APPLICATION OF GEOGRAPHIC INFORMATION SYSTEM IN CENSUS MAPPING

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- Surveys and Censuses can be characterized by the type of information to be collected.
- In any survey maps are essential for carrying out the survey.
- The area to be surveyed is to be mapped.
- One time survey requires that map coverage be provided with available resources and existing information.

- Continuing surveys can afford to put more resources into mapping for future operations.
- The boundary stability for statistical area is important in continuing surveys.
- The efficiency of the surveys relies on maps.
- Continuing surveys require constant updating and filling up of maps for later use.

Aim and Objectives:-

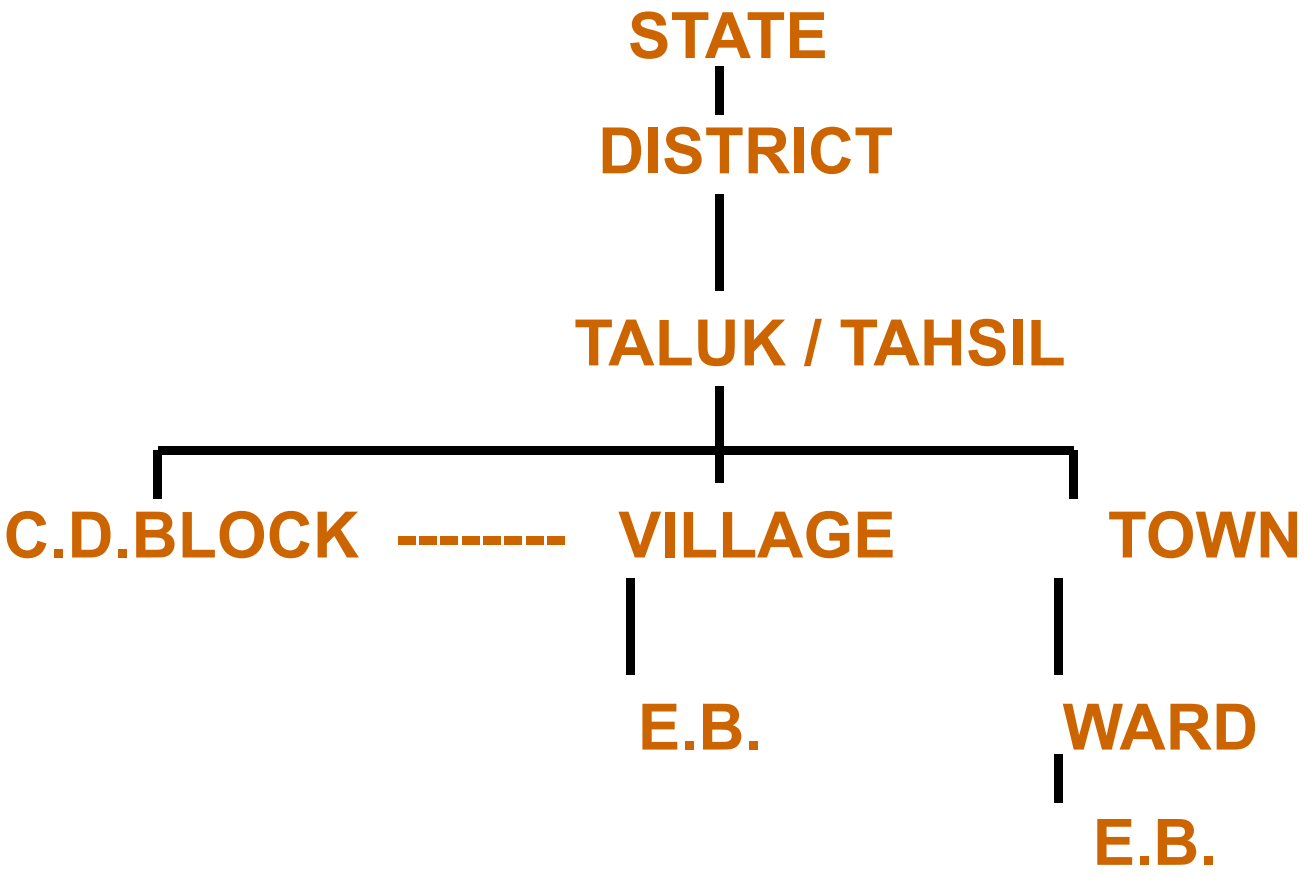
- To convert layout sketch into digital format.
- To attach attribute data into digital data base.
- To make a spatial query with respect to Non- spatial data.
- To conduct enumeration routing analysis.
- To generate enumeration block maps for the use of enumerator.

