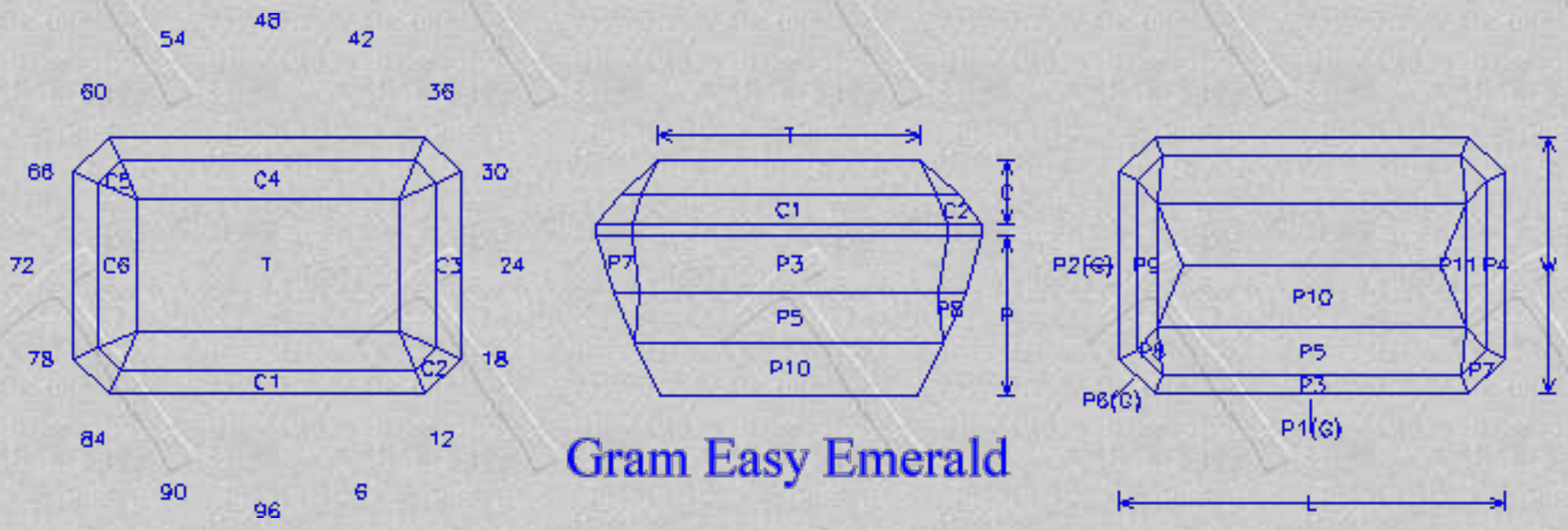
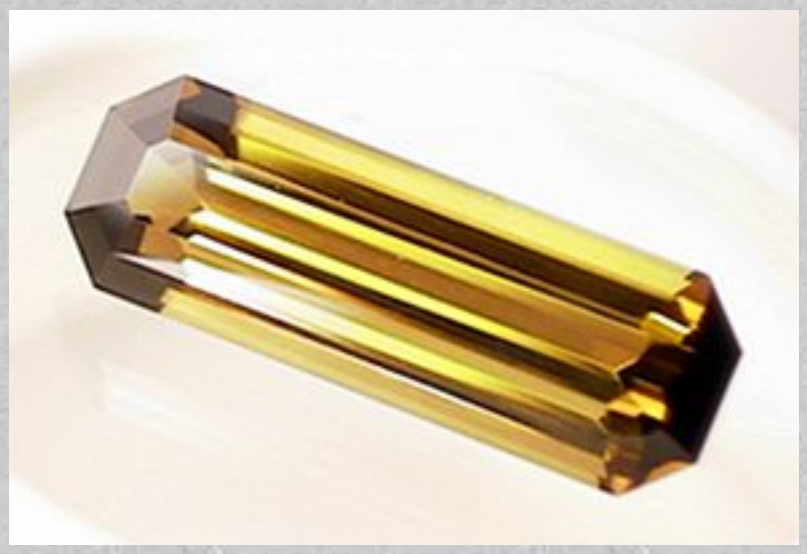
Gram Easy Emerald by Jeff R. Graham



Gram Easy Emerald - designed by Jeff R. Graham jeff@faceters.com ©1999	
Angles for R.I. = 1.56	37 facets + 8 facets on girdle = 45
2-fold, mirror-image symmetry	96 index
L/W = 1.500 T/W = 1.020 T/L = 0.680 P/W = 0.622 C/W = 0.253	H/W = (P+C)/W+0.02 = 0.894 P/H = 0.695 C/H = 0.283
Vol./W^3 = 0.824	Brightness at 0 degrees tilt for R.I. = 1.56 COS = 68.4 ISO = 75.4

