# PROJECT BRIEF OF JACKFRUIT AND PROCESSED JACKFRUIT PRODUCTS PROCESSING UNIT BY

Chhattisgarh State Minor Forest Produce (Trade & Development) Cooperative Federation Limited



S. No.	Particular	Details
1	Project Name	JACKFRUIT AND PROCESSED JACKFRUIT PRODUCTS PROCESSING UNIT
2	Location	Village-Pratapara, Dist-Surajpur, Chhattisgarh
3	Land Area (open area, built-up area)	Plot: 17951.57 Sq Meter Factory Shed: 650 Sq Meter
4	The capacity of the Unit in terms of Finished Product Production (in MTPA)	<ul> <li>Jackfruit Pulp: 112.04</li> <li>Canned Jack Bulb:134.09</li> <li>Dehydrated Jackfruit: 42.46</li> <li>Jackfruit Seed Flour:162.96</li> <li>Jam: 49.15</li> <li>Squash: 36.86</li> <li>Chips &amp; Flakes: 15.36</li> </ul>
5	Raw Material Quantity of Jackfruit in MT per Annum)	Tender Jackfruit: 1140
6	Number of Working days	150 Days in a Year
7	Total Project Cost	3.76 Cr
8	Indicative Costs (It's bifurcation into total civil and total machinery costs)	A. Total Civil Cost: 1.54 Cr B. Total Machinery Cost: 2.22 Cr
9	Projected electricity requirement	Electricity: 70kW
10	List of Tentative finished Products	Jackfruit Pulp, Canned Jack Bulb, Dehydrated Jackfruit, Jackfruit Seed Flour, Jam, Squash, Chips & Flakes etc.

# PROJECT BRIEF– JACKFRUIT AND PROCESSED JACKFRUIT PRODUCTS PROCESSING UNIT

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# CHAPTER 1: INTRODUCTION

The state has realized the importance of the fast-growing medicinal plant sector and the global preference towards the Indian System of Medicine. Realizing the potential of medicinal plants and other non-specified Minor Forest Produce (MFP), their availability, and economic utility in the state, the Federation is promoting conservation and non-destructive harvesting of MFP.

# **Project Concept (Jackfruit Processing Unit)**

Jackfruit is a multi-purpose species providing food, timber, fuel, fodder, and medicinal and industrial products. The primary economic product of Jackfruit is the fruit which is used both when mature and unripe. The fruit pulp is sweet and tasty and used as a dessert or preserved in syrup. The fruits and seeds are also processed in a variety of ways for food and other products. Jackfruit value-added products include chips, papads, pickles, ice cream, jelly, sweets, beverages like squash, nectar, wine, and preserved flakes, etc. It is a nutritious fruit that is rich in carbohydrates, proteins, potassium, calcium, iron, and vitamin A, B, and C. Due to high levels of carbohydrates, jackfruit supplements other staple foods in times of scarcity in some regions. The flesh of the jackfruit is starchy and fibrous and is a source of dietary fiber.

India is the second largest producer of Jackfruit globally. Besides India, it is extensively cultivated in the South and Southeast Asia countries including Bangladesh, Thailand, Indonesia, and Nepal. Jackfruit possesses an impressive nutrition profile. It was traditionally used as a remedy, since it provides multiple health benefits including antioxidant protection, maintaining cardiovascular health, and enhances immunity.

# CHAPTER 2: ABOUT JACKFRUIT

#### INTRODUCTION

The jackfruit (Artocarpus heterophyllus) is also known as the jack tree. India is the second largest producer of Jackfruit in the world and is considered the motherland of jackfruit. According to some, Chakka, its Malayalam name, has given birth to the English name jackfruit. In India, the total area under cultivation of jackfruit is approximately 1,02,552 hectares, of which an estimated 10,00,000 trees are grown in back yards and as intercrop in other commercial crops (betel nut, coffee, pepper, and cardamom plantations) in south India. It is widely distributed in Assam, Tripura, Bihar, and Uttar Pradesh, as well as the Himalayan foothills and South Indian states<sup>1</sup>.

The trees are found in southern states such as Kerala, Tamil Nadu, Karnataka, Goa, coastal Maharashtra, and other states such as Assam, Bihar, Tripura, Uttar Pradesh, and the foothills of the Himalayas.

#### Image of Jackfruit



### **Origin:**

Jackfruit is a tropical fruit species found in tropical, high rainfall, coastal and humid areas of the world. Jackfruit does not spread readily and is not considered invasive species. In most areas of the world where jackfruit is grown, its presence is indicative of human cultivation. Jackfruit was introduced to most Pacific Islands, mainly in-home gardens, where it finds a place among other favourite multipurpose plants. It is easy to grow and more adaptable than some of the other common Artocarpus species like breadfruit.

All parts of the tree have been reported to have medicinal properties. The Chinese consider jackfruit pulp and seeds as a tonic, cooling, and nutritious, and to be useful in overcoming the influence of alcohol on the system. The seed starch is given to a person to relieve biliousness and the roasted seeds are regarded as an aphrodisiac. The ash of jackfruit leaves if mixed with corn and coconut shell ash is used alone or mixed with coconut oil to heal ulcers. The dried latex yields artostenone, a compound that is convertible to artosterone, which has a potent

androgenic property. If mixed with vinegar, the latex promotes the healing of abscesses. The root is a remedy for skin diseases and asthma. An extract of the root is taken and used as a cure for fever and diarrhoea. The bark is made into poultices. Heated leaves are placed on wounds. The wood has a sedative property; its pith is reported to induce abortion. Aside from flavouring for beverages, the fruit can be fermented and distilled to produce alcoholic liquor.

# Jack fruit Varieties in India

The state wise varieties of Jackfruit in India are detailed below.

Table 2: Variet	Table 2: Varieties of Jack Fruit in India						
State	Cultivars/varieties						
Chhattisgarh	Local Genotypes (Khaza, Singapore, Silon)						
Himachal	Local Genotypes, (Gulabi, Champa, Hazari)						
Pradesh							
Karnataka	Palur-1 Jack, PP-1, Jack PLR (J)-2, Swarna						
	Local genotypes (Idukki, Wayanand, Kannur, Thiruvananthapuram						
Kerala							
Madhya	Local genotypes (Khaza, Singapore, Silon)						
Pradesh							
Maharashtra	Konkan Prolific						
Odisha	Local genotypes (Khajra, Kadua)						
Tamil Nadu	Palur 1 Jack (PLR 1), PP-1 Jack, PLR (J)-2, Local genotypes (Valipala,						
	Singapore,						
	Panruti Selection, Thanjavur Jack, Burliar 1)						
Tripura	Local Genotype						

# Health Benefits of Jack fruit

The jackfruit tree is a tropical fruit that is high in carbohydrates, proteins, vitamins, minerals, dietary fiber and phytochemicals. Anticarcinogenic, antimicrobial, antifungal, antiinflammatory, wound healing and hypoglycaemic properties are just a few of the health benefits of jackfruit.

The below-mentioned	table shows the	chemical constitutes	and	composition (	of Jackfruit.
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	Table 3: Chemical Composition of Jackfruit				
Nutrients	Young fruit	Ripe fruit	Seed		
Water (g)	76.2-85.2	72.0-94.0	51.0-64.5		
Protein (g)	2.0-2.6	1.2-1.9	6.6-7.04		
Fat (g)	0.1-0.6	0.1-0.4	0.40-0.43		
Carbohydrate (g)	9.4-11.5	16.0-25.4	25.8-38.4		
Fibre (g)	2.6-3.6	1.0-1.5	1.0-1.5		
Total sugars (g)		20.6			
Total minerals (g)	0.9	0.8-0.9	0.9-1.2		
Calcium (mg)	30.0-73.2	20.0-37.0	50.0		
Magnesium (mg)	NA	27.0	54.0		

Phosphorus (mg)	20.0-57.2	38.0-41.0	38.0-97.0
Potassium (mg)	287.0-323.0	191.0-407.0	246.0
Sodium (mg)	3.0-35.0	2.0-41.0	63.2
Iron (mg)	0.4-1.9	0.5-1.1	1.5
Vitamin A (IU)	30.0	175.0-540.0	10.0-17.0
Thiamine (mg)	0.05-0.15	0.03-0.09	0.25
Riboflavin (mg)	0.05-0.2	0.05-0.4	0.11-0.3
Vitamin C (mg)	12.0-14.0	7.0-10.0	11.0
Energy (kJ)	50-210	88-410	133-139

Mentioned below table highlights the Nutritional value of Jackfruit.

Table 4: Nutritional constitutes & composition of Jack fruit (per 100g)						
Nutrients	Nutrient value	Recommended Dietary Allowance (%)				
Cholesterol (mg)	0	0				
Dietary fiber (g)	1.5	4				
Vitamins						
Folate (µg)	24	6				
Niacin (mg)	0.92	6				
Pyridoxine (mg)	0.329	25				
Riboflavin (mg)	0.055	4				
Thiamin (mg)	0.105	9				
Vitamin A (IU)	110	3.5				
Vitamin C (mg)	13.7	23				
Vitamin E (mg)	0.34	2				

Table 4: Nutritional constitutes & composition of Jack fruit (per 100g)						
Nutrients	Nutrient value	Recommended Dietary Allowance (%)				
Electrolytes						
Sodium (mg)	3	0				
Potassium (mg)	303	6.5				
Minerals						
Calcium (mg)	34	3.4				
Iron (mg)	0.6	7.5				
Magnesium (mg)	37	9				
Manganese (mg)	0.197	8.5				
Phosphorus (mg)	36	5				
Phosphorus (mg)	21	3				
Selenium (mg)	0.6	1				
Zinc (mg)	0.42	4				
Phytonutrients						
Carotene-ß (µg)	61					
Crypto-xanthin-ß (µg)	5					
Lutein-zeaxanthin (µg)	157					

### Availability of Jackfruit in India

#### National Profile of Jackfruit

Jackfruit is one of the major fruits in India. According to Horticulture Statistics at glance, Jackfruits is produced in West Bengal, Kerala, Chhattisgarh, Tamil Nadu, Assam, Karnataka, Tripura, Odisha, Jharkhand. The data indicate that the production of Jackfruit has been increasing gradually from 2015-16 to 2017-18. The below shown graph depicts that the production of Jackfruit reached 1946000 MT in 2021-22.

Figure 3: Area and Production Trends of Jack Fruit in India during FY 2014-15 to 2021-22



#### Production of Jackfruit in India

Jackfruit is a tropical climacteric fruit, belonging to the Moraceae family, is native to south and Southeast Asia where India is the second biggest producer of fruit in the world and is considered the Motherland of jackfruit. In India, the jackfruit trees are abundantly distributed in southern states like Kerala, Tamil Nadu, and Karnataka, and are also widely found in states like Orissa, Chhattisgarh, Madhya Pradesh, Assam, Bihar, Jharkhand, West Bengal, etc. According to the National Horticulture Board (NHB) Govt. of India, Orissa is the leading producer of jackfruit in India which contributes 16 per cent (312000 MT) of total production followed by Kerala 13.5 percent(263000 MT) Assam 10.9 per cent (212000 MT) West Bengal 11.4 per cent (221000 MT), and Chhattisgarh contributes 10.5 Percent (204000 MT) which placed 5<sup>th</sup> position among all the states in India during FY 2021-22 as shown in the figure<sup>3</sup>.



**Total Production-1946000 MT** 

### Availability of Jackfruit in State of Chhattisgarh

Chhattisgarh stood among the top 5 states in Jackfruit production during 2021-22. The state produced 204000 MT of Jackfruits in the year 2021-22, contributing approx. 10.5% to the national production for the year<sup>4</sup>. The majority of Jackfruit is cultivated under natural conditions, often growing as scattered plantations. The production of within state is sufficient to meet the demand of fruit within the state, and there is an immense untapped potential for supplying to other states as fresh fruit or for processing into various products to meet the demand of consumers through value-added products across different states and abroad. The production of jackfruit in Chhattisgarh during FY 2014-15 to 2021-22 are provided below.



Area and Production of Jack Fruit in Chhattisgarh during FY 2014-15 to2021-22

This shows that Chhattisgarh has an immense untapped potential where intervention may lead to the processing of Jackfruits for various markets and meet the needs of consumers across India & abroad.

### Availability of Raw Material in neighbouring district

Fresh jackfruit is the basic raw material for jackfruit value added product processing industries. A sustainable food processing unit must ensure maximum capacity utilization and thus requires an operation of a minimum of 200 days per year to get reasonable profit. Therefore, ensuring uninterrupted raw materials supply requires the maintenance of adequate raw material inventory. The processor must have linkage with producer organizations preferably FPCs through a legal contract to get adequate quantity and quality of raw materials which otherwise get deteriorated. In the current Jackfruit processing project, there is a huge possibility of procurement of jackfruit from neighbouring states like west Bengal, Orrisa, Kerala, Assam, Tripura, Madhya Pradesh and Jharkhand etc. The Area and Production of Jackfruit of these states has been provided below:

Table 4: Area and production of jackfruit different states of India					
State	Area	Production			
Orissa	13.56	312			
Kerala	91.70	263			
Assam	22.51	212			
West Bengal	12.32	221			
Jharkhand	14.93	200			
Tripura	5.60	136			
Madhya Pradesh	7.12	151			
Area ('000 Ha) and production ('000 MT)					

# **Seasonality of Jackfruit Production**

Generally, the Jackfruit plant starts producing fruits from the 7<sup>th</sup> - 8<sup>th</sup> year onwards. Grafted plant starts to yield from 4<sup>th</sup> - 5<sup>th</sup> year itself. Normally the fruits are available for consumption from March to June. In higher elevation, the harvesting season extends up to September. Even in plains, certain genotypes bear an off-season crop during October - December<sup>6</sup>.

Jackfruit has got the immense potential for value addition. A wide variety of items can be prepared from jackfruit right from immature stage to well-ripened stage. Each item has its own qualities in terms of taste, preference, shelf-life, etc. Because of its heaviness and large size, transportation and packaging are huge impediments to the successful marketing of jackfruit. Therefore, value-added products have more relevance for the commercial utility rather than the whole fruit. Jackfruit can be preserved by applying various techniques like drying, freezing, canning, or by converting it into various products.

S t	JAN	FEB	MAR	APR	MA V	J	JUL	AUG	SEP	OCT	NOV	DEC
i a					1	N N						
t												
e												
Tripura												
Assam												
Orissa												
Chhattisgarh												
Kerala												
West Bengal												
Green Jackfruit								Rip	e Jackf	ruit		

### **Post-Harvest Management Storage of Jackfruit**

**Collecting the harvesting Fruit**: After harvest, the fruit should be laid for some time with its stalk down to allow the latex to flow and coagulate. The use of dried banana leaves, or other cushioning materials placed in between the layers of fruits can minimize mechanical damage during transport. It is also important to prevent the spread of latex on the surface of the fruits so that they look fresh.

**Transport:** It is usually done in motorized vehicles (trucks and vans). The vehicles must be clean to avoid impurities such as dirt and stones that damage the fruit, thereby endangering the quality and shelf life of the fruit.

Jackfruit, being bulky and highly perishable, has quite high transport costs. Hence processing locally will enable reduced transport costs.

**Storage:** Harvesting of jackfruit in the green mature stage can prevent mechanical damage. Also, adaption to appropriate postharvest practices may facilitate the exportation through extended shelf life. Storage of the whole jackfruit at 10°-12°C and 85-90% humidity can extend the shelf life of the crop approximately by two weeks.

### Various Processed Products from Jackfruit

Jackfruit constitutes three parts viz., bulb (30-32%), seeds (13-15%), and the rind (5-55%) of the ripe fruit. The primary economic product of jackfruit is the fruit, used both when immature and when mature. The fresh de-seeded sweet pulp of the fruit is consumed as such by people and cannot be stored for a long time due to its perishability as a result huge post-harvest loss (30-35%) occur during the peak season. The fruit pulp is sweet and tasty and used as a dessert or preserved in syrup. The ripened pulp of fruitlets is used to flavour products such as ice cream and beverages and the fresh pulp is used to prepare jams, chutneys, jellies, or candies. Dried pulp is made into chips<sup>7</sup>.

The jackfruit seeds contained in the ripe fruits are also cooked, boiled, or roasted for direct consumption. The fruits and seeds are also processed in a variety of ways for food and other products. The green jackfruits are being utilized as a vegetable and processed to make pickles. It is nutritious, rich in vitamin A, B, and C, Calcium, Potassium and Iron, pectin, etc.

The importance of the fruit, seed, and rind is known very little to the growers and consumers. Hence, the University of Agricultural Sciences has taken up an important research and development project in their Post-Harvest Engineering and Technology Centre to develop value-added products from Jackfruits to utilize the surplus fruits available during the season as well as improve the livelihood of the farmers by enabling them to produce value-added products to improve their income as well as provide the surplus fruits to the fruit processing industries in their region which can produce these value-added products in large scale.



#### Various value-added products of Jackfruit



Cut Fruit



Jam

There are nine different value-added products from different parts of the Jackfruit that can be processed as mentioned below:

S. N	Value-added	Description
	products	
1.	Canned Jackfruit	Apart from the domestic market, canned jackfruits have good export potential also. As raw fruit is a highly perishable item, we can preserve it in sugar syrup for a long duration of time. We need to use the crisp bulbs of the ripe Jackfruit for canning purposes. Also, we will needraw materials like Sugar, Citric Acid and packing materials like Tin Can, etc.
2.	Fruit Bar	Generally, fruit bars are healthy snack items that provide a delicious taste also. It is also popular as fruit toffee. So, fruit bars have a wide market throughout the country. we can prepare the fruit bar from jackfruits also. Commercial manufacturing is a highly profitable business. As the raw materials, we will need starch, sugar, colour, preservatives, skimmed milk powder, hydrogenated fat, flavour, glucose, etc.
3.	Ice Cream	Ice creams in different fruit flavour are getting huge popularity these days. Currently, people of all age groups consume ice creams throughout the year. Hence, it is not a seasonal business. And we can prepare ice cream with jack pulp.
4.	Jackfruit Chips	Raw jackfruit is the basic raw material for fried jack chips. First, cut the raw jackfruits into large pieces. Then, remove the bulbs and seeds by hand. Then cut the raw bulbs into suitable lengthwise pieces. Finally, fry these pieces in coconut oil or refined vegetable oil. Also, we may add salt to the frying pieces to enhance their taste and preservation
5.	Jackfruit Nectar	"Nectar" typically refers to beverages produced by dilution of fruit pastes or juices with or without the

S. N	Value-added	Description
	products	
		addition of sweeteners. It is a healthy food item even for children and seniors. in nectar processing, you will need to remove the bulbs from ripe jackfruit. And pass them through a pulping/fruit mill. Then mix with about 10% hot water and pass through a pulper having a fine sieve of 1 mm hole. Now we can use this pulp for preparing nectar.
6.	Jackfruit Squash	In our country, fruit squash is a popular product in preparing homemade cold drinks like sharbat. we can find a wide number of established brands like Kissan, Druke, Ruhafza, etc. we can prepare jackfruit squash from the juice and pulp. The manufacturing process is simple. We will need to provide good quality moisture and leak- proof packaging.
7.	Jack Seed Flour	The manufacturing of jackfruit seed flour is easy. Also, the technology is readily available for entrepreneurs. Due to its high carbohydrate content and other nutrients, they can be added to baked products for value addition without affecting the functional and sensory properties of the final product.
8.	Jam	For jam preparation, we will need to use fully ripe jackfruits. we can prepare it by boiling fruit pulp with sugar, pectin, and acid. we need to invest a small startup capital for starting a small-scale unit. Jam is an intermediate moisture food and high sugar content increases its caloric value. Due to the sweet taste, people of all age groups consume jam frequently.
9.	Pickles	we will need to use unripe jackfruits for preparing pickles. Apply oil to a knife and peel the jackfruit. Peel theskin. Cut the peeled fruits into 12-18 mm thick slices. Prepare a 5% common salt solution by mixing salt with water, 50 g salt/l. Place the slices in a container and cover with the brine solution. Drain the slices after 24 hours. Finally, grind and mix with spice and vinegar and cook it to make taste.

Jackfruit is a highly fibrous fruit. Also, can be kept as ripe fruit fresh for a long duration of time. Therefore, you need to take considerable care in the time of procuring fresh jackfruits for preparing any type of value-added food products.

India, the world's largest producer of jackfruit, is cashing in on the fruit's rising appeal as a "superfood" meat substitute, praised by chefs from San Francisco to London and Delhi for its pork-like texture when unripe. It's used in curries or fried, minced, and sautéed when it's unripe. Shredded jackfruit has become a popular substitute for pulled pork in the West, and

Table 5 : Various Manufacturing and processing Company of value-added products of         Jackfruit				
Jackfruit Products	Brands			
Ready to Eat, Curry	The Jackfruit Company, Wakao			
Canned Jackfruit	Twin Elephant			
Chips	Urban Platter, Flavours of Calicut			
Jam	NaturUp, Nature Land			
Pickle	Urban Platter, Addme			
Cut Fruit (Cut & Peeled)	Living food company			
Flour	Jack Fruit 365, Wakao, Korah's			
Squash	Jumbo			
Fruit Bar	Go Desi			

it is even used as a pizza topping. The jackfruit tacos have been a huge hit at all locations in US.

The detailed market presence, market size, market share and market growth of different value-added products of jackfruit for various Brands in India are difficult to manage because the Brands are not ready to provide which is very confidential. however, according to secondary research the market size/price of different value-added products of jackfruit for various Brands in India are mentioned in detail.

# CHAPTER 3: MARKET POTENTIAL

### **Overview**

Emerged as the world's fastest growing economy, India is expected to become one of the top three economic powers in the world by 2030 or 2035. It is also expected that one-fifth of the world's working population will be Indian by 2025 with over 850 million internet users 2030. In terms of real gross domestic product (GDP) at current prices, India stood at USD 2.71 trillion in the financial year 2020-2021. The per capita GDP of the country has increased from USD 1,458.10 in 2011 to USD 2,099.60 in 2019, growing at a CAGR of approximately 7% (2011- 2019)<sup>18</sup>.