Lay out sketch:-

- Layout map is a free hand drawing, not drawn to scale.
- The purpose is to ensure a complete coverage of the enumeration block assigned.
- Important topographical features and land marks such as roads, railways, water features and important public places are to be marked.
- The measurement of angular direction and linear distance is not needed.
- The enumerator should have training for drawing layout maps.
- EB map is to digitized either manually or thro' scanning.

The administrative units are to be divided into a number of enumeration blocks.

Criteria for carving out an enumeration block are No. of households or number of houses .



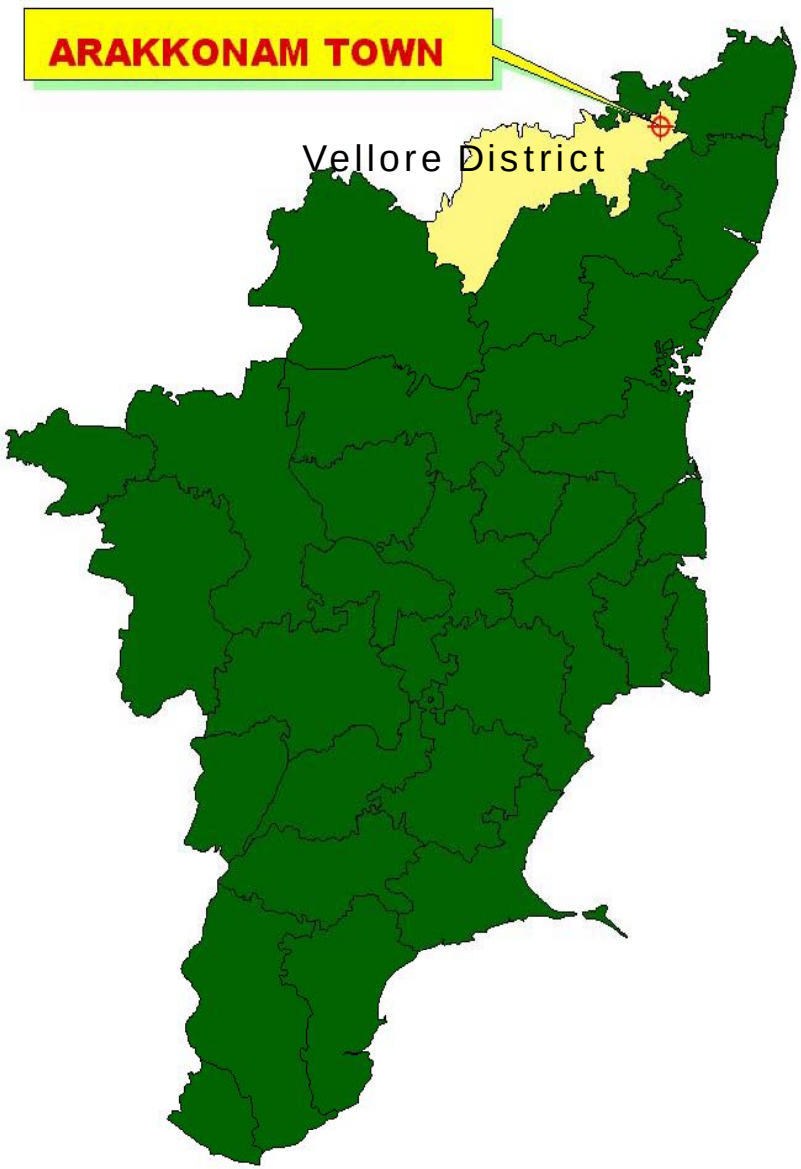
GIS as a tool:

- **GIS is an enabling technology that can be made use of in digitizing the enumeration block map along with data base.**
- **The lay out sketches and the data generated on the enumeration block can be related for retrieval of information on the enumeration block.**
- **We have to create database and bring out these details in the table by one to one relationship and one to many relationship.**
- **Now we have to set relationship between spatial and non-spatial data.**
- **The query building has to be done on the spatial and non-spatial data.**
- **GIS is used here to demonstrate its capability using 3 enumeration areas as the case in point.**

