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RESTRICTED DOCUMENT REF NO. AU/IRS/MN/7979/475-2023-24 DT 20-03-24

Preparation of Local Level CRZ Map for the Project Site bearing Survey No. 87/3A1D in Kanathur Reddy Kuppam Village, Thiruporur Taluk, Chengalpattu District, Tamil Nadu by Superimposing on Approved CZMP as per CRZ Notification 2011

SPONSORED BY

M/s. Arima Builders & Technologies Pvt. Ltd.
Door No. 34, Plot No. 3
AURA Villa 5C, Pandiyan Street
Neelangarai, Chennai - 600 041



INSTITUTE OF REMOTE SENSING
ANNA UNIVERSITY, CHENNAI-25

MARCH 2024

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Executive Summary

Institute of Remote Sensing, Anna University, Chennai has taken up the task of preparation of local level CRZ map for the project site bearing Survey No. 87/3A1D in Kanathur Reddy Kuppam village, Thiruporur taluk, Chengalpattu district, Tamil Nadu by superimposing on approved CZMP as per CRZ Notification 2011 on the request of M/s. Arima Builders & Technologies Pvt. Ltd. Door No. 34, Plot No. 3, AURA Villa 5C, Pandiyan Street, Neelangarai, Chennai - 600 041. The objective of the project is to superimpose the proposed project site on approved CZMP map (Map No. TN 104) published by TNCZMA in 2018. The satellite imagery of the project area was interpreted for analysis of geomorphic characteristics in the vicinity of proposed project site.

The client, M/s. Arima Builders & Technologies Pvt. Ltd. Door No. 34, Plot No. 3, AURA Villa 5C, Pandiyan Street, Neelangarai, Chennai - 600 041 was requested to provide the location details of the project site. The HTL, LTL, Ecologically sensitive areas indicated in approved CZMP with setback lines as per CRZ Notification 2011 were superimposed on to georeferenced cadastral map to prepare a local level CRZ map at 1:4,000 scale. The location of project details as provided by the client was superimposed on the Satellite imagery is presented in Annexure I. The co-ordinates of the HTL derived from approved CZMP at 1:25,000 scale in WGS84 system are presented in the Annexure-II. The proposed project site was superimposed on approved CZMP and presented in Annexure IV. The proposed project site completely falls outside CRZ. The shortest distance from HTL (Bay of Bengal) to plot boundary B and C are 530.81m and 531.10m respectively.

Project Data Sheet

Title	Preparation of Local Level CRZ Map for the Project Site bearing Survey No. 87/3A1D in Kanathur Reddy Kuppam Village, Thiruporur Taluk, Chengalpattu District, Tamil Nadu by Superimposing on Approved CZMP as per CRZ Notification 2011
Project Ref No.	REF NO. AU/IRS/MN/7979/475-2023-24 DT 20-03-24
Funded by	M/s. Arima Builders & Technologies Pvt. Ltd. Door No. 34, Plot No. 3, AURA Villa 5C, Pandiyan Street, Neelangarai, Chennai - 600 041
Principal Consultant	Ms.M.Navamuniyammal, Asst. Professor
Field &Mapping Team	Mr.Inbarasan, IRS, AU Mr. J. Prem Kumar, IRS, AU Mr. Rajan Babu, IRS, AU
Report Preparation	Ms.M.Navamuniyammal, Asst. Professor
Quality Assessment Team	Dr. K.Srinivasaraju , Professor, Dr. K.Srinivasan, Assistant Professor, Dr. R. Kanmani Shanmuga Priya, Assistant Professor (Sl.Gr)

The Quality Assessment Committee for consultancy projects has scrutinized the local level CRZ map and corresponding text report of the above project on **21.03.2024**. The Principal Consultant of the project has presented the approach adopted, findings of the study to the committee. The committee has evaluated the CRZ Map and the report for different parameters against the standards prescribed for the mapping. The positional accuracy, attribute accuracy, completeness, semantic accuracy of the output were assessed and found satisfactory. The committee recommends the approval of the map and associated report

Ms.M.Navamuniyammal
(Principal Consultant)

Dr. K.Srinivasaraju
(QAC Member)

Dr. K.Srinivasan
(QAC Member)

Dr. R. Kanmani Shanmuga Priya
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1.0 INTRODUCTION

1.1 Coastal Regulation Zone

The coastal zone is the area of interaction between land and sea. The coastal Zone of Tamil Nadu has a very high concentration of population along with ecologically sensitive areas like mangroves. There is a spurt of developmental activities arising from huge residential colonies, new industries and tourism centres along the coast and in coastal zone. There is a need to protect the coastal environment while ensuring continuing production and development. This zone is extremely vulnerable and has to be managed judiciously striking a balance between ecological and developmental needs.

