

PREFEASIBILITY REPORT

OF

**ACC LIMITED, SINDRI CEMENT WORKS
(GRINDING UNIT)**

for

TERMS OF REFERENCE

For

**Capacity Expansion of Cement From 2.5 MTPA to 4.5
MTPA**

for

**Manufacturing, Storage and Dispatch of Cement as per relevant
Standard of BIS.**

Submitted by

ACC Limited

Sindri Cement Works

**P.O ACC Colony, District: Dhanbad – 828124
Jharkhand**

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PRE – FEASIBILITY REPORT

1. EXECUTIVE SUMMARY

ACC Limited (ACC), is one of the largest producers of cement in the country with an installed capacity of about 34 million tones per annum (MTPA) and a turn over of more than Rs. 11000 Crores per Annum. ACC has 17 Cement plants dispersed geographically across the country and ACC has more than 80 years of experience in setting up and operation of Cement plants in India and abroad. ACC draw a plan to expand its production capacity in a phased manner in the coming years.

ACC Limited is operating Sindri Cement Works (SCW) located at Sindri, Dhanbad, District of Jharkhand. SCW Limited has obtained EC from MoEF&CC vide MoEF&CC letter no. F.No.J.-11011/623/2009-IA-II(I) dated 13th May, 2011 for 1.0 to 2.5 MTPA Cement. Subsequently Amendment in EC for different product mix of PPC,PSC,OPC& GGBFS (at any ratio) as per requirement of market scenario obtained vide MoEF&CC letter no.F.No.J.-11011/623/2009-IA-I (I) dated 18th Dec,2015 without change in the cement production capacity of 2.5 MTPA and CTO from jharkhand state Pollution control Board.

Sindri Cement works proposes for Expansion of Sindri Cement Works Cement production capacity from 2.5 MTPA to 4.5 MTPA and the proposed expansion will be developed in two phases:

- 1) Phase - I : 2.5 to 3.0 MTPA (In existing line with optimization.)
- 2) Phase - II : 3.0 to 4.5 MTPA)(Installation of new mill)

Manufacturing, Storage and Dispatch of Cement will be as per relevant Standard of BIS.

The estimated capital cost, for the plant and equipment to be installed, works out to about Rs. 5.0 crores for the phase-I and Rs. 250 crore (approx) for Phase-II. This includes the cost of the plant equipment and buildings, construction of roads etc.,. The expenditure would be spread over a period of 18 months.

The nearest river is Damodar River, located about 2.5 km. away from the site in south direction. Interstate boundary with West Bengal is 2.5 km from the project site. No ecologically sensitive habitats like national parks, biosphere reserves, wildlife sanctuary, reserve / protected forest, archaeological monuments, health resorts and defense installation is present within 10 km radius of the SCW.

At Present, the entire cement production is envisaged for the domestic market. Current project activity is an expansion to the existing SCW and will be executed within the existing land available. Adequate green belt (more than 33%) was developed inside & outside the plant boundary

Clinker will be sourced from ACC's Jamul , Chaibasa , Bargarh, and Kymore cement plants . Further additional Clinker requirement if any, will be sourced from other nearby Cement companies.

Project involves utilization of industrial waste fly Ash from power plants, Slag from steel plant for manufacturing of PPC ; PSC & GGBFS, thereby - providing the waste minimizing solution at sources, ie power plant& steel plants. and thereby helping in conservation of natural resources.. By utilizing this waste, the plant is not only adding value to this waste but also helping in creating a better environment.

2. INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

(i) Identification of project and project proponent.

ACC Limited (ACC), is one of the largest producers of cement in the country with an installed capacity of about 34 million tones per annum (MTPA) and a turn over of more than Rs. 11000 Crores per Annum. ACC has 17 Cement plants dispersed geographically across the country and ACC has more than 80 years of experience in setting up and operation of Cement plants in India and abroad. ACC draw a plan to expand its production capacity in a phased manner in the coming years. Over the years, ACC had carefully nurtured and retained the requisite technical skills of a high order in various disciplines of engineering and technology, thereby positioning itself to absorb and utilize new technologies with ease.

All the Technical Support for installation of cement plants, modernization of plants and Operation and Maintenance of existing plants of ACC is provided from Techport of ACC located at Thane, Maharashtra. ACC's Technical Support Services Centre, also gives research and development support to its manufacturing operations and has also been making contributions in the development of high tech products like blended cements development, special cementitious materials etc. Commercial exploitation of products developed by R & D division of ACC have been taken up by cement and other industries in India.

As a part of Technical Support Services Centre , ACC has a Large CAPEX Projects Implementation group at ACC Thane Complex, Maharashtra, which implements large new Cement projects for ACC

ACC Limited is operating Sindri Cement Works (SCW) located at Sindri, Dhanbad, District of Jharkhand. SCW Limited has obtained Environmental Clearance (EC) from Ministry of Environment, Forests & Climate Change

(MoEF&CC) vide MoEF&CC letter no. F.No.J.-11011/623/2009-IA-II(I) dated 13th May, 2011 for 1.0 to 2.5 MTPA Cement. Subsequently ACC has obtained Amendment in EC for different product mix of PPC,PSC,OPC& GGBFS

(at any ratio) as per requirement of market scenario vide MoEF&CC letter no.F.No.J.-11011/623/2009-IA-I (I) dated 18th Dec,2015 without change in the cement production capacity of 2.5 MTPA.

