

作りましょう 0.7

パラメタ方式フォントファミリ  
校とプリティプリントのソース

Tsukurimashou 0.7

Parametric Font Family  
Proofs and pretty-printed  
source code

Matthew Skala

[mskala@ansuz.sooke.bc.ca](mailto:mskala@ansuz.sooke.bc.ca)

2013年3月7日

March 7, 2013

Proofs and pretty-printed source code for Tsukurimashou  
Copyright © 2011, 2012 Matthew Skala

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, version 3.

As a special exception, if you create a document which uses this font, and embed this font or unaltered portions of this font into the document, this font does not by itself cause the resulting document to be covered by the GNU General Public License. This exception does not however invalidate any other reasons why the document might be covered by the GNU General Public License. If you modify this font, you may extend this exception to your version of the font, but you are not obligated to do so. If you do not wish to do so, delete this exception statement from your version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see <http://www.gnu.org/licenses/>.

# Contents

I Infrastructure	13
preintro.mp	15
Infrastructure . . . . .	15
Font Parameter Defaults . . . . .	16
tsuku-bk.mp	18
tsuku-kg.mp	19
tsuku-mg.mp	20
tsuku-mi.mp	21
tsuku-ps.mp	22
tsuku-bq.mp	23
tsuku-dq.mp	24
tsuku-el.mp	25
tsuku-eq.mp	26
tsuku-lw.mp	27
intro.mp	28
fntbase.mp	46
General Library Functions . . . . .	46
Prefix And Suffix Handling . . . . .	53
A Module That Finds An Envelope Of A Path Drawn With A Pen . . . . .	55
Postscript Font Generation . . . . .	67
obstack.mp	89
Object Stack Data . . . . .	89
Object Stack Methods . . . . .	90
frac-intro.mp	95
latin-intro.mp	97
accent.mp	101
bcircle.mp	112
buildkanji.mp	115
dakuten.mp	132
enclosed.mp	133
genjimon.mp	135
hiragana.mp	147
Hiragana Vowels . . . . .	147
Hiragana Kakikukeko/Gagigugego . . . . .	152
Hiragana Sashisuseso/Zajizuzezo . . . . .	156
Hiragana Tachitsuteto/Dajizudedo . . . . .	162

Hiragana Naninuneno . . . . .	167
Hiragana Hahifuheho/Babibubebo/Papipupepo . . . . .	172
Hiragana Mamimumemo . . . . .	177
Hiragana Yayuyo . . . . .	183
Hiragana Rarirurero . . . . .	185
Hiragana Wawiwewo/N/Iteration . . . . .	191
iching.mp	199
katakana.mp	201
Katakana Vowels . . . . .	201
Katakana Kakikukeko/Gagigugego . . . . .	205
Katakana Sashisuseso/Zajizuzezo . . . . .	210
Katakana Tachitsuteto/Dajizudedo . . . . .	215
Katakana Naninuneno . . . . .	220
Katakana Hahifuheho/Babibubebo/Papipupepo . . . . .	225
Katakana Mamimumemo . . . . .	231
Katakana Yayuyo . . . . .	235
Katakana Rarirurero . . . . .	238
Katakana Wawiwewo/N/Iteration . . . . .	244
latin.mp	250
numerals.mp	339
ogonek.mp	350
punct.mp	362
serif.mp	404
 II Shared kyouiku kanji	 411
gradeone.mp	413
gradetwo.mp	481
gradethree.mp	556
gradefour.mp	598
gradefive.mp	634
gradesix.mp	650
 III Other shared kanji	 663
bottomrad.mp	665
leftrad.mp	668
radical.mp	678
rightrad.mp	716
toprad.mp	720
gradeeight.mp	726

gradenine.mp	770
rare.mp	798

IV U+0000 to U+2FFF	845
tsuku-00.mp	847
Ascii . . . . .	847
Latin-1 Extra Characters . . . . .	941
Accented Latin . . . . .	962
tsuku-01.mp	1020
Latin Extended A Uppercase . . . . .	1020
Latin Extended A Lowercase . . . . .	1075
Latin Extended A Other . . . . .	1133
tsuku-02.mp	1135
Latin Extended B . . . . .	1135
Spacing Modifier Letters . . . . .	1136
tsuku-03.mp	1145
Combining Diacritical Marks . . . . .	1145
tsuku-20.mp	1160
General Punctuation . . . . .	1160
tsuku-21.mp	1177
Symbols Required By Mes-1 . . . . .	1177
tsuku-24.mp	1183
Circled Numerals . . . . .	1183
Circled Latin And Zero . . . . .	1203
Inverted Circled Numerals . . . . .	1256
Doubly Circled Numerals . . . . .	1266
One More Inverted Circled Numeral . . . . .	1276
tsuku-25.mp	1278
Geometric Shapes . . . . .	1278
tsuku-26.mp	1280
I Ching . . . . .	1280
tsuku-27.mp	1297
Inverted Circled Numerals . . . . .	1297
tsuku-2e.mp	1308
Cjk Radicals Supplement . . . . .	1308
tsuku-2f.mp	1346
Kangxi Radicals . . . . .	1346
Ideographic Description Characters . . . . .	1466

V	U+3000 to U+4DFF	1481
	tsuku-30.mp	1483
	Ideographic Symbols And Punctuation . . . . .	1483
	Hiragana . . . . .	1503
	Katakana . . . . .	1548
	tsuku-31.mp	1595
	Phonetic Extensions For Ainu . . . . .	1595
	tsuku-32.mp	1612
	Circled Numerals . . . . .	1612
	Circled Katakana . . . . .	1642
	tsuku-34.mp	1690
	tsuku-4d.mp	1691
	I Ching . . . . .	1691
VI	U+4E00 to U+61FF	1757
	tsuku-4e.mp	1759
	tsuku-4f.mp	1796
	tsuku-50.mp	1852
	tsuku-51.mp	1865
	tsuku-52.mp	1882
	tsuku-53.mp	1915
	tsuku-54.mp	1944
	tsuku-55.mp	1955
	tsuku-56.mp	1961
	tsuku-57.mp	1971
	tsuku-58.mp	1981
	tsuku-59.mp	1990
	tsuku-5a.mp	2004
	tsuku-5b.mp	2006
	tsuku-5c.mp	2041
	tsuku-5d.mp	2065
	tsuku-5e.mp	2074
	tsuku-5f.mp	2112
	tsuku-60.mp	2171
	tsuku-61.mp	2220
VII	U+6200 to U+75FF	2227
	tsuku-62.mp	2229
	tsuku-63.mp	2250

tsuku-65.mp	2256
tsuku-66.mp	2282
tsuku-67.mp	2299
tsuku-68.mp	2318
tsuku-69.mp	2327
tsuku-6a.mp	2333
tsuku-6b.mp	2339
tsuku-6c.mp	2353
tsuku-6d.mp	2404
tsuku-6e.mp	2419
tsuku-6f.mp	2430
tsuku-70.mp	2435
tsuku-71.mp	2441
tsuku-72.mp	2448
tsuku-73.mp	2461
tsuku-74.mp	2462
tsuku-75.mp	2466

VIII U+7600 to U+89FF	2479
tsuku-76.mp	2481
tsuku-77.mp	2488
tsuku-78.mp	2498
tsuku-79.mp	2500
tsuku-7a.mp	2516
tsuku-7b.mp	2526
tsuku-7c.mp	2541
tsuku-7d.mp	2545
tsuku-7f.mp	2563
tsuku-80.mp	2568
tsuku-81.mp	2577
tsuku-82.mp	2583
tsuku-83.mp	2616
tsuku-84.mp	2630
tsuku-85.mp	2635
tsuku-86.mp	2637
tsuku-87.mp	2638
tsuku-88.mp	2640
tsuku-89.mp	2667

IX U+8A00 to U+9FFF	2683
tsuku-8a.mp	2685
tsuku-8b.mp	2741
tsuku-8c.mp	2744
tsuku-8d.mp	2755
tsuku-8e.mp	2759
tsuku-8f.mp	2764
tsuku-90.mp	2777
tsuku-91.mp	2795
tsuku-92.mp	2807
tsuku-93.mp	2811
tsuku-95.mp	2815
tsuku-96.mp	2832
tsuku-97.mp	2855
tsuku-98.mp	2859
tsuku-99.mp	2871
tsuku-9a.mp	2875
tsuku-9b.mp	2879
tsuku-9c.mp	2880
tsuku-9e.mp	2882
tsuku-9f.mp	2885
 X U+A000 to U+10FFFF	 2887
tsuku-f7.mp	2889
Latin Small Caps . . . . .	2889
tsuku-f9.mp	2916
tsuku-ff.mp	2918
Full-Width Forms . . . . .	2918
Half-Width Punctuation . . . . .	2944
Half-Width Katakana . . . . .	2947
tsuku-1f1.mp	3011
Squared Latin . . . . .	3011
Inverse Circled Latin . . . . .	3037
Inverse Squared Latin . . . . .	3063
tsuku-200.mp	3090
tsuku-20a.mp	3091
tsuku-21c.mp	3092
tsuku-295.mp	3093
tsuku-f17.mp	3094



Combining Dots For I Ching . . . . .	3094
Miscellaneous . . . . .	3103
Tomoe Ornaments . . . . .	3109
Heavy Metal Umlaut . . . . .	3117
Genjimon . . . . .	3134
tsuku-ff0.mp . . . . .	3188
Fraction Numerators . . . . .	3188
tsuku-ff1.mp . . . . .	3195
Fraction Denominators . . . . .	3195
 XI Jieubsida core . . . . .	 3197
hangul.mp . . . . .	3199
Jamo Combining Operations . . . . .	3201
jamo-basic.mp . . . . .	3209
Filler Jamo . . . . .	3209
Sios/Cieuc/Chieuch Family . . . . .	3209
Kiyeok . . . . .	3212
Nieun . . . . .	3213
Tikeut . . . . .	3215
Rieul . . . . .	3217
Mieum . . . . .	3218
Pieup . . . . .	3219
Sios . . . . .	3220
Jeung . . . . .	3220
Cieuc . . . . .	3221
Chieuch . . . . .	3222
Khieukh . . . . .	3223
Thieuth . . . . .	3224
Phieuph . . . . .	3225
Hieuh . . . . .	3227
Mixed Tails . . . . .	3228
Vowels . . . . .	3229
jamo-extra.mp . . . . .	3238
Pansios . . . . .	3241
Yesieung . . . . .	3241
Yeorinhieuh . . . . .	3242
Chitueum And Ceongchieum Variants . . . . .	3244
Kapyeoun Variants . . . . .	3245
hglxtb.mp . . . . .	3246

Hangul Extension B . . . . .	3246
Hangul Jungseong (Vowel) Jamo Extension B . . . . .	3246
Hangul Jongseong (Tail) Jamo Extension B . . . . .	3269
jieub-bt.mp	3319
jieub-do.mp	3320
jieub-sm.mp	3321
hglpage.mp	3322
jieub-ll.mp	3324
Hangul Choseong (Lead) Jamo . . . . .	3324
Hangul Jungseong (Vowel) Jamo . . . . .	3419
Hangul Jongseong (Tail) Jamo . . . . .	3490
jieub-3l.mp	3579
Hangul Compatibility Jamo . . . . .	3579
jieub-a9.mp	3673
Hangul Choseong (Lead) Jamo Extended A . . . . .	3673
jieub-ac.mp	3703

## XII Jieubsida alternates 3757

jieub-ff2.mp	3759
Hangul Jungseong (Vowel) Jamo . . . . .	3759
Hangul Jungseong (Vowel) Jamo Extension B . . . . .	3830
jieub-ff3.mp	3854
Hangul Choseong (Lead) Jamo . . . . .	3854
jieub-ff4.mp	3979
Hangul Choseong (Lead) Jamo . . . . .	3979
jieub-ff5.mp	4104
Hangul Choseong (Lead) Jamo . . . . .	4104
jieub-ff6.mp	4229
Hangul Choseong (Lead) Jamo . . . . .	4229
jieub-ff7.mp	4354
Hangul Choseong (Lead) Jamo . . . . .	4354
Hangul Choseong (Lead) Jamo Extended A . . . . .	4449

## XIII TsuIta 4479

tsuita-common.mp	4481
tsuita-at.mp	4492
tsuita-so.mp	4493
Additional Proofs	4495

XIV	Blackletter Lolita	4549
	bll.mp	4551
	bll-co.mp	4556
	pentacross.mp	4557
	Utilities For Pentagrams And Crosses . . . . .	4557
	bll-f5c.mp	4559
	Pentagrams . . . . .	4559



## Volume III

### Other shared kanji

bottomrad.mp

**BOTT**

leftrad.mp

**LEFT**

radical.mp

**RADI**

righttrad.mp

**RIGH**

toprad.mp

**TOPR**

gradeeight.mp

**EIGH**

gradenine.mp

**NINE**

rare.mp

**RARE**



## bottomrad.mp

**BOTT**

```
1 %
2 % Radicals for bottom (often special forms of other radicals)
3 % Copyright (C) 2011, 2012, 2013 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 inclusion_lock(bottomrad);
32
33 

---

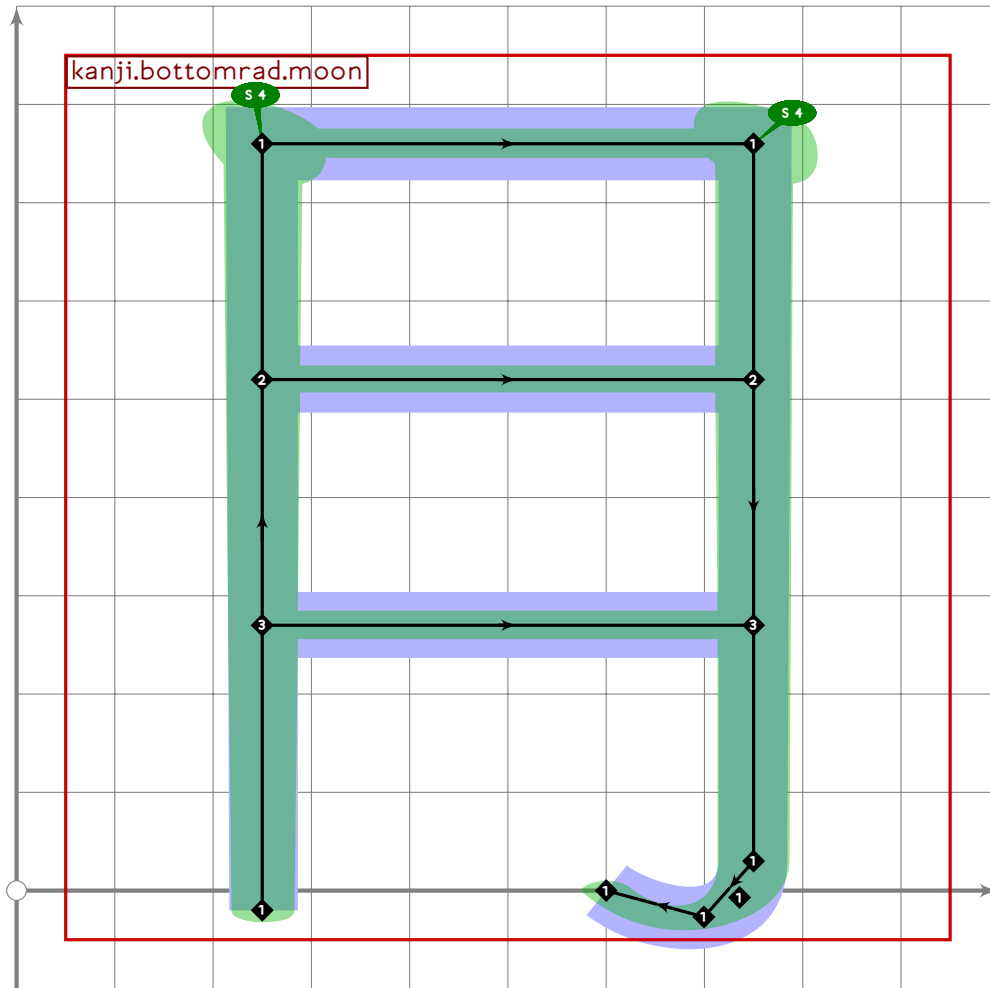

34
35 vardef kanji.bottomrad.clothes =
36   push_pbox_toexpand("kanji.bottomrad.clothes");
37   push_stroke((470,810)..tension 1.2..(340,650)..(80,510),
38     (1,7,1,7)-(1,5,1,5)-(1,1));
39   push_stroke((point 1 of get_strokep(0))-
40     (xpart point 1 of get_strokep(0),0),
41     (1,5,1,5)-(1,4,1,4));
42   push_stroke((510,80)..tension 1.2..(point 1 of get_strokep(0))..(130,-40),
43     (1,1)-(1,4,1,4)-(1,8,1,8));
44   push_stroke((540,810)..tension 1.2..(700,240)..(890,0),
45     (1,1)-(1,4,1,4)-(1,7,1,7));
46   push_stroke((820,540)..tension 1.2..(720,460)..
47     (point 0.69 of get_strokep(0)),
48     (1,7,1,7)-(1,4,1,4)-(1,2,1,2));
49   expand_pbox;
50 enddef;
51
52 vardef kanji.bottomrad.four_ticks =
53   push_pbox_toexpand("kanji.bottomrad.four_ticks");
54   push_stroke((210,750)..tension 1.2..(160,250)..(100,-30),
55     (1,1)-(1,3,1,3)-(1,8,1,8));
56   push_stroke((350,700)..tension 1.2..(390,300)..(400,-50),
57     (1,1,1,1)-(1,4,1,4)-(1,9,1,9));
58   push_stroke((540,750)..tension 1.2..(610,320)..(630,-40),
59     (1,1,1,1)-(1,4,1,4)-(1,9,1,9));
60   push_stroke((740,800)..tension 1.2..(850,360)..(890,-20),
61     (1,1,1,1)-(1,4,1,4)-(1,9,1,9));
62   expand_pbox;
63 enddef;
64
65 vardef kanji.bottomrad.heart =
66   push_pbox_toexpand("kanji.bottomrad.heart");
67   perl_structure:=perl_structure&"eids.softhead.u5FC3";
68   tsu_xform(identity shifted (-100,0))
69     (push_stroke((450,670),(1,6,1,6));
70     build_kanji.add_ltail(0));
```

```

71 set_boserif(0,0,10);
72 push_stroke((210,540)..tension 1.2..(130,280)..(60,150),
73   (1,1)-(1.5,1.5)-(1.8,1.8));
74 push_stroke((500,720)..tension 1.2..(570,520)..(600,270),
75   (1,1)-(1.3,1.3)-(1.6,1.6));
76 push_stroke((790,540)..tension 1.2..(880,310)..(930,130),
77   (1,1)-(1.5,1.5)-(1.8,1.8));
78 expand_pbox;
79 enddef;
80
81 vardef kanji.bottomrad.long_kimono =
82   push_pbox_toexpand("kanji.bottomrad.long_kimono");
83   build_kanji.box((210,760),(790,540));
84   push_stroke((440,540)..tension 1.2..(330,300)..(110,80),
85     (1.6,1.6)-(1.4,1.4)-(1,1));
86   push_stroke((500,540)-(500,-20),(1.6,1.6)-(1.5,1.5));
87   push_stroke((500,380)..tension 1.2..(710,220)..(800,100),
88     (0.9,0.9)-(1.5,1.5)-(1.9,1.9));
89   push_stroke(
90     (810,410)..tension 1.2..(750,340)..(point 0.8 of get_strokep(0)),
91     (1.7,1.7)-(1.2,1.2)-(0.9,0.9));
92   expand_pbox;
93 enddef;

```





```

94
95 vardef kanji.bottomrad.moon =
96   push_pbox_toexpand("kanji.bottomrad.moon");
97   push_stroke((250,-20)..{up}(250,760)-(750,760),
98     (1.4,1.4)-(1.6,1.6)-(1.6,1.6));
99   build_kanji.add_jtail(0);
100   set_botip(0,1,1);
101   set_botip(0,2,1);
102   set_boserif(0,1,4);
103   set_boserif(0,2,4);
104   push_stroke((250,520)-(750,520),
105     (1.5,1.5)-(1.5,1.5));
106   push_stroke((250,270)-(750,270),
107     (1.5,1.5)-(1.5,1.5));
108   expand_pbox;
109 enddef;

```

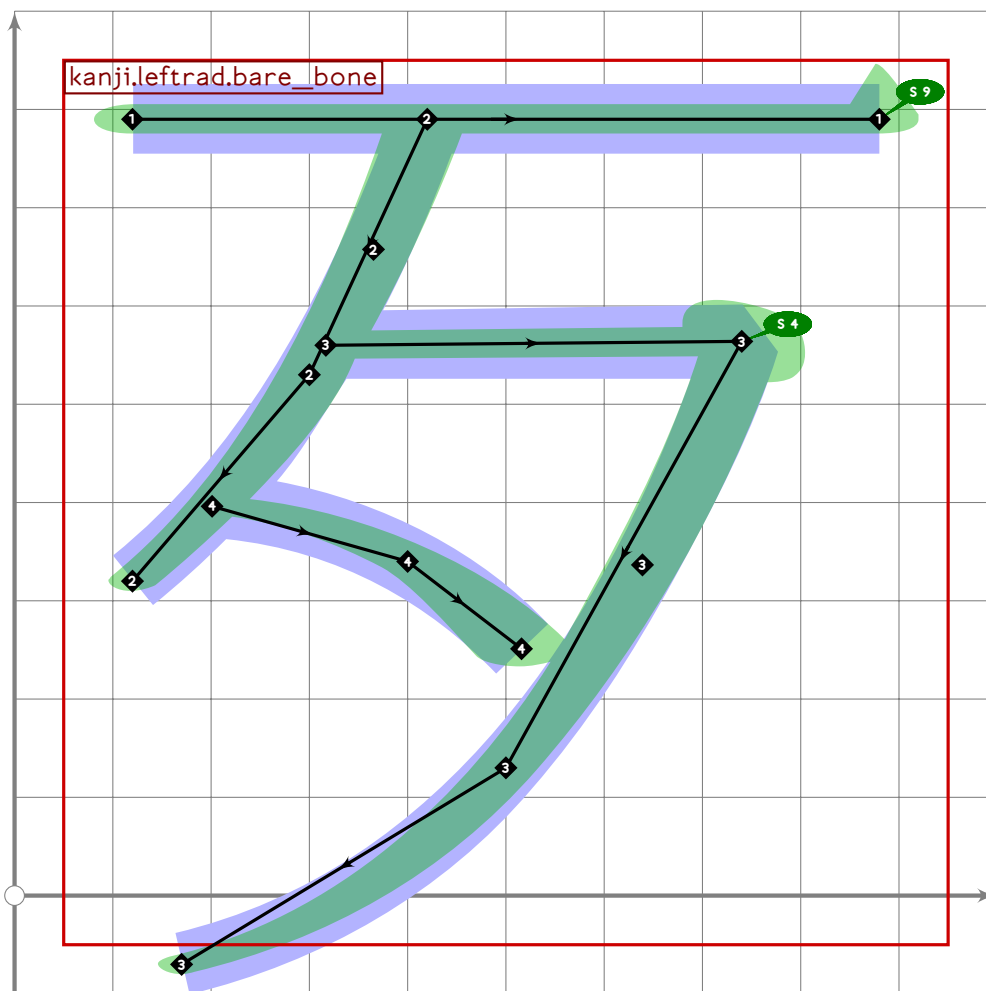
# leftrad.mp

LEFT

```
1 %
2 % Radicals for left side (often special forms of other radicals)
3 % Copyright (C) 2011, 2012, 2013 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 inclusion_lock(leftrad);
32
33 

---


34
35 vardef kanji.leftrad.alt_person =
36   push_pbox_toexpand("kanji.leftrad.alt_person");
37   push_stroke((510,780)..(450,400)..(300,100)..(20,-90),
38     (1.6,1.6)-(1.5,1.5)-(1.3,1.3)-(0.85,0.85));
39   set_boserif(0,0,10);
40   push_stroke(
41     (point 0.8 of get_strokep(0))..tension 1.2..(640,340)..(860,40),
42     (1.2,1.2)-(1.4,1.4)-(1.6,1.6));
43   expand_pbox;
44 enddef;
```



LEFT

```

45
46 vardef kanji.leftrad.bare_bone =
47   push_pbox_toexpand("kanji.leftrad.bare_bone");
48   push_stroke((120,790)-(880,790),(1.6,1.6)-(1.6,1.6));
49   set_boserif(0,1,9);
50   push_stroke((420,790)..tension 1.2..(300,530)..(120,320),
51     (1.6,1.6)-(1.5,1.5)-(1.2,1.2));
52   push_stroke(
53     (get_stroke(0) intersectionpoint ((-infinity,560)-(infinity,560)))-(
54       (740,564)..tension 1.2..(500,130)..(170,-70),
55     (1.5,1.5)-(1.6,1.6)-(1.4,1.4)-(1.2,1.2));
56   set_botip(0,1,0);
57   set_boserif(0,1,4);
58   push_stroke(
59     (point 1.6 of get_stroke(-1))..(400,340)..(point 1.8 of get_stroke(0)),
60     (1.2,1.2)-(1.4,1.4)-(1.8,1.8));
61   replace_stroke(0)(subpath (0,1.7) of oldp);
62   expand_pbox;
63 enddef;
64
65 vardef kanji.leftrad.big =

```

```

66  push_pbox_toexpand("kanji.grone.big");
67  push_stroke((90,500)-(910,500),
68    (1,6,1,6)-(1,6,1,6));
69  set_boserif(0,1,9);
70  push_stroke((510,780){down}..(370,200)..{curl 0.5}(50,-20),
71    (1,6,1,6)-(1,4,1,4)-(1,1,1,1));
72  push_stroke(((60,-60)+point 0.6 of get_strokep(0))..tension 1.1..
73    (750,190)..(860,0),
74    (0,9,1)-(1,3,1,3)-(1,8,1,8));
75  expand_pbox;
76  enddef;
77
78  vardef kanji.leftrad.boat =
79    push_pbox_toexpand("kanji.leftrad.boat");
80    push_stroke((560,850)..tension 1.2..(500,750)..(450,700),
81      (1,6,1,6)-(1,4,1,4)-(1,2,1,2));
82    set_boserif(0,0,10);
83    push_stroke(
84      (150,0)..(260,200)..{dir 89.5}(300,700)-(730,700),
85      (1,5,1,5)-(1,6,1,6)-(1,7,1,7)-(1,7,1,7));
86    build_kanji.add_jtail(0);
87    set_botip(0,2,1);
88    set_botip(0,3,0);
89    set_boserif(0,2,4);
90    set_boserif(0,3,4);
91    push_stroke((410,610)..tension 1.2..(520,540)..(560,480),
92      (1,1,1,1)-(1,4,1,4)-(1,7,1,7));
93    set_bosize(0,90);
94    push_stroke((110,350)..tension 1.2..(500,380)..(890,440),
95      (1,6,1,6)-(1,5,1,5)-(1,1,1,1));
96    push_stroke((500,300)-(500,100),
97      (1,6,1,6)-(1,4,1,4));
98    set_boserif(0,0,10);
99    set_bosize(0,90);
100   expand_pbox;
101   enddef;
102
103  vardef kanji.leftrad.clothes =
104    push_pbox_toexpand("kanji.leftrad.clothes");
105    kanji.leftrad.showing;
106    push_stroke((830,400)..tension 1.2..(750,320)..(650,300),
107      (1,6,1,6)-(1,4,1,4)-(1,1,1));
108    set_boserif(0,0,10);
109    expand_pbox;
110   enddef;
111
112  vardef kanji.leftrad.day =
113    push_pbox_toexpand("kanji.leftrad.day");

```

```

114 tsu_xform(identity shifted (0,-600) yscaled 0.62 shifted (0,600))
115   (kanji.grone.day);
116   expand_pbox;
117 enddef;
118
119 vardef kanji.leftrad.earth =
120   push_pbox_toexpand("kanji.leftrad.earth");
121   build_kanji.sscale(yscaled 0.9)
122     (build_kanji.lift_skirt(370,150+30*mincho)(kanji.grone.earth));
123   expand_pbox;
124 enddef;
125
126 vardef kanji.leftrad.eat =
127   push_pbox_toexpand("kanji.leftrad.eat");
128   kanji.grtwo.eat;
129   pop_stroke;
130   replace_strokep(-6)(subpath(0,1.75) of oldp);
131   replace_strokep(-1)
132     ((130,20)..tension 1.2..(point 0 of get_strokep(-4))..(720,80));
133   replace_strokep(0)((650,170)..tension 1.3..(720,80)..(770,-20));
134   replace_strokeq(0)((1,1)-(1.5,1.5)-(1.8,1.8));
135   expand_pbox;
136 enddef;
137
138 vardef kanji.leftrad.fire =
139   push_pbox_toexpand("kanji.leftrad.fire");
140   kanji.grone.person;
141   pop_stroke;
142   push_stroke((510,270)..tension 1.2..(750,180)..(900,60),
143     (0.9,0.9)-(1.3,1.3)-(1.8,1.8));
144   push_stroke((360,600)..(270,480)..(140,360),
145     (0.9,0.9)-(1.3,1.3)-(1.8,1.8));
146   push_stroke((860,640)..(790,550)..(680,440),
147     (1.6,1.6)-(1.4,1.4)-(1.2,1.2));
148   expand_pbox;
149 enddef;
150
151 vardef kanji.leftrad.foot =
152   push_pbox_toexpand("kanji.leftrad.foot");
153   build_kanji.box((210,730),(790,460));
154   push_stroke((500,460)-(500,40),(1.6,1.6)-(1.5,1.5));
155   push_stroke((500,250)-(850,250),(1.5,1.5)-(1.6,1.6));
156   set_boserif(0,1.9);
157   push_stroke((220,310)-(220,20),(1.6,1.6)-(1.5,1.5));
158   set_boserif(0,0,10);
159   push_stroke((100,0)..tension 1.2..(500,40)..(900,100),
160     (1.7,1.7)-(1.5,1.5)-(1,1));
161   expand_pbox;

```

LEFT

```

162 enddef;
163
164 vardef kanji.leftrad.gold =
165   push_pbox_toexpand("kanji.leftrad.gold");
166   build_kanji.lift_skirt(250,120)(kanji.grone.gold);
167   replace_stroke(-6)(subpath (0,1.7) of oldp);
168   expand_pbox;
169 enddef;
170
171 vardef kanji.leftrad.hand =
172   push_pbox_toexpand("kanji.leftrad.hand");
173   build_kanji.sscale(xscaled 1.5)
174     (push_stroke((500,810),(1.6,1.6));
175     build_kanji.add_jtail(0);
176     set_boserif(0,0,10));
177   push_stroke((100,580)-(900,580),(1.6,1.6)-(1.6,1.6));
178   set_boserif(0,1,9);
179   push_stroke((120,280)..tension 1.2..(500,330)..(910,420),
180     (1.8,1.8)-(1.5,1.5)-(1.1,1.1));
181   expand_pbox;
182 enddef;
183
184 vardef kanji.leftrad.heap_big =
185   push_pbox_toexpand("kanji.leftrad.heap_big");
186   build_kanji.sscale(scaled 0.88)
187     (kanji.grthree.heap_big;
188     replace_stroke(0)(get_stroke(-6));
189     replace_stroke(0)
190       (get_stroke(-1) shifted ((point 1 of oldp)-(point 0 of oldp))
191       shifted (-500,0) xscaled 1.1 shifted (500,0));
192     replace_strokeq(0)(reverse get_strokeq(-1));
193     set_boserif(0,1,whatever));
194   expand_pbox;
195 enddef;
196
197 vardef kanji.leftrad.heart =
198   push_pbox_toexpand("kanji.leftrad.heart");
199   kanji.radical.vline;
200   push_stroke((320,630)..tension 1.2..(210,470)..(60,380),
201     (1,1)-(1.4,1.4)-(1.7,1.7));
202   push_stroke((660,660)..tension 1.2..(840,530)..(890,470),
203     (1,1)-(1.5,1.5)-(1.8,1.8));
204   expand_pbox;
205 enddef;
206
207 vardef kanji.leftrad.husband =
208   push_pbox_toexpand("kanji.leftrad.husband");
209   kanji.grfour.husband;

```

```

210 pop_stroke;
211 push_stroke(((get_stroke(-1) intersectionpoint get_stroke(0))+(-0,-40))..
212   (720,170)..(870,30),
213   (1,1,1)-(1,4,1)-(1,7,1));
214 expand_pbox;
215 enddef;
216
217 vardef kanji.leftrad.ice =
218   push_pbox_toexpand("kanji.leftrad.ice");
219   push_stroke((450,790)..tension 1.2..(600,730)..(750,650),
220     (1,1)-(1,3,1,3)-(1,9,1,9));
221   push_stroke(
222     interpath(mincho,
223       (880,350)..(810,270)..(750,210)..(600,90)..(450,0),
224       (880,480)..tension 1.2..(630,300)..{dir 180}(360,240){dir 350}..
225       (500,130)..{curl 0}(550,-20)),
226     interpath(mincho,
227       (1,4,1,4)-(1,45,1,45)-(1,5,1,5)-(1,6,1,6)-(1,7,1,7),
228       (0,8,0,8)-(1,2,1,2)-(2,1,2,1)-(1,2,1,2)-(1,9,1,9)));
229   expand_pbox;
230 enddef;
231
232 vardef kanji.leftrad.king =
233   push_pbox_toexpand("kanji.leftrad.king");
234   build_kanji.sscale(yscaled 0.9)
235     (build_kanji.lift_skirt(370,150+30*mincho)(kanji.grone.king));
236   expand_pbox;
237 enddef;
238
239 vardef kanji.leftrad.long_hair =
240   push_pbox_toexpand("kanji.leftrad.long_hair");
241   build_kanji.level(
242     kanji.grtwo.long;
243     pop_stroke;pop_stroke;pop_stroke;
244     replace_stroke(-3)((300,320)-(300,770)-(800,770));
245     build_kanji.sscale(xyscaled (0,90,38) shifted (0,-240))
246     (kanji.radical.mu));
247   expand_pbox;
248 enddef;
249
250 vardef kanji.leftrad.mouth =
251   push_pbox_toexpand("kanji.leftrad.mouth");
252   build_kanji.box((200,700),(800,230));
253   replace_stroke(-1)((subpath (0,2) of oldp)-((0,40)+point 3 of oldp));
254   expand_pbox;
255 enddef;
256
257 vardef kanji.leftrad.person =

```

```

258 push_pbox_toexpand("kanji.leftrad.person");
259 push_stroke((900,800)..(500,520)..(0,330),
260   (1.6,1.6)-(1.4,1.4)-(0.8,0.8));
261 set_bosize(0,115);
262 set_boserif(0,0,10);
263 push_stroke(
264   (point 0.7 of get_strokep(0))..(xpart point 0.7 of get_strokep(0);-40),
265   (1.6,1.6)-(1.4,1.4));
266 set_bosize(0,115);
267 expand_pbox;
268 endif;
269
270 vardef kanji.leftrad.request =
271   push_pbox_toexpand("kanji.leftrad.request");
272   kanji.grfour.request;
273   replace_strokep(-2)(oldp shifted (-750,400) scaled 0.5 shifted (760,470));
274   replace_strokep(-3)((610,370)..tension 1.2..(730,270)..(850,110));
275   expand_pbox;
276 endif;
277
278 vardef kanji.leftrad.rice =
279   push_pbox_toexpand("kanji.leftrad.rice");
280   build_kanji.level(build_kanji.tb(540,220)
281     (build_kanji.spread_legs(-200)(kanji.toprad.sparkle_two))
282     (build_kanji.lift_skirt(450,60)(kanji.leftrad.wood)));
283   replace_strokep(-3)((500,820)-(500,30));
284   replace_strokeq(-3)((1.6,1.6)-(1.4,1.4));
285   expand_pbox;
286 endif;
287
288 vardef kanji.leftrad.sentence =
289   push_pbox_toexpand("kanji.leftrad.sentence");
290   build_kanji.level(build_kanji.tb(580,30)
291     (kanji.radical.kettle_lid)
292     (kanji.radical.cut_the_grass;
293       replace_strokep(-1)(oldp shifted (0,-400) yscaled 0.7 shifted (0,400))));
294   expand_pbox;
295 endif;
296
297 vardef kanji.leftrad.seal =
298   push_pbox_toexpand("kanji.leftrad.seal");
299   push_stroke((770,810)..tension 1.2..(550,740)..(250,700),
300     (1.8,1.8)-(1.5,1.5)-(1,1));
301   push_stroke((250,730)-(250,0),
302     (1.6,1.6)-(1.5,1.5));
303   set_boserif(0,0,10);
304   push_stroke((250,440)-(800,440),(1.55,1.55)-(1.55,1.55));
305   set_boserif(0,1,9);

```

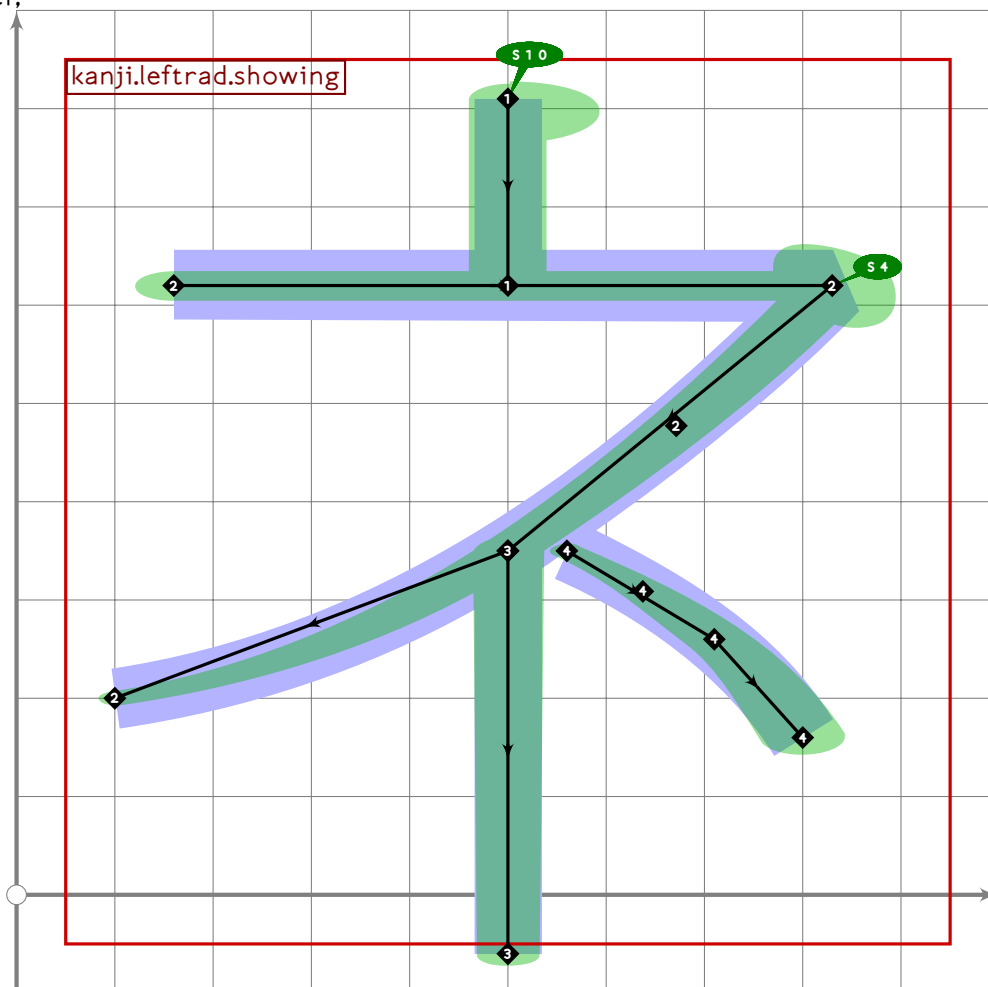


```

306 push_stroke((250,80)-(800,80),(1.5,1.5)-(1.5,1.5));
307 set_boserif(0,1,9);
308 expand_pbox;
309 enddef;
310
311 vardef kanji.leftrad.seven =
312   push_pbox_toexpand("kanji.leftrad.seven");
313   build_kanji.sscale(shifted (0,-300) yscaled 0.7 shifted (0,300))
314     (kanji.grone.seven);
315   set_boserif(-1,3,whatever);
316   expand_pbox;
317 enddef;

```

LEFT



```

318
319 vardef kanji.leftrad.showing =
320   push_pbox_toexpand("kanji.leftrad.showing");
321   push_stroke((500,810)-(500,620),(1.6,1.6)-(1.57,1.57));
322   set_boserif(0,0,10);
323   push_stroke((160,620)-(830,620)..tension 1.2..
324     (500,350)..(100,200),
325     (1.6,1.6)-(1.6,1.6)-(1.4,1.4)-(1,1));
326   set_botip(0,1,0);

```

```

327 set_boserif(0,1,4);
328 push_stroke((500,350)-(500,-60),(1.5,1.5)-(1.4,1.4));
329 push_stroke((560,350)..tension 1.2..(710,260)..(800,160),
330   (1,1)-(1.4,1.4)-(1.7,1.7));
331 expand_pbox;
332 enddef;
333
334 vardef kanji.leftrad.two_branch_tree =
335   push_pbox_toexpand("kanji.leftrad.two_branch_tree");
336   tsu_xform(identity shifted (0,-50))
337   (build_kanji.add_beret(kanji.leftrad.wood));
338   expand_pbox;
339 enddef;
340
341 vardef kanji.leftrad.water =
342   push_pbox_toexpand("kanji.leftrad.water");
343   kanji.leftrad.ice;
344   push_stroke((230,590)..tension 1.2..(390,530)..(540,450),
345     (1,1)-(1.3,1.3)-(1.9,1.9));
346   expand_pbox;
347 enddef;
348
349 vardef kanji.leftrad.woman =
350   push_pbox_toexpand("kanji.leftrad.woman");
351   perl_structure:=perl_structure&"eids.softhead.u5973";
352   push_stroke((100,580)-(800,580){curl 0}..(550,170)..{curl 0.3}(80,-40),
353     (1.6,1.6)-(1.6,1.6)-(1.4,1.4)-(0.94,0.94));
354   set_botip(0,1,0);
355   set_boserif(0,1,4);
356   push_stroke((450,830)..(310,510)..(140,220),
357     (1.6,1.6)-(1.6,1.6)-(1.6,1.6));
358   set_boserif(0,0,10);
359   push_stroke((point 1.75 of get_strokep(0))..(530,200)..(840,60),
360     (0.85,0.85)-(1.5,1.5)-(1.8,1.8)-(1.6,1.6));
361   replace_strokep(0)(insert_nodes(oldp)(1.5));
362   expand_pbox;
363 enddef;
364
365 vardef kanji.leftrad.wood =
366   push_pbox_toexpand("kanji.leftrad.wood");
367   perl_structure:=perl_structure&"eids.softhead.u6728";
368   push_stroke((500,780)-(500,0),
369     (1.6,1.6)-(1.6,1.6));
370   set_boserif(0,0,10);
371   push_stroke((100,580)-(830,580),
372     (1.6,1.6)-(1.6,1.6));
373   set_boserif(0,1,9);
374   push_stroke((500,580)..(250,200)..(80,70),

```

```
375     (1.6,1.6)..(1.3,1.3)..(0.9,0.9));
376   push_stroke((500,470)..(680,320)..(800,210),
377     (1.1,1.1)..(1.5,1.5)..(1.7,1.7));
378   expand_pbox;
379 endif;
```

LEFT

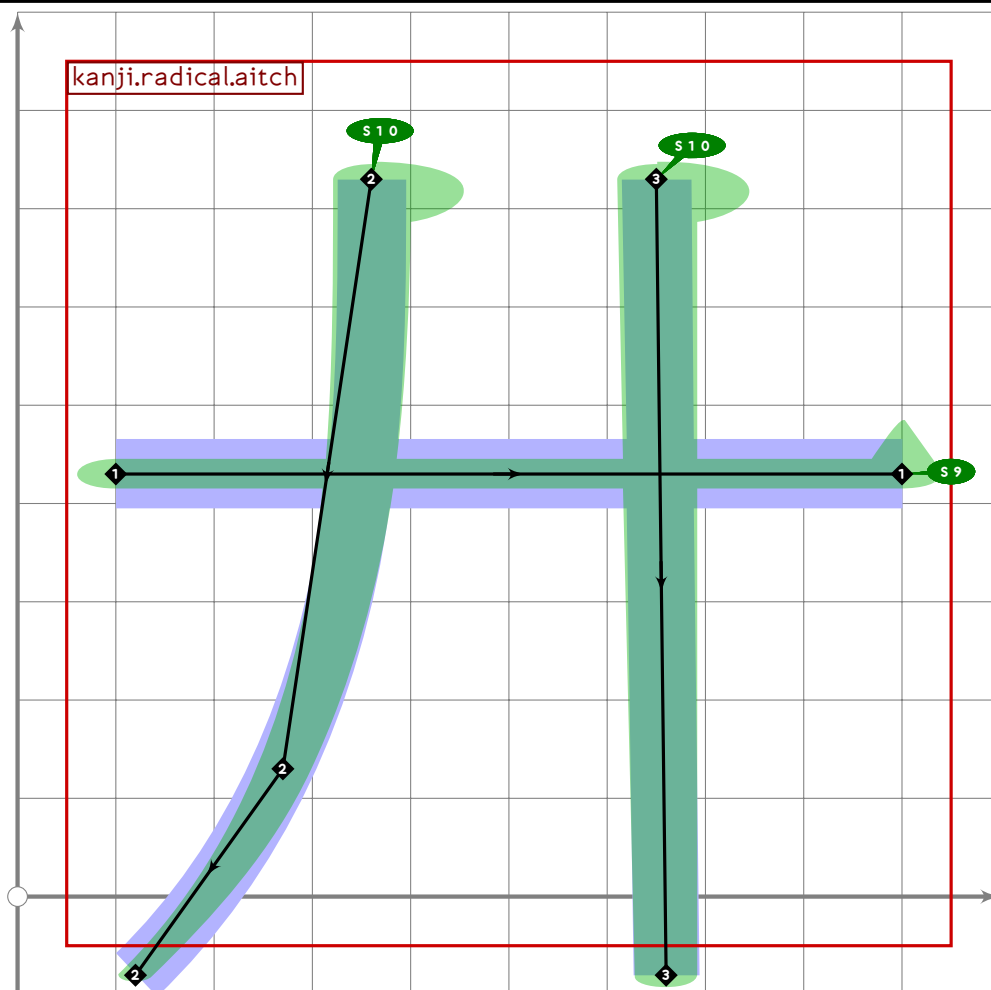
# radical.mp

```

1 %
2 % Radicals that are not common kanji in themselves
3 % Copyright (C) 2011, 2012, 2013 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 inclusion_lock(radical);
32
33

```

RADI

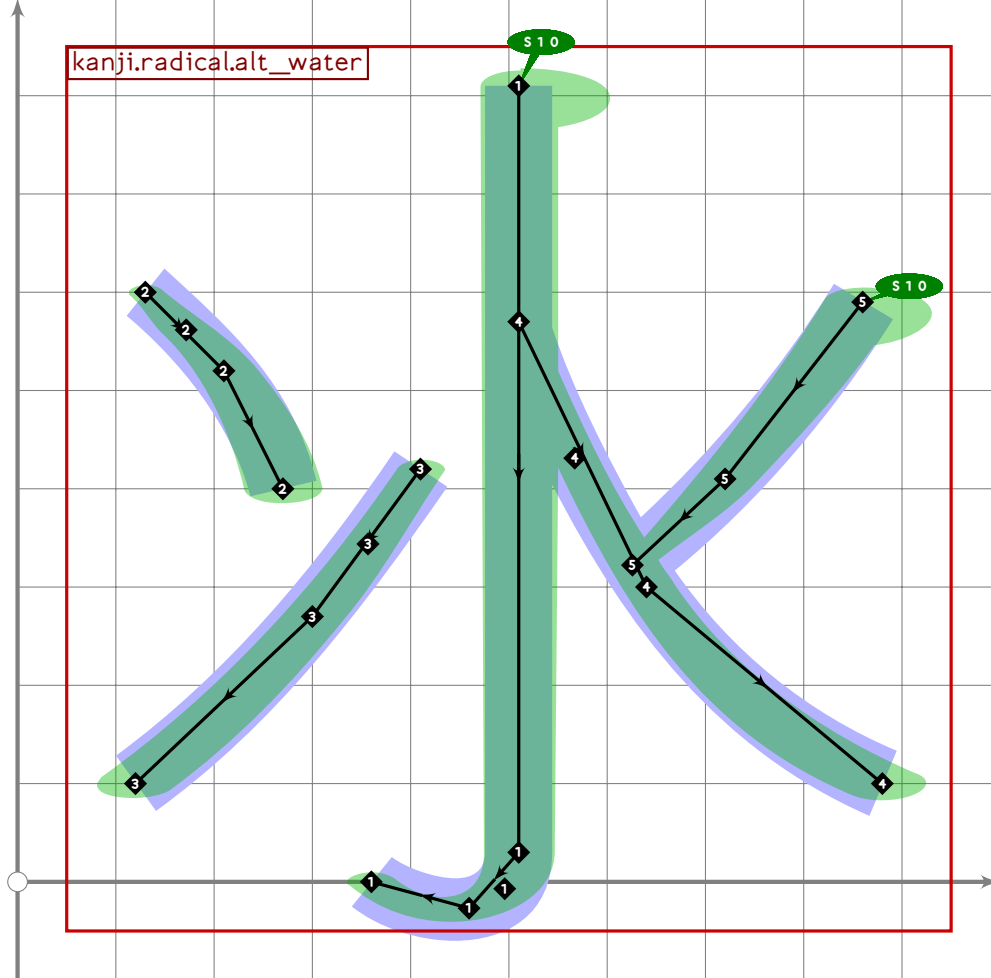


```

34
35 vardef kanji.radical.aitch =
36   push_pbox_toexpand("kanji.radical.aitch");
37   push_stroke((100,430)-(900,430),(1.6,1.6)-(1.6,1.6));
38   set_boserif(0,1,9);
39   push_stroke((360,730){down}..(270,130)..(120,-80),
40     (1.6,1.6)-(1.3,1.3)-(1,1));
41   set_boserif(0,0,10);
42   push_stroke((650,730)-(660,-80),(1.6,1.6)-(1.4,1.4));
43   set_boserif(0,0,10);

```

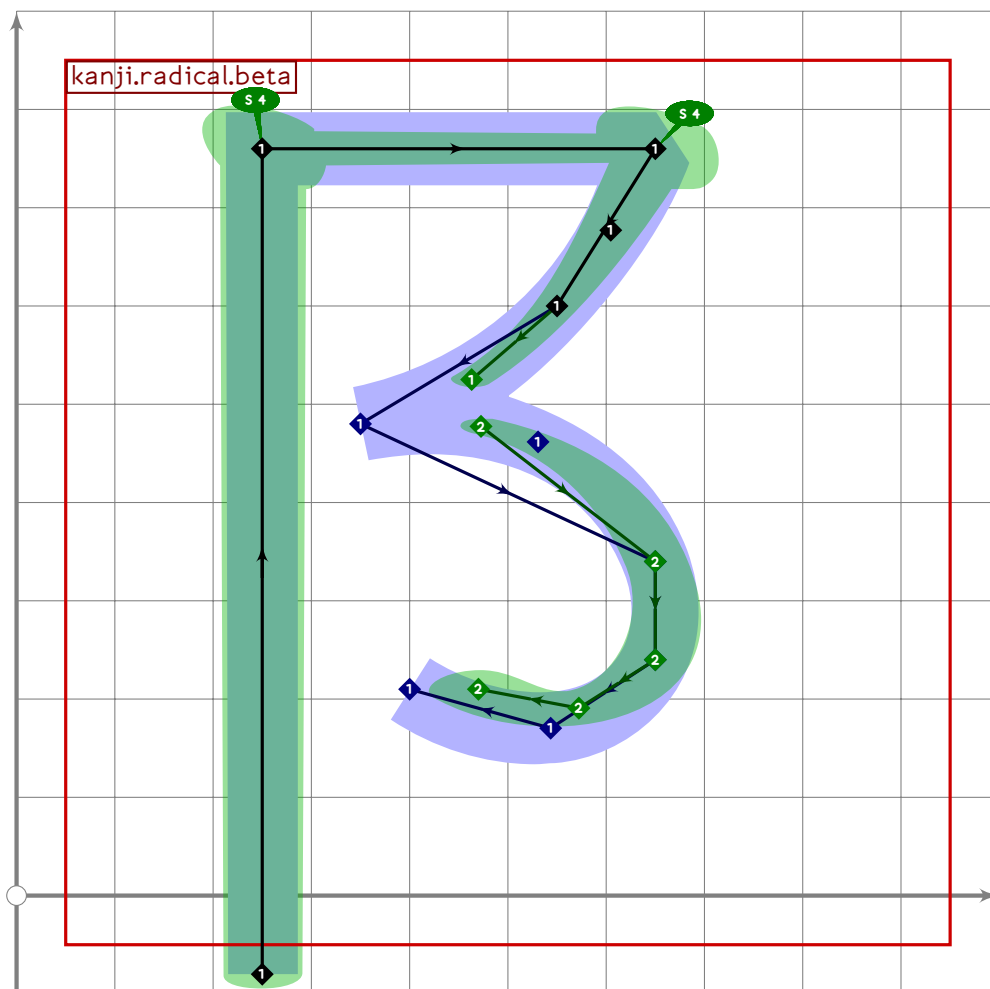
```
44 expand_pbox;
45 enddef;
```



RADI

```
46
47 vardef kanji.radical.alt_water =
48   push_pbox_toexpand("kanji.radical.alt_water");
49   push_stroke((510,810),(1,6,1,6));
50   build_kanji.add_jtail(0);
51   set_boserif(0,0,10);
52   push_stroke((130,600)..tension 1.2..(210,520)..(270,400),
53     (1,1)-(1,4,1,4)-(1,6,1,6));
54   push_stroke((410,420)..tension 1.2..(300,270)..(120,100),
55     (1,2,1,2)-(1,4,1,4)-(1,6,1,6));
56   push_stroke((510,570)..tension 1.2..(640,300)..(880,100),
57     (1,1)-(1,3,1,3)-(1,7,1,7));
58   push_stroke((860,590)..(720,410)..(point 0.9 of get_stroke(0)),
59     (1,6,1,6)-(1,4,1,4)-(1,1));
60   set_boserif(0,0,10);
61   expand_pbox;
62 enddef;
```

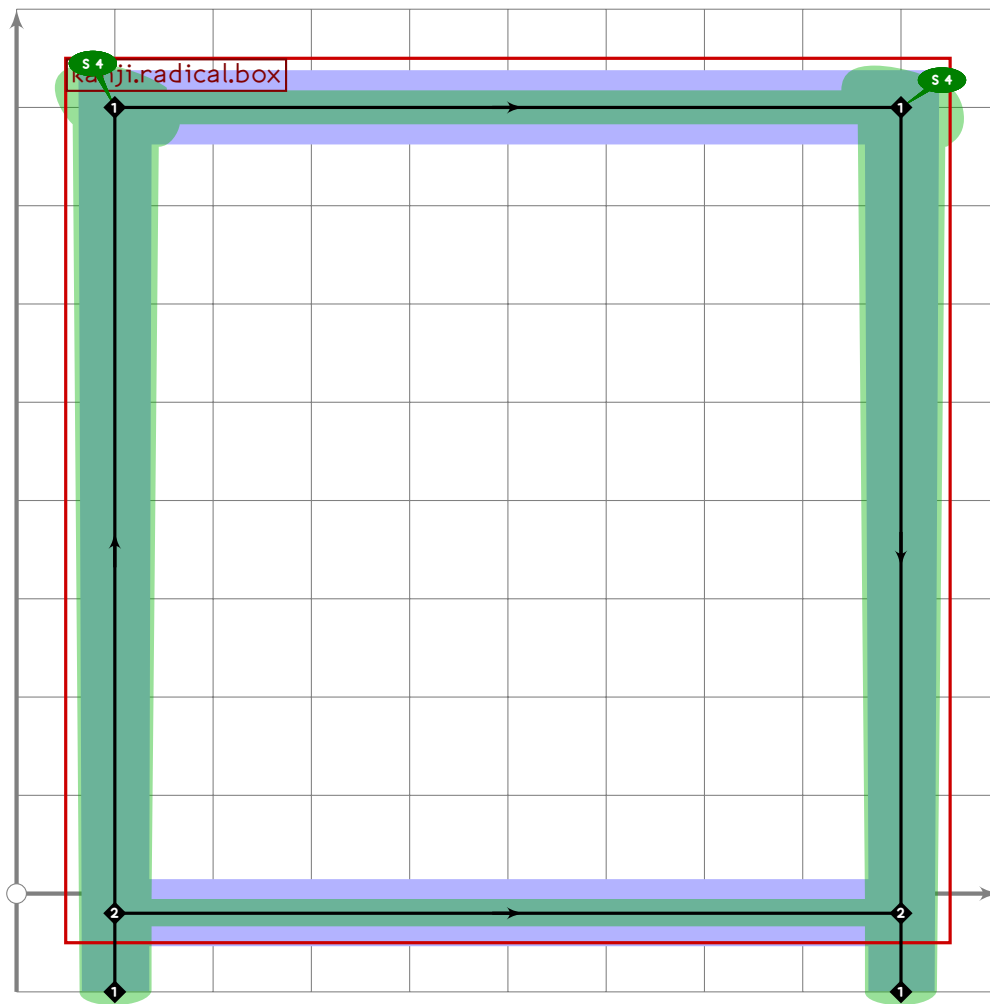
RADI



```

63
64 vardef kanji.radical.beta =
65   push_pbox_toexpand("kanji.radical.beta");
66   push_stroke((250,-80)-(250,760)-(650,760)..tension 1.2..
67     (550,600)..{curl 1}(350,480){curl 0.5}..
68     (650,340)..(650,240)..{curl 0.3}(400+70*mincho,210),
69     (1.6,1.6)-(1.7,1.7)-(1.6,1.6)-
70     (1.1,1.3)-(0.55,1.4)-
71     (1.4,1.4)-(1.6,1.6)-(1.8,1.8)-(1.9,1.9));
72   set_botip(0,1,1);
73   set_botip(0,2,0);
74   set_botip(0,4,1);
75   set_boserif(0,1,4);
76   set_boserif(0,2,4);
77   replace_strokep(0)(insert_nodes(oldp)(6.5));
78   expand_pbox;
79 enddef;

```



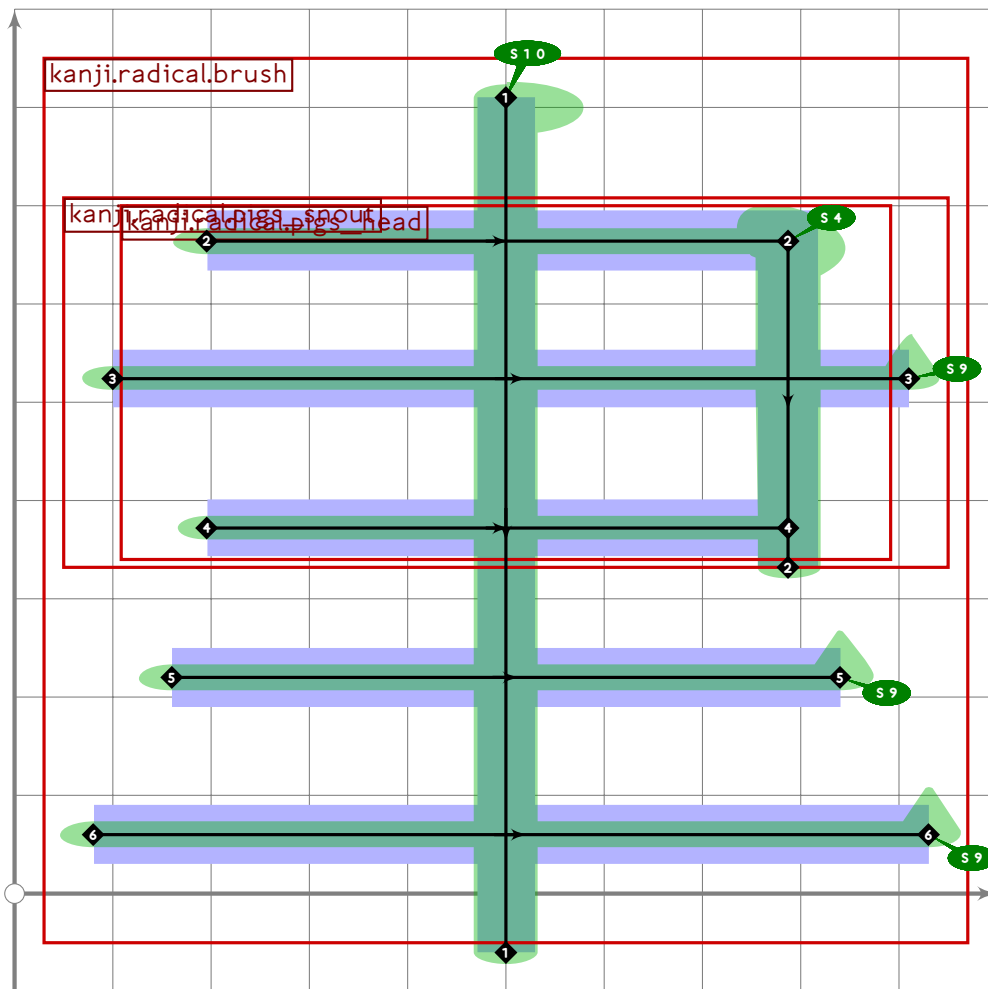
RADI

```

80
81 vardef kanji.radical.box =
82   perl_structure:=perl_structure&"eids.u2FF4.u56D7.1_";
83   push_pbox_toexpand("kanji.radical.box");
84   build_kanji.box((100,800),(900,-20));
85   expand_pbox;
86 enddef;

```

# RADI

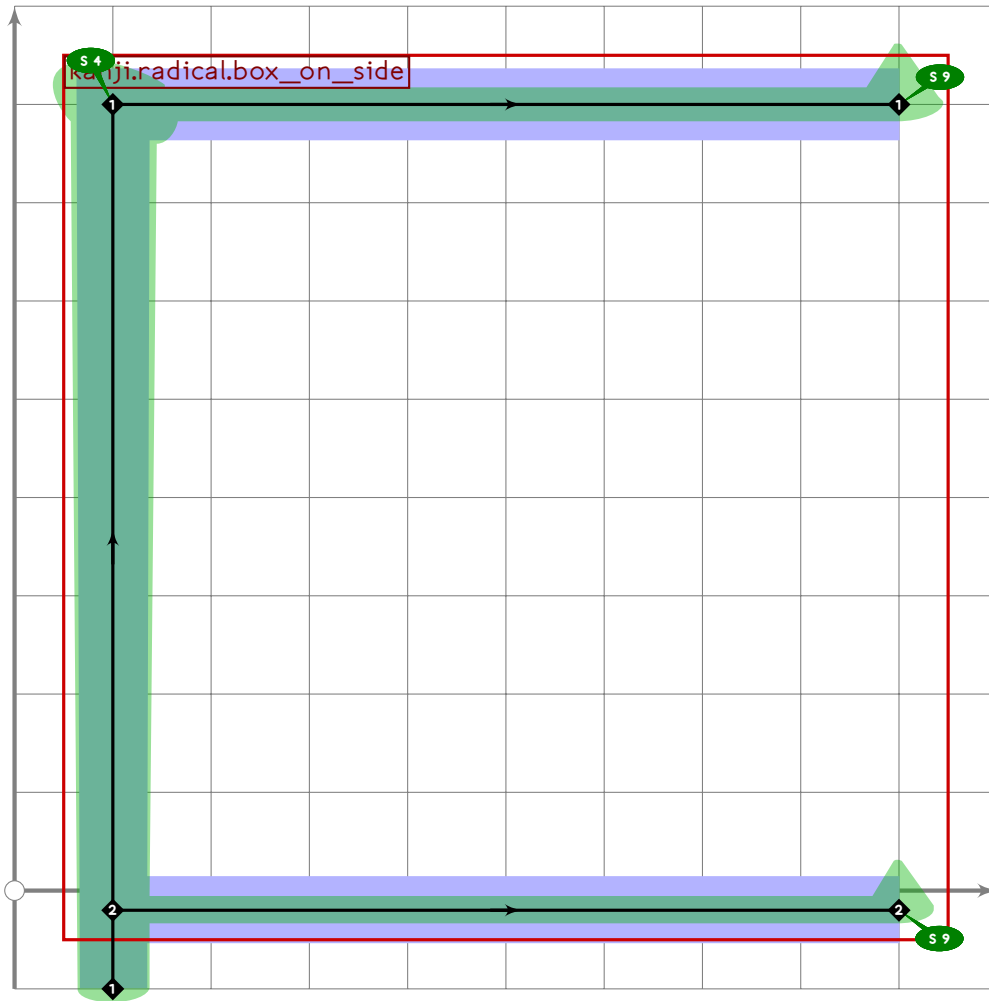


```

87
88 vardef kanji.radical.brush =
89   push_pbox_toexpand("kanji.radical.brush");
90   push_stroke((500,810)-(500,-60),(1.6,1.6)-(1.5,1.5));
91   set_boserif(0,0,10);
92   tsu_xform(identity yscaled 0.4 shifted (0,360))
93     (kanji.radical.pigs_snout);
94   push_stroke((160,220)-(840,220),
95     (1.6,1.6)-(1.6,1.6));
96   set_boserif(0,1,9);
97   push_stroke((80,60)-(930,60),
98     (1.6,1.6)-(1.6,1.6));
99   set_boserif(0,1,9);
100   for i=-5 upto 0: set_bosize(i,85); endfor;
101   expand_pbox;
102 enddef;

```





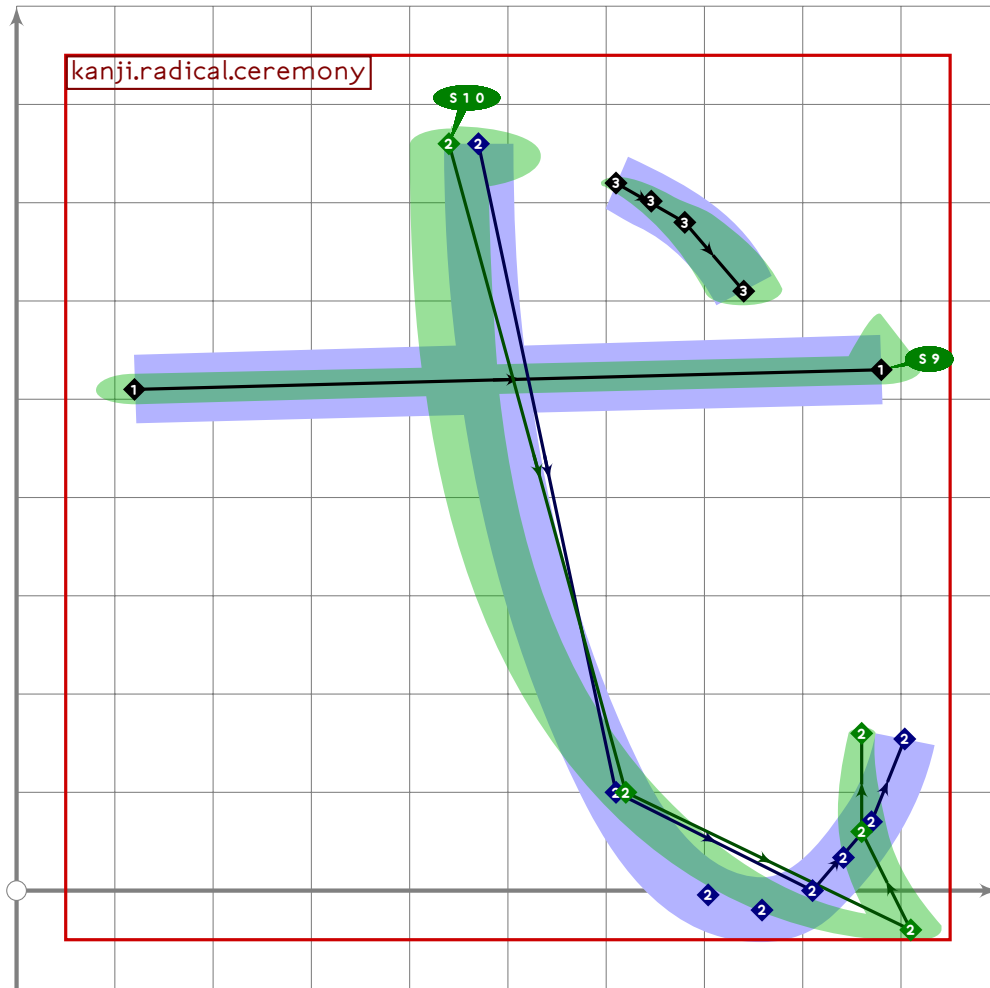
RADI

```

103
104 vardef kanji.radical.box_on_side =
105   push_pbox_toexpand("kanji.radical.box_on_side");
106   build_kanji.box((100,800),(900,-20));
107   replace_strokep(-1)(subpath (0,2) of oldp);
108   replace_strokeq(-1)(subpath (0,2) of oldq);
109   set_boserif(-1,2,9);
110   set_botip(-1,2,whatever);
111   set_boserif(0,1,9);
112   expand_pbox;
113 enddef;

```

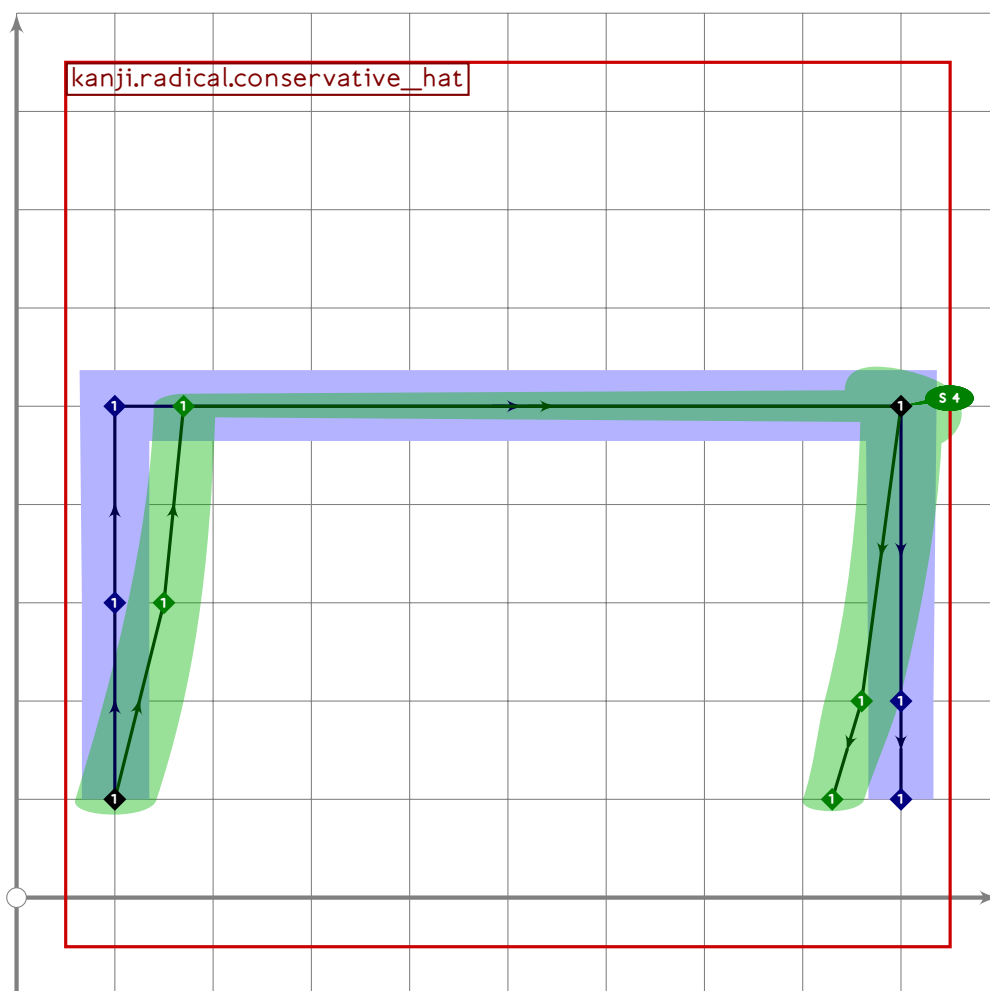
RADI



```

114
115 vardef kanji.radical.ceremony =
116   push_pbox_toexpand("kanji.radical.ceremony");
117   push_stroke((120,510)–(880,530),(1.6,1.6)–(1.6,1.6));
118   set_boserif(0,1,9);
119   push_stroke(interpath(mincho,
120     (470,760){down}..(610,100)..(810,0)..tension 1.5..
121     (870,70)..{curl 0.3}(910,200),
122     (440,760){down}..(620,100)..{right}(910,-40){curl 1}..
123     (860,60)..(860,160)),
124     (1.6,1.6)–(1.4,1.4)–(1.4,1.4)–(1.2,1.2)–(0.9,0.9));
125   set_boserif(0,0,10);
126   push_stroke((610,720)..tension 1.2..(680,680)..(740,610),
127     (1,1)..(1.5,1.5)–(1.7,1.7));
128   set_bosize(0,90);
129   expand_pbox;
130 enddef;

```



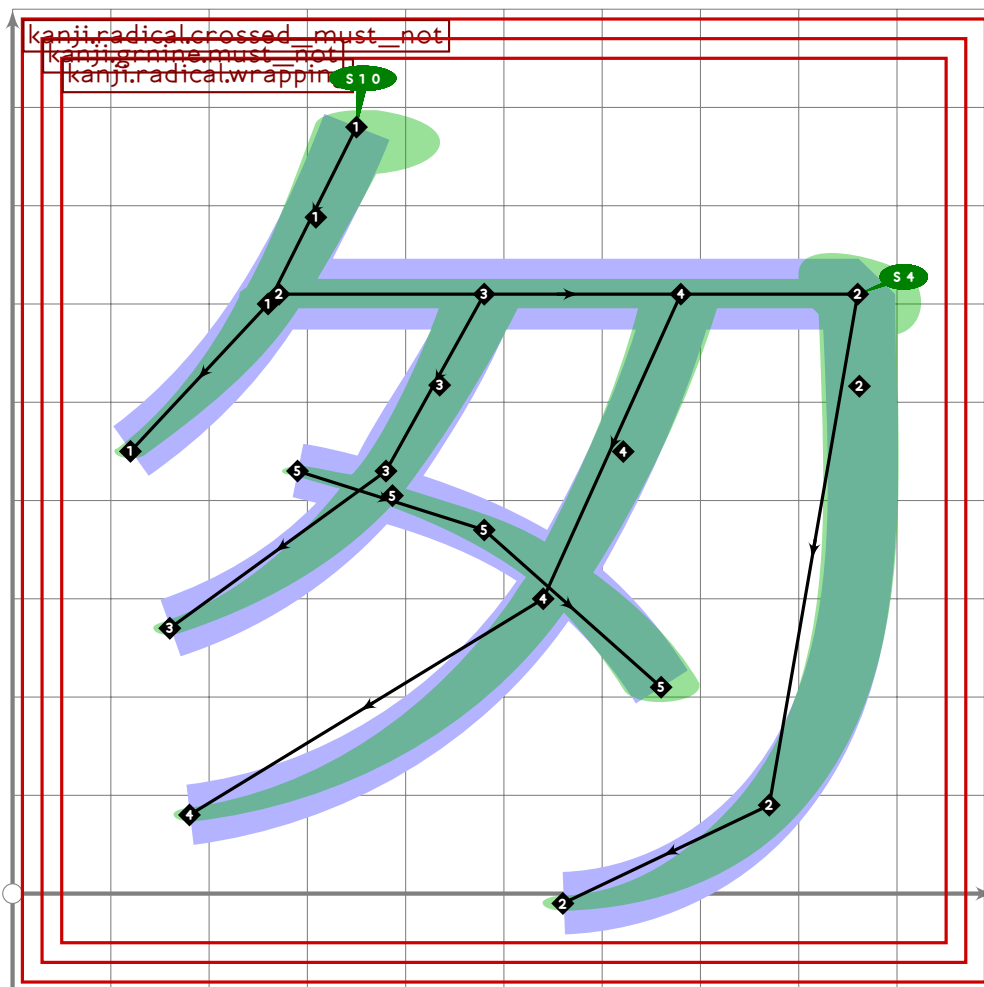
RADI

```

131
132 vardef kanji.radical.conservative_hat =
133   push_pbox_toexpand("kanji.radical.conservative_hat");
134   push_stroke((100,100)..(100+50*mincho,300)..(100+70*mincho,500)-
135     (900,500)..(900-40*mincho,200)..(900-70*mincho,100),
136     (1.7,1.7)-(1.6,1.6)-(1.4,1.4)-(1.7,1.7)-(1.6,1.6)-(1.4,1.4));
137   set_bosize(0,95);
138   set_botip(0,2,1);
139   set_botip(0,3,1);
140   set_boserif(0,3,4);
141   expand_pbox;
142 enddef;

