DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII
AN APPORACH TOWARD RURBANISATION
VILLAGE NAME:NINGALA

DISTRICT NAME:BOTAD

PREPARED BY

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Year : 2020-21

GUJARAT TECHNOLOGICAL UNIVERSITY

Chandkheda, Ahmedabad-382424 Gujarat

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CERTIFICATE

This is to certify that the following students of degree engineering successfully submitted

DETAIL PROJECT REPORT FOR

VILLAGE NAME:NINGALA

DISTRCT NAME:BOTAD

UNDER

VISHWAKARMA YOJANA: PHASE-I

In partial fulfillment of the project offered by

Gujarat Technological University, Chandkheda

During the academic year 2020-21.

This project work has been carried out by them under our supervision and guidance.

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ABSTRACT

Vishwakarma Yojana is one such initiative towards Rurbanization of villages by Government of Gujarat that hinders such migrations. This Yojana aims at developing the village by providing all the urban facilities that a city may have, yet maintaining the Rural soul. This can be achieved by considering various aspects such as Physical, Social, and Renewable infrastructural facilities. The concept of Rurbanization at regeneration and revitalization of both the physical as well as social environment in villages through a judicious and economic consumption of resources is the thought forbetterment or the villages. It is designed to reduce and remove the rural-urban divide and to lead to process of rural transformation that is not exploitative. Vishwakarma Yojana is an approach towards Rurbanization, it has been proposed to provide the benefit of real world experience to engineering students and apply their technical knowledge in the planning, development and management of rural infrastructure facilities. Rurbanization means urban facilities and amenities in rural area, developing village with help of rural soul and urban amenities. In this village on one hand some essential infrastructural facilities like Water Supply, Road Network and electricity, primary school, secondary and higher secondary school etc. have been good and sufficient on the other hand lacking of infrastructural facilities like drainage, public toilet, and public garden. Under this scheme the villages of Rurban areas will be adopted by various engineering colleges under the Gujarat technological University. The engineering colleges would study the identified villages and make recommendations to achieve integrated and comprehensive development through technology application and project preparation and management.

The name of the allocated village is ningala located in gadhada taluka of botad district. This village has comprises of 930 houses. It has a total population of 4472 with 2184 female population against 2288 males according census 2011 data. The main aspects for development of this village are sewage, public toilets, community hall, etc. Some of the physical infrastructure like dairy, panchayat building, primary school, and well exist in the village and are properly maintained and utilized. Moreover Water tank is present but in bad condition.

On the basis of survey data we have observed that there are some physical infrastructures like water tank, dairy, primary school, etc. but among them some are not in usable condition which createsproblems for villagers. The work of Sarpanch and Talati is good as per the feedback given by villagers.Clinic facility is also not available. Construction of roads are in better condition and usable. More suchproblems are identified and are to be designed and renovated in the project phases.In part 1 on the basis of survey data, which we have collected from ningala village and interaction with villagers, Sarpanch and Talati, we have finalized some designs for the further development of the village as, Community hall, Pharmacy Store, ATM, Village entrance gate,Supermarket and Cyber-cafe.

By introducing above mentioned amenities all the facilities can be made available to villagers which may reduce the migration. This will sustain the culture of cooperative living. Socioeconomic development will occur giving a sense of livelihood to the dwellers yet maintaining the essence of a village.

Key Words : Rurbanization, developing land and infrastructure,banking points by csc, Rural Development, etc.

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Summary of project villages

Village features	Allocated village	Ideal village	Smart village
Village	Ningala	Budhel	Kolavada
Taluka	gadhada	Bhavnagar	Gandhinagar
District	Botad	Bhavnagar	Gandhinagar
Sarpanch	Bhaveshbhai vithhani	Anilbhai jetani	Rameshbhai patel
Teacher/talati name	Riteshbhai joshi	Harshadbhai trivedi	Vijaybhai parmar
Distance(k.m)	68	10	197.5
Population(2011)	4472	7760	1908
Pincode	364760	364002	382028
Surveys	Techno economic survey	Techno economic survey	Techno economic survey
Facilities/key features	Grampanchayat,road network,primary education,anganwadi,o/h water tank,ro water-plant etc.	Gram panchyat,road network,outpost,bus stop,primary secondary and higher secondary education etc.	Gram panchyat,road network,outpost,bus stop,primary secondary and higher secondary education etc.
Technology	Mobile and internet connectivity,wifi connection in panchyat,etc.	Solar system,mobile and internet connectivity,wifi etc.	Solar system,mobile and internet connectivity,wifi etc.
Drawbacks	Maintenance is weak	More people ,traffic	Lack of services

Chapter 1. Ideal village visit from District of Gujarat State (Civil Concept):

1.1 Background & Study Area Location budhel Village :

Ideal village visit is required to understand development of ideal village and required development of allotted village. As a part of Vishwakarma Yojana, we visited budhel village, bhavanagar district on 26th nov, 2020. We observed the present condition of budhel village and noted down some important elements related to various infrastructure, economic growth, population, electricity, water. supply, etc. We also collected the data which were necessary for Tecno-economic survey. We met the Sarpanch and Talati of budhel village at the gram panchayat building and also interacted with the localities regarding the facilities and amenities of the village. We visited all the necessary places namely school, post office, hospital, library, police station, banks, community hall, recreational area, etc.

Budhel is a large village located in Bhavnagar Taluka of Bhavnagar district, Gujarat with total 1355 families residing. The Budhel village has population of 7760 of which 3974 are males while 3786 are females.

In Budhel village population of children with age 0-6 is 1024 which makes up 13.20 % of total population of village. Average Sex Ratio of Budhel village is 953 which is higher than Gujarat state average of 919. Child Sex Ratio for the Budhel as per census is 793, lower than Gujarat average of 890.

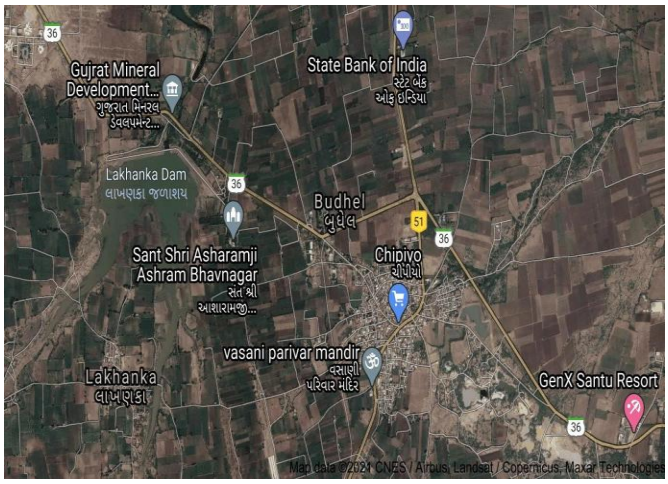
budhel population Facts:

Number of Households	**1355**
Population	7760
Male Population	3974
Female Population	3786
Children Population	1024
Sex-ratio	906
Literacy	75.89%
Male Literacy	83.98%
Female Literacy	67.63%
Scheduled Tribes (ST) %	506
Scheduled Caste (SC) %	30

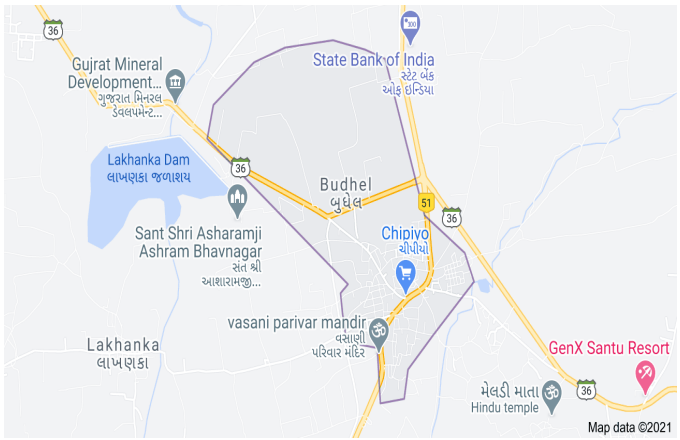
T-1.1A – budhel population facts

BUDHEL VILLAGE	
CORDINATES:-21.77° N 72.11° E	
Country	India
State	Gujarat
District	bhavanagar
taluka	bhavnagar
Government	
Body	Budhel gram panchayat
Elevation	11 meter
Population (Total):	7760
languages	gujrati
Pin no	364002
Vehicle regestration	Gj-04

T-1.1B – budhel data



(F-1.1A - budhel



(F-1.1B – budhel satellite map)

1.2 Concept: Ideal Village, Normal Village:

Concept of an Ideal Village is a community village with a Self Sustaining income producing projects, Independent electrification system generated from non-fuel based devices, clean water facilities for drinking and irrigation purpose, affordable quality housings, Schools, Medical facilities for human beings and animals both, proper sanitation System, Information Centre, bank, police station, retail outlet for household and agriculture needs, phone facility and connecting roads to nearby villages and towns.

1.2.1 Objectives :

To provide all the basic facilities to the people to make their life easy and comfortable.

- To provide technical solution of their problem so that they do not need to migrate to urban areas.
- Creation of infrastructure – connectivity, civic and social infrastructure along with the provision of the alternative livelihood generation is the key pillars.
- Reduce migration from rural areas to urban areas due to lack of basic facilities and other Services which are available in rural areas.
- Promote integrated development to the rural areas with the provision of good quality of housing conditions, better quality of water, proper and good connectivity to roads etc.

1.2.2 Example / Live Case studies of ideal village of India/Gujarat :

Budhel is a large village located in Bhavnagar Taluka of Bhavnagar district, Gujarat with total 1355 families residing. The Budhel village has population of 7760 of which 3974 are males while 3786 are females as per Population Census 2011.In Budhel village population of children with age 0-6 is 1024 which makes up 13.20 % of total population of village. Average Sex Ratio of Budhel village is 953 which is higher than Gujarat state average of 919. Child Sex Ratio for the Budhel as per 2011census is 793, lower than Gujarat average of 890.Budhel village has lower literacy rate compared to Gujarat. In 2011, literacy rate of Budhel village was 75.89 % compared to 78.03 % of Gujarat. In Budhel Male literacy stands at 83.98 % while female literacy rate was 67.63 %. As per constitution of India and panchayati raaj Act, budhel village is administrated by Sarpanch (head of village) who is elected representative of village.

Budhel

Locality Name :	budhel
Taluka Name :	bhavanagar
District :	bhavanagar
State :	Gujarat
Language :	Gujarati
Time zone:	IST (UTC+5:30)
Elevation / Altitude:	11 meters. Above Sea level
Std Code:	027882
Sarpanch Name:	anilbhai jetani
Pin Code :	364002
Post Office Name:	Budhel

(F-1.2A-budhel gram panchayat)

(F-1.2B-kendra shala)

1.2.3 The Idea of a model/Smart Village :

Smart Village refers to a concept developed in rural area that provides solutions to problems occurred and improves the quality of life. The main problems faced by rural areas are cover poverty, low level of education, and limited access to technology. Smart village concept emerged due to somedifferent characteristics between rural and urban areas. Regency is one of regions that created smart concept starting from rural area. So far, smart only focused on public services, which included only a small part of smart city concept. Hence, this researchwas intended to propose the model of smart village examined through initial interview in village sampleof literature reviews related to smart city, smart village, and smart rural. Then, the results were confirmed and adjusted to support local regulations. This research created a smart village

Model that was capable to be a guide for each village to develop towards better future.

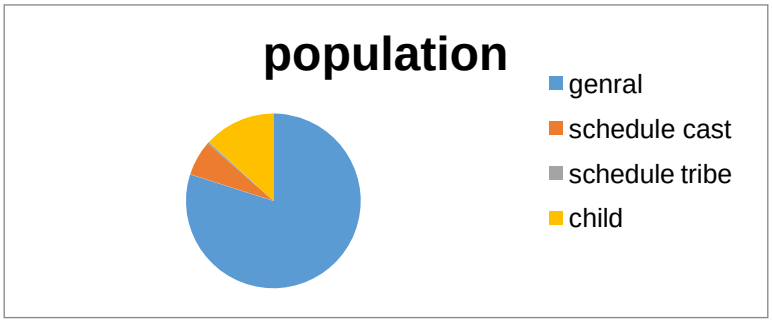
- Adopt people_s participation as an end in itself – ensuring the involvement of all sections of society in all aspects related to the life of a village, especially in decision-making related to governance
- Adhere to Antyodaya (development unto the last) – enabling the ―poorest and the weakest person‖ in the village to achieve well-being
- Affirm gender equality and ensuring respect for women
- Guarantee social justice
- Instill dignity of labour and the spirit of community service and voluntarism
- Promote a culture of cleanliness
- Live in consonance with nature – ensuring a balance between development and ecology
- Preserve and promote local cultural heritage
- Inculcate mutual cooperation, self-help, and self-reliance
- Foster peace and harmony in the village community

1.2.4 Ancient history of Civil/Electrical Concept about Indian villages and its development:

Following the Gandhian vision and dream of Gram Swaraj, rural development has always been given critical salience in the planning process of independent India. It began with launching of the Community Development Programmes in 1952 followed by the National Extension Services in 1953. These two programmes had ambitious objectives and envisioned community participation but failed miserably due to their top down development paradigm. Later, successive Five-Year Plans led to the creation of essential physical and institutional infrastructure to bring about socio-economic changes in rural areas .The Fifth Five-Year Plan proposed different approaches to rural development such as Area Development, Target Group Approach, and comprehensive development approach.3 Schemes involving special financial and fiscal concessions, bank loans on soft terms, and capital subsidies.

1.3 Detail study (Socio economic, physical, demographic and infrastructure details) of Ideal village budhel with photograph :

- Budhel is a large village located in Bhavnagar Taluka of Bhavnagar district, Gujarat with total 1355 families residing. The Budhel village has population of 7760 of which 3974 are males while 3786 are females as per Population Census 2011.In Budhel village population of children with age 0-6 is 1024 which makes up 13.20 % of total population of village. Average Sex Ratio of Budhel village is 953 which is higher than Gujarat state average of 919. Child Sex Ratio for the Budhel as per 2011census is 793, lower than Gujarat average of 890.Budhel village has lower literacy rate compared to Gujarat. In 2011, literacy rate of Budhel village was 75.89 % compared to 78.03 % of Gujarat. In Budhel Male literacy stands at 83.98 % while female literacy rate was 67.63 %. As per constitution of India and panchayati raaj Act, budhel village is administrated by Sarpanch.



(F-1.3A Caste wise population budhel)

Cast of people	
General	6200
Schedulecast	506
Schedule tribe	30
child	1024

Infrastructure Development:

The most important concern in rural development is to provide basic amenities to each person living in the rural area. Punsari stands out in this regard as it has constructed a reverse osmosis plant and since then provided house-to-house piped connections to supply chlorinated water. It also has its own 66 KV substation for electricity generation and 100 per cent coverage of all streets with LED streetlights. A public address system with 120 waterproof speakers for announcing information and spreading messages has been another striking feature of this village. The village headperson uses this public announcement system to share what s/he thinks, plans, and is doing at the gram Panchayat. The entire village has been put under CC TV surveillance, which has helped to bring down crime rate to almost zero per cent. Each household has a personalized lavatory and the whole village has a well-designed drainage and storm water disposal system. Atal Express is a free bus service available for commutation to all the villagers. Punsari is the first fully Wi-Fi-covered village in India. There are

also plans to do GIS mapping for the better implementation of many government schemes. Some of the popular national banks and their ATM centers are now available as well.

Education:

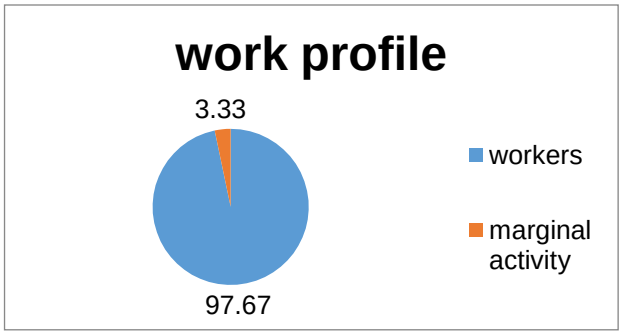
Education for all and free for all is the mantra this village has aspired to adopt. Punsari has five primary schools and four secondary schools. The class rooms in these schools are fully equipped with CCTV cameras, LED screens used for teaching, mineral water plants, separate toilets for girls and boys, computer labs, and well-stocked libraries. MidMeals programs of the central government have been successfully implemented. Availability of these basic amenities within the premises of schools has also helped to reduce the dropout rate to zero.

Health, Sanitation & Women Empowerment:

budhel has a 24/7 primary health centre equipped with a pharmacy and a library. It also has a 24/7 maternity ward to encourage institutional deliveries in the village. In fact, the village has been successful in achieving the goal of 100% institutional deliveries. It has also been able to materialize the objective of 100% immunization and zero per cent infant and maternal mortality rate. The waste collection system offers door-to-door collection service. The street polluters are heavily fined. There are 109 women self-help groups in the village, which has helped and changed the lives of more than 1200 women involved in them. They provide vocational training in order to make women self-reliant.

Budhel work profile

In Budhel village 7760 out of total population, 2554 were engaged in work activities. 96.67 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 3.33 % were involved in Marginal activity providing livelihood for less than 6 months. Of 2554 workers engaged in Main Work, 519 were cultivators (owner or co-owner) while 611 were Agricultural labourer.



f-1.3-% of working population budhel

budhel Religion Data 2011:

Town	Population	Hindu	Muslim	Christian	Sikh	Buddhist	Jain	Others	Not Stated
Budhel	7760	97.01%	0.82%	0.0%	0.00%	0.0%	0.0%	1.08%	1.09%

Budhel Infrastructures facilities (All Types):

Infrastructure and facilities	Details
1. PHC	2
2. Government Hospital	1
3. Private Hospital/ clinic	9
4. CHC	1
5. Government dispensary	2
6. Anganwadi	8
7. Primary school (Eng. & Guj.)	4
8. Sec and high. Sec. school	1
9. ITI college	0
10. Private Tuitions	Available
11. Community hall	1
12. Library	0
13. Public garden	Available
14. Village pond	1
15. Handpump	Available
16. Overhead tank	2
17. Assembly polling station	4
18. Post office	1
19. Panchayat building	1
20. U/G Sump	3
21. Polling Stations	4
22. Mahila mandal	2
23. Dairy	1
24. Nursing Home	0
25. Police station and jail	0
26. veterinary hospital	1
27.Small scale industries	20 above
28. Recreational Centre	Chowk, temples and Play ground
29. Bus station	1
30. Telephone exchange office	1
31. Electricity	24/7
32. Road network	CC,RCC and Paver Blocks

33. waste collection	Daily
34. Shops Approximately	200
35. Bank	Co. Op. 1 and Gov. 2
36. ATM	3
37. Local Transportation	Available
38. Gov. grocery shop	2
39. Multispec. hospitals	2
40. U/G Drainage	Available

(T-1.3B-budhel Infra. Facilities)

(F-1.3C-budhel gram panchayat)

(F-1.3D-budhel Kendra shala)

(F-1.3E-residential houses)

(F-1.3F-residential house)

(F-1.3G-chabutra)

(F-1.3H-Watertank)

(F-1.3I-Private primary school)

(F-1.3J-Anganwadi)

1.4 SWOT analysis of Ideal village :

STRENGTHS	weakness
➢ **Proper drainage facilities** ➢ **Transportation facilities** ➢ **Sanitation facilities** ➢ **RO system** ➢ **Cleanness of village** ➢ **Communication hall**	➢ **Job insecurity** ➢ **Less sustainable ecofriendly environment in terms of capacity to green development in future**

Opportunities	Threats
➢ **Involvement in government initiated** ➢ **Solar panel uses** ➢ **Waste recycle**	➢ Increase in pollution ➢ Poor and weak maintanance

(F-1.4A-SWOT Analysis)

1.5 Future prospects of Development of the Ideal village :

In future they think to do installation of solar, biogas or any other renewable energy sources as per availability of sources in village and more suitable source for the particular area. If any other problems were occurs in future then try to solve that problem also.

- Solar Street light, Bio Gas Plant, Waste water treatment plant, Blood Bank, Water Meter

1.6 Benefits of the visits of Ideal village :

1. Locally produced and locally consumed energy:

In villages if the mountains, hilly area are present then use of solar energy & wind energy then energy is produce in that village itself & use for development of village.

2. Creation of job:

Generally village people migrate from village to city for purpose of job. If village becomes smart so all the job requirements are fulfills & People not migrate from one place to another.

3. Contribution to global environment:

The system can reduce reliance on fossil fuels &contribute to reduction Of green house gases such as carbon dioxide .Energy consumption Optimization 25-30% average energy saving.

1.7 civil aspect required in ideal village:

- Dams ,paved road,water supply, Waste water treatment plant,Bio-gas plant,Community hall,Public toilet,Water tank,Bus station etc.

CHAPTER: 2

LITERATURE REVIEW-(CIVIL CONCEPT)

2.1 Introduction: Urban & Rural village concepts:

Urban is that area where the population density is more and new facilities are provided to the people .Urban area is the region surrounding a city. Most of inhabitants of urban areas have non-agricultural jobs. Urban areas have municipality, corporation, cantonment board or notified town area committee etc. According to census 2011, there are 7,939 towns, 4,040 statutory town and 3,895 census towns. Rural: All the areas which are not characterized as urban area is called rural area. In which the population is very low compared to urban areas. Mainly they depend on agricultural activities. According to census 2011, there are 6, 40,868 villages in India. The area where more than 75% of male population is associated with agricultural activity is known as rural area.

2.2 Importance of the Rural development:

The main objective of the rural development programme is to raise the economic and social level of the rural people. Rural development implies both the economic betterment of people as well as greater social transformation. Rural Development refers to the process of improving or uplifting the living conditions of the people living in rural areas. The people of India live mostly in rural areas (villages). Therefore, it is in the heart of the villages that the nation lives. Indeed, –the soul of India is in the toil of the rural areas‖. The welfare of India depends upon the prosperity of the villages. A healthy and dynamic agricultural sector is an important foundation of ruler development. generating strong linkages to other economic sectors. Rural livelihoods are enhanced through effective participation of rural people and rural communities in the management of their own social, economic and environmental objectives by empowering people in rural areas, particularly women and youth, including through organizations such as local cooperatives and by applying the bottom-up approach. Close economic integration of rural areas with neighbouring urban areas and the creation of rural off-farm employment can narrow rural-urban disparities, expand opportunities and encourage the retention of skilled people, including youth, in rural areas. There is considerable potential for rural job creation not only in farming, agro processing and rural industry but also in building rural infrastructure, in the sustainable management of natural resources, waste and residues. Rural communities in developing countries are still faced with challenges related to access to basic services, economic opportunities and some degree of incoherence with regard to planning.

2.3 Ancient villages/ different definition of rural urban village

(A) Rural area:

Rural areas are also known as 'Countryside' or a 'village' in India. It has a very low density of population. In rural area people practice agriculture for their livelihood. Town with a maximum population of 15,000 is considered rural in nature.

The soul of India lives in its villages," declared Mahatma Gandhi at the beginning of 20th century. According to the 2011 census of India, 68.84% of Indians (around 833.1 million people) live in 640,867 different villages. The size of these villages varies considerably. 236,004 Indian villages have a population of fewer than 500, while 3,976 villages have a population of 10,000+. Most of the villages have their own temple, mosque, or church, depending on the local religious following.

(B) urban area:

An urban area is characterized by higher population density and in comparison to areas surrounding it. Urban areas may be cities or towns, but the term is not commonly extended to rural settlements. An urban area, or built-up area, is a human settlement with a high population density and infrastructure of built environment. Urban areas are created through urbanization and are categorized by urban morphology as cities, towns, conurbations or suburbs. In urbanism, the term contrasts to rural areas such as villages and hamlets; in urban sociology or urban anthropology it contrasts with natural environment. The creation of early predecessors of urban areas during the urban revolution led to the creation of human civilization with modern urban planning,

2.4 Scenario: Rural / Urban village of India population Growth:

Nearly 70% of the country's population lives in rural areas where, for the first time since Independence, the overall growth rate of population has sharply declined, according to the latest Census. The 121 crore Indians, 83.3 crore live in rural areas while 37.7 crore stay in urban areas, said the Census of India's 2011 Provisional Population Totals of Rural-Urban Distribution in the country.

Population		Literacy		Density of population		Sex ratio		Child sex ratio (0–6 age group)	
Males	**623,724,568**	Males	**82.10%**	per km^2	**382**	per 1000 males	**940 females**	**per 1000 males**	**914 females**
Females	**586,469,294**	Females	**65.46%**						
Total	**1,210,193,862**	total	**73.28%**						

(T-2.4A-India Census 2011 Data)

2.5 Scenario: Rural / Urban village of Gujarat as per Census 2011 and latest:

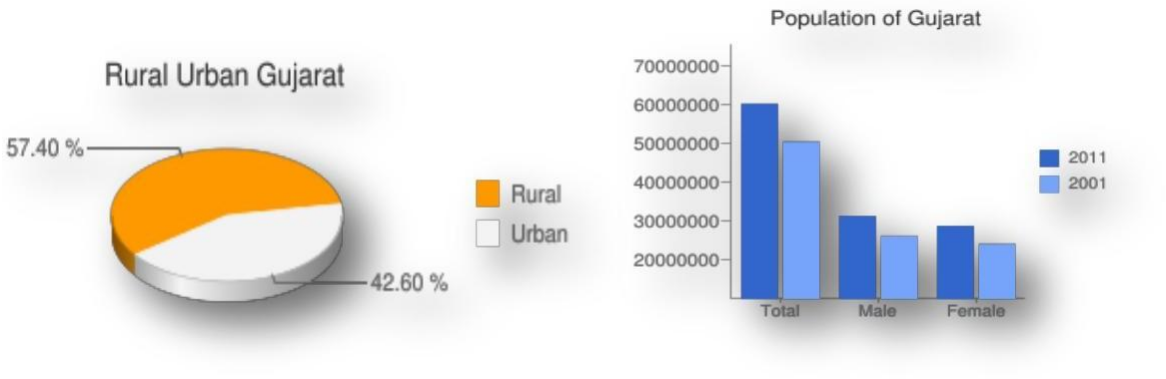
Gujarat Urban Population 2011 :

As per details from Census 2011, Gujarat has population of 6.04 Crores, an increase from figure of 5.07 Crore in 2001 census. Total population of Gujarat as per 2011 census is 60,439,692 of which male and female are 31,491,260 and 28,948,432 respectively. In 2001, total population was 50,671,017 in which males were 26,385,577 while females were 24,285,440. The total population growth in this decade was 19.28 percent while in previous decade it was 22.48 percent. The population of Gujarat forms 4.99 percent of India in 2011. In 2001, the figure was 4.93 percent.

Recently as per Gujarat census data, 83.92% houses are owned while 13.54% were rented. In all, 65.95% couples in Gujarat lived in single family. In 2011, 57.87% of Uttar Pradesh population had access to Banking and Non-Banking Finance Corporation. Only 3.13% of Uttar Pradesh population had internet facility which is likely to improve in 2021 due to Jio. 6.10% of family in Uttar Pradesh owned car while 34.14% owned two wheller.

Description	2011	2001
Actual Population	60439692	50671017
Male Population	31491260	26385577
Female Population	28948432	24285440
Population Growth	19.28%	22.48 %
Child Population (0-6)	7777262	7532404
Literates	78.03%	69.14%
Average Literacy	71.71 %	86.31 %
Male Literacy	85.75 %	79.68 %

(T-2.5A- Gujarat population)



(F-2.5APopulation Chart Gujarat)

2.6 rural development issue-concern and measure

Issues:

- Disconnection between development inputs delivered and the genuine needs of the community
- Lack of participation of all sections of society, especially the marginalized and the aged
- Focus on infrastructure and expenditure ignoring the social aspects and sustainable outcomes
- Reliance primarily on government grants and not emphasizing community contributions and self-help
- Absence of organic convergence of different schemes
- Unfair decisions regarding the allocation of benefits to locations and households leading to alienation
- Political partisanship – perceived and real
- Disregard for socio-cultural values of different sections of the community
- Existence of multiple power structures and absence of a reconciling mechanism

- **Measures:**

- ✓ Welfare of the rural masses.
- ✓ Increase in rural employment.
- ✓ Minimum wages to landless labourers.
- ✓ Uplift of the SC and ST people.
- ✓ Growth of housing facilities.
- ✓ New programs of family planning.
- ✓ Extension of primary health facilities
- ✓ Making primary education more effective.
- ✓ Welfare of women and children.

Particulars	Total	Male	Female
Total No. of Houses	930	-	-
Population	4472	2288	2184
Child (0-6)	564	296	268
Schedule Caste	307	159	148
Schedule Tribe	12	6	6
Literacy	75.38%	85.09%	65.29%
Total Workers	1652	1304	348
Main Worker	1478	-	-
Marginal Worker	174	73	101

(T-2.6A- Ningala Population

2.7 Various infrastructure guidelines with the Norms for Villages for the provisions ofdifferent infrastructure facilities:

Facilities	Planning comission	Required as per nom
Education	Each Village	1
Aganwadi	Each Village	1
Primary School	Per 7,500 Population	2

Secondary School	Per 15,000 Population	0
Higher Secondary School	Per 125,000 Population	0
College	Per 100,000 Population	0
Tech. Training Institute	Per 100,000 Population	0
Agriculture Research Centre	Each Village	1
Medical Facility		
Gov./Panchyat Dispensary or Sub PHC or Health Centre	Each village	1
PHC & CHC	Per 20000 population	0
Child Welfare and Maternity Home	Per 10000 population	1
Hospital	Per 10000 population	0
Transportation		
Internal Road Approach Road	Each village must have good quality roads.	
Bus/Auto Stand Provision	All village connect by pt(st bus/rickshow)	1
Drinking Water Water Facilities		
Over Head Tank	1/3 of Total Demand	1.6 lac cap
U/G Sump	2/3 of Total Demand	3.2 lac cap
Public Latrines	Each Village	60
Cremation Ground	Per 20,000 Population	1
Post Office	Per 10,000 Population	1
Gram Panchayat Building	Each individual	1
APMC	Per 100,000 Population	0
Fire Station	Per 100,000 Population	0
Police Station	Per 15,000 Population	0
Community Hall	Per 10,000 Population	1

(T-2.6B- PLANNING COMISSION

Other Facilities :

- Janani Suraksha Yojana
- Kishori Shakti Yojana
- Balika Samriddhi Yojana
- Mid-day Meal Programme
- Intergrated Child Development Scheme (ICDS)
- Mahila Mandal Protsahan Yojana (MMPY)

- National Food for work Programme (NFFWP)
- National Social Assistance Programme
- Sanitation Programme (SP)
- Rajiv Gandhi National Drinking Water Mission
- Swarnjayanti Gram Swarozgar Yojana

2.8 Other Projects / Schemes of Gujarat / Indian Government :

Following are the projects/schemes by Govt. Sector:

- Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)
- Pradhan Mantri Gram Sadak Yojana (PMGSY)
- Indira Awas Yojana (IAY)

i) Mahatma Gandhi National Rural Employment Guarantee Act :

MGNREGA Launched on 2nd February 2006 as a momentous initiative towards pro-poor growth. For the first time, rural communities have been given not just a development program but also a regime of rights. The National Rural Employment Guarantee Act, 2005 (NREGA) guarantees 100 days of employment in a financial year to any rural household whose adult members are willing to do unskilled manual work. This work guarantee also serve other objectives: generating productive assets and skills thereby boosting the rural economy, protecting the environment, empowering rural women, reducing rural urban migration and fostering social equity, among others. The Act offers an opportunity to strengthen our democratic processes by entrusting principle role to Panchayats at all levels in its simple mentation and promises transparency through involvement of community at planning and monitoring stages.

ii) Pradhan Mantri Gram Sadak Yojana (PMGSY):

pradhan Mantri Gram Sadak Yojana (PMGSY) was launched on 25th December 2000 as a fully funded Centrally Sponsored Scheme to provide all weather road connectivity in rural areas of the country. The program envisages connecting all habitations with a population of 500 persons and above in the plain areas and 250 persons and above in hill States, the tribal and the desert areas .According to latest figures made available by the State Governments under a survey to identify Core Network as part of the PMGSY program, about 1.635 lakh Unconnected Habitations are eligible for coverage under the program. This involves construction of about 3.74 lakh km. of roads for New Connectivity and 3.65 lakh km. under upgradation .The President of India, in his address to Parliament on 25th February, 2005 announced a major business plan for rebuilding rural India called Bharat Nirman.

The Finance Minister, in his BudgetSpeech of 28th February,2005, identified Rural Roads as one of the six components of Bharat Nirman and has set a goal to provide connectivity to all habitations with a population of 1000 persons and above (500 persons and above in the case of hilly or tribal areas) with an all-weatherroad. A total of 59567 habitations are proposed to be provided new connectivity under Bharat Nirman. This would involve construction of 1, 46,184 kms of rural roads. In addition to new connectivity, Bharat Nirman envisages upgradation /renewal of 1, 94,130 kms of existing rural roads. This comprises 61% upgradation from Government of India and 41% renewal by the State Governments.

iii) Indira Awas Yojana (IAY) :

Housing is one of the basic requirements for human survival. For a normal citizen owning a house provides significant economic security and status in society. For a shelter less person, a house brings about a profound social change in his existence, endowing him with an identity, thus integrating him with his immediate social background.

iv) Objective:

The objective of Indira Awaas Yojana is primarily to help construction of dwelling units by members of Scheduled Castes/ Schedule Tribes, freed bonded labourers and also non-SC/ST rural poor below the poverty line by providing them with grant-in-aid.

❖ the projects/schemes running by the private sector:

- Non-Governmental Organizations (NGOs)
- Provision of Urban Amenities in Rural Areas (PURA)

1. Non-Governmental Organsiation (NGOs):

The NGOs became prominent after independence, especially after 1970s. Development parishioners, government officials and foreign donors consider that NGOs by virtue of being small scale, flexible, innovative and participatory, are more successful in reaching the poor and in poverty alleviation, NGOs involved in initiating and implementing rural development program. At present30,000 NGOs working in India. Definition of NGOs: The term NGOs is used to denote / specify those organizations which undertake voluntary action social movements. A non-governmental organization (NGO) is a legally constituted organization created by legal persons that operates independently from any government and a term usually used by governments to refer to entities that have no government status. In the cases in which NGOs are funded totally or partially by governments, the NGO maintains its non-governmental status by excluding government representatives from membership in the organization. The term is usually applied only to organizations that pursue some wider social aim that has political aspects, but that are not overtly political organizations such as political parties.

2. Provision of Urban Amenities in Rural Areas (PURA):

Objective of the Scheme: The objective of the scheme is to provide urban amenities and livelihood opportunities in rural areas to bridge the rural-urban divide, thereby reducing migration from rural to urban areas. PURA aims to achieve –holistic and accelerated development of compact areas around a potential growth centre in a Panchayat (or group of Panchayats) through PPP by providing livelihood opportunities and urban amenities to improve the quality of life in rural areas.

In other projects for the development of the rural area is the Public Private Partnership.

Public-Private-Partnership –

The Concept Public-Private-Partnership or PPP is a mode of implementing government program / schemes in partnership with the private sector. The term private in PPP encompasses all non-government agencies such as the corporate sector, voluntary organizations, self-help groups, partnership firms, individuals and community based organizations, PPP, moreover, subsumes all the objectives of the service being provided earlier by the government, and is not intended to compromise on them. Essentially, the shift in emphasis is from delivering services directly, to service management and coordination.The potential benefits expected from PPP could be mentioned as below:

- **Cost-**effectiveness -since selection of the developer/ service provider depends on competition or some bench marking, the project is generally more cost effective than before.

- **Higher Productivity**-by linking payments to performance, productivity gains may be expected within the program/project.

- **Accelerated Delivery**– since the contracts generally have incentive and penalty clauses of capital projects/program this leads to accelerated delivery of projects.

- **Clear Customer Focus**- the shift in focus from service inputs to outputs create the scope for innovation in service delivery and enhances customer satisfaction.

- **Enhanced Social Service**- social services to the mentally ill, disabled children and delinquents etc .require a great deal of commitment than sheer professionalism. In such cases it is Community/Voluntary Organizations (VOs) with dedicated volunteers who alone can provide the requisite relief.

Chapter 3.

Smart (Cities / Village) Concept Idea and its Visit (Civil Concept) :

3.1 Introduction: Concepts, Definitions and Practices :

We have selected the smart village as kolavada. It is located in gandhinagar taluka of district gandhinagar.We have visited the kolavada Village.

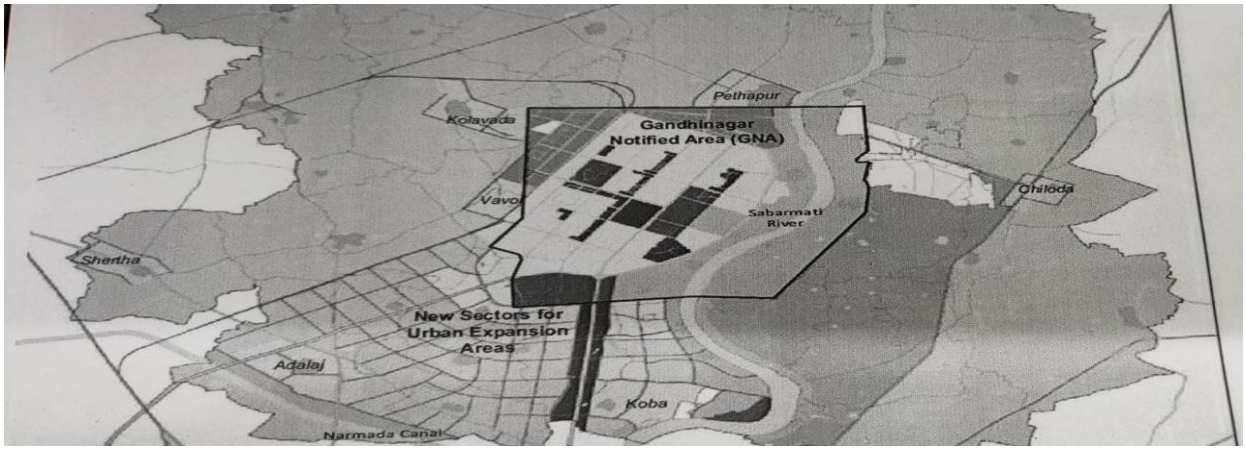
Brief of kolavada smart villages

Kolavada is a village panchayat located in the Gandhinagar district of Gujarat state,India. The latitude 23.2711934 and longitude 72.6121294 are the geo-coordinate of the Kolavada. Gandhinagar is the state capital for Kolavada village. It is located around 3.7 kilometer away from Kolavada.

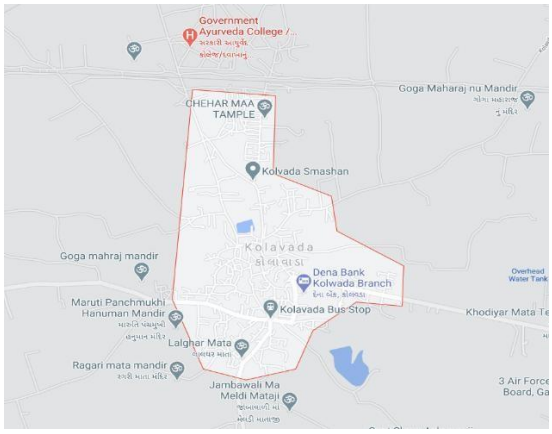
(T-3.1A- KOLAVADA DATA)

Sr. No.	**Census**	**Population**	**Male**	**Female**	**Total House Holds**
i)	2001	1643	890	753	336
ii)	2011	1908	993	915	389

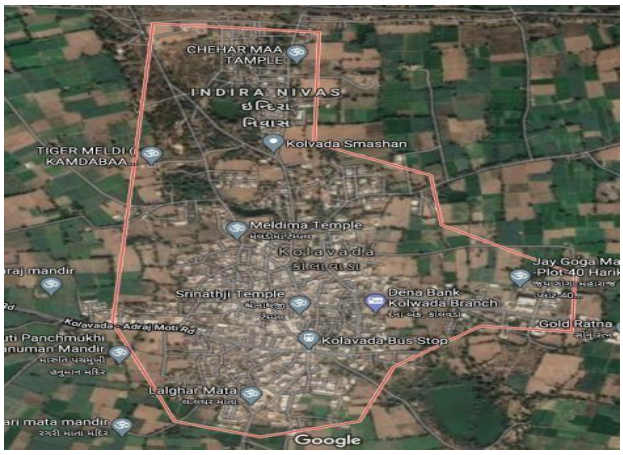
Village	**kolavada**
Block	gandhinagar
District	gandhinagar
State	Gujarat
Country	India
Continent	Asia
Time Zone	IST (UTC + 05:30)
Currency	Indian Rupee (INR)
Dialing Code	+91 **********
Date format	dd/mm/yyyy
Driving side	Left
Internet cTLD	In
Language	Gujarati
Time difference	
Latitude	23.2613 N
Longitude	72.6107 E



(F-3.1A Gandhinagar Base Map)



(F-3.1B-kolavada Map)



(F-3.1C-kolavada Satellite View)

(F-3.1DVillage picture)

F-3.1E-house condition)

(F-3.1F-bank in kolavada)

(F-3.1G-village enttrence)

(F-3.1H-Water Tank)

(F-3.1I-PHC)

Smart Village Concept:

Smart Village India gets its foundation from Mahatma Gandhi's vision of Adarsh Gram (model village) and Gram Swaraj (Village self-rule/independence). Gandhi in two texts, Hind Swaraj and Gram (Village) Swaraj, promotes the concept of integrated rural development to impact majority of the population, as the primary initiative after India Independence in 1947. The Eco Needs Foundation has initiated the concept of "Smart Village". Under this project the Foundation is adopting villages and putting efforts for sustainable development by providing basic amenities like sanitation, safe drinking water, internal road, tree plantation, water conservation. The Foundation is also working for inculcating moral values in the society and for improving the standard of living of the villagers. In the concept of "Smart Village" the development of the village shall be based on the five paths Retrofitting, Redevelopment, Green fields, e-Pan, Livelihood. Under the concept of Smart Village, the Foundation has adopted Village Dhanora, Teh. Bari, District Dholpur, a small and remote village of Rajasthan to

develop it as India‘s First Smart Village. The village is situated 30 km away from Dholpur district head quarter and 248 km from Jaipur. The population of the village is about 2,000.

The village was devoid of its basic needs like sanitation, internal roads. It was also facing various other similar problems such as lack of access to potable water, non-availability of water conservation system, encroachment on the roads, power fluctuation, non-availability of employment oriented education, unemployment and poverty, so on and so forth. Prof. Priyanand Agale Founder of Eco Needs Foundation and Dr. Satyapal Sing Meena (IRS) Joint commissioner of Income Tax has converted this idea into reality and now Dhanora has become role model of Rural Development. Dhanora village was also given an award by Prime minister of India Mr. Narendra Modi in the year 2018.

Smart Village Definitions:

smart Village is a concept adopted by national, state and local governments of India, as an initiative focused on holistic rural development, derived from Mahatma Gandhi's vision of Adarsh Gram (Ideal Village) and Swaraj (Self Reliance).

Civil Practices:

- ✓ Procurement
- ✓ Whole Life Costing
- ✓ Value Management
- ✓ Benchmarking
- ✓ Partnering
- ✓ Risk Management
- ✓ Health and Safety in Construction
- ✓ Sustainable Construction

- **Procurement:-** Procurement is the process of finding and agreeing to terms, and acquiring goods,services, or works from an external source, often via a tendering or competitive bidding process.

- **Whole Life Costing**:- Whole-life cost is the total expense of owning an asset over its entire life, from purchase to disposal, as determined by financial analysis. It is also known as the life-cycle cost, the lifetime cost, "cradle to grave," or "womb to tomb." Whole-life cost includes purchase and installation, design and building costs, operating costs, maintenance, associated financing.

- **Value Management:-** Value management is a combination of planning tools and methods to find the optimum balance of project benefits in relation to project costs and risks. It is the process of planning, assessing and developing the project in order to make the right decisions about the optimized balance of the benefits, risks and costs.

- **Benchmarking**:-This article is about the business term. For the geolocating activity, see Benchmarking (geolocating). For other uses, see Benchmark (disambiguation).Benchmarking is the practice of comparing business processes and performance metrics to industry bests and best practices from other companies. Dimensions typically measured are quality, time and cost. Benchmarking is used to measure performance using a specific indicator (cost per unit of measure, productivity per unit of measure, cycle time of x per unit of measure or defects per unit of measure) resulting in a metric of performance that is then compared to others.

- **Risk management**:-Risk management is the process of identifying, assessing and controlling threats to an organization's capital and earnings. These threats, or risks, could stem from a wide variety of sources, including financial uncertainty, legal liabilities, strategic management errors, accidents and natural disasters.

- **Health and Safety in Construction:-**Construction industry, often termed as 'high-risk', has a significant impact on the health and safety of the workers. Though it is common to see a construction worker work at heights with equipment and building materials, these scenarios are plagued by potentially dangerous situations and poor working conditions.

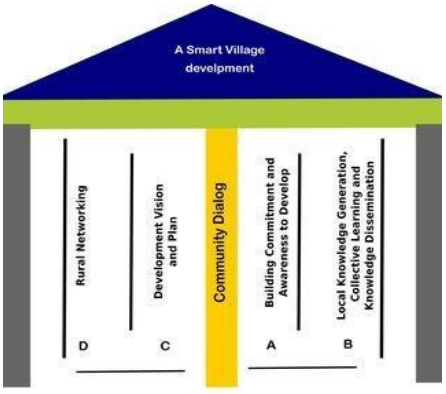
- **Sustainable Construction:-**Sustainable construction is the practice of creating a healthy environment that's based on ecological principles. According to Professor Charles J. Kibert, sustainable construction focuses on six principles: –conserve, reuse, recycle/renew, protect nature, create non-toxic and high quality.

3.2 Vision-Goals, Standards and Performance Measurement Indicators :

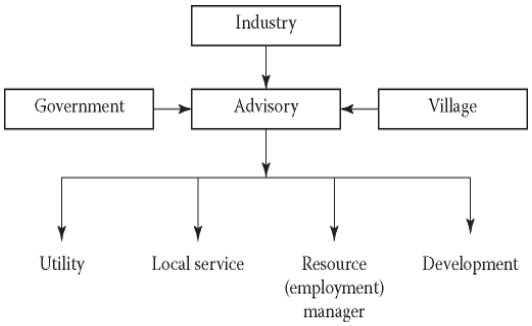
India is a rural dominated country and villages are said to be the heart of this nation. Accordingto 2011 Census, the population of rural areas comprised of 68.84 per cent. Migration of the people from rural areas to urban areas causes some burden on the urban areas. If the vision of the founders ofthis nation is to be respected and implemented, then we all need to have the responsibility to make ourvillages smart, which means self-sufficient, efficient, healthy and educated villagers. To make the villages smart means to make the country self-reliant, stronger and secured. India lives in its villages. Villages are the food basket of the nation. Village Panchayats are the centers of grass root democracy. However, the holistic development of rural India is still under tremendous pressure owing to the declining farm output, increasing trend of distressed migration, absence of basic amenities and emerging problems of environmental pollution and conflicts. The smart village concept is needed for a sustainable and a secured future of the villages. It is about understanding the villages towards the growth model which is inclusive. It‘s about achieving a higher goal without compromising the roots and the sense of belongingness of the masses. The concept of smart village is contemporary and very reliable today as there is a limit of the growth of cities which is leading to creation of urban jungles, where the population ratio and its related issues per km of land is way above the expected targets.

Smart city development vision- Goals - activities :

- Identify the transportation challenges and needs of the citizen and business community and demonstrate how advanced technologies can be used to address issues in safety, mobility, andclimate change, now and into the future.
- Determine which technologies, strategies, applications, and institutional arrangements demonstrate the most potential to address and mitigate, if not solve, transportation challengesidentified within a city.
- Support and encourage cities to take the evolutionary and revolutionary steps to integrate advanced technologies – including connected and automated vehicle technologies – into the management and operations of the city, consistent with the USDOT vision elements.
- Demonstrate, quantify, and evaluate the impact of these advanced technologies, strategies, andapplications towards improved safety, efficiency, and sustainable movement of people and goods.
- Examine the technical, policy, and institutional mechanisms needed for realizing the potentialof these strategies and applications – including identifying technical and policy gaps and issues.
- Assess reproducibility and qualify successful smart city systems and services for technology and knowledge transfer to other cities facing similar challenges.



(F-3.2A- Smart village development)



(F-3.2B-Smart village measurement)

3.3 Technological Options :

Following various techniques can be promoted improving the life of people in villages and for actual development of smart villages. Enhanced Use of Smart Phones and Optical Fibre Technology for

Internet Techniques India has become the second biggest Smartphone market in terms of unique Smartphone users, crossing 220 million users, surpassing the US market, as per the report by Counterpoint research. Over 20 mobile phone brands are now assembling their parts in India. . With over 460 million internet users, India is the second largest online market, ranked only behind China. By 2021, there will be about 635.8 million internet users in India. Urban population is adopting latest technology so fast that within a short span of three months, there are more than 10 crore JIO users . Indians often turn to mobile internet, as the large majority of the digital population in India were mobile internet users in 2016. India had an estimate of 262 million mobile internet users living in urban communities and 109 million living in rural areas which is close to one third of urban users . Alongside smart phone, there are alternative mediums for accessing fast internet in villages like optical fibre technology. This is one of the advanced technologies nowadays and is replacing cable network rigoursly. Opticale communication is more advantageous han cable network due to its comparatively low cost, easy to install, high data transfer speed and abundantly available raw material After provision of internet facility at villages using various advanced technology, our next responsibility towards making villages smarter is to provide a quality education to the villagers. Internet is one of the easy way of accessing the data and information. This technology can now be explored to more extent by providing online education in schools and colleges. Worldwide digital contents are available on internet which can be accessed by children in villages to make them compatible with rest of the world. All Schools shall be connected with broadband. Free wifi shall be provided in all secondary and higher secondary schools (coverage would be around 250,000 schools). A programme on digital literacy would be taken up at the national level. MOOCs –Massive Online Open Courses shall be developed and leveraged for e-Education .

Farming is our country‘s oldest profession for earning daily wages along with bread and butter and more than half of our population is directly dependent on this profession. But the agriculturalproductivity in our country is still lacking behind many of other developed countries. Also most of our farmers are dependent on natural resources like monsoon and old techniques of farming. Due to drought like situation, many of our farmers have committed suicide and this number is increasing day by day. Our Government is trying to control this number through various schemes but all is in vein. Smart agriculture can be life saver to such people if implemented in right direction. Following techniques can be adopted for implementing smart agriculture:a. In Climate smart technology, a small weather forecasting centres can be opened for group of villages well equipped with advanced technology which will be able to monitor the upcoming weather changes with the help of satellites and same information shall be communicated with the nearby villagers in an advance so that farmers can plan their agricultural activities.

