PRE FEASIBILITY REPORT

FOR

EXPANSION OF CEMENT PLANT

With
Clinker Production from 1.485 MTPA to 3.485 MTPA
Cement Production from 1.65 MTPA to 5.00 MTPA
(By Installation of New Line of 2 MTPA CAPACITY)

at

The India Cements Limited

"White House", # 6-3-1192/1/1,
Block – III B, III Floor,
Kundanbagh, Begumpet,
Hyderabad-500016

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Annexures

1. EXECUTIVE SUMMARY

THE INDIA CEMENTS LIMITED:

M/s The India Cements Limited (ICL) is proposing to set up a 2.00 million tonnes per annum (MTPA) of Clinkerisation plant adjacent to existing Cement Plant located near Chilamkur village in Yerraguntla Mandal, Y.S.R.Kadapa district of Andhra Pradesh.

The cement plant was established in the year 1984 with a clinker production capacity of 1.38 MTPA. The quality of cement produced by ICL has an outstanding demand in the market.

ICL is involved in manufacturing of varities of Cement viz. Ordinary Portland Cement (OPC), Pozzolona Portland Cement (PPC) & Sulphate Resisting Portland Cement (SRPC).

The limestone requirement of the cement plant is met from Captive mining lease located adjacent to the cement plant.

ICL received Environmental Clearance vide MoEF letter no. J-11011/ 126/2011-IA, II (1) dt 7.12.2012 (**Annexure-I)**

The current status of various units of **ICL** along with installed production capacities are given below:

OVERVIEW OF PRODUCTION CAPACITIES OF ICL

Cement Plant	**(MTPA)**	
	Clinker	**Cement**
Unit –I	1.485	1.65
Unit –II (proposed)	2.00	3.35
Total	**3.485**	**5.00**

PRESENT PROPOSAL

ICL is proposing to set up a 2.0 million tonnes per annum of Clinkerisation Line adjacent to existing Cement Plant located near Chilamkur village in Yerraguntla Mandal, Y.S.R. Kadapa district of Andhra Pradesh.

ICL proposes to meet the above additional limestone requirement from proposed mining lease extended over an area of 413 Ha, in Chilamkur & Kalamalla Village, Yerraguntla Mandal, Y.S.R.Kadapa district of Andhra Pradesh.

The present proposal pertains to obtaining environmental clearance for the following

INCREASE OF PRODUCTION

Unit		**Present approved Capacity as per MoEF EC (MTPA)**		**Proposed enhancement (MTPA)**		**Capacity after proposed expansion (MTPA)**	
		Clinker	**Cement**	**Clinker**	**Cement**	**Clinker**	**Cement**
Cement Plant	Unit –I	1.485	1.65	-		1.485	1.65
	Unit –II (new unit)	-	-	2.00	3.35	2.00	3.35
	Total	**1.485**	**1.65**	**2.00**	**3.35**	**3.485**	**5.00**

ICL complex is located in an area of 68.77 Ha

Need for the project and its importance to the country and or region.

The cement market has growth potential due to the central government liberalization policies and new schemes for housing, road projects. Cement demand growth is anticipated to be about 9 to 10% increase mainly through National Highway road projects, Housing Projects (1.3 million houses in rural & 0.7 million in urban areas). Continuous demand for exports to China and other South-East Asian countries along with the increased requirement of the domestic sector have led all the cement manufacturers in the country to plan for increased capacities.

So with a view to capture growing opportunity demand, the management of ICL wants to take up the expansion. The proposed expansion will enable the company to maximize its profitability by optimum utilization of technology, manpower, present infrastructure and capital.

The cost of production will substantially reduce due to power efficient equipment, better fuel, financial charges and other fixed overheads on

account of large scale economics due to higher volume of production and sales.

It would also enable the company to withstand against the considerable competitive pressure from large-scale units in the country and also to create wider brand loyalty for the product.

The increase of production within the existing plant is based on the following considerations

- Proximity of the site to captive limestone mines and abundant availability of reserves.
- Market demand
- Availability of land – no further land is proposed to be acquired
- Availability of existing infrastructure.

ICL has already commissioned railway siding and rail movement has been started connecting Kalamalla Railway Station. This railway line helps in transporting cement from the cement plant to the market and obtaining raw materials like coal, gypsum and other additives, etc.

ICL cement plant is supported by their captive Limestone mines to meet the additional limestone requirement of Cement Plant after proposed New line. The production capacity of limestone mines will be augmented. The proposal is being submitted to MoEF & CC separately for necessary Environmental Clearance.

The indigenous coal is envisaged to be sourced from Singareni Collieries after linkage is received. Till then the imported Coal will be sourced. Coal is brought to the plant by trucks/by rail in future.

The present water requirement for the plant is 2300 m^3/day and is sourced from Penneru River, Mines harvesting water. Additional Water requirement for proposed Unit is 1000 m^3/day and will be met from Penneru River, Mines harvesting water.

The project is based on Clinkerization factor of 1.50 on kiln feed basis with specific heat consumption of 700 Kcal/ kg clinker.

No solid waste generation from the plant.

There is no wild life sanctuary, national park, eco-sensitive area within the 10 km radius of the project site.

For transporting cement from the cement plant to the market and obtaining raw materials like coal, gypsum and other additives, well connected road also is available.

No additional quarter's construction is proposed.

Wastewater generated is only from domestic activities at cement plant and residential colony. A full-fledged sewage treatment plant (STP) is in operation designed for a maximum load of 400 m^3/day. Treated domestic wastewater is 100% reused for greenbelt development within ICL cement plant complex.

Greenbelt is maintained in about 33 % of the total area.

The peak power consumption in the ICL Cement plant complex including mine is 22.5 MW. Power requirement is met from Grid, APGPCL, IEX, TATA power etc. An additional power of 30 MW is required for the proposed expansion project.

Plant expected to be commissioned in 18 months from date of commencement of construction

Total capital Investment Cost is INR. 640 Crores

2.0 INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

i) Identification of project and project proponent. In case of mining project, a copy of mining lease / letter of intent should be given.