```

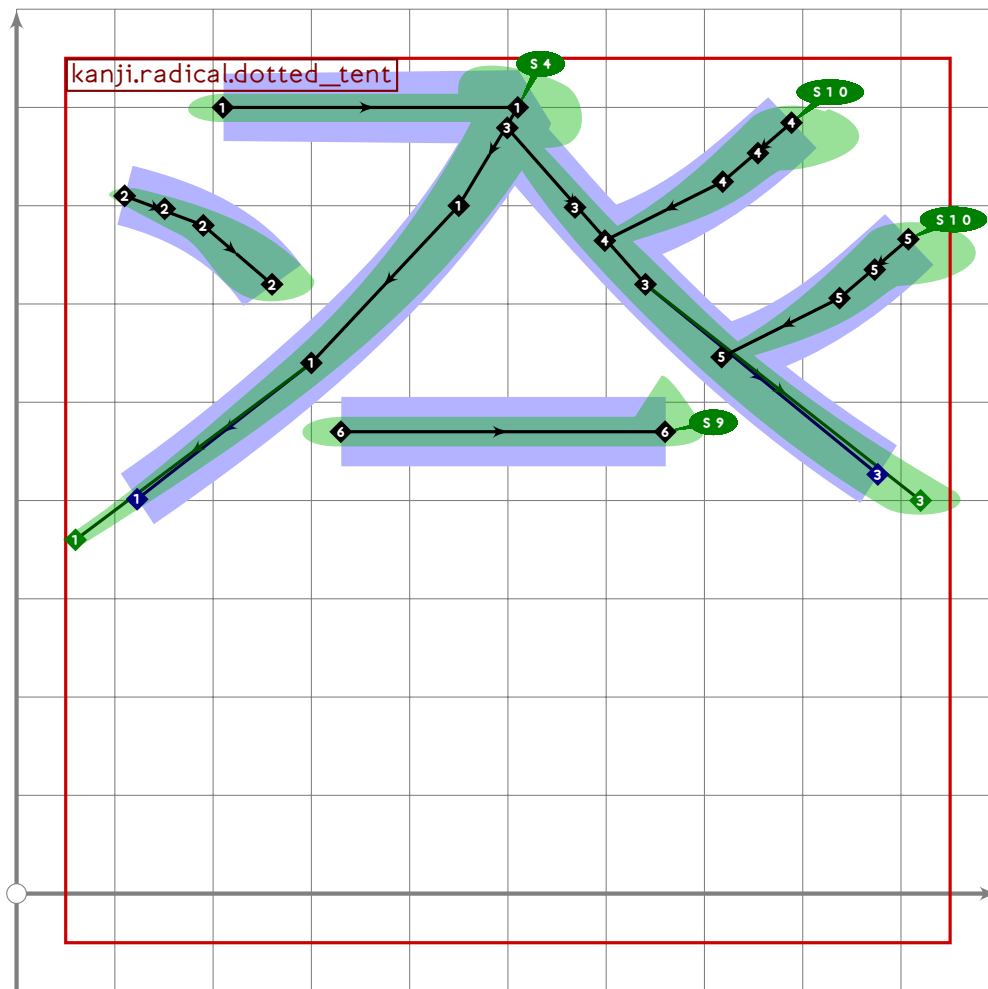
RADI



```

143
144 vardef kanji.radical.crossed_must_not =
145   push_pbox_toexpand("kanji.radical.crossed_must_not");
146   kanji.grnine.must_not;
147   push_stroke((290,430)..tension 1.2..(480,370)..(660,210),
148     (1,1)–(1.4,1.4)–(1.7,1.7));
149   set_bosize(0,90);
150   expand_pbox;
151 enddef;
152
153 vardef kanji.radical.cut_the_grass =
154   push_pbox_toexpand("kanji.radical.cut_the_grass");
155   push_stroke((150,750)..(500,500)..(850,50),
156     (1.3,1.3)–(1.5,1.5)–(1.7,1.7));
157   push_stroke((700,800)..(500,330)..(70,30),
158     (1.6,1.6)–(1.5,1.5)–(1,1));
159   set_boserif(0,0,10);
160   expand_pbox;
161 enddef;

```



RADI

```

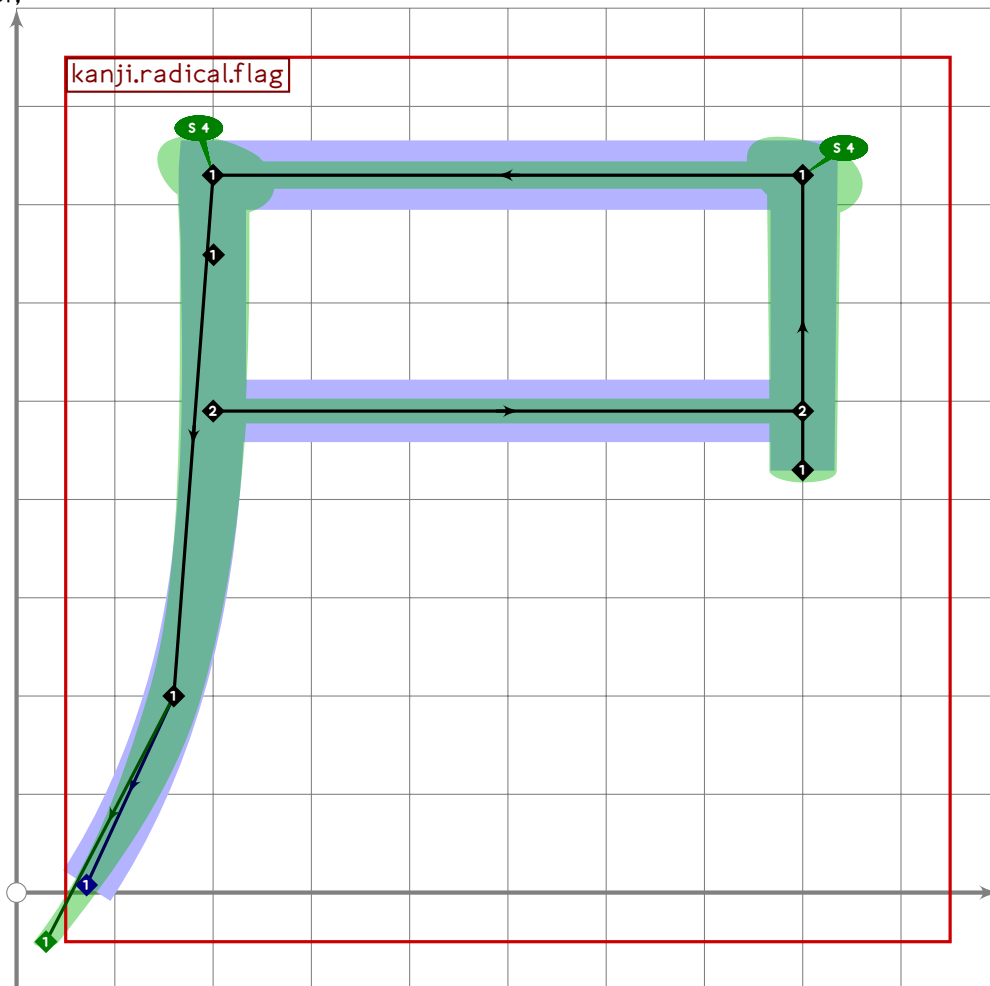
162
163 vardef kanji.radical.dotted_tent =
164   perl_structure:=perl_structure&"eids.u2FF1.u7676.1_";
165   push_pbox_toexpand("kanji.radical.dotted_tent");
166   push_stroke((210,800)-(510,800)..(450,700)..(300,540)..(60,360),
167     (1.5,1.5)-(1.6,1.6)-(1.5,1.5)-(1.3,1.3)-(0.85,0.9));
168   set_boserif(0,1,4);
169   set_botip(0,1,0);
170   push_stroke((110,710)..tension 1.2..(190,680)..(260,620),
171     (1,1)-(1.4,1.4)-(1.7,1.7));
172   push_stroke(
173     (point 1.2 of get_stroke(-1))..tension 1.2..(640,620)..(920,400),
174     (1,1)-(1.3,1.3)-(2.25,0.95));
175   push_stroke(((190,120)..tension 1.2..(120,60)..(0,0))
176     shifted (point 0.7 of get_stroke(0)),
177     (1.7,1.7)-(1.5,1.5)-(1,1));
178   set_boserif(0,0,10);
179   push_stroke(((190,120)..tension 1.2..(120,60)..(0,0))
180     shifted (point 1.3 of get_stroke(-1)),
181     (1.7,1.7)-(1.5,1.5)-(1,1));
182   set_boserif(0,0,10);

```

U+5C38  
tsuku.uni5C38

```
183 push_stroke((330,470)-(660,470),(1.6,1.6)-(1.6,1.6));
184 set_boserif(0,19);
185 expand_pbox;
186 endif;
187
188 vardef kanji.radicaleight =
189   push_pbox_toexpand("kanji.radicaleight");
190   push_stroke((610,760)..tension 1.3..(760,240)..(880,-10),
191     (1,1)-(14,14)-(18,1.8));
192   set_bosize(0,110);
193   push_stroke((350,740)..(280,360)..(160,80)..(40,-30),
194     (1.6,1.6)-(14,14)-(1.3,1.3)-(0.88,0.88));
195   set_bosize(0,110);
196   set_boserif(0,0,10);
197   expand_pbox;
198 endif;
```

RADI

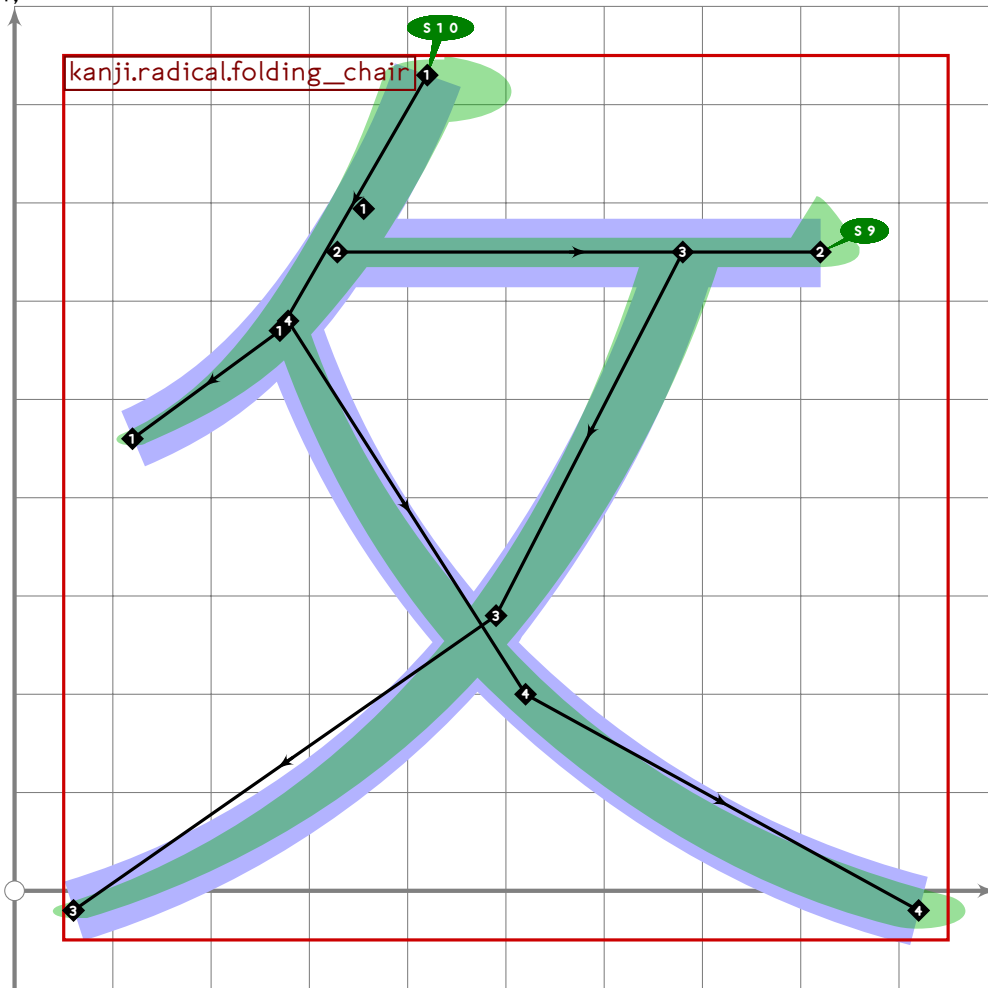


```
199
200 vardef kanji.radical.flag =
201   perl_structure:=perl_structure&"eids.u2FF8.u5C38.1_";
202   push_pbox_toexpand("kanji.radical.flag");
203   push_stroke((800,430)-(800,730)-(200,730){down}..(160,200)..(30,-50),
```

```

204 (1.5,1.5)-(1.6,1.6)-(1.6,1.6)-(1.3,1.3)-(0.9,0.9));
205 set_botip(0,1,1);
206 set_botip(0,2,1);
207 set_boserif(0,1,4);
208 set_boserif(0,2,4);
209 set_bosize(0,93);
210 push_stroke((((0,490)-(1000,490))
211 intersectionpoint reverse get_stroke(0))-(800,490),
212 (1.5,1.5)-(1.5,1.5));
213 set_bosize(0,93);
214 expand_pbox;
215 enddef;

```



```

216
217 vardef kanji.radical.folding_chair =
218   push_pbox_toexpand("kanji.radical.folding_chair");
219   push_stroke((420,830)..tension 1.2..(270,570)..(120,460),
220     (1.7,1.7)-(1.4,1.4)-(1,1));
221   set_boserif(0,0,10);
222   push_stroke(
223     (get_stroke(0) intersectionpoint ((0,650)-(1000,650)))-(820,650),
224     (1.5,1.5)-(1.6,1.6));

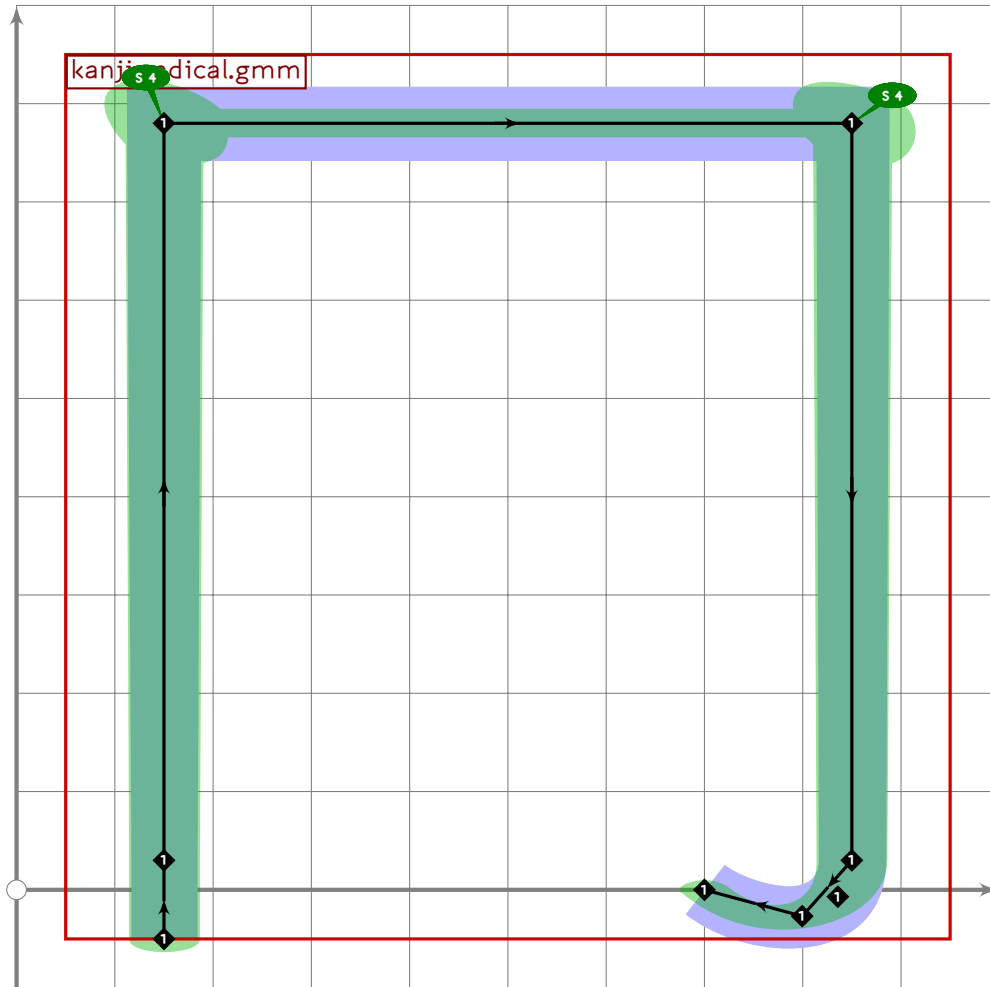
```

RADI

U+5182  
tsuku.uni5182

```
225 set_boserif(0,1,9);
226 push_stroke((680,650)..tension 1.1..(490,280)..(60,-20),
227   (1.6,1.6)-(1.4,1.4)-(1.1,1.1));
228 push_stroke((point 0.95 of get_stroke(-2))..(520,200)..(920,-20),
229   (1,1)-(1.3,1.3)-(1.8,1.8));
230 expand_pbox;
231 enddef;
232
```

RADI



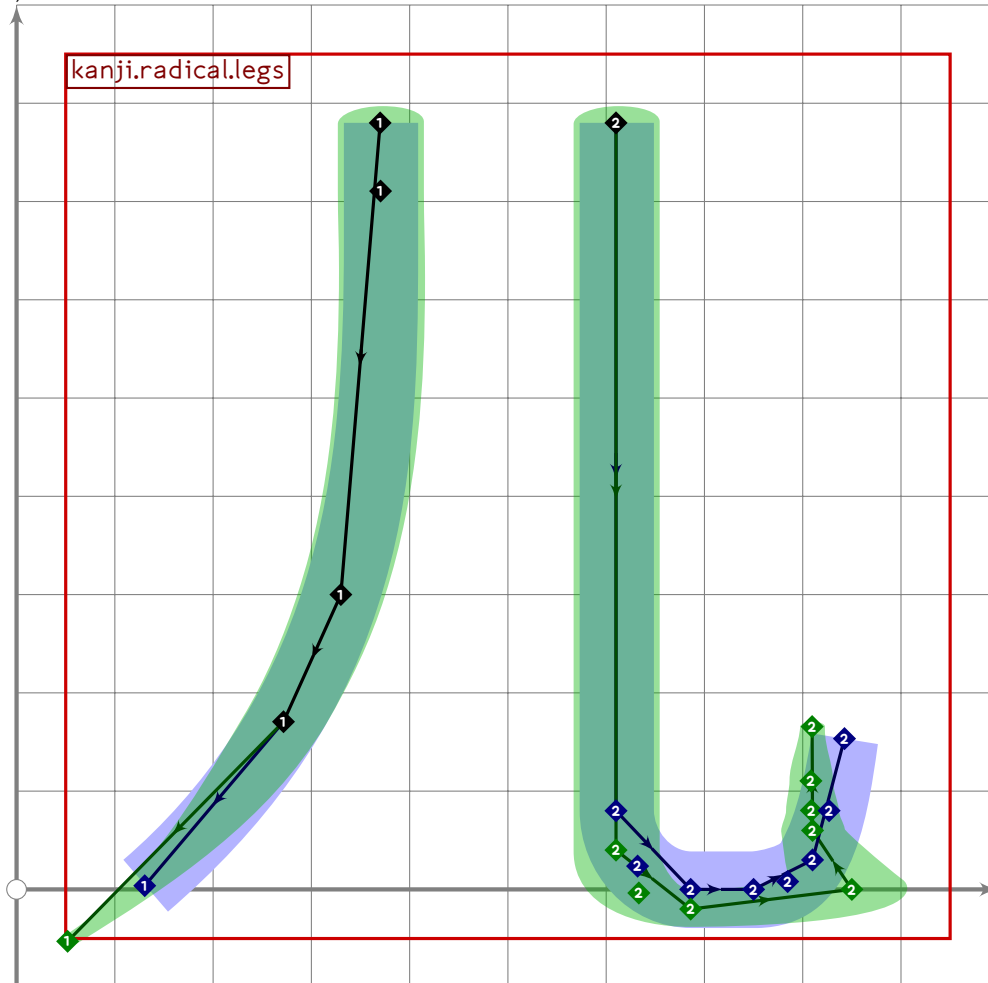
```
233 % "George Michael's Moustache" radical, according to Schultzzz
234 vardef kanji.radical.gmm =
235   push_pbox_toexpand("kanji.radical.gmm");
236   push_stroke((150,-50)-(150,30)-(150,780)-(850,780),
237     (1.5,1.5)-(1.5,1.5)-(1.6,1.6)-(1.6,1.6));
238   build_kanji.add_jtail(0);
239   set_botip(0,2,1);
240   set_botip(0,3,1);
241   set_boserif(0,2,4);
242   set_boserif(0,3,4);
243   expand_pbox;
244 enddef;
245
```



```

246 vardef kanji.radical.kettle_lid =
247   push_pbox_toexpand("kanji.radical.kettle_lid");
248   push_stroke((500,700)..(500,160),(1.6,1.6)-(1.5,1.5));
249   set_bosize(0,125);
250   set_boserif(0,0,10);
251   push_stroke((100,160)-(900,160),(1.7,1.7)-(1.7,1.7));
252   set_bosize(0,125);
253   set_boserif(0,1,9);
254   expand_pbox;
255 enddef;

```



```

256
257 vardef kanji.radical.legs =
258   push_pbox_toexpand("kanji.radical.legs");
259   push_stroke((370,780){down}..(330,300)..(40,-60),
260     (1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(0.8,0.7));
261   replace_stroke(0)(insert_nodes(oldp)(1.3));
262   set_bosize(0,110);
263   push_stroke((610,780),
264     (1.6,1.6));
265   build_kanji.add_ltail(0);
266   set_bosize(0,110);

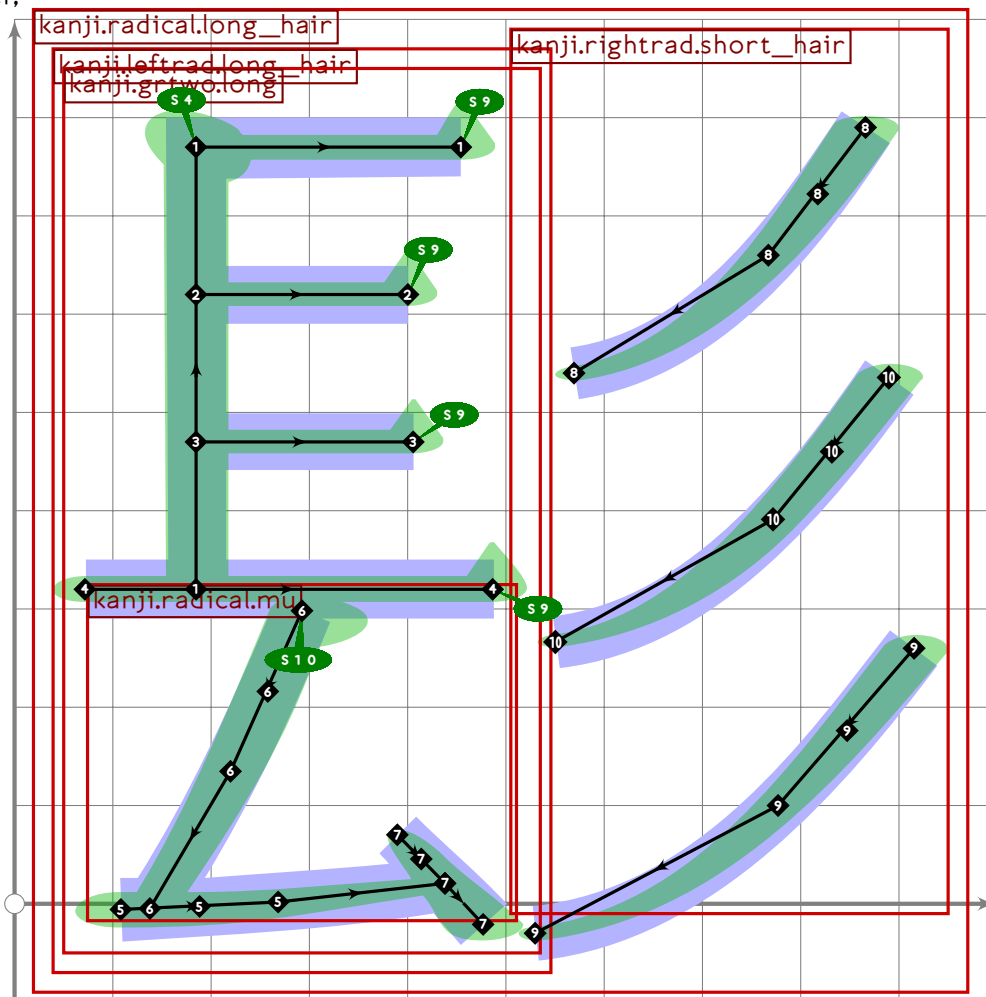
```

RADI

U+9ADF  
tsuku.uni9ADF

```
267 expand_pbox;
268 enddef;
269
270 vardef kanji.radical.life_minus =
271   push_pbox_toexpand("kanji.radical.life_minus");
272   push_stroke((500,780)-(500,0),(1.6,1.6)-(1.6,1.6));
273   set_boserif(0,0,10);
274   push_stroke((280,700)..(220,360)..(140,120),
275     (1.6,1.6)-(1.2,1.2)-(0.8,0.8));
276   set_boserif(0,0,10);
277   push_stroke((point 0.9 of get_stroke(0))-
278     (820,ypart point 0.9 of get_stroke(0)),
279     (1.6,1.6)-(1.6,1.6));
280   set_boserif(0,1,9);
281   push_stroke((120,0)-(880,0),(1.6,1.6)-(1.6,1.6));
282   set_boserif(0,1,9);
283   expand_pbox;
284 enddef;
```

RADI



```
285
286 vardef kanji.radical.long_hair =
287   push_pbox_toexpand("kanji.radical.long_hair");
```

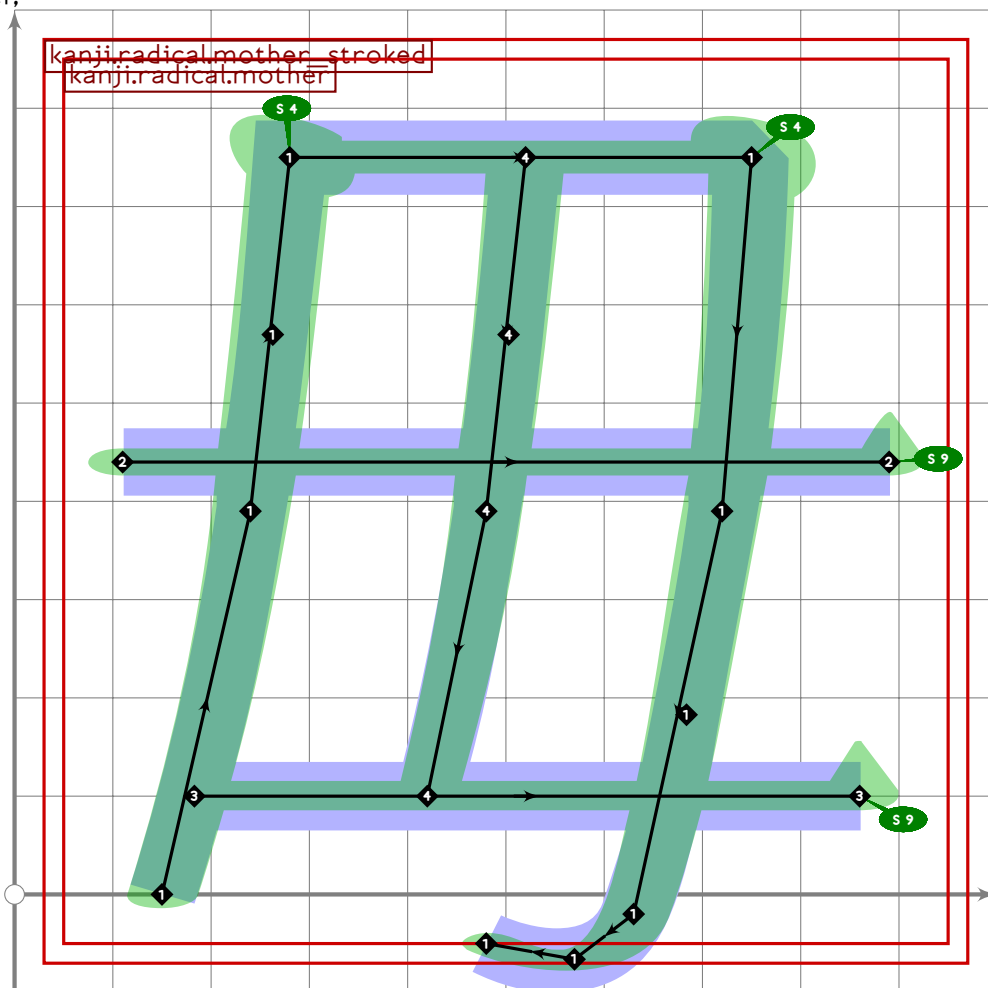
```

288 build_kanji.level(build_kanji.lr(520,30)
289   (kanji.leftrad.long_hair)
290   (tsu_xform(identity shifted (0,40))
291     (kanji.rightrad.short_hair)));
292 expand_pbox;
293 enddef;
294
295 vardef kanji.radical.long_kimono =
296   push_pbox_toexpand("kanji.radical.long_kimono");
297   build_kanji.level(build_kanji.tb(600,-50)
298     (kanji.grone.earth)
299     (kanji.bottomrad.long_kimono));
300   expand_pbox;
301 enddef;
302
303 vardef kanji.radical.moon_flag =
304   push_pbox_toexpand("kanji.radical.moon_flag");
305   push_stroke((800,300)–(800,730)–(200,730){down}..(160,200)..(30,-50),
306     (1.5,1.5)–(1.6,1.6)–(1.6,1.6)–(1.3,1.3)–(0.9,0.9));
307   set_botip(0,1,1);
308   set_botip(0,2,1);
309   set_boserif(0,1,4);
310   set_boserif(0,2,4);
311   set_bosize(0,93);
312   push_stroke((((0,550)–(1000,550))
313     intersectionpoint reverse get_strokep(0))–(800,550),
314     (1.5,1.5)–(1.5,1.5));
315   set_bosize(0,94);
316   push_stroke((((0,350)–(1000,350))
317     intersectionpoint reverse get_strokep(-1))–(800,350),
318     (1.5,1.5)–(1.5,1.5));
319   set_bosize(0,97);
320   expand_pbox;
321 enddef;
322
323 vardef kanji.radical.mother =
324   push_pbox_toexpand("kanji.radical.mother");
325   push_stroke(
326     (150,0)..(240,390)..tension 1.2..(280,750)–
327     (750,750)..(720,390)..tension 1.2..(630,-20){dir 250}{curl 0.2}(480,-50),
328     (1.5,1.5)–(1.6,1.6)–(1.7,1.7)–(1.7,1.7)–(1.6,1.6)–(1.5,1.5));
329   replace_strokep(0)(insert_nodes(oldp)((length oldp)-0.5));
330   replace_strokeq(0)(oldq–(14,14)–(1.2,1.2));
331   set_botip(0,2,1);
332   set_botip(0,3,0);
333   set_boserif(0,2,4);
334   set_boserif(0,3,4);
335   push_stroke((110,440)–(890,440),(1.5,1.5)–(1.5,1.5));

```

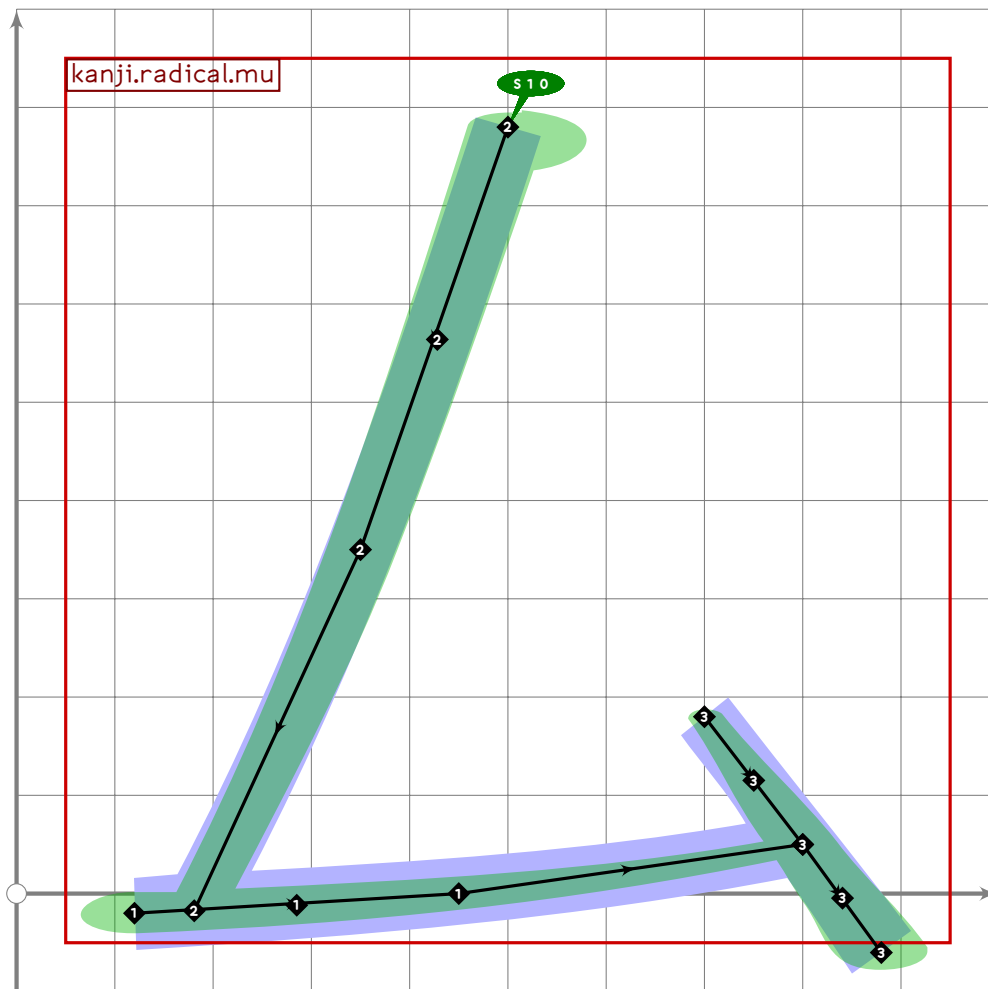
U+6BCB  
tsuku.uni6BCB

```
336 set_boserif(0,1,9);  
337 push_stroke((183,100)-(860,100),(1.6,1.6)-(1.6,1.6));  
338 set_boserif(0,1,9);  
339 expand_pbox;  
340 enddef;
```



```
341  
342 vardef kanji.radical.mother_stroked =  
343   push_pbox_toexpand("kanji.radical.mother_stroked");  
344   kanji.radical.mother;  
345   push_stroke((520,750)..tension 1.2..(480,390)..(420,100),  
346     (1.6,1.6)-(1.5,1.5)-(1.4,1.4));  
347   expand_pbox;  
348 enddef;
```

RADI



RADI

```

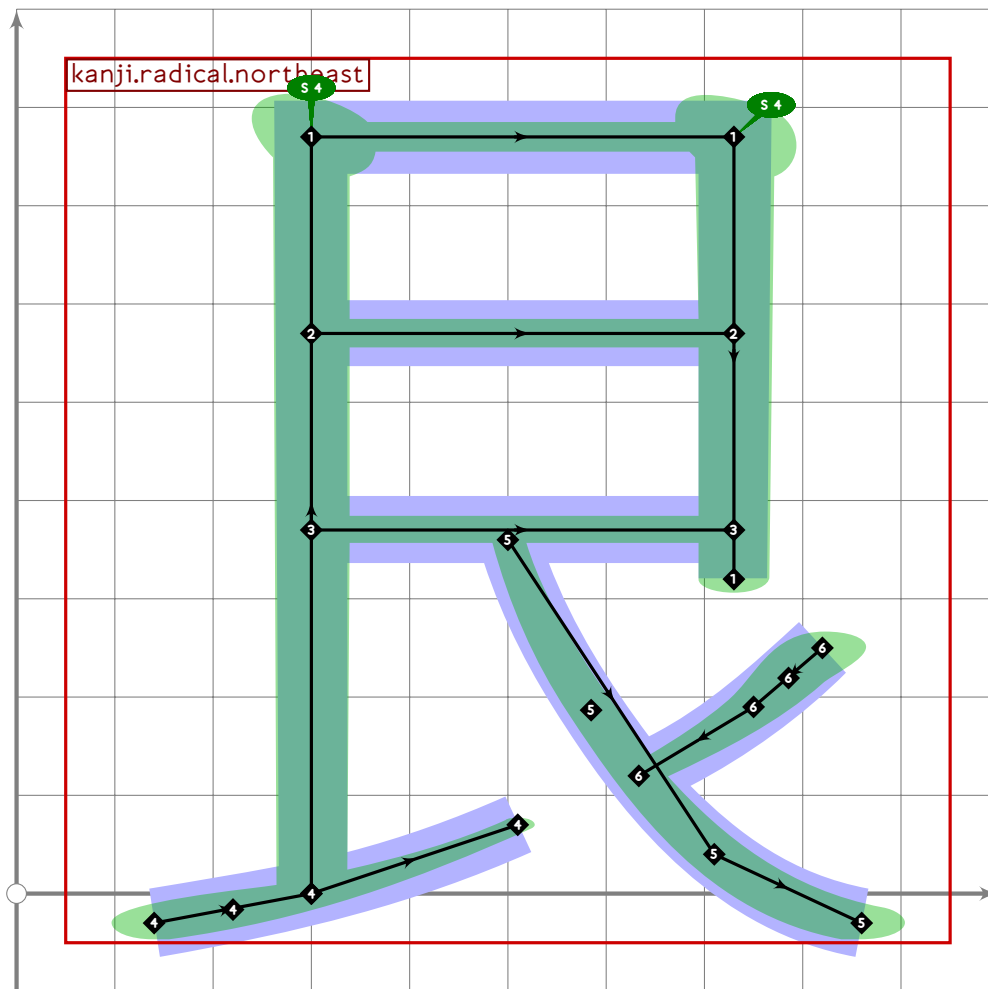
349
350 vardef kanji.radical.mu =
351   push_pbox_toexpand("kanji.radical.mu");
352   push_stroke((120,-20)..tension 1.2..(450,0)..(800,50),
353     (2,2)-(1.7,1.7)-(1.2,1.2));
354   push_stroke(
355     (500,780)..tension 1.2..(350,350)..(point 0.2 of get_stroke(0)),
356     (1.6,1.6)-(1.5,1.5)-(1.3,1.3));
357   set_boserif(0,0,10);
358   push_stroke((700,180)..tension 1.3..(800,50)..(880,-60),
359     (1,1)-(1.5,1.5)-(1.8,1.8));
360   expand_pbox;
361   enddef;
362
363 vardef kanji.radical.mu_bar =
364   push_pbox_toexpand("kanji.radical.mu_bar");
365   push_stroke((140,780)-(860,780),(1.6,1.6)-(1.6,1.6));
366   set_boserif(0,1,9);
367   build_kanji.scale(xyscaled (0.92,1.5) shifted (0,250))
368     (kanji.radical.mu);
369   replace_stroke(-1)(subpath

```

```

370    (xpart (oldp intersectiontimes get_strokep(-3)),infinity) of oldp);
371    set_boserif(-1,0,whatever);
372    replace_strokep(0)(oldp rotatedaround (point 1 of oldp,-15));
373    expand_pbox;
374 enddef;
375
376 vardef kanji.radical.narrow_flag =
377   perl_structure:=perl_structure&"eids.u2FF8.u5C381_";
378   push_pbox_toexpand("kanji.radical.narrow_flag");
379   push_stroke((800,560)–(800,730)–(200,730){down}..(160,200)..(30,-50),
380     (1.5,1.5)–(1.6,1.6)–(1.6,1.6)–(1.3,1.3)–(0.9,0.9));
381   set_botip(0,1,1);
382   set_botip(0,2,1);
383   set_boserif(0,1,4);
384   set_boserif(0,2,4);
385   set_bosize(0,93);
386   push_stroke((((0,610)–(1000,610))
387     intersectionpoint reverse get_strokep(0))–(800,610),
388     (1.5,1.5)–(1.5,1.5));
389   set_bosize(0,93);
390   expand_pbox;
391 enddef;

```



RADI

```

392
393 vardef kanji.radical.northeast =
394   push_pbox_toexpand("kanji.radical.northeast");
395   push_stroke((300,0)–(300,770)–(730,770)–(730,320),
396     (1.5,1.5)–(1.6,1.6)–(1.6,1.6)–(1.5,1.5));
397   set_boserif(0,1,4);
398   set_boserif(0,2,4);
399   set_botip(0,1,1);
400   set_botip(0,2,1);
401   push_stroke((300,570)–(730,570),(1.5,1.5)–(1.5,1.5));
402   push_stroke((300,370)–(730,370),(1.5,1.5)–(1.5,1.5));
403   push_stroke((140,30)..tension 1.2..(300,0)..(510,70),
404     (1.7,1.7)–(1.5,1.5)–(1,1));
405   push_stroke((500,360)..tension 1.2..(710,40)..(860,30),
406     (1,1)–(1.4,1.4)–(1.7,1.7));
407   push_stroke((820,250)..tension 1.2..(750,190)..
408     (point 0.7 of get_stroke(0)),
409     (1.7,1.7)–(1.4,1.4)–(1.2,1.2));
410   expand_pbox;
411 enddef;
412

```

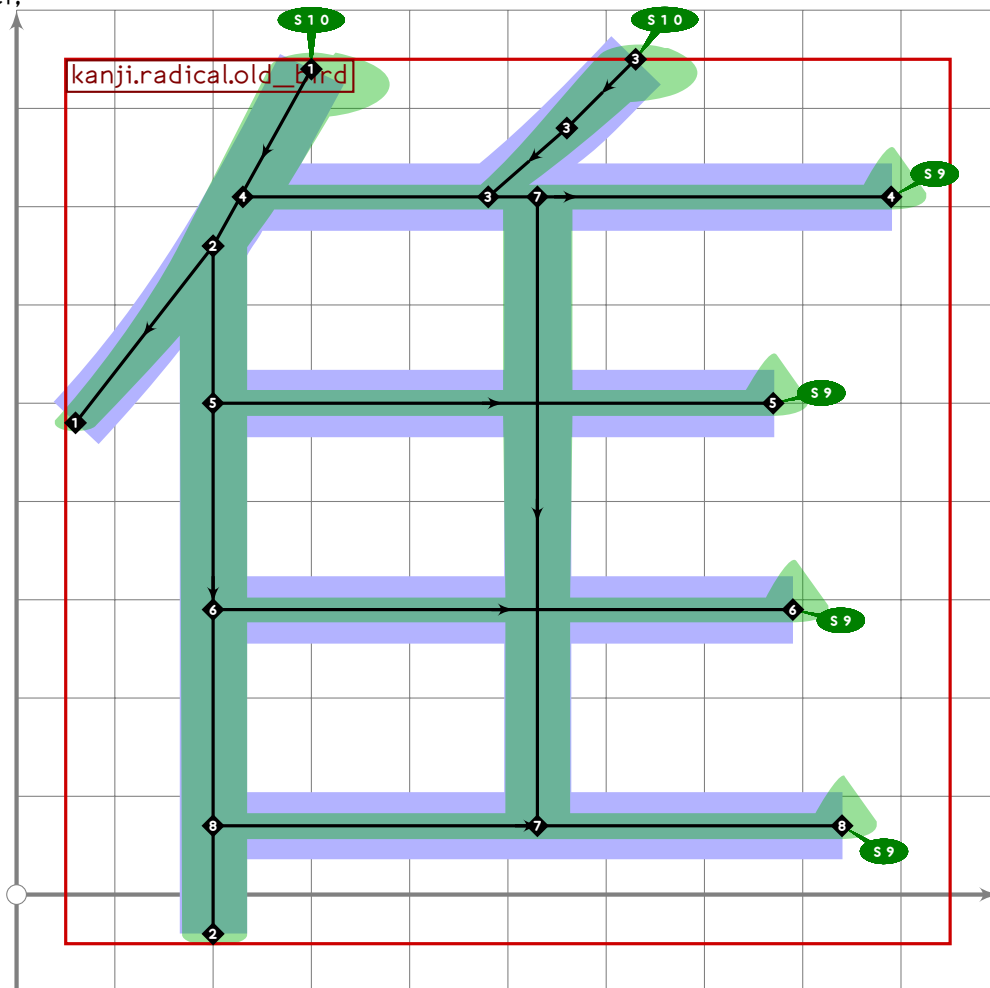
U+96B9  
tsuku.uni96B9

RADI

```

413 vardef kanji.radical.alt_northeast =
414   push_pbox_toexpand("kanji.radical.northeast");
415   push_stroke((300,0)-(300,770)-(730,770)-(730,320),
416     (1.5,1.5)-(1.6,1.6)-(1.6,1.6)-(1.5,1.5));
417   set_boserif(0,1,4);
418   set_boserif(0,2,4);
419   set_botip(0,1,1);
420   set_botip(0,2,1);
421   push_stroke((300,570)-(730,570),(1.5,1.5)-(1.5,1.5));
422   push_stroke((300,370)-(730,370),(1.5,1.5)-(1.5,1.5));
423   push_stroke((130,-20)..tension 1.2..(300,0)..(720,80),
424     (1.7,1.7)-(1.5,1.5)-(1,1));
425   push_stroke((650,170)..tension 1.3..(720,80)..(770,-20),
426     (1,1)-(1.5,1.5)-(1.8,1.8));
427   expand_pbox;
428 enddef;

```



```

429
430 vardef kanji.radical.old_bird =
431   push_pbox_toexpand("kanji.radical.old_bird");
432   push_stroke((300,840){curl 0}..(200,660)..(60,480),
433     (1.7,1.7)-(1.5,1.5)-(1,1,1));

```



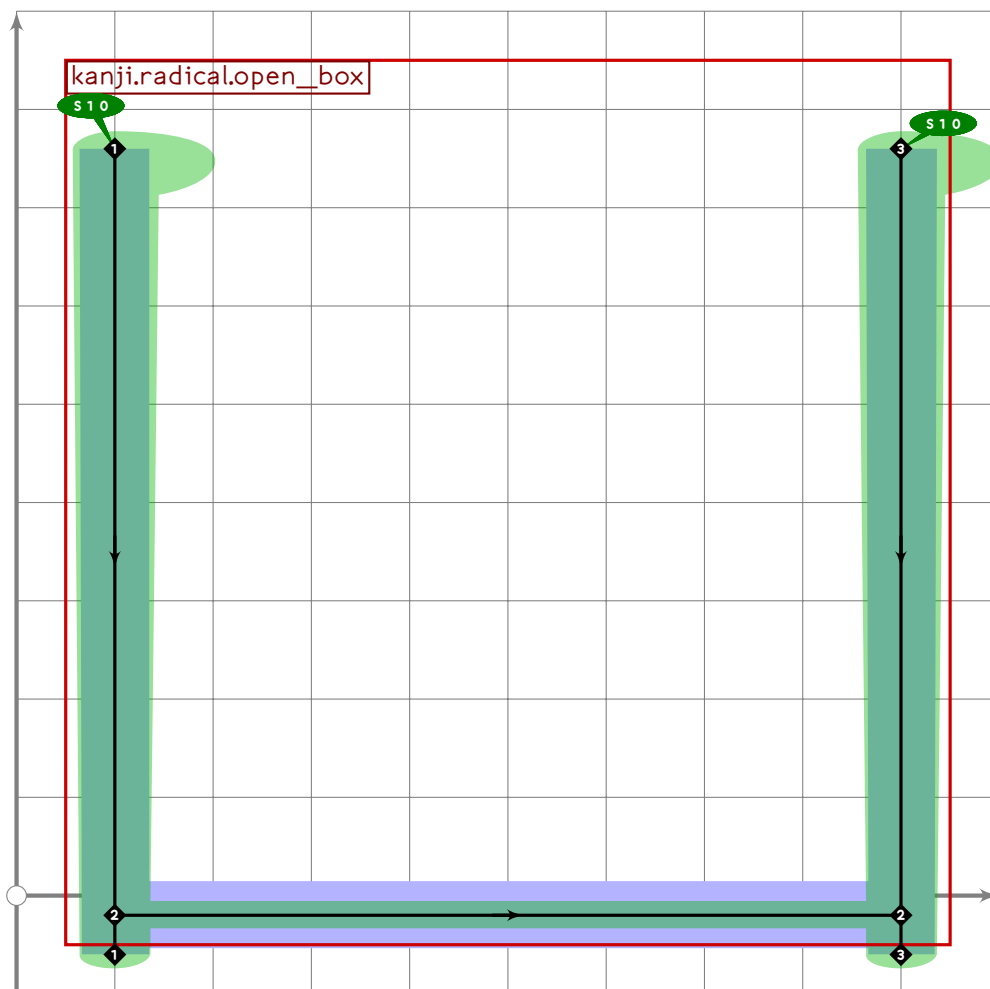
```

434 set_boserif(0,0,10);
435 push_stroke((200,660)-(200,-40),
436   (149,149)-(14,14));
437 push_stroke((630,850){curl 0.1}..(560,780)..(480,710),
438   (1.6,1.6)-(14,14)-(1,1,1));
439 set_boserif(0,0,10);
440 push_stroke(
441   (((0,710)-(1000,710)) intersectionpoint get_stroke(-2))-(890,710),
442   (14,14)-(1.5,1.5));
443 set_boserif(0,1,9);
444 push_stroke((200,500)-(770,500),
445   (14,14)-(1.5,1.5));
446 set_boserif(0,1,9);
447 push_stroke((200,290)-(790,290),
448   (14,14)-(1.5,1.5));
449 set_boserif(0,1,9);
450 push_stroke((530,710)-(530,70),(1.5,1.5)-(14,14));
451 push_stroke((200,70)-(840,70),
452   (14,14)-(1.5,1.5));
453 set_boserif(0,1,9);
454 expand_pbox;
455 enddef;
456
457 % pass in some code that goes in the bottom
458 vardef kanji.radical.old_man(text curves) =
459   push_pbox_toexpand("kanji.radical.old_man");
460   build_kanji.level(
461     build_kanji.tb(480,110)
462       (kanji.grone.earth;
463         replace_stroke(-1)(oldp shifted (-500,0) xscaled 0.75 shifted (480,0)))
464       (curves);
465     push_stroke((880,780)..tension 1.2..(600,530)..(50,260),
466       (1.6,1.6)-(1.5,1.5)-(1,1)));
467   expand_pbox;
468 enddef;

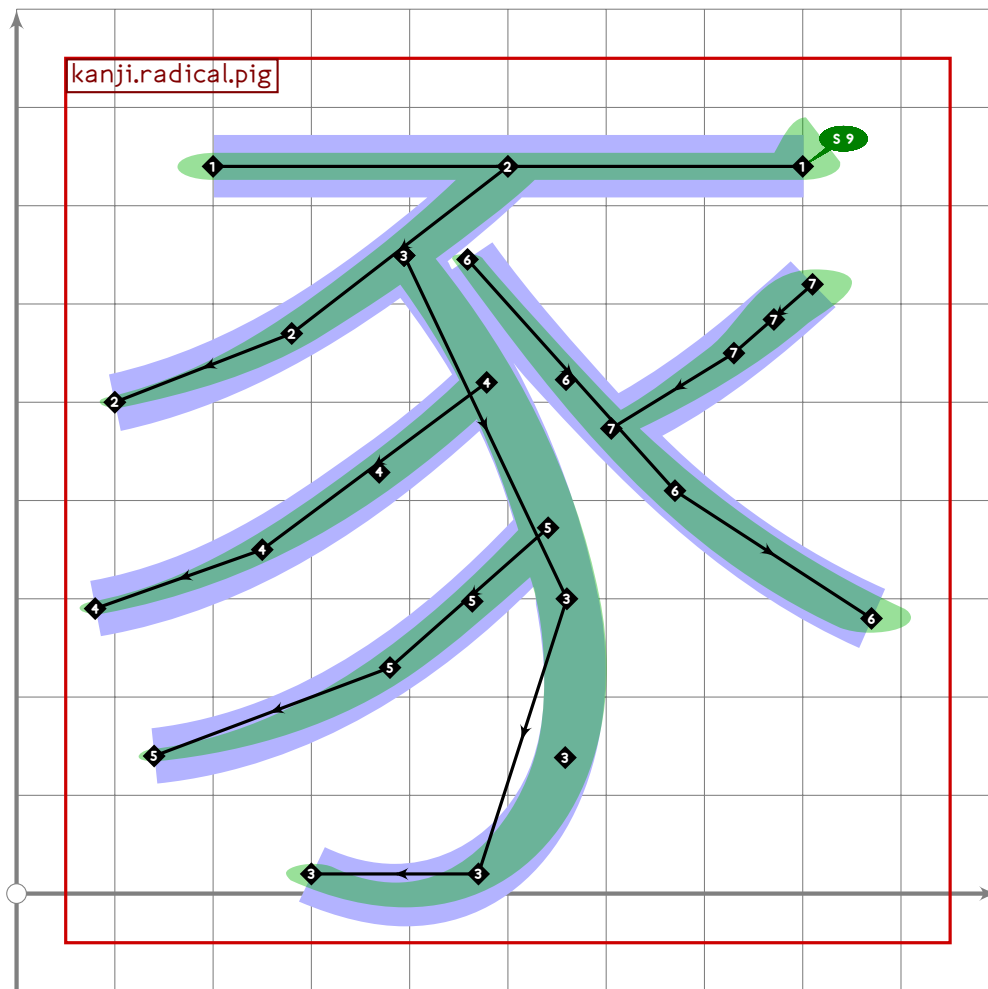
```

U+51F5  
tsuku.uni51F5

RADI



```
469
470 vardef kanji.radical.open_box =
471   push_pbox_toexpand("kanji.radical.open_box");
472   push_stroke((100,760)-(100,-60),(1.7,1.7)-(1.5,1.5));
473   set_boserif(0,0,10);
474   push_stroke((100,-20)-(900,-20),(1.5,1.5)-(1.5,1.5));
475   push_stroke((900,760)-(900,-60),(1.7,1.7)-(1.5,1.5));
476   set_boserif(0,0,10);
477   expand_pbox;
478 enddef;
```



RADI

```

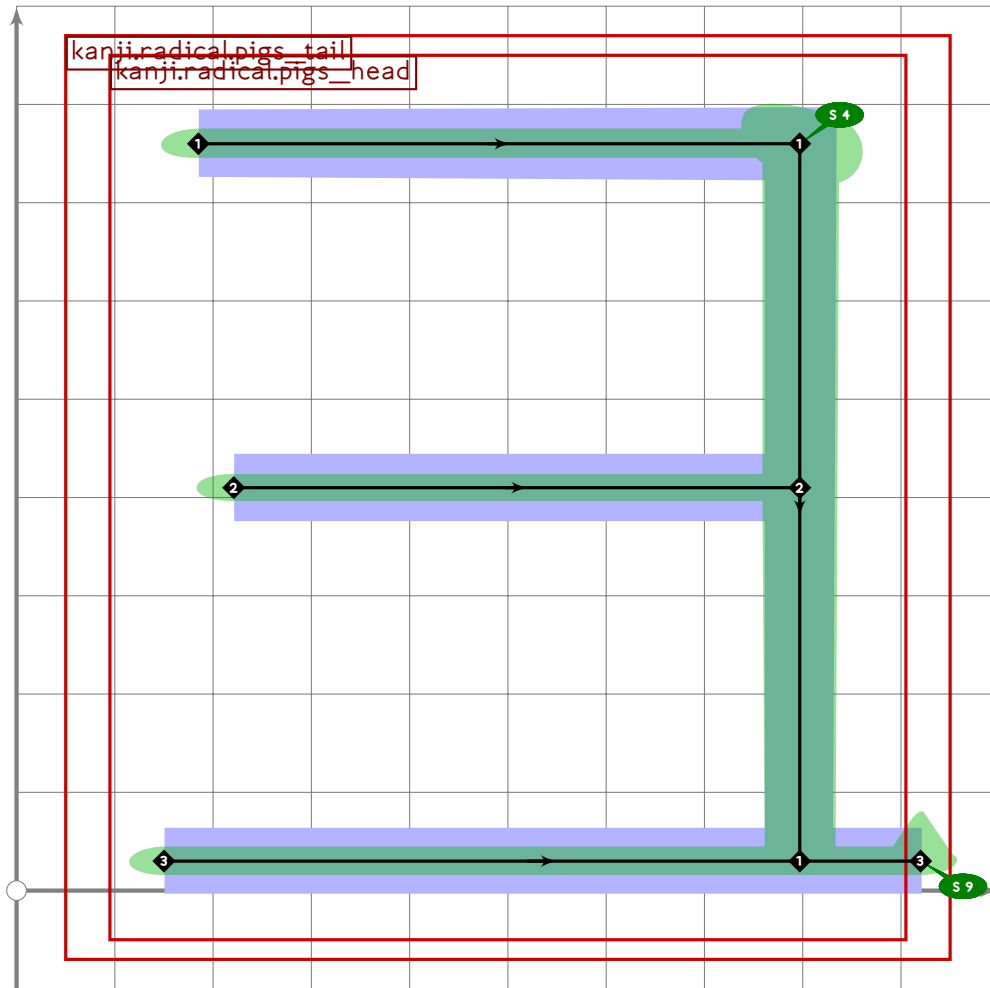
479
480 vardef kanji.radical.pig =
481   push_pbox_toexpand("kanji.radical.pig");
482   push_stroke((200,740)-(800,740),(1.6,1.6)-(1.6,1.6));
483   set_boserif(0,19);
484   push_stroke((500,740)..tension 1.2..(280,570)..(100,500),
485     (1.6,1.6)-(1.4,1.4)-(1.0,1.0));
486   push_stroke(
487     (point 0.5 of get_stroke(0))..tension 1.1..(560,300)..
488     (470,20)..{curl 0.6}(300,20),
489     (1.3,1.3)-(1.5,1.5)-(1.4,1.4)-(1.3,1.3));
490   push_stroke(
491     (point 0.4 of get_stroke(0))..tension 1.2..(250,350)..(80,290),
492     (1.35,1.35)-(1.4,1.4)-(1.0,1.0));
493   push_stroke(
494     (point 0.8 of get_stroke(-1))..tension 1.2..(380,230)..(140,140),
495     (1.35,1.35)-(1.4,1.4)-(1.0,1.0));
496   push_stroke(
497     ((0,90)+point 0.3 of get_stroke(-2))..tension 1.2..(670,410)..(870,280),
498     (1,1)-(1.4,1.4)-(1.7,1.7));
499   push_stroke(

```

```

500     (810,620)..tension 1.2..(730,550)..(point 0.7 of get_strokep(0)),
501     (1.7,1.7)–(1.4,1.4)–(1.2,1.2));
502   for i=-6 upto 0: set_bosize(i,92); endfor;
503   expand__pbox;
504 enddef;
505
506 vardef kanji.radical.pigs_head =
507   push_pbox_toexpand("kanji.radical.pigs_head");
508   push_stroke((150,760)–(830,760)–(830,70),
509     (1.6,1.6)–(1.6,1.6)–(1.5,1.5));
510   set_botip(0,1);
511   set_boserif(0,1,4);
512   push_stroke((190,410)–(830,410),(1.55,1.55)–(1.55,1.55));
513   push_stroke((150,30)–(830,30),(1.5,1.5)–(1.5,1.5));
514   expand__pbox;
515 enddef;
516
517 % name is mine - it has central horizontal line lengthened
518 vardef kanji.radical.pigs_snout =
519   push_pbox_toexpand("kanji.radical.pigs_snout");
520   build_kanji.level(
521     build_kanji.sscale(xscaled 0.87)(kanji.radical.pigs_head);
522     replace_strokep(-1)((100,410)–(910,410));
523     set_boserif(-1,1,9);
524   );
525   expand__pbox;
526 enddef;
527

```



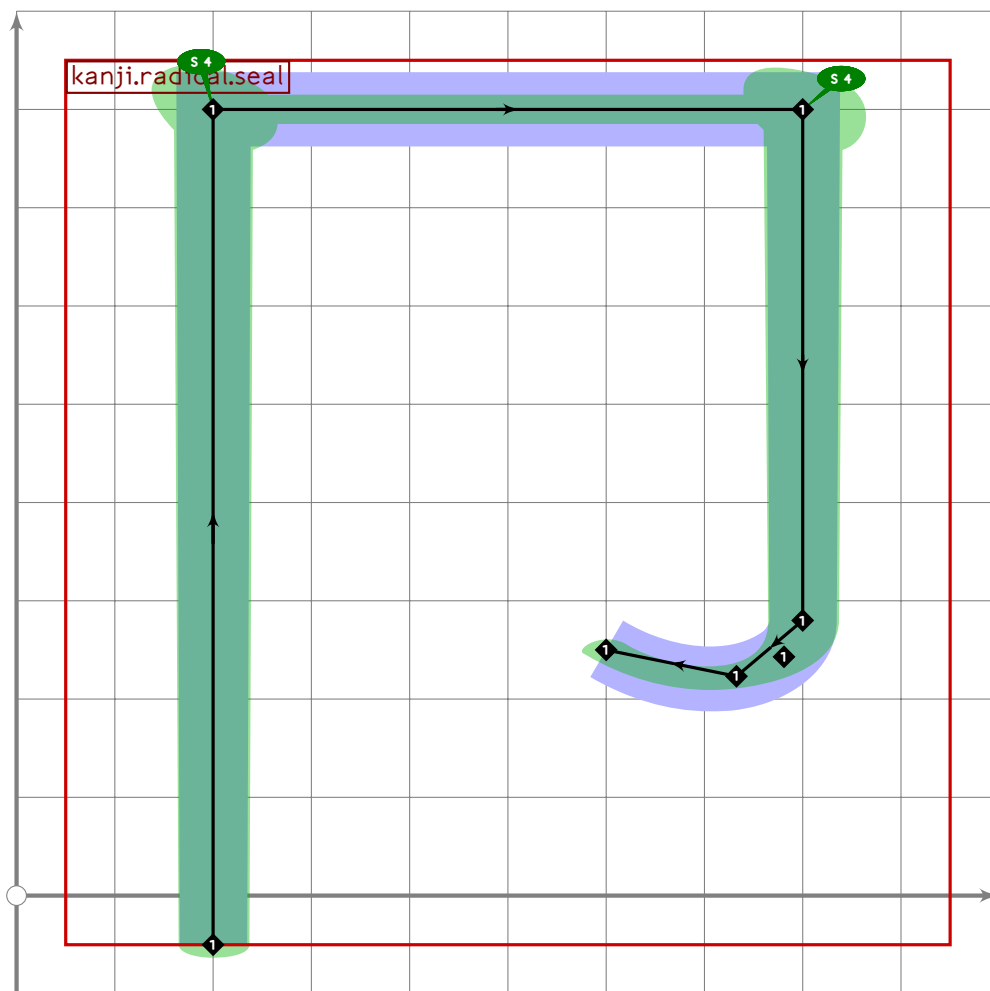
RADI

```

528 % name is mine - it has bottom horizontal line lengthened, vertical clipped
529 vardef kanji.radical.pigs_tail =
530   push_pbox_toexpand("kanji.radical.pigs_tail");
531   build_kanji.sscale(xscaled 0.9)
532   (kanji.radical.pigs_head;
533     replace_stroke(-2)((150,760)-(830,760)-(830,30)));
534   replace_stroke(0)((150,30)-(920,30));
535   set_boserif(0,1,9);
536   expand_pbox;
537 enddef;

```

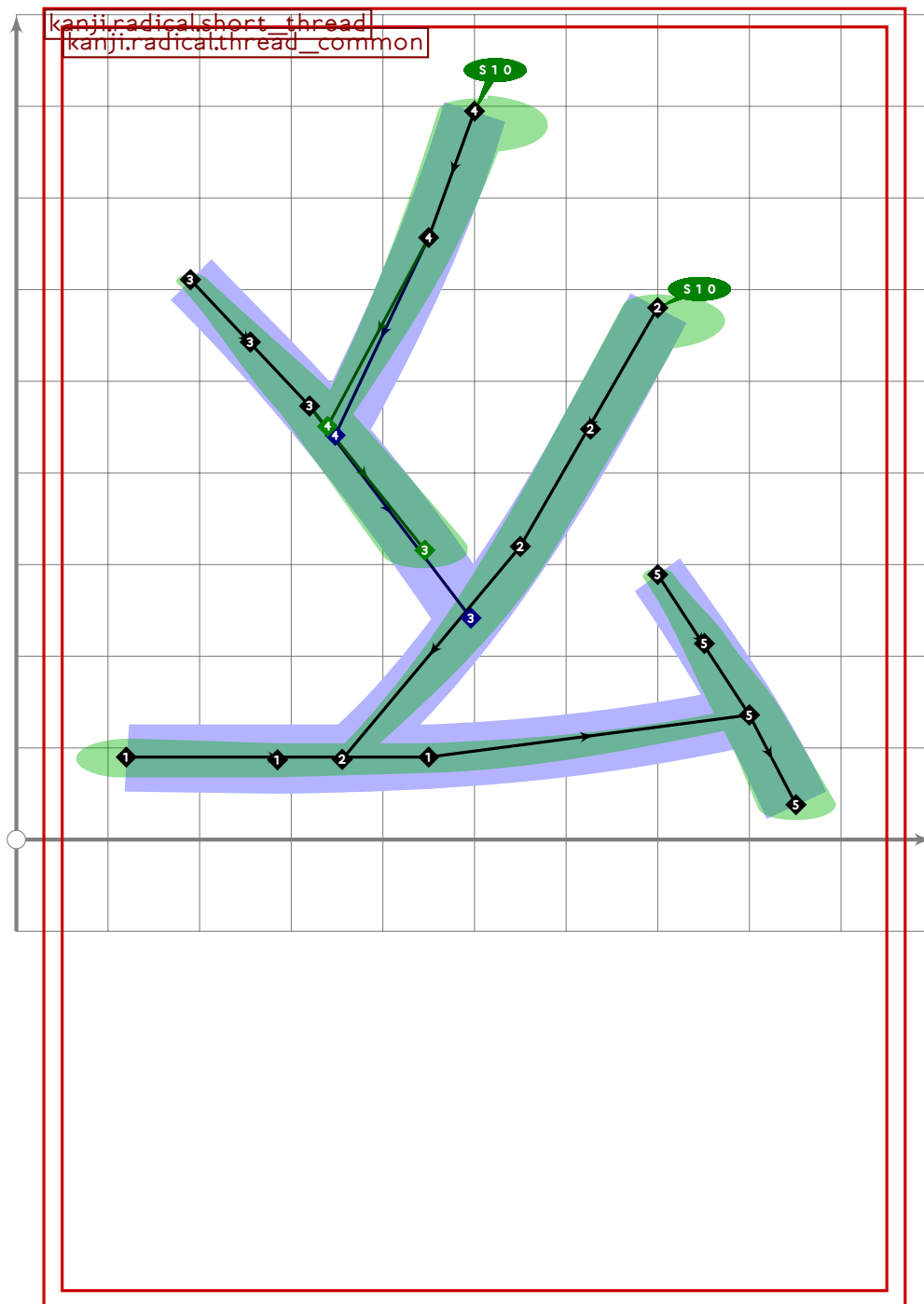
RADI



```

538
539 vardef kanji.radical.seal =
540   push_pbox_toexpand("kanji.radical.seal");
541   push_stroke((150,-300)-(150,550)-(600,550),
542     (1.5,1.5)-(1.6,1.6)-(1.6,1.6));
543   build_kanji.add_jtail(0);
544   replace_stroke(0)(oldp shifted (0,250) xscaled 1.3333);
545   set_boserif(0,1,4);
546   set_boserif(0,2,4);
547   set_botip(0,1,1);
548   set_botip(0,2,1);
549   expand_pbox;
550 enddef;

```



RADI

```

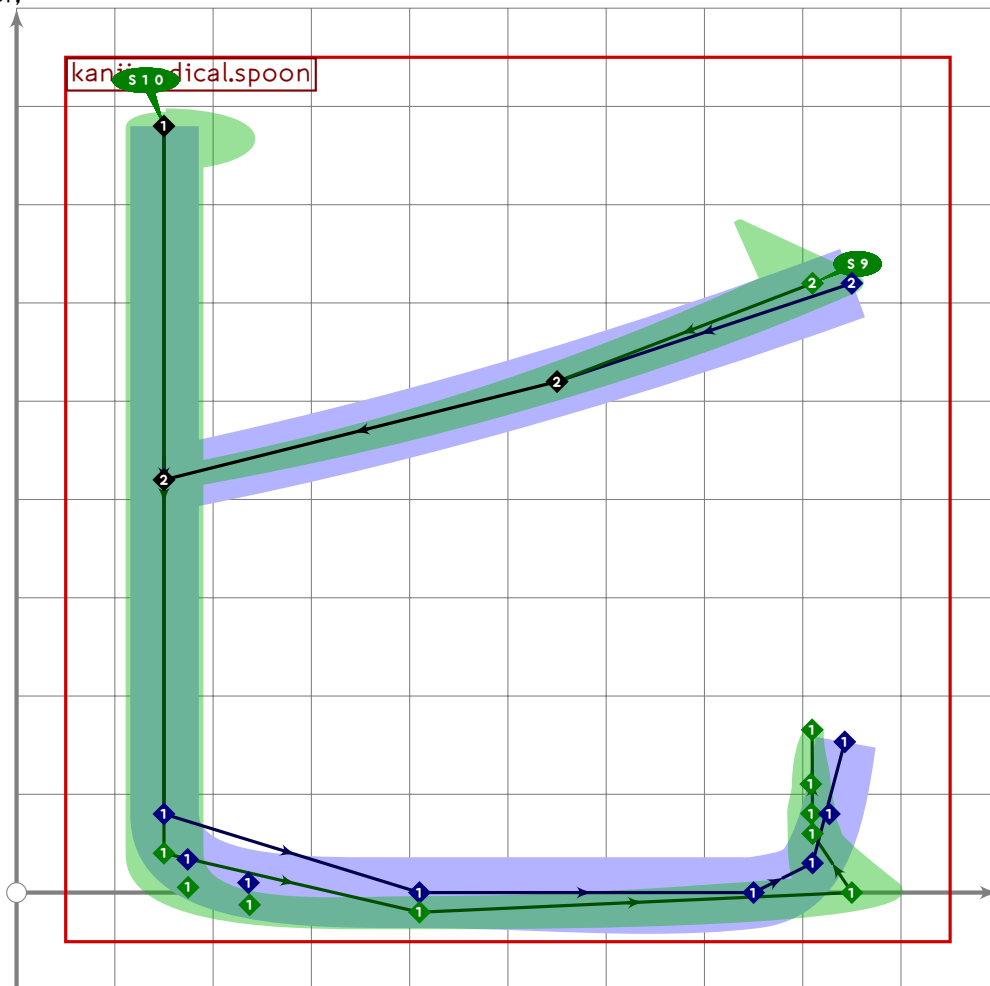
551
552 vardef kanji.radical.short_thread =
553   push_pbox_toexpand("kanji.radical.short_thread");
554   tsu_xform(begingroup
555     save myxf;
556     transform myxf;
557     xpart myxf=yxpart myxf=0;
558     xpart myxf=1;
559     (500,330) transformed myxf=(500,90);
560     (500,800) transformed myxf=(500,810);

```

```

561   myxf
562   endgroup)(kanji.radical.thread_common);
563   replace_strokep(0)(subpath (0,1.6) of oldp);
564   replace_strokeq(0)(subpath (0,1.6) of oldq);
565   for i=-4 upto 0: set_bosize(i,100); endfor;
566   expand_pbox;
567   enddef;
568
569   vardef kanji.radical.silly_hat =
570     push_pbox_toexpand("kanji.radical.silly_hat");
571     push_stroke((500,800)..(500,500),(1.6,1.6)-(1.5,1.5));
572     set_bosize(0,95);
573     set_boserif(0,0,10);
574     kanji.radical.conservative_hat;
575     expand_pbox;
576   enddef;

```



```

577
578   vardef kanji.radical.spoon =
579     push_pbox_toexpand("kanji.radical.spoon");
580     push_stroke((150,780),(1.6,1.6));
581     build_kanji.add_tail(0);

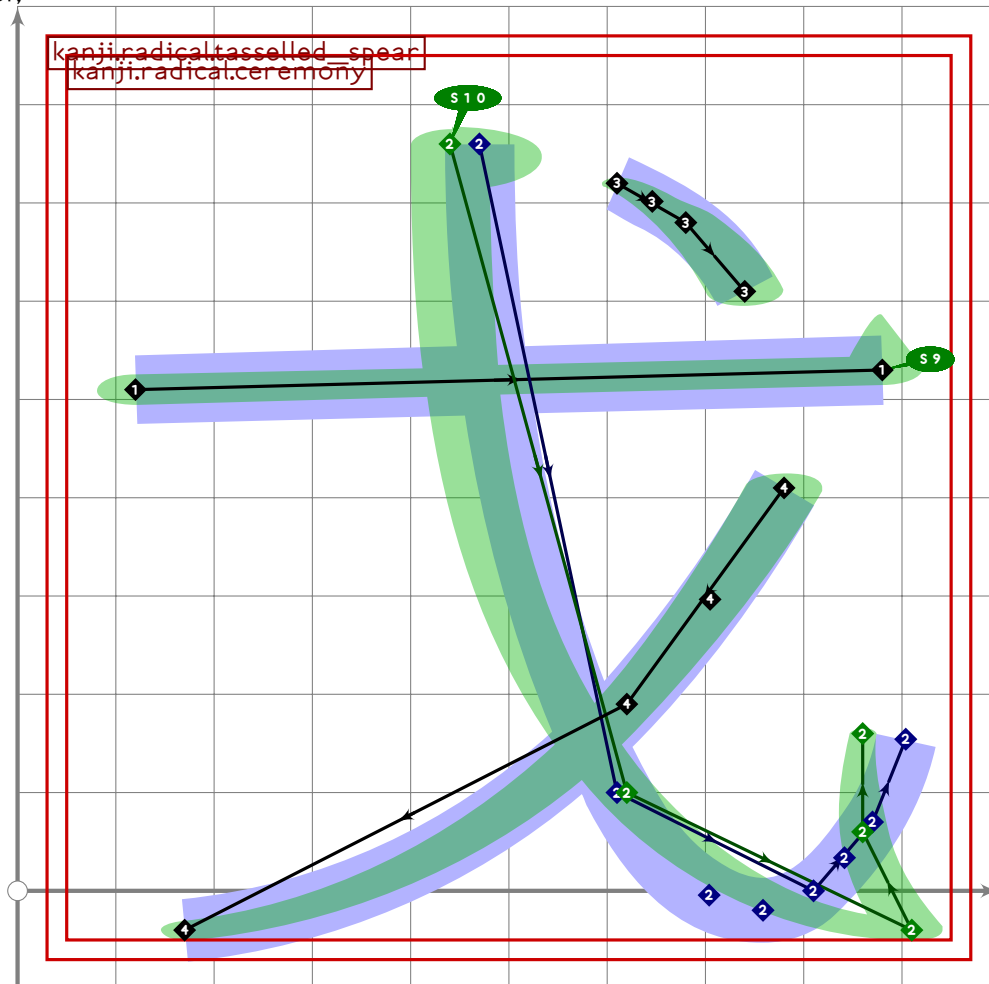
```



```

582 set_boserif(0,0,10);
583 push_stroke(
584   (xpart point infinity of get_stroke(0),620)..(550,520)..(150,420),
585   (1.9,1.9)..(1.6,1.6)..(1.3,1.3));
586 set_boserif(0,0,9);
587 expand_pbox;
588 enddef;

```



RADI

```

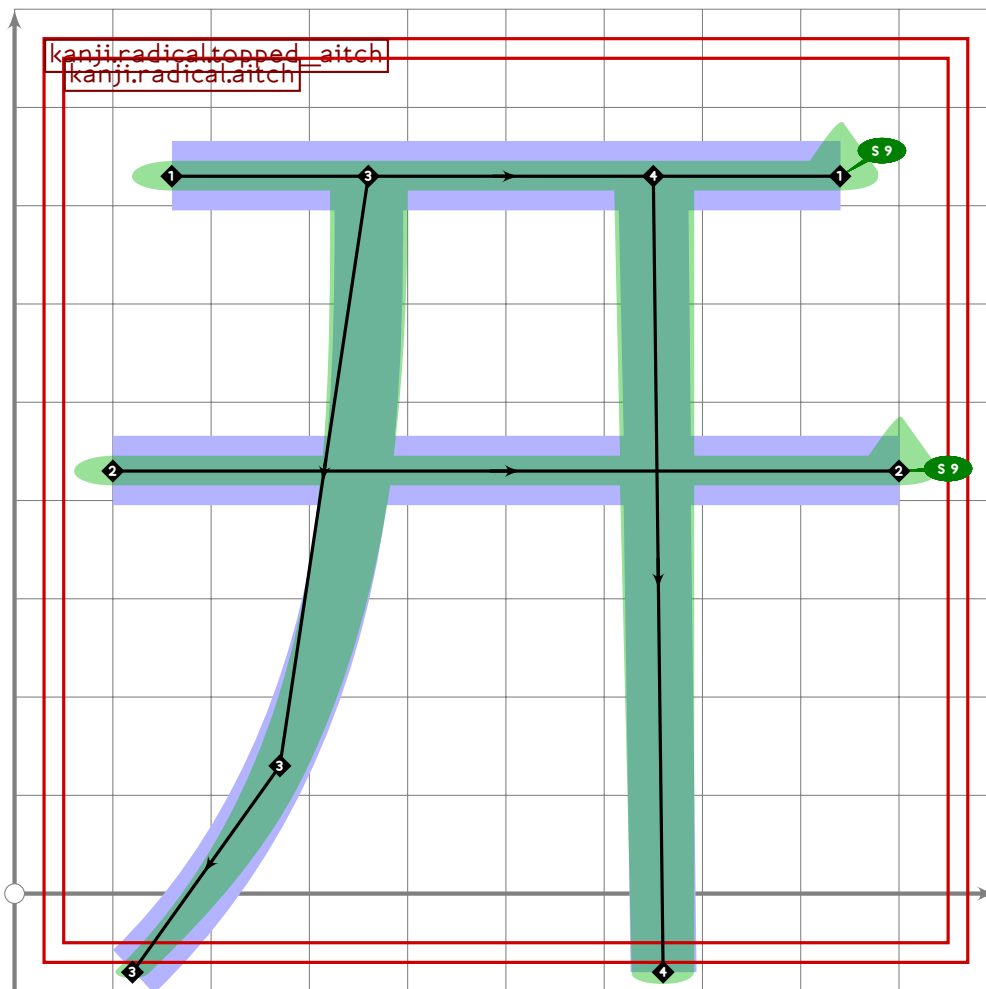
589
590 vardef kanji.radical.tasselled_spear =
591   push_pbox_toexpand("kanji.radical.tasselled_spear");
592   kanji.radical.ceremony;
593   push_stroke((780,410)..tension 1.2..(620,190)..(170,-40),
594     (1.6,1.6)-(1.4,1.4)-(1.2,1.2));
595   expand_pbox;
596 enddef;
597
598 vardef kanji.radical.tent =
599   perl_structure:=perl_structure&"eids.u2FF1.u4EBA.1_";
600   push_pbox_toexpand("kanji.radical.tent");
601   push_stroke((510,800)..(450,700)..(300,540)..(60,360),
602     (1.6,1.6)-(1.5,1.5)-(1.3,1.3)-(0.85,0.9));