The Ministry of Environment and Forest in the CRZ Notification, 2011 declared the following areas as CRZ and imposed with effect from the date of the notification the restrictions on the setting up and expansion of industries, operations or processes and the like in the CRZ. The areas that are defined as CRZ as per CRZ Notification, 2011 are

(i) The land area from High Tide Line (HTL) to 500mts on the landward side along the sea front.

(ii) CRZ shall apply to the land area between HTL to 100 meters or width of the creek whichever is less on the landward side along the tidal influenced water bodies that are connected to the sea and the distance upto which development along such tidal influenced water bodies is to be regulated shall be governed by the distance upto which the tidal effects are

experienced which shall be determined based on salinity concentration of 5 parts per thousand (ppt) measured during the driest period of the year and distance upto which tidal effects are experienced shall be clearly identified and demarcated accordingly in the Coastal Zone Management Plans.

(iii) The land area falling between the hazard line and 500mts from HTL on the landward side, in case of seafront and between the hazard line and 100mts line in case of tidal influenced water body the word 'hazard line' denotes the line demarcated by Ministry of Environment and through the Survey of India taking into account tides, waves, sea level rise and shoreline changes.

(iv) Land area between HTL and Low Tide Line (LTL) which will be termed as the intertidal zone.

(v) The water and the bed area between the LTL to the territorial water limit (12 Nm) in case of sea and the water and the bed area between LTL at the bank to the LTL on the opposite side of the bank, of tidal influenced water bodies.

The Classification of the CRZ is also modified for the purpose of conserving and protecting the coastal areas and marine waters as CRZ – I, CRZ – II, CRZ – III and CRZ – IV. The CRZ – I include the areas that are ecologically sensitive and the geomorphological features which play a role in the maintaining the integrity of the coast like (a) Mangroves (b) Corals and coral reefs and associated biodiversity (c) Sand Dunes (d) Mudflats which are biologically active (e) National parks, marine parks, sanctuaries, reserve forests, wildlife habitats and other protected areas (f) Salt Marshes (g) Turtle

nesting grounds (h) Horse shoe crabs habitats (i) Sea grass beds (j) Nesting grounds of birds (k) Areas or structures of archaeological importance and heritage sites and the area between Low Tide Line and High Tide Line. The CRZ-II includes areas that have been developed upto or close to the shoreline. The CRZ-III includes areas that are relatively undisturbed and those do not belong to either CRZ-I or II, which include coastal zone in the rural areas (developed and undeveloped) and also areas within municipal limits or in other legally designated urban areas, which are not substantially built up. The CRZ-IV includes the water area from the Low Tide Line to twelve nautical miles on the seaward side and the water area of the tidal influenced water body from the mouth of the water body at the sea upto the influence of tide which is measured as five parts per thousand during the driest season of the year.

In view of the unique coastal systems of backwater and backwater islands along with space limitation present in the coastal stretches of the State of Tamil Nadu, CRZ shall be regulated as follows namely:- (i) all the islands in the backwaters of Tamil Nadu shall be covered under the CRZ notification; (ii) the islands within the backwaters shall have 50mts width from the High Tide Line on the landward side as the CRZ area.

The Ministry of Environment and Forest has also provided guidelines for demarcation of High Tide Line in the CRZ Notification, 2011. As per the guidelines, Cadastral (village) maps in 1:3960 or the nearest scale shall be used as the base maps. HTL and LTL will be demarcated by NCSCM, Chennai is used for superimposition on the cadastral map based on physical

verification using coastal geomorphological signatures or features in accordance with the CZMP Maps approved by the Central Government.

In order to facilitate classification of Coastal Regulation Zones Government of India has approved few agencies/institutions across the Country vide Lr. No. J17011/8/92-1A III, dated 10.05.1999 of Ministry of Environment and Forests. Institute of Remote Sensing, Anna University being one of them, has been carrying out HTL and LTL mapping following the guidelines issued by Ministry of Environment & Forests, Government of India.