ICL is proposing to set up a 2.0 million tonnes per annum of Clinkerisation plant adjacent to existing Cement Plant located near Chilamkur village in Yerraguntla Mandal, Y.S.R.Kadapa district of Andhra Pradesh.

ICL cement plant is supported by their captive limestone mines. To meet the increasing demand of cement, both in the domestic and international markets, ICL is proposing to setting up a new production line with the clinker production capacity of 2.0 MTPA.

ii) Brief description of nature of the project

ICL is now proposing to setting up a new production line with the clinker production capacity of 2.0 MTPA and cement production capacity of 3.35 MTPA.

iii) Need for the project and its importance to the country and or region.

The cement market has growth potential due to the central government liberalization policies and new schemes for housing, road projects. Cement demand growth is anticipated to be about 9 to 10% increase mainly through road projects (Golden Quadrilateral), Housing Projects (1.3 million houses in rural & 0.7 million in urban areas). Continuous demand for exports to China and other South-East Asian countries along with the increased requirement of the domestic sector have led all the cement manufacturers in the country to plan for increased capacities.

So with a view to capture growing opportunity demand, the management ICL wants to take up the section wise capacity balancing and optimization. The proposed expansion will enable the company to maximize its profitability by optimum utilization of technology, manpower, present infrastructure and capital.

The cost of production will substantially reduce due to power efficient equipment, fuel, financial charges and other fixed overheads on account of large scale economics due to higher volume of production and sales.

It would also enable the company to withstand against the considerable competitive pressure from large-scale units in the country and also to create wider brand loyalty for the product.

The increase of production within the existing plant is based on the following considerations

- Proximity of the site to captive limestone mines and abundant availability of reserves.
- Market demand
- Availability of land – no further land is proposed to be acquired
- Availability of existing infrastructure.

Demand – supply Gap

Now State and Central Governments are providing thrust for infrastructure development and housing to the poor people. Also Govt. is giving incentives for construction of own houses by the middle class people. Cement is one of the main commodities for construction of structures, houses and infrastructures. Thus continued growth of cement industry is expected for next few decades.

Growth of infrastructure, Irrigation and housing scenario automatically drives the increased requirement of Cement in the market.

v) Imports Vs. Indigenous production

India is self sufficient to meet the demands of the market with the GDP projected at 10 % in the coming decades and in view of the infrastructure.

The end product being cement, the importance of the project is detailed below with respect to cement demand.

India is self sufficient to meet the demands of the market with the GDP projected at 10% in the coming decades and in view of the infrastructure.

vi) Export possibility

No export of cement outside the country is planned.

vii) Domestic / export markets

This new line project is proposed to meet the domestic markets demand.

viii) Employment generation (direct and indirect) due to the project.

Due to new project 500 members of direct & indirect additional manpower will be employed.

3.0 PROJECT DESCRIPTION

i. Type of project including interlinked and interdependent projects, if any

The present proposal is setting up new kiln within existing Cement Plant area of ICL located at Chilamkur village in Yerraguntla Mandal, Y.S.R.Kadapa district of Andhra Pradesh, in an area of 68.7 Ha.

To meet the limestone requirement of Cement Plant after proposed new line, new Captive limestone mines are proposed.

ii. Location (map showing general location, specific location, and project boundary & project site layout) with co-ordinates.

The Cement plant is located near Chilamkur village in Yerraguntla Mandal, Y.S.R.Kadapa district of Andhra Pradesh. The site falls between 78°27'31.91" East longitude and 14°39'54.93" North latitude with an average of 196 m above msl. The area falls within Survey of India Toposheet no. 57 J/6, [1:50000 scale]

The area is well connected by road and rail. National Highway - NH-18 connecting Chittoor – Kurnool is at 28.3 km in ENE direction to the Plant site.

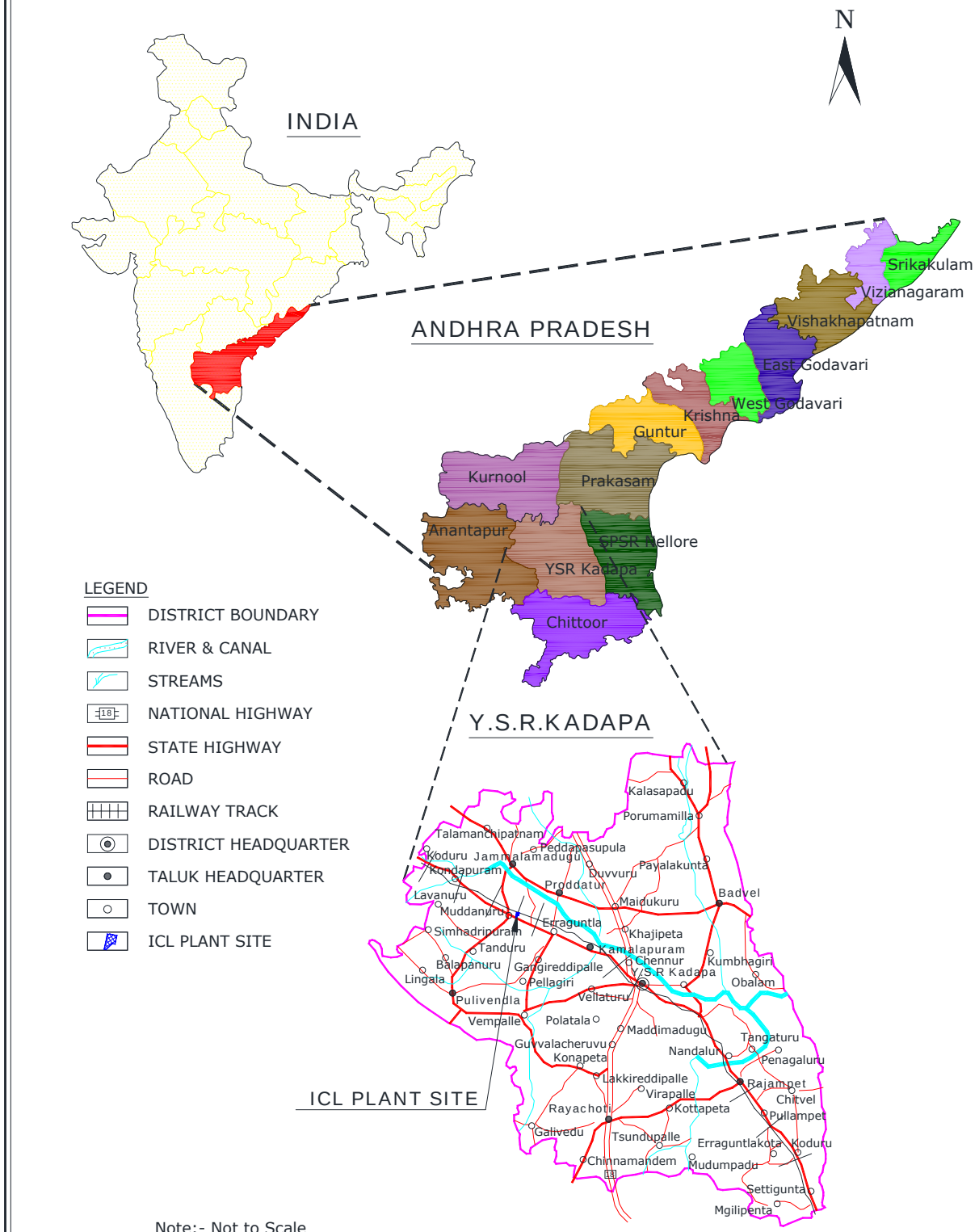
Limestone Mines fall under the revenue limits of Chilamkur & Kalamalla Villages, Yerraguntla Mandal, Y.S.R. Kadapa district of Andhra Pradesh.