Smart apps for smart agriculture like IFFCO KISAN, AgriApp can be introduced in villages for providing timely updates regarding availability and cost of seeds, fertilizers, pesticides and other agricultural commodities. Present stock and shortage of seeds, fertilizers and pesticides can be communicated with farmers in an advance by using these apps. Government initiatives like water harvesting, subsidies on products, crop insurances, agricultural product exhibition, etc can directly be communicated with the farmers using these smart apps. Live streaming of agricultural commodities rates, market network can be done on these smart apps which will help farmers to sell their products with better prizes.

A training can be provided to farmers through which organic fertilizers and pesticides can be manufactured at community level to boost its better use than chemical fertilizers and fertilizers. This will help in maintaining soil quality and increasing productivity. Such types of training workshops can be arranged at Tehsil level for nearby farmers and they should be promoted to participate in it.

Water harvesting is the today's most essential need and is a part of smart agriculture. Government is running various schemes for rain water harvesting and providing support for the same. Recently Maharashtra Government have run –Magel tyala Shet tale‖ scheme and thousands of farmers have through this scheme. Such types of projects can be explored at other ground like roof top rain water harvesting, industrial water recycling, etc at large scales and should be supported by the state and central governments. The proper awareness can be created among villagers for water conservation, monitoring and harvesting.

Solar powered bore wells can be installed directly to avoid both the water and electricity crisis. Due to lack of 24 x 7 electricity farmers are unable to install irrigation in their and remain dependent on natural sources. Solar powered bore wells can help them in increasing agricultural productivity through timely water supply along with overcoming power crisis.

3.4 Road map and Safe guard

- **Government initiatives :** Pradhan Mantri Gram Sadak Yojana (PMGSY) has proved to be a transformative scheme. Thousands of villages which were cut-off from the outside world were connected. The national rural road construction program has built paved roads to over 100,000 villagessince its launch in 2000. *A* research report _Market Access and Structural Transformation: Evidence from Rural Roads in India' by Sam Asher and Paul Novosad examines the labor market consequences of high rural transport costs by estimating the causal effects of a USD 37 billion rural road constructionprogram, which has provided over 100,000 Indian villages with paved connections to the wider road network. It states, –These effects are driven by villages close to large cities, where a new rural road represents a larger proportional decrease in total transportation costs to external demand for rural labor and production.‖ Similarly the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has brought significant improvement in employment generation in rural India. The scheme that is termed the biggest poverty reduction scheme provides jobs to over 50 million households. However, the government needs to find out some innovative ways through which rural workforce can be provided skills and improve their employability in the evolving markets in rural India.

(F-3.4A- Smart technologies)

3.5 Issues & Challenges :

Issues:

- ✓ Absence of organic convergence of different schemes
- ✓ Unfair decisions regarding the allocation of benefits to locations and households leading to alienation
- ✓ Political partisanship – perceived and real
- ✓ Disregard for socio-cultural values of different sections of the community
- ✓ Existence of multiple power structures and absence of a reconciling mechanism
- ✓ Ignoring environmental concerns for immediate gains
- ✓ Prevalence of social evils like drinking, dowry, casteism, communalism and discrimination against women.

Challenges:

- ✓ Retrofitting existing legacy city infrastructure to make it smart, Financing smart cities, Availability of master plan or city development plan, Financial sustainability of ULBs, Technical constraints of ULBs, Three-tier governance, Providing clearances in a timely manner, Dealing with a multivendor environment, Capacity building program, Reliability of utility services.

3.6 Smart infrastructure:

Following are the various important amenities in the village:

- ✓ **CCTV cameras:** In ningala there is 12 CCTV cameras are installed at important junction of the village so that the litter bugs can be spotted and punished. There is no police station in this village. The crime rate is about zero in ningala. They can take help from the botad Police Station which is about 11 km from ningala. There is 196 street lights in the roads of this village.
- ✓ **Power Station:** There is no power station in villages but there's farmers agriculture knowlage is about the solar energy produce like personal producer.
- ✓ **Water supply**: There is 24 hours water supply in the village. The water is distributed by the canals which is near to the village.
- ✓ **Banks**:There are 2 banks in ningala and one of the sarkari bank and one of the sahakari mandali.

- ✓ **Hospitals and primary health centre:**There are good facilities for primary treatment in the village. There are 3 hospitals in village. There is one dental clinic also in the village. There are also Ayurvedic doctors they are doing private practice.

- ✓ **Drainage Facilities** :There is open drainage system in the village. So, the rain water can be easily drained off.

3.7 Cyber Security :

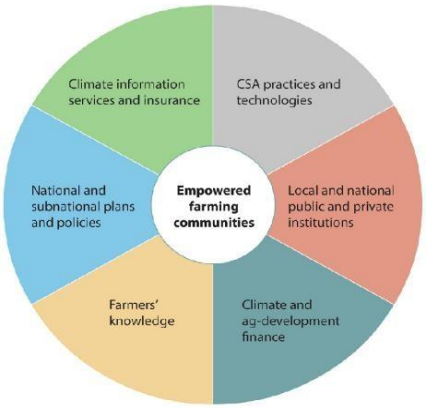
Securing smart cities is a not-for-profit global initiative which aims at solving the existing and future cyber security problems of smart cities through collaboration between companies, government, media outlets and individuals across the world.Over the past few years, Technology has begun to play an important role in our daily lives. Internet enabled gadgets have changed the way in which we work or do our daily chores. Digitization has an impact on personal lives, education, health, government and national security. Due to increase in complexity of smart city systems and globally connected social, economic, political systems, etc. has increased vulnerability of security of a city. The cyber threats have amplified due to infinite supply of data.

Smart surveillance technology or analytics to manage the crowd, traffic, cyber security, data privacy, building codes to manage natural/man-made disasters, etc. are some parameters that would make a city safe. Different challenges to our security and expectations of privacy have arrived due to innovations in IT. Humans are already interconnected via gadgets. Standards are evolved for all these potentially connected systems. This will lead to improve in quality in life.Smart Transportation will also provide an access to a web of connected data from GPS location. Integrated systems and cyber security will aid public safety. We examine two important challenges : Security and Privacy.

3.8 Retrofitting- Redevelopment- Greenfield Development District Cooling :

the terms of Retrofitting, Redevelopment, Greenfield Development & PAN City Development. These four are the advanced techniques to be implemented for the fulfillment of projects under smart cities initiatives taken all over the world. The purpose of the Smart Cities Projects is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to Smart outcomes. Area- based development will transform existing areas (retrofit and redevelop), including slums, into better planned ones, thereby improving liveability of the whole City. New areas will be developed around cities in order to accommodate the expanding population in urban areas. Application of Smart Solutions will enable cities to use technology, information and data to improve infra-structure and services. Comprehensive development in this way will improve quality of life, create employment and enhance incomes for all, especially the poor and the disadvantaged, leading to inclusive Cities. With the help of green retrofitting of a building both owner and tenants can attain the benefits which are either tangible or intangible benefits. It will result in reduction in consumption of energy, utilities and water. Maintenance, new technologies and occupancy changes also need to be continually dealt with.

Green field development:



Greenfield development is a term often used for land that has not been used before for any human activity like agriculture or real estate development. Greenfield Land is generally land where there is no development of any kind. These open fields evolve on their own volition and are often sprawling expanses of land near cities and in the countryside. These lands which are not used for any purpose can be classified as Greenfield lands. Greenfield land is available in urban areas as well as rural areas. The land between towns and cities all over the world which is unused and characterized by grass, barren lands, and wild growth of vegetation and open fields is Greenfield land.

3.9 Strategic Options for Fast Development :

- ✓ Develop and discuss strategic options for the future of IP within the organization. These options may cover such areas as: organization, relationships, processes, standards, skills, resources, technologies, and knowledge base.
- ✓ Consider the implications of these options for strategic change within the organization. Explore positive drivers and negative resistance factors for the strategic change.
- ✓ Prepare and give a presentation to key people in the organization.
- ✓ In coordination with the organization, select the most appropriate strategic options to take forward.

3.10 India's Urban Water and Sanitation Challenges and Role of Indigenous:

- ✓ **Unique Multi Stage Biological Treatment Solution:**Multi Stage Biological Treatment Solution (MSBT) can be implemented on existing STP which is not able to process Sewage to optimum efficiency. MSBT can be implemented as a modular or container on the banks of rivers on Drains/Nalas which discharge waste water to the river. It can also be implanted in small urban societies and housing complex for better water management.

- ✓ **Environment friendly Plasma technologies**:Solid waste dumping sites or landfill sites need more amount of land which is not available in urban areas. Incineration of solid waste pollutes the environment if the incinerators are not designed or operated properly. Thermal Plasma Technology is ideally suited for waste treatment. By plasma technology Hazardous & toxic compounds are broken down to elemental constituents at high temperatures; Inorganic materials are converted to Vitrified Mass; and Organic materials are Pyrolyzed or Gasified, converted to flue gases (H2 & CO) & Lower hydrocarbon gases when operated at low temperature (500 – 600OC). Disposal of carcass is also being thought of using plasma pyrolysis.

- ✓ **Indigenous water purification technologies**:These technologies can improve the drinking water quality of smaller villages as well as larger cities. It uses the Pressure Driven Membrane Processes. These are suitable for all capacity units e.g. they are adaptable from household level unit or community level unit to large scale unit. Water purification technologies make use of the nuclear energy and solar energy also.

- ✓ **Water supply continuity:** 2005 none of the 35 Indian cities with a population of more than one million distributed water for more than a few hours per day, despite generally sufficient infrastructure. Owing to inadequate pressure people struggle to collect water even when it is available. According to the World Bank, none have performance indicators that compare with average international standards. A 2007 study by the Asian Development Bank showed that in 20 cities the average duration of supply was only 4.3 hours per day. None of the 20 cities had continuous supply. The longest duration of supply was 12 hours per day in Chandigarh, and the lowest was 0.3 hours per day in Rajkot.

- ✓ According to the results of a Service Level Benchmarking (SLB) Program carried out by the Ministry of Urban Development (MoUD) in 2006 in 28 cities, the average duration of supply was 3.3 hours per day, with a range from one hour every three days to 18 hours per day. In Delhi residents receive water only a few hours per day because of inadequate management of the distribution system. This results in contaminated water and forces households to complement a deficient public water service at prohibitive 'coping' costs; the poor suffer most from this situation. For example, according to a 1996 survey households in Delhi spent an average of ₹2,182 (US$30.60) per year in time and money to cope with poor service levels. This is more than two times as much as the 2001 water bill of about US$18 per year of a Delhi household that uses 20 cubic meters per month.

3.11 Initiatives in village development by local self-government :

The Panchayati Raj system, as established in accordance with the 73rd Amendment, is athree-tier structure based on direct elections at all the three tiers : village, intermediate anddistrict. Exemption from the intermediate tier is given to the small States having less than20 lakhs population. It means that they have freedom not to have the middle level ofpanchayat. All members in a panchayat are directly elected. However, if a State so decides,members of the State Legislature and Parliament may also be represented indistrictand middle level panchayats. The middle level panchayats are generally known as PanchayatSamitis. Provisions have been made for the inclusion of the chairpersons of the villagepanchayats in the block and district level panchayats. The provision regarding reservation of seats for Scheduled Castes/Scheduled Tribes has already been mentioned earlier.However it should also be noted here that one-third of total seats are reserved for women,and one-third for women out of the Quota fixed for Scheduled Castes/Tribes. Reservationis also provided for offices of Chairpersons. The reserved seats are allotted by rotation to different constituencies in a panchayat area. State Legislatures can provide for further reservation for other backward classes (OBC) in panchayats.

3.12 Smart Initiatives by District Municipal Corporation:

Talking about the smart city initiative by botad district the goal of the initiative is ― Smart utilization of botad city‘s potential for enhancing quality of life for the citizens of providing equalaccess to best quality physical infrastructure , social infrastructure and mobility through leveraging state of the art and technology : thus making botad a futuristic Global city with focus on enhancing economy , protecting the ecology and preserving the identity and culture of the city‖.

The initiatives taken by botad Municipal Corporation are :

- Solar roof Panels
- Urban infra structure
- Sanitation waste and management
- Utilities and environment
- Integrated command and control center.
- Installation of CCTV Cameras
- Installation of public wi-fi
- Parking encroachment drive

3.13 Any Projects contributed working by Government / NGO / Other Digital Countryconcept :

Panchayat house in the many types of work like electricity bills and other bills also available now by government support other is here like,

- Bharat Net
- Digitize India Platform
- eHospital

- Electronics Development Fund
- eSign Framework
- MyGov.in
- National Scholarship Portal
- Next Generation Network
- Swachh Bharat Mission mobile app
- Wi-fi Hotspots
- Csc centres of bank

3.14 How to implement other Countries smart village projects in Indian village context(Regarding Environment , Employment) :

The life in Indian villages is simple and isolated; although they are connected now a day with cell phones and digital television transmission, yet they are cut off from the main stream of urban areas due to poor road connectivity and market for their agricultural commodities. The villages do not have enoughelectricity supply and all those work dependents on electricity is affected. The health, educational and civil facilities are also either absent or not up to the mark. Making such villages as _Smart Villages_ is surely a noble program announced by Government.But no one in villages has seen what exactly, in the Indian conditions, smart village means. However, the government seems to have clarity of vision and the initiatives are coming from the Government through the scheme called ―Shyama Prasad Mukherji Rurban Mission. The so-called smart development of infrastructure is hardly strictly divided into two polarized sets of frameworks, rural and urban. in the case of Indian smart development, it is necessary to consider both spaces simultaneously, their mutual interconnections and take into account that significant changes in one will affect the other and another way around. Therefore, the paper considers both contexts and combines the findings from the two. Secondly, even though the implications of technologies are often used in discourses on smart communities, the technological and digital components of the transformation are not the only ones, not necessarily the most important in specific cases. making a report on smart and self-sustaining rural villages in Hungary on the example of a small village that began its journey towards the label 'Smart Village' in the field of agriculture and with the decision to become self-sufficient in food production (pp. 678–680). On the basis of smart/successful agricultural decisions, the education level of the village inhabitants has increased, the population has grown, and health services improved.more detailed and comprehensive analysis of initiatives and practices of smart social system brings to the fore the important finding that, while looking at the smart system, it is not always the case that they are grounded on the information and communication technologies (ICT). In the proposed model, instead, they are focusing more on the relationships with the environment. However, even though the digital dimension does not pervade all the models of the Smart Cities/Villages and its main features, it is indeed important to all of them.

Chapter 4.

About ningala village :

4.1 Introduction :

4.1.1 Introduction About ningalaVillage details :

Ningala Local Language is Gujarati. Ningala Village Total population is 4472 and number of houses are 930. Female Population is 48.8%. Village literacy rate is 65.9% and the Female Literacy rate is 28.0%..More than 90% of the population of ningala is educated. The annual income of the village is Rs.5,00,000. Income of 60% people of ningala depends on the business. All the people of the village i.e.100% people of ningala pay their tax to the Gram Panchayat. There are Sahakari Mandali which gives loan to the farmers at the low interest.

ningala - Village Overview	
Gram Panchayat :	ningala
Block / Tehsil :	gadhada
District :	botad
State :	Gujarat
Pincode :	364760
Area :	590.89 hectares
Population :	4472
Households :	930
Nearest Town :	Botad(20 k.m)

(T-4.1A- ningala data)

Caste Data as per Census 2011:-

Schedule Caste (SC) constitutes 6.86 % while Schedule Tribe (ST) were 0.27 % of total population in Ningala village. In Ningala village population of children with age 0-6 is 564 which makes up 12.61 % of total population of village. Average Sex Ratio of Ningala village is 955 which is higher than Gujarat state average of 919. Child Sex Ratio for the Ningala as per census is 905, higher than Gujarat average of 890.

Working Population as per Census 2011:-

In Ningala village out of total population, 1652 were engaged in work activities. 89.47 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 10.53 % were involved in Marginal activity providing livelihood for less than 6 months. Of 1652 workers engaged in Main Work, 318 were cultivators (owner or co-owner) while 548 were Agricultural labourer.

ningala Details:

Particulars	Total	Male	Female
Total No. of Houses	**930**	-	-
Population	**4,472**	2,288	2,184
Child (0-6)	**564**	296	268
Schedule Caste	**307**	159	148
Schedule Tribe	**12**	6	6
Literacy	**75.38 %**	85.09 %	65.29 %
Total Workers	**1,652**	1,304	348
Main Worker	**1,478**	-	-
Marginal Worker	**174**	73	101

(T-4.1B-ningala details)

4.1.2 Justification/ need of the study :

Almost 70% of our population lives in villages and the need to be provided with the best of facilities and lifestyle to take India forward as a country. Being future civil engineers it is our duty to observe even the smallest issue and work towards its improvement. Even if a small amount of people migrate from villages to cities the pressure on the city increases, be it: overcrowding, pollution, traffic etc., this affects the whole nation Migration occurs mainly due to job opportunities and better facilities like hospitals, educational facilities etc. provided in urban area. To increase liveliness of village by providing good sanitation facilities, good infrastructure, basic requirements like pucca houses or awaas, water supply etc. are required considering the environmental and need of people. r the label “smart” but could also be intertwined with other dimensions, as in the case of where the smart dimension is addressed in most of them addressing other specific aspects.village in maybe around 60-70% of people live because of farming , and our nation also famer country,there are many export of the farmer’s wheat,sugar cane etc. there are many resources like, management of water resources, accessibility of sustainable energy, sustainable economic growth and decent work, building resilient infrastructures.

4.1.3 Study Area (Broadly define) :

- Ningala is a Village in Gadhada Taluka in Bhavnagar District of Gujarat State, India. It is located 59 KM towards west from District head quarters Bhavnagar. 15 KM from. 194 KM from State capital Gandhinagar.
- Ningala Pin code is 364760 and postal head office is Ningala .
- Keriya No.1 (3 KM) , Ishvariya (3 KM) , Surka (4 KM) , Pati (5 KM) , Pipaliya (6 KM) are the nearby Villages to Ningala. Ningala is surrounded by Botad Taluka towards North, Vallabhipur Taluka towards East, Umrala Taluka towards South , Barvala Taluka towards East .
- Sihor , Lathi,barwala , Bhavnagar , are the nearby Cities to Ningala.

4.1.4 Objectives of the study :

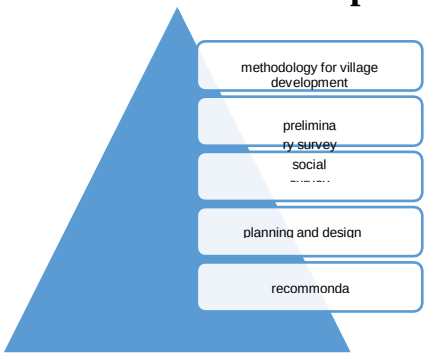
- To provide all the basic facilities to the people to make their life easy and comfortable.
- To provide technical solution of their problem so that they do not need to migrate to urban areas.
- Creation of infrastructure – connectivity, civic and social infrastructure along with the provision of the alternative livelihood generation is the key pillars.
- Reduce migration from rural areas to urban areas due to lack of basic facilities and other Services which are available in rural areas.

4.1.5 Scope of the Study :

By studying the present status and techno-economic survey of ningala village in botad districts of the Gujarat state in terms of basic services, public amenities, other infrastructural facilities for the need of the people and to prepare a report on the expected socio- economic growth of the area with the consultation of TDO, DDO and Sarpanch; will help full in providing better facilities and services in village.

From the gap analysis, development strategies for village development will be proposed and planning proposals for Physical infrastructure, Social Infrastructure and Renewable energy Source will be suggested for the village. The study will focus the development. India is agriculture country, about sixty percent of total population lives in village; they migrate to city for job and urban facility. This is useful to find the Actual requirement of village and how to overall development of village is possible in easy and practically way.The study will focus the development trend, intensity of growth of the village, and find out the problems related to the Socio- Cultural or physical. Rural settlements engulfed in urban limits during the process of development, and also those located in the fringe areas of large cities, can be termed as urban villages. These settlements areas are a rural because they have been so in the past and they are urban because of they are now located in the intense influence area of a large city or within the urban limits and have a majority of their workforce engaged in nonagricultural pursuits.

4.1.6 Methodology Frame Work for development of your village :



Methodology:

- methodology for village development
- survey
- analysis
- planning and design proposal
- recommendation

4.1.7 List of objects available related to civil methodology:

- Budget
- Gantt Chart of project schedule
- Identify customer needs
- Identify local/state/federal engineering and construction specifications
- Project management structure
- Proposed sustainability features
- Resumes of team members
- Technical approach etc.

Census Parameter	Census Data
Total Population	4472
Total No of Houses	930
Female Population %	2184
Total Literacy rate %	2288
Female Literacy rate	65.29%
Scheduled Tribes Population	12
Scheduled Caste Population	307
Working Population %	1652
Child(0 -6) Population by 2011	564

(T-4.2A-Population data ningala)

4.2 ningala village study area profile

Ningala is a large village located in Gadhada Taluka of Bhavnagar district, Gujarat with total 930 families residing. The Ningala village has population of 4472 of which 2288 are males while 2184 are females as per Population Census 2011.

4.2.1 Study Area Location with brief History land use details :

- Ningala is a Village in Gadhada Taluka in Bhavnagar District of Gujarat State, India. It is located 59 KM towards west from District head quarters Bhavnagar. 15 KM from . 194 KM from State capital Gandhinagar
- Ningala Pin code is 364760 and postal head office is Ningala .Keriya No.1 (3 KM) , Ishvariya (3 KM) , Surka (4 KM) , Pati (5 KM) , Pipaliya (6 KM) are the nearby Villages to Ningala. Ningala is surrounded by Botad Taluka towards North , Vallabhipur Taluka towards East , Umrala Taluka towards South , Barvala Taluka towards East.

  sihor , Lathi , Bhavnagar , Palitana are the near by Cities to Ningala.

  Ningala Pin code is 364760 and postal head office is Ningala .

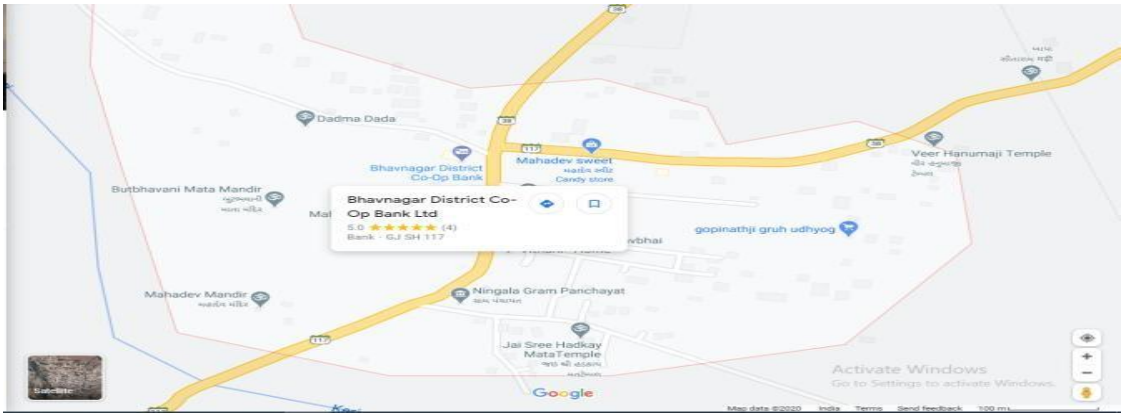
Particulars	Total	Male	Female
Total No. of Houses	**930**	-	-
Population	**4,472**	2,288	2,184
Child (0-6)	**564**	296	268
Schedule Caste	**307**	159	148
Schedule Tribe	**12**	6	6
Literacy	**75.38 %**	85.09 %	65.29 %
Total Workers	**1,652**	1,304	348
Main Worker	**1,478**	-	-
Marginal Worker	**174**	73	101

(T-4.2B-Land use details ningala)

4.2.2Base Location map, Land Map, Gram Tal Map :

(F-4.2A-ningala Base Map)

(F-4.2B ningala Satellite View)



(F-4.2C-ningala Map)

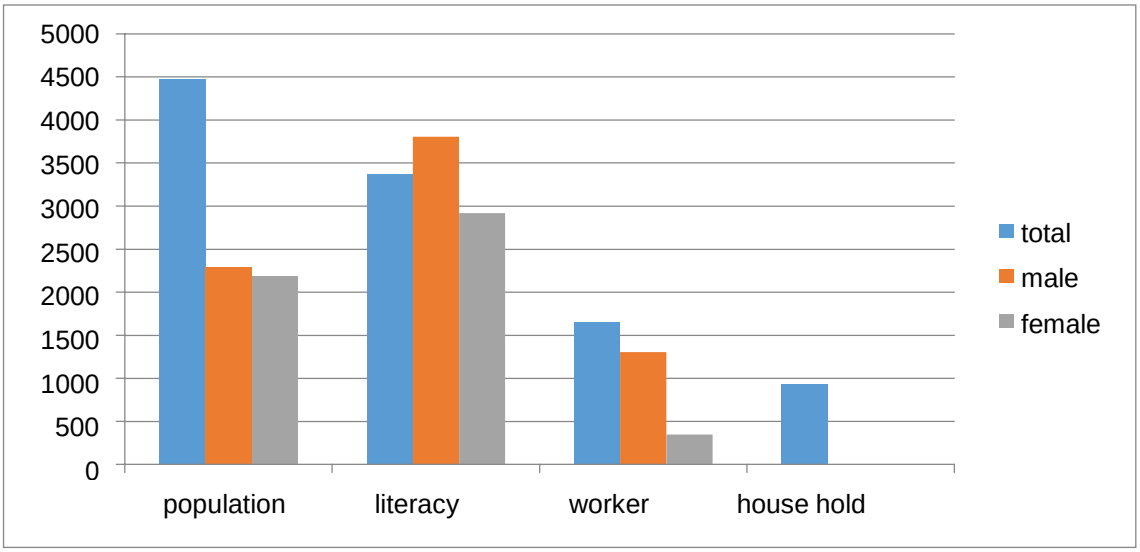
4.2.3Physical & Demographical Growth :

Demographics : The village is home to 4472 people, among them 2288 are male and 2184 are female. 73% of the whole population are from general caste, 5% are from schedule caste and 22% are schedule tribes. Child (aged under 6 years) population of ningala village is 564, among them 52% are boys and 48% are girls. There are 930 households in the village and an average 5 persons live in every family. Ningala Local Language is Gujarati. Ningala Village Total population is 4472 and number of houses are 930. Female Population is 48.8%. Village literacy rate is 65.9% and the Female Literacy rate is 28.0%.

Growth of population : Population of the village has increased by 19.2% in last 10 years. In 2001 census total population here were 3157. Female population growth rate of the village is 20.4% which is 6% higher than male population growth rate of 15.4%. General caste population has increased by 19.2%; Schedule caste population has decreased by -19.2%; Schedule Tribe population has increased by 27.9% and child population has decreased by 1.2% in the village since last census.

Cast factor:- Schedule Caste (SC) constitutes 6.86 % while Schedule Tribe (ST) were 0.27 % of total population in Ningala village.

Work factor:-In Ningala village out of total population, 1652 were engaged in work activities. 89.47 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 10.53 % were involved in Marginal activity providing livelihood for less than 6 months. Of 1652 workers engaged in Main Work, 318 were cultivators while 548 were Agricultural labourer.



(F-4.2D-Population chart ningala)

Country	**India**
State	Gujarat
District	Botad
Location	Ningala,gadhada
Population(2019/2020) est.	5045
Population(2011)	4472

Males	2288
Females	2184
Households	930
Latitude	22.0210° N
Longitude	71.7037° E

T-4.2C-ningala Profile)

4.2.4 Economical generation profile / Banks :

- The major sources of income are:

1. Farming
2. labour
3. Animal Husbandry
4. Private job
5. As workers in mills and factories.

- Banks: There are no banks currently present in ningala village. Banks can be found in a near-by town gadhada
- Income: The average income of the village dwellers is about ₹6000 to ₹ 27000 per month.
- Post Office: There is one Post Office in ningala village.

4.2.5Actual Problem faced by Villagers and smart solution :

issues

- There is a waterlogging problem during rainy season,
- Required 1 anaganwadi
- Maintenance of school
- Public health centre renovation
- There are no one Public laterin
- There is no community hall available in the village,

Smart solutions:

- ATM
- Bank
- Cybercafe
- Entrance Gate
- Pharmacy Store
- Public garden
- Rain water harvesting

- Skill development center
- Solar street lights and dustbins
- Solid waste management
- Supermarket

4.2.6 Social scenario -Preservation of traditions, Festivals, Cuisine

CULTURE:- The vast array of handcrafted products displaying intricate Gujarati art forms are not only popular in our country, but are a well-known entity all across the globe. These products include furniture, jewellery, embroidered garments, leatherwork, metalwork, baked clay articles and mirror work. Gujarat serves as the producer of some of the most creative and elegant furnishings that include bedcovers, quilts, cushion covers and table mats. Intricate dainty patterns are woven on the patola sarees with high precision. The traditional art forms of the state play a significant role in preserving its rich heritage.

CUSTOMS AND TRADITIONS:- The traditional folk dance forms include Garba, Dandiya Raas, Tippani, Padhar, Sidi and Dangi. Dandiya Raas is a romantic, very energetic, colourful and playful dance originating in the state of Gujarat

CUISINE : The typical Gujarati thali consists of rotli, dal or kadhi, rice, and shaak (a dish made up of several different combinations of vegetables and spices, which may be either spicy or sweet). The thali will also include preparations made from pulses or whole beans (called kathor in Gujarati) such as moong, black eyed beans etc., a snack item (farsaan) like dhokla, pathra, samosa, fafda, etc. and a sweet (mishthaan) like mohanthal, jalebi, doodh pak etc. Gujarati cuisine varies widely in flavour and heat, depending on a family's tastes as well as the region of Gujarat to which they belong. North Gujarat, Kathiawad, Kachchh, Central Gujarat and South Gujarat are the five major regions of Gujarat that contribute their unique touch to Gujarati cuisine. Many Gujarati dishes are distinctively sweet, salty, and spicy simultaneously.

OCCUPATION: The major occupation of the people of Gujarat is agriculture for at least one-half of the total land area is cultivable. Other area of economy and job sector includes dairy farming, primarily concerned with milk production. There are lot of industries which are involved in the production of fertilizers and petrochemicals.

4.2.7 Migration Reasons / Trends :

Ningala Migration Reasons as per the data available in Village Profile & Taluka Planning Atlas :

- Number of families who have migrated from village to village/city to get higher education are 834.
- Number of families who have migrated from village to other place in the country are 25.
- Number of families who have migrated from village to out of the country are 35.

Other reasons : Lack of physical and infrastructure facilities in the village like community hall, bank,PHC, etc.

- **Migration Trend:** Employment opportunities, For better education, Globalization, Sometimes crops failure forced villagers to migrate to cities.

Reason for migrations	Number of Migrants			Percentage to Migrants		
Total migrants	**98,301,342**	**32,896,986**	**65,404,356**	**100.0**	**100.0**	**100.0**
Reason for migration : Work / Employment	**14,446,224**	**12,373,333**	**2,072,891**	**14.7**	**37.6**	**3.2**
Business	**1,136,372**	**950,245**	**186,127**	**1.2**	**2.9**	**0.3**
Education	**2,915,189**	**2,038,675**	**876,514**	**3.0**	**6.2**	**1.3**
Marriage	**43,100,911**	**679,852**	**42,421,059**	**43.8**	**2.1**	**64.9**
Moved after birth	**6,577,380**	**3,428,673**	**3,148,707**	**6.7**	**10.4**	**4.8**
Moved with households	**20,608,105**	**8,262,143**	**12,345,962**	**21.0**	**25.1**	**18.9**
Other	**9,517,161**	**5,164,065**	**4,353,096**	**9.7**	**15.7**	**6.7**

(T-4.2D-Migration data India)

4.3. Data Collection ningala village (Photograph/Graphs/Charts/Table) :

4.3.1 Describe Methods for data collection

- First of all we studied various internet content available on websites.
- Then we have interected with gram-panchayat.
- Through techno-economic survey we found required details of facilities and infrastructure.
- Through interaction with villagers.
- By inspecting village
- Interaction with school teachers and staff.

4.3.2Primary details of survey :

Ningala is a Village in Gadhada Taluka in Bhavnagar District of Gujarat State, India. It is located 59 KM towards west from District head quarters Bhavnagar. 15 KM from . 194 KM from State capital Gandhinagar.
Ningala Pin code is 364760 and postal head office is Ningala .Keriya No.1 (3 KM) , Ishvariya (3 KM) , Surka (4 KM) , Pati (5 KM) , Pipaliya (6 KM) are the nearby Villages to Ningala. Ningala is surrounded by Botad Taluka towards North , Vallabhipur Taluka towards East , Umrala Taluka towards South , Barvala Taluka towards East.

Ningala is a large village located in Gadhada Taluka of botad district, Gujarat with total 930 families residing. The Ningala village has population of 4472 of which 2288 are males while 2184 are females as per Population Census 2011.

In Ningala village population of children with age 0-6 is 564 which makes up 12.61 % of total population of village. Average Sex Ratio of Ningala village is 955 which is higher than Gujarat state average of 919. Child Sex Ratio for the Ningala as per census is 905, higher than Gujarat average of 890.

Ningala village has lower literacy rate compared to Gujarat. In 2011, literacy rate of Ningala village was 75.38 % compared to 78.03 % of Gujarat. In Ningala Male literacy stands at 85.09 % while female literacy rate was 65.29 %.

4.3.3 Average size of the House - Geo-Tagging of House:-

- Average size of the house in the village is 7m X 11m
- Geo-Tagging: The process of tagging infrastructure with geographical information like Latitude, Longitude, Distance, place name, etc. It is connected to GPS which are monitored through computer internet networks. It can be used to locate important places like labs, dispensaries, milk center, etc. Geo Tagging is not implemented in ningala village.

4.3.4 No of Human being in One House :

- Total number of population in ningala is 4472 as per 2011 census. There are different number of peoplein each house as there are nuclear families as well as joint families, but the average no of human beingsin one house is 4 to 5.

4.3.5 Material available locally in the village and Material Out Sourced by thevillagers:

- The materials like milk, other grocery materials, wheat, onion, cotton and other agricultural cereals are used locally as they are locally easily available.

4.3.6 Geographical Detail:

The total geographical area of village is 590.89 hectares, total residential area is 199.89 hectares and total irrigated land area is 337 hectares.

Coordinates of ningala:-22.010‘ N,71.7037‘E

Elevation above MSL : 57 meters

4.3.7 Demographical Detail - Cast Wise Population Details / Which ID proof using by villagers :

- Total no. of houses:930
- Population of village:4472
- Literacy of village:-75.38%
- Total worker:-1652

4.3.8 Occupational Detail - Occupation wise Details / Majority business :

Major occupations are**:** Farming ; Animal Husbandry ; Service ; Labor ; etc.

In Ningala village out of total population, 1652 were engaged in work activities. 89.47 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 10.53 % were involved in Marginal activity providing livelihood for less than 6 months. Of 1652 workers engaged in Main Work, 318 were cultivators (owner or co-owner) while 548 were Agricultural laboure information about schools and hospital in Ningala village.

4.3.9 Agricultural Details / Organic Farming / Fishery :

Majority of the population of ningala village are occupied in farming. The main crops grown in the village are: wheat, cotton, rice, etc. There are no any farmer or villager using organic farming or fishery.

4.3.10 Physical Infrastructure Facilities - Manufacturing HUB / Ware Houses :

Transportation facilities are Government bus service is available from main highway road. ningala Rail Way Station , ningala Junction Rail Way Station are the very nearby railway stations to botad. Local transportations are auto-rickshaw , private vehicles are available in ningala village. ; The village approach roads are made of WBM and internal roads are of RCC and also paverblocks and it is available in all streets in village. One overhead tank is available. Apart from this primary school, anganwadi, dairy, RO water plant, U/G sump, etc. are also present in the ningala village. ; There are no any ware houses or manufacturing hub activities active in the ningala village.

4.3.11Tourism development not available in the village for attracting the tourist :

In ningala village there are no any tourism activities available for attracting the tourist. Tourism Development can be implemented in ningala as ,Touring ; Cultural activities ; Water-related activities ; Health-related activities ; Aerial activities ; Passive activities ; Sporting activities ; Hallmark events ; Business-related activities ; etc.

4.4 infrastructure details(with exiting village photograph

4.4.1Drinking Water / Water Management Facilities :

(F-4.4A-Overhead Water tank)

(F-4.4B-RO water plant)

In ningala village the main source of drinking water is from ghelo river and that water is stored in village overhead water tank which is of 2,85,000 lit. Other than this the village has the different water sources as RO Water plant which water is collected from Narmada main canal, 3 different underground sumps as one in village area, second from vasahat area and 3rd from ugamedi village.

The water tank,RO Water plant and 3 sumps are sufficient for all types of water requirements in the village. As per the present condition of water tank the village officials have decided to construct a new water tank of total 2,00,000 lit capacity. A water tank is a container for storing water. Water tanks are used to provide storage of water for use in many applications, drinking water, irrigation agriculture, fire suppression, agricultural farming, both for plants and livestock, chemical manufacturing, food preparation as well as many other uses.

4.4.2 Drainage Network / Sanitation Facilities:

The ningala village has semi underground drainage facility as from drainage starting it is in open condition and from vasahat area it is in closed underground condition and the pipelines are ending in ghelo river. As there is semi underground drainage network, during monsoon there is an overflow of drainage water. There is a good sanitation facility available in ningala village. Khaal-kuvaas are available in all the households. Dumping of garbage is done out of the village and other solid wastes are dumped in corner part of the village and it is burnt by villagers.Sanitation is done daily by villagers and there is no any solid waste collection system available in the village. No government sweepers are coming daily for other waste collection.

(F-4.4C-Waste Dumping Area)

(F-4.4D-Cleaned Village Streets & Dustbin)

4.4.3 Transportation & Road Network :

Ningala Rail Way Station , Alampur Rail Way Station are the very nearby railway stations to Ningala.Nearest State Highway: SH 38 and 117 ;Bus stop is available at main highway as Nana Zinzavadar Bus Stop village busstop. The main approach road of village isof WBM and village streets are of RCC and internal streets having paver blocks.

(F-4.4E-Nearest Bus stop)

(F-4.4F-Village Road)

4.4.4 Housing condition :

In ningala village the major structures such as schools, panchayat buildings and majority of the housesare pucca houses and some are kuchha houses. Rest of the houses are made of cement and bricks but with metal corrugated roof as shown in figure. Some of the houses which are out of the vasahat area, were observed as mud houses.

(F-4.4G-Pukka House)

(F-4.4H-Kuchha House)

4.4.5 Social Infrastructure Facilities , Health , Education , Community Hall , Library :

Social Infrastructures:

In ningala village there are 1 anganwadi , 1 primary school , 3 temples , 1 Post office , 1 Panchayat building but one in working condition and other in closed condition. There are no secondary and higher secondary schools. Village does not have any health care center, public latrine and recreational area or public garden.

Health Facilities:

In the village no PHC, CHC, dispensary or any kind of private clinics are available in the village. Thevillagers go to ningala village for any kind of health facility. Health facilities are places that provide health care. They include hospitals, clinics, outpatient care centers, and specialized care centers, such as birthing centers and psychiatric care centers.

Education Facilities:

ningala village has 1 Anganwadi and 1 primary school. Primary School is managed by the Local

body.The school consists of Grades from 1 to 8. The school is Co-educational and the school have an attached playground section. Gujarati is the medium of instructions in this school. This school is approachable by all-weather roads. The school is Government building. It has got 8-10 classrooms for instructional purposes. As per the observation classrooms are in good condition. The school has a separate room for Head master/Teacher. The school has electric connection. The source of Drinking Water in the school is Tap Water and it is functional and according to Talati there is rain water harvesting in school. The school has 1 boys toilet and it is functional, and 1 girl‘s toilet and it is functional.

(F-4.5a-primary school)

(F-4.5 b-community

Public Library : ningala village in no public library.

4.4.6 Existing Condition of Public Buildings & Maintenance of existing Public

Infrastructures :

In the ningala village as per the interaction with the villagers the maintenance is required in the village pond. Water tank is present but is not in good condition and village officials have said that new water tank will be constructed in place of current water tank with higher capacity. Panchayat building, Anganwadi, Public library and primary school are also in good working condition. So the estimate of proper maintenance of village pond is required. Dairy is operated under a good pukka condition building.

4.4.7 Technology Mobie/ WIFI / Internet Usage Details :

Almost in all the households the villagers are using mobile phone and they are also using the internet facility for personal usage. There are no private WIFI users in the village as per the data collected. Butin the panchayat building there is a WIFI connection available.

4.4.8 Sports Activity as Gram Panchayat :

There are no any sports activities are being done by gram panchayat. The primary school has some sports equipment and tools & also children and students are using these facilities.

4.4.9 Socio-Cultural Facilities, Public Garden/ Park/ Playground/ Pond/

The ningala village has panchayat building and it is in good condition. The separate Post office building is there in village. Public Library is available in the village. Dairy building is available in the village. A small playground outside the primary school is present. The village has no public garden, separate play ground or any other recreational facilities. There is one village pond but it is not in goodcondition and its water is also not drinkable.

4.4.10 Other Facilities

There are no any kind of facilities like smart toilet-coin operated entry, footpath development, self- cleansing, waterless public building, etc. in the ningala village. There are some houses in which solar system is there like solar panel, solar water heater and solar cooker. And according to current population the village has a smart.A **solar panel** is an assembly of photo-voltaic cells mounted in a framework for installation. Solar panels use sunlight as a source of energy to generate direct current electricity. A collection of PV modules is called a PV panel, and a system of PV panels is call an array. Arrays of a photovoltaic system supply solar electricity to electrical equipment. the ability of some materials to create an electrical charge from light exposure was first observed.

(F-4.4S-Solar Panel System)

(F-4.4T-RO U/G sump)

4.4.11 Any other details :

There are agriculture co-operative office building, 12 wells, 9 tube wells in farms or agriculture areas and 4 pump. The farmers have the farming equipment like tractor, etc. in the ningala village.

4.5 Existing Institution like - Village Administration – Detail Profile :

4.5.1 Bachat Mandali : In ningala khedut sarkari Bachat Mandali existing.

4.5.2 Dudh Mandali : There is one Dudh Mandali existing in the ningala village in Dairy.

(F-4.5A-Village Dairy)

(F-4.5B-Mahila Forum in Anganwadi)

4.5.3Mahila forum :

A mahila forum is active in the village anganwadi. There is no any mahila mandal existing in the ningala village. As per the interaction with villagers there is a system of asking before any kind of decision implementation in the village and that is a good thing in ningala village so that mahilas havethe decision making authority.

4.5.4Plantation for the Air Pollution :

There is no such activity done of tree plantation for the air pollution in the ningala village. But that kind of activities are done in the primary school by the students of the ningala village.

4.5.5 Rain Water Harvesting - Waste Water Recycling :

In the ningala village in primary school and angan wadi in that types of methods are used. using the system of rain water harvesting and there is no any kind of waste water recycling process done. According to Talati there is rain water harvesting in the village primary school.

4.5.6 Agricultural Development :

There is one agricultural co-operative office building in the ningala village so all the village agriculture related decisions are being operated from this office. The village farmers have agricultural tools and equipment. All the agri-materials are available from nana zindavadar village which is 3 km away from the ningala village.

4.5.7 Any Other :

There are no any other kind of institutions existing in the ningala village apart from panchayat building, dairy, primary school, public library, government grocery shop, temples, agricultural co-operative office building, anganwadi, etc.Most of the houses have electric connections. Electricity is used to run tubewells in fields and for many other purposes. village has two primary schools and one high school. There is a primary health centre run by the government and one private dispensary where the sick are treated. Electricity is used to run tubewells in fields and for many other purposes. village has two primary schools and one high school. There is a primary health centre run by the government and one private dispensary where the sick are treated. It also has a well-developed system of roads and transport facilities.government grocery shop, temples, agricultural co-operative office building, anganwadi, etc.Most of the houses have electric connections. Electricity is used to run tubewells.

Chapter 5.

Technical Options with Case Studies : (FOR ANY ONE TOPIC, Take a new concept design , prototype model with actual costing) :

5.1 Concept (Civil) :

5.1.1 Advance Sustainable construction techniques / Practices and Quantity Surveying:

Quantity surveyors in construction companies apply traditional quantity surveying practices to meet the requirements of consultant quantity surveyors acting for the client. Other practices have to be used to suit the internal cost accounting and reporting requirements of the company.

Drivers for Sustainability :

Six Key Drivers for Sustainable Development

- Research Article.
- Research on Sustainable Development.
- Controversial Issues.
- Complexity and Transdisciplinarity.
- System Thinking and System Dynamics.
- Two, Three, Four, Five... Dimensions of Sustainable Development.
- Spatial and Temporal Scales of Sustainable Development.
- Values and Principles.

✓ Recommendations :

The Sustainable Development Goal (SDG) - Education 2030 Steering Committee has issued recommendations focusing on financing education as a public good, strengthening national ownership and addressing data gaps as part of its work to steer progress towards meeting internationally agreed targets for education.

- Planning, design and specifications based on performance and service life

- Construction Practices
- Material Conservation and Selection
- Demolition and recycling
- Energy Conservation

✓ Planning, Design and Specifications :

Structures in India are designed well however so far in most specifications, there is no reference to any service life or calculations thereof. To this effect, deeper study of various service life prediction models and calculations are essential. Specifications must to be performance based as opposed to their present form of being prescription based.

✓ Construction Practices :

It is acknowledged that wastage in the construction industry is as high as 30%. That means at current valuation, we are talking about wastage to the tune of Rs.1200 billion or $27 billion in India. This is in itself a large, yet relatively simple and straight forward challenge to tackle. These wastages are activities that absorb resources, man hours and materials but create no value. Most developed countries have different forums / institutes / researchers / academic institutions for seeking solutions to mitigate these wastages and lean construction practices that emerged have yielded encouraging. Lean construction is a "way to design production systems to minimize waste of materials, time and efforts in order to generate the maximum possible value". While some novel initiatives are being taken in some parts of India to adopt leaner construction practices, India does not have a fully focused lean construction forum. Creation of an industry consortium or lean construction forum may be a good beginning.

✓ Demolition and Recycling :

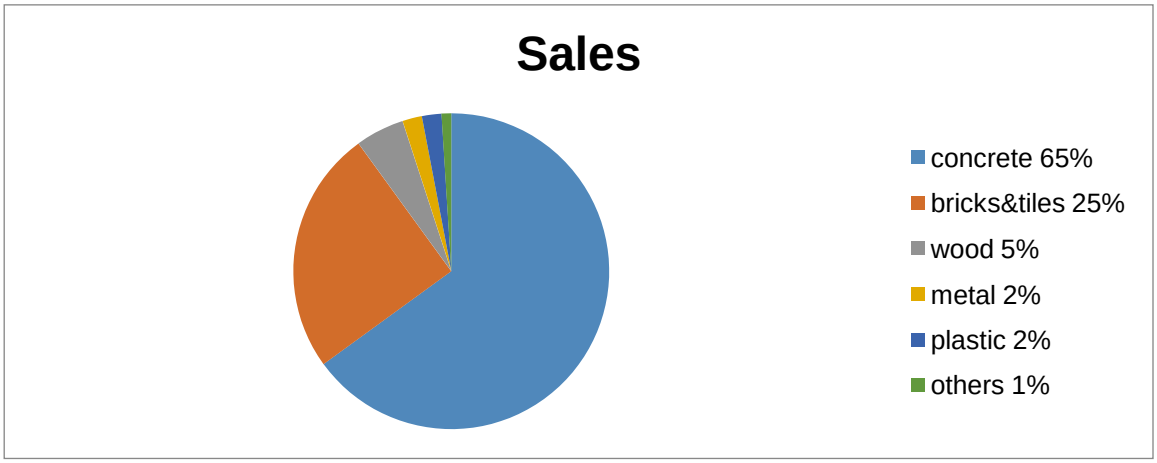
In India, the use of recycled aggregates has not been adequately explored. Reportedly, the construction and demolition waste has substantially increased as new super structures are being built on land after tearing down the smaller structures that previously existed. It is estimated that the construction industry in India generates about 10-12 million tons of waste annually. Projections for building materials requirement of the housing sector indicate a shortage of aggregates of about 55,000 million cu. m. An additional 750 million cu.m. of aggregates would be required for achieving the targets of the road sector.

✓ Material Conservation and Selection :

Concrete is the largest synthesized material which has a per capita consumption of 1.5 tons per annum in India. Presence of concrete is all pervading simply because it has the capacity to utilize locally available ingredients, develop adequate engineering properties for a variety of applications, easily adapt to any shape and size and has comparatively low initial and maintenance costs. While concrete not be as big of an energy consumer as structural steel, aluminum and glass; concrete and particularly cement still remains a major energy 'sink' due to its sheer volume of production and also environmentally unsustainable due to large quantities of CO2 evolution associated with its manufacture. Raw materials for cement manufacture include non-renewable natural resources like lime stone, aggregates, manufactured sands (fine aggregates), and so on. Hence the Indian concrete Industry needs to take a fresh look at these challenges. Some of the problems faced by Indian concrete industry towards achieving sustainability in concrete utilization are as follows:

✓ Energy Conservation :

Since sources of good quality, aggregates are fast depleting, the concrete industry in India needs to prepare itself to use locally available 'marginal' aggregates. The use of local materials helps reduce the carbon footprint associated with transport. Thus, from sustainability angle, the emphasis should be placed on using locally-available aggregates, even if there are small deficiencies in their quality. It has been amply demonstrated that desired properties of concrete can be obtained by intelligent blending of available aggregates with crushed sand, inert fillers, supplementary cementitious materials and chemical admixtures. Another important issue is that river sand and other construction materials are usually transported by road. India has a well-developed and efficient rail and water transport system that need to be leveraged by the construction industry. This is not only more sustainable option but also most cost effective.



(F-5.1A-Consruction materials chart of energy conservation)

Conclusion

Sustainable development is largely about people, their well-being, and equity in their relationships with each other, in a context where nature-society imbalances can threaten economic and social stability. Because climate change, its drivers, its impacts and its policy responses will interact with economic production and services, human settlements and human societies, climate change is likely to be a significant factor in the sustainable development of many areas (e.g., Downing, 2002). Simply stated, climate change has the potential to affect many aspects of human development, positively or negatively, depending on the geographic location, the economic sector, and the level of economic and social development already attained (e.g., regarding particular vulnerabilities of the poor, see Dow and Wilbanks, 2003). Because settlements and industry are often focal points for both mitigation and adaptation policy-making and action, these interactions are likely to be at the heart of many kinds of development-oriented responses to concerns about climate change.

