testing of joints complete as per direction of Engineer in Charge. 32 mm dia 10Kgf/cm2											≈	20.00	m	x	Rs:	180.00		≈	3600
		40mm Externalwork - Exposed on wall																			

43	OD 161	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 40mm dia 10Kgf/cm2-Internal work - Exposed on wall	≈	8.00	m	x	Rs:	302.41		≈	2419
		63mm External work - Exposed on wall									
44	OD 165	Providing and fixing PVC pipes including fixing the pipe with clamps/ clips at 1.00 m spacing. This includes jointing of pipes with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 63mm dia 6Kgf/cm2 -External work - Exposed on wall	≈	8.00	m	x	Rs:	226.40		≈	1811
		110mm Internal work - Exposed on wall									
45	OD 170	Providing and fixing PVC pipes including fixing the pipe with clamps/ clips at 1.00 m spacing. This includes jointing of pipes with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 110mm dia 6Kgf/cm2 -External work - Exposed on wall	≈	6.00	m	x	Rs:	340.00		≈	2040
		110mm External work - unfer trench									
46	OD 151	Providing and fixing PVC pipes including jointing of pipes with one step PVC solvent cement ,trenching, refilling & testing of joints complete as per direction of Engineer in Charge. 110 mm dia 6Kgf/cm2	≈	13.00	m	x	Rs:	446.61		≈	5806

47	OD 178	Providing and fixing PVC moulded fittings / accessories for Rigid PVC pipes, including jointing with PVC solvent cement - 63 mm dia Vent cowl	≈	5.00	No:	x	Rs:	73.57		≈	368
48	OD 192	Providing and fixing PVC moulded fittings / accessories for Rigid PVC pipes, including jointing with PVC solvent cement - 110 mm dia Elbow	≈	5.00	No:	x	Rs:	202.00		≈	1010
49	OD 195	Providing and fixing PVC moulded fittings / accessories for Rigid PVC pipes, including jointing with PVC solvent cement - 110 mm dia Bend	≈	5.00	No:	x	Rs:	189.55		≈	948
50	OD 197	Providing and fixing PVC moulded fittings / accessories for Rigid PVC pipes, including jointing with PVC solvent cement - 110 x 110 x 110 mm dia Door Tee	≈	5.00	No:	x	Rs:	276.00		≈	1380
51	OD 203	Providing and fixing PVC moulded fittings / accessories for Rigid PVC pipes, including jointing with PVC solvent cement - 110 x 75 mm dia Reducer	≈	5.00	No:	x	Rs:	104.44		≈	522
52	OD 191	Providing and fixing PVC moulded fittings / accessories for Rigid PVC pipes, including jointing with PVC solvent cement - 75 x 63 mm dia Reducer	≈	5.00	No:	x	Rs:	67.18		≈	336
53	18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank	≈	1000.00	ltr	x	Rs:	10.56	/ltr	=	10560
54	18.19.1.1	Providing and fixing gun metal non-return valve of approved quality (screwed end) : 25 mm nominal bore : Horizontal DAR 18.19.1.1	≈	5.00	Nos	x	Rs:	599.23	/Nos	=	2996

55	18.19.1.1	Providing and fixing gun metal non-return valve of approved quality (screwed end) : 32 mm nominal bore : Horizontal DAR 18.19.1.1											≈	5.00	Nos	x	Rs:	599.23	/Nos	=	2996
III	BLOCK 2																				
1	2.6.1	Earth work in Excavation by mechanical means(Hydraulic Excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.50m, disposed earth to be leveled and neatly dressed. DAR 2.6.1 All kinds of soil																			
		Pillar	(	1	x	10	)	x	1.50	x	1.50	x	1.50	≈	33.75	m3						
		Wall all round	(	1	x	1	)	x	36.80	x	0.40	x	0.40	≈	5.89	m3						
		Total													39.64	m3						
		Net qnty													40.00	m3	x	Rs:	226.72	/m3	≈	9069
2	4.1.8	Providing and laying in position cement concrete of specific grade excluding the cost of centering and shuttering (1:4:8 cement concrete using 40 mm metal) watering curing etc. complete.																			
		Pillar	(	1	x	10	)	x	1.50	x	1.50	x	0.20	≈	4.50	m3						
		Floor concrete	(	1	x	1	)	x	13.40	x	5.00	x	0.08	≈	1.07	m3						
			(	1	x	1	)	x	13.00	x	13.40	x	0.08	≈	1.04	m3						
		Total													6.61	m3						
		Deduction																				
		wall area	(	1	x	1	)	x	58.20	x	0.20	x	0.08	≈	0.93	m3						
		deduction total													0.93	m3						

														5.68							
		Net qnty												6.00	m3	x	Rs:	6267.21	/m3	≈	37603
3	7.1.1	Random rubble masonry with hard stone in foundation and plinth including leveling up with cement concrete 1:6:12 (1 cement: 6 coarse sand: 12 graded stone aggregate 20 mm nominal size) up to plinth level with: 7.1.1 Cement mortar 1:6 (1 cement: 6 coarse sand)																			
		Foundation Wall all round	(	1	x	1	)	x	36.80	x	0.40	x	0.40	≈	6.00	m3	x	Rs:	5709.10	/m3	≈	34255
4	5.1.2	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level : 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)																			
		Pillar foottings	(	1	x	10	)	x	1.20	x	1.20	x	0.20	≈	2.88	m3						
		Pillar foottings	(	1	x	10	)	x	0.90	x	0.90	x	0.15	≈	1.22	m3						
		Pillar up to plinth level	(	1	x	10	)	x	0.40	x	0.23	x	1.55	≈	1.43	m3						
		Plinth Beam all length	(	1	x	1	)	x	48.66	x	0.23	x	0.35	≈	3.92	m3						
		Sock pit Slab	(	1	x	4	)	x	2.10	x	0.53	x	0.12	≈	0.53	m3						
		Total													9.97	m3						
		Net qnty													10.00	m3	x	Rs:	9078.02	/m3	≈	90780
5	OD	Solid block masonry using pre cast solid blocks (Factory made) of size 30x20x15cm or nearest available size for super structure above floor two level up to floor five level with thickness 15cm in: CM 1:6 (1 cement : 6 coarse sand) etc complete																			
		Wall all round	(	1	x	1	)	x	81.60	x	0.20	x	3.00	≈	48.96	m3						