Fig-1 shows the location map of the Plant Site. The Plant Site is located at a distance of 28.3 km away from the National Highway [NH-18] connecting Chittoor – Kurnool. The key map showing the location of captive mines and the cement plant are shown in **Fig – 2**

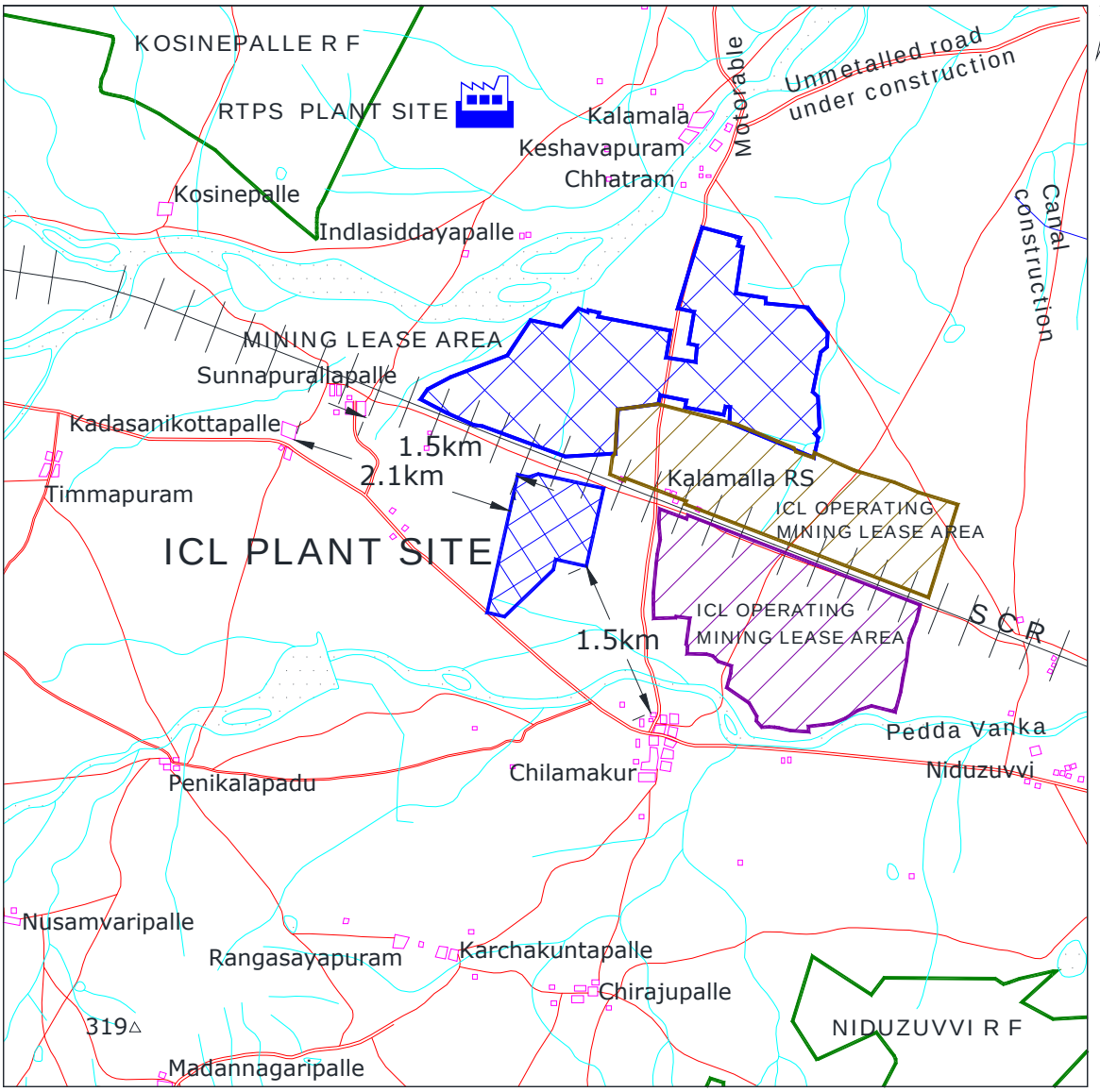
Nearest Settlements:

- Chilamakur – 1.5 km – SSE
- Kadasanikottapalle – 2.1 km – WNW
- Sunnapurallapalle – 1.5 km – WNW

FIG - 1
LOCATION MAP



Note:- Not to Scale



LEGEND

- ROADS
- STREAMS/ TANKS
- FOREST
- CANAL
- SETTLEMENTS
- RAILWAY LINE
- 319△ SPOT HEIGHT
- RTPS PLANT SITE
- ICL OPERATING MINING LEASE AREA
- ICL OPERATING MINING LEASE AREA
- MINING LEASE AREA
- ICL PLANT SITE

SCALE

0 1 2km

FIG - 2

CLIECT : M/s. THE INDIA CEMENTS LTD.,

PROJECT : CEMENT PLANT

Chilamkur Village, Yerraguntla Mandal, YSR Kadapa District, Andhra Pradesh.