More households are entering higher income groups. Disposable incomes are increasing steadily in India. On average, every Indian is earning 30 percent more than what they used to earn in 2015. Per capita income in India increased at CAGR of 5% from ₹ 72,805 in FY15 to ₹94,954 in FY19. However, the pandemic has affected the per capita income in India negatively to attain a level of ₹ 85,929 with a growth of -9.1%.

With the next wave of unicorn 'start-ups' coming, India is in a very comfortable position with 21 unicorns collectively valued at USD 73.2 billion in 2020 and with 10 more start-ups entering the unicorn club in the first four months of the year 2021. FDI inflows in India increased from USD 74.3 billion in 2019-2020 to USD 58.37 billion between the months of April and November in the year 2020. The FDI inflows in the food processing sector stood at USD 904.7 million in 2019-2020 suggesting increased interest in the sector amongst investors. Owing to the rise in startup culture in India, the Chhattisgarh government is promoting startups and innovators in the agriculture and allied sector through Biotech Incubation Centre and Agri-Business Incubation and Production Centre.

Table 7 : Government of India recognised start-ups in Chhattisgarh				
Particulars	By the month of September 2019			
No. of Start-ups registered	293			
No. of seed funded start-ups	13			
No. of venture funded start-ups	0			
No. of incubators in state	3			
No. of incubates	102			
Purchase order awarded	1			

Source: Directorate of Industries, Chhattisgarh

#### Favourable changes in Demographic patterns

India's population has increased from 125.03 crores in 2011 to approximately 138 crores in 2020 with a yearly growth of 0.99% whereas the state of Chhattisgarh has witnessed an increase in population from 2.56 crores in 2011 to 2.94 crores in 2020. The total dependency ratio of the country is 48.7 and approximately 42% of the total population falling in the 25-54 age group. By 2025, the median age in India is expected to be 39 years. Hence median age will be in the working age population segment and not in the 'dependent' age population segment. India is expected to have over 550 million people below 25 years of age and over 800 million people in the productive age group of 20-60 years by the year 2050. By the year 2020, 34.9% of the total Indian population resides in urban settings with the rate of urbanization being 2.37% per annum from 2015- 2020.

### **Jackfruit Market**

The major populace in the jackfruit-producing areas normally consume ripe fruits and seeds locally, with some quantity of fruits finding their way to the markets. However, due to the bulk and weight of the fruit and its perishability, long distance markets are unreachable and most of the fruit is left to rot in the orchards. However, in the last 5-6 years, jackfruit has been getting paramount importance from the urban consumers and abroad markets in value-added and processed forms. As per a market study on Jackfruit, it has been estimated that approx. **25% of the production is channelled into the manufacturing of value-added products.** 

The rising concerns for climate change fuelling the vegan culture across the globe has led to an increase in demand for jackfruit worldwide causing a rise in exports from the country to west Asian countries, Germany, and Great Britain. India, the leading producer of Jackfruit, exported the superfood to over 75 countries worth USD 2.3 million in the year 2020-2021 (April to November) with the total volume of export around 2,300MT in the same period. In May 2021, approximately 1.2 tonnes of jackfruit sourced from Krishi Sanyoga Agro Producer Company of Tripura was exported to London<sup>19</sup>.

The entire jackfruit tree is loaded with various use cases. Apart from being used as fruit when ripe and as a vegetable when consumed in an unripe state, the leaves of the jackfruit are used as cattle feed. The wood from the tree is termite-proof and is superior to teak for furniture,

construction, musical instruments, etc. Consumers in countries including the UK, the US, and Germany perceive the cooked, unripe Jackfruit has a texture like pulled pork or chicken, making it a popular vegan option in these countries. Brands such as The Jackfruit Company and Upton's Naturals have shown how versatile an ingredient the fruit can be, consistently launching new products such as curry, pasta, and noodle meal kits all based around the meaty fruit.

### **Marketing Potential of Jackfruit**

### Exports for Jackfruit Value-added Products from India

United Arab Emirates is the largest market for Jackfruit export from India. In 2020-2021 (Apr-Nov), United Arab Emirates imported 0.37 USD million worth Jackfruit from India.

The top 5 trading partners of India are United Arab Emirates (0.37 USD Million), United Kingdom (0.32 USD Million), Nepal (0.26 USD Million), Thailand (0.24 USD Million), Viet Nam (0.22 USD Million) . The total export value of Jackfruit in these countries is 1.41 USD million. These top 5 countries account for over 61.3% of the total Jackfruit export from India.



Country	Value (USD Million)	Share (%)
United Arab Emirates	0.37	16.09
United Kingdom	0.32	13.91
Nepal	0.26	11.3
Thailand	0.24	10.43
Viet Nam	0.22	9.57
Malaysia	0.16	6.96
Saudi Arabia	0.16	6.96
Qatar	0.15	6.52
Australia	0.11	4.78
Germany	0.06	2.61
Total	2.05	89.13

Among the top countries, United Arab Emirates market share of the total Jackfruit export shipments from India is 16.09%. Followed by United Kingdom with the Jackfruit shipment

value being 0.32 USD Million. The top 10 countries in total shared the share of 89.13% of the Jackfruit export value from India.

The following table gives insights on a monthly report of November 2020 on Jackfruit export from India to the top 8 trading partners.

Country Wise Trends for Jackfruit export (USD Million)					
S.no.	Country Name	Qty in Kgs	Value (USD Million)		
1	United Arab Emirates	22010	0.04		
2	Kuwait	8370	0.02		
3	Qatar	12180	0.02		
4	Singapore	7660	0.02		
5	Australia	1970	0.01		
6	Bahrain	4560	0.01		
7	Oman	3820	0.01		
8	Saudi Arabia	6170	0.01		
Total		66740	0.14		

In the month of November 2020, India majorly exported Jackfruit to United Arab Emirates (0.04), Kuwait (0.02), Qatar (0.02), Singapore (0.02), Australia (0.01). The total export volume and export value of these top 5 importing countries is 52190 and 0.11 USD million, which is the 78.57% of the overall export volume in the month of November 2020.

However, the export data of value-added products of jackfruits are not available hence we have provided the above data which are according to the connect to India export data<sup>20</sup>.

#### In India

Jackfruit has immense potential for value addition, wherein a variety of items can be prepared from jackfruit right from immature stage to well-ripened stage. Value-added products have more relevance for the commercial utility rather than the whole fruit due to the heavy fruit size and transportation cost incurred in moving the fresh produce to consumers. The market for jackfruit products is valued at ₹1,252 Crore in India in 2017-18 and is projected to grow to approximately ₹1,580 Crore in the next five years (2021-22). The market is dominated by the unorganized sector players, accounting for approx. 95% of the market. The major portion of the Jackfruit market is captured by chips and papads, which account for approximately 70% share of the market by value and approximately 80% share by volume. Chips and papads are prepared from fully matured Jackfruit, wherein several tiny and household units manufacture jackfruit chips and supply them to domestic retail outlets. For processing, Jackfruit is mainly preserved by applying various techniques like drying, freezing, canning, or by converting it into various products.

Based on the above estimate about the jackfruit products' market size in India, further projections have been provided till 2025-26. Certain assumptions have been validated based on primary information received from the suppliers of jackfruit products. The market is estimated to grow at a CAGR of 4.78% annually till 2022-23. The products like chips and papad, though are the major product segments in the market, however, the growth prospects

for these products are not very promising, as these are not considered as healthy foods by consumers and create obesity, thus less preferred by health-conscious consumers. Thus, the growth rates for these products have been considered slightly lower at around 3.2% annual for the projection period (2023-24 to 2025-2026), considering the similar growth rate as in the case of competing product (potato chips). On the other hand, the categories like Seed Flour, Jackfruit Pulp, Dehydrated Jackfruit, and Canned Jackfruit Bulb are the categories which are expected to witness a higher growth in coming years, mainly driven by export markets (US, UK, and Germany, etc.). For these markets, the moderate growth rate of  $\sim 8\%$ per annum has been considered to project the market estimates for the upcoming years. These product categories provide opportunities for the processing industry in the near to long term. The estimate market size of jackfruit products as described below:



Based on the above estimate about the jackfruit products' market size in India, further projections have been provided till 2025-26.

Market size of Jackfruit products in India (in ₹ Crore)									
Droduct	2017-	2018-	2019-	2020-	2021-	2022-	2023-	2024-	2025-
Frouuct	18	19 (E)	20 (E)	21 (E)	22 (E)	23 (E)	24 (E)	25 (E)	26 (E)
Chips	600.96	629.69	659.78	691.32	724.37	758.99	783.28	808.35	834.21
Papad	325.52	341.08	357.38	374.47	392.37	411.12	424.28	437.85	451.87
Seed Flour	150.24	157.42	164.95	172.83	181.09	189.75	204.93	221.32	239.03
Jackfruit	62.6	62.6	62.6	62.6	62.6	62.6	67.61	73.02	78.86
Pulp									
Dehydrated	25.04	25.04	25.04	25.04	25.04	25.04	27.04	29.21	31.54
Jackfruit									
Canned	12.52	13.12	13.75	14.40	15.09	15.81	17.08	18.44	19.92
Jackfruit									
Bulb									
Others	75	83	91	100	109	118	125	132	140
Total	1252	1312	1375	1440	1509	1581	1649	1721	1796

**Assumptions:** Some adjustments have been made in the classifications (naming) of the product categories, based on inputs from primary respondents, wherein Pickles, Marmalade, Jam have been classified into 'Others' category



In market estimates, the volume terms have been arrived at based on the average prices of price category as per primary interactions with suppliers and also cross verification with companies /channels offering these products. The below table provides the market estimates for jackfruit products in volume terms.

Market size of Jackfruit products in India (in MT)									
Droduct	2017-	2018-	2019-	2020-	2021-	2022-	2023-	2024-	2025-
Product	18	<b>19 (E)</b>	20 (E)	21 (E)	22 (E)	23 (E)	24 (E)	25 (E)	26 (E)
Chips	24,038	25,187	25,623	26,066	26,516	26,974	27,027	27,079	27,132
Papad	21,701	22,739	23,132	23,531	23,938	24,352	24,399	24,446	24,494
Seed Flour	3,339	3,498	3,559	3,620	3,683	3,746	3,928	4,119	4,319
Jackfruit	3,130	3,130	3,039	2,950	2,864	2,781	2,916	3,058	3,206
Pulp									

Market size of Jackfruit products in India (in MT)									
Droduct	2017-	2018-	2019-	2020-	2021-	2022-	2023-	2024-	2025-
Product	18	<b>19 (E)</b>	20 (E)	21 (E)	22 (E)	23 (E)	24 (E)	25 (E)	26 (E)
Dehydrated	501	501	486	472	458	445	467	489	513
Jackfruit									
Canned	835	875	890	905	921	937	982	1,030	1,080
Jackfruit									
Bulb									
Others	5,008	5,527	5,893	6,258	6,622	6,985	7,188	7,398	7,613
Total	58,552	61,456	62,621	63,803	65,002	66,220	66,907	67,618	68,356

#### Note:

• The market volumes have been arrived by considering market value and prices of products. The prices considered for estimation have been considered as: Chips: ₹250 per kg; Papad:

₹150 per Kg, Seed Flour: ₹450 per Kg; Jackfruit Pulp: ₹200 Per Kg; Dehydrated Jackfruit:

₹500 per Kg; Canned Jackfruit Bulb: ₹150 per Kg; Others (Pickles, Marmalade, Jam): ₹150

Per Kg.

• A 3% yearly increase in market prices have been considered every year, for estimation of production volumes.

Based on the above analysis, the estimated market size and potential of jackfruit value added products are already provided in previous section. There are various brand available in market for jackfruit value added products. During interaction with top brands manufactures, they have not provided the critical information related to turnover, market share and market size of their products. Based on the secondary analysis the name of top brands and their market price are detailed below:

### Brand wise specific Price of Products:

The Brand wise market price of various of products of Jackfruit are provided below<sup>21</sup>:

<b>S.</b> N	Brand Name	Unit	Price in INR
1.	Nutsara Jackfruit Chips	kg	962
2.	Safe Products	kg	1076
3.	We Care Eco Products	kg	1156
4.	Worth 2 Deal	kg	938
5.	Flavours of Calicut	kg	1032

#### Jackfruit Chips and flakes

#### 1. Jackfruit Pulp

<b>S.</b> N	Brand Name	Unit	Price in INR
1.	Akshaj Foods	kg	290
2.	Fresho	kg	195
3.	Arasan	kg	200
4.	Limra	kg	180

#### 2. Jackfruit seed powder

<b>S.</b> N	Brand Name	Unit	Price in INR
1.	Law	kg	1196
2.	Arasan	kg	700
3.	B&B Organics	kg	880
4.	SAARA	kg	990

#### 3. canning of Jackfruit Bulb

S. N	Brand	Unit	Price in INR
1.	Jacme	kg	450
2.	Agrozee Fresh	kg	200
3.	Troppy Foods	kg	100

#### 4. Dehydrated Jackfruit

S. N	Brand	Unit	Price in INR
1.	Hillten	kg	475
2.	Durva	kg	600
3.	Jagan	kg	350
4.	Vembanattu Foods	kg	450

#### In Chhattisgarh

The consumption of Jackfruit in Chhattisgarh is mainly as a fresh fruit used for cooking as a vegetable. The scope for processing and value addition in Jackfruit exists for multiple products in the current scenario. Some of the common value-added products consumed include Chips, Brined products, Jam, Jelly, Jackfruit seed powder, etc. Based on raw material availability in the state, it has a great potential for commercial processing. The farming communities are slowly becoming aware of the potential importance of jackfruit and its value addition to their food and livelihood security. Mainly small-scale industries are processing the fruit for value addition, under cottage industry.

Market size for Processed Jackfruit Products in Chhattisgarh (in ₹ crore)									
Droduct	2017-	2018-	2019-	2020-	2021-	2022-	2023-	2024-	2025-
TTouuci	18	19 (E)	20 (E)	21 (E)	22 (E)	23 (E)	24 (E)	25 (E)	26 (E)
Chips	12.93	13.55	14.20	14.87	15.59	16.33	16.85	17.39	17.95
Papad	7.00	7.34	7.69	8.06	8.44	8.85	9.13	9.42	9.72
Seed Flour	3.23	3.39	3.55	3.72	3.90	4.08	4.41	4.76	5.14
Jackfruit Pulp	1.35	1.35	1.35	1.35	1.35	1.35	1.45	1.57	1.70
Dehydrated	0.54	0.54	0.54	0.54	0.54	0.54	0.58	0.63	0.68
Jackfruit									
Canned	0.27	0.28	0.30	0.31	0.32	0.34	0.37	0.40	0.43
Jackfruit Bulb									
Others	1.62	1.78	1.96	2.14	2.34	2.54	2.74	2.96	3.20
Total	26.9	28.2	29.6	31.0	32.5	34.0	35.5	37.1	38.8

**Assumption:** The population proportion of Chhattisgarh has been used on the Indian market to estimate the market size of Chhattisgarh. The population of India has been considered as 136.64 Crore and Population of Chhattisgarh as 2.94 Crore

In terms of consumption volumes, for jackfruit value-added products, Chhattisgarh is a small market, though it contributes to around 10% of the total raw material (jackfruit) production Pan India. The below table provides an estimate of the market size of jackfruit products by volume for the state.

Market size for Processed Jackfruit Products in Chhattisgarh (in MT)									
Drug drug 4	2017-	2018-	2019-	2020-	2021-	2022-	2023-	2024-	2025-
ITOuuci	18	<b>19 (E</b> )	20 (E)	21 (E)	22 (E)	23 (E)	24 (E)	25 (E)	26 (E)
Chips	517	542	551	561	571	580	582	583	584
Papad	467	489	498	506	515	524	525	526	527
Seed Flour	72	75	77	78	79	81	85	89	93
Jackfruit Pulp	67	67	65	63	62	60	63	66	69
Dehydrated	11	11	10	10	10	10	10	11	11
Jackfruit									
Canned	18	19	19	19	20	20	21	22	23
Jackfruit Bulb									
Others	108	119	127	135	142	150	155	159	164
Total	1,260	1,322	1,347	1,373	1,399	1,425	1,440	1,455	1,471

There is a scope of establishing jackfruit processing unit in Chhattisgarh based on sufficient availability of fruit in different production clusters, from where the high growth niche products (Jack Pulp, Jack Seed Powder, Dehydrated Jackfruit, Canned Jack Bulb) can be catered to the demand within and outside the state. The target markets for these products from Chhattisgarh could be the urban consumers of Raipur, Ranchi, Patna, and distant urban markets in other states. Also, key suppliers from south India view export markets as the lucrative destination for some of these products including jackfruit seed powder and dehydrated jackfruit, export-oriented processing can provide an attractive business opportunity to the processing unit in Chhattisgarh.

### **Consumption pattern of Jackfruit**

There is a paucity of authentic reference material on Jackfruit market size. Jackfruit market size may be divided into markets available in Rural and Urban areas. In India, it was calculated that the total Jackfruit consumption under the fruit category was 3,06,122 tons. The market size for Chhattisgarh is estimated to be 1,882 tons.

Jackfruit consumption estimation					
Jackfruit as a fruit	Unit in Ton				
Rural Consumption - India	2,69,920				
Urban Consumption - India	36,202				
Total Consumption - India	3,06,122				
Rural Consumption - Chhattisgarh	1,882				
Urban Consumption - Chhattisgarh	0				
Total Consumption - Chhattisgarh	1,882				

*Source:* Census of India (2011), Household Consumption of Various Goods and Services in India (20II-12), Ministry of Statistics and Programme Implementation, Government of India, 2014

### 1.1. SWOT Analysis

#### Strengths

- Favourable agro-climatic conditions for cultivation of Jackfruit
- Production of approximately 2,10,000MT of Jackfruit in the year 2019-2020 in the state
- Production of Jackfruit happens in all the 27 districts of Chhattisgarh
- Proximity of the state to Amritsar-Kolkata Industrial Corridor and East coast Industrial Corridor
- With approximately 45% of the state covered with forest cover and presence of multiple rivers, the state has natural resources in abundance to support the industry
- Growing health related awareness and acceptability of Jackfruit by the consumers

• Growing environment related awareness and comparatively similar taste of Jackfruit as of pork

#### Weakness

- Inadequate facilities for post-harvest handling of Jackfruit
- The pulping of Jackfruit is still done manually
- Considerable quantities of raw material is wasted at the source itself
- Upgradation of technology for processing of raw material
- The bulkiness of the fruit and high transportation costs may lead to disinterest of an entreprenuer in Jackfruit
- High perishability of Jackfruit and lack of storage facilities may lead to low capacity utilisation of the plant

#### Opportunities

- Scope for improving industrial infrastructure to attract more investments
- Incentives provided by the government to promote processing of Jackfruit
- The huge availability of processing quality produce is the big opportunity for the state
- The increasing awareness of Indian Consumer health orientation, and export orientation of the produce has given further impetus to the consumption of ayurvedic products in the food plate

#### Threats

- Less support in terms of research & development of the product may cause the private entities to invest in other high value products
- Possibility of ecological imbalance because of illicit felling of trees

# CHAPTER 4: LOCATION AND INFRASTRUCTURE

The envisaged plant will be set up by Chhattisgarh Government State Minor Forest Produce Cooperative Federation Limited, Chhattisgarh at the site mentioned.

- Site is located at Khasra No. 100/1 at Village-Patrapara, Dist-Surajpur, Chhattisgarh.
- External Infrastructure such as Boundry Wall, Connecting Roads and Necessary utilities connection etc. will be constructed by CGMFP Federation.
- Internal Boundry walls & Processing unit roads shall be constructed by the processing unit party along with other construction.







DPR on Jackfruit and Processed Jackfruit Products



DPR on Jackfruit and Processed Jackfruit Products

# CHAPTER 5: TECHNOLOGY

As described in earlier sections, there is a good scope for setting up jackfruit processing unit for processing into different value-added products, which not only will help the farmers to utilize the perishable raw material and generate more employment opportunities but also fulfill the needs of consumers. In this section, the manufacturing process of various value- added products through jackfruit processing has been elaborated for the proposed processing unit.

These Products and their processing technology are developed with the collaboration of Experts.

Jackfruit based value-added products has abundance nutrition and medicinal properties. There are standard technologies to produce jackfruit-based value-added products.

Product Processing Technology is the whole proprietary of the CGMFP Fed. This will be shared at the time of mutual agreement with all terms and conditions.

- Canned Jack Bulb
- Dehydrated Jackfruit
- Jackfruit Seed Flour
- Jam
- Squash
- Chips & Flakes
- Jackfruit Pulp

### **Technical Specification for Finished Products:**

Several types of products can be produced from various stages of Jackfruits. Nutritive value per 100g will be as below:

Nutritive value of various finished products of Jackfruit					
Nutrients	Young fruit	Ripe fruit	Seed		
Water (g)	76.2-85.2	72.0-94.0	51.0-64.5		
Protein (g)	2.0-2.6	1.2-1.9	6.6-7.04		
Fat (g)	0.1-0.6	0.1-0.4	0.40-0.43		
Carbohydrate (g)	9.4-11.5	16.0-25.4	25.8-38.4		
Fiber (g)	2.6-3.6	1.0-1.5	1.0-1.5		
Total sugars (g)		20.6			
Total minerals (g)	0.9	0.8-0.9	0.9-1.2		
Calcium (mg)	30.0-73.2	20.0-37.0	50.0		
Magnesium (mg)	NA*	27.0	54.0		
Phosphorus (mg)	20.0-57.2	38.0-41.0	38.0-97.0		
Potassium (mg)	287.0-323.0	191.0-407.0	246.0		
Sodium (mg)	3.0-35.0	2.0-41.0	63.2		
Iron (mg)	0.4-1.9	0.5-1.1	1.5		
Vitamin A (IU)	30.0	175.0-540.0	10.0-17.0		
Thiamine (mg)	0.05-0.15	0.03-0.09	0.25		
Riboflavin (mg)	0.05-0.2	0.05-0.4	0.11-0.3		
Vitamin C (mg)	12.0-14.0	7.0-10.0	11.0		
Energy (kJ)	50-210	88-410	133-139		

# CHAPTER 6: FINAL PRODUCTS

For jackfruit processing, there are different technologies available in the market, involving different degree of manual and automatic processes. The proposed unit will produce four products and for each product, the plant and machinery has been proposed based on discussions with suppliers and research about their products. This section provides the reasons for selection of particular technology in the machine assembly for the proposed unit.