		Inside wall	(	1	x	1	)	x	15.00	x	0.20	x	3.00	≈	9.00	m3							
		A single row on the plinth beam	(	1	x	1	)	x	81.60	x	0.20	x	0.15	≈	2.45	m3							
		parapet	(	1	x	1	)	x	36.80	x	0.20	x	0.15	≈	1.10	m3							
		Total													61.51	m3							
		Deduction																					
		Wall at pillar portions	(	1	x	25	)	x	0.40	x	0.20	x	3.10	≈	6.20	m3							
		R shutter 300x255	(	1	x	4	)	x	3.00	x	0.20	x	2.55	≈	6.12	m3							
															12.32								
															49.19								
		Total													50.00	m3	x	Rs:	6136.00	/m3	≈	306800	
6	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.																					
		floor area	(	1	x	1	)	x	240.00			x	0.60	≈	144.00	m3	x	Rs:	163.78	/m3	≈	23584	
7	5.8	Reinforced cement concrete work in vertical and horizontal fins individually or forming box louvers, facials and eaves boards up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement with 1:1½:3 (1 cement : 1½ coarse sand : 3 graded stone aggregate 20mm nominal size).																					
		Shade	(	1	x	1	)	x	5.00	x	0.60	x	0.07	≈	0.21	m3							

		Pillar	(	1	x	15	)	x	0.45	x	0.23	x	3.00	≈	4.66	m3						
		Beam top	(	1	x	2	)	x	50.00	x	0.23	x	0.45	≈	10.35	m3						
		Beam top	(	1	x	2	)	x	26.80	x	0.23	x	0.45	≈	5.55	m3						
		cantilever	(	1	x	7	)	x	1.00	x	0.23	x	0.45	≈	0.72	m3						
		Messanin roof slab	(	1	x	1	)	x	14.70	x	5.60	x	0.12	≈	9.88	m3						
		Messanin roof slab	(	1	x	1	)	x	14.00	x	6.30	x	0.12	≈	10.58	m3						
		total													41.95	m3						
		Net qnty													42.00	m3	x	Rs:	9749.20	/m3	≈	409466
8	5.22A.6	5.22A Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.																				
		42.00	m	3	x	100			kg/m3						4200.00	kg	x	Rs:	99.22851	/kg	≈	416760
9	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.																				
		10.00	m	3	x	120			kg/m3						1200.00	kg	x	Rs:	99.22851	/kg	≈	119074

10	10.6.1	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointedtogether at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - 1 and M.S. top cover of required thickness for rolling shutters 80x1.25 mm M.S. laths with 1.25 mm thick top cover.																			
		Wall all round	(	1	x	4	)	x	3.00	x	3.00			≈	36.00	m2	x	Rs:	3121.25	/m2	≈	112365
11A	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for : Foundations, footings, bases of columns, etc. for mass concrete.																			
		Pillar foottings	(	4	x	10	)	x	1.50			x	0.20	≈	12.00	m2						
		Pillar foottings	(	4	x	10	)	x	1.20			x	0.20	≈	9.60	m2						
		Pillar foottings	(	4	x	10	)	x	0.90			x	0.20	≈	7.20	m2						
															28.80							
															30.00	m2	x	Rs:	286.25	/m2	≈	8588
11B	5.9.5	Centering and shuttering including strutting, propping etc. and removal of form for : Lintels, beams, plinth beams, girders, bressumers and cantilevers.																			
		Plinth Beam all length	(	1	x	2	)	x	31.80			x	0.35	≈	22.26	m2						
		Beam top side	(	2	x	1	)	x	50.00			x	0.45	≈	45.00	m2						
		Beam top side	(	2	x	1	)	x	26.80			x	0.45	≈	24.12	m2						
		cantilever	(	7	x	1	)	x	1.00			x	1.13	≈	7.91	m2						

														99.29							
														100.00	m2	x	Rs:	484.00	/m2	≈	48400
11C	5.9.6	Centering and shuttering including strutting, propping etc. and removal of form for : Columns, Pillars, Piers, Abutments, Posts and Struts.																			
		Pillar up to plinth level	(	1	x	10	)	x	1.26			x	1.55	≈	19.53	m2						
		Pillar	(	1	x	15	)	x	1.26			x	3.00	≈	56.70	m2						
															76.23							
															80.00	m2	x	Rs:	660.60	/m2	≈	52848
11D	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for : Suspended floors, roofs, landings, balconies and access platform.																			
		Messanin roof slab	(	1	x	1	)	x	14.70	x	5.60				82.32	m2						
			(	1	x	1	)	x	14.00	x	6.30				88.20	m2						
															170.52	m2						
		total													172.00	m2	x	Rs:	585.24	/m2	≈	100661
12	13.16	6 mm thick cement plaster of c m 1:3 one coat floated hard and trowelled smooth for under side of slabs including watering curing etc. complete.under side of floor DAR 13.16																			
		Plinth Beam all length	(	1	x	1	)	x	48.66			x	0.60	≈	29.20	m2						
		Pillar	(	1	x	30	)	x	1.26			x	3.00	≈	113.40	m2						
		Beam top side	(	2	x	1	)	x	50.00			x	0.45	≈	45.00	m2						
		Beam top side	(	2	x	1	)	x	26.80			x	0.45	≈	24.12	m2						
		cantilever	(	2	x	7	)	x	1.00			x	0.45	≈	6.30	m2						

