1. INTRODUCTION

After recognizing the need of redevelopment on plot bearing C. S. No. 207 & 208 (pt), of worli Division, Sasmira Marg, G South Ward, Worli, Mumbai, having twenty four residential, three non residential, one residential cum commercial and one balwadi; i.e. in all twenty nine tenant/occupant residing at two Ground level Chawl building structure is now being developed by M/s Adishakti Associates. This developer has proposed to develop it in two wings as residential buildings.

The existing structure is two chawls of Ground floor structures each with total nos. of 29 existing residential and non residential tenants including balwadi. The land use of the existing plot is residential as per the existing plan of structure, as certified by Assistant Commissioner (Estates). These chawls are owned by MCGM and this is the redevelopment of Municipal tenanted property.

As per inspection extract of 1934, the chawl existed on C. S. No 207. Hence, C. S. No 207 is eligible for redevelopment under 33(7) for grant of additional FSI. However, C. S. NO 208 (pt) was vacant in the year 1940 and hence FSI only of 1.33 is permissible thereof. The composite development by amalgamating these two C. S. Nos. is proposed so as to have the comprehensive planning. However, FSI of 2.5 is proposed only on C. S. No 207. Further, the benefits of DCR's as on 6th January 2011, such as staircase and lift area as free of FSI are proposed on pro rata basis based on admissibility of FSI on C. S. No 207 only.

These structures are now to be developed into two composite residential buildings, viz. Wing 'A' and Wing 'B'. The wing B (sale component of building) will consist of two Basements + Ground + 1 - 19 upper floors. The wing A (rehabilitation component of building) will consist of Ground + 6 upper floors. The ground floor of wing A will have four commercial components including balwadi and one 1RC component. The 1st to 6th floor will have four 1BHK flats each. Thus this rehabilitation

building will have 24 flats one residential cum commercial component and four commercial components including balwadi.

The upper and lower basement of wing B will be used for car parking. The ground floor will be used as the entrance lobby and parking area. The 1st-5th floor will be used for car parking. The 6th floor will be used as refuge area and for other amenities like society office, car machine room, etc. The 7th-12th floors and 14th-17th floors will have one 4BHK flats on each floor respectively. The 13th floor will have one 2BHK flat along with refuge area and 18th-19th floors will have one 6BHK flat duplex. Thus the sale building will have total 12 flats for sale.

The site under reference is surrounded by many more authorized structures and is affected by CRZ-II zone. It is situated on the landward side of the existing Worli Sea Face Road & Sir Pochkhanwala Road. Hence the development is permitted subject to the CRZ clearance. The development site does not fall or contain the environmentally sensitive areas as specified in the Coastal Regulation Zone Notification. The site under reference is in close vicinity of Indian Navy establishment and the NOC from head quarters Western Naval Command, Mumbai for proposed development has been submitted.

The total cost of the project is Rs. 31, 22, 66,42 0/- (Rupees Thirty One Crores Twenty Two Lakhs Sixty Six Thousands and Four Hundred and Twenty Only) as per the valuation report.

2. PURPOSE OF THE REPORT

Proposed redevelopment on plot bearing C.S. No. 207 & 208 (pt),of worli Division, Sasmira marg, G south ward, worli, Mumbai as per clause 33(7) of DCR – 1991 in force as on 6th January 2011 and thereby obtain CRZ - Environmental Clearance as per S.O.19(E) dated 6th January 2011. The

Plot has two Chawls of Ground floor structures each with total nos of 29 existing residential and non residential tenants including one balwadi, which are proposed to be redeveloped.

As per MoEF Notification dated 6/1/2011, redevelopment of dilapidated, cessed and unsafe buildings in CRZ areas are permitted with special advantages, in which the project is planned as per DCR's in force as on 6/1/2011 and staircase/ lobby/ lift area is claimed free of FSI, as per clause 35(2)c of DCR 1991. The proposal is submitted for prior CRZ clearance, as per the requirement of amended CRZ notification - 2011 and the check list finalised by MCZMA vide Office Memorandum dated 02/07/2011. As the project is planned on two plots wherein one plot is vacant and another plot contains a chawl prior to 1940, FSI as well as all other benefits of 6 th January 2011 are considered only for C. S. No 207 on which old chawls exist. For other C. S. No 208 (pt), FSI of 1.33 is claimed and staircase and lift area is counted in FSI proportionately.

Current development thus will help the existing tenant to get permanent, safe structure. Earlier they were residing in unsafe building. Photos of the same are attached in Annexure I.

3. DESCRIPTION OF THE PROJECT

3.1 NATURE OF THE PROJECT

This is a proposal for redevelopment of residential building situated at junction of Sasmira road and Hardikar Marg (ie. Drainage channel road) ar Worli, Mumbai in CRZ-II belt, as the same is situated within 500 mtrs. from Arabian Sea. (Approximate distance 320 mtrs). The subject plot is situated on the landward side of existing Sir Pochkhanwala Road/ Worli Sea face Road; which is in existence much prior to 19th Feb 1991.

The Plot is situated in Residential zone and not under any reservation as per 1967 DP as well as Revised 1993 DP. The FSI permitted on the plot under reference is 2.5 for the CS No 207 and 1.33for the CS No 208 (pt) , as per DCRs in force as on 6 th January 2011 and 19 th Feb 1991 respectively. Hence, the FSI proposed to be consumed is 1.68 only considering the amalgamated plot.