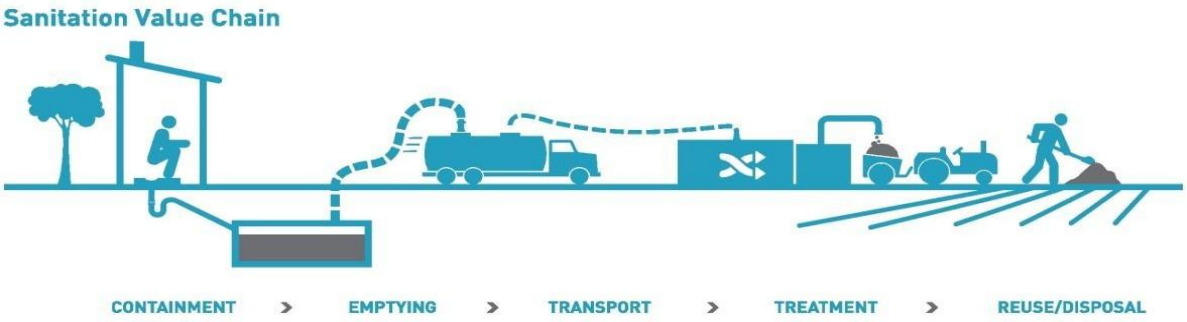
5.1.2 Soil Liquefaction :

Soil liquefaction occurs when a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress such as shaking during an earthquake or other sudden change in stress condition, in which material that is ordinarily a solid behaves like a liquid. In soil mechanics ,the term "liquefied" was first used by Allen Hazen in reference to the 1918 failure of the Calaveras Dam in California.He described the mechanism of flow liquefaction of the embankment dam as If the pressure of the water in the pores is great enough to carry all the load, it will have the effect of holding the particles apart and of producing a condition that is practically equivalent to that of quicksand… the initial movement of some part of the material might result in accumulating pressure, first on one point, and then on another, successively, as the early points of concentration were liquefied.

(F-5.1B-Soil Liquefaction)

5.1.3 Sustainable Sanitation :

Sustainable sanitation is a sanitation system designed to meet certain criteria and to work well over the long-term. Sustainable sanitation systems consider the entire "sanitation value chain", from the experience of the user, excreta and wastewater collection methods, transportation or conveyance of waste, treatment, and reuse or disposal. The Sustainable Sanitation Alliance (SuSana) includes five features (or criteria) in its definition of "sustainable sanitation": Systems need to be economically and socially acceptable, technically and institutionally appropriate and protect the environment and natural resources.



F-5.1C-Sustainable Sanitation)

5.1.4 Transport Infrastructure / system :

Sustainable transport and the environment protection including green vehicles/ Urban transport, land use development, spatial and transport planning/ Bicycling, bike, bike-sharing systems, cycling mobility/ Human factor in transport systems/ Intelligent Mobility: emerging technologies to enable the smarter movement of people and goods/Airport landside: access roads, parking facilities, terminal facilities, aircraft apron and the adjacent taxiway/ Transportation policy, planning and design, modeling and decision making/ Transport economics, finance and pricing issues, optimization problems, equity appraisal/ Road safety impact assessments, road safety audits, the management of road network safety and safety inspections/ Tunnels and underground structures: preventing incidents-accidents mitigating their effects for both people and goods/ Traffic flow characteristics, traffic control devices, work zone traffic control, highway capacity and quality of service/ Track-vehicle interactions in railway systems, capacity analysis of railway networks/ Risk assessment and safety in air and railway transport, reliability aspects/ Maritime transport and inland waterways transport research/ Intermodal freight transport: terminals and logistics.Asset management in transport infrastructure, financial viability of transport engineering projects/ Life cycle Cost Analysis, Life-Cycle Assessment and Sustainability Assessment of transport infrastructure/ Infrastructures financing and pricing with equity appraisal, operation

optimization and energy management/ Low-Volume roads: planning, maintenance, operations, environmental and social issues/ Public-Private Partnership (PPP) .

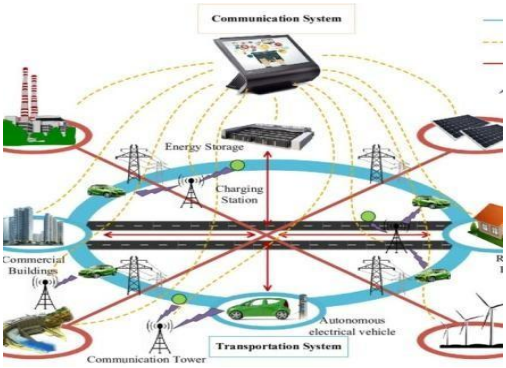


Figure (F-5.1D- Transport Infra.)

5.1.5 Vertical Farming :

Vertical farming is the practice of growing crops in vertically stacked layers. It often incorporates controlled-environment agriculture, which aims to optimize plant growth, and soilless farming techniques such as hydroponics, aquaponics, and aeroponics. Some common choices of structures to house vertical farming systems include buildings, shipping containers, tunnels, and abandoned mine shafts. As of 2020, there is the equivalent of about 30 ha (74 acres) of operational vertical farmland in the world.The modern concept of vertical farming was proposed in 1999 by Dickson Despommier, professor of Public and Environmental Health at Columbia University. Despommier and his students came up with a design of a skyscraper farm that could feed 50,000 people.Although the design has not yet been built, it successfully popularized the idea of vertical farming.Current applications of vertical farmings coupled with other state-of-the-art technologies, such as specialized LED lights, have resulted in over 10 times the crop yield than would receive through traditional farming methods.

Figure 1(F-5.1E-Vertical Farming)

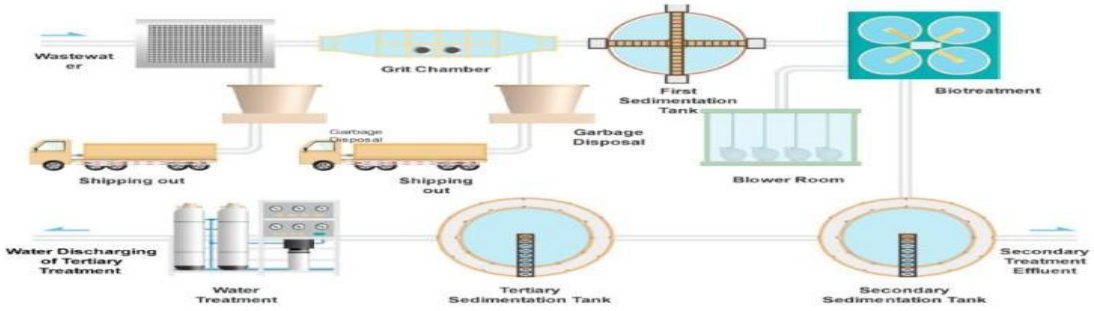
5.1.6 Corrosion Mechanism, Prevention & Repair Measures of RCC Structure :

In the case of Reinforced concrete structure the ingress of moisture or air may lead to corrosion of steel, cracking and spalling of concrete cover thereby reducing durability of concrete structure . Repair has been suggested as the protective solution for damaged structure due to corrosion.

some metals, such as gold, silver, and platinum, occur naturally in their pure form. Many other metals, including iron, are found in their natural state as ores, natural oxides, sulphides, and other reaction products. These metals must be derived from their ores by smelting, from which the metal absorbs and retains the energy needed to free it from the ore. This metallic state is unstable, however, because the metal tends to recombine with elements in the environment and return to its natural state, losing the extra energy in the process. The process of a metal reverting to its natural state is called oxidation, or corrosion. Steel has a natural tendency to corrode and to return to its natural state as iron ore, typically ferric oxide, Fe2O3. The rate of steel corrosion depends on the availability of water, oxygen, and aggressive ions, as well as the pH and temperature of the surrounding environment, and on the internal properties of the steel, such as composition, grain structure, and entrained fabrication stresses.

5.1.7 Sewage treatment plant :

Sewage treatment is the process of removing contaminants from municipal wastewater, containing mainly household sewage plus some industrial wastewater. Physical, chemical, and biological processes are used to remove contaminants and produce treated wastewater (or treated effluent) that is safe enough for release into the environment. A by-product of sewage treatment is a semi-solid waste or slurry, called sewage sludge. The sludge has to undergo further treatment before being suitable for disposal or application to land.



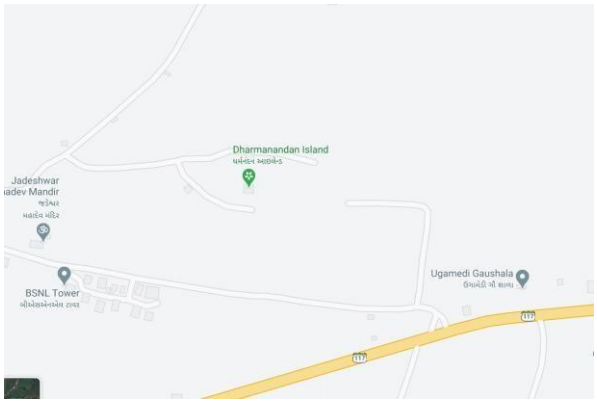
(F-5.1F- Sewage Treatment Plant)

5.1.8 Technical Case Study On “dharmanandan island-(ugamedi)”

Chief Minister Vijay Rupani inaugurated the newly constructed Dharmanandan Sarovar at Ugamedi village in Gadhada taluka of Botad in the special presence of Energy Minister Saurabhbhai Patel.Addressing the crowd, the Chief Minister said that at present, the issue of double digits is being discussed all over the country.Gujarat has fought for water for 70 years.The lifeline of Gujarat, Narmada river is at a historical level today,Reaching the surface of 138 meters in a few days will make the whole of Gujarat waterlogged.About 115 dams in Saurashtra have been flooded with Narmada water under Sauni scheme.Through which greenery has spread in Saurashtra again.The Chief Minister added that earlier the sisters of Kutch and Saurashtra had to fight for two beds of water. But today, as a result of the state government's water schemes, water has reached villages.Recently, the Tappar Dam in Kutch district has been overflowed through Narmada water. Thus, the state government has done a commendable job of delivering Narmada water to arid regions like Kutch, 600 km away.This is how our Shetruji and Bhadar demos will be filled to the brim. Through such Bhagirath work, the farmer of the entire diocese has become stronger. The CM further added.

Dharmanandan island ugamedi cost：

Cost:6 crore



(F-5A- DHARMANANDAN LAKE LOCATION)

Environmental clearance:

In the Constitution of India it is clearly stated that it is the duty of the state to _protect and improve the environment and to safeguard the forests and wildlife of the country‘. It imposes a duty on every citizen _to protect and improve the Natural environment including forests, lakes, rivers, and wildlife‘. Reference to the environment has also been made in the Directive Principles of

State Policy as well as the Fundamental Rights. The Department of Environment was established in India in 1980 to ensure a healthy environment for the country. This later became the Ministry of Environment and Forests in 1985.The constitutional provisions are backed by a number of laws — Acts, Rules, and Notifications. The Environment Protection Act, 1986 came into force soon after the Bhopal Gas Tragedy and is considered an umbrella legislation as it fills many gaps in the existing laws. Thereafter a large number of laws came into existence as the problems began arising, for example, Handling and Management of Hazardous Waste Rules in 1989. The Environment (Protection) Act, 1986 authorizes the central government to protect and improve environmental quality, control and reduce pollution from all sources, and prohibit or restrict the setting and /or operation of any industrial facility on environmental grounds. 1986 - The Environment (Protection) Rules lay down procedures for setting standards of emission or discharge of environmental pollutants. The environmental Protection Act, 1986 is an ‗Umbrella' Act enacted by the national parliament. This Act empowers the Government to take all necessary measures to protect control and abate environmental pollution. The Act identifies the MoEF, Government of India as the apex nodal agency to deal with environmental problems of nation so that an integrated and holistic policy can be implemented with regard to the environment. The scope of this Act is very broad covering water, Air, Land and human beings and other living creatures.

Founder of dharmanadan lake ugamedi: Laljibhai t. patel

tourism

(F-5B- DHARMANANDAN LAKE

The lake name is dharmanandan,that is a for villagers's tour and riding the boats and other machines.that is an awesome view for visitors and touristers. This later became the Ministry of Environment and Forests in 1985.The constitutional provisions are backed by a number of laws — Acts, Rules, and Notifications. The Environment Protection Act, 1986 came into force soon after the Bhopal Gas Tragedy and is considered an umbrella legislation as it fills many gaps in the existing laws.

Dharmanandan lake photographs:

(F-5C- DHARMANANDAN LAKE LOCATION)

(F-5D- DHARMANANDAN LAKE LOCATION)

Chief Minister Vijay Rupani inaugurated the newly constructed Dharmanandan Sarovar at Ugamedi village in Gadhada taluka of Botad in the special presence of Energy Minister Saurabhbhai Patel.Addressing the crowd, the Chief Minister said that at present, the issue of double digits is being discussed all over the country.Gujarat has fought for water for 70 years.The lifeline of Gujarat, Narmada river is at a historical level today,Reaching the surface of 138 meters in a few days will make the whole of Gujarat waterlogged.About 115 dams in Saurashtra have been flooded with Narmada water under Sauni scheme.Through which greenery has spread in Saurashtra again.The Chief Minister added that earlier the sisters of Kutch and Saurashtra had to fight for two beds of water. But today, as a result of the state government's water schemes, water has reached villages.Recently, the Tappar Dam in Kutch district has been overflowed through Narmada water. Thus, the state government has done a commendable job of delivering Narmada water to arid regions like Kutch, 600 km away.This is how our Shetruji and Bhadar demos will be filled to the brim.

Chapter 6.

Swachh Bharat Abhiyan (Clean India) :

Swachh Bharat Mission (SBM)

A clean India would be the best tribute India could pay to Mahatma Gandhi on his 150 birth anniversary in 2019, said Shri Narendra Modi as he launched the Swachh Bharat Mission at Rajpath in New Delhi. On 2nd October 2014, Swachh Bharat Mission was launched throughout length and breadth of the country as a national movement. The campaign aims to achieve the vision of a _Clean India‘ by 2nd October 2019.While leading the mass movement for cleanliness, the Prime Minister exhorted people to fulfil Mahatma Gandhi‘s dream of a clean and hygienic India. Shri Narendra Modi himself initiated the cleanliness drive at Mandir Marg Police Station. Picking up the broom to clean the dirt, making Swachh Bharat Abhiyan a mass movement across the nation, the Prime Minister said people should neither litter, nor let others litter. He gave the mantra of _Na gandagi karenge, Na karne denge.‘ Shri Narendra Modi also invited nine people to join the cleanliness drive and requested each of them to draw nine more into the initiative. The government provided subsidy for construction of nearly 110 million toilets between 2014 and 2019, although many Indians especially in rural areas choose to not use them. The campaign was criticized for using coercive approaches to force people to use toilets. Many households were threatened with a loss of benefits such as access to electricity or food entitlements through the public distribution system.

6.1 Swachhta needed in ningala village -Existing Situation with photograph

We have done one survey on existing condition of village regarding swachhta. Thepeople are maintaining cleanliness of the village but in some streets there is no swachhata because there are animaland their waste , mud, etc. The village pond has to need a proper maintenance. Other than these there are clean streets, main road and approach road.

(F-6.1-Existing Photo of swachhta in ningala

6.2Guidelines - Implementation in ningala village with Photograph :

According to Talati, Sarpanch and villagers, the people are cleaning their nearby area regularly and collect that waste and dispose it to out of the village and burn it. No daily basis waste collection is therein the ningala village.

F-6.2-Existing Photos of village streets)

6.3 Activities Done by Students for ningala village

Firstly we took a permission from village Talati and Sarpanch for doing one Swachhta awareness camp and then we have done one activity of swachhta awareness in the village and we have done an interaction with villagers and aware them about the importance of swachhta in our life and told them to keep the village and infrastructure clean and safe. We have also done a cleaning of village street. We have suggested them for not dumping the waste in village streets and dispose it at right place.So that we have also proposed one design of Solid Waste Management as part 2 design in the ningala village.

(F-6.3-Swachhta Awareness Activity Photos)

Chapter 7.

Village condition due to Covid-19 :

the breakout of the Covid-19 pandemic affected rural India in diverse ways.This was only to be expected given the great variation in production systems and socio-economic conditions in villages across agro-ecological zones.This note analyses the impact of the lockdown – which brought almost all economic and public activity in India to a halt – on a select group of villages based on a rapid assessment survey conducted by the Foundation for Agrarian Studies. India faces an uphill struggle in dealing with the pandemic. While two-thirds of India‘s population lives in rural areas, there are almost four times as many health workers per person in cities. Most rural communities rely on untrained health workers. Over two-thirds of these rural health providers have no formal medical training, but remain the only option of medical support for most of the rural population.

7.1 Taken steps in ningala village related to existing situation with photograph :

(F-7.1-mask distribute)

During interaction with the Talati, he told us that quarantine place and home quarantine facility were implemented during the lockdown. According to Talati, Sarpanch and villagers ; in the ningala village the sanitization process was done during the lockdown period when first case of covid 19 came in the village. Ningala‘s near about village in isolation ward declared of near about 4 to 5 villages.that‘s photographs

F-7.2-ugamedi’s isolation centers)

7.2 Activities Done by Students for ningala village

We have taken a permission from Talati and Sarpanch for doing one awareness regarding covid 19 in the ningala village and then we did awareness camp regarding covid 19.In that awareness camp we have distributed some face masks to the villagers for the protection against covid 19 and aware them about covid 19 situation in India and told them to take precautionary measures like wear a mask perfectly, wash hands regularly, maintain social distancing inpublic and avoid crowdy area & firstly make yourself home quarantined if you fill any COVID-19 symptom in your body.

(1) Mask distribution
(2) Awareness about 6 foot distance between 2 members
(3) Awareness of Time to time exercise and drinking warm water
(4) Awareness of Fever and cold in don‘t any of out of home

the breakout of the Covid-19 pandemic affected rural India in diverse ways.This was only to be expected given the great variation in production systems and socio-economic conditions in villages across agro-ecological zones.This note analyses the impact of the lockdown – which brought almost all economic and public activity in India to a halt – on a select group of villages based on a rapid assessment survey conducted by the Foundation for Agrarian Studies. India faces an uphill struggle in dealing with the pandemic. While two-thirds of India‘s population lives in rural areas, there are almost four times as many health workers per person in cities. Most rural communities rely on untrained health. Now that the building blocks of remote education have been put into place and classroom learning is underway, more and more teachers are turning their attention to the mental health of their students. Youth anxiety about the coronavirus is rising, and our young people are feeling isolated, disconnected, and confused. While social-emotional education has typically taken place in the bricks and mortar of schools, we must now adapt these curriculums for an online setting.

I have created six well-being activities for teachers to deliver online using the research-based SEARCH framework which stands for Strengths, Emotional management, Attention and awareness, Relationships, Coping, and Habits and goals. Research suggests that students who cultivate these skills have stronger coping capacity, are more adaptable and receptive to change.

Rather than viewing these activities as another thing you have to fit in, use them as a learning tool that helps your students stay focused, connected, and energized. given the great variation in production systems and socio-economic conditions in villages across agro-ecological zones.This note analyses the impact of the lockdown – which brought almost all economic and public activity in India to a halt – on a select group of villages based on a rapid assessment survey conducted by the Foundation for Agrarian Studies. India faces an uphill struggle in dealing with the pandemic. While two-thirds of India‘s population lives in rural areas, there are almost four times as many health workers per person in cities. Most rural communities rely on untrained health. Now that the building blocks of remote education.

Chapter 8.

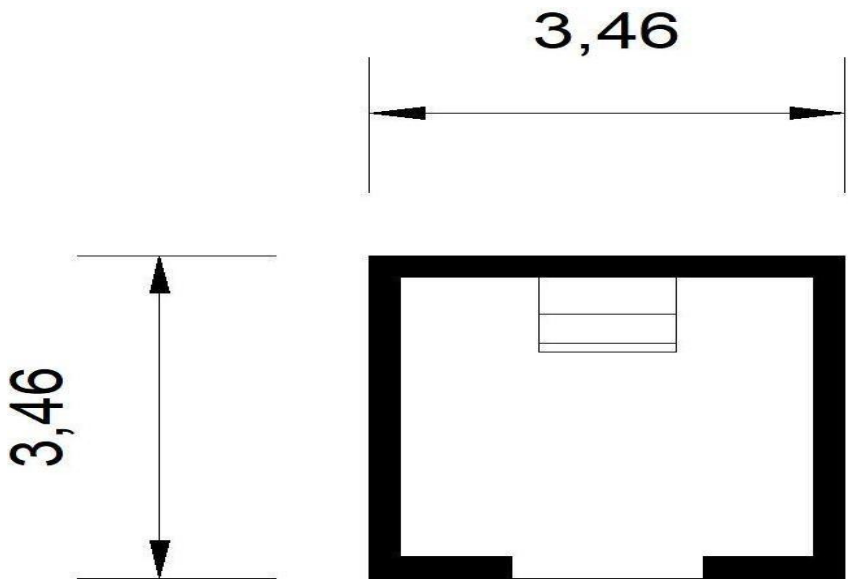
Sustainable Design Planning Proposal (Prototype Design) - Part- I (Scenario / Existing Situation / Proposed Design in Auto cad / Recapitulation Sheet / Measurement Sheet / Abstract Sheet / Sustainability of Proposal / Any other software):

8.1 Design Proposals : Observation and brief write up about each design

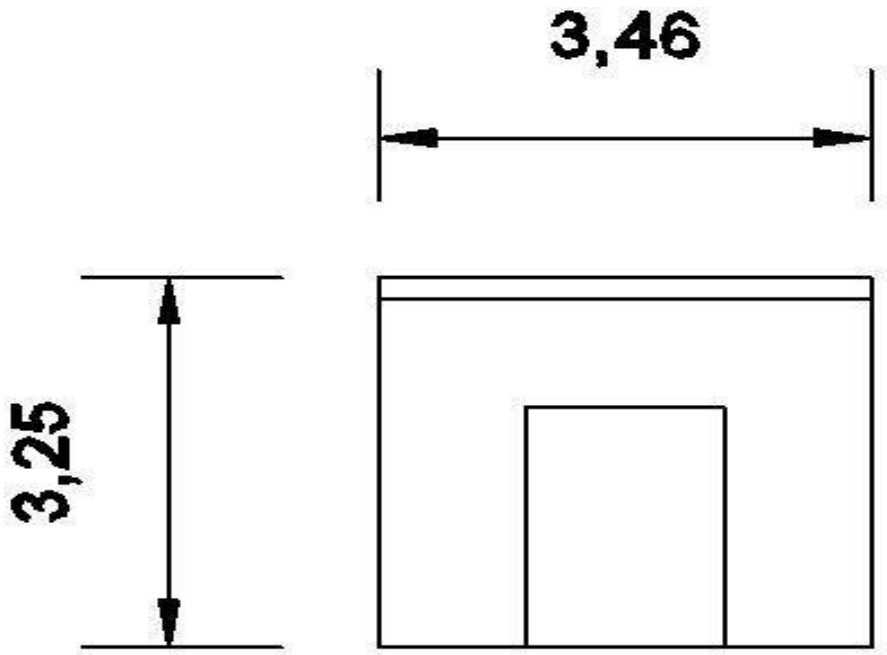
1. design of A.T.M
2. design of public health center
3. design of a.t.m
4. design of anganwadi
5. public laterin
6. public ground

8.1.1 design of a.t.m:

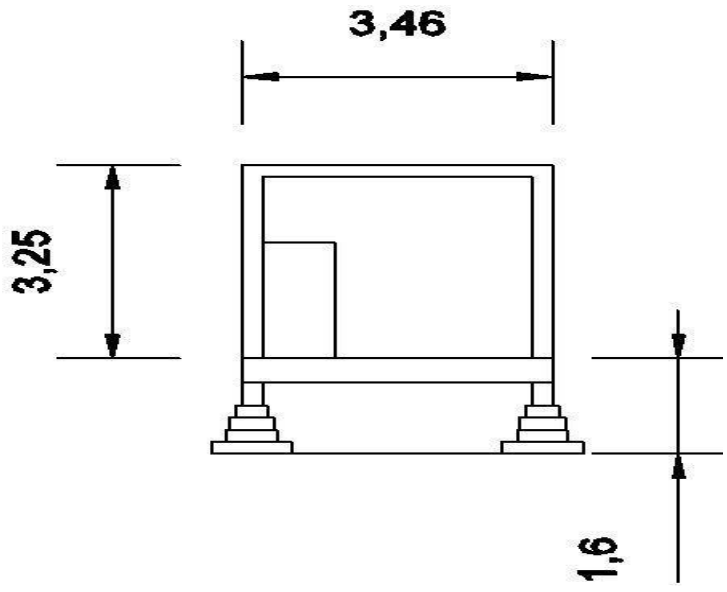
An ATM, which stands for automated teller machine, is a specialized computer that makes it convenient to manage a bank account holder‘s funds. It allows a person to check account balances, withdraw .



F-8.1.1-A-PLAN OF A.T.M



F-8.1.1-B-ELEVATION OF A.T.M



F-8.1.1-C-SECTION OF A.T.M

T-8.8.1 –A-QUANTITY SHEET

SR. NO	description	length	width	height	Nos.	Total quantity
1	EXCAVATION	13.2	1.2	1.5	1	23.76
2	BASIC WALL:GENERIC – 0.50	13.2	2	0.4	1	5.28
3	BASIC WALL:00.30	13.2	1.2	0.4	1	6.336
4	BASIC WALL:0.40	13.2	1.6	0.4	1	8.448
5	PCC IN FOOTING	13.2	0.90	0.4	1	4.752
6	CAST-IN- PLACE STAIR:	0.177	1.52	0.1778	4	0.75
7	BASIC WALL:9" EXTERIOR	1.600	0.22	3.05	1	1.0736
8	BASIC WALL:9" EXTERIOR	2.438	0.22	3.05		2.04
9	FLOOR: 10"	2.667	2.6	0.254	1	1.81
10	BASIC ROOF:GENERIC	2.667	2.66	0.152	1	1.15
11	GLASS DOORWITH ALUMINUM FRAME	1.397	0.02	2.209	1	1

T-8.8.1-B-ABSTRACT SHEET

Sr no.	description	Quantity	rate	per	Amount
1.	EXCAVATION	23.76	90	M3	2138.4
2.	BASIC WALL:GENERIC – 0.50	5.28	90	M3	475.2
3.	BASIC WALL:00.30	6.336	90	M3	570.24
4.	BASIC WALL:0.40	8.448	3500	M3	29568
5.	PCC IN FOOTING	4.752	350	M3	1663.2
6.	CAST-IN- PLACE STAIR:	0.75	3000	M3	2250
7.	BASIC WALL:9" EXTERIOR	1.0736	4100	Ft2	4411.6
8.	BASIC WALL:9" EXTERIOR	2.04	3500	Ft2	7140
9.	FLOOR: 10"	1.81	3000	Ft2	5430
10.	BASIC ROOF:GENERIC	1.15	90	M3	103.5
11.	GLASS DOORWITH ALUMINUM FRAME	1	-	-	3000
			Total	=	56750.14
			additional	10%+1.5%=	6526.26
			Total amount	=	63276.26s.

8.1.2 public health center:

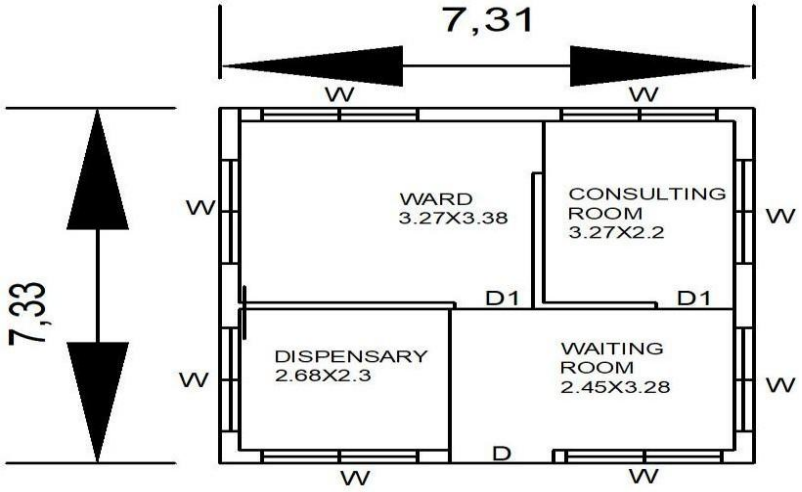
In the ningala village there is no any PHC. So according to the feedback given by the villagers, one P.H.C should be there in the village.

design Utilized by : All the people living in the village of even outsiders from nearby villages can use P.H.C.

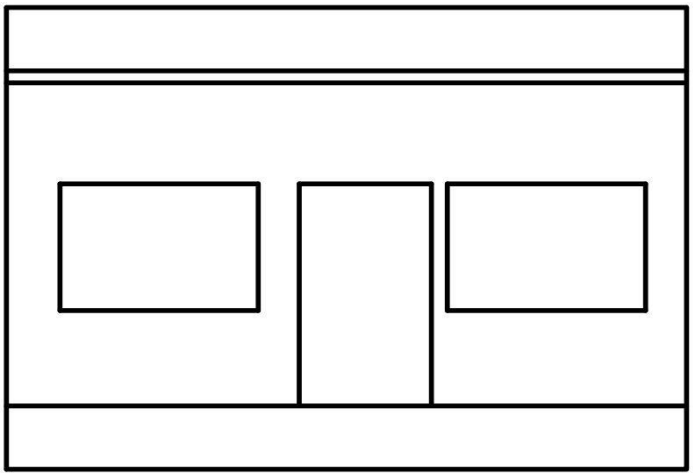
Needs : Anyone using treatment benefits when they have easier access to a doctor; When emergency requirements.

Length :7.31 m ; **Width** : 7.33 m **: Height** : 3.05 m

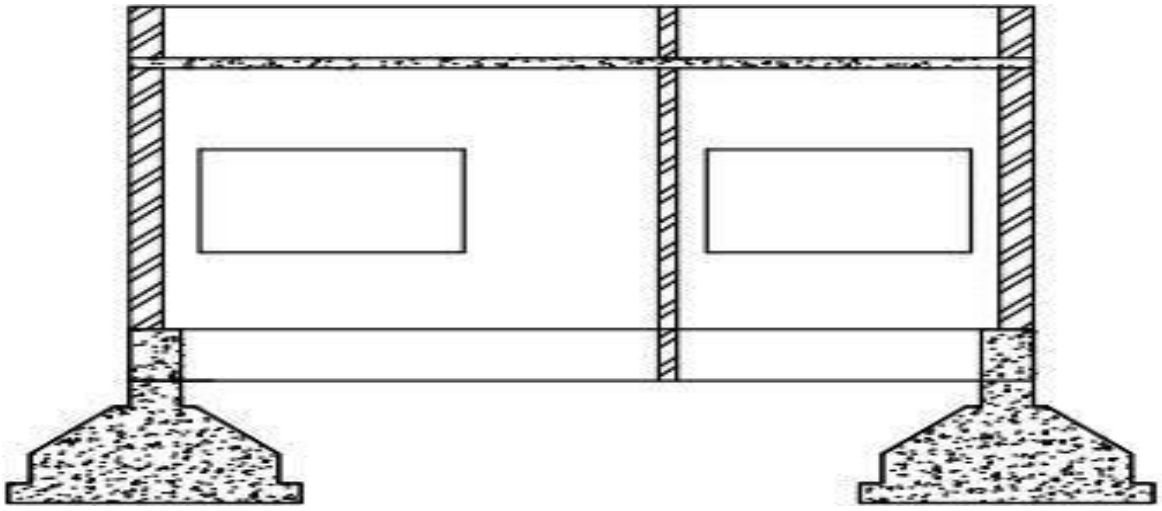
Carpet area : 53.582 m2



(F-8.1.2 A- P.H.C plan)



(F-8.1.2 B- P.H.C elevation)



(F-8.1.2 C- P.H.C section)

(F-8.1.2 C- P.H.C model 3d)

(**Abstract sheet(T-8.1.2-A-P.H.C-QUANTITY SHEET)**)						
SR NO.	ITEM DESCRIPTION	NO. OF ITEM	L	B	H	QUANTITY
1	EXCAVATION IN FOUNDATION L=41.5-0.5 *0.9*6 =38.8 m	1	38.8	0.9	1.1	38.41
2	P.C.C L=41.5-0.5 *0.9*6 =38.8 m	1	38.8	0.9	0.2	6.98
3	Brick masonary up to plinth					
	First step: L=41.5-0.5*0.5*6 =40	1	40	0.5	0.3	6
	Second step: L=40.3	1	40.3	0.4	0.3	4.84
	Third step L=40.6	1	40.6	0.3	0.85	10.31
	Step (d1=1.5)					
	First step	1	1.5	0.9	0.15	0.20
	Second step	1	1.5	0.6	0.15	0.14
	Third step	1	1.5	0.3	0.15	0.07
				total	=	21.6 m3
4	Up to slab (0.23 m) L=41.5-0.5*0.23*6 L=40.8					
		1	40.8	0.23	3	28.15
5	Deduction(door x window)					
	D	1	1.5	0.23	2.1	0.724
		3	1.1	0.23	2.1	0.531
	D1 W	8	1.8	0.23	1.4	4.63
	Deduction of lintel			Total	=	5.88 m3
	Bearing each end=0.15					
	15 cm					
	D	1	1.8	0.23	0.15	0.062
	D1	3	1.4	0.23	0.15	0.145
	W	8	2.1	0.23	0.15	0.58
	Net quantity of brickwork =28.15-5.88-0.787 =21.478 m3			Total	=	0.787 m3

6.	External plaster					
	H-WALL=L=6.15	2	6.15	-	3	36.9
	V-WALL=L=6.17	2	6.17	-	3	37.02
				Total	=	73.01 m3
	deduction	1	1.5	-	2.1	3.15
		8	1.8	-	1.4	20.16
				Total	=	23.31 m3
	Net quantity=73.01 – 23.31 =49.8m3					
7	Tiles work					
	Ward	1	3.38	3.3	-	11.15
	Consulting room	1	2.2	3.3	-	7.26
	Dispensary	1	2.68	2.3	-	6.164
	Waiting room	1	2.9	2.3	-	6.67
				Total	=	31.24 m2
8.	Inside plaster (plaster of walls)					
	Ward	2	3.38	-	3	20.08
		2	3.38	-	3	19.8
	Consulting room	2	2.2	-	3	13.2
		2	3.3	-	3	19.8
	Waiting room	2	2.9	-	3	17.4
		2	2.3	-	3	13.8
	dispensary	2	2.68	-	3	16.08
		2	2.3	-	3	13.8
9.	Ceiling plaster					
	Ward	1	3.38	3.3	-	11.15
	Consulting room	1	2.2	3.3	-	7.26
	Waiting room	1	2.9	2.3	-	6.67
	dispensary	1	2.68	2.3	-	6.16
				Total	=	165.4 m2
10.	Deduction door *window					
	D	1/2	1.5	-	2.1	1.575
	D1	6/2	1.1	-	2.1	6.93
	W	8/2	1.8	-	1.4	10.08
				Total	=	18.58 m2
	Net quantity plaster =165.4-18.58 =146.82 m2					
11.	Wood work for door-window					
	D	1	1.5	-	2.1	3.15
	D1	3	1.1	-	2.1	6.93
	W	8	1.8	-	1.4	20.16
				Total	=	30.24 m2
12.	D.P.C at plinth=38.8	1	38.8	0.3	-	11.64 m2
13.	Colour work	External				146.82 m2
		internal				49.8 m2

(**Abstract sheet(T-8.1.2-B-P.H.C-ABSTRACT SHEET))**				
Sr. no	Item work	quantity	Rate rs.	amount
1	EXCAVATION IN FOUNDATION	38.41m3	87.87	3375
2	P.C.C	6.98m3	2500	17450
3	Brick masonary up to plinth	21.6 m3	3504	75896
4				
5	Net quantity of brickwork	21.478 m3	3700	79468
6	Net quantity of plaster	49.8m2	180	8964
7	Tiles work	31.24 m2	525	16401
8	Inside plaster (plaster of walls) Ceiling plaster	146.82 m2	210	30832
9	Wood work for door-window	30.24 m2	1835	55490
10	D.P.C at plinth	11.64 m2	1500	17460
11	Colour work External	146.82 m2	72.72	10676
	internal	49.8 m2	52	2590
		total	=	318602
		Add(10%) Add(1.5%)	=	31860.2 4779
		Grand total	=	355241.23

P.H.C (Public health centre)

Centre line method:

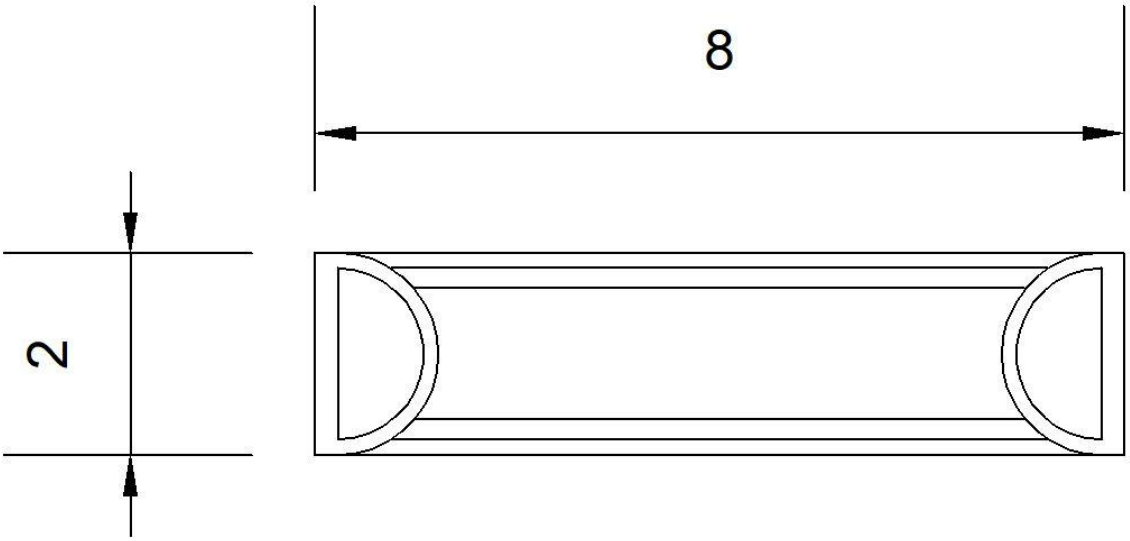
No. of junction:6

D(main gate)=1.5 x 2.1

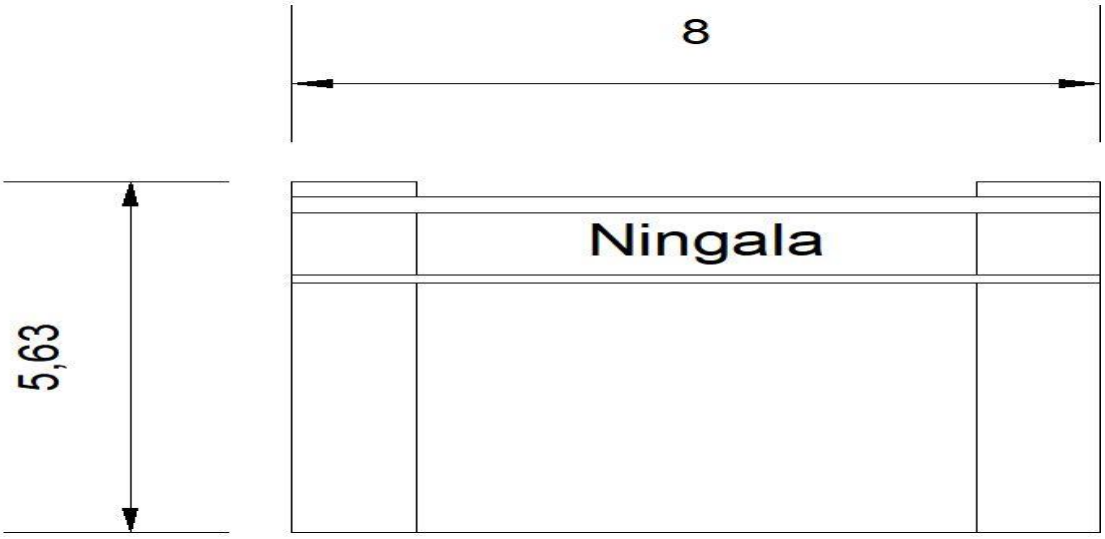
D1 = 1.1 X 2.1

W=1.8 X 1.4

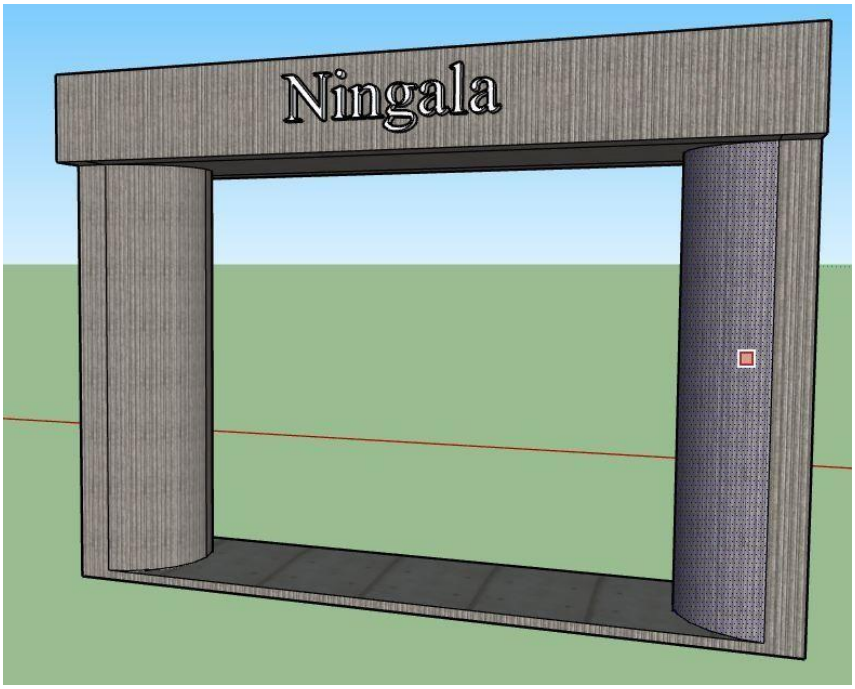
8.1.3 Entrence gate:



8.1.3-a-entrence plan



8.1.3-b-entrence gate-elevation



F-8.1.3—c-3-d of entrence gate

Length of entrence gate:-8 m

Width of entrence gate:-2 m

SR. NO	Description	Length (m)	Width (m)	Height (m)	Count (Nos.)	Total Quantity (m^3)
1.	EXCAVATION	8	2	1.5m	2	**48**
2.	BASIC WALL:9"	8	2.10	5	2	**168**
3.	BASIC WALL: GENERIC - 6" MASONRY	1.524	0.1524	1.83	1	**0.42**
4.	ROOFS 1	8	2.08	0.1524	1	**2.53**
5.	ROOFS 2	8	2.08	0.1524	1	**2.53**

T-QUANTITY SHEET OF ENTRENCE GATE

SR. NO	Description	quantity	rate	per	amount
1.	EXCAVATION	**48**	350	M3	16800
2.	p.c.c	**48**	3500	M3	168000
2.	BASIC WALL:9"	**168**	350	M3	58800
3.	BASIC WALL:GENERIC - 6" MASONRY	**0.42**	130	M3	550
4.	ROOFS 1	**2.53**	3500	M3	8855
5.	ROOFS 2	**2.53**	3500	M3	8855
			Total	=	261860
			Add	10%	26186
			Add	1.5%	3927.9
			Total amount	=	291973.9rs.

T-8.1.3-2-ABSTRACT SHEET

8.1.4 Public laterin

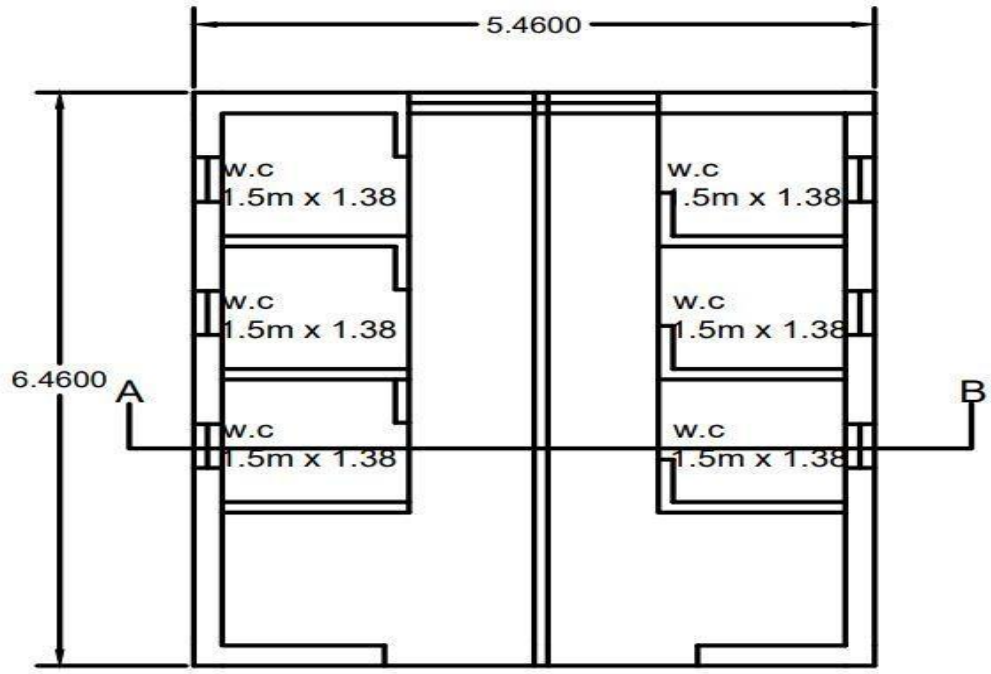
A public toilet is a room or small building with toilets (or urinals) and sinks that does not belong to a particular household. Rather, the toilet is available for use by the general public, customers, travellers, employees of a business, school pupils, prisoners etc. Public toilets are commonly separated into male and female facilities, although some are unisex, especially for small or single-occupancy public toilets. Increasingly, public toilets are accessible to people with disabilities.that type laterin not available in this village.so I take this design.

design Utilized by : All the people living in the village of even outsiders from nearby villages can use public laterin.

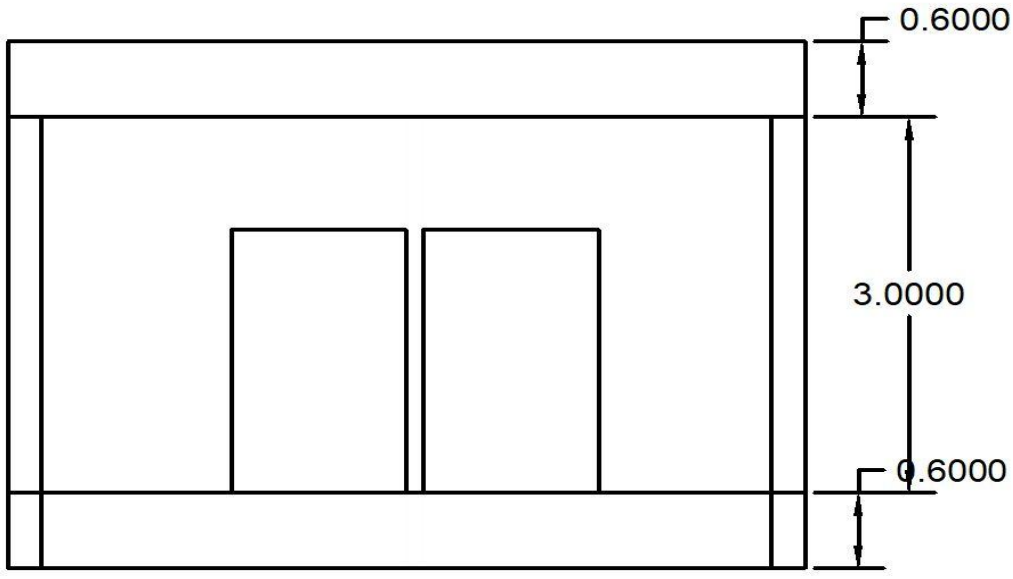
Needs : Anyone using treatment benefits when they have easier access to a doctor; When emergency requirements.