```

```

603 set_boserif(0,0,10);
604 push_stroke(
605     (point 0.2 of get_strokep(0)).tension 1.2..(640,620)..(920,400),
606     (1,1)-(1.3,1.3)-(2.25,0.95));
607 push_stroke((330,470)-(660,470),(1.6,1.6)-(1.6,1.6));
608 set_boserif(0,1,9);
609 expand_pbox;
610 enddef;
611
612 vardef kanji.radical.thread_common =
613     push_pbox_toexpand("kanji.radical.thread_common");
614     push_stroke((120,330)..tension 1.2..(450,330)..(800,360),
615         (2,2)-(1.7,1.7)-(1.2,1.2));
616     push_stroke((700,650)..tension 1.3..(550,480)..(point 0.7 of get_strokep(0)),
617         (1.6,1.6)-(1.5,1.5)-(1,1));
618     set_boserif(0,0,10);
619     push_stroke(subpath (0,2-0.3*mincho) of
620         ((190,670)..tension 1.3..(320,580)..(point 1.3 of get_strokep(0))),
621         (1,1)-(1.5,1.5)-(1.8,1.8));
622     push_stroke((500,790)..(450,700)..(point 1.15 of get_strokep(0)),
623         (1.6,1.6)-(1.5,1.5)-(1,1));
624     set_boserif(0,0,10);
625     push_stroke((700,460)..tension 1.3..(800,360)..(880,250),
626         (1,1)-(1.5,1.5)-(1.8,1.8));
627     expand_pbox;
628 enddef;
629
630 vardef kanji.radical.three_tasselled_spear =
631     push_pbox_toexpand("kanji.radical.three_tasselled_spear");
632     kanji.radical.ceremony;
633     replace_strokep(-2)(oldp shifted (0,40));
634     replace_strokep(0)(oldp shifted (-680,750) xyscaled (1.2,0.6)
635         shifted (680,750));
636     push_stroke((subpath (0,1,0.9) of get_strokep(-2)) shifted (0,-130),
637         (1.6,1.6)-(1.6,1.6));
638     set_boserif(0,1,9);
639     push_stroke(get_strokep(-3) shifted (0,-270),
640         (1.6,1.6)-(1.6,1.6));
641     set_boserif(0,1,9);
642     push_stroke((800,220)..tension 1.2..(620,88)..(120,-40),
643         (1.6,1.6)-(1.4,1.4)-(1.2,1.2));
644     expand_pbox;
645 enddef;

```



RADI

```

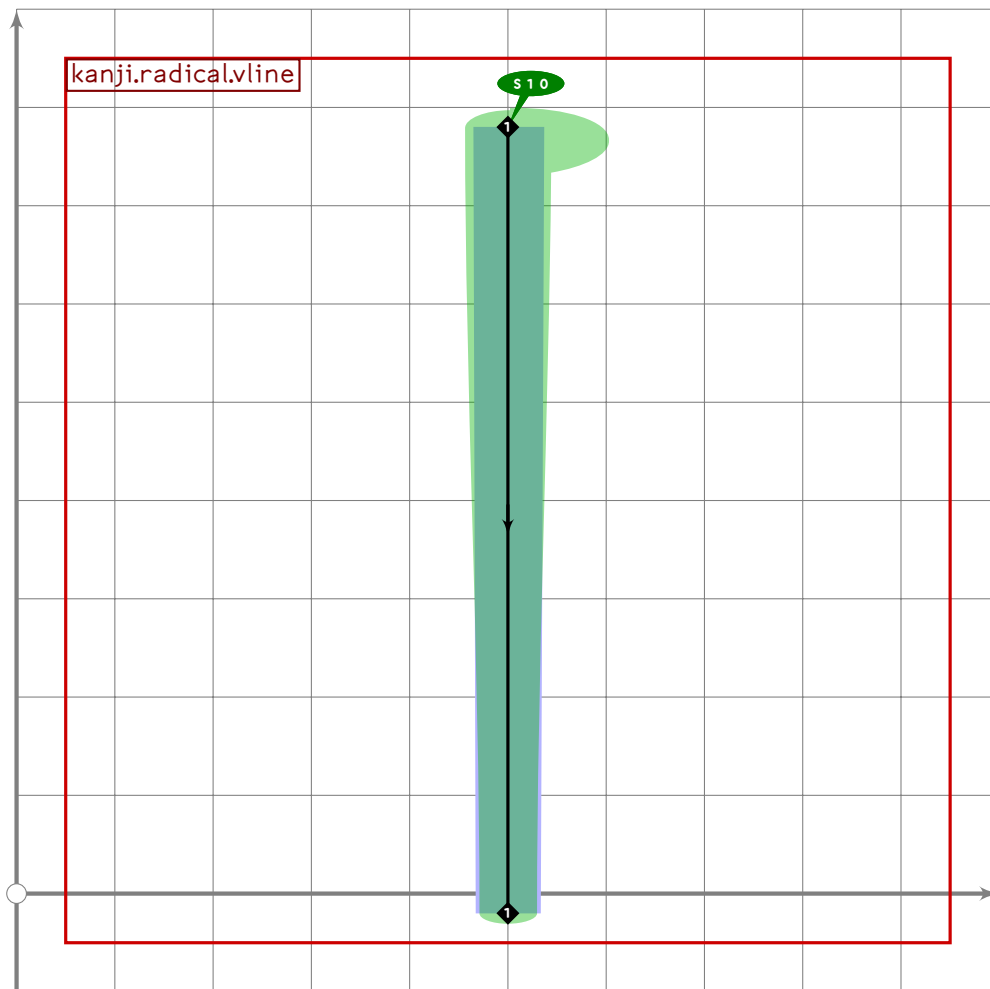
646
647 vardef kanji.radical.topped_aitch =
648   push_pbox_toexpand("kanji.radical.topped_aitch");
649   push_stroke((160,730)-(840,730),(1.6,1.6)-(1.6,1.6));
650   set_boserif(0,1,9);
651   kanji.radical.aitch;
652   set_boserif(-1,0,whatever);
653   set_boserif(0,0,whatever);
654   expand_pbox;
655 enddef;
656
657 vardef kanji.radical.travel_inside =
658   push_pbox_toexpand("kanji.radical.travel_inside");
659   push_stroke((720,810)..tension 1.2..(380,610)..(80,510),
660     (1.7,1.7)-(1.5,1.5)-(1,1));
661   push_stroke((320,570)-(320,-60),(1.6,1.6)-(1.5,1.5));
662   push_stroke((point 0.7 of get_stroke(-1))..
663     tension 1.2..(650,240)..(850,0),
664     (1,1)-(1.4,1.4)-(1.7,1.7));
665   push_stroke((770,490)..tension 1.2..(680,420)..
666     (point 0.65 of get_stroke(0)),

```

```

667     (1.7,1.7)–(1.4,1.4)–(1.2,1.2));
668   expand_pbox;
669 enddef;
670
671 vardef kanji.radical.tusk =
672   push_pbox_toexpand("kanji.radical.tusk");
673   push_stroke((140+30*mincho,780)–(830,780),(1.6,1.6)–(1.6,1.6));
674   set_boserif(0,1,9);
675   push_stroke((660,780),(1.6,1.6));
676   build_kanji.add_jtail(0);
677   push_stroke((340,780)–(340,480),(1.6,1.6)–(1.5,1.5));
678   push_stroke((110+30*mincho,480)–(860,480),(1.6,1.6)–(1.6,1.6));
679   set_boserif(0,1,9);
680   push_stroke((580,480)..tension 1.2..(380,200)..(110,60),
681     (1.6,1.6)–(1.4,1.4)–(1,1));
682   expand_pbox;
683 enddef;
684
685 % insert "Scottish tsunderé" joke here
686 vardef kanji.radical.twin_tailed_sheep =
687   push_pbox_toexpand("kanji.radical.twin_tailed_sheep");
688   kanji.grthree.sheep;
689   replace_strokep(0)
690     ((510,615){down}..(500,260)..(370,70)..{curl 0.5}(50,-60));
691   replace_strokeq(0)((1.6,1.6)–(1.6,1.6)–(1.4,1.4)–(1.1,1.1));
692   push_stroke(((get_strokep(0) intersectionpoint get_strokep(-3))+(50,0))..
693     (650,80)..(900,-50),
694     (1.1,1.1)–(1.4,1.4)–(1.7,1.7));
695   expand_pbox;
696 enddef;

```



RADI

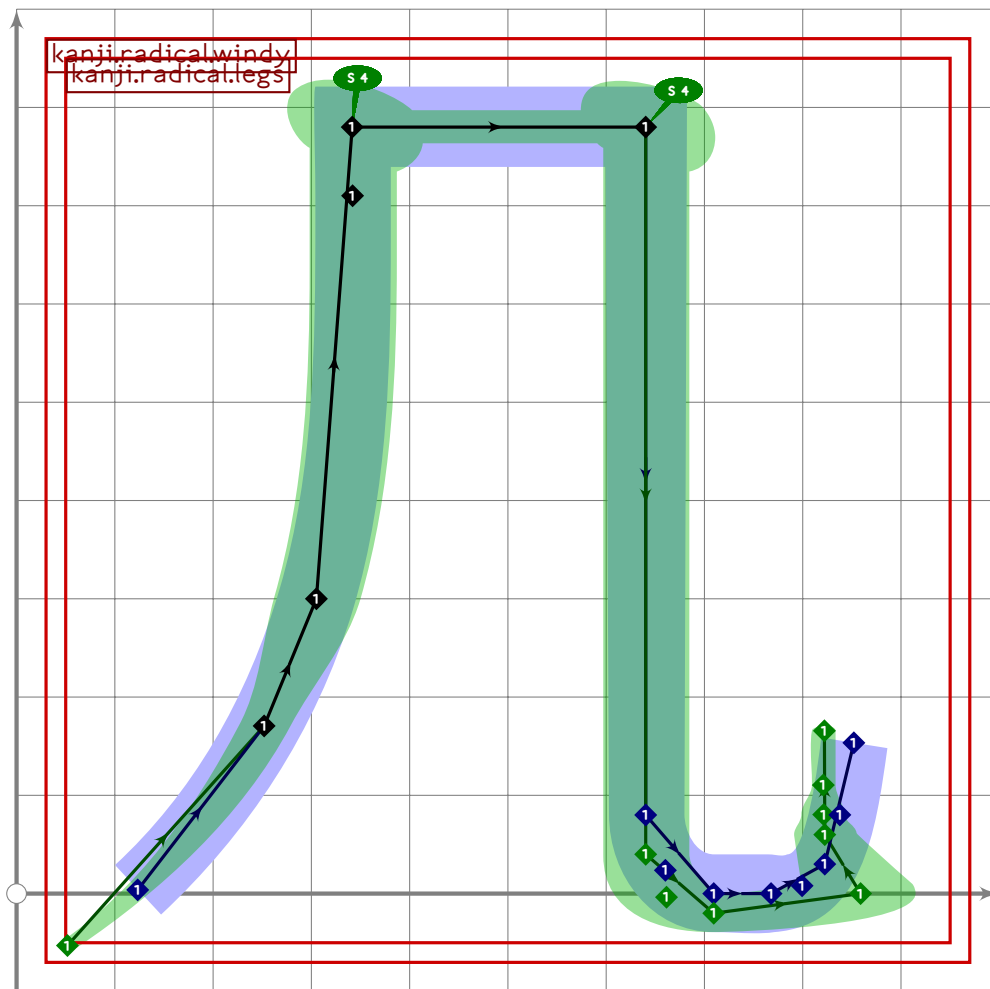
```

697
698 vardef kanji.radical.vline =
699   push_pbox_toexpand("kanji.radical.vline");
700   push_stroke((500,780)-(500,-20),(1.7,1.7)-(1.3,1.3));
701   set_boserif(0,0,10);
702   expand_pbox;
703 enddef;

```

U+51E0  
tsuku.uni51E0

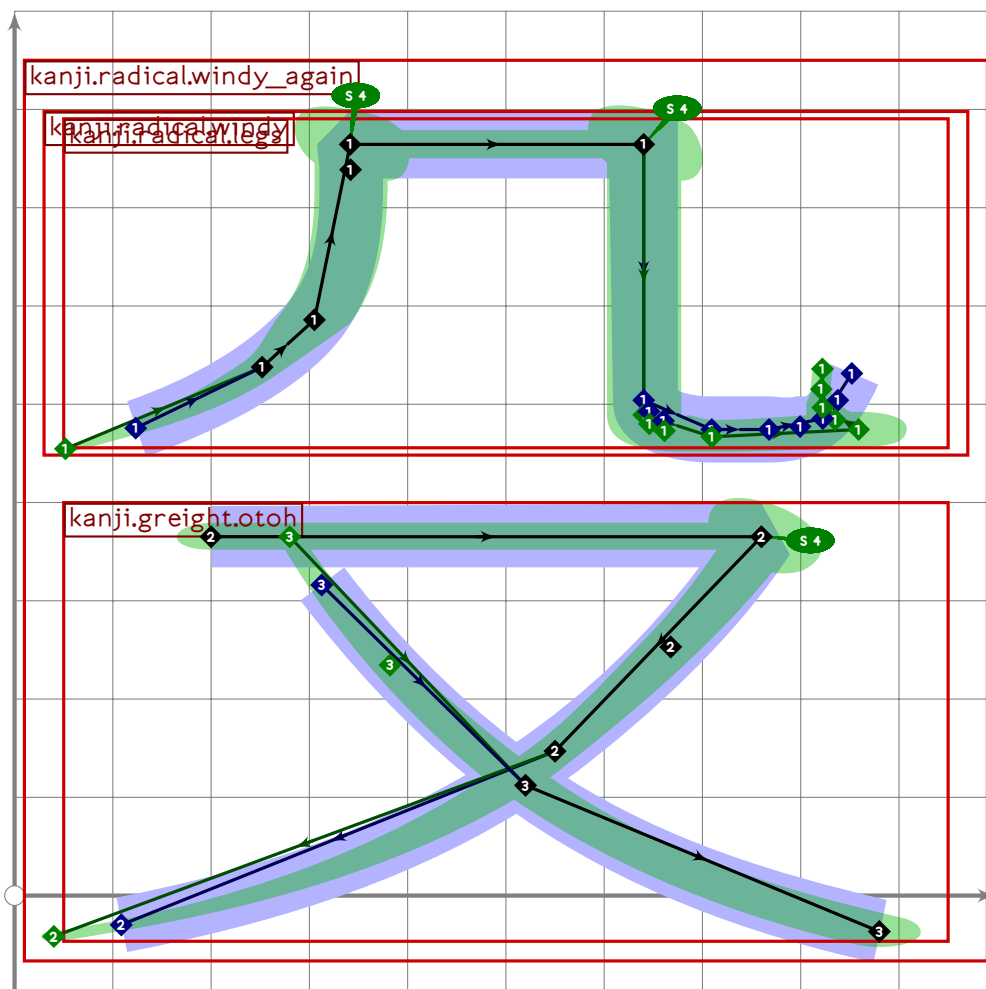
RADI



```

704
705 vardef kanji.radical.windy =
706   push_pbox_toexpand("kanji.radical.windy");
707   build_kanji.spread_legs(80)(kanji.radical.legs);
708   replace_strokep(-1)((reverse oldp)-get_strokep(0));
709   replace_strokeq(-1)((reverse oldq)-get_strokeq(0));
710   pop_stroke;
711   set_boserif(0,3,4);
712   set_boserif(0,4,4);
713   set_botip(0,3,1);
714   set_botip(0,4,1);
715   expand_pbox;
716 enddef;

```



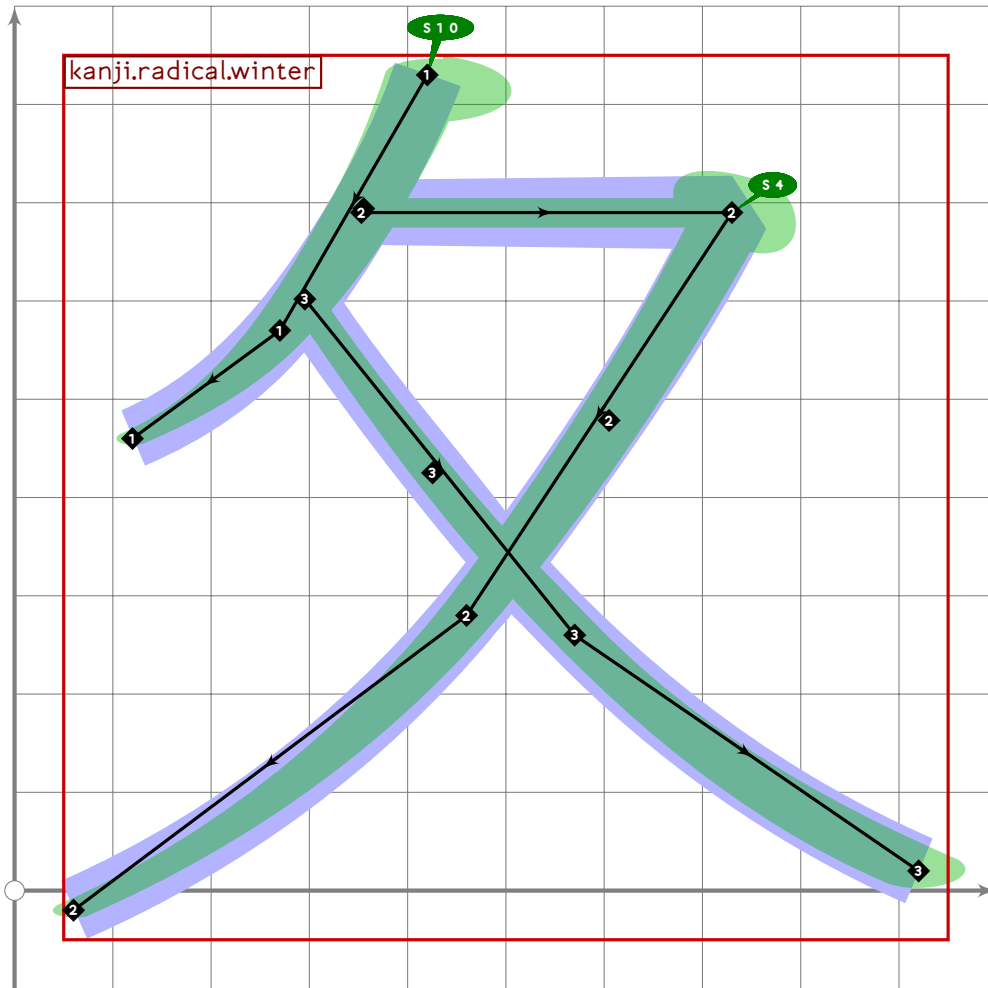
RADI

```

717
718 vardef kanji.radical.windy_again =
719   push_pbox_toexpand("kanji.radical.windy_again");
720   tsu_xform(identity yscaled 0.93)
721     (build_kanji.tb(460,-60)
722       (kanji.radical.windy)
723       (kanji.greight.otoh));
724   expand_pbox;
725 enddef;

```

RADI

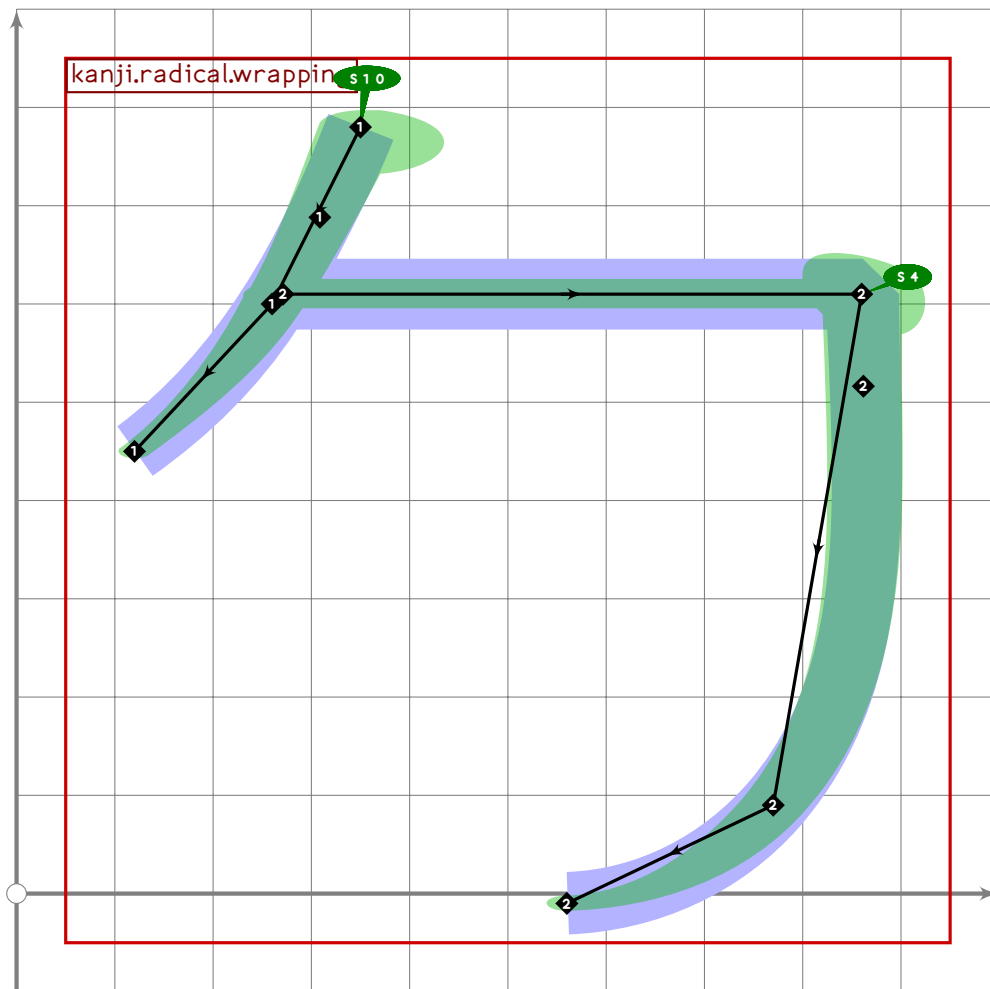


```

726
727 vardef kanji.radical.winter =
728   push_pbox_toexpand("kanji.radical.winter");
729   push_stroke((420,830)..tension 1.2..(270,570)..(120,460),
730     (1.7,1.7)–(1.4,1.4)–(1,1));
731   set_boserif(0,0,10);
732   push_stroke((get_strokep(0) intersectionpoint ((0,690)–(1000,690)))–
733     (730,690)..tension 1.2..(460,280)..(60,20),
734     (1.5,1.5)–(1.6,1.6)–(1.4,1.4)–(1.1,1.1));
735   set_boserif(0,1,4);
736   set_botip(0,1,0);
737   push_stroke((point 0.85 of get_strokep(-1))..tension 1.2..
738     (570,260)..(920,20),
739     (1,1)–(1.3,1.3)–(1.8,1.8));
740   expand_pbox;
741 enddef;

```





RADI

```

742
743 vardef kanji.radical.wrapping =
744   push_pbox_toexpand("kanji.radical.wrapping");
745   push_stroke((350,780)..tension 1.2..(260,600)..(120,450),
746     (1,7,1,7)-(1,4,1,4)-(1,1));
747   set_boserif(0,0,10);
748   push_stroke(
749     ((5,0)+((get_stroke(0) intersectionpoint ((0,610)-(1000,610)))))-(
750       (860,610){down}..(770,90)..(560,-10),
751       (1,6,1,6)-(1,6,1,6)-(1,5,1,5)-(1,1,1,1));
752   set_boserif(0,1,4);
753   set_botip(0,1,0);
754   expand_pbox;
755 enddef;

```

## rightrad.mp

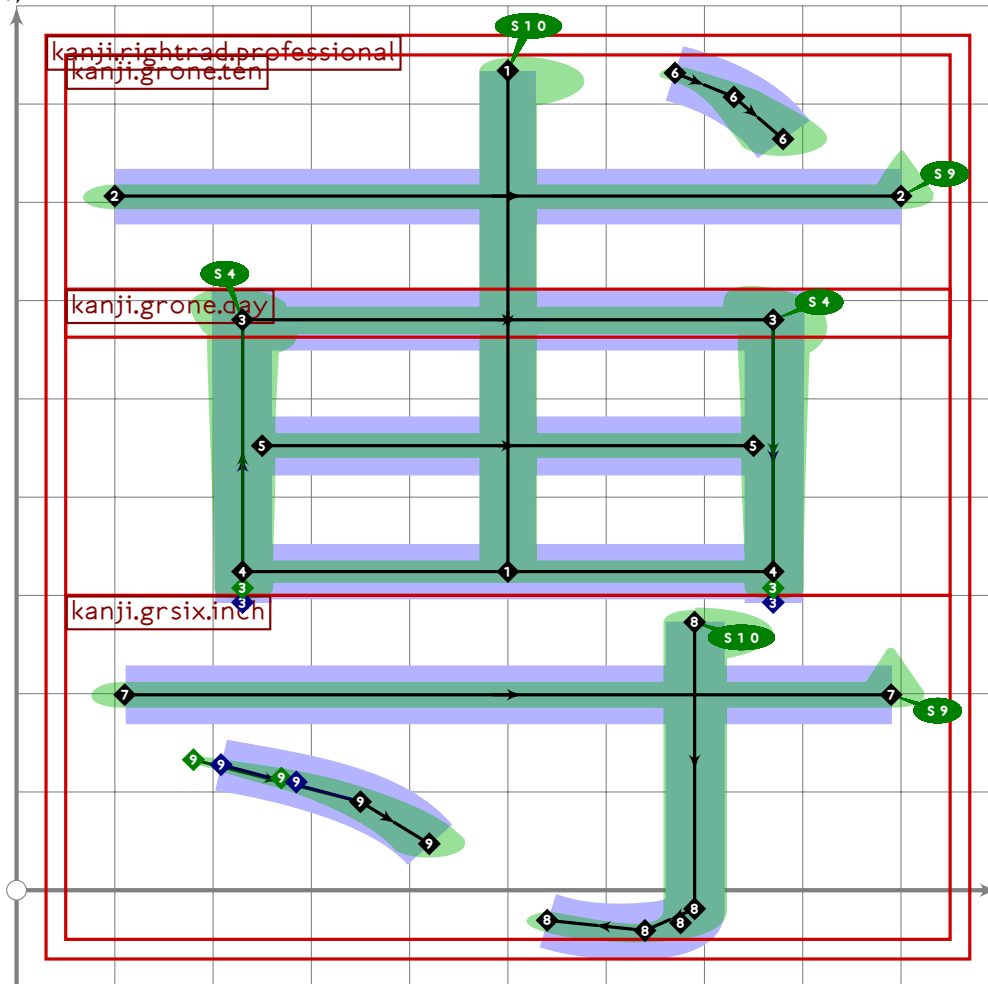
```
1 %
2 % Right-side radicals
3 % Copyright (C) 2012 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 inclusion_lock(rightrad);
32
33
34
35 vardef kanji.rightrad.beta =
36   push_pbox_toexpand("kanji.rightrad.beta");
37   kanji.radical.beta;
38   replace_strokep(0)
39     (oldp shifted (-250,-760) xyscaled (1.2,630/550) shifted (300,760));
40   replace_strokep(0)((300,-60)–(subpath (1,infinity) of oldp));
41   expand_pbox;
42 enddef;
43
44 % KanjiVG lists this as U+5F54, but it's a little different visually
45 vardef kanji.rightrad.carve_wood =
46   push_pbox_toexpand("kanji.rightrad.carve_wood");
47   build_kanji.tb(420,60)
48     (kanji.radical.pigs_tail)
49     (kanji.radical.alt_water);
50   expand_pbox;
51 enddef;
52
53 % named for the most common character to contain it
54 vardef kanji.rightrad.clothing =
55   push_pbox_toexpand("kanji.rightrad.clothing");
56   tsu_xform(identity yscaled 0.92)(build_kanji.tb(440,60)
57     (kanji.radical.seal)
58     (tsu_xform(identity shifted (50,0))
59       (kanji.greight.otoh)));
60   replace_strokep(-2)
61     ((xpart point 0 of oldp,-40)–subpath (1,infinity) of oldp);
62   replace_strokep(-1)
63     (oldp shifted (-900,0) xscaled 0.78 shifted (900,0));
64   replace_strokep(-1)
65     (((-170,0)+point 0 of oldp)–subpath (1,infinity) of oldp);
66   expand_pbox;
67 enddef;
68
69 vardef kanji.rightrad.genius =
70   push_pbox_toexpand("kanji.rightrad.genius");
```

**RIGH**

```

71 push_stroke((600,800),(1.6,1.6));
72 build_kanji.add_jtail(0);
73 set_boserif(0,0,10);
74 push_stroke((110+30*mincho,580)-(860,580),(1.6,1.6)-(1.6,1.6));
75 set_boserif(0,1,9);
76 push_stroke((520,580)..tension 1.2..(360,260)..(110,90),
77   (1.6,1.6)-(1.4,1.4)-(1,1));
78 expand_pbox;
79 enddef;

```



RIGH

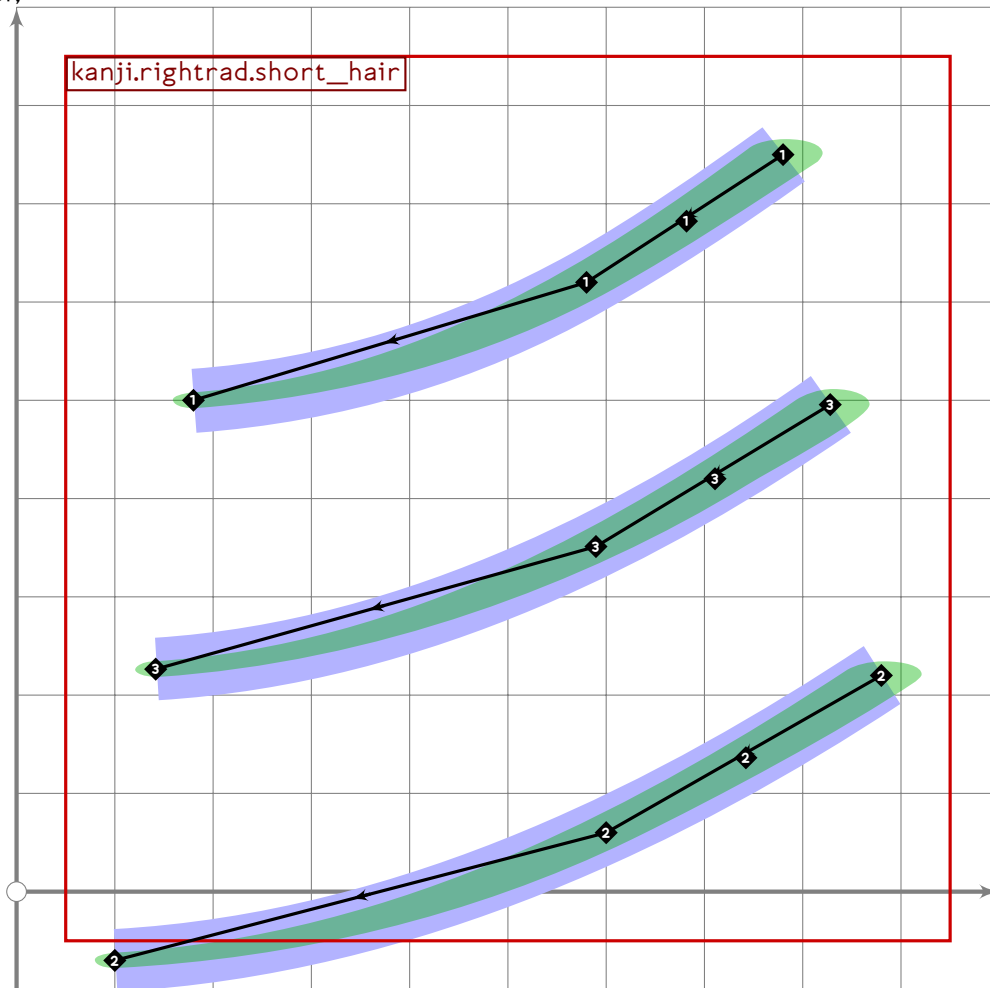
```

80
81 vardef kanji.rightrad.professional =
82   push_pbox_toexpand("kanji.rightrad.professional");
83   build_kanji.tb(300,0)
84     (build_kanji.tb(420,80)
85       (kanji.grone.ten)
86       (kanji.grone.day);
87   replace_stroke(-4)((point 0 of oldp)-(point 0.5 of get_stroke(-1)));
88   push_stroke((670,820)..(730,780)..(780,710),
89     (1,1)-(1.4,1.4)-(1.8,1.8));
90   (kanji.grsix.inch);
91   expand_pbox;

```

U+5F61  
tsuku.uni5F61

92 enddef;



**RIGH**

93

94 vardef kanji.rightrad.short\_hair =

95 push\_pbox\_toexpand("kanji.rightrad.short\_hair");

96 push\_stroke((780,750)..tension 1.2..(580,620)..(180,500),

97 (1.6,1.6)–(1.4,1.4)–(1.1,1.1));

98 push\_stroke((880,220)..tension 1.2..(600,60)..(100,70),

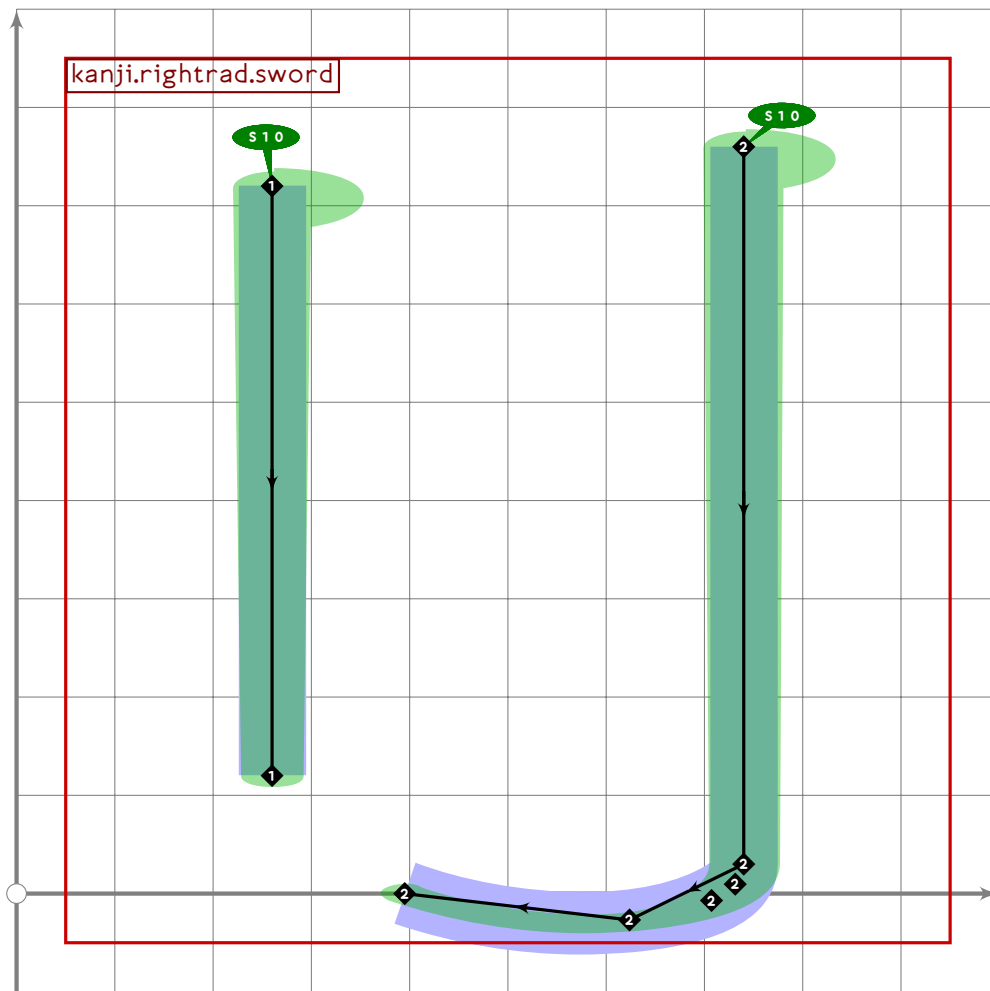
99 (1.6,1.6)–(1.4,1.4)–(1.1,1.1));

100 push\_stroke(interpath(0.52,get\_stroke(0),get\_stroke(1)),

101 (1.6,1.6)–(1.4,1.4)–(1.1,1.1));

102 expand\_pbox;

103 enddef;



**RIGH**

```

104
105 vardef kanji.rightrad.sword =
106   push_pbox_toexpand("kanji.rightrad.sword");
107   push_stroke((260,720)-(260,120),(1.6,1.6)-(1.4,1.4));
108   set_boserif(0,0,10);
109   push_stroke((740,760),(1.6,1.6));
110   set_boserif(0,0,10);
111   build_kanji.add_jtail(0);
112   replace_stroke(0)(oldp shifted (-740,0) xscaled 2.3 shifted (740,0));
113   expand_pbox;
114 enddef;

```

## toprad.mp

```
1 %
2 % Radicals for top (often special forms of other radicals)
3 % Copyright (C) 2011, 2012, 2013 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 inclusion_lock(toprad);
32
33
34
35 vardef kanji.toprad.alt_sparkle_three =
36   push_pbox_toexpand("kanji.toprad.alt_sparkle_three");
37   push_stroke((220,810)..(270,450)..(300,90),
38     (1.2,1.2)–(1.5,1.5)–(1.7,1.7));
39   push_stroke((420,900)..(470,540)..(500,180),
40     (1.2,1.2)–(1.5,1.5)–(1.7,1.7));
41   push_stroke((780,870)–(670,0),(1.7,1.7)–(1.3,1.3));
42   set_boserif(0,0,10);
43   expand_pbox;
44 enddef;
45
46 vardef kanji.toprad.bamboo =
47   push_pbox_toexpand("kanji.toprad.bamboo");
48   push_stroke((250,780)..(190,590)..(70,420),
49     (1.7,1.7)–(1.6,1.6)–(1.2,1.2));
50   set_boserif(0,0,10);
51   push_stroke((190,590)–(490,590),(1.6,1.6)–(1.6,1.6));
52   set_boserif(0,1,9);
53   push_stroke((270,590)..tension 1.2..(360,480)..(390,370),
54     (1,1,1)–(1.5,1.5)–(1.7,1.7));
55   push_stroke((650,780)..(590,590)..(480,440),
56     (1.7,1.7)–(1.6,1.6)–(1.2,1.2));
57   set_boserif(0,0,10);
58   push_stroke((590,590)–(930,590),(1.6,1.6)–(1.6,1.6));
59   set_boserif(0,1,9);
60   push_stroke((680,590)..tension 1.2..(770,480)..(800,370),
61     (1,1,1)–(1.5,1.5)–(1.7,1.7));
62   expand_pbox;
63 enddef;
64
65 vardef kanji.toprad.blue =
66   push_pbox_toexpand("kanji.toprad.blue");
67   push_stroke((120,560)–(880,560),
68     (1.6,1.6)–(1.6,1.6));
69   set_boserif(0,1,9);
70   push_stroke((500,780)–(500,40),
```

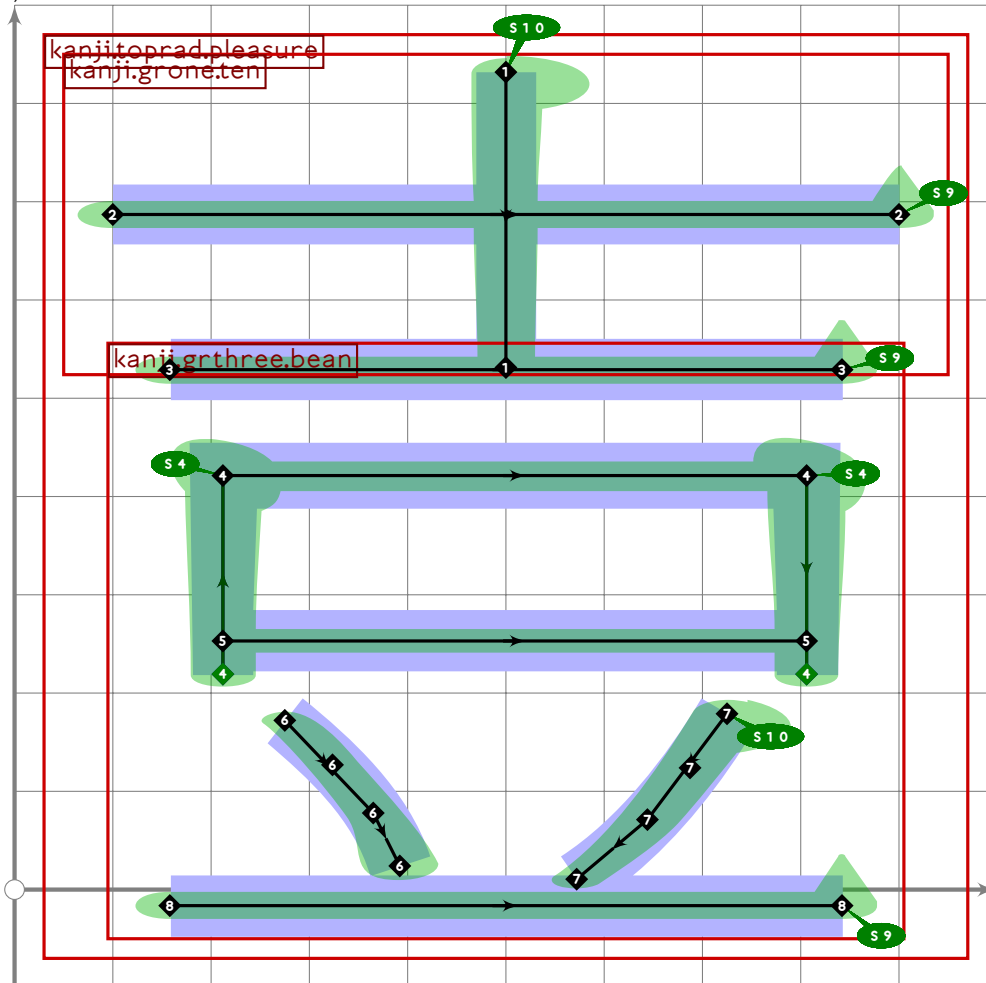
```

71     (1.6,1.6)–(1.5,1.5));
72     set_boserif(0,0,10);
73     push_stroke((160,310)–(840,310),
74     (1.6,1.6)–(1.6,1.6));
75     set_boserif(0,1,9);
76     push_stroke((80,40)–(920,40),
77     (1.6,1.6)–(1.6,1.6));
78     set_boserif(0,1,9);
79     expand_pbox;
80 enddef;
81
82 vardef kanji.toprad.cave =
83     push_pbox_toexpand("kanji.toprad.cave");
84     build_kanji.level(build_kanji.tb(400,360)
85     (kanji.radical.silly_hat)
86     (kanji.radical.legs));
87     expand_pbox;
88 enddef;
89
90 vardef kanji.toprad.ey =
91     push_pbox_toexpand("kanji.toprad.ey");
92     build_kanji.box((130,800),(870,120));
93     push_stroke((376,800)–(376,120),(1.6,1.6)–(1.5,1.5));
94     push_stroke((624,800)–(624,120),(1.6,1.6)–(1.5,1.5));
95     expand_pbox;
96 enddef;
97
98 vardef kanji.toprad.grass =
99     push_pbox_toexpand("kanji.toprad.grass");
100     push_stroke((350,800)–(350,-30),
101     (1.6,1.6)–(1.4,1.4));
102     set_boserif(0,0,10);
103     push_stroke((650,800)–(650,-30),
104     (1.6,1.6)–(1.4,1.4));
105     set_boserif(0,0,10);
106     push_stroke((100,400)–(900,400),
107     (1.6,1.6)–(1.6,1.6));
108     set_boserif(0,1,9);
109     expand_pbox;
110 enddef;
111
112 vardef kanji.toprad.once_upon_a_time =
113     push_pbox_toexpand("kanji.toprad.once_upon_a_time");
114     perl_structure:=perl_structure&"eids.u2FF1.u8279.u4E00";
115     build_kanji.sscale(xscaled 0.8)(kanji.toprad.grass);
116     tsu_xform(identity shifted (0,-420))(kanji.grone.one);
117     expand_pbox;
118 enddef;

```

U+58F4  
tsuku.uni58F4

```
119
120 vardef kanji.toprad.paw =
121   push_pbox_toexpand("kanji.toprad.paw");
122   tsu_xform(identity yscaled 0.6)
123   (push_stroke(
124     (170,880)..(500,1060)..tension 1.1..(830,1380),
125     (1.1,1.1)-(1.6,1.6)-(2.0,2.0));
126   build_kanji.sscale(rotated 90 slanted -0.35 rotated -90)
127   (kanji.toprad.alt_sparkle_three));
128   expand_pbox;
129 enddef;
```



```
130
131 vardef kanji.toprad.pleasure =
132   push_pbox_toexpand("kanji.toprad.pleasure");
133   build_kanji.level(build_kanji.tb(540,32)
134     (kanji.grone.ten)
135     (build_kanji.sscale(xscaled 0.9)(kanji.grthree.bean)));
136   expand_pbox;
137 enddef;
138
139 vardef kanji.toprad.rain =
```



```

140 push_pbox_toexpand("kanji.toprad.rain");
141 push_stroke((120,720)-(880,720),(1.6,1.6)-(1.6,1.6));
142 set_boserif(0,1,9);
143 push_stroke((500,720)-(500,30),(1.6,1.6)-(1.5,1.5));
144 push_stroke((100,150)..(100+50*mincho,400)..(100+70*mincho,540)-
145     (900,540)..(900-40*mincho,275)..(900-70*mincho,150),
146     (1.7,1.7)-(1.6,1.6)-(1.4,1.4)-
147     (1.7,1.7)-(1.6,1.6)-(1.4,1.4));
148 set_botip(0,2,1);
149 set_botip(0,3,1);
150 set_boserif(0,3,4);
151 push_stroke((230,380)..(400,380),(1.6,1.6)-(1.6,1.6));
152 set_boserif(0,1,9);
153 set_bosize(0,80);
154 push_stroke(get_strokep(0) shifted (350,0),get_strokeq(0));
155 set_boserif(0,1,9);
156 set_bosize(0,80);
157 push_stroke(get_strokep(-1) shifted (0,-220),get_strokeq(-1));
158 set_boserif(0,1,9);
159 set_bosize(0,80);
160 push_stroke(get_strokep(-2) shifted (350,-220),get_strokeq(-2));
161 set_boserif(0,1,9);
162 set_bosize(0,80);
163 expand_pbox;
164 endif;
165
166 vardef kanji.toprad.ridiculous_hat =
167     push_pbox_toexpand("kanji.toprad.ridiculous_hat");
168     build_kanji.level(build_kanji.tb(620,156)
169         (kanji.toprad.sparkle_three)
170         (build_kanji.tb(600,410)
171             (kanji.radical.conservative_hat)
172             (build_kanji.sscale(xyscaled (0.8,0.64) shifted (0,-120))
173                 (kanji.grone.mouth))));
174     expand_pbox;
175 endif;
176
177 vardef kanji.toprad.sheep =
178     push_pbox_toexpand("kanji.toprad.sheep");
179     kanji.grthree.sheep;
180     replace_strokep(0)
181         ((point 0 of oldp)-(oldp intersectionpoint get_strokep(-3)));
182     expand_pbox;
183 endif;
184
185 vardef kanji.toprad.slash =
186     push_pbox_toexpand("kanji.toprad.slash");
187     push_stroke((280,810)..tension 1.2..(160,220)..(50,0),

```

```

188     (1.7,1.7)–(1.5,1.5)–(1.2,1.2));
189   set__boserif(0,0,10);
190   push_stroke((get_strokep(0) intersectionpoint ((0,520)–(1000,520)))–
191     (880,520),
192     (1.5,1.5)–(1.6,1.6));
193   set__boserif(0,1,9);
194   expand_pbox;
195 enddef;
196
197 vardef kanji.toprad.sparkle_four =
198   push_pbox_toexpand("kanji.toprad.sparkle_four");
199   push_stroke((150,600)..tension 1.2..(200,440)..(270,160),
200     (1,1)–(1.3,1.3)–(1.9,1.9));
201   push_stroke((390,780)–(390,-20),
202     (1.6,1.6)–(1.5,1.5));
203   set__boserif(0,0,10);
204   push_stroke((610,780)–(610,-20),
205     (1.6,1.6)–(1.5,1.5));
206   set__boserif(0,0,10);
207   push_stroke((840,620)..tension 1.2..(780,370)..(720,170),
208     (1.6,1.6)–(1.5,1.5)–(1.3,1.3));
209   set__boserif(0,0,10);
210   expand_pbox;
211 enddef;
212
213 vardef kanji.toprad.sparkle_three =
214   push_pbox_toexpand("kanji.toprad.sparkle_three");
215   kanji.toprad.sparkle_two;
216   push_stroke((500,780)–(500,-20),
217     (1.6,1.6)–(1.5,1.5));
218   set__boserif(0,0,10);
219   expand_pbox;
220 enddef;
221
222 vardef kanji.toprad.sparkle_two =
223   push_pbox_toexpand("kanji.toprad.sparkle_two");
224   push_stroke((200,600)..tension 1.2..(250,440)..(320,160),
225     (1,1)–(1.3,1.3)–(1.9,1.9));
226   push_stroke((790,620)..tension 1.2..(730,370)..(670,170),
227     (1.6,1.6)–(1.5,1.5)–(1.3,1.3));
228   set__boserif(0,0,10);
229   expand_pbox;
230 enddef;
231
232 vardef kanji.toprad.stand_up =
233   push_pbox_toexpand("kanji.toprad.stand_up");
234   push_stroke((500,810)–(500,510),
235     (1.6,1.6)–(1.5,1.5));

```

```

236 set_boserif(0,0,10);
237 push_stroke((120,510)-(880,510),
238   (1.6,1.6)-(1.6,1.6));
239 set_boserif(0,1,9);
240 push_stroke((250,430)..tension 1.2..(320,220)..(380,90),
241   (1.2,1.2)-(1.4,1.4)-(1.7,1.7));
242 push_stroke((750,450)..tension 1.2..(660,220)..(580,60),
243   (1.6,1.6)-(1.5,1.5)-(1.3,1.3));
244 set_boserif(0,0,10);
245 push_stroke((70,0)-(930,0),
246   (1.6,1.6)-(1.6,1.6));
247 set_boserif(0,1,9);
248 expand_pbox;
249 enddef;
250
251 vardef kanji.toprad.summer =
252   push_pbox_toexpand("kanji.toprad.summer");
253   push_stroke((100,855)-(900,855),(1.6,1.6));
254   set_boserif(0,1,9);
255   build_kanji.attach_tick(660)(kanji.grone.ey);
256   expand_pbox;
257 enddef;
258
259 vardef kanji.toprad.ticket =
260   push_pbox_toexpand("kanji.toprad.ticket");
261   build_kanji.thickness(0.92)
262     (push_stroke((110,760)-(890,760),(1.6,1.6)-(1.6,1.6));
263     set_boserif(0,1,9);
264     push_stroke((390,760)-(390,30),(1.5,1.5)-(1.4,1.4));
265     push_stroke((610,760)-(610,30),(1.5,1.5)-(1.4,1.4));
266     build_kanji.box((180,420),(820,30)));
267   expand_pbox;
268 enddef;

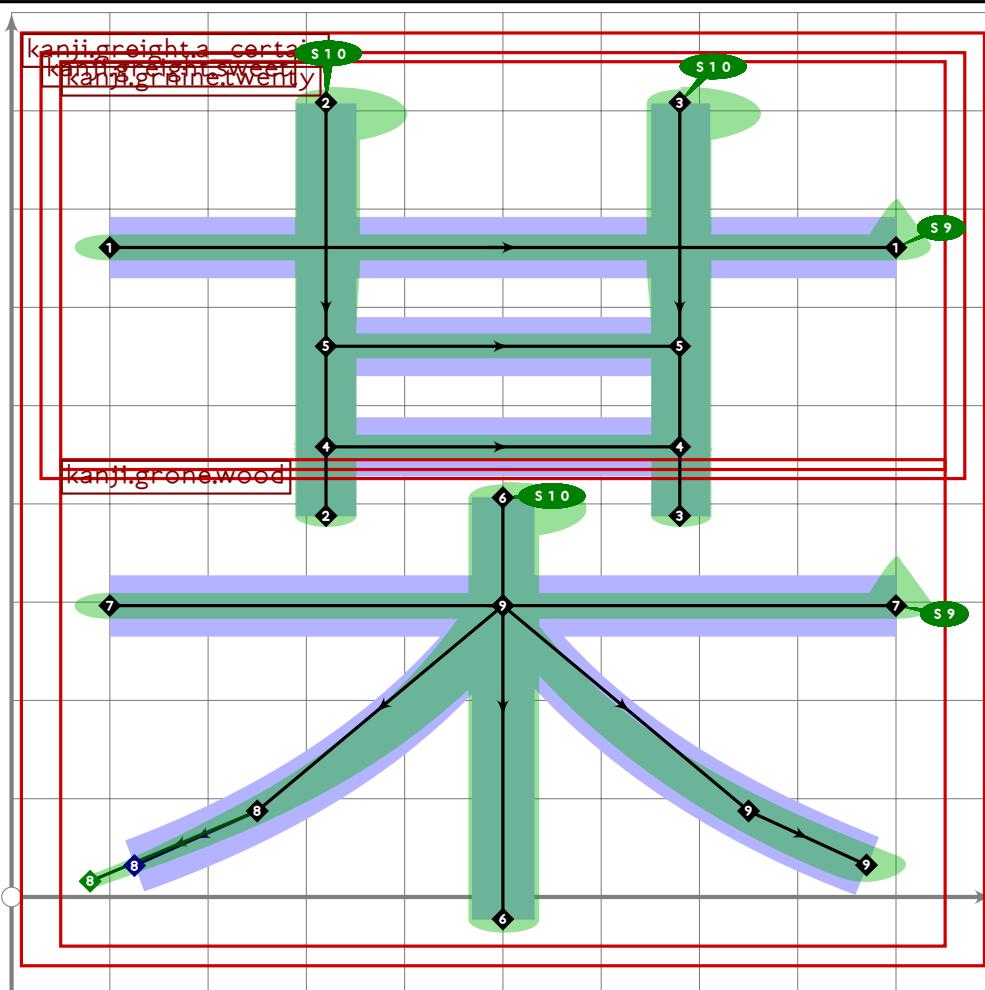
```

# gradeeight.mp

```

1 %
2 % Grade Eight kanji used on more than one page
3 % Copyright (C) 2011, 2012, 2013 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 inclusion_lock(gradeeight);
32
33

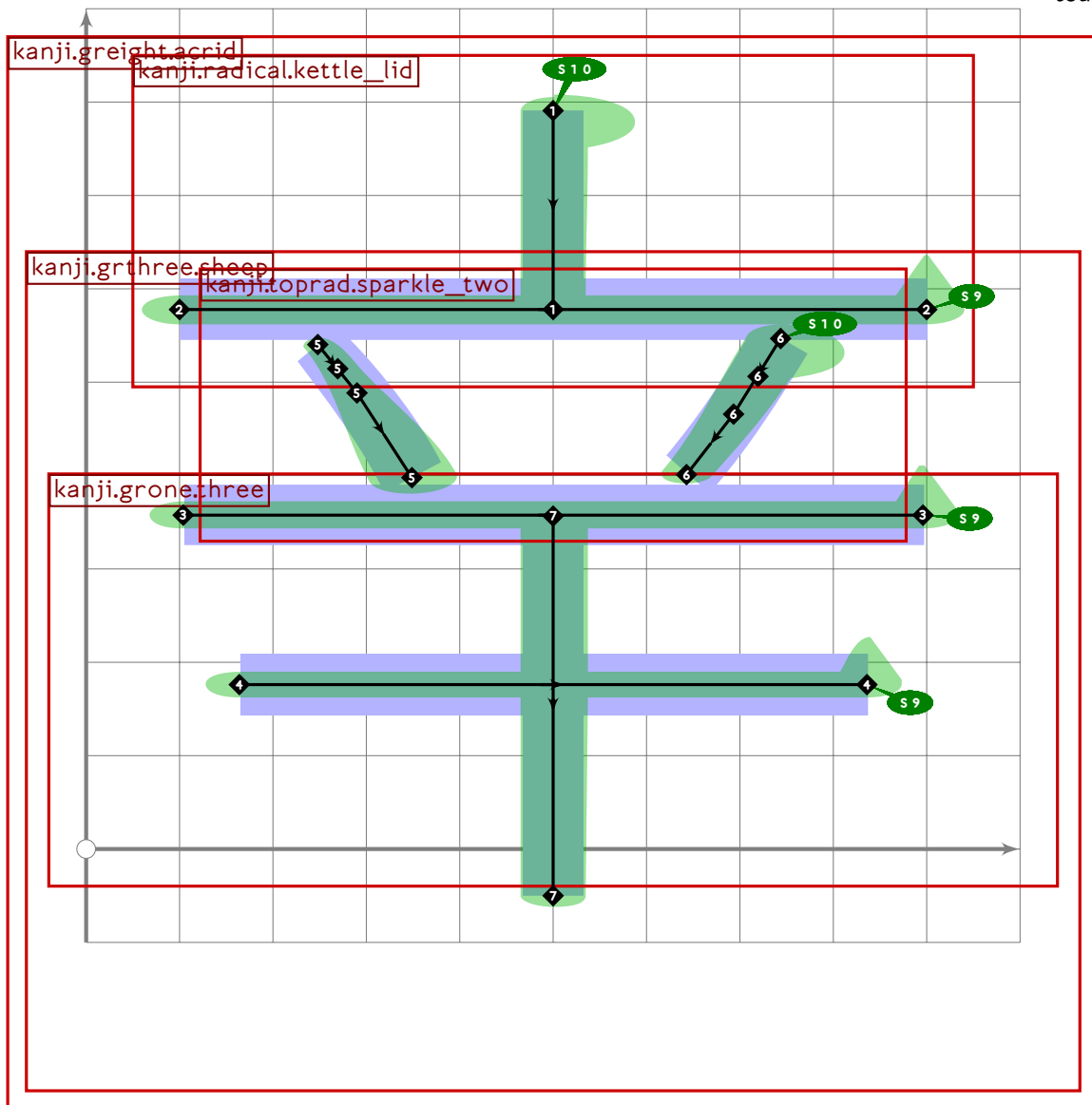
```



```

34
35 vardef kanji.greight.a_certain =
36   push_pbox_toexpand("kanji.greight.a_certain");
37   build_kanji.tb(440,10)
38     (kanji.greight.sweet)
39     (kanji.grone.wood);
40   expand_pbox;
41 enddef;

```

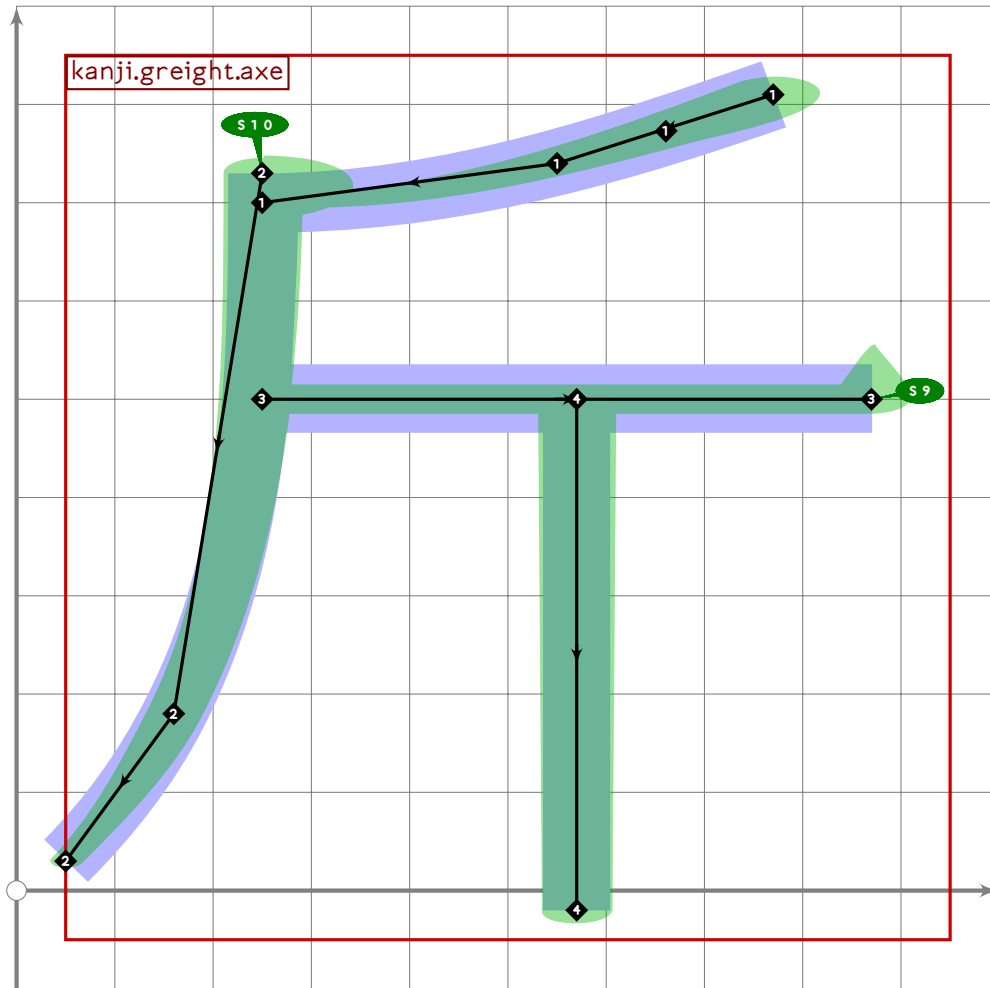


EIGH

```

42
43 vardef kanji.greight.acrid =
44   push_pbox_toexpand("kanji.greight.acrid");
45   build_kanji.level(build_kanji.tb(520,50)
46     (kanji.radical.kettle_lid)
47     (build_kanji.sscale(xyscaled (1.2,1.4) shifted (0,-140))
48       (kanji.grthree.sheep);
49     obstacktype[find_stroke(-3)]:=otnull;
50     replace_stroke(0)((point 0 of oldp)-(500,-50)));
51   expand_pbox;
52 enddef;

```

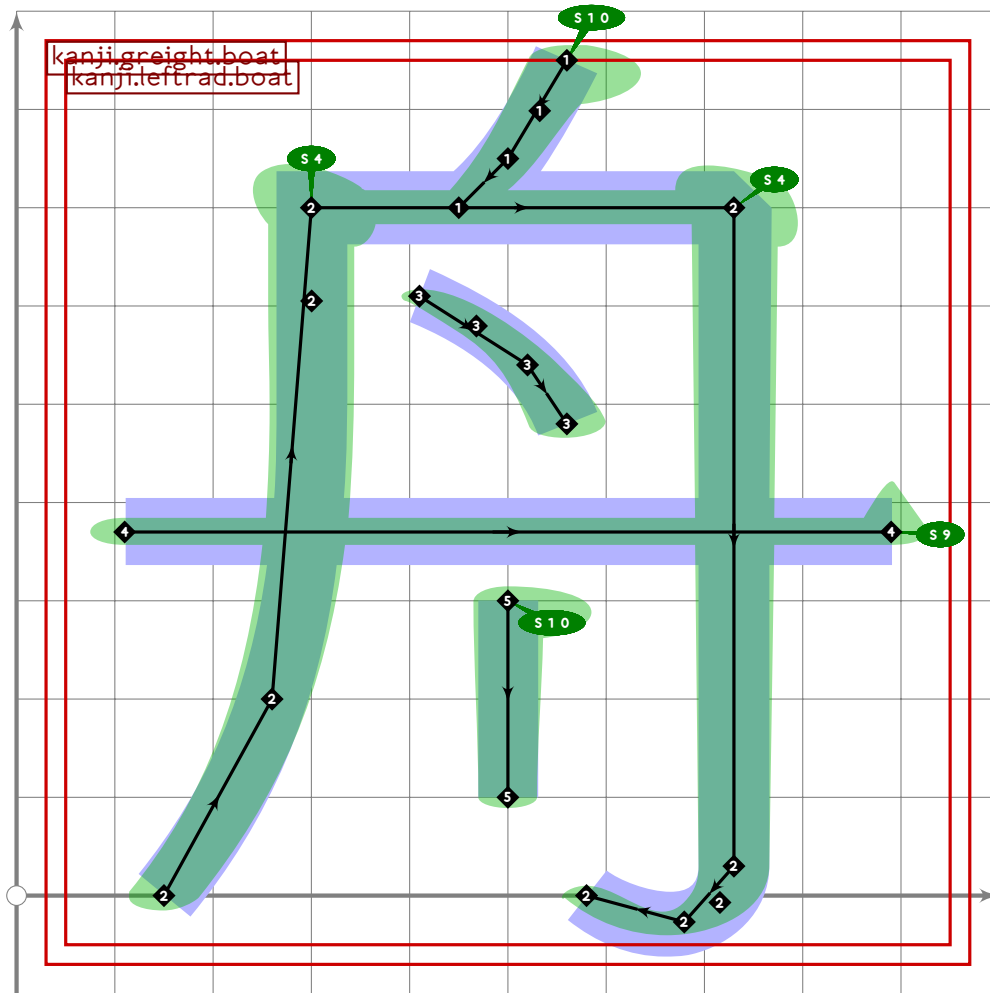


## EIGH

```

53
54 vardef kanji.greight.axe =
55   push_pbox_toexpand("kanji.greight.axe");
56   push_stroke((770,810)..tension 1.2..(550,740)..(250,700),
57     (1.8,1.8)–(1.5,1.5)–(1,1));
58   push_stroke((250,730){down}..(160,180)..(50,30),
59     (1.6,1.6)–(1.3,1.3)–(1,1));
60   set_boserif(0,0,10);
61   push_stroke((250,500)–(870,500),(1.6,1.6)–(1.6,1.6));
62   set_boserif(0,1,9);
63   push_stroke((570,500)–(570,-20),(1.6,1.6)–(1.5,1.5));
64   expand_pbox;
65 enddef;

```



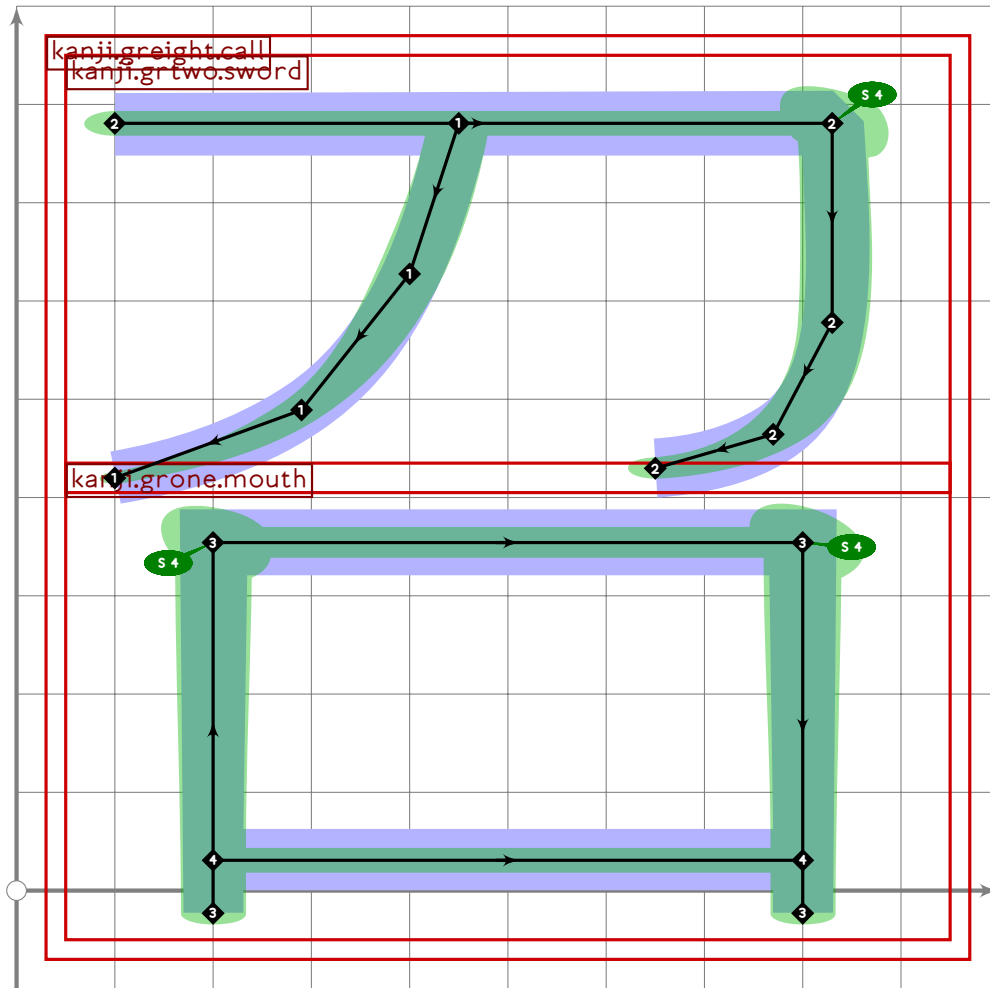
```

66
67 vardef kanji.greight.boat =
68   push_pbox__toexpand("kanji.greight.boat");
69   kanji.leftrad.boat;
70   replace_strokep(-1)((110,370)-(890,370));
71   replace_strokeq(-1)((1.5,1.5)-(1.5,1.5));
72   set_boserif(-1,9);
73   expand_pbox;
74 enddef;

```

EIGH

U+53EC  
tsuku.uni53EC



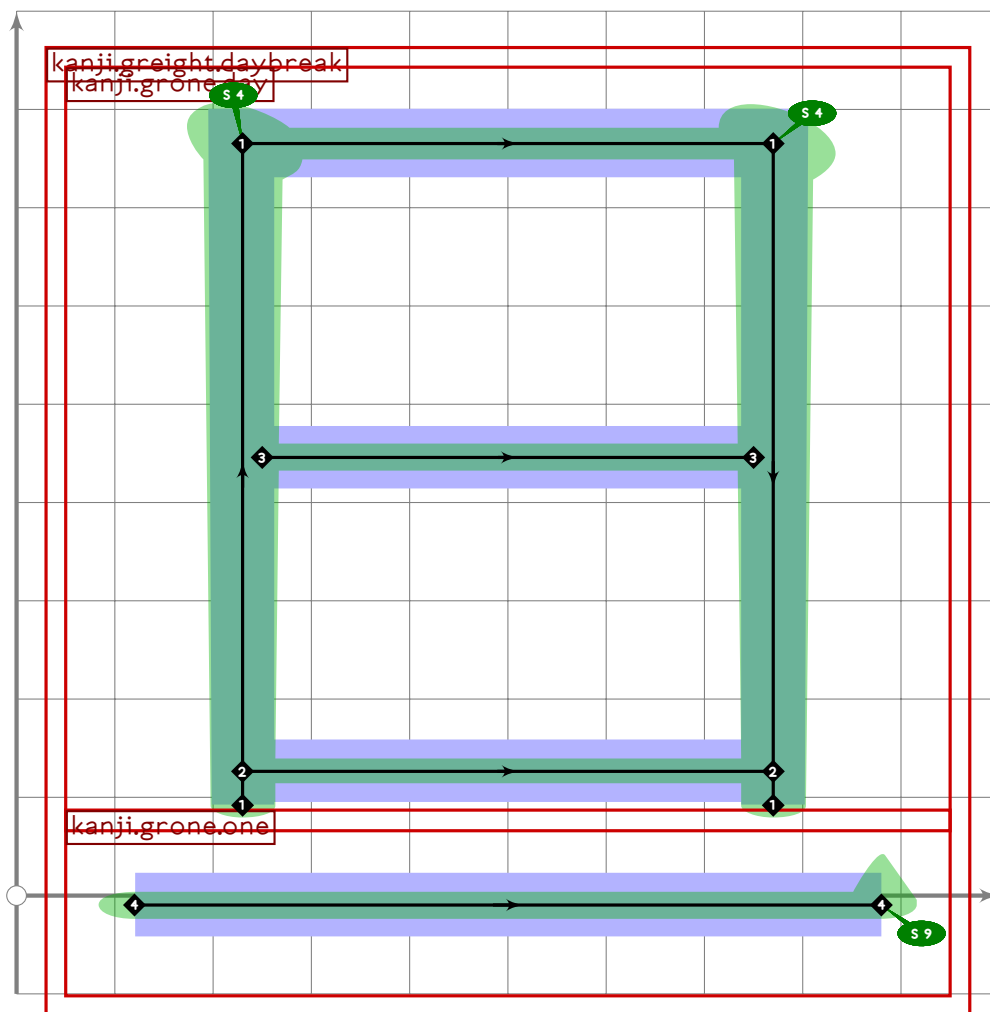
**EIGH**

```

75
76 vardef kanji.greight.call =
77   push_pbox_toexpand("kanji.greight.call");
78   build_kanji.tb(420,30)
79     (kanji.grtwo.sword)
80     (kanji.grone.mouth);
81   expand_pbox;
82 enddef;

```





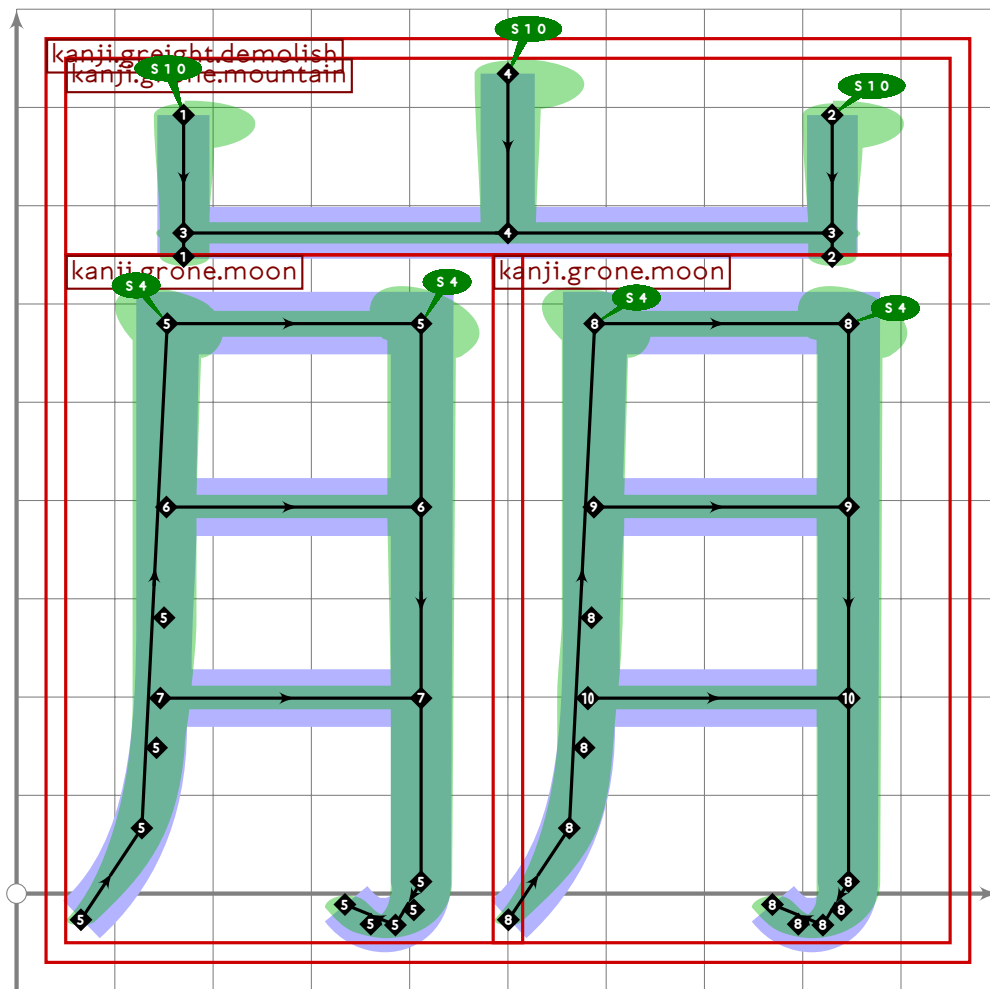
```

83
84 vardef kanji.greight.daybreak =
85   push_pbox_toexpand("kanji.greight.daybreak");
86   build_kanji.sscale(yscaled 1.05 shifted (0,-30))
87   (build_kanji.level(build_kanji.tb(120,20)
88     (kanji.grone.day)
89     (kanji.grone.one)));
90   expand_pbox;
91 enddef;