3.2 SIZE OF THE PROJECT

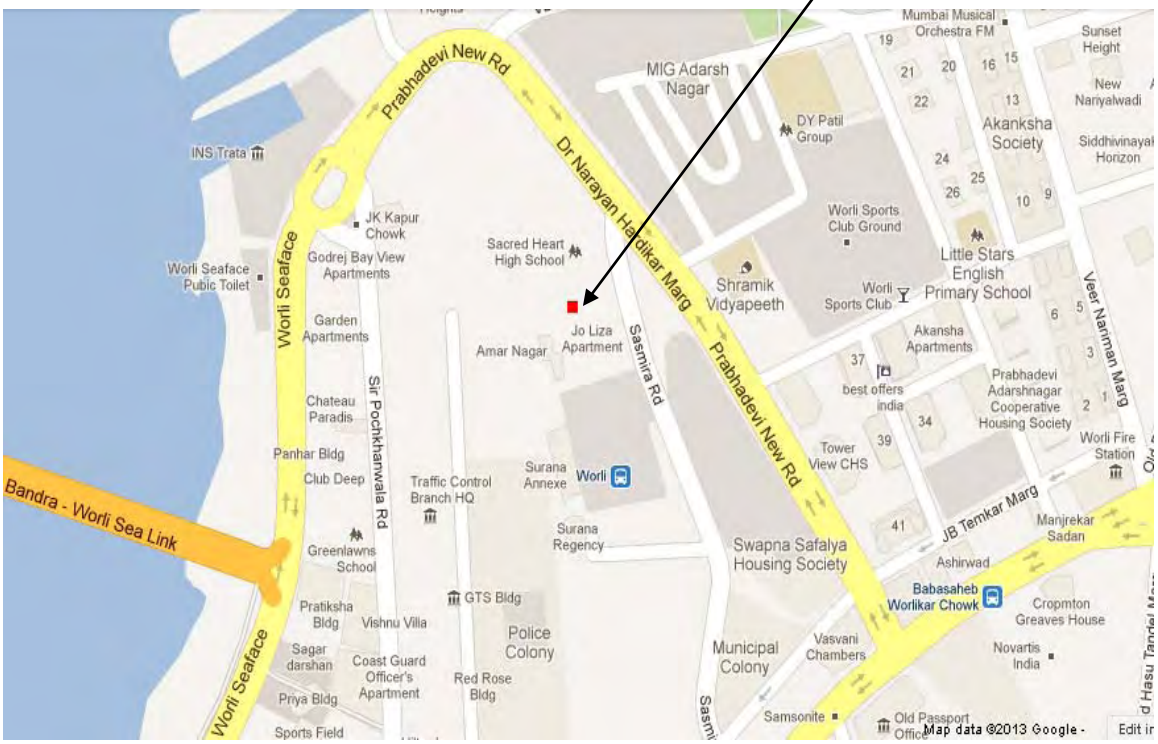
Area of the amalgamated plot is 2085.07 sq. mtr., which has been proposed for FSI purpose. Out of 2085.07 sq mtrs area, 438.21 sq mtrs area falls under road setback. The cost of the Project is Rs. 31 , 22, 66, 420/- (Rupees Thirty One Crores Twenty Two Lakhs Sixty Six Thousands Four Hundred and Twenty Only).

3.3 LOCATION

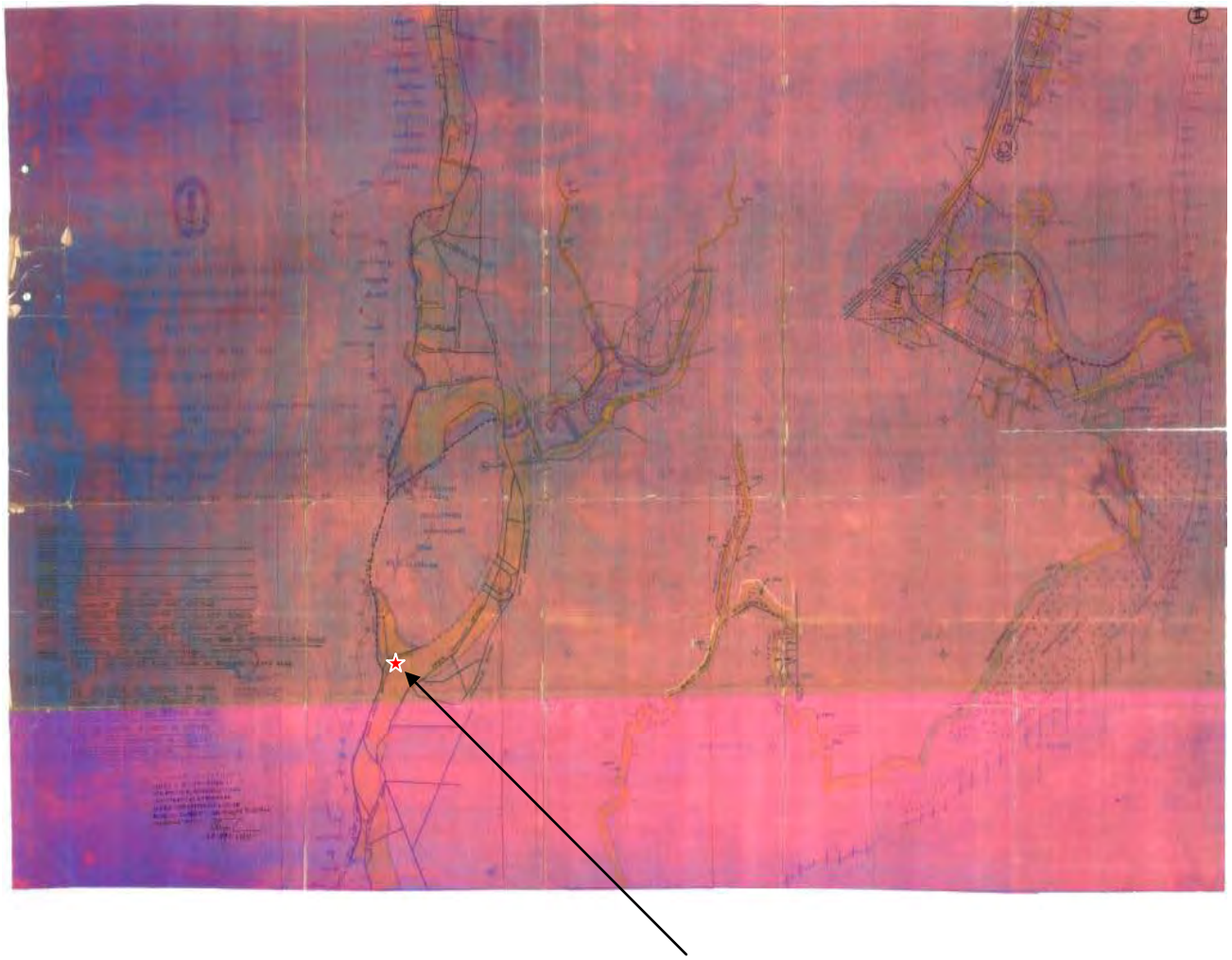
The C.S. No. 207 & 208 (pt),of worli Division, Sasmira Marg, G south ward, worli, Mumbai is in the heart of the city. The nearest railway station is Elphinston Road Railway Station on the western line, which is approximately 2.5 KMs from the subject site. The building is located around 300 meters away from the High Tide Line.