TITLE : KEY MAP

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SECUNDERABAD

Nearest Reserved Forests:

- Niduzuvvi RF – 3.24 km – SE
- Kosinepalle RF- 1.91 km- NW

Due to availability of rich limestone deposits, major cement plants, which are located within 10 km, are given below:

DETAIL OF CEMENT PLANTS IN STUDY AREA

- India Cements Limited (Nidizivve) – 5.7 km – ESE
- Zuari Cements – 7.5 km –SE
- Rayalaseema Thermal Power Station – 2.6 km – NNW

Fig-3 shows the 10 km radius around Cement plant. Salient features of the plant site are given in **Table-1.**

iii. Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.

As the expansion is proposed in the existing premises, no alternate site considered or proposed for the proposed project.

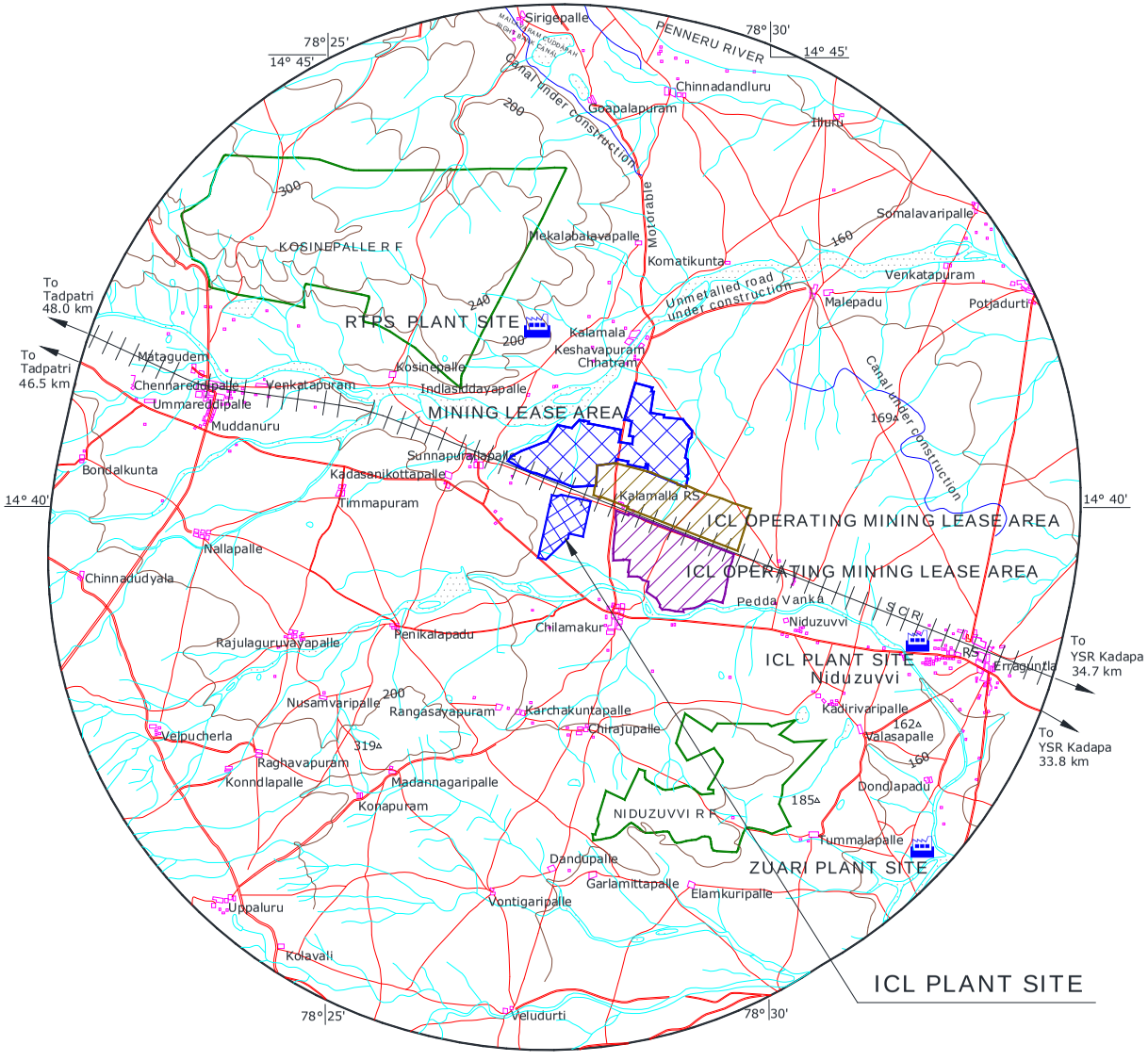
iv. Size or magnitude of operation

With the proposed expansion, the clinker production will be 3.485 MTPA and Cement at 5.00 MTPA.

ICL is manufacturing varities of Cement viz. Ordinary Portland Cement (OPC), Pozzolona Portland Cement (PPC)& Sulphate Resisting Portland Cement(SRPC).

Manufacturing Process:

Limestone Mining: Mechanized mining of lime stone is done by deep hole drilling, nonel blasting, excavation and hauling. The blasted lime stone of size less than 1000mm will be transported to lime stone crusher for crushing.