		Messanin roof slab	(	1	x	1	)	x	14.70	x	5.60				82.32	m2							
			(	1	x	1	)	x	14.00	x	6.30				88.20	m2							
		total													388.54	m2							
		Net qnty													390.00	m2	x	Rs:	196.30	/m2	≈	76557	
13	13.4	Plastering with 1:4,12 mmthick one coat floated hard and troweled smooth for walls inside & out side watering curing etc.complete.																					
		Wall all round	(	1	x	2	)	x	44.80			x	3.00	≈	268.80	m2							
		Inside wall	(	1	x	2	)	x	28.40			x	3.00	≈	170.40	m2							
		Inside wall	(	1	x	1	)	x	13.40			x	3.00	≈	40.20	m2							
		A single row on the plinth beam	(	2	x	1	)	x	81.60			x	0.15	≈	24.48	m2							
		Total													503.88	m2							
		Deduction																					
		RS Opening 300 x 255 cm 4 Nos:	(	2	x	4	)	x	3.00			x	2.55	≈	61.20	m2							
		Total Deduction													61.20	m2							
															442.68								
		Net qnty													445.00	m2	x	Rs:	251.06	/m2	≈	111722	

14	16.88	Providing and laying matt finished vitrified tile of size 100x100x16mm having water absorption less than 0.5% and conforming to IS: 15622 of approved make in all colours and shades in out door floors such as footpath, court yard multi models etc., laid on 20mm thick base of cement mortar 1:4 (1cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as direction of Engineer-in-Charge.																			
		Car porch area							13.40	x	5.00				67.00	m2	x	Rs:	2148.06	/ m2		143920
15	11.38	Providing and laying ceramic floor tiles of size 300x300 mm of first quality of approved make In all colours laid on 20 mm thick bed of cement mortar 1:4 including pointing the joints with white cement and matching pigment etc. complete. DAR 11.38																			
		floor area	(	1	x	1	)	x	241.20	m2				≈	241.20	m2						
		floor total													242.00	m2	x	Rs:	1317.87	/m2	≈	318925
16	12.5	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineerin-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.																			
		roof area	(	1	x	2	)	x	112.00	m2				≈	224.00	m2						
		floor total													225.00	m2	x	Rs:	906.32	/m2	≈	203921

17	12.51.1	Providing and fixing precoated galvanised steel sheet roofing accessories 0.50 mm (+ 0.05 %) total coated thickness, Zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self drilling/ self tapping screws complete : Ridges plain (500 - 600mm)																			
			(	1	x	1	)	x	12.00	m			≈	12.00	m						
		total												12.00	m	x	Rs:	923.66	/m	≈	11084
18	10.2	Structural steel work riveted, bolted or welded in built up sections, trussesand framed work, including cutting, hoisting, fixing in position and applying priming coat of approved steel primer all complete.																			
		90.00	m		x	26			kg/m					2340.00	kg	x	Rs:	107.75	/kg	≈	252141
19	13.48.1	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications : Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of special primer applied @ 0.75 ltr /10 sqm DAR 13.48.1																			
													≈	835.00	m2	x	Rs:	145.71	/m2	=	121668

20	13.48.3	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/ 10 sqm over an under coat of primer applied @ 0.80 ltr/ 10 sqm of approved brand and manufacture	≈	100.00	m2	x	Rs:	131.14	/m2	=	13114
		APPENDIX - B- WORKS ARRANGED FOR PLUMBING & SANITTARY FITTINGS									
21	17.7.1	Providing and fixing wash basin with C.I brackets , 15 mmC.P brass pillartap ,32 mm C.P brass waste of standard pattern, including painting painting of fittings and brackets, cutting and making good the walls wherever required white vitreous china wash basin size 630X450 mm with a pair of 15 mm C.P brass pillar taps DAR 17.7.1									
			≈	2.00	Nos	x	Rs:	3397.00	/E	=	6794
22	17.70.1	Providing and fixing PTMT Bottle Trap for Wash basin and sink.Bottle trap 31 mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 260 gms									
			≈	2.00	Nos	x	Rs:	721.00	/E	=	1442
23	18.51.1	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.15 mm nominal bore DAR 18.51.1									
			≈	2.00	Nos	x	Rs:	889.78	/E	=	1780

24	OD 107	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 20mm dia 10Kgf/cm2- Internal work - Exposed on wall											≈	15.00	m	x	Rs:	168.12	/M	≈	2522
		20mm External work - Exposed on wall																			
25	OD 157	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 20mm dia 10Kgf/cm2- Internal work - Exposed on wall											≈	15.00	m	x	Rs:	172.96	/M	≈	2594
		20mm External work - unfer trench																			
26	OD 138	Providing and fixing PVC pipes including jointing of pipes with one step PVC solvent cement ,trenching, refilling & testing of joints complete as per direction of Engineer in Charge. 20 mm dia 10Kgf/cm2											≈	15.00	m	x	Rs:	125.50		≈	1883
		25mm Internal work - Exposed on wall																			

27	OD 109	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 25mm dia 10Kgf/cm2- Internal work - Exposed on wall											≈	8.00	m	x	Rs:	188.00	/M	≈	1504
		25mm External work - Exposed on wall																			
28	OD 159	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 25mm dia 10Kgf/cm2- External work - Exposed on wall											≈	15.00	m	x	Rs:	196.21		≈	2943
		25mm External work - unfer trench																			
29	OD 140	Providing and fixing PVC pipes including jointing of pipes with one step PVC solvent cement ,trenching, refilling & testing of joints complete as per direction of Engineer in Charge. 25 mm dia 10Kgf/cm2											≈	15.00	m	x	Rs:	157.22		≈	2358
		32mm Internal work - Exposed on wall																			
30	OD 110	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 32mm dia 10Kgf/cm2 - Internal work - Exposed on wall											≈	8.00	m	x	Rs:	228.34	/M	≈	1827