Google Earth Image of the site

SITE UNDER REFERENCE



CZMP Plan showing location of reference Plot



SITE UNDER REFERENCE

3.4 SITE DESCRIPTION

The site under reference is affected by CRZ-II zone and the property falls on the landward side of the existing Worli Sea Face Road & Sir Pochkhanwala Road **in existance prior to 19/2/1991, as may be seen from CZMP of Mumbai as well as 1967 DP of Mumbai.** Thus property attracts the CRZ legislation as per CRZ 2011.

The development site does not fall or contain the environmentally sensitive areas as specified in the coastal Regulation zone notification. Total plot Area in CRZ is 2085.07 sq mtrs.

Town / Tehsil	:	Mumbai
District	:	Greater Mumbai
State	:	Maharashtra
Latitude	:	19^{o} 00’ 51.70” N
Longitude	:	72^{o} 49’ 09.53” E

3.5 PROPOSED DEVELOPMENT

3.5.1 AREA

Sr. No	Description	Details
1	Total Plot Area	C.S. No. 207: 627.46 sq. mtrs. C.S. No. 208(pt):1457.61 sq. mtrs. Total Plot Area: 2085.07 sq. mtrs.
2	Deductions for setback area	C.S. No. 207: 58.74 sq. mtrs. C.S. No. 208(pt): 379.47 sq. mtrs. Total setback Area: 438.21 sq. mtrs.
3	Balance area of plot(1-2)	1646.86 sq. mtrs.
4	Net area of plot	2085.07 sq. mtrs.
5	FSI Permissible	2.5 for plot bearing C.S. No 207 and 1.33 for plot bearing C.S. No 208(pt)
6	Permissible Built up area	3507.27 sq. mtrs.
7	Total Built up Area Proposed.	3452.50 sq. mtrs.
8	Total Construction Area	8070.00 sq. mtrs (Approximately)
9	Parking required by MCGM Rule	24
10	Parking provided	27

PROJECT DEVELOPMENT DETAILS

Proposed development		
1	Structure of Building	Wing A: Ground Floor + 1-6 Upper Floors. Wing B: Upper and Lower Basement + Ground Floor + 1 - 19 upper floors including parking floors.
2	Tenements proposed	Residential Tenements: 36 nos. RC tenants: 1 nos. Non Residential Tenements: 4 nos. including balwadi. Total tenements: 41 nos.
3	Tenements existing	Residential Tenements and Non Residential Tenements: 28 nos + 1 balwadi. Total 29 nos. of tenants.
4	Height of Building from Ground level	69.25 mtrs
5	Emergency Power supply (D.G. Nos. x KVa	1 no. 35 KVa
6	Area required for D.G sets	5 sq. mtrs
7	Salient features of the project	
	• Earthquake Resistance Building structure. • Rain water Harvesting System in the complex. • Energy Conservation; Provision of Solar water heating system. • Eco-Friendly Measures. • Minimum use of Timber.	

3.5.2 UTILITIES

The Utilities required during the construction phase area water, power, fuel and Labour.

i) **WATER :** (Expected Consumption – total 35 cum/day)

For Construction activities: 30 cum/day & For Domestic use: 5 cum/day

Water Balance (Construction Phase)				
Sr. No.	Consumption	Input m^3/Day	Loss m^3/Day	Effluent m^3/Day
1.	Construction Activities	30	30 (Tanker consumption)	Nil
2.	Domestic (50 Site Workers)	5	1	4
	Total	**35**	**31**	**4**

OPERATIONAL PHASE WATER CONSUMPTION

Sr. No	Component/Head	Occupant load	Water Requirement m^3/day		Remarks
			Domestic	Flushing	
1.	Total residential population	85	7.65	3.825	@ 90/45 lpcd
2.	Total non residential population	50	1.00	1.25	@ 20/25 lpcd
3.	Total Quantity of Water Required	135	13.725 CMD		For a total population of 135 person
4.	Grey Water generation	6.82 CMD			6.80 CMD to Treatment plant (capacity 9 CMD)
5.	Sludge generated	-	0.14 CMD		-
6.	GWTP treated water	-	6.80 CMD		-

1] Source: - Water will be available from Mumbai (MCGM) for domestic use and from Tanker for construction purpose

2] Storage: - Water for construction will be stored in open tank.

Drinking water will be stored in High Density Polyethylene (HDPE) tank.

ii) **POWER**

DURING CONSTRUCTION

(Expected Consumption- about 0.3 MW)

1] An Electricity supply of 0.3 MW will be available from BEST. It is mainly required for some construction equipments, general lighting etc.

2] All Fire & Safety measures will be taken as appropriate and will be supervised by the Authority.

DURING OPERATION PHASE

Total Energy consumption: 0.40 MW

The electricity supply will be available from BEST.

iii) FUEL

DURING CONSTRUCTION PHASE

Diesel (5 L/day during excavation & 10 L/ day post excavation).

All the equipment are electrically driven except JCB, poclain, and concrete mixers.

DURING OPERATION PHASE

Diesel will be required to run the D. G. Set in case of power failure. Hence the quantity of diesel consumed will vary depending upon the usage of D. G set.

1. Storage: Diesel and oil will be stored in drums / tins with proper identification mark/labels in identified areas only.
2. Fire and safety measures will be taken as per the guidelines from concerned authority.
3. All Safety and fire precautions will be followed.

iv) MANPOWER

DURING CONSTRUCTION PHASE

(Expected Manpower – about 50)

Approximately 50 persons will be working during the peak time of construction phase. These persons will be on the project site during 0900 hrs. Except Security Personnel, who will be on the field round the clock for twenty – four hours.

DURING OPERATION PHASE (POPULATION)

There will be about 85 persons residing in the building, and 50 will be floating non residential staff including drivers, security, commercial population, etc.

4. CONSTRUCTION PHASE

The type of Construction Materials, Equipments used during the construction phase and persons involved in various activities on the field affect the status of environment to a great extent. The impact of construction Activities on various components of environment on the on the project site and surrounding area is predicated in this section.

4.1 LIST OF MATERIALS

The Construction material required for the proposed redevelopment is given below.

Sr. No.	Item	Unit	Quantity	Source	Process
1.	Sand	CUM	2377	River bed/ Creek	Nil
2.	Aggregate	CUM	5287	Quarry	Crushing
3.	Standard Bricks	M.T	1914	Red Soil	Heating, Moulding
4.	Timber	M.T	87	Forest	Cutting & Trimming
5.	Construction Waste	Kg/ Day	163	-	-

- The basic engineering materials like aggregate, cement, sand and bricks/blocks will be purchased locally. However, finishing materials will be purchased keeping in mind the energy conservation aspect.
- Fly ash generated from Thermal Power Plants will be used in concrete to the extent of about 20 to 30 %. Depending up on the grade of concrete specified.