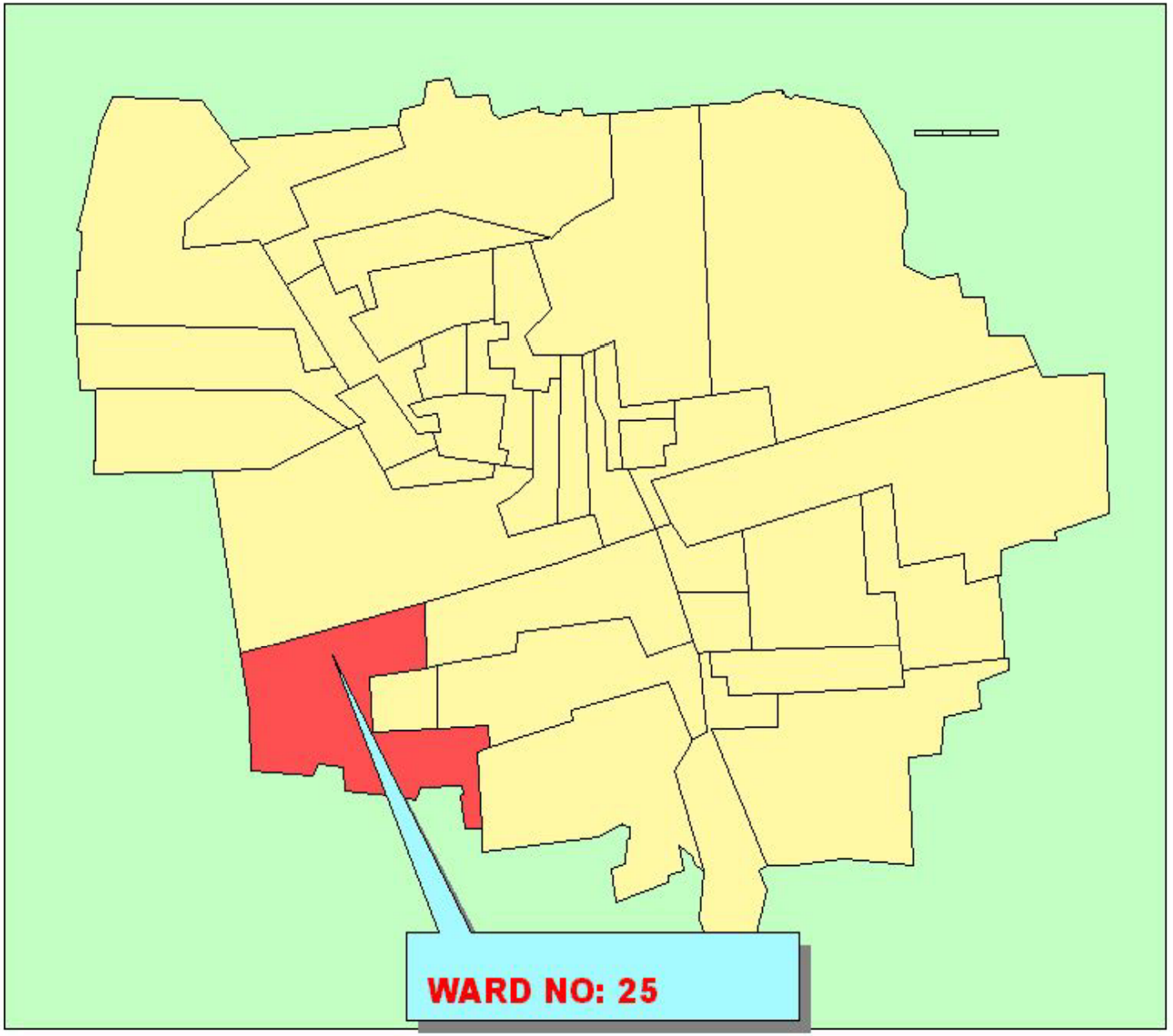
Case Study:-

- Each enumeration block is drawn as lay out sketch.
- All the buildings whatever may be their use, are marked in the layout sketch.
- As a case study, the ward No.25 of Arakkonam town has been taken into. It contains 3 enumeration blocks.
- These 3 enumeration blocks are digitized and fit in to the ward map.
- The attribute data of the enumeration blocks are added in tables for each enumeration block. Thus the spatial data base is attached with attribute data base.