		32mm External work - Exposed on wall																			
31	OD 160	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 32mm dia 10Kgf/cm2 - External work - Exposed on wall												≈	15.00	m	x	Rs:	237.36		≈	3560
		32mm External work - unfer trench																			
32	OD 141	Providing and fixing PVC pipes including jointing of pipes with one step PVC solvent cement ,trenching, refilling & testing of joints complete as per direction of Engineer in Charge. 32 mm dia 10Kgf/cm2												≈	20.00	m	x	Rs:	180.00		≈	3600
		40mm Externalwork - Exposed on wall																			
33	OD 161	Providing and fixing PVC pipes, fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step PVC solvent cement and testing of joints complete as per direction of Engineer-in-Charge 40mm dia 10Kgf/cm2-Internal work - Exposed on wall												≈	8.00	m	x	Rs:	302.41		≈	2419
		63mm External work - Exposed on wall																			
34	18.19.1.1	Providing and fixing gun metal non-return valve of approved quality (screwed end) : 25 mm nominal bore : Horizontal DAR 18.19.1.1												≈	4.00	Nos	x	Rs:	599.23	/Nos	=	2397
35	18.19.1.1	Providing and fixing gun metal non-return valve of approved quality (screwed end) : 32 mm nominal bore : Horizontal DAR 18.19.1.1												≈	4.00	Nos	x	Rs:	599.23	/Nos	=	2397

36		BIOGAS PLANT																	2.00	NO		175000
37		SOLID WASTE PLANT																	2.00	NO		200000
38		RAIN WATER HARVEST																	2.00	NO		200000
		TOTAL	(BLOCK1+BLOCK2)																			5661120
39		SOLAR PANNEL INSTALLATION 10%													LS							566112
40		Add ELECTRIFICATION CHARGES 10%													LS							566112
		CONTIGENCIES 5%																				281656
		GRAND TOTAL																				**7075000**
		RUPEES SEVENTY LAKHS SEVENTY FIVE THOUSAND ONLY																				

Chapter 3

FINANCIAL DETAILS

Component wise details for each activity

Materials: The material will be supplied by the contractor as per the specification in the tender notification. The cost of the materials is included in the estimate, as it is proposed to be a work by a recognized contractor. The material specifications are included to assure the quality of all the material used (Attached).

Labour: Special provisions may be made to assure the quality of workmanship. The labour charge is included in the estimate. Since it is proposed to be a work by a recognized contractor, the labour will be employed by the contractor as per the pacification in the tender notification.

Transport: The transporting charge is included in the estimate. While transporting the materials, all necessary care will be taken to avoid any casualty.

Environmental compliance: All environmental laws, regulations, standards and other requirements (site permit, fire clearance certificate and pollution certificate) will be obtained. Environmental concerns and compliance activities are increasingly being integrated and aligned to some extent in order to avoid conflicts, wasteful overlaps and gaps.

Consultancy: No major consultancy is envisaged.

Stationary compliance cost: Detailed costing included

Procurement: Procurement charge is envisaged

Soil Testing: Provision is included

Contingency: Around 5 per cent is demarcated under contingency

Financing Source: Fund from Kerala Local Government Service Delivery Project (KLGSDP)

Chapter 4

INSTITUTIONAL FRAMEWORK

ROLE OF DIFFERENT OFFICIALS:

Panchayat Committee: The project has to approve by the Panchayat Committee

Assistant Director of Agriculture and Engineer from the LSGD Engineering Wing: After the approval, it will be vetted by the Assistant Director of Agriculture and Engineer from the LSGD Engineering wing .

Panchayat Committee: Panchayat Committee officially submits the project to the District Planning Committee (DPC) for approval.

Procurement / Tender: After the approval of the DPC, the Panchayat has to tender the work as per the procumbent /tender rule

Implementation: The project will be implemented by the LSGD Engineering wing of the Gram Panchayat in consultation with the Panchayat Committee

Monitoring: the Project will be monitored by the Panchayat Committee..

Beyond Panchayat: No activity is visualized beyond the Panchayat during the stage of construction.

Chapter 5

PROJECT MANAGEMENT

PRE CONSTRUCTION PHASE

Pre construction phase is the phase of analysis that occurs after some form of funding is available and before design begins. During the pre-design phase, engineering investigation is done to analyze space requirement issues, the constraints and opportunities of the proposed site, and the cost versus the budget. Funds may be available to develop a detailed project program or only to investigate certain technical issues in order to determine scope, budget, or project schedule.

The pre-design phase may include site analysis, programming, construction cost analysis, and value engineering.

- Site analysis includes site selection, geotechnical reports, and review of existing structures.
- Programming defines the project needs of the user. Programming includes cataloging the spaces and equipment needed, and functional relationships.
- The construction cost analysis provides a construction budget amount for the capital improvement budget (CIB) and a cost plan to assist in explaining the budget and in guiding project management.
- Value engineering in the pre-design phase scrutinizes the program, site selection, and project budget.

The overall planning, coordination, and control of the project from inception to completion aimed at satisfying the requirements of the Panchayat are listed in the project management phase in order to produce a functionally and financially viable project. Design -bid -build method of construction of agri -business center structure would be entirely designed before being built. It resulted in a package of plans and specifications which formed the construction documents. The Panchayat would then tender the bids (or tenders) and award the project to a successful bidder, who would then build the structures for agri -business center authority and the solid & liquid waste management. Pre-construction services grew out of construction cost estimating to encompass the other activities in planning the project. The intent is to work with the Panchayat to help deliver a satisfactory project that meets the objectives of the proposed project. In addition to estimating, the pre construction team participates in design decisions, evaluations, value engineering, value analysis, scheduling, constructability reviews, and more. Design costs and permitting are included. Many items under pre-construction services are included in the project construction services. This is also accomplished in the project cost. The constructing firm then delivers the project as per the proposed tender agreement. The

Panchayat and the constructing firm share any cost savings realized during construction. Before implementation a wide range of issues needs to be considered. · The availability of finance for construction is important. As in case of the proposed project, it is assured from the KLGSDP .Other activities are (i) establishment of a monitoring and performance evaluation system,(ii)· the phasing out of development and provision for agri-business center authority operation during the construction period,(iii) role of the public participation and (iv)· technical assistance requirements for construction, supervision and for the management and operations staff. Preparation of tender/bid documents; and· choice of an appropriate type of construction contract is another landmark in the project.