#### Jackfruit Pulp Extraction

For extraction of pulp from jackfruit, there are different technologies available. Each technology has its own advantages and disadvantages. The common technologies are rotary modern twin pulping and single sieve pulping. To get the best pulp from jackfruit, the rotary modern twin pulper machine is proposed for the processing unit which uses a central rotation shaft equipped with blades and provides a more rotational effect to the product taken for processing and better product recovery. Motorization also rotates the central rotation shafts. The technology saves labour and times and maintains product hygiene. On the other hand, the single sieve pulper technology involves working with single sieve and the quality of the pulp is not good compared with the rotary modern twin pulping. It is more manual operated, hence less efficient in terms of hygiene maintenance and saving in time and labour.

Through jackfruit pulp, Jam and squash can also be produced based on the demand and requirement.

#### Jackfruit Canning

In the case of canning of jackfruit, the process differentiates at the canning stage only. There are mainly two types of kettles used, one is a steam jacketed kettle, and another is a tilt kettle. We are proposing steam jacketed kettles, wherein steam jacketed pots are operated at 50 psi as the maximum pressure. A boiler usually supplies desired amount of steam to this steam jacketed kettles. A steam jacketed kettle is a container with a spherical bottom with jacket covering to provide space for steam to circulate. The steam condenses on the product-surface of the kettle jacket and transfers its latent heat of vaporization to the product, thereby heating the cooking surface. The steam Kettle is complete with a pressure gauge, safety valve and steam trap. The kettles are double jacketed for maximum steam utilization and better efficiency. To produce canned jackfruit, therefore steam kettle is considered better. Also, the steam kettle does not need to be revolved again and again. On the other hand, the kettle must change again after one shift of processing and thus increases the change-over time.

#### Jackfruit Seed Powder

For processing of Jackfruit seed powder, there are many pulverisers available in the market, which includes semi-automatic and manual micro pulveriser. Both machines are used for grinding seeds, but we are proposing a semi-automatic pulveriser because it is a high-speed swing beater type grinding machine and has more efficiency than the manual micro pulveriser. Semi-automatic pulverization works on impact of beater on the material in the grinding chamber while the manual micro pulveriser uses screen to generate the fine particles from seed. In the semi-automatic pulverization, the fine powder is swept by the

suction of the blower from the grinding chamber through whizzer blade and cone. The function of the whizzer blade and cone is to check the oversize particles and thus regulates the mesh size by shifting the whizzer blade to the cone side. The function of the blower is to deliver particles to the cyclone where particles are separated from the air by the centrifugal force developed in the cyclone. The powder is discharged by the cyclone outlet and the separated air returns to the grinding chamber by semi round bend. It has a high-speed rotor assembly of two-way reversible beaters. Automatic pulveriser has an easy access because of its dual access doors. They also have silent running with dust free operations, which helps them to be durable. It also guaranteed grinding efficiency, particle sizes are finer and more uniform than that obtained from a machine using a screen.

#### Dehydrated Jackfruit

There are drum drying technique and solar drying techniques available in the market. We are proposing solar dryers for dehydrating jackfruits because it has a uniform drying capacity and gives better dehydrated products. When the solar radiation impinges on the glass cover, the air is heated up and then introduced inside the drying chamber. Raising the temperature of the air has a direct effect on the product by removing its moisture content by evaporation and increasing its temperature. It also dries faster because inside the dryer it is warmer than outside. It also gives less risk of spoilage of product and protects against flies, pests, rain, and dust. It also helps in saving labour and the quality of the product is better in terms of nutrients, hygiene, and colour.

# CHAPTER 7: PLANT AND MACHINERY

Technical Specifications for Plant & Machinery for Jackfruit Processing Unit

The following table has summarized the technical specifications of plant and machinery used in processing unit. Some of these machines shall have a common use for all four products which shall include processes of Washing, Blanching, Control panel for controlling the unit, RO plant etc. The details of technical specifications have been mentioned here.

Specification of	Plant & Machinery	
Equipment	Description of Machine and	Diagram
Name	Specification	
Feeding Hopper Cum Washer	<ul> <li>The parts of machine are made of stainless steel with simple design and sturdy construction.</li> <li>The machine has hopper for feeding the raw material continuously, which gets washed by slowtumbling action.</li> <li>Capacity – 1 MT/Hour</li> <li>Power - 2.4 kW</li> </ul>	
Working Table	<ul> <li>The working table is made of stainless steel with a simple design.</li> <li>Length- 6 feet</li> <li>Width- 2 feet</li> <li>Height -3.5 feet</li> <li>Required Nos. of Table- 8</li> </ul>	
S/S Trays	<ul> <li>The S/S Trays are made of stainless</li> <li>steel with a simple design.</li> <li>Finish- Mirror Finish</li> <li>Required Nos. of Trays- 50</li> </ul>	
Plastic Crates	<ul> <li>Plastic Crates made of plastic.</li> <li>Capacity - 20 to 25 Kgs</li> <li>Shape -Rectangular</li> <li>Size -540x360x290mm</li> <li>Required Nos 200</li> </ul>	

DPR on Jackfruit and Processed Jackfruit Products

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	• Blade Material made of Carbon Steel			
Large Cutting	• Colour- Black			
	• Handle Material- Wood, Steel, Iron			
	• Blade Edge- Plain			
	• Required Nos 20			
Specification of	Plant & Machinery			
Equipment	Description of Machine and	Diagram		
Name	Specification			
	• S.S. Drum & Body and other frames			
	are made by MS.			
	• <b>Production Capacity -</b> 200KG/Hour			
	Motor-2 HP			
Blancher	• Type- Continuous			
	• Power- 2 kW			
	Usage: The Blancher is a versatile			
	machine which is designed for heating			
	and cooking a variety of food products.			
	• Mounted on stainless steel legs. Jacket			
	and pan made of 10/12 Standard Wire			
	Gauge stainless steel. Complete with			
	pressure gauge, safety valve, steam			
	Trap. The kettles are double jacketed			
	for maximum steam utilization and			
Steam	efficiency.			
Jacketed	• Kettles fixed type with Teflon			
Kettle of	scrapper fitted with geared motor			
Stainless-	completely made of stainless steel			
Steel	(legs, mounting etc.)			
Construction	• Capacity: 200 litres			
	• Surface Finish- Mirror Finish Usage:			
	Steam-jacketed kettles are often used to			
	rapidly and uniformly heat food and			
	agricultural products to processing			
	temperatures.			

DPR on Jackfruit and Processed Jackfruit Products

Specification of	Plant & Machinery				
Equipment	<b>Description of Machine and</b>	Diagram			
Name	Specification				
Slicer	<ul> <li>The machine can slice jackfruit bulbs into uniform-sized slices.</li> <li>Made of stainless steel</li> <li>Capacity- 750kg/day</li> <li>Space required- 50 Sq. Ft.</li> <li>Required Nos 4</li> </ul>				
Filling Tank	<ul> <li>Made of Stainless steel, SS-304</li> <li>Capacity – 500-1000 Litres.</li> <li>Insulated for maintaining the inside temperature</li> </ul>				
Semi- automatic can sealer machine	<ul> <li>Capacity: 35 Cans Per Minute</li> <li>Power: 2.5 Hp</li> <li>Machine Type: Semi-Automatic</li> <li>Motor Speed -1440 rpm</li> <li>Net Weight -850Kg</li> <li>Voltage - 440V</li> </ul>				
Pulper	<ul> <li>Consists of 2 Nos pulper mounted on the basic structure of M.S. 1ststage is fitted with a sieve. The product gets pulped in the 1st stage &amp; then flows into the 2nd stage, which is fitted with a sieve (as per requirement). All contact parts made of stainless steel AISI-304.</li> <li>Stages -2</li> <li>Automation Grade- Semi- Automatic</li> </ul>				
	<ul> <li>Voltage -440v</li> <li>Electricity Phase-Three Phase</li> <li>Capacity- 2.5/3 tonnes /hrs</li> </ul>				

Specification of	Plant & Machinery						
Equipment Name	Description of Machine and Specification	Diagram					
	• Total load- 7.5 HP						
Pulveriser	<ul> <li>Material- Stainless steel</li> <li>Power- 7.5 HP</li> <li>Electricity Phase- 3 Phase Motor</li> <li>Capacity -250 kg per hour.</li> <li>Automatic Grade- Semi automatic</li> <li>Use: A pulveriser or grinder is a mechanical device for the grinding of many different types of materials.</li> </ul>						
Solar Dryer	<ul> <li>Operating Temperature: 50-60° C</li> <li>Feature: With electric heater as back up, controlled by digital Temperature controller with PT-100 sensor</li> <li>Base Area- 12 x 30 feet</li> <li>Capacity- 300 kg/ batch</li> </ul>						
Or							
Mechanical Dryer	<ul> <li>Mechanical Tray Dryer</li> <li>Material- Mild Steel</li> <li>Automation Grade- Automatic</li> <li>Capacity- 24 tray dryer.</li> <li>Heating Media - Electric</li> </ul>						
Masala Coating Machine	<ul> <li>The Masala Coating Machine is made of a Stainless-steel body.</li> <li>Capacity -100 kg / hrs</li> <li>Operation Mode-Automatic</li> </ul>						

DPR on Jackfruit and Processed Jackfruit Products
Specification of	Plant & Machinery	
Equipment	Description of Machine and	Diagram
Name	Specification	
	• Electricity Connection -Three	
	Phase	
	• Motor Power -2 HP	
	• Required Nos 1	
	• RO Capacity- 2000LPH	
	• <b>Purification Type</b> - RO	
	• Features- Fully Automatic	
PS-RO PLANT	• Automation Grade-	
	Automatic	
	• Power Source -AC	
	• <b>Power</b> - 10-12 kW	
	• Temperature: -18-25 Degree C	
	• Phase- 3 Phase	
	• Compressor Type- Air Cooled	
Frozen	• Size of Storage- 1500 cubic feet	
storage	• Capacity -20 tonnes	
	• <b>Temperature-</b> 2°C to 8°C	
	• Humidity- 85% - 90%	
	• <b>Power:</b> 12-15 kW	
	• Power Source- Electric	
	• Automation Grade- Automatic	
	• <b>Power Consumption:</b> 5 kW 3 Phase	
Boiler	• <b>Capacity-</b> 600 (kg/hr)	Watex .
	• <b>Weight</b> -1200 kg	

Specification of	Plant & Machinery	
Equipment Name	Description of Machine and Specification	Diagram
Plate chiller	<ul> <li>Capacity- 2 Ton</li> <li>Power -440 V</li> <li>Phase -3 Phase</li> <li>Material- Stainless Steel</li> <li>Frequency - 60 Hz</li> <li>Use: plate chillers are used for pulp packing to 5 -10 kg and it has specially used to preserve pulp without chemical mixing at cold storage.</li> </ul>	
Automatic chips frying machine	<ul> <li>Material- Stainless Steel</li> <li>Driven Type- Automatic</li> <li>Capacity -300kg/h</li> <li>Power Consumption - 3 HP</li> <li>Machine Components - Fryer</li> </ul>	
Jackfruit Seed Grinder	<ul> <li>This is used for fine grinding of jackfruit seeds into powder.</li> <li>Weight- 50 kg</li> <li>Voltage- 220V</li> <li>Capacity- 100 Kg/Hr</li> <li>Power-3.5 HP Motor</li> </ul>	
FFS machine with nitrogen flush	<ul> <li>This is a Semi-Automatic pneumatically operated vacuumizing, sealing and enhance the product self-life.</li> <li>Power Supply- 220 V AC, Single Phase, 50 Hz</li> <li>Power Consumption- 1.8 kW</li> <li>Filling range- 25 gm – 500 gm</li> <li>Phase- 1 Phase</li> </ul>	

DPR on Jackfruit and Processed Jackfruit Products

Specification of	Plant & Machinery	
Equipment	Description of Machine and	Diagram
Name	Specification	
	• Packaging Speed- 35-40	
	Pouch/Min	
	• <b>Pressure-</b> 100-150 Bar	
	• Voltage - 380 volt	
	• <b>Capacity</b> - 100-1000	6 66
	litres/hour	
	• <b>Phase-</b> 3 phase.	
Homogenizer	• Automation Grade- Semi-	
	Automatic	
	• <b>Power-</b> 5 HP	
	Use: Homogenizer is a special equipment	
	of the liquid material thinningand	
	high-pressure	
	transportation.	
	• Electric Power- 50 kVA	
	• Alternator- Brushless, Single	L'AND
DG Set	Bearing, IP23,	
	Class H Insulated, 50 Hz, Voltage	2 (D
	Regulation +- 0.5%, 0.8PF Lag	
	• Size- 2000 X 900 mm	
	• Working Voltage Range -440 V 3	
	Phase	
	• <b>PH Level-</b> 6 to 8	
	• Operating Temperature- 25	
	to 50 degrees Celsius	
	• <b>Operating Pressure-</b> up to 3	
	bar	
Effluent	• Feed Flow Rate- 0.5 to 2 m3/hr	
Treatment	• <b>Dimension</b> -4ft* 3.2ft*4ft	
Plant	• <b>Power-</b> 1.5 to 2.5 KW	

Specification of	Plant & Machinery	
Equipment	Description of Machine and	Diagram
Name	Specification	
Transformer	<ul> <li>Capacity – 100 kVA</li> <li>Input Voltage- 300-460 Volt</li> <li>Cooling Type- Oil cooled.</li> <li>Phase- 3 Phase</li> <li>Frequency- 50-60 HZ</li> <li>Carbon Rollers- High Grade Graphite Rollers</li> </ul>	
Pallet jacks	<ul> <li>Fork Length- 1150 mm</li> <li>Fork Width- 550 mm</li> <li>Capacity- 2 ton</li> </ul>	
Carton rapping machine	<ul> <li>Strap Width- 12 mm</li> <li>Wight- 210 Kg</li> <li>Material- Mild Steel</li> <li>Speed- 25 Cycle/Min</li> </ul>	
Bag Closer Machine	<ul> <li>Frequency- 50 Hz</li> <li>Voltage- 220V.</li> <li>Needle – Double</li> <li>Capacity- 25-30 Bag/Min</li> <li>Carton strapping and taping machine</li> </ul>	
Manual bag closer machine	<ul> <li>Capacity: 5-8 bags per min.</li> <li>Voltage - 220V</li> <li>Stitch Type - Single Thread/Chain Stitch</li> <li>Weight -6 Kg</li> </ul>	

Specification of Plant &					
Equipment	Description of Machine and	Diagram			
Name	Specification				
	List of equipment				
	Laminar Air Flow				
	Microscope				
	• Oven				
	• Incubator				
	• Refractometer (0 – 32 <sup>0</sup> B, 28-62 <sup>0</sup> B & 58-90 <sup>0</sup> B)				
Laboratory	• Salinometer (0-100%)				
	• Pressure tester				
	• PH Meter				
	• Weighing Balance (mg to g)				
	• Other equipment (Petri dish, B	urner, inoculating needle,			
	Chemicals, Microorganisms gro	owing media, test tube,			
	beaker, flask etc)				

# VENDORS" NAME AND ADDSRESS

The key suppliers of plant and machinery are mainly located outside the state of Chhattisgarh and some of these players have PAN India services. The below list provided the details of suppliers of jackfruit processing plant and machinery:

Key	Key suppliers of Processing Plant & Machineries					
<b>S.</b> N	Vendor Name	Address	Contact			
1	IRS Agro Direct	Omkar Apartment, Shaniwar peth, Tal:Miraj, Dist-Miraj, Maharashtra-416410	+91-7057624160			
2	S4S Technologies	Plot no 43, Sector 6, Sanpada East, Navi Mumbai 400-705	sales@s4stechnologies.co m +91-7738193313			
3	Kerala Agro Fruit Products	Elampal, P.O, Punalur, Kerala- 691322	(0471) 2471344, 2471345, 2471343			
4	Fry-Tech Food Equipment's Private Ltd	S. No. 4, Raviraj Industrial Estate, Bhikhubhai Mukhi Ka Kuwa Bharwadvash, Ramol, Ahmedabad - 380024, Gujarat, India	+91-9016108819, +91-8042952940			
5	Hindustan Vibro Tech Pvt Ltd	No. 32 1st Floor, Shivam Square, Swami Nityanand Marg, Sahar Road, Andheri (E), Mumbai – 400069.	+91-8976232172, 0- 250-2390081/82			
6	Springboard Enterprises India Ltd	<ul> <li>1st, 2nd &amp; 3rd Floor, Plot No. 7, 8 &amp;</li> <li>9, Garg Shopping Mall, Service Centre, Rohini Sector 2 New Delhi</li> <li>– 110085, Delhi, India</li> </ul>	+91-8130796171			
7	Flour Tech Engineers Private Limited	Plot No. 182, Sector 24, Faridabad - 121005, Haryana, India	+91-9810462578, 0129-4043399			
8	P Square Technologies	3, Swami Mahal, Gurunanak Nagar, off. Shankarsheth Road Bhavani Peth, Pune - 411002, Maharashtra, India	+91- 8048762146			
9	Ricon Engineers	10 To 13, Bhagwati Estate, Near Amraiwadi Torrent Power, Behind Uttam Dairy, Rakhial, Ahmedabad - 380023, Gujarat, India	+91-9374417121			
10	Gemtech Project LLP	10/C, Middleton Row, 3rd Floor, Kolkata-700071, India	(91-33) 2217-7328			
11	M/s. Batliboi & Comp Ltd.	Bharat house, 5th Floor, 104 Bombay Samachar Marg, Fort, Mumbai-400001	(022) 66378200			

# CHAPTER 8: PROCESS FLOW CHART

## A. Jackfruit Pulp



## B. Dehydrated Jackfruit





**Canning and** 

Sealing

Storage

Packaging

Labelling

Blanching &

Staining

## C. Canned Jackfruit pulp

## E. Jackfruit Seed Powder/Flour

![](_page_44_Figure_1.jpeg)

## F. Jackfruit Chips and Flakes

![](_page_44_Figure_3.jpeg)

# CHAPTER 09: WORKING HOURS, CAPACITY UTILIZATION& HUMAN RESOURCE

## • Working Hours & Capacity Utilization

## **Working Hours/Days**

Working hours per day	Ш	8.00 (1 Shifts)	Hours
No. of working days in a year	Ш	150.00	Days

# Capacity Utilization from 2023-24 to 2032-33

YEAR	2023-24	2024-25	2025- 26	2026-27	2027-28	2028-29	2029-30	2030- 31	2031-32	2032-33
CAPACITY UTILISATION	50.00%	60.00%	70.00 %	80.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%

Electricity Requirements	70kW

## Manpower

Workforce Assumptions	Nos.
Semi-Skilled Labour	20
Employee Expenses	
Plant Manager	1
Food Technologist	1
Plant Operator	2
Accountant	1
Plant Staff	2
Security	3
Marketing Specialists	2

# CHAPTER 10: CONSTRUCTION AND BUILDING DESIGN

# **A. DESCRIPTION OF DESIGN**

S. No.	DESCRIPTION OF ITEMS
1	RAW MATERIAL COLLECTION
2	SEED & BULB SEPARATION
3	DOUBLE JACKETED
4	PULPIER & COLLECTION TANKS
5	HOMOGENIZER
6	PACKAGING & STORANGE
7	JACKFRUIT PEELING AND COLLECTION
8	SEPARATION OF SEEDS AND RAW BULBS
9	MECHANICAL DRYING
10	PULVERIZE/GRINDER
11	SIEVING AND PACKAGING
13	SECONDARY PACKAGING
	MECHANICAL SLICER FOR UNRIPENED JACKFRUIT BULBS
14	SLICING
	EXCESS WATER SLICER FOR UNRIPENED JACKFRUIT BUBL SLICING
15	
16	AUTOMATIC CHIPS FRYING & STAINING
17	FFS PACKAGING WITH NITROGEN FLUSH & LOBELING
18	SECONDARY PACKAGING
19	JACKFRUIT DICING
20	BIANCHING & STAINING
21	CAN SEALING & SEAMING

	CAN PROOFING
22	
	BOILER & R.O. WATER UNIT
23	
	WASHROOMS
24	
	E.T.P.UNIT
25	
	LABORATORY
26	
	ADMINISTRATIVE OFFICE
27	

# **B. AREA STATEMENT**

S.NO.	ITEMS	FLOOR AREA
1	PLOT AREA	14576.08 SQ.M.
2	RAW MATERIAL COLLECTION	27.87 SQ.M.
3	SEED & BULB SEPARATION	13.935 SQ.M.
4	DOUBLE JACKETED	27.87 SQ.M.
5	PULPIER & COLLECTION TANKS	13.93 SQ.M.
6	HOMOGENIZER	13.93 SQ.M.
7	PACKAGING & STORANGE	27.87 SQ.M.
8	JACKFRUIT PEELING AND COLLECTION	27.87 SQ.M.
9	SEPARATION OF SEEDS AND RAW BULBS	18.58 SQ.M.
10	MECHANICAL DRYING	18.58 SQ.M.
11	PULVERIZE/GRINDER	9.29 SQ.M.
12	SIEVING AND PACKAGING	9.29 SQ.M.
13	SECONDARY PACKAGING	9.29 SQ.M.