Location of Project Site

Sindri Cement Works (SCW) is located at Sindri, at a distance of about 26 – 27 km from Dhanbad town. The nearest rail station is Sindri located at 3.5 km from plant boundary in Western direction. Dhanbad is an important Railway station located on the broad gauge Mughal Sarai- Howrah section on East Central Railway. It is directly connected to important cities like Mumbai, New Delhi, Kolkata, Chennai, Ranchi & Patna. The site is 180 km away from State Capital Ranchi, which is also the nearest airport.

The nearest river is Damodar River, located at 2.5 km. from the site in southern direction. Interstate boundary with West Bengal is 2.5 km from the project site.

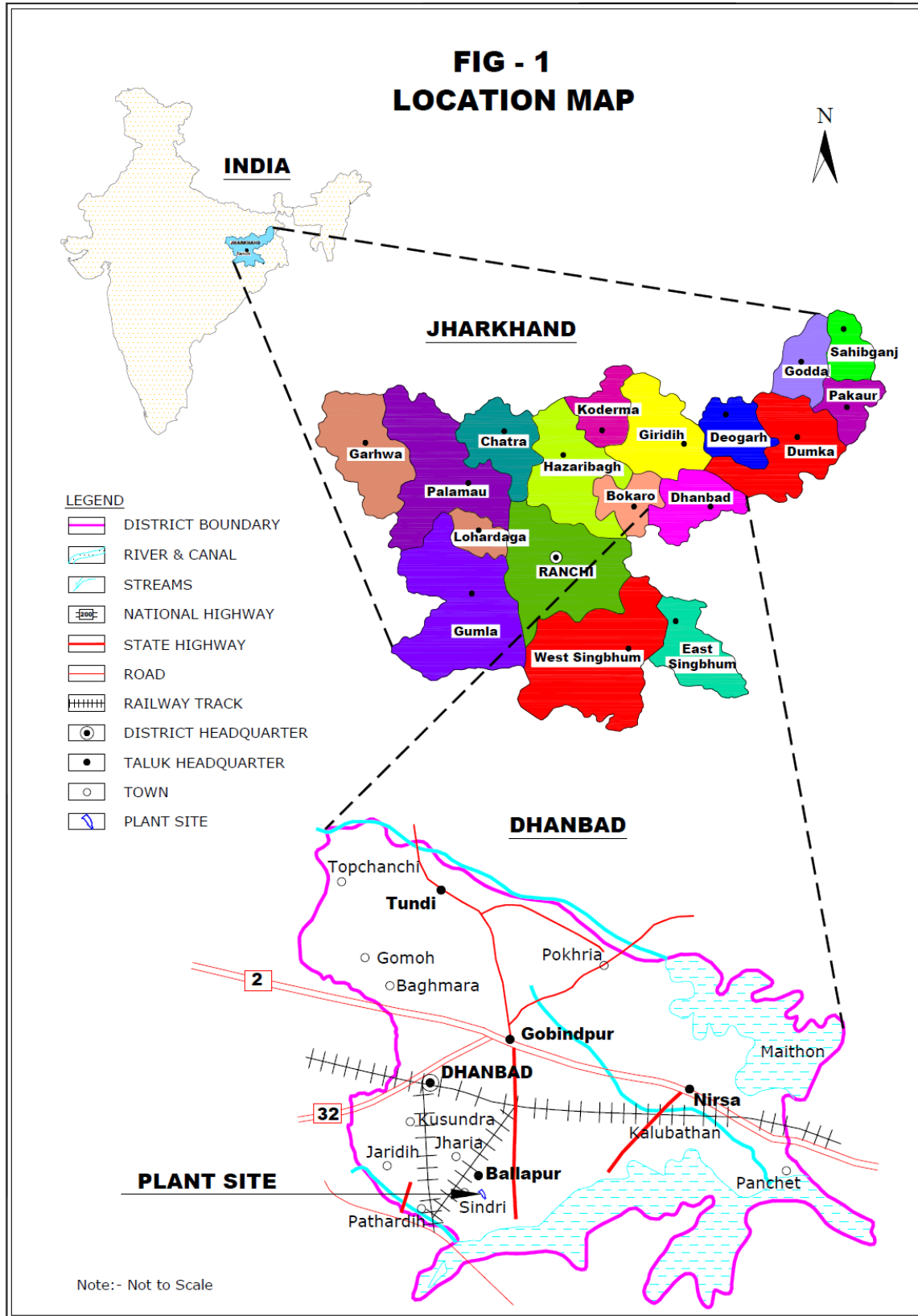
No ecologically sensitive habitats like national parks, biosphere reserves, wildlife sanctuary, reserve / protected forest, archaeological monuments, health resorts and defense installation are present within 10 km radius of the SCW.