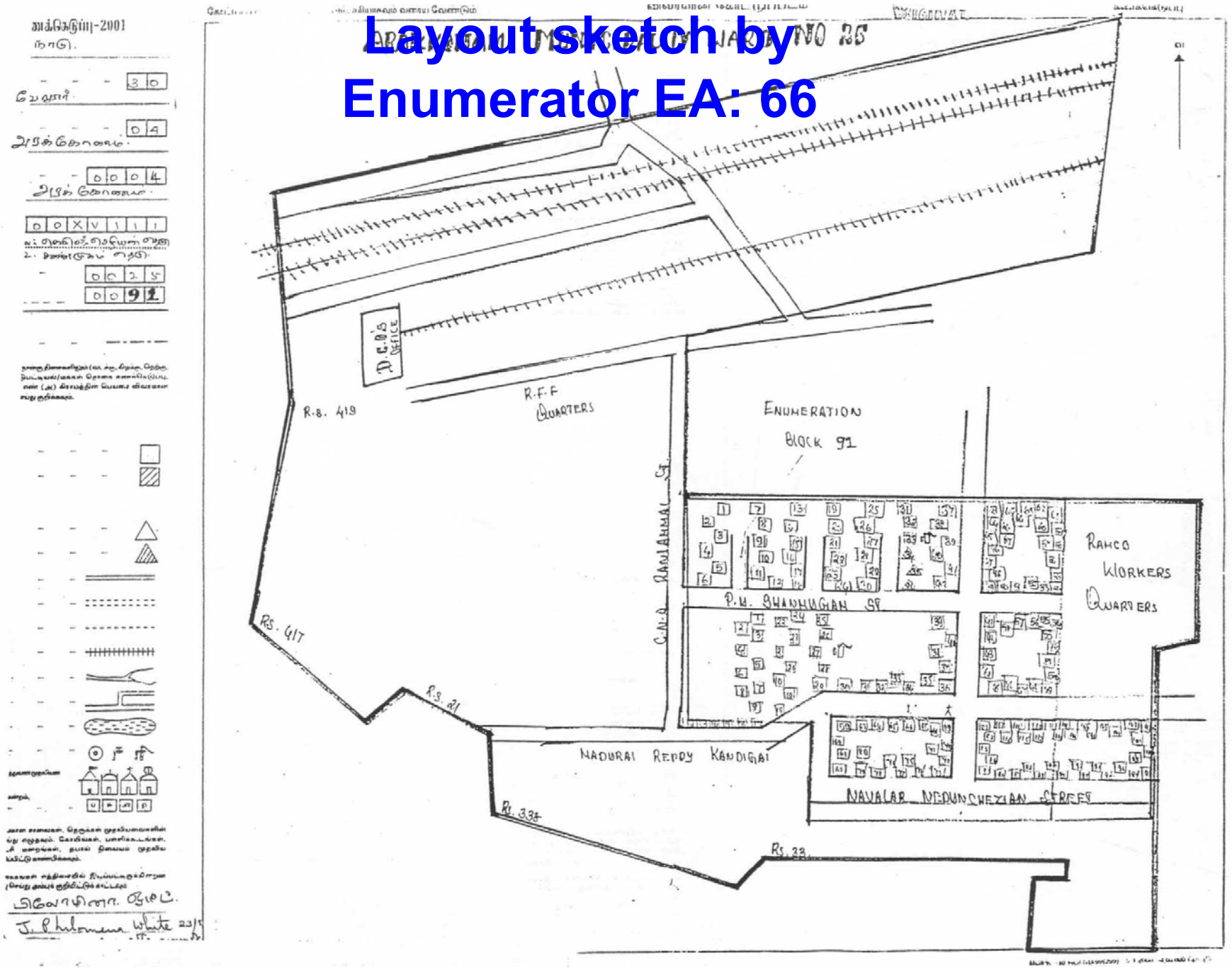
- This spatial and non-spatial data base can be used again after a certain period of time.
- New buildings can be added by different symbol.
- The buildings that are not existing at present may also be marked by another symbol.
- Now the same exercise can be repeated and the enumeration can be done.