DPR on Jackfruit and Processed Jackfruit Products

14	MECHANICAL SLICER FOR UNRIPENED JACKFRUIT BULBS SLICING	9.29 SQ.M.
15	EXCESS WATER SLICER FOR UNRIPENED JACKFRUIT BUBLS SLICING	4.92 SQ.M.
16	AUTOMATIC CHIPS FRYING & STAINING	18.58 SQ.M.
17	FFS PACKAGING WITH NITROGEN FLUSH & LOBELING	9.29 SQ.M.
18	SECONDARY PACKAGING	9.29 SQ.M.
19	JACKFRUIT DICING	18.58 SQ.M.
20	BIANCHING & STAINING	18.58 SQ.M.
21	CAN SEALING & SEAMING	18.58 SQ.M.
22	CAN PROOFING	18.58 SQ.M.
23	BOILER & R.O. WATER UNIT	18.58 SQ.M.
24	WASHROOMS	18.58 SQ.M.
25	E.T.P.UNIT	18.58 SQ.M.
26	LABORATORY	13.93 SQ.M.
27	ADMINISTRATIVE OFFICE	27.87 SQ.M.

## **C. REPORT AND SPECIFICATION**

NAME OF	CONSTRUCTION OF PROPOSED INTEGRATED
WORK	MAHUA PROCESSING UNIT PATAN DIST. –DURG C.G.
AUTHORITY	CHHATTISGARH STATE MINOR FOREST PRODUCE
PROVISIONS	The Following Provisions has been made in this Estimate :
1.Foundation And	Column and Footing with R.C.C. M-20
Frame	
2.Plinth	Sand/crusher dust and hard moorum has been/used for filling under floors
	Ant termite treatment provision has been given below plinth.
	Brick work with FLY ASH lime bricks in C.M -1:6 has been provided
	R.C.C. Grade slab at plinth level with M-20 grade of concrete
3.Superstructure	Brick Work with Fly Ash Bricks of crushing strength not less than 25 kg/sq cm
	R.C.C Slab with M-20 Grade of concrete
	Poly Carbonate and Profile Sheeting Work with steel structure as per approved make C.G. PWD
4.Flooring & wall	i. Terrazzo flooring with complete polishing and wall tiling
tiling	up to 900 mm inside the processing area all around with adhesive
	of approved make as per C.G. PWD
5. Doors	All door frames and shutters of Teak wood frame
	For main doors and entry in processing area will be of fire proof doors of approved make approved as per C.G. PWD
6. Windows	All windows and ventilators are Aluminum section windows shutters of A class aluminum sections approved in C.G. PWD

7.Steel Work	M.S grills in windows, ventilators and stainless steel railing has been provided in ramp and stair case
8. Plastering	12mm thick plaster for smooth side, 15 mm thick plaster for rough side, 6mm thick plaster for ceiling has been used in this building.
9.Painting	All wood work and steel work is painted with synthetic enamel paints and inner walls are painted with acrylic luxury emulsion (plastic) with putty of A class fire proof materials as per approved C.G. PWD
10. false ceiling	Armstrong false ceiling in all processing unit of approved make as per C.G. PWD

11. Water Supply	Specific item with ISI mark are used	
12 Landscape And Road	nd As per C.G. PWD ROAD 2015	
13. Rate	All rates are as per schedule of rates in C.G.P.W.D enforced from	
	01.01.2015 & Amendment up to 06.04.2016	
16.Specification	Work will be executed as per C.P.W.D & National Building Code specification	

PROVISIONS	Following provisions of Electrical Works have been made in this building :
Type Of Wiring	Concealed type Wiring with Copper Conductor (FRLS) in PVC (Non-Metallic) Conduit Separate wiring and Separate Meter System for each Department

# PREFABRICATED STEEL

Build up Area 26.69 X 17.62 =470.27 Sqm

Canopy Area 18X3.0 = 54.0 Sqm

Providing, Supplying, Designing and Erection of PREFABRICATED STEEL BUILDING - HSN CODE -9406 in site.

THE BUILDING WILL BE MANUFACTURED IN ACCORDANCE WITH THE FOLLOWING CODES:-

IS 800-2007

. A WS D1.1 Structural Welding Code. MBMA Manual for Fabrication Tolenances.

Product Specification

1. PRIMARY MEBMERS:- Primary Structure framing shall

include the transverse rigid frams, lean-to-rafters and colulmns, canopy rafters, interior columns (beam and column frames) bearing frame refters and corner columns and end wall wind columns.

2. SECONDARY MEMBERS:- Secondary structure framing shall include the purlins, girts eave struts, wind bracing flags bracing, base angle, clips and outer miscellaneous structure parts.

3. PAINT OF STRUCTURAL MEMBERS:- All structural

members shall be cleaned by wire brushing to move dirt, grease, oil and loose mill scale and give one shop coat of red oxide, air doing ,phenol modifeed alkyd resin primer.

# 4. CONNECTIONS:- All field connections shall be

bolted (unless othewise notes). Primary bolted connections shell be furnshed with high stength bolt informing to the physical specifications of ASTM A 325 (Or equivalent). Secondary bolted connection shall be furnished with machine bolts confirming to the physical specification of ASTM A307 (Or equivalent).

# 5. PHYSICAL SPECIFICATIO OF STRUCTURAL

MEMBERS:- Member fabricated from plate or bar stock shall have flanges and webs jointed on one side of the web by a continuous welding process and will conform to the physical specifications of ASTM A570 (Grade 50) or equivalent and having a minimum yield strength of 50,00 P.S.I (345 MPa).

members fabricated by cold forming process shall conform to the physical specifications of ASTM A570(Grade 50) or equivelent and having a minium yield strength of 50,000 P.S.I. (345 Mpa).

Members fabricated from hot rolled strucural shapes shall conform to the physical specifications of ASTM A572 (Grade 35) or equivalent and having a minimum yield strength of 36,000 P.S.I. (250 Mpa).

Rod and angle bracing shall conform to the physical specification of ASTM A36 (or equivalent) and having a minimum yield strength of 36,000 P.S.I. (250 Mpa).

Roof and wall cladding shall conform to the physical specifications of ASTM A653 grade 50 (or equivalent ) and having a minimum yield strength of 50,000 P.S.I. (345 Mpa).

All other miscellaneous secondary members shall have minimum yield strength of 36,000 P.S.I. (250 Mpa).

6. ROOF SHEETING (KR)/WALL SHEETING (KW) :-Roof and wall panels shall be of 26 gauge thick profiled galvalume or galvalume color coated steel sheeting.

In case of pre-painted galvalume panels, the exterior face is pre-painted with 1mil. Thick factory applied polyester paint. The interior face is pre-painted with 0.5mil. Thick factory applied polyester paint.

Each panel shall provide one meter coverage and can be shipped in any length up to 10 m. color of exterior and interior faces shall be white/grey or as directed. Other materials, thicknesses and coating are available upon request.

The material shall conform to ASTM A792 and the galvalume coating to ASTM-A792-AZ150. The yield strength of material shall be 550/300 mpa. Incase of KSS type of sheeting the yield strength shall be 300 mpa (minimum).

7. SHEETING FASTENERS :- Standard fasteners shall

be NO. 14, Type A, self tapping sheet metal screws with metal and neoprene washers. All screws shall have hexagonal heads, be color coated to match roof and wall sheeting and made of zinc plated steel.

8.SEALER/ROPE SEAL:- Thise is to be applied at all side

laps and end laps of roof panels and around self flashing windows. Sealer shall be 6mm wide X 5mm thick, asbestos fiber filled, pressure sensitive butyl tape. The sealer shall be non asphalted, non shrinking, non drying and non toxic and shall have superior adhesion to metals, plastic and painted surfaces at temperatures from - 51 deg. 'C' to + 104 deg 'C'.

9. CLOSURES/FILLER STRIPS :- Solid or closed cell E.T.P.

(Ethylene polypropylene Terpolymer) closures matching the profile of the panel shall be installed along the eaves, rake and other locations specified on drawings.

10. RIDEGE CAP :- A formed panel matching the material color, slope and profile of adjoining Rib roof panels.

11. FLASHING AND TRIM :- Flashing and /or trim shall be furnished at the rake, corners, eaves framed openings and wherever necessary to provede weather tightness and finished appearance. Color shall be white for rake and eave flashings unless otherwise specified by client from one of the standard range of colors. Material shall be 26 G thick conforming to the physical specifications of ASTM A446 Grade C or equivalent and having minimum yield strength of 40,000 P.S.I. (275 MPa).

12. EAVE GUTTERS AND DOWNSPOUTS :- Eave gutter

shall be box shaped, color coated, and 0.5mm nominal thickness (26 gauges) galvanized steel . The outside face of the gutter shall be supported with color coated 0.5 mm nominal thickness (26 gutter) galvenized straps to the eave member at a maximum spacing of 1.2 m.

Downspouts shall be rectangular shapped, color

coated and 0.5mm nominal thickness (26 gauge) galvanized steel. Downspouts shall have a 45 degree elbow at the bottom and shall be supported by attachment to the wall coveting at 3.0 m maximum spacing.

13. FIBERGLASS INSULATION :- The fiberglass

insulation when offered as optional on mutual agreement shall be of 50 mm thickness of density 10kg/m3. with one side aluminum facing, other thickness and density are available and will be provided on prior negotiation.

14. ANCHOR BOLTS :- Thise are normally supplied prior to the delivery of pre- Engineered building.

4. BASIC BUILDING DESCRIPTION :-

A. Frame type - RF

B. Width (m) - 27.7 X 00m o/o

C. Length (M) - 18.5 m o/o

D. Eava height (M) -6.00 M clear

E. Roof slope - 1:10

F Bay spacing (m) - 7@7.857M

G. wind bracing - Pipe Bracing

H. Roof cladding (KR) - 26 GA bare Galvalume high tensil profile

I. Wall cladding (KW) - 26 GA colour Galvalume high tensil profile

J. Opening at front sidewall - 3.0 M height brick wall and above sheeting

K. Opening at back sidewall -3.0 M height brick wall and above sheeting

L. Opening at left end wall - 3.0 M height brick wall and above sheeting

M. Opening at right end wall - 3.0 M height brick wall and above sheeting

N. Eave gutters - Included

O. Downspouts - included

# **BUILDING ADDITIONS**

A. conapy location/description - 3.1M X 18.5 M - 01NO.

STANDARD BUILDING ACCESSORIES

A. Sky lights - 1.0m X 3.305m -14 Nos. on the - Roof

B. Ridge Vents - 0.300m X 3.0m - 05 Nos. on the - Roof

# **D. List of Drawing**

S.No.	Drawing Title	Drawing Document
1	Jack fruit processing plan layout(ARC/01)	Attached
2	Rigid frame elevation at FL (ARC/02)	Attached
3	Typical section details Endwall framing and shitting elevation (ARC/03)	Attached
4	Side evelation and front elevation (ARC/04)	Attached
5	General Arrengement plan (STR./01)	Attached
6	Column centerline plan (STR/02)	Attached
7	Footing centerline plan (STR/03)	Attached
8	Graund beam plan (STR/04)	Attached
9	Plinth beam plan (STR/05)	Attached
10	Lintel beam plan (STR/06)	Attached

11	Column, footing, ground, plinth & lintel beam details (STR/07)	Attached
12	Administrative block, plan, section & elevation (ARC/01)	Attached
13	Administrative block, Column, footing, ground &slab beam plan (STR/01)	Attached
14	Administrative block, Column, footing & ground beam details (STR/02)	Attached
15	Administrative block, Terrace floor slab beam details (STR/03)	Attached
16	Typical details of drain, road, boundary wall, (STR/01)	Attached

![](_page_57_Figure_0.jpeg)

![](_page_57_Figure_1.jpeg)

![](_page_57_Figure_3.jpeg)