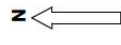
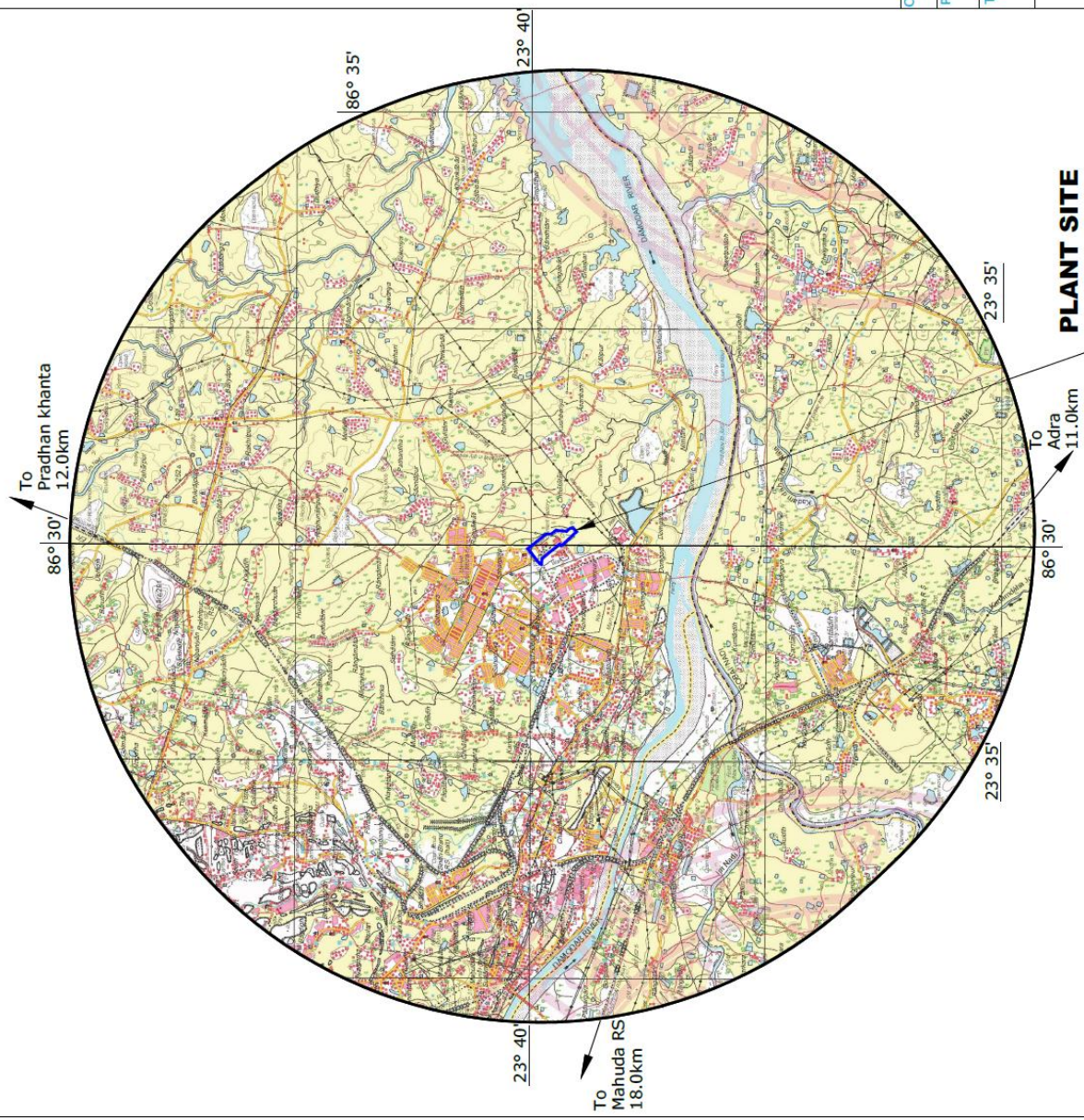
The details of proposed plant site and location are given in below. Location Map of the Project Site is given in **Figure 1**. The map showing proposed site and surrounding features within 10 km area is given in **Figure 2**.

Salient Features of the project is given below.

Sr. No.	Particulars	Details
1	Location	Sindri Cement Works (SCW) is located at Sindri, at a distance of 26 kms from Dhanbad
A	Near by Villages	Domgarh, Rohrabandh, Saharpura, Manohart and Gaushala and Rangamati.
B	Tehsil	Dhanbad
C	District	Dhanbad
D	State	Jharkhand
E	Latitude	23°39'29.49"N - 23°39'53.11"N
F	Longitude	86°29'47.64"E - 86°29'58.67"E
2	Elevation	177 M AMSL
3	Rainfall: Average,	1500mm
4	Nearest highway	GT Road
5	Nearest railhead / Railway station	Sindri Station & Dhanbad 27 km
6	Nearest airport	Ranchi 180 km
7	Wild life sanctuaries	None
8	Reserved/Protected forest within 10-km radius	None
9	Industries in 7 km radius	Fertilizer Corporation of India Projects & Development India Limited
10	Nearest major city	Dhanbad
11	Nearest major settlement	Dhanbad

**FIG - 1
LOCATION MAP**





LEGEND

 PLANT SITE

REFER TO THIS MAP AS:- 1:50,000
SHEET 73/I/10 FIRST EDITION
Published under the direction of
the Surveyor General of India - 2009

**Index to
Survey of India Toposheets**


73 $\frac{1}{5}$	73 $\frac{1}{9}$	73 $\frac{1}{13}$
73 $\frac{1}{8}$		73 $\frac{1}{14}$
73 $\frac{1}{7}$	73 $\frac{1}{11}$	73 $\frac{1}{15}$



FIG - 2

CLIENT : ACC LIMITED - SINDRI CEMENT WORKS (GRINDING UNIT)
PROJECT : Capacity Expansion of Cement From 2.5 MTPA to 4.5 MTPA
Sindri Village, Dhanbad District, Jharkhand.

TITLE : **TOPOGRAPHICAL MAP
SHOWING 10 km RADIUS**

Prepared by
 **B.S. ENVI-TECH (P) LTD.,**
SECUNDERABAD

PLANT SITE

(ii) Brief description of nature of the project.