```

EIGH

U+5D29  
tsuku.uni5D29

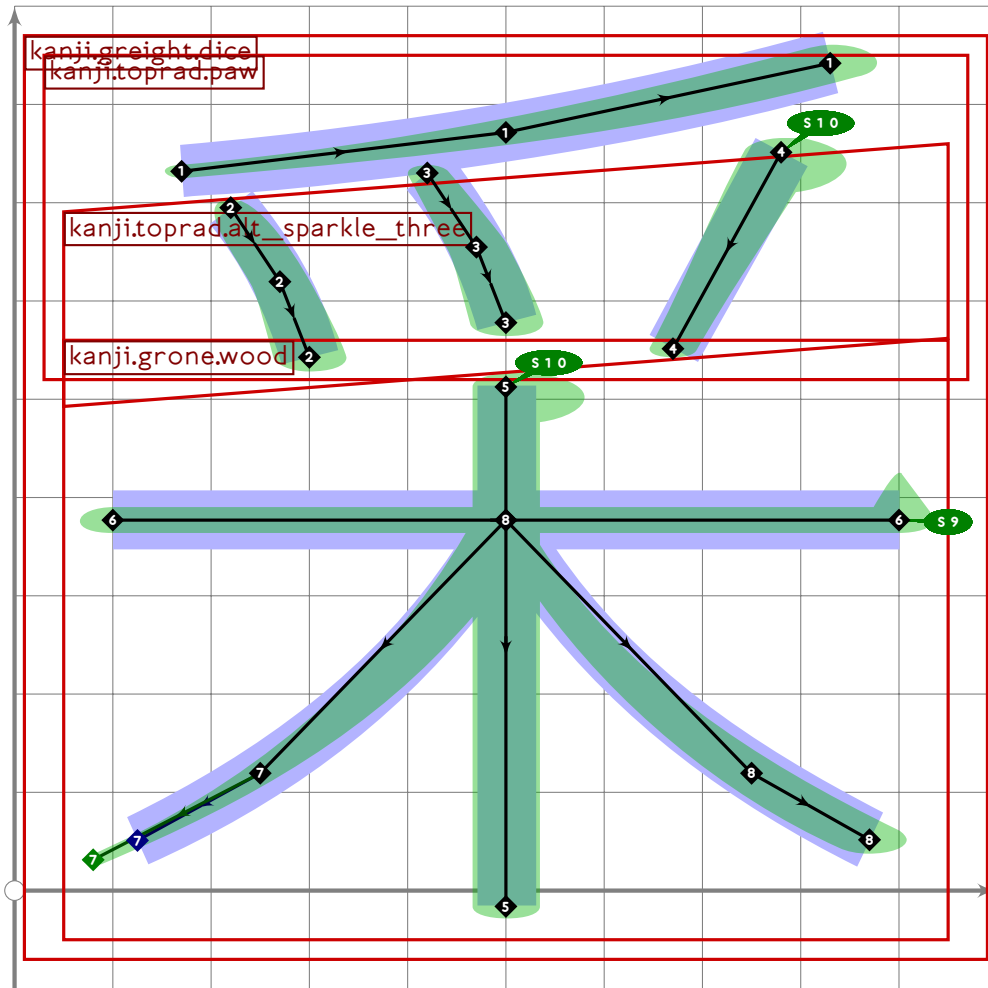


**EIGH**

```

92
93 vardef kanji.greight.demolish =
94   push_pbox_toexpand("kanji.greight.demolish");
95   build_kanji.tb(650,0)
96     (kanji.grone.mountain)
97     (build_kanji.lr(500,30)
98     (kanji.grone.moon)
99     (kanji.grone.moon));
100   expand_pbox;
101 enddef;

```

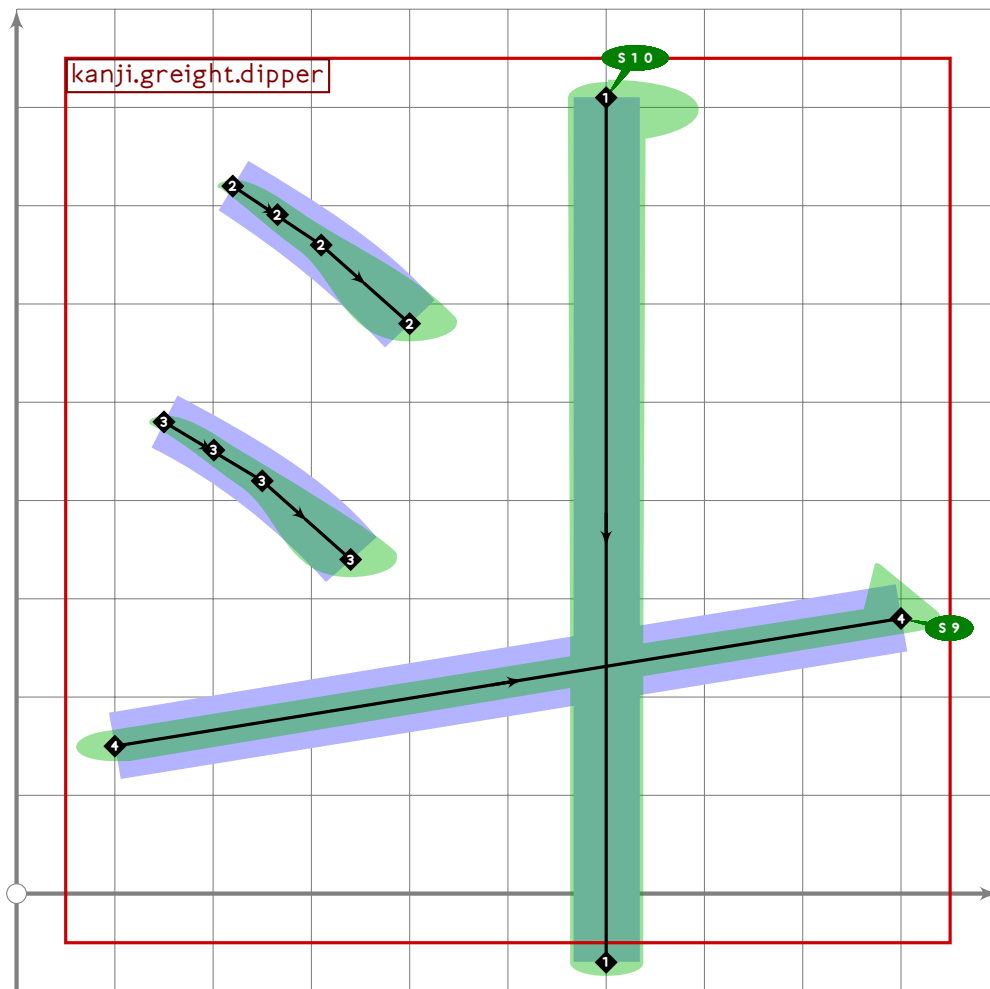


```

102
103 vardef kanji.greight.dice =
104   push_pbox_toexpand("kanji.greight.dice");
105   build_kanji.level(build_kanji.tb(540,40)
106     (kanji.toprad.paw)
107     (kanji.grone.wood));
108   expand_pbox;
109 enddef;

```

**EIGH**

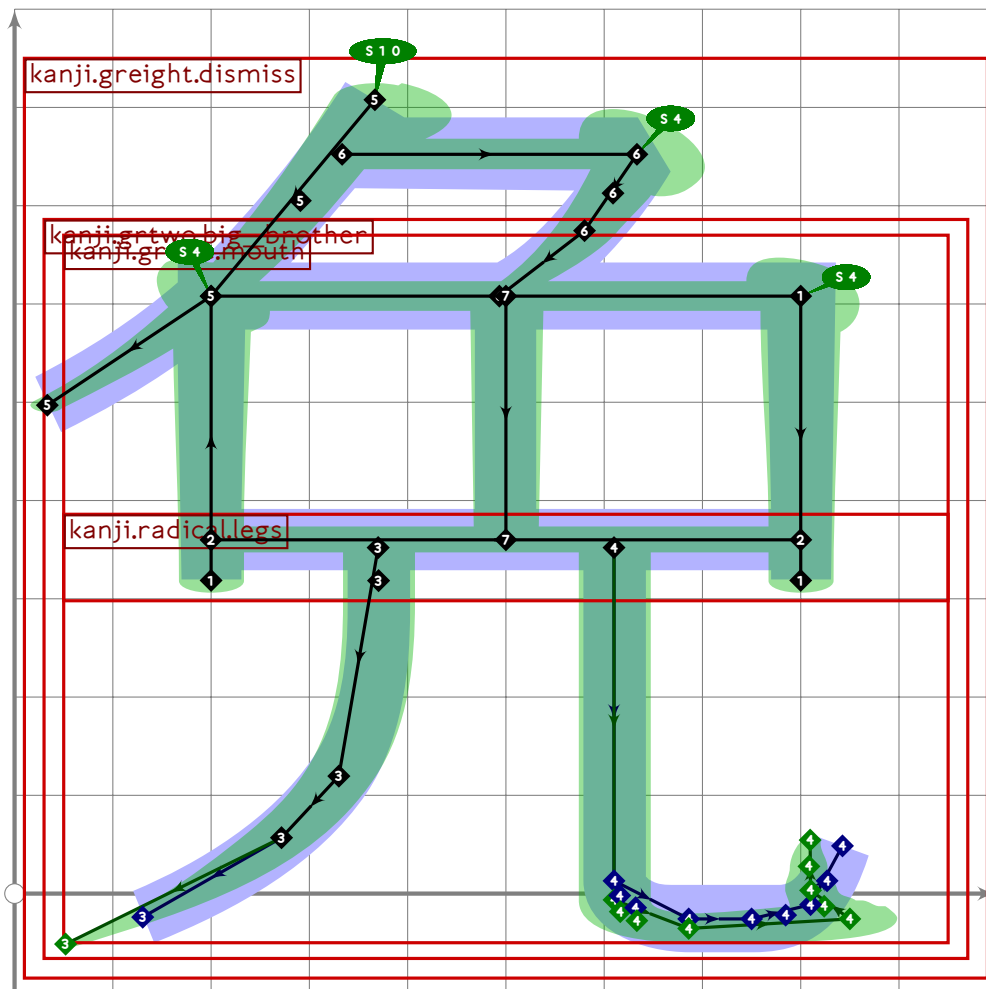


## EIGH

```

110
111 vardef kanji.greight.dipper =
112   push_pbox_toexpand("kanji.greight.dipper");
113   push_stroke((600,810)-(600,-70),(1.6,1.6)-(1.5,1.5));
114   set_boserif(0,0,10);
115   push_stroke((220,720)..tension 1.2..(310,660)..(400,580),
116     (1,1)-(1.3,1.3)-(1.9,1.9));
117   set_bosize(0,94);
118   push_stroke((150,480)..tension 1.2..(250,420)..(340,340),
119     (1,1)-(1.3,1.3)-(1.9,1.9));
120   set_bosize(0,94);
121   push_stroke((100,150)-(900,280),(1.6,1.6)-(1.6,1.6));
122   set_boserif(0,1,9);
123   expand_pbox;
124 enddef;

```



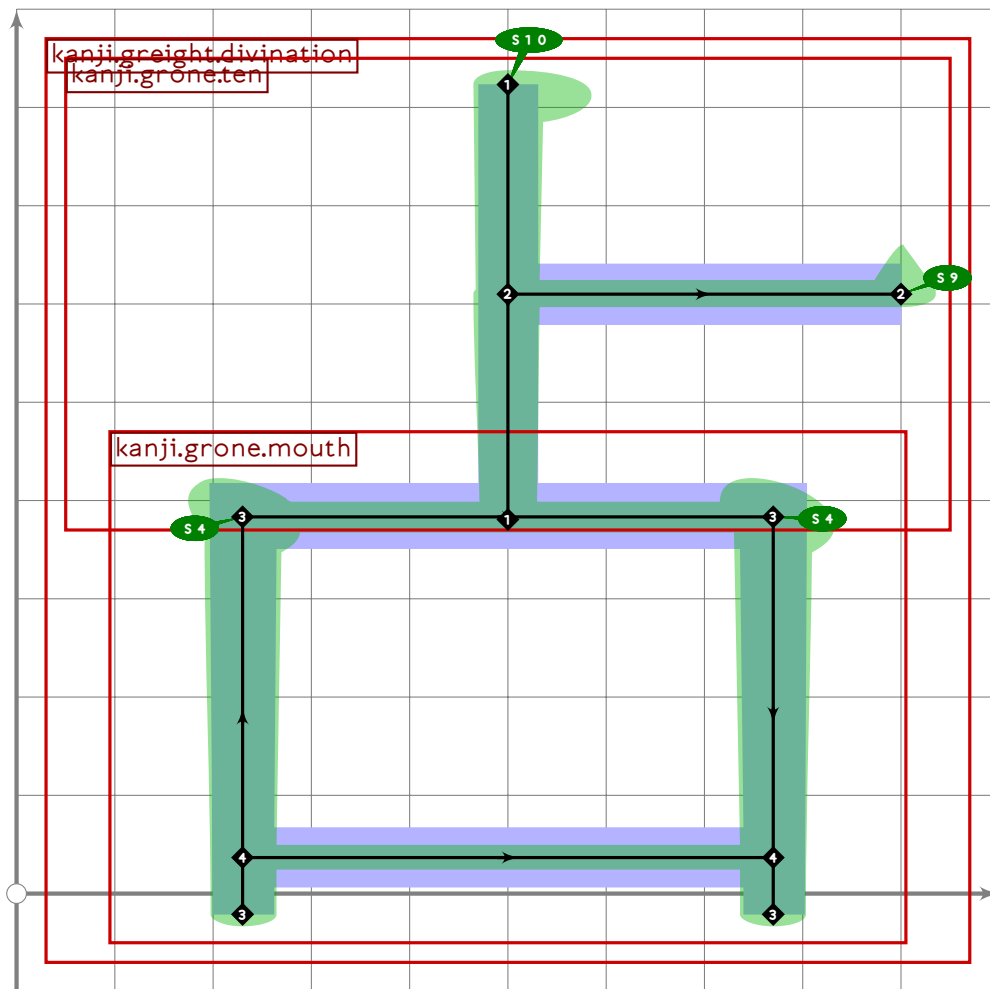
```

125
126 vardef kanji.greight.dismiss =
127   push_pbox_toexpand("kanji.greight.dismiss");
128   build_kanji.attach_fishhook(0.8)(kanji.grtwo.big_brother);
129   push_stroke(
130     (point 1.5 of get_stroke(-5))-(point 0.5 of get_stroke(-4)),
131     (1.6,1.6)-(1.5,1.5));
132   set_bosize(0,get_bosize(-5));
133   expand_pbox;
134 enddef;

```

EIGH

U+5360  
tsuku.uni5360

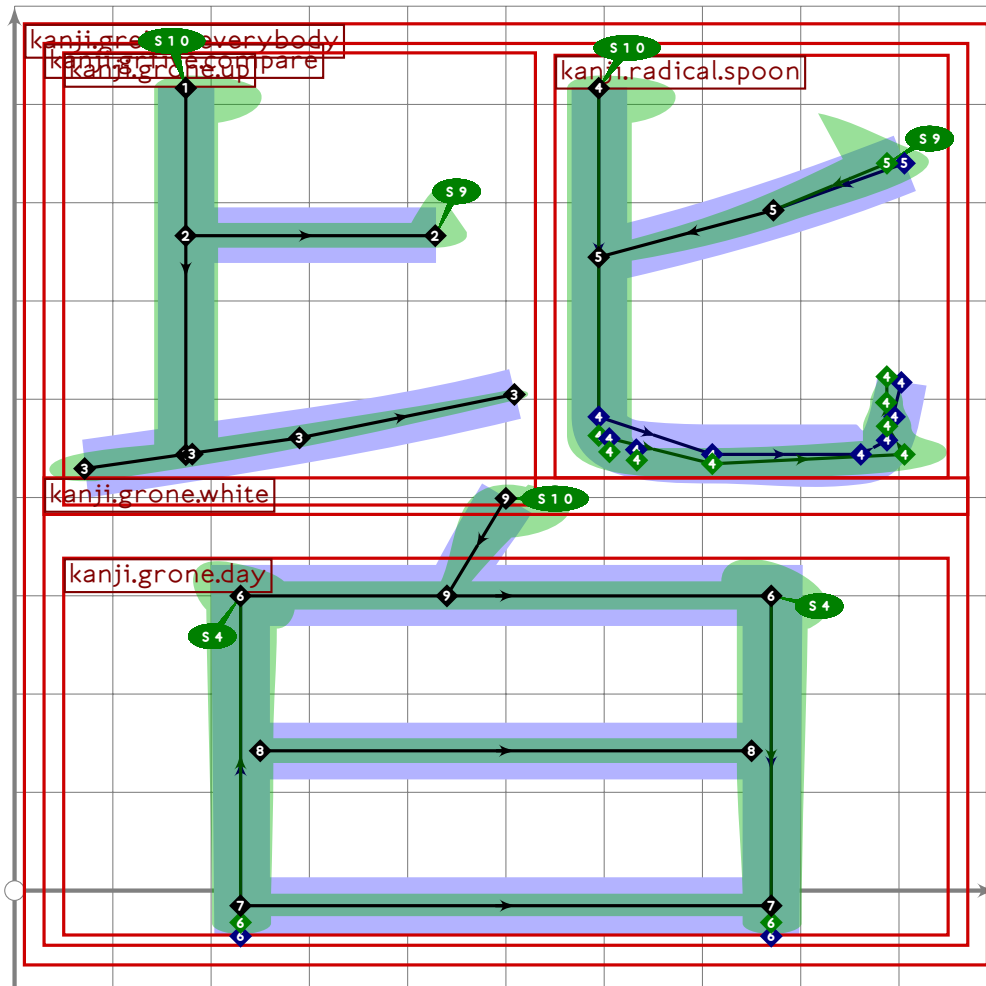


**EIGH**

```

135
136 vardef kanji.greight.divination =
137   push_pbox_toexpand("kanji.greight.divination");
138   build_kanji.level(build_kanji.tb(420,100)
139     (kanji.grone.ten;
140       replace_strokep(0)(subpath (0.5,1) of oldp))
141     (build_kanji.sscale(xscaled 0.9)(kanji.grone.mouth)));
142   expand_pbox;
143 enddef;

```

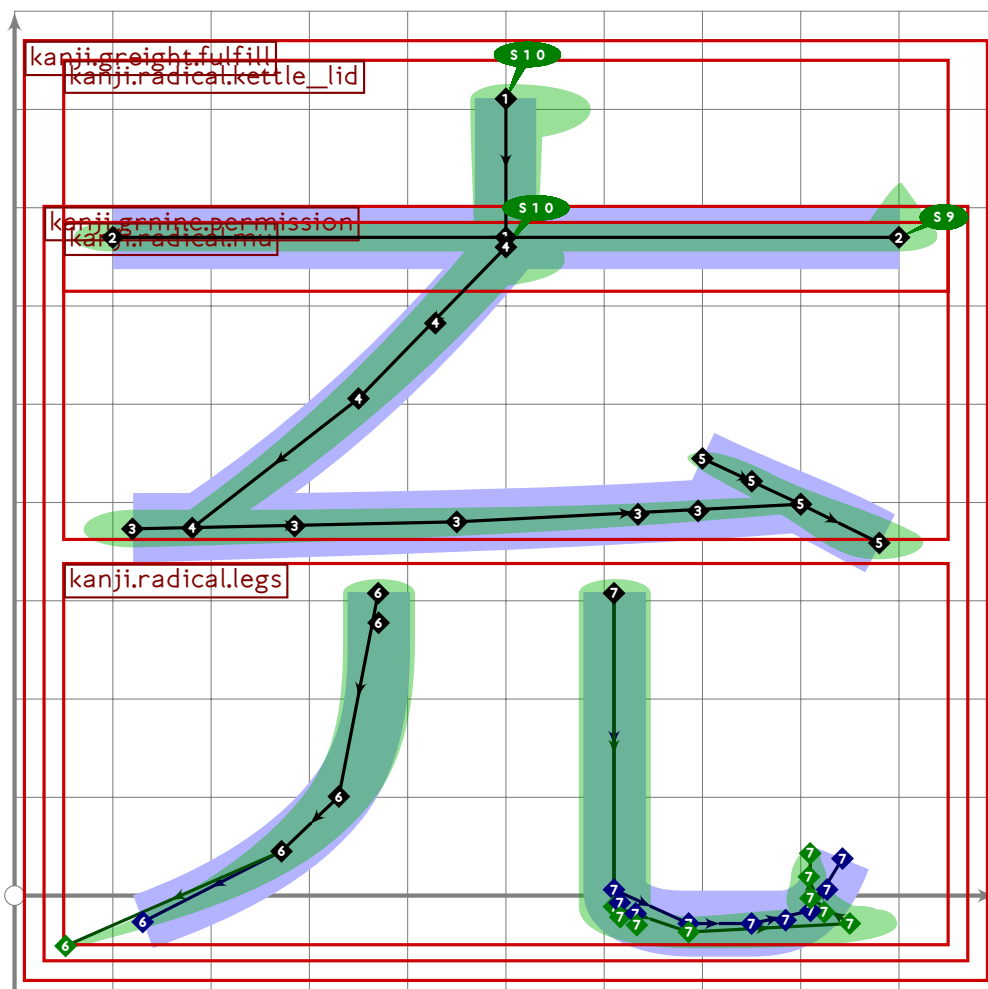


```

144
145 vardef kanji.greight.everybody =
146   push_pbox_toexpand("kanji.greight.everybody");
147   build_kanji.level(build_kanji.tb(420,0)
148     (kanji.grfive.compare)
149     (kanji.grone.white));
150   expand_pbox;
151 enddef;

```

EIGH



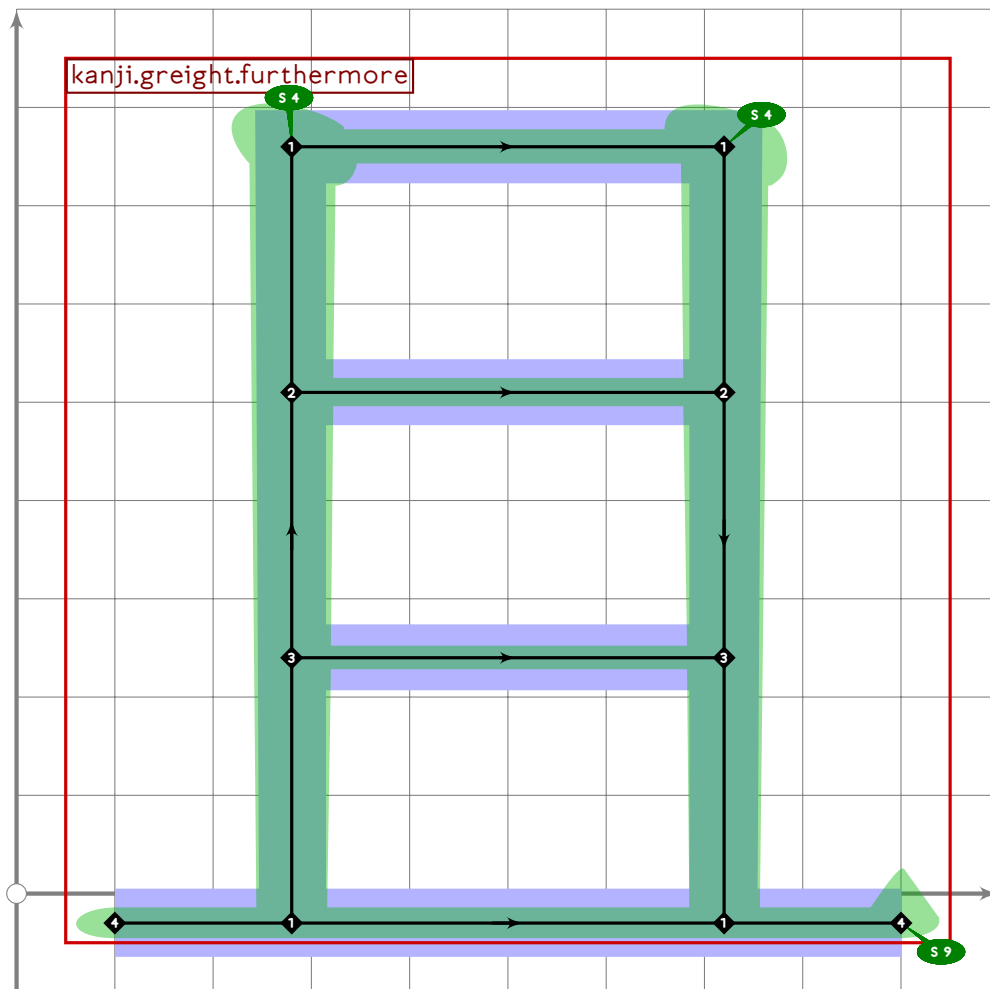
**EIGH**

```

152
153 vardef kanji.greight. fulfill =
154   push_pbox_toexpand("kanji.greight. fulfill");
155   build_kanji.level(build_kanji.tb(650,70)
156     (kanji.radical.kettle_lid)
157     (kanji.grnine.permission));
158   expand_pbox;
159 enddef;

```



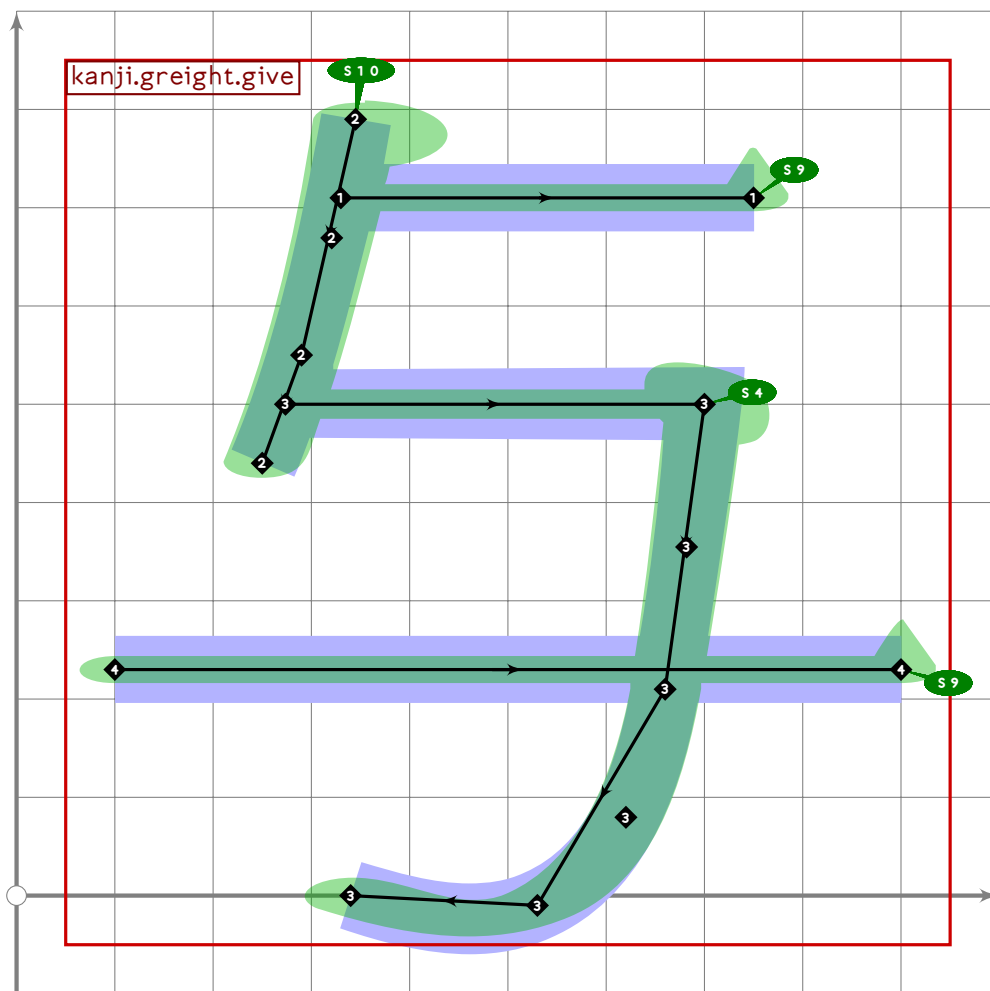


```

160
161 vardef kanji.greight.furthermore =
162   push_pbox_toexpand("kanji.greight.furthermore");
163   push_stroke((280,-30)-(280,760)-(720,760)-(720,-30),
164     (1.5,1.5)-(1.7,1.7)-(1.7,1.7)-(1.5,1.5));
165   set_botip(0,1,1);
166   set_botip(0,2,1);
167   set_boserif(0,1,4);
168   set_boserif(0,2,4);
169   push_stroke((280,510)-(720,510),
170     (1.5,1.5)-(1.5,1.5));
171   push_stroke((280,240)-(720,240),
172     (1.4,1.4)-(1.4,1.4));
173   push_stroke((100,-30)-(900,-30),
174     (1.6,1.6)-(1.6,1.6));
175   set_boserif(0,1,9);
176   expand_pbox;
177 enddef;

```

EIGH

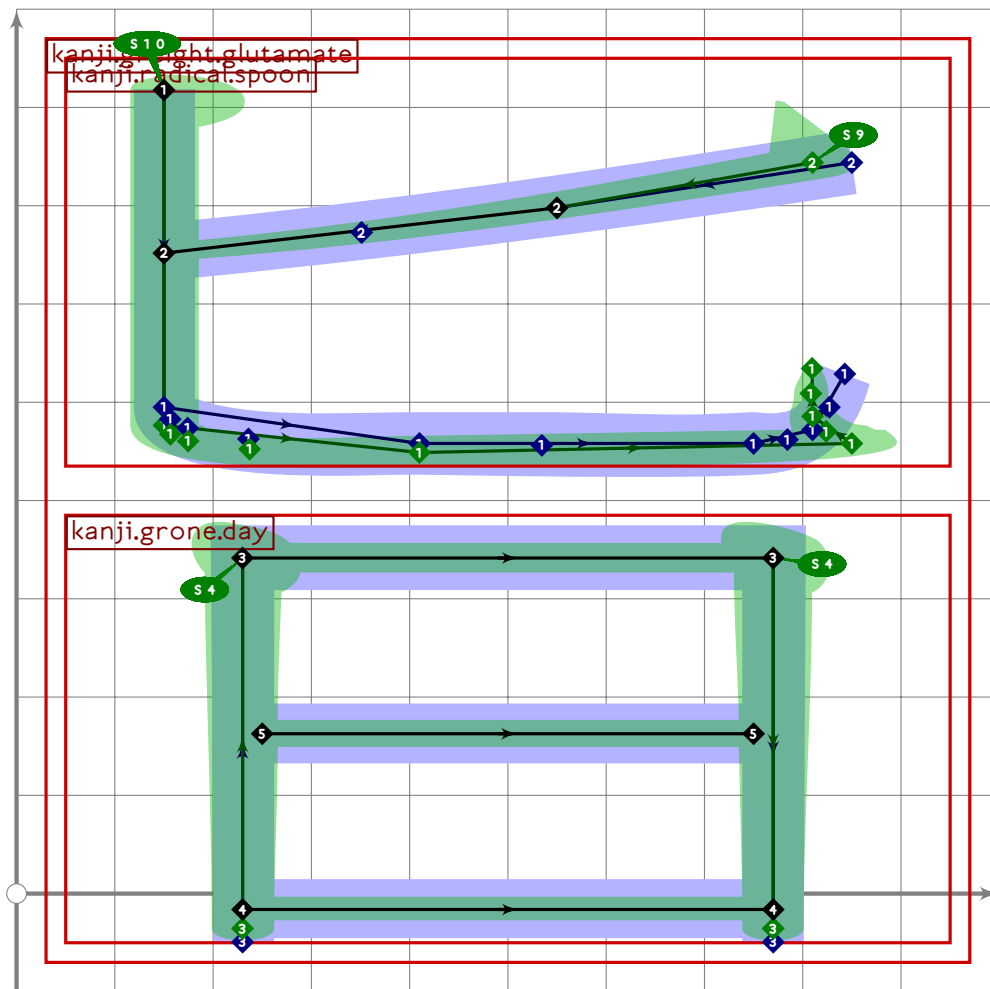


## EIGH

```

178
179 vardef kanji.greight.give =
180   push_pbox_toexpand("kanji.greight.give");
181   push_stroke((330,710)–(750,710),(1.5,1.5)–(1.5,1.5));
182   set_boserif(0,1,9);
183   push_stroke((345,790)..tension 1.2..(290,550)..(250,440),
184     (1.7,1.7)–(1.6,1.6)–(1.6,1.6));
185   set_boserif(0,0,10);
186   push_stroke((get_stroke(0) intersectionpoint ((0,500)–(1000,500)))–
187     (700,500)..tension 1.4..(660,210)..(530,10)..{curl 0.1}(340,0),
188     (1.6,1.6)–(1.6,1.6)–(1.5,1.5)–(1.7,1.7)–(1.8,1.8));
189   set_botip(0,1,1);
190   set_boserif(0,1,4);
191   push_stroke((100,230)–(900,230),(1.5,1.5)–(1.5,1.5));
192   set_boserif(0,1,9);
193   expand_pbox;
194 enddef;
195

```



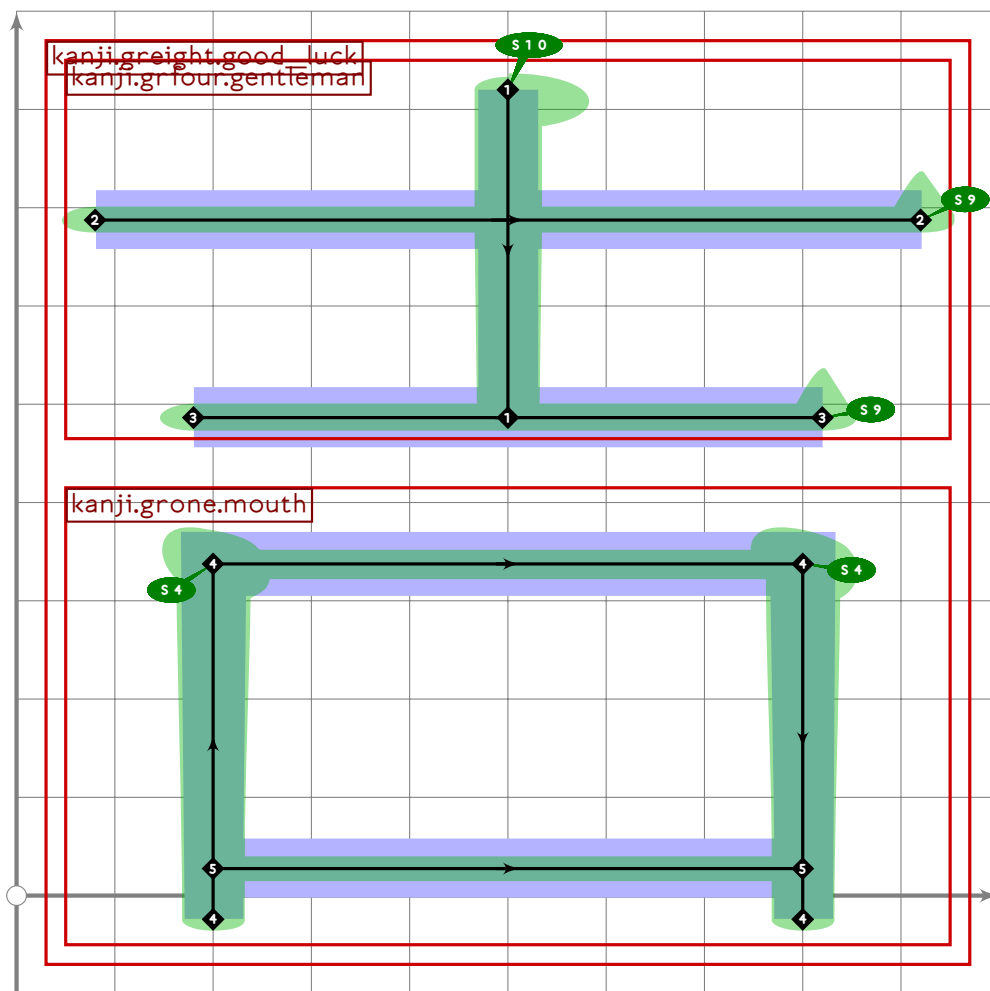
```

196 % this actually means sort of generically "good", but it's "uma" in
197 % "umami" and needs to be distinguished from other vague kanji
198 vardef kanji.greight.glutamate =
199   push_pbox_toexpand("kanji.greight.glutamate");
200   build_kanji.level(build_kanji.tb(410,-50)
201     (kanji.radical.spoon)
202     (kanji.grone.day));
203   expand_pbox;
204 enddef;

```

**EIGH**

U+5409  
tsuku.uni5409

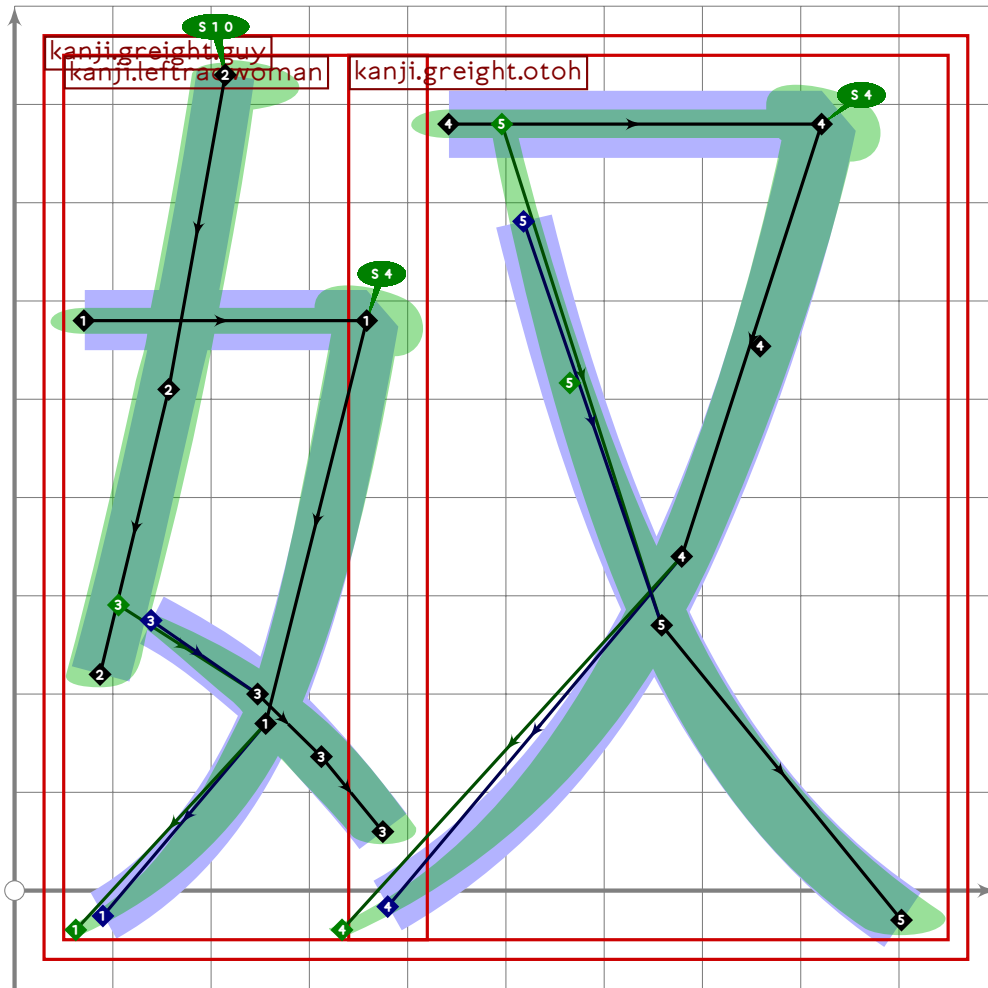


**EIGH**

```

205
206 vardef kanji.greight.good_luck =
207   push_pbox_toexpand("kanji.greight.good_luck");
208   build_kanji.level(build_kanji.tb(440,-50)
209     (kanji.grfour.gentleman)
210     (kanji.grone.mouth));
211   expand_pbox;
212 enddef;

```



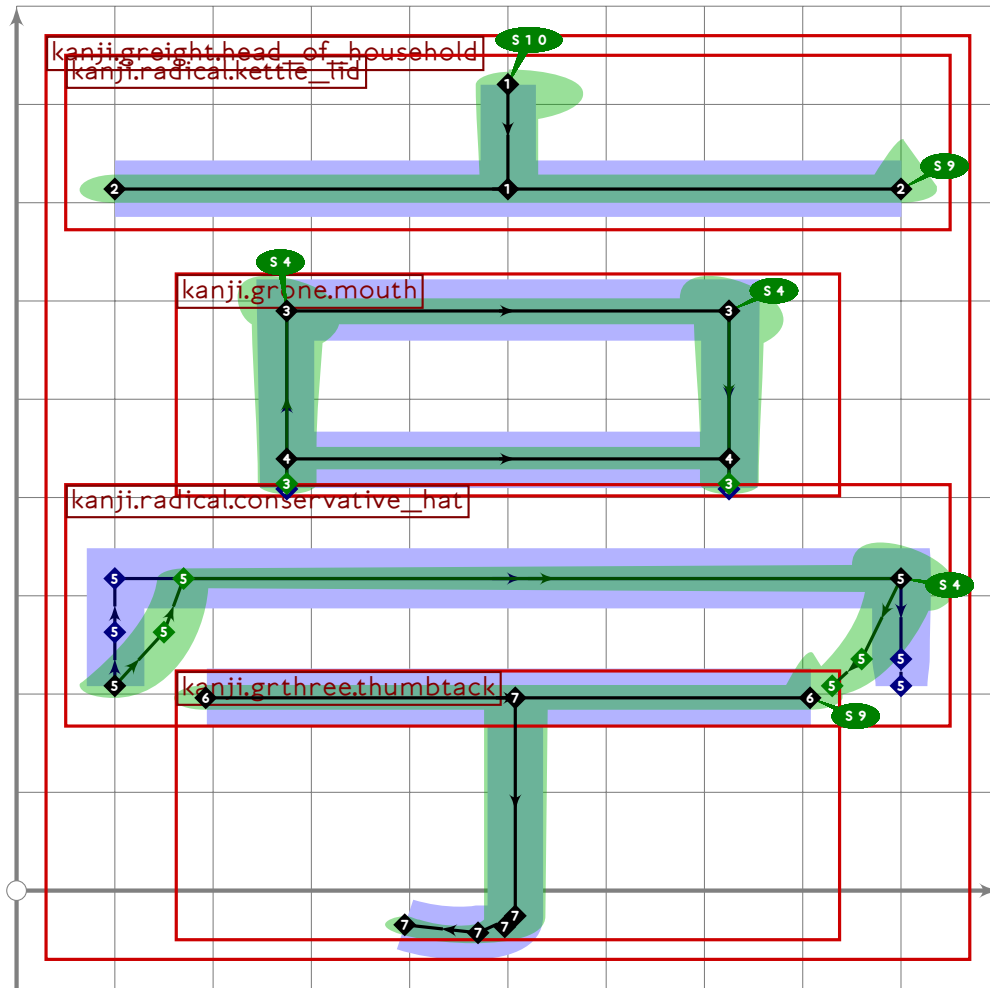
```

213
214 vardef kanji.greight.guy =
215   push_pbox_toexpand("kanji.greight.guy");
216   build_kanji.lr(380,80)
217     (kanji.leftrad.woman)
218     (kanji.greight.otoh);
219   expand_pbox;
220 enddef;

```

**EIGH**

U+4EAD  
tsuku.uni4EAD

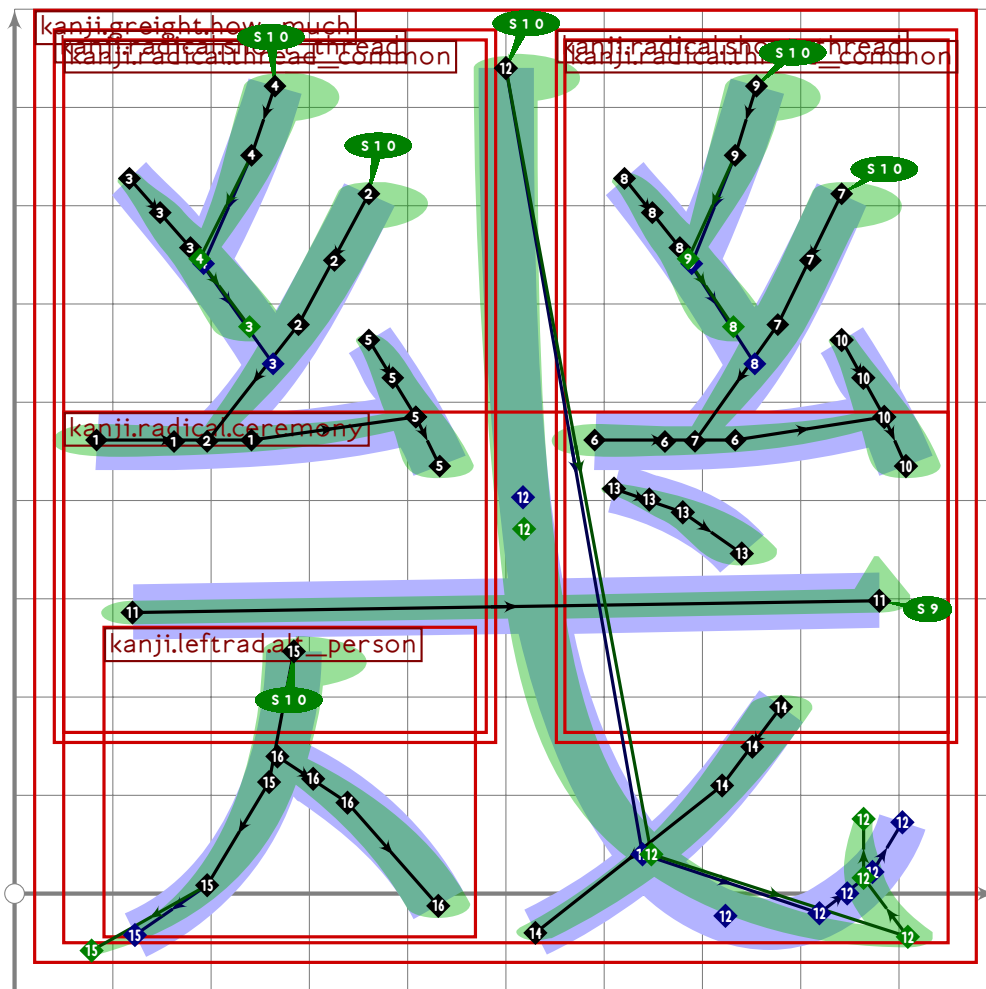


**EIGH**

```

221
222 vardef kanji.greight.head_of_household =
223   push_pbox_toexpand("kanji.greight.head_of_household");
224   build_kanji.level(build_kanji.tb(650,-45)
225     (kanji.radical.kettle_lid)
226     (build_kanji.tb(550,0)
227       (build_kanji.sscale(xscaled 0.75)(kanji.grone.mouth))
228       (build_kanji.tb(450,90)
229         (build_kanji.sscale(yscaled 1.1)(kanji.radical.conservative_hat))
230         (build_kanji.sscale(xscaled 0.75)(kanji.grthree.thumbtack))));
231   expand_pbox;
232 enddef;

```

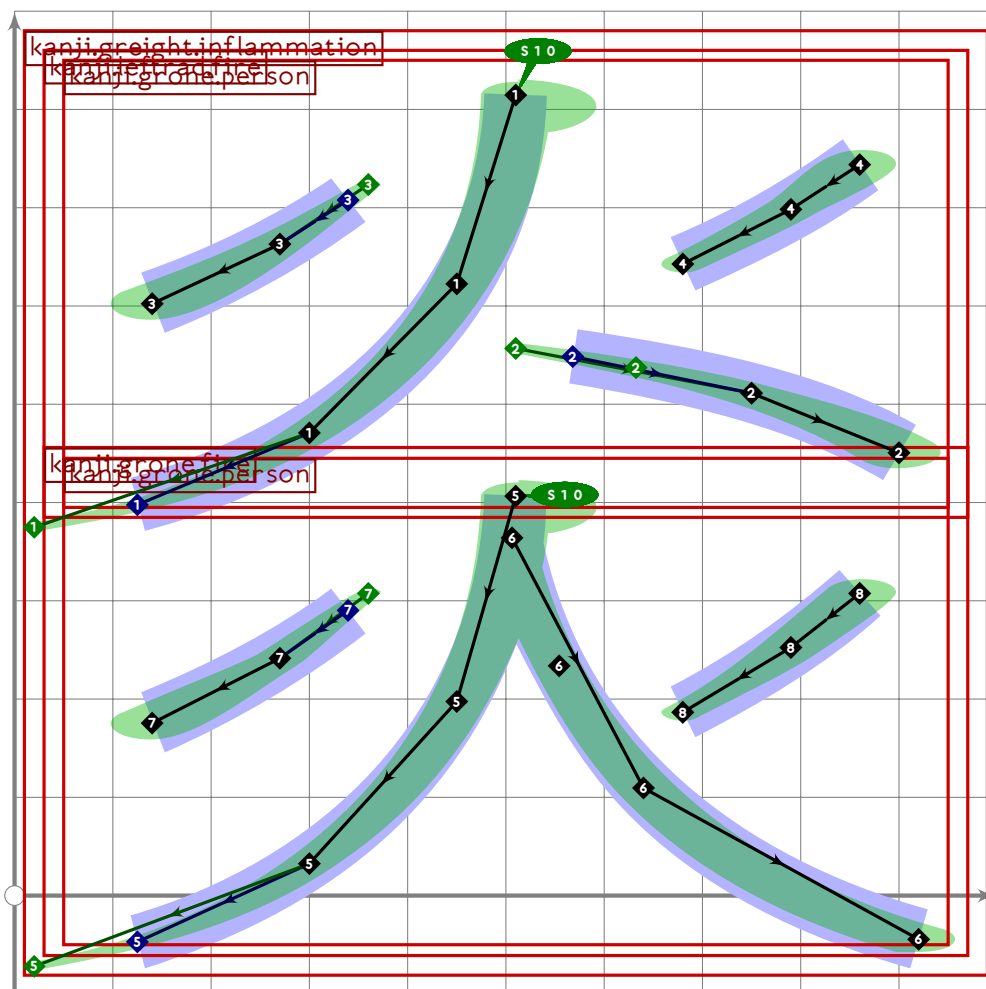


```

233
234 vardef kanji.greight.how_much =
235   push_pbox_toexpand("kanji.greight.how_much");
236   build_kanji.level(
237     build_kanji.tb(440,100)
238     (build_kanji.lr(520;80)
239       (kanji.radical.short_thread)
240       (kanji.radical.short_thread))
241     (kanji.radical.ceremony);
242   replace_strokep(-1)
243     (oldp shifted (-900,60) xscaled 0.9 shifted (900,-60));
244   replace_strokep(-1)((500,840){down}...subpath (1,infinity) of oldp);
245   push_stroke((780,190)..tension 1.2..(720,110)..(530,-40),
246     (1.6,1.6)-(1.4,1.4)-(1.2,1.2));
247   build_kanji.sscale(xyscaled (0.42,0.35) shifted (-220;280))
248     (kanji.leftrad.alt_person);
249   );
250   expand_pbox;
251 enddef;

```

EIGH



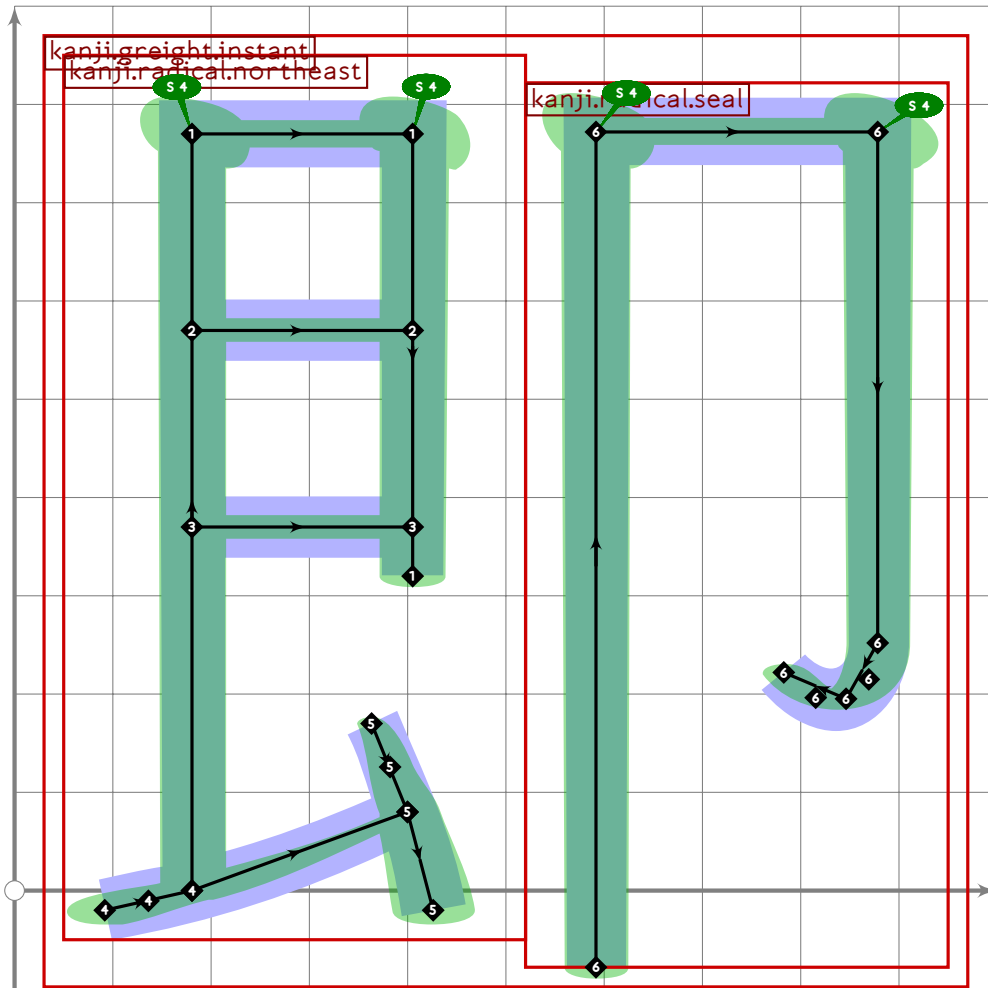
```

252
253 vardef kanji.greight.inflammation =
254   push_pbox_toexpand("kanji.greight.inflammation");
255   build_kanji.level(build_kanji.tb(420,50)
256     (kanji.leftrad.fire)
257     (kanji.grone.fire));
258   expand_pbox;
259 enddef;

```

EIGH



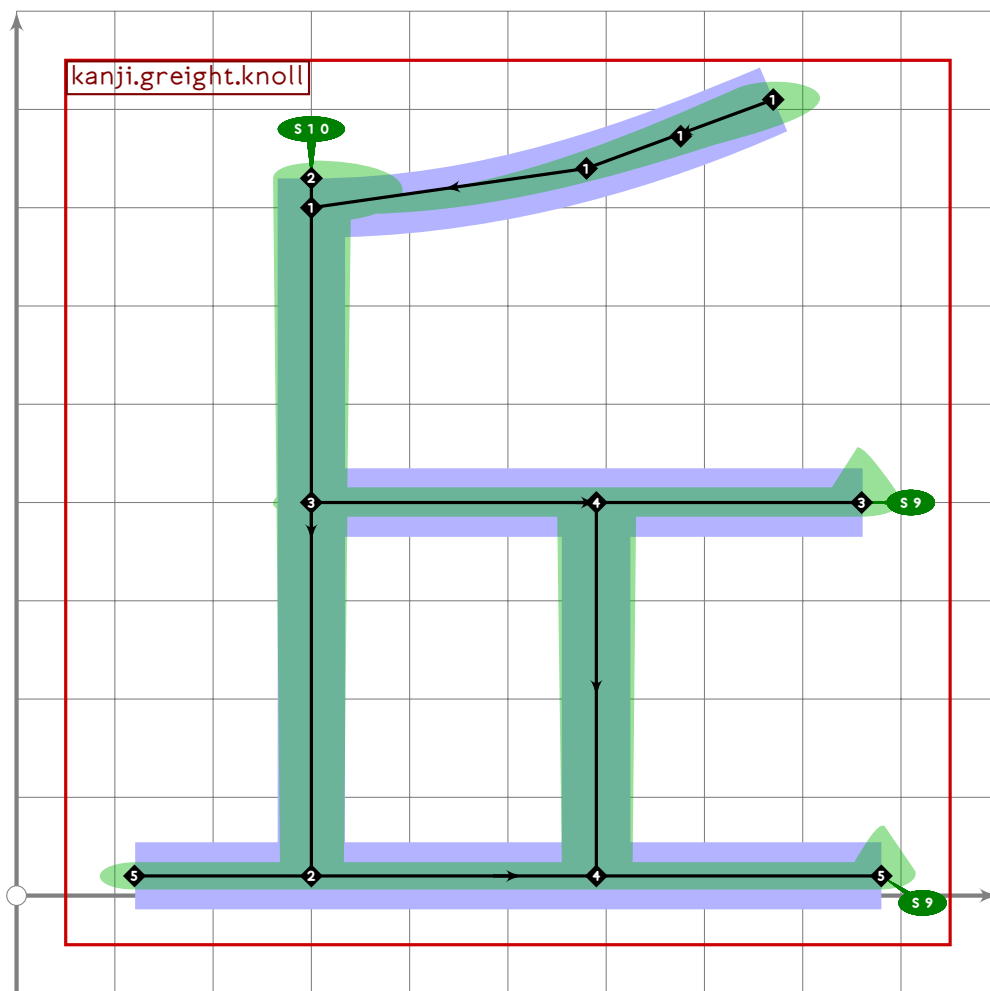


```

260
261 vardef kanji.greight.instant =
262   push_pbox_toexpand("kanji.greight.instant");
263   build_kanji.level(build_kanji.lr(520,0)
264     (kanji.radical.alt_northeast)
265     (build_kanji.sscale(shifted (0,28))(kanji.radical.seal)));
266   expand_pbox;
267 enddef;

```

**EIGH**

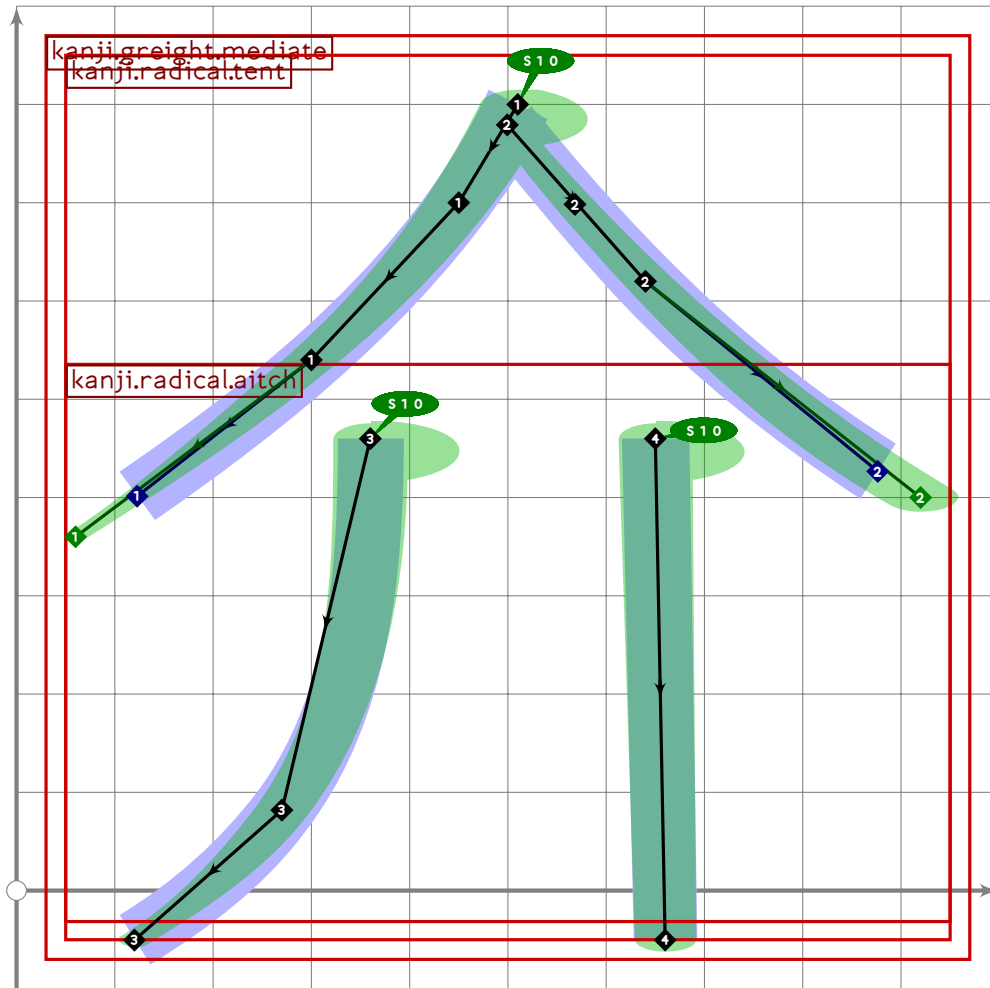


## EIGH

```

268
269 vardef kanji.greight.knoll =
270   push_pbox_toexpand("kanji.greight.knoll");
271   push_stroke((770,810)..tension 1.2..(580,740)..(300,700),
272     (1.8,1.8)–(1.5,1.5)–(1,1));
273   push_stroke((300,730)–(300,20),
274     (1.6,1.6)–(1.4,1.4));
275   set_boserif(0,0,10);
276   push_stroke((300,400)–(860,400),(1.6,1.6)–(1.6,1.6));
277   set_boserif(0,1,9);
278   push_stroke((590,400)–(590,20),(1.6,1.6)–(1.5,1.5));
279   push_stroke((120,20)–(880,20),(1.5,1.5)–(1.5,1.5));
280   set_boserif(0,1,9);
281   expand_pbox;
282 enddef;

```

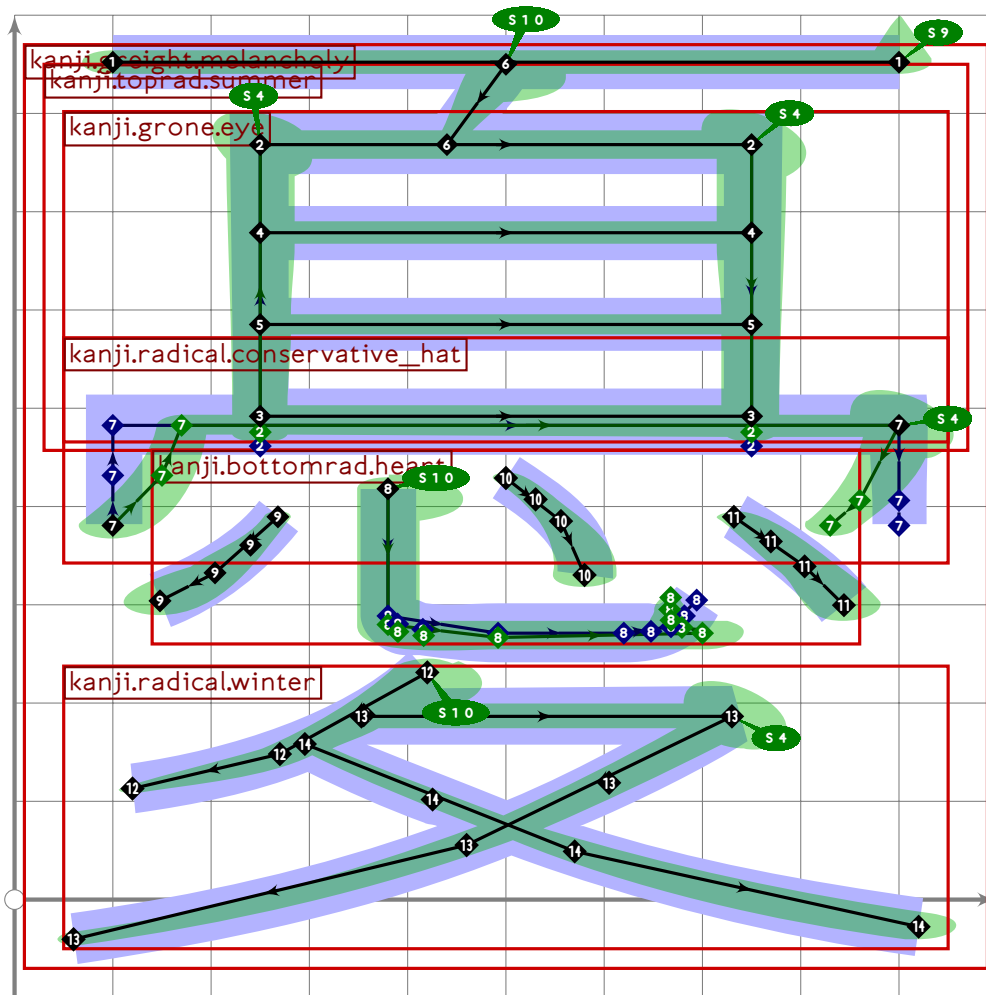


```

283
284 vardef kanji.greight.mediate =
285   push_pbox__toexpand("kanji.greight.mediate");
286   build_kanji.level(
287     kanji.radical.tent;
288     pop_stroke;
289     tsu_xform(identity yscaled 0.63)(kanji.radical.aitch);
290     obstacktype[find_whatever(otstroke,-2)]:=otnull;
291   );
292   expand_pbox;
293 enddef;

```

**EIGH**

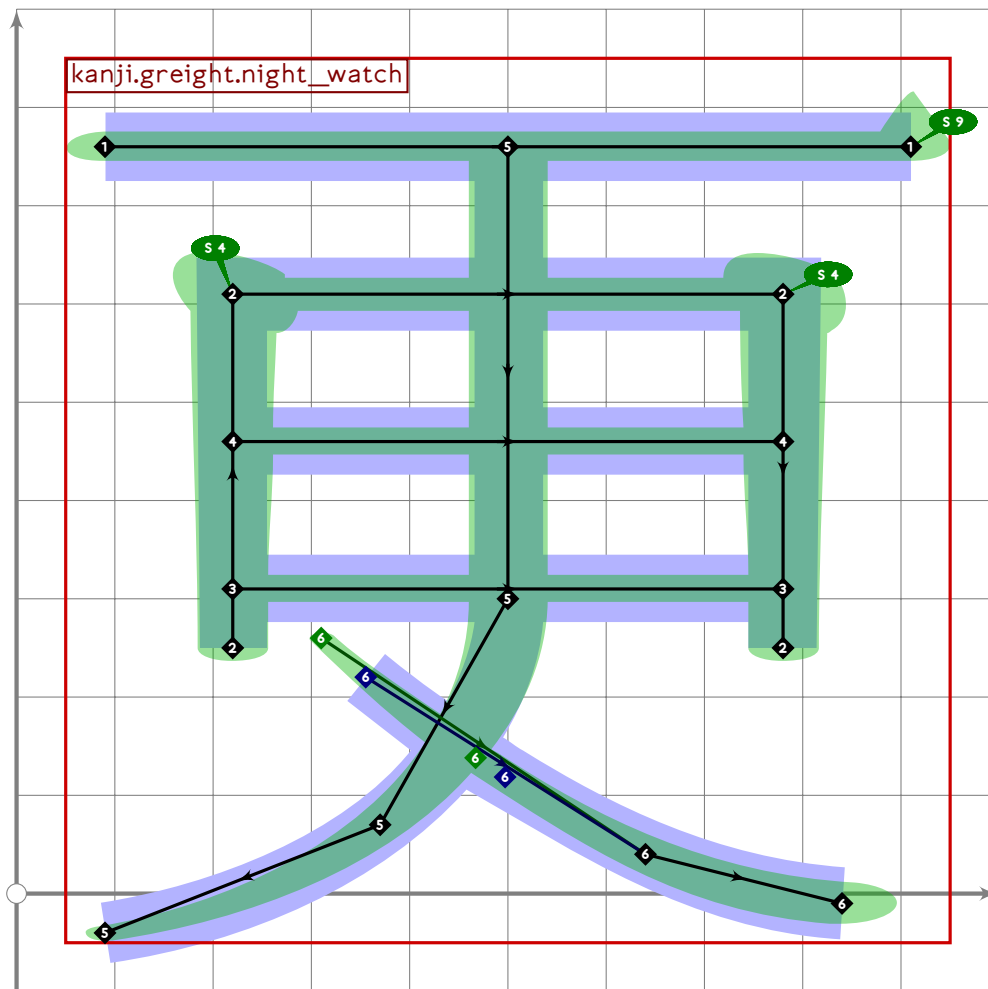


**EIGH**

```

294
295 vardef kanji.greight.melancholy =
296   push_pbox_toexpand("kanji.greight.melancholy");
297   build_kanji.level(build_kanji.tb(400,115)
298     (build_kanji.tb(260,193)
299       (kanji.toprad.summer)
300       (kanji.radical.conservative_hat))
301     (build_kanji.tb(480,-40)
302       (build_kanji.sscale(xscaled 0.8)(kanji.bottomrad.heart))
303       (kanji.radical.winter)));
304   expand_pbox;
305 enddef;

```



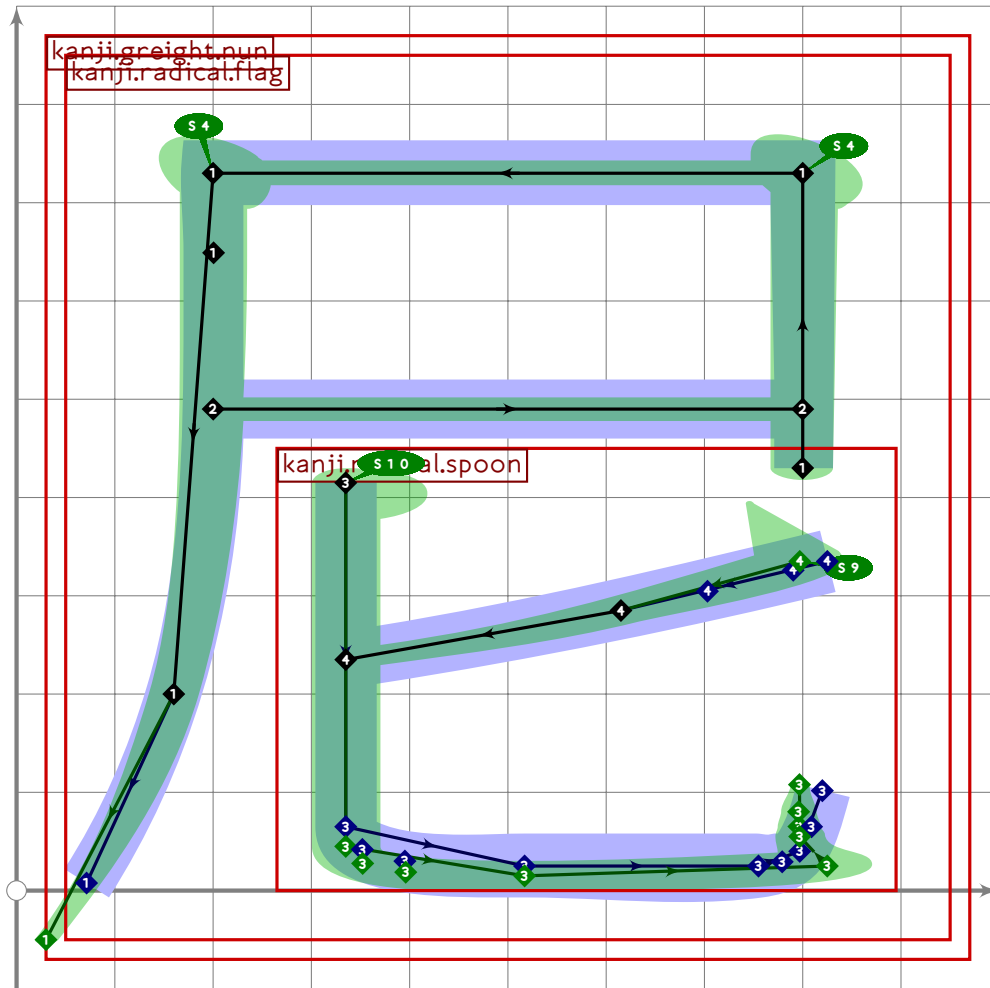
```

306
307 vardef kanji.greight.night_watch =
308   push_pbox_toexpand("kanji.greight.night_watch");
309   push_stroke((90,760)–(910,760),(1.6,1.6)–(1.6,1.6));
310   set_boserif(0,1,9);
311   build_kanji.box((220,610),(780,310));
312   push_stroke((220,460)–(780,460),(1.5,1.5)–(1.5,1.5));
313   push_stroke((500,760)–(500,300){down}{.curl 0.5}{(90,-40),
314     (1.6,1.6)–(1.6,1.6)–(14,14)–(11,11));
315   push_stroke((310,260)..tension 1.2..(640,40)..(840,-10),
316     (0,0,9)–(1.5,1.5)–(2,2));
317   expand_pbox;
318 enddef;

```

EIGH

U+5C3C  
tsuku.uni5C3C

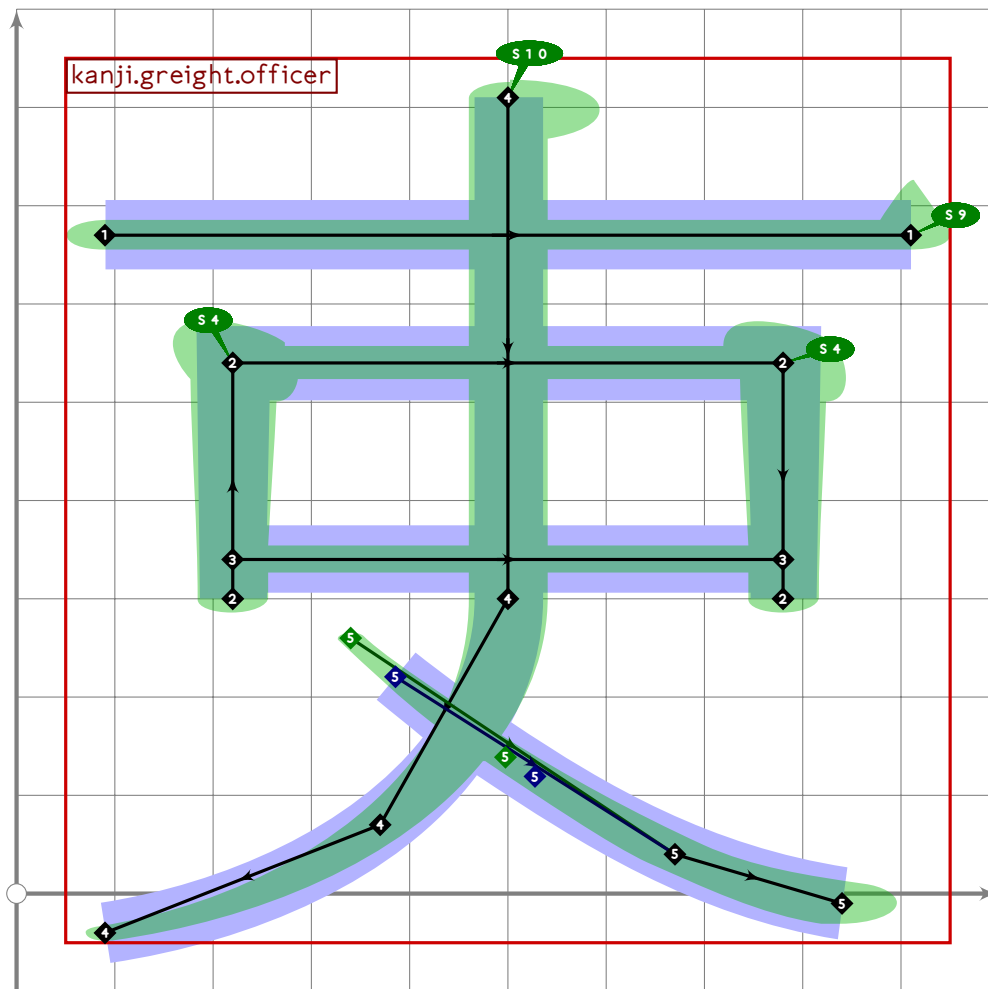


**EIGH**

```

319
320 vardef kanji.greight.nun =
321   push_pbox_toexpand("kanji.greight.nun");
322   build_kanji.level(
323     kanji.radical.flag;
324     build_kanji.sscale(xyscaled (0.7,0.5) shifted (80,170))
325     (kanji.radical.spoon));
326   expand_pbox;
327 enddef;

```

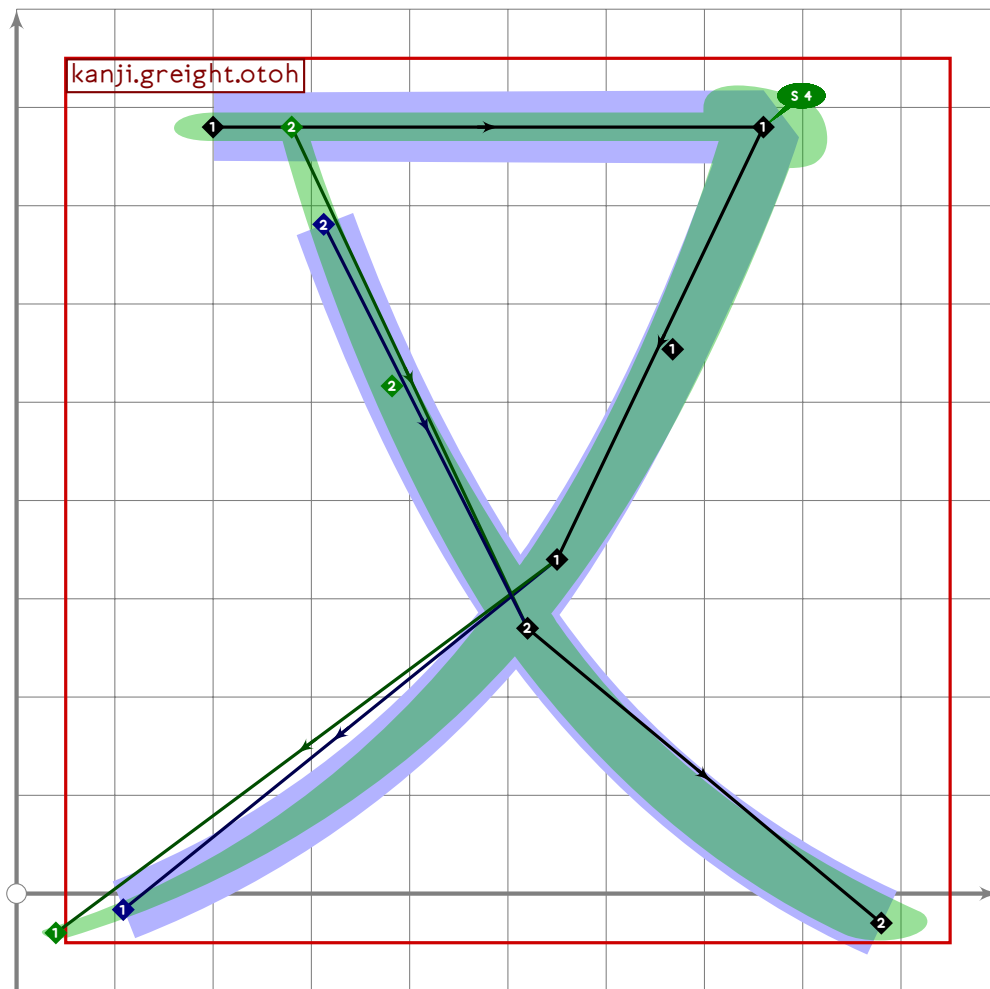


```

328
329 vardef kanji.greight.officer =
330   push_pbox_toexpand("kanji.greight.officer");
331   push_stroke((90,670)–(910,670),(1.6,1.6)–(1.6,1.6));
332   set_boserif(0,1,9);
333   build_kanji.box((220,540),(780,340));
334   push_stroke((500,810)–(500,300){down}..(370,70)..{curl 0.5}(90,40),
335     (1.6,1.6)–(1.6,1.6)–(1.4,1.4)–(1.1,1.1));
336   set_boserif(0,0,10);
337   push_stroke((340,260)..tension 1.2..(670,40)..(840,10),
338     (0,9)–(1.5,1.5)–(2,2));
339   expand_pbox;
340 enddef;