1. ALL DIMENSION ARE IN METERS, UNLASS STATED OTHERWER 2. THIS DRAWING MUST NOT BE SCALED; ONLY WRITTEN DIMENSIONS TO BE FOLLOWED. 3. ANY DISCREPANCY ORSERVED SHOULD BE IMMEDIATELY BROUGHT TO THE CONSULTANTS NOTICE. 4. CORRECT POSITIONING OF ALL REINFORCEMENT BARS SHAE STRICTLY FINUURD DEFORM FOURING CONCRETE. 5. STRICT QUALITY CONTROL SHALL BE ENSURED FOR ALL MATERIAL AND CONSTRUCTION ACTIVITIES. 6. PROPER CURING OF CONCRETE, AS PER LS: 456 - 2000, SHALL STRUCTLY MAINTAINED. 7. UNRCH AND CONSTRUCTION CONCRETE. ASS CONFORM TO LS. 1769 - 2008 WITH UPCORMED STEEL BARS CONFORM TO LS. 1769 - 2008 WITH UPED STRENDED STEEL BARS CONFORM TO LS. 1769 - 2008 WITH UPED STREND STORED STEEL BARS CONFORM TO LS. 1769 - 2008 WITH UPED STREND STOLED BE MADE UNITHOUT AWAITTEN CONCRETEM-25 GRADE FOR ALL R WORK. 8. NO DEVIATIONS FROM THIS DRAWNO SHOULD BE MADE UNITHOUT AWAITTEN CONSULTANT. 9. CLEAR COVER : COLUMN -40 mm, FOOTING -50mm, BEAMS -2			
DIMENSIONS TO BE POLLOWED.  3. ANY DISCREPANCY ORSERVED SHOULD BE IMMEDIATELY BROUGH TO THE CONSULTANTS NOTICE.  4. CORRECT POSITIONING OF ALL REINFORCEMENT BARS SHALL STRICTLY MANUAL BEHAVIOUR OCNORETE.  5. STRICT QUALITY CONTROL SHALL BE INSURED FOR ALL MINITEMAL AND CONSTRUCTION ACTIVITIES.  6. PROPER CURING OF CONCRETE. AS PER 15: 456 - 2000, SHALL STRICTLY MAINTAINED.  7. USE: a) HIGH YIELD STRENGTH DEFORMED STREEL BARS CONTORM TO LS. STREET CONTROL THES STREET CONTROL STREET. MADE STREETED CONTROL TO THE STREETED CONTROL STREET. MADE STREETED CONTROL SHALL STREETED CONTROL STREET. MADE STREETED CONTROL STREETED CONTROL STREET. MADE STREETED CONTROL STREETED CONTROL STREET. MADE STREETED CONTRACTOR.  5. WODEVATIONS FROM THIS DRAWING SHOLLD BE MADE STREETED CONTRACTOR.  5. WOULD ATTIONS FROM THIS DRAWING SHOLLD BE MADE STREETED CONTRACTOR.  5. STREETED CONTROL STREETED CONTRACTOR.  5. STREETED CONTRACTOR.  5. STREETED CONTRACTOR.  5. STREETED ST	<ol> <li>ALL DIMENSION A</li> <li>THIS DRAWING MI</li> </ol>	RE IN METI UST NOT BF	ERS, UNLESS STATED OTHERWIS E SCALED; ONLY WRITTEN
Anno Lossen and a base to be even the should be insubulated of the consultants notice.     CORRECT POSITIONING OF ALL REINFORCEMENT BARS SHAL STREET A SUBJECT OF THE CONSTRUCTION ACTIVITIES.     CORRECT POSITIONING OF ALL REINFORCEMENT BARS SHAL STREET AND CONSTRUCTION ACTIVITIES.     POPER CURING OF CONCRETE. AS PER IS: 456-2000, SHALL STREET IN ANT EASILY ADDITION TO LS 178-2008 WITH PLUE D STREEMENT IN OT LESS THAN SYMMUL? UNLESS SPECIFIED OTHERWISE.     NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.     SUDECHATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.     CLEAR COVER : COLUMN 40 mm, FOOTING 50mm, BEAMS -2 & SLAB 20 mm.     NOAL THECKNESS - 0.1m 0.2m.     SUDECHATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.     SUDECHATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.     CLEAR COVER : COLUMN 40 mm, FOOTING 50mm, BEAMS -2 & SLAB 20 mm.     NOAL THE KOLE SEES OLDING AT THE CONSTRUCTION SITELT THE SOLE RESPONSIBILITY OF THE CONSTRUCTION SITELT SUPPRIVE NOAL 0.1 MADE 71 MAY 0 MADE 71 MA	DIMENSIONS TO B	E FOLLOW	
4. CORRECT POSITIONING OF ALL REINFORCEMENT FARS SHAT     STRICT POVALITY CONTROL SHALL BE ENSURED FOR ALL     MATERIAL AND CONSTRUCTION ACTIVITIES.     STRICT QUALITY CONTROL SHALL BE ENSURED FOR ALL     MATERIAL AND CONSTRUCTION ACTIVITIES.     PROPER CURNO OF CONCRETE. AS PER 15: 456 - 2000, SHALL     STRICTLY MAINTAINED.     USE: <ul> <li>PROPED CURNO OF CONCRETE. AS PER 15: 456 - 2000, SHALL             STRICTLY MAINTAINED.</li>             USE:             <li>PROPED CURNO OF CONCRETE. AS PER 15: 456 - 2000, SHALL             STRICTLY MAINTAINED.</li>             USE:             <li>PROPED CURNO OF CONCRETE. M-25 GRADE FOR ALL R             WORK.</li>             NO DEVIATIONS TROM THIS DRAWING SHOULD BE MADE             WITHOUT A WRITTER CONSENT FROM THE CONSULTANT.             CLEAR COVER : COLUMN -40 mm, FOOTING -50mm, BEAMS -22             stataB 20 mm.             WALL THICKNESS = 0.1m/0.2m. </ul> <li>SIGUATION OF CONCRETE IS: 456-2000.     </li> <li>Type of Formwork IS MALL E AS PER 15: 456-2000.         <ul>             Type of Formwork IS MALL E AS PER 15: 456-2000.</ul></li> Type of Formwork IS MALL E AS PER 15: 456-2000. <li>SIGUATION THE TABLE AS PER 15: 456-2000.     </li> <li>Type of Formwork IS MALL E AS PER 15: 456-2000.         <ul>             Type of Formwork IS MALL E AS PER 15: 456-2000.         </ul></li> <li>SIGUATION OF MOLTO FILE AS PER 15: 456-2000.     <ul> <li>Type of Formwork IS MALL E AS PER 15: 456-2000.         </li> </ul> </li> <li>SIGUATION OF MOLTO FILE AS PER 15: 456-2000.     <ul> <li>Type of Formwork IS MALL E AS PER 15: 456-2000.         </li> <li>Type of FORMOUT IS THE TABLE AS PER 15: 456-2000.     </li> <li>Type of FORMOUT IS TABLE AS PER 15: 456-2000.     </li> <li>SIGUATION OF MOLTO FILE AS PER 15: 450-200.     </li> <li>SIGUATION OF MOLTO FILE AS PER 15: 450-</li></ul></li>	3. ANY DISCREPANC BROUGHT TO THE	CONSULTA	ED SHOULD BE IMMEDIATELY ANTS NOTICE.
S. STRUCT QUALITY CONTROL SHALL BE ENSURED FOR ALL MATTERIAL AND CONSTRUCTION ACTIVITIES.  PROPER CURING OF CONCRETE. AS PER LS: 456 - 2000, SHALL STRUCTLY MAINTAINED.  J. UST:  a) HIGH YIELD STRENGTH DEPORMED STEEL BARS CONFORM TO LS. 1786 - 2008 WITH YIELD STRENGTH NOT LESS THAN S Norme2. (IN LESS SPECTED OTHERWISE.  b) RELENFORCED CEMEENT CONCRETE - M. 25 GRADE FOR ALL R WORK.  NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.  C CLEAR COVER: COLUMN -40 mm, FOOTING -50mm, BEAMS -2 a & SLAB -20 mm.  C UFAR COVER: COLUMN -40 mm, FOOTING -50mm, BEAMS -2 a & SLAB -20 mm.  U WALL THICKNESS - 0.1m/0.2m.  H. SHUTTERING & SCAFFOLDING AT THE CONSTRUCTION SITE I THE SOLE RESPONSIBILITY OF THE CONSTRUCTION SITE I THE SOLE RESPONSIBILITY OF THE CONSTRUCTION SITE I THE SOLE RESPONSIBILITY OF THE CONSTRUCTION SITE I STRIPTING THME TABLE AS PER IS: 456-2000.  Type of FORMWORK IN MINIMUM PERIOD OF THE CONSTRUCTION SITE I STRIPTING THME TABLE AS PER IS: 456-2000.  Type of DOMMORK IN BEAMS.  Props to ARCHAEL MAY PERIOD OF THE CONSTRUCTION SITE I STRIPTING THME TABLE AS PER IS: 456-2000.  Type of FORMWORK IN A MINIMUM PERIOD OF THE CONSTRUCTION SITE I STRIPTING THME TABLE AS PER IS: 456-2000.  Type of DOMMORK IN THE TABLE AS PER IS: 456-2000.  Type of DOMMORK IN BEAMS.  Props to ABARS.  Props to ABARS.  10 444 JAYS Props to ABARS.  10 444 JAYS Props to ABARS.  10 444 JAYS Props to SIBME.  10 444 JAYS Props to SIBME.  11 5.11 444 JAYS Props to SIBME.  13 ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBILITY OF THE CONTRACTOR.  14 ALL LAPS (Ld) SHALL BE STRUCTOR.  15 ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBILITY OF THE CONTRACTOR.  15 ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBLITY OF THE CONSTRUCTION.  16 ADD LAPED AT ANY GIVEN STRUCTOR.  16 ADD LAPED AT ANY GIVEN STRUCTOR.  17 ALL LAPS (Ld) SHALL BE STRUED OUT MORE STRUCT  18 CONTACT.  19 ADD ON GUALIFIED CIVILSTRUCTURAL ENGINEER  19 ADD ON CIVIL AT SUBMER AT THE CONSTRUCTURAL ENGI	4. CORRECT POSITIO STRICTLY ENSURE	NING OF AI ED BEFORE	LL REINFORCEMENT BARS SHAL POURING CONCRETE.
6. PROPER CUENNG OF CONCRETE, AS PER IS: 456-2000, SHALL STRICTLY MAINTAINED. 7. USE: a) HIGH VIELD STRENGTH DEFORMED STELL BARS CONTORM 10 IS: 1786-2008 WHI PLED STRENGTH NOT LESS HARS 5 Noma2. UNLESS SPECIFIED OTHERWISE. b) RELIVORCED CEMENT CONCRETE - M-25 GRADE FOR ALL R WORK. 8. NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSTRUCTION SITE J 10. WALL THUCKNESS = 0.1m/0.2m. 11. SHUTTERING & SACHFOLDING AT THE CONSTRUCTION SITE J THE SOLE RESPONSIBILITY OF THE CONTRACTOR. 12. STRIPPING TIME TABLE AS PER IS: 456-2000. Type of Formwork MINING SHOULD BE CONTRACTOR. 13. SHUTTERING & SACHFOLDING AT THE CONSTRUCTION SITE J THE SOLE RESPONSIBILITY OF THE CONTRACTOR. 14. SHOTTERING & SACHFOLDING AT THE CONSTRUCTION SITE J 15. STRIPPING TIME TABLE AS PER IS: 456-2000. Type of Formwork MINING HIGH SHOULD BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. 14. SHOTTERING & SACHFOLDING AT THE CONSTRUCTION SITE J 15. SHOTI GENERAL DIA AS PER IS: 456-2000. Type to basing up to 4.5m. 10. Jusys 10. Jusys Shall BE TABLE AS PER IS: 456-2000. Type of DER STREED INTERCONSTRUCTION SITE IS THE RESPONSIBLITY OF THE CONTRACTOR. 14. ALL LAP (TO SHALL BE INCECTOR. GRADE OF REINF. M20. M25. M30 FESOI (TMI) TO 3TA J 49 XD 46 XD FOOR BUNDEED BARS. LD SHALL BE INCREASED BY 10%, FOX 2 IN CONTACT. 15. THE WORK SHOLD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20.00 TM2 AT 3.0m DEPTH FROM THE NGL 4. & WATER TABLE 2m BELOW THE NGLL EVEL AS PER CLIENT. JACK FRUIT PROCESSING GRADE OF REINF. M20. M25. M30 FESOI (TMI) TAT SURAJPUR (C.G.) CLIENT :- <u>CGGMFFPFED NAYAA</u> <u>RAIPUR, (C.G.)</u> TITLE :- <u>TYPICAL DETAILS</u>	5. STRICT QUALITY C MATERIAL AND CO	CONTROL S	HALL BE ENSURED FOR ALL ION ACTIVITIES.
<ul> <li>1. USE:</li> <li>a) HIGH WIELD STRENCTH DEPORMED STREIL BARS CONFORM NUMBER 2018 WITH VIELD STRENCTH INFOLLESS THIANS SNUMPER 2018.</li> <li>b) REINFORCED CEMENT CONCRETE - M-25 GRADE FOR ALL R WORK.</li> <li>a) NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.</li> <li>c) CLAR COVER : COLUMN -40 mm, FOOTING -50mm, BEAMS -2 &amp; SLAB -20 mm.</li> <li>i) WALL THICKNESS = 0.1m/0.2m.</li> <li>i) SHUTTERING &amp; SCAPPOLDING AT THE CONSTRUCTION SITE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>i) SHITTERING &amp; SCAPPOLDING AT THE CONSTRUCTION SITE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>i) SHITTERING &amp; SCAPPOLDING AT THE CONSTRUCTION SITE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>i) SHIT THE TABLE AS PER IS: 456-2000.</li> <li>Type of Formwork to Subs 7 days 7 opts to BREFSCI immediately after removal of formwork.</li> <li>i) soffic formwork to Baars 10 days 10 soffic formwork to Baars 10 days 11 Shab spanning over 4.5m 11 days 11 Shab spanning over 4.5m 12 days 11 Shab spanning over 4.5m 14 days 12 Shab spanning over 4.5m 14 days 13 ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>14 ALL LAPS (L4) SHALL BE STAGGERED &amp; NOT MORE THAN SOP BARS TO BE LAPPED AT ANY CIVIN STCTION.</li> <li>GRADE OR REINLITY OF CONTACT AND 33% FOR 4 B. IN CONTACT.</li> <li>15 THE WORK SHOULD BE CARRIED OUT UNDER STRUCT SUPERVISION OF QUALIFED CULLSTRUCT URAL ENGINEER.</li> <li>16. SEC IS TAKEN 2000 TAWAT 3.0m DEPITH FROM THE NGL 4. WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT.</li> <li>DRG. NO.:- <i>R1</i></li> <li>DARG NO.:- <i>R1</i></li> <li>DARE 1. 28 FEB 2023</li> <li>Project :-</li> <li><i>LACK FRUIT PROCESSING</i> <i>UNIT AT SURAJPUR (C.G.)</i></li> <li>TITLE :-</li> <li>TYPICAL DETAILS</li> </ul>	6. PROPER CURING O STRICTLY MAINTA	F CONCREZ	ΓΕ , AS PER I.S: 456 - 2000, SHALL
8. NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTIN CONSIGNT BROM THE CONSULTANT. 9. CLEAR COVER : COLUMN -40 mm, FOOTING -50mm, BEAMS -2 & SLAB -20 mm. 10. WALL THICKNESS = 0.1m-0.2m. 11. SHUTTERING & SCAPFOLDING AT THE CONSTRUCTION SITE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. 12. STRIPPING TIME TABLE AS PER IS: 456-2000. Type of Formwork Mainting period before striking formwork. 19. Spin over for 16 to 24 hours columns, which we for 16 to 24 hours columns, while and beams 10 days 19. Spin over for 21 days 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 509 BARS 10 BELAPPED AT ANY GIVEN SECTION. GRADE OF REINE, M20 M25 M30 FORD to BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINE, M20 M25 M30 FORD TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINE, M20 M25 M30 FOR 10 BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 INCONTACT. 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 B. IN CONTACT. SUPERVISION OF QUALIPIED CIVIL/STRUCTURAL ENGINEER. LO ROTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIPIED CIVIL/STRUCTURAL ENGINEER. 16. SEC IS TAKEN 20:00 TAM AT 3.0m DEPTH FROM THE N.G.L. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT. Client::- CGGMFPFED NAYA CARAIPUR, (C.G.) Title :- TYPICAL DETAILS	<ul> <li>7. USE:-</li> <li>a) HIGH YIELD STRETO I.S. 1786 - 2008 N/mm2. UNLESS S</li> <li>b) REINFORCED CEI WORK.</li> </ul>	ENGTH DEF WITH YIEI SPECIFIED ( MENT CON	FORMED STEEL BARS CONFORMI LD STRENGTH NOT LESS THAN 50 OTHERWISE. CRETE - M-25 GRADE FOR ALL R.
9. CLEAR COVER : COLUMN -40 mm. FOOTING -50mm. BEAMS -2 & SLAB -20 mm. 10. WALL THICKNESS = 0.1m/0.2m. 11. SHUTTERING & SCAFFOLDING AT THE CONTRACTOR. 12. STRIPPING TIME TABLE AS PER IS: 456-2000. Type of Formwork Main and beams. Proposo be Refixed immediately after removal of formwork. 1) Substanting up to 4.5m 10 days Proposo be Refixed immediately after removal of formwork. 1) Substanting up to 4.5m 10 days Proposo be Refixed immediately after removal of formwork. 1) Substanting up to 4.5m 10 days Proposo be Refixed immediately after removal of formwork. 1) Substanting up to 4.5m 10 days Proposo be Refixed immediately after removal of formwork. 1) Substanting up to 4.5m 10 days Proposo be Refixed immediately after removal of formwork. 1) Substanting up to 4.5m 10 days Proposo to beams 10 days Proposo be Refixed immediately after removal of formwork. 1) Substanting up to 4.5m 10 days 1) Substanting up to 4.5m 10 days Proposo to beams 10 days	8. NO DEVIATIONS F WITHOUT A WRITT	̈ROM THIS Ι ΓΕΝ CONSE	DRAWING SHOULD BE MADE INT FROM THE CONSULTANT.
<ul> <li>II. SHUTTERING &amp; SCAPPOLDING AT THE CONSTRUCTION SITE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>I2. STRIPPING TIME TABLE AS PER IS: 456-2000.</li> <li>Type of Fornwork Minimum period before striking formwork to 16 to 24 hours columns, walls and beams.</li> <li>Props to Kelickel immediately after removal of formwork.</li> <li>I) sofit formwork to Beams.</li> <li>Props to Slabs:</li> <li>I) sofit formwork to Beams.</li> <li>III and the string of the construction strice is the responsibility of the Construction strice is the construction.</li> <li>GRADE OF REINF. M20 M25 M30</li> <li>RESON SIBILITY OF THE CONTRACTOR.</li> <li>I4. ALL LAPS (L4) SHALL BE STAGGERED &amp; NOT MORE THAN 509 BARS TO BE LAPPED AT ANY GIVEN SECTION.</li> <li>GRADE OF REINF. M20 M25 M30</li> <li>RESON TOT 57 XD 49 XD 46 XD</li> <li>POR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 IN CONTACT.</li> <li>SCHEMENDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 IN CONTACT.</li> <li>SCHEMENT.</li> <li>STHE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER.</li> <li>IS CIS TAKEN 20.00 TM2 AT 3.0m DEPTH FROM THE N.G.L. &amp; WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT.</li> <li>DRG. NO.:- <i>R1</i></li> <li>Date :- 28 FEB 2023</li> <li>Project :-</li> <li><i>JACKK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)</i></li> <li>Client :-</li> <li>CGMFPFED NAYA RAIPUR, (C.G.)</li> <li>Title :-</li> <li>TYPICAL DETAILS</li> </ul>	9. CLEAR COVER : C & SLAB -20 mm.	OLUMN -40	) mm, FOOTING -50mm, BEAMS -25
11. SHUTTERING & SCAFFOLDING AT THE CONSTRUCTION SITE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. 12. STRIPPING TIME TABLE AS PER IS: 456-2000. Type of Formwork to isolation in the construction of formwork. 15. State in mediately after removal of formwork. 19. Soffit formwork to abase. Props to Be Refixed in mediately after removal of formwork. 19. Soffit formwork to abase. Props to Stabe: <ul> <li>10. Span up to 6m</li> <li>14 days</li> <li>10. Span up to 6m</li> <li>14 days</li> </ul> 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBILITY OF THE CONTRACTOR. 14. ALLAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 509 BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 ressol UNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 IN CONTACT. 16. SDC (INT) 57 X D 49 X D 46 X D FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 IN CONTACT. 17. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SDC (IS TAKEN 20:00 T/M2 AT 3:0m DEPTH FROM THE N.G.L. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT. DRG, No.:- <i>R1</i> Date :- <i>28 FEB 2023</i> Project :- <i>JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)</i> Client :- <i>CGMIFPFED NAYA RAIPUR, (C.G.)</i> Title :- <i>TYPICAL DETAILS</i>	10. WALL THICKNESS	S = 0.1 m/0.2 r	n.
12. STRIPPING TIME TABLE AS PER IS: 456-2000. Type of Formwork Minimum period before Striking formwork to Stabe 10 to 24 hours columns walls and beams. Props to be Refixed inmediately after removal of formwork. 1) soffit formwork to Beams 10 days Props to Stabe 11 days Props to Stabe 11 days Props to Stabe 11 days 11 Stabe spanning over 4.5. 14 days 11 Stabe spanning vor 4.5. 14 days 11 Span over 6m 21 days 11 Stabe spanning vor 4.5. 14 days 11 Span over 6m 21 days 11 Stabe spanning vor 4.5. 14 days 11 Span over 6m 21 days 12 days 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 509 BARS TO LEU SHALL DE STAGGERED & NOT MORE THAN 509 BARS TO LEU SHALL DE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 14. ALL LAPS (Ld) SHALL BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC 15 TAKEN 20.00 TM2 AT 3.0m DEPTH FROM THE N.GL. & WATER TABLE 2m BELOW THE N.GL. LEVEL AS PER CLIENT. DRG. No.:- <i>R1</i> Date :- 28 <i>FEB</i> 2023 Project :- <i>JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)</i> Client :- <i>CGMIFPFED NAYA</i> <i>RAIPUR , (C.G.)</i> Title :-	11. SHUTTERING & SC THE SOLE RESPON	AFFOLDIN SIBILITY O	G AT THE CONSTRUCTION SITE I F THE CONTRACTOR.
Type of Formwork Minimum period before striking formwork to 16 to 24 hours columns, walls and beams. Props to be Refixed inumediately after removal of formwork. 1) soffit formwork to Slabs 7 days 10 days Props to Slabs: 10 days 10 days Props to Slabs: 10 days 11 days 11 days 11 soffit formwork to Beams 10 days Props to Slabs: 10 days 11 days 11 days 11 soffit days 11 soffit formwork to Beams and arches: 11 days 11 soffit formwork to BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 FEOSO (TMT) 57 XD 49 XD 46 XD FOR 20 KS SIDULTY OF THE CONTRACTOR. 14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 509 BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 FEOSO (TMT) 57 XD 49 XD 46 XD FOR 20 IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 15. SHE IS TAKEN 2000 TM2 AT 3.00 DEPTH FROM THE N.GL. & WATER TABLE 2m BELOW THE N.GL. LEVEL AS PER CLIENT. DRG. No.:- <i>R1</i> Date :- <i>28 FEB 2023</i> Project :- <i>JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)</i> Client :- <i>CGMFPFED NAYA</i> <i>RAIPUR , (C.G.)</i> Title :-	12. STRIPPING TIME T	ABLE AS PI	ER IS: 456-2000.
columns wills and beams. The Derivative columns wills and beams. The provestion of the Refixed immediately after removal of formwork. The properties of the Refixed immediately after removal of formwork. The properties of the Refixed immediately after removal of formwork. The properties of the Refixed immediately after removal of formwork. The properties of the properti	Type of Formwork		Minimum period before striking formwork 16 to 24 hours
1) sofit formwork to Slabs: 7 days Props to Slabs: 10 days Props to Slabs: 11 days Props to Slabs: 12 days Props to beams and arches: 12 days 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBILITY OF THE CONTRACTON. GRADE OF REINF. M20 M25 M30 Fe500 (TMT) 57 X D 49 X D 46 X D FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE N.G.L. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT. DRG. No.:- <i>R1</i> Date :- <i>28 FEB 2023</i> Project :- <i>STR/01</i> REV. No.:- <i>R1</i> Date :- <i>28 FEB 2023</i> Project :- <i>STR/01</i> Client :- <i>CGMFPFED NAYA</i> <i>RAIPUR</i> , (C.G.) Title :- <i>TYPICAL DETAILS</i>	columns, walls and be Props to be Refixed in	ams. mmediately a	after removal of formwork.
i) Slabs spanning up to 4.5m 10 days ii) Slabs spanning over 4.5m 14 days Props to beams and arches: i) Span up to 6m 14 days ii) Span over 6m 21 days 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 50° BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 Fe500 (IMT) 57 X D 49 X D 46 X D HOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE N.GL. & WATER TABLE 2m BELOW THE N.GL. LEVEL AS PER CLIENT. DRG. No.:- <i>R1</i> Date :- 28 FEB 2023 Project :- <i>JACK FRUIT PROCESSING</i> <i>UNIT AT SURAJPUR (C.G.)</i> Client :- <i>CGMFPFED NAYA</i> <i>RAIPUR , (C.G.)</i> Title :- <i>TYPICAL DETAILS</i>	i) soffit formwork to S ii) soffit formwork to Props to Slabs:	Beams	7 days 10 days
1) Span over 6m 21 days 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 50° BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 Fe500 (IMT) 57 X D 49 X D 46 X D FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 IN CONTACT, 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 B. IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20:00 T/M2 AT 3:00 DEPTH FROM THE N.G.L. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT. DRG. No.:- <i>R1</i> Date :- <i>28 FEB 2023</i> Project :- <i>JACK FRUIT PROCESSING</i> <i>UNIT AT SURAJPUR (C.G.)</i> Client :- <i>CGMFPFED NAYA</i> <i>RAIPUR , (C.G.)</i> Title :- <i>TYPICAL DETAILS</i>	<ul><li>i) Slabs spanning up t</li><li>ii) Slabs spanning over</li><li>Props to beams and an</li></ul>	o 4.5m er 4.5m rches:	10 days 14 days
<ul> <li>13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>14. ALL LAPS (Ld) SHALL BE STAGGERED &amp; NOT MORE THAN 50' BARS TO BE LAPPED AT ANY GIVEN SECTION.</li> <li>GRADE OF REINF. M20 M25 M30</li> <li>F6500 (IMT) 57 X D 49 X D 46 X D</li> <li>FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR : IN CONTACT. 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 B. IN CONTACT.</li> <li>15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER.</li> <li>16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE N.G.L. &amp; WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT.</li> <li>DRG. NO.:- <i>R1</i></li> <li>Date :- <i>28 FEB 2023</i></li> <li>Project :-</li> <li><i>JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)</i></li> <li>Client :-</li> <li><i>CGMFPFED NAYA RAIPUR , (C.G.)</i></li> <li>Title :-</li> <li><i>TYPICAL DETAILS</i></li> </ul>	i) Span up to 6m ii) Span over 6m		14 days 21 days
14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 50' BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 Fe500 (TMT) 57 X D 49 X D 46 X D FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 IN CONTACT, 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 B. IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE NG.L. & WATER TABLE 2m BELOW THE NG.L. LEVEL AS PER CLIENT. DRG. No.:- <i>R1</i> Date :- <i>28 FEB 2023</i> Project :- <i>JACK FRUIT PROCESSING</i> <i>UNIT AT SURAJPUR (C.G.)</i> Client :- <u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u> Title :- <u>TYPICAL DETAILS</u>	13. ALL SAFETY MEAS RESPONSIBILITY C	SURES AT 1 OF THE CON	THE CONSTRUCTION SITE IS THE UTRACTOR.
IN CONTACT, 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 B. IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20:00 T/M2 AT 3.0m DEPTH FROM THE N.G.L. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT. DRG. No.:- $R1$ Date :- $28 FEB 2023$ Project :- JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.) Client :- <u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u> Title :- <u>TYPICAL DETAILS</u>	14. ALL LAPS (Ld) SHA BARS TO BE LAPPE GRADE OF REINF. Fe500 (TMT) FOR BUNDLED BAI	ALL BE STA ED AT ANY M20 M 57 X D 49 RS, LD SHA	GGERED & NOT MORE THAN 50% GIVEN SECTION. 125 M30 X D 46 X D LL BE INCREASED BY 10% FOR 2
DRG. No.:- STR/01 REV. No.:- R1 Date :- 28 FEB 2023 Project :- JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.) Client :- $\frac{CGMFPFED NAYA}{RAIPUR, (C.G.)}$ Title :- $\underline{TYPICAL DETAILS}$			
REV. No.:- $R1$ Date :- $28 FEB 2023$ Project :- JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.) Client :- CGMFPFED NAYA RAIPUR , (C.G.) Title :- TYPICAL DETAILS	DRG. No.:-	STR	/01
Date :- $28 FEB 2023$ Project :- JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.) Client :- CGMFPFED NAYA RAIPUR , (C.G.) Title :- TYPICAL DETAILS	REV. No.:-	<i>R1</i>	
Project :- JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.) Client :- <u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u> Title :- <u>TYPICAL DETAILS</u>	Date :-	28 F	TEB 2023
Client :- <u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u> Title :- <u>TYPICAL DETAILS</u>	Project :-	<i><b>FRUI</b></i>	T PROCESSING
Title :- <u>TYPICAL DETAILS</u>	JACK F UNIT A	TSU.	RAJPUR (C.G.)
TYPICAL DETAILS	$\frac{JACK F}{UNIT A}$ $Client :- \frac{CG}{R}$	TSU MFP AIPU	RAJPUR (C.G.) FED NAYA R, (C.G.)
	$\frac{JACK F}{UNIT A}$ $Client :-$ $\frac{CG}{R}$ $Title :-$	TSU MFP AIPU	RAJPUR (C.G.) FED NAYA R, (C.G.)

![](_page_58_Figure_0.jpeg)

![](_page_58_Figure_2.jpeg)

![](_page_58_Picture_5.jpeg)

![](_page_59_Figure_0.jpeg)

# **\*\* DENOTES DOUBLE SIDED FLANGE BRACE**

SECTION (B-B)

	<ul> <li>NOTE:-</li> <li>1. ALL DIMENSION ARE IN METERS, UNLESS STATED OTHERWISE.</li> <li>2. THIS DRAWING MUST NOT BE SCALED; ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.</li> <li>3. ANY DISCREPANCY OBSERVED SHOULD BE IMMEDIATELY BROUGHT TO THE CONSULTANTS NOTICE.</li> <li>4. NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.</li> <li>5. WALL THICKNESS = 0.1m/0.2m.</li> </ul>
/E TER	
WN DUT	
Έ.	DRG. No.:- ARC/02
	REV. No.:- <i>R1</i>
L	Project :-
91	JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)
	Client :-
	<u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u>
	Title :- <u>TYPICAL</u> <u>SECTION DETAILS-001</u>

![](_page_60_Figure_0.jpeg)

SECTION (C-C)

- \* DENOTES SINGLE SIDED FLANGE BRACE.