ACC Limited is operating Sindri Cement Works (SCW) located at Sindri, Dhanbad, District of Jharkhand. SCW Limited has obtained Environmental Clearance (EC) from Ministry of Environment, Forests & Climate Change (MoEF&CC) vide MoEF&CC letter no. F.No.J.-11011/623/2009-IA-II(I) dated 13th May, 2011 for 1.0 to 2.5 MTPA Cement. Subsequently ACC has obtained Amendment in EC for different product mix of PPC,PSC,OPC& GGBFS (at any ratio) as per requirement of market scenario vide MoEF&CC letter no.F.No.J.-11011/623/2009-IA-I (I) dated 18th Dec,2015 without change in the cement production capacity of 2.5 MTPA.

Present Proposal :

Sindri Cement works proposes for Expansion of Sindri Cement Works Cement production capacity from 2.5 MTPA to 4.5 MTPA. The proposed expansion will be developed in two phases:

- 1) Phase - I : 2.5 to 3.0 MTPA (In existing line with optimization.)
- 2) Phase - II : 3.0 to 4.5 MTPA)

Manufacturing, Storage and Dispatch of Cement will be as per relevant Standard of BIS.

Sindri cement works have approval from the Ministry of Environment and Forest Climate Change to produce Cement (OPC,PPC,PSC,GGBFS etc) and proposing for producing Cement (OPC,PPC, PSC,GGBFS, Composite cement etc) or any other Manufacturing, Storage and Dispatch of Cement, Product as per relevant Standard of BIS.

(iii) Need for the project and its importance to the country and or region. & (iv) Demand- Supply Gap.

The cement demand in the country is going at the rate 6-7 (Compound Average Growth rate CAGR) Particularly in the Eastern states, due to no. of major infra-structural projects planned by State/Central Governments and also rapid growth of industries, the demand is likely to be higher than average for the country. Considering the proximity of the project site to two states i.e., Jharkhand and West Bengal, the growing demand can be met with less transportation costs of cement.

From the market analysis data, it is evident that the states of Jharkhand and West Bengal will continue to show an above average growth of demand.

(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. Facilities going across the region the growth rate of demand will increase to meet the expansion of new proposal are muted.

(vi) Export possibility

At Present, the entire cement production is envisaged for the domestic market. Since the plant is located away from the coast and the neighboring countries, the logistic cost involved for transporting cement, it may not be economically viable for export of cement.

(vii) Domestic/export Markets.

The entire production is envisaged for the domestic market

(viii) Employment Generation (Direct And Indirect) due to the project.

Employment generation: phase-I : No additional manpower required for phase-I. Around 60 manpower would be required for Phase-II.

During the construction phase, skilled and unskilled people on daily average will be employed. ACC will give preference to the local peoples during construction and operation phase of the project depending upon the skill, job requirement and desired competency.

In addition to above the project will create several other related employment opportunity in the field of transportation, greenery development, hospitality and retail business. The anticipated indirect employment generation from this project would be (about 500) in services like like truck and LMV drivers, attendants, workshop–garage technicians, electricians, masons, carpenters, plumbers, tailors, barbers, retail shop owners, medical stores, dispensary-nursing homes, gardeners, restaurants and dhabas.

3 PROJECT DESCRIPTION.

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

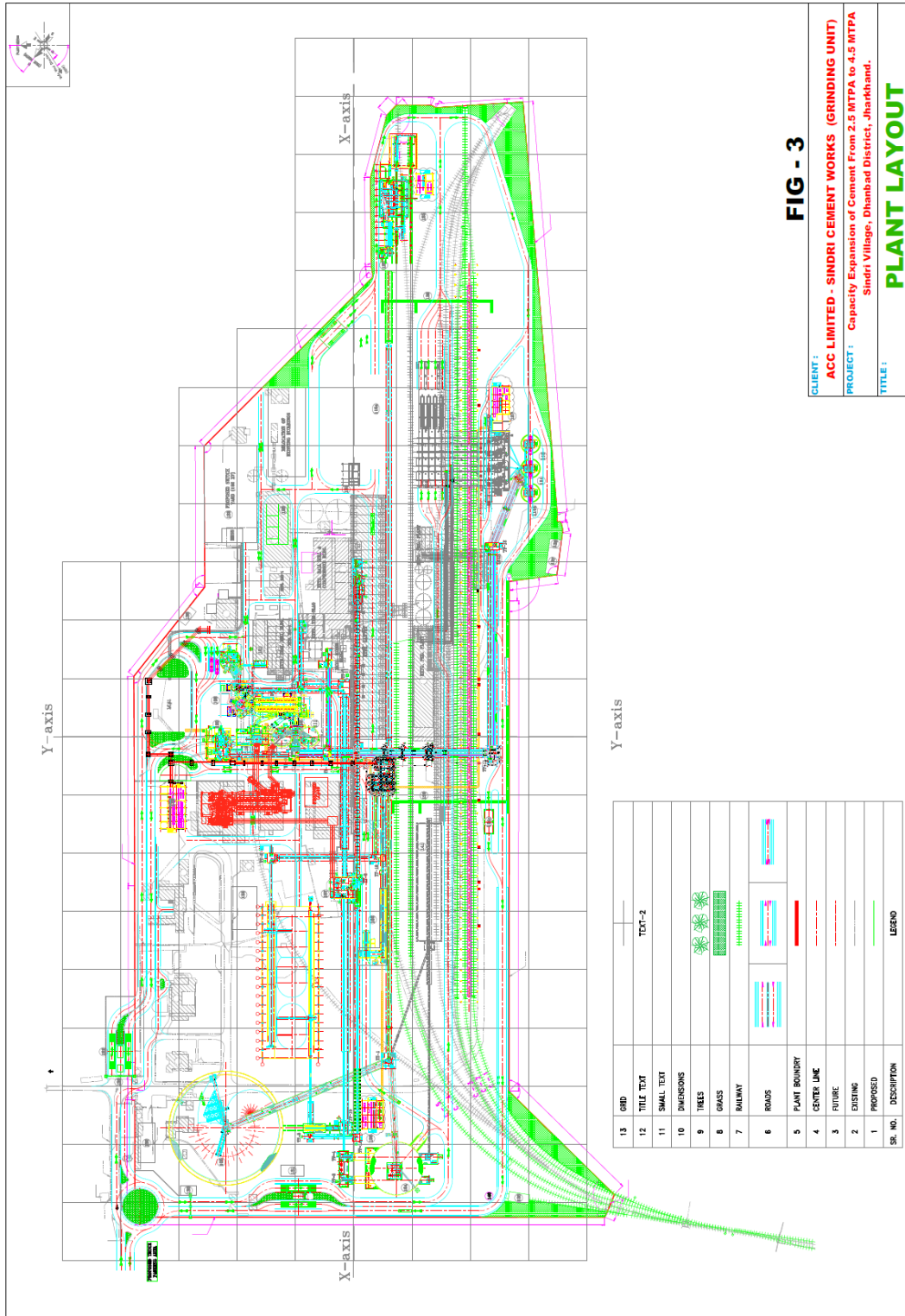
(ii) Location (map showing general location, specific location, and project boundary & project site layout with coordinates.