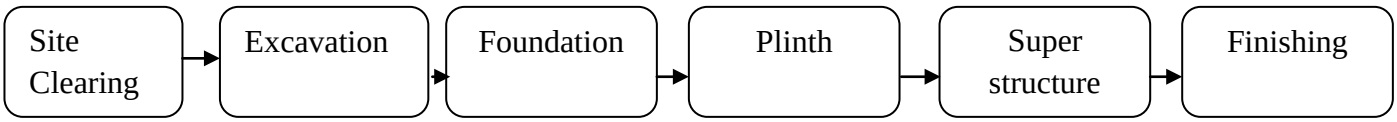
4.2 LIST OF EQUIPMENTS

The construction equipments required for the residential building is given below.

Sr. No.	Equipments	Numbers	Operation	Duration
1.	JSB, Poclain	1	Diesel	Short
2.	Dumpers	2	Diesel	Short
3.	Goods lifts / Personal lifts	1	Electric	Total
4.	Vibrators	4	Electric	Total
5.	Dewatering Pumps	1	Electric	Total
6.	Concrete Mixers	1	Electric	Total
7.	Wood Cutting Machine	1	Electric	Total
8.	Drill Machine	1	Electric	Total

4.3 CONSTRUCTION PROCEDURES

The outline of the construction procedure is described below schematically.



Note:

1] The project is expected to be completed within three years (Maximum) period Construction Parameters and Quality will be strictly adhered to as per the approved architectural design data/map. All the regulations of government authorities will be followed.

2] All the safely precaution will be observed as per the guidelines during the construction phase. Personal Protective Equipments (PPE) will be provided to all the personnel involved in the construction activities.

3] Site barricading by corrugated tin sheets up to height of 5.0 mtr will be done to protect the surrounding area of the project site from nuisance /dusting.

4] All electrical connections & cables will be checked by authorized persons to ensure the safety of workers on field.

5] Water sprinkling will be done, wherever required to reduce the dusting in atmosphere. Jute barricading along building / plot boundary shall be provided to minimize noise level from construction activities.

6] The safety and security officers shall supervise the site.

7] Safety helmets will be mandatory to all the persons present on the site during the construction activities.

8] Hand gloves and dust masks will be provided to persons handing construction materials during the operation.

9] Safety belts will be provided to the persons working at height during the operation.

10] Safety nets will be arranged at a height at about 5.0 mtr. when the structures get raised above the required height from the ground.

5. ENVIRONMENTAL CONCERNS

5.1 AIR POLLUTION

1] Source: - The source of Air Emissions is from the use of some equipment like concrete pumps, mixers, etc. These equipments consume Diesel as fuel during their operation. Carbon Monoxide, Hydrocarbons, Oxides of Nitrogen and Particulate Matter etc. will be the major pollutants.

Fugitive Emissions i.e. Emissions from construction activities will mainly consist of dust. Movement of Heavy & light vehicles, for loading and unloading of Construction Materials, transporting people, will also add on to source of emissions.

Parameter	Permissible Range	CPCB Limits	AVG Range Before Activity	During Activity
SPM ($\mu g/m^3$)	100 ~ 200	200	80-100	150-200
RSPM ($\mu g/m^3$)	50 ~ 100	100	20-30	50-100
SO2 ($\mu g/m^3$)	50 ~ 80	80	10-15	10-15
NOx ($\mu g/m^3$)	40 ~ 80	80	5-10	5-10

Ref: 24 Hourly values as per Central Pollution Control Board, National Ambient Air Quality Monitoring, Notification 11th April, 1994, Schedule 1.

5.2 AIR POLLUTION MITIGATION

Sr. No.	Source	Mitigation	
1.	Vehicle	i]	All the vehicles coming to the site will be ensured to be in good condition having PUC.
		ii]	Public awareness to use Green Fuel will be done.
2.	Solid Waste	i]	Proper segregation and collection of waste will be ensured.
		ii]	Location of loading and unloading will be fixed.
		Iii]	Good Housekeeping practices will be ensured at the premises.
3.	Construction Activities	i]	Noise / Dust nuisance preventions by barricading site up to 5.0 meter height by GI Sheets
		ii]	Water sprinkling on dry site, sand.
		Iii]	Maximum use of electrical driven construction equipments with regular maintenance.

5.3 WATER POLLUTION

1] **Use** : - The MCGM water will be used for domestic purpose i.e. drinking water for staff and laborers working on the field whereas bore well water/Tanker water will be used for various constructions activities like, Concreting, Plastering, Flooring & Finishing etc.

2] **Effluent** : - There will be no generation of effluent from construction activities as the water used for concreting; Plastering, Flooring and Finishing etc. will get evaporated during drying or curing

time. All the construction activities are physical in nature. The Domestic Effluent will be generated due to the persons working on the site who will require water for drinking, cleaning, bathing etc.

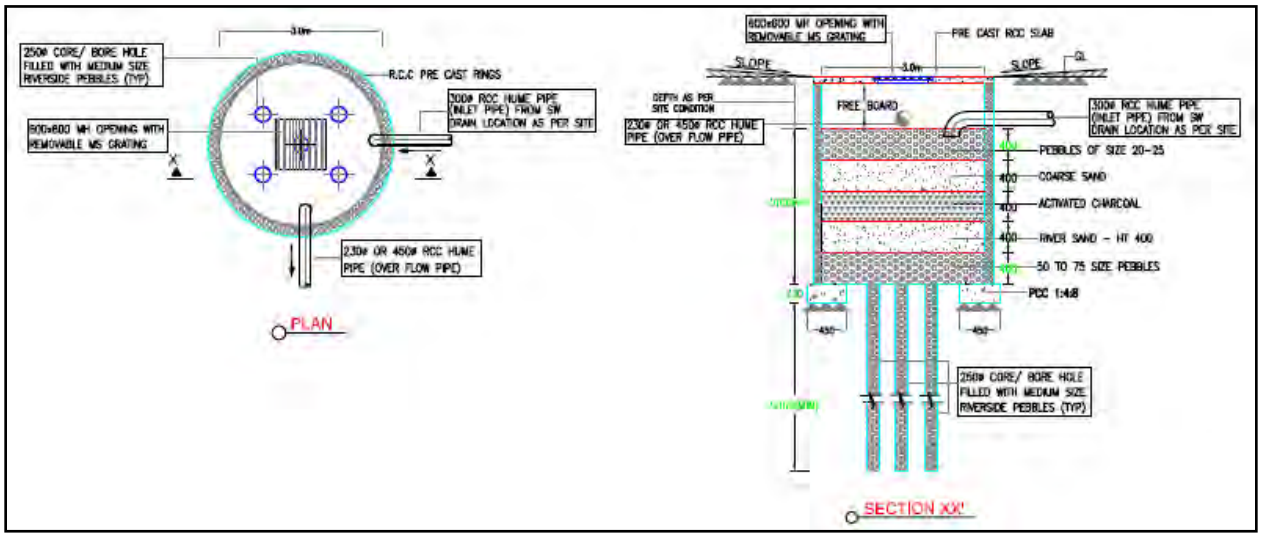
Grey water generated during operation phase will amount to 6.82 CMD will be treated in the Grey Water Treatment Plant. The treated water will be used for non domestic purposes such as gardening, flushing etc.