	<ul> <li>NOTE:-</li> <li>1. ALL DIMENSION ARE IN METERS, UNLESS STATED OTHERWISE.</li> <li>2. THIS DRAWING MUST NOT BE SCALED; ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.</li> <li>3. ANY DISCREPANCY OBSERVED SHOULD BE IMMEDIATELY BROUGHT TO THE CONSULTANTS NOTICE.</li> <li>4. NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.</li> <li>5. WALL THICKNESS = 0.1m/0.2m.</li> </ul>
/E FER	
WN DUT	
ΥL. L.	DRG. No.:-       ARC/03         REV. No.:-       R1         Date :-       28 FEB 2023
91	Project :- <i>JACK FRUIT PROCESSING</i> <i>UNIT AT SURAJPUR (C.G.)</i>
	Client :- <u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u>
	Title :- <u>TYPICAL</u> SECTION DETAILS-002

![](_page_61_Figure_0.jpeg)

![](_page_61_Figure_1.jpeg)

![](_page_61_Figure_2.jpeg)

FRONT ELEVATION

	1. ALL DIMENSION ARE IN METERS, UNLESS STATED OTHERWISE.
	2. THIS DRAWING MUST NOT BE SCALED; ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
	3. ANY DISCREPANCY OBSERVED SHOULD BE IMMEDIATELY BROUGHT TO THE CONSULTANTS NOTICE.
	4. NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.
]	5. WALL THICKNESS = $0.1m/0.2m$ .
NMC	
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0 3 5 3	
0.333	
	DRG. No.:- <i>ARC/04</i>
	REV. No.:- <i>R1</i>
	Date :- 28 FEB 2023
	Project -
	LACK EDIUT DDOCECCINC
	$\frac{JACK FRUIT PROCESSING}{UNIT AT SURAIPUR (C G)}$
	Client :-
	CGMEPEED NAVA
	$\frac{COMPTPED NATA}{RAIPUR (C.G.)}$
	Title :-
	TYPICAL ELEVATION

![](_page_62_Figure_0.jpeg)

![](_page_62_Figure_1.jpeg)

![](_page_62_Figure_2.jpeg)

![](_page_62_Picture_3.jpeg)

![](_page_62_Picture_4.jpeg)

![](_page_63_Figure_0.jpeg)

Client :- <u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u> Title :- <u>GENERAL</u> <u>ARRANGEMENT PLAN</u>	REV. No.:-       RI         Date :-       28 FEB 2023         Project :-       JACK FRUIT PROCESSING         UNIT AT SURAJPUR (C.G.)	<ul> <li>1 offit formwork to Slabs: 7 days</li> <li>1 offit formwork to Slabs: 10 days</li> <li>10 slabs spanning up to 4.5m 10 days</li> <li>11 slabs spanning over 4.5m 14 days</li> <li>12 slabs spanning over 4.5m 14 days</li> <li>13 Slabs spanning over 4.5m 14 days</li> <li>13 Shan over 6m 21 days</li> <li>13 ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>14 ALL LAPS (Ld) SHALL BE STAGGERED &amp; NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION.</li> <li>14 GRADE OF REINF. M20 M25 M30</li> <li>Fe500 (TMT) 57 X D 49 X D 46 X D</li> <li>FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BARS IN CONTACT.</li> <li>15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER.</li> <li>16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE N.G.L. &amp; WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT.</li> <li>DRG. No.:- STR/01</li> </ul>	<ol> <li>NOTE:-</li> <li>1. ALL DIMENSION ARE IN METERS, UNLESS STATED OTHERWISE.</li> <li>2. THIS DRAWING MUST NOT BE SCALED; ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.</li> <li>3. ANY DISCREPANCY OBSERVED SHOULD BE IMMEDIATELY BROUGHT TO THE CONSULTANTS NOTICE.</li> <li>4. CORRECT POSITIONING OF ALL REINFORCEMENT BARS SHALL BE STRUCTLY ENSURED BEFORE POURING CONCRETE.</li> <li>5. STRICT QUALITY CONTROL SHALL BE ENSURED FOR ALL MATERIAL AND CONSTRUCTION ACTIVITIES.</li> <li>6. PROPER CURING OF CONCRETE, AS PER I.S: 456 - 2000, SHALL BE STRUCTLY MAINTAINED.</li> <li>7. USE:- a) HIGH YIELD STRENGTH DEFORMED STEEL BARS CONFORMING TO I.S. 1786 - 2008 WITH YIELD STRENCTH NOT LESS THAN 500 Num2. UNLESS SPECIFIED OTHERWISE.</li> <li>b) REINFORCED CEMENT CONCRETE - M-25 GRADE FOR ALL R.C.C WORK.</li> <li>9. CLEAR COVER : COLUMN -40 mm, FOOTING -50mm, BEAMS -25 mm &amp; SLAB 20 mm.</li> <li>10. WALL THICKNESS = 0.1 m/0.2m.</li> <li>11. SHUTTERING &amp; SCAFFOLDING AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>12. STRIPPING TIME TABLE AS PER IS: 456-2000.</li> <li>Type of Formwork Minimum period before striking formwork 16 to 24 hours columns, walls and beams.</li> <li>Proys to be Refixed immediately after removal of formwork.</li> </ol>
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GENERAL ARRENGEMENT PLAN (LEVEL +3.0m From Plinth Level)

![](_page_64_Figure_0.jpeg)

CENTERLINE PLAN	Client :- <i>CGMFPFED NAYA</i> <i>RAIPUR</i> , (C.G.)	JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)	REV. No.:-       R1         Date :-       28 FEB 2023         Project :-	DRG. No.:- STR/02	IN CONTACT. IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE N.G.L. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT.	<ul> <li>14. ALL LAPS (Ld) SHALL BE STAGGERED &amp; NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION.</li> <li>GRADE OF REINF. M20 M25 M30</li> <li>Fe500 (TMT) 57 X D 49 X D 46 X D</li> <li>FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BARS IN CONTACT. 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 BARS</li> </ul>	<ul> <li>1) States spanning up to 4.5m</li> <li>ii) Slabs spanning over 4.5m</li> <li>Props to beams and arches: <ul> <li>i) Span up to 6m</li> <li>ii) Span over 6m</li> <li>21 days</li> </ul> </li> <li>13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> </ul>	Type of FormworkMinimum period before striking formworkVertical formwork to columns,walls and beams.16 to 24 hours 16 to 24 hoursProps to be Refixed immediately after removal of formwork. i) soffit formwork to Slabs7 days 10 daysProps to Slabs: i) Slabs spanning up to 4.5m10 days	<ul> <li>10. WALL THICKNESS = 0.1m/0.2m.</li> <li>11. SHUTTERING &amp; SCAFFOLDING AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>12. STRIPPING TIME TABLE AS PER IS: 456-2000.</li> </ul>	<ol> <li>8. NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.</li> <li>9. CLEAR COVER : COLUMN -40 mm, FOOTING -50mm, BEAMS -25 mm &amp; SLAB -20 mm.</li> </ol>	<ul> <li>a) HIGH YIELD STRENGTH DEFORMED STEEL BARS CONFORMING TO I.S. 1786 - 2008 WITH YIELD STRENGTH NOT LESS THAN 500 N/mm2. UNLESS SPECIFIED OTHERWISE.</li> <li>b) REINFORCED CEMENT CONCRETE - M-25 GRADE FOR ALL R.C.C WORK.</li> </ul>	<ul> <li>5. STRICT QUALITY CONTROL SHALL BE ENSURED FOR ALL MATERIAL AND CONSTRUCTION ACTIVITIES.</li> <li>6. PROPER CURING OF CONCRETE , AS PER I.S: 456 - 2000, SHALL BE STRICTLY MAINTAINED.</li> </ul>	<ul> <li>3. ANY DISCREPANCY OBSERVED SHOULD BE IMMEDIATELY BROUGHT TO THE CONSULTANTS NOTICE.</li> <li>4. CORRECT POSITIONING OF ALL REINFORCEMENT BARS SHALL BE STRICTLY ENSURED BEFORE POURING CONCRETE.</li> </ul>	NOTE:- 1. ALL DIMENSION ARE IN METERS, UNLESS STATED OTHERWISE. 2. THIS DRAWING MUST NOT BE SCALED; ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
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COLUMN CENTERLINE PLAN

![](_page_65_Figure_0.jpeg)

ENTERLINE PLAN	Client :- <i>CGMFPFED NAYA</i> <i>RAIPUR</i> , (C.G.)	JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)	REV. No.:-       R1         Date :-       28 FEB 2023         Project :-	DRG. No.:- <i>STR/03</i>	<ul> <li>FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BARS IN CONTACT, 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT.</li> <li>15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER.</li> <li>16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE N.G.L. &amp; WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT.</li> </ul>	<ul> <li>14. ALL LAPS (Ld) SHALL BE STAGGERED &amp; NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION.</li> <li>GRADE OF REINF. M20 M25 M30</li> <li>Fe500 (TMT) 57 X D 49 X D 46 X D</li> </ul>	Props to Slabs:       10 days         i) Slabs spanning up to 4.5m       10 days         ii) Slabs spanning over 4.5m       14 days         Props to beams and arches:       14 days         i) Span up to 6m       14 days         ii) Span over 6m       21 days         13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOLE         RESPONSIBILITY OF THE CONTRACTOR.	Type of FormworkMinimum period beforeType of Formworkstriking formworkVertical formwork to16 to 24 hoursColumns, walls and beams.16 to 24 hoursProps to be Refixed immediately after removal of formwork.i) soffit formwork to Slabs7 daysii) soffit formwork to Beams10 days	<ul> <li>10. WALL THICKNESS = 0.1m/0.2m.</li> <li>11. SHUTTERING &amp; SCAFFOLDING AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>12. STRIPPING TIME TABLE AS PER IS: 456-2000.</li> </ul>	<ol> <li>8. NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.</li> <li>9. CLEAR COVER : COLUMN -40 mm, FOOTING -50mm, BEAMS -25 mm &amp; SLAB -20 mm.</li> </ol>	<ul> <li>7. USE:-</li> <li>a) HIGH YIELD STRENGTH DEFORMED STEEL BARS CONFORMING TO I.S. 1786 - 2008 WITH YIELD STRENGTH NOT LESS THAN 500 N/mm2. UNLESS SPECIFIED OTHERWISE.</li> <li>b) REINFORCED CEMENT CONCRETE - M-25 GRADE FOR ALL R.C.C WORK.</li> </ul>	<ul> <li>5. STRICT QUALITY CONTROL SHALL BE ENSURED FOR ALL MATERIAL AND CONSTRUCTION ACTIVITIES.</li> <li>6. PROPER CURING OF CONCRETE , AS PER I.S: 456 - 2000, SHALL BE STRICTLY MAINTAINED.</li> </ul>	<ul> <li>3. ANY DISCREPANCY OBSERVED SHOULD BE IMMEDIATELY BROUGHT TO THE CONSULTANTS NOTICE.</li> <li>4. CORRECT POSITIONING OF ALL REINFORCEMENT BARS SHALL BE STRICTLY ENSURED REFORE POURING CONCRETE.</li> </ul>	<ol> <li>ALL DIMENSION ARE IN METERS, UNLESS STATED OTHERWISE.</li> <li>THIS DRAWING MUST NOT BE SCALED; ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.</li> </ol>	NOTE:-
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FOOTING CENTERLINE PLAN

![](_page_66_Figure_0.jpeg)

Client :- <u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u> Title :- <u>GROUND BEAM PLAN</u>	REV. No.:-       RI         Date :-       28 FEB 2023         Project :-       JACK FRUIT PROCESSING         UNIT AT SURAJPUR (C.G.)	<ul> <li>NOTE:</li> <li>1. ALL DIMENSION ARE IN METERS, UNLESS STATED OTHERWISE</li> <li>2. THIS, DRAWING JULTOT DIE COLLOWED,</li> <li>3. ANY DISCREMENT OT BE SCALLED; ONLY WRITTEN; DIMENSIONS TO BE FOLLOWED,</li> <li>3. ANY DISCREMENT OF ALL REINFORCEMENT BARS SHALL BE STRUCTLY NATURY CONTROL SHALL BE ENSURED BEFORE POURING CONCRETE.</li> <li>4. CORRECT ROSTRUCTION OF ALL REINFORCEMENT BARS SHALL BE STRUCTLY MAINTAINED.</li> <li>5. FIDET QUALITY CONTROL SHALL BE ENSURED FOR ALL BE STRUCTLY MAINTAINED.</li> <li>7. USE:</li> <li>a. DEDEVENCED CEMENT CONCRETE. AS PER 15. 456 - 2000. SHALL BE STRUCTLY MAINTAINED.</li> <li>b) REINFORCED CEMENT CONCRETE. M25 GRADE FOR ALL REC WORK.</li> <li>c) SIGHT THEIRS SPECIFIED OTHER WISE.</li> <li>b) REINFORCED CEMENT CONCRETE. M25 GRADE FOR ALL REC WORK.</li> <li>c) SIGHT FORMORY TO FILE CONSTRUCTION SITE IS THE SOLE EESPONSIBILITY OF THE CONSTRUCTION SITE IS THE SOLE EESPONSIBILITY OF THE CONTRACTOR.</li> <li>c) LARG COVER : COLLMN -40 mm, FOOTING -50mm, BEAMS -25 mm &amp; SLAB -20 mm.</li> <li>10. WALL THECKESS PECIFIES OF INFORMATIC CONTRACTOR.</li> <li>c) MALL THECKESS PECIFIES OF INFORMATIC ON SITE IS THE SOLE EESPONSIBILITY OF THE CONTRACTOR.</li> <li>12. STRIPPING TIME TABLE AS PER 15. 456-2000.</li> <li>Type of romwork to for 21 days</li> <li>i) soffic formwork to Blasm in form beiod before transpire to Subs.</li> <li>i) Soffic formwork to Blasm in the sole of the sole o</li></ul>

GROUND BEAM PLAN (LEVEL +0.00m)

![](_page_67_Figure_0.jpeg)

Client :- <i>CGMFPFEL</i> <i>RAIPUR</i> , ( <i>PLINTH BEA</i> )	DRG. No.:- STR/05 REV. No.:- R1 Date :- 28 FEB 20 Project :- JACK FRUIT PRO UNIT AT SURAJI	<ul> <li>NOTE:-</li> <li>1. ALL DIMENSION ARE IN METERS, UNL</li> <li>2. THS DRAWING MUST NOT BE FOLLOWED.</li> <li>3. ANY DISCREPANCY OBSERVED SHOU BROUGHT TO THE CONSULTANTS NOT</li> <li>4. CORRECT POSITIONING OF ALL REINF STRUCTLY ENSURED BEFORE POURING</li> <li>5. STRICT QUALITY CONTROL SHALL BE MATERIAL AND CONSTRUCTION ACTI</li> <li>6. PROPER CURING OF CONCRETE , AS PE STRUCTLY MAINTAINED.</li> <li>7. USE:- a) HIGH YIELD STRENGTH DEFORMED TO LS. 1786 - 2008 WITH YIELD STREN Num2. UNLESS SPECIFIED OTHERWIN b) REINFORCED CEMENT CONCRETE , AS PE WORK.</li> <li>8. NO DEVIATIONS FROM THIS DRAWING WITHOUT A WRITTEN CONSENT FROM 9. CLEAR COVER : COLUMN -40 mm, FOC &amp; SLAB -20 mm.</li> <li>10. WALL THICKNESS = 0.1m/0.2m.</li> <li>11. SHUTTERING &amp; SCAFFOLDING AT THE THE SOLE RESPONSIBILITY OF THE CON- softi formwork to Slabs: b) softi formwork to Slabs: b) softi formwork to Slabs: b) softi formwork to Beams in days props to be Refixed immediately after remov i) softi formwork to Slabs: b) Span opt o form 21 days ii) Slabs spanning over 4.5m i 14 days ii) Slabs spanning over 4.5m i 21 days ii) Slabs spanning over 4.5m i 21 days ii) Slabs spanning over 4.5m i 21 days ii) Slabs Strue DE LAPPED AT ANY GIVEN SI GRADE OF REINF. M20 M25 M FeS00 (TMT) 57 XD 49 XD 40 FOR BUNDLED BARS, LD SHALL BE IN CONTACT.</li> <li>14. ALL LAPS (Ld) SHALL BE STAGGERED BARS TO BE LAPPED AT ANY GIVEN SI GRADE OF REINF. M20 M25 M FeS00 (TMT) 57 XD 49 XD 40 FOR BUNDLED BARS, LD SHALL BE IN CONT IN CONTACT. 20% FOR 3 BARS IN CONT IN CONTACT.</li> <li>15. THE WORK SHOULD BE CARRIED OUT SUPERVISION OF QUALIFIED CIVIL/ST 10. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPJ</li> </ul>
ED NAYA , (C.G.)	B 2023 PROCESSING AJPUR (C.G.)	UNLESS STATED OTHERWISE. ALED; ONLY WRITTEN HOULD BE IMMEDIATELY SNOTICE. EINFORCEMENT BARS SHALL BE RUNG CONCRETE. L BE ENSURED FOR ALL ACTIVITIES. AS PER LS: 456 - 2000, SHALL BE RWISE. RWISE. TE - M-25 GRADE FOR ALL R.C.C WING SHOULD BE MADE ROM THE CONSTRUCTION SITE IS TE CONTRACTOR. FOOTING -50mm, BEAMS -25 mm 'days '

PLINTH BEAM PLAN (LEVEL +1.20m)

![](_page_68_Figure_0.jpeg)

Client :- <u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u> Title :- <u>LINTEL BEAM PLAN</u>	<ul> <li>1.4.1.1. DIAGNASSION ARE IN METRIS, INLESS STATUD OTHERWISE.</li> <li>1. FIRS DRAVING MIST NOT BE SCALIDE, ONLY WRITTIN</li> <li>3. ANY DISCREPANCY ORSERVED SIGIL D BE MMEDIATELY</li> <li>4. CORRECT PONTONY OF ALL REINFORCENTISM COCCRETE.</li> <li>5. SERECTLY ANALYSIS NOTCE.</li> <li>5. REPORTE CERNIC OF DEFORMED TO INFORM STRUCTION ACTIVITIES.</li> <li>5. REPORTE CERNIC OF DEFORMED THE DERIVING STRUCTION ACTIVITIES.</li> <li>6. REPORTE CERNIC OF DEFORMED STRUCTION ACTIVITIES.</li> <li>6. NODEVATIONS FRONT THIS DRAVING STRUCTION STRUCTION STRUCTION STRUCTION ACTIVITIES.</li> <li>6. REPORTE CERNIC OF DEFORMATION OF THE CONSTRUCTION STRUCTION STRUCTURE STRUCT STRUCTURE S</li></ul>

LINTEL BEAM PLAN (LEVEL +4.20m)

![](_page_69_Figure_0.jpeg)

N	IG SIZE	D	BO7 REINFOI	TOM RCEMENT
	Β		MAIN	DIST.
	2.100	0.450	T10-@0.125c/c	T10-@0.125c/
	3.600	0.525	T10-@0.100c/c	T10-@0.100c/

![](_page_69_Figure_5.jpeg)

C'C

1. ALL DIMENSION ARE IN M	
2. THIS DRAWING MUST NOT	IETERS, UNLESS STATED OTHERWISE. Γ BE SCALED; ONLY WRITTEN
DIMENSIONS TO BE FOLLO 3. ANY DISCREPANCY OBSE	OWED. RVED SHOULD BE IMMEDIATELY
BROUGHT TO THE CONSUL 4. CORRECT POSITIONING OI	LTANTS NOTICE. F ALL REINFORCEMENT BARS SHALL BE
5. STRICT OUALITY CONTROL	DRE POURING CONCRETE.
6. PROPER CURING OF CONC	JCTION ACTIVITIES.
STRICTLY MAINTAINED.	RETE, AS TER I.S. 450 - 2000, SHALL DE
<ul> <li>a) HIGH YIELD STRENGTH I TO I.S. 1786 - 2008 WITH Y N/mm2. UNLESS SPECIFIE</li> <li>b) REINFORCED CEMENT C WORK.</li> </ul>	DEFORMED STEEL BARS CONFORMING TIELD STRENGTH NOT LESS THAN 500 ED OTHERWISE. CONCRETE - M-25 GRADE FOR ALL R.C.C
8. NO DEVIATIONS FROM TH WITHOUT A WRITTEN COM	HIS DRAWING SHOULD BE MADE NSENT FROM THE CONSULTANT.
9. CLEAR COVER : COLUMN & SLAB -20 mm.	I -40 mm, FOOTING -50mm, BEAMS -25 mm
10. WALL THICKNESS = 0.1m/	′0.2m.
11. SHUTTERING & SCAFFOLI THE SOLE RESPONSIBILIT	DING AT THE CONSTRUCTION SITE IS Y OF THE CONTRACTOR.
12. STRIPPING TIME TABLE A	S PER IS: 456-2000.
Vertical formwork to	striking formwork 16 to 24 hours
columns,walls and beams. Props to be Refixed immediate i) soffit formwork to Slabs	ely after removal of formwork. 7 days
ii) soffit formwork to Beams Props to Slabs: i) Slabs spanning up to 4.5	10 days
ii) Slabs spanning up to 4.5m Props to beams and arches:	14 days
1) Span up to 6m ii) Span over 6m	14 days 21 days
13. ALL SAFETY MEASURES A RESPONSIBILITY OF THE C	AT THE CONSTRUCTION SITE IS THE SOL CONTRACTOR.
<ul> <li>14. ALL LAPS (Ld) SHALL BE S BARS TO BE LAPPED AT A GRADE OF REINF. M20 Fe500 (TMT) 57 X D</li> </ul>	STAGGERED & NOT MORE THAN 50% NY GIVEN SECTION. M25 M30 49 X D 46 X D
<ul> <li>15. THE WORK SHOULD BE CA SUPERVISION OF QUALIFIE</li> <li>16. SBC IS TAKEN 20.00 T/M2 A WATER TABLE 2m BELOW</li> </ul>	ARRIED OUT UNDER STRICT ED CIVIL/STRUCTURAL ENGINEER. AT 3.0m DEPTH FROM THE N.G.L. & THE N.G.L. LEVEL AS PER CLIENT.
DRG. No.:- <i>S7</i>	TR/07
DRG. No.:- <i>S7</i> REV. No.:- <i>R1</i>	rR/07
DRG. No.:- <i>S7</i> REV. No.:- <i>R1</i> Date :- <i>28</i> <b>Project :-</b>	FEB 2023
DRG. No.:- $S7$ REV. No.:- $R1$ Date :- $28$ Project :- JACK FRU UNIT AT S Client :- CGME	TR/07
DRG. No.:- $ST$ REV. No.:- $RI$ Date :- $28$ Project :- JACK FRUUNIT AT S Client :- CGMF RAIP	TR/07
DRG. No.:- $ST$ REV. No.:- $RT$ Date :- $28$ Project :- $\frac{JACK FRU}{UNIT AT S}$ Client :- $\frac{CGMF}{RAIP}$ Title :- $\frac{COLUM}{GROUND, P}$ <u>BEAN</u>	TR/07 TR/07 TER 2023 TER 2025 TER 2025 TE