1.2 Background

The Client, M/s. Arima Builders & Technologies Pvt. Ltd. Door No. 34, Plot No. 3, AURA Villa 5C, Pandiyan Street, Neelangarai, Chennai - 600 041 has requested Institute of Remote Sensing, Anna University to prepare local level CRZ map by superimposing project site boundary along with HTL, LTL for the Sea/Bay/tidal influenced water bodies and ecologically sensitive areas on 1:4,000 scale cadastral map in the vicinity of proposed project site at land bearing Survey No. 87/3A1D in Kanathur Reddy Kuppam village, Thiruporur taluk, Chengalpattu district, Tamil Nadu. The project site falls near Bay of Bengal. It is in this context, the proposed location of the proposed project site needs to be evaluated to assess whether it fall under regulations of CRZ Notification, 2011. Hence IRS has taken up the work of superimposing project location on approved CZMP prepared by NCSCM.

1.3 Objectives

The objective of the present study is to examine the project location with respect to CRZ Notification, 2011. Keeping in view of the requirements of notification, Institute of Remote Sensing, Anna University under took the project with following agreed scope of work:

- Transfer of HTL, LTL for Bay of Bengal as indicated in approved CZMP (Map No. TN 104) in the vicinity of the project site by digitization from approved CZMP at 1:25,000 scale.
- Digitization of ecologically sensitive entities such as Mangroves, Sand dunes, Turtle breeding grounds as indicated on approved CZMP (Map Map No. TN 104) in the vicinity of project site.
- Superimposition of HTL,LTL, Ecologically Sensitive Areas along with the project site on to the georeferenced cadastral map
- Preparation of local level CRZ map at 1:4000 scale for the project site bearing Survey No. 87/3A1D in Kanathur Reddy Kuppam village, Thiruporur taluk, Chengalpattu district, Tamil Nadu.

1.4 Data Products

The CZMP prepared as per CRZ Notification 2011 and approved by MOEF&CC, New Delhi were collected from the client/authority and used as reference for transfer of HTL, LTL and Ecologically Sensitive Area in the vicinity of project site on to local level CRZ map. The data products used for the preparation of local level CRZ map are approved CZMP (Map No.TN 104) and satellite imagery.

1.5 Methodology

The cadastral map of project location provided by the client has been used for preparation of local level CRZ map. The geomorphic characteristics of the coastal zone has been analysed from the medium resolution satellite data. The coastal geomorphologic features and existence of permanent vegetation identified from the satellite imagery were used to transfer the HTL demarcated by NCSCM on approved CZMP. The approved CZMP is georeferenced using graticules available on the maps.

The cadastral maps of the Kanathur Reddy Kuppam village were digitized from approved CZMP to create a vector dataset of survey polygons in the vicinity of project location. The same is superimposed on satellite imagery to identify the proposed project location. The HTL, LTL and ecologically sensitive areas in the vicinity of project location are digitized from georeferened approved CZMP. 100m, 200m and 500m setback lines from HTL of Bay of Bengal are generated using GIS buffering tool. The zones between LTL, HTL and setback lines are delineated to corresponding CRZ as per CRZ Notification 2011.

2.0 STUDY AREA

2.1 Description of Study Area

The proposed project site is located in Kanathur Reddy Kuppam Village as shown in Figure 1. The coordinates of the project boundary corners are presented in Table 1.

2.2 Status as per Approved CZMP prepared by NCSCM, Chennai

The project site is located in near Bay of Bengal. The proposed project site completely falls outside CRZ as per approved CZMP map (Map No. TN 104) prepared by NCSCM, Chennai vide CRZ Notification 2011.

