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BASIC SURFACES FOR ENGINEERING

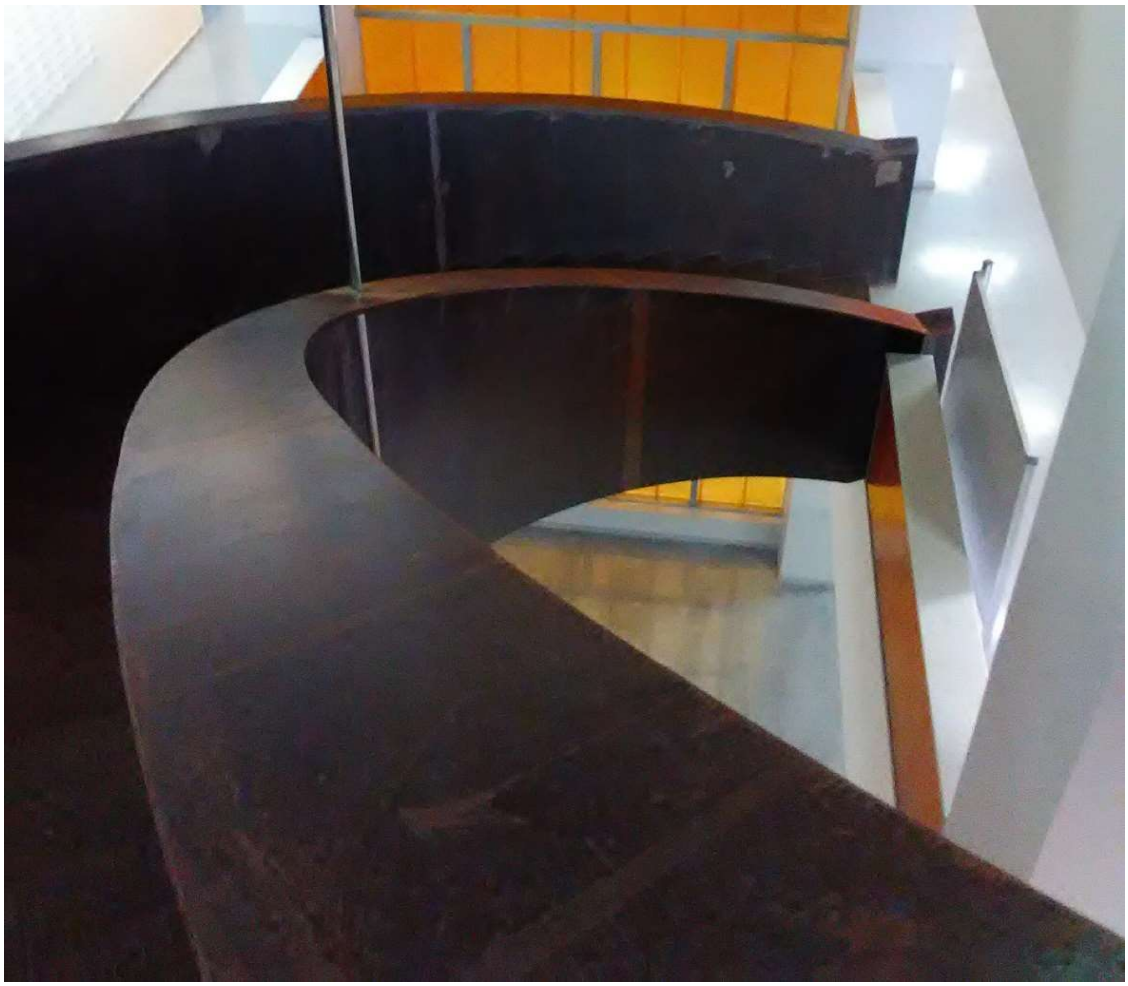

Figure 00. Main stairs of Engineering School of Bilbao II. Picture made by the authors, 2018.

6. Exercises for global self-evaluation

6. GLOBAL SELF-EVALUATION EXERCISES OF SURFACES

See the corresponding section in the teaching guide (**1.8 Heading**) to evaluate the level reached in the performance of the exercises.

E. STATEMENT

It is recommended to print the sentences enlarged to A3 format for greater precision and comfort in drawing the lines.