Project coordinates. :

Latitude: 23°39'29.49"N to 23°39'53.11"N

Longitude: 86°29'47.64"E to 86°29'58.67"E

Figure-3 shows the layout of the project.



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

Current project activity is an expansion to the existing Sindri Cement works and will be done within the existing land available.

The existing vacant land in the plant premise owned by company is sufficient for proposed new cement grinding & packing plant. Hence no alternate site is required.

(iv) Size or magnitude of operation.

Sindri Cement works proposes for Expansion of Sindri Cement Works Cement production capacity from 2.5 MTPA to 4.5 MTPA. The proposed expansion will be developed in two phases:

- 1) Phase - I : 2.5 to 3.0 MTPA (in existing line with optimization.)
- 2) Phase - II : 3.0 to 4.5 MTPA)

Manufacturing, Storage and Dispatch of Cement will be as per relevant Standard of BIS.

(v) Project description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc. should be given.

Project description with process details:

In order to meet the market demand and enhance the SWC share in the local market, the management of ACC Limited has proposed to increase cement production throughput from existing 2.5 to 4.5 MTPA for Manufacturing, Storage and Dispatch of Cement as per relevant Standard of BIS. The said expansion has been planned in two phases. Phase I is from 2.5 to 3.0 MTPA and Phase II will be expansion from 3.0 to 4.5 MTPA

Phase I: Optimisation is done by

1. Increasing of dam ring height VRM
2. Nozzle ring velocity increase of VRM
3. Raw material feeding optimization and product online change over
4. Separator modification by using of felt packing

Anticipating increase of 3.5 Lakhs tonns volume by converting slag based product into flyash based product

By process optimization and equipment efficiency improvement will contribute 1.5 lakhs tons volume.

Phase-II [Installation of new mill of 1.5 MTPA].

"It is proposed to increase the cement grinding capacity at Sindri from 3.0 MTPA to 4.5 MTPA by installing a new vertical roller mill, adjacent to the mill commissioned recently. The existing mill will mostly grind clinker & gypsum and the new mill will mostly grind slag. The products from these mills will be taken to the existing ground clinker and ground slag silos respectively. Ground slag and ground clinker from these silos will be mixed in the existing mixer and transported to existing cement storage silos. Additionally, PPC will be produced in the existing mill. Between these two mills, a total of 3.5 MTPA cement will be produced as per Manufacturing, Storage and Dispatch of Cement as per relevant Standard of BIS with 1 MTPA cement from old mill making the total production to 4.5 MTPA. Packing and dispatch will be through existing packers and loaders which have spare capacity available.

Feeding to the new mill will be from the existing mill feed hoppers through a conveyor."

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

Details of Raw material requirement along with estimated quantity (max), likely source, mode of transport is given in table below .;

Raw material	Existing requirement (Tones)	For Phase-I (Tones)	For Phase-II (Tones)	Source of Raw Materials	Mode of Transport
Clinker	16, 75,000	3,04,000	7,00,000	ACC's Jamul ,Chaibasa , Bargarh& Kymore cement plants of ACC.	By Rail /Road
Gypsum	1,40,000	26,000	80,000	Imported from Bhutan, Oman and Thailand.	By rail / road

Slag / Ground Granulated Blast Furnace slag	13,50,000	2,69,000	8,00,000	Tata Steel- Jharkhand; , Tata Kalinganagar, Orissa, Jindal Steel -Orissa, IISCO Burnpur, and Bhushan steel,	By rail / Road
Fly Ash	715,000	1,70,000	65,000	Maithon, Bokaro and Santadi Power plants.	Road (bulker)
Coal	32,000	5,380	16,000	Eastern Coalfields and E auction	By truck / Rail

Above raw material requirement is for production of Cement (OPC, PPC, PSC, GGBFS, Composite cement etc) or any other Manufacturing, Storage and Dispatch of Cement products as per relevant Standard of BIS.

(vii) Resources optimization/ recycling and reuse envisaged in the project, if any, should be brief outlined.

Project also involves utilization of industrial waste fly Ash from Power plant ; , Slag from Steel plants, for manufacturing of PSC, PPC & GGBFS , thereby providing the waste minimizing solution to the power plant& steel plant and helps conserving natural resources.