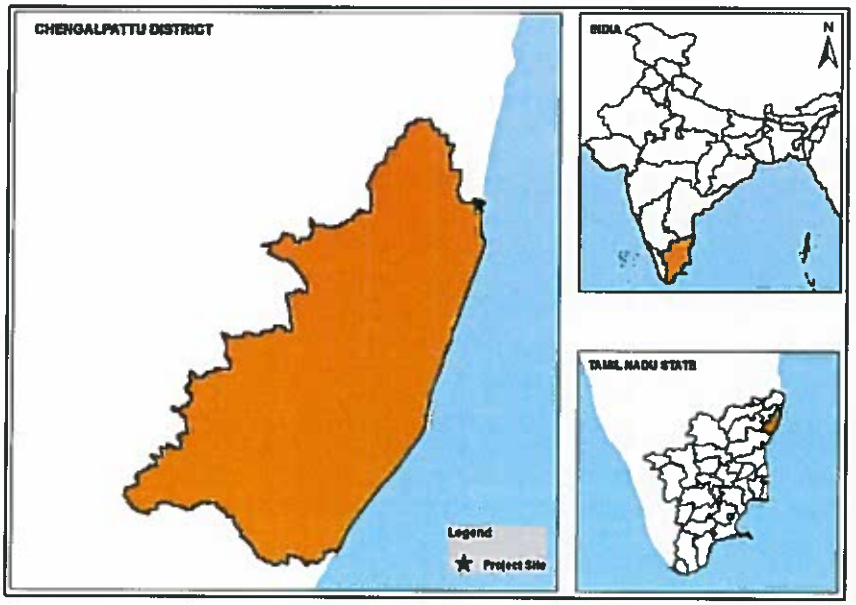


Figure 1: Site Key map

Table 1 Coordinates of the Proposed Project Site boundary corners

Label	Latitude	Longitude
A	12° 51' 15.955" N	80° 14' 38.052" E
B	12° 51' 15.950" N	80° 14' 38.997" E
C	12° 51' 13.922" N	80° 14' 38.843" E
D	12° 51' 13.847" N	80° 14' 37.901" E

3.0 RESULTS AND CONCLUSIONS

3.1 Results

The cadastral maps of Kanathur Reddy Kuppam village were georeferenced using graticule points available on approved CZMP map (Map No. TN 104) of Chengalpattu district, Tamil Nadu prepared by NCSCM, MOEF & CC, Govt of India. The HTL and LTL for Bay of Bengal as indicated in approved CZMP were superimposed on to georeferenced cadastral map along with ecologically sensitive areas in the vicinity of project site. 100m, 200m and 500m setback lines from HTL of Bay of Bengal as indicated in approved CZMP map (Map No. TN 104) were superimposed on to prepare local level CRZ map at 1:4.000 scale (Annexure III). The co-ordinates of selected points on HTL derived from approved CZMP in WGS 84 system are presented in Annexure II. The satellite imagery of project site is presented for reference in Annexure I..

3.2 Conclusions

- The project site is located in Survey No. 87/3A1D in Kanathur Reddy Kuppam village, Thiruporur taluk, Chengalpattu district, Tamil Nadu falls near Bay of Bengal.
- The proposed project site in survey No. 87/3A1D in Kanathur Reddy Kuppam village, Thiruporur taluk, Chengalpattu district, Tamil Nadu is completely falls outside CRZ as per CZMP map by NCSCM, Chennai vide CRZ Notification 2011.
- The shortest distance from HTL (Bay of Bengal) to plot boundary B and C are 530.81m and 531.10m respectively.