E.1. Represent and visualize the projections of the oblique regular hexagonal pyramid of vertex V and base in the plane, which is perpendicular to the horizontal plane. Line e passes through the center O of the hexagon, and it is 31 mm. sideways. The vertex A of the base has the highest possible elevation.

- Find the projections of the section produced by plane , , parallel to plane at 15 mm. away. Plane is perpendicular to segment VO and passes through its midpoint. The plane is as far away as possible from V.
- Find the development of the pyramid and the transform of the section, starting with an edge of symmetry.

Figure 6.1:

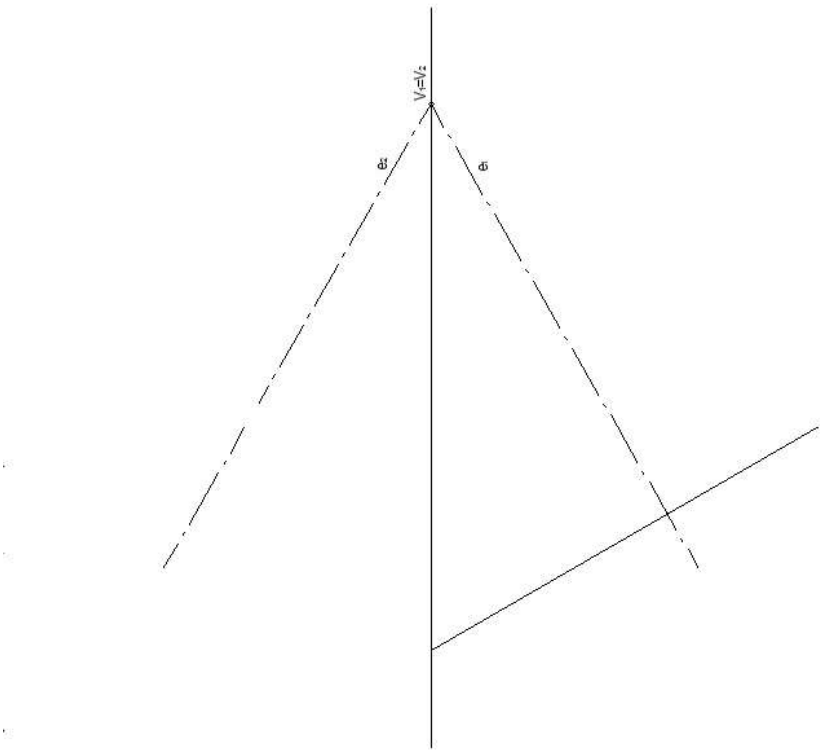

Figure 6.1. Representation, flat section and development of a pyramid (Image made with Solid Edge).

E.2. The elevation represents a discharge duct composed of three surfaces:

1. Straight cylinder of e-axis revolution, 600 mm base. in diameter, cut by the plane perpendicular to the vertical plane.

2. Straight cone of revolution of axis e.

3. A straight cylindrical surface with a parabolic base, cut by the plane perpendicular to the vertical plane.

- Find the horizontal projection and the profile projection of the assembly. Find the development of surface nº 2, dividing the directrix into 12 parts.