ARAKKONAM TOWN
Vellore District

ARAKKONAM TOWN



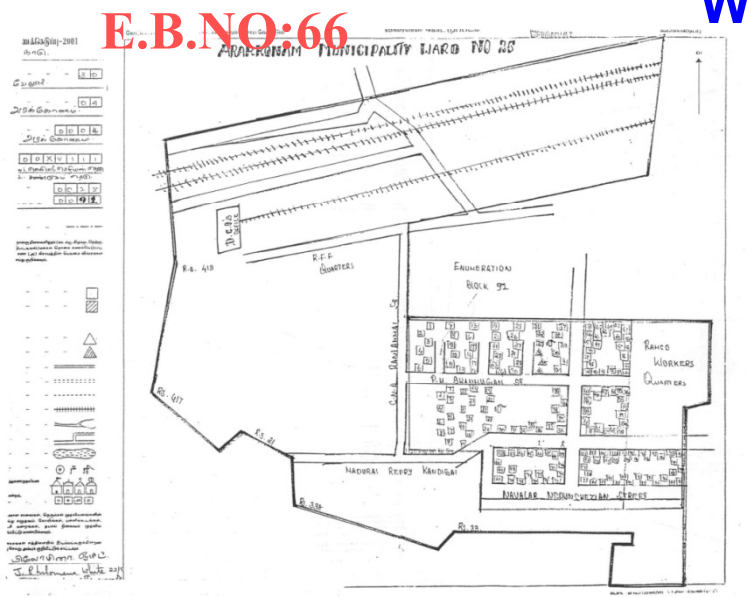
Layout sketch by Enumerator EA: 66



Layout sketches by Enumerators

Ward : 25

E.B.NO:66



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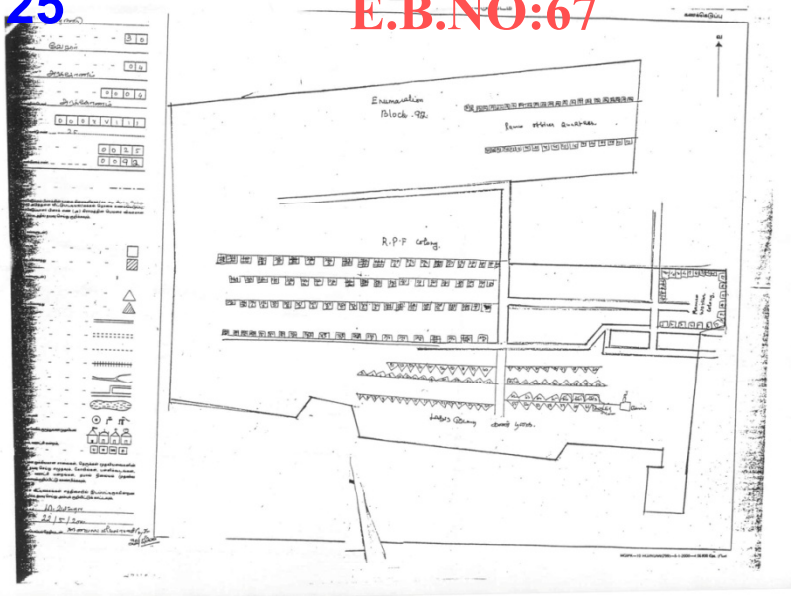