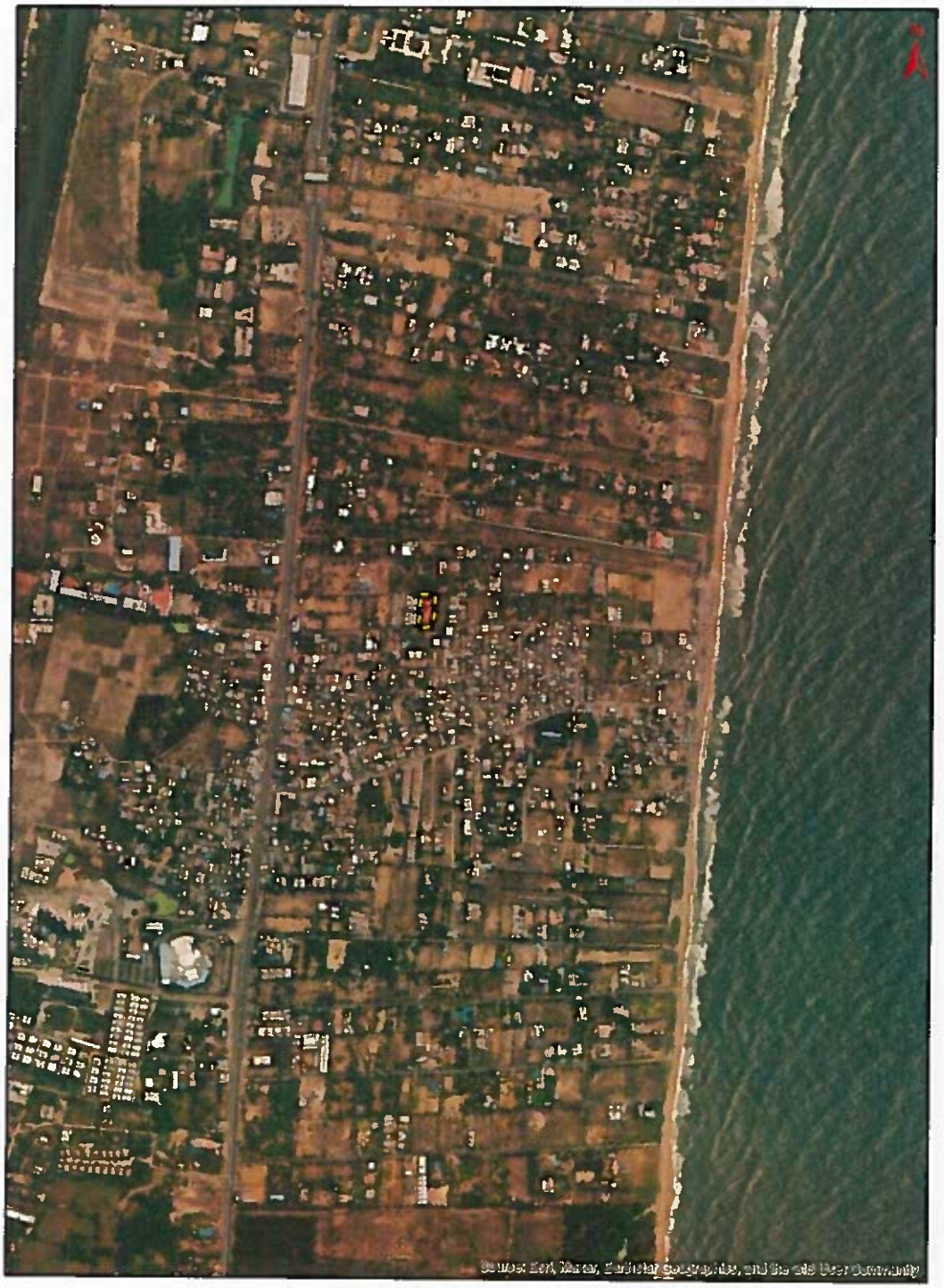
PRINCIPAL CONSULTANT

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Anna University,
Chennai - 600 025.

ANNEXURE I

Satellite Imagery of project site (courtesy: Google Earth)



ANNEXURE II

Coordinates of HTL Reference Points

Point No	Latitude	Longitude
1	12° 51' 34.293" N	80° 14' 58.218" E
2	12° 51' 27.684" N	80° 14' 57.442" E
3	12° 51' 22.101" N	80° 14' 57.085" E
4	12° 51' 17.262" N	80° 14' 56.771" E
5	12° 51' 10.785" N	80° 14' 56.216" E
6	12° 51' 3.858" N	80° 14' 55.500" E
7	12° 50' 56.701" N	80° 14' 55.014" E

(Source: Approved CZMP – Map No. TN 104)