Pavilion			
P1(G)	90.00	96-48	Establish width
P2(G)	90.00	24-72	Establish length
P3	72.00	96-48	Cut to equal depth, establish pavilion side girdle line
P4	72.00	24-72	Cut to meet girdle
P5	46.00	96-48	Cut until width of P3 = .227W
P6(G)	90.00	12-36-60-84	Cut through girdle, to meet P3,P5
P7	72.00	12-36-60-84	Cut to meet girdle
P8	58.50	12-36-60-84	Cut to meet P3,P5,P7
P9	68.00	24-72	Cut to meet P8,P7,P4
P10	41.00	96-48	Cut to meet P9, P8
P11	64.00	24-72	Cut to meet P10, P9, P8
Crown			
C1	52.00	96-48	Establish crown side girdle line
C2	52.00	12-36-60-84	Cut to meet girdle
C3	52.00	24-72	Cut to meet girdle
C4	42.00	96-48	Cut until width of C1 = .145W
C5	42.00	12-36-60-84	Cut to meet C4
C6	42.00	24-72	Cut to meet C5

T	0.00	Table	Cut table into meet C5



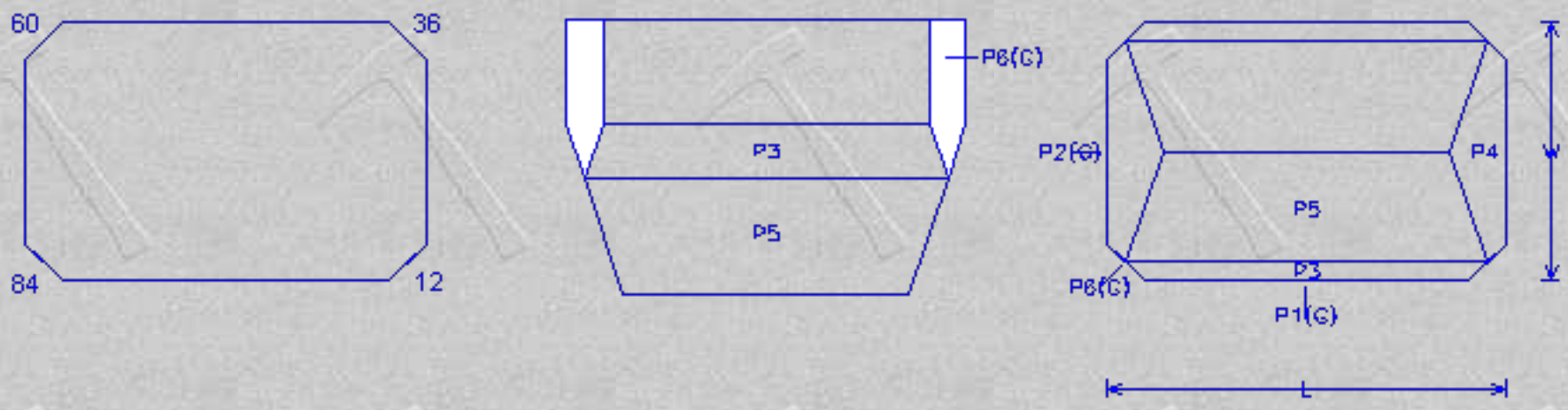
Easy Emerald Cutting Remarks

Shown at left is an 8.8 x 25.3 mm, 13.6 carat Easy Emerald cut from yellow tourmaline, with a length to width ratio of 2.9:1. This particular tourmaline is black on the c-axis. Relatively steep pavilion facets on the end steps help minimize the darkening effect of the black axis on the ends of the stone.

Here's an easy to facet emerald cut that's designed to maximize yield. This design and its cutting sequence accommodate stones with arbitrary length to width ratios.

The stone is first cut to a rectangular outline, followed next by two courses of pavilion steps. The P5 steps on the second course are cut in until the width across the face of the P3 facets on the first course is reduced to approximately .227W, where W is the width of the stone. Thus, if your stone were 10.0 mm wide, you would cut in P5 until the width of P3 had been reduced to 2.27 mm. At both ends, of course. **;)**

An inexpensive pair of dial or vernier calipers can be used to make that measurement. That dimension need not be exact and could even be determined by calibrated eyeball, but the closer the width of P3 is to .227W, the closer your corners will come to matching the relative proportions shown in the three-views. The width of the corners (12,36,60,84) is established by cutting the P6(G) facets through the girdle to meetpoints at the bottom of the first step. The lower portion of P6(G) is subsequently overcut at 72° by P7, creating the pavilion girdle line on the corners.



The wider you leave P3, the wider and deeper the corners facets will be. The yellow tourmaline was cut with the width of P3 approximately equal to .300W. Note in the picture how its table is cut through the C4,C5,C6 meetpoints with the effect of adding embellishing bevels at the table corners and making it larger.

The pavilion ends (24,72) are relatively steep to help keep from darkening or mixing muddy colors on the c-axis and to improve yield. For darker materials you could tangent ratio the crown to reduce its depth but in most cases I would rather have the dispersion of the deeper crown.

The P3 outer pavilion facets light up when you rock the stone and the P5 and P10 inside blink on and off, giving the classic "emerald" look that I prefer.

Enjoy cutting your Easy Emerald! Drop me an email to let me know your results and what you've cut, or feel free to inquire if you have any questions or need some help regarding this design - Jeff.

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