Cement manufacturing within the state will boost the economic development of the state as well as the country. With the organizational conservation towards mineral conservation, sustainable developments of mineral resources & environmental protection by ACC in this area have played a vital role in uplifting the standards of living.

The dust collected in the air pollution control equipment in the cement plant will be recycled back to the process. Hence no solid waste which requires disposal is generated from the plant.

Solid waste generated from colony and sewage treatment plant will be disposed after segregating the waste into bio-degradable and non-degradable. Bio degradable waste will be composted and non-degradable waste will be land filled at identified areas.

(viii) Availability of water its sources, Energy /power requirement and sources should be given,

Water

Cement grinding is a dry process. No process water is required during the manufacturing phase. The water consumption is for cooling of plant machinery during grinding and thus no process waste water is generated. Closed loop closing system is in place along with cooling tower for cooling purpose. Only make up water is added to compensate the evaporation losses.

ACC is purchasing 250kld water from Fertilizer Corporation of India (FCI) as per the agreement. SCW has an agreement with FCI for supply of 1137.5 KLD of water

The following table shows the water consumption for various purposes in the plant

Water Consumption Details (KL/Day):

Section	Existing Raw Water Requirement (KLD)	Proposed water requirement (KLD)	Wastewater Generation (KLD)
Make up for Equipment Cooling	35	70	100% evaporated
Gardening, Dust Suppression, etc	5	5	100% evaporation and seepage
Colony & Domestic	210	210	160 Used for greenbelt
Total (for Plant)	250	285	Nil

Waste Water Generation

Since this is dry process, no water is required during the manufacturing of cement. The only source of water consumption is cooling of plant machinery during grinding. Closed loop closing system is in place along with cooling tower. Only make up water is added to compensate the evaporation losses. Thus no process waste water is generated.

Domestic sewage from plant and colony is being treated in the following STPs.

- a) Inside plant area 20 KLD & 10 KLD total 2 nos - of Sewage treatment plant have been installed.
- b) In staff colony 200 KLD Sewage treatment plant has been installed

The treated sewage is used for water sprinkling, irrigation / plantation development. No wastewater is discharged outside plant premises. Plant was designed to achieve zero liquid discharge-

Power:

The present power requirement is 19 MW and the additional power requirement would be about approx 10 MW. The total 29 MW is met from Grid.

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

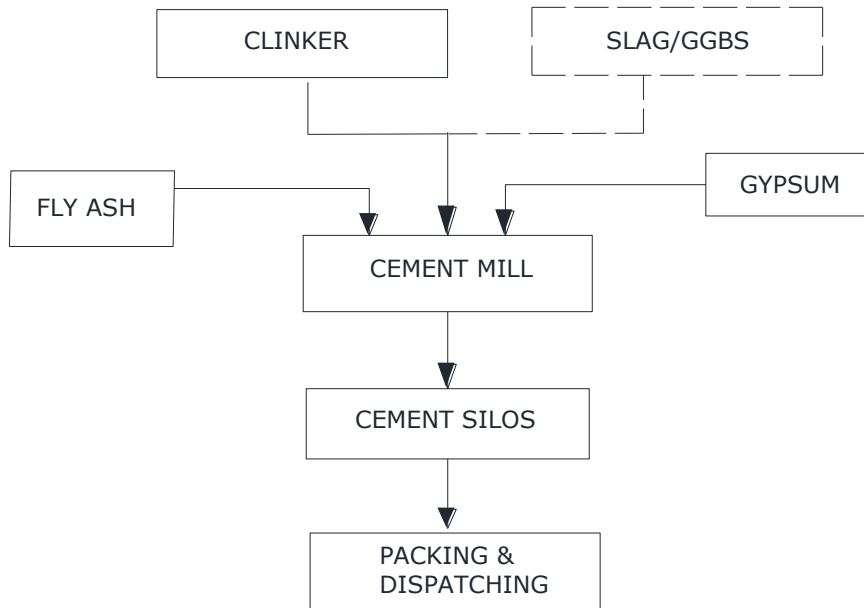
The production of cement will be based on completely dry process; hence no process waste water will be generated from the plant. Also the cooling water will be through a closed circuit system. The only waste water generated will be domestic waste water from residential township and the same will be treated in STP and will be re-circulated for industrial use and gardening purpose.

Dust that gets generated in the process, gets recycled back into system.

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

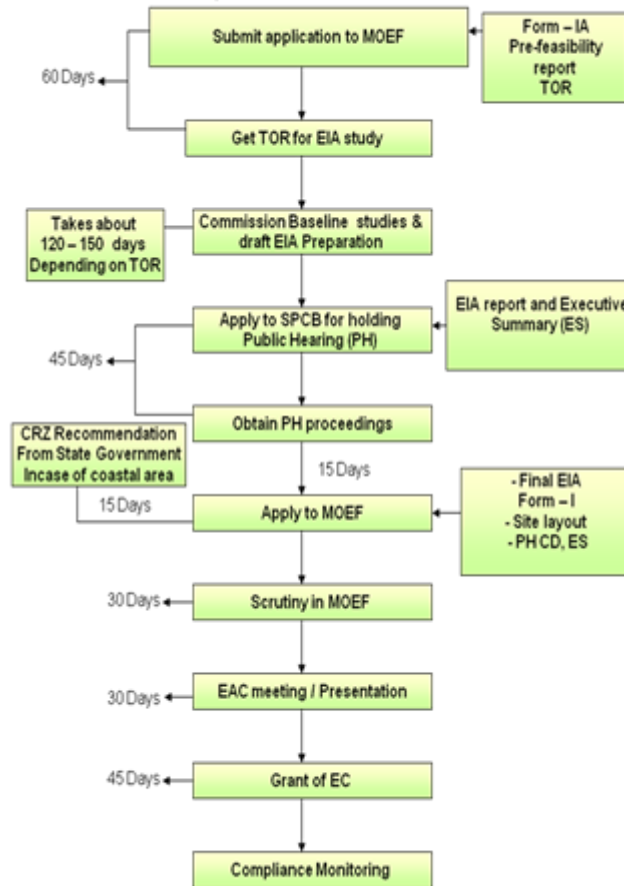
Detailed schematic representations of the feasibility covering the purpose of EIA will be given in the Environmental Impact Assessment report. EIA report will be prepared as per the generic structure of EIA Notification SO1533

