Princess Geometry

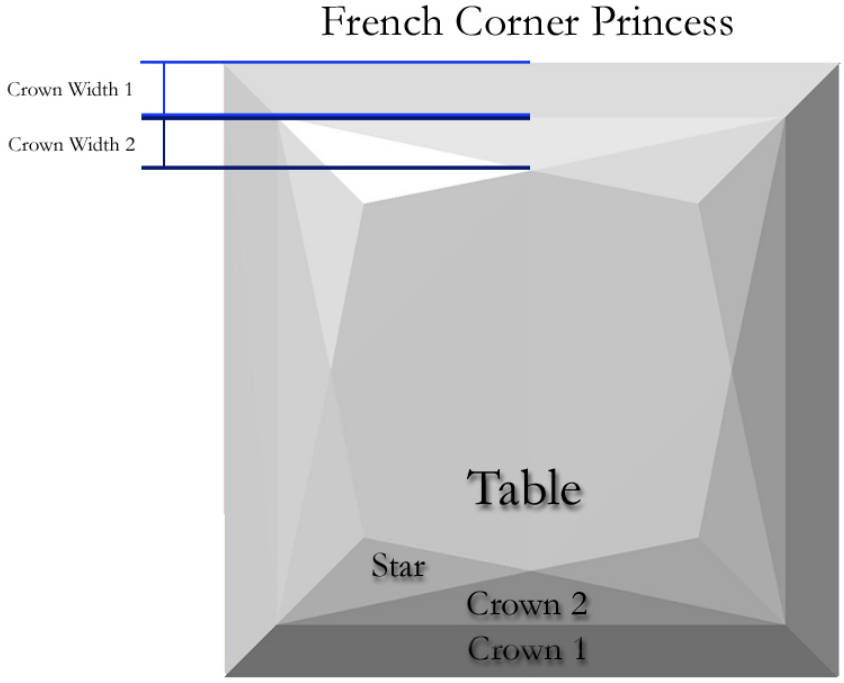
AGSL parameters, assumptions, and naming conventions

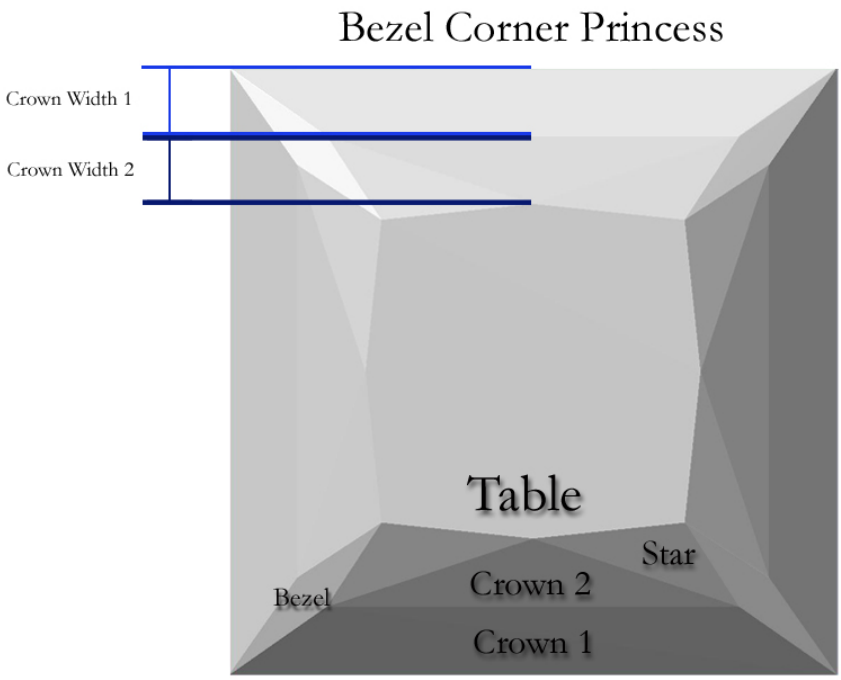
Below is a complete description of the assumptions and parameters AGSL currently uses to construct 3-d models for the princess.

AGSL wishes to thank Bruce Harding for his many contributions and suggestions leading to these definitions.

PRINCESS CROWN

AGSL currently grades Princess cuts with the following 2 crown facet arrangements – the French corner and the Bezel corner.





Both variations are defined by 2 assumptions and 3 parameters.

ASSUMPTIONS:

1) The width of crown facet 1 equals the width of crown facet 2.
2) The azimuth of the star facet is 6 degrees.