LEGEND

- ROADS
- STREAMS/ TANKS
- CONTOURS
- FOREST
- CANALS
- RIVER
- SETTLEMENTS
- SPOT HEIGHT
- RAILWAY LINE
- ICL PLANT SITE (NIDUZUVVI)
- ZUARI PLANT SITE
- RTPS PLANT SITE
- ICL OPERATING MINING LEASE AREA
- ICL OPERATING MINING LEASE AREA
- MINING LEASE AREA
- ICL PLANT SITE

N

REFER TO THIS MAP AS:- 1:50,000
SHEET 57/J/6 FIRST EDITION
Published under the direction of
the Surveyor General of India - 1978

Index to
Survey of India Toposheets

57 J/1	57 J/5	57 J/9
57 J/2	57 J/6	57 J/10
57 J/3	57 J/7	57 J/11

SCALE

0 3 6 km

FIG - 3

CLIENT : M/s. THE INDIA CEMENTS LTD.,

PROJECT : CEMENT PLANT
Chilamkur Village, Yerraguntla Mandal, YSR Kadapa District, Andhra Pradesh.

TITLE : TOPOGRAPHICAL MAP SHOWING 10 km RADIUS

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SECUNDERABAD

TABLE – 1.1
SALIENT FEATURES OF THE PLANT SITE

Feature	**Details**
Altitude	196 m above msl
Longitude & Latitude	14°39'54.93"N- 78°27'31.91"E
Village, Mandal, District, State	Chilamakur & Kalamalla Village, Yerraguntla Mandal, Y.S.R.Kadapa district of Andhra Pradesh
Maximum Temperature °C	45.6
Minimum Temperature °C	6.7
Relative Humidity, %	25-77
Annual rainfall, mm	725.9
Topography	Plain
Soil Type	Clayey
Nearest IMD Station	Kurnool – 132.5 km – NNW
Nearest Waterbodies	Penneru River – 9.9 km – N Pedda Vanka- adjacent – S Penneru River –Third order Stream - adjacent – North direction.
Nearest Highway	National Highway - NH-18 connecting Chittoor – Kurnool is at 28.3 km in ENE direction to the Plant site.
Nearest Railway station	Kalamala RS – 0.55 km - SE
Nearest Industries	India Cements Limited (Nidizivve) – 5.7 km – ESE Zuari Cements – 7.5 km –SE Rayalaseema Thermal Power Station – 2.6 km – NNW
Nearest Village	Chilamakur – 1.5 km – SSE Kadasanikottapalle – 2.1 km – WNW Sunnapurallapalle – 1.5 km – WNW
Nearest Town/City	YSR Kadapa – 40.9 km – ESE.
National Parks/ bird sanctuaries	None within 10km Radius map
Nearest Inter State Boundary	Andhra Pradesh – Karnataka – 92.4 km – SSW, Andhra Pradesh – Telangana – 154.0 km – Northen direction
Nearest Air port	Hyderabad (Shamshabad) Airport– 285.0 km – N, Kadapa Airport – 35.6km – ESE, Bengaluru International Airport – 181.5 km – SSW Renigunta Aitrport -161.5km - SE
Nearest Forest	Niduzuvvi RF – 3.24 km - SE Kosinepalle RF – 1.91 km - NW
Historical places	Gandikota – 24.2 km-WNW

Note :Distances mentioned are aerial distances

Limestone Crushing: A single Rotor Impact Crusher is installed to reduce limestone size from 1000 mm to 45mm.

Stacking & Reclaiming: The crushed lime stone is stacked longitudinally with stacker as per the required quality given by Quality Control Dept. The capacity of stock pile is 80000 T. After forming the stockpile, the reclaimation will be started. The total process of stacking and reclaiming is called chevron method.

Raw material grinding: Blended lime stone will be reclaimed and will be filled into raw material hopper in the Vertical Roller Mill (VRM) section. Laterite (out source material) and corrective limestone will be filled into laterite hopper and corrective limestone hopper respectively. All the three materials with the required ratio are conveyed through the weigh feeders and belt conveyors to Vertical Roller Mill, where grinding takes place.

VRM within built system of separator will grind the raw materials 45 mm size to 17-20 %R on 90 micron size. The product called Raw meal is collected in cyclones and Pulse jet BH and transported through air slides and bucket elevator and stored in blending Silo.

Coal Crushing & Grinding: Raw Coal unloaded from open trucks to yard and transported by Belt Conveyors to crusher where the size is reduced from 100mm to 15 mm and conveyed to raw coal hopper through conveyor belts. Vertical roller mill (VRM) pulverizes raw coal to fine coal with fineness of 16%R on 90 microns, which is collected in Bag Filter. The fine coal is further conveyed mechanically to fine coal bins and transported to kiln and calciner pneumatically (through FK pumps) for firing.

Pyro-Processing: This system consists of Rotary Kiln with 6 stage Pre-heater and In-line Calciner. Raw meal from Silos is conveyed through pre-heater. Fine coal is fired through burner pipe into kiln and into pre-calciner. The material is 90 to 92 % calcined before entering into kiln and balance calcination, Pre burning and sintering takes place in the kiln for ensuring completion of chemical reactions. Clinker formed is cooled in Static grate coolers with high pressure fans. The clinker after cooling is transported mechanically to clinker storage tanks.

Cement Grinding: Clinker from clinker storage tank is conveyed to clinker hopper. Gypsum is filled into gypsum hopper. Closed Circuit Ball Mill with dynamic separator grinds clinker and gypsum in a ratio of 96; 4 respectively. The product, called Ordinary Portland cement (OPC) is conveyed mechanically to cement storage silos.

Similarly Clinker, Fly ash, gypsum in a ratio of 65: 30: 5 to make Portland Pozzolona cement (PPC) are ground in the Ball Mill which is conveyed mechanically to cement storage silos.

Cement Packing: Electronic Packers 8 spout- double discharge) automatically fill the PP bags or paper bags of 50 Kg. These bags are loaded to the trucks and rail rakes through belt conveyors and loaders.

The Plant is well automated and operated form Central Control Room and Control system is based on PLC.

Quality Control: All the raw materials, in- process and products are carried out by means of XRF and XRD of PAN Analytical. The preventive measures are taken to ensure the consistent and best quality is achieved. Material testing is undertaken on calibrated instruments for both Physical and Chemical parameters all the time. The people involved in this stream are highly qualified and experienced and quality conscious. The product is well accepted in the market and customers like Ready mix concrete, Industries and Builders prefer our product very well.