MANUFACTURING PROCESS



EC PROCESS

As per EIA notification - 2006



Total EC process is expected to take about 11 - 12 months

4 SITE ANALYSIS

(i) Connectivity.

The site is well connected by Rail, road. Sindri Cement Works (SCW) is located at Sindri, at a distance of 27 kms from Dhanbad Railway Station on Western side, in Dhanbad, District of Jharkhand. Dhanbad is an important Railway station located on the broad gauge Mughal Sarai -Howrah section on East Central Railway. It is directly connected to important cities like Mumbai, New Delhi, Kolkata, Chennai, Ranchi & Patna. The site is situated 180 km away from State Capital Ranchi, which is also the nearest airport.

(ii) Land form, land use and land ownership.

Land : The present land is located in about 65.449 acres and the expansion will come up in the existing land available.in about 1.65 acres .

The Colony was developed in about 100 acres around the plant and about more than 33% acres of land was developed under greenbelt in & around the project area . The entire land is owned by ACC Sindri Cement Works.

Topography (along with map)

Area around SCW has fairly plain topography with no hill or valleys in the vicinity. **Figure-2** shows 10 km radius map of the project area

(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 form the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given)

No ecologically sensitive habitats like national parks, biosphere reserves, wildlife sanctuary, reserve / protected forest, archaeological monuments, health resorts and defense installation is present within 10 km radius of the SCW. Proposed plant site does not falls under the CRZ area or notified industrial area. Damodhar River is 2.5 KM from the SCW .

Existing land use pattern of study area is given below:

Land use	Area (%)
Area under Forest	4.5
Net sown Area	45.6
Barren & uncultivated land	6.9
Area under non agricultural use	18.4
Orchard and pastures	3.2
Cultivable waste	12.2
Current fallow and fallow Land	9.2

(v) Existing infrastructure.

Existing Sindri Cement works is having all the required infrastructure which can be used for the expansion project also.

Well established Communication facilities such as telephone, tele-fax and Internet are available in the existing plant

(vi) Soil classification

The soil of study area of 10 km radius is sandy loam. The soil is slightly acidic in nature. The pH values of the soil samples ranges from 5.72 to 6.90. The fertility of the soil is satisfactory, as the soil contains moderate amount of organic matter, nitrogen, potassium and phosphorus. The infiltration rate of the soil ranges between 4.15 to 8.5 cm/hr.

(vii) Climatic data form the secondary sources.

The secondary data has been collected from IMD Dhanbad which is nearest IMD station to the project site. The data collected from IMD includes wind speed, wind direction, (recorded in sixteen directions), temperature, relative humidity, atmospheric pressure, rainfall and cloud cover over a period of 10 years. The monthly maximum , minimum and average values are collected. The collected data is tabulated in below.

Month	Temperature (deg C)		Relative		Rainfall (mm)	Wind speed	Predominant wind direction	Cloud cover
	Max	Min	Max	Min				
January	25.2	11.5	61	45	17.3	4.3	W,NW	1.3
February	28.6	14.1	53	36	18.5	5.0	W,NW	1.2
March	33.9	18.8	45	28	18.3	5.6	W,NW	1.3
April	38.3	23.2	45	27	22.7	6.6	W,NW	1.7
May	39.1	25.1	56	37	49.1	7.1	W,NW	1.9
June	35.8	25.1	74	62	192.9	7.3	SE	4.8
July	31.7	24.1	86	80	342.8	7.1	SE	6.4
August	31.2	24.1	87	81	311.6	6.6	SE	6.2
September	31.5	23.5	84	79	282.6	6.0	SE	4.9
October	31.1	20.9	74	68	105.3	4.3	W,NW	2.8
November	28.8	16.0	62	54	7.8	3.7	W,NW	1.2
December	25.8	11.9	60	49	5.1	4.0	W,NW	0.9

(viii) Social Infrastructure available.

All infrastructure facilities such as education, health facilities and other social facilities are adequate at Sindri itself. The proposed site is well connected with rail network and is adequate to receive the raw materials like gypsum, coal and clinker.

SCW will be actively contributing to improve the socio-economic conditions of the area through its CSR activity and also actively participating in implementing Government Schemes for the welfare of the society of the area.

5. PLANNING BRIEF.

(i) Planning Concept (types of industries, facilities, transportation etc) Town and Country planning/Development authority Classification

Proposed expansion will be done within the boundary of existing ACC Sindri Cements Works which is cement grinding & packing plant.

Sindri Cement Works (SCW) is located at Sindri, at a distance of about 26 – 27 km from Dhanbad town. The nearest rail station is Sindri located about 3.5 km from plant boundary in west direction. Dhanbad is an important Railway station located on the broad gauge Mughal Sarai Howrah section on East Central Railway. It is directly connected to important cities like Mumbai, New Delhi, Kolkata, Chennai, Ranchi & Patna. The site is situated 180 km away from State Capital Ranchi, which is also the nearest airport.