Figure 6.2

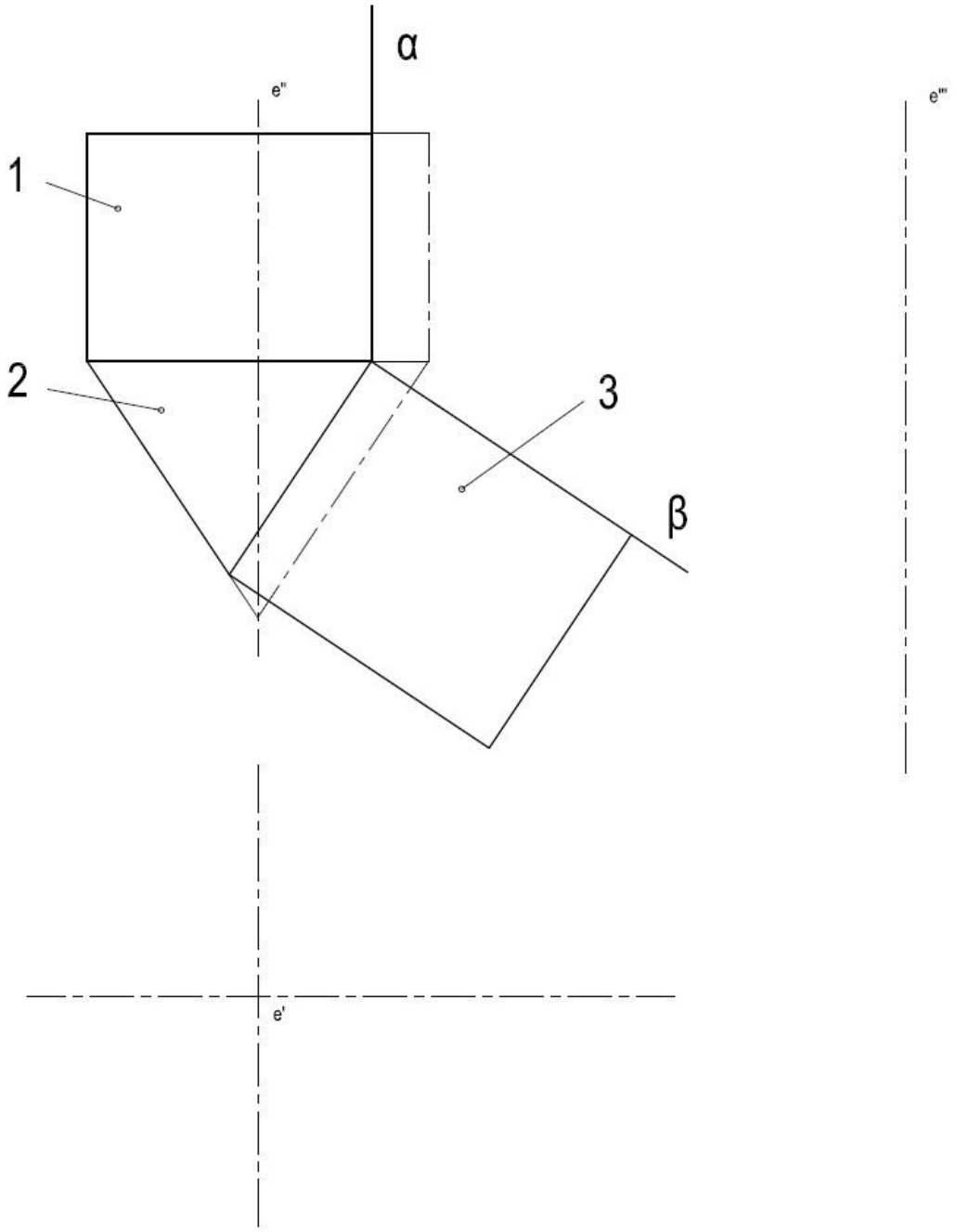

Figure 6.2. Representation, intersection and development of surfaces (Image made with Solid Edge).

S. SOLUTIONS

S.1. Representation, flat section and development of a pyramid.