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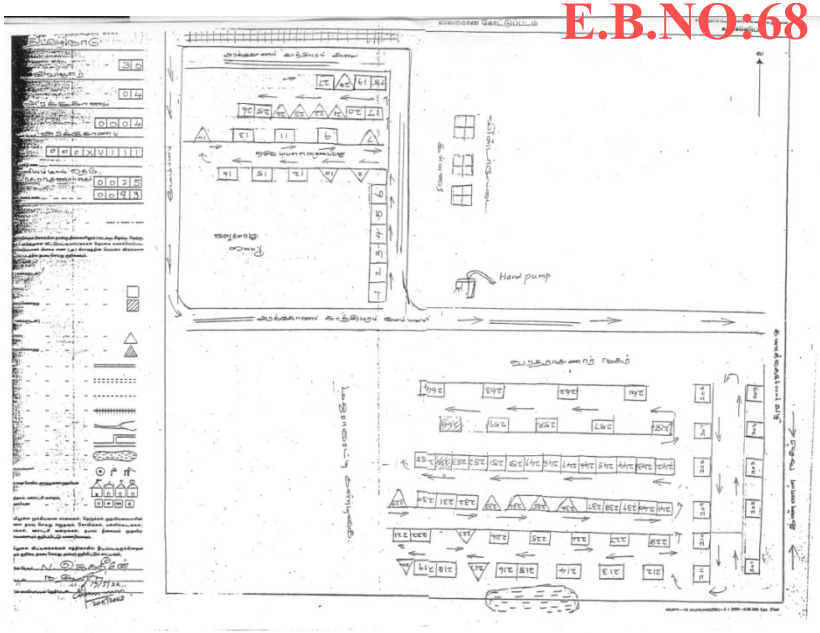