```

EIGH



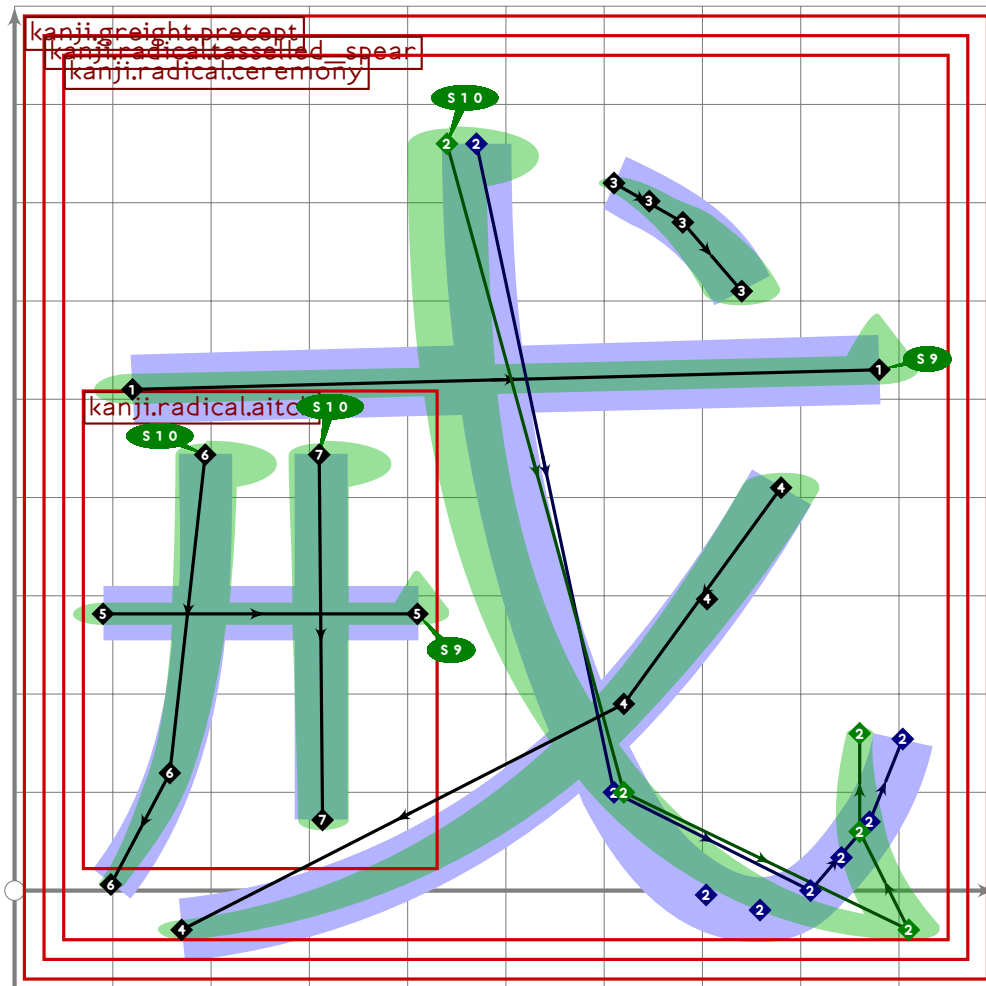
**EIGH**

```

341
342 vardef kanji.greight.otoh =
343   push_pbox_toexpand("kanji.greight.otoh");
344   push_stroke(
345     (200,780)–(760,780)..tension 1.2..(550,340)..(40,-40),
346     (1.6,1.6)–(1.6,1.6)–(14,14)–(0.9,0.95));
347   set_botip(0,1,0);
348   set_boserif(0,1,4);
349   push_stroke((280,780)..tension 1.2..(520,270)..(880,-30),
350     (0.9,0.9)–(14,14)–(1.8,1.8));
351   expand_pbox;
352 enddef;

```





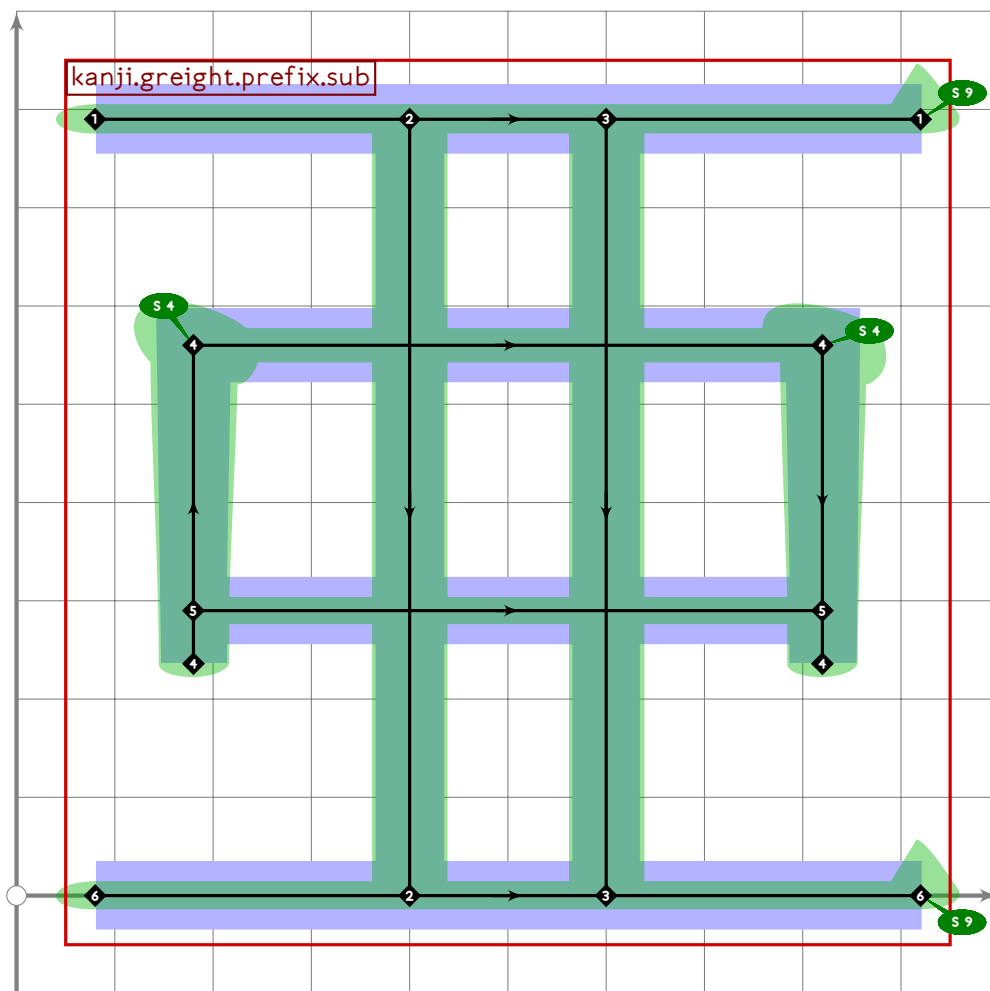
```

353
354 vardef kanji.greight.precept =
355   push_pbox_toexpand("kanji.greight.precept");
356   kanji.radical.tasselled_spear;
357   build_kanji.sscale(xyscaled (0.4,0.54) shifted (-250,-130))
358     (kanji.radical.aitch;
359       replace_stroke(0)(subpath (0,0.85) of oldp));
360   expand_pbox;
361 enddef;

```

EIGH

U+4E9C  
tsuku.uni4E9C

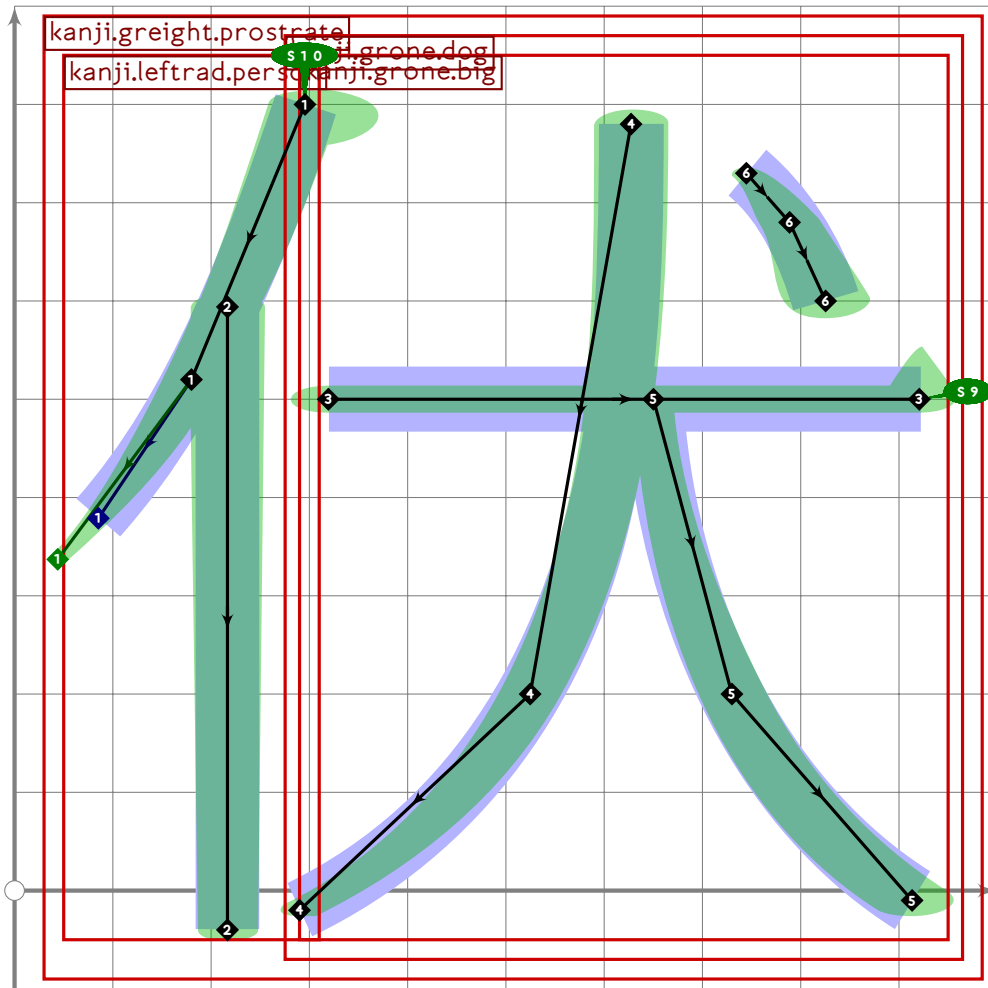


**EIGH**

```

362
363 vardef kanji.greight.prefix_sub =
364   push_pbox_toexpand("kanji.greight.prefix.sub");
365   push_stroke((80,790)-(920,790),(1.6,1.6)-(1.6,1.6));
366   set_boserif(0,1,9);
367   push_stroke((400,790)-(400,0),(1.6,1.6)-(1.5,1.5));
368   push_stroke((600,790)-(600,0),(1.6,1.6)-(1.5,1.5));
369   build_kanji.box((180,560),(820,290));
370   push_stroke((80,0)-(920,0),(1.6,1.6)-(1.6,1.6));
371   set_boserif(0,1,9);
372   expand_pbox;
373 enddef;

```



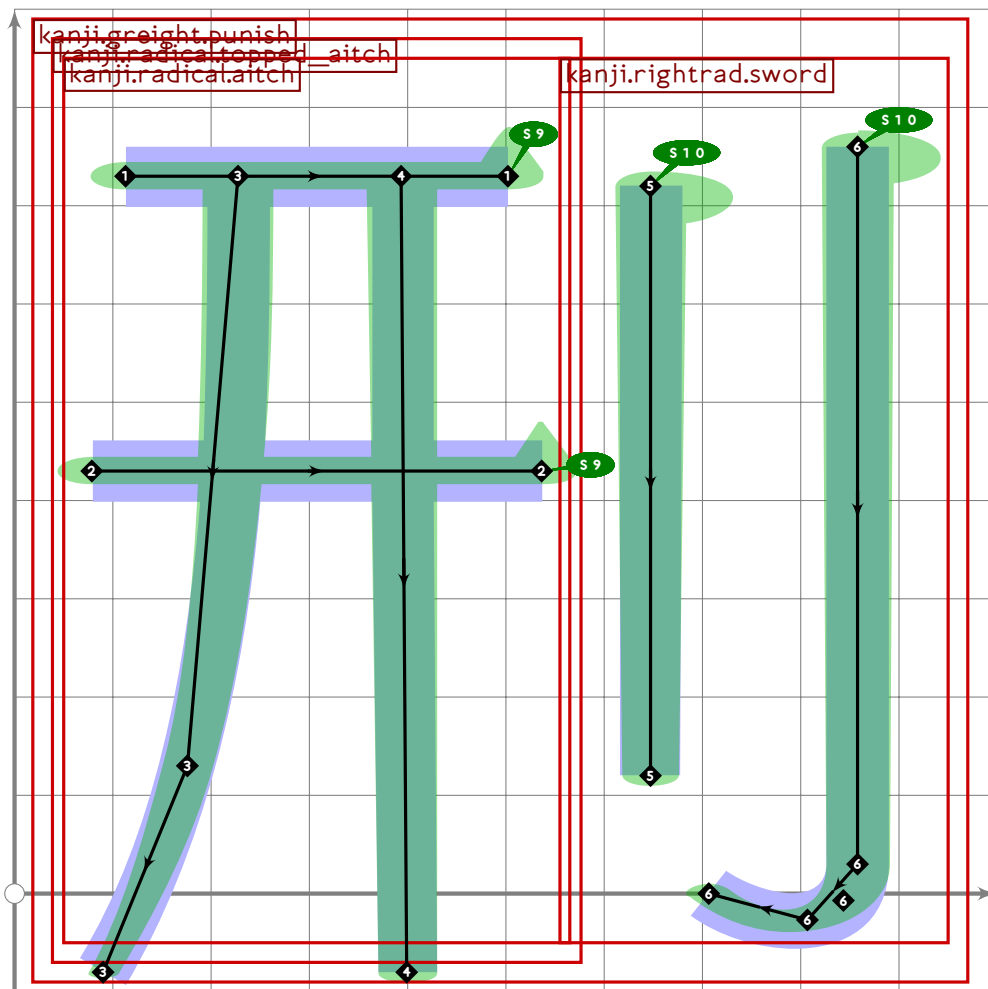
```

374
375 vardef kanji.greight.prostrate =
376   push_pbox_toexpand("kanji.greight.prostrate");
377   build_kanji.lr(300,20)
378     (kanji.leftrad.person)
379     (kanji.grone.dog);
380   expand_pbox;
381 enddef;

```

EIGH

U+5211  
tsuku.uni5211

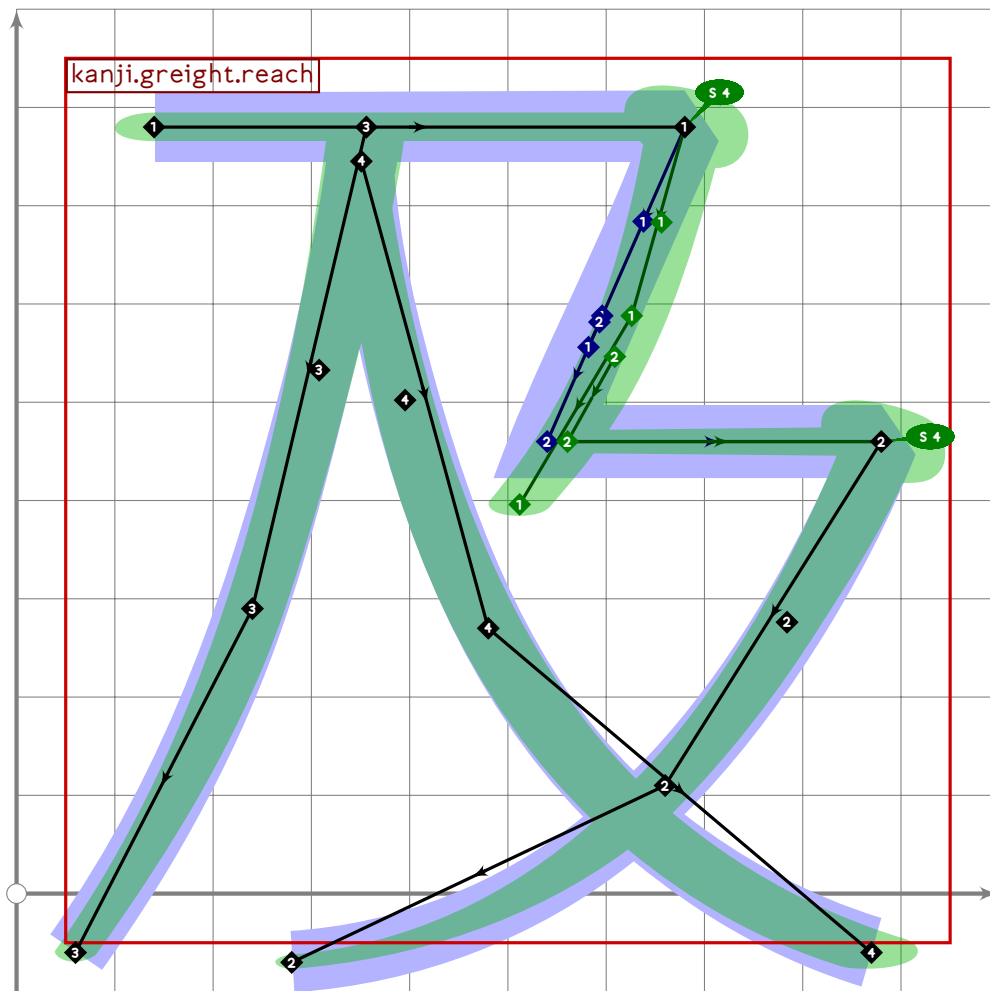


**EIGH**

```

382
383 vardef kanji.greight.punish =
384   push_pbox_toexpand("kanji.greight.punish");
385   build_kanji.level(build_kanji.lr(560,10)
386     (kanji.radical.topped_aitch)
387     (kanji.rightrad.sword));
388   expand_pbox;
389 enddef;

```



```

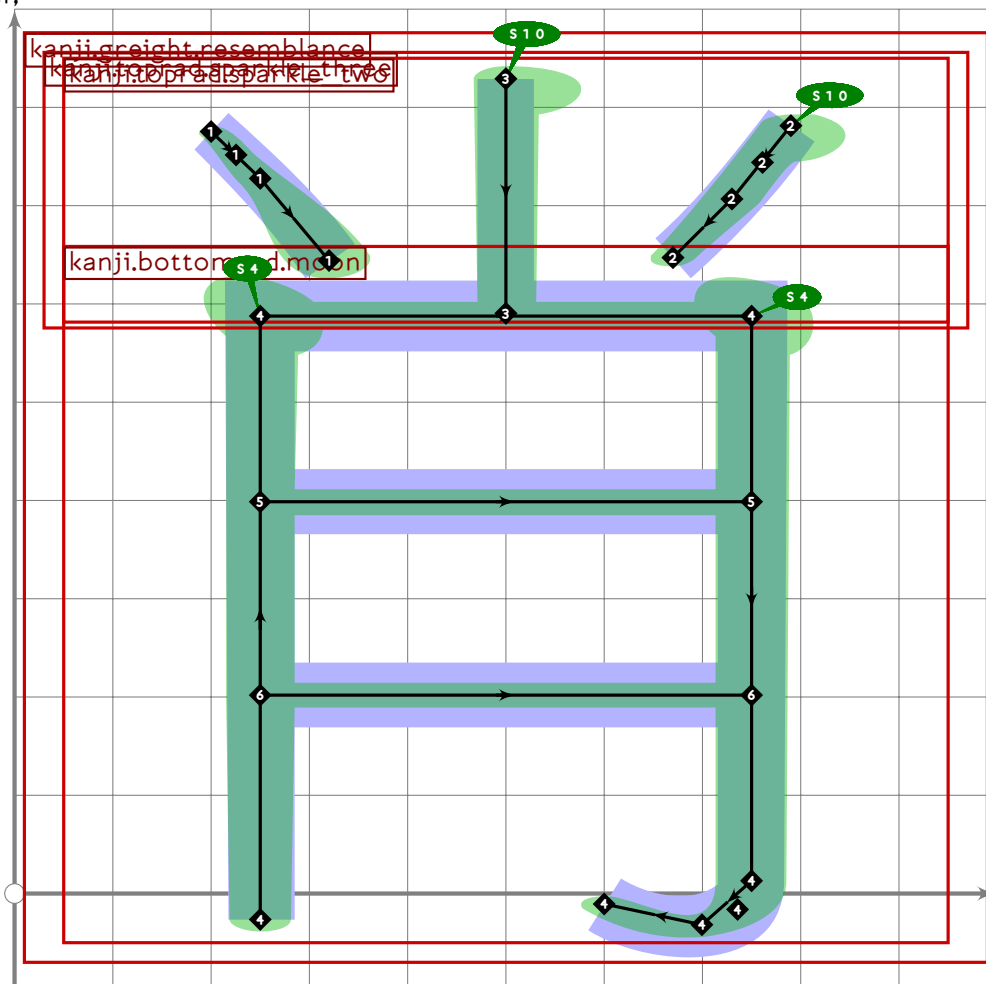
390
391 vardef kanji.greight.reach =
392   push_pbox_toexpand("kanji.greight.reach");
393   begingroup
394     save x,y;
395     numeric x[],y[];
396     x1=140;
397     x2=680;
398     x4=540;
399     y1=y2=780;
400     y4=460;
401     z3=0.4[z4,z2]+mincho*(30,0);
402     z5=(0.3-0.5*mincho)[z4,z2];
403     push_stroke(z1-z2.tension 1.2..z3..z5,
404       (1.6,1.6)-(1.6,1.6)-(1.6-0.1*mincho,1.6-0.1*mincho)-
405       (1.6-0.2*mincho,1.6-0.2*mincho));
406     set_boserif(0,1,4);
407     set_botip(0,1,0);
408     x7=0;
409     x9=880;
410     x10=660;

```

EIGH

U+8096  
tsuku.uni8096

```
411 x11=280;
412 y7=y9=y4;
413 y10=110;
414 y11=-70;
415 z6=point 2.2 of get_stroke(0);
416 z8=(z7-z9) intersectionpoint (get_stroke(0)-((-1)[z4,z2]));
417 push_stroke(z6-z8-z9.tension 1.2..z10..z11,
418   (1.6-0.5*mincho,1.6-0.5*mincho)-(1.5-0.1*mincho,1.5-0.1*mincho)-
419   (1.6,1.6)-(1.4,1.4)-(1,1));
420 set_boserif(0,2,4);
421 set_botip(0,1,1);
422 set_botip(0,2,0);
423 endgroup;
424 push_stroke((point 0.4 of get_stroke(-1)).tension 1.2..
425   (240,290)..(60,60),
426   (1.6,1.6)-(1.4,1.4)-(1.1,1.1));
427 push_stroke((point 0.08 of get_stroke(0)).tension 1.2..
428   (480,270)..(870,60),
429   (1.2,1.2)-(1.5,1.5)-(1.8,1.8));
430 expand_pbox;
431 enddef;
```

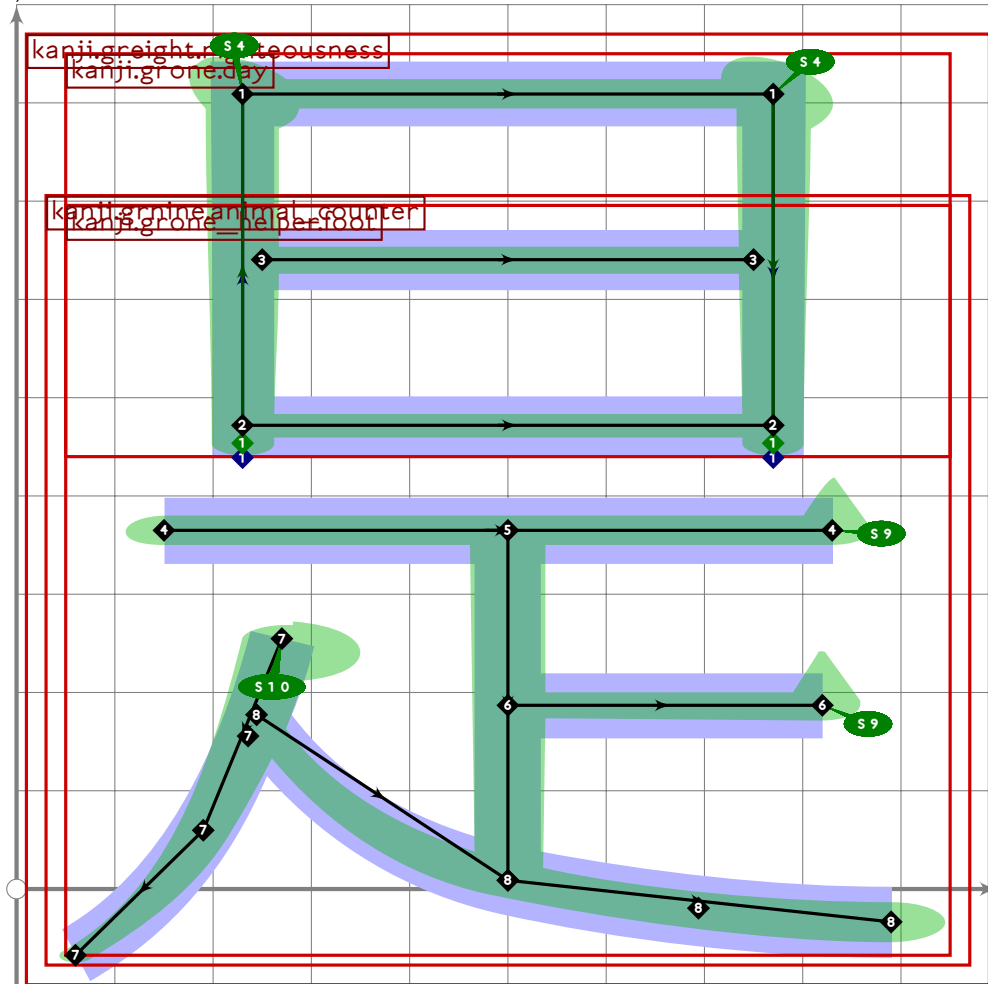


EIGH

```

432
433 vardef kanji.greight.resemblance =
434   push_pbox_toexpand("kanji.greight.resemblance");
435   build_kanji.tb(620,77)
436     (kanji.toprad.sparkle_three)
437     (kanji.bottomrad.moon);
438   expand_pbox;
439 enddef;

```



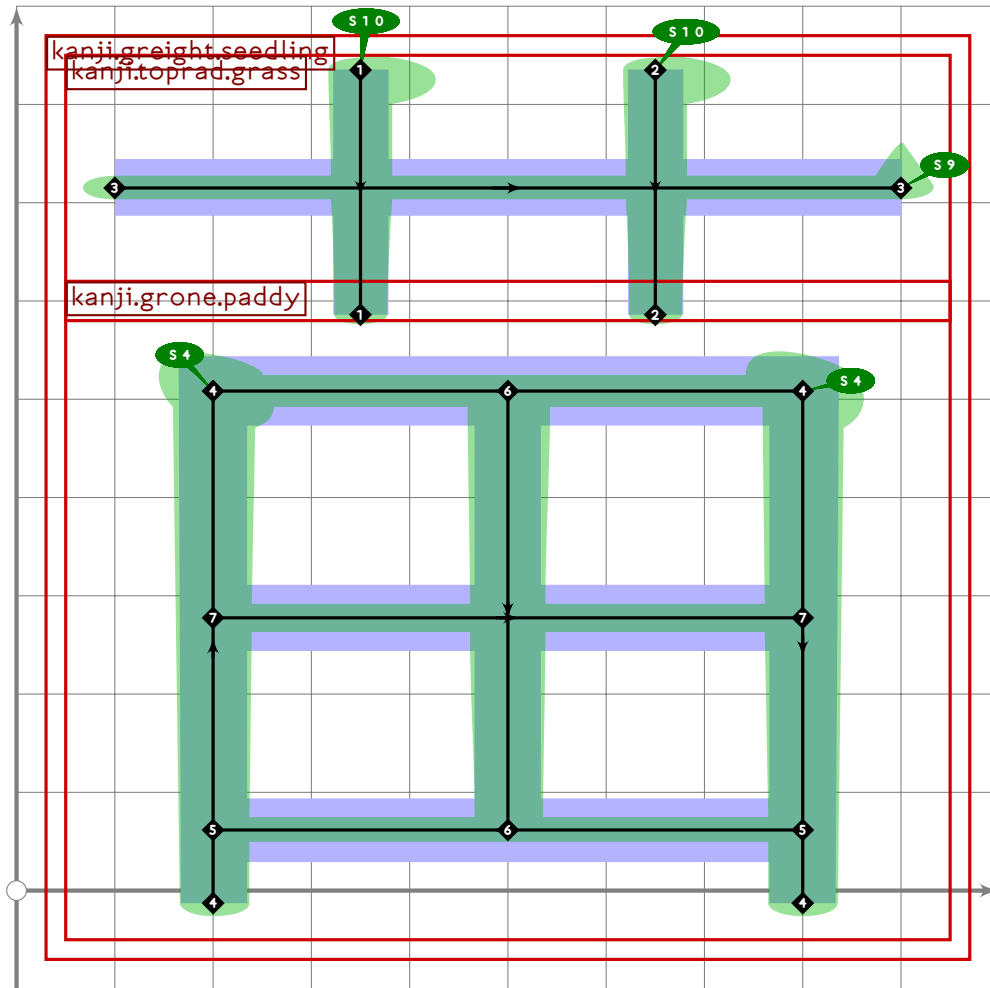
```

440
441 vardef kanji.greight.righteousness =
442   push_pbox_toexpand("kanji.greight.righteousness");
443   build_kanji.tb(420,-40)
444     (kanji.grone.day)
445     (kanji.grnine.animal_counter;
446       replace_stroke(-4)(subpath (0,1) of oldp);
447       set_botip(-4,1,whatever);
448       replace_strokeq(-4)((1.6,1.6)-(1.6,1.6));
449       set_boserif(-4,1,9));
450   expand_pbox;
451 enddef;

```

EIGH

U+82D7  
tsuku.uni82D7



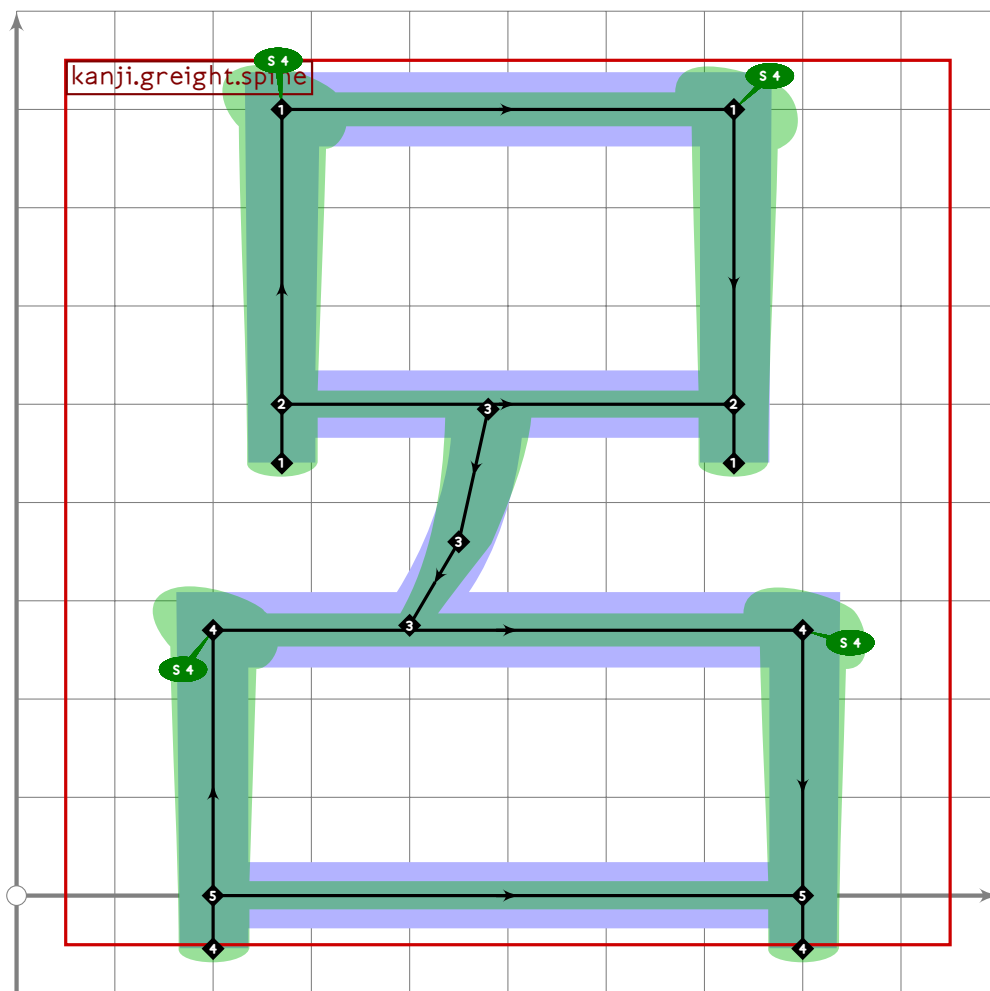
**EIGH**

```

452
453 vardef kanji.greight.seedling =
454   push_pbox_toexpand("kanji.greight.seedling");
455   build_kanji.tb(600,40)
456     (kanji.toprad.grass)
457     (kanji.grone.paddy);
458   expand_pbox;
459 enddef;

```



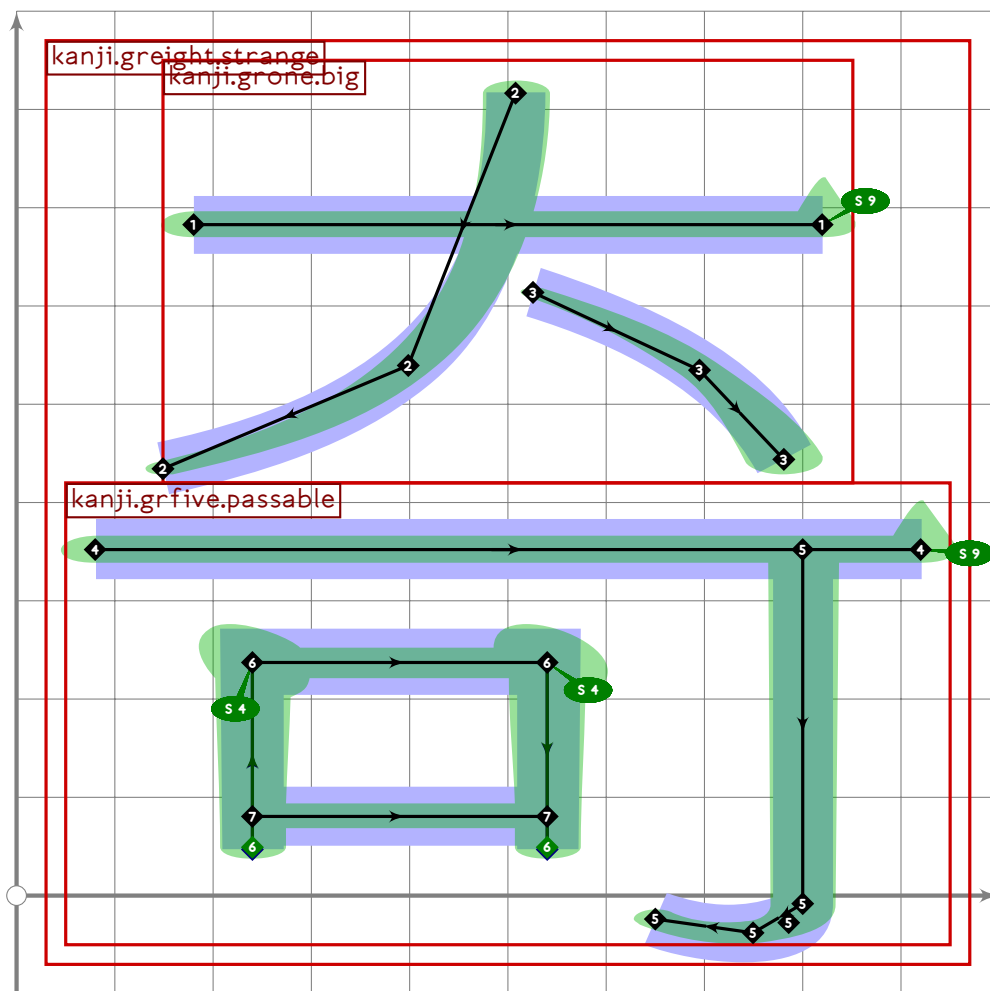


```

460
461 vardef kanji.greight.spine =
462   push_pbox_toexpand("kanji.greight.spine");
463   build_kanji.box((270,800),(730,500));
464   push_stroke((480,495)..(450,360)..(400,275),
465     (1,7),(1,7)-(1,4),(1,1));
466   build_kanji.box((200,270),(800,0));
467   expand_pbox;
468 enddef;

```

**EIGH**

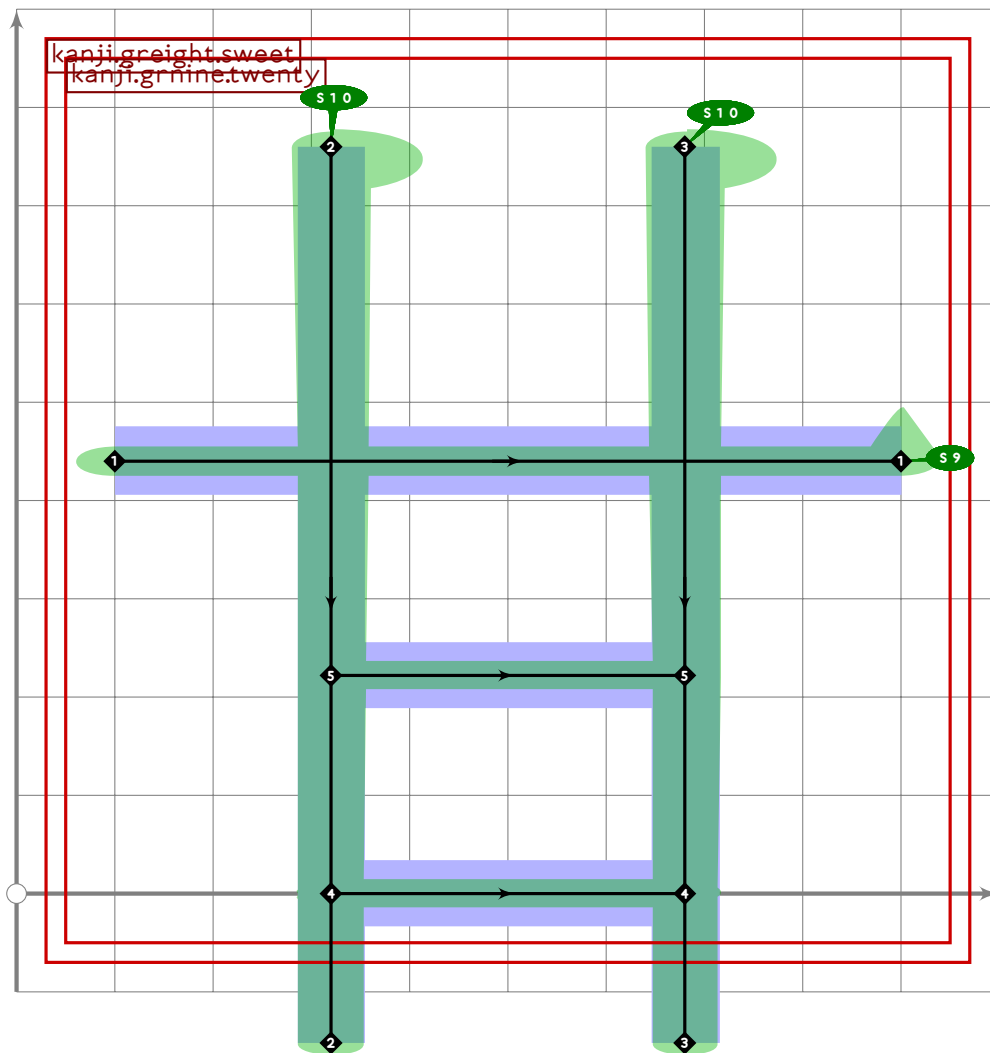


**EIGH**

```

469
470 vardef kanji.greight.strange =
471   push_pbox_toexpand("kanji.greight.strange");
472   build_kanji.tb(420,0)
473     (build_kanji.sscale(xscaled 0.78)(kanji.leftrad.big))
474     (kanji.grfive.passable);
475   expand_pbox;
476 enddef;

```



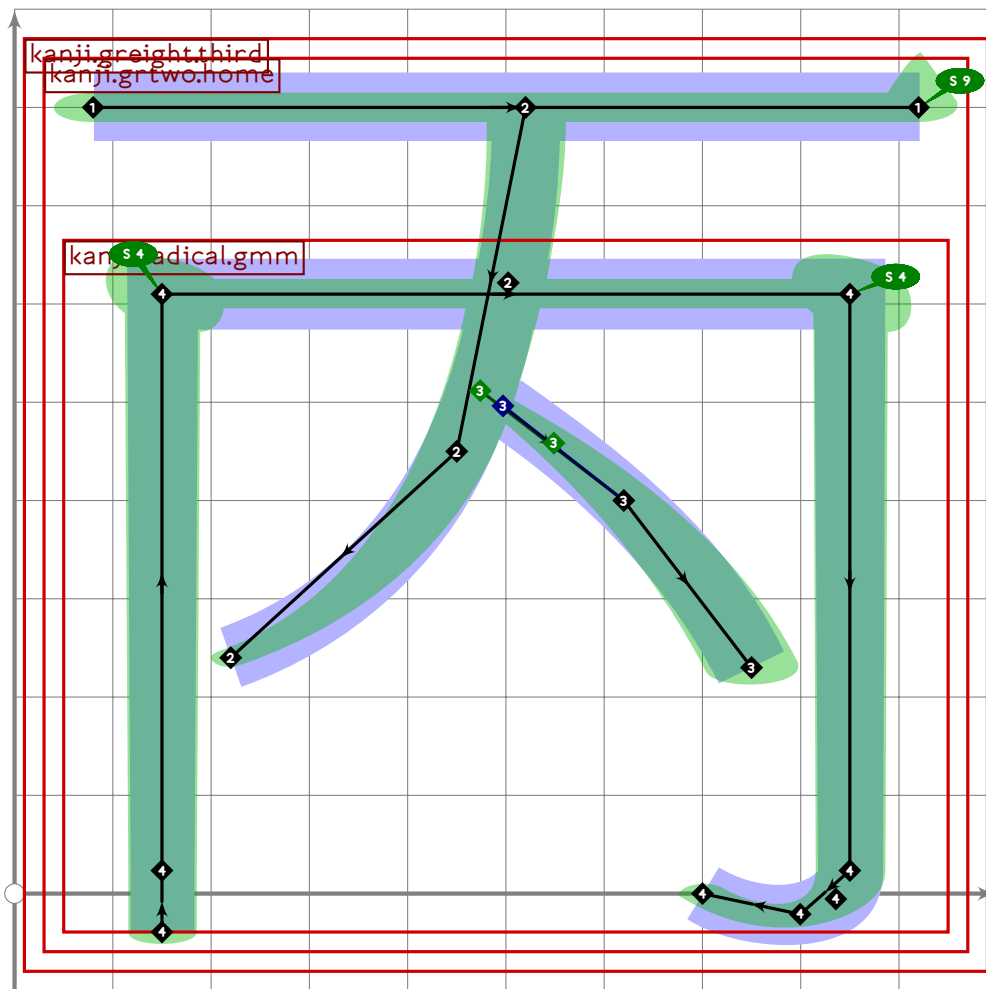
```

477
478 vardef kanji.greight.sweet =
479   push_pbox_toexpand("kanji.greight.sweet");
480   kanji.grnine.twenty;
481   push_stroke((320,222)-(680,222),(1.5,1.5)-(1.5,1.5));
482   expand_pbox;
483 enddef;

```

**EIGH**

U+4E19  
tsuku.uni4E19

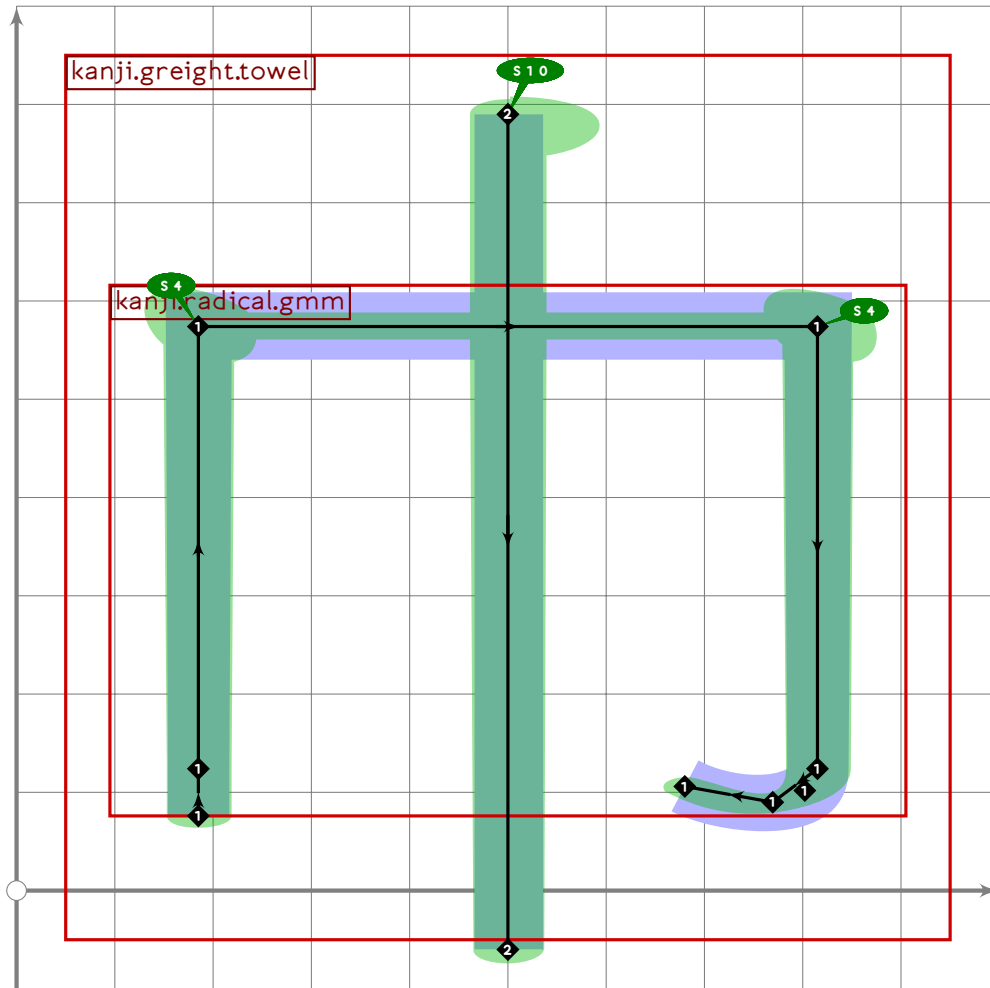


**EIGH**

```

484
485 vardef kanji.greight.third =
486   push_pbox_toexpand("kanji.greight.third");
487   push_stroke((80,800)-(920,800),(1.6,1.6)-(1.6,1.6));
488   set_boserif(0,1,9);
489   kanji.grtwo.home;
490   set_boserif(-2,0,whatever);
491   expand_pbox;
492 enddef;

```



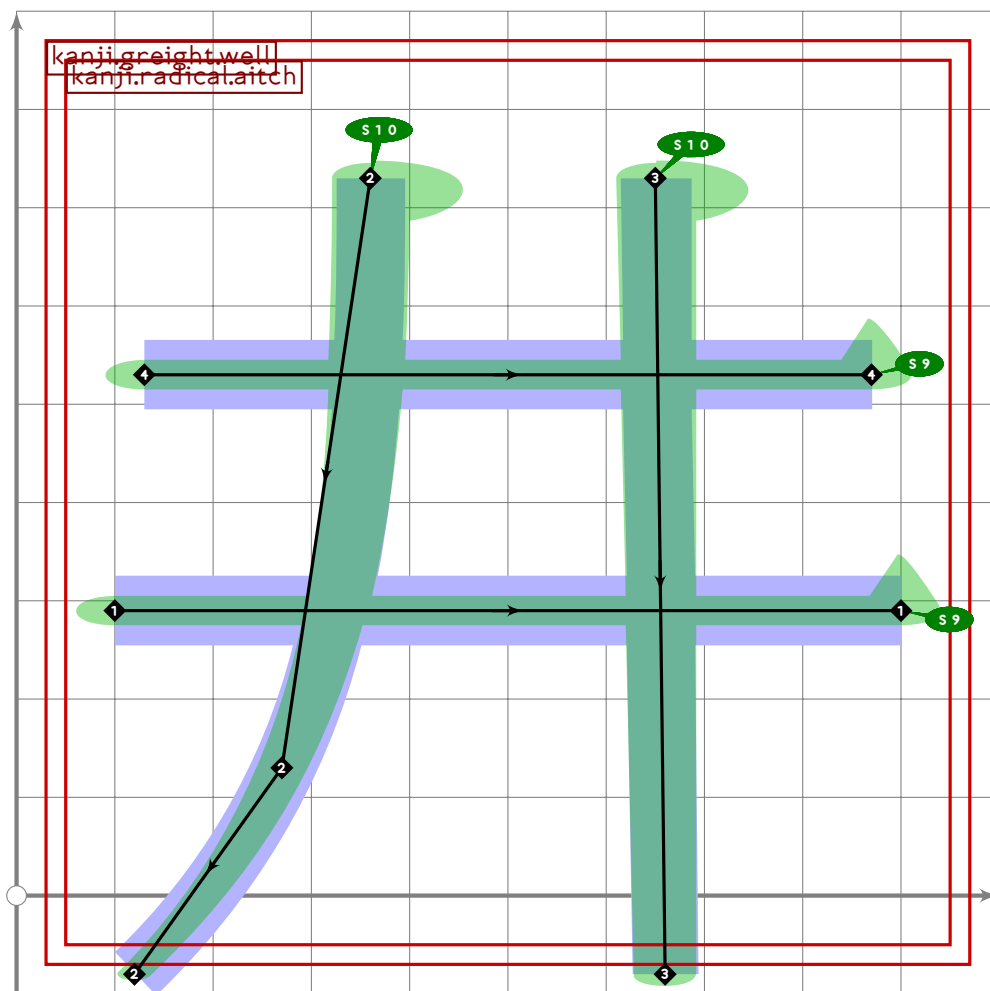
```

493
494 vardef kanji.greight.towel =
495   push_pbox_toexpand("kanji.greight.towel");
496   build_kanji.sscale(xyscaled (0,9,0.6) shifted (0,-50))
497     (kanji.radical.gmm);
498   push_stroke((500,790)-(500,-60),
499     (1.6,1.6)-(1.5,1.5));
500   set_boserif(0,0,10);
501   expand_pbox;
502 enddef;

```

EIGH

U+4E95  
tsuku.uni4E95

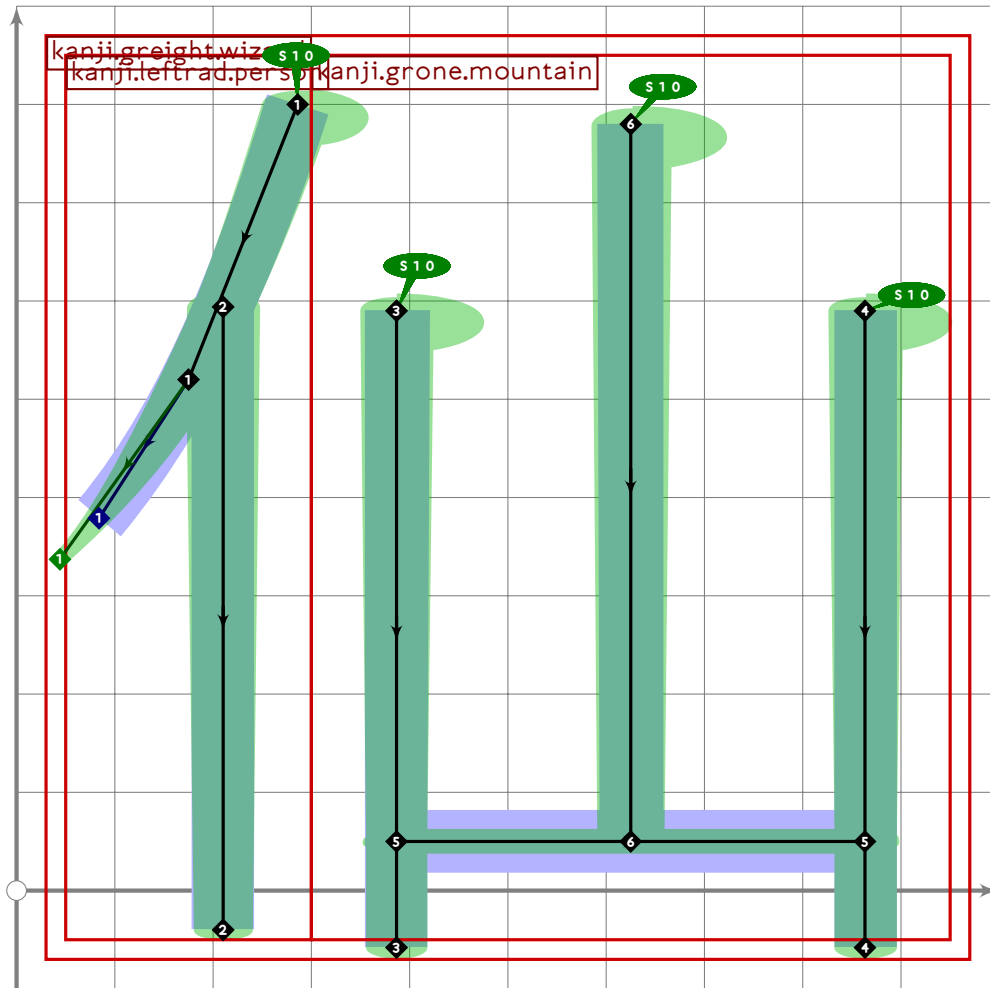


**EIGH**

```

503
504 vardef kanji.greight.well =
505   push_pbox_toexpand("kanji.greight.well");
506   kanji.radical.aitch;
507   replace_strokep(-2)(oldp shifted (0,-140));
508   push_stroke((130,530)-(870,530),(1.6,1.6)-(1.6,1.6));
509   set_boserif(0,1,9);
510   expand_pbox;
511 enddef;

```



```

512
513 vardef kanji.greight.wizard =
514   push_pbox_toexpand("kanji.greight.wizard");
515   build_kanji.lr(300,0)
516     (kanji.leftrad.person)
517     (kanji.grone.mountain);
518   expand_pbox;
519 enddef;

```

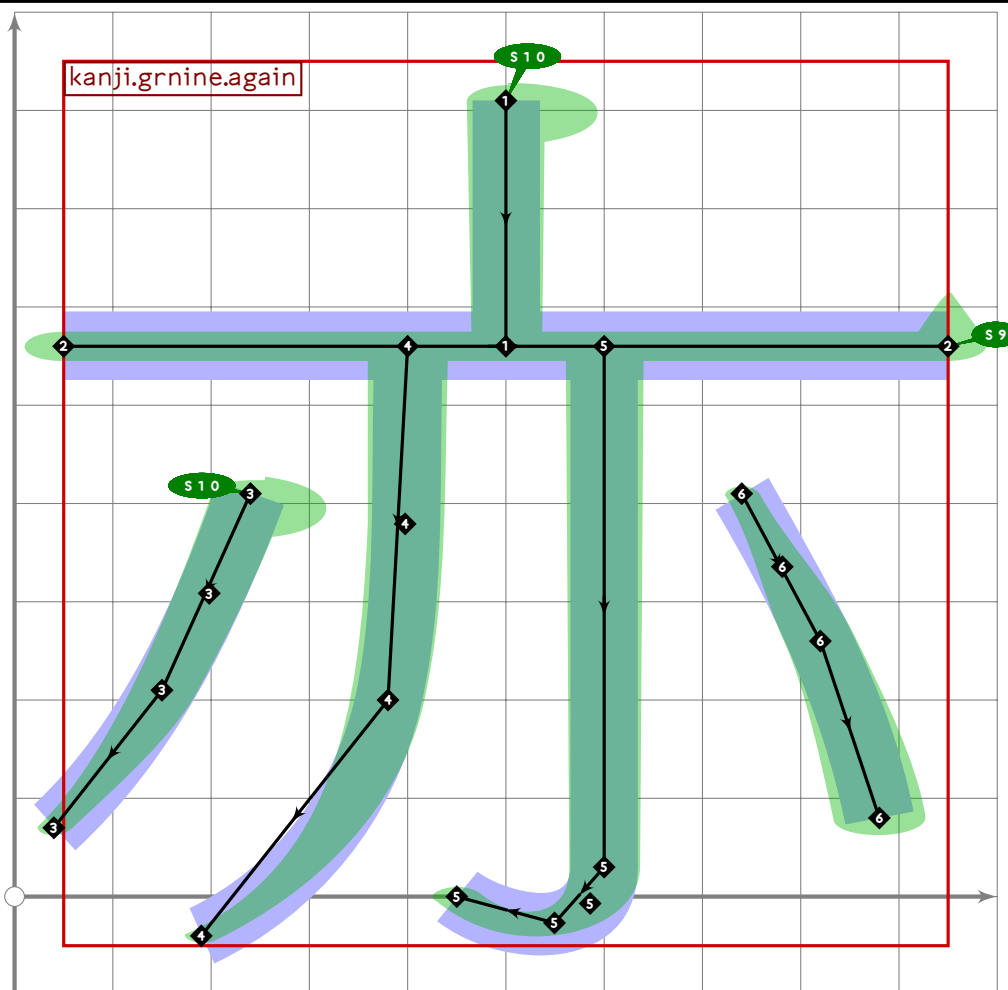
EIGH

# gradenine.mp

```

1 %
2 % Grade Nine kanji used on more than one page
3 % Copyright (C) 2011, 2012, 2013 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 inclusion_lock(gradenine);
32
33

```



NINE

```

34
35 vardef kanji.grnine.again =
36   push_pbox_toexpand("kanji.grnine.again");
37   push_stroke((500,810)-(500,560),(1.6,1.6)-(1.5,1.5));
38   set_boserif(0,0,10);
39   push_stroke((50,560)-(950,560),(1.6,1.6)-(1.6,1.6));
40   set_boserif(0,1,9);
41   push_stroke((240,410)..tension 1.3..(150,210)..(40,70),
42     (1.6,1.6)-(1.5,1.5)-(1,1));
43   set_boserif(0,0,10);

```



```

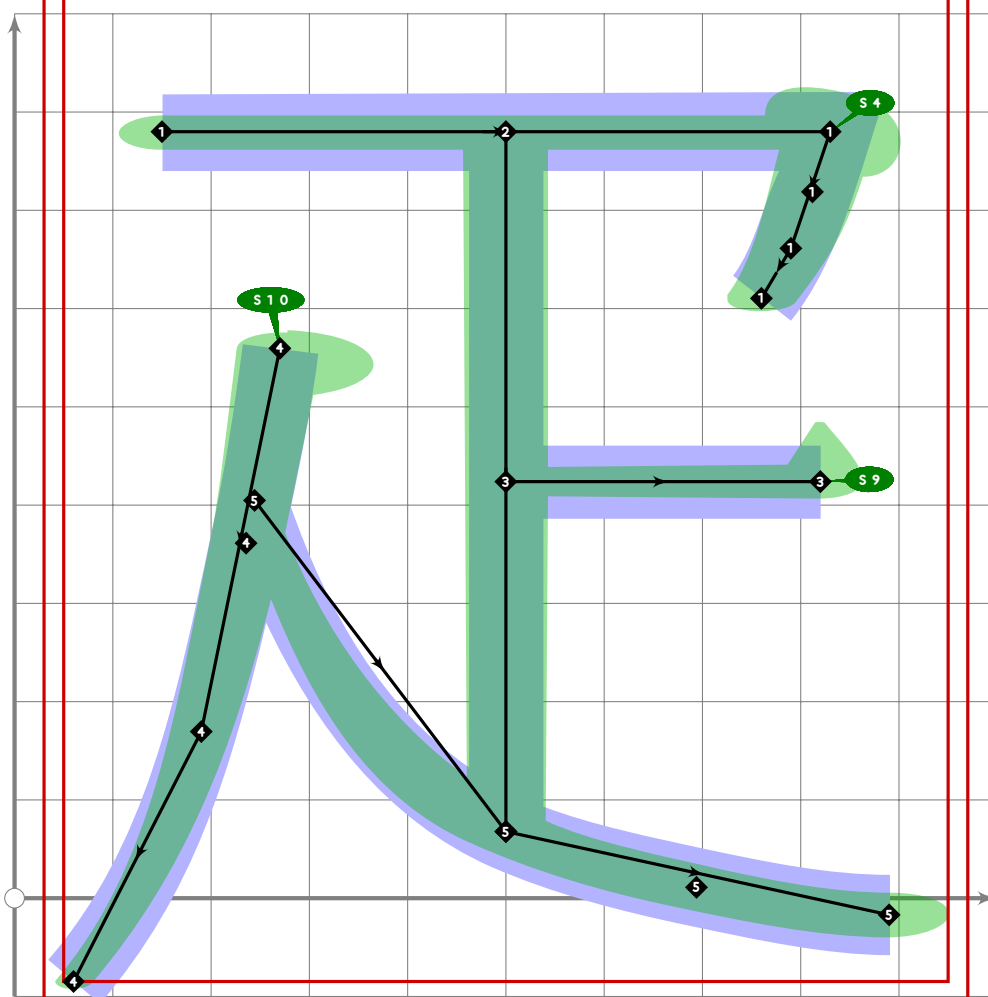
44  push_stroke((400,560){down}..tension 1.3..(380,200)..(190,-40),
45    (1.6,1.6)–(1.5,1.5)–(1,1));
46  push_stroke((600,560),(1.6,1.6));
47  build_kanji.add_jtail(0);
48  push_stroke((740,410)..tension 1.3..(820,260)..(880,80),
49    (1,1)–(1.5,1.5)–(1.8,1.8));
50  expand_pbox;
51 enddef;

```

U+758B  
tsuku.uni758B

kanji.grnine.animal\_counter  
kanji.grnine\_helper.foot

NINE



```

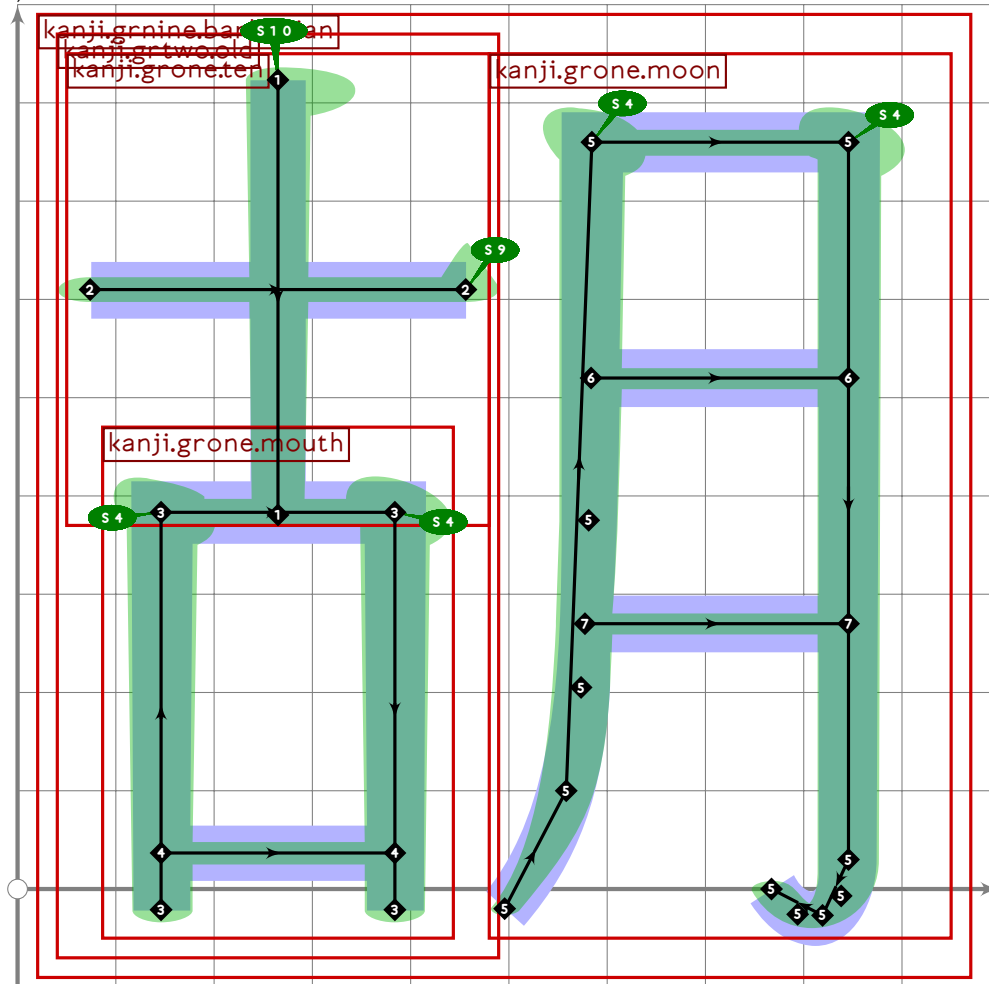
52
53 vardef kanji.grnine.animal_counter =
54   push_pbox_toexpand("kanji.grnine.animal_counter");
55   tsu_xform(identity yscaled (780/460))
56   (push_stroke((150,460)-(830,460)..tension 1.2..(790,390)..(760,360),
57     (1.6,1.6)-(1.7,1.7)-(1.6,1.6)-(1.4,1.4));

```

```

58   set_botip(0,1,1);
59   set_boserif(0,1,4);
60   push_stroke((500,460)-(500,40),(1.6,1.6)-(1.5,1.5));
61   push_stroke((500,250)-(820,250),(1.5,1.5)-(1.6,1.6));
62   set_boserif(0,1,9);
63   kanji.grone_helper.foot);
64   expand_pbox;
65 enddef;

```



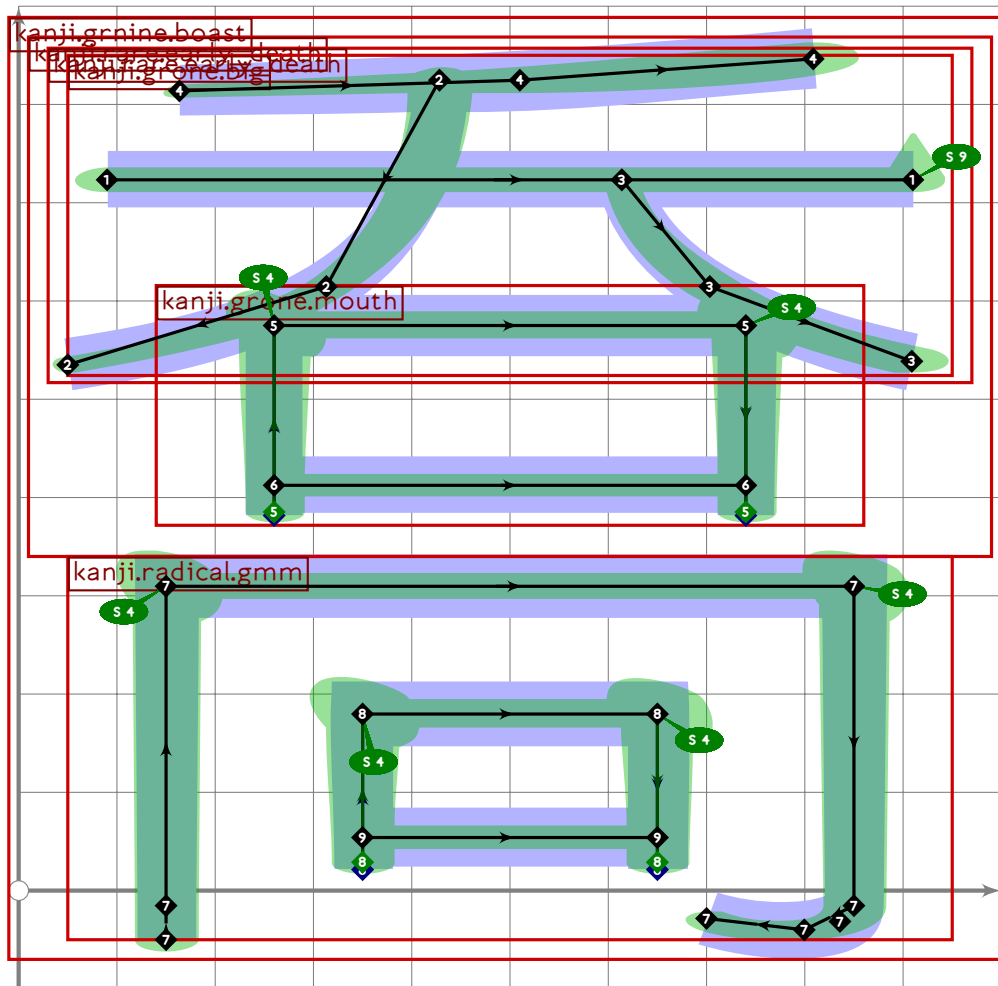
```

66
67 vardef kanji.grnine.barbarian =
68   push_pbox_toexpand("kanji.grnine.barbarian");
69   build_kanji.level(build_kanji.lr(480,0)
70     (kanji.grtwo.old)
71     (kanji.grone.moon));
72   expand_pbox;
73 enddef;

```

NINE

U+55AC  
tsuku.uni55AC

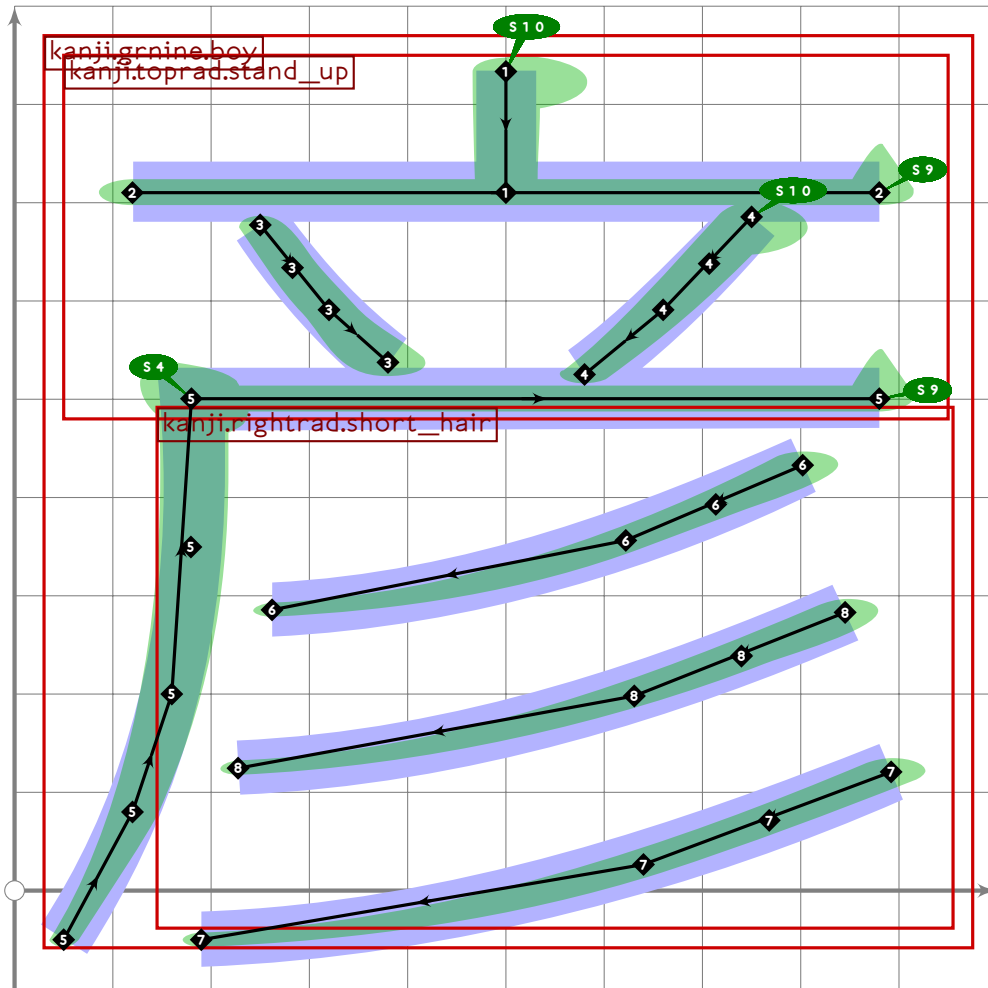


```

74
75 vardef kanji.grnine.boast =
76   push_pbox_toexpand("kanji.grnine.boast");
77   build_kanji.tb(340,0)
78   (kanji.rare.drink)
79   (kanji.radical.gmm;
80     build_kanji.box((350,480),(650,190)));
81   expand_pbox;
82 enddef;

```

NINE

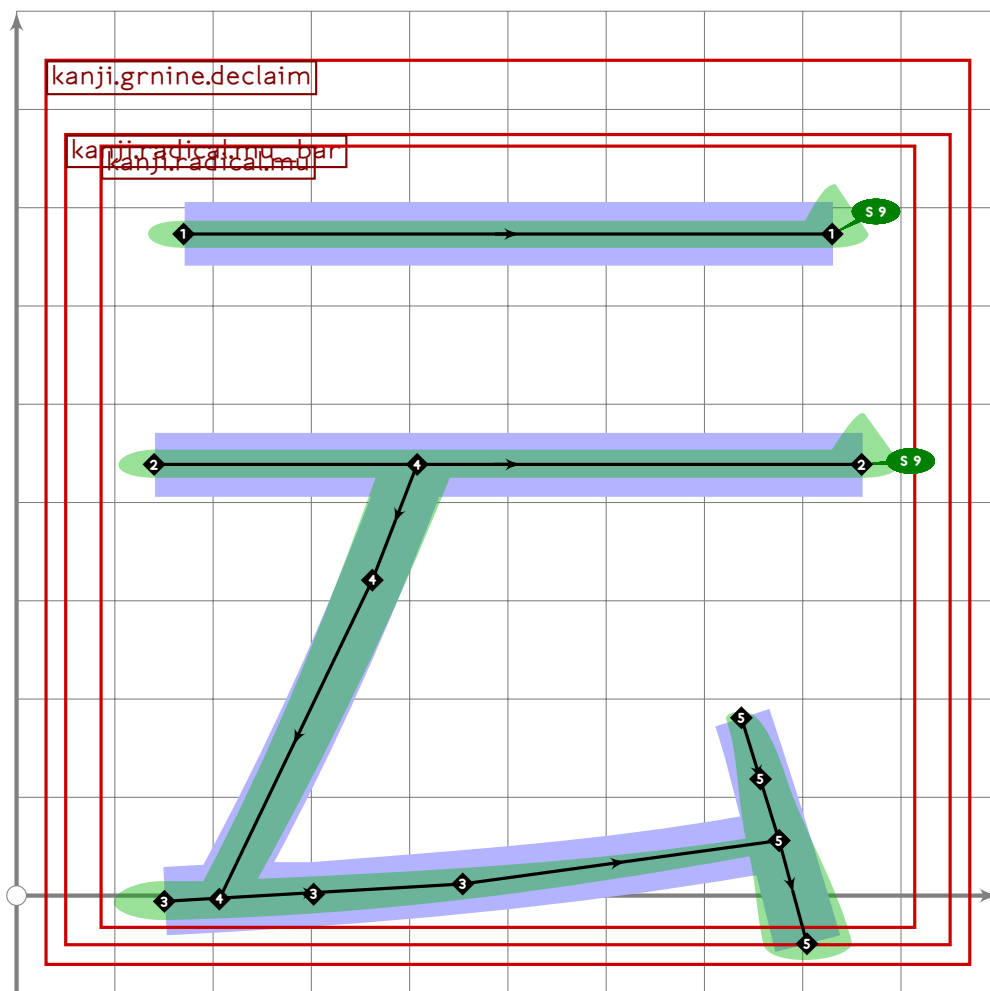


```

83
84 vardef kanji.grnine.boy =
85   push_pbox_toexpand("kanji.grnine.boy");
86   build_kanji.level(build_kanji.tb(480,0)
87     (kanji.toprad.stand_up)
88     (build_kanji.sscale(xscaled 0.9 shifted (50,20))
89       (kanji.rightrad.short_hair)));
90   replace_strokep(-3)((50,50)..(120,80)..(160,200)..tension 1.2..
91     (180,y part point 0 of oldp)-(880,y part point 1 of oldp));
92   replace_strokeq(-3)((1,1)-(1.3,1.3)-(1.5,1.5)-(1.6,1.6)-(1.6,1.6));
93   set_botip(-3,3,1);
94   set_boserif(-3,1,whatever);
95   set_boserif(-3,3,4);
96   set_boserif(-3,4,9);
97   expand_pbox;
98 enddef;