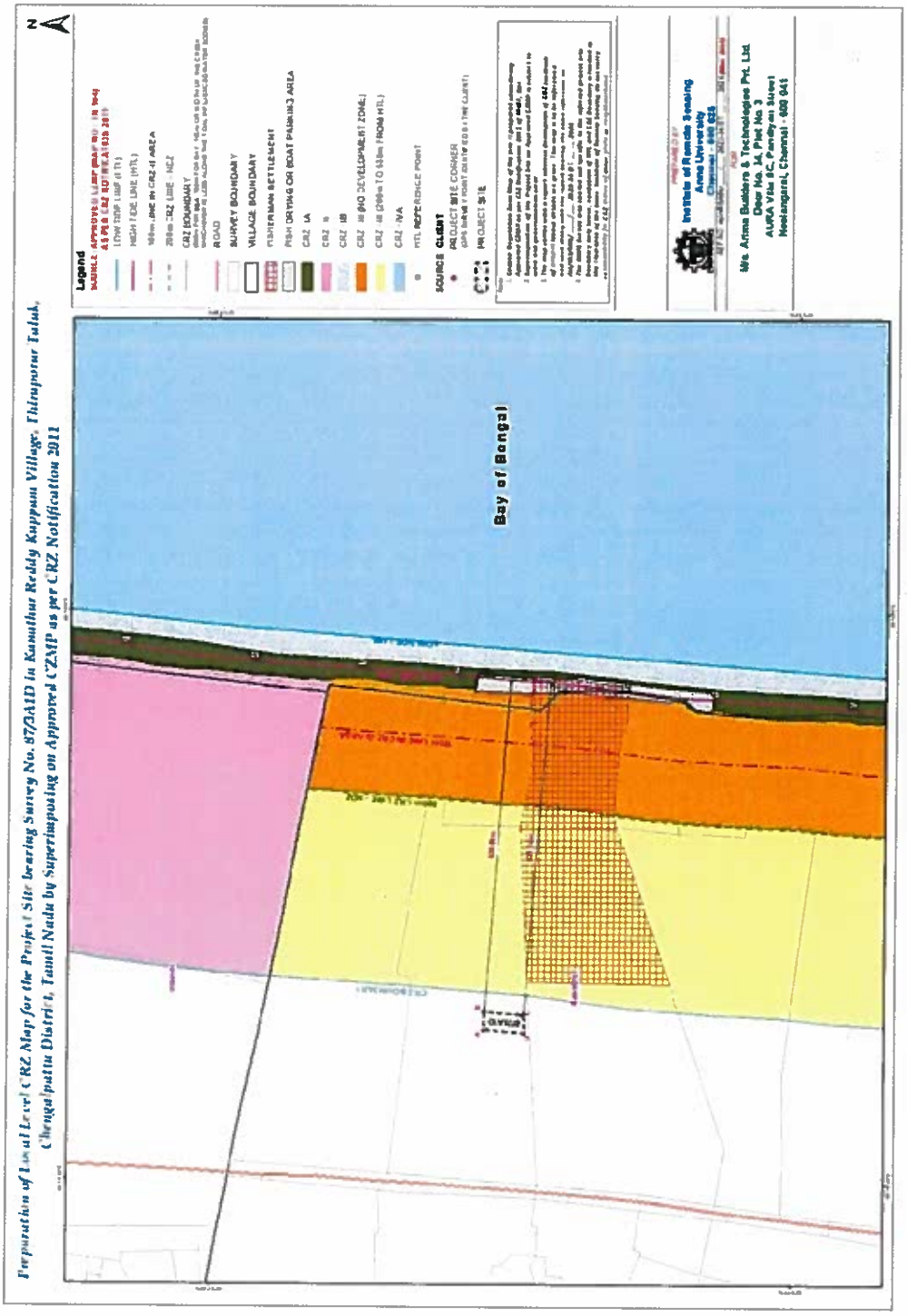
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