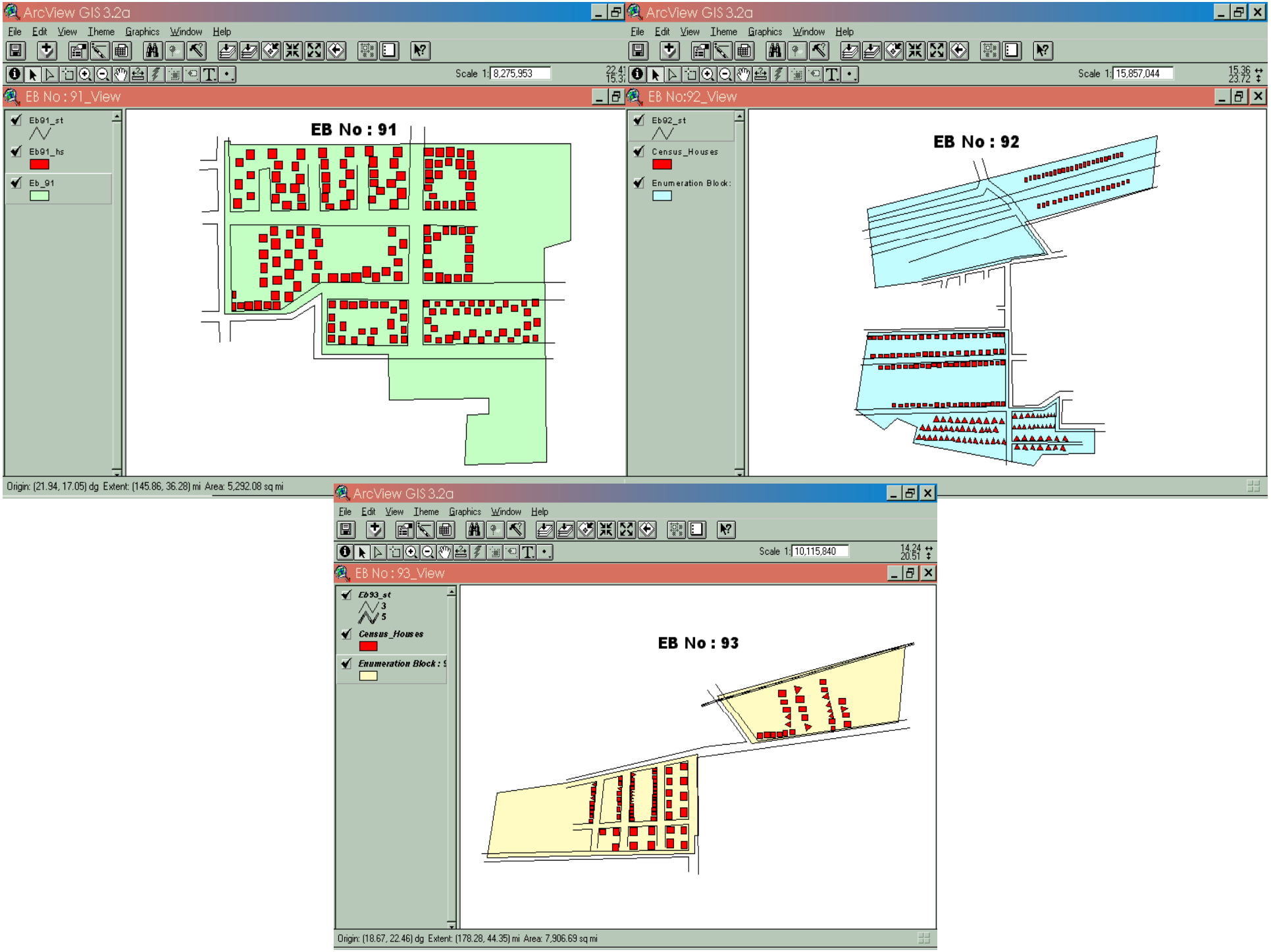
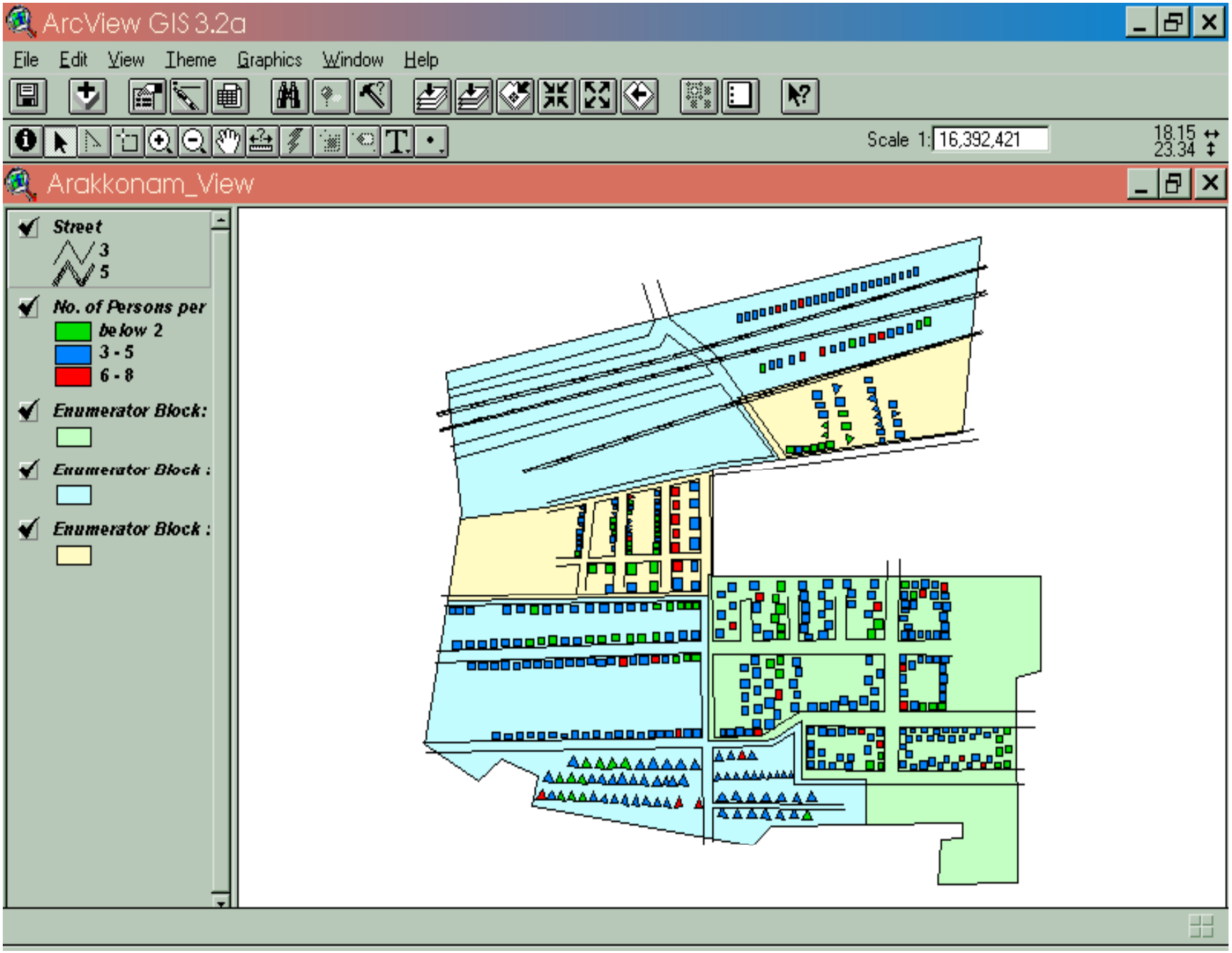
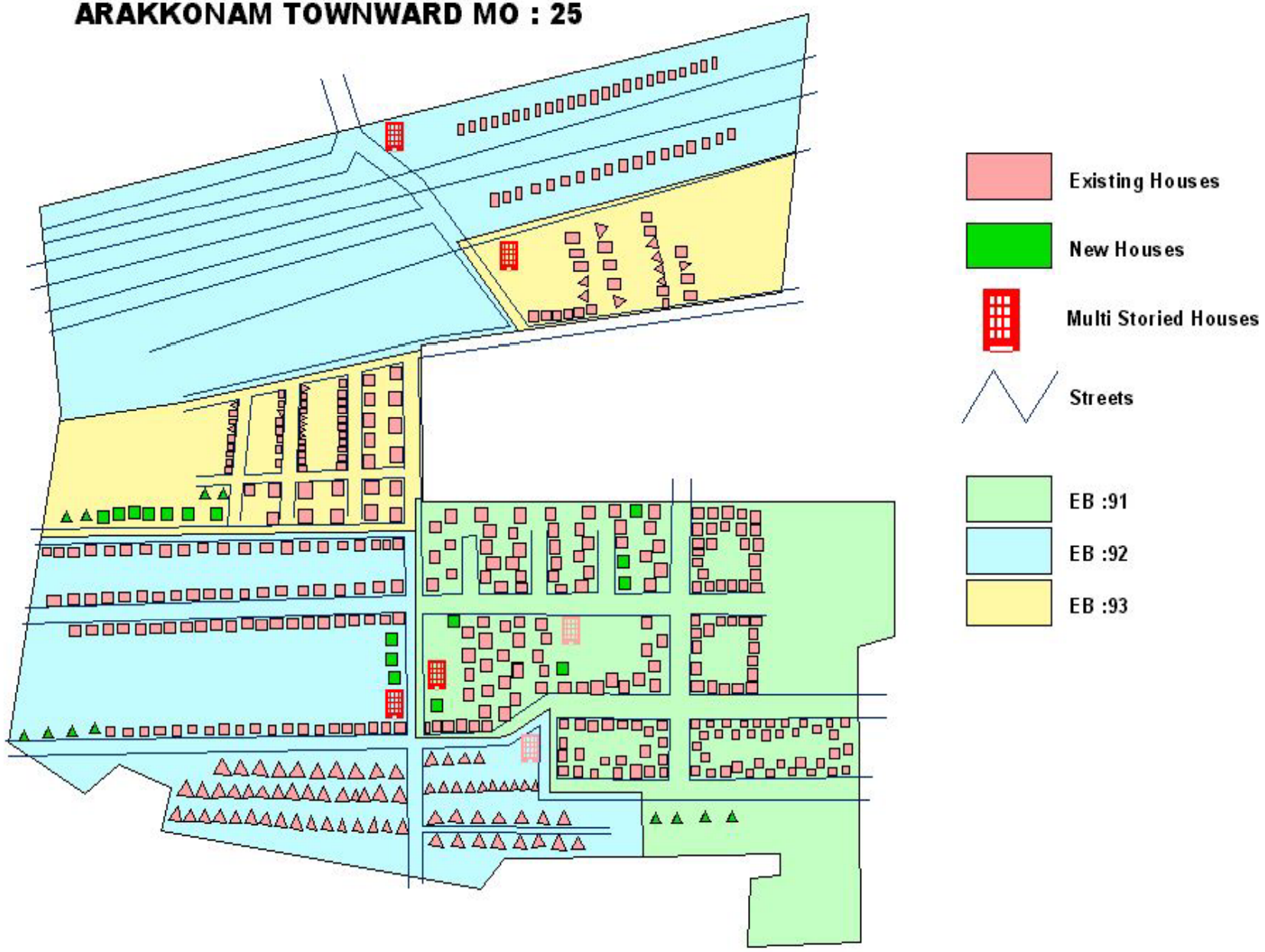