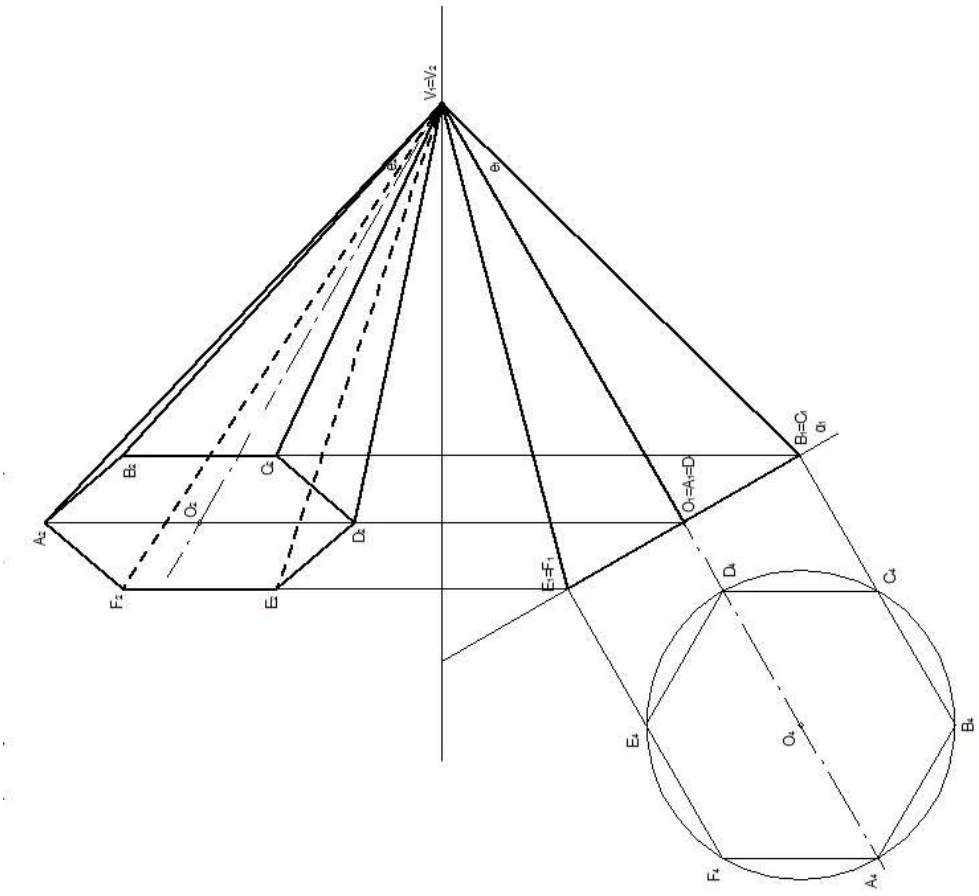

Figure 6.3. Representation of the pyramid (Image made with Solid Edge).