3] **Treatment & Disposal**:-The Domestic Effluent generated in construction phase will be disposed off in existing MCGM Sewer.

4] **Rain Water Harvesting**: The existing structure is two Chawls of Ground floor structures each with total nos of 29 existing residential and non residential tenants including 1 balwadi, which will be developed into two composite residential buildings, viz. Wing 'A' and Wing 'B'. The wing B (sale component of building) will consist of two Basements + Ground + 1 - 19 upper floors. The wing A (rehabilitation component of building) will consist of Ground + 1 - 6 upper floors. The plot area is 2085.07 sq mtrs, out of which 438.76 sq mtrs. area is deducted for road set back. The available area for rain water harvesting is very small. Hence roof rain water harvesting is proposed in the project. The permeable paver blocks are proposed along with 1 Recharge pits to increase the percolation of rain water into the soil rather than flowing to the drain.

*** (AS PER MOEF GUIDELINES)**

- **Percolation Pits: 1 nos. (0.5 * 0.5 * 2m)**



5] **Storm Water Discharge**:

Storm water drains will be constructed for proposed facility as per the norms. The recharge pits and Rain water recharge pits will help to reduce the runoff and reduce the load on external storm water drain.

5.4 NOISE POLLUTION

Location	Range dB (A)
	Day Time
National Ambient Air Quality Standards (For Residential Zone)	55

5.5 NOISE LEVEL MITIGATION

Sr. No.	Source	Mitigation
1.	Near Residential Areas	i] Site Barricading by corrugated tin sheets will be done to protect the surrounding area. ii) Construction Activity will be carried out during daytime only.
2.	Nearby Traffic	i] All the vehicles coming to the site will be ensured in good condition, having Pollution under Check (PUC). ii] Smooth Roads will be maintained in a project site.
3.	Construction Equipments	i] All the equipments will be run during daytime only. ii] Lubricants will be applied to all the equipments at proper interval. Iii] Acoustic Enclosure will be provided for all the Equipments

2] It is evident from the nature of operation (i.e. Construction) that the Concentration of suspended particulate matter would be higher than the other two parameters.

3] Control of Emission: - Proper precaution will be taken to reduce the particulate matter by water sprinkling on the dry site area, barricading the periphery by corrugated tin Sheets of 5.0 mtrs height to protect the surrounding area from dusting. The pollution generated will be controlled by, allowing vehicles that will comply to mass Emission Standard (Bharat Stage –II) stipulated by Central Pollution Control Board (CPCB)–Ministry of Environment & forest (MoEF), New Delhi. Also it will be ensured that the vehicles will carry PUC certificate. To minimize air pollution efforts shall be made by use of equipments, which area electric power driven.

5.6 SOLID WASTE

1] Normal debris, waste concrete, soil, broken bricks, waste plasters etc. will be collected properly and will be reused for land filling in the premises.

2] Total solid waste (Quantity about 67.5 kg per day) and organic waste (20.79 Kg/ day) will be segregated properly and stored in a separate bins and will be disposed off as per MCGM rules.

3] Metallic Waste and paper waste will be collected separately and will be salvaged or recycled or sold to authorized recyclers.

6. PROJECT SCHEDULE AND COST ESTIMATES

The Proposed Project is Redevelopment project and work of sale wing will be started as soon as all government NOC's and CRZ Clearance is received to start the work. The project is estimated to be completed by December 2017 if everything went as per planning.

7. TRAFFIC MANAGEMENT

CONSTRUCTION PHASE

- Storage and Godown area will be properly identified.
- There will be about adequate wider space for movements of vehicles and parking.
- The area for loading and unloading will be located at proper demarcated location in the premises.
- Thus the traffic management on the project site will be easily and smoothly monitored without any hindrance to the regular flow of traffic on the main road.

7.2 OPERATIONAL PHASE

- About 27 cars per day are expected to be accommodated in the premises. The parking space will be provided in basement and under stilt / parking floors. There is ample car parking space in the building on all sides; there will be smooth movements of cars.
- The plot is touching the two municipal road for movements of vehicles and parking.
- Traffic Management Plan system will be approved from concern MCGM Authority.
- Thus the traffic management will be easily and smoothly monitored without any hindrance to the regular flow of traffic on the main road.

8. ENVIRONMENTAL, HEALTH AND SAFETY

All the safety and security measures shall be observed at constructions site. Safety precautions will be observed as per the guidelines during the construction phase. Personal Protective Equipments (PPE) will be provided to all the personnel involved in the construction activities. The project authorities will ensure use of safety equipments for workers during execution process. The safety and security officers shall supervise the site. Proper training will be given to workers and authorities to handle the hazard situation.

8.1 SAFETY MEASURES ON SITE

1] Parameters and Quality will be strictly adhered to as per the approved architectural design data/map. All the regulations of government authorities will be followed.

2] All the safely precaution will be observed as per the guidelines during the construction phase. Personal Protective Equipments (PPE) will be provided to all the personnel involved in the construction activities.

3] Site barricading by corrugated tin sheets up to height of 5.0 mtr will be done to protect the surrounding area of the project site from nuisance /dusting.

4] All electrical connections & cables will be checked by authorized persons to ensure the safety of workers on field.

5] Water sprinkling will be done, wherever required to reduce the dusting in atmosphere. Jute barricading along building / plot boundary shall be provided to minimize noise level from construction activities.

