

CADASTRAL DELIMITATION OF ADMINISTRATIVE TERRITORY IN ROMANIA, IN ORDER TO ACHIEVE GENERAL URBAN PLANS

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ABSTRACT: *Cadastral delimitation of territorial administrative units represents a basic activity in order to identify, measure and establish the limits of the territorial administrative units, containing significant points and border path of the territorial administrative unit, but also the urban area border.*

The general urban plan is the main strategic document that establishes the priorities of the economic, social and cultural development. The urban activity without a general urban plan is nothing else but chaos.

The general urban plan is a project according to the regional planning and urban development for all the urban area of the territorial administrative unit. It involves a series of analyses, regulations and local statutes for the entire administrative territory (both intravilan and extravilan). In the same time, the general urban plan establishes general norms that will be the base of the detailed plans, zonal urban plan and detailed urban plan.

Keywords: *Cadastral delimitation; general urban plan; administrative territory;*

Introduction

In Romania, according to the current legislation in force, the boundaries of territorial and administrative units and the limits of its elements are set:

- a) in the case of establishment or re-establishment by law of a new administrative - territorial unit;
- b) in the case of boundary litigations;
- c) in the case of reconstruction of boundaries of administrative-territorial units, where markers that define the limits of borders have been destroyed or where items are missing from the delimitation files;
- d) in the case of preparing technical documentation for the introduction of general cadastre;
- e) in the case of change of border points due to the construction of dams, reservoirs aggregation, regularization of rivers and in the case of natural calamities [1].

The General Urban Plan of an administrative-territorial unit contains short-term regulations of the following aspects [2]:

- determination and delimitation of the built-up area in relation to the administrative territory of the village, town or city;
- determination of the use of land inside the built-up area;
- functional zoning in conjunction with the organization of the traffic network;
- delimitation of areas of public rights;
- modernization and development of technical infrastructure;
- establishment of protected areas and protection of historical monuments;
- forms of land ownership and legal circulation of land;
- specification of requirements for the location and conformation of the built, landscaped and planted volumes.

Therefore, this work was required in relation to the delimitation of the built-up area inside an administrative territory.

In Romania, delimitation works must be carried out before the introduction of the general cadastre into a territorial-administrative unit.

This delimitation is carried out by a Delimitation Committee [3], set up through an Order of the Prefect. Its tasks are: to analyse the existing delimitation documents and related cartographic materials; to set the border route based on orthophotoplans in the presence of the authorised person appointed to perform the work of delimitation; to finalise on site the land border sections that cannot be clearly defined on the orthophotoplans; to draw up the minutes of delimitation on the basis of delimitation documentation and to establish points of boundary changed by the construction of dams, reservoirs, highways or railways, regularization of rivers or of changes in the size and configuration of the plots, use categories, adjacent linear details;

The on-site cadastral boundary delimitation usually begins at a meeting point of three or more borders (point of "three borders" means the point where the boundaries of three administrative units meet). Then, the route up to the next meeting point of several borders is identified.

The numbering of border points start with the number 101 from the intersection of three or more borders located in the north or northwest and continues clockwise.

In the case of previously set cadastral boundaries, the old numbers of border points will be replaced with new numbers without doubling the numbers. On the border segments common to two territorial-administrative units, the old numbers of border points in the territory of the neighbouring territorial-administrative unit will be written between brackets.

For every materialized milestone (old or new), surveying descriptions and identification reports will be drawn up. Data on the lands crossed by the boundary line sections will be collected (use categories, land use and owners) and recorded in the minutes of the cadastral delimitation.

During the on-site visit, the status of field markers for both the old points of boundary (that remain) and for the new points to be marked will be described.