PHASING OF DEVELOPMENT

Phasing out of targets for the entire construction work of the proposed project (agri business center and solid & liquid waste management) is the important step under the pre construction phase. The programme has incorporated practical time-frames for the construction contract lengths and the periods required for the pre-contract stages. Sufficient time is allowed for examination of detailed design, the preparation of tender documents, tendering and tender analysis, recommendations and acceptance; and the contractor's mobilization. Other matters requiring careful consideration are also included into the separate construction contracts and scheduling of equipment procurement. In order to accelerate implementation some activities are designed in such a way that it can be initiated before the real start of a project. The pre-qualification, selection of design, supervision of consultants, the preparation of tender documents are included in the initial actions .

Quality assurance and quality control are integral components of a Quality Assurance Project Plan (QAPP). In addition, there are four key elements of a QAPP: project management, measurement/data acquisition, assessment and oversight, and data validation and usability. The elements of project management include documenting the process used to identify the problem and collecting background information; establishing task descriptions, timelines, and quality objectives; creating staff organization charts and responsibilities, including training and certification requirements; and keeping necessary documentation of the project. These elements ensure the project has a well-defined goal and approach understood by the participants, and that the planning outputs have been documented.

CONTRACT ADMINISTRATION SYSTEM

A responsible person who belongs to the LSGD Engineering Wing from the Panchayat, would normally be appointed to oversee the works. Apart from day-to-day supervision of the project, it is his / her responsibilities to cover the preparation of the tender (or "bid") documents, including working details, tender drawings, specifications and bills of quantities, an overall cost plan and procurement schedules for obtaining equipment.

CONTRACT ADMINISTRATION ISSUES

Before initiating construction operations, a number of issues related to construction supervision and monitoring procedures have to be resolved, that is on· the responsibility for setting out the works the authority for giving instructions on the site ,the scope of any materials-testing programme , the date for completion of the work and the date for occupation. It is better to settle these issues by the Panchayat with the contractor.

FINANCIAL MANAGEMENT

The timely administration and financial management of payments to contractors is the responsibility of the Panchayat, who will undertake valuations of the work completed and then prepare a certificate showing the amount for interim payment. An amount of around 5-10 percent is normally retained from the valuations to cover the making good of defects. On completion of the works the LSGD Engineering Wing is entitled to prepare a final account, which will form the basis of the final payment, including the release of the retention amount. With a contract based on measured quantities (rather than a fixed price) the final account will adjust the tender sum amount to correspond to the actual works completed.

LOCAL CONTRACTING CAPACITY

To achieve the desired phasing the construction works will need to be broken up or packaged so that they can be handled by the local construction industry. The abilities of local contractors will, therefore, need to be reviewed. We have a system of licensing of contractors. In order to be registered they have to satisfy a range of minimum requirements. These criteria are related to the technical personnel they employ, the construction equipment they possess, their experience in terms of projects completed and their financial assets. Normally, contractors are graded into classes and what needs to be considered is the suitability of particular grades for different sections of the work as per the proposed project.

SELECTION AND PRE-QUALIFICATION OF CONTRACTORS

Generally, bidding should be on a selective tendering basis, taking into account the need for the contractors to have experience in both the installation of site infrastructure and of fairly sophisticated buildings. The proposed project requires experience in high-quality building construction and therefore a general civil engineering contractor, with relevant good will and experience, would be appropriate. This might be best achieved by letting this section of the works as a separate contract. Since the design of the buildings is made

sufficiently robust and simple, the proposed project activity might be undertaken by a smaller-scale contractor.

CONTRACT CONDITIONS

Conditions must be clear and it should be easily administered contractual arrangements**.** Local conditions of contract are likely to exist and these may be appropriate for proposed types of work. The contract should be on a measure and pay basis, tendered on the basis of bills of quantity, for which the local conditions are ideally suited.

NO AFFIRMATIVE ACTION PROGRAMMES.

Affirmative action programmes towards local construction industries should not be entertained so that standard and those who have good credibility can compete against locally patronaged contractors. These programmes will need to be taken into account both in selecting contractors and in the financial and economic analysis of the project. The normal criteria used in evaluating tenders is to select the lowest "conforming" bid, which is the one that combines a low price matched to a proven ability to undertake the works.

An additional incentive to local contractors is often to allow a mobilization advance of say 10 percent of the contract value. If this is contemplated, it is essential that adequate provision is made in the contract documents for its proper utilization, so that the payments are only made against specific project activities, such as a percentage release on the arrival of the contractor's equipment and plant, with the balance released as the work progresses to the satisfaction of the resident engineer.

IMPLEMENTATION *OF* AGRI BUSINESS CENTER AUTHORITY OPERATIONS

Assuming that the institutional framework for the agri -business center authority has been resolved there are a number of other issues with which the agri- business center staff and traders will need to involve themselves in order that management aspects of the implementation programme are effective.

Operational matters. These include issues such as staff selection and training. Many of the items and skills required will be relatively novel and it will therefore be necessary for a training programme to be developed appropriate to these needs. The selection of applicants for stalls and storage space, and the setting of rents and tolls will also need to be resolved by the Panchayat .

Post-contract administration. On completion of the construction works the agri business center will take over responsibility for looking after the physical infrastructure. A agri business center operator is, in effect, the manager of the infrastructure system. To do this, the agri business center will have to consider how the periodic operation and maintenance of the agri business center will be undertaken. Apart from day-to-day maintenance, which is likely to be the responsibility of "in-house" staff, this will include:· (i) the setting of

maintenance standards for the longer-term repair and replacement of infrastructure, (ii) emergency safety and security procedures; and (iii) obtaining public liability and accidental damage insurance.

Information systems. The setting up of agri -business center information and price systems will need to be considered right from the outset so that the dissemination of information can commence with the operation of the agri- business center. A monitoring system will also need to be set up so that a agri- business center authority's performance can be evaluated against predetermined physical and economic criteria, particularly if lessons from a project are to be applied to other agri -business center authority developments.