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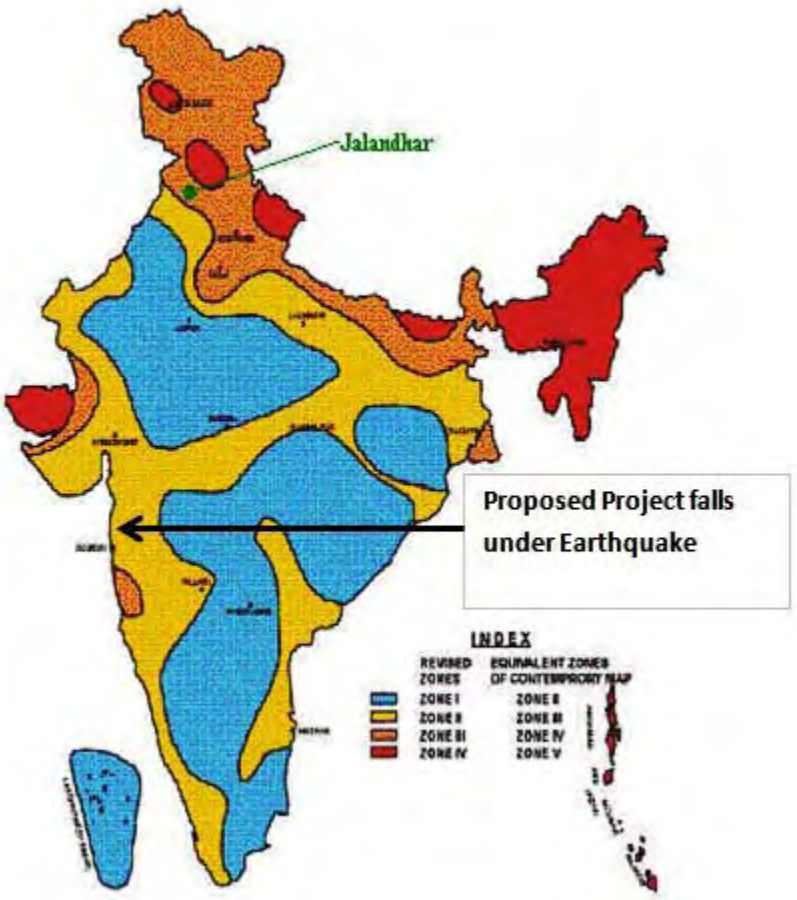
9] Safety belts will be provided to the persons working at height during the operation.

10] Safety nets will be arranged at a height at about 5.0 mtrs when the structures get raised above the required height from the ground.

9. BENEFITS OF THE PROJECT

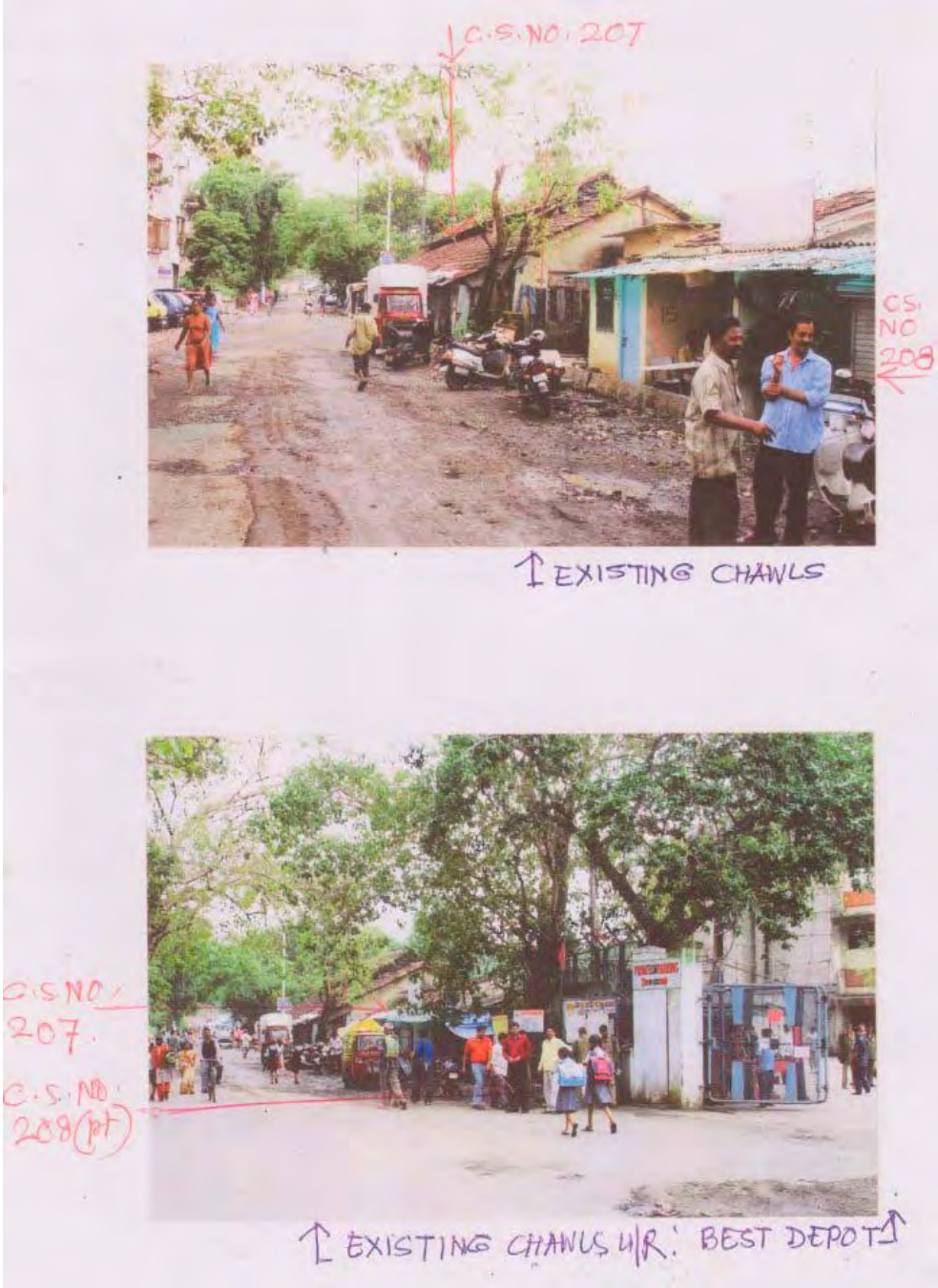
- The proposed redevelopment will initiate redevelopment of surrounding old building.
- The surrounding area will also be developed from residential point of view.
- It will provide employment opportunities to the local people in terms of labour during construction and services personnel during operational phase.
- Modern sanitation and infrastructure facilities will have minimal impact on living condition of local people.
- The project will improve living standard and welfare of the area and local people.