According to the laws in force, the points to be marked are the following [2]:

- meeting points of boundary lines (3 or more border points);
- points allowing to change the alignment of the border line (chosen so as to allow, if necessary to recreate the exact route the border line. On the sections of the

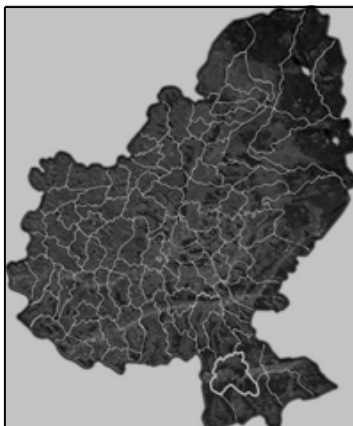


Fig.1. On-site cadastral delimitation of the boundary line (at a three borders point) [6]

border, in a line, when more than 3 km long, markers will be placed at a distance of about 2 km);

- meeting points of the border with rivers, railways, roads (these will be marked only on one side of the line details; on the opposite side, they will be marked by wooden poles with a diameter of 10 cm and a length of 70 cm, protected by mounds of earth).

The administrative border points were marked by the contractor of the cadastral boundary delimitation works. The coordinates X, Y, Z of border points were calculated according to the Stereographic 1970 projection system and to the Black Sea 1975 reference system [3].

The delimitation of the built-up area within the limits of the city of Sighisoara (the city which I took as example) consisted in:

- setting up the committee for delimitation of the city's built-up area;
- on-site visit of the built-up area limits, according to the existing approved general urban plan, and identifying future markers;
- marking of points;
- execution of land and office work to determine coordinates of the points;
- drawing up the minutes of cadastral delimitation of the built-up area, as agreed and signed by the members of the committee;
- setting up the cadastral delimitation record.

The delimitation work consisted in providing and placing markers along the route of the road at a distance of about 2 km between them, so as to ensure an average density of 0.5 points / km of route. The markers were located as close to the road as possible, usually in the protection area, aiming to ensure conditions of stability, accessibility and visibility.

The operation of fixing of topographic or surveying markers into the ground or into buildings is called marking. Geodetic

network points and some points in the elevation network are marked permanently (through markers, benchmarks, metal bolts and wooden poles). Some points from the elevation network serving only for land measurements, with no special significance for defining topographic details' position are marked provisionally (with wooden pegs, mobile markers, etc.).

Inside the built-up area, topographical points are permanently marked by metal bolts embedded in the sidewalk or roadway, having a notch or point excavated in the centre of the upper head, located at the surface. For the permanent marking of levelling markers, levelling benchmarks made of cast iron are used, encased in geodetic markers or in a building's wall, at least 50 cm above ground level. Milestones alongside roads, railways and canals may serve as points of levelling or planimetry.

For the new General Urban Plan of the city of Sighisoara, specialized materials and data were used, such as: basic network based in the Stereographic 1970 projection system and the Black Sea 1975 reference system; plans to scale 1: 25000 (L-35-62-B, L-35-62-A-d, L-35-62-B-a, L-35-62-B-c); orthophotos; national network of triangulation in the area and the existing general urban plan [4].

Field work began with going on site and checking the limit of the built-up area on each segment. On this occasion, the location of concrete markers that will become witness points to the limit of the built-up area inside Sighisoara City was established [4].

Another step was the restoration and completion of basic network of the City of Sighisoara, during which the new station markers were designed, materialized and established [4].

Overall, a total of 38 middle-size concrete markers, one Feno marker and 26 metal pickets were placed. The following were used as station points: 2 water source markers, one hectometre marker, 1 sewer chamber cap and 2 concrete pillars [4].

Therefore, in order to draw up the status plans, needed for the delimitation documents, land surveys were carried out using the Topcon total station, a high precision geodetic equipment, with two frequencies L1, L2. Also, 3 Sokkia Stratus receivers were used. These are high precision

surveying GPS tools with a single frequency. Data processing was performed using the specialized software Toposys [4].

The result was status plans 1 and 2 that are connected to each other and the area calculation, as represented in the figures below (Fig 2, Fig.3).