Length :6.46 m ; **Width** : 5.46 m **: Height** : 3.06 m

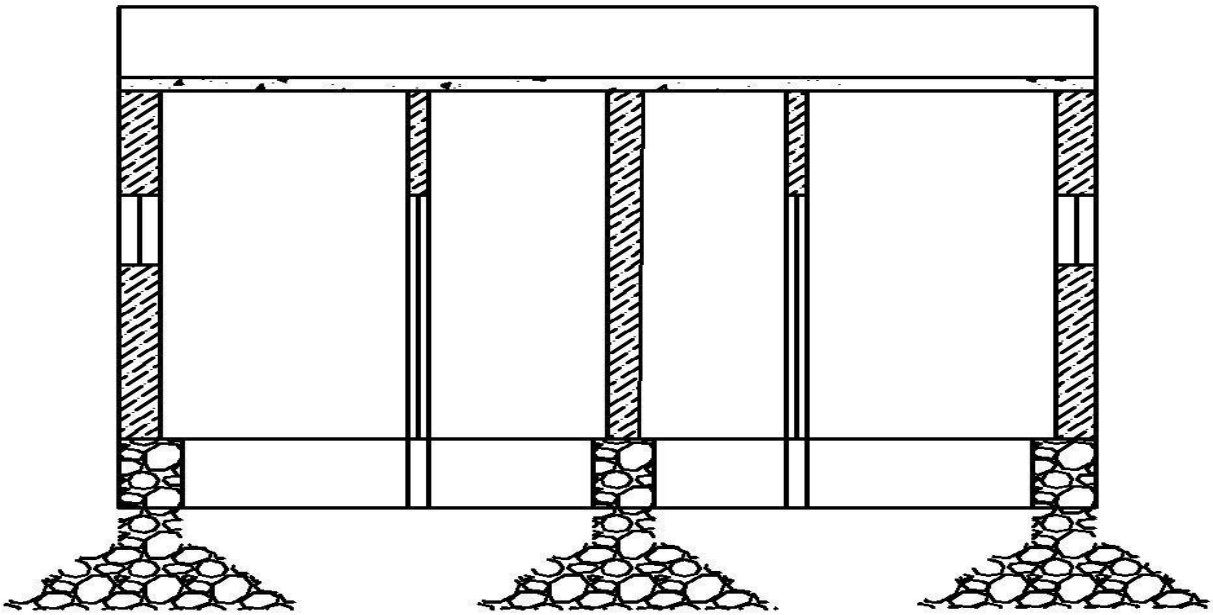
Carpet area : 35.4354 m2



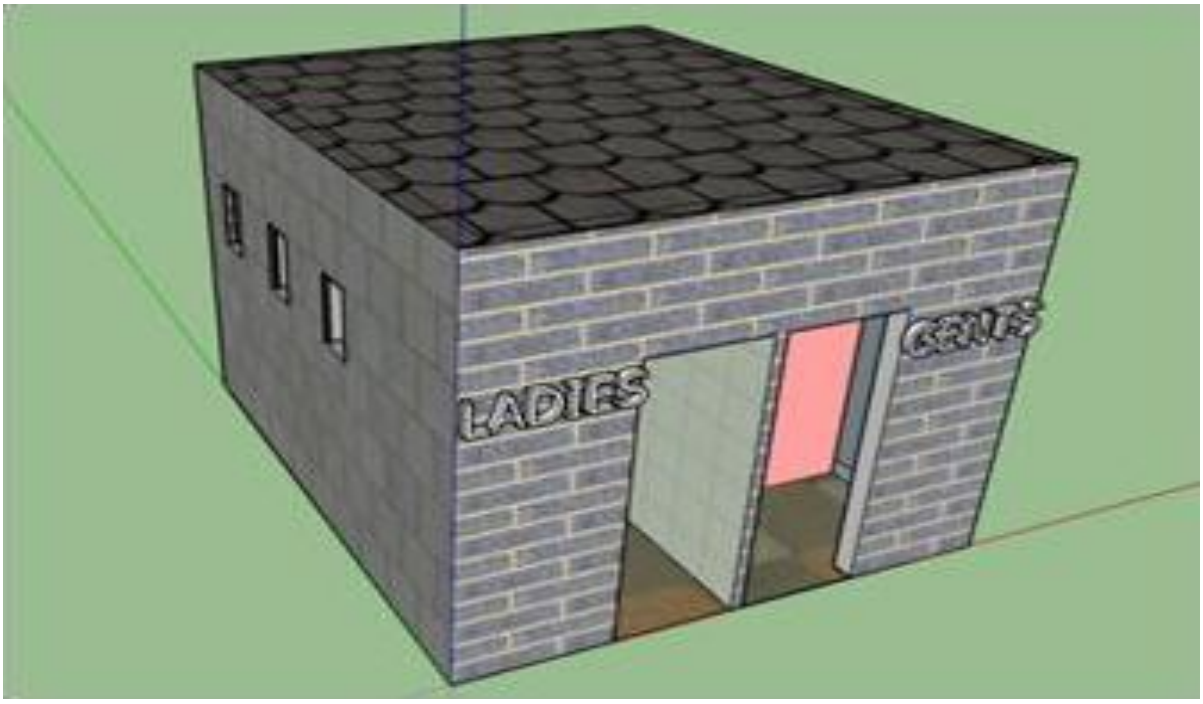
F-8.1.4 A- public laterin plan)



(F-8.1.4 A- public laterin elevation)



(F-8.1.4 B- public laterin section)



(F-8.1.4 c- public laterin 3-d)

((**quantity sheet(T-8.1.4-A-PUBLIC laterin-quantity SHEET))**						
Sr no.	Item description	No. of item	L	B	H	Quantity
1.	Excavation of foundation =47.35 – 1/2 * 0.9*16 =40.15 m	1	40.15	0.9	1.1	39.7 m3
2.	Pcc =47.35 – 1/2 * 0.9*16 =40.15 m	1	40.15	0.9	0.2	7.22 m3
3.	Brick masonary upto plinth and slab					
	First step =40.15-0.5*0.5*16 =36.15 m	1	36.15	0.5	0.3	5.42 m3
	Second step =40.15-0.5*0.4*16 =36.95 m	1	36.95	0.4	0.3	4.43 m3
	Third step =40.15-0.5*0.3*16 =37.75 m	1	37.75	0.3	0.85	9.62 m3
	Fourth step =40.15-0.5*0.23*16 =38.31 m	1	38.31	0.23	3	26.43 m3
	Quantity of first too third step Quantity of forth step			Total Total	= =	19.88 m3 26.43 m3
4.	Deduction of door and windows					
	D1 D2 W V	2 6 2 6	1.5 0.9 1.22 0.6	0.23 0.23 0.23 0.23	2.1 2.1 2.1 0.6	1.449 2.60 1.159 0.49
				Total	=	5.698 m3

5.	Deduction for lintel					
	D1	3	1.8	0.23	0.15	0.186
	D2	6	1.2	0.23	0.15	0.248
	W	2	1.5	0.23	0.15	0.103
	V	6	0.9	0.23	0.15	0.186
	Deduction=26.43-5.7-0.723 =20.00 m3			Total	=	0.723 m2
6.	Plaster (internal)(15mm)					
	w/c wall	2	1.5	-	3	9
		2	1.38	-	3	8.28
	w/c celling	-	1.5	1.38	-	2.07
	Total no.w/c=6 =6*19.35 =116.1 m2			Total	=	19.35m3
	Deduction					
	D1	1	1.5	-	2.1	3.15
	D2	12/2	6.9	-	2.1	11.34
	W	2/2	1.2	-	1.4	1.68
				Total	=	16.17
	Front of W.C	2	-	4.18	-	26.88
		2	-	4.48	-	26.88
	Ceiling	2	1.01	4.48	-	9.408
	plaster					179.2 m2
7.	Plaster(external)(20 mm)					
	Wall	2	5.46	-	3	32.76
		2	6.46	-	3	38.76
	deduction					
	D1	2	1.5	-	2.1	6.3
	w	2	1.2	-	1.4	3.36
				Total	=	61.86 m2
8.	Tiles work					
	w/c	6	1.5	1.38	-	12.42
	Front w/c	2	1.05	4.48	-	9.40
	passage	2	2.44	1.75	-	8.54
				Total	=	30.36 m2

PUBLIC LATERIN:Centre line method

No. of junction:16

Door(D1)=1.5 x 2.1

Door(D2)=0.9 x 2.1

W=1.2 x 1.4,V=0.6 x 0.6

(**Abstract sheet(T-8.1.4-B-PUBLIC laterin-ABSTRACT SHEET))**				
Sr. no	Item work	quantity	Rate rs.	amount
1	Excavation of foundation	39.7 m3	87.87	3488
2	Pcc	7.22 m3	2500	18050
3	Brick masonary upto plinth and slab	19.47m3 20.00m3	3504 3700	68222 74000
4	Plaster (internal) celling	179.2 m2 9.408m2	210 153	37632 1439
5	Plaster(external)	61.86 m2	210	12990
6	Tiles work	30.36 m2	525	15939
		total	=	231760
		Add(10%) Add(1.5%)	=	23176 3237
		Grand total	=	258173

design Utilized by : All the people living in the village of even outsiders from nearby villages can use public laterin.

Needs : Anyone using treatment benefits when they have easier access to a doctor; When emergency requirements.

Length :6.46 m ; **Width** : 5.46 m **: Height** : 3.06 m

Carpet area : 35.4354 m2

8.1.5 anganwadi

Anganwadi is a type of rural child care centre in India. They were started by the Indian government in 1975 as part of the Integrated Child Development Services program to combat child hunger and malnutrition.

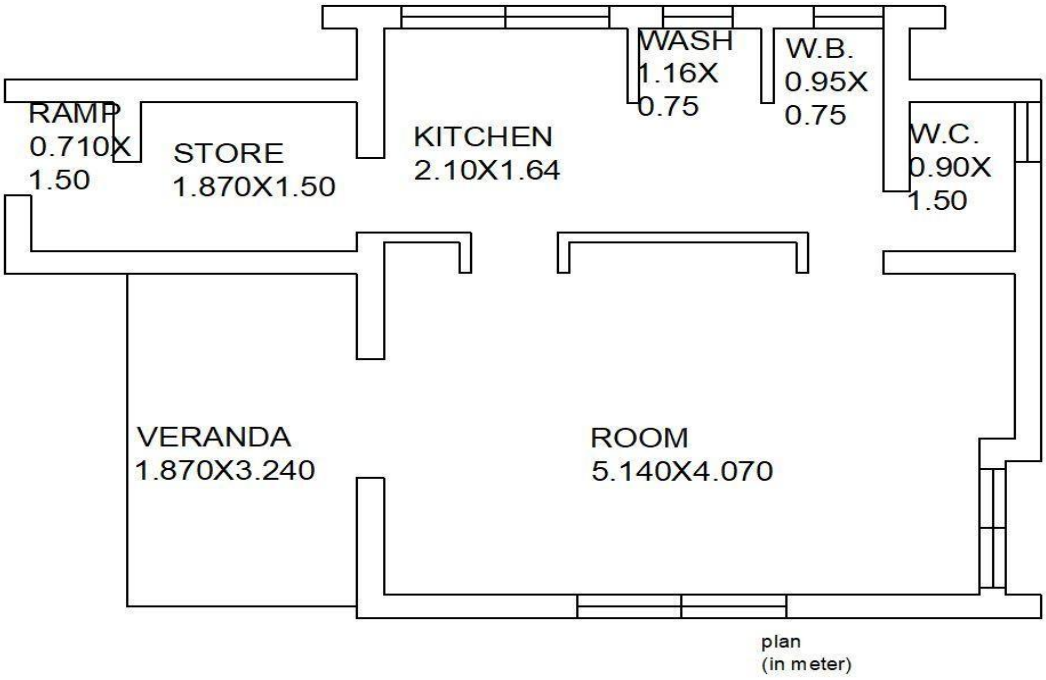
design Utilized by : All the people living in the village of even outsiders from nearby villages can use for study area anganwadi.

Needs : Anyone using treatment benefits when they have easier access to a doctor; When emergency requirements.

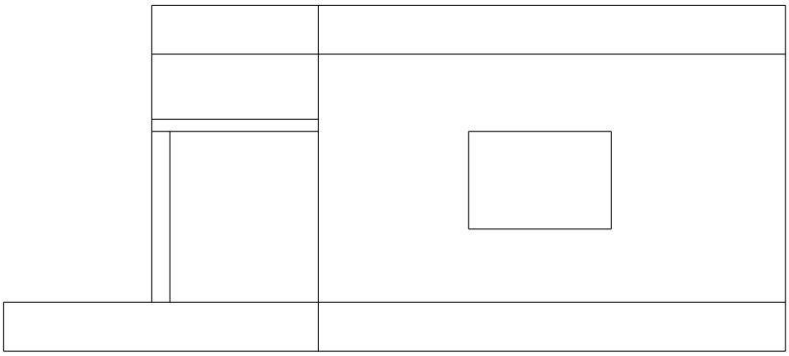
Length :6.46 m ; **Width** : 5.46 m **: Height** : 3.06 m

Carpet area : 35.4354 m2

Proposed Design in Auto cad; Revit and Skechup :

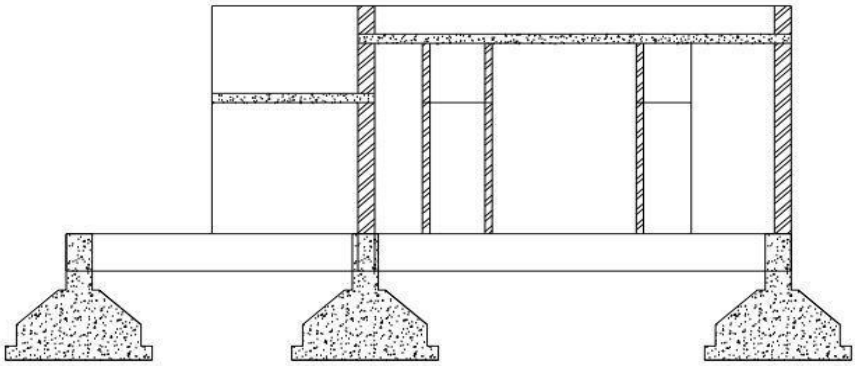


F-8.1.5 A- ANGANWADI plan)

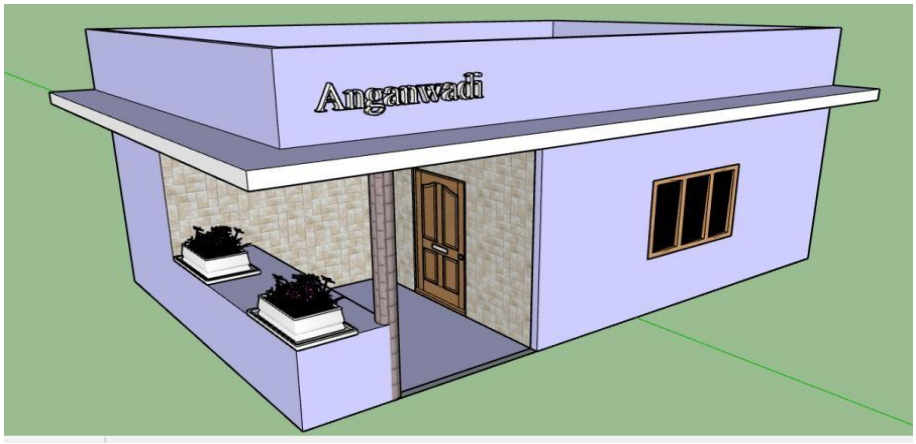


F-8.1.5 B- ANGANWADI elevation)

Floor Height of building=3.05m



F-8.1.5 C- ANGANWADI Section)



F-8.1.5 D- ANGANWADI 3-D)

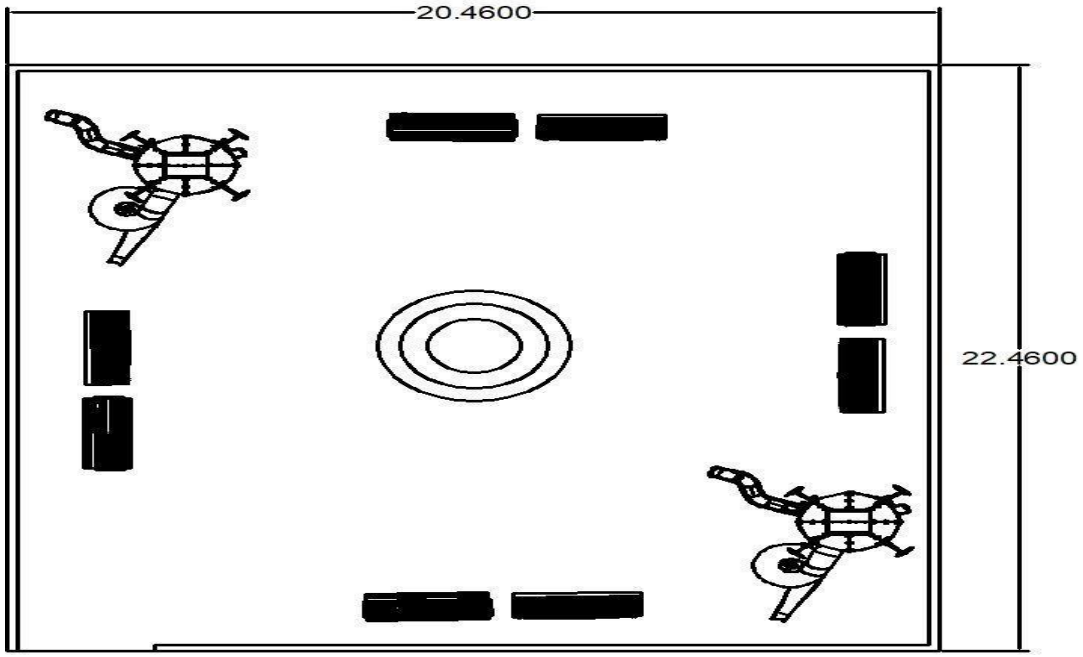
QUANTITY sheet(T-8.1.5-A-ANGANWADI-QUANTITY SHEET)						
Sr no.	Item description	No. of	L	B	H	Quantity
1.	Excavation of foundation L=51.71-1/2*0.9*12 =46.31	1	46.31	0.9	1.1	48.54 M3
2.	Pcc	1	46.31	0.9	0.2	8.33 M3
3.	D.P.C	1	49.91	0.3	0.05	0.748 M3
4.	BRICK MASONARY					
	First step L=51.71-1/2*0.5*12 48.71	1	48.71	0.50	0.3	7.30 m3
	Second step L=51.71-1/2*0.3*12 =49.9	1	49.3	0.4	0.3	5.91 m3
	Third step L=51.71-1/2*0.3*12 =49.9	1	49.9	0.3	0.85	12.72 m3
	Forth step L=51.71-1/2*0.23*12 =50.33	1	50.33	0.23	3	34.12M3
5.	DEDUCTION DOOR WINDOW					
	D1=1.5*2.1	1	1.5	0.23	2.1	0.724
	D2=0.9*2.1	3	0.9	0.23	2.1	1.3
	D3=0.75*2.1	1	0.75	0.23	2.1	0.23
	W=1.2*1.4	3	1.2	0.23	1.4	1.15
	V=0.6*0.6	3	0.6	0.23	0.6	0.248
				TOTAL	=	3.78
6.	DEDUCTION LINTEL					
	D1	1	1.8	0.23	0.15	0.06
	D2	3	1.2	0.23	0.15	0.124
	D3	1	1.05	0.23	0.15	0.036
	W	3	1.5	0.23	0.15	0.155
	V	3	0.9	0.23	0.15	0.093
				TOTAL	=	0.468
				TOTAL	=	30.47 M3

7.	PLASTER(WALL)	2	6.14	-	3	30.84
		2	4.07	-	3	24.42
	CEILING	1	5.14	4.07	-	20.91
	W.C. WALL	2	0.9	-	3	5.4
		2	1.5	-	3	9
	CEILING	1	0.9	1.5	-	1.35
	W.C WALL	1	0.95	-	3	2.85
		2	0.75	-	3	4.5
	CEILING	1	0.95	0.75	-	6.712
	WASH	1	1.16	-	3	3.48
		2	0.75	-	3	4.5
	CEILING	1	1.16	0.75	-	0.87
	KITCHEN	1	2.1	-	3	6.3
		1	1.64	-	3	4.92
		1	2.1	1.64	-	3.44
	STORE	2	1.87	-	3	11.22
		2	1.5	-	3	9
		1	1.87	1.5	-	2.8
	VERNDAH	1	1.87	-	2.1	3.92
		1	3.24	-	2.1	6.80
	RAMP	2	0.71	-	3	4.26
		2	1.5	-	3	9
	CELLING	1	0.71	1.5	-	1.06
				TOTAL	=	171.52 M2
8.	DEDUCTION DOOR &WINDOW					
	D1	1	1.5	-	2.1	3.15
	D2	3	0.9	-	2.1	5.67
	D3	1	0.75	-	2.1	1.57
	W	3	1.2	-	1.4	5.04
				TOTAL	=	171.55-15.43
					=	156.12 M2
NO,DEDUCTION VENTILATIOR BEACAUSE AREA LESS THAN 0.5M2						

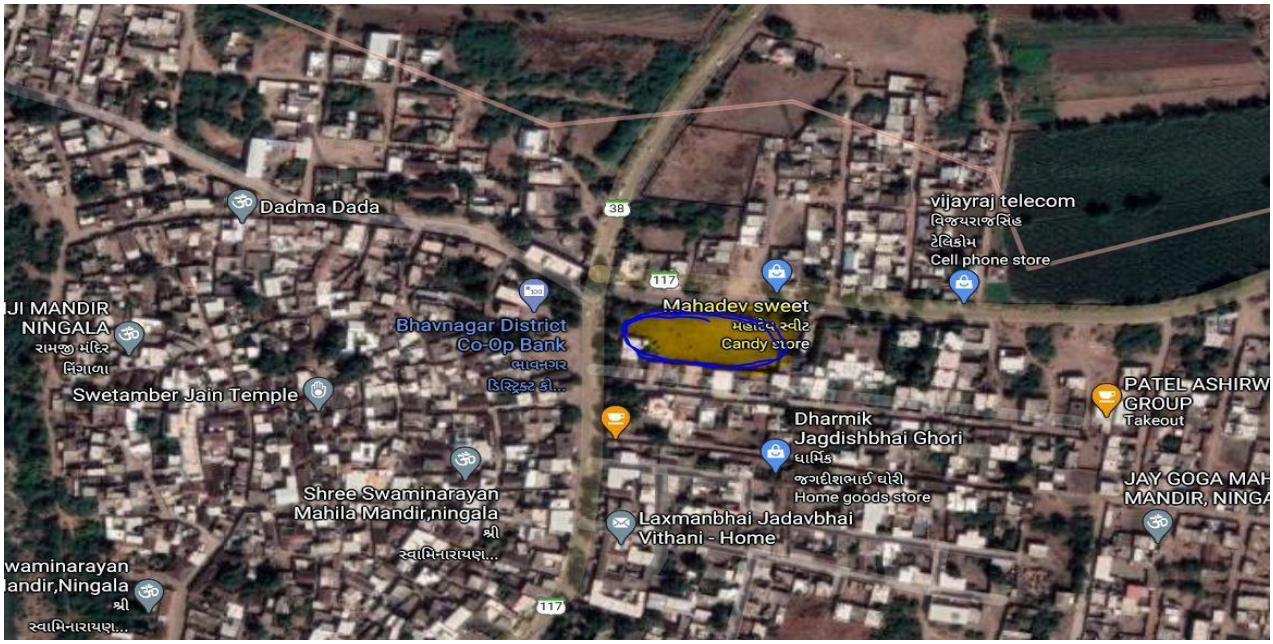
Abstract sheet(T-8.1.5-B-ANGANWADI-ABSTRACT SHEET)				
Sr. no	Item work	quantity	Rate rs.	amount
1	Excavation of foundation	48.54 M3	87.87	4265
2	Pcc	8.33 M3	2500	20825
	Dpc	0.748 M3	1500	1122
3	Brick masonary upto plinth and slab	25.93m3 30.47 M3	3504 3700	90858 112739
4	Plaster (internal) celling	156.12 M2	180	28101
5	Plaster(external)	71.13m2	210	14937
6	Wood work for door-window	15.43m2	1835	28314
7	Colour work external	71.13m2	72.72	5172
	internal	156.12m2	52	8118
		total	=	314451
		Add(10%) Add(1.5%)	=	31445 4716
		Grand total	=	3,50,612=00rs

8.1.6 public ground

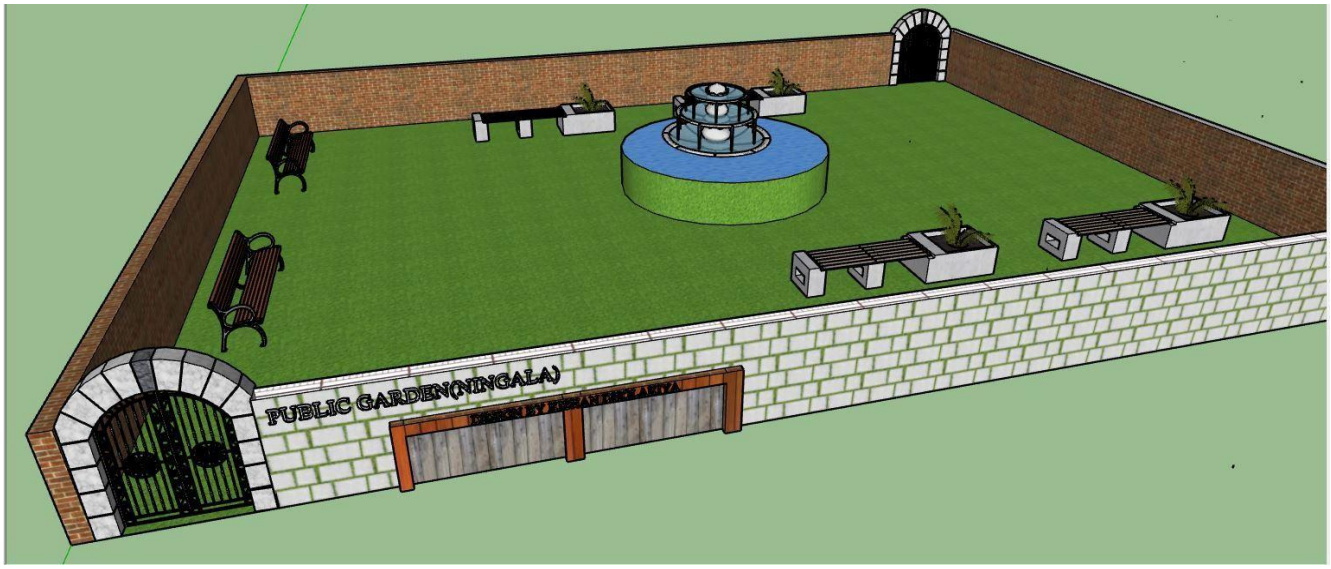
Public garden houses many popular public buildings. Some of these are State Legislative Assembly, museums such as gujrat Art Museum, Health Museum, Horticulture Department, Jubilee Hall, etc, an open air along with an ancient mosque, depicting the marvellous Shahi architecture. Along with these monumental buildings, the park boasts of lush green landscapes, refreshing lawns and pathways. It must be open to the public and the garden's resources and accommodations must be made to all visitors. Public gardens are staffed by professionals trained in their given areas of expertise and maintain active plant records systems.



F-8.1.6 A-public ground 2-D)



(F-8.1.6 B-public ground 2-D)



(F-8.1.6 C-public ground 3-D)

- Length of wall=20.46 m
- Width of wall=22.46 m

Abstract sheet(T-8.1.6-A-PUBLIC GROUND-ABSTRACT SHEET)				
SR.NO	Item work	quantity	Rate rs.	amount
1	Excavation for foundation up to 1.5 mt. depth including sorting out and stacking of useful materials and disposing of the excavated stuff up to all lead and sretta	**15.2856**	86.75	1326.026
2	Brickwork using common burnt clay building bricks having crushing strength not less than 35 kg./Sq.Cm. in foundation and plinth in Cement Mortar 1:5. (1- Cement : 5 -fine sand) (A) Modular	**29.2974**	2382.99	69815.41
3	20mm thick sand faced cement plaster on walls upto height 10 metres above ground level consisting of 12mm thick backing coat of C.M. 1:3 (1-cement : 3-sand) and 8mm thick finishing coat of C.M. 1:1 (1-cement : 1-sand)	**254.76**	207.05	52748.06

4	Finishing wall with water proofing cement paint of on wall surfaces (Two coats) to give an approved brand and manufacture and of required shape even shade after thoroughly brushing the surface to remove all dirt and remains of loose powered materials.	**254.76**	36.76	9364.978
5	Filling in foundation and plinth with murrum or selected soil in layers of 20cm. thickness including watering, ramming and consolidating etc. completed.	**99.36**	290.88	28901.84
6	Providing, Supplying & planting various types of decorative plants as per instruction of Engineer-incharge etc complete. Decorative Plants	**500**	75	37500
7	Providing, Supplying & planting guarden loan as per instruction of Engineer-in-charge etc complete.	**432**	150	64800
8	Providing, STEEL gate as per design with colour fitting, its elevation fixing all incl.	**1**	25000	25000
		Total	=	289456

A public garden is an institution that maintains collections of plants for the purposes of public education and enjoyment, in addition to research, conservation, and higher learning. It must be open to the public and the garden's resources and accommodations must be made to all visitors. Public gardens are staffed by professionals trained in their given areas of expertise and maintain active plant records systems.

Many related entities are part of American Public Gardens Association or benefit from member organizations. These entities include: Botanical gardens, arboreta, cemeteries, zoological gardens, sculpture gardens, college and university campuses, historic homes, urban greening organizations, natural areas, and city/county/state/federal parks.

Here cost of public garden:289456=00 rs.

SR.NO	DESCRIPTION T-8.1.6-B-PUBLIC GROUND-QUANTITY SHEET)	LENGTH (m)	WIDTH (m)	HEIGHT (m)	Nos. UNIT		Total Quantity	RATE
1	Excavation for foundation up to 1.5mt. depth including sorting out andstacking of useful materials and disposing of the excavated stuff up to all lead and sretta	84.92	0.3	0.6	1	M3	**15.2856**	86.75
2	Brickwork using common burnt claybuilding bricks having crushing strength not less than 35 kg./Sq.Cm.in foundation and plinth in Cement Mortar 1:5. (1- Cement : 5 - finesand) (A) Modular	84.92	0.23	1.5	1	M3	**29.2974**	2382.99
3	20mm thick sand faced cement plaster on walls upto height 10 metres above ground level consisting of 12mm thick backing coat of C.M. 1:3 (1-cement : 3- sand) and 8mm thick finishing coat of C.M. 1:1 (1-cement : 1-sand) etc. complete.	84.92	0	1.5	2	SQ.MT	**254.76**	207.05
4	Finishing wall with water proofing cement paint of on wall surfaces (Two coats) to give an approved brand and manufacture and of required shape even shade after thoroughly brushing the surface to remove all dirt and remains of loose powered materials.	84.92	-	1.5	2	SQ.MT	**254.76**	36.76
5	Filling in foundation and plinth withmurrum or selected soil in layers of 20cm. thickness including watering,ramming and consolidating etc. completed.	24	0.23	18	1	M3	**99.36**	290.88
6	Providing, Supplying & planting various types of decorative plants as per instruction of Engineer-incharge	500	-	-	1	NOS.	**500**	75

7	Providing, Supplying & planting guarden loan as per instruction ofEngineer-in-charge etc complete.	24	-	18	1	SQ.MT	**432**	150
8	Providing, STEEL gate as per design with colour fitting, itselevation fixing all incl.	1	-	-	1	NOS.	**1**	250 00

Chapter 9.

Proposing designs for Future Development of the Village for thePART-II Design:

For future development of the ningala village we are proposing the designs for Part II design in which following points should be considered,

- Medical store
- Public library
- Pipe culvert
- u/g sump
- house conditions
- community hall

medical store: some people who are addicted to various drugs and try to steal certain medicines.To safeguard medicines, avoid expensive losses, and prevent unnecessary drug abuse in the masses, medical stores need to be protected.

Public libraries can play a major role in improving health literacy of clients by offering special services. Educating diabetic patients through public libraries can improve the dissemination of health information. The objective of the study was to evaluate the effect of education on the level of health literacy among diabetic patients referring to a public library, and the relationship between health literacy level, age and gender of patients.

Culverts are an integral part of any arable farm providing a safe passage over ditch fields into arable fields. ... The pipes that are used to allow the water to flow through the culverts are pivotal in maintaining water flow within the ditch systems.

he sump sits below the main tank and is used as a filter, as well as a holding place of unsightly equipment such as heaters and protein skimmers. The main advantage of having a sump plumbed into an aquarium is the increase of water in the system, making it more stable and less prone to fluctuations of pH and salinity.

Chapter 10.

Conclusion of the Entire Village Activities of the Project :

Rurbanisation is to bring peace of mind to the villagers by providing them the basic amenities required and still keeping the village soul intact. This project gives one new idea for Development of rural villages. Also gives procedure how they fulfil requirement of the villages. Now a day people are moving from rural to urban area due to lack of basic amenities. So this help to provide better solution for the available problems in rural area like drinking water, Drainage facility road network, etc. The following points can be summarized as the outcome of the study:

1. Socio Economic Survey has been done for the study area in detail. All the types of the needs, facilities has been studied in detail. Gap analysis have been done and interviews of the local peoples has been done in detail.

2. The existing structures and infrastructures have been studied and reviewed in detail. Suggestions have been proposed for the repair and renovation of existing structures and design proposals for its development.

3. The preliminary survey and socio-economic study shows that the village has insufficient infrastructure requirement. If the planning and proposals will be proposed based on the requirement of the people the life of the people can be made prosperous.

4. number of social forces have changed both the landscape of family and community life and the expectations for young people. A combination of factors have weakened the informal community support once available to young people: high rates of family mobility; greater anonymity in neighborhoods, where more parents are at work and out of the home and neighborhood for long periods, and in schools, which have become larger and much more heterogeneous; extensive media exposure to themes of violence and heavy use and abuse of drugs and alcohol; and, in some cases, the deterioration and disorganization of neighborhoods and schools as a result of crime, drugs, and poverty.

Chapter 11.

References refereed for this project :

- GTU guidelines and briefings
- http://ijaerd.com/papers/special_papers/NCAN09.pdf
- http://smartcities.gov.in/upload/uploadfils/files/What%20is%20Smart%20City.pdf

- http://www.larsentoubro.com/corporate/products-and-services/sardar-patel/the- statue-of- unity/

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  ps://sswm.info/node/7722
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  URDPFI norms
- www.census2011.com
- www.censusgujarat.gov.in
- www.censusindia.gov.in
- www.ijser.org
- www.indikosh.com
- www.onefivenine.com

  www.researchgate.net

  www.villageinfo.in

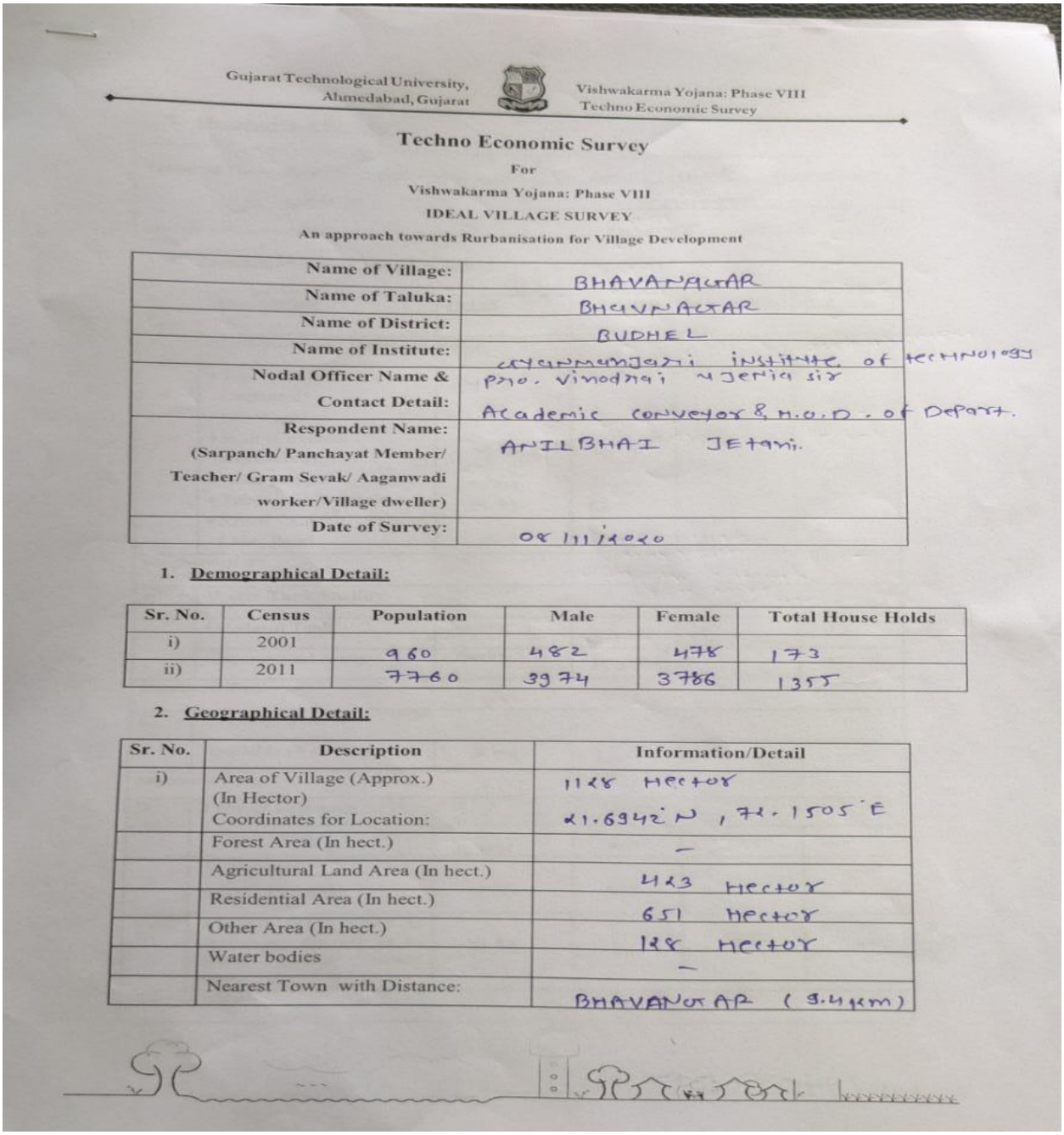
  www.villagemaps.in

  www.vyojana.gtu.ac.in
- GTU guidelines and briefings
- http://ijaerd.com/papers/special_papers/NCAN09.pdf

Chapter 12.

Annexure attachment :

12.1 Survey form of Ideal Village Scanned copy attachment in the report for Part-I : (FIGURE 1- 9)



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

For

Vishwakarma Yojana: Phase VIII

IDEAL VILLAGE SURVEY

An approach towards Rurbanisation for Village Development

Name of Village:	BHAVANAGAR
Name of Taluka:	BHAVNAGAR
Name of District:	BUDHEL
Name of Institute:	Swarnimjayanti Institute of Technology
Nodal Officer Name & Contact Detail:	Prof. Vinodbhai Jetani sir Academic conveyor & H.O.D. of Depart.
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	ANILBHAI JETANI.
Date of Survey:	08/11/2020

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	960	482	478	173
ii)	2011	7760	3974	3786	1355

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	1128 Hector 21.6942°N, 72.1505°E
	Forest Area (In hect.)	–
	Agricultural Land Area (In hect.)	423 Hector
	Residential Area (In hect.)	651 Hector
	Other Area (In hect.)	128 Hector
	Water bodies	–
	Nearest Town with Distance:	BHAVNAGAR (9.4 km)

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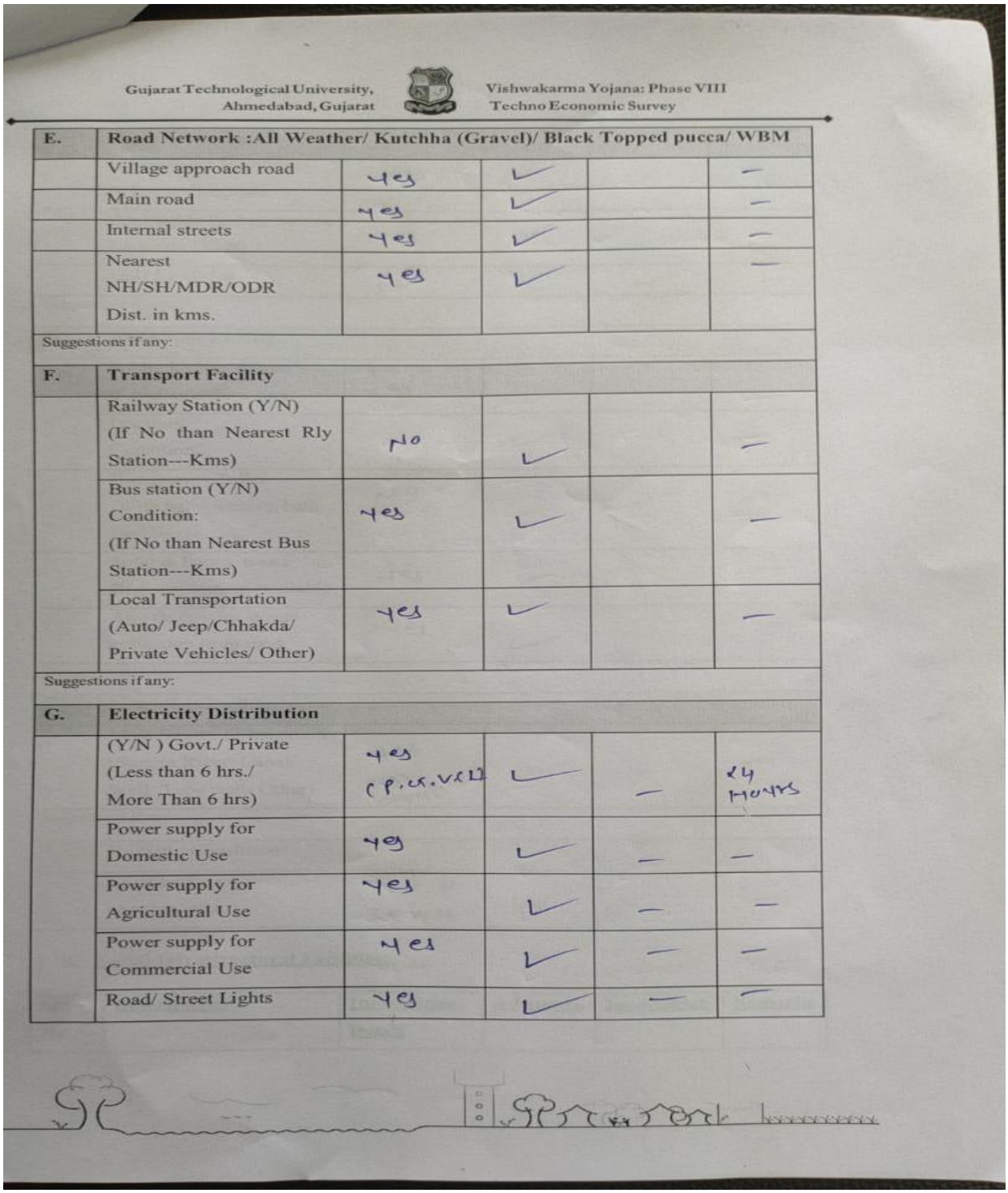
3. Occupational Details:

Name of Three Major Occupation groups in Village	1.	Agriculture Farming
	2.	literature
	3.	labour work

4. Physical Infrastructure Facilities:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated)	yes	✓		—
	• RO Water	no		—	—
	• Well (Covered/ Uncovered)	yes	✓		—
	• Hand pumps	yes	✓		—
	• Tube well/ Borehole	yes	✓		—
	• River/ Canal/ Spring/ Lake/ Pond	no	✓		—
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	2 nos.	14 lakh	—
	Underground Sump	Capacity:	4 nos.	23 lakh	—
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)	yes	✓	—	—
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open	both	✓	—	—
	If Open than Pucca / Kutchcha	yes	✓	—	—
	Whether drain water is discharged directly in to Water bodies/ Sewer plants	yes	✓	—	—
Suggestions if any:					



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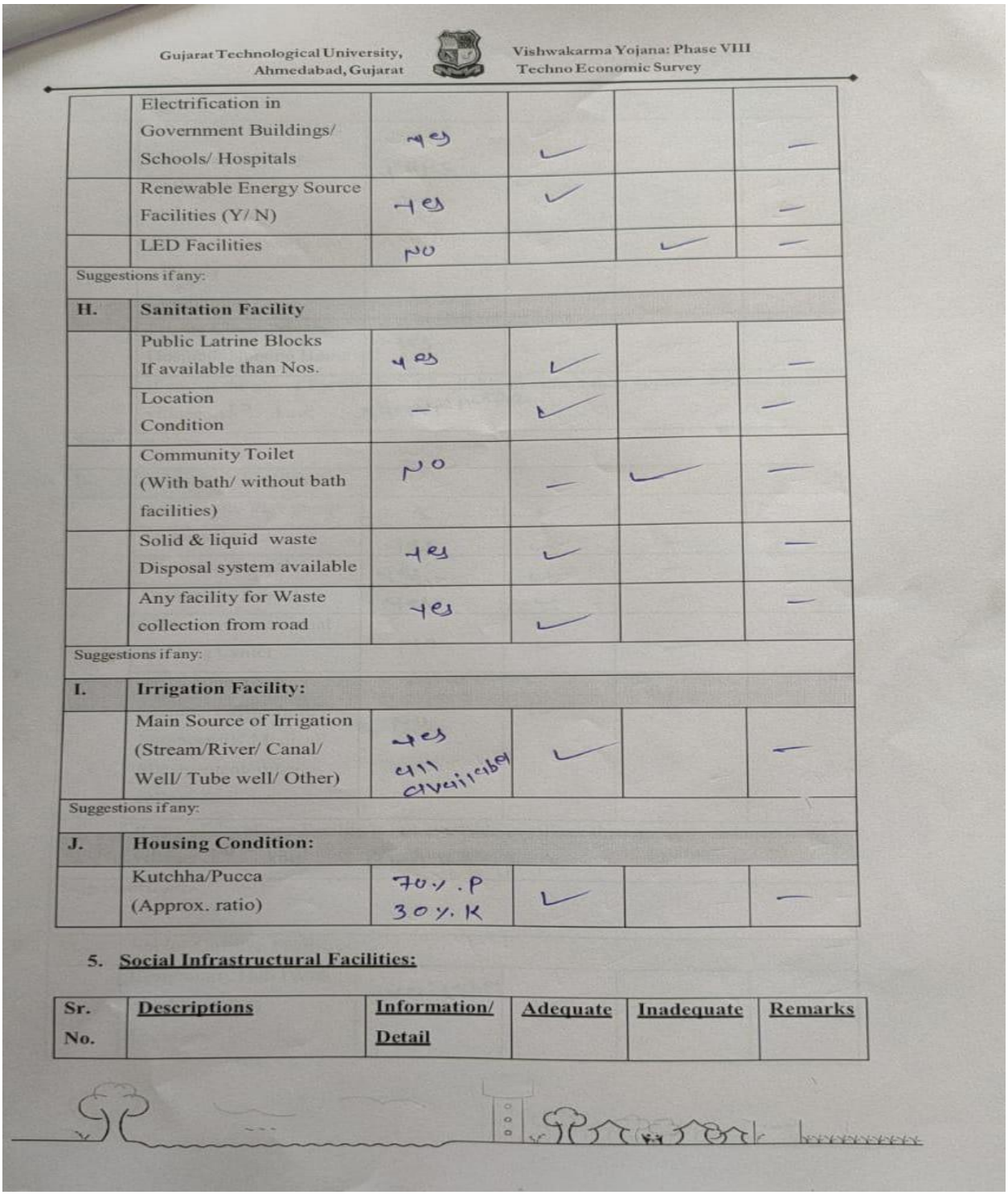
E.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Yes	✓		—
	Main road	Yes	✓		—
	Internal streets	Yes	✓		—
	Nearest NH/SH/MDR/ODR Dist. in kms.	Yes	✓		—
Suggestions if any:					
F.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No	✓		—
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes	✓		—
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	✓		—
Suggestions if any:					
G.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes (P.U.V.V.N.L)	✓	—	24 Hours
	Power supply for Domestic Use	Yes	✓	—	—
	Power supply for Agricultural Use	Yes	✓	—	—
	Power supply for Commercial Use	Yes	✓	—	—
	Road/ Street Lights	Yes	✓	—	—



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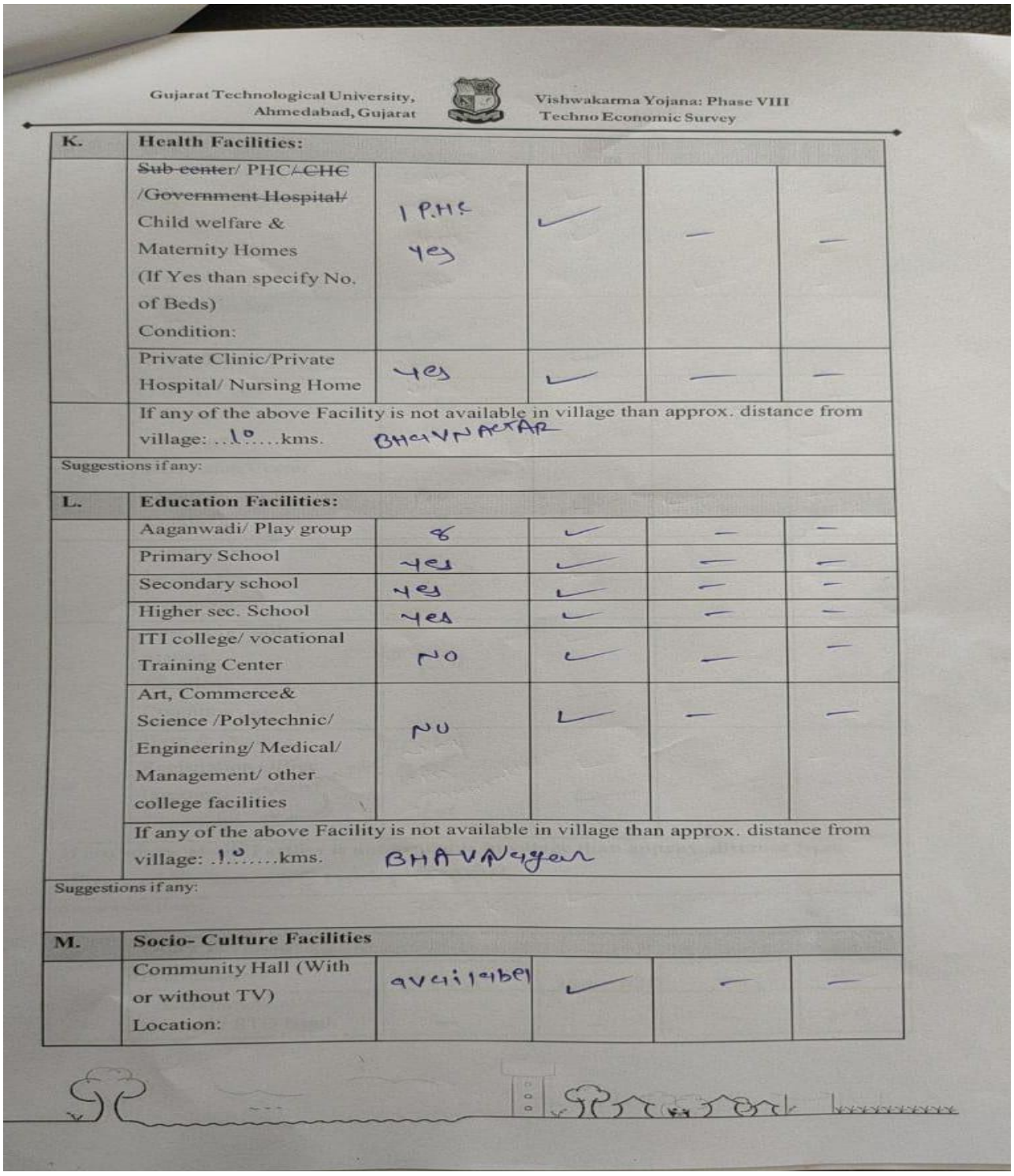
Techno Economic Survey

	Electrification in Government Buildings/ Schools/ Hospitals	yes	✓		—
	Renewable Energy Source Facilities (Y/ N)	yes	✓		—
	LED Facilities	no		✓	—
Suggestions if any:					
H.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	yes	✓		—
	Location Condition	—	✓		—
	Community Toilet (With bath/ without bath facilities)	no	—	✓	—
	Solid & liquid waste Disposal system available	yes	✓		—
	Any facility for Waste collection from road	yes	✓		—
Suggestions if any:					
I.	**Irrigation Facility:**				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)	yes all available	✓		—
Suggestions if any:					
J.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	70% P 30% K	✓		—