Process Control: The plant operation through ABB Automation is equipped with Distributed Control Systems (DCS), comprising the SDR system. PIDs with closed loops systems are intact and PLC is in advanced modern system. Fuzzy logic from FLS is also adopted for smooth and consistent operation of the plant. The process parameter is designed by the experts and is operated by qualified and experienced engineers. The deviations are minimized and the tolerances are limited. This is resulting in achieving the productivity in terms of best quality, optimal production and energy conservation (thermal as well as electrical).

vi. Raw material required along with estimated quantity, likely source, marketing area of final products, mode of transport of raw material and finished product.

The raw material required for production of clinker is Limestone, Iron ore, Bauxite and Coal. Available limestone reserves of existing mines. The requirement of raw material per annum on an average for the production clinker and cement at capacity of 5.00 MTPA is presented in **Table-2**.

Table-2

Raw Material Requirement (Tonnes per Annum)

S.No	Materials	Existing	New Line	After Expansion	Source
1	Limestone	2093850	300000	5093850	Captive mines
2	Gypsum	82500	177550	260050	By product from the chemical plant
3	Fly ash	82500	1172500	1255000	Thermal plant
4	Coal	210000	246000	456000	Indigineous /Imported
5	Laterite/Iron ore	133650	313650	447300	Mines

For obtaining raw materials like coal, gypsum, additives and transporting cement from the cement plant to the market, well connected roads are available.

vii. Resource optimization / recycling and reuse envisaged in the project, if any, should be briefly outlined.

Available limestone reserves of proposed mine which cater to limestone needs of Cement Plant.

Cooling water circuit is close circuited, thereby ensuring no generation of wastewater. The process, selected envisages re-cycling all the material collected in the pollution control equipment whereby ensuring no generation of solid waste.

viii. Availability of water its source, energy / power requirement

Water

Water is required for cooling, dust suppression, sanitary facilities and gardening. Water requirement for proposed line is 1000 m^3/day,

bringing the total consumption of complex to 3300 m^3/day. The source of water is Penneru river, Mines harvesting water.

Power

The peak power consumption in the ICL Cement plant complex including mine is 22.5 MW. Total power requirement for the ICL cement plant complex is met from Grid/Captive Power Plant. Additional power required is about 30 MW.

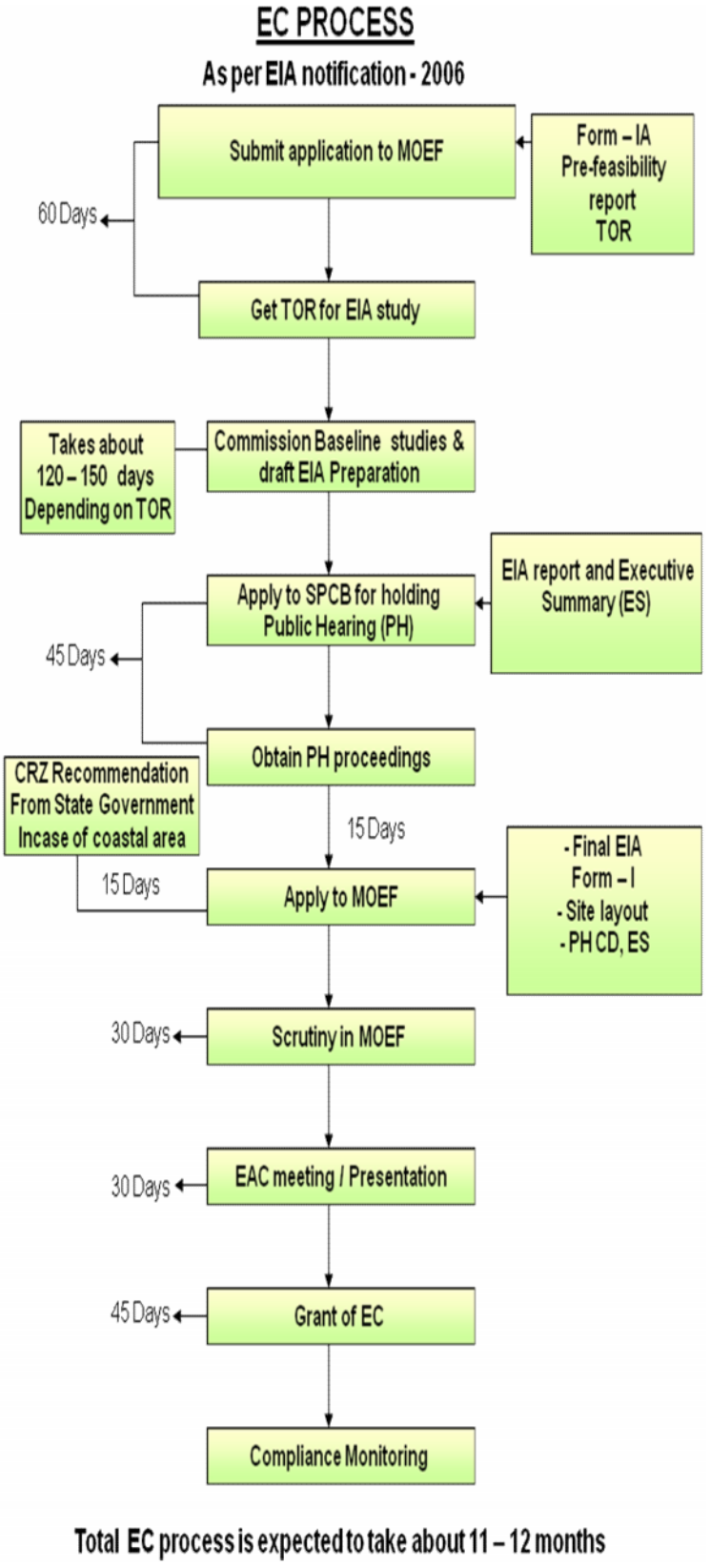
ix. Quantity of waste to be generated (liquid and solid) and scheme for their management / disposal.

In cement plant water is used for cooling, gas conditioning and raw material addition at various stages. This water is totally absorbed in the process or will be subjected to evaporation and hence no wastewater is released from the cement plant.

Wastewater generated is only from domestic activities at cement plant and residential colony. A full-fledged sewage treatment plant (STP) is in operation designed for a maximum load of 400 m^3/day. Treated domestic wastewater is 100% reused for greenbelt development within ICL cement plant complex.