```

U+4E91  
tsuku.uni4E91

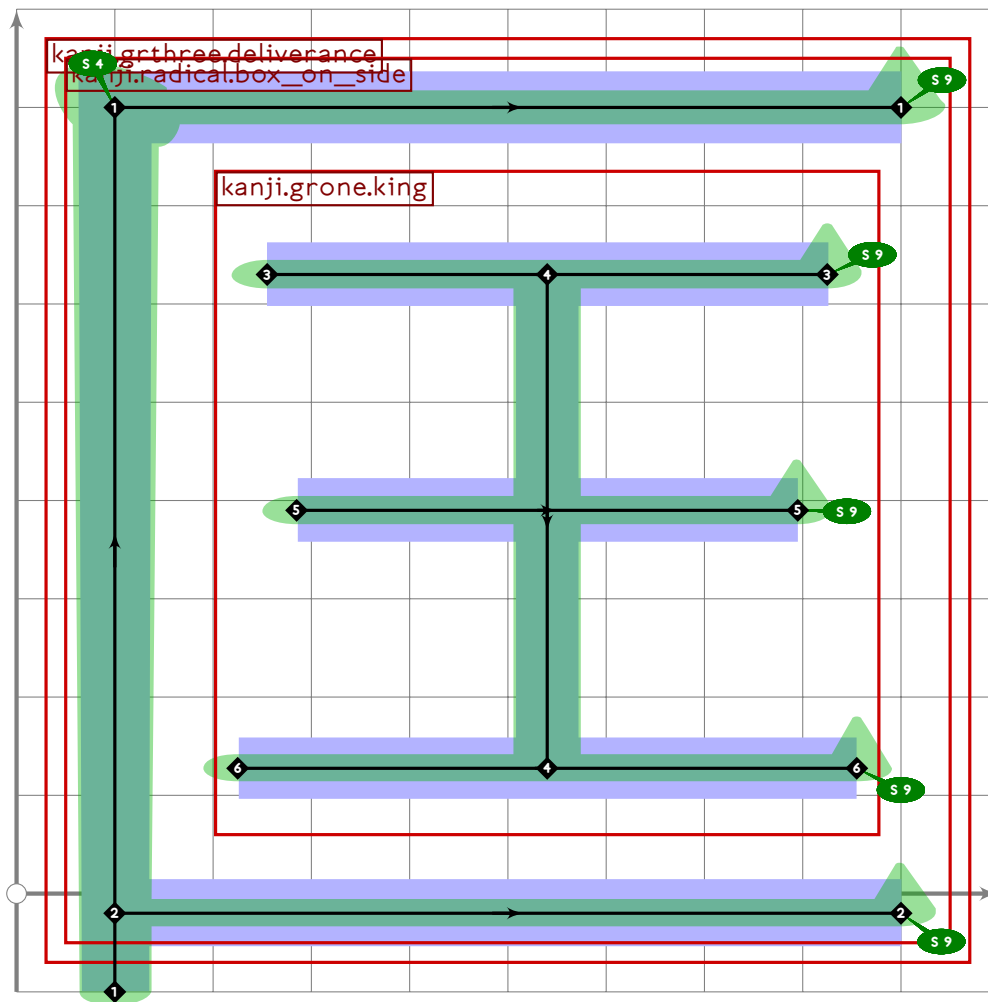


```

99
100 vardef kanji.grnine.declaim =
101   push_pbox_toexpand("kanji.grnine.declaim");
102   build_kanji.level(build_kanji.tb(480,0)
103     (push_stroke((170,420)-(830,420),
104       (1.6,1.6)-(1.6,1.6));
105     set_boserif(0,1,9);
106   )
107   (kanji.radical.mu_bar));
108   expand_pbox;
109 enddef;

```

NINE

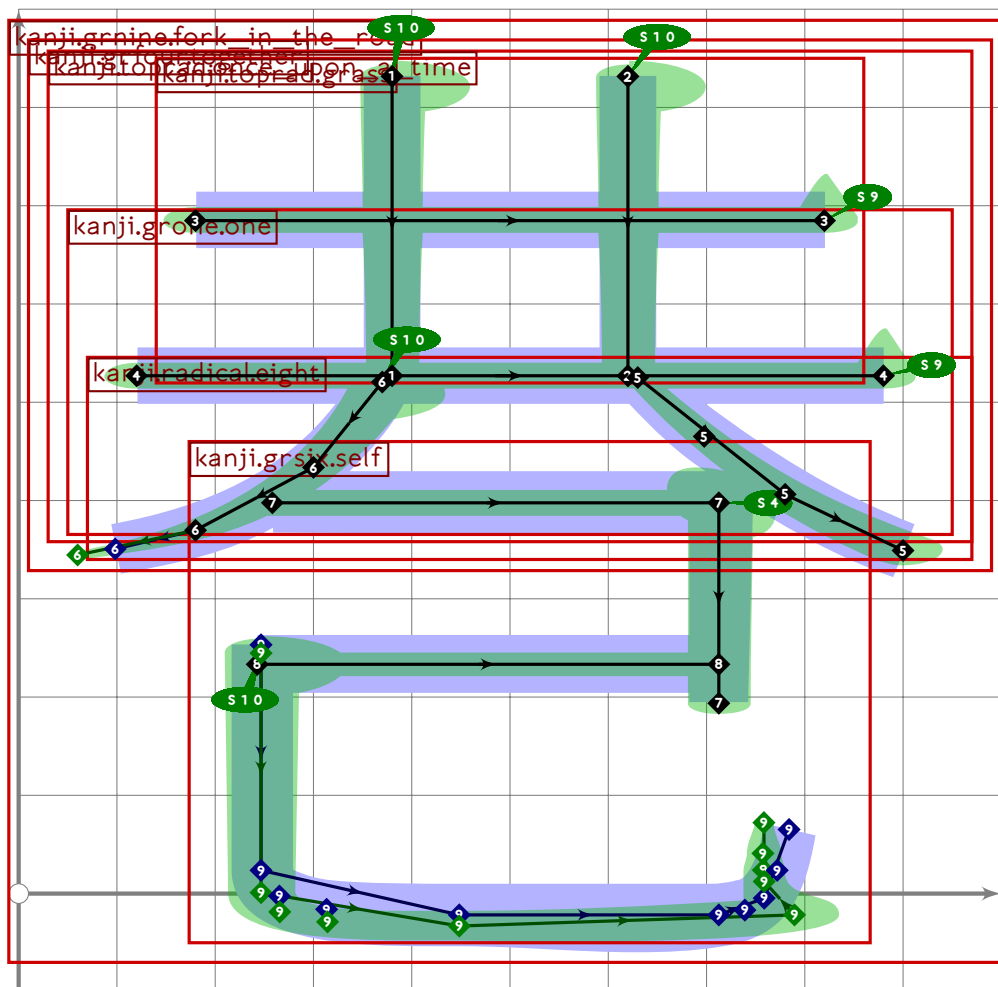


```

110
111 vardef kanji.grnine.deliverance =
112   push_pbox_toexpand("kanji.grthree.deliverance");
113   kanji.radical.box_on_side;
114   build_kanji.sscale(scaled 0.75 shifted (40,0))(kanji.grone.king);
115   expand_pbox;
116 enddef;

```

NINE

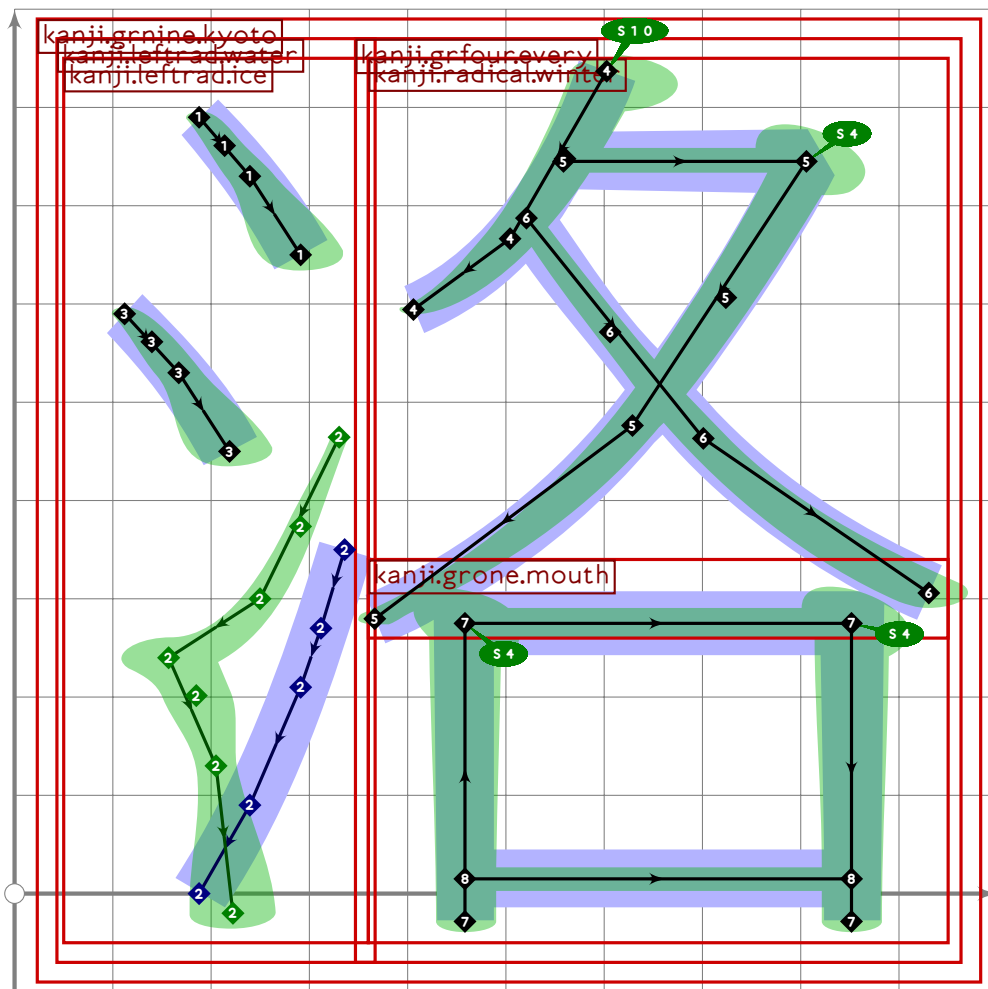


```

117
118 vardef kanji.grnine.fork_in_the_road =
119   push_pbox_toexpand("kanji.grnine.fork_in_the_road");
120   build_kanji.tb(400,120)
121     (kanji.grfour.together)
122     (build_kanji.sscale(xscaled 0.77 shifted (20,0))(kanji.grsix.self));
123   expand_pbox;
124 enddef;

```





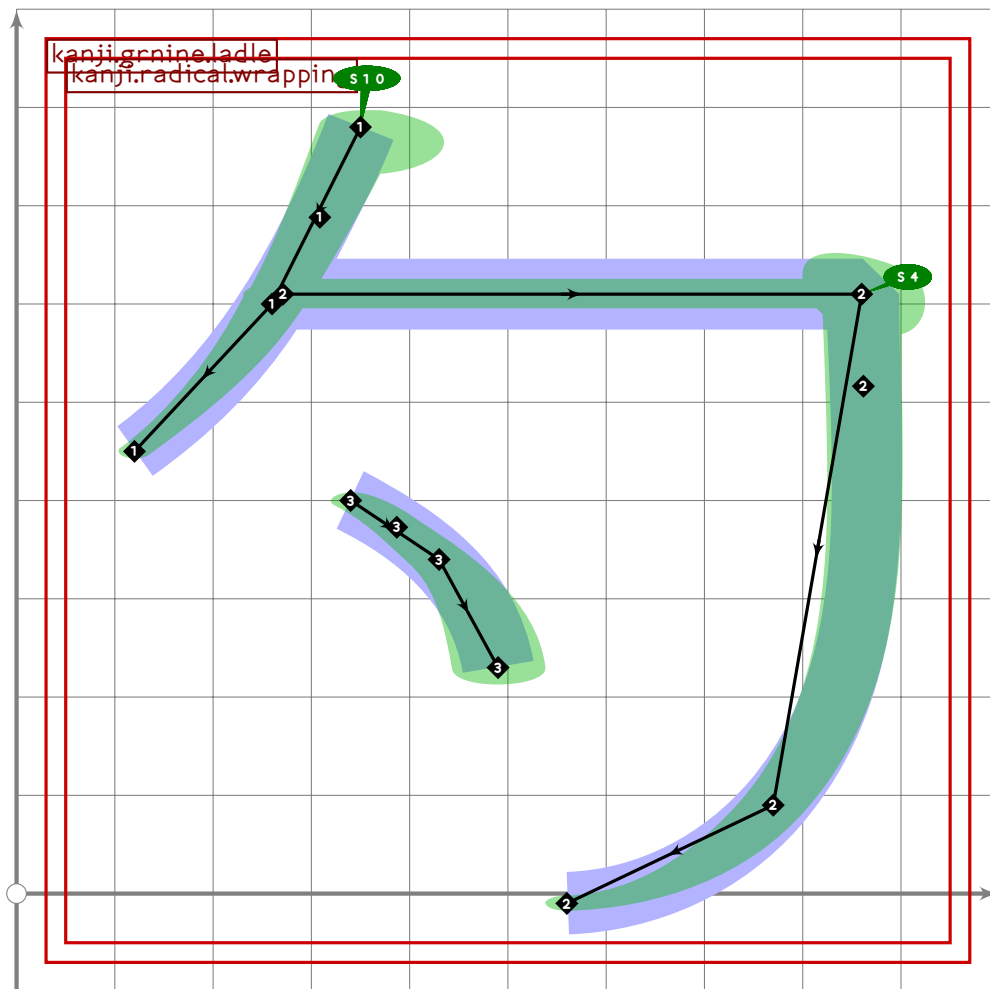
```

125
126 vardef kanji.grnine.kyoto =
127   push_pbox_toexpand("kanji.grnine.kyoto");
128   build_kanji.lr(360,0)
129   (kanji.leftrad.water)
130   (kanji.grfour.every);
131   expand_pbox;
132 enddef;

```

**NINE**

U+52FA  
tsuku.uni52FA

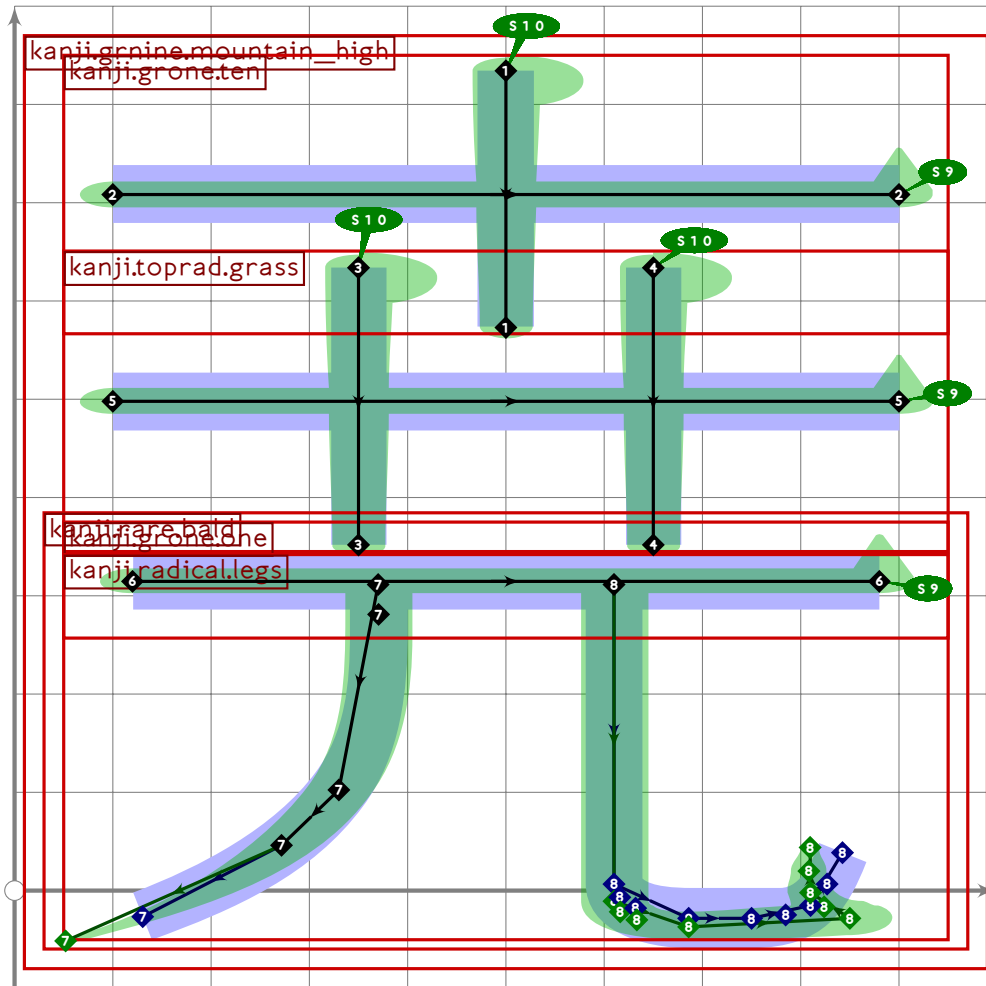


```

133
134 vardef kanji.grnine.ladle =
135   push_pbox_toexpand("kanji.grnine.ladle");
136   kanji.radical.wrapping;
137   push_stroke((340,400)..tension 1.2..(430,340)..(490,230),
138     (1,1,1)-(14,14)-(18,18));
139   expand_pbox;
140 enddef;

```

NINE



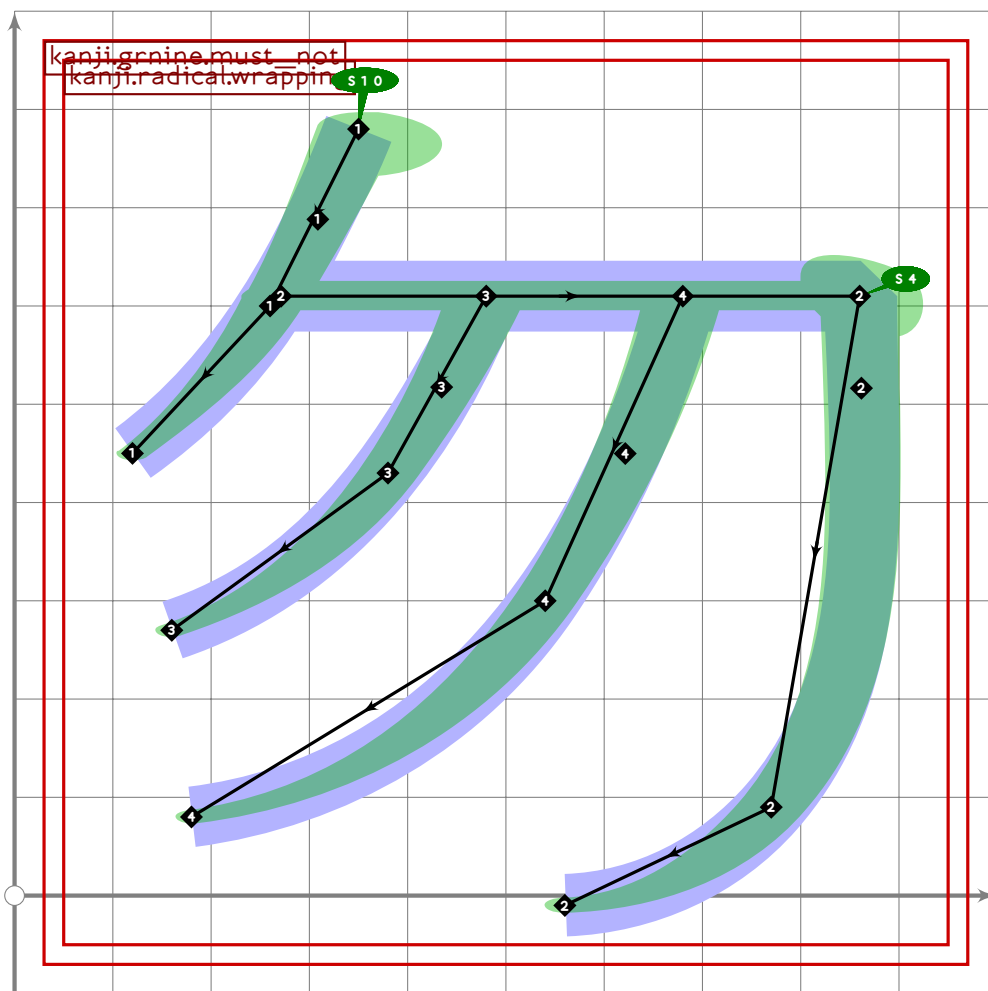
```

141
142 vardef kanji.grnine.mountain_high =
143   push_pbox_toexpand("kanji.grnine.mountain_high");
144   build_kanji.level(build_kanji.tb(360,30)
145     (build_kanji.tb(420,150)
146       (kanji.grone.ten)
147       (kanji.toprad.grass))
148     (kanji.rare.bald));
149   expand_pbox;
150 enddef;

```

NINE

U+52FF  
tsuku.uni52FF

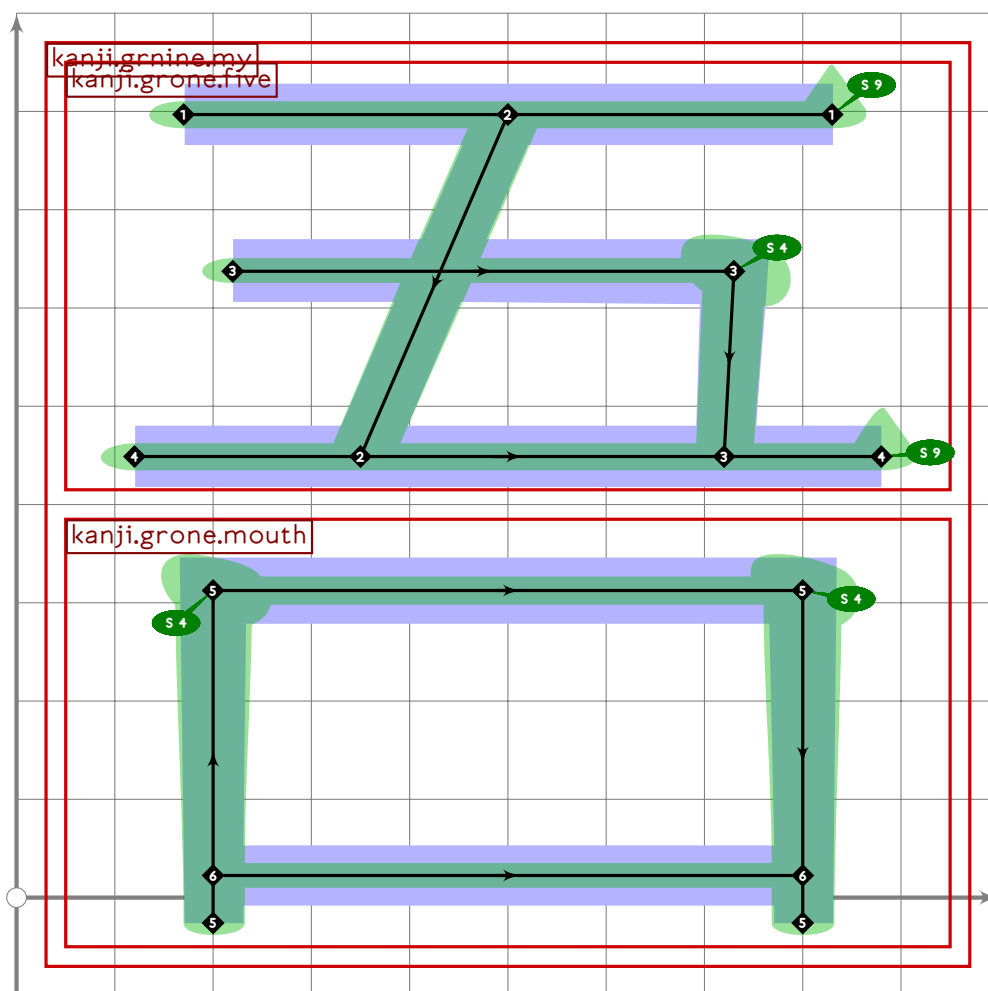


```

151
152 vardef kanji.grnine.must_not =
153   push_pbox_toexpand("kanji.grnine.must_not");
154   kanji.radical.wrapping;
155   push_stroke(
156     (480,610)..tension 1.2..(380,430)..(160,270),
157     (1.6,1.6)–(1.4,1.4)–(1.0,1.0));
158   push_stroke(
159     (680,610)..tension 1.2..(540,300)..(180,80),
160     (1.6,1.6)–(1.4,1.4)–(1.0,1.0));
161   expand_pbox;
162 enddef;

```

NINE



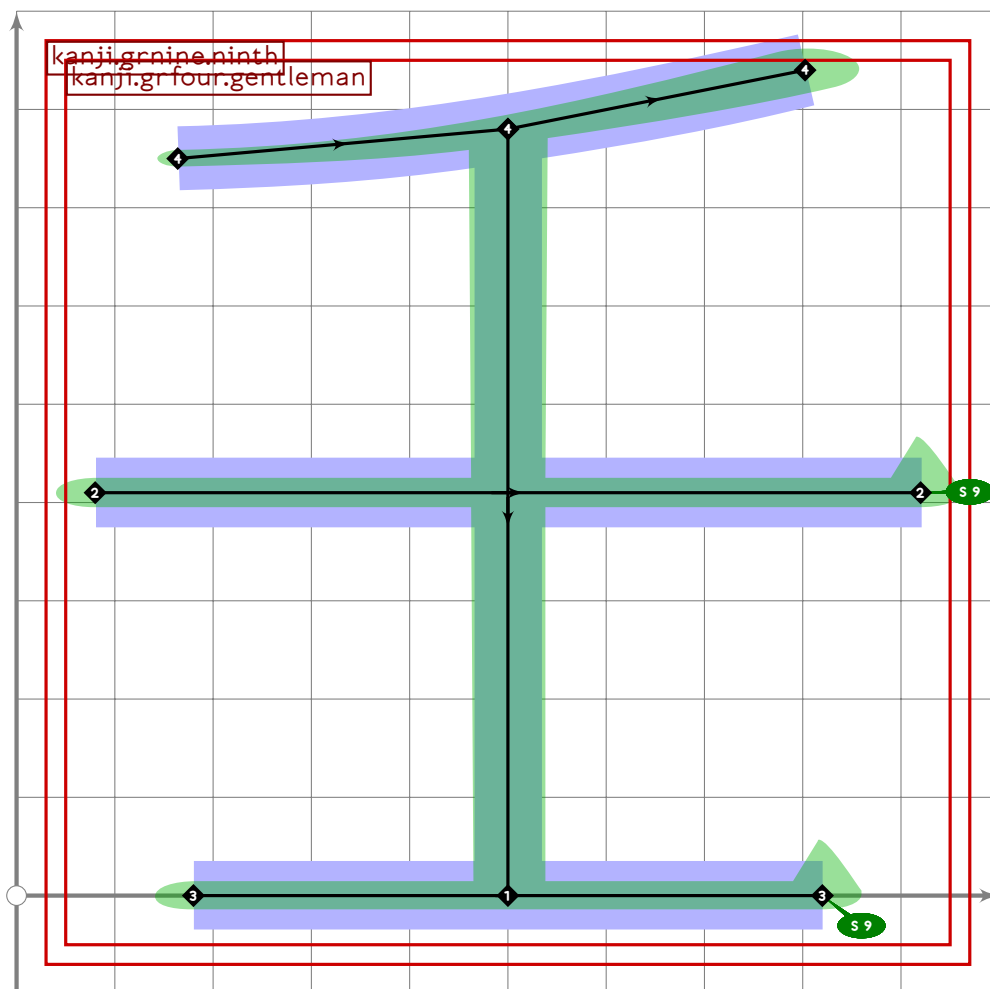
```

163
164 vardef kanji.grnine.my =
165   push_pbox_toexpand("kanji.grnine.my");
166   build_kanji.level(build_kanji.tb(400,-30)
167     (kanji.grone.five)
168     (kanji.grone.mouth));
169   expand_pbox;
170 enddef;

```

NINE

U+58EC  
tsuku.uni58EC

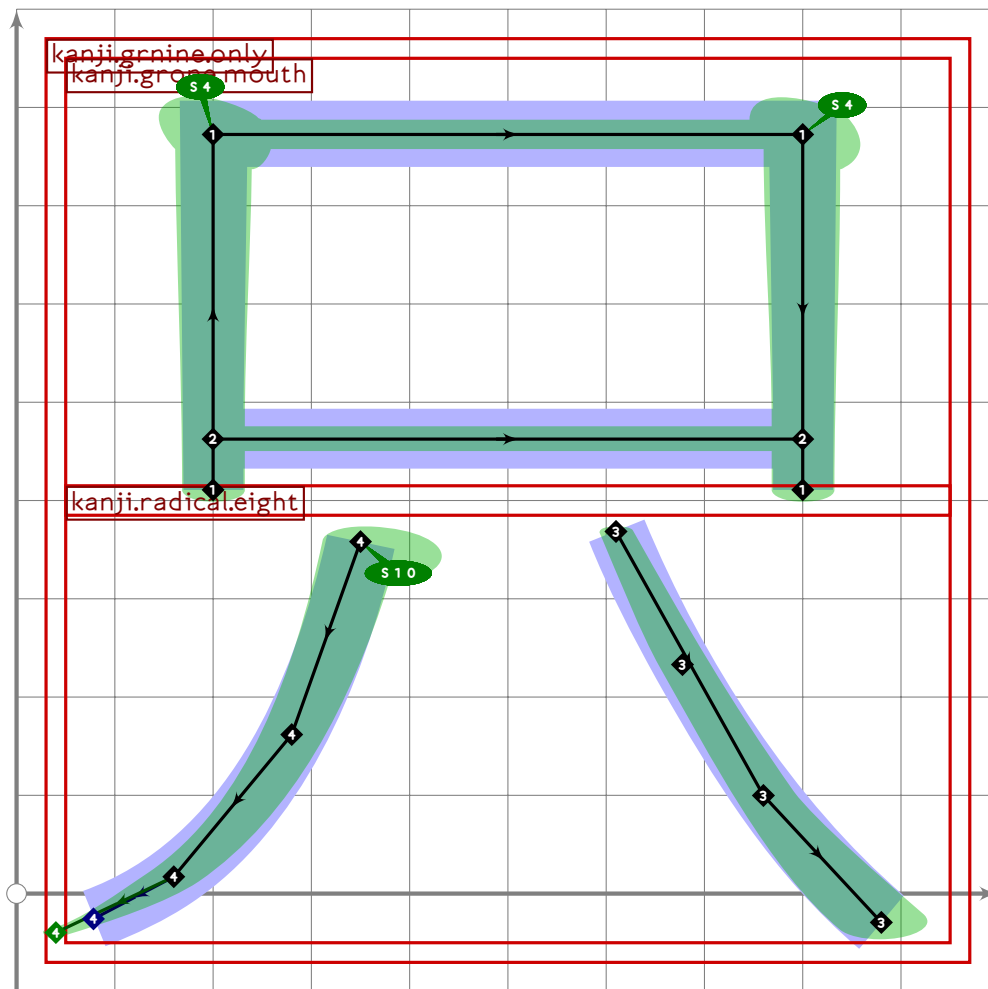


```

171
172 vardef kanji.grnine.ninth =
173   push_pbox_toexpand("kanji.grnine.ninth");
174   build_kanji.add_beret(
175     kanji.grfour.gentleman;
176     replace_strokep(-1)(oldp shifted (0,-60)));
177   expand_pbox;
178 enddef;

```

NINE



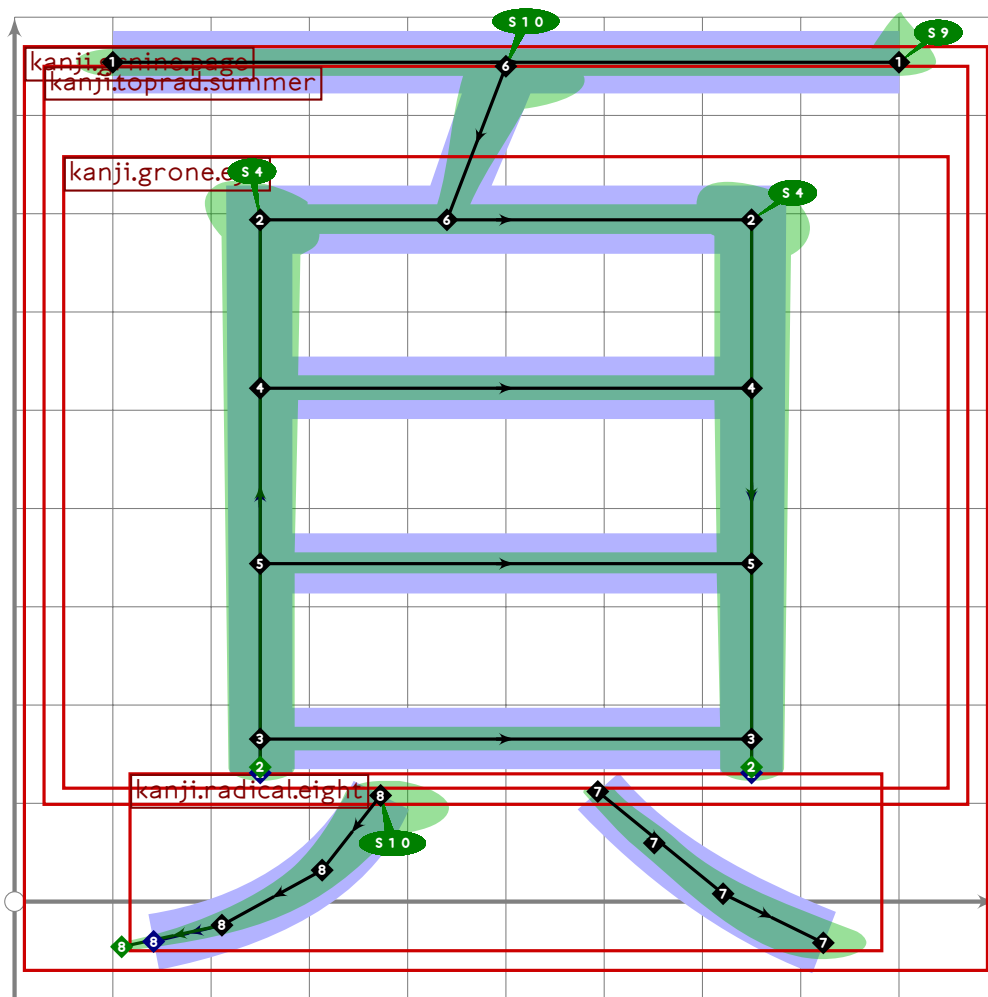
```

179
180 vardef kanji.grnine.only =
181   push_pbox_toexpand("kanji.grnine.only");
182   build_kanji.tb(400,30)
183     (kanji.grnine.mouth)
184     (kanji.radical.eight);
185   expand_pbox;
186 enddef;

```

NINE

U+9801  
tsuku.uni9801



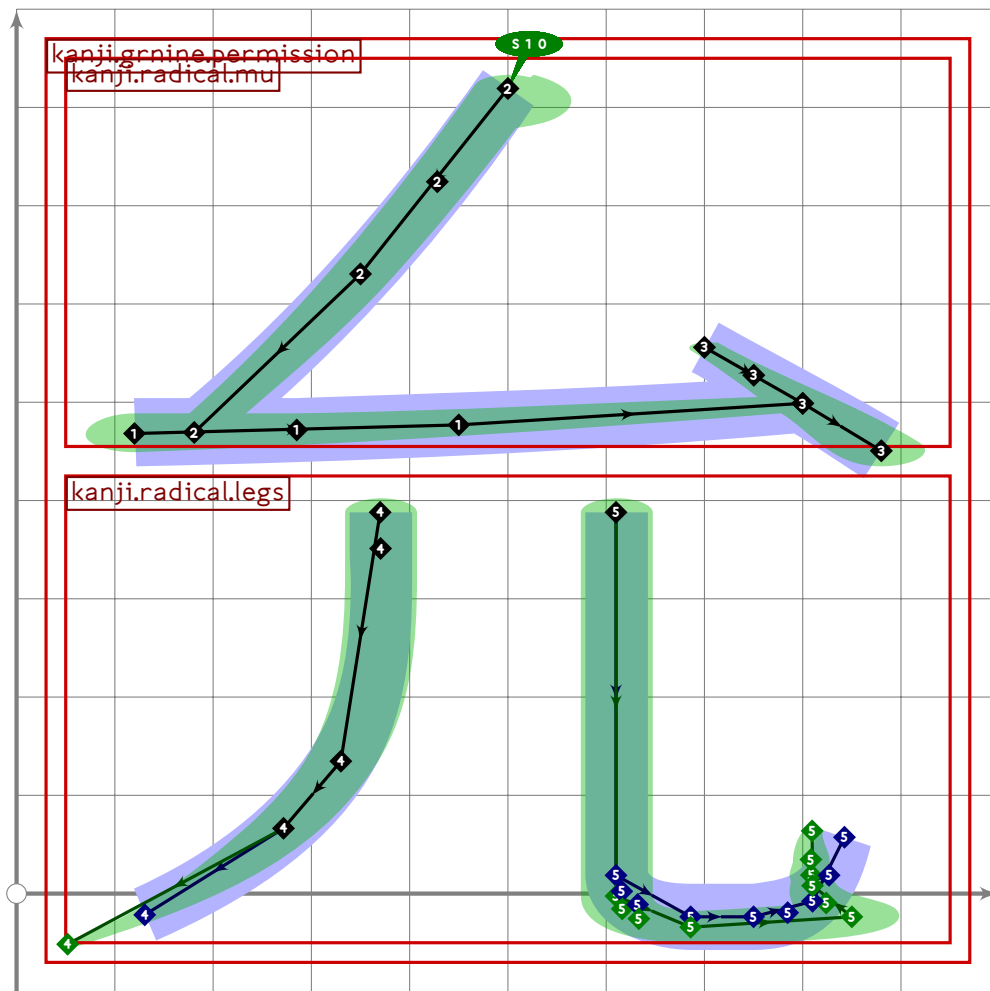
```

187
188 vardef kanji.grnine.page =
189   push_pbox_toexpand("kanji.grnine.page");
190   build_kanji.level(build_kanji.tb(120,20)
191     (kanji.toprad.summer)
192     (build_kanji.sscale(xscaled 0.85)(kanji.radical.eight)));
193   expand_pbox;
194 enddef;

```

NINE



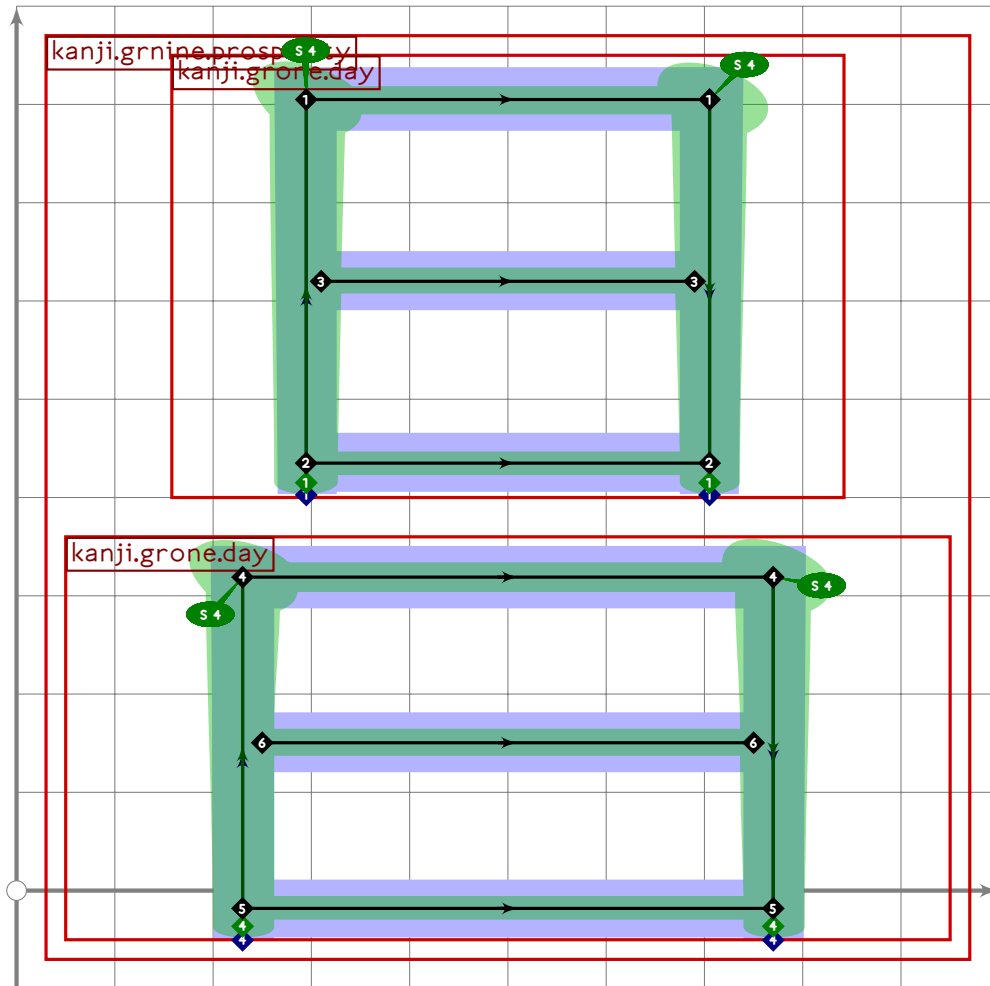


```

195
196 vardef kanji.grnine.permission =
197   push_pbox_toexpand("kanji.grnine.permission");
198   build_kanji.level(build_kanji.tb(440,-30)
199     (kanji.radical.mu)
200     (kanji.radical.legs));
201   expand_pbox;
202 enddef;

```

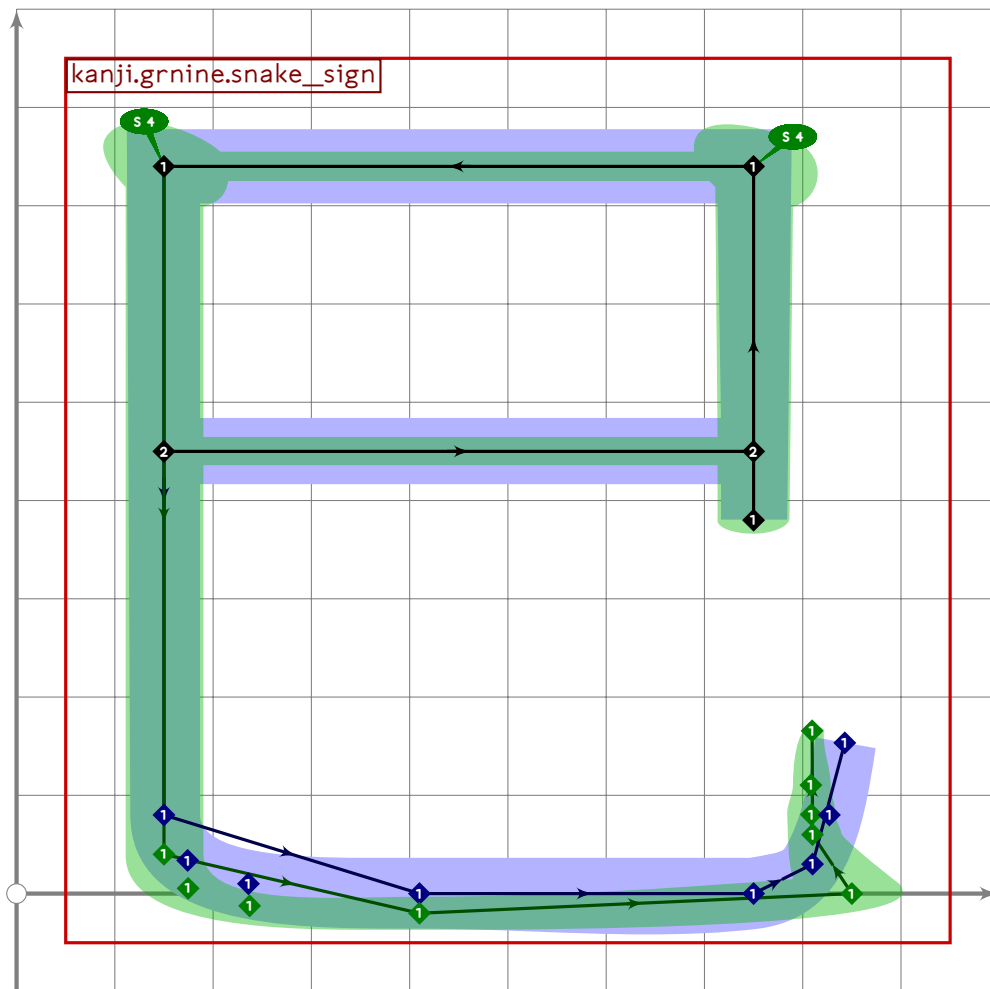
NINE



```

203
204 vardef kanji.grnine.prosperity =
205   push_pbox_toexpand("kanji.grnine.prosperity");
206   build_kanji.level(build_kanji.tb(380,-40)
207     (build_kanji.sscale(xscaled 0.76)(kanji.grone.day))
208     (kanji.grone.day));
209   expand_pbox;
210 enddef;

```

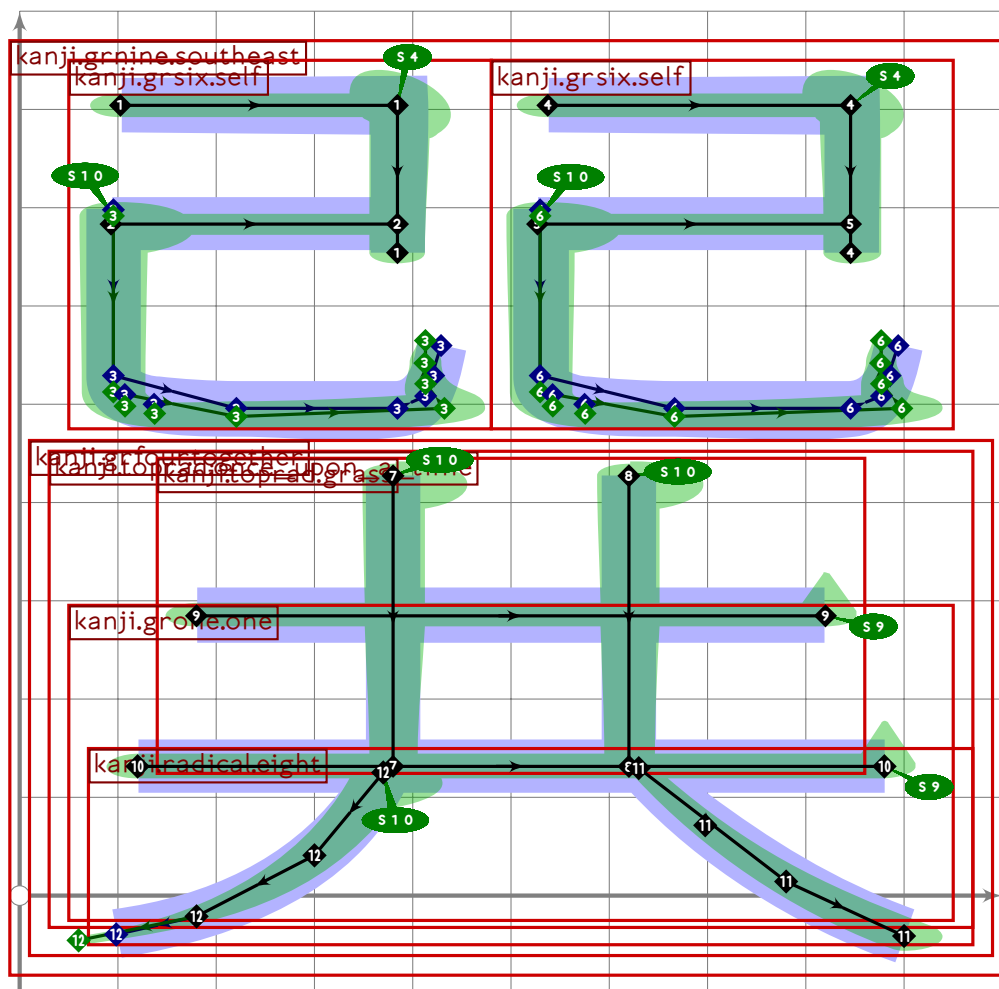


```

211
212 vardef kanji.grnine.snake_sign =
213   push_pbox_toexpand("kanji.grnine.snake_sign");
214   push_stroke((750,380)–(750,740)–(150,740),
215     (1.5,1.5)–(1.6,1.6)–(1.6,1.6));
216   set_botip(0,1,1);
217   set_botip(0,2,1);
218   set_boserif(0,1,4);
219   set_boserif(0,2,4);
220   build_kanji.add_ltail(0);
221   push_stroke((150,450)–(750,450),
222     (1.5,1.5)–(1.5,1.5));
223   expand_pbox;
224 enddef;

```

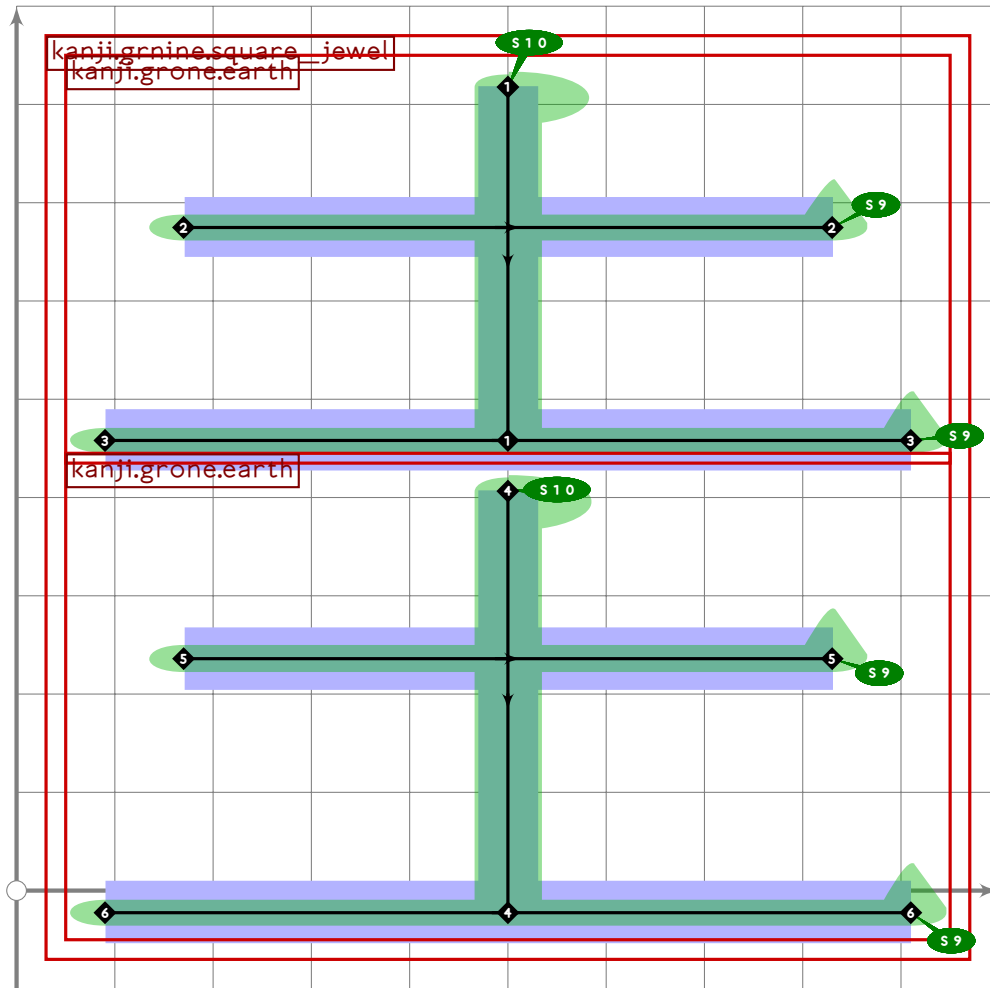
NINE



```

225
226 vardef kanji.grnine.southeast =
227   push_pbox_toexpand("kanji.grnine.southeast");
228   build_kanji.level(build_kanji.tb(460,-30)
229     (build_kanji.lr(480,0)
230       (kanji.grsix.self)
231       (kanji.grsix.self))
232     (kanji.grfour.together));
233   expand_pbox;
234 enddef;

```

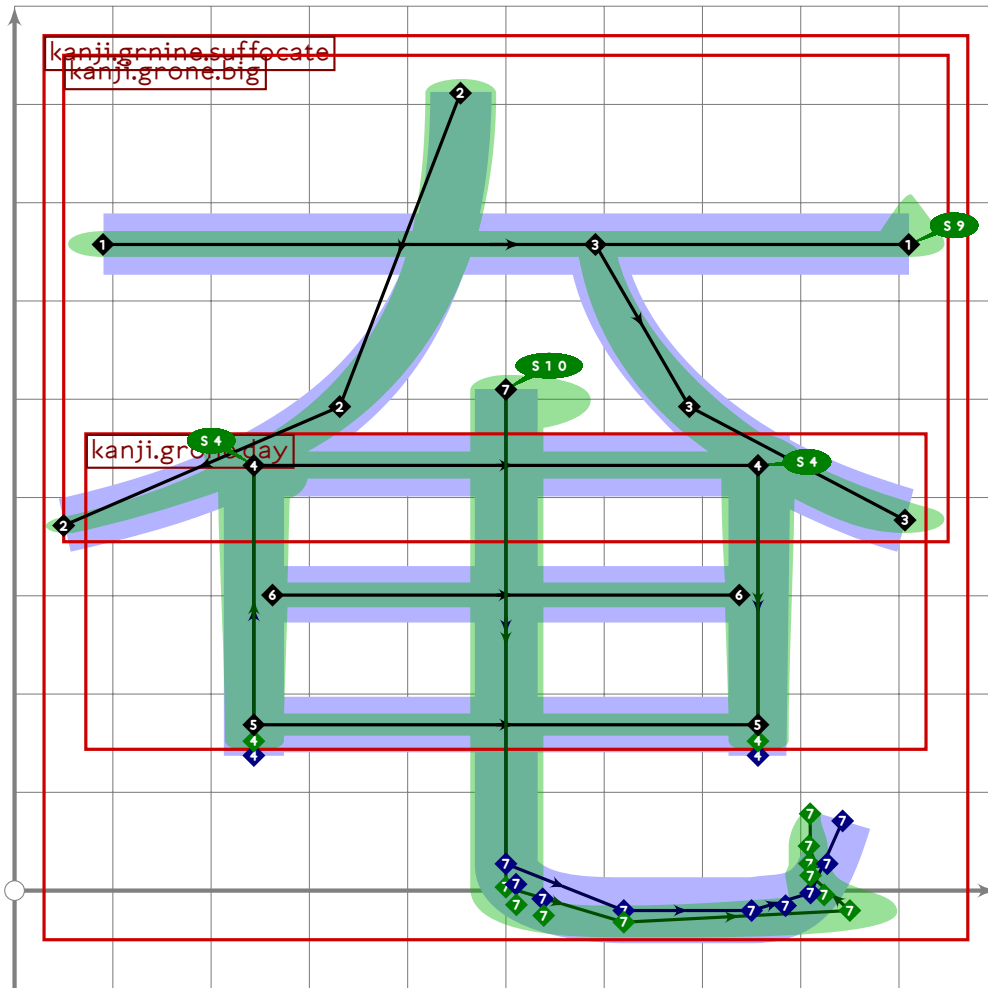


```

235
236 vardef kanji.grnine.square_jewel =
237   push_pbox_toexpand("kanji.grnine.square_jewel");
238   build_kanji.tb(440,10)
239     (kanji.grone.earth)
240     (kanji.grone.earth);
241   expand_pbox;
242 enddef;

```

NINE

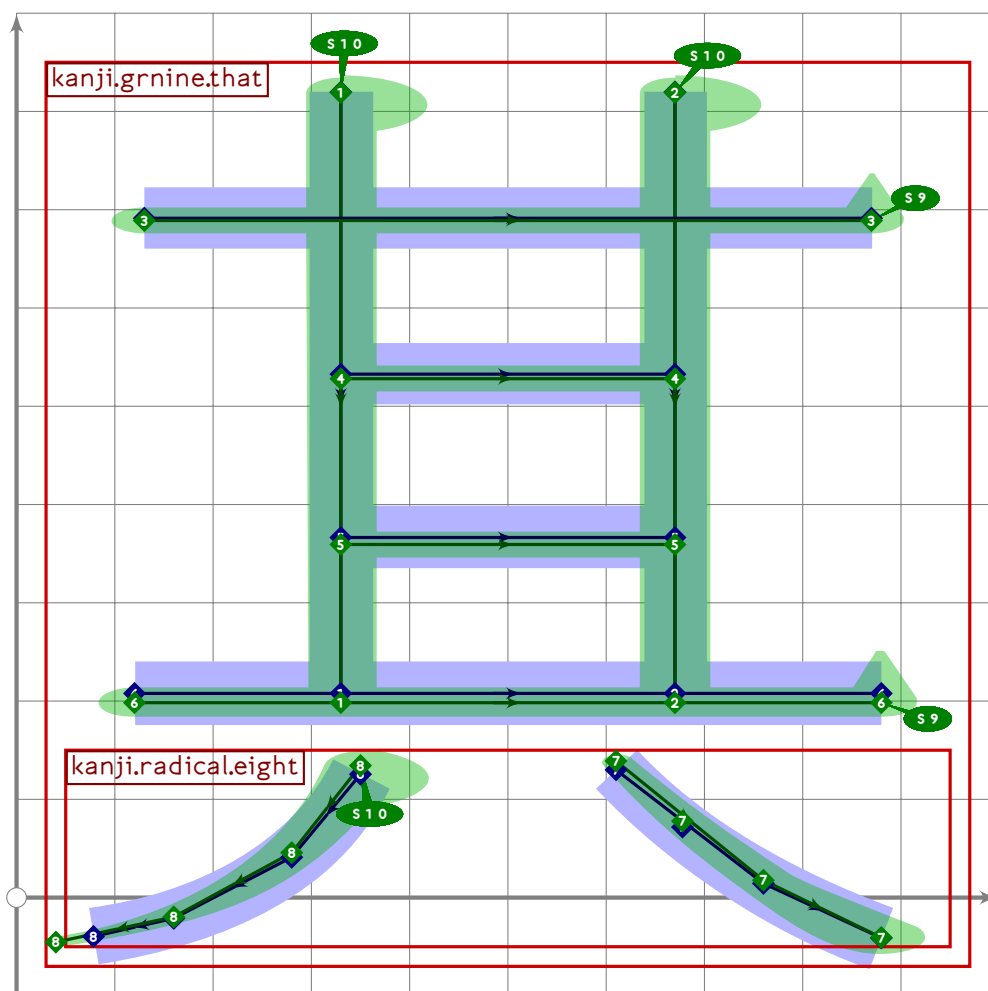


```

243
244 vardef kanji.grnine.suffocate =
245   push_pbox_toexpand("kanji.grnine.suffocate");
246   build_kanji.tb(420,130)
247   (build_kanji.spread_legs(110)
248     (kanji.grone.big))
249   (build_kanji.sscale(xyscaled (0.95,0.6) shifted (0,150))
250     (kanji.grone.day);
251   push_stroke(((0,130)+point 1.5 of get_stroke(-2)),(1.6,1.6));
252   build_kanji.add_tail(0);
253   set_boserif(0,0,10));
254   expand_pbox;
255 enddef;

```

NINE



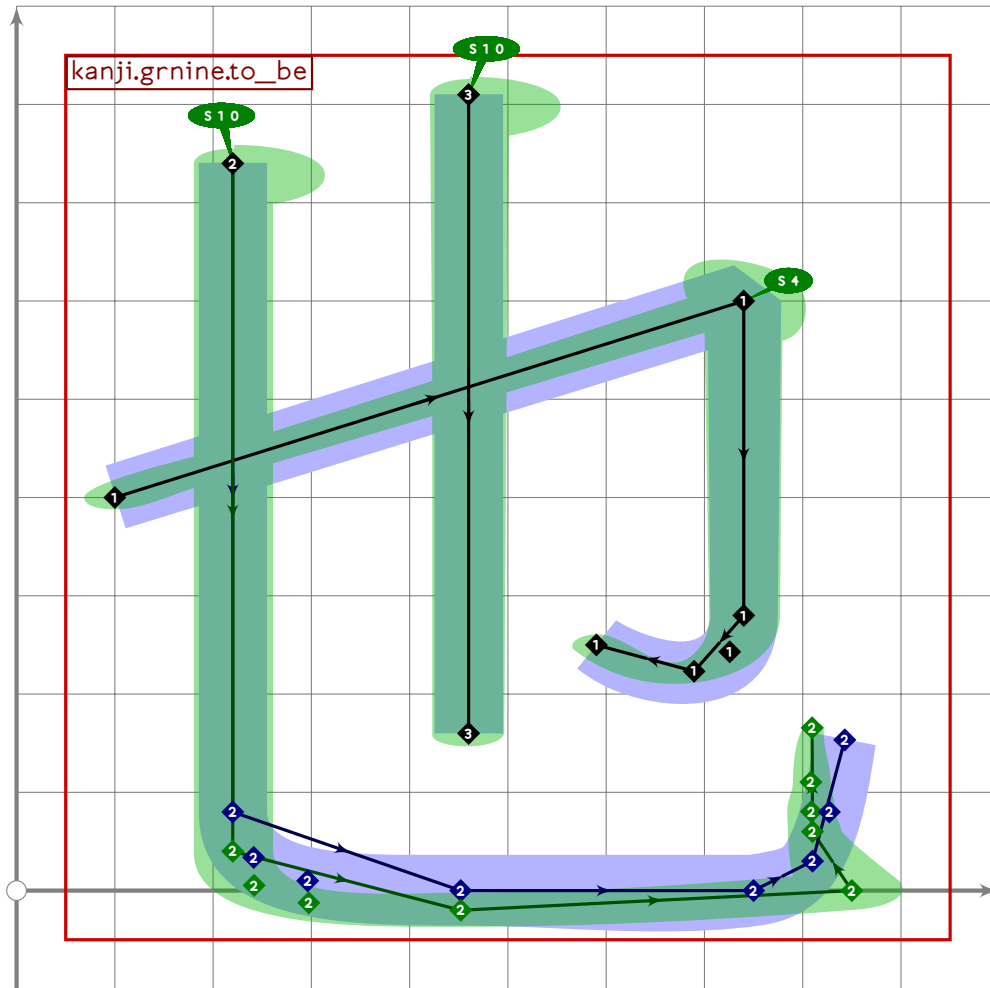
```

256
257 vardef kanji.grnine.that =
258   push_pbox_toexpand("kanji.grnine.that");
259   build_kanji.level(build_kanji.tb(160;20+20*mincho)
260     (push_stroke((330,810)-(330,0),(1.6,1.6)-(1.5,1.5));
261       set_boserif(0,0,10);
262       push_stroke((670,810)-(670,0),(1.6,1.6)-(1.5,1.5));
263       set_boserif(0,0,10);
264       push_stroke((130,640)-(870,640),(1.5,1.5)-(1.5,1.5));
265       set_boserif(0,1,9);
266       push_stroke((330,430)-(670,430),(1.5,1.5)-(1.5,1.5));
267       push_stroke((330,210)-(670,210),(1.5,1.5)-(1.5,1.5));
268       push_stroke((120,0)-(880,0),(1.6,1.6)-(1.6,1.6));
269       set_boserif(0,1,9))
270     (kanji.radical.eight));
271   expand_pbox;
272 enddef;

```

NINE

U+4E5F  
tsuku.uni4E5F



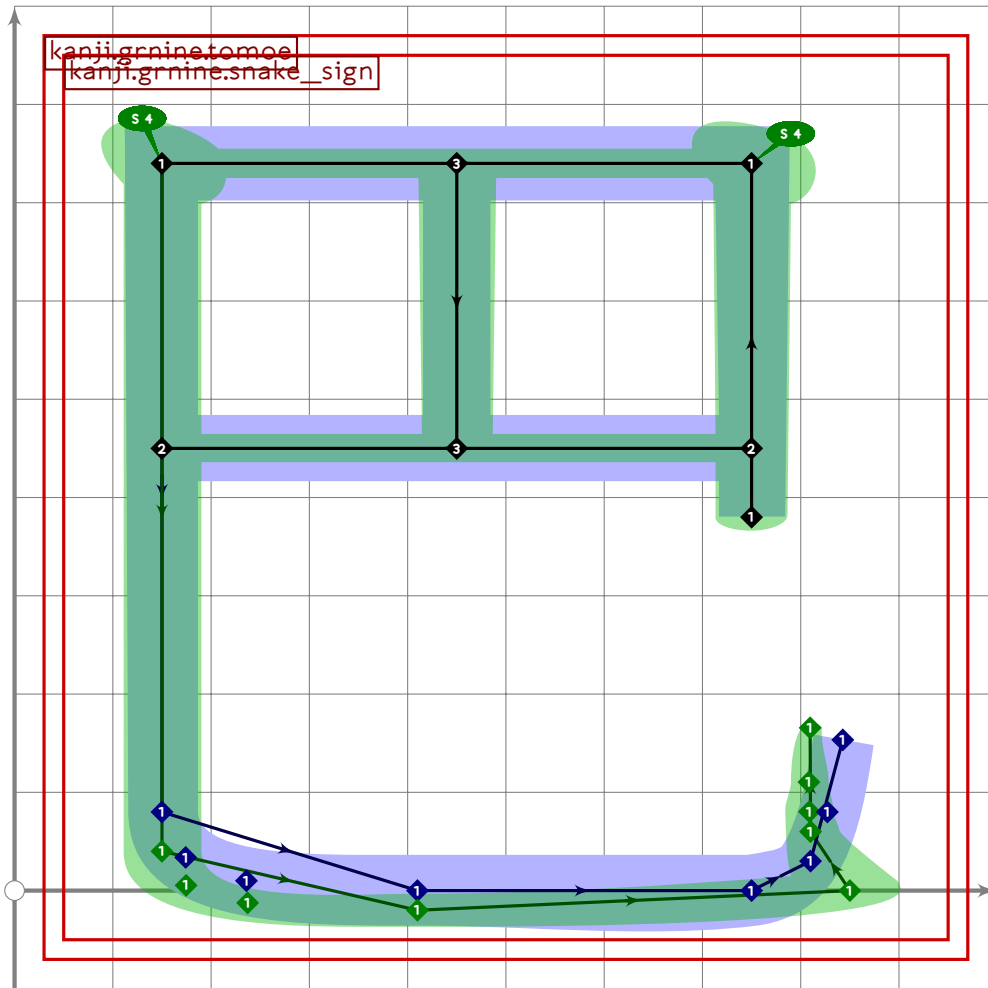
```

273
274 vardef kanji.grnine.to_be =
275   push_pbox_toexpand("kanji.grnine.to_be");
276   tsu_xform(identity shifted (0,250))(
277     push_stroke((100,150)-(740,350),
278       (1.4,1.4)-(1.6,1.6));
279     set_botip(0,1,0);
280     set_boserif(0,1,4);
281     build_kanji.add_jtail(0);
282   );
283   push_stroke((220,740),(1.6,1.6));
284   build_kanji.add_ltail(0);
285   set_boserif(0,0,10);
286   push_stroke((460,810)-(460,160),
287     (1.6,1.6)-(1.5,1.5));
288   set_boserif(0,0,10);
289   expand_pbox;
290 enddef;

```

NINE





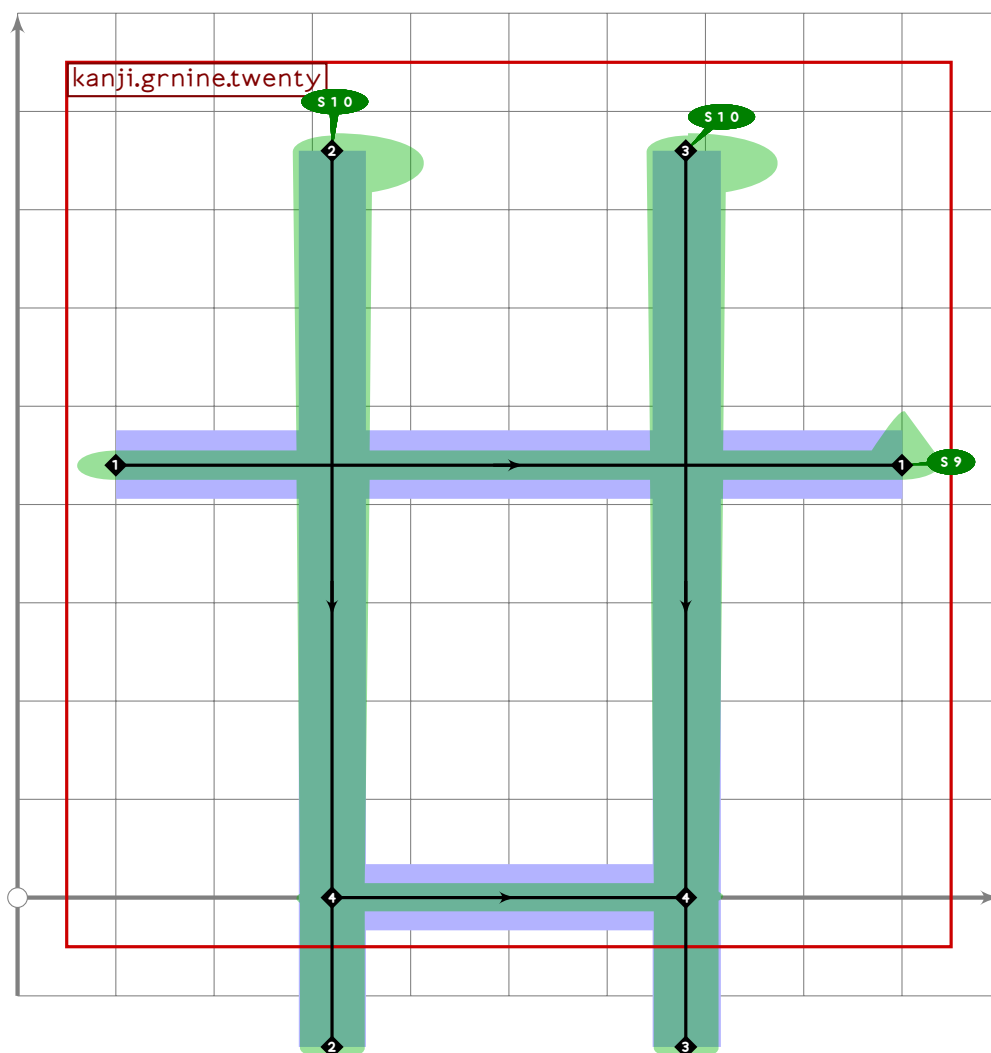
```

291
292 vardef kanji.grnine.tomoe =
293   push__pbox_toexpand("kanji.grnine.tomoe");
294   kanji.grnine.snake__sign;
295   push__stroke((450,740)–(450,450),(1.6,1.6)–(1.5,1.5));
296   expand__pbox;
297 enddef;

```

**NINE**

U+5EFF  
tsuku.uni5EFF

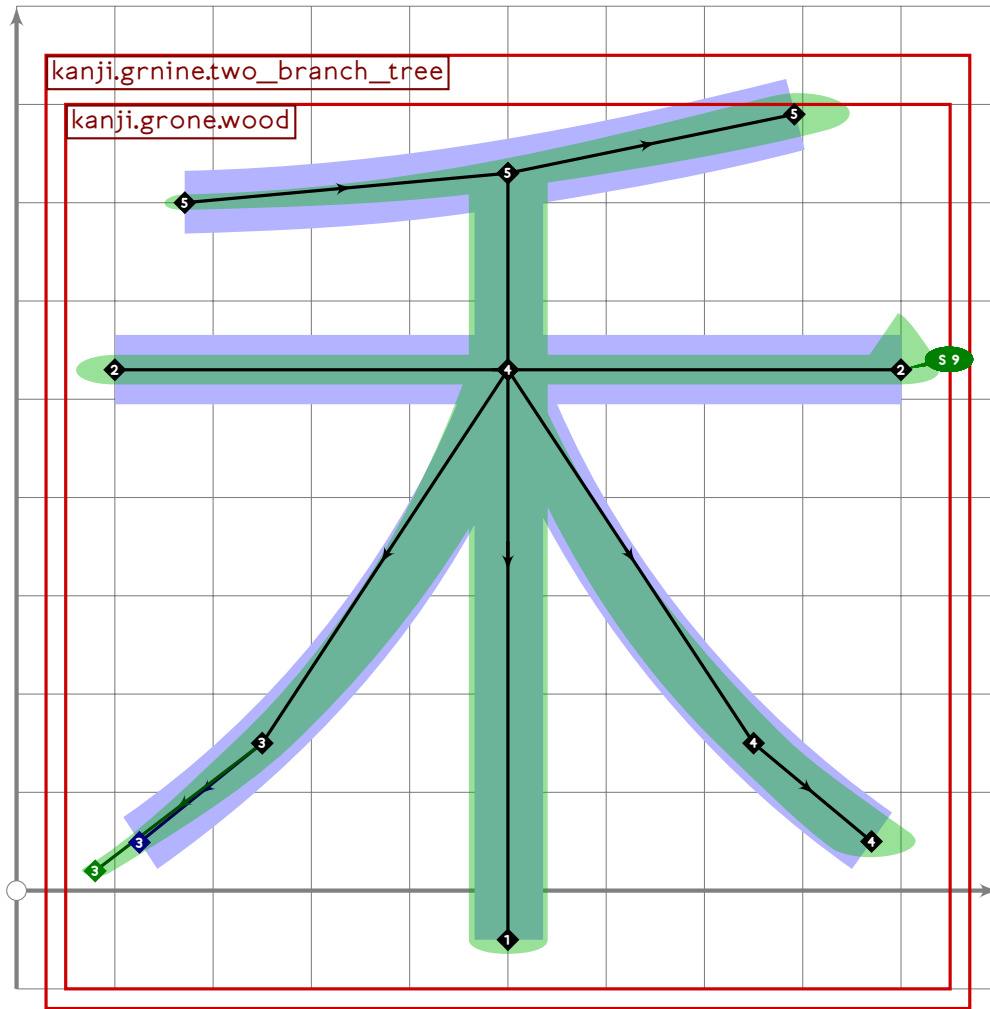


```

298
299 vardef kanji.grnine.twenty =
300   push_pbox_toexpand("kanji.grnine.twenty");
301   push_stroke((100,440)-(900,440),(1.6,1.6)-(1.6,1.6));
302   set_boserif(0,1,9);
303   build_kanji.cup((320,760),(680,0));
304   expand_pbox;
305 enddef;

```

NINE



```

306
307 vardef kanji.grnine.two_branch_tree =
308   push_pbox_toexpand("kanji.grnine.two_branch_tree");
309   tsu_xform(identity shifted (0,-50))
310     (build_kanji.add_beret(kanji.grone.wood));
311   expand_pbox;
312 enddef;

```

NINE

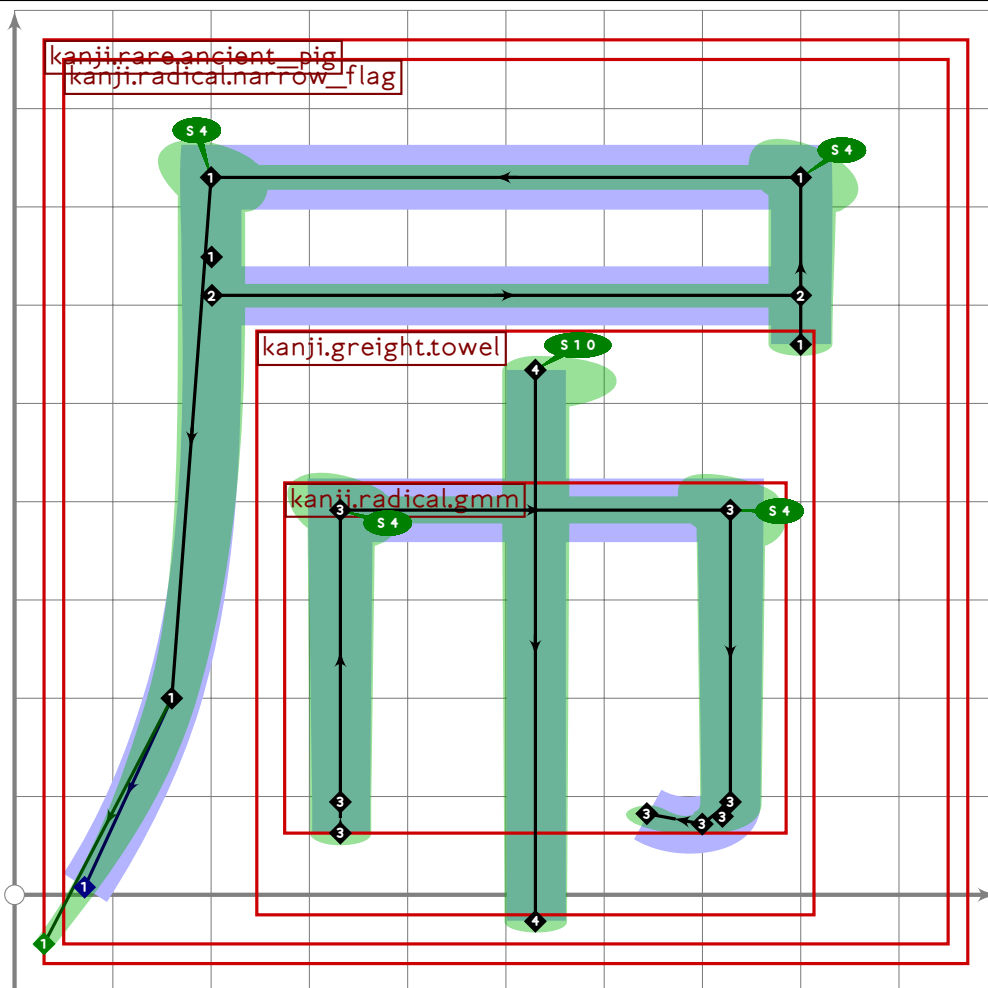
## rare.mp

```
1 %
2 % Rare kanji needed to build others
3 % Copyright (C) 2011, 2012, 2013 Matthew Skala
4 %
5-29 [Standard copyright notice]
```

```
30
31 inclusion_lock(rare);
```