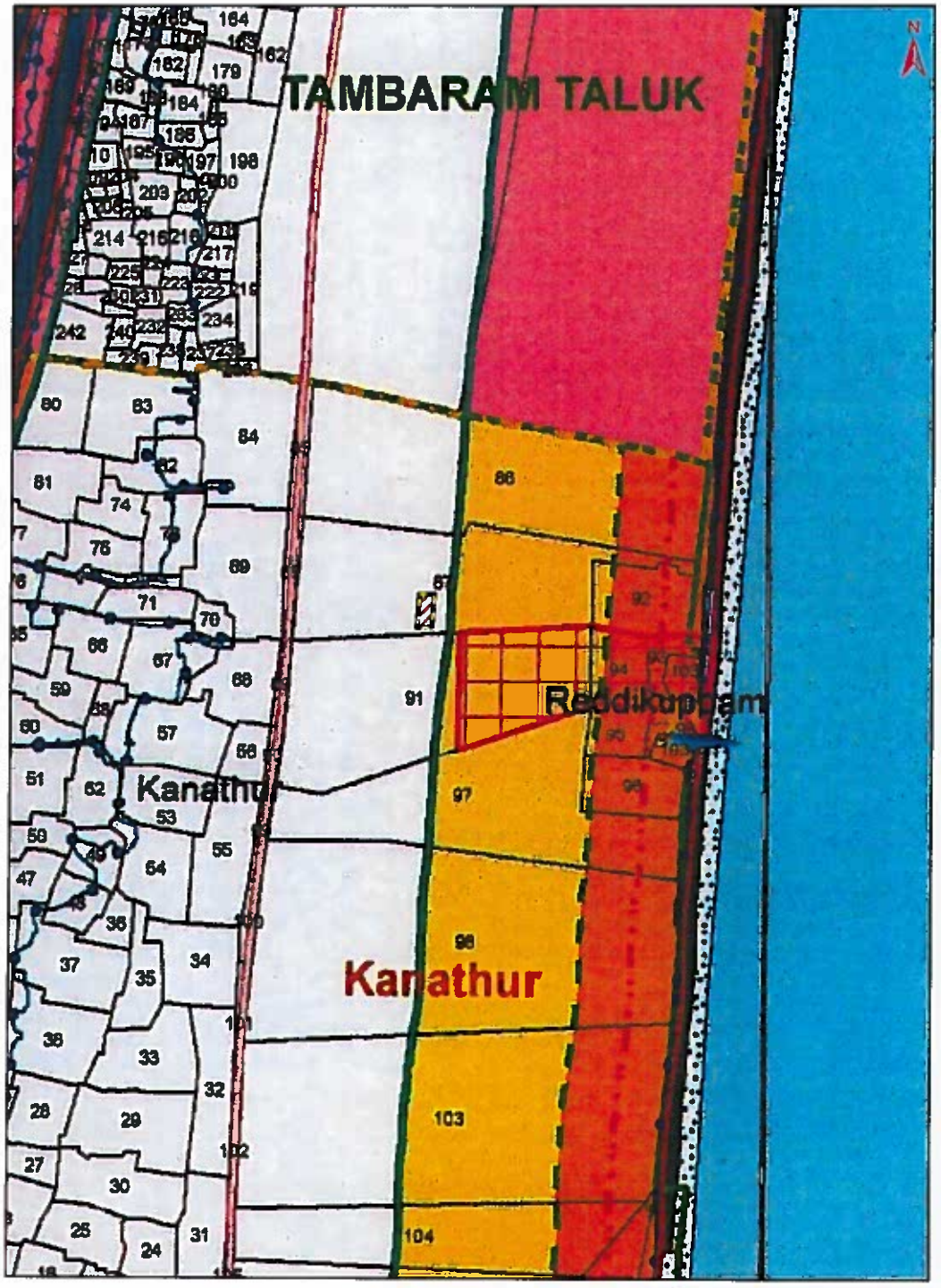
ANNEXURE III