5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks



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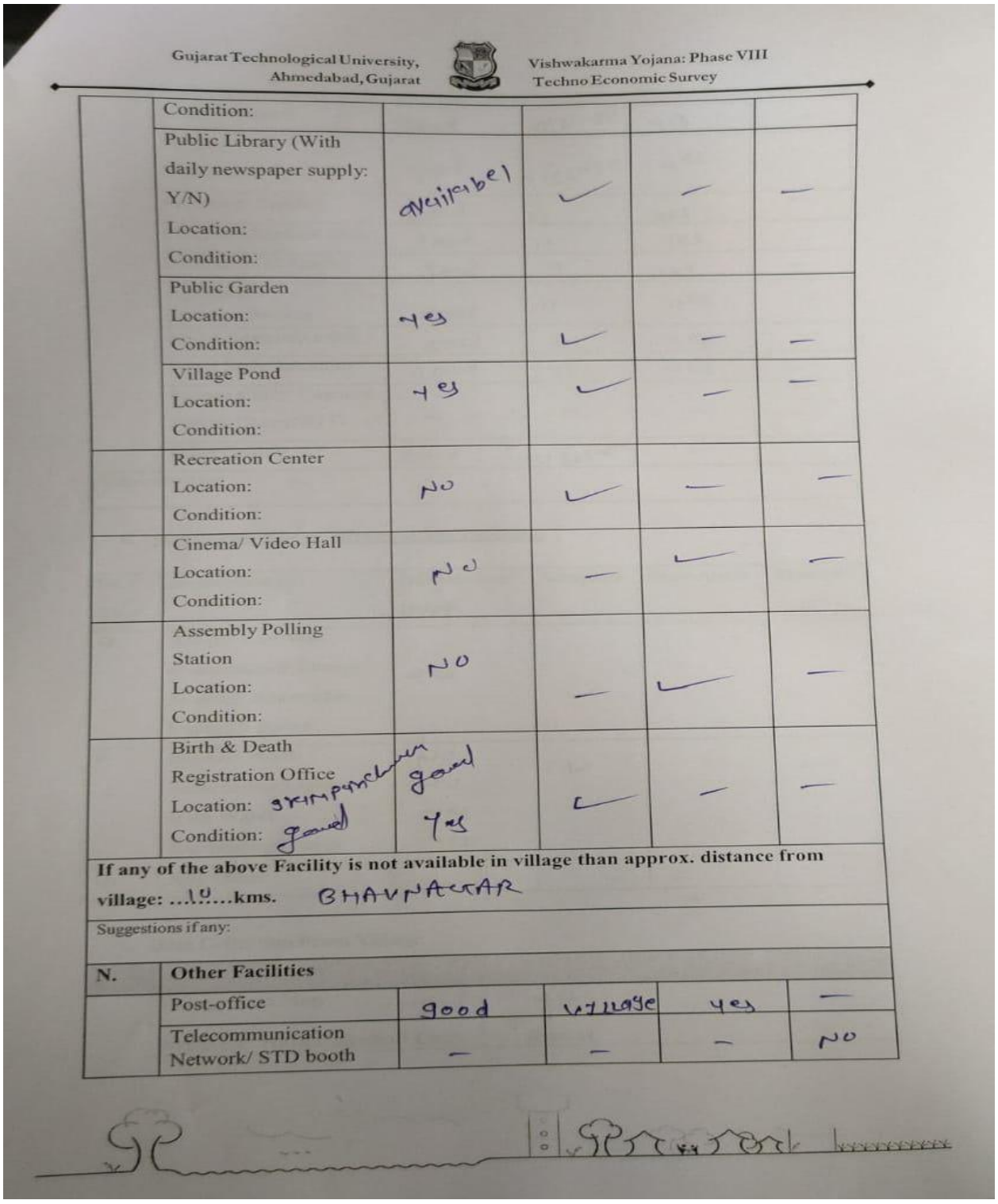
K.	**Health Facilities:**				
	~~Sub center~~/ PHC/ ~~CHC /Government Hospital/~~ Child welfare & Maternity Homes (If Yes than specify No. of Beds) Condition:	1 P.H.C Yes	✓	—	—
	Private Clinic/Private Hospital/ Nursing Home	Yes	✓	—	—
	If any of the above Facility is not available in village than approx. distance from village: ..10.....kms.	BHAVNAGAR			
Suggestions if any:					
L.	**Education Facilities:**				
	Aaganwadi/ Play group	8	✓	—	—
	Primary School	Yes	✓	—	—
	Secondary school	Yes	✓	—	—
	Higher sec. School	Yes	✓	—	—
	ITI college/ vocational Training Center	NO	✓	—	—
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	NO	✓	—	—
	If any of the above Facility is not available in village than approx. distance from village: .10.....kms.	BHAVNagar			
Suggestions if any:					
M.	**Socio- Culture Facilities**				
	Community Hall (With or without TV) Location:	available	✓	—	—



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Techno Economic Survey

	Condition:				
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	Available	✓	—	—
	Public Garden Location: Condition:	Yes	✓	—	—
	Village Pond Location: Condition:	Yes	✓	—	—
	Recreation Center Location: Condition:	NO	✓	—	—
	Cinema/ Video Hall Location: Condition:	NO	—	✓	—
	Assembly Polling Station Location: Condition:	NO	—	✓	—
	Birth & Death Registration Office Location: Grampanchayat Condition: good	good Yes	✓	—	—

If any of the above Facility is not available in village than approx. distance from village: ...10....kms. BHAVNAGAR

Suggestions if any:

N.	Other Facilities				
	Post-office	good	village	Yes	—
	Telecommunication Network/ STD booth	—	—	—	NO

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	General Market	good	village	yes	—
	Shops (Public Distribution System)	good	village	yes	—
	Panchayat Building	good	11	yes	—
	Pharmacy/Medical Shop	good	11	yes	—
	Bank & ATM Facility	good	11	yes	—
	Agriculture Co-operative Society	good	11	yes	—
	Milk Co-operative Soc.	good	11	yes	—
	Small Scale Industries	good	11	yes	—
	Internet Cafes/ Common Service Center/Wi Fi	—	11	—	—
	Other Facility	good	village	—	—
Suggestions if any: —					

6. **Sustainable /Green Infrastructure Facilities:**

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
O.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources	yes	✓		—
P.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	NO NO yes yes	✓		—
Q.	Any Other	—	—	—	—

7. **Data Collection From Village**

Village Base Map Available: Hard Copy/Soft Copy	yes Both

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Vishwakarma Yojana: Phase VI
Techno Economic Survey

Recent Projects going on for Development of Village	No
Any NGO working for village development	No

8. **Additional Information/ Requirement:**

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities(School Building, Health Center, Panchayat Building, Public Toilets & any other)	yes yes yes yes	– – – –
2.	Additional Information/ Requirement		
	cleaning	yes	–
	fogging	yes	–

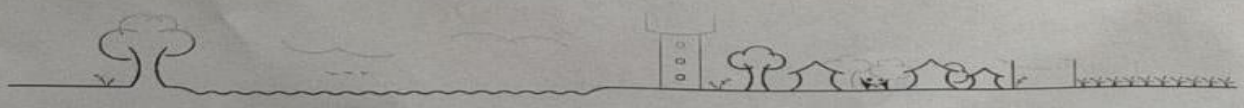
9. **Smart Village Proposal Design**

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Rain water Harvesting (bettery)	yes	–

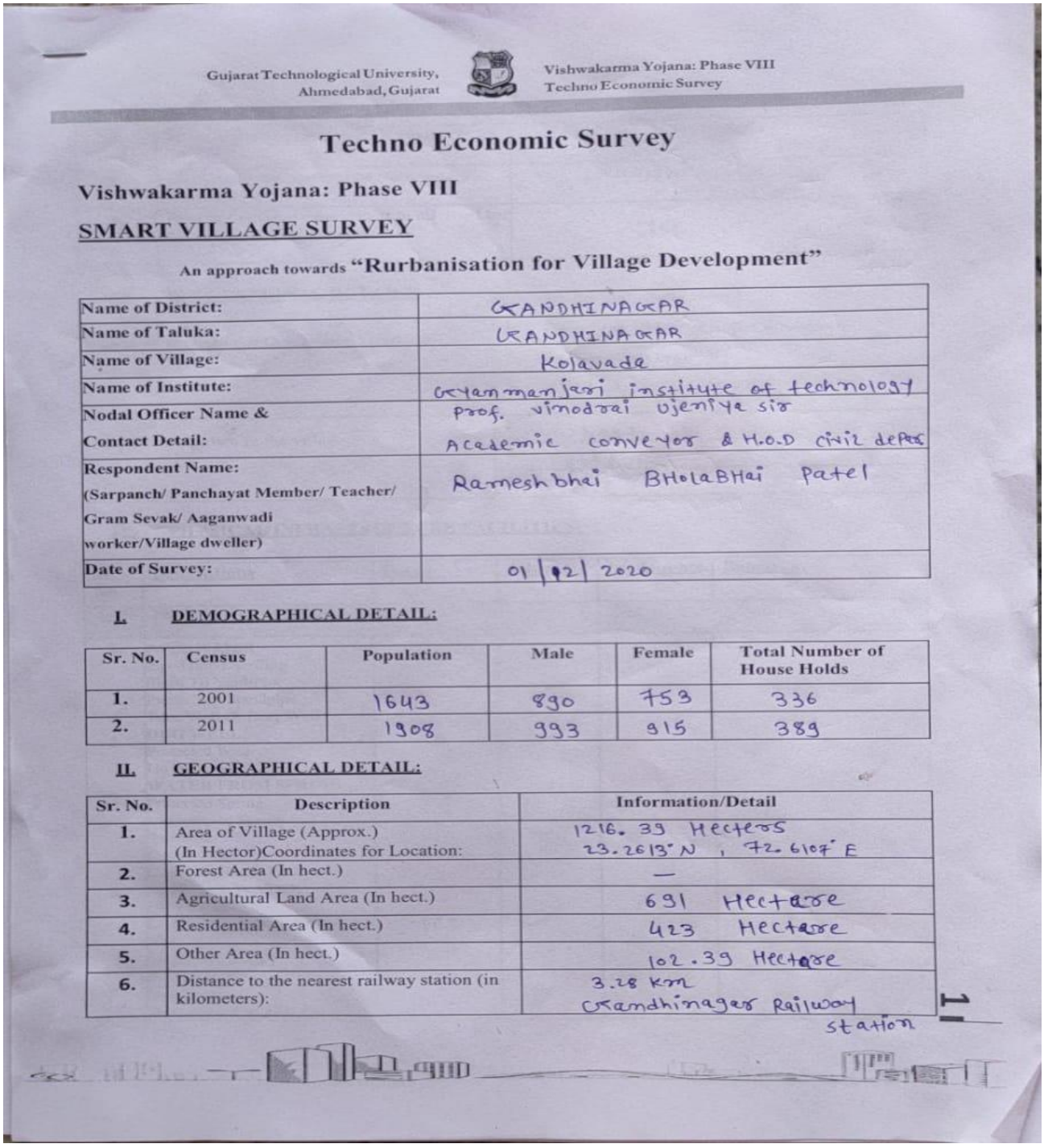
Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

For Any Administration queries/ Difficulties:
GTU VY Section:
Contact No – 079-23267588
Email ID: rurban@gtu.edu.in

તા.૪/૭/૨૧
સરપંચશ્રી
બુધેલ ગ્રામ પંચાયત
તા.જી. ભાવનગર



12.2 Survey form of Smart Village Scanned copy attachment in the report for Part-I : FIGURE(1-9)



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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

SMART VILLAGE SURVEY

An approach towards **"Rurbanisation for Village Development"**

Name of District:	GANDHINAGAR
Name of Taluka:	GANDHINAGAR
Name of Village:	Kolavada
Name of Institute:	Gyanmanjari institute of technology
Nodal Officer Name & Contact Detail:	Prof. vinodrai ujeniya sir Academic conveyor & H.O.D civil depts
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Rameshbhai BHolaBHai Patel
Date of Survey:	01/02/2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	1643	890	753	336
2.	2011	1908	993	915	389

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	1216.39 Hectors 23.2613° N , 72.6107° E
2.	Forest Area (In hect.)	—
3.	Agricultural Land Area (In hect.)	691 Hectare
4.	Residential Area (In hect.)	423 Hectare
5.	Other Area (In hect.)	102.39 Hectare
6.	Distance to the nearest railway station (in kilometers):	3.28 km Gandhinagar Railway station

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Techno Economic Survey

7.	Name of Nearest Town with Distance:	Gandhinagar (3.4 km)
8.	Distance to the nearest bus station (in kilometers):	Gandhinagar (4.1 km)
9.	Whether village is connected to all road for the any facility or town or City?	Yes

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	Agricultural Farming
	2.	literature
	3.	Labour work

Major crops grown in the village:	1.	wheat
	2.	cotten
	3.	Rice

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
1.	**PIPED WATER** Piped Into Dwelling Piped To Yard/Plot Public Tap/Standpipe Tube Well Or Bore Well	Yes	✓		–
2.	**DUG WELL** Protected Well Un Protected Well	Yes	✓		–
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring	Yes	✓		–
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump Other(Specify)**Lake/ Pond**	Yes Yes	✓		– –

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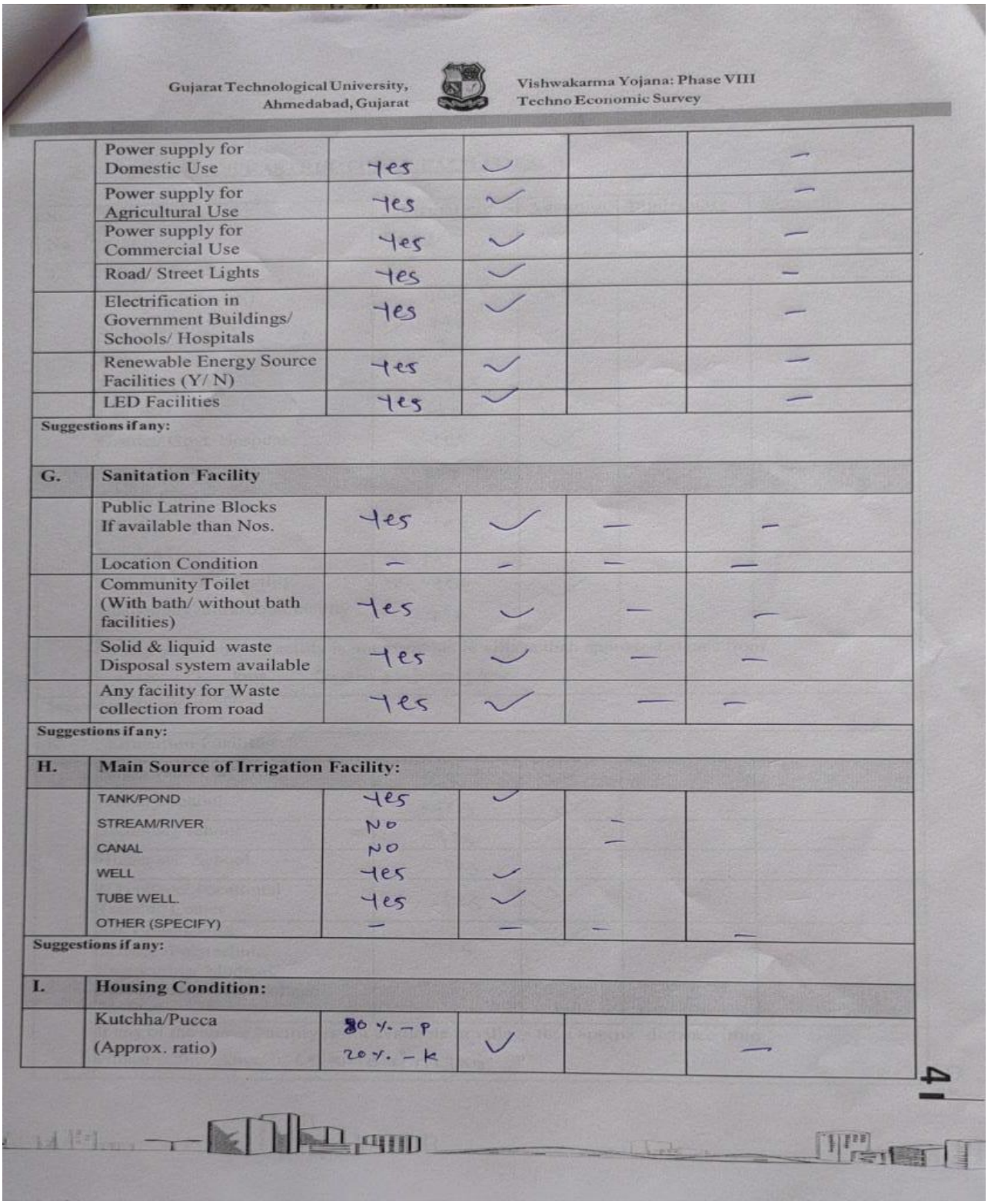
Suggestions if any:						
B.	**Water Tank Facility**					
	Overhead Tank	Capacity:	2,50,000	✓	
	Underground Sump	Capacity:	2,00,000	✓	
Suggestions if any:						
C.	**The Type of Drainage Facility**					
	A. UNDERGROUND DRAINAGE 1 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET	Yes	Yes		–
Suggestions if any:						
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**					
	Village approach road	Yes	✓		–
	Main road	Yes	✓		–
	Internal streets	Yes	✓		–
	Nearest NH/SH/MDR/ODR Dist. in kms.	Yes MDR	✓		–
Suggestions if any:						
E.	**Transport Facility**					
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Yes	✓		–
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes	✓		–
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	✓		–
Suggestions if any:						
F.	**Electricity Distribution**					
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes (U.G. V.C.)	✓		– 24 hours

3



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	Power supply for Domestic Use	Yes	✓		–
	Power supply for Agricultural Use	Yes	✓		–
	Power supply for Commercial Use	Yes	✓		–
	Road/ Street Lights	Yes	✓		–
	Electrification in Government Buildings/ Schools/ Hospitals	Yes	✓		–
	Renewable Energy Source Facilities (Y/ N)	Yes	✓		–
	LED Facilities	Yes	✓		–
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	Yes	✓	–	–
	Location Condition	–	–	–	–
	Community Toilet (With bath/ without bath facilities)	Yes	✓	–	–
	Solid & liquid waste Disposal system available	Yes	✓	–	–
	Any facility for Waste collection from road	Yes	✓	–	–
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND	Yes	✓		
	STREAM/RIVER	No		–	
	CANAL	No		–	
	WELL	Yes	✓		
	TUBE WELL	Yes	✓		
	OTHER (SPECIFY)	–	–	–	–
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	80 % - P 20 % - K	✓		–

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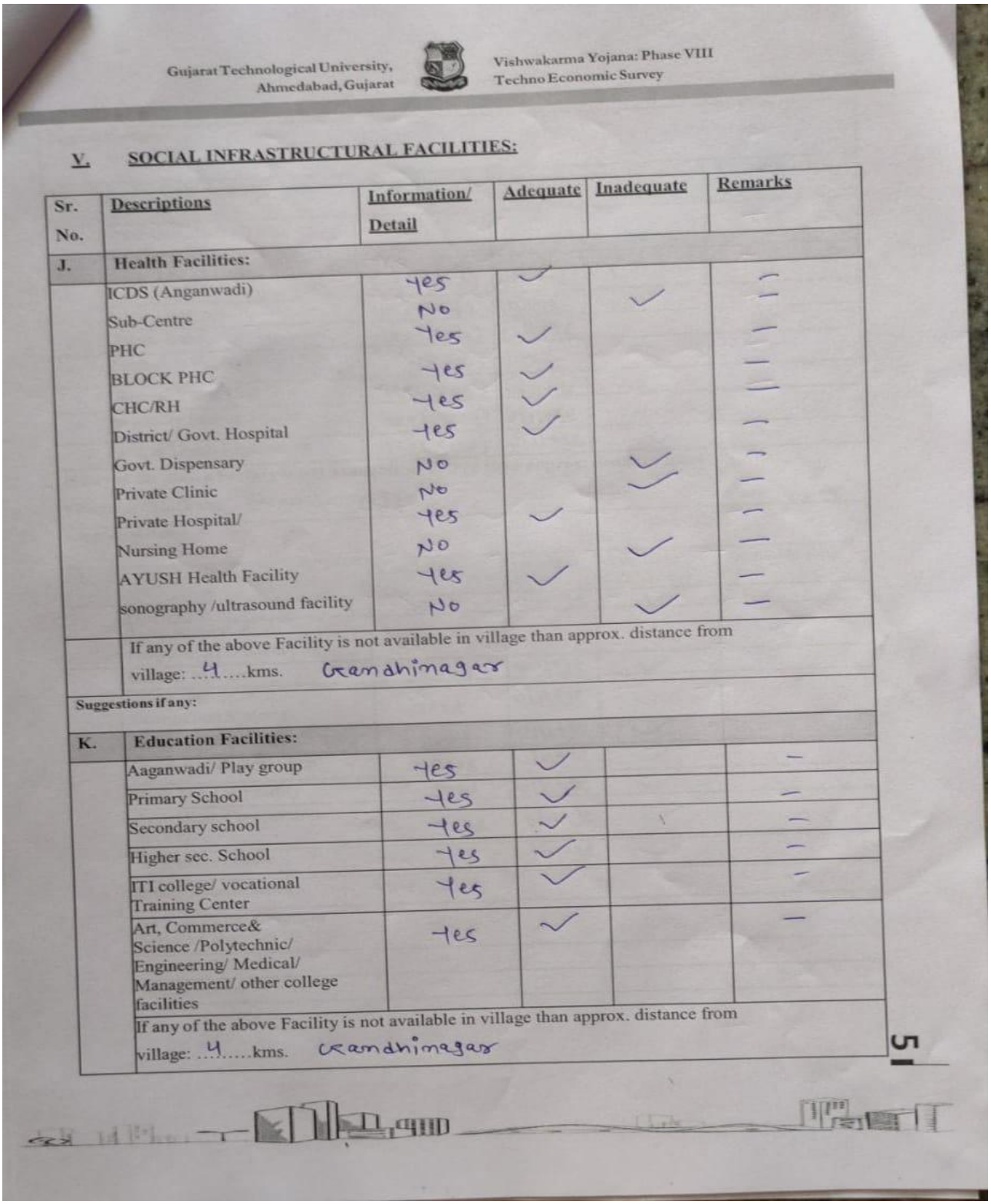

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	Yes	✓		–
	Sub-Centre	No		✓	–
	PHC	Yes	✓		–
	BLOCK PHC	Yes	✓		–
	CHC/RH	Yes	✓		–
	District/ Govt. Hospital	Yes	✓		–
	Govt. Dispensary	No		✓	–
	Private Clinic	No		✓	–
	Private Hospital/	Yes	✓		–
	Nursing Home	No		✓	–
	AYUSH Health Facility	Yes	✓		–
	sonography /ultrasound facility	No		✓	–
	If any of the above Facility is not available in village than approx. distance from village: ...4....kms. Gandhinagar				
	Suggestions if any:				
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Yes	✓		–
	Primary School	Yes	✓		–
	Secondary school	Yes	✓		–
	Higher sec. School	Yes	✓		–
	ITI college/ vocational Training Center	Yes	✓		–
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	Yes	✓		–
	If any of the above Facility is not available in village than approx. distance from village: ...4....kms. Gandhinagar				

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Suggestions if any:

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	No	–		✓
	Public Library (With daily newspaper supply: Y/N)	Yes (good)	village	✓	
	Public Garden	Yes (good)	village		
	Village Pond	Yes (good)	village		
	Recreation Center	No	–		✓
	Cinema/ Video Hall	Yes (good)	village		
	Assembly Polling Station	Yes (good)	village		
	Birth & Death Registration	Yes (good)	village		

If any of the above Facility is not available in village than approx. distance from village: ....4....kms. Gandhinagar

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office	good	village	✓	
	Telecommunication Network/ STD booth	–			✓
	General Market	good	village	✓	
	Shops (Public Distribution System)	good	village	✓	
	Panchayat Building	good	village	✓	
	Pharmacy/Medical Shop	good	village	✓	
	Bank & ATM Facility	good	village	✓	
	Agriculture Co-operative Society	good	village	✓	
	Milk Co-operative Soc.	good	village	✓	
	Small Scale Industries	–			✓
	Internet Cafes/ Common Service Center/Wi Fi	–			✓
	Youth Club	–			✓
	Mahila Mandal	–			✓

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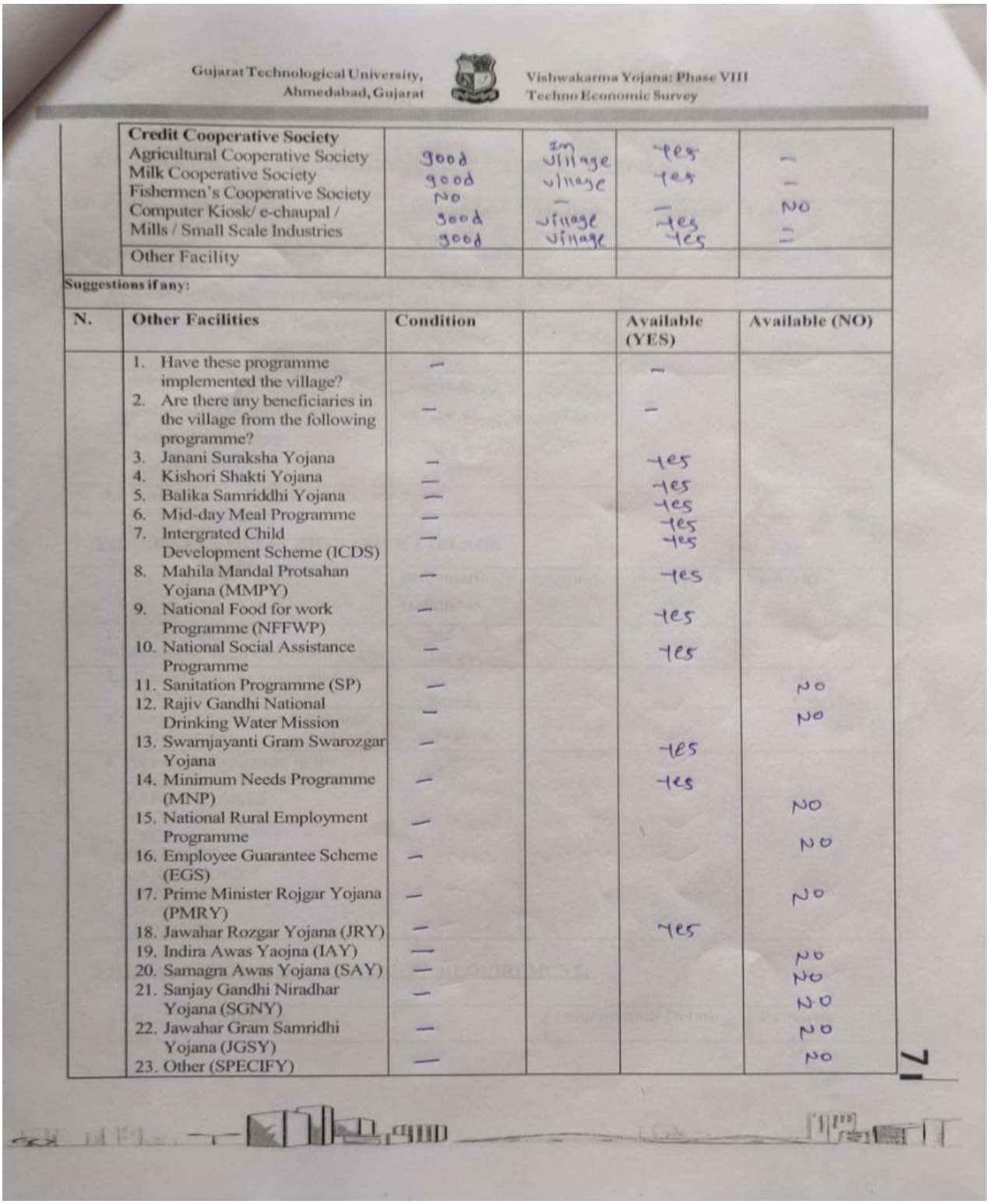

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	Credit Cooperative Society				
	Agricultural Cooperative Society	Good	In village	Yes	1
	Milk Cooperative Society	Good	village	Yes	1
	Fishermen's Cooperative Society	No	–	–	No
	Computer Kiosk/ e-chaupal /	Good	village	Yes	1
	Mills / Small Scale Industries	Good	village	Yes	
	Other Facility				

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village?	–		–	
	2. Are there any beneficiaries in the village from the following programme?	–		–	
	3. Janani Suraksha Yojana	–		Yes	
	4. Kishori Shakti Yojana	–		Yes	
	5. Balika Samriddhi Yojana	–		Yes	
	6. Mid-day Meal Programme	–		Yes	
	7. Intergrated Child Development Scheme (ICDS)	–		Yes	
	8. Mahila Mandal Protsahan Yojana (MMPY)	–		Yes	
	9. National Food for work Programme (NFFWP)	–		Yes	
	10. National Social Assistance Programme	–		Yes	
	11. Sanitation Programme (SP)	–			20
	12. Rajiv Gandhi National Drinking Water Mission	–			20
	13. Swarnjayanti Gram Swarozgar Yojana	–		Yes	
	14. Minimum Needs Programme (MNP)	–		Yes	
	15. National Rural Employment Programme	–			20
	16. Employee Guarantee Scheme (EGS)	–			20
	17. Prime Minister Rojgar Yojana (PMRY)	–			20
	18. Jawahar Rozgar Yojana (JRY)	–		Yes	
	19. Indira Awas Yaojna (IAY)	–			20
	20. Samagra Awas Yojana (SAY)	–			20
	21. Sanjay Gandhi Niradhar Yojana (SGNY)	–			20
	22. Jawahar Gram Samridhi Yojana (JGSY)	–			20
	23. Other (SPECIFY)	–			20

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1.	Repair & Maintenance of Existing	Yes	–
	Public Infrastructure facilities,	Yes	–
	School Building	Yes	–
	Health Center	Yes	(P.H.C)
	Panchayat Building	Yes	–
	Public Toilets & any other	Yes	Require more
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	Yes	–

IX. Smart Village / Heritage Details

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	IS THEIR ANY THING FOR THE VILLAGE ENHANCEMENT POSSIBLE ?	Rain water Harvesting	–

Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

For Any Administration queries/ Difficulties:
GTU VY Section
Contact No – 079-23267588
Email ID: rurban@gtu.edu.in

× રમેશભાઈ ગો. પટેલ
કોલવાડા

12.3 Survey form of allocated Village Scanned copy attachment in the report for Part-I :(FIGURE 1 -9)

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards **"Rurbanisation for Village Development"**

Name of District:	Botad
Name of Taluka:	gadhada
Name of Village:	NINGALA
Name of Institute:	shyammunjari institute of technology
Nodal Officer Name & Contact Detail:	prof vinodbhai ujemia sir academic conveyor & H.O.D civil depart.
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	BHAVESH BHAI vithani
Date of Survey:	27/10/2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	3157	1709	1448	657
2.	2011	4472	2288	2184	930

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	590.89 Hector 22.10' N , 71.073' E
2.	Forest Area (In hect.)	–
3.	Agricultural Land Area (In hect.)	337 Hectare
4.	Residential Area (In hect.)	199.89 Hectare
5.	Other Area (In hect.)	54 Hectare
6.	Distance to the nearest railway station (in kilometers):	NINGALA railway station (2km)

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7.	Name of Nearest Town with Distance:	Botad - 13.6 km NANA ziz AVADAR - 2.0 km
8.	Distance to the nearest bus station (in kilometers):	Botad station - 20 km
9.	Whether village is connected to all road for the any facility or town or City?	yes

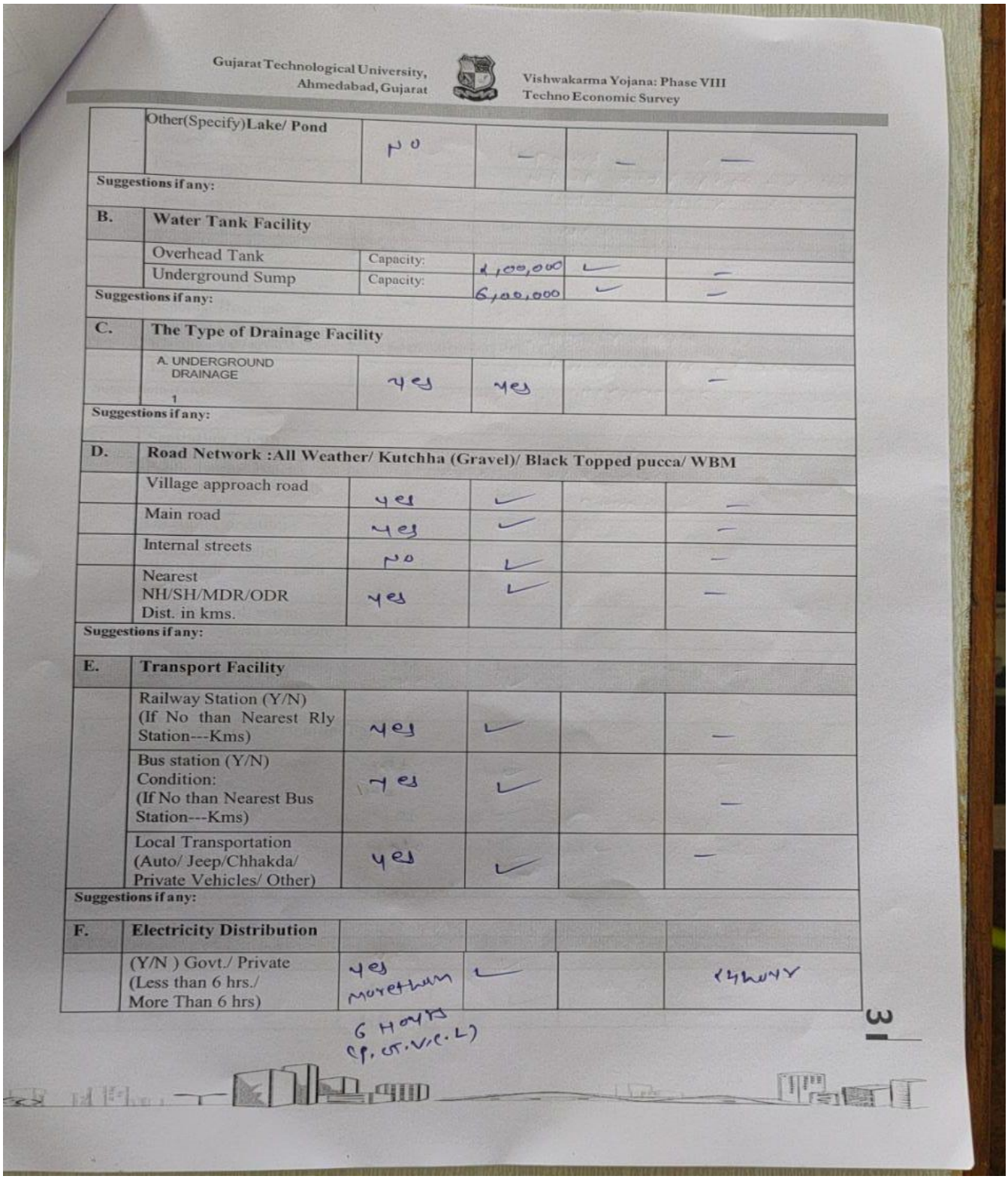
III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	Labour work
	2.	Agriculture - farming
	3.	literature

Major crops grown in the village:	1.	wheat
	2.	cotton
	3.	Bajara

IV. PHYSICAL INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
1.	**PIPED WATER** Piped Into Dwelling Piped To Yard/Plot Public Tap/Standpipe Tube Well Or Bore Well	yes	✓		-
2.	**DUG WELL** Protected Well Un Protected Well	yes	✓		-
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring				
	Rainwater Tanker Truck Cart With Small Tank	No	-	✓	-
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump	yes	✓		-



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	Other(Specify)Lake/ Pond	NO	—	—	—
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:	1,00,000	✓	—
	Underground Sump	Capacity:	6,00,000	✓	—
Suggestions if any:					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1	Yes	Yes		—
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Yes	✓		—
	Main road	Yes	✓		—
	Internal streets	NO	✓		—
	Nearest NH/SH/MDR/ODR Dist. in kms.	Yes	✓		—
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Yes	✓		—
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	Yes	✓		—
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes	✓		—
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes More than 6 Hours (Gp. GT.V.(.L)	✓		12 hours

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	Power supply for Domestic Use	Yes	✓		—
	Power supply for Agricultural Use	Yes	✓		—
	Power supply for Commercial Use	Yes	✓		—
	Road/ Street Lights	Yes	✓		—
	Electrification in Government Buildings/ Schools/ Hospitals	Yes	✓		—
	Renewable Energy Source Facilities (Y/ N)	No	✓		—
	LED Facilities	No		✓	—
Suggestions if any:					
G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	No	✓	—	—
	Location Condition	—	—	—	—
	Community Toilet (With bath/ without bath facilities)	No	—	—	—
	Solid & liquid waste Disposal system available	Yes	✓	—	—
	Any facility for Waste collection from road	Yes	✓	—	—
Suggestions if any:					
H.	**Main Source of Irrigation Facility:**				
	TANK/POND	Yes	✓		—
	STREAM/RIVER	No	✓		—
	CANAL	Yes	✓		—
	WELL	Yes	✓		—
	TUBE WELL	Yes	✓		—
	OTHER (SPECIFY)	2 Lakes 4M²	✓		—
Suggestions if any:					
I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	60% P 40% K	✓		—

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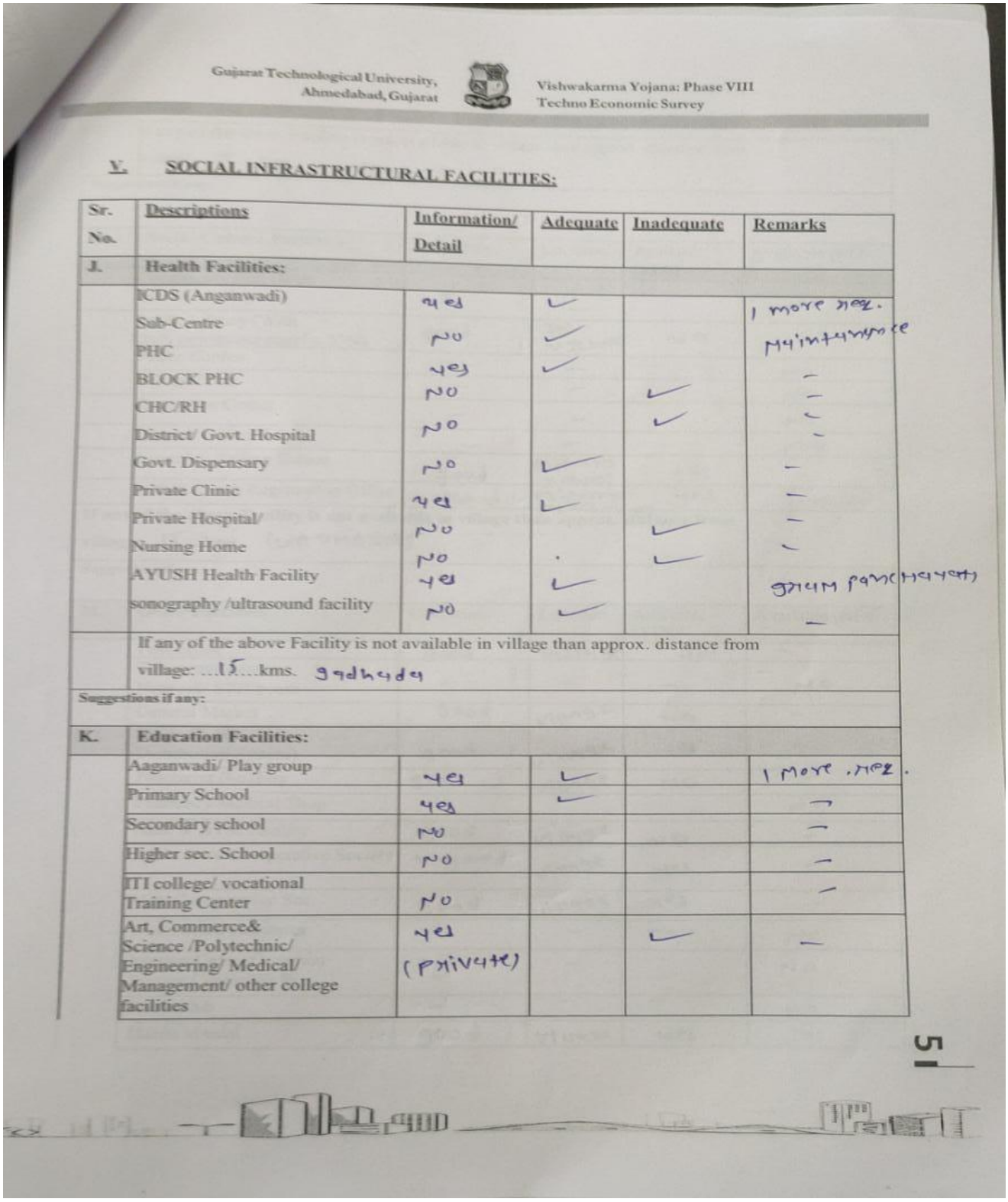

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	Yes	✓		1 more req.
	Sub-Centre	No	✓		Maintenance
	PHC	Yes	✓		–
	BLOCK PHC	No		✓	–
	CHC/RH	No		✓	–
	District/ Govt. Hospital	No	✓		–
	Govt. Dispensary	No	✓		–
	Private Clinic	Yes	✓		–
	Private Hospital/	No		✓	–
	Nursing Home	No		✓	–
	AYUSH Health Facility	Yes	✓		Gram Panchayat
	sonography /ultrasound facility	No	✓		–
	If any of the above Facility is not available in village than approx. distance from village: ...15...kms. Gadhada				
	Suggestions if any:				
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Yes	✓		1 More req.
	Primary School	Yes	✓		–
	Secondary school	No			–
	Higher sec. School	No			–
	ITI college/ vocational Training Center	No			–
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	Yes (Private)		✓	–

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	If any of the above Facility is not available in village than approx. distance from village: ..15....kms. (GADHADA)				
Suggestions if any:					
L.	**Socio- Culture Facilities**	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	–	–		NO
	Public Library (With daily newspaper supply: Y/N)	good	In village	yes	
	Public Garden	–	–		NO
	Village Pond	–	–		NO
	Recreation Center	–	–		NO
	Cinema/ Video Hall	–	–		NO
	Assembly Polling Station	good	primary school	yes	–
	Birth & Death Registration Office	good	primary panchayat	yes	–
If any of the above Facility is not available in village than approx. distance from village: ..15....kms. (GADHADA)					
Suggestions if any:					
M.	**Other Facilities**	Condition	Location	Available (YES)	Available (NO)
	Post-office	good	village	yes	–
	Telecommunication Network/ STD booth	–	–	–	NO
	General Market	good	village	yes	–
	Shops (Public Distribution System)	good	village	yes	–
	Panchayat Building	good	village	yes	–
	Pharmacy/Medical Shop	–	–	–	NO
	Bank & ATM Facility	good	village	yes	–
	Agriculture Co-operative Society	v. good	village	yes	–
	Milk Co-operative Soc.	good	village	yes	–
	Small Scale Industries	–	–	–	NO
	Internet Cafes/ Common Service Center/Wi Fi	–	–	–	NO
	Youth Club	–	–	–	NO
	Mahila Mandal	good	village	yes	–

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	Credit Cooperative Society	good		yes	
	Agricultural Cooperative Society	good	In Village	yes	
	Milk Cooperative Society	–	–	–	2
	Fishermen's Cooperative Society	–	–	–	2
	Computer Kiosk/ e-chaupal /	–	–	–	2
	Mills / Small Scale Industries	–	–	–	
	Other Facility	A.T.M	In Village	yes	–

Suggestions if any:

N.	Other Facilities	Condition		Available (YES)	Available (NO)
	1. Have these programme implemented the village?	–		–	–
	2. Are there any beneficiaries in the village from the following programme?	–		–	2
	3. Janani Suraksha Yojana	–		yes	–
	4. Kishori Shakti Yojana	–		yes	–
	5. Balika Samriddhi Yojana	–		yes	–
	6. Mid-day Meal Programme	–		yes	–
	7. Intergrated Child Development Scheme (ICDS)	–		yes	–
	8. Mahila Mandal Protsahan Yojana (MMPY)	–		yes	–
	9. National Food for work Programme (NFFWP)	–		–	2
	10. National Social Assistance Programme	–		–	2
	11. Sanitation Programme (SP)	–		yes	2
	12. Rajiv Gandhi National Drinking Water Mission	–		2	2
	13. Swarnjayanti Gram Swarozgar Yojana	–		–	2
	14. Minimum Needs Programme (MNP)	–		–	2
	15. National Rural Employment Programme	–		yes	–
	16. Employee Guarantee Scheme (EGS)	–		–	2
	17. Prime Minister Rojgar Yojana (PMRY)	–		–	2
	18. Jawahar Rozgar Yojana (JRY)	–		–	2
	19. Indira Awas Yaojna (IAY)	–		–	2
	20. Samagra Awas Yojana (SAY)	–		–	2
	21. Sanjay Gandhi Niradhar Yojana (SGNY)	–		–	2
	22. Jawahar Gram Samridhi Yojana (JGSY)	–		–	2
	23. Other (SPECIFY)	–		–	2

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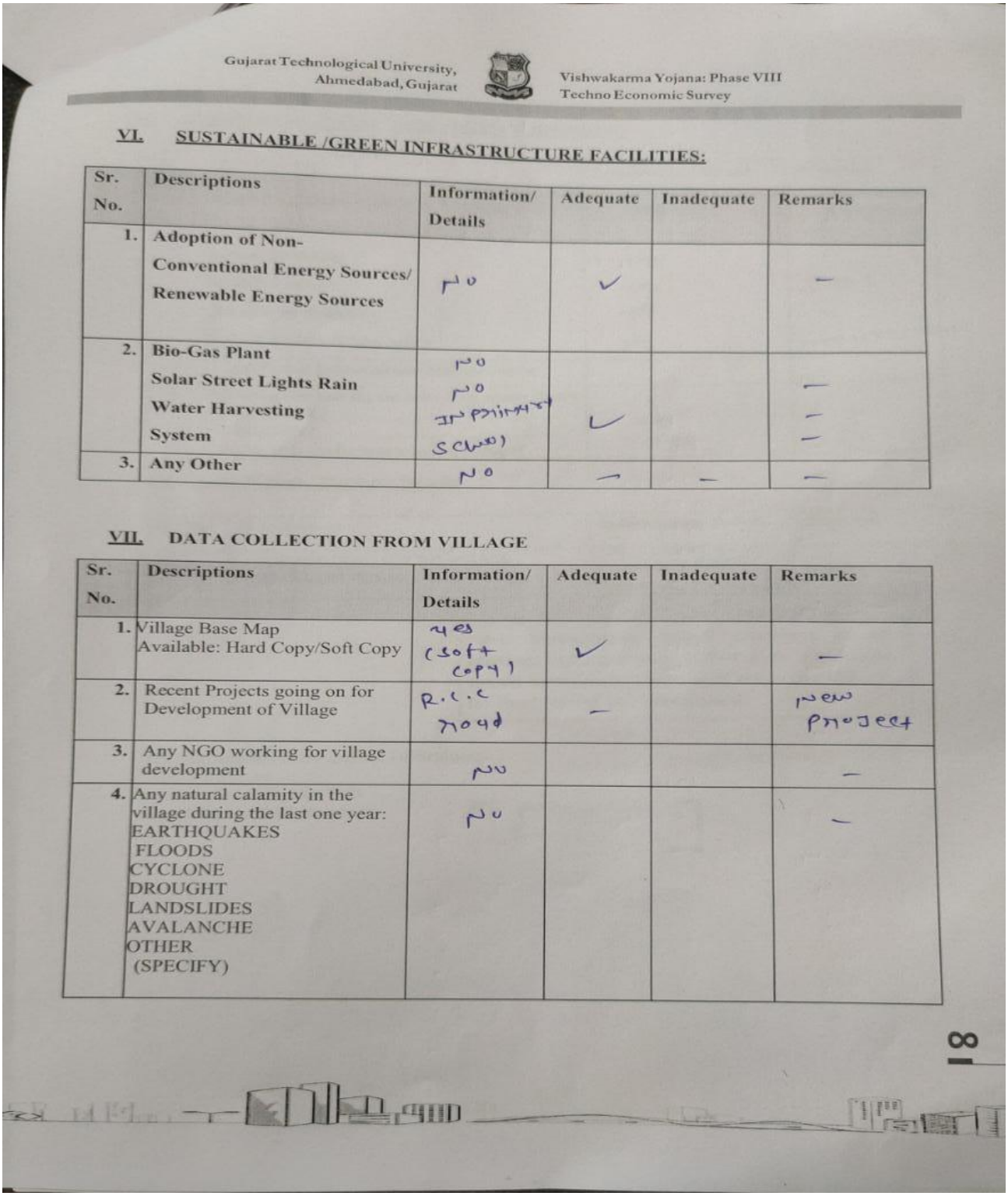

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources	NO	✓		—
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	NO NO IN PRIMARY SCHOOL	✓		— — —
3.	Any Other	NO	—	—	—

VII. DATA COLLECTION FROM VILLAGE

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy	yes (soft copy)	✓		—
2.	Recent Projects going on for Development of Village	R.C.C road	—		new project
3.	Any NGO working for village development	NO			—
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	NO			—

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VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities,	Yes	—
	School Building	—	—
	Health Center	Yes	—
	Panchayat Building	Yes	P.H.C
	Public Toilets & any other	Yes	—
		No	Requirement
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	Yes Yes	— —

IX. Smart Village / Heritage Details

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	IS THEIR ANY THING FOR THE VILLAGE ENHANCEMENT POSSIBLE ?	- Rainwater Harvesting + Clean Ponds & Fill More Water	—

Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions should be taken by students of respective villages for their record and information.