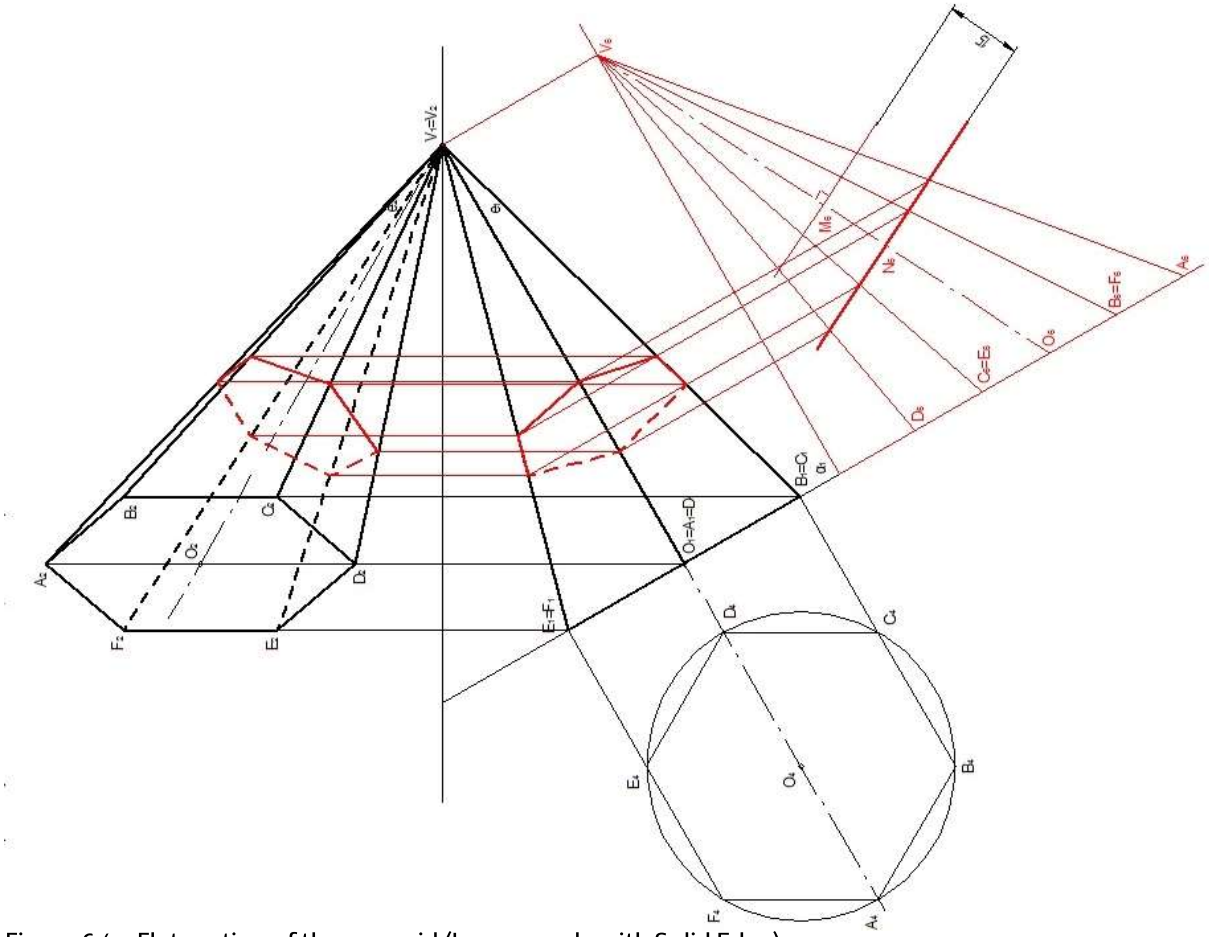

Figure 6.4. Flat section of the pyramid (Image made with Solid Edge).