![](_page_70_Figure_0.jpeg)

<i>LACK FRUIT PROCESS</i> <i>UNIT AT SURAJPUR (C. UNIT AT SURAJPUR (C. C. C. T. C. C. T. C. C. T. C. C. T. Title :- <i>COLUMN, FOOTING, GROUND, &amp; SLAB BEAM I</i></i>	<ul> <li>6. PROPER CURING OF CONCRETE , AS PER LS: 456 - 200</li> <li>7. USE: <ul> <li>a) HIGH YIELD STRENGTH DEFORMED STEEL BARS OF TO 15. 1786 - 2008 WTH YIELD STRENGTH NOT LESS PEOFIED OTHERWISE.</li> <li>b) KINDEND CED CEMENT CONCRETE - M-25 GRADE FO WORK.</li> <li>c) DEVIATIONS FROM THIS DRAWING SHOULD BE MWORK.</li> <li>c) CLEAR COVER : COLUMN -40 mm, FOOTING -50mm, E &amp; SLAB 20 mm.</li> <li>10. WALL THICKNESS = 0.1m0.2m.</li> <li>11. SHUTTERING &amp; SCAFFOLDING AT THE CONSTRUCTINT THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>12. STRIPPING TIME TABLE AS PER IS: 456-2000.</li> <li>Type of Fornwork biomove intermoval in the construction of the proses to be Refised immediately after removal of formwork.</li> <li>b) sofit formwork to Beams 10 days Props to balas spanning over 4.5m 14 days 10 sofit formwork to Beams 20 days.</li> <li>c) Sabas spanning up to 4.5m 14 days 10 span over 6 m 21 days.</li> <li>c) Sabas spanning over 4.5m 14 days 10 span over 6 m 21 days.</li> <li>c) Sabas spanning over 4.5m 14 days 10 span over 6 m 21 days.</li> <li>c) Sabas STO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M23 M30 Festion ONTROP.</li> <li>d) ALL LAPS (Ld) SHALL BE STAGGERED &amp; NOT MORE BARS TO BE LAPPED AT ANY GIVEN SECTION.</li> <li>GRADE OF REINF. M20 M23 M30 Festion OVER THE CONTACT AND 33% IN CONTACT.</li> <li>n. CONTACT.</li> <li>1.5 THE WORK SHOULD BE CARRIED OUT UNDER STRUCTION SIN OCONTACT. 3.0m DEPTH FROM THEN WATER TABLE 20.00 TMA AT 3.0m DEPTH FROM THEN WATER TABLE 20.00 TMA AT 3.0m DEPTH FROM THEN WATER TABLE 20.00 TMA AT 3.0m DEPTH FROM THEN WATER TABLE 20.00 TMA AT 3.0m DEPTH FROM THEN WATER TABLE 20 BELOW THE NGL. LEVEL AS FER VILL IN CONTACT.</li> <li>DRG: NO.:- R1</li> <li>DRG: NO.:- R1</li> </ul> </li> <li>DRG: NO.:- 28 FEB 2023</li> </ul>	<ul> <li>NOTE:-</li> <li>1. ALL DIMENSION ARE IN METERS, UNLESS STATED O</li> <li>2. THIS DRAWING MUST NOT BE SCALED; ONLY WRITT DIMENSIONS TO BE FOLLOWED.</li> <li>3. ANY DISCREPANCY OBSERVED SHOULD BE IMMEDI BROUGHT TO THE CONSULTANTS NOTICE.</li> <li>4. CORRECT POSITIONING OF ALL REINFORCEMENT BA STRICTLY ENSURED BEFORE POURING CONCRETE.</li> <li>5. STRICT QUALITY CONTROL SHALL BE ENSURED FOF MATERIAL AND CONSTRUCTION ACTIVITIES.</li> </ul>
	0, SHALL BE ONFORMING S THAN 500 OR ALL R.C.C MADE TANT. BEAMS -25 mm BEAMS -25 mm O% FOR 2 BARS 5 FOR 4 BARS CLIENT. N.G.L. & CLIENT.	THERWISE. TEN IATELY ARS SHALL BE

GROUND BEAM PLAN

SLAB BEAM PLAN

![](_page_71_Figure_0.jpeg)