For Any Administration queries/ Difficulties:
GTU VY Section
Contact No – 079-23267588
Email ID: rurban@gtu.edu.in

12.4 Gap Analysis of the Allocated Village :

VILLAGE GAP Analysis

Village Facilities	Planning Commission/UDPFI Norms	Village Name:	NINGALA		
		Population:		4480	
		Existing	Required as per Norms	Smart Vilage / Cities / Heritage Future Projection Design	Gap
Social Infrastructure Facilities					
Education					
Anganwadi	Each or Per 2500 population	1	2	DESIGN	1
Primary School	Each Per 2500 population	2	2	-	0
Secondary School	Per 7,500 population	2	2	-	0
Higher Secondary School	Per 15,000 Population	0	0	-	0
College	Per 125,000 Population	0	0	-	0
Tech. Training Institute	Per 100000 Population	0	0	-	0
Agriculture Research Centre	Per 100000 Population	0	0	-	0
Skill Development Center	Per 100000 Population	0	0	-	0
Health Facility					
Govt/Panchyat Dispensary or Sub PHC or Health Centre	Each Village	1	0	-	1
Primary Health & Child Health Center	Per 20,000 population	1	0	-	1
Child Welfare and Maternity Home	Per 10,000 population	0	0	-	0
Multispeciality Hospital	Per 100000 Population	0	0	-	0
Public Latrines	1 for 50 families (if toilet is not there in home, specially for slum pockets & kutcha house)	0	2	DESIGN	2
Physical Infrastructure Facilities					
Transportation					
Pucca Village Approach Road	Each village	Adequate		Repair& maintenance	
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	1	0	-	1
Drinking Water (Minimum 70 lpcd)		Adequate	1.6 lakh Liter capacity		0
Over Head Tank	1/3 of Total Demand	Adequate	2lakh Litre capacity	-	0
U/G Sump	2/3 of Total Demand	Inadequate	3 lakh liter capacity	Design	0
Drainage Network - Open		Adequate	1	Repair& maintenance	0
Drainage Network - Cover		Adequate	5	Redesign	0
Waste Management System		Adequate		Redesign	0
Socio- Cultural Infrastructure Facilities					
Community Hall	Per 10000 Population	0	0	-	0
community hall and Public Library	Per 15000 Population	0	0	-	0
Cremation Ground	Per 20,000 population	0	0	-	0

Post Office	Per 10,000 population	1	1	-	0
Gram Panchayat Building	Each individual/group panchayat	1	1	-	0
APMC	Per 100000 Population	0	0	-	0
Fire Station	Per 100000 Population	0	0	-	0
Public Garden	Per village	1	1	-	0
Police post	Per 40,000Population	0	0	-	0
Shopping Mall	-				
Electrical Design					
Electricity Network		Adequate	24hour	-	0
Any Smart Village Facility					
Technology					
		ESR cap Adequate	0	-	0
		Sump cap Inadequate	0	Design	0
		Last 0	0	-	0

12.5 Summary details of all the villages design in the table form as part 2

Sr.No.	VillageName	Discipline	Part-I
1.	**ningala**	**Civil**	**Medical store**
			Public library
			U/g sump
			Pipe culvert
			House condition
			Community hall
2.	Nava gam (nana)	civil	**Public Toilet**
			Communication Hall
			Post Office
			Water Tank
			Dispensary
			Bus Station
3.	thalsar	Civil	**Medical store**
			Public library
			U/g sump
			Pipe culvert
			House condition
			Community hall
4.	Thordi	Civil	**Pipe Culvert**
			Smashan
			Snangruh
			Residential house (Type A & B)
			Public Garden
			5Lakh Liter sump
5.	Mota Surka	Civil	**Public toilet**
			Chabutara
			Anganwadi
			Primary School
			Dispensary
			Public Library

12.6 Summary of goods photo graphs:

Summary of photo graph of ningala-allocated village:

(F-12.6.A-Ningala Bus stop)

F-12 .6.B-road network)

(F-12.6.C-Ningala anganwadi)

(F-12.6.D-Ningala school)

(F-12.6.E-Ningala pucca house)

(F-12.6.F-Ningala kuchha house)

Summary Of Photographs Of kolavada– smart Village :

(F-12.6.G-kolavada entrance gate

(F-12.6.H-kolavada water tank)

(F-12.6.I-kolavada in road)

(F-12.6.J-kolavada in house condition)

(F-12.6.K -kolavada in P.H.C)

(F-12.6.L-kolavada in bank)

Summary Of Photographs Of budhel – Ideal Village :

(F-12.6.M-budhel in post office)

(F-12.6.N-budhel in temple)

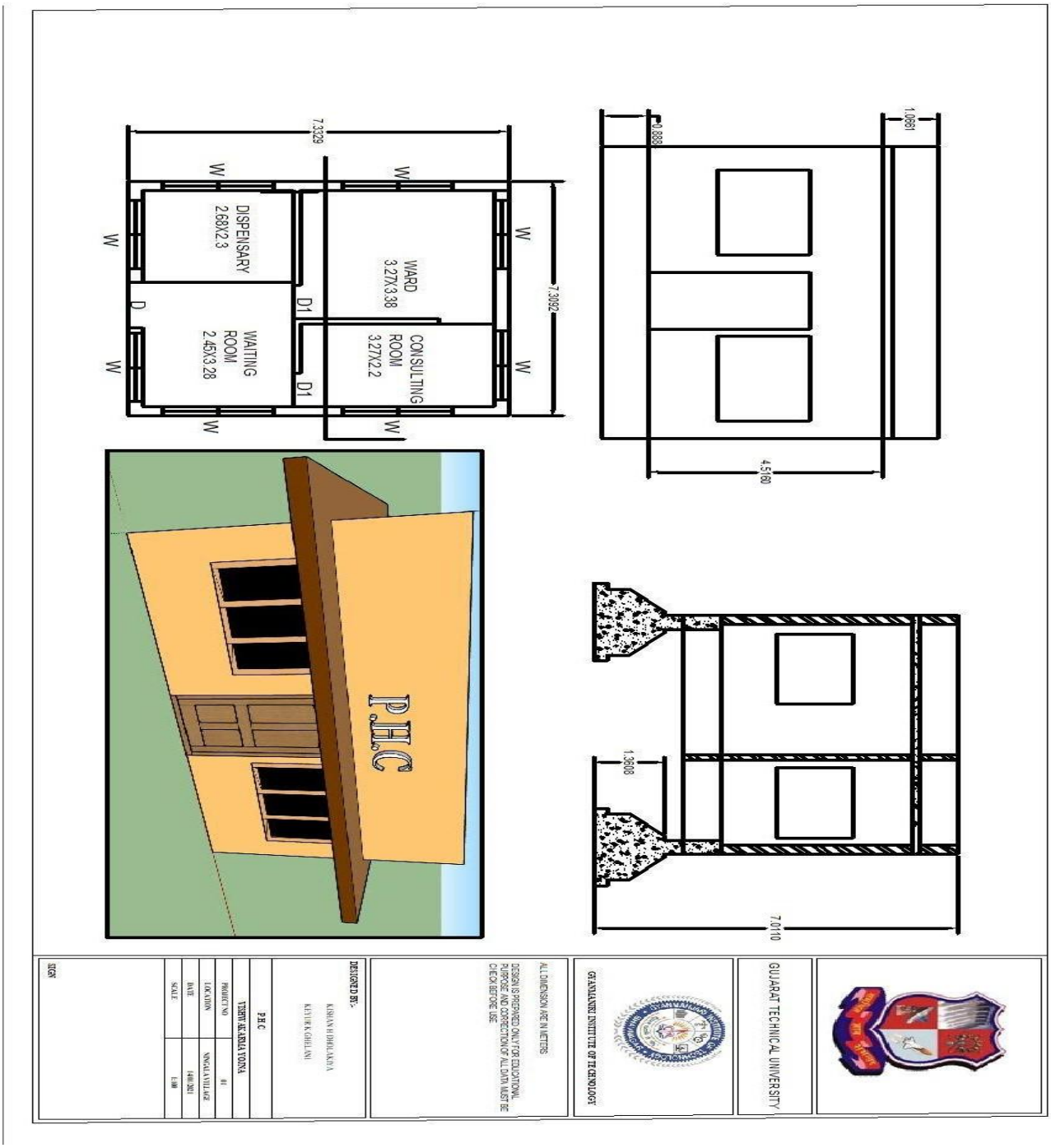
(F-12.6.O-budhel in school)

(F-12.6.P-budhel in dam)

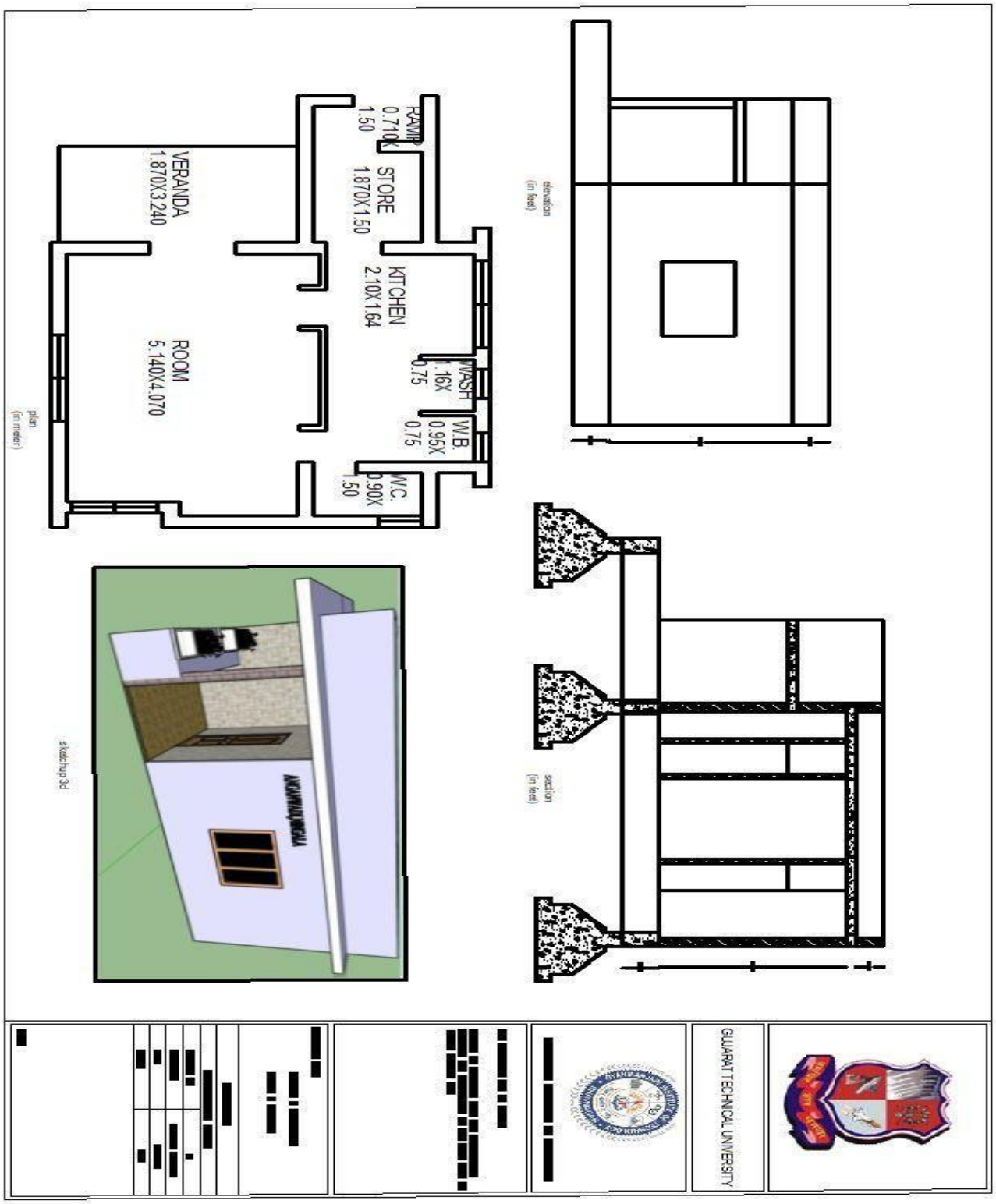
(F-12.6.Q-budhel in gram panchayat

(F-12.6.R-budhel in government school)

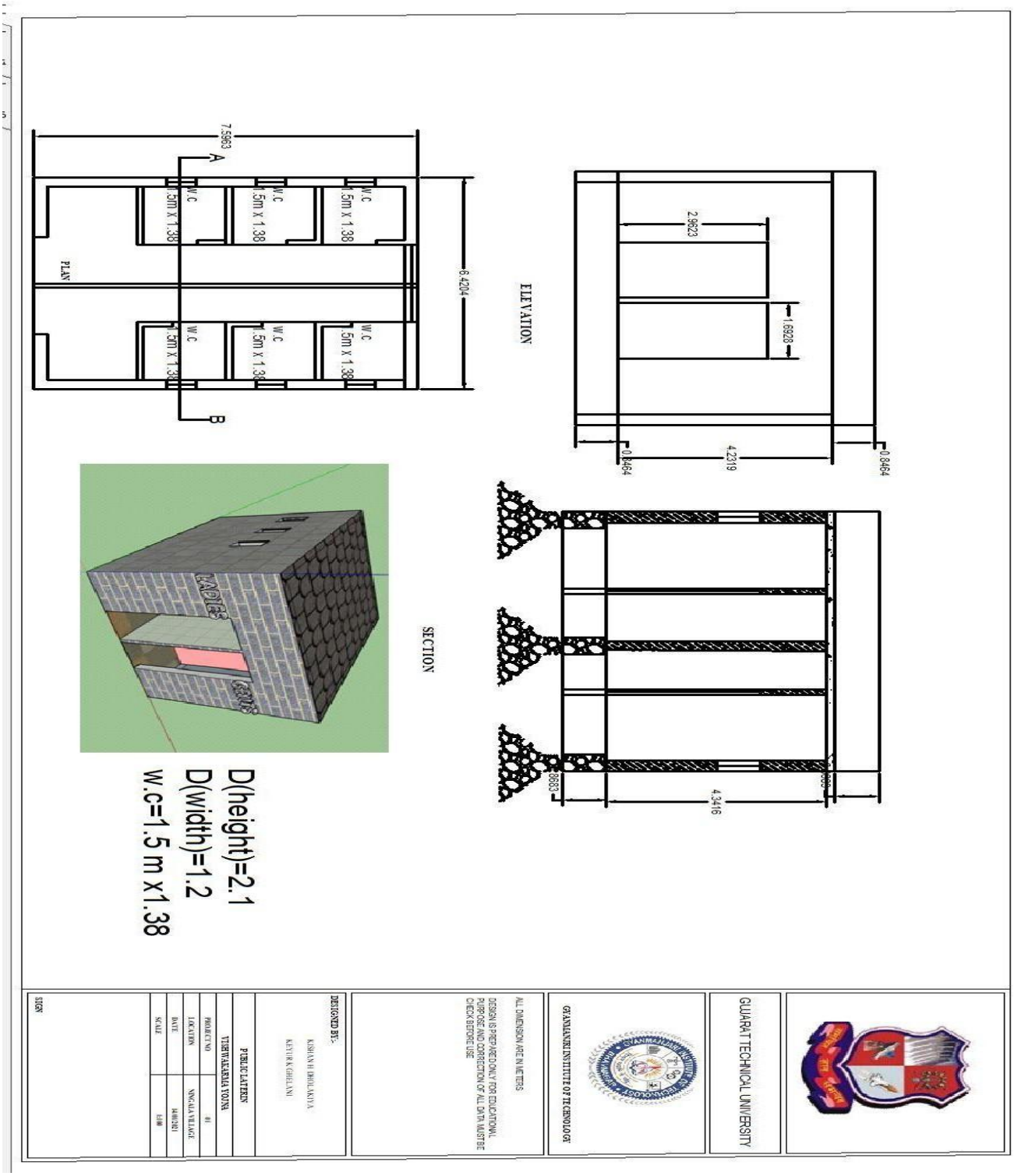
12.7 DRAWINGS OF SHEET:



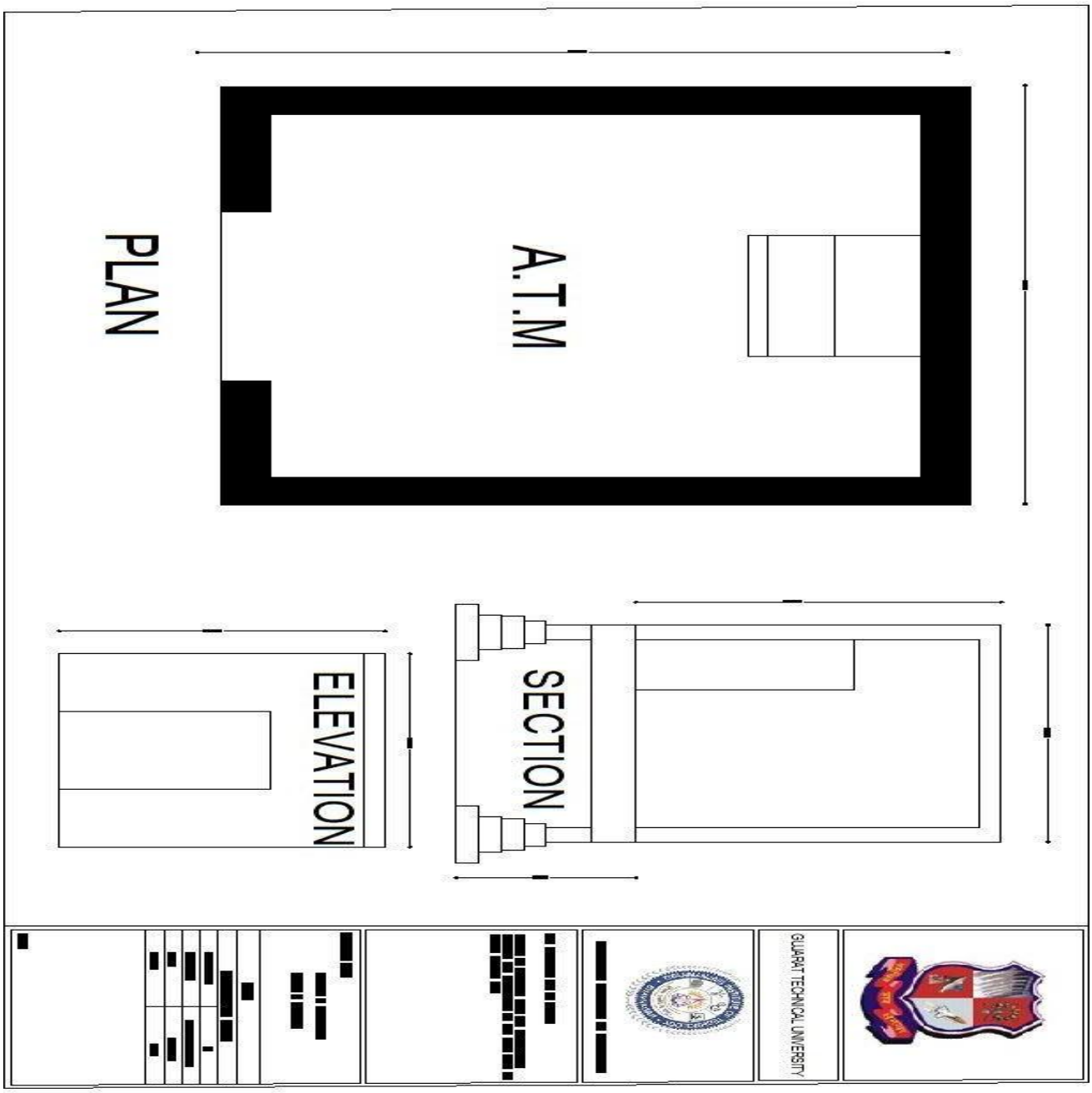
F-12.7-A-P.H.C SHEET



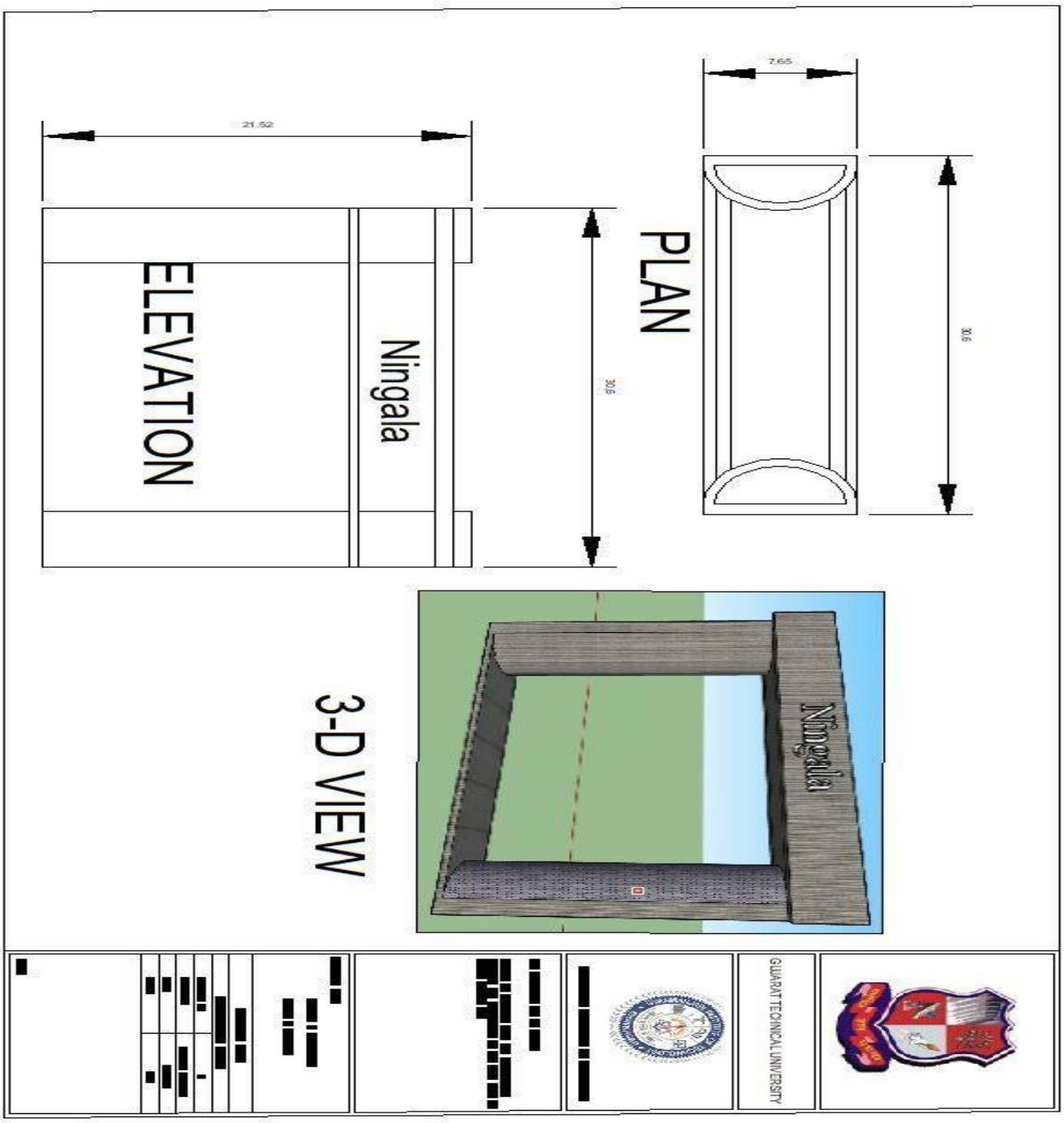
F-12.7-B-ANGANWADI SHEET



F-12.7-C-PUBLIC LATERIN SHEET

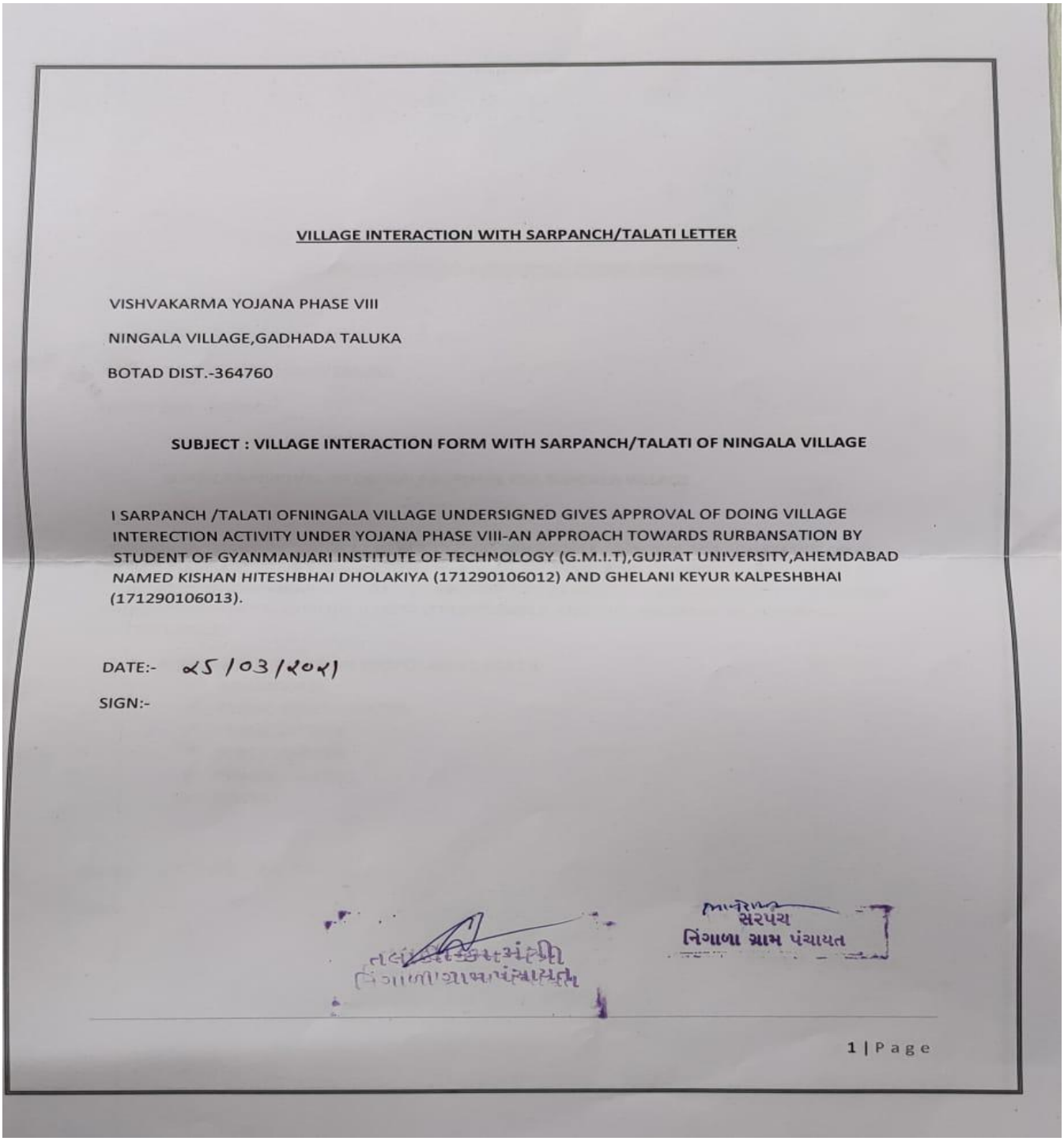


F-12.7-D-A.T.M SHEET



F-12.7-E-SEWER LINE SHEET

12.8 village interaction with sarpanch report :



VILLAGE INTERACTION WITH SARPANCH/TALATI LETTER

VISHVAKARMA YOJANA PHASE VIII

NINGALA VILLAGE,GADHADA TALUKA

BOTAD DIST.-364760

SUBJECT : VILLAGE INTERACTION FORM WITH SARPANCH/TALATI OF NINGALA VILLAGE

I SARPANCH /TALATI OFNINGALA VILLAGE UNDERSIGNED GIVES APPROVAL OF DOING VILLAGE INTERECTION ACTIVITY UNDER YOJANA PHASE VIII-AN APPROACH TOWARDS RURBANSATION BY STUDENT OF GYANMANJARI INSTITUTE OF TECHNOLOGY (G.M.I.T),GUJRAT UNIVERSITY,AHEMDABAD NAMED KISHAN HITESHBHAI DHOLAKIYA (171290106012) AND GHELANI KEYUR KALPESHBHAI (171290106013).

DATE:- ૨૫/૦૩/૨૦૨૧

SIGN:-

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નિંગાળા ગ્રામ પંચાયત

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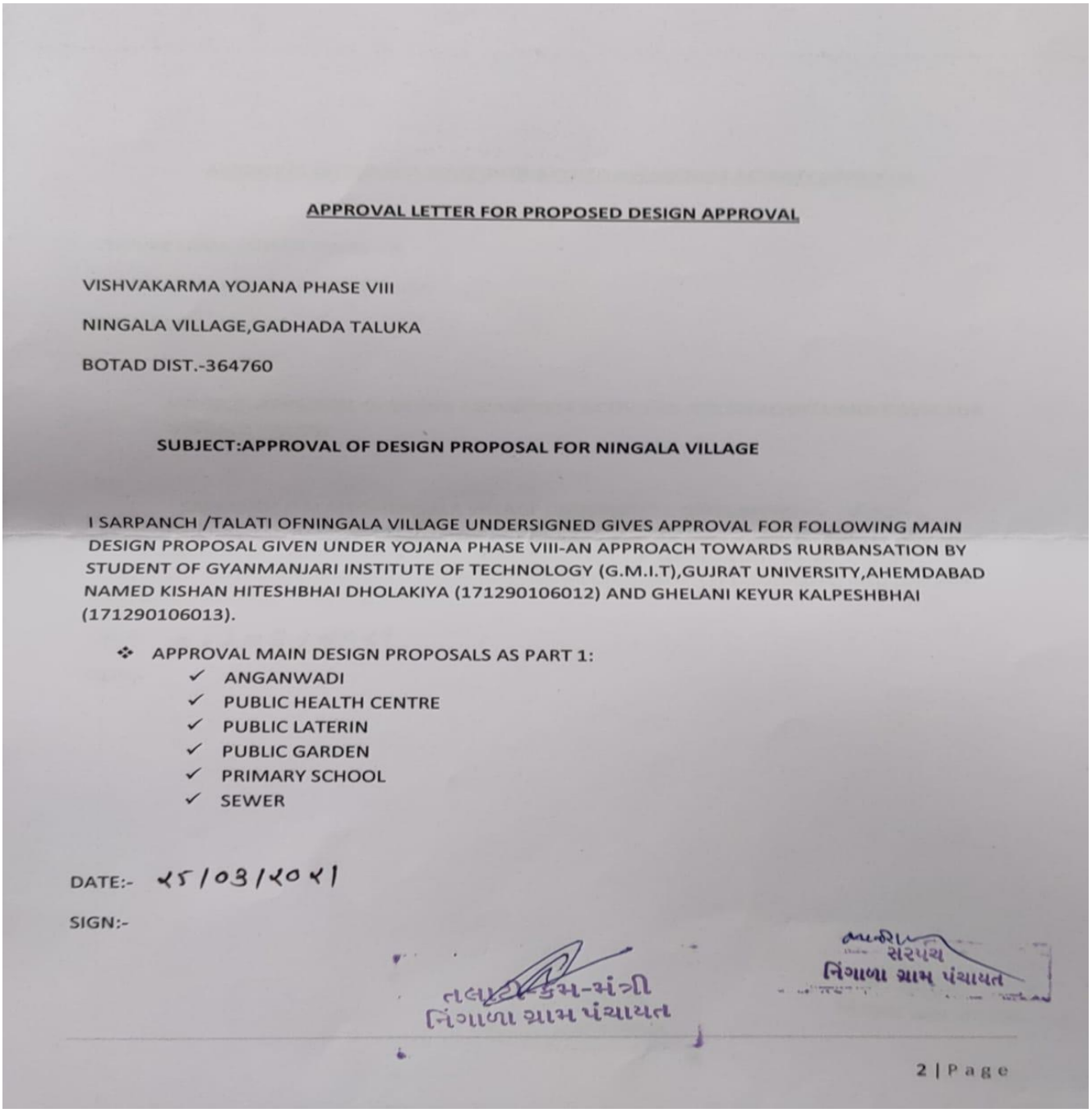
F-12.8-A –VILLAGE SARPANCH INTERACTION

12.9 sarpanch letter giving information about the village:



APPROVAL LETTER FOR PROPOSED DESIGN APPROVAL

VISHVAKARMA YOJANA PHASE VIII

NINGALA VILLAGE,GADHADA TALUKA

BOTAD DIST.-364760

SUBJECT:APPROVAL OF DESIGN PROPOSAL FOR NINGALA VILLAGE

I SARPANCH /TALATI OFNINGALA VILLAGE UNDERSIGNED GIVES APPROVAL FOR FOLLOWING MAIN DESIGN PROPOSAL GIVEN UNDER YOJANA PHASE VIII-AN APPROACH TOWARDS RURBANSATION BY STUDENT OF GYANMANJARI INSTITUTE OF TECHNOLOGY (G.M.I.T),GUJRAT UNIVERSITY,AHEMDABAD NAMED KISHAN HITESHBHAI DHOLAKIYA (171290106012) AND GHELANI KEYUR KALPESHBHAI (171290106013).

- APPROVAL MAIN DESIGN PROPOSALS AS PART 1:
  - ✓ ANGANWADI
  - ✓ PUBLIC HEALTH CENTRE
  - ✓ PUBLIC LATERIN
  - ✓ PUBLIC GARDEN
  - ✓ PRIMARY SCHOOL
  - ✓ SEWER

DATE:- 25/03/2021

SIGN:-

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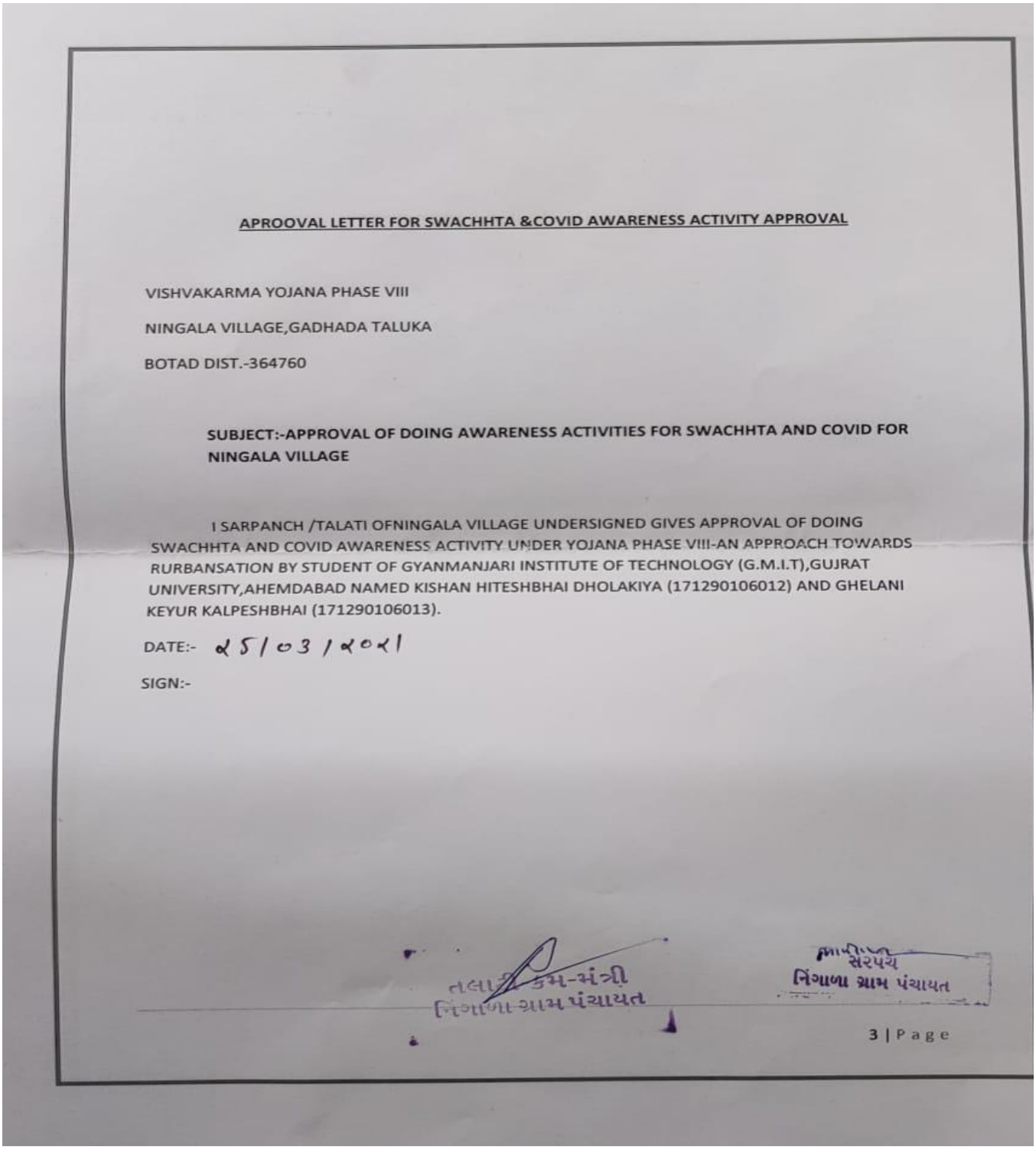
F-12.9-A DESIGN APROOVAL LETTER



APROOVAL LETTER FOR SWACHHTA &COVID AWARENESS ACTIVITY APPROVAL

VISHVAKARMA YOJANA PHASE VIII

NINGALA VILLAGE,GADHADA TALUKA

BOTAD DIST.-364760

SUBJECT:-APPROVAL OF DOING AWARENESS ACTIVITIES FOR SWACHHTA AND COVID FOR NINGALA VILLAGE

I SARPANCH /TALATI OFNINGALA VILLAGE UNDERSIGNED GIVES APPROVAL OF DOING SWACHHTA AND COVID AWARENESS ACTIVITY UNDER YOJANA PHASE VIII-AN APPROACH TOWARDS RURBANSATION BY STUDENT OF GYANMANJARI INSTITUTE OF TECHNOLOGY (G.M.I.T),GUJRAT UNIVERSITY,AHEMDABAD NAMED KISHAN HITESHBHAI DHOLAKIYA (171290106012) AND GHELANI KEYUR KALPESHBHAI (171290106013).

DATE:- ૨૫/૦૩/૨૦૨૧

SIGN:-

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F-12.9-B-COVID ACTIVITY APROOVAL LETTER

Chapter 13.

Proposing designs for Future Development of the Village for the PART-II Design:

For future development of the ningala village we are proposing the designs for Part II design inwhich following points should be considered,

- general market
- Public library
- Pipe culvert
- bank
- house conditions
- community hall

13.1.1 general market

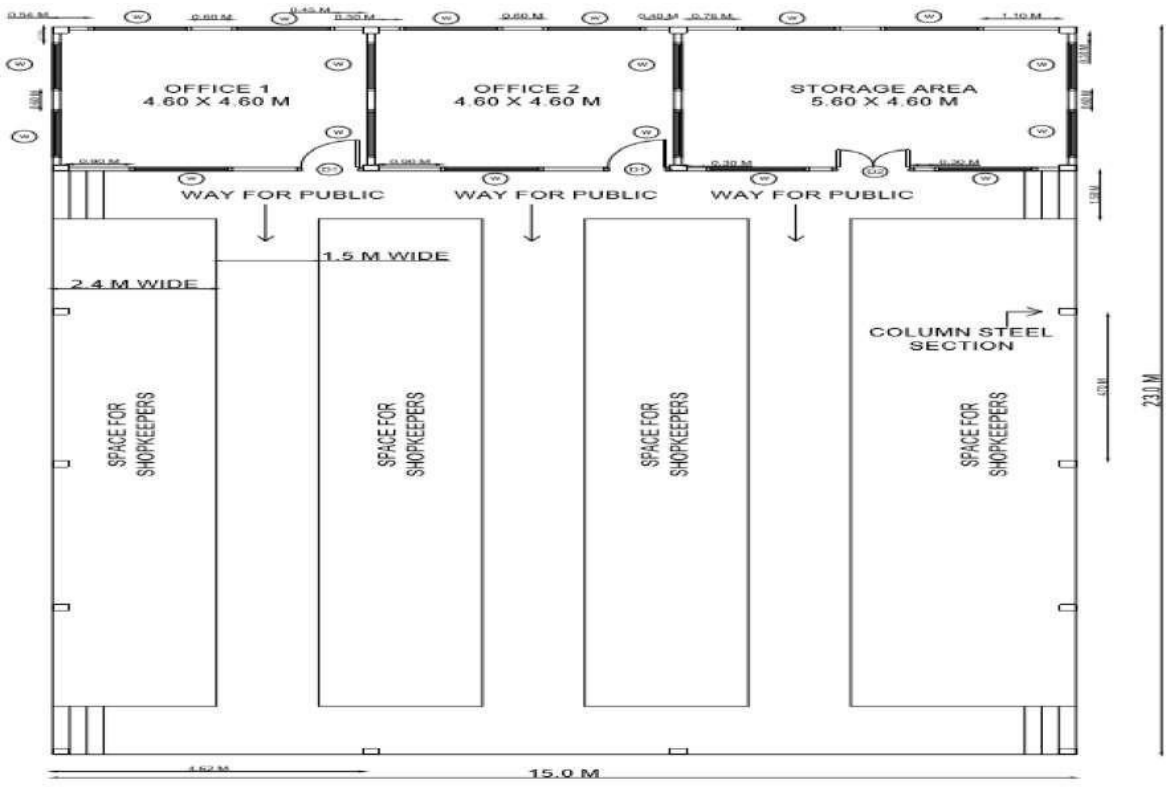


Fig.13.1.1 plan of general market

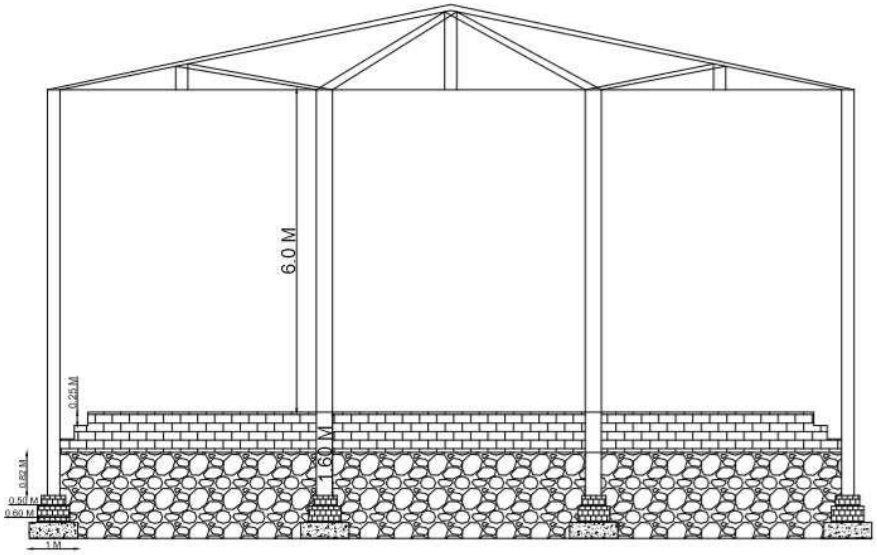


Fig.13.1.1 –elevation of general market

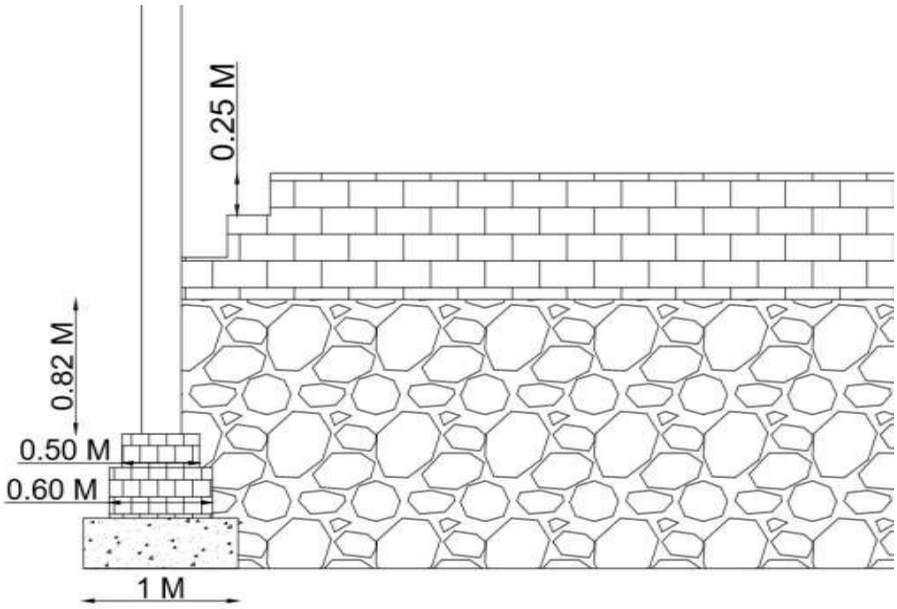


Fig.13.1.1 –section of general market

Measurement sheet(13.1.1)							
Sr no.	description	No.	length	breadth	height	Quantity	Total
1	Excavation in foundation	1	23	15	1.2	414	414 m3
2	p.c.c(1:4:8)	18	1	1	0.3	5.4	5.4 m3
3	Brick work in foundation to plinth level						
	First step	18	0.6	0.6	0.3	1.95	-
	Second step	18	0.5	0.5	0.2	0.9	2.85 m3
4	brick work in steps						
	First step	1	15	23	0.25	86.25	
	Second step	1	14.5	22.5	0.25	81.56	
	Third step	1	14	22	0.25	77	244.81 m3
5.	Brick work in super structure in cement mortar 1:6						
	External wall	2	15	0.228	3	20.52	
		4	5	0.228	3	13.68	34.2 m3
	Deduction for door						
	D1	2	0.8	0.228	2.1	0.766	
	D2	1	1.5	0.228	2.1	0.712	
	W1	18	0.8	0.228	1.2	3.93	(-)5.42 m3
	Deduction for lintels:						
	Bearing =0.15 m						
	D1	2	1.3	0.228	0.15	0.088	
	D2	1	1.8	0.228	0.15	0.061	
	W1	18	1.3	0.228	0.15	0.8	(-)0.949 m3
6.	r.c.c work						
	Slab	1	23	15	0.12	41.4	
	Lintel	1	15	5	0.12	9	51.35 m3
7.	Steel columns	18	7.6	-	-		5841.36 kg
8.	2cm thick marble flooring						
	office	2	4.6	4.6	-	42.32	
	Storage area	1	5.6	4.6	-	25.76	
	Open spaces	1	015	18	-	270	338.08 m2
9.	smooth plaster on inside the walls and ceiling in cm						
	Wall	1	14.8	-	3	44.4	
		4	4.6	-	3	55.2	
	celing	2	4.6	4.6	-	42.32	
		1	5.6	4.6	-	25.76	167.68 m2
10.	Earth filling in excavation						
	Total excavation for walls						414 m3
	Brick work masonary to g.l						(-)2.85 m3
	p.c.c						(-)5.4 m3
						total	405.75

Abstract sheet (13.1.1)						
No.	particles	quantity	unit	Rate	per	Amount
1	Exacavation in foundation	414	M3	85	M3	35190
2	Pcc in foundation	5.4	M3	3000	m3	16200
3	Brickwork in foundation up to plinth	2.85	M3	3200	M3	9120
4	Brick work in super structure	27.83	M3	3500	M3	97405
5	Rcc work	51.35	M3	8800	M3	451880
6	Steel column	5841.36	Kg	37	Kg	216130
7	2 cm thick marble flooring	338.08	M2	500	M2	169040
8	Smooth plaster in side walls	167.0688	M2	150	M2	25152
9	Earth filling in excavation	405.75	M3	50	M3	20287.5
	Total					1040405
	Add 5%					52020
	Grand total					1092425
Say						1100000

Total amount is around 11,00,000 rs. General market factors refers to the overall conditions within a defined market that affect all properties within that market. ... General market factors change over time with demographic patterns, economic and business cycles, employment trends and government policies, amongst other factors.