PARAMETERS:

1) Table size
2) Crown angle 1
3) Crown angle 2

PRINCESS GIRDLE

The girdle is defined by 1 parameter:

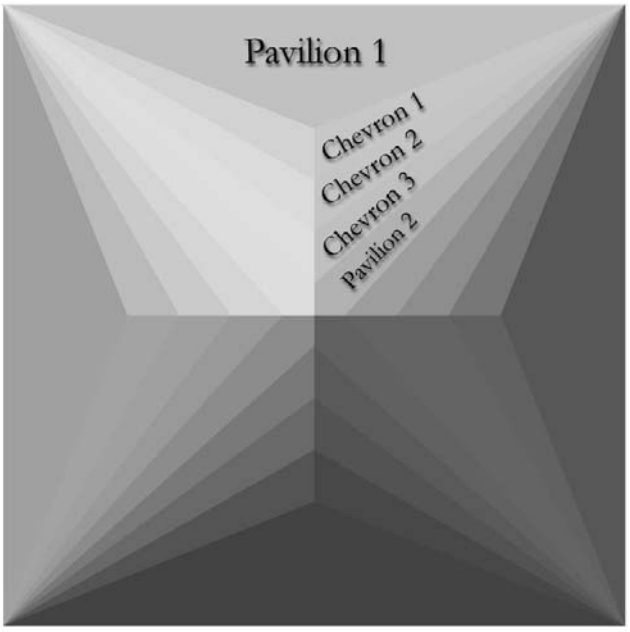
PARAMETERS:

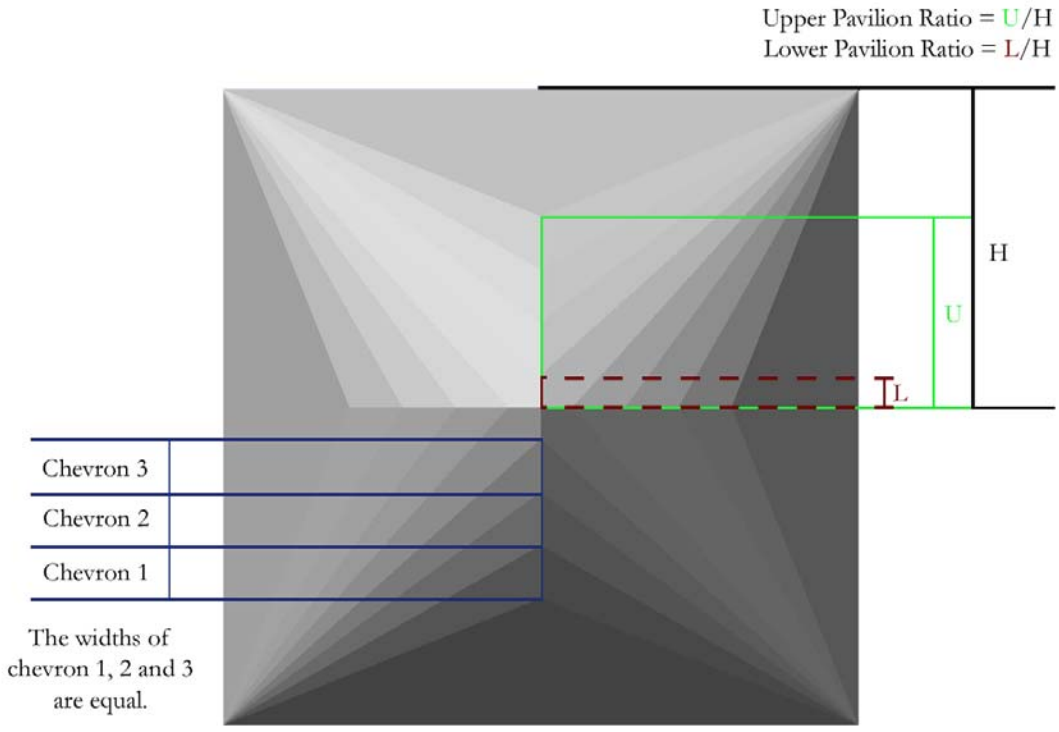
1) Girdle width percentage = girdle width divided by stone width

PRINCESS PAVILION

AGSL currently grades Princess cuts with pavilions containing 2, 3, or 4 chevrons.

3 Chevron Example:





A 2 chevron princess pavilion is defined by 5 parameters and 1 assumption:

ASSUMPTIONS:

1) The “width” of the chevrons are exactly the same.

PARAMETERS:

1) Pavilion 2 angle (elevation)
2) Upper pavilion ratio
3) Lower pavilion ratio
4) Chevron 1 azimuth
5) Chevron 2 azimuth

A 3 chevron princess pavilion is defined by 6 parameters and 1 assumption:

ASSUMPTIONS:

1) The “width” of the chevrons are exactly the same.

PARAMETERS:

1) Pavilion 2 angle (elevation)
2) Upper pavilion ratio
3) Lower pavilion ratio
4) Chevron 1 azimuth
5) Chevron 2 azimuth
6) Chevron 3 azimuth

A 4 chevron princess pavilion is defined by 7 parameters and 1 assumption:

ASSUMPTIONS:

1) The “width” of the chevrons are exactly the same.

PARAMETERS:

1) Pavilion 2 angle (elevation)
2) Upper pavilion ratio
3) Lower pavilion ratio
4) Chevron 1 azimuth
5) Chevron 2 azimuth
6) Chevron 3 azimuth
7) Chevron 4 azimuth

Note: In all the above cases, the pavilion 1 facet is defined perforce by the above parameters.