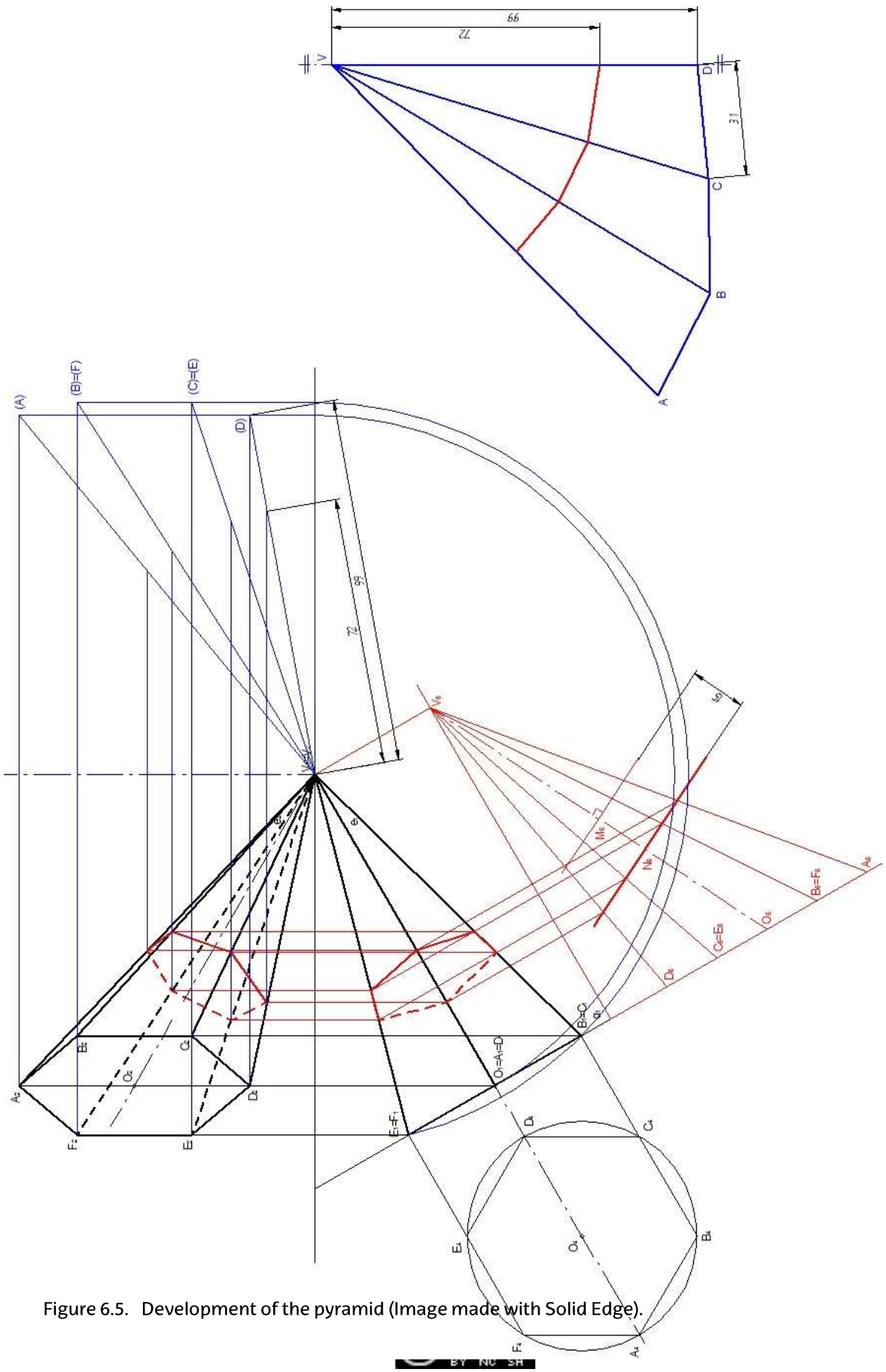

Figure 6.5. Development of the pyramid (Image made with Solid Edge).