Project completion. At the end of an implementation period the agri- business center should be fully operational, agri -business center information and management systems should be functioning and it should start to be clear whether the agri -business center will be able to achieve benefits for the main target groups of beneficiaries. However, the impact of a agri -business center project on its beneficiaries is likely to be difficult to measure, particularly in the short term of a project life.

Project monitoring criteria. The achievement of a project's goals will, therefore, need to be measured by the monitoring system. A number of indicators may be used to measure the project's impact. These might include:

- increased per caput consumption of fruits, vegetables, fish and meat in line with national basic-needs targets;
- expanded production areas for fruits, vegetables and related increases in producer's incomes; and
- lower consumer prices for fruits and vegetables, accompanied by a levelling-out of seasonal fluctuations in consumer prices.

To verify these indicators may need regular surveys to be undertaken by the agri -business center or by the responsible government departments, say agriculture. Surveys may include changes in price and volume of agriculture produce, estimates of changes in production areas planted and yields; and consumer price monitoring. These data, combined with an analysis of the daily trading and receipts records maintained by the agri-business center, will indicate whether the operation of a agri -business center has been successful. The foundation of the monitoring system should be established during the implementation period by undertaking base-line surveys.

Commencement of Activities

- Procurement Process (Tender Package, Package description).
- Tender Schedule – (Contract, Consultant, firms)
- Schedule for Clearance (if any) (Certificate, registration agreement.)

Chapter 6

FINANCIAL VIABILITY AND SUSTAINABILITY

ECONOMIC COST BENEFIT ANALYSIS (CBA):

It is examined to establish and totals up the equivalent money value of the benefits and cost to the community of the Panchayat by constructing the project. In other words, our analysis is to know whether the construction of the Agri -Business Center is worthwhile in terms of economic rationality. In the exercise many components of the benefits and costs are intuitively obvious and therefore the basic principles are applied for the exercise. When the impact of the project is studied and computed, 'the particular area under construction' has contributed additional weightage. It is a positive amount for the particular project area, the Thanthonnithodu Panchayat. We have constructed two hypothetical illustrations by applying 'with and without' comparison and 'before and after' comparison. (i) What the situation would be with the project and what the situation would be without the Project. (ii) What the situation would be before the project and what the situation would be after the project. All the comparisons are positive and justified economic rationality of the project .The measurement of value of human wellbeing expected to be supported by the proposed project is also favourable though there is considerable reservations to the idea of placing money value on human wellbeing. When all this has been considered, the decision making for this project is one for which the discounted value of the benefit exceeds the discounted value of cost .The net benefits are positive ,this is equivalent to the benefit cost being greater than one and the internal rate of return being greater the cost of capital .

Social Cost Benefit Analysis

All the societal effects, like, pollution, environment, safety, travel times, spatial quality, health, market impacts, legal aspects, etc had been taken in consideration. We have tried to attach a price to as many effects as possible in order to uniformly weigh the above-mentioned heterogeneous effects. As a result, these prices reflect the value a society attaches to the caused effects. It has enabled us to form an opinion about the net social welfare effects of the project and set against the 'null alternative hypothesis'. We have identified direct, indirect and external effects of social cost benefit. Direct effects are the costs and benefits that can be directly linked to the users of the project properties (the local community in general and peasantry in particular) Indirect effects are the costs and benefits that are passed on to the producers and consumers outside the market with which the project is involved (a chain of another set of business group, nearby the new building,

recreational area such as hotels and restaurant , taxi stand , tax incomes, etc.). External effects are the costs and benefits that cannot be passed on to any existing markets because they relate to issues like the environment (noise, emission of CO2, generation of solid and liquid waste etc.). All relevant costs and benefits of the project is identified and monetized as far as possible. The general principle is that the benefits of a project do not always get to the groups bearing the costs. A social cost benefit analysis gives insight in who bears the costs and who derives the benefits. However, the above general principal is not the case with the construction of the project. Here, as per our observation, who bears the costs of the project are those who derive the benefits. Our method of monetizing effects could also influence the outcome of the social cost benefit analysis and the predictions contained major elements of uncertainty. Therefore, we are fully conscious that the result of the social cost benefit analysis was not absolute. Nevertheless, it has acted a good instrument to investigate the strong and weak points of the different aspects of the project.

- The following Social benefits and costs were identified

Social Benefits

1. The major benefit of setting up of an agri -business center would be the establishment of a market structure that will lead to creation of better price mechanism for agriculture produce .It will also lead to supply of fresh agriculture produce to customers at a reasonable price. The exploitation of the middle men would be minimized.

2. The benefit of setting up of a scientific structure for waste (solid & liquid) treatment and management along with the market structure would lead to reduction in waste disposal costs and environment coasts as agriculture residue can be used.

3. The total project beneficiary households are the entire households in the Panchayat area and considerable size from the nearby Panchayats.

4. The total project workforce is estimated to peak at 340 and additional part-time employment of about another 250 workers.

5. Revenue earned by the Panchayat in terms of professional tax and other taxes which will gradually strengthen the resource base of the deficit Panchayat.

The will provide the technical industry expertise, and partnerships to help the regions' industry connect, compete and grow. With focus areas in emerging and novel crops, food business development, and precision agriculture, the Center will support the agriculture industry and enable companies to access high-growth opportunities for increased success.

Social Costs

No major social cost except the generation of solid and liquid waste is identified. Since the center is intended to be properly and structurally linked with the solid and liquid waste management unit the impact of the social cost is minimized to very little /zero.

Access:

- Since the proposed project is on *Agri Business Center*, *the* access is ensured to all sections of the society. The peasantry would directly participate in the market with their agriculture produce and the other sections of the society participate as customers. The service of the Solid & Liquid Waste Management unit is accessible to all.

Coverage:

- Universal coverage is ensured. However, there may be preference for those who from the local community.