FOOTIN	IG SIZE	D	
L	B		
1.800	1.800	0.450	5

<ul> <li>ALL DIMENSION ARE IN METERS, UNLESS STATED OTHERWISE.</li> <li>THIS DRAWING MIST NOT RE SCALED, ONLY WRITTEN DIMENSIONSTO THE FOLLOWED.</li> <li>ANY DISCREPANCY OUSLIKATION RELED ONLY WRITTEN SCALED STRUCTUY CONTROL SHALL BE INMIRED ATTLY STRUCTY ENSURED DEFORE POURING CONCRETT.</li> <li>STRUCT QUALITY CONTROL SHALL PENSIRED ON ALL MATERIAL AND CONSTRUCTION ACTIVITIES.</li> <li>PROPER CURING OF CONCRETE , AS PER 15: 456 - 200, SHALL BE STRUCTLY MANDALONSTRUCTION ACTIVITIES.</li> <li>PROPER CURING OF CONCRETE , AS PER 15: 456 - 200, SHALL BE STRUCTLY MANDALONSTRUCTION ACTIVITIES.</li> <li>PROPER CURING OF CONCRETE , AS PER 15: 456 - 200, SHALL BE STRUCTLY MANDALONSTRUCTION ACTIVITIES.</li> <li>PROPER CURING OF CONCRETE , AS PER 15: 456 - 200, NIMAL BE ON DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITEN CONSENT FROM THE CONSTRUCTION SHE AS DO NUMBER.</li> <li>IN O DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITEN CONSENT FROM THE CONSTRUCTION SHE IS THE SOLE RESPONSIBILITY OF THE CONSTRUCTION.</li> <li>SIRTIG FORWOOK IN SHAT THE CONSTRUCTION SHE IS THE SOL WARDA DE AREA TO ANY GIVEN SECTION.</li> <li>SIRTIG FORWOOK IN SHAT THE CONSTRUCTION SHE IS THE SOL WARDA DE AREA TO ANY GIVEN SECTION.</li> <li>ALL SAFETY MEASURES AT THE CONSTRUCTION SHE IS THE SOL RESPONSIBILITY OF THE ONTRACTOR.</li> <li>ALL SAFETY MEASURES AT THIC CONSTRUCTION SHE IS THE SOL RESPONSIBILITY OF THE ONTRACTOR.</li> <li>ALL SAFETY MEASURES AT THIC CONSTRUCTION.</li> <li>ALL SAFETY MEASURES AT THE CONSTRUCTION.</li> <li>ALL SAFETY MEASURES AT THE CONSTRUCTION.</li> <li>STRUCTART.</li> <li>MARTER AND AS ANY GIVEN SECTION.</li> <li>GRADE OF CLIPPED ANY GIVEN SECTION.</li> <li>GRADE OF CLIPPED ANY GIVEN SECTION.</li> <li>GRADE OF CLIPPED ANY GOVEN SECTION.</li> <li>SAFE OF CLIPPE</li></ul>	1. ALL DIMENSION ARE IN ME	TERS_UNLESS STATED OTHERWISE
A Into Jorawano Study 1 NOT RE SCALED, ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.  A ONE STRUCT Y CONSTRUCT ON SERVED SHOULD BE IMMEDIATELY BROUGHT TO THE CONSULTANTS NOTICE.  A CORRECT POSITIONING OF ALL REINFORCEMENT BARS SHALL BI STRUCTLY ENSURED DEFORE POURING CONCRETE.  STRUCTLY MAD CONSTRUCTION ACTIVITIES.  PROPER CUBING OF CONCRETE AS PER 15: 456 - 2000, SHALL BE STRUCTLY MAD CONSTRUCTION ACTIVITIES.  PROPER CUBING OF CONCRETE AS PER 15: 456 - 2000, SHALL BE STRUCTLY MAD CONSTRUCTION ACTIVITIES.  PROPER CUBING OF CONCRETE AS PER 15: 456 - 2000, SHALL BE STRUCTLY MAD CONSTRUCTION ACTIVITIES.  PROPER CUBING OF CONCRETE AS PER 15: 456 - 2000, SHALL BE STRUCTLY MAD CONSTRUCTION STRUCTION TO LSS TRAN SO NUME.  NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE.  NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE.  CONCRE.  NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE.  S CORECULTION STREME FROM THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONSTRUCTION SITE IS THE SOLE RESPONSIBLE TO BELAPPED AT ANY OUVEN SECTION. GRADE OF RUPE, MEAD MEES AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.  13 ALL SAFELY MEASLESS AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBIL TO GE THEORY AND IF AND ASS. TO SOLE ADD THE CONTRACTOR.  14. ALL LAPED AD SHALL BE INCREASED BY 10% FOR 2 DAIL IN CONTACT.  15 SUBMARY AND AD SETTING THAN ADD ASS. IN CONTACT.  15 SUBMARY AND AD SETTING THAN ADD ASS. IN CONTACT.  16 SUCH SET CARRIED OUT UNDER STRUCT SUP	$\sim$	
3. ANY DISCREPANCY OBSERVED SHOULD BE IMMEDIATELY BROLENT TO THE CONSULTANTS NOTCE. 4. CORRECT POSITIONING OF ALL REINFORCEMENT BARS SHALL BE STRICTLY ENSURED BEFORE POURING CONCRETE. 5. STRICTLY GUILTY CONTROL SHALL BE ENSURED FOR ALL MATERIAL AND CONSTRUCTION ACTIVITIES. 6. PROPER CURING OF COURRED. AS PER 18: 456 - 2000, SHALL BE STRICTLY MAINTAINED. 7. USE: a) HIGH YIELD STREMMETH DEPORTED STREET HARS CONFORMING b) HEADY OCCENE THE DEPORTED STREET HARS CONFORMING b) HEADY OCCENE THE DEPORTED STREET HARS CONFORMING b) HEADY OCCE SCHIMT CONCRETE. AS PER 18: 456 - 2000, NUMBEL DE STREET HID DEPORTED STREET HID AND DESTIFICATION STREET b) HEADY OCCENE TO CONCRETE. AS CONFORMING TO IS 1786 - 2000, NUMBEL DE STREET HID OFTHERWINE. b) HEADY OCCENE TO CONCRETE THE CONSTRUCTION STEELS HARDS WITHOUT A WRITTEN CONSENT FROM THE CONSTRUCTION STEELS HARDS WITHOUT A WRITTEN CONSENT FROM THE CONSTRUCTION STEELS HARDS 10. WALL THICKNESS - 0.1m0.2m. 11. SHLTTERING & SCAFFOLDING AT THE CONSTRUCTION STEELS THE 12. STREPPING THE TABLE AS PER 18: 456-2000. 13. SHL SAFET JUBE. 13. SHL SAFET JUBE. 14. SHL AS 2010 THE CONTRACTOR. 15. STREPONSIBILITY OF THE CONTRUCTION STEELS THE SOL RESPONSIBILITY OF THE CONTRACTOR. 13. ALL SAFET JUBE. 14. AND CONTACT AS THE SUBJECT ON STEELS IN SOL 13. SHL SAFET JUBE. 14. AND CONTACT ANY GIVEN SUCH ON TWO REE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SUCH ON TO MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SUCH ON THE SOL RESPONSIBILITY OF THE CONTRACT AND 33% FOR 4 BARS 10. ONTACT. 20% FOR 3 BARIEN INCONTACT AND 33% FOR 4 BARS 11. SUCH THE SOL AS FREE SINCONTACT AND 33% FOR 4 BARS 12. SOLFT AND BLAPPED AT ANY GIVEN SUCH ONE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SUCH TO NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SUCH TO NOT STREET SUPERVISION OF QUALIFED CIVIL STRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTACT AND 33% FOR 4 BARS 13. ALL SAFETY AND ADD THAN GIVEN SUCH TAT AND 33% FOR 4 BARS 14. MALTAR AND ADD THAN GIVEN SUCH AND 33% FOR 4 BARS 15	DIMENSIONS TO BE FOLLOW	BE SCALED; ONLY WRITTEN WED.
4. CORRECT POSITION TO OF ALL REPORT REVENENT PARES SHALL HE STRICT LY CANNED DEFORE POERNG CONCRETE. 5. STRICT QUAL TY CONTROL SHALL BE INSURED FOR ALL. 6. PROPER CURING OF CONCRETE, AS PER LS: 456 - 2000, SHALL HE STRICT Y MANTANED. 7. USE: 10) INFO POEND CONTROLO STRUCTION ACTIVITIES 6. PROPER CURING OF CONCRETE, AS PER LS: 456 - 2000, SHALL HE STRUCTLY MANTANED. 7. USE: 10) INFO POEND COMMENT OF STRUCTION LESS THAN 300 NUMBLE OF MEMORY OF THE DEFORMED STEEL BARS CONFORMING 10) INFO POEND COMMENT OF STRUCTION STEES THAN 300 NUMBLE OF MEMORY OF THE ON THE STRUCTION STEES THAN 300 NUMBLE OF MEMORY OF THE CONSTRUCTION STEE IS 11. SULTTERING & SCAFFOLDING AT THE CONSTRUCTION STEE IS 11. SULTTERING & SCAFFOLDING AT THE CONSTRUCTION STEE IS 11. SULTTERING & SCAFFOLDING AT THE CONSTRUCTION STEE IS 12. STRIPPING TIME TABLE AS PER IS: 456 2000. 12. STRIPPING TIME TABLE AS PER IS: 456 2000. 13. SULTAINTY OF THE CONTRACTON. 12. STRIPPING TIME TABLE AS PER IS: 456 2000. 14. AUS ASSIDENT FROM THE CONSTRUCTION STEE IS 14. MAYS 10. SUBMERTING AS SCAFFOLDING AT THE CONSTRUCTION STEE IS 11. SULTAINTY IN ASSURES AT THE CONSTRUCTION STEE IS 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTON. 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTON. 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTON. 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTON. 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTON. 14. AND FOR ALL PROVIDED ANY GIVEN THE ASD DET THE SOL IN SOL 15. THE WORK SHOULD BL CARRIED OUT LINDER STRUCT 15. THE WORK SHOULD BL CARRIED OUT LINDER STRUCT 15. THE WORK SHOULD BL CARRED OUT LIN	3. ANY DISCREPANCY OBSER BROUGHT TO THE CONSULT	VED SHOULD BE IMMEDIATELY FANTS NOTICE.
<ul> <li>STRICT QUALITY CONTROL SHALL BE ENSURED FOR ALL MATTERIAL AND CONSTRUCTION ACTIVITIES.</li> <li>PROPER CURING OF CONCRETE, AS PER LS, 456 - 2000, SHALL BE STRICTLY MAINTAINED.</li> <li>USE:</li> <li>OHGH, YIELD STREINGTH DEFORMED STEEL BARS CONFORMING O'LIS, 1786 - 2008 WITH YIELD STREINGTH NOT LESS THAN 500 Numit. CLUESS SPECIFIED OTHERWISE.</li> <li>NENHORCED CRAIENT CONCRETE - M-25 GRADE FOR ALL RC.C WORK.</li> <li>NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTER CONSENT FROM THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>CLEAR COVER : COLUMN 40 mm, FOOTING -50mm, BEAMS -25 mm &amp; SLAB -20 mm.</li> <li>WALL THEING &amp; SCAPFOLDING AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>SHE SEDONSIBILITY OF THE CONTRACTOR.</li> <li>STRIPTING TIME TABLE AS PER IS: 456-2000.</li> <li>Type of Formwork Miniaum period before striking formwork 10 to 29 hous columa, valia and ocaus.</li> <li>TOPIC to BEADS 10 days 10 Sobe spanning over 4.5m 10 days 10 Sobe spanning over 4.5m 10 days 10 Sobe spanning over 4.5m 14 days</li></ul>	4. CORRECT POSITIONING OF A STRICTLY ENSURED BEFOR	ALL REINFORCEMENT BARS SHALL BE E POURING CONCRETE.
A PROPER CURING OF CONCRETE, AS PER LS: 456 - 2000, SHALL BE STRECTLY MAINTAINED.  I.USI: I	5. STRICT QUALITY CONTROL MATERIAL AND CONSTRUC	SHALL BE ENSURED FOR ALL TION ACTIVITIES.
<ul> <li>1. SEC:</li> <li>1) HIGH YIELD STRINGTH DEFORMED STEEL BARS CONFORMING 10 IS. 178-2008 WITH BLED STRINGTH NOT LESS THAN 500 Num.2. UNLESS SPECIFIED OTTIERVISE.</li> <li>1) BENNORGED CEMENT CONCRETE - M-25 GRADE FOR ALL R.C.C WORK.</li> <li>8. NO DEVILTIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSTRUCTION SITE S 10. WALL THICKNESS - 0.1m/0.2m.</li> <li>11. SHITTERMAG, &amp; SCAFFOLDING, AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.</li> <li>12. STRIPPING TIME TABLE AS PER IS: 456-2000.</li> <li>Type of Formwork Minimum period before striking formow is 10 to 24 hours columns, walk and beams.</li> <li>10. WALL THICKNESS - 0.1m/0.2m.</li> <li>12. STRIPPING TIME TABLE AS PER IS: 456-2000.</li> <li>Type of Formwork Solar 7 days in soffic formwork is 14 days.</li> <li>Props to bles: 10. Shale spanning user 4.5m.</li> <li>14 days.</li> <li>Props to bles: 13. Shale spanning user 4.5m.</li> <li>14 days.</li> <li>Props to bles: 13. Shale spanning user 4.5m.</li> <li>14 days.</li> <li>Props to bles: 13. Shale spanning user 4.5m.</li> <li>14 days.</li> <li>Props to bles: 13. Shale spanning user 4.5m.</li> <li>14 days.</li> <li>Props to bles: 14. ALL LAPS (Ld) SHALL BE STAGGERED &amp; NOT MORE THAN 50%. BARS TO BE LAPPED AT ANY GIVEN SECTION.</li> <li>13. CONTACT.</li> <li>14. MALL LAPS (Ld) SHALL BE CARRIED OUT UNDER STRICT SUFFICIENTS: MOR 3D ARS IN CONTACT AND 33% FOR 2 BARS IN CONTACT.</li> <li>15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUFFICIENTS: MOR 3D ARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT.</li> <li>15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUFFICIENT SIGNO OF QUALIFIED CIVILSTRICTURAL ENGINEER.</li> <li>16. SED IS TAKEN 20.00 TWA 2T 3.0m DEPTH FROM THE N.GL. &amp; WATER TABLE 2m BELOW THE N.GL. LEVEL AS PER CLIENT.</li> <li>CLIENT :- <a href="mailto:Column.FOOTING">COLUMN.FOO</a></li></ul>	6. PROPER CURING OF CONCR STRICTLY MAINTAINED.	ETE , AS PER I.S: 456 - 2000, SHALL BE
B) WORK. 8. NO DEVIATIONS FROM THIS DRAWING SHOUL D BE MADE WORK. 8. NO DEVIATIONS FROM THIS DRAWING SHOUL D BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT. 9. CLEAR COVER : COLUMN -40 mm, FOOTING -50mm, BEAMS -25 mm & SLAB -20 mm. 10. WALL THICKNESS = 0.1m <sup>5</sup> 0.2m. 11. SHUTTERING & SCAPPOLDING AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. 12. STRIPPING TIME TABLE AS PER IS: 456-2000. 13. STRIPPING TIME TABLE AS PER IS: 456-2000. Vertical formwork to 16 in 24 hours columns, walls and hears. 19. OUT formwork to 16 in 24 hours columns, walls and hears. 19. Solid Signating up to 4.5m 10 days Props to Babs. 10. Shab symming up to 7.5m 14 days Props to Babs. 10. Shab symming up to 7.5m 14 days Props to Babs. 10. Shab symming up to 7.5m 14 days Props to Babs. 10. Shab symming up to 7.5m 14 days Props to Babs. 10. Shab symming up to 7.5m 14 days Props to Babs. 10. Shab symming up to 7.5m 21 days 11. SHULLAPS (1d) SHALL J. BE STAGGERED & NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION. RESONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (1d) SHALL J. BE STAGGERED & NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION. RESUONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (1d) SHALL J. BE STAGGERED & NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION. RESUONSIBILITY OF R3 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. DRG. NO.:- STR/02 REV. NO.:- R1 DATE: - 02 MAR 2023 Project :- STR/02 Client :- CGMMFPFED NAYAA RAIPPUR, (C.G.) Title :- CCMMFPFED NAYAA RAIPPUR, (C.G.) Title :- COLUMN, FOOTING, & GROUND BEAM DETAILS	<ul> <li>7. USE:-</li> <li>a) HIGH YIELD STRENGTH DI TO I.S. 1786 - 2008 WITH YII N/mm2. UNLESS SPECIFIED</li> <li>b) REINFORCED CEMENT CO</li> </ul>	EFORMED STEEL BARS CONFORMING ELD STRENGTH NOT LESS THAN 500 OTHERWISE.
<ul> <li>8. NO DEVIATIONS FROM THIS DRAWING SHOLLD BE MADE WITHOUT A WRITTER CONSERVE FROM THE CONSTRUCTION.</li> <li>9. CLEAR COVER : COLUMN 40 mm, FOOTING -30mm, BEAMS -25 mm &amp; \$1.438 - 20 mm.</li> <li>10. WALL THICKNESS = 0.1m<sup>3</sup>0.2m.</li> <li>11. SHUTTERING &amp; SCAFFOLDING AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTOR.</li> <li>12. STRIPPING TIME TABLE AS PER IS: 456-2000.</li> <li>Type of Formwork Minimum period before striking formwork to 16 to 24 hours columns, walls and beams.</li> <li>Props to Keftxed immediately after removal of formwork.</li> <li>1) sofil formwork to Slabs.</li> <li>1) duty Props to Skabs.</li> <li>1) Subit Statums 10 dutys</li> <li>Props to Skabs.</li> <li>1) Subit Statums and arches 11 dutys</li> <li>Props to Skabs.</li> <li>1) Subit Statums and arches 11 dutys</li> <li>Props to Skabs.</li> <li>1) Subit Statums and arches 11 dutys</li> <li>Props to Skabs.</li> <li>1) Subit Statums and arches 12 dutys</li> <li>13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOI RESPONSIBILITY OF THE CONTRACTOR.</li> <li>14. ALL LAPS (Ld) SHALL BE STAGGERED &amp; NOT MORE THAN 50% BARS 10 GUTM 57 X.D 49 X.D 46 X.D</li> <li>POR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BAR IN CONTACT.</li> <li>15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT</li> <li>15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT</li> <li>15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT</li> <li>16. SBC IS TAKEN 20.00 TM2 AT 3.0m DEPTH FROM THE N.G.L &amp; WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT.</li> <li>16. SBC IS TAKEN 20.00 TM2 AT 3.0m DEPTH FROM THE N.G.L &amp; WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT.</li> <li>17. CORTACT.</li> <li>18. THE WORK SHOULD BE CARRIED OUT UNDER STRICT</li> <li>18. COLUMN, FOOTING, WATER TABLE 2m BELOW THE N.G.L. EVEL AS PER CLIENT.</li> <li>17. THE SITE STRUCT SUPERVISION OF QUALTRY AND STRUCTURAL ENGINEER.</li> <li>16. SBC IS TAKEN 20.00 TM2 AT 3.0m DEPTH FROM THE N.G.L &amp; WATER TABLE 2m BELOW THE N.G.L. EVEL AS PER CLIENT.</li> <li>11. STRUCTURY, FOOTING,</li></ul>	WORK.	NCKETE - M-25 GRADE FOR ALL R.C.C
9. CLEAR COVER : COLUMN -40 mm, FOOTING -50mm, BEAMS -25 mm & & \$LAB -20 mm. 10. WALL THICKNESS = 0.1m00.2m. 11. SHUTTERNO & SCAFFOLDING AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. 12. STRIPPING TIME TABLE AS PER IS: 456-2000. Type of Formwork (b) 16 to 24 hours (c) 16 to 24 hours (c) 10 soft formwork (b) 24 hours (c) 10 days (c	8. NO DEVIATIONS FROM THIS WITHOUT A WRITTEN CONS	S DRAWING SHOULD BE MADE SENT FROM THE CONSULTANT.
10. WALL THICKNESS 0.1m0.2m. 11. SIRUTTERNG & SCAFFOLDING AT THE CONTRACTOR. 12. STRIPPING TIME TABLE AS PER IS: 456-2000. 13. Superior of the memory of 16 to 24 hours 10. Softi formwork to Stafe 11. Softi formwork to Stafe 12. Softi formwork to Stafe 13. ALL LAPS (Ld) SHALL BE STAGGREED & NOT MORE THAN 50% 13. ALL LAPS (Ld) SHALL BE STAGGREED & NOT MORE THAN 50% 14. ALL LAPS (Ld) SHALL BE STAGGREED & NOT MORE THAN 50% 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT 15. COLLINE TABLE 2m BELOW THE N.GL. LEVEL AS PER CLIENT 16. SBC ISTAKEN 20.00 TM2 AT 3.0m DEPTH FROM THE N.GL. & 17. CIGMFPFED NAYA 27. COLLINE (C.G.)  Client :- COLLINE (C.G.)  Client :- COLUMN, FOOTING, & GROUND BEAM DETAILS	9. CLEAR COVER : COLUMN - & SLAB -20 mm.	40 mm, FOOTING -50mm, BEAMS -25 mm
11. She i feknov & Schrödelaufs af The CONTRACTOR. 12. STRIPPING TIME TABLE AS PER IS: 456-2000. Type of Formwork Minimum period before striking formwork is to be to 24 hours columns, walls and beams. Props to be Relixed immediately after removal of formwork. 1) sofit formwork to Beams. 10 days 10 formwork to Beams. 10 days 10 days 10 shales spanning over 4.5m 14 days Props to be Relixed immediately after removal of formwork. 1) Span over 6m 21 days 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20. M25 M30 FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BARS IN CONTACT. 200 MIDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BARS IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SDC IS TAKEN 20.00 TAX AT 3.0m DEPTH FROM THE N.G.L. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT. DRG. No.:- <i>STR/02</i> REV. No.:- <i>R1</i> Date :- <i>02 MAR 2023</i> Project :- <i>LACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)</i> Client :- <i>CGMFPFED NAYA RAIPUR, (C.G.)</i> Title :- <i>COLUMN, FOOTING, &amp; GROUND BEAM DETAILS</i>	10. WALL THICKNESS = $0.1 \text{m}/0$ .	2m.
12. STRIPPING TIME TABLE AS PER IS: 456-2000. Type of Fornwork Minimum period before attriking formwork to 16 to 24 hours columns will sub deams. Props to be Refixed immediately after removal of fornwork. 1) soffit fornwork to Stabs 7 days 11 days Props to Stabs. 1) Stabs spanning our of 4.5m 10 days 11 Stabs spanning our of 4.5m 14 days 12 days 13 ALL APS (1.4) STALL BE STAGERED & NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 Fe500 (TMT) 57 X D 49 X D 46 X D FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BAI IN CONTACT. 20% FOR 2 BAIS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. AND 33% FOR 4 BARS IN CONTACT. 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. AND 33% FOR 4 BARS IN CONTACT. 20% FOR 2 BAIRS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. AND 33% FOR 4 BARS IN CONTACT. AND 33% FOR 4 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. 20% FOR 2 BAIRS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. AND 33% FOR 4 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. AND 33% FOR 4 BARS IN CONTACT. AND 33% FOR 4 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. AND 33% FOR 4 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. AND 33% FOR 4 BARS INCONTACT. AND 33% FOR 4 BARS INCONTACT. AND 33% FOR 4 BARS INCONTACT. AND 33%	THE SOLE RESPONSIBILITY	NG AT THE CONSTRUCTION SITE IS OF THE CONTRACTOR.
Spectra in the set of	12. STRIPPING TIME TABLE AS Type of Formwork	PER IS: 456-2000. Minimum period before
columns, walls and beams. Props to be Refixed immediately after removal of formwork. i) sofii formwork to Slabs 7 days ii) sofii formwork to Beams 10 days ii) solats spanning up of 45m 10 days ii) Slabs spanning up of 45m 11 days Props to beams and arches: 1) Span over 6m 21 days ii) Span over 6m 21 days ii) Span over 6m 21 days iii) Sofii for 3 STAD 49 X D 46 X D FOR BUNDLED BARS, ID SHALL BE INCREASED BY 10% FOR 2 BAH IN CONTACT. IS. THE WORK SHOULD BL CARRED OUT UNDER STRICT SUPERVISION OF QUALIFED CIVIL/STRUCTURAL ENGINEER. IG SBC IS TAKEN 20:00 T/M2 AT 3:0m DEPTH FROM THEN 61. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT. DRG. No.:- <i>R1</i> Date :- <i>02 MAR 2023</i> Project :- <i>JACK FRUIT PROCESSING</i> <i>UNIT AT SURAJPUR (C.G.)</i> Client :- <i>CGMFPFED NAYA</i> <i>RAIPUR , (C.G.)</i> Title :- <i>COLUMN, FOOTING,</i> & <i>GROUND BEAM DETAILS</i>	Vertical formwork to	striking formwork 16 to 24 hours
it) solit formwork to Beams 10 days Props to Slabs: 1) Slabs spanning up to 4.5m 10 days i) Slab spanning over 4.5m 14 days Props to beams and arches: 1) Span vor 6m 21 days 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 Fe500 (TMT) 57 XD 49 XD 46 XD FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BAI IN CONTACT, 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT, R1 Date :- 02 MAR 2023 Client :- <u>CGMFPFED NAYA</u> RAIPUR, (C.G.,) Title :- <u>COLUMN, FOOTING, &amp; GROUND BEAM DETAILS</u>	Props to be Refixed immediately i) soffit formwork to Slabs	after removal of formwork. 7 days
i) Slabs spanning over 4.5m 14 days Props to beams and arches: i) Span over 6m 21 days 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 Fe500 (TMT) 57 X D 49 X D 46 X D FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BAR IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE N.G.L. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT. DRG. No.:- <i>R1</i> Date :- <i>02 MAR 2023</i> Project :- <i>JACK FRUIT PROCESSING</i> <i>UNIT AT SURAJPUR (C.G.)</i> Client :- <u>CGMFPFED NAYA</u> <i>RAIPUR , (C.G.)</i> Title :- <u>COLUMN, FOOTING,</u> & GROUND BEAM DETAILS	<ul><li>ii) soffit formwork to Beams</li><li>Props to Slabs:</li><li>i) Slabs spanning up to 4.5m</li></ul>	10 days 10 days
1) Span over fm 21 days 13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 F6500 (TMT) 57 X D 49 X D 46 X D FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BAI IN CONTACT. 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE N.GL. & WATER TABLE 2m BELOW THE N.GL. LEVEL AS PER CLIENT. DRG. No.:- <i>STR/02</i> REV. No.:- <i>R1</i> Date :- <i>02 MAR 2023</i> Project :- <i>JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)</i> Client :- <i>CGMFPFED NAYA RAIPUR , (C.G.)</i> Title :- <i>COLUMN, FOOTING, &amp; GROUND BEAM DETAILS</i>	ii) Slabs spanning over 4.5m Props to beams and arches:	14 days
13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOL RESPONSIBILITY OF THE CONTRACTOR. 14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION. GRADE OF REINF. M20 M25 M30 Fe500 (IMT) 57 XD 49 XD 46 XD FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BAIS IN CONTACT. 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT. 15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE N.G.L. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT. DRG. No.:- <i>R1</i> Date :- <i>02 MAR 2023</i> Project :- <i>JACK FRUIT PROCESSING</i> <i>UNIT AT SURAJPUR (C.G.)</i> Client :- <i>CGMFPFED NAYA</i> <i>RAIPUR , (C.G.)</i> Title :- <i>COLUMN, FOOTIING,</i> <i>&amp; GROUND BEAM DETAILS</i>	i) Span up to om ii) Span over 6m	21 days
<ul> <li>14. ALL LAPS (Ld) SHALL BE STAGGERED &amp; NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION.</li> <li>GRADE OF REINF. M20 M25 M30</li> <li>Fe500 (TMT) 57 XD 49 XD 46 XD</li> <li>FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BAI IN CONTACT. 20% FOR 3 BARS IN CONTACT. AND 33% FOR 4 BARS IN CONTACT.</li> <li>15. THE WORK SHOULD BE CARRIED OUT UNDER STRICT SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER.</li> <li>16. SBC IS TAKEN 20.00 T/M2 AT 3.0m DEPTH FROM THE N.G.L. &amp; WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT.</li> <li>DRG. No.:- <i>R1</i></li> <li>Date :- <i>02 MAR 2023</i></li> <li>Project :-</li> <li><i>JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)</i></li> <li>Client :-</li> <li><i>CGMFPFED NAYA RAIPUR , (C.G.)</i></li> <li>Title :-</li> <li><i>COLUMN, FOOTING, &amp; GROUND BEAM DETAILLS</i></li> </ul>	13. ALL SAFETY MEASURES AT RESPONSIBILITY OF THE CC	THE CONSTRUCTION SITE IS THE SOL ONTRACTOR.
SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER. 16. SBC IS TAKEN 20:00 T/M2 AT 3.0m DEPTH FROM THE N.G.L. & WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT. DRG. No.:- $RI$ Date :- $02 MAR 2023$ Project :- JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.) Client :- CGMFPFED NAYA RAIPUR , (C.G.) Title :- COLUMN, FOOTING, & GROUND BEAM DETAILS	<ul> <li>14. ALL LAPS (Ld) SHALL BE ST BARS TO BE LAPPED AT AN GRADE OF REINF. M20 Fe500 (TMT) 57 X D 4 FOR BUNDLED BARS, LD SH IN CONTACT, 20% FOR 3 BA IN CONTACT.</li> <li>15. THE WORK SHOULD BE CAI</li> </ul>	AGGERED & NOT MORE THAN 50% Y GIVEN SECTION. M25 M30 P9 X D 46 X D ALL BE INCREASED BY 10% FOR 2 BAH RS IN CONTACT AND 33% FOR 4 BARS
DRO. NO.:- $RI$ REV. No.:- $RI$ Date :- $02 MAR 2023$ Project :-JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)Client :- $CGMFPFED NAYA$ RAIPUR , (C.G.)Title :- $COLUMN, FOOTING,$ & GROUND BEAM DETAILS	WATER TABLE 2m BELOW T	THE N.G.L. LEVEL AS PER CLIENT.
REV. No.:- RT Date :- 02 MAR 2023 Project :- JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.) Client :- CGMFPFED NAYA RAIPUR , (C.G.) Title :- COLUMN, FOOTING, & GROUND BEAM DETAILS	$DRG No \cdot STR$	R/N2
Date :- 02 MAR 2023 Project :- $\frac{JACK FRUIT PROCESSING}{UNIT AT SURAJPUR (C.G.)}$ Client :- $\frac{CGMFPFED NAYA}{RAIPUR , (C.G.)}$ Title :- $\frac{COLUMN, FOOTING,}{\& GROUND BEAM DETAILS}$	DRG. No.:- STI	R/02
Project :- <u>JACK FRUIT PROCESSING</u> <u>UNIT AT SURAJPUR (C.G.)</u> Client :- <u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u> Title :- <u>COLUMN, FOOTING,</u> <u>&amp; GROUND BEAM DETAILS</u>	DRG. No.:- <i>STI</i> REV. No.:- <i>R1</i>	R/02
<i>JACK FRUIT PROCESSING</i> <i>UNIT AT SURAJPUR (C.G.)</i> Client :- <i>CGMFPFED NAYA</i> <i>RAIPUR , (C.G.)</i> Title :- <i>COLUMN, FOOTING,</i> <i>&amp; GROUND BEAM DETAILS</i>	DRG. No.:- $STP$ REV. No.:- $R1$ Date :- $02$	R/02 MAR 2023
Client :- <u>CGMFPFED NAYA</u> <u>RAIPUR , (C.G.)</u> Title :- <u>COLUMN, FOOTING,</u> <u>&amp; GROUND BEAM DETAILS</u>	DRG. No.:-       STR         REV. No.:-       R1         Date :-       02 A         Project :-       Str	R/02 MAR 2023
RAIPUR , (C.G.)         Title :- <u>COLUMN, FOOTING,</u> & GROUND BEAM DETAILS	DRG. No.:- $STR$ REV. No.:- $R1$ Date :- $02L$ Project :- JACK FRUI UNIT AT SU	R/02 MAR 2023
Title :- <u>COLUMN, FOOTING,</u> & GROUND BEAM DETAILS	DRG. No.:- $STR$ REV. No.:- $R1$ Date :- $02L$ Project :- JACK FRUIUNIT AT SU Client :- CGMFR	R/02 MAR 2023 T PROCESSING JRAJPUR (C.G.)
& GROUND BEAM DETAILS	DRG. No.:- $STI$ REV. No.:- $R1$ Date :- $02$ Project :- JACK FRUI UNIT AT SU Client :- CGMFI RAIPU	R/02 MAR 2023 T PROCESSING JRAJPUR (C.G.)
	DRG. No.:- $STI$ REV. No.:- $R1$ Date :- $02$ Project :- JACK FRUI UNIT AT SU Client :- CGMFI RAIPU Title :-	R/02 MAR 2023 T PROCESSING JRAJPUR (C.G.) PFED NAYA JR , (C.G.)
	DRG. No.:- $STI$ REV. No.:- $RI$ Date :- $02$ Project :- JACK FRUIUNIT AT SU Client :- CGMFIRAIPUTitle :- $COLUMI& GROUND$	R/02 MAR 2023 T PROCESSING JRAJPUR (C.G.) PFED NAYA JR , (C.G.) N, FOOTING, BEAM DETAILS
	DRG. No.:- $STI$ REV. No.:- $R1$ Date :- $02$ Project :- JACK FRUI UNIT AT SU Client :- CGMFI RAIPU Title :- COLUMI & GROUND	R/02 MAR 2023 T PROCESSING JRAJPUR (C.G.) PFED NAYA JR , (C.G.) N, FOOTING, BEAM DETAILS

@0.12; 2L
(SEE FIG1 FOR POSITIONING AND DETAILING OF SLAB REINFORCEMENT)	
NAME OF DEPTH REINFORCEMENT ALONG SHORT DIRECTION REINFORCEMENT ALONG LONG DIRECTION	TION DISTRIBUTI
NAME OF SLAB (METER)OF SLAB AT MID SPAN NEAR BOTTOM FACEAT MID SPAN OVER BEAM SUPPORT NEAR TOP FACEAT MID SPAN AT MID SPAN NEAR BOTTOM FACEOVER BEAM SUPPORT NEAR BOTTOM FACE	PORT R/F CE
S1       0.125       8# - @0.125C/C       8# - @0.125C/C       8# - @0.125C/C       8# - @0.125C/C	C –







2-WA

	NOTE:- 1. ALL DIMENSION ARE IN METERS, UNLESS STATED OTHERWISE.
	2. THIS DRAWING MUST NOT BE SCALED; ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
<b>^</b> \	3. ANY DISCREPANCY OBSERVED SHOULD BE IMMEDIATELY BROUGHT TO THE CONSULTANTS NOTICE.
2)	4. CORRECT POSITIONING OF ALL REINFORCEMENT BARS SHALL BE STRICTLY ENSURED BEFORE POURING CONCRETE.
	5. STRICT QUALITY CONTROL SHALL BE ENSURED FOR ALL MATERIAL AND CONSTRUCTION ACTIVITIES
	<ul> <li>6. PROPER CURING OF CONCRETE, AS PER I.S: 456 - 2000, SHALL BE</li> </ul>
	7. USE:-
	<ul> <li>a) HIGH YIELD STRENGTH DEFORMED STEEL BARS CONFORMING TO I.S. 1786 - 2008 WITH YIELD STRENGTH NOT LESS THAN 500 N/mm2. UNLESS SPECIFIED OTHERWISE.</li> <li>b) REINFORCED CEMENT CONCRETE - M-25 GRADE FOR ALL R.C.C WORK.</li> </ul>
	8. NO DEVIATIONS FROM THIS DRAWING SHOULD BE MADE WITHOUT A WRITTEN CONSENT FROM THE CONSULTANT.
	9. CLEAR COVER : COLUMN -40 mm, FOOTING -50mm, BEAMS -25 mm & SLAB -20 mm.
	10. WALL THICKNESS = $0.1m/0.2m$ .
	11. SHUTTERING & SCAFFOLDING AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
	12. STRIPPING TIME TABLE AS PER IS: 456-2000.
	Type of FormworkMinimum period before striking formworkVertical formwork to16 to 24 hours
A B	columns, walls and beams. Props to be Refixed immediately after removal of formwork. i) soffit formwork to Slabs 7 days
- Z	ii) soffit formwork to Beams 10 days Props to Slabs:
	1) Slabs spanning up to 4.5m10 daysii) Slabs spanning over 4.5m14 daysProps to beams and arches:
	i) Span up to 6m14 daysii) Span over 6m21 days
	13. ALL SAFETY MEASURES AT THE CONSTRUCTION SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
	14. ALL LAPS (Ld) SHALL BE STAGGERED & NOT MORE THAN 50% BARS TO BE LAPPED AT ANY GIVEN SECTION.
AII	GRADE OF REINF. M20 M25 M30 Eo500 (TMT) 57 X D 40 X D 46 X D
	FOR BUNDLED BARS, LD SHALL BE INCREASED BY 10% FOR 2 BARS
	IN CONTACT, 20% FOR 3 BARS IN CONTACT AND 33% FOR 4 BARS IN CONTACT.
LL Z	SUPERVISION OF QUALIFIED CIVIL/STRUCTURAL ENGINEER.
NG RE	WATER TABLE 2m BELOW THE N.G.L. LEVEL AS PER CLIENT.
NIV	DRG. No.:- <i>STR/03</i>
Ó	REV. No.:- <i>R1</i>
L L	Date :- 02 MAR 2023
Z	Project :-
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DICAL SEC	JACK FRUIT PROCESSING UNIT AT SURAJPUR (C.G.)
	Client :-
_ +	CGMFPFED NAYA
ט לי	RAIPUR, (C.G.)
つ の	Title :-
	TERRACE FLOOR SLAB
	BEAM DETAILS
R	
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