No solid waste will be generated from the cement plant. The dust collected in the pollution control devices is being 100% recycled back to the process.

x. Schematic representations of the feasibility drawing which give information of EIA purpose.



4.0 SITE ANALYSIS

i. Connectivity

The Cement plant is located at Chilamkur village in Yerraguntla Mandal, Y.S.R. Kadapa district of Andhra Pradesh.

ii. Land form, land use and land ownership.

Break-up of present land use of existing cement plant is given in **Table-2** and ICL cement plant layout is shown in **Figure-4.** No additional land acquisition will be required for proposed new line. Proposed Unit will be located in an area of about 10 ha within the existing cement plant area.

TABLE-2
LAND AVAILABILITY

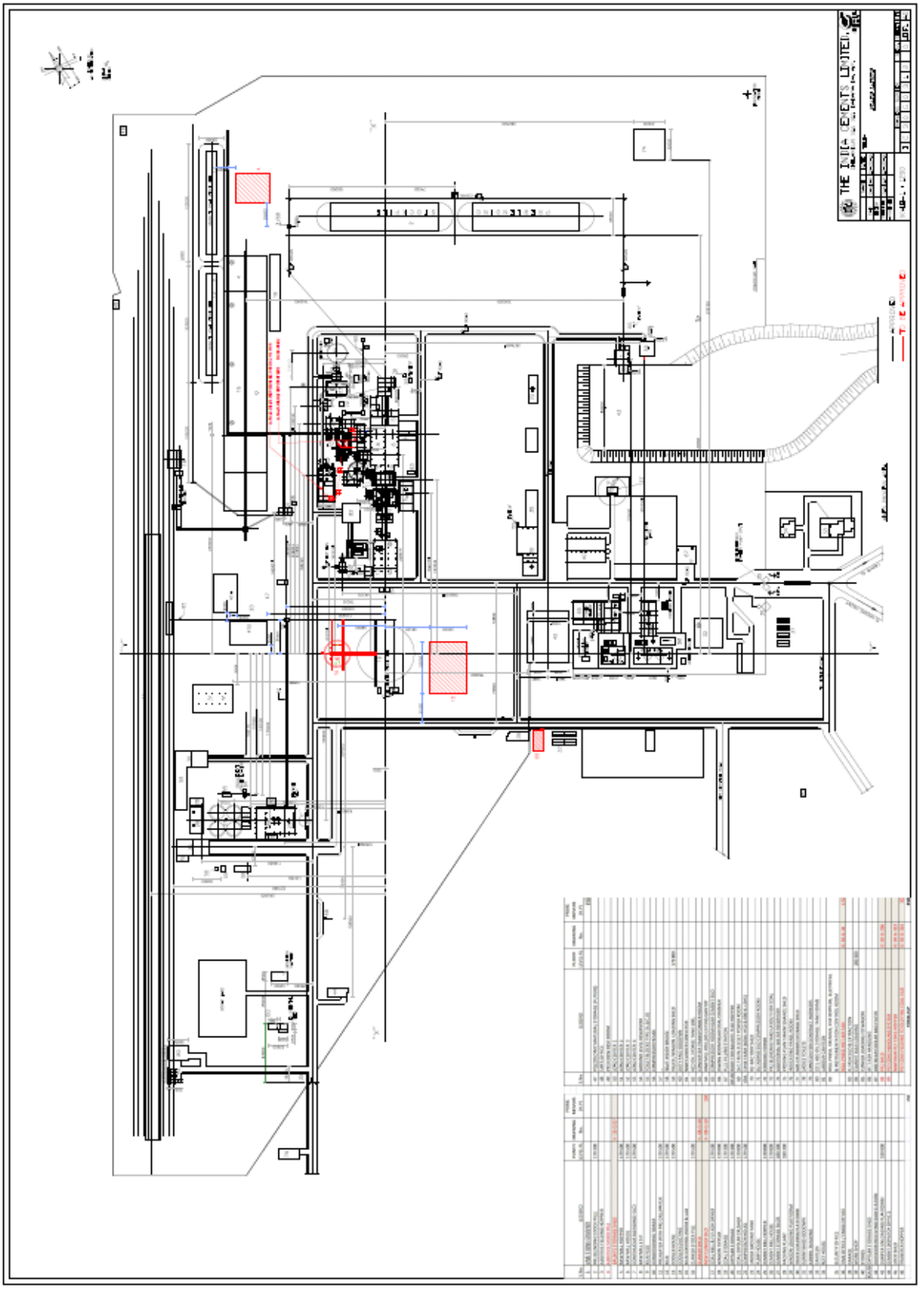
S.No.		Area (ha.)	
		Before expansion	**After expansion**
1	Plant area and roads	26.37	36.37
2	Colony with infrastructure	0	0
3	Parking area	1.00	1.00
4	Greenbelt	25.31	25.31
5	Vacant Land	16.08	6.08
Total		**68.77**	**68.77**

iii. Topography (along with map)

The existing ICL Cement plant site is located at an elevation of 196 m above MSL.

The Cement plant is located at Chilamkur village in Yerraguntla Mandal, Y.S.R. Kadapa district of Andhra Pradesh. The site falls between 78°27'31.91" East longitude and 14°39' 54.93" North latitude with an average altitude of 196 m above msl. The area falls within Survey of India Toposheet no. 57 J/6 [1:50000 scale].

FIG – 4 PLANT LAYOUT



iv. Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ, in case of notified industrial area, a copy of the Gazette notification should be given.

The existing cement plant is located at Chilamkur Village. No additional land will be required for proposed expansion project. There are no sensitive places within 10 km of the plant boundary.

v. Existing Infrastructure

For transporting cement from the cement plant to the market and obtaining raw materials like coal, gypsum and other additives, well connected road and railway siding are available.

vi. Soil Classification

The proposed new line will be located in existing plant area. No additional land will be required for proposed new line.