Service:

- The proposed project has two components, Agri Buseness Center and Solid & liquid waste management .The first one provides a package of services such as rural market, remunerative price for local agriculture produce, supply of agriculture product with reasonable price and employment opportunities. Whereas the services from the second component provides clean and zero waste environment space for social and civic engagement.

Safety:

All safety measures including fire safety will be ensured in the in the center as per the existing building norms.

Time Saving:

As time saving mechanism, a time scheduled (with set goals and deadlines on realistic terms), is included in the work plan and accord it strictly as possible. Application of protocol checklist for observations on how products and services are used and is recommended as ways to save time. Application of accounting software, project management platform ,delegation ,focus on result, incentivize tasks, set reminders, prioritize by importance, prioritize by urgency etc can be used judiciously and in the right context as time saving tips in project management. The project steering committee will be constituted to avoid gaps in project planning, deficient contract management, and ineffective monitoring, which is mainly taking the responsibility of time saving in the project.

Cost Saving:

All intense, precise, and detailed cost saving measures will be applied. Mainly, it will be achieved by competitive bidding process. Pre tender documents will be prepared in such a way to select and manage the best providers for the project in terms of service, quality and

cost. It looks at how processes and procedures can be made more efficient, increasing productivity. Apply protocol checklist for simple observations on how products and services are used and recommends ways to save money. Correction of billing errors will be made by double checking **.**Elimination of overcharges and/or unnecessary services is another way to reduce cost **.**Rate reductions from current providers will be made friendly negotiations. The project steering committee will be constituted to avoid gaps in project planning, deficient contract management, and ineffective monitoring, which is mainly taking the responsibility of cost saving in the project.

Environmental Improvement:

An Environment Improvement Programme (EIP) is envisaged as a business and community engagement tool which will be constructed by the three stakeholders (Panchayat, business groups and the local community). It will be an effective tool to guide the proposed market's environmental management through a process of continued improvement. It is also a public commitment by the Panchayat to drive environmental improvements through a series of agreed actions and timelines. Environment Improvement Program recognizes the valuable environmental improvements which can be made by stakeholder committed to the effective application of EIPs through responsible citizen engagement. A number of fundamental principles should be considered by the Panchayat, businesses group in the proposed market project and the local community. The EIP is developed in a partnership between the Panchayat, business group and the local community in which it operates. As such the Panchayat needs to be open, constructive and collaborative – the consortium of Panchayat, business group and local community will provide insight into areas of environment concern. When used both as an inspirational tool, and in a mandatory capacity between the Panchayat, business group and local community, have the legitimate power to regulate. The consortium looking to implement an EIP need to show genuine commitment to the process of environmental improvement, which is reflected in the issues identified for action plan, which should be endorsed at Panchayat level. The information in EIPs should be easily accessible to the community. The language and style of plans should be appropriately pitched for the audience. The document should also be available both to the local community members who attend the Gram Sabha and also in the public domain via (the Panchayat 's website). The EIPs should be integrated into existing environmental policies. The nature of this will vary depending on the level of sophistication of environmental management in the Panchayat with standard protocol checklist. The issues and actions identified within EIPs should be tailored to the specific business and the specific project site of both market and solid & liquid waste management structures/units. In particular, they should reflect those identified as of community concern and should address any relevant issues which

characterize the particular business group. Activities and objectives within EIPs should be prioritized according to the need. The progress is monitored on a concurrent basis with a reporting system by an Management Information System (MIS) template

Accountability

Accountability is the key element in project management. It outlines the different ways in which project activities are accountable and the mechanisms they use to account to the local communities. Since the process and end result aim to results-based management the proposed project activity should begin by introducing key features of governance and management structures in relation to the principle of accountability. The Panchayat also outlines principles for enhancing 'downward' or social accountability to project and programme beneficiaries. The organizational culture is designed in such ways which lead to accountability in project management and accountability in their dealings with all stakeholders. An accountability manual would be designed to give instructions on how to keep clear, accurate financial records in accordance with standard best practice. It also suggested to operational double-entry book keeping and provides guidance on generating key financial statements including income & expenditure accounts and balance sheets for social auditing.

.**Negative effects**

- No negative efforts are listed.

Chapter 7
MONITORING AND EVALUATION

While perceptions as to the role and function of Monitoring and Evaluation (M&E) may vary, their place as key elements of the project cycle among development agencies is incontrovertible. The EC's Project Cycle Management Guidelines, for example, emphasize the use of M&E results for programming and project identification, as part of a structured process of feedback and institutional learning. Here, monitoring and evaluation systems are designed "to inform project management of whether implementation is going as planned or corrective action is needed. A well-designed M&E system provides data on the progress of a project and whether it is meeting objectives. These data may indicate that adjustments are required in the project to take into account different circumstances in the local environment". Although monitoring and evaluation are usually discussed in tandem, they serve distinct yet complementary functions. The role of monitoring is seen as one of regular and continuous tracking of inputs, outputs, outcomes, and impacts of development activities against targets. It determines whether adequate implementation progress has been made to achieve outcomes, and provides management with information to enhance implementation. Unlike monitoring, evaluation is seen as attempting to establish attribution and causality, and serve as a basis for accountability and learning by staff, management and clients. Information from evaluation is to be used to develop new directions, policies and procedures.

Maintenance, monitoring and evaluation should be considered a part of the asset management system. Asset management may be defined as minimizing the life cycle cost of managing deteriorating facilities, including construction costs, while maintaining the level of service provided to users with limited financial and human resources, maintaining the existing assets in good condition and clearly explaining these activities to the public. On completion of the center, the Panchayat committee will take over responsibility for looking after the physical infrastructure. The responsibility of monitoring and evaluation would be attached to the Assistant Director of Agriculture and Engineer from the LSGD engineering Wing. The Gram Panchayat is in effect, the manager of the rural market infrastructure system,. To do this, the Panchayat will have to consider how the periodic monitoring and maintenance of the market will be undertaken. At the end of an implementation period the market should be fully operational. However, the impact of the project on its beneficiaries is likely to be difficult to measure, particularly in the short term of a project life.