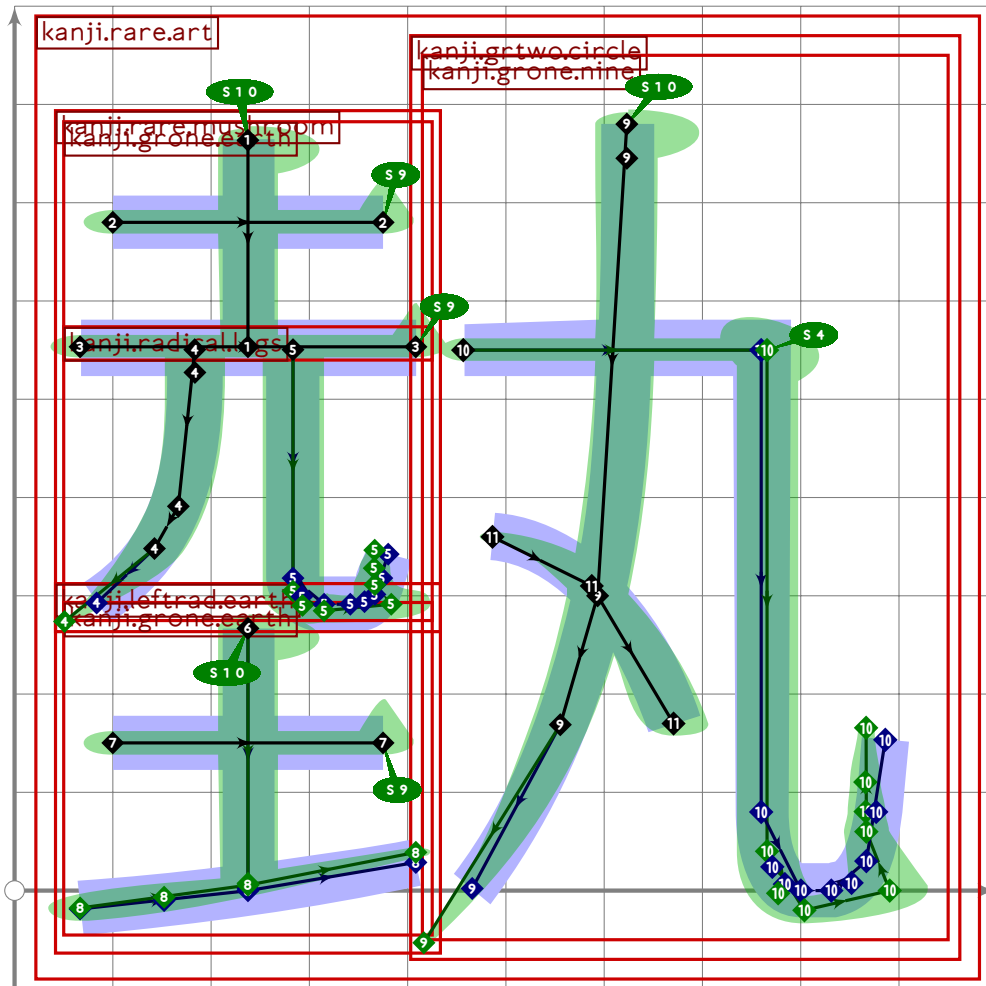
```
32
```

```
33
```



RARE

```
34
35 vardef kanji.rare.ancient_pig =
36   push_pbox_toexpand("kanji.rare.ancient_pig");
37   build_kanji.level(
38     kanji.radical.narrow_flag;
39     build_kanji.sscale(xyscaled (0.63,0.66) shifted (30,120))
40     (kanji.greight.towel));
41   expand_pbox;
42 enddef;
```



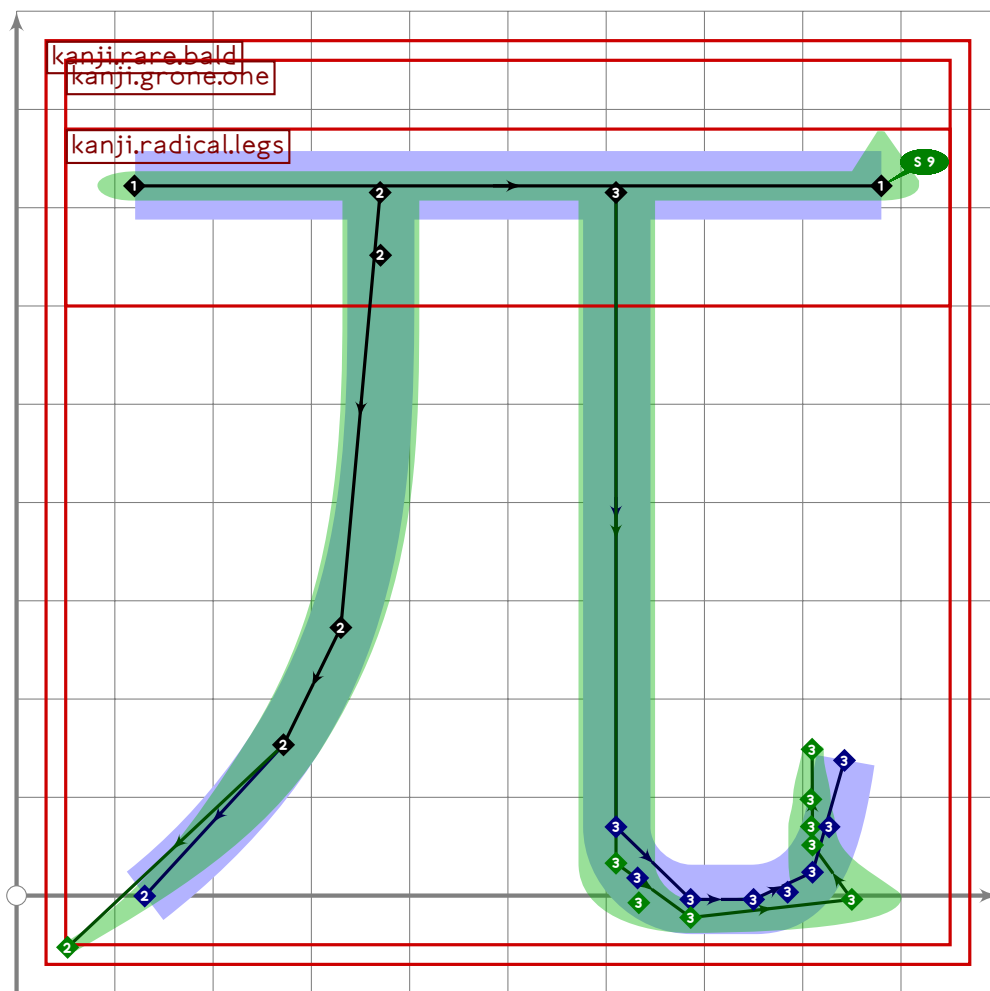
```

43
44 vardef kanji.rare.art =
45   push_pbox_toexpand("kanji.rare.art");
46   build_kanji.level(build_kanji.lr(420,10)
47     (build_kanji.sscale(yscaled 0.94 shifted (0,-40))(build_kanji.tb(330,40)
48       (kanji.rare.mushroom)
49       (kanji.leftrad.earth)))
50     (kanji.grtwo.circle));
51   expand_pbox;
52 enddef;

```

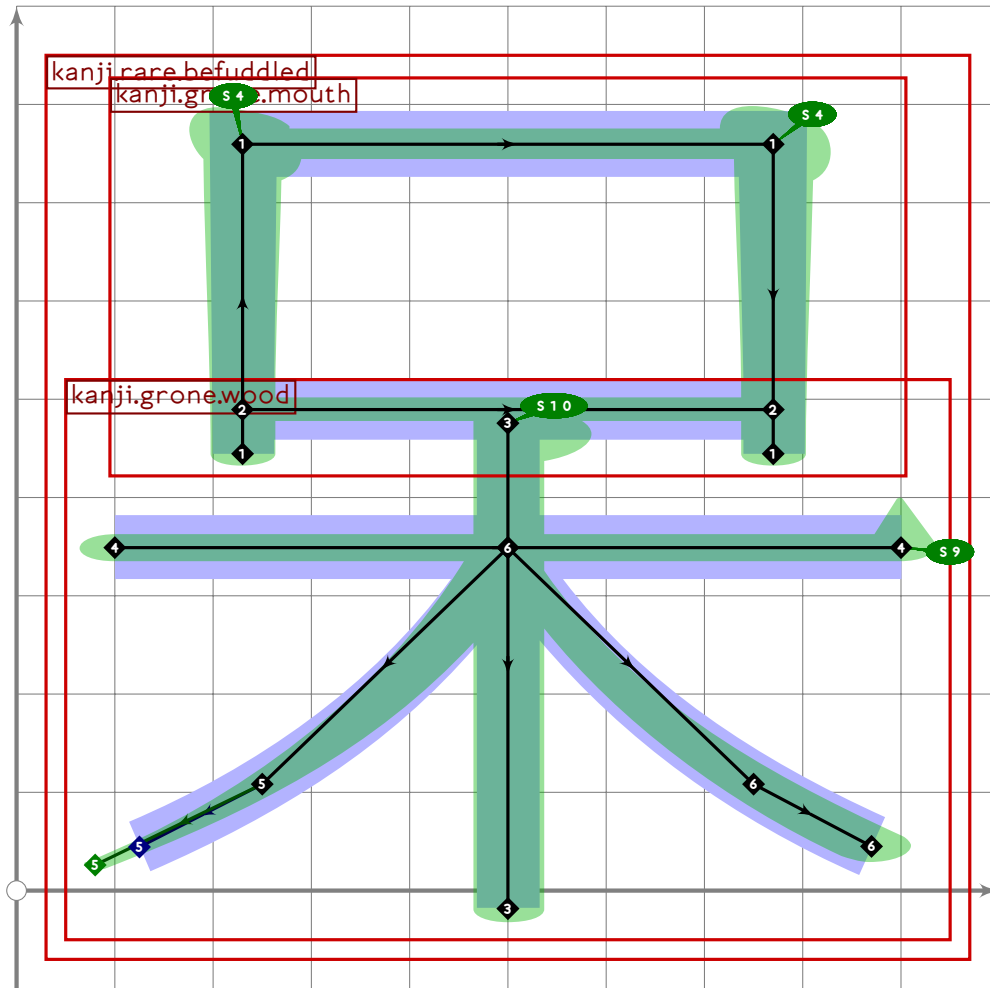
RARE

U+5140  
tsuku.uni5140



```
53
54 vardef kanji.rare.bald =
55   push_pbox_toexpand("kanji.rare.bald");
56   build_kanji.level(build_kanji.tb(690,180)
57     (kanji.grone.one)
58     (kanji.radical.legs));
59   expand_pbox;
60 enddef;
```

RARE



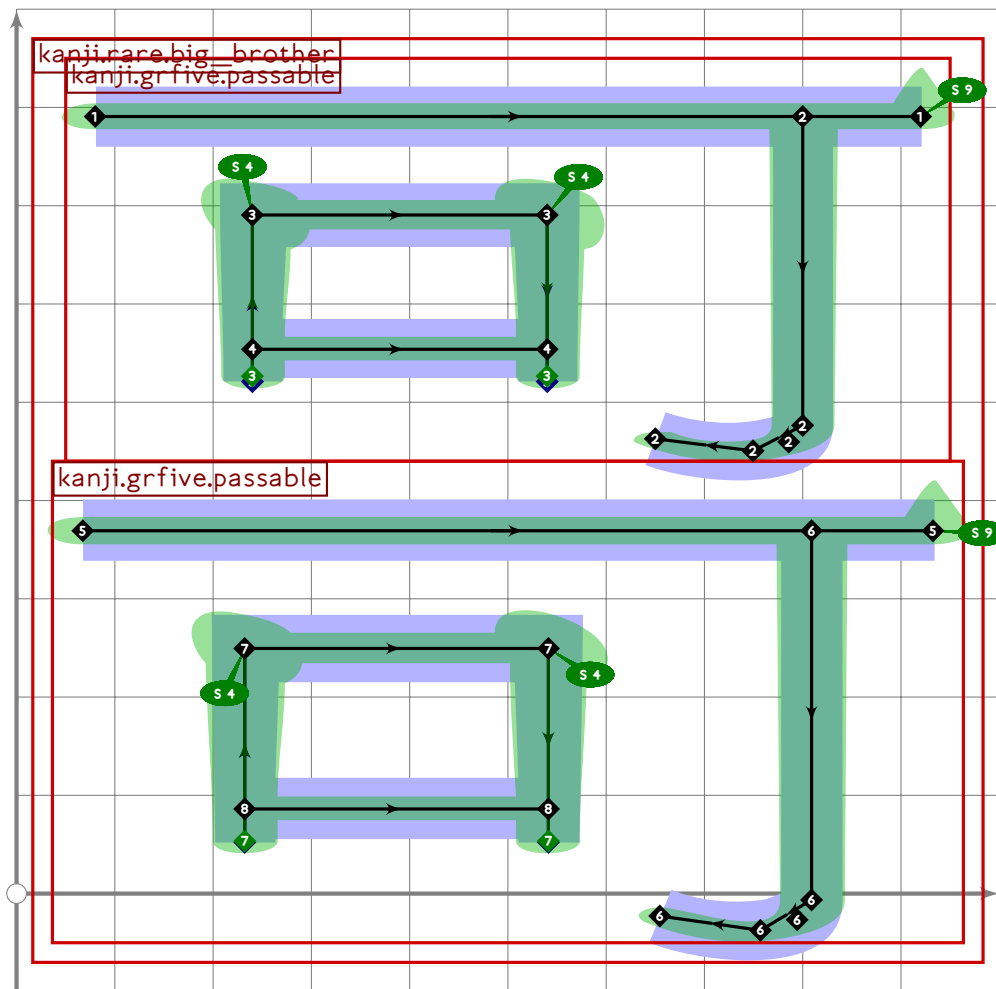
```

61
62 vardef kanji.rare.befuddled =
63   push_pbox_toexpand("kanji.rare.befuddled");
64   build_kanji.level(build_kanji.tb(460,120)
65     (build_kanji.sscale(scaled 0.9)(kanji.grone.mouth))
66     (kanji.grone.wood));
67   expand_pbox;
68 enddef;

```

RARE

U+54E5  
tsuku.uni54E5



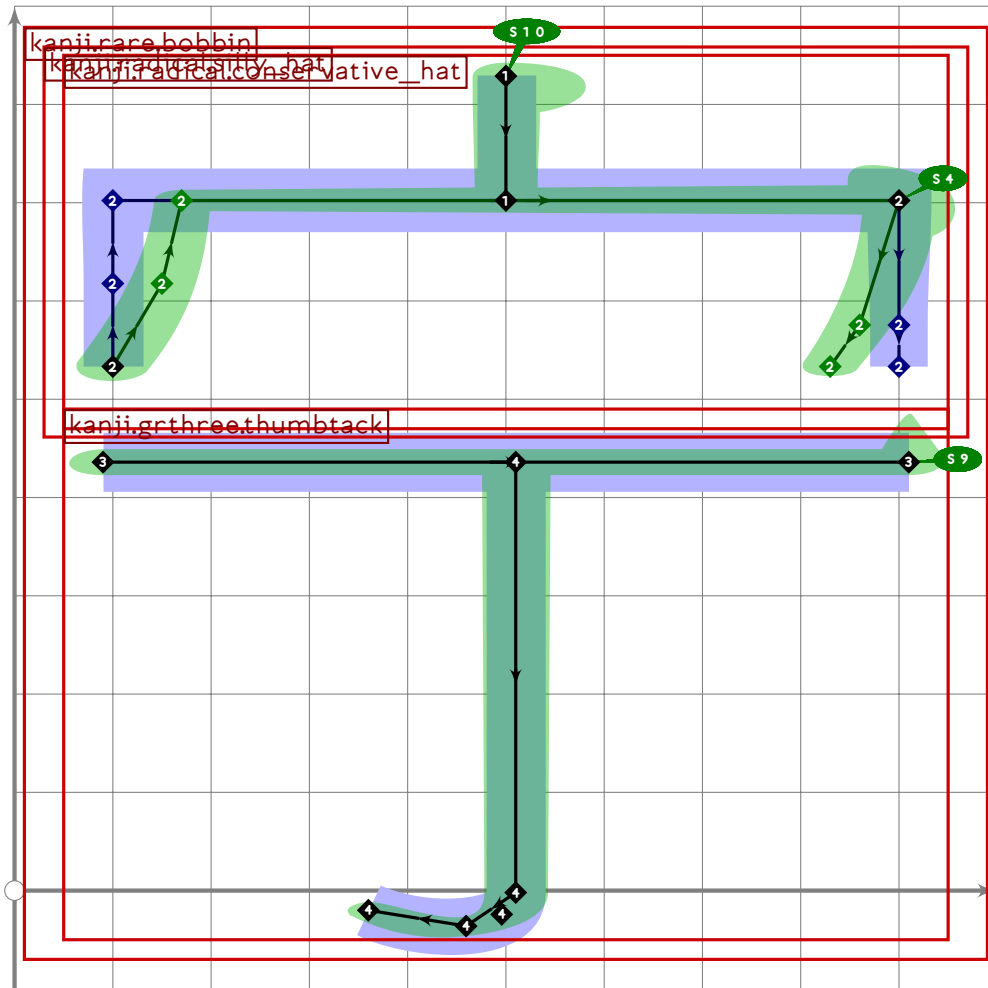
```

69
70 vardef kanji.rare.big_brother =
71   push_pbox_toexpand("kanji.rare.big_brother");
72   build_kanji.tb(440,0)
73     (kanji.grfive.passable)
74     (build_kanji.sscale(xscaled 1.03)(kanji.grfive.passable));
75   expand_pbox;
76 enddef;

```

RARE



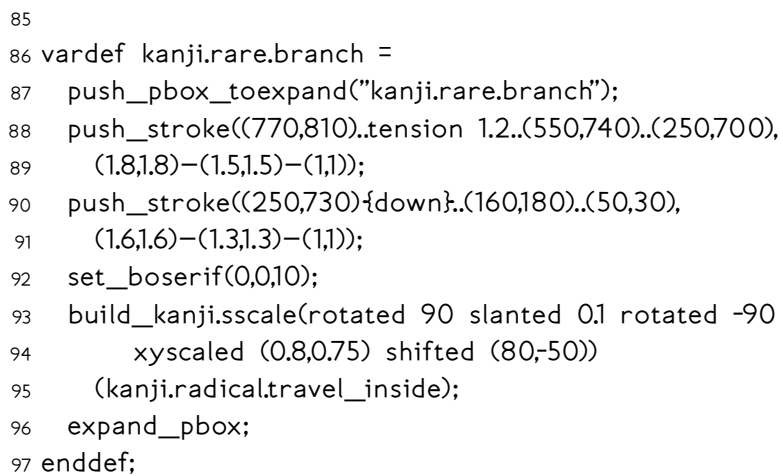


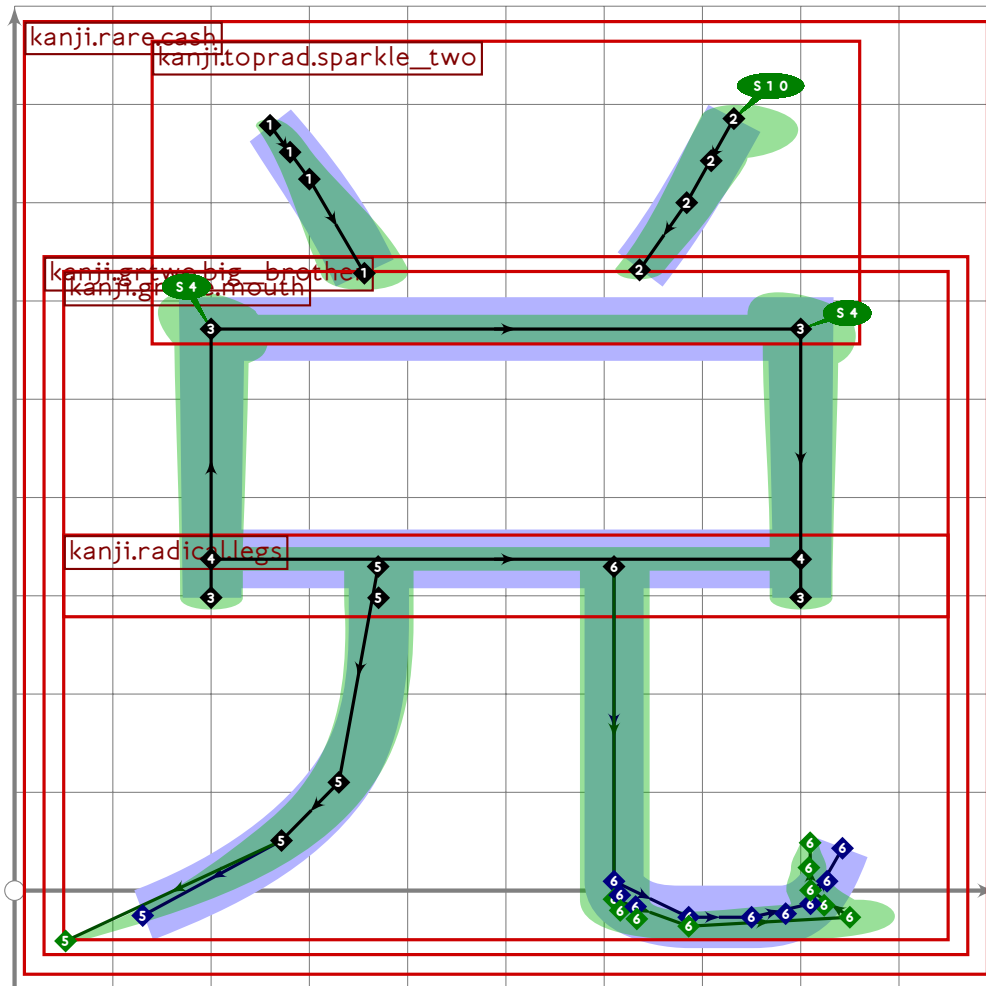
```

77
78 vardef kanji.rare.bobbin =
79   push_pbox_toexpand("kanji.rare.bobbin");
80   build_kanji.level(build_kanji.tb(480,20)
81     (kanji.radical.silly_hat)
82     (kanji.grthree.thumbtack));
83   expand_pbox;
84 enddef;

```

RARE





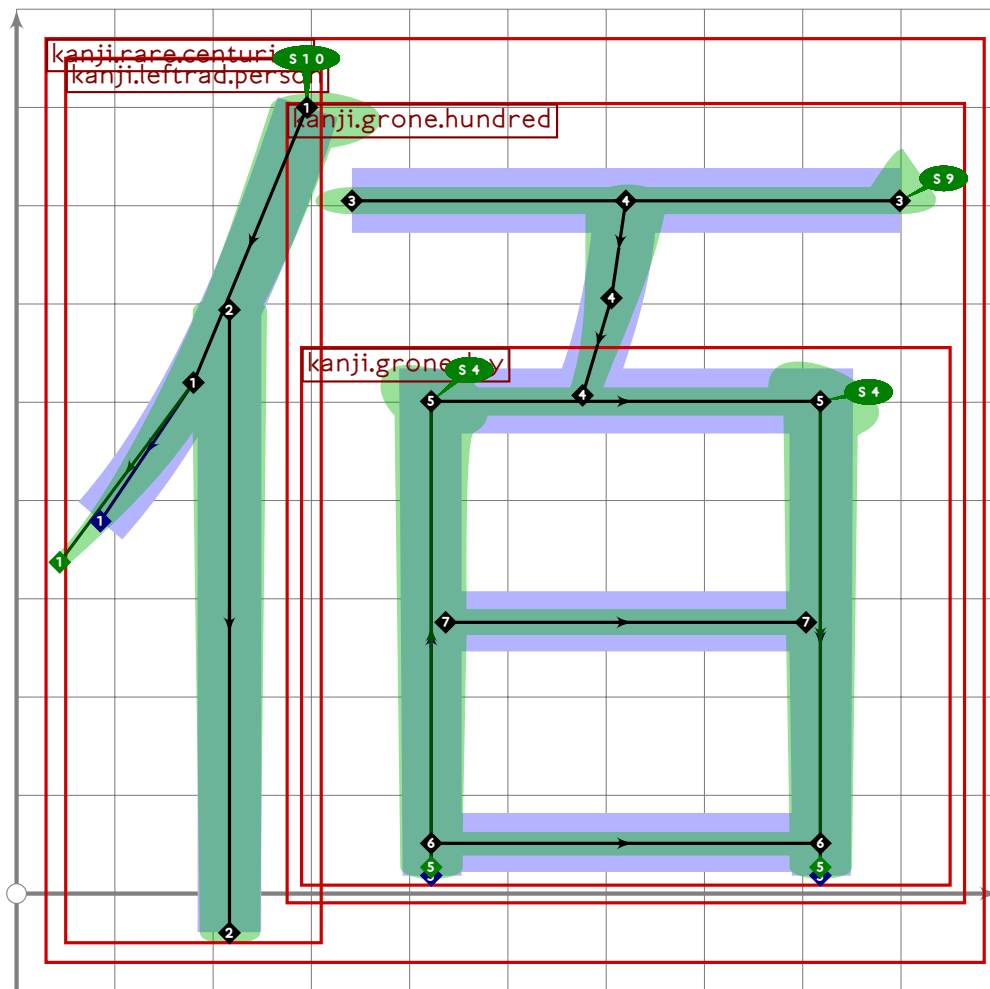
```

98
99 vardef kanji.rare.cash =
100   push_pbox_toexpand("kanji.rare.cash");
101   build_kanji.level(build_kanji.tb(600,60)
102     (build_kanji.sscale(xyscaled (0.8,1.1))(kanji.toprad.sparkle_two))
103     (kanji.grtwo.big_brother));
104   expand_pbox;
105 enddef;

```

RARE

U+4F70  
tsuku.uni4F70

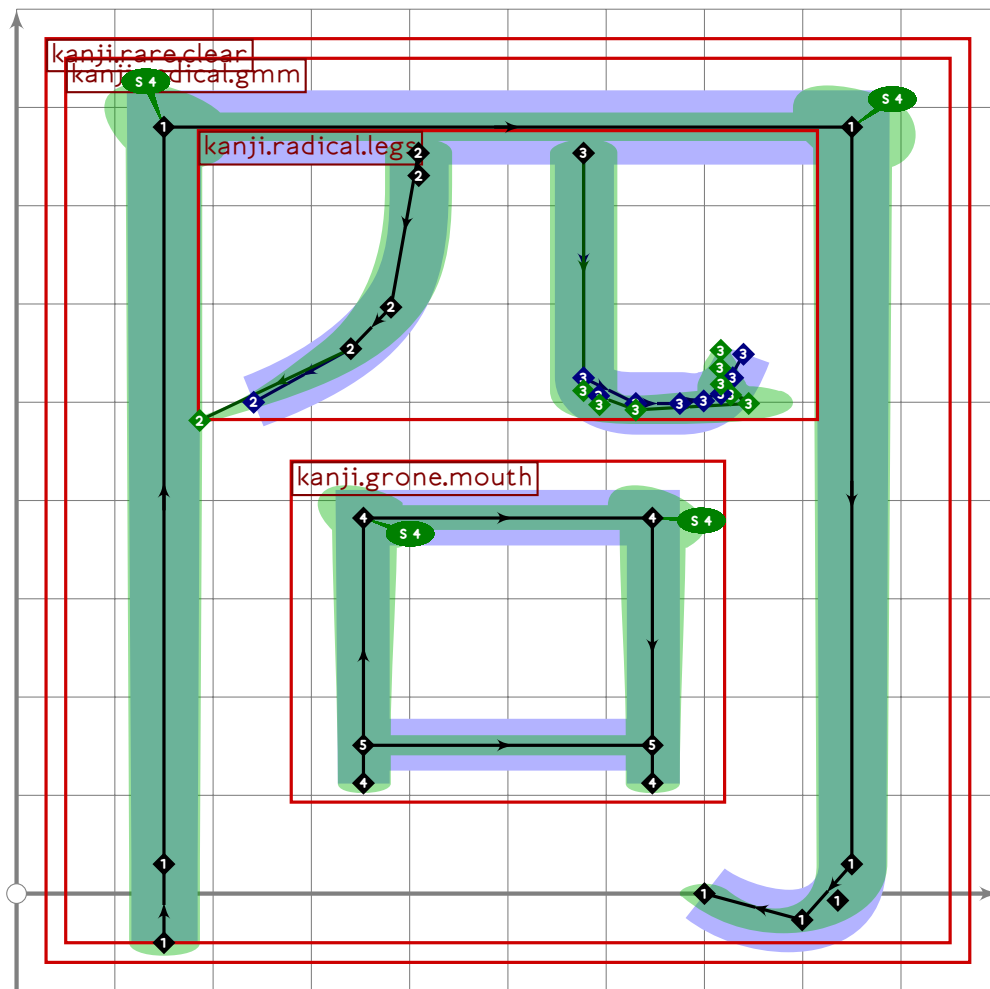


```

106
107 vardef kanji.rare.centurion =
108   push_pbox_toexpand("kanji.rare.centurion");
109   build_kanji.lr(300,20)
110     (kanji.leftrad.person)
111     (build_kanji.sscale(yscaled 0.9)(kanji.grone.hundred));
112   expand_pbox;
113 enddef;

```

RARE

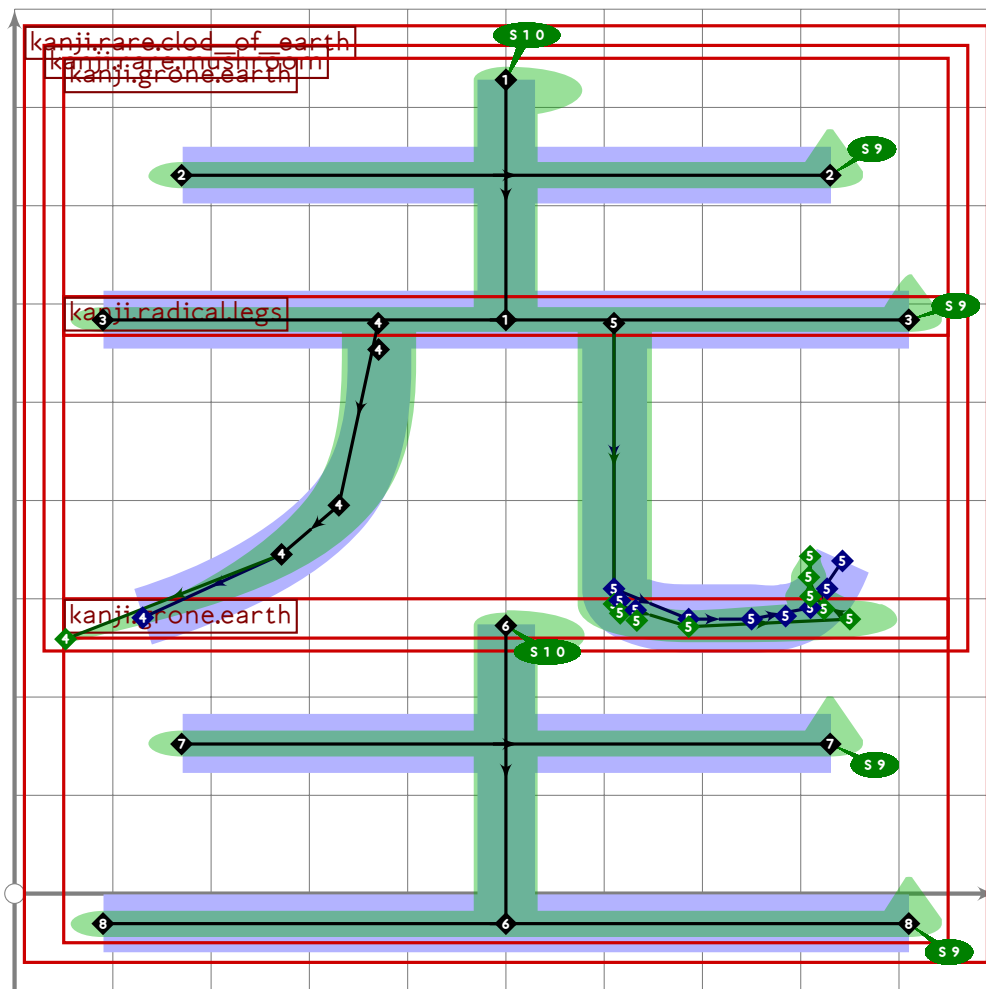


```

114
115 vardef kanji.rare.clear =
116   push_pbox_toexpand("kanji.rare.clear");
117   kanji.radical.gmm;
118   build_kanji.sscale(xyscaled (0.7,0.84))(build_kanji.tb(520,40)
119     (kanji.radical.legs)
120     (build_kanji.sscale(scaled 0.7)(kanji.grone.mouth)));
121   expand_pbox;
122 enddef;

```

RARE

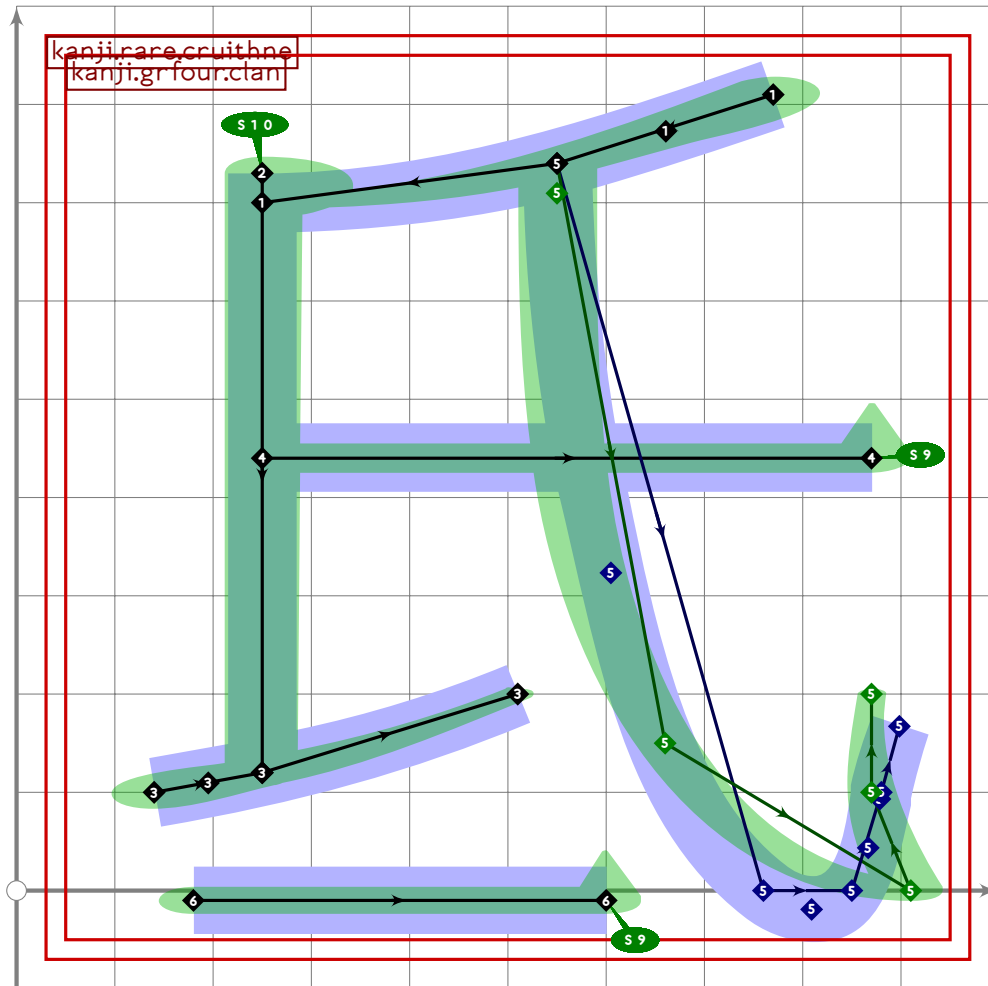


```

123
124 vardef kanji.rare.clod_of_earth =
125   push_pbox_toexpand("kanji.rare.clod_of_earth");
126   build_kanji.tb(280,40)
127     (kanji.rare.mushroom)
128     (kanji.grone.earth);
129   expand_pbox;
130 enddef;
131

```

RARE



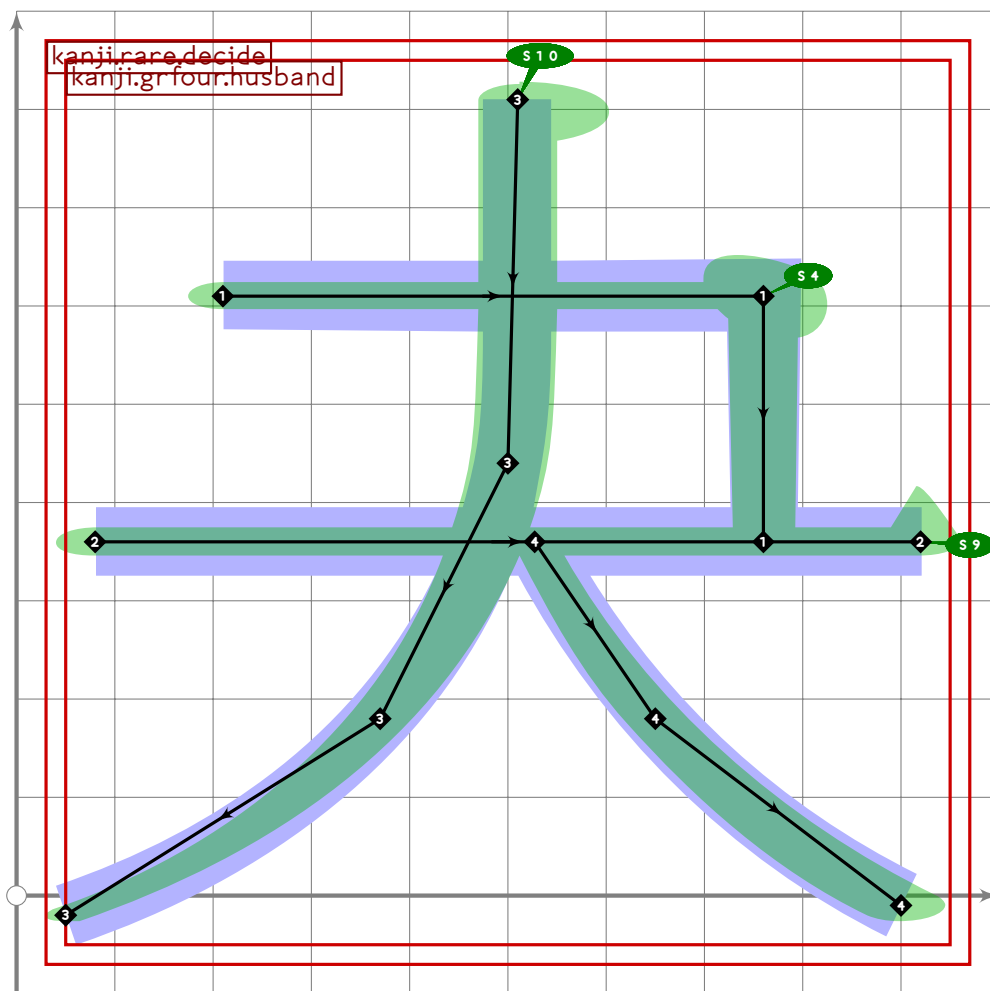
```

132 % dictionary says "name of an ancient tribe"; needed for grfour.low
133 vardef kanji.rare.cruithne =
134   push_pbox_toexpand("kanji.rare.cruithne");
135   kanji.grfour.clan;
136   replace_stroke(-3)((250,730)-(250,120));
137   replace_stroke(-2)(oldp shifted (0,130));
138   push_stroke((180,-10)-(600,-10),(1.5,1.5)-(1.5,1.5));
139   set_boserif(0,1,9);
140   expand_pbox;
141 enddef;

```

RARE

U+592C  
tsuku.uni592C



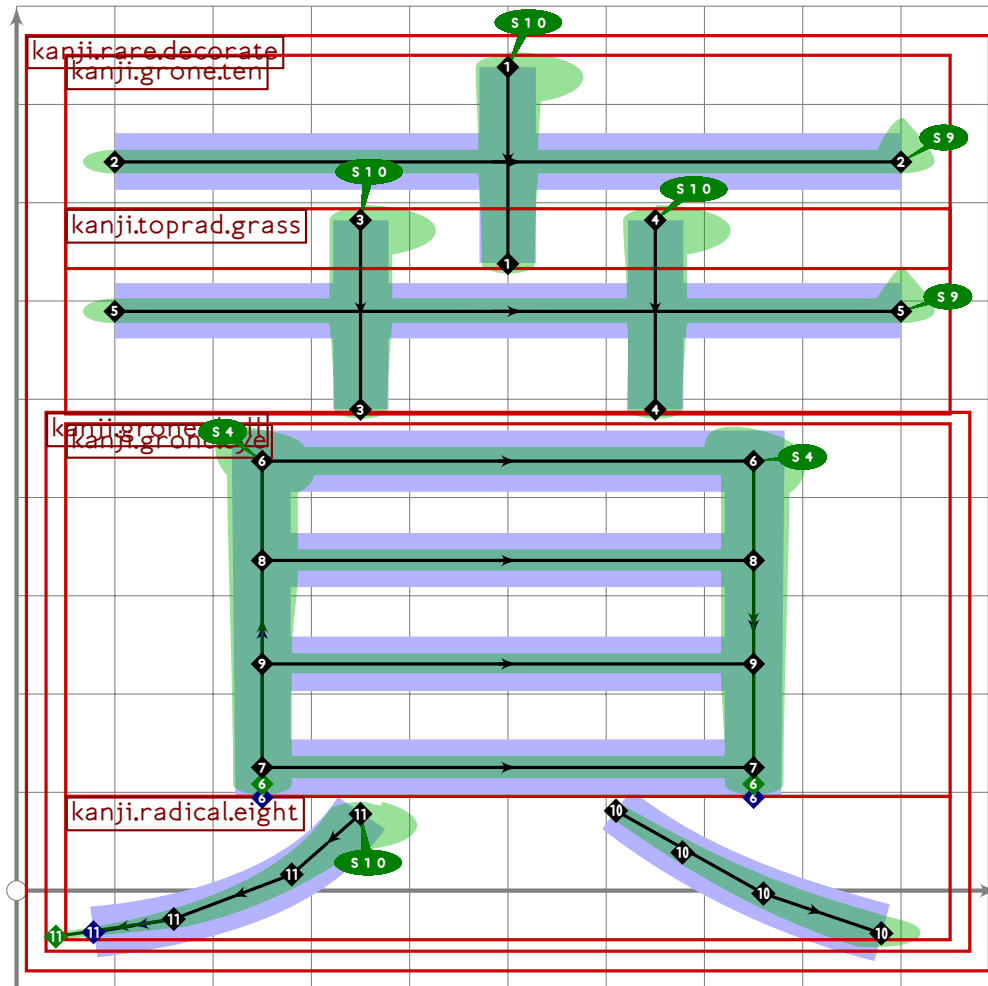
```

142
143 vardef kanji.rare.decide =
144   push_pbox_toexpand("kanji.rare.decide");
145   kanji.grfour.husband;
146   replace_strokep(-3)((210,610)-(760,610)-(760,360));
147   replace_strokeq(-3)((1.5,1.5)-(1.5,1.5)-(1.4,1.4));
148   set_boserif(-3,1,4);
149   set_botip(-3,1,1);
150   expand_pbox;
151 enddef;

```

RARE





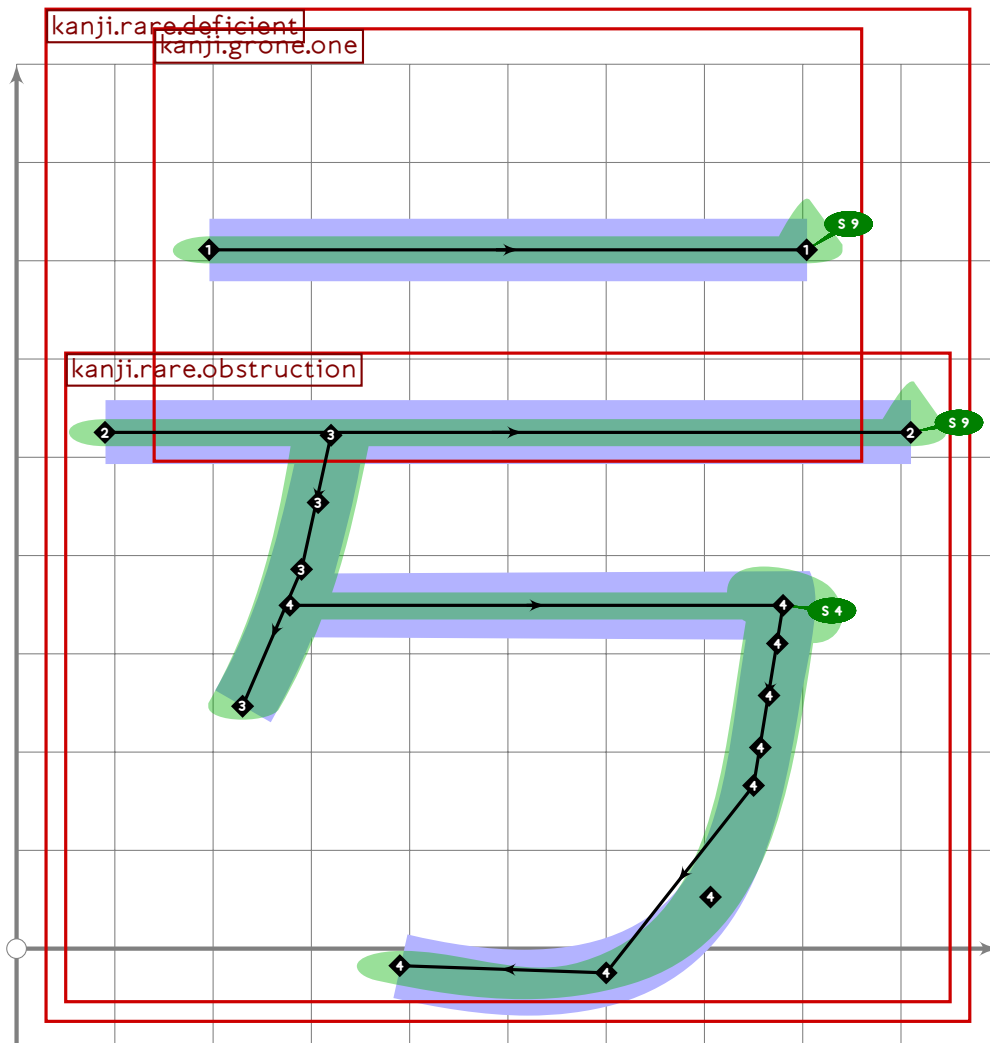
```

152
153 vardef kanji.rare.decorate =
154   push_pbox_toexpand("kanji.rare.decorate");
155   build_kanji.level(build_kanji.tb(480,-10)
156     (build_kanji.tb(390,150)
157       (kanji.grone.ten)
158       (kanji.toprad.grass))
159     (kanji.grone.shell));
160   expand_pbox;
161 enddef;

```

RARE

U+4E8F  
tsuku.uni4E8F

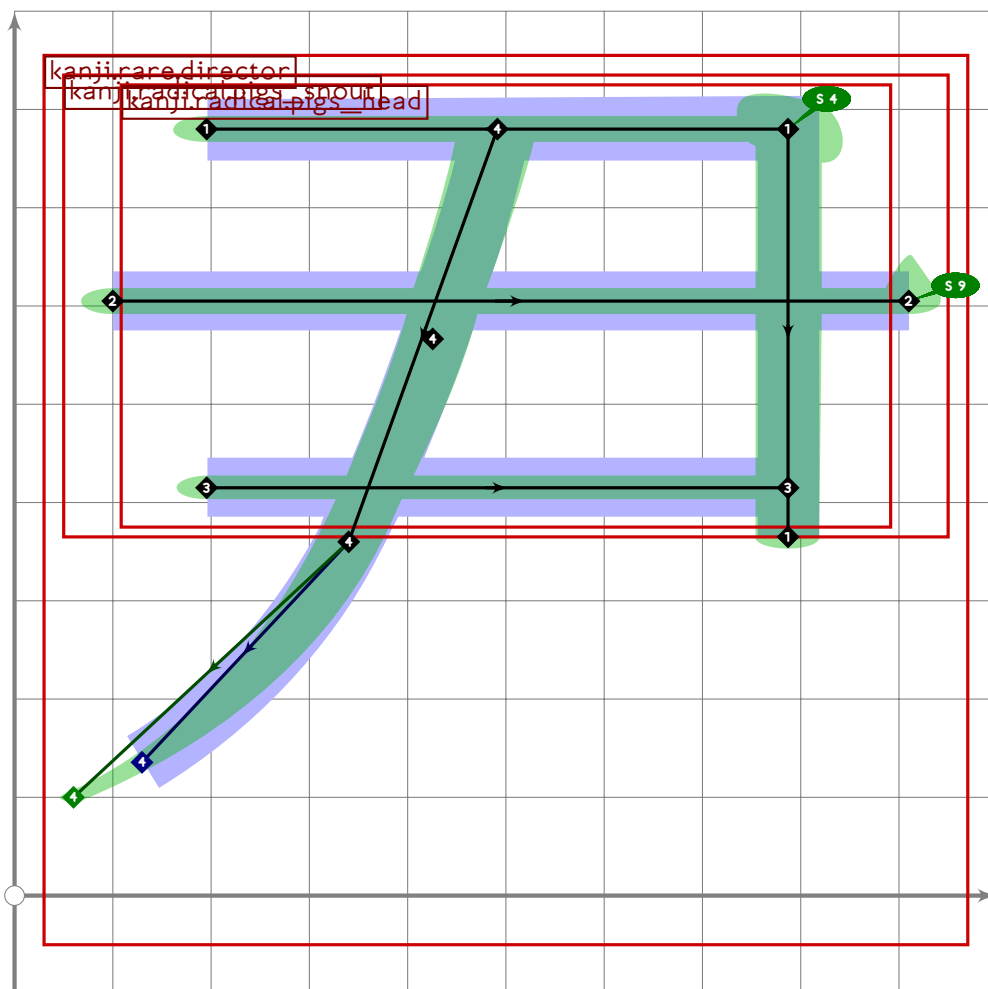


```

162
163 vardef kanji.rare.deficient =
164   push_pbox_toexpand("kanji.rare.deficient");
165   build_kanji.level(build_kanji.sscale(yscaled 1.1 shifted (0,40))
166     (build_kanji.tb(500,100)
167       (build_kanji.sscale(xscaled 0.8)(kanji.grone.one))
168       (kanji.rare.obstruction)));
169   expand_pbox;
170 enddef;

```

RARE

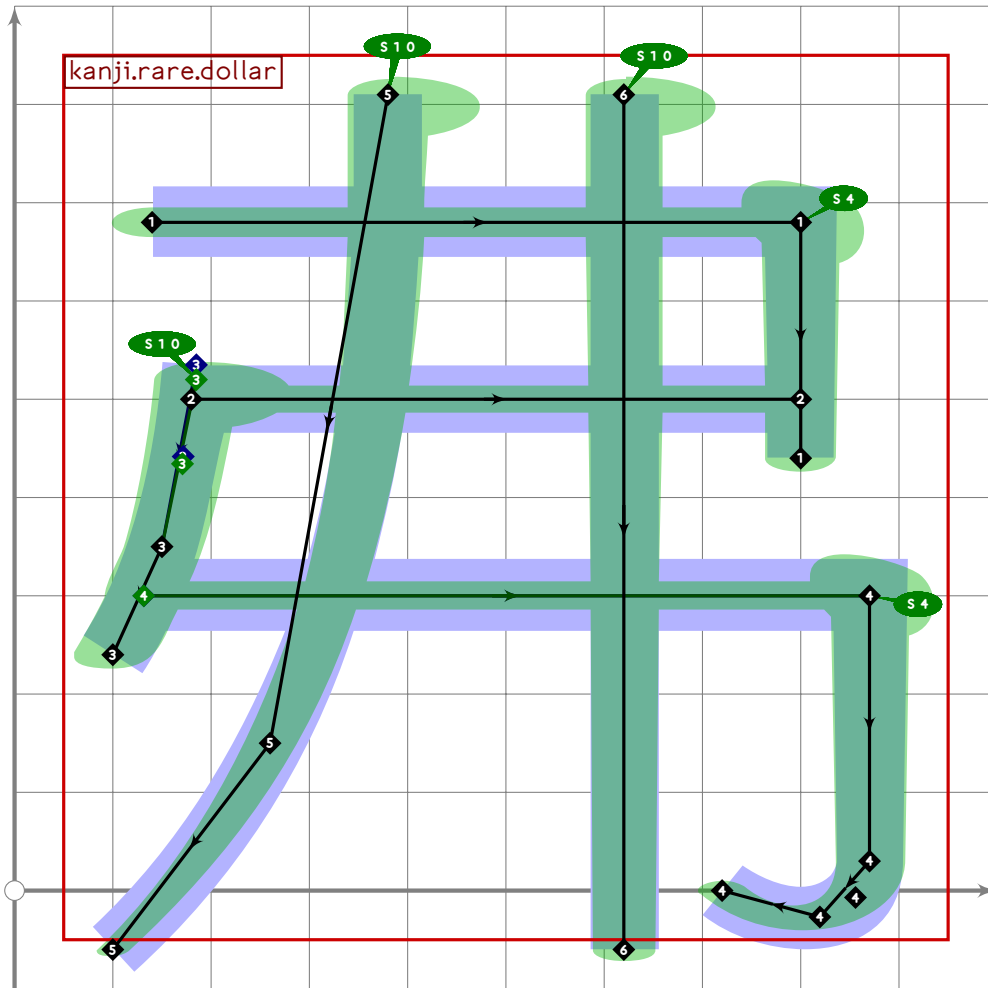


```

171
172 vardef kanji.rare.director =
173   push_pbox_toexpand("kanji.rare.director");
174   tsu_xform(identity yscaled 0.5 shifted (0,400))
175   (kanji.radical.pigs_snout);
176   push_stroke(
177     (point 0.5 of get_stroke(-2)).tension 14..(340,360)..(60,100),
178     (1.6,1.6)-(14,1.4)-(0.9,0.9));
179   expand_pbox;
180 enddef;

```

RARE



```

181
182 vardef kanji.rare.dollar =
183   push_pbox_toexpand("kanji.rare.dollar");
184   push_stroke((140,680)–(800,680)–(800,440),
185     (1.6,1.6)–(1.6,1.6)–(1.5,1.5));
186   set_botip(0,1);
187   set_boserif(0,1,4);
188   push_stroke((180,500)–(800,500),
189     (1.5,1.5)–(1.5,1.5));
190   push_stroke((185,535–15*mincho)..tension 1.2..(150,350)..(100,240),
191     (1.7,1.7)–(1.6,1.6)–(1.6,1.6));
192   set_boserif(0,0,10);
193   push_stroke((get_strokep(0) intersectionpoint ((0,300)–(1000,300)))–
194     (870,300),
195     (1.6,1.6)–(1.6,1.6));
196   build_kanji.add_jtail(0);
197   set_botip(0,1);
198   set_boserif(0,1,4);
199   push_stroke((380,810){down}..(260,150)..(100,–60),
200     (1.6,1.6)–(1.3,1.3)–(1,1));
201   set_boserif(0,0,10);

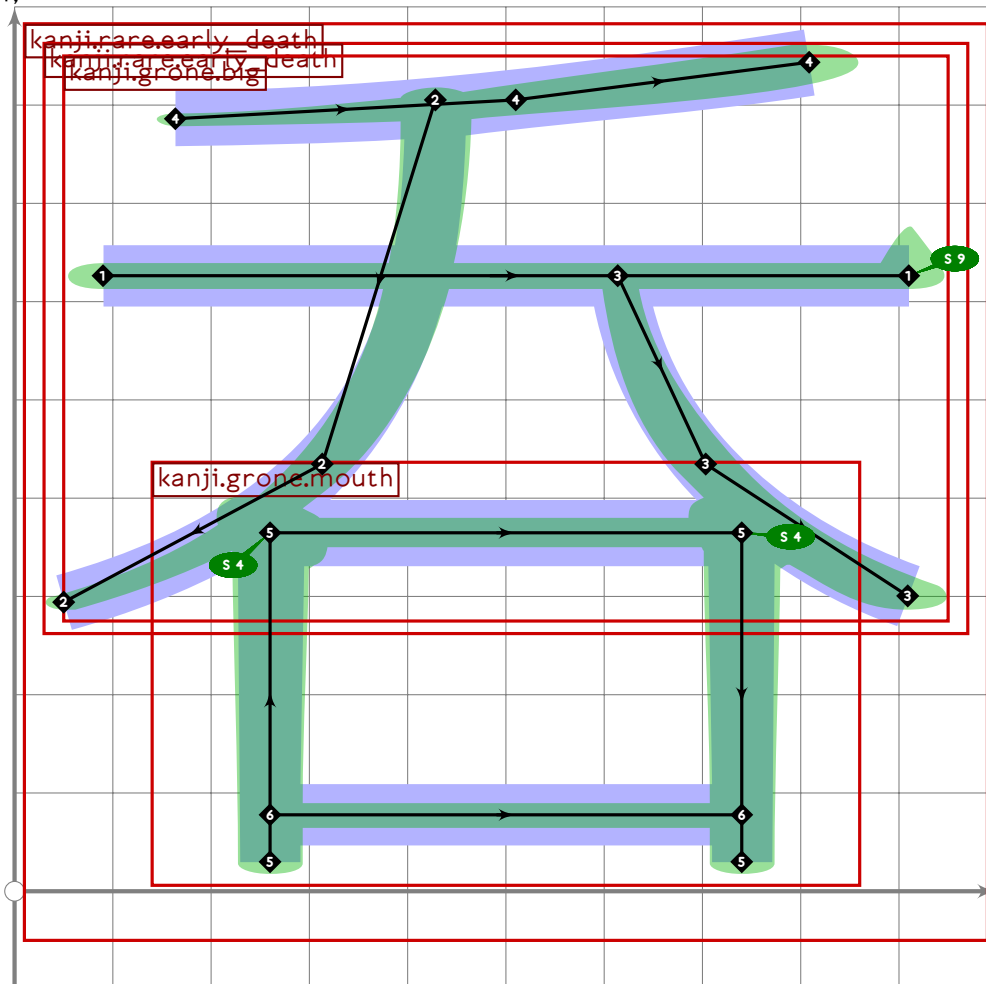
```

RARE

```

202 push_stroke((620,810)-(620,-60),(1.6,1.6)-(14,14));
203 set_boserif(0,0,10);
204 expand_pbox;
205 enddef;

```



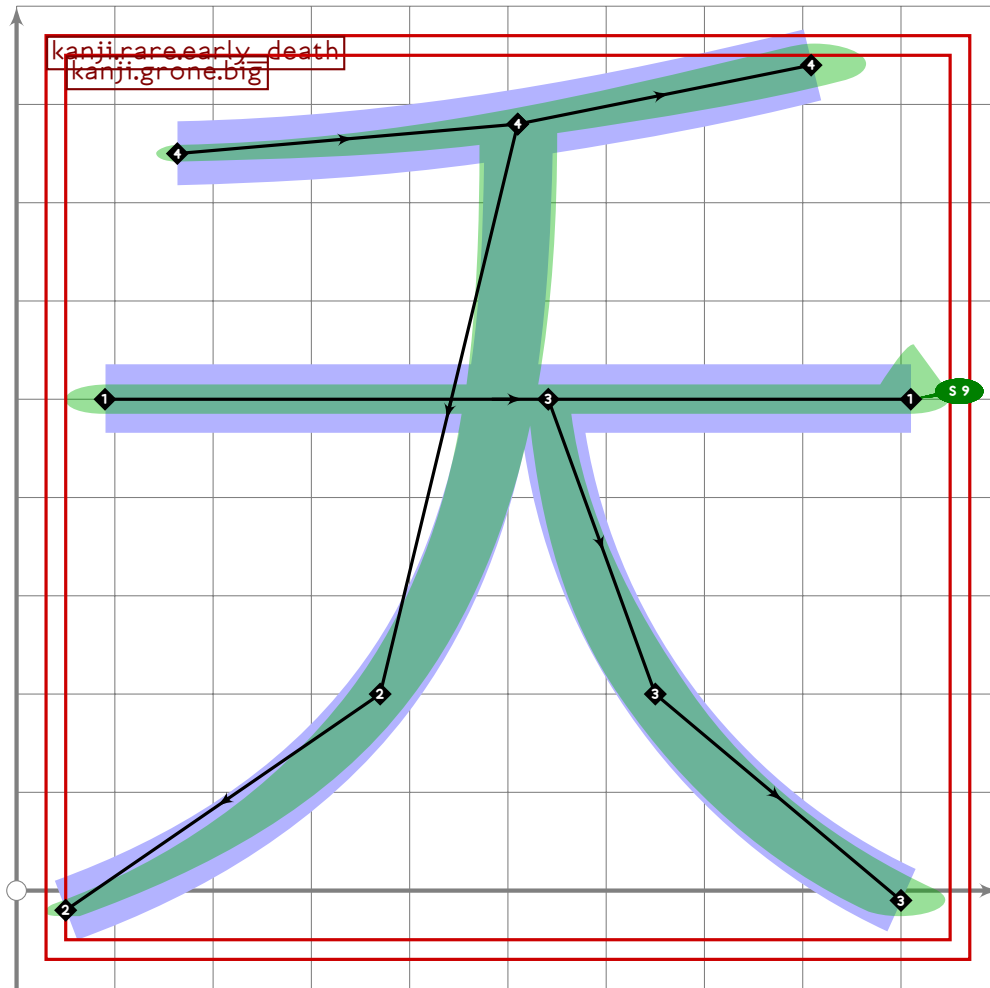
```

206
207 vardef kanji.rare.drink =
208   push_pbox_toexpand("kanji.rare.early_death");
209   build_kanji.level(build_kanji.tb(420,290)
210     (build_kanji.spread_legs(160)
211       (kanji.rare.early_death))
212     (build_kanji.sscale(xyscaled (0.8,0.7) shifted (0,-50))
213       (kanji.grone.mouth)));
214   expand_pbox;
215 enddef;

```

RARE

U+592D  
tsuku.uni592D

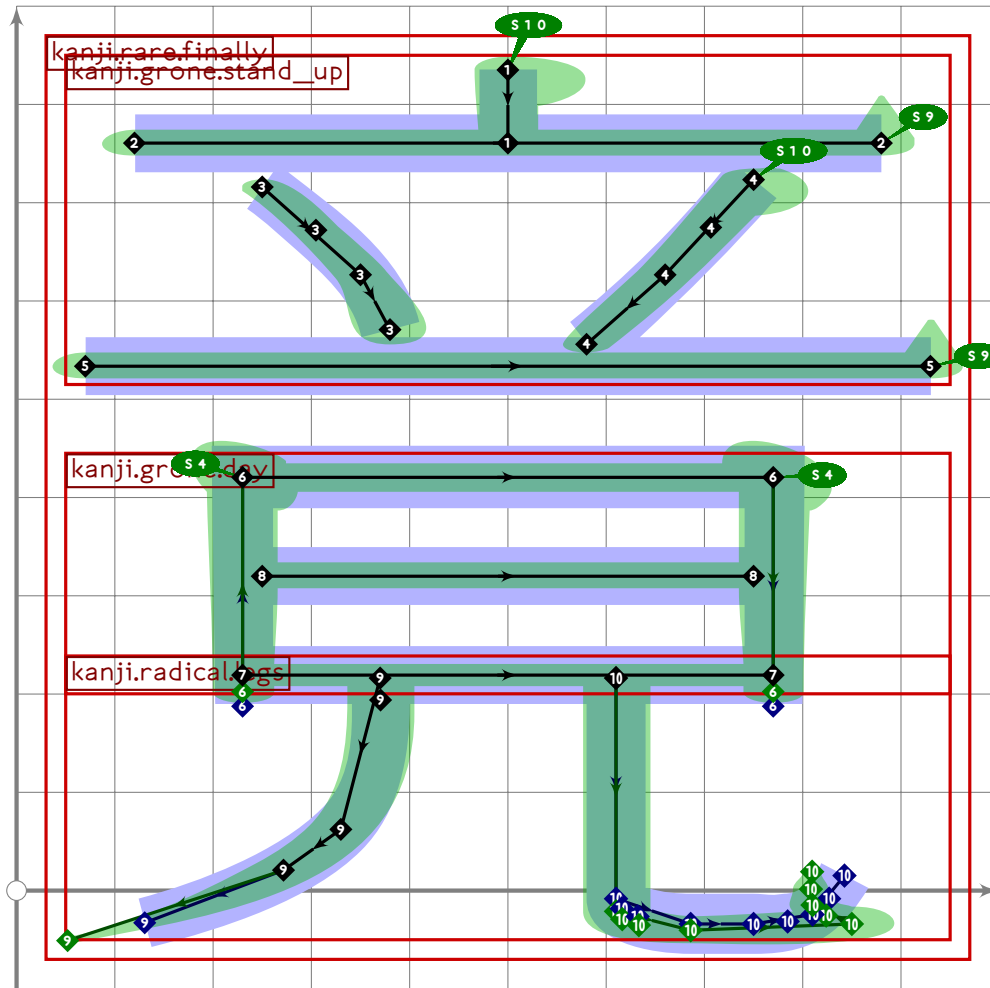


```

216
217 vardef kanji.rare.early_death =
218   push_pbox_toexpand("kanji.rare.early_death");
219   build_kanji.add_beret(kanji.grone.big);
220   expand_pbox;
221 enddef;

```

RARE



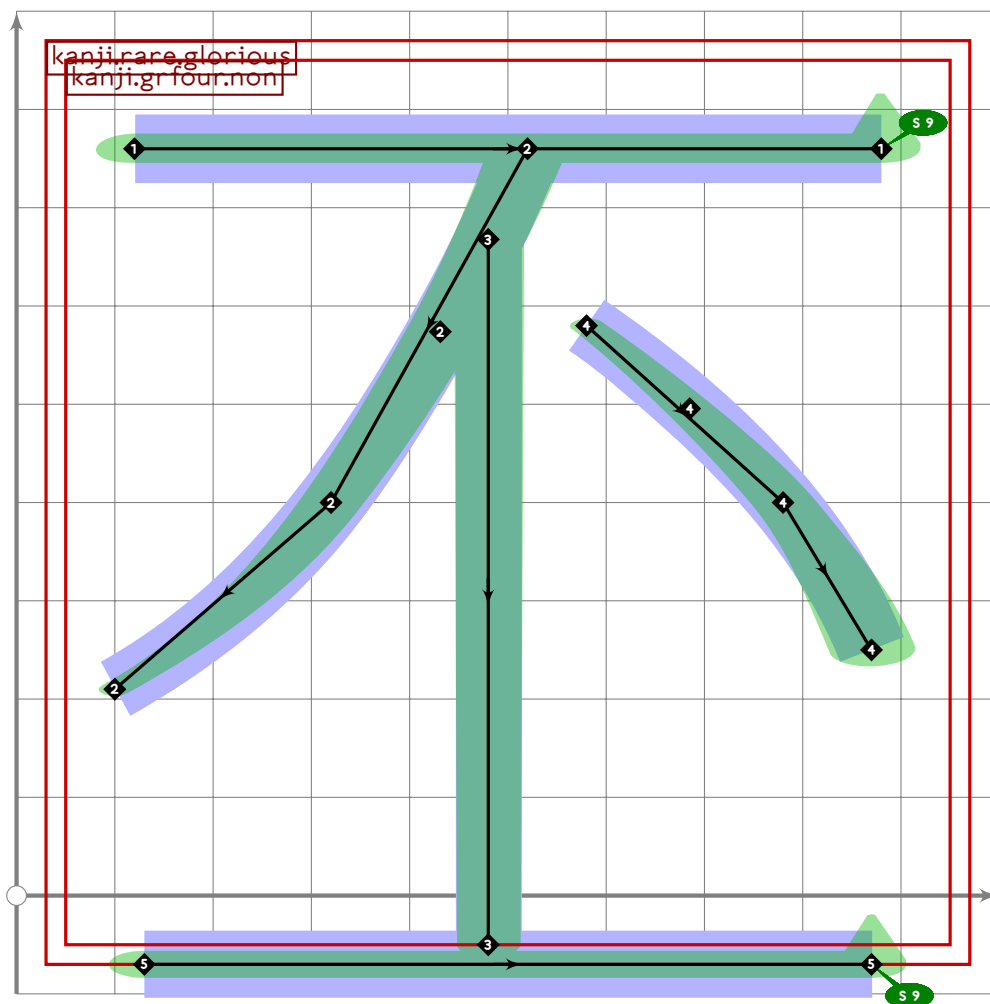
```

222
223 vardef kanji.rare.finally =
224   push_pbox_toexpand("kanji.rare.finally");
225   build_kanji.tb(480,70)
226     (kanji.grone.stand_up)
227     (build_kanji.level(build_kanji.tb(440,70)
228       (kanji.grone.day)
229       (kanji.radical.legs)));
230   expand_pbox;
231 enddef;

```

RARE

U+4E15  
tsuku.uni4E15



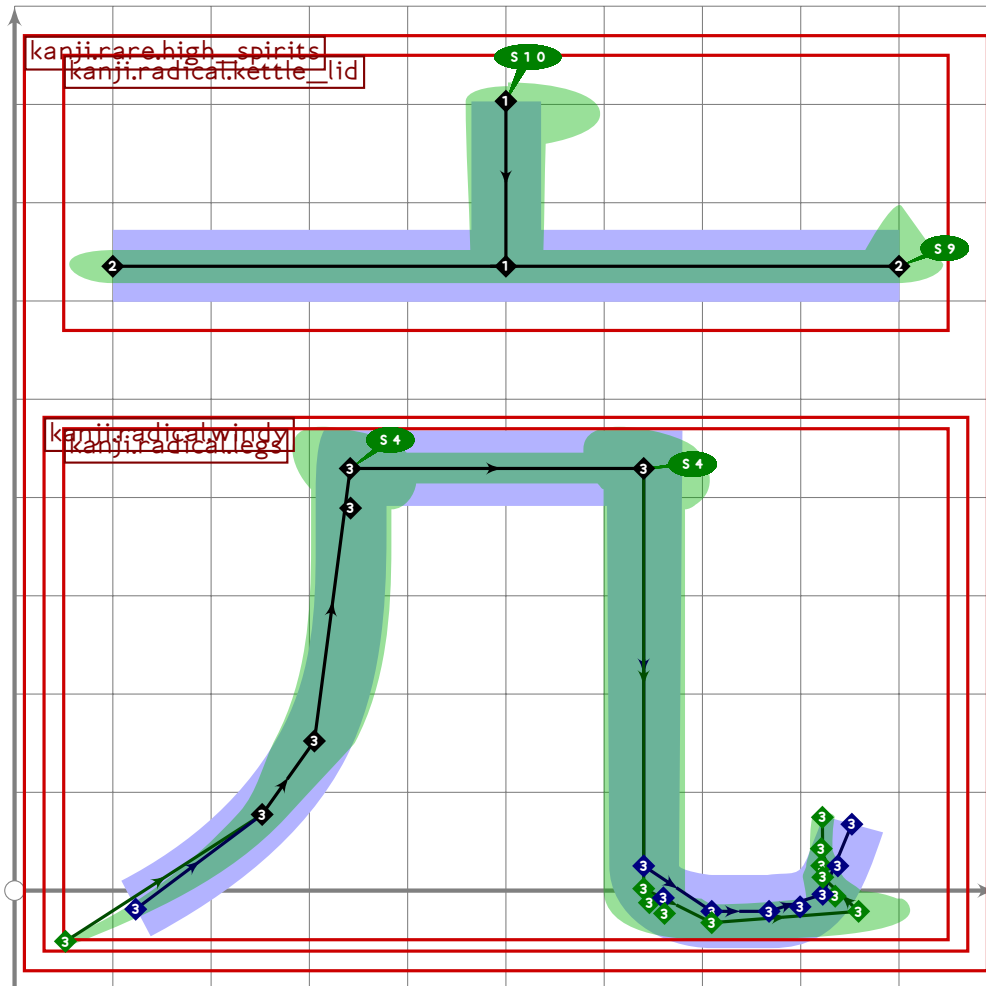
```

232
233 vardef kanji.rare.glorious =
234   push_pbox_toexpand("kanji.rare.glorious");
235   kanji.grfour.non;
236   push_stroke((130,-70)-(870,-70),(1.5,1.5)-(1.5,1.5));
237   set_boserif(0,1,9);
238   expand_pbox;
239 enddef;

```

RARE



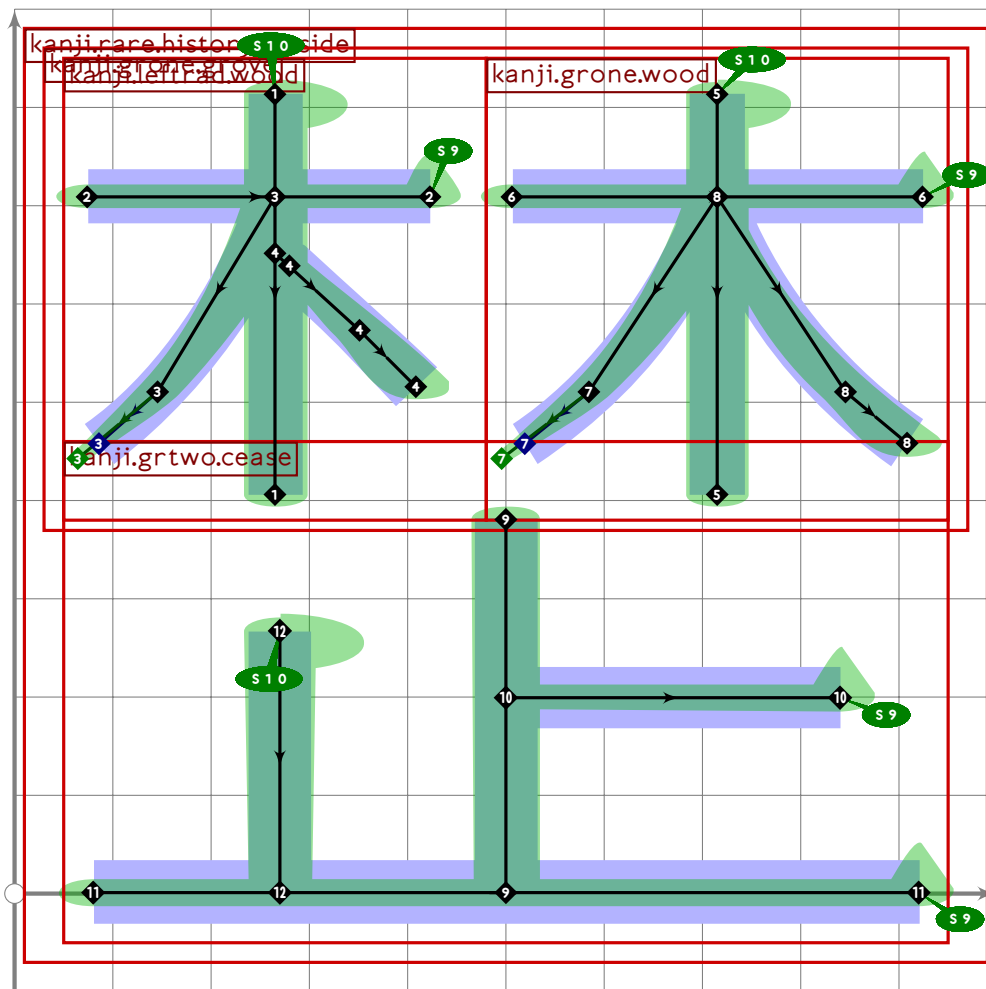


```

240
241 vardef kanji.rare.high_spirits =
242   push_pbox_toexpand("kanji.rare.high_spirits");
243   build_kanji.level(build_kanji.tb(520,-100)
244     (kanji.radical.kettle_lid)
245     (kanji.radical.windy));
246   expand_pbox;
247 enddef;

```

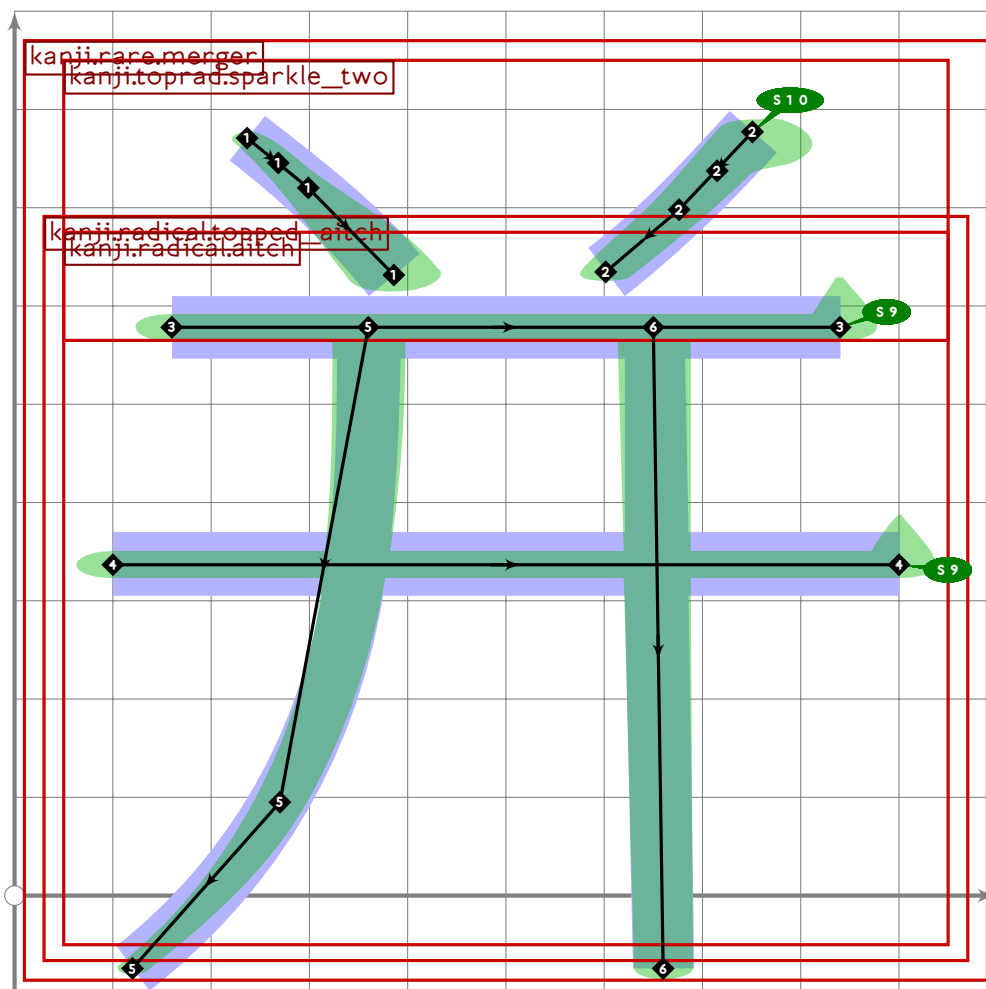
RARE



```

248
249 vardef kanji.rare.history_inside =
250   push_pbox_toexpand("kanji.rare.history_inside");
251   build_kanji.tb(420,80)
252     (kanji.grone.grove)
253     (kanji.grtwo.cease);
254   expand_pbox;
255 enddef;