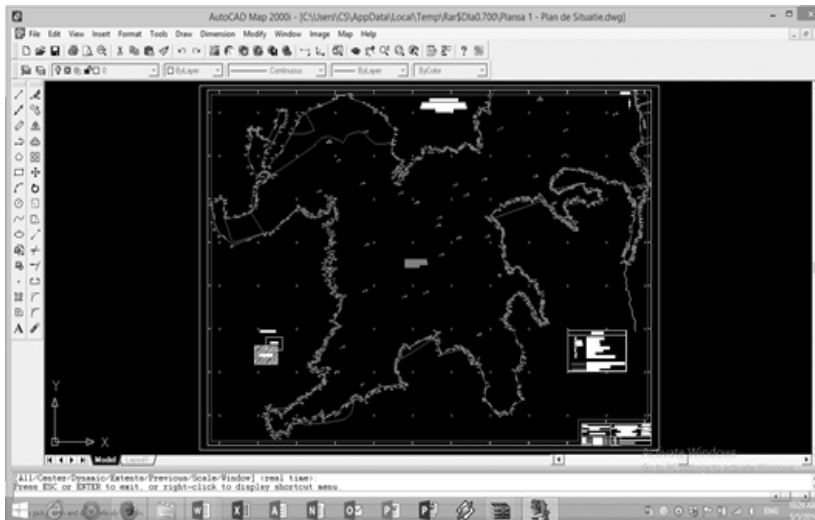


Fig 2. Status plan 1 - Marking and delimitation of the built-up area [4]

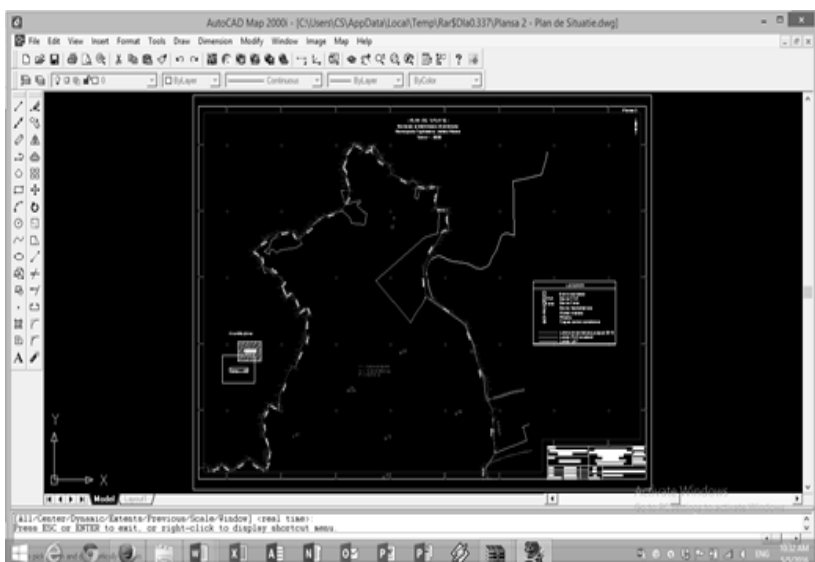


Fig 3. Status plan 2 – Marking and delimitation of the built-up area [4]

The status plans contain elements such as (Fig.4):

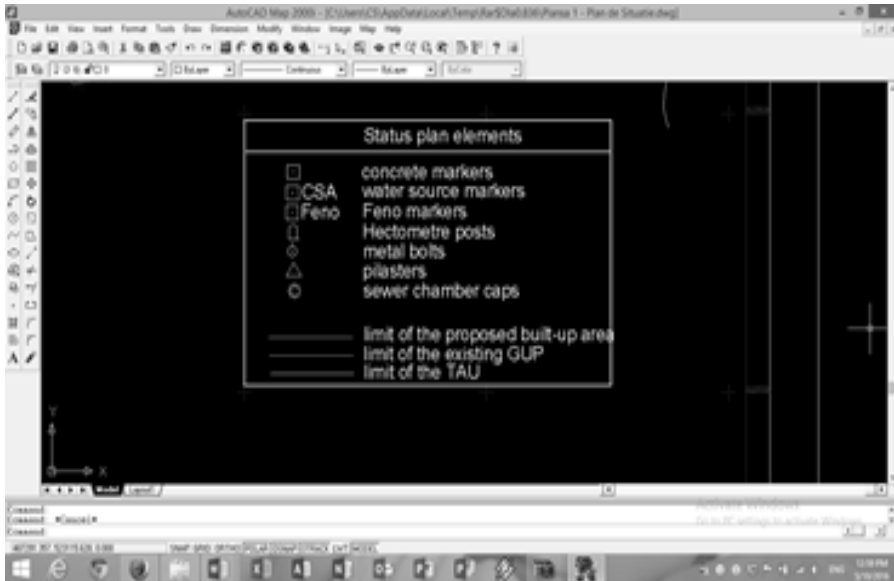


Fig 4. Status plan elements – markers and limits [4]