ArcView GIS 3.2a
File Edit View Theme Graphics Window Help
Scale 1: 8,275,953
EB No : 91_View
Eb91_st
Eb91_hs
Eb_91
EB No : 91
Origin: (21.94, 17.05) dg Extent: (145.86, 36.28) mi Area: 5,292.08 sq mi
ArcView GIS 3.2a
File Edit View Theme Graphics Window Help
Scale 1: 15,857,044
EB No:92_View
Eb92_st
Census_Houses
Enumeration Block:
EB No : 92
ArcView GIS 3.2a
File Edit View Theme Graphics Window Help
Scale 1: 10,115,840
EB No : 93_View
Eb93_st
Census_Houses
Enumeration Block :
EB No : 93
Origin: (18.67, 22.46) dg Extent: (178.28, 44.35) mi Area: 7,906.69 sq mi


ArcView GIS 3.2a
File Edit View Theme Graphics Window Help
Scale 1: 16,392,421
18.15
23.34
Arakkonam_View
Street
3
5
No. of Persons per
below 2
3 - 5
6 - 8
Enumerator Block:
Enumerator Block :
Enumerator Block :

ARAKKONAM TOWNWARD MO : 25



Recommendations and conclusion:-

- The enumerator should be given proper training to prepare the lay out sketch of the enumeration block.
- The Enumeration Block maps can be very well used for next Census.
- It is easy to delineate EBs with the existing map.
- we ensure complete enumeration of the houses without any omission or repetition and avoid error in enumeration.
- Through this mapping technology the route of enumeration for the enumerator can be decided so that he can save time and enumeration is made easy to him.
- It is easy for the supervisor to check the enumeration.