Proforma C

E&S Clearance and Compliance Format for GPs

Village: Thannithode GP: Thanni[redacted]ode Taluk: Konni District: Pta
Title of Proposed Activity: Construction of Agricultural Market building 1,2,3
Proposed date of commencement of work:

1. Does any item in the Regulatory list apply to the proposed activity? ☐Yes ☑No
2. If yes, have necessary permissions been obtained? ☐Yes ☐No ☑NA
3. Does any item in Level 1 of Control List apply? ☐Yes ☑No
4. Does any item in Level 2 of Control List apply? ☑Yes ☐No

MITIGATION PLAN

Likely Environmental and Social Risks	Mitigation Measures to be adopted

Additional cost on account of mitigation measures added to overall project cost, if any:

Note: Use the Environmental Mitigation Guidelines (Proforma E) in case of Level-1 activities or LESA report (Proforma F) in case of Level-2 activities to fill in the above section. Write N/A if answers to questions 2 and 3 are 'No'

Filed by: Implementing Officer (Signature) Assistant Engineer L.S.G.D Section

Working Group Chairman (Signature)

APPROVALS

☐ Cleared ☐ Not cleared Chairperson, GP Committee (Signature & Comments)

☐ Cleared ☐ Not cleared Block Level Officer in the next higher tier (Signature & Comments)

☐ Cleared ☐ Not cleared Chairperson DPC (Signature & Comments)

COMPLIANCE VERIFICATION

Verified that all mitigation measures proposed have been ☐ implemented / ☐ not implemented as per the mitigation plan mentioned above.

Additional comments, if any:

Signatures: GP Implementing Officer Chairman, Monitoring Committee Block Level Officer

Proforma F

Format for execution of Limited Environmental and Social Assessment (LESA) for Level-2 activities

Name of the Project In Malayalam: In English:	[illegible] 1,2,3,4 Construction of Agricutural market building 1,2,3,4
Project Code	
Municipality / GP	Name: Thannithodu | District: Pathanamthitta
Location of the Project	Place Name: Thekkuthodu | Ward No. V
Outlay & Duration	Outlay-Rs. 1,0980000/- | Duration: .... Months

Evaluation of the Project

Objectives	Components	Resource requirements	Technology
Transaction of Agricultural Products	Cement, metal Steel, Sand	Market	Building Construction Technology of CPWD
Project activities critical to environment	1 2 NA	1 2	
Mitigation measures inherent in the project, if any	1 2 NA	1 2	

Environmental Impact Scenario
(Tick (√) in boxes if applicable)

NA

	√	Mitigation proposed	Cost
IMPACTS ON AIR			
• Dust and particulate matter in the air			
• Smoke and fumes			
• Erosion of land due to air velocity			
IMPACTS ON WATER			
• Increased siltation in water bodies			
• Reduced availability of water			
• Erosion of soil/ land due to run off			
• Depletion of groundwater			
• Depletion of water in surface water bodies			
• Reduction on groundwater recharge capacity			
• Discharge solid and liquid waste or other pollutants into water bodies			
IMPACTS ON LAND			
• Disfiguration of landscape due to land modification or soil erosion			
• Disruption in services/ Utilities			
• Break or interference in natural drainage			
• Interference with existing drainage pathways leading to water logging			
• Dumping of waste or littering in open areas			
• Solid or liquid waste discharge			
• Loss of open space			
• Loss of top soil and soil quality deterioration			
IMPACTS ON HEALTH AND SAFETY			
• Accumulation of domestic waste			
• Accumulation of bio-medical waste			
• Inadequate maintenance of public toilet facilities			
• Risk of accidents and hazards			
• Hazard of vector borne diseases			

22

• Hazard of communicable diseases			
• Absence or inadequate use of occupational safety equipment			
• Fugitive Emissions			
IMPACTS ON BIO-DIVERSITY			
• Tree Felling			
• Threat to endangered or endemic species			
• Obstruction to path of migratory bird species			
• Obstruction to natural foraging pathway of any wild animal species			
• Obstruction or damage to natural breeding or roosting sites of any wild species			
• Threat from invasive alien species			
• Threat from pests or improper pest management			
IMPACTS ON COMMUNITY AND SOCIETY			
• Nuisance due to excessive noise to residential areas or schools/ hospitals			
• Accumulation of bio-medical waste			
• Inadequate maintenance of public toilet facilities			
• Possibility of resource conflict			
• Displacement of any indigenous community or vulnerable group			
ANY OTHER IMPACTS NOT INDICATED ABOVE:			

Analysis of Alternatives

Alternatives, if any – only if significantly more attractive	Environmental implications	Environmental mitigation measures required
	1 2	1 2
Overall Recommended Mitigation Plan	Overall cost, if any, of implementing recommended mitigation measures	

Prepared by Signature Name Designation Date	Assistant Engineer E.S.G.D Section Consultancy

Notes on LESA:

The LESA shall be carried out by the GP Engineer or by an Environmental Expert or an agency using a structured format given in Proforma F. A person or agency with experience in teaching or practicing environmental science/engineering, geology, civil engineering or such other related subjects and having a perspective of environmental effects can be engaged for carrying out the LESA. Such people or agency may be available locally or in nearby areas and the local governments may enlist them on a normative search process and engage them. Tentatively, the consultation fee shall be 0.75% of the project cost with a lower limit of Rs. 1,500/-.

The desirable Terms of Reference for conducting an LESA could be the following.

- Identification of the project activities / components that could have critical environmental and social implications
- Identify the impacts of these activities on various environmental components such as land, surface and groundwater, air quality, noise level, flora and fauna and social developement and their aspects
- Examine whether any in-built mitigation measures happen to be present in the project
- Identify possible risks and accidents, due to project activities and suggest ways and means to preventing the same
- Consider alternatives to the project, if any, especially in respect of project location and technology and compare the risks associated with the alternatives
- Suggest appropriate mitigation measures for reducing/offsetting the environmental effects of the project
  Determine the cost involved for implementing mitigation measures, if any