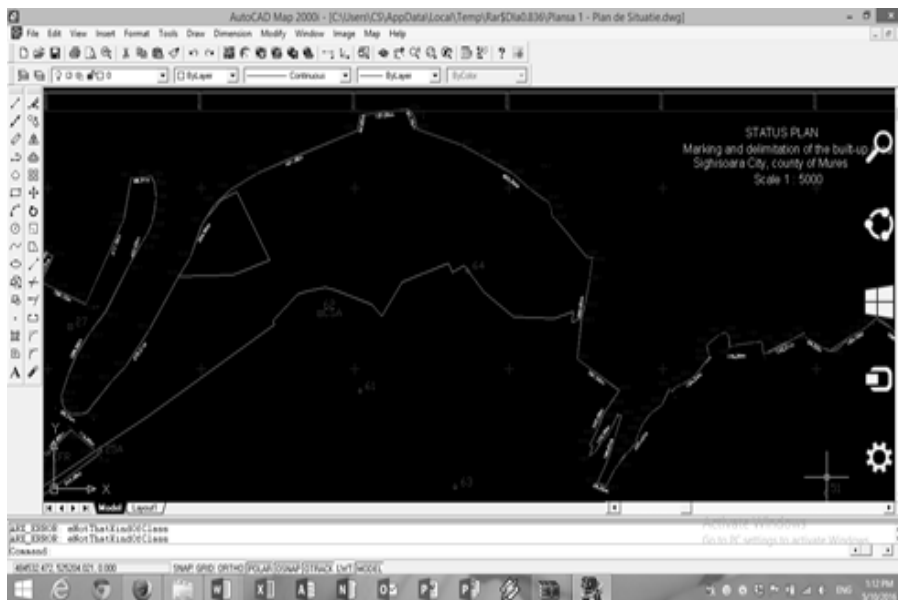


Fig 5. Status plan – Markers, old limit, new limit [4]

The status plan allowed for the calculation of the area of the administrative territory, which is $A = 12,343,882.82$ sq. m. (Fig 6).

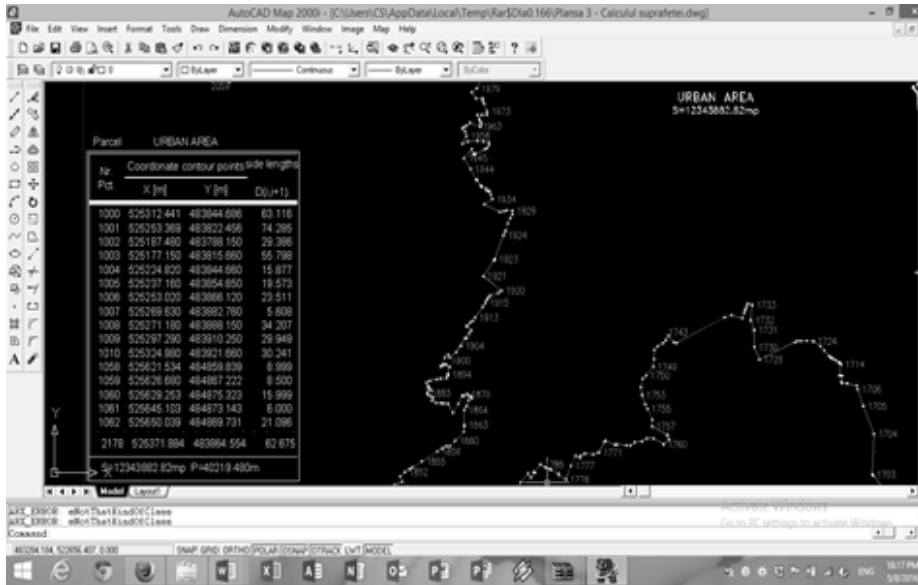


Fig 6. Status plan – calculation of the size of the built-up area $A = 12.343.882,82$ sq. m. [4]

Conclusion

Thus, the marking and delimitation of land inside the built-up area of the

administrative territory of the city of Sighisoara will be included in the General Urban Plan of the city, observing the laws in force.

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