Local Level CRZ map for the Proposed Project site



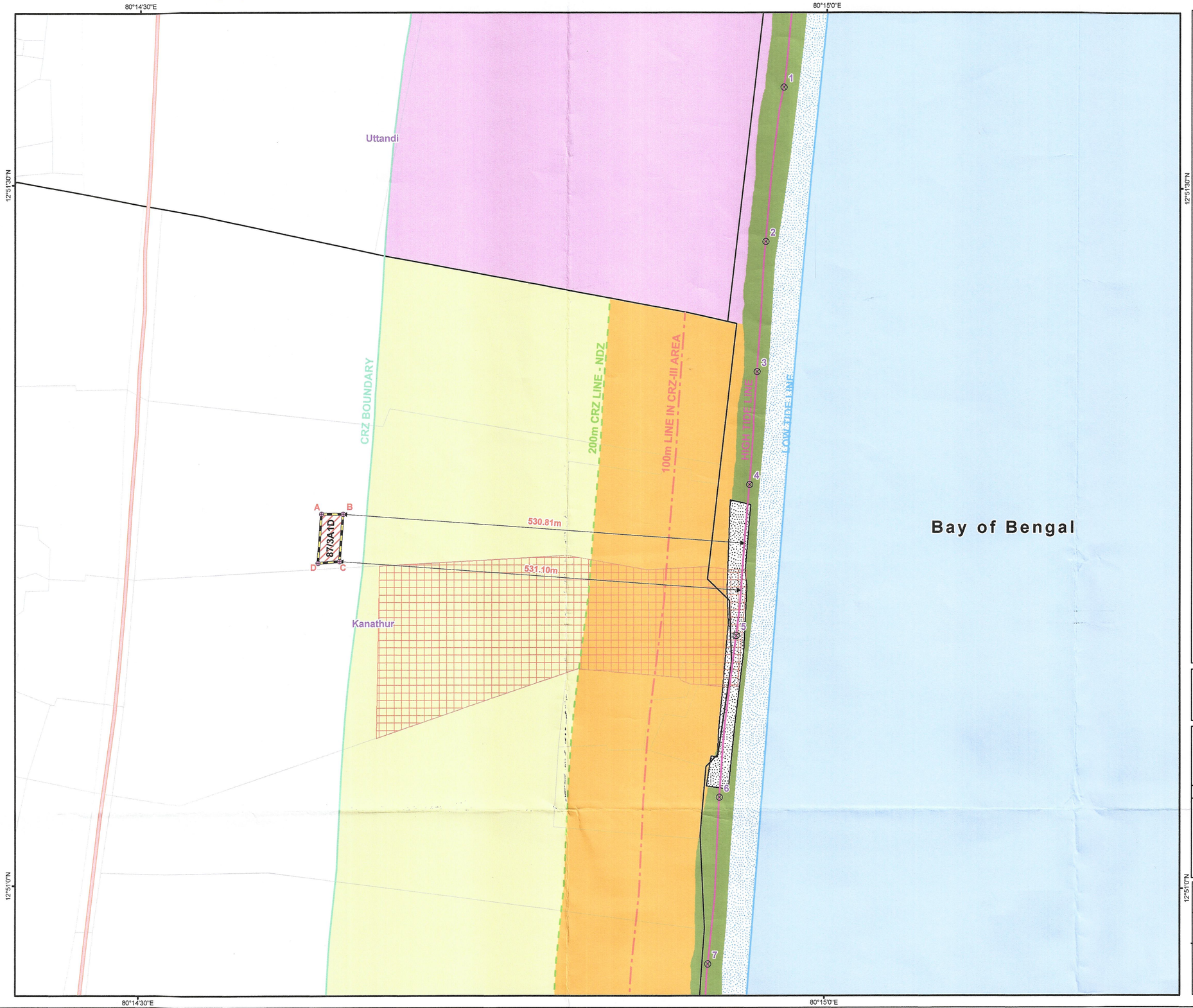
ANNEXURE IV

PROJECT ACTIVITIES SUPERIMPOSED ON APPROVED CZMP



(Source: Map No: TN 104)

Preparation of Local Level CRZ Map for the Project Site bearing Survey No. 87/3A1D in Kanathur Reddy Kuppam Village, Thiruporur Taluk, Chengalpattu District, Tamil Nadu by Superimposing on Approved CZMP as per CRZ Notification 2011



Legend

SOURCE: APPROVED CZMP (MAP NO : TN 104) AS PER CRZ NOTIFICATION 2011

- LOW TIDE LINE (LTL)
- HIGH TIDE LINE (HTL)
- 100m LINE IN CRZ-III AREA
- 200m CRZ LINE - NDZ
- CRZ BOUNDARY (500m FOR SEA, 100m FOR BAY, 100m OR WIDTH OF THE CREEK WHICHEVER IS LESS ALONG THE TIDAL INFLUENCED WATER BODIES)
- ROAD
- SURVEY BOUNDARY
- VILLAGE BOUNDARY
- FISHERMAN SETTLEMENT
- FISH DRYING OR BOAT PARKING AREA
- CRZ - IA
- CRZ - II
- CRZ - IB
- CRZ - III (NO DEVELOPMENT ZONE)
- CRZ - III (200m TO 500m FROM HTL)
- CRZ - IVA
- HTL REFERENCE POINT

SOURCE: CLIENT

- PROJECT SITE CORNER (GPS SURVEY POINT IDENTIFIED BY THE CLIENT)
- PROJECT SITE

Note:

1. *Coastal Regulation Zone Map of the site is prepared considering Approved CZMP as per CRZ Notification 2011 of MoEF, GoI*
2. *Superimposition of the Project Site on Approved CZMP is subject to scale and generalisation error*
3. *The map comes with a report wherein description of CRZ zonation of project layout details are given. This map is to be referenced and used along with the report bearing the same reference no: AU/IRS/MN/7979/475-2023-24 DT. 20.03.2024*
4. *The DGPS Survey was carried out specific to the referred project site boundary only hence, validation of HTL and CRZ Boundary is limited to the clearance of the same. Institute of Remote Sensing do not carry responsibility for CRZ status of other plots or neighbourhood.*

SCALE 1 : 4,000

0 50 100 200 300 400 M

PREPARED BY

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Chennai - 600 025

REF NO. AU/IRS/MN/7979/475-2023-24 DT. 20.03.2024 *(Mar. 2024)*

FOR

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