13.1.2 public library:-

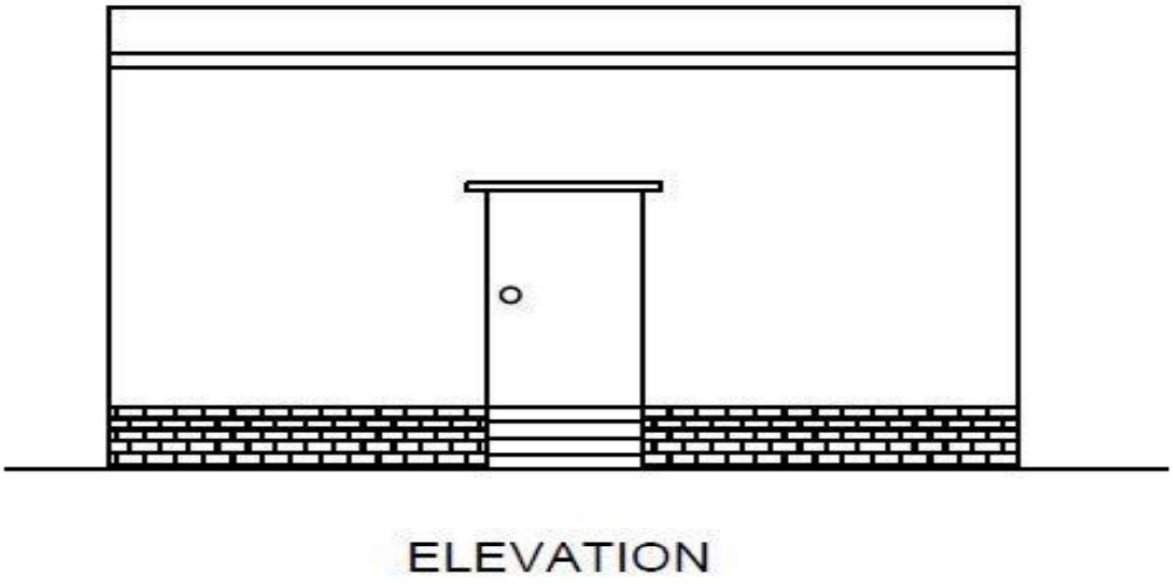


Fig.13.1.1-elevation of public library

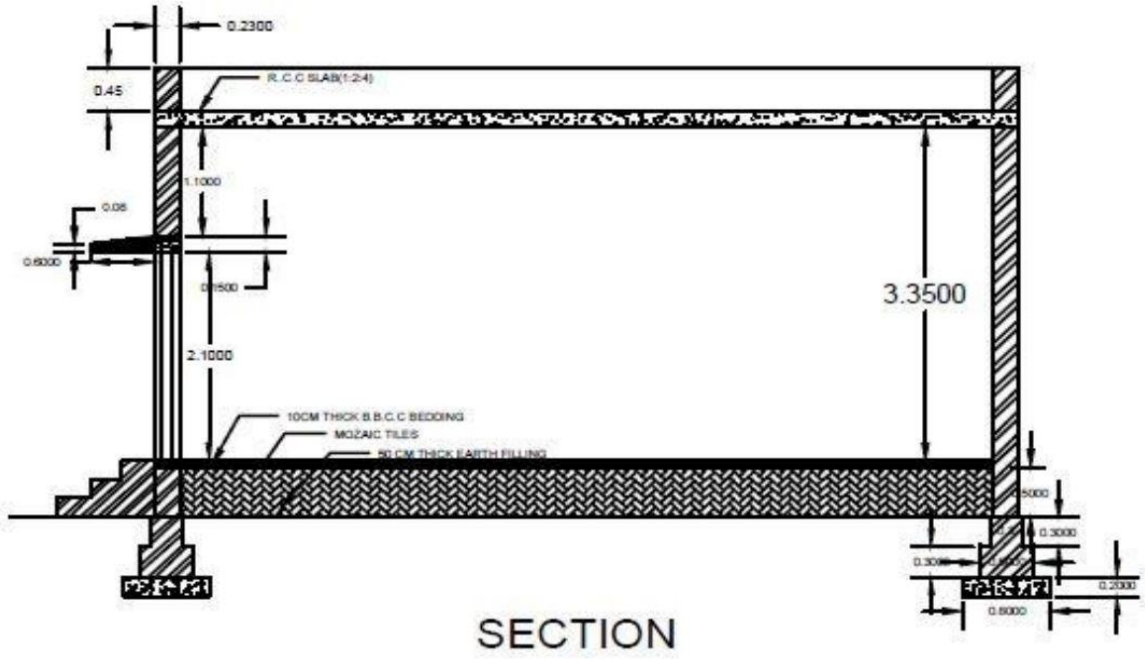


Fig.13.1.2 -section of public library

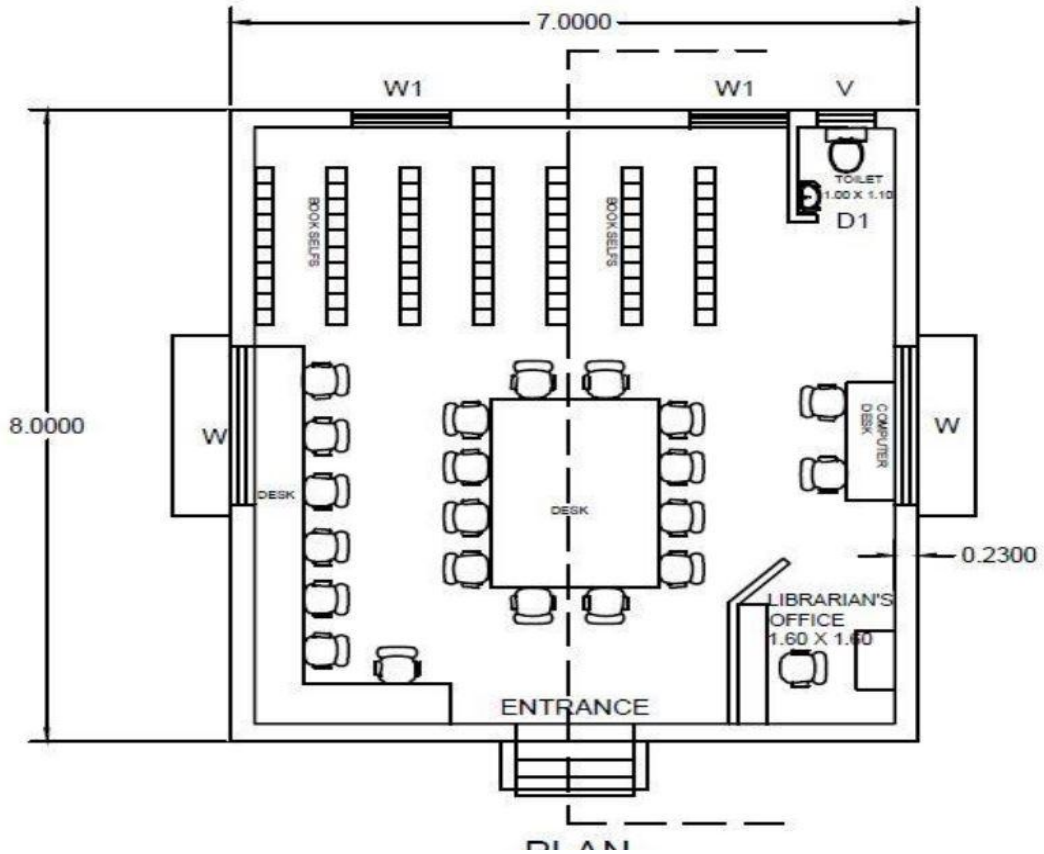


Fig.13.1.3-plan of public library

Measurement sheet						
Sr.	description	No.	L	B	H	Quantity
1.	Excavation for foundation for column footing	9	2.2	2.2	1	43.56 cu.m
	Brickwork in super structure	1	29.88	0.23	3.35	23.02 cu.m
	Deduction for door and window entrance	1	1.2	0.23	2.1	0.58 cu.m
	D1	1	0.8	0.23	2.1	0.39 cu.m
	W	2	2	0.23	1.2	1.10 cu.m
	W1	2	1	0.23	1.2	0.552 cu.m
	V	1	0.6	0.23	0.6	0.089 cu.m
	Total deduction for doors and window					2.72 cu.m
2.	Deduction for lintel above door and window with 15 cm offset on both faces					
	entrance	1	1.5	0.23	0.15	0.05 cu.m
	D1	1	1.1	0.23	0.15	0.04 cu.m
	W	2	2.3	0.23	0.15	0.16 cu.m
	W1	2	1.3	0.23	0.15	0.084 cu.m
	V	1	0.9	0.23	0.15	0.031 cu.m
	Total deduction					0.37 cu m

	Total brickwork in super structure					20 cu.m
3.	Providing 15mm thick cement plaster in single coat on Rough (Similar)side of single or half brick walls for interior plastering up to floor two level and finished even and smooth in (ii) Cement mortar 1:4					
	Room					
	Side wall 1	2	7.54		3.35	50.51 sq m
	Side wall 2	2	6.54		3.35	43.082 sq m
	Ceiling	1	7.54	6.54		49.31 sq m
	total					143.63 sq m
	Deduction of door& window					
	Entrence	0.5	1.2	-	2.1	1.26 sq m
	D1	0.5	0.8	-	2.1	0.84 sq m
	W	12	2	-	1.2	2.4 sq m
	W1	1	1	-	1.2	1.2 sq m
	v	0.5	0.6	-	0.6	0.18 sq m
	Total deduction of plaster					5.88 sq m
	Total intrior plaster work					137.95 sq m
4.	Providing 20 mm thick double coat cement plaster on exterior brick / concrete work for plastering comprising of base coat of 12 mm thick cement plaster in cement mortar (1 Cement : 4 coarse sand) in rough finishing and 8 mm thick top coat of cement					
	Side wall 1	2	8	-	3.9	62.4 sq m
	Side wall 2	2	7	-	3.9	54.6 sq m
	Deduction					
	Entrence	1	1.2	-	2.1	2.52 sq m
	D1	1	0.8	-	2.1	1.68 sq m
	W	2	2	-	1.2	4.8 sq m
	W1	2	1	-	1.2	2.4 sq m
	V	1	0.6	-	0.6	0.36 sq m
	total					11.76 sq m
	Net exterior plster					105.24 sq m
5.	Providing and laying Vitrified tiles 8 to 10 mm thick , 24" x 24" in flooring on 10mm thick cement plaster 1:3 (1- cement : 3 - coarse sand) and jointed with white cement slurry	1	6.54	7.54		50.07 sq m
6.	Providing and fixing 35 mm thick shutters for Doors including nodized steel butt hinges with necessary screws. (A) Indian teak wood. (i) Fully Paneled.					
	Entrence	1	1.2	-	2.1	2.52 sq m
	D1	1	0.8	-	2.1	1.68 sq m
	W	2	2	-	1.2	4.8 sq m
	W1	2	1	-	1.2	2.4 sq m

	v	1	0.6	-	0.6	0.36 sq m
	Total wood work for door and shutter					11.76 sq.m
7.	r.c.c work for slab	7	8	0.2	5	11.48 sq .m
8.	bottom	1	6.3	0.23	-	1.44 sq .m
	Sides	2	6.53	-	0.3	3.91 sq .m
	Ends	2	-	0.23	0.3	0.138 sq .m
	For total 4 no.of beams	4 x 5.5				22.02 sq .m
9.	Quantity of steel bars					
	1) 20 mm dia straight bar L = 6.3m + (0.23 + 0.23) + 2(9 x 0.020) – (2 x0.025) = 7.07 m For 4 nos of beam total weight of straight bar is = 4 x 69.82 = 279.28 kg	4	7.07@2.47 kg/m			69.82 kg
	2) 20 mm dia. bentup bars x = 0.3 – 2x0.025 - 2x0.008 - 2x1/2x0.020 = 0.214 m L = 7.07 + 2 x (0.45x) = 7.07 + 2 x (0.214 x 0.45) = 7.26 m No of bars = 2 For 4 nos of beams total weight of 79) steel = 4 x 35.8 = 143.4 kg	2	7.26 @ 2.47 kg/m			35.8 kg
	3) 16 mm dia anchor bar L = 6.53 + 2 x 9 x 0.016 – 2 x 0.025 = 6.768 For 4 nos. of beam total wt. of 80) anchor bars = 4 x 28.83 = 115.33kg	3	6.768 @ 1.42 kg/m			28.3 kg
	B = 0.3 - 2x0.025– 2 x 0.008 = 0.234 m A = 0.230 – 2 x 0.025 – 2 x 0.008 = 0.174 m L = 2(0.174 + 0.234) + 0.15 = 0.966m No of stirrups = 6.53 – 2 x 0.02 /0.3 = 21.63 say 22 nos For same size of 4 beams no of stirrups = 22 x 4 = 88 nos total weight for 4 beams is 7.552 x 4 = 30.225 Total weight of steel in all 4	22	0.966 @ 0.35 kg/m			7.55 kg

Table no.13.1.1 measurement sheet

Abstract sheet					
Sr no.	Description	quantity	Rate	Per	amount
1.	Brick work using common burnt clay building bricks having crushing strength not less than 35 kg./Sq.Cm. in super structure in Cement Mortar 1:5. (1- Cement : 5 –fine sand) (A) Modular	22.72	4431.00	Cu.m	100672.32
2.	Providing and laying ordinary cement concrete 1:2:4 (1- Cement 2- coarse sand : 4- graded stone aggregates 20 mm nominal size) and finishing smooth with, curing etc. complete including the cost of formwork but excluding the cost of reinforcement for R.C.C work in COLUMNS:	23.5	3816.75	Cu.m	89693.63
3.	Providing and laying ordinary cement concrete 1:2:4 (1- Cement 2- coarse sand : 4- graded stone aggregates 20 mm nominal size) and finishing smooth with,curing etc. complete including the cost of formwork but excluding the cost of reinforcement for R.C.C work in BEAM	1.73	3816.75	Cu.m	6617.79
4.	Providing and laying ordinary cement concrete 1:2:4 (1- cement 2 - coarse sand : 4- graded stone aggregates 20 mm nominal size) and finishing smooth with, curing etc. complete including the cost of formwork but excluding the cost of reinforcement	11.48	3816.75	Cu.m	43816.29
5.	Providing and laying ordinary cement concrete 1:2:4	-	3990	Sq.m	3990
6.	Providing H.Y.S.D. Bar as per I.S. Standard reinforcement for R.C.C. work including bending, binding and placing in position complete up to floor two level	645.15	59.85	kg	38612.23
7.	Providing 15mm thick cement plaster in single coat on Rough (Similar)side of single or half brick walls for interior plastering up to floor two level and finished even and smooth in (ii) Cement mortar 1:4	137.95	134.40	Sq.m	18540.48
8.	Providing 20 mm thick double coat cement plaster on exterior brick / concrete work for plastering comprising of base coat of 12 mm thick cement plaster in cement mortar (1 Cement : 4 coarse sand) in rough finishing and 8 mm thick top coat of cement mortar 1:2 (1 Cement : 2 Coarse sand) finished with trovel including scaffolding Curing etc. complete.	126	220.50	Sq.m	27783.0
9.	Providing and laying Vitrified tiles 8 to 10 mm thick , 24" x 24" in flooring treads of steps and landing laid on a bed of 30mm thick cement mortar 1:5 (1- cement :5 - coarse sand) finishing	50.07	870.45	Sq.m	43583.43

	with flush pointing in white cement.				
10.	Providing and fixing 35 mm thick shutters for Doors including anodized steel butt hinges with necessary screws. (A) Indian teak wood. (i) Fully Paneled.	11.76	4935	Sq.m	58035.60
11.	Providing and fixing 35 mm thick shutters for windows including anodized steel butt hinges with necessary screws. (A) Indian Teak Wood (iii) Partly paneled and partly glazed.	-	3990	Sq.m	3990
12.	Wall painting (two coats) with plastic emulsion paint of approved brand and manufacture including putty finished on interior undecorated wall and ceiling surface to give an even shade including thoroughly brushing the surface free from mortar droppings and other foreign matter and sand papered Smooth.	126.4	236.25	Sq.m	29862
13.	Wall painting	137.95	147	Sq.m	20278.65
Total Amount					1984203.10

Table no-13.1.2-abstract sheet

13.1.3 pipe culvert :-

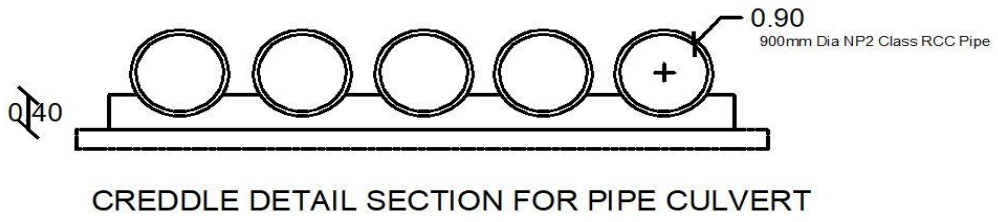


Fig .13.3.1-plan of pipe culvert

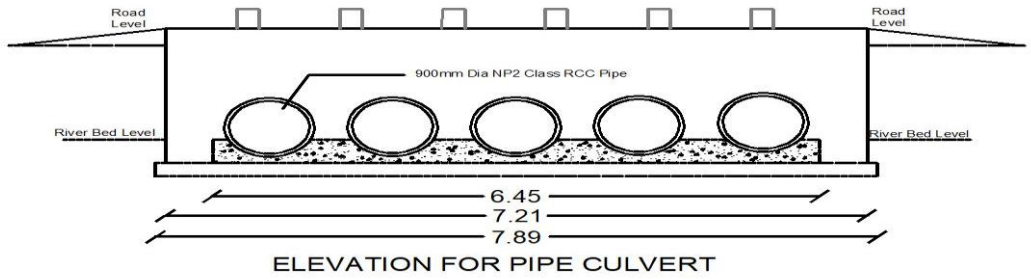


Fig.13.3.2-elevation of pipe culvert

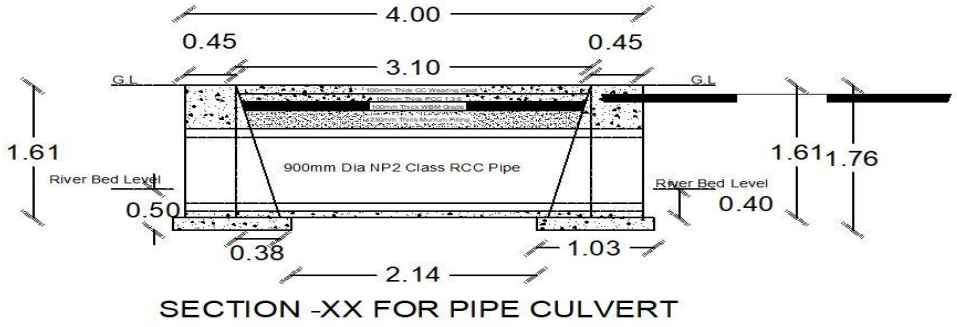


Fig.13.3.3 section of pipe culvert

Sr no.	description	length	width	height	No.	Total quantity
1	Excavation (foundation)	7.89	4.2	0.5	1	33.13 m3
2	Cement concrete 1:3:6 formwork (a) Foundation and plinth	7.21	2	1.03	2	29.70 m3
3	Cement concrete M-200 (B) Walls, fom top of foundation level upto					
	Rectaingular	7.21	0.45	1.61	1	5.22 m3
	Triangle	0.5	0.38	1.61	1	0.30
total						5.55 m3
4.	Providing form work of ordinary timber planking (C) Vertical surface such as walls	7.89	2.30	-	3	54.44 m3
5	Filling in Foundation	7.89	3.05	0.5	1	12.03 m3
6	NP2 PIPE 900mm dia	4	-	-	5	20rmt
7	100mm thick WBM Grade - I	7.89	0.1	3.1	1	2.44 m3
8	Concrete M-200	7.89	0.1	3.1	1	2.44 m3
9	Fe-500/500D TMT Bars reinforcement A)piers B) abutments C) R.C.C.Returns	0.11	-	-	-	0.11 m
10	Fe-500/500D TMT Bars reinforcement. A) RCC Karb B) RCC Footpath C) R.C.C.Approch slab D) Wearing Coat	0.12	-	-	-	0.12 m
11	Guard stone	12	-	-	-	12 nos
12	A.C. pipes of 100mm diameter	9	-	-	-	9 nos

Table no.13.3.1-measurement sheet table

Sr. no	description	quantity	Rate	per	Amount
1	Excavation for foundation	33.13	86.76	M3	2874.35
2	Cement concrete 1:3:6 formwork in (a) Foundation and plinth	29.70	2382.99	M3	70774.803
3	Cement concrete M-200 (B) Walls, fom top of foundation level upto floor two level	5.55	3714.78	M3	20617.029
4	Providing form work of ordinary timber planking (C) Vertical surface such as walls (any thickness) partitions.	54.44	149.98	M2	8164.91
5	Filling in Foundation	12.0.	290.88	M3	3490.56
6	NP2 PIPE 900mm dia	20	1363.5	Rmt	27270
7	100mm thick WBM Grade - I	2.44	875.67	M3	2136.63
8	Concrete M-200	2.44	3362.29	M3	8203.98
9	Fe-500/500D TMT Bars reinforcement A)piers B) abutments C) R.C.C.Returns	0.11	45458.08	M	4545.80
10	Fe-500/500D TMT Bars reinforcement. A) RCC Karb B) RCC Footpath C) R.C.C.Approch slab (D) Wearing Coat	0.12	44181.44	M	4420.11
11	Guard stone	12	208.03	Nos	2500
12	A.C. pipes of 100mm diameter	9	52.42	Nos	471.78
total					155469.95 rs.

Tablno.13.3.2-abstract sheet

culvert is a structure that allows water to flow under a road, railroad, trail, or similar obstruction from one side to the other. Typically embedded so as to be surrounded by soil, a culvert may be made from a pipe, reinforced concrete or other material. In the United Kingdom, the word can also be used for a longer artificially buried watercourse.

Culverts are commonly used both as cross-drains to relieve drainage of ditches at the roadside, and to pass water under a road at natural drainage and stream crossings. When they are found beneath roads, they are frequently empty. A culvert may also be a bridge-like structure designed to allow vehicle or pedestrian traffic to cross over the waterway while allowing adequate passage for the wate

13.1.4 Bank:

A bank is a financial institution that accepts deposits from the public and creates a demand deposit while simultaneously making loans. Lending activities can be directly performed by the bank or indirectly through capital markets

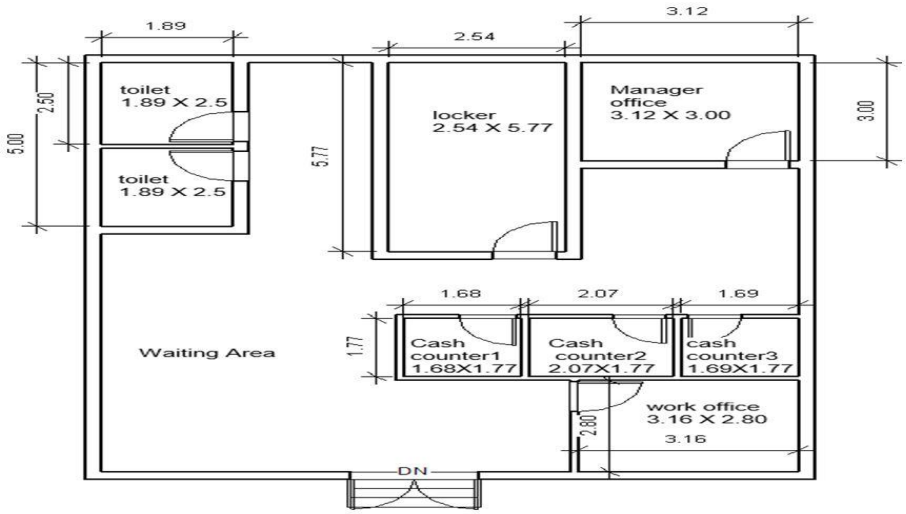


Fig.13.1.4.a plan of bank

Fig.13.1.4.b elevation of bank

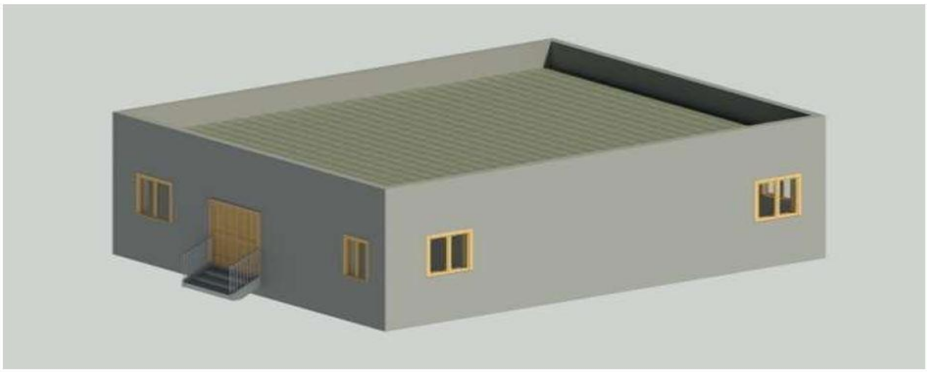


Fig.13.1.4.c side view of bank

Item number	Item description	No.	Length L(m)	width B(m)	Height H(m)	Quantity	Total
1	excavation for foundation L = 80.74-0.5(0.9*10) L = 76.24	1	76.24	0.9	1.1	75.47	75.47m3
2	BBCC	1	76.24	0.9	0.2	13.72	13.72m3
3	Brick masonary upto plinth c:m (1:6)						
	first: L = 80.74-0.5*.5*10	1	78.24	0.6	0.3	14.083	
	L= 78.24						
	second:L= 80.74-0.5*.4*10	1	78.74	0.5	0.3	11.81	
	L=78.74						
	third:L=80.74-.5*.3*10	1	79.24	0.4	0.85	26.94	
	L=79.24						
	Steps:						
	First step:	1	1.1	0.9	0.15	0.15	
	Second step:	1	1.1	0.6	0.15	0.1	
	Third step:	1	1.1	0.3	0.15	0.05	
	53.19m3						
4	Brick Masonry above plinth upto slab level in c.m 1:6						
	L=80.74-0.5*0.3*10 L=79.24	1	79.24	0.3	3.5	83.2	83.2m3
	Deduction :-						
	D1	1	2.5	0.3	2.1	1.575	
	D2	5	1.2	0.3	2.1	3.75	
	W	6	1.2	0.3	1.2	2.592	
	V	2	0.9	0.3	0.7	0.378	
							(-) 8.295m3
	Deduction for lintels abovedoor & windows with 15cm bearing at each end						
	D1	1	2.8	0.3	0.15	0.126	
	D2	5	1.5	0.3	0.15	0.3375	
	W	6	1.5	0.3	0.15	0.405	
							(-) 0.975m3
							grand total= 73.985m3

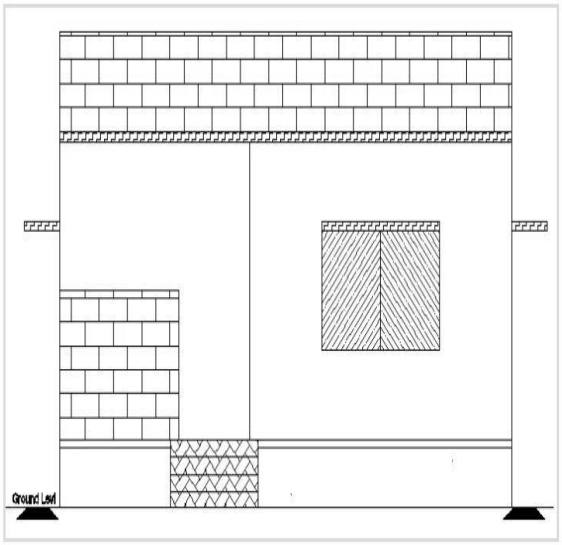
5	Smooth plaster inside theRooms and celliung in C.M 1:3						
	Plaster For wall						
	Inquiry room	2	3.16		3.5	22.12	
		2	2.8		3.5	19.6	
	Manager office	2	3.12		3.5	21.84	
		2	3		3.5	21	
	Locker	2	2.54		3.5	17.71	
		2	5.77		3.5	40.39	
	W.C	4	1.89		3.5	26.46	
		4	2.5		3.5	35	
	Infront of W.C	2	2.7		3.5	18.9	
		2	1.89		3.5	13.23	236.25m2
	Celling Plaster:						
	Inquiry room	1	3.16	2.8		8.84	
	Manager Office	1	3	3.12		9.36	
	Locker	1	2.54	5.77		14.65	
	W.C	1	1.89	5		9.45	42.3m2
	Deduction:						
	D1	0.5	3.5		2.1	3.675	
	D2	5	1.2		2.1	12.6	(-)16.2m2
							Grand total=
							262.34m2
6	RCC Work in Slab, Chajja &Lintel L=10+2*0.3 L=10.6 B=12.5+2*0.3 B=13.1	1	10.6	13.1	0.15	20.829	20.829m2
	RCC Chajja						
	W	6	1.5	0.6	0.1	0.54	0.54+0.976
							Grand total= 22.339m3
7	2cm thick marble flooring						
	Locker	1	2.54	5.77		14.65	
	Manager office	1	3.12	3		9.36	
	Inquiry counter	1	3.16	2.8		8.85	
	Cash Counter 1&3	2	1.65	1.75		5.947	
	Cash Counter 2	1	2.07	1.77		3.66	
	Passage	1	1.85	5.77		10.67	
	Passage	1	6.66	1.97		13.12	
	Passage	1	10.5	2		21	
	Passage	1	3.12	3.07		9.578	
	Door Sills	5	1.2	2.1		12.6	138.32m2

Table-13.1.4.a Measurement sheet

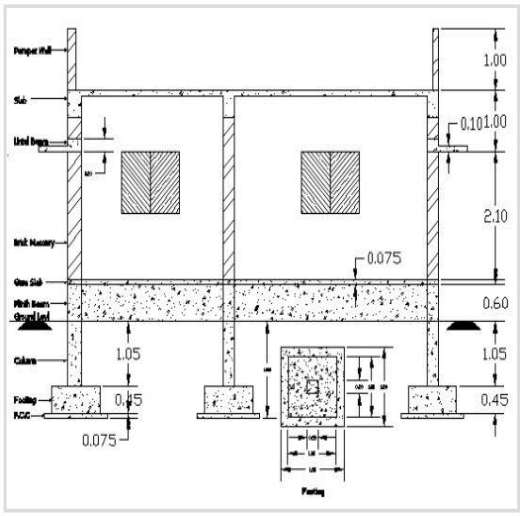
Table no.13.1.4.b abstract sheet

Item no	Particulers of item	Quantity	per	Rate	Amount in RS	
1	Excavation in foundation	75.47	m3	85	6414.95	
2	PCC in Foundation in 1:3:6	13.72	m3	3200	43904	
3	Brickwork in foundation	53.19	m3	3200	170208	
4	Brickwork in super structure in cement mortar 1:4	73.92	m3	3500	258749	
5	RCC Work in Slab, Chajja and lintel	22.339	m3	8800	196583	
6	2cm Thick marble Flooring	138.32	m2	500	69164	
7	Earth filling in plinth	64.876	m3	50	3244	
8	Plastering					
	inner	262.34	m2	150	39351	
	outer	233	m2	150	34950	
9	Painting in same area as plastering	495.34	m2	220	108974	
10	wooden materials				35000	
11	glass plates				7000	
					total=	9,73,553/-
				add 3% contingencies=		29,206
			add 2% work charged establish=			19,471
				grand total=		10,22,231

13.1.5 house conditions

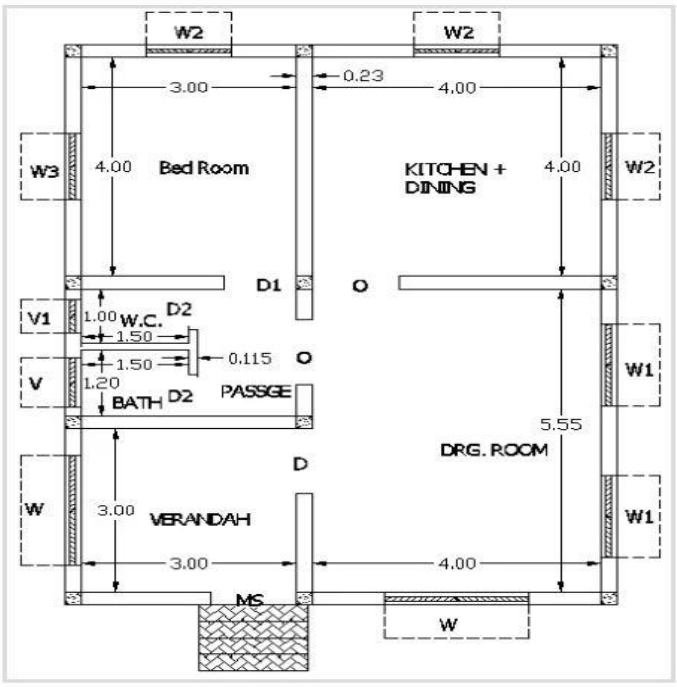


Elevation



Section

Fig.13.1.5.1 & 13.1.5.2-elevation & section of house condition



Plan

Fig -13.1.5.3- plan of house condition

Measurement sheet(table no.13.1.5.1)							
Sr no.	description	No.	length	width	height	quantity	Unit
1	**Earthwork in Excavation in Foundation**						
	Footing (1m x 1m)	11	2.2	2.2	1.58	84.12	Cu.m
	Depth From GL = 0.6 + 1 + 0.6						
	0.6 =Extra For working space						
2	**Footing P.C.C.**	11	1.3	1.3	0.075	1.39	Cu.m
	Footing (1m x 1m)						
	Thickness = 0.075						
	D = 0.150 + 1.0 + 0.15						
3	**Footing R.C.C.**						
	Base(1m x 1m)	11	1	1	0.45	4.95	Cu.m
	Thickness = 0.450						
4	**Column up to Plinth Level R.C.C.**	11	0.230	0.230	1.050	0.61	Cu.m.
5	backfill						
	Backfilling In Footing						
	Excavation Area	11	2.200	2.200	1.580	84.12	Cu.m.
	Deduction						
	Footing P.C.C.	-11	1.300	1.300	0.075	-1.39	Cu.m.
	Footing R.C.C.	-11	1.000	1.000	0.450	-4.95	Cu.m.
	Footing Column	-11	0.230	0.230	1.050	-0.61	Cu.m.
					total	77.16	Cu.m
	Plinth area out to out	1	10.240	7.690	0.600	47.25	Cu.m.
6	**Plinth Beam R.C.C.** Beam (230 mm x 600 mm)	3	10.240	0.230	0.600	4.24	Cu.m.
7	**Grae Slab R.C.C.**						
	Plinth area out to out	1	10.240	7.690	0.100	7.87	Cu.m.
	Deduction						
	Column	-11	0.230	0.230	0.100	-0.06	Cu.m.
					total	7.82	Cu.m
8	**Column Up to Slab Level R.C.C**	11	0.230	0.230	2.650	1.54	Cu.m.
9	**Brick Masonry**						
	230 mm thick wall Brick Masonry						

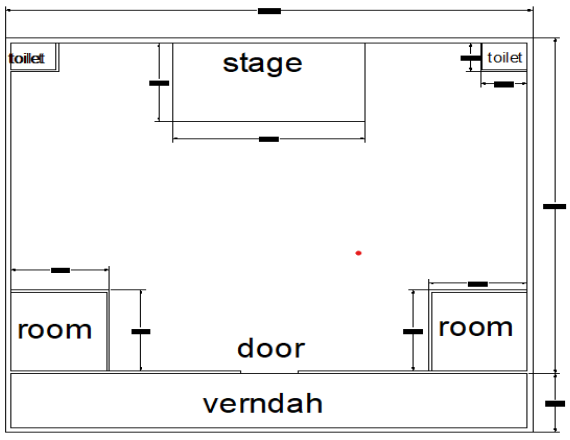
	Long Wall	3	10.240	0.230	2.650	18.72	Cu.m.
	Shot wall-1	3	3.000	0.230	2.650	5.49	Cu.m
	Shot wall-1	1	3.000	0.230	1.200	0.83	Cu.m.
	Shot Wall-2	3	4.000	0.230	2.650	7.31	Cu.m.
	DEDUCTION						
	Column	-11	0.230	0.230	2.650	-1.54	Cu.m.
	Window W	-2	2.000	0.230	1.200	-1.10	Cu.m.
	Window W1	-2	1.500	0.230	1.200	-0.83	Cu.m.
	Window W2	-3	1.200	0.230	1.200	-0.99	Cu.m.
	Window W3	-1	1.200	0.230	1.500	-0.41	Cu.m.
	Door o	-2	1.200	0.230	2.100	-1.16	Cu.m.
	Door D	-1	1.200	0.230	2.100	-0.58	Cu.m.
	Door D1	-1	1.000	0.230	2.100	-0.48	Cu.m.
	Door MS	-1	2.000	0.230	1.200	-0.55	Cu.m.
	Vent	-1	0.900	0.230	0.600	-0.12	Cu.m.
	Vent V1	-1	0.600	0.230	0.600	-0.08	Cu.m.
					total	24.49	Cu.m
	115 mm thick wall Brick Masonry					4.87	Cu.m
10	**In Side Plaster**						
	Bed room						
	Long Wall	2	4.000		3.000	24.00	Sq.m.
	Shot wall	2		3.000	3.000	18.00	Sq.m
	Deduction						
	Door D1	-0.5	1.000		2.100	-1.05	Sq.m.
	Window W2	-0.5	1.200		1.000	-0.60	Sq.m
	Window W3	-0.5	1.200		1.200	-0.72	Sq.m.

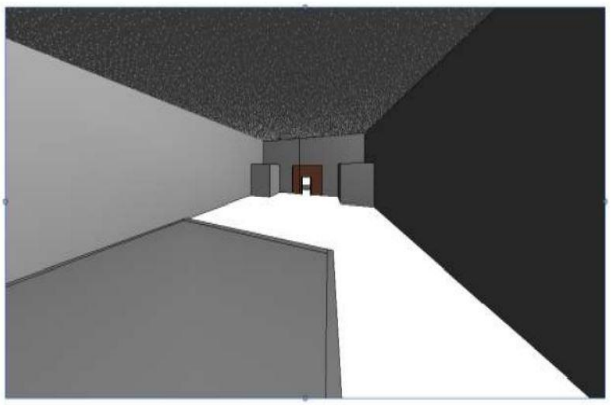
	Kitchen + Dining						
	Long Wall	2	4.000		3.000	24.00	Sq.m.
	Short wall	2		4.000	3.000	24.00	Sq.m
	Deduction						
	Door O	-0.5	1.200		2.100	-1.26	Sq.m.
	Window W2	-1	1.200		1.000	-1.20	Sq.m
	Verandah						
	Long Wall	2	3.000		3.000	18.00	Sq.m.
	Shot wall	1		3.000	3.000	9.00	Sq.m.
	Shot wall	1		3.000	1.200	3.60	Sq.m.
	Deduction						
	Door MS	-0.5	1.200		1.200	-0.72	Sq.m.
	Door D	-0.5	1.200		2.100	-1.26	Sq.m.
	Window W	-0.5	2.000		1.200	-1.20	Sq.m.
	DRG. Room						
	Long Wall	2	5.550		3.000	33.30	Sq.m.
	Shot wall	2		4.000	3.000	24.00	Sq.m.
					total	208.89	Sq.m
11	**Celling Plaster**						
	Bed Room	1	4.000	3.000	-	12.00	Sq.m.
	Kitchen + Dining	1	4.000	4.000	-	16.00	Sq.m.
	Verandah	1	3.000	3.000	-	9.00	Sq.m.
	DRG. Room	1	5.550	4.000	-	22.20	Sq.m.
	Bath Room	1	1.500	1.200	-	1.80	Sq.m.
	W.C	1	1.500	1.000	-	1.50	Sq.m.
	Passage	1	2.320	1.390	-	3.22	Sq.m.
					total	65.72	Sqm
12	**Slab RCC**	-	-	-	-	12.59	Cu.m

13	**paint**					191.18	Sq.m

Abstract sheet(table no:13.1.5.2)					
Sr no.	description	quantity.	Rate	per	amount
1	Earthwork in Excavation in Foundation	84.12	86.75	M3	7297.41
2	Footing P.C.C.	1.39	2382.99	M3	3312.35
3	Footing R.C.C.	4.95	3424.82	M3	2089.14
4	Column up to Plinth Level R.C.C.	0.61	3424.82	M3	2088
5	Backfilling In Footing	47.25	3424.82	Sq m	1617.80
6	Plinth Beam R.C.C.	4.24	3424.82	M3	14517.76
7	Grae Slab R.C.C.	7.85	4096	M3	32153
8	Column Up to Slab Level R.C.C	1.54	44181.44	M3	68034.75
9	Brick Masonry	4.87	3002.80	M3	14396
10	In Side Plaster	208.89	134.63	Sq m	28132
11	Celling Plaster	65.72	207.25	Sq m	13620
12	Slab RCC	12.59	3424.82	M3	43115.58
13	paint	191.18	72.72	Sq m	13902.60
Total amount					244272.9
		Contractor profit	Add(10%)		24427.2
		Electrical	Add(6%)		13465
		Water charge	Add(3%)		11546
		Total amount			293711.1

13.6 community hall:-





INNER VIEW

Fig.13.6.1 & 13.6.2 –plan and interview of community hall

ELEVATION

Fig.13.6.3-elevation of community hall

Quantity sheet							
Sr no.	description	No.	length	width	height	quantity	Total
1.	Excavation =109.7 - 0.5*6*0.9 =107	1	107	0.9	1.1	105.93	105.93 m3
2.	brick cement concrete 1:4:8 for foundation	1	107	0.9	0.2	19.260	19.26 m3
3.	Brick masonary L=109.7-.5*0.6*6 =109.7 L=109.7-0.5*0.5*6 =108.2 L=109.7-.5*0.4*6 =108.5	1 1 1	109.7 108.2 108.5	0.6 0.5 0.4	0.3 0.3 1.15	19.42 16.23 49.91	86.16 m3
4.	Brick Masonary above plinth up to slab level in C.M 1:6 L=109.7-0.5*3*6 =108.8	1	108.8	0.3	5	163.2 m3	
	deduction						
	D1	1	3	0.3	2.1	1.89	
	D2	2	1.2	0.3	2.1	1	
	D3	1	0.7	0.3	2.1	0.44	
	W1	4	1.5	0.3	1.5	2.7	
	W2	2	1.2	0.2	1	0.48	
	v	1	0.6	0.2	0.6	0.072	
						total	(-)6.58 m3
	deduction						
	D1	1	3.3	0.3	0.15	0.148	

	D2	2	1.5	0.3	0.15	0.09	
	D3	1	1	0.3	0.15	0.045	
	W1	4	1.8	0.3	0.15	0.324	
	W2	2	1.5	0.2	0.15	0.09	
	v	1	0.9	0.2	0.15	0.027	
						total	(-)0.73 m3
					Total deduction		155.89m3
5.	smooth plastering rooms & celling in cm 1:3 plaster for wall						
	hall	2	21.8	-	5	218	
		1	20	-	5	100	
	wall	2	4.3	-	5	43	
	room	4	4	-	5	80	
	varndah	2	8.5	-	5	85	
	Ceiling plaster	1	20	25	-	500	
		2	4	4	-	32	
					total	1058	
	Deduction						
	D1	0.5	3	-	2.1	3.15	
	D2	2	1.2	-	2.1	5.04	
	D3	1	0.7	-	2.1	1.47	
	W1	2	1.5	-	1.5	4.5	
	W2	1	1.2	-	1	1.2	
						total	(-)5.36 m2
					total		1042.64 m2
6.	Rcc work in slab chajja						
	L=22						
	B=20	1	22	20	0.12	52.8 m3	
	Rcc chajja						
	W1	4	1.5	0.60	0.1	0.36	
	W2	2	1.2	0.4	0.1	0.09	0.456 m3
						+	0.73
						total	53.98 m3
7.	2 cm thick marble flooring						
	Room	2	4	4	-	32	
	Varndah	1	3	20	-	60	
	Hall	-	-	-	-	372.72	
	Door sill d	3	1.2	0.3	-	1.08	
						total	465.8 m2

8.	Earth filling in plinth H=0.9-0.075-0.025-0.02 =0.78						
	Room	2	4	4	0.78	24.96	
	Varndah	1	3	20	0.78	46.8	
	Hall	1	-	-	-	290.72	
	toilet	1	2	2	0.78	3.12	
						Total	365.6 m3

Table 13.6.1 measurement sheet

Measurement sheet					
Item no.	description	quantity	Per	rate	Amount
1	excavation in foundation	105.93	M3	85	9004
2	Plain cement Concrete (pcc) in foundation in 1:3:6	19.26	M3	3000	57780
3	Brickwork in foundation	86.19	M3	3000	258570
4	Brickwork in super structure in cement mortar 1:4	155.89	M3	3200	498848
5	Rcc Work in Slab, chajja and lintel	53.98	M3	8700	469626
6	2cm thick marble	465.8	M2	495	230573
7	Earth filling in plinth	365.6	M3	50	18280
8	wooden stage,doors,windows	-	-	-	25000
			total		1546531
			Add(5%)		46395
			Grand total		1623856

Table 13.6.2-abstarct sheet

13.2 Recommendations / why about new proposals of Designs:

(public library)Public libraries provide books and other materials for people to read and use. These materials are educational and lead to self-improvement and develop basic literacy skills. Public Libraries have always seen as an educational resource for all people.

(pipe culvert) It can be constructed of any desired strength by proper mix design, thickness, and reinforcement. They are economical. These pipes can withhold any tensile stresses and compressive stresses. The crossing of water is under the structure.

(u/g sump) u/g sump is a low space that collects often undesirable liquids such as water or chemicals.

A *sump* can also be an infiltration basin used to manage surface runoff water and recharge underground aquifers. Sump can also refer to an area in a cave where an underground flow of water.

(rain water harvesting)The importance of rainwater harvesting lies in the fact that it can be stored for future use. Just as it can be used directly so also the stored water can be utilized to revitalize the ground level water and improve its quality. This also helps to raise the level of ground water which then can be easily accessible.

(community hall) Community centres or community halls are public locations where members of a community tend to gather for group activities, social support, public information, and other purposes. They may sometimes be open for the whole community or for a specialized group within the greater community.

13.3/ Benefit of the Villagers about new path technology / Designsproposed by the students There are following structures need to build up to Progress of village and their people:

Physical Infrastructure Facilities should need such as: Higher secondary school, closed drainage system, panchayat building, sanitation facilities, Child Welfare center etc.

Social Infrastructure Facilities should need such as: Police station, hospitals, community Housing, General market, etc.

Socio-Cultural Infrastructure Facilities should need such as: Govt. grocery shop, Community hall, Library, Auditorium, Recreational activities, pick up stand etc.

Sustainable Infrastructure Facilities should need such as: Green building, organic waste controller, Natural Resources (petrol) Solar system, Biogas plant, Rain Water Harvesting, etc.

If these structures available in the village, Villager can easily get the advantages of the system and they not need to depend on other town, good drainage system and sanitation facility in village ensure the good health and well-being of people.

14.TECHNICAL ISSUE (EXPLAIN ALL TOPIC AND FOR MINIMUM ONE TOPIC EXPLAIN NEW CONCEPT, DESIGN, PROTOTYPE MODEL WITH ACTUAL COST ESTIMATION)

14.1 Civil Engineering

14.1.1 Advanced Earthquake Resistant:

Earthquake-resistant structures are structures designed to protect buildings from earthquakes. While no structure can be entirely immune to damage from earthquakes, the goal of earthquake-resistant construction is to erect structures that fare better during seismic activity than their conventional counterparts. According to building codes, earthquake-resistant structures are intended to withstand the largest earthquake of a certain probability that is likely to occur at their location.Currently, there are several design philosophies in earthquake engineering, making use of experimental results, computer simulations and observations from past earthquakes to offer the required performance for the seismic threat at the site of interest.

14.1.2 Seismic Retrofitting of Buildings:

Seismic failure due to earthquakes. With better understanding of seismic demand on structures and with our recent experiences with large earthquakes near urban centers, the need of seismic retrofitting is well acknowledged. Prior to the introduction of modern seismic codes in the late 1960s for developed countries (US, Japan etc.) and late 1970s for many other parts of the world (Turkey, China etc.), many structures were designed without adequate detailing and reinforcement for seismic protection. In view of the imminent problem, various research work has been carried out. State-of-the-art technical guidelines for seismic assessment, retrofit and rehabilitation have been published around the world – such as the ASCE-SEI 4 and the New Zealand Society for Earthquake Engineering (NZSEE)'s guidelines. These codes must be regularly updated; the 1994 Northridge earthquake brought to light the brittleness of welded steel frames, for example.

The retrofit techniques outlined here are also applicable for other natural hazards such as tropical cyclones, tornadoes and severe winds from thunderstorms. Whilst current practice of seismic retrofitting is predominantly concerned with structural improvements to reduce the seismic hazard of using the structures, it is similarly essential to reduce the hazards and losses from non-structural elements. It is also important to keep in mind that there is no such thing as an earthquake-proof structure, although seismic performance can be greatly enhanced through proper initial design or subsequent modifications.

retrofitting is the modification of existing structures to make them more resistant to seismic activity, ground motion, or soil.

14.1.3 Advance Practices in Construction field in Modern Material, Techniques and Equipment's

The construction industry is repeatedly criticised for being inefficient and slow to innovate. The basic methods of construction, techniques and technologies have changed little since Roman times. But the application of innovation in the construction industry is not straight forward.

Every construction project is different, every site is a singular prototype, construction works are located in different places, and involve the constant movement of personnel and machinery. In addition, the weather and other factors can prevent the application of previous experience effectively.

The term 'advanced construction technology' covers a wide range of modern techniques and practices that encompass the latest developments in materials technology, design procedures, quantity surveying, facilities management, services, structural analysis and design, and management studies.

Incorporating advanced construction technology into practice can increase levels of quality, efficiency, safety, sustainability and value for money. However, there is often a conflict between traditional industry methods and innovative new practices, and this is often blamed for the relatively slow rate of technology transfer within the industry.

The adoption of advanced construction technology requires an appropriate design, commitment from the whole project team, suitable procurement strategies, good quality control, appropriate training and careful commissioning.

Advanced construction technologies are commonly described as including (amongst many others) advanced forms of:

- Materials.
- Building information modeling (BIM).
- Cladding systems.
- Computer aided design and computer aided manufacturing (CAD/CAM).
- Computer numerical control.
- Construction Innovation Hub.
- Construction plant.
- Modern methods of construction.
- Modular construction.
- Offsite manufacturing.
- Prefabrication and preassembly.
- Research and development.
- Site investigations and surveying.
- Substructure works.

14.1.4 Engineering Aspects Of Soil mechanics - Environmental Impact Assessment

Soil Mechanics is a discipline of Civil Engineering involving the study of soil, its behaviour and application as an engineering material.

Soil Mechanics is the application of laws of mechanics and hydraulics to engineering problems dealing with sediments and other unconsolidated accumulations of solid particles, which are produced by the mechanical and chemical disintegration of rocks, regardless of whether or not they contain an admixture of organic constituents.

Soil consists of a multiphase aggregation of solid particles, water, and air. This fundamental composition gives rise to unique engineering properties, and the description of its mechanical behavior requires some of the most classic principles of engineering mechanics.

Engineers are concerned with soil's mechanical properties: permeability, stiffness, and strength. These depend primarily on the nature of the soil grains, the current stress, the water content and unit weight.

14.1.5 Water Supply-Sewerage system-Waste Water- Sustainable development techniques:

Water supply is the provision of water by public utilities, commercial organisations, community endeavors or by individuals, usually via a system of pumps and pipes. Aspects of service quality include continuity of supply, water quality and water pressure. The institutional responsibility for water supply is arranged differently in different countries and regions (urban versus rural). It usually includes issues surrounding policy and regulation, service provision and standardization.

A sewerage system, or wastewater collection system, is a network of pipes, pumping stations, and appurtenances that convey sewage from its points of origin to a point of treatment and disposal.

Wastewater is any water that has been contaminated by human use. Wastewater is "used water from any combination of domestic, industrial, commercial or agricultural activities, surface runoff or stormwater, and any sewer inflow or sewer infiltration". ... Wastewater can contain physical, chemical and biological pollutants.

1.Solar-powered LED street light

solar-powered LED street light that can immediately report its power data. The disclosed LED Street light has a solar cell, a switch power supply unit, and a power cable data communicating unit. The mains power cable of the LED Street light connects to the switch power supply unit for providing it with DC power. The solar cell has a solar board, a battery and a charge controller. The charge controller can also provide the LED Street light with DC power. The charge controller has a power data digital output interface for connecting with the power cable data communicating unit, outputting the power data of the solar cell to the power cable data communicating unit. Through the mains power cable, the status of solar cell of each LED lamp ismonitored.

A solar-powered LED street light comprising:

An LED lamp mounted on a lamp post;

A solar cell comprising a solar board, a charge controller and a battery, wherein the charge controller is electrically connected between the solar board and the battery and electrically connected to the LED lamp for converting power in the battery and outputting to the LED lamp, and the charge controller has a power data digital output interface;

A switch power supply unit connected to an mains power cable for converting AC power into DC power and outputting the DC power to the LED lamp; and A power cable digital communicating unit coupled to the AC power cable and electricallyconnected to the power data digital output interface of the charge controller to obtain power data.

2.Rooftop rainwater harvesting

Rooftop rainwater harvesting (RTRWH) is the most common technique of rainwater harvesting (RWH) for domestic consumption. In rural areas, this is most often done at small-scale. It is a simple, low-cost technique that requires minimum specific expertise or knowledge and offers many benefits. Rainwater is collected on the roof and transported with gutters to a storage reservoir, where it provides water at the point of consumption or can be used for recharging a well or the aquifer. Rainwater harvesting can supplement water sources when they become scarce or are of low quality like brackish groundwater or polluted surface water in the rainy season. However, rainwater qualit may be affected by air pollution, animal or bird droppings,insects, dirt and organic matter. Therefore regular maintenance (cleaning, repairs, etc.) as well asa treatment before water consumption (e.g. filtration or/and disinfection) are very important.