Sindri is an industrial township within the Dhanbad municipal limits of the Dhanbad District of Jharkhand state. Sindri was well famous because of a large Fertilizer Factory (Fertilizer Corporation of India) conceived here in the early industrialized India (1950)

(ii) Population projection.

The project will create the additional employment in semi skilled and unskilled category during the operation phase of the project. During the construction phase, 200 people on daily average will be employed for a period of 18 months. ACC will give preference to the local peoples during construction of the project depending upon the skill, job requirement and capability. Several other indirect employment opportunities will be created in the surrounding areas. Transport, business, vehicle drivers and attendants, workshops, grocery and retails, medical, etc.

(iii) Land use planning (breakup along with green belt etc)

Land : The present land is located in about 65.449 acres and the expansion will come up in the existing land available. It just requires about 1.65 acres.

The Colony was developed in about 100 acres around the plant and about more than 33 % of land was developed under greenbelt in and around the project area

(iv) Assessment of Infrastructure Demand (physical & social).

Adequate physical and social facilities are available in this area.

(v) Amenities/ Facilities.

All infrastructure facilities such as education, health facilities and other social facilities are available in this area

6 PROPOSED INFRASTRUCTURE

(i) Industrial Area (Processing Area).

The expansion project is coming up in the existing plant area. Hence no additional land is required for this expansion project.

The plant buildings/structure will include cement mill feed hoppers, cement mill building and associated material handling system. New facilities of the expansion project will be integrated with the existing facilities of the present plant

(ii) Residential Area (Non Processing Area)

Residential colony for the employees is already available.

(iii) Green belt.

Adequate green belt (more than 55 acres) was developed in and around the plant boundary as per statutory norms.

(iv) Social Infrastructure.

ACC has well-defined CSR policy under which ACC is already carrying out social development and welfare measures in the surrounding village in the fields of health, education, environmental preservation etc., ACC will continue to pursue these activities

(v) Connectivity (Traffic and Transportation Road/ Rail/Metro/ Water ways etc)

The site is well connected by Rail, road. Sindri Cement Works (SCW) is located at Sindri, at a distance of 27 kms from Dhanbad Railway Station on Western side, in Dhanbad, District of Jharkhand. Dhanbad is an important Railway station located on the broad gauge Mughal Sarai Howrah section on East Central Railway. It is directly connected to important cities like Mumbai, New Delhi, Kolkata, Chennai, Ranchi & Patna. The site is situated 180 km away from State Capital Ranchi, which is also the nearest airport.

(vi) Drinking water management (source and supply of water)

SCW has an agreement with FCI for supply of 682.5 KLD water for plant use and 455 KLD water for domestic use.

(vii) Sewerage system.

The only waste water generated will be domestic waste water from residential township and the same will be treated in STP in used for green belt development The Industrial water consumption is for cooling of plant machinery during grinding and thus no process waste water is generated. Closed loop closing system is in place along with cooling tower. Only make up water is added to compensate the evaporation losses.

(viii) Industrial waste management.

The production of cement will be based on completely dry process; hence no process waste will be generated from the plant. The dust generated in Baghouse/Filters is recalcuated into the system

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 Rules, 2010.

(ix) Solid waste management

The dust collected in the air pollution control equipment in the cement plant will be recycled back to the process. Hence no solid waste which requires disposal is generated from the plant

In addition, the project was involved in usage of Slag & fly ash as raw material. This helps in solving the problems of waste utilization, disposal and Land degradation at the source. Also leads to conservation of Natural resources and energy conservation. .By utilizing these waste materials, ACC is not only adding value to this waste product but is also helping in creating a better environment

(x) Power Requirement & Supply / Source.

The power requirement would be about approx 10 MW for the expansion plant

7. REHABILITATION AND RESETTLEMENT (R & R) PLAN.

(i) Policy to be adopted (Central/ State) in respect of the project affected persons including home oustees, land oustees and landless laborers (a brief outline to be given).

Not applicable, since no R& R Issue is involved.

8. PROJECT SCHEDULE & COST ESTIMATES

(i) Likely date of start of construction and likely date of completion (time schedule for the project to be given).

Design, Engineering and Execution of this project will be carried out by CAPEX Project Management Group of Techport of ACC. First phase of the project will be completed within the 2 months from the approval of all regulatory approvals. Second phase of the project will be developed at later stage of the project.

(ii) Estimated project cost along with analysis in terms of economic viability of the project.

The estimated capital cost, for the plant and equipment to be installed, works out to about Rs. 5.0 Cr. for the phase-I and Rs. 250 crore for Phase-II. This includes the cost of the plant equipment and buildings, construction of roads etc.,. The expenditure would be spread over a period of 18 months

9. ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS).

(i) Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any in the area.

Based on the growing demand in the Eastern Part of India over the next 10 years, the proximity of the project location to this market is an advantage with respect reduction in freight of cement to these markets. The financial viability also shows a good Rate of return from the project. This environment friendly project will result in sustainable development by utilization of flyash and waste slag from thermal power plant & steel industries respectively. Considering the above, ACC is planning to go ahead with the project, once it gets all the statutory approvals

Employment:	Preference will be given for locals for employment based on qualifications & requirement
Medical facilities:	ACC's existing Medical facilities is already providing services to the employees and local communities. ACC will continue to extend these facilities to the employees and communities
Educational facilities:	ACC is providing basic educational and vocational facilities for the children of employees as well as nearby villagers and will continue to provide the same
Infrastructure facilities:	Sindri Cement works is having well established infrastructure facilities
Additional:	Nil