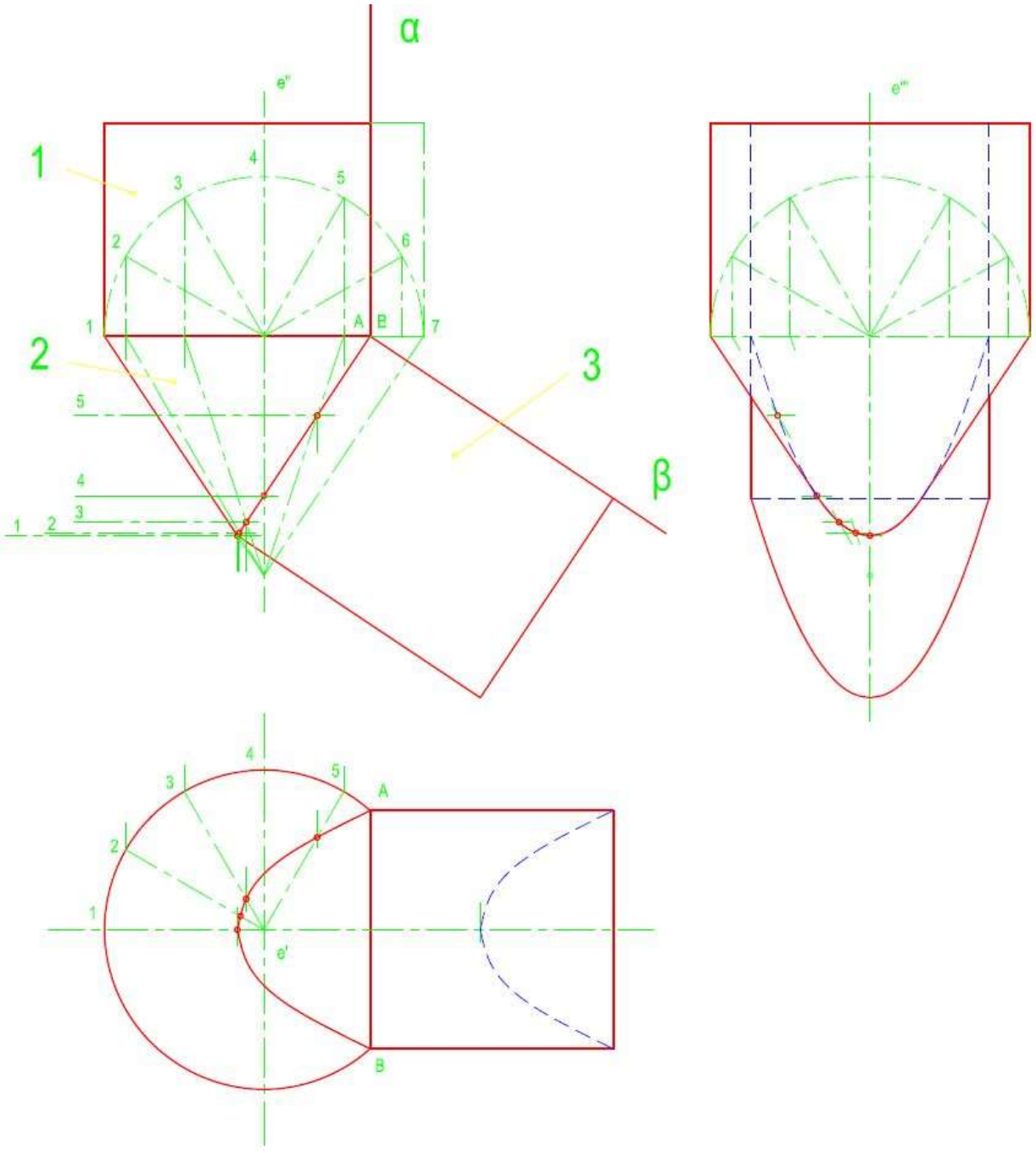

Figure 6.6. Representation and intersection of the surfaces (Image made with Solid Edge).

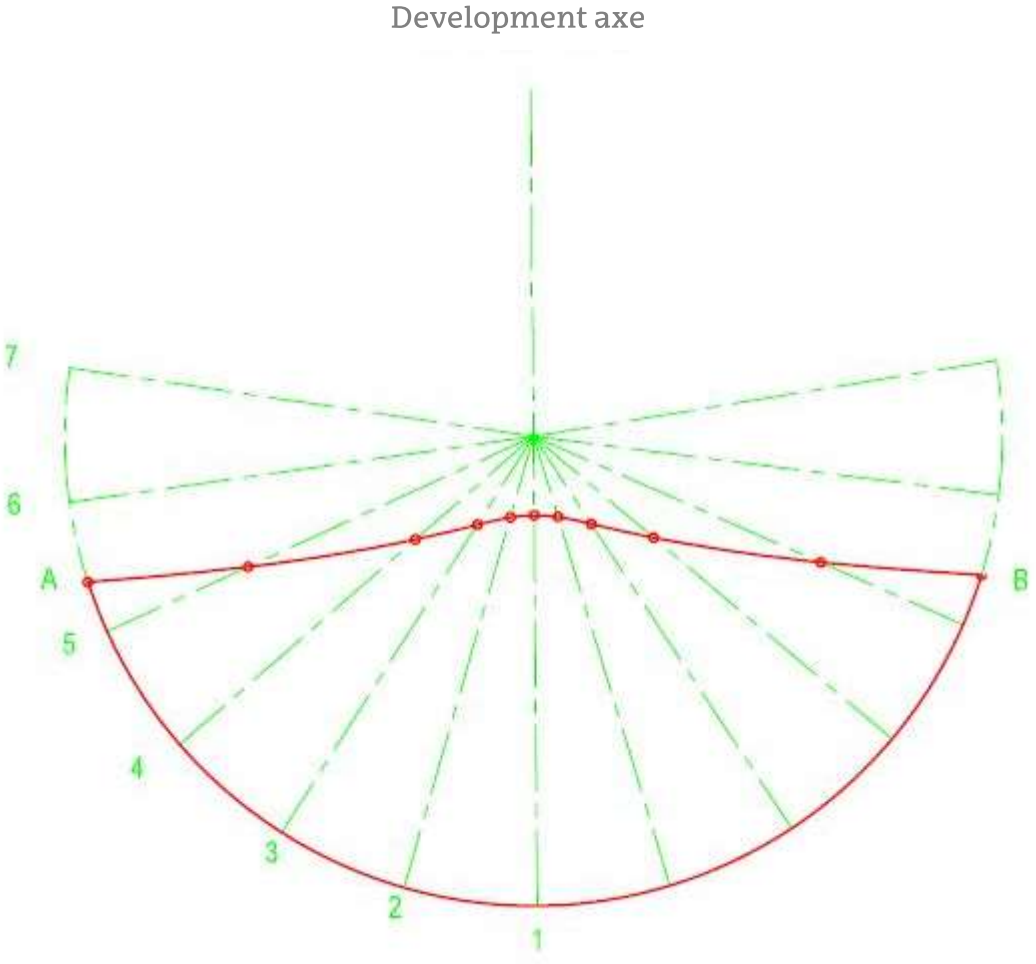

Figure 6.7. Development of the surface (Image made with Solid Edge).