The delivery system from rural rooftop catchment usually consists of gutters hanging from the sides of the roof sloping towards a down pipe and tank. Guttering is used to transport rainwater from the roof to the storage vessel. Guttering comes in a wide variety of shapes and forms, ranging from the factory made PVC type similar as the pipes used in water distribution systemsto homemade guttering using bamboo or folded metal sheet. Guttering is usually fixed to the building just below the roof and catches the water as it falls from the roof. Debris, dirt, dust and droppings will collect on the roof of a building or other collection area.

When the first rains arrive, this unwanted matter would be washed into the tank. This will cause contamination of the water and the quality will be reduced. Many RWH systems therefore incorporate a system for diverting this ‘first flush’ water so that it does not enter the tank. These systems are called first flush devices.

The simpler ideas are based on a manually operated arrangement whereby the inlet pipe is moved away from the tank inlet and then replaced again once the initial first flush has been diverted. This method has obvious drawbacks in that there has to be a person present who will remember to move the pipe. Other, more sophisticated methods provide a much more elegant means of rejecting the first flush water, training material).

15.Smart and/or Sustainable features of Chapter 8 & 13 designs, Impact on society.

(For Allocated village development, villagers happiness, comfortable and for enhancement of the village) (With the Smart village development Concept As Per Your Idea And Village Visit, modern technology with innovation).

estimation table (part -1):

a.t.m	63276.26 rs
p.h.c	355241.23 rs
Entreence gate	291973 rs
Public laterin	258173 rs
Anganwadi	350612 rs
Public garden	289456rs

Estimate table (Part -2)

Rainwater harvesting	11782 rs
Public library	1984203.10 rs
Pipe culvert	155469.95 rs
u/g sump	1900789 rs.
House condition	293711.1 rs
Community hall	1623856 rs

16. Survey By Interviewing With Talati And Sarpanch:

NINGALA VILLAGE SURVEY

SURVEY BY INTERVIEWING WITH TALATI AND/OR SARPANCH
Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Sr.	Questions	Yes/ No	Remarks
1	What are the sources of income in village?	YES	Farming
2	What are the chances of employment in village?	NO	—
3	What are the special technical facilities in village?	NO	—
4	Is any debt on village dwellers?	NO	—
5	Are village people getting agricultural help?	YES	financial
6	Is women health awareness Program organized in village?	NO	—
7	Are women having opportunity to work and income?	YES	embroidary & labour work
8	Child girl education is appreciated in village?	YES	—
9	Facility of vaccination to child is available in village?	YES	In P.H.C. centre
10	Are village people aware about child vaccination and done to each and every child as per norms?	YES	only Awareness
11	Women help line number information is provided to village people?	NO	—
12	Is water scarcity in village? How many days per year?	NO	—
13	Is village under any debt?	NO	—
14	Is any serious issue due to debt from bank or any person happened in village?	NO	—
15	Is any suicide like incident observed in village due to government policy, debt or threatening?	NO	—
16	Is any death of patient occurred due to unavailability of medical facility in village?	YES	—
17	How many disabled (physically challenged) is observed in village? Provide list with Male/female/girl/boy with age and type of disability and reason of disability.	NO	—
18	Is village improvement is observed in comparative scenario from past to present?	YES	—
19	Is any unavoidable difficulty village people are facing? Any natural calamity is there?	YES	famine
20	Life Living standard of girls and women is appreciated and uplifted in village?	YES	Some extent

સરપંચ
નિંગાળા ગ્રામ પંચાયત

Table no.16 survey by interview

17.Irrigation / Agriculture Activites And Agro Industry, Altenate Technics And Solution:

Irrigation is the artificial process of applying controlled amounts of water to land to assist in production of crop. Irrigation helps to grow agricultural crops, maintain landscapes, and revegetate disturbed soils in dry areas and during periods of less than average rainfall. Irrigation also has other uses in crop production, including frost protection, suppressing weed growth in grain fields and preventing soil consolidation In contrast, agriculture that relies only on direct rainfall is referred to as rain-fed.

Irrigation systems are also used for cooling livestock, dust suppression, disposal of sewage, and in mining Irrigation is often studied together with drainage, which is the removal of surface and sub-surface water from a given location

Irrigation helps to grow agricultural crops, maintain landscapes, and revegetate disturbed soils in dry areas and during periods of less than average rainfall. Irrigation also has other uses in crop production, including frost protection, suppressing weed growth in grain fields and preventing soil consolidation. Industries that have agricultural produce as raw materials are known as Agro-based Industries. These are consumer-based industries Cotton, jute, silk, woollen textiles, sugar and edible oil, etc. industry are based on agricultural raw materials. Sugar industry is India's second largest organised industry next to cotton textiles. India is the second largest producer of sugarcane in the world, after Brazil.

Products and By-Products: Sugarcane is an important cash crop which is crushed in the factories to produce sugar. A fairly large amount is also used to make gur (jaggery) and khandsari. The sugar industry also supplies molasses, bagasse and press mud.

India is one of the largest cotton textile manufacturing countries in the world. It is a major industry in India as it directly or indirectly supports more than 40 percent of the country's labour force. This industry is divided into the handloom and powerloom sectors. The most important cotton mills in powerloom are located in Maharashtra, Gujarat and Tamil Nadu. Handloom industry is located in every Indian state, however small it maybe.

PROBLEMS OF THE AGRO INDUSTRY

The problems faced by the Indian sugar industry are as follows:
(1) The sugarcane cultivated in India is of poor quality giving low yield per hectare and low sucrose
(2)The cost of production is quite high because of various reasons.
(3) The supply of raw materials to sugar factories is irregular.
(4) The by-products of sugar like molasses and bagasse are not utilised completely.

PROBLEMS FACED BY THE AGRICULTURE SECTOR – INDIA Rudimentary infrastructure and policies leads to slow agricultural growth Slow agricultural growth is a matter of concern as most of India’s population is dependent on rural employment for a living. Current agricultural practices are neither economically nor environmentally sustainable and India's yields for many agricultural commodities are low. Poorly maintained irrigation systems and lack of good extension services are among the factors responsible. Farmers' access to markets is hampered by poor roads, rudimentary market infrastructure, and excessive regulation.

India has inadequate infrastructure and services because of low investment. Farming equipment and infrastructure are scarce outside the provinces of Punjab and Haryana.Because many of the farms are small, the farmers cannot afford irrigation systems that would increase productivity. Most big farms are family-owned and run and do not take advantage of economies of scale - the concept that the cost per unit falls as output quantities

increase, because the problem of land absenteeism in big farms which hinders the development of land to increase productivity because the tenant who cultivates the land has little.

Low investment in big and small of farms leads to lower production, inefficiency and higher costs, one of the causes of food inflation in India.According to the World Bank, India's large agricultural subsidies are hampering productivity-enhancing investment such as agricultural research and extension, as well as investments in rural infrastructure, and the health and education of the rural people.Though trade reforms in the 1990s helped to overregulation of the agricultural domestic trade increased costs, price risks and uncertainty, undermining the sector's competitiveness. The government in trvenes in labour, land, and credit markets.The average size of land holdings is small The average size of land holdings is less than20,000 m² and subject to fragmentation due to land ceiling acts and, in some cases, family disputes. Such small holdings are often overmanned, resulting in disguised unemploymentand low productivity of labour.

Use of technology is inadequate Adoption of modern agricultural practices and use of technology is inadequate, hampered byignorance, high costs and impracticality in the case of small land holdings. In India, farm in gare too haphazard and non-scientific and need some forethought be for any new technology. The screening of technology is important since all innovations are not relevant or attractive to all areas. It is important to screen them according to the geographical area and the local context of agriculture and let the local Kisan Vigyan Kendras (KVKs) promote it. Appropriate technologies need to be adopted.No proper management of irrigation Irrigation in India can be broadly classified intotwo parts, each having different issues.

There are a few major problems with surface irrigation. Irrigation facilities are in adequate and there is no effective system management for how much water is stored, how much is used for irrigation or what value can be added to this water. Consequently, farmers depend on rainfall, specifically the Monsoon season. A good monsoon results in robust growth for the economy as a whole, while a poor monsoon leads to sluggish growth.

Water Quantity Estimation

The quantity of water required for municipal uses for which the water supply scheme has to be designed requires following data:

1. Water consumption rate (Per Capita Demand in litres per day per head)
2. Population to be served.

Quantity= Per capita demand x Population

Water Consumption Rate

It is very difficult to precisely assess the quantity of water demanded by the public, since there are many variable factors affecting water consumption. The various types of water demands, which a city may have, may be broken into following classes:

Water Consumption for Various Purposes:

	Types of Consumption	Normal Range (lit/capita/day)	Average	%

1	Domestic Consumption	65-300	160	35
2	Industrial and Commercial Demand	45-450	135	30
3	Public Uses including Fire Demand	20-90	45	10
4	Losses and Waste	45-150	62	25

Factors affecting per capita demand:

a. Size of the city: Per capita demand for big cities is generally large as compared to that for smaller towns as big cities have sewered houses.
b. Presence of industries.
c. Climatic conditions.
d. Habits of people and their economic status.
e. Quality of water: If water is aesthetically $ medically safe, the consumption will increase as people will not resort to private wells, etc.
f. Pressure in the distribution system.
g. Efficiency of water works administration: Leaks in water mains and services; and unauthorised use of water can be kept to a minimum by surveys.
h. Cost of water.
i. Policy of metering and charging method: Water tax is charged in two different ways: on the basis of meter reading and on the basis of certain fixed monthly rate.

Fluctuations in Rate of Demand

Average Daily Per Capita Demand
= Quantity Required in 12 Months/ (365 x Population)

If this average demand is supplied at all the times, it will not be sufficient to meet the fluctuations.

- **Seasonal variation**: The demand peaks during summer. Firebreak outs are generally more in summer, increasing demand. So, there is seasonal variation .
- **Daily variation** depends on the activity. People draw out more water on Sundays and Festival days, thus increasing demand on these days.
- **Hourly variations** are very important as they have a wide range. During active household working hours i.e. from six to ten in the morning and four to eight in the evening, the bulk of the daily requirement is taken. During other hours the requirement is negligible. Moreover, if a fire breaks out, a huge quantity of water is required to be supplied during short duration, necessitating the need for a maximum rate of hourly supply.

So, an adequate quantity of water must be available to meet the peak demand. To meet all the fluctuations, the supply pipes, service reservoirs and distribution pipes must be properly proportioned. The water is supplied by pumping directly and the pumps and distribution system must be designed to meet the peak demand. The effect of monthly variation influences the design of storage reservoirs and the hourly variations

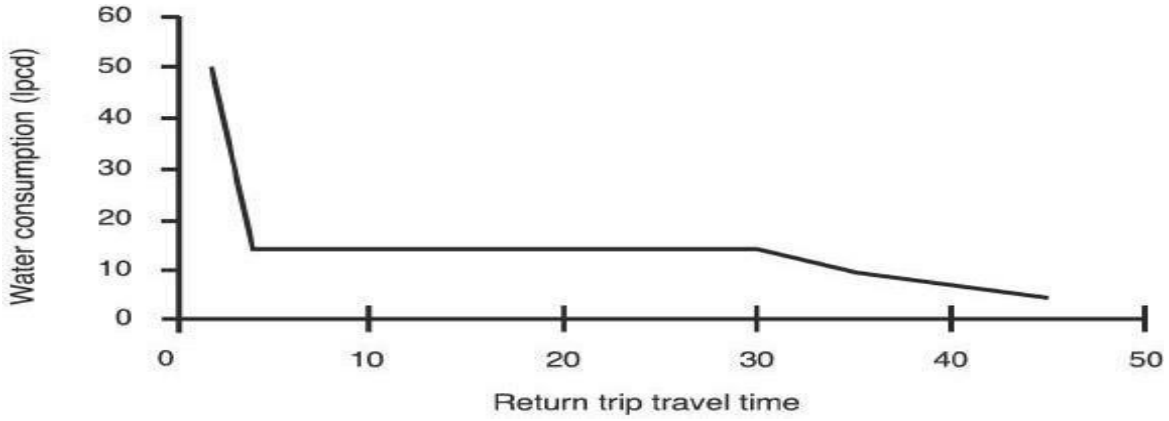
influences the design of pumps and service reservoirs. As the population decreases, the fluctuation rate increases.

Maximum daily demand = 1.8 x average daily demand
Maximum hourly demand of maximum day i.e. Peak demand
= 1.5 x average hourly demand
= 1.5 x Maximum daily demand/24
= 1.5 x (1.8 x average daily demand)/24
= 2.7 x average daily demand/24
= 2.7 x annual average hourly demand

Population Forecasting Methods

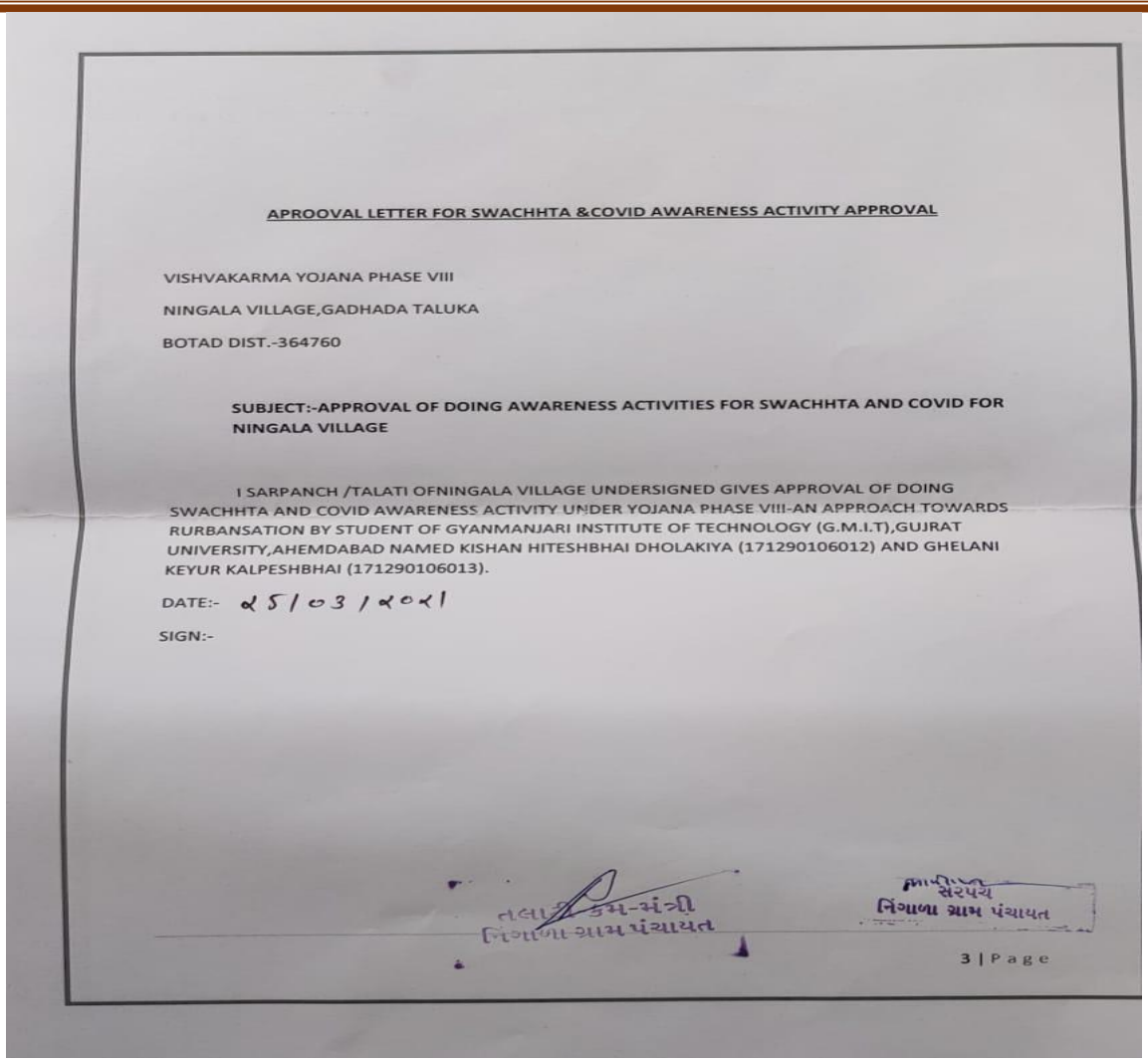
The various methods adopted for estimating future populations are given below. The particular method to be adopted for a particular case or for a particular city depends largely on the factors discussed in the methods, and the selection is left to the discrection and intelligence of the designer.

1. Arithmetic Increase Method
2. Geometric Increase Method
3. Incremental Increase Method
4. Decreasing Rate of Growth Method
5. Simple Graphical Method
6. Comparative Graphical Method
7. Ratio Method
8. Logistic Curve Method



Graph of lpcd

18. Social Activities – Any Activates Planned By Students awareness camp,



APROOVAL LETTER FOR SWACHHTA &COVID AWARENESS ACTIVITY APPROVAL

VISHVAKARMA YOJANA PHASE VIII

NINGALA VILLAGE,GADHADA TALUKA

BOTAD DIST.-364760

SUBJECT:-APPROVAL OF DOING AWARENESS ACTIVITIES FOR SWACHHTA AND COVID FOR NINGALA VILLAGE

I SARPANCH /TALATI OFNINGALA VILLAGE UNDERSIGNED GIVES APPROVAL OF DOING SWACHHTA AND COVID AWARENESS ACTIVITY UNDER YOJANA PHASE VIII-AN APPROACH TOWARDS RURBANSATION BY STUDENT OF GYANMANJARI INSTITUTE OF TECHNOLOGY (G.M.I.T),GUJRAT UNIVERSITY,AHEMDABAD NAMED KISHAN HITESHBHAI DHOLAKIYA (171290106012) AND GHELANI KEYUR KALPESHBHAI (171290106013).

DATE:- ૨૫/૦૩/૨૦૨૧

SIGN:-

તલાટી-કમ-મંત્રી
નિંગાળા ગ્રામ પંચાયત

સરપંચ
નિંગાળા ગ્રામ પંચાયત

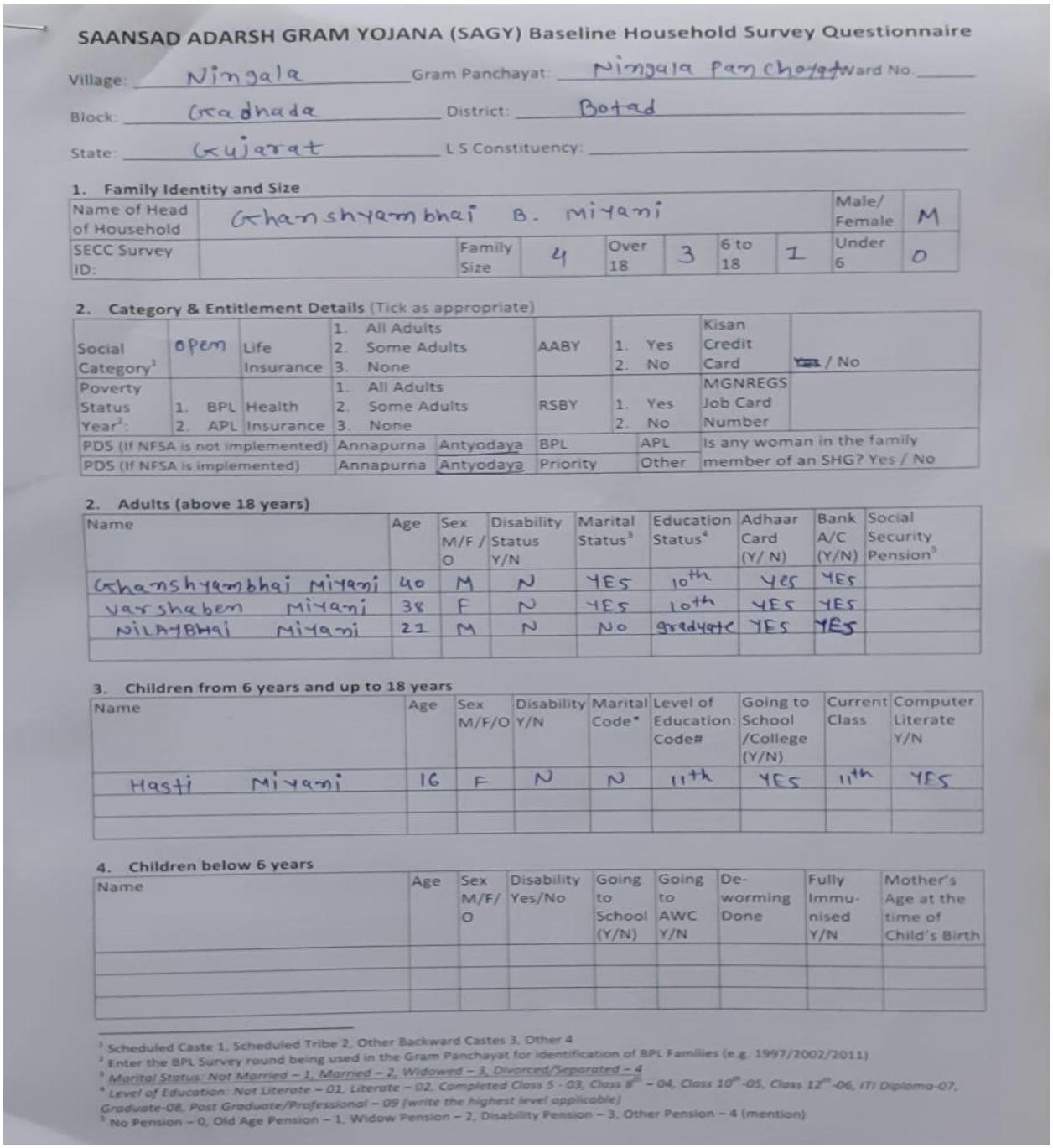
3 | Page

fig.18.social awareness

- wear of mask
- vaccination awareness
- social distance
- don’t use public transport during corona
- check a rapid and rt pcr report for every particular time
- do exercise everyday
- without any work –don’t leave the home

19.ningala village-SAGY Questionnaire Survey form with the Sarpanch

Signature (Scanned copy attachment in the soft copy report and Original copy in hardboundreport)



SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Ningala Gram Panchayat: Ningala Pan Chayat Ward No.

Block: Gadhada District: Botad

State: Gujarat L S Constituency:

1. Family Identity and Size

Name of Head of Household	Ghanshyambhai B. Miyani							Male/ Female	M
SECC Survey ID:		Family Size	4	Over 18	3	6 to 18	1	Under 6	0

2. Category & Entitlement Details (Tick as appropriate)

Social Category[1]	Open	Life Insurance	1. All Adults 2. Some Adults 3. None	AABY	1. Yes 2. No	Kisan Credit Card	Yes / No
Poverty Status Year[2]:	1. BPL 2. APL	Health Insurance	1. All Adults 2. Some Adults 3. None	RSBY	1. Yes 2. No	MGNREGS Job Card Number	
PDS (If NFSA is not implemented)	Annapurna	Antyodaya	BPL	APL	Is any woman in the family member of an SHG? Yes / No		
PDS (If NFSA is implemented)	Annapurna	Antyodaya	Priority	Other			

2. Adults (above 18 years)

Name	Age	Sex M/F / O	Disability Status Y/N	Marital Status[3]	Education Status[4]	Adhaar Card (Y/ N)	Bank A/C (Y/N)	Social Security Pension[5]
Ghanshyambhai Miyani	40	M	N	YES	10th	Yes	YES	
Varshaben Miyani	38	F	N	YES	10th	YES	YES	
NILAYBHai Miyani	21	M	N	No	graduate	YES	YES	

3. Children from 6 years and up to 18 years

Name	Age	Sex M/F/O	Disability Y/N	Marital Code*	Level of Education Code#	Going to School /College (Y/N)	Current Class	Computer Literate Y/N
Hasti Miyani	16	F	N	N	11th	YES	11th	YES

4. Children below 6 years

Name	Age	Sex M/F/ O	Disability Yes/No	Going to School (Y/N)	Going to AWC Y/N	De-worming Done	Fully Immu-nised Y/N	Mother's Age at the time of Child's Birth

[1] Scheduled Caste 1, Scheduled Tribe 2, Other Backward Castes 3, Other 4
[2] Enter the BPL Survey round being used in the Gram Panchayat for identification of BPL Families (e.g. 1997/2002/2011)
[3] Marital Status: Not Married – 1, Married – 2, Widowed – 3, Divorced/Separated – 4
[4] Level of Education: Not Literate – 01, Literate – 02, Completed Class 5 - 03, Class 8th – 04, Class 10th -05, Class 12th -06, ITI Diploma-07, Graduate-08, Post Graduate/Professional – 09 (write the highest level applicable)
[5] No Pension – 0, Old Age Pension – 1, Widow Pension – 2, Disability Pension – 3, Other Pension – 4 (mention)

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

5. Hand washing

	Always		Sometimes		Never
After use of Toilet	Soap (Yes)	Other	Soap	Other	
Before Eating	Soap	Other (Yes)	Soap	Other	

6. Use of Mosquito Net
Children: ~~Yes~~ / No Adults: ~~Yes~~ / No

7. Do members take Regular Physical Exercise

	Yoga	Games	Other Exercises
Adults	~~Yes~~ / No	Yes / ~~No~~	~~Yes~~ / No
Children	~~Yes~~ / No	Yes / ~~No~~	~~Yes~~ / No

8. Consumption of Tobacco

	Smoking	Chewing
Adults	No	No
Children	No	No

9. House & Homestead Data

Own House: Yes / ~~No~~	No. of Rooms: 2
Type: ~~Kutcha~~ / ~~Semi Pucca~~ / Pucca	
Toilet: Private / ~~Community~~ / ~~Open Defecation~~	
Drainage linked to House: Covered / ~~Open~~ / ~~None~~	
Waste Collection System	~~Door Step~~ / Common Point / ~~No Collection System~~
Homestead Land: Yes / ~~No~~	Kitchen Garden : Yes / ~~No~~
Compost Pit: ~~Individual~~/ ~~Group~~/ None	Biogas Plant: ~~Individual~~/ ~~Group~~/ None

10. Source of Water (Distance from source in KMs)

Source of Water		Distance
Piped Water at Home	Yes / ~~No~~	
Community Water Tap	Yes / ~~No~~	
Hand Pump (Public / Private)	Yes / ~~No~~	
Open Well(Public / Private)	Yes / ~~No~~	
Other (mention):		

11. Source of Lighting and Power

Electricity Connection to Household: Yes / ~~No~~
Lighting: Electricity/~~Kerosene~~/~~Solar Power~~
Mention if Any Other: _____
Cooking: LPG/~~Biogas~~/~~Kerosene~~/Wood/~~Electricity~~
Mention if Any Other: _____
If cooking in Chullah: Normal/ ~~Smokeless~~

12. Landholding (Acres)

1. Total	20 vighe	2. Cultivable Area	20 vighe
3. Irrigated Area	–	4. Uncultivable Area	–

13. Principal Occupations in the Household

Livelihood	Tick if applicable
Farming on own Land	Yes
Sharecropping /Farming Leased Land	
Animal Husbandry	
Pisciculture	
Fishing	
Skilled Wage Worker	
Unskilled Wage Worker	
Salaried Employment in Government	
Salaried Employment - Private Sector	
Weaving	
Other Artisan(mention)	
Other Trade & Business (mention)	

14. Migration Status
Does any member of the household migrate for Work: Yes / ~~No~~. If Yes Entire Year / ~~Seasonal~~
Does anyone below 18 years migrate for work: ~~Y~~/N

15. Agriculture Inputs

Do you use Chemical Fertilisers	Yes/~~No~~
Do you use Chemical Insecticides	Yes/No
Do you use Chemical Weedicide	Yes/No
Do you have Soil Health Card	~~Yes~~/~~No~~
Irrigation: None/ Canal/ Tank/ Borewell/Other	
Drip or Sprinkler Irrigation: Drip /Sprinkler / None	

16. Agricultural Produce in a normal year (Top 3)

Name	Unit	Quantity
Vegetables		
wheat		
Beans		

17. Livestock Numbers

Cows: –	Bullocks: –	Calves: –
Female Buffalo: –	Male Buffalo: –	Buffalo Calves: –
Goats/ Sheep: –	Poultry/ Ducks: –	Pigs: –
Any other: Type –		No. –
Shelter for Livestock: Pucca / Kutcha / None		
Average Daily Production of Milk(Litres): –		

18. What games do Children Play
Cricket, hide & seek

19. Do children play musical instrument (mention)
NO

Schedule Filled By:
Principal Respondent:
Date of Survey:

SURVEY BY INTERVIEWING WITH TALATI AND/OR SARPANCH
Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

Sr.	Questions	Yes/ No	Remarks
1	What are the sources of income in village?	YES	Farming
2	What are the chances of employment in village?	NO	–
3	What are the special technical facilities in village?	NO	–
4	Is any debt on village dwellers?	NO	–
5	Are village people getting agricultural help?	YES	financial
6	Is women health awareness Program organized in village?	NO	–
7	Are women having opportunity to work and income?	YES	embroidary & labour work
8	Child girl education is appreciated in village?	YES	–
9	Facility of vaccination to child is available in village?	YES	In P.H.C. centre
10	Are village people aware about child vaccination and done to each and every child as per norms?	YES	only Awareness
11	Women help line number information is provided to village people?	NO	–
12	Is water scarcity in village? How many days per year?	NO	–
13	Is village under any debt?	NO	–
14	Is any serious issue due to debt from bank or any person happened in village?	NO	–
15	Is any suicide like incident observed in village due to government policy, debt or threatening?	NO	–
16	Is any death of patient occurred due to unavailability of medical facility in village?	YES	–
17	How many disabled (physically challenged) is observed in village? Provide list with Male/female/girl/boy with age and type of disability and reason of disability.	NO	–
18	Is village improvement is observed in comparative scenario from past to present?	YES	–
19	Is any unavoidable difficulty village people are facing? Any natural calamity is there?	YES	famine
20	Life Living standard of girls and women is appreciated and uplifted in village?	YES	Some extent

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Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

I. Basic Information

a. Gram Panchayat: Ningala Panchayat

b. Block: Gadhada

c. District: Botad

d. State: Gujarat

e. Lok Sabha Constituency: _____

f. Number of Wards in the Gram Panchayat: _____

g. Number of Villages in the Gram Panchayat: _____

h. Names of Villages:
Ningala

Demographic Information

Number of Households 930 Total Population 4472 Male 2288 Female 2184

SC HHs 307 ST HHs 12 OBC HHs 375 Other HHs 236

I. Access to Infrastructure / Facilities / Services

	Infrastructure Facilities / Services	Located within the GP Yes (Y)/No (N)	If located elsewhere (N), distance from the GP office
a.	ANM/ Health Sub Centre	NO	20 km
b.	Nearest Primary Health Centre (PHC)	NO	20 km
c.	Nearest Community Health Centre (CHC)	NO	20 km
d.	Nearest Post Office	YES	Middle of the village
e.	Nearest Bank Branch (Any)	YES	Middle of the village
f.	Nearest Bank with CBS Facility	NO	20 km
g.	Nearest ATM	NO	20 km
h.	Nearest Primary School	YES	Middle of the village
i.	Nearest Middle School	YES	near primary school
j.	Nearest Secondary School	NO	20 km
k.	Nearest Higher Secondary School / +2 College	NO	20 km
l.	Nearest Graduate College	NO	20 km
m	Nearest ITI / Polytechnic Centre	NO	20 km
n	Kisan Seva Kendra	YES	near Gram Panchayat

1

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

	Infrastructure Facilities / Services	Located within the GP Yes (Y)/No (N)	If located elsewhere (N), distance from the GP office
o	Agriculture Credit Cooperative Society	NO	20 km
p	Nearest Agro Service Centre	NO	20 km
p	MSP based Government Procurement Centre	NO	20 km
q	Milk Cooperative /Collection Centre	YES	
r	Veterinary Care Centre	NO	20 km
s	Ayurveda Centre	NO	20 km
t	E – Seva Kendra	YES	
u	Bus Stop	YES	
v	Railway Station	YES	
w	Library	NO	20 km
x	Common Service Centre	NO	20 km

IV. Sports Facilities in the Gram Panchayat

a. Number of Play Grounds in the GP: Total 1 Public 1 Private –

b. Mini Stadium : NO ~~Yes(Y)~~ /No (N) *(Playground with equipment and sitting arrangement)*

V. Education, ICDS

a. Number of Angan Wadi Centres: 1

b. Number of villages without Angan Wadi Centres –

Names of such villages: –

c. Schools (Number)

Primary Private: – Primary Govt.: 1

Middle Private: – Middle Govt.: 1

Secondary Private: – Secondary Govt.: –

Higher Secondary Private: – Higher Secondary Govt: –

VI. Public Distribution System

	Item	Private Contractor	Women's SHG	Gram Panchayat	Cooperative	Other (Mention)	Location in GP (mention Location)	If outside GP, Location & distance from GP HQrs)
a.	Cereal (Rice/ Wheat/ Millets)	GOV.						
b.	Kerosene	GOV.						
c.	Other (mention)	GOV.						

2

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

VII. Coverage of Villages under different Facilities & Services

	Parameter	Villages Status[1]	Names of Villages Covered	Names of Villages not Covered
a.	Piped Water Supply Coverage to Villages	Covered _____ Not Covered _____	Ningala	
b.	Hand Pump Coverage in Villages:	Covered _____ Not Covered _____	Ningala	
c.	Coverage under Covered Drains:	Covered _____ Not Covered _____	Ningala	
d.	Coverage under Open Drains:	Covered _____ Not Covered _____	Ningala	
e.	Villages with Household Electricity Connection (Numbers)	Connected _____ Not Connected _____	Ningala	

VIII. Land and Irrigation

	Private Land	Area in Acres		Common Land	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	2459 hector	d.	Pasture / Grazing Land	248 hector	g.	Check Dam	
b.	Irrigated Land	978 hector	e.	Forests/ Plantations		h.	Wells/Bore Wells	2
c.	Un-irrigated Land	494 hector	f.	Other Common Land		i	Tanks /Ponds	1

[1] Mention the number of Villages Covered and Not Covered

3

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

(Note: Please aggregate information from village level questionnaires wherever relevant)

IX. Parameters relating to Households & Institutions

		Number
a)	Number of eligible Households for pension (old age, widow, disability)	ગામમાં 38
b)	Number of Households receiving pension (old age, widow, disability)	19
c)	Number of eligible Households who are not receiving pension	300
d)	Number of Households eligible for Ration Card	911
e)	Number of eligible HHs having ration cards	—
f)	Number of households covered under RSBY (Rashtriya Swasthya Bima Yojana)	15
g)	Number of HHs covered under AABY (Aam Aadmi Bima Yojana)	—
h)	Number of active Job Card holders under MGNREGA	10
i)	Number of Job Card holders who completed 100 days of work during 2013-14	2
j)	Number of shops selling alcohol	—
k)	Number of BPL families	13
l)	Number of landless households	—
m)	Number of IAY beneficiaries	—
n)	Number of FRA[2] beneficiaries	—
o)	Number of Community Sanitary Complexes	—
p)	Number of Households headed by single women	—
q)	Number of Households headed by physically handicapped persons	2
r)	Total number of Persons with Disability in the village	—
s)	Number of SHGs	—
t)	Number of active SHGs	—
u)	Number of SHG Federations	—
v)	Number of Youth Clubs	—
w)	Number of Bharat Nirman Volunteers	—

Name and Signature of Surveyor and Respondent'

Surveyor	PRI Respondent (Preferably Gram Panchayat Chairperson)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	Date of Survey
મોહન ડી ખોલાણી	સરપંચ નિંગાળા ગ્રામ પંચાયત		16/05/21

[2] The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

4

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

This questionnaire should be filled for each of the villages in the selected Gram Panchayat[1]

Basic Information

a. Village: Ningala

b. Ward Number:

c. Gram Panchayat: Ningala Panchayat

d. Block: Gadhada

e. District: Botad

f. State: Gujarat

g. Lok Sabha Constituency:

h. Number of Habitations / Hamlets in the Gram Panchayat:

i. Names of Habitations / Hamlets:

Ningala

Demographic Information

Number of Households 930 Total Population 4472 Male 2288 Female 2184

SC HHs 307 ST HHs 12 OBC HHs 375 Other HHs 236

II. Access to Infrastructure/Amenities etc.

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
a.	Nearest Primary School	YES	
b.	Nearest Middle School	YES	
c.	Nearest Secondary School	NO	20 km
d.	Kisan Seva Kendra	YES	
e.	Milk Cooperative /Collection Centre	YES	
g.	Health Sub Centre	NO	20 km
h.	Bank	YES	
i.	ATM	NO	20 km
j.	Bus Stop	YES	
k.	Railway Station	YES	

[1] While filling this the surveyor must collect the information from the Ward Member/s and relevant government officials

1

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
l	Library	No	20 km
m	Common Service Centre	No	20 km
n	Veterinary Care Centre	No	20 km

ii. Road Connectivity

a. Habitations connected by All-weather Roads *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations where not available: Some

iii. Drinking Water Facilities

a.Piped Water Supply Coverage to Habitations: 1 *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered: _____

b.Hand Pump Coverage in Habitations: 1 *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered: _____

iv. Coverage of Habitations under Waste Management System

a. Coverage under Covered Drains: 2 *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered: _____

b. Coverage under Open Drains: 3 *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered: _____

c. Coverage under Doorstep Waste Collection: *(1-All 2-None 3-Some)* 3

If 3 mention the name of the habitations not covered: _____

v. Coverage of Habitations under Electrification

a. Coverage under Household Connections: *(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered: 1

b.Coverage under Street Lighting: All*(1-All 2-None 3-Some)*

If 3 mention the name of the habitations not covered: 1

vi. Sports Facilities in the Village

a.Number of Play Grounds in the Village (minimum size 200 square meters): _____

b.Mini Stadium : No Yes(Y) /No (N)

vii. Education, ICDS

a. Number of Anganwadi Centres: 1

c. Schools (Number)

Primary Private: - Primary Govt.: 1

Middle Private: - Middle Govt.: 1

Secondary Private: - Secondary Govt.: -

Higher Secondary Private: - Higher Secondary Govt: -

2

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

viii. Land Category		Area in Acres		Land Category	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	2459 hectare	d.	Pasture / Grazing Land	248 hectare	g.	Check Dam	
b.	Irrigated Land	978 hectare	e.	Forests/ Plnatations		h.	Wells/Bore Wells	2
c.	Un-irrigated Land	484 hectare	f.	Other Common Land		I	Tanks /Ponds	I

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	—
2	Number of active Job Card holders who have completed 100 days of work	—
3	Number of shops selling alcohol	None
4	Number of BPL families	Some
5	Number of landless households	—
6	Number of IAY beneficiaries	—
7	Number of FRA beneficiaries	—
8	Number of common sanitation complexes	—
9	Number of SHGs	—
10	Number of active SHGs	—
11	Existence of SHG Federation in the Village (Yes / No)	—
12	Number of Youth Clubs	—
13	Number of Bharat Nirman Volunteers	—

Name and Signature of Surveyor and Respondent'

Surveyor	PRI Respondent (Preferably a ward member from a ward that is fully or partially covered under the Village)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	Date of Survey

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16/05/21

3

20.TDO-DDO-Collector email sending Soft copy attachment in the report:

(no subject)
1 message

kishan <kishandholakiya00004@gmail.com> Sat, 17 Jul 2021 at 2:25 pm
To: do.botad@gmail.com <do.botad@gmail.com>, tdo.botad@gmail.com <tdo.botad@gmail.com>
Cc: Vishwakarma Yojana <rurban@gtu.edu.in>

Respected Sir/Madam

We are the students of Gyanmanjari institute of technology,sidsar,bhavanagar affiliated to Gujarat Technological University-GTU. GTU has been assigned to Vishwakarma Yojanaa-VY in which students survey various village and Designs various amenities To Deliver it to them making them ideal for living better life as per requirements & village problem statements.

As a part of Vishwakarma Yojana's guidelines, we have been asked to inform all the respected officers about the our project in which we will shortly notify about ningala Village profile of issues for development and our design work for them which is as below.

Designs :

Village:ningala	Population:4482	
Key issue	remark	Given design
Financial	For money saving	a.t.m,bank
Health	-	p.h.c
Identification	Identify by visitors	Entrance gate
Toilet	Almost 89% house hold have	Public laterin
Study	Study purpose	Anganwadi
Play ground	Temples,benches in play ground	Public ground
Super market	Other grocery services	General market
Community place	Common hall	Community hall

Total amount of structures

Sr no.	Design name	Period in month	Amount of the project	benifits

1	A.T.M	3 month	63276	Easily available money
2	p.h.c	5-6 month	355241	Solve the health issue
3	Entrance gate	2 month	291973	Visitors view
4	Public laterin	3 month	258173	Decrease in deases
5	Anganwadi	5 month	350612	For kids
6	Public ground	1 month	289456	Playing unlimited
7	General market	2-4 month	1100000	Easily available of grocery and other things
8	Public library	7-8 month	1984203	Read news paper and research papers
9	Pipe culvert	4 month	155469	For waste water disposed
10	Bank	4-6 month	1022231	For deposite and saving money
11	House condition	10 month	293711.11	For tough structure
12	Community hall	11 month	1623856	For community

Best Regards,

Kishan dholakiya & Keyur ghelani

U.G.,Civil Engineering

Gyanmanjari institute of technology,bhavanagar

Gujarat Technological University

Sent from Mail for Windows 10

Sent from Mail for Windows 10

21. Comprehensive report for the entire village

Rurbanisation is to bring peace of mind to the villagers by providing them the basic amenities required and still keeping the village soul intact. This project gives one new idea for Development of rural villages. Also gives procedure how they fulfilled requirement of the villages. Now a day people are moving from rural to urban area due to lack of basic amenities. So this help to provide better solution for the available problems in rural area like drinking water, Drainage facility road network, etc.

The following points can be summarized as the outcome of the study:

1. Socio Economic Survey has been done for the study area in detail. All the types of the needs, facilities has been studied in detail. Gap analysis have been done and interviews of the local people has been done in detail.

2. The existing structures and infrastructures have been studied and reviewed in detail. Suggestions have been proposed for the repair and renovation of existing structures and design proposals for it's development.

village visit is required to understand development of ideal village and required development of allotted village. As a part of Vishwakarma Yojana, we visited budhel village, bhavanagar district on 26th nov, 2020. We observed the present condition of budhel village and noted down some important elements related to various infrastructure, economic growth, population, electricity, water. supply, etc. We also collected the data which were necessary for Tecno-economic survey. We met the Sarpanch and Talati of budhel village at the gram panchayat building and also interacted with the localities regarding the facilities and amenities of the village. We visited all the necessary places namely school, post office, hospital, library, police station, banks, community hall, recreational area, etc.

an Ideal Village is a community village with a Self Sustaining income producing projects, Independent electrification system generated from non-fuel based devices, clean water facilities for drinking and irrigation purpose, affordable quality housings, Schools, Medical facilities for human beings and animals both, proper sanitation System, Information Centre, bank, police station, retail outlet for household and agriculture needs, phone facility and connecting roads to nearby villages and towns.

Following the Gandhian vision and dream of Gram Swaraj, rural development has always been given critical salience in the planning process of independent India. It began with launching of the Community Development Programmes in 1952 followed by the National Extension Services in 1953. These two programmes had ambitious objectives and envisioned community participation but failed miserably due to their top down development paradigm. Later, successive Five-Year Plans led to the creation of essential physical and institutional infrastructure to bring about socio-economic changes in rural areas

.The Fifth Five-Year Plan proposed different approaches to rural development such as Area Development, Target Group Approach, and comprehensive development approach.3 Schemes involving special financial and fiscal concessions, bank loans on soft terms, and capital subsidiesThe most important concern in rural development is to provide basic amenities to each person living in the rural area. Punsari stands out in this regard as it has constructed a reverse osmosis plant and since then provided house-to-house piped connections to supply chlorinated water. It also has its own 66 KV substation for electricity generation and 100 per cent coverage of all streets with LED streetlights. A public address system with 120 waterproof speakers for announcing information and spreading messages has been another striking feature of this village. The village headperson uses this public announcement system to share what s/he thinks, plans, and is doing at the gram Panchayat. The entire village has been put under CC TV surveillance, which has helped to bring down crime rate to almost zero per cent. Each household has a personalized lavatory and the whole village has a well- designed drainage and storm water disposal system. Atal Express is a free bus service available for commutation to all the villagers. Punsari is the first fully Wi-Fi-covered village in India.

The main objective of the rural development programme is to raise the economic and social level of the rural people. Rural development implies both the economic betterment of people as well as greater social transformation. Rural Development refers to the process of improving or uplifting the living conditions of the people living in rural areas. The people of India live mostly in rural areas (villages). Therefore, it is in the heart of the villages that the nation lives. Indeed, ―the soul of India is in the toil of the rural areas‖. The welfare of India depends upon the prosperity of the villages. A healthy and dynamic agricultural sector is an important foundation of rural development, generating strong linkages to other economic sectors. Rural livelihoods are enhanced through effective participation of rural people and rural communities in the management of their own social, economic and environmental objectives by empowering people in rural areas, particularly women and youth, including through organizations such as local cooperatives and by applying the bottom-up approach. Close economic integration of rural areas with neighbouring urban areas and the creation of rural off-farm employment can narrow rural-urban disparities, expand opportunities and encourage the retention of skilled people, including youth, in rural areas. There is considerable potential for rural job creation not only in farming, agro processing and rural industry but also in building rural infrastructure, in the sustainable management of natural resources, waste and residues. Rural communities in developing countries are still faced with challenges related to access to basic services, economic opportunities and some degree of incoherence with regard to planning.

Urban is that area where the population density is more and new facilities are provided to the people.Urban area is the region surrounding a city. Most of inhabitants of urban areas have non-agricultural jobs. Urban areas have municipality, corporation, cantonment board or notified town area committee etc. According to census 2011, there are 7,939 towns, 4,040 statutory town and 3,895 census towns. Rural: All the areas which are not characterized as urban area is called rural area. In which the population is very low compared to urban areas. Mainly they depend on agricultural activities. According to census 2011, there are 6, 40,868 villages in India. The area where more than 75% of male population is associated with agricultural activity is known as rural area.

MGNREGA Launched on 2nd February 2006 as a momentous initiative towards pro-poor growth. For the first time, rural communities have been given not just a development program but also a regime of rights. The National Rural Employment Guarantee Act, 2005 (NREGA) guarantees 100 days of employment in a financial year to any rural household whose adult members are willing to do unskilled manual work. This work guarantee also serve other objectives: generating productive assets and skills thereby boosting the rural economy, protecting the environment, empowering rural women, reducing rural urban migration and fostering social equity, among others. The Act offers an opportunity to strengthen our democratic processes by entrusting principle role to Panchayats at all levels in its simple mentation and promises transparency through involvement of community at planning and monitoring stages.pradhan Mantri Gram Sadak Yojana (PMGSY) was launched on 25th December 2000 as a fully funded Centrally Sponsored Scheme to provide all weather road connectivity in rural areas of the country. The program envisages connecting all habitations with a population of 500 persons and above in the plain areas and 250 persons and above in hill States, the tribal and the desert areas .According to latest figures made available by the State Governments under a survey to identify Core Network as part of the PMGSY program, about 1.635 lakh Unconnected Habitations are eligible for coverage under the program. This involves construction of about 3.74 lakh km. of roads for New Connectivity and 3.65 lakh km. under upgradation .The President of India, in his address to Parliament on 25th February, 2005 announced a major business plan for rebuilding rural India called Bharat Nirman.

The NGOs became prominent after independence, especially after 1970s. Development parishioners, government officials and foreign donors consider that NGOs by virtue of being small scale, flexible, innovative and participatory, are more successful in reaching the poor and in poverty alleviation, NGOs involved in initiating and implementing rural development program. At present30,000 NGOs working in India. Definition of NGOs: The term NGOs is used to denote / specify those organizations which undertake voluntary action social movements. A non-governmental organization (NGO) is a legally constituted organization created by legal persons that operates independently from any government and a term usually used by governments to refer to entities that have no government status. In the cases in which NGOs are funded totally or partially by governments, the NGO maintains its non-governmental status by excluding government representatives from membership in the organization. The term is

usually applied only to organizations that pursue some wider social aim that has political aspects, but that are not overtly political organizations such as political parties.

Smart Village India gets its foundation from Mahatma Gandhi's vision of Adarsh Gram (model village) and Gram Swaraj (Village self-rule/independence). Gandhi in two texts, Hind Swaraj and Gram (Village) Swaraj, promotes the concept of integrated rural development to impact majority of the population, as the primary initiative after India Independence in 1947. The Eco Needs Foundation has initiated the concept of "Smart Village". Under this project the Foundation is adopting villages and putting efforts for sustainable development by providing basic amenities like sanitation, safe drinking water, internal road, tree plantation, water conservation. The Foundation is also working for inculcating moral values in the society and for improving the standard of living of the villagers. In the concept of "Smart Village" the development of the village shall be based on the five paths Retrofitting, Redevelopment, Green fields, e-Pan, Livelihood. Under the concept of Smart Village, the Foundation has adopted Village Dhanora, Teh. Bari, District Dholpur, a small and remote village of Rajasthan develop it as India‘s First Smart Village. The village is situated 30 km away from Dholpur district head quarter and 248 km from Jaipur. The population of the village is about 2,000.

The village was devoid of its basic needs like sanitation, internal roads. It was also facing various other similar problems such as lack of access to potable water, non-availability of water conservation system, encroachment on the roads, power fluctuation, non-availability of employment oriented education, unemployment and poverty, so on and so forth. Prof. Priyanand Agale Founder of Eco Needs Foundation and Dr. Satyapal Sing Meena (IRS) Joint commissioner of Income Tax has converted this idea into reality and now Dhanora has become role model of Rural Development. Dhanora village was also given an award by Prime minister of India Mr. Narendra Modi in the year 2018

India is a rural dominated country and villages are said to be the heart of this nation. Accordingto 2011 Census, the population of rural areas comprised of 68.84 per cent. Migration of the people from rural areas to urban areas causes some burden on the urban areas. If the vision of the founders ofthis nation is to be respected and implemented, then we all need to have the responsibility to make ourvillages smart, which means self-sufficient, efficient, healthy and educated villagers. To make the villages smart means to make the country self-reliant, stronger and secured. India lives in its villages. Villages are the food basket of the nation. Village Panchayats are the centers of grass root democracy. However, the holistic development of rural India is still under tremendous pressure owing to the declining farm output, increasing trend of distressed migration, absence of basic amenities and emerging problems of environmental pollution and conflicts. The smart village concept is needed for a sustainable and a secured future of the villages. It is about understanding the villages towards the growth model which is inclusive. It‘s about achieving a higher goal without compromising the roots and the sense of belongingness of the masses. The concept of smart village is contemporary and very reliable today as there is a limit of the growth of cities which is leading to creation of urban jungles, where the population ratio and its related issues per km of land is way above the expected targets.the terms of Retrofitting

Designs of the ningala viilage for renocation and re generation:

- p.h.c
- medical centre
- a.t.m
- entrance gate
- anganwadi
- public garden
- public laterin
- community hall
- bank etc.