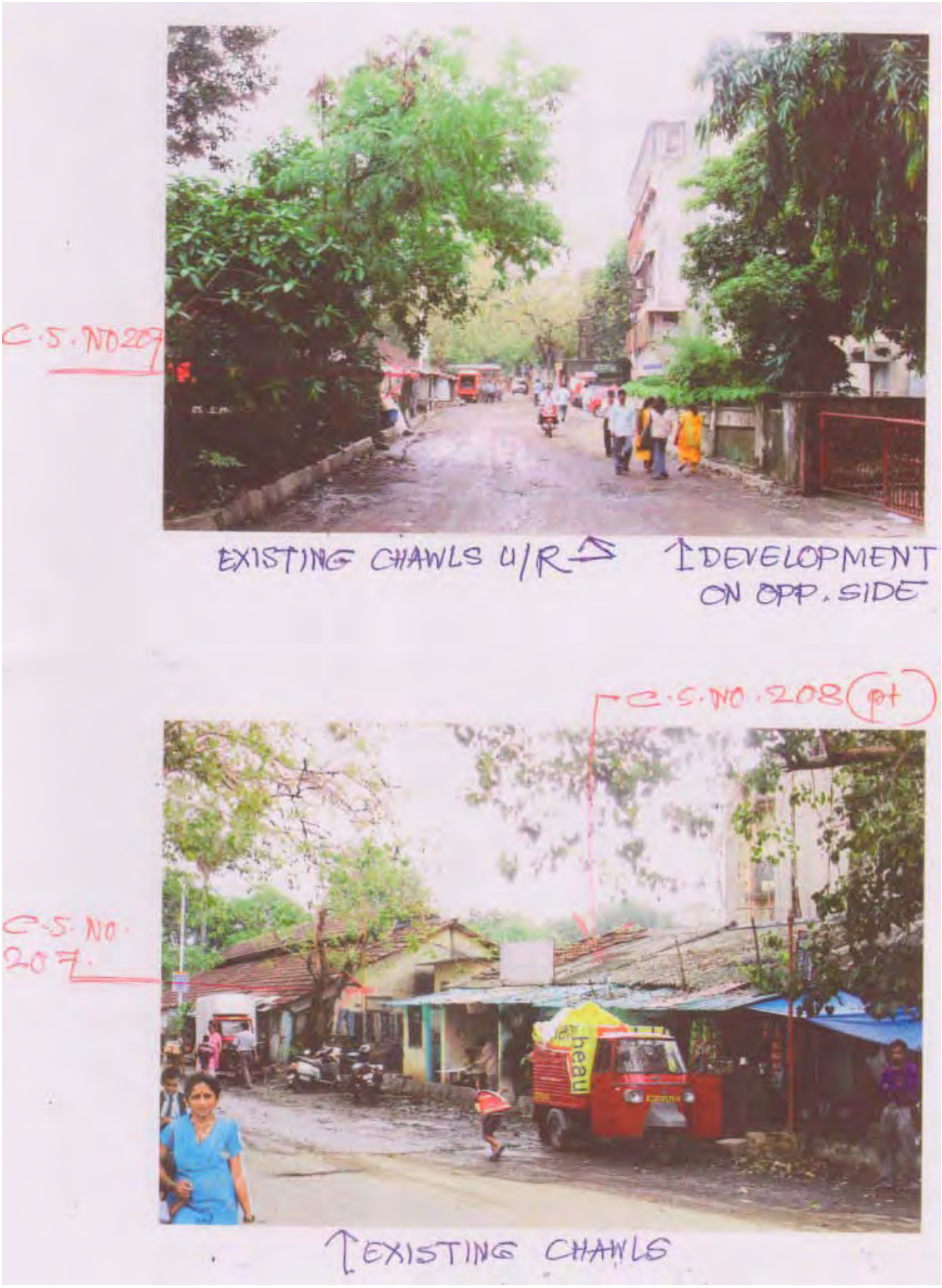
SEISMIC ZONE MAP OF INDIA

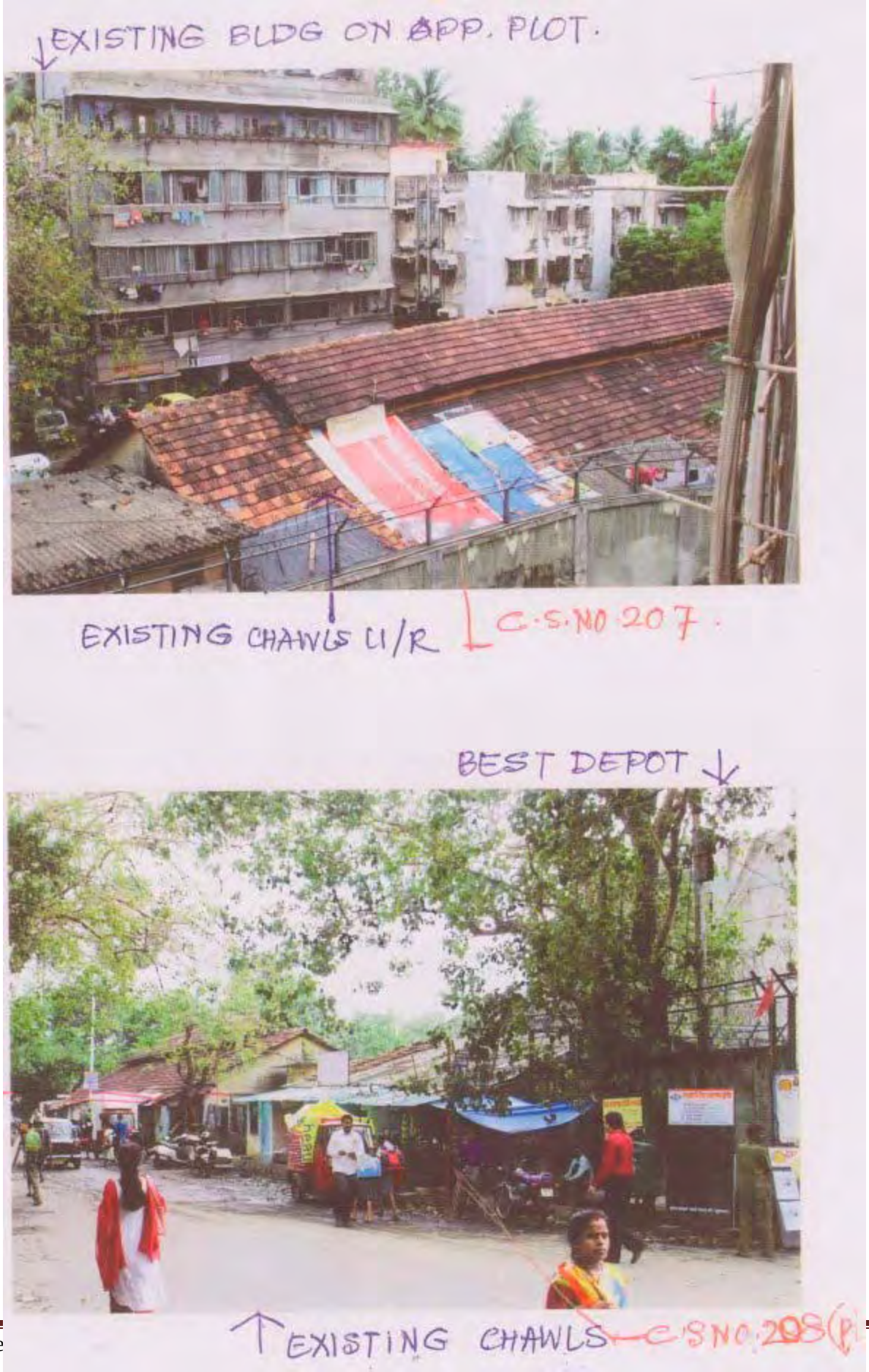


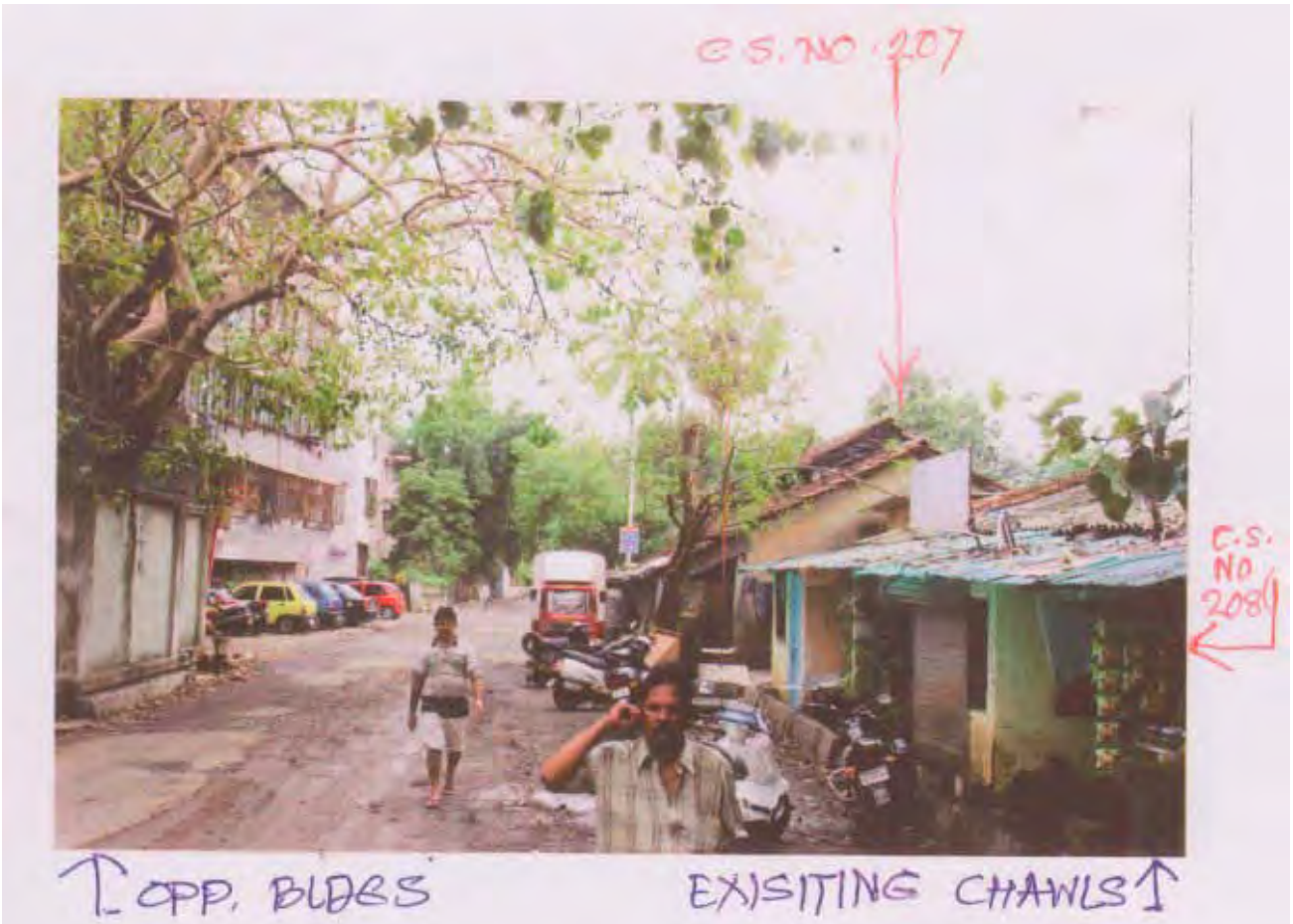
ANNEXURE I

SITE PHOTOGRAPHS




C.S.NO 207
EXISTING CHAWLS U/R
DEVELOPMENT ON OPP. SIDE
C.S.NO. 208 (pt)
C.S.NO. 207.
EXISTING CHAWLS


EXISTING BLDG ON APP. PLOT.
EXISTING CHAWLS U/R
C.S.NO 207.
BEST DEPOT
EXISTING CHAWLS
C.S.NO.208(P)


C.S.NO.207
C.S. NO 208
OPP. BLDGS
EXISITING CHAWLS


OPP. BLDGS
C.S.NO.207
EXISTING CHAWLS W/R