Soil in the area is found to be sandy clayed in texture with sand percentage in the range between 20-60%, silt between 18-41% and clay 22-44%.

vii. Climate data from secondary sources

The tropical climate of the region is manifested in hot and humid summer, moderately monsoon and mild winter seasons. May is the hottest month in the year. The maximum temperature during the day time was recorded as 45.6 ^{0}C and During the cold months of December, the temperature falls to 6.7^{o}C. The rainfall of the district is 725.9 mm. The months of December, January & February are considered to have pleasant climate.

viii. Social infrastructure available

A well-equipped Occupational Health center is provided at colony, which has full time male and lady medical officers assisted, by compounders and nurses. Necessary free medicines and medical aid is available for the company employees.

A good canteen is provided for the benefit of the employees. The canteen serves tea & snacks at subsidized rates to the employees.

Adequate number of shelters with fans, drinking water etc. for taking food and rest are provided for the benefit of the employees.

Safe hygienic drinking water is provided at the plant. Drinking water facility is available near rest shelters.

A full-fledged Training hall is available in the ICL cement plant complex. The training to workmen is provided on basics as well as for refreshers.

The employees are provided with well-designed houses having electricity and water connections.

For the education facility of employee's children School is provided at our colony.

5.0 PLANNING BRIEF

i. Planning concept (type of industries, facilities, transportation etc) town and country planning / development authority classification.

This is expansion project of existing cement plant within the present ICL cement plant complex. Additional civil structures will be required for proposed unit.

ii. Population projection

The total manpower at the existing plant is approx. 500. Due to new project 500 members of direct & indirect additional manpower will be employed.

Apart from the jobs, the company provided medical and educational facilities to the employees which were availed by the people around the plant. Adequate recreational facilities for the staff of the company and the local people were created.

iii. Land use planning (breakup along with greenbelt etc.,)

This is expansion project of existing cement plant. The present land use pattern of the existing ICL cement plant complex is given in **Table-2.** No additional land will be required for proposed expansion project

iv. Assessment of infrastructure demand (physical & social)

No additional housing facility will be created.

v. Amenities / Facilities

All infrastructure facilities such as education, health facilities and other social facilities are adequate at district headquarter which site makes the region adequate in amenities.

6.0 PROPOSED INFRASTRUCTURE

i. Industrial area (processing area)

The following are the major equipment proposed under the new production line

Main Machinery	**Item**	**Type**	**Capacity**
	Limestone Crusher	Impact crusher	1000 TPH
	Limestone Stacker	Longitudinal chevron type	40000 Tons/Pile
	Limestone Reclaimer	Bridge type Harrow with bucket conveyor	40000 Tons/Pile
	Raw Material Grinding	Vertical Roller Mill	550 TPH
	Coal Grinding	Vertical Roller Mill	40 TPH
	Preheater / Calciner	Six stage suspension pre heater with inline calciner	
	Kiln	Rotary kiln	
	Clinker Cooler	High efficiency Grate cooler	
	Cement Grinding	Vertical Roller Mill	500 TPH
	Packing Plant	8 Spouts rotary packer	4 * 120 TPH
Main Storages	**Item**	**Type**	**Capacity**
	Limestone Stock pile	Longitudinal chevron type	80000 Tons
	Chemical gypsum Stockpile	Closed shed	2000 Tons
	Raw Meal Silo	CF Silo	12000 Tons
	Fly Ash Silo	Concrete silo	4000 Tons
	Clinker Silo	Clinker Stock Pile	90000 Tons
	Cement Silo	Concrete Silos	3 * 10000 Tons

ii. Residential area (non-processing area)

Residential colony is located nearer to the plant. The Waste water from colony and plant is treated in the Sewage Treatment Plant.

iii. Greenbelt

ICL has already developed greenbelt in and around the plant site.

iv. Social infrastructure

ICL has well defined CSR policy to Carryout social development and welfare measures in the surrounding villages. Under CSR activity ICL will initiate community development projects, in the fields of health, education and environmental preservation, in the study area around the plant as is done in their existing units.

v. Connectivity (traffic and transportation road/rail/metro/water ways etc)

For transporting cement from the cement plant to the market and obtaining raw materials like coal, gypsum and other additives, well connected roads/rail are available. The National Highway [NH-18] connecting Chittoor – Kurnool is at a distance of about 28.3 km.

vi. Drinking water management (source & supply of water)

The existing cement plant is having safe drinking water facility. RO water is supplied to all the employee and contract workmen.

vii. Sewerage System

Existing STP will be utilized for treatment of domestic wastewater after expansion of project.

viii. Industrial waste management

The production of cement will be based on completely dry process; hence no process waste water will be generated from the plant. Also the cooling water will be through a closed circuit system. The only waste water generated will be domestic waste water from residential township and the same will be treated in STP and used for green belt development.

Hazardous wastes like spent oil from construction equipment, DG sets etc., generated in small quantities during construction and operational phase would be appropriately stored & handled and properly disposed off in accordance with the provisions of the Hazardous Waste Management (Transboundary) Rules, 2010.

ix. Solid waste Management

No solid waste is generated from the cement plant. The dust collected in the pollution control devices is being 100% recycled back to the process.

x. Power requirement & Supply/Source.

The peak power consumption in the ICL Cement plant complex including mine is 22.5 MW. Total power requirement for the ICL cement plant complex is met from grid. An additional power 30 MW is required for the proposed expansion project.

7.0 REHABILITATION AND RESETTLEMENT (R&R) PLAN

The new Unit is coming up in the existing complex owned by ICL and the R&R does not arise.

8.0 PROJECT SCHEDULE & COST ESTIMATES

The project is expected to be completed in a period of 18 months from the date of receipt of all the approvals from statutory authorities. The estimated cost of the project is INR. 640 Crores

9.0 ANALYSIS OF PROPOSAL (FINANCIAL RECOMMENDATIONS)

The capital cost, for the proposed production enhancement project, works out to INR. 640 Crores Financial institutions will be funding the project.

Growth of infrastructure, Irrigation and housing scenario automatically drives the increased requirement of Cement in the market. Based on the growing demand in the South East region of the country for Cement over the next 10 years, the proximity of the project location to this market is an advantage with respect to reduction in freight of cement to these markets. The financial viability also show a good Rate of return from the project. Considering the above ICL is planning to go ahead with the project, once it gets all the statutory approvals for this enhancement project.