```



```

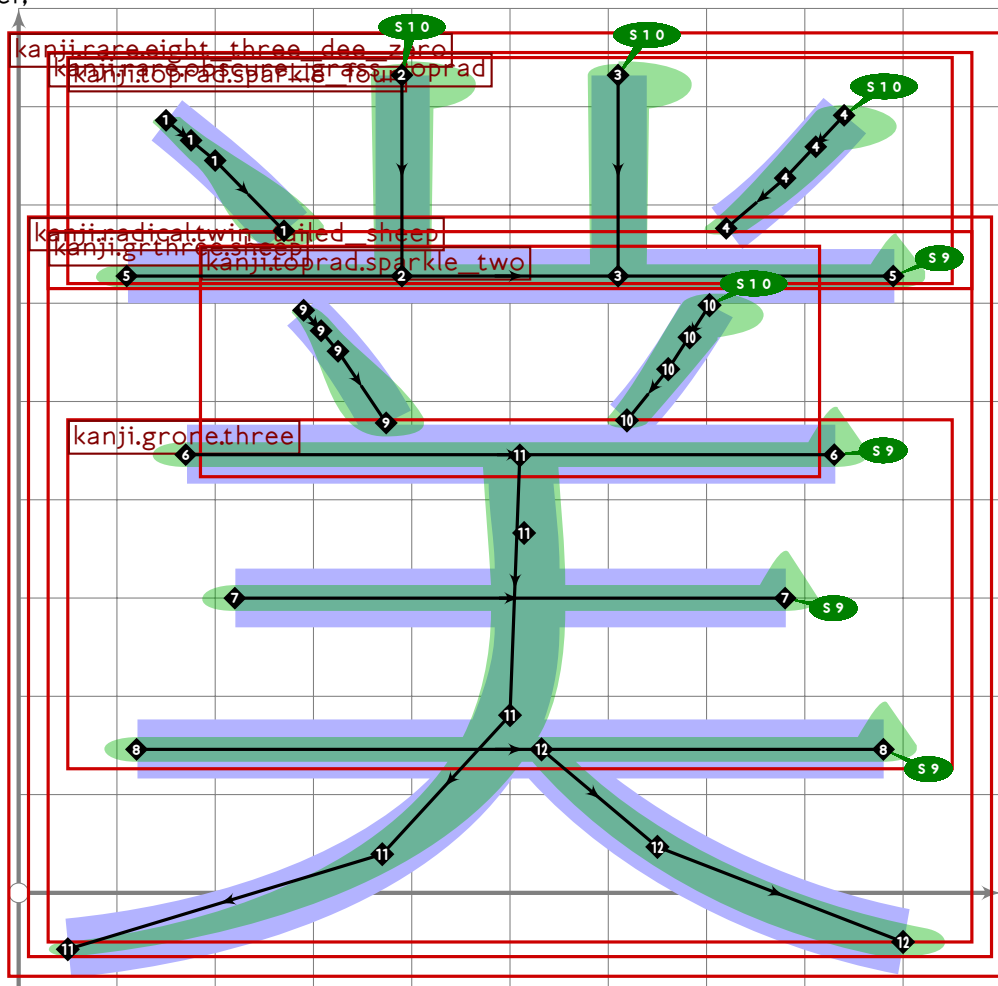
256
257 vardef kanji.rare.merger =
258   push_pbox_toexpand("kanji.rare.merger");
259   build_kanji.level(build_kanji.tb(620,110)
260     (build_kanji.spread_legs(-220)(kanji.toprad.sparkle_two))
261     (kanji.radical.topped_aitch));
262   expand_pbox;
263 enddef;
264
265 % This obscure form of the "grass" radical seems to be used only in U+83D0,
266 % an obscure kanji that doesn't seem to have a meaning of its own but forms
267 % the right-hand side of the fairly common kanji for the masculine
268 % first-person pronoun "boku," which we need in order to spell the type
269 % style name "Bokukko." It's not even clear that it really is a form of the
270 % "grass" radical at all, but that's how Unicode seems to classify it.
271
272 vardef kanji.rare.obscure_grass_toprad =
273   push_pbox_toexpand("kanji.rare.obscure_grass_toprad");
274   kanji.toprad.sparkle_four;
275   push_stroke((110,-20)-(890,-20),(1.6,1.6)-(1.6,1.6));
276   set_boserif(0,19);

```

RARE

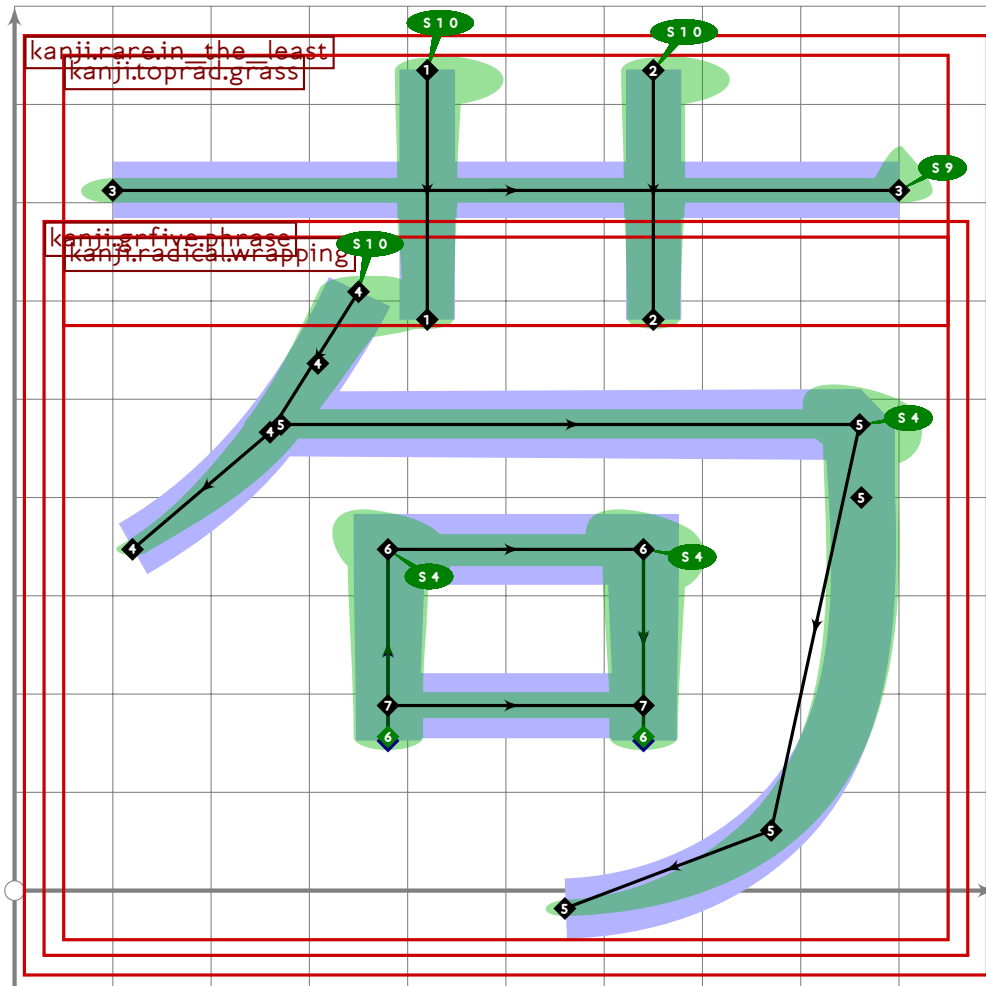
U+83D0  
tsuku.uni83D0

```
277 expand_pbox;
278 enddef;
```



```
279
280 vardef kanji.rare.eight_three_dee_zero =
281   push_pbox_toexpand("kanji.rare.eight_three_dee_zero");
282   build_kanji.tb(620,0)
283     (kanji.rare.obscure_grass_toprad)
284     (kanji.radical.twin_tailed_sheep);
285   expand_pbox;
286 enddef;
```

RARE



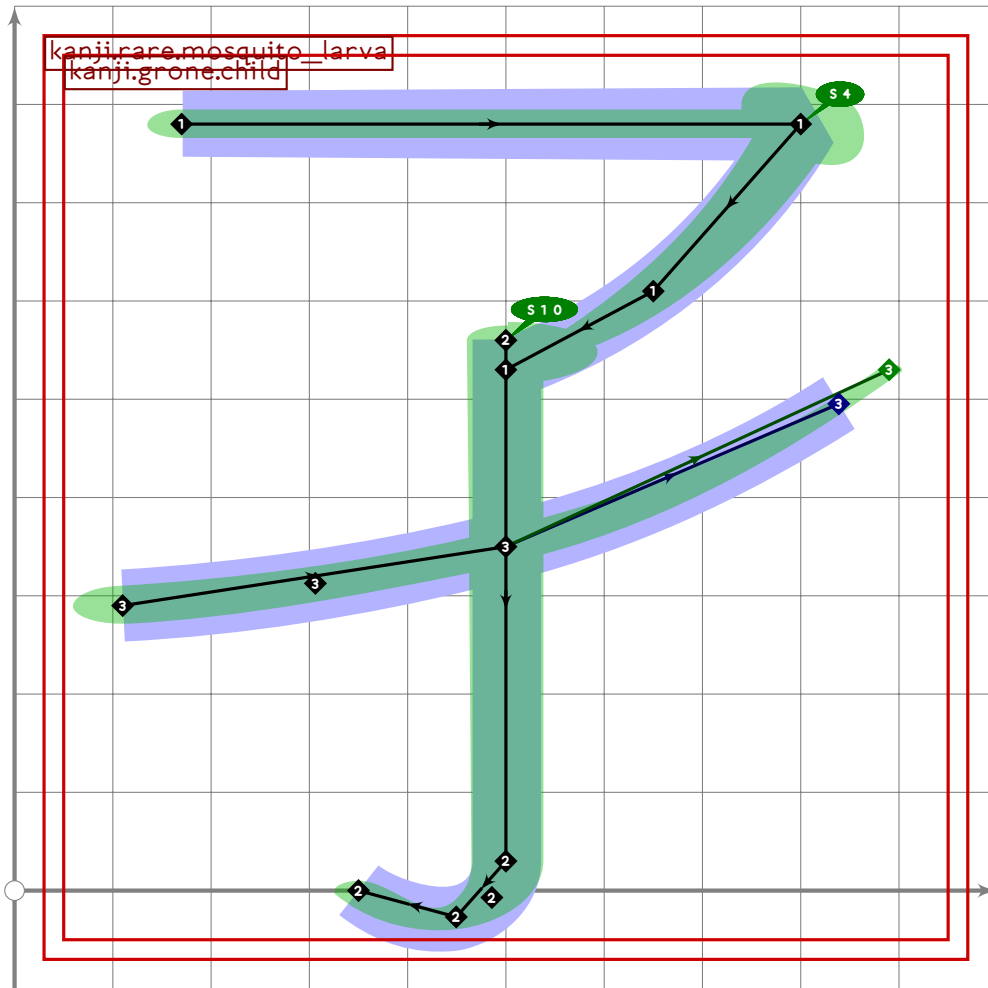
```

287
288 vardef kanji.rare.in_the_least =
289   push_pbox_toexpand("kanji.rare.in_the_least");
290   build_kanji.tb(620,90)
291     (kanji.toprad.grass;
292       replace_stroke(-2)(oldp shifted (70,0)))
293     (kanji.grfive.phrase);
294   expand_pbox;
295 enddef;

```

RARE

U+5B51  
tsuku.uni5B51



```

296
297 vardef kanji.rare.mosquito_larva =
298   push_pbox_toexpand("kanji.rare.mosquito_larva");
299   kanji.grone.child;
300   replace_strokep(0)((110,290)..tension 1.2..(500,350)..(890,530));
301   replace_strokeq(0)((1.9,1.9)-(1.6,1.6)-(0.9,0.9));
302   set_boserif(0,whatever);
303   expand_pbox;
304 enddef;
305
306 vardef hook.mound_bottoms(expr left_i,right_i,bottom_i) =
307   if (obstacktype[left_i]=otstroke)
308     and (obstacktype[right_i]=otstroke)
309     and (obstacktype[bottom_i]=otstroke):
310     if (3=length obstackp[left_i])
311       and (2=length obstackp[right_i])
312       and (1=length obstackp[bottom_i]):
313       begingroup;
314       save x,y,p,e;
315       numeric x[],y[],e[];
316       path p[];

```

RARE

```

317
318     p1=obstackp[left_i];
319     p2=obstackp[bottom_i];
320     p3=obstackp[right_i];
321
322     z1=-(direction 0 of p1)/abs(direction 0 of p1);
323     z2=(direction 0.5 of p2)/abs(direction 0.5 of p2);
324     z3=(direction 2 of p3)/abs(direction 2 of p3);
325
326     e3=obstackna.bosize[bottom_i]*tsu_brush_max*tsu_brush_shape*0.5;
327     if abs(z1 dotprod z2)<0.1:
328         point 0 of p1=z4+e1*z1;
329         z4=(point 0.5 of p2)+whatever*z2;
330
331         if e1<e3:
332             p1:=(z4+e3*z1)-(subpath (1,3) of p1);
333             obstackp[left_i]:=p1;
334         fi;
335     fi;
336     if abs(z3 dotprod z2)<0.1:
337         point 0 of p1=z5+e2*z3;
338         z5=(point 0.5 of p2)+whatever*z2;
339
340         if e2<e3:
341             p3:=(subpath (0,1) of p2)-(z5+e3*z2);
342             obstackp[right_i]:=p3;
343         fi;
344     fi;
345     endgroup;
346 fi;
347 fi;
348 enddef;
349
350 vardef kanji.rare.mound_helper =
351     push_pbox_toexpand("kanji.rare.mound_helper");
352     begingroup
353         save x,y;
354         numeric x[],y[];
355
356         x1=x2=x5=x7=x10=180;
357         x3=x4=x6=0.87[x1,x8];
358         x8=x9=x11=1000-x1;
359
360         y1=y9=(-0.2)[y10,y7];
361         y2=y3=780;
362         y4=(-0.2)[y5,y2];
363         y5=y6=530;
364         y7=y8=290;

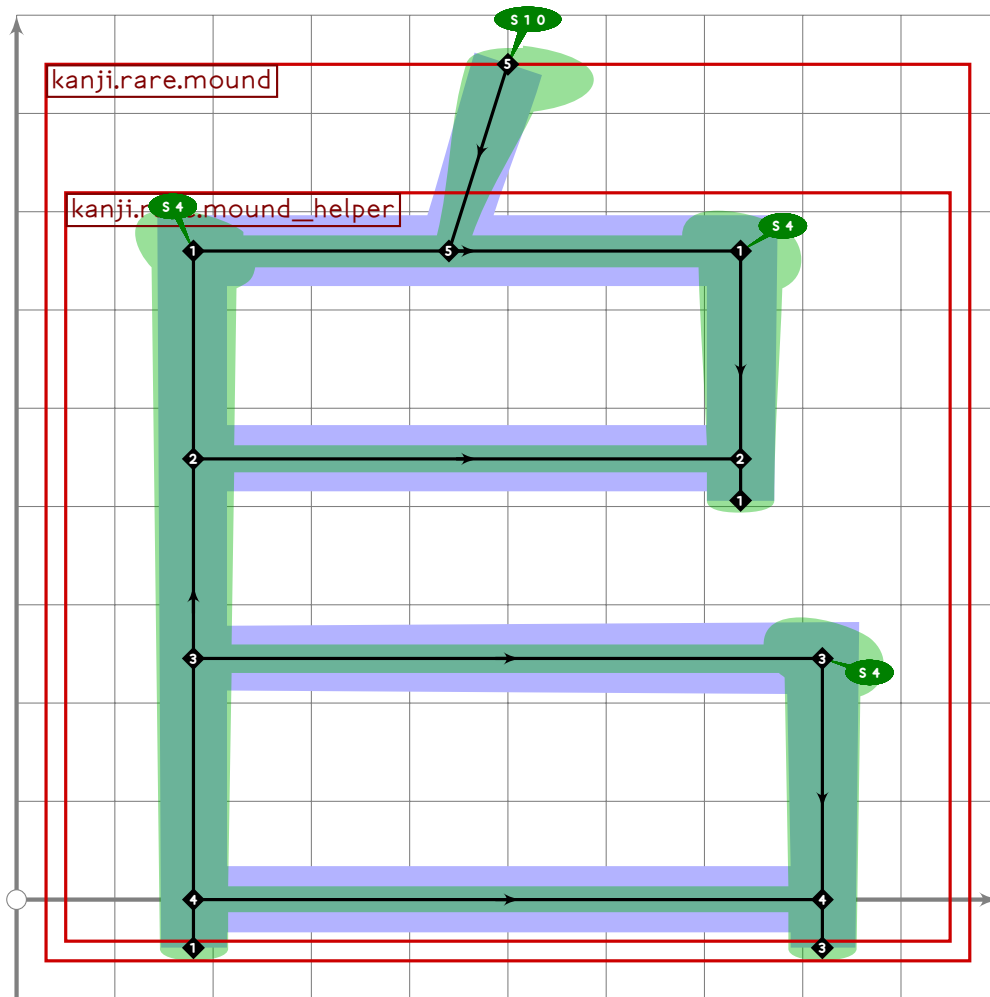
```

```

365     y10=y11=0;
366
367     push_stroke(z1-z2-z3-z4,(1.5,1.5)-(1.7,1.7)-(1.7,1.7)-(1.5,1.5));
368     set_botip(0,1);
369     set_botip(0,2,1);
370     set_boserif(0,1,4);
371     set_boserif(0,2,4);
372     push_stroke(z5-z6,(1.5,1.5)-(1.5,1.5));
373     push_stroke(z7-z8-z9,(1.5,1.5)-(1.6,1.6)-(1.5,1.5));
374     set_botip(0,1);
375     set_boserif(0,1,4);
376     push_stroke(z10-z11,(1.5,1.5)-(1.5,1.5));
377
378     push_hook(hsmain_render,
379         "hook.box_bottom("&(decimal find_stroke(-3))&"
380             &(decimal find_stroke(-2))&");" );
381     push_hook(hsmain_render,
382         "hook.mound_bottoms("&(decimal find_stroke(-3))&"
383             &(decimal find_stroke(-1))&"
384             &(decimal find_stroke(0))&");" );
385     endgroup;
386     expand_pbox;
387 endif;

```



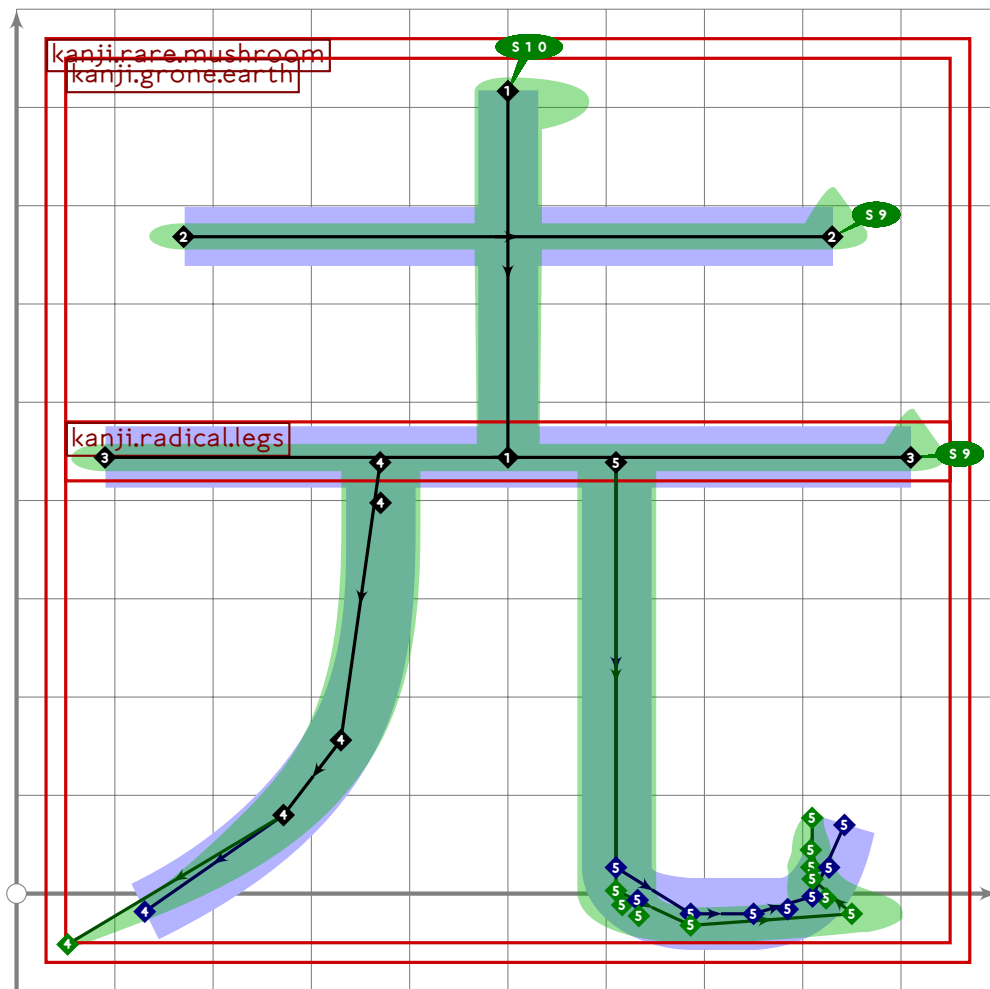


```

388
389 vardef kanji.rare.mound =
390   push_pbox_toexpand("kanji.rare.mound");
391   build_kanji.attach_tick(660)(kanji.rare.mound_helper);
392   expand_pbox;
393 enddef;

```

RARE

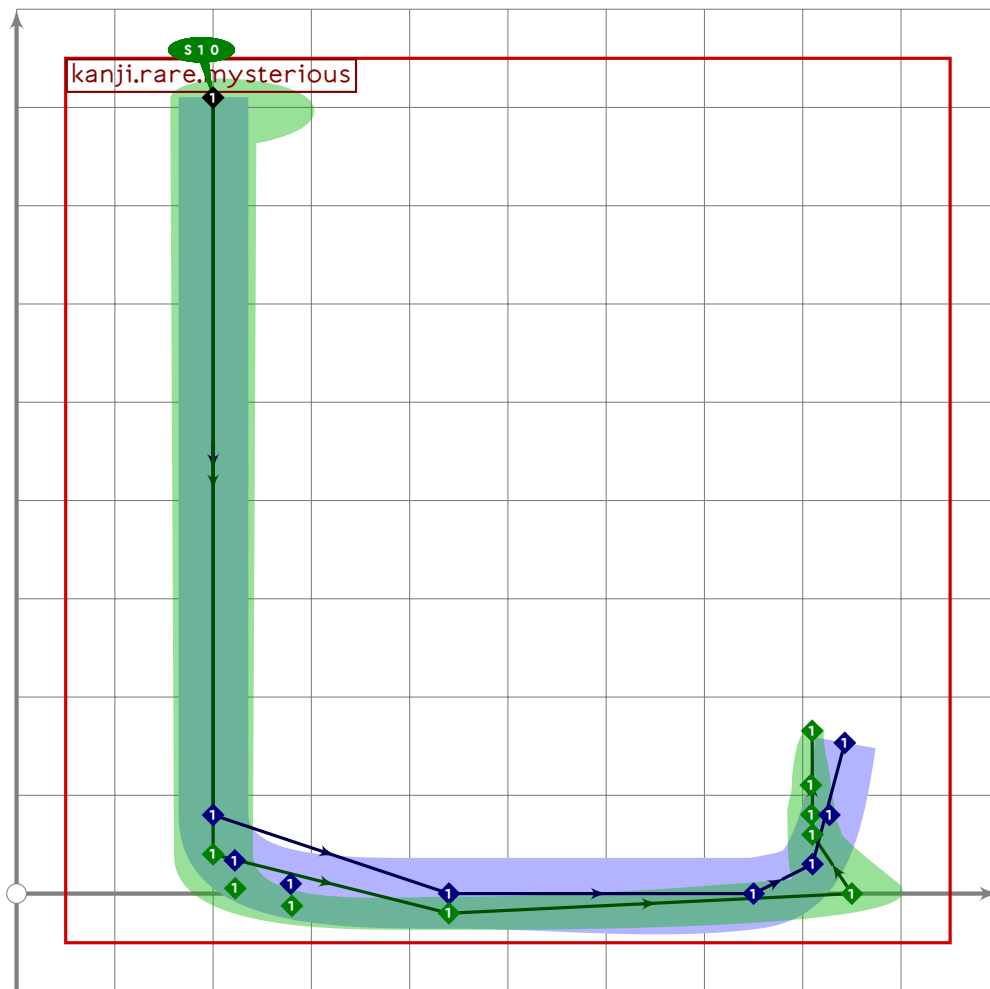


```

394
395 vardef kanji.rare.mushroom =
396   push_pbox_toexpand("kanji.rare.mushroom");
397   build_kanji.tb(450,60)
398     (kanji.grone.earth)
399     (kanji.radical.legs);
400   expand_pbox;
401 enddef;

```

RARE

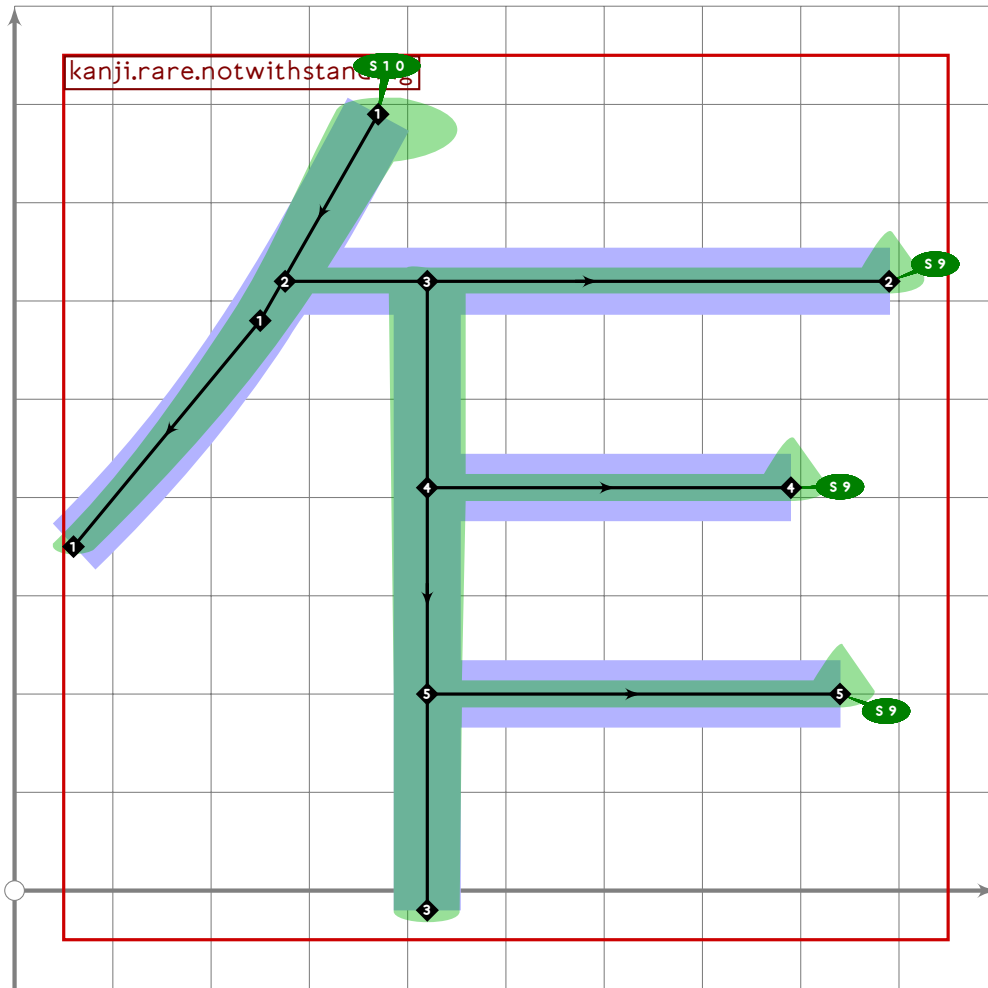


```

402
403 vardef kanji.rare.mysterious =
404   push_pbox_toexpand("kanji.rare.mysterious");
405   push_stroke((200,810))((1,7,1,7));
406   build_kanji.add_ltail(0);
407   set_boserif(0,0,10);
408   expand_pbox;
409 enddef;

```

RARE

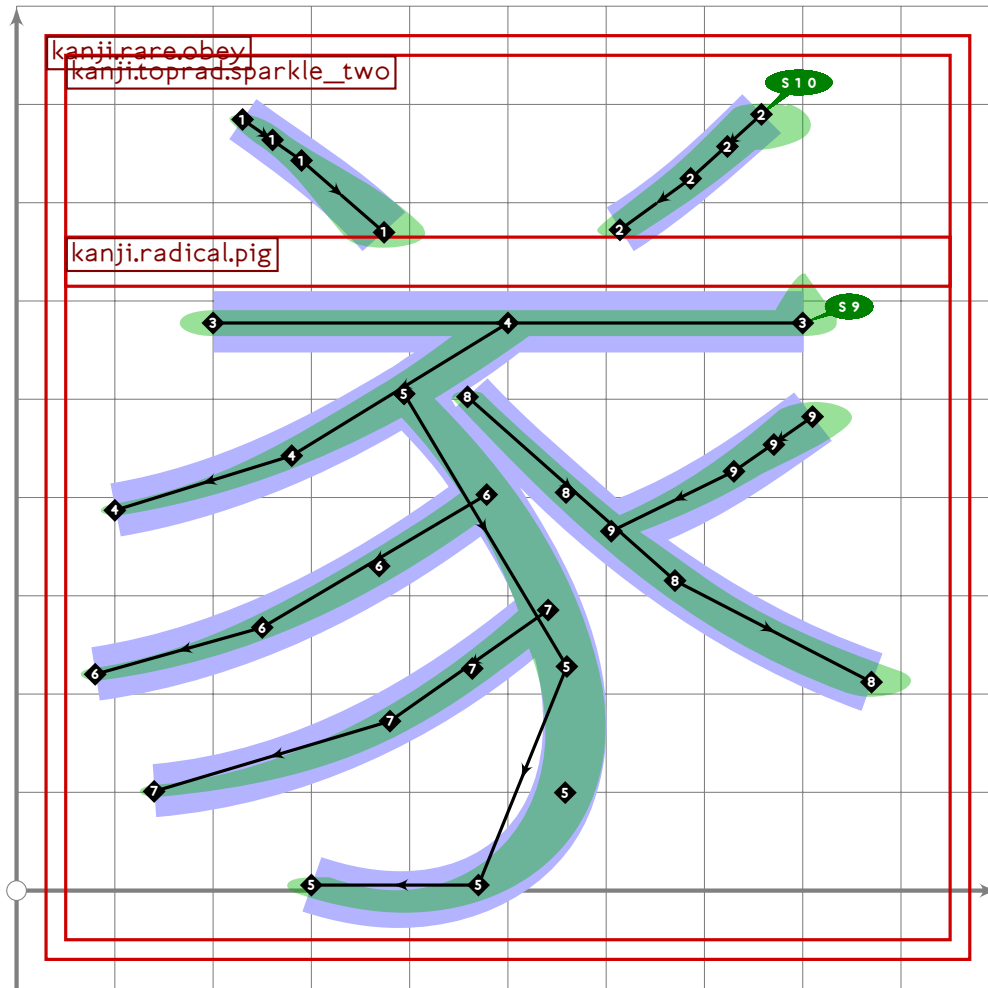


```

410
411 vardef kanji.rare.notwithstanding =
412   push_pbox_toexpand("kanji.rare.notwithstanding");
413   push_stroke((370,790){curl 0.1}..(250,580)..(60,350),
414     (1.7,1.7)–(1.4,1.4)–(1.1,1.1));
415   set_boserif(0,0,10);
416   push_stroke(
417     (((0,620)–(1000,620)) intersectionpoint get_stroke(0))–(890,620),
418     (1.4,1.4)–(1.5,1.5));
419   set_boserif(0,1,9);
420   push_stroke((420,620)–(420,-20),
421     (1.6,1.6)–(1.4,1.4));
422   push_stroke((420,410)–(790,410),
423     (1.5,1.5)–(1.5,1.5));
424   set_boserif(0,1,9);
425   push_stroke((420,200)–(840,200),
426     (1.5,1.5)–(1.5,1.5));
427   set_boserif(0,1,9);
428   expand_pbox;
429 enddef;

```

RARE

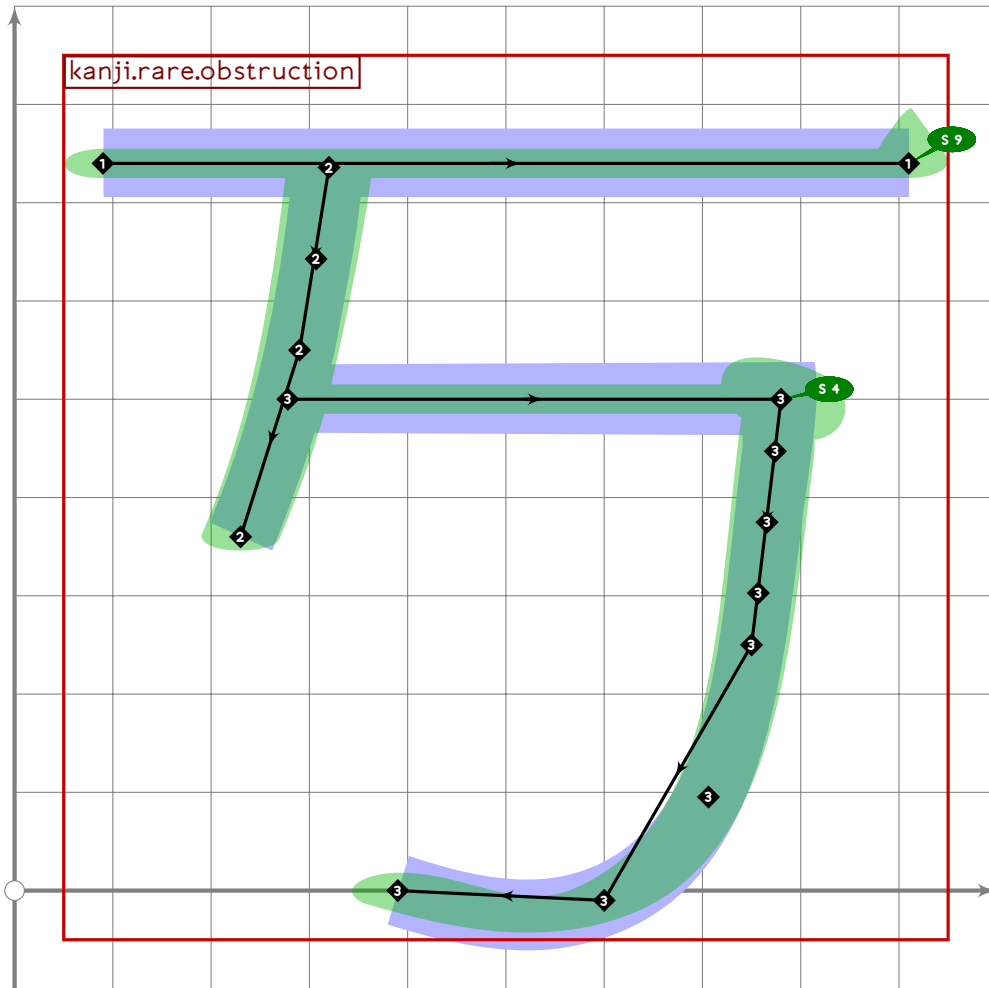


```

430
431 vardef kanji.rare.obey =
432   push_pbox_toexpand("kanji.rare.obey");
433   build_kanji.tb(640,50)
434     (build_kanji.spread_legs(-180)(kanji.toprad.sparkle_two))
435     (kanji.radical.pig);
436   expand_pbox;
437 enddef;

```

RARE

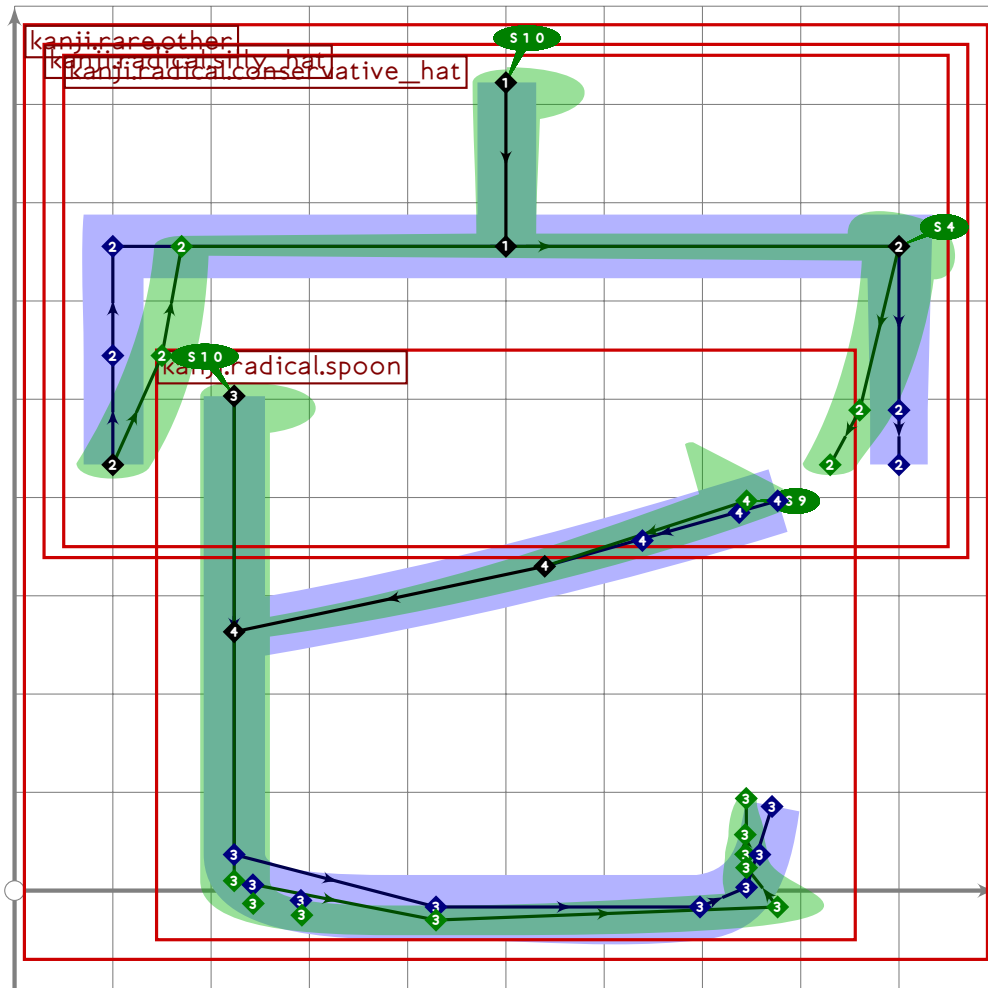


```

438
439 vardef kanji.rare.obstruction =
440   push_pbox_toexpand("kanji.rare.obstruction");
441   push_stroke((90,740)–(910,740),(1,6,1,6)–(1,6,1,6));
442   set_boserif(0,1,9);
443   push_stroke((320,736)..tension 1.2..(290,550)..(230,360),
444     (1,7,1,7)–(1,6,1,6)–(1,6,1,6));
445   push_stroke((get_strokep(0) intersectionpoint ((0,500)–(1000,500)))–
446     (780,500)..tension 1.7..(750,250)..(600,10)..{curl 0}(390,0),
447     (1,6,1,6)–(1,6,1,6)–(1,5,1,5)–(1,7,1,7)–(1,8,1,8));
448   set_botip(0,1,1);
449   set_boserif(0,1,4);
450   expand_pbox;
451 enddef;

```

**RARE**

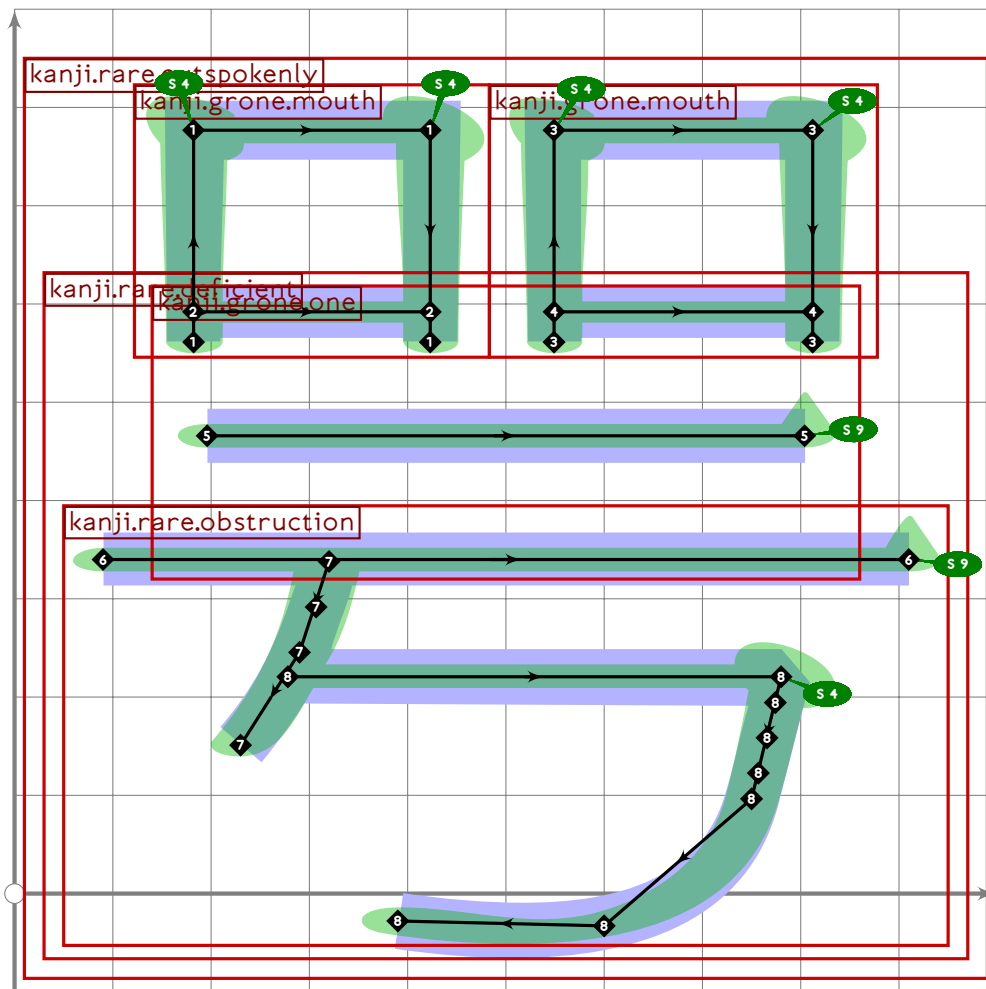


```

452
453 vardef kanji.rare.other =
454   push_pbox_toexpand("kanji.rare.other");
455   build_kanji.tb(450,200)
456     (kanji.radical.silly_hat)
457     (build_kanji.sscale(xscaled 0.79)
458       (kanji.radical.spoon));
459   expand_pbox;
460 enddef;

```

RARE



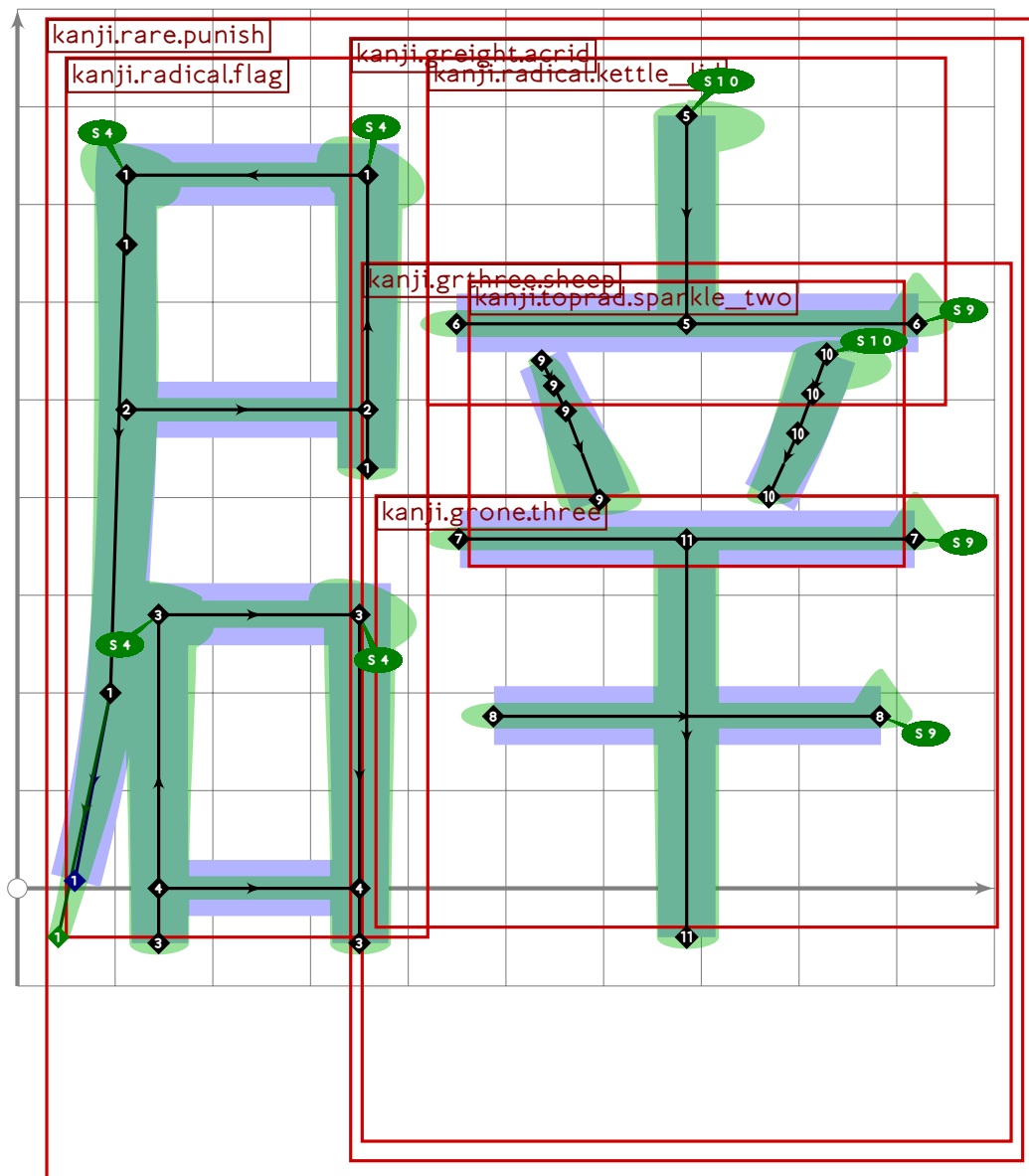
```

461
462 vardef kanji.rare.outspokenly =
463   push_pbox_toexpand("kanji.rare.outspokenly");
464   build_kanji.level(build_kanji.tb(540,40)
465     (build_kanji.sscale(scaled 0.84)(build_kanji.lr(480,0)
466       (kanji.grone.mouth)(kanji.grone.mouth)))
467     (kanji.rare.deficient));
468   expand_pbox;
469 enddef;

```

RARE





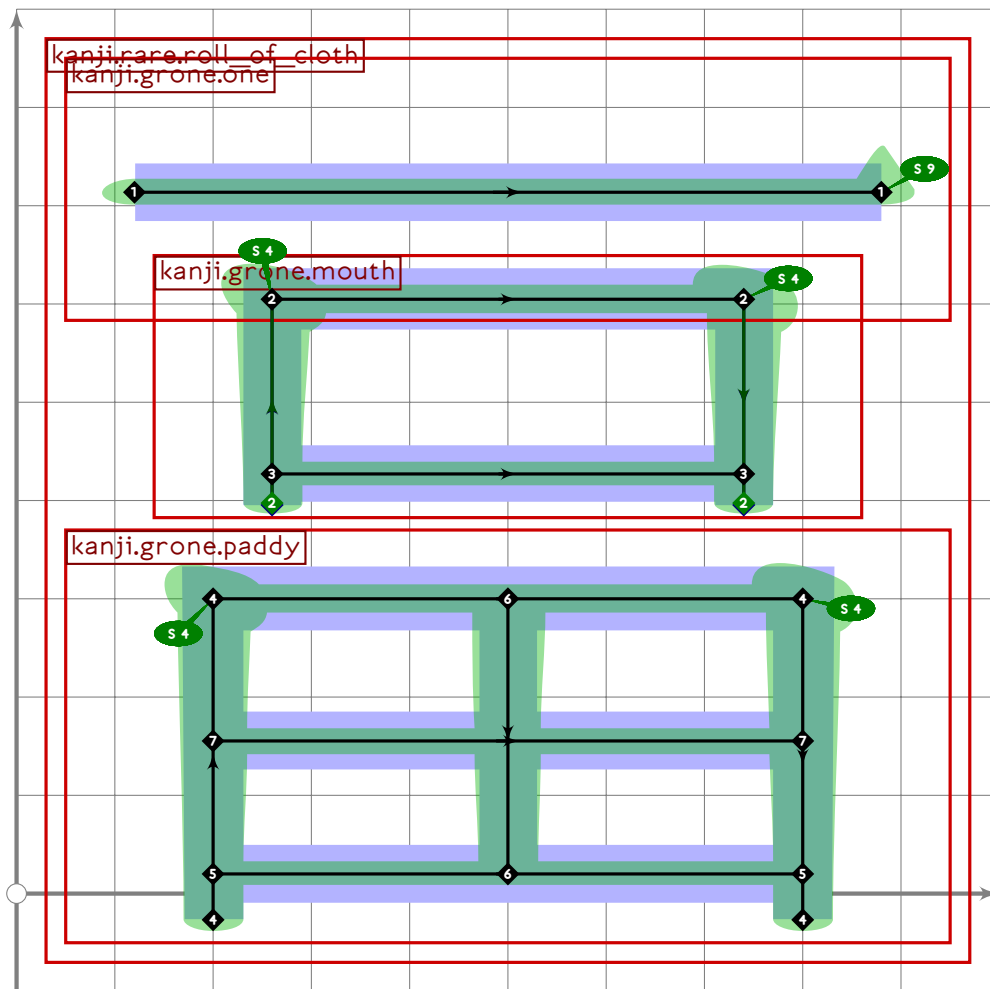
```

470
471 vardef kanji.rare.punish =
472   push_pbox_toexpand("kanji.rare.punish");
473   build_kanji.level(build_kanji.lr(420,0)
474     (kanji.radical.flag;
475       build_kanji.box((280,280),(780,0)))
476     (kanji.greight.acrid));
477   expand_pbox;
478 enddef;

```

RARE

U+7550  
tsuku.uni7550

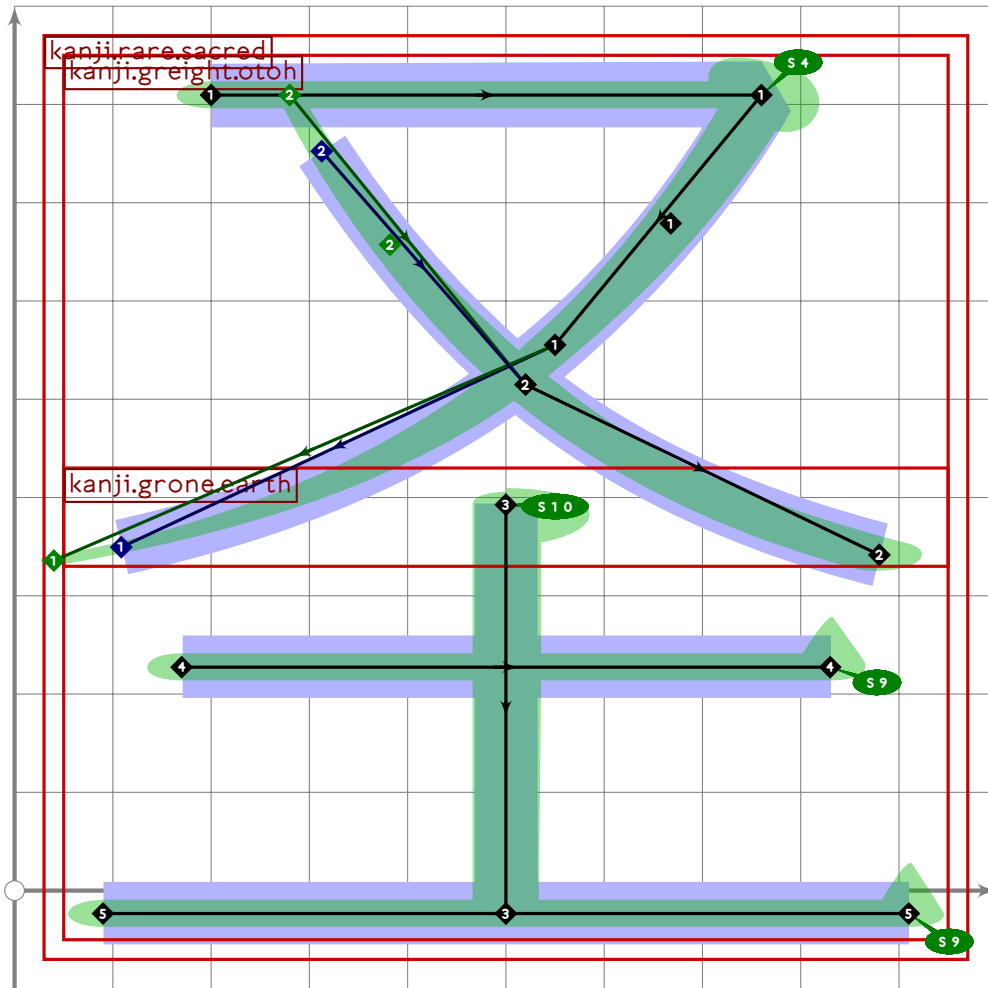


```

479
480 vardef kanji.rare.roll_of_cloth =
481   push_pbox_toexpand("kanji.rare.roll_of_cloth");
482   build_kanji.level(build_kanji.tb(360,20)
483     (build_kanji.tb(460,180)
484       (kanji.grone.one)
485       (build_kanji.sscale(scaled 0.8)(kanji.grone.mouth)))
486     (kanji.grone.paddy));
487   expand_pbox;
488 enddef;

```

RARE



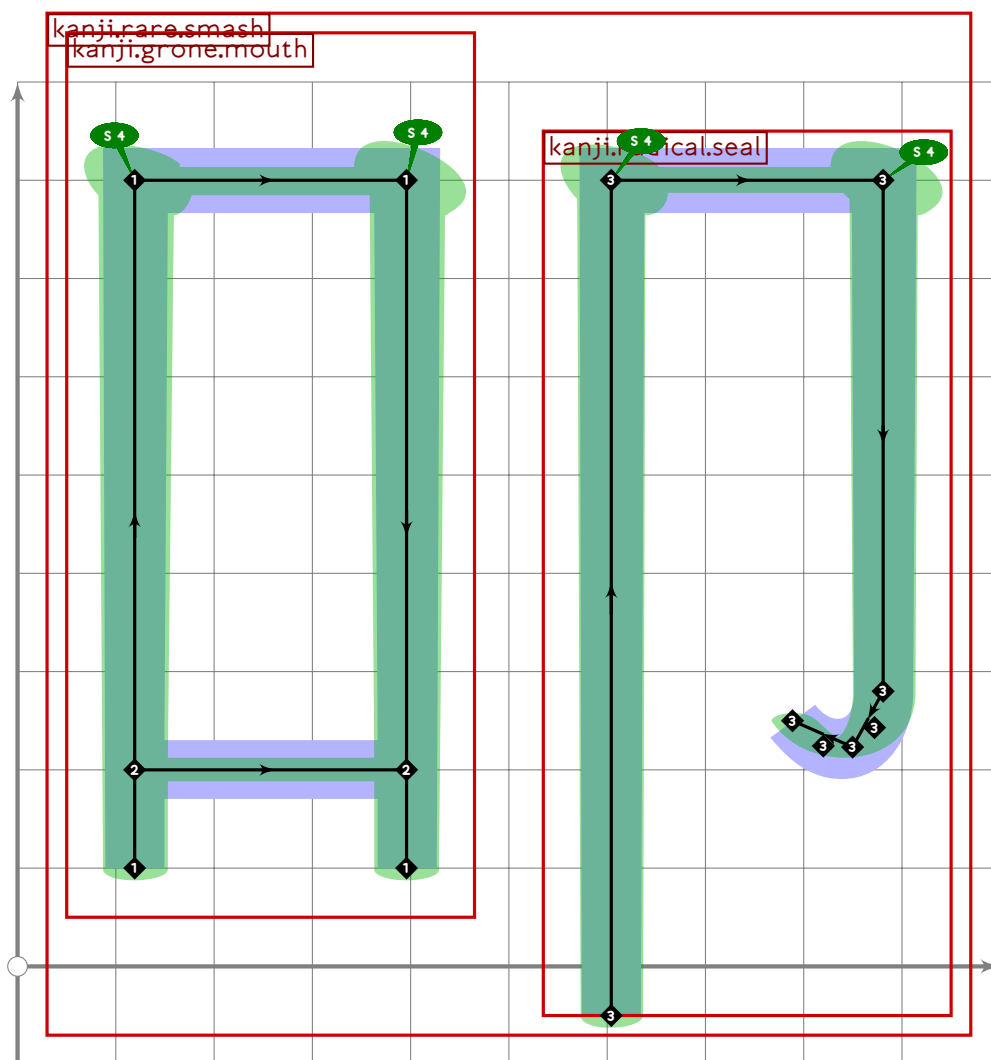
```

489
490 vardef kanji.rare.sacred =
491   push_pbox_toexpand("kanji.rare.sacred");
492   build_kanji.level(build_kanji.tb(380,100)
493     (kanji.graight.otoh)
494     (kanji.grone.earth));
495   expand_pbox;
496 enddef;

```

RARE

U+53E9  
tsuku.uni53E9

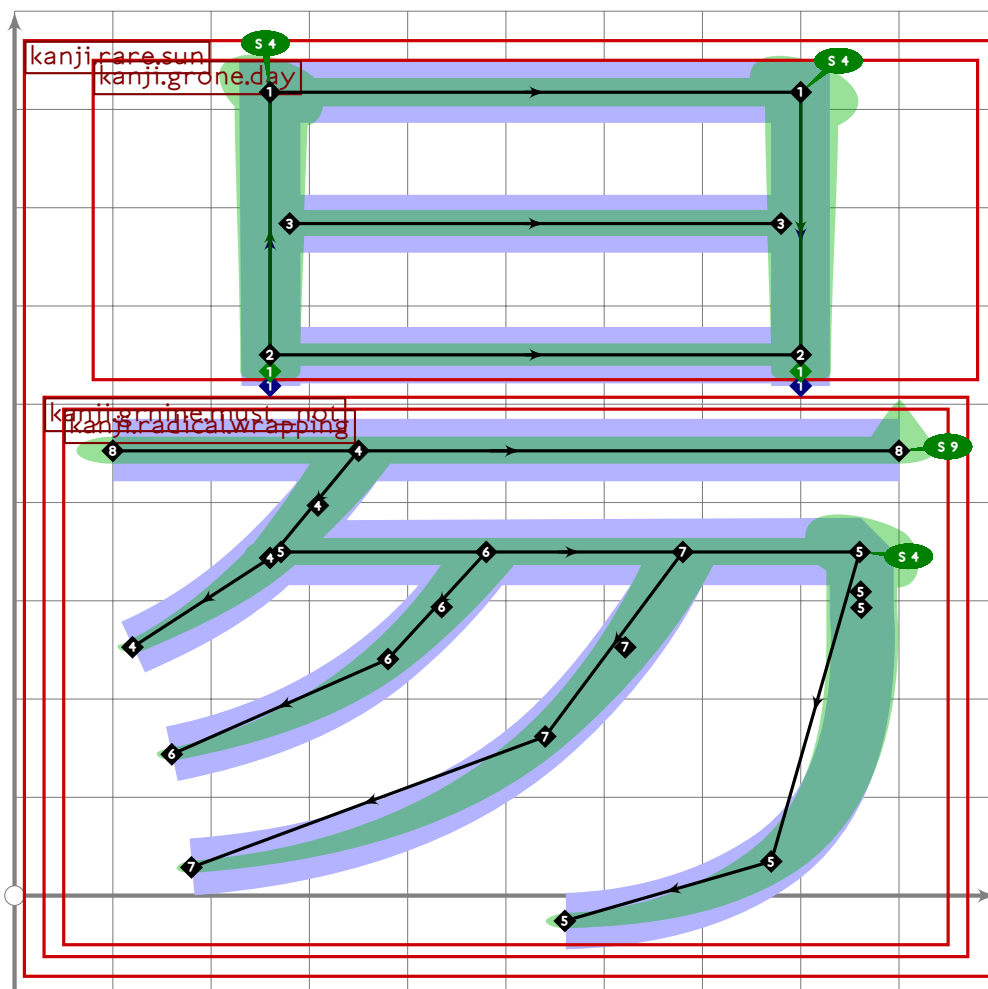


```

497
498 vardef kanji.rare.smash =
499   push_pbox_toexpand("kanji.rare.smash");
500   build_kanji.level(build_kanji.lr(500;70)
501     (tsu_xform(identity shifted (0,100))(kanji.grone.mouth))
502     (kanji.radical.seal));
503   expand_pbox;
504 enddef;

```

RARE



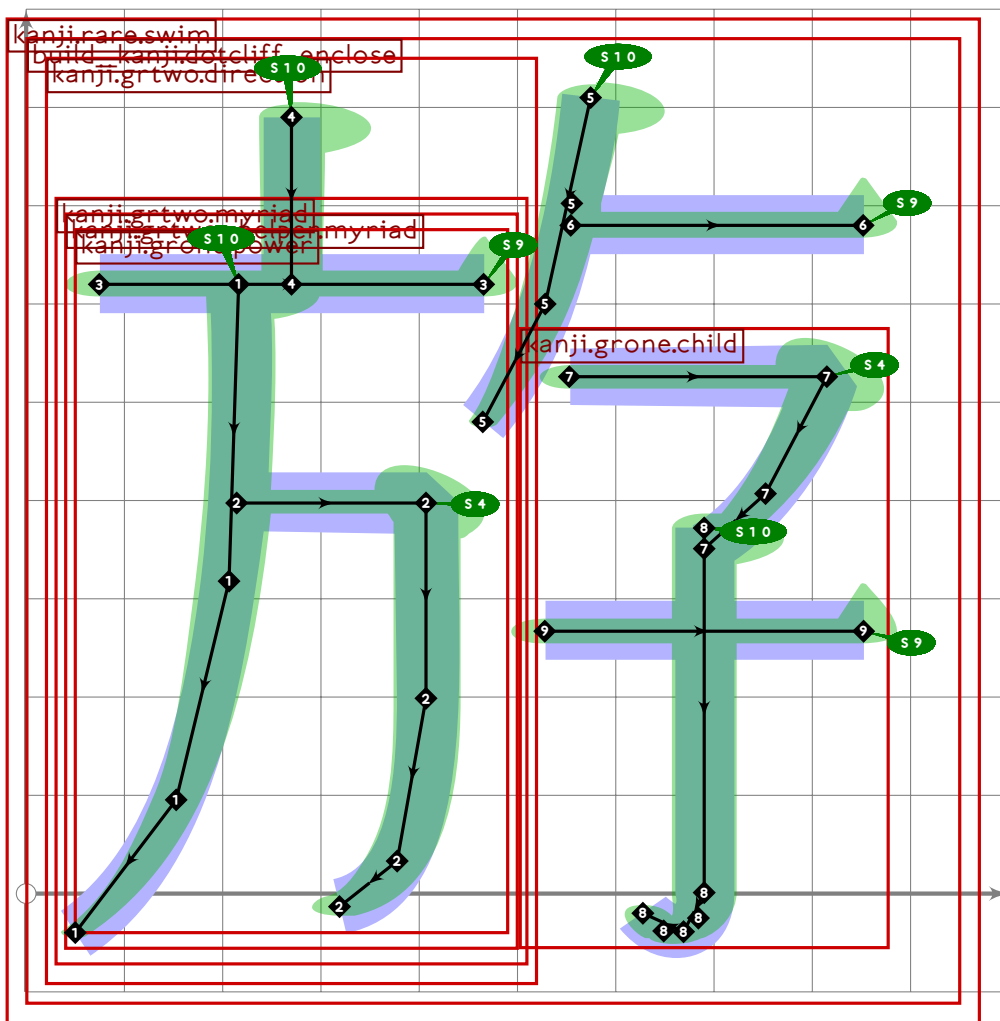
```

505
506 vardef kanji.rare.sun =
507   push_pbox_toexpand("kanji.rare.sun");
508   build_kanji.tb(510,-30)
509     (tsu_xform(identity shifted (30,0))(kanji.grone.day))
510     (kanji.grnine.must_not;
511       set_boserif(-3,0,whatever);
512       push_stroke((100,780)-(900,780),(1.6,1.6)-(1.6,1.6));
513       set_boserif(0,1,9));
514   expand_pbox;
515 enddef;

```

RARE

U+65BF  
tsuku.uni65BF

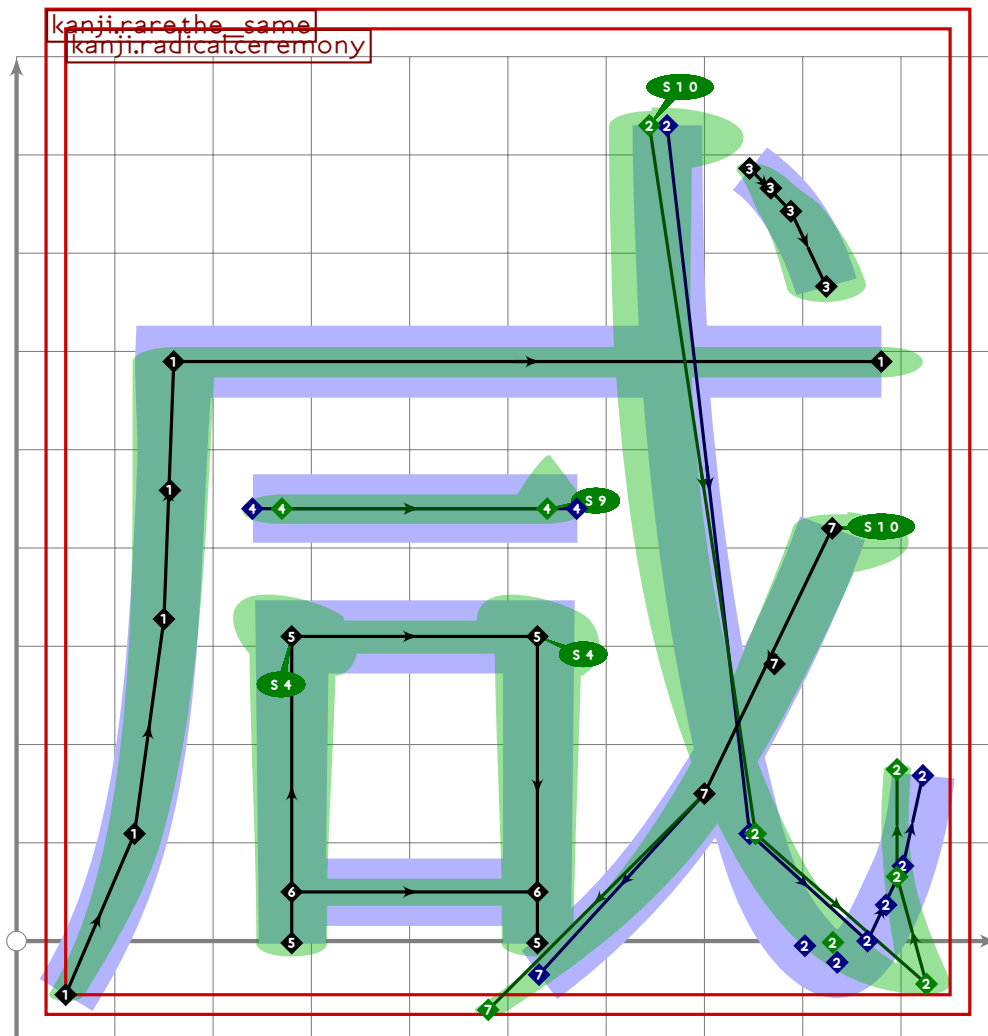


```

516
517 vardef kanji.rare.swim =
518   push_pbox_toexpand("kanji.rare.swim");
519   build_kanji.level(build_kanji.flag_enclose(0.72,0.7)
520     (kanji.grone.child));
521   expand_pbox;
522 enddef;

```

**RARE**



```

523
524 vardef kanji.rare.the_same =
525   push_pbox_toexpand("kanji.rare.the_same");
526   tsu_xform(identity yscaled (830/760))
527   (kanji.radical.ceremony;
528     replace_stroke(-2)
529       ((50,-50)..(120,100)..(150,300)..tension 1.2..(160,540)-(880,540));
530     replace_strokeq(-2)
531       ((1,1)-(1.3,1.3)-(1.5,1.5)-(1.6,1.6)-(1.6,1.6)));
532   set_botip(-2,3,1);
533   set_boserif(-2,1,whatever);
534   replace_stroke(-1)(oldp shifted (-950,0) xscaled 0.6 shifted (950,0));
535   replace_stroke(0)(oldp shifted (-950,0) xscaled 0.6 shifted (950,0));
536   push_stroke((if sharp_corners: 240 else: 270 fi,440)-
537     (if sharp_corners: 570 else: 540 fi,440),
538     (1.6,1.6)-(1.6,1.6));
539   set_boserif(0,1,9);
540   build_kanji.box((280,310),(530,50));
541   push_stroke((830,420)..tension 1.2..(700,150)..(480,-70),
542     (1.6,1.6)-(1.4,1.4)-(0.9,0.9));

```

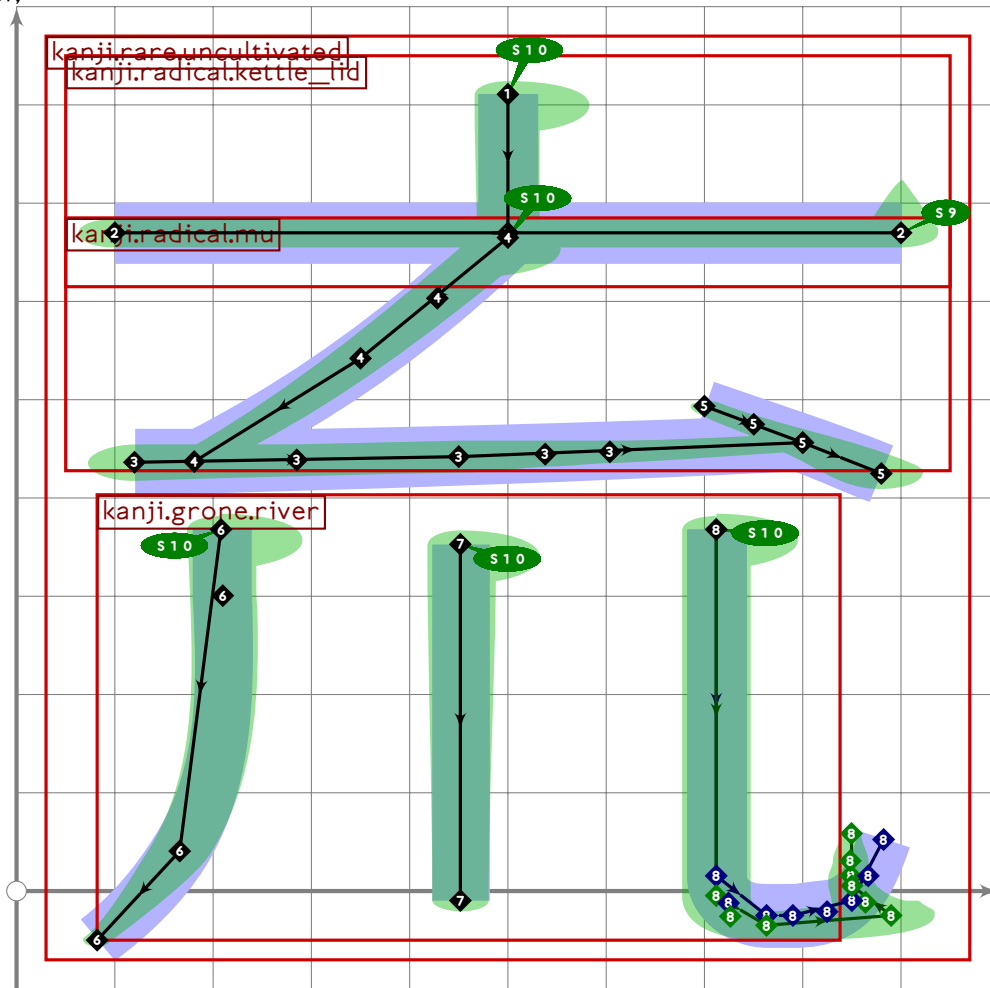
RARE

U+342C  
tsuku.uni342C

```

543 set_boserif(0,0,10);
544 expand_pbox;
545 enddef;

```



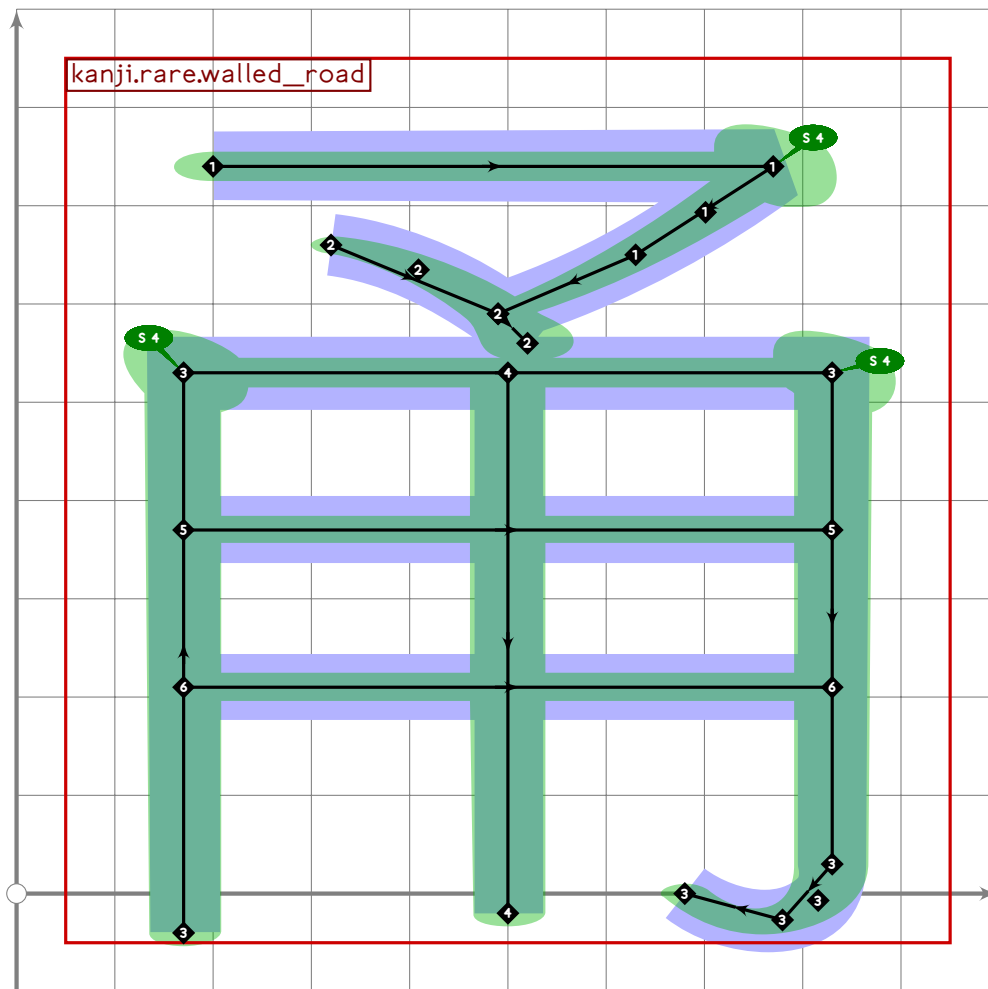
```

546
547 vardef kanji.rare.uncultivated =
548   push_pbox_toexpand("kanji.rare.uncultivated");
549   build_kanji.level(build_kanji.tb(650,70)
550     (kanji.radical.kettle_lid)
551     (build_kanji.tb(520,30)
552       (kanji.radical.mu)
553       (tsu_xform(identity shifted (40,0))
554         (tsu_xform(identity xscaled 0.84)(kanji.grone.river);
555         replace_strokep(0)((point 0 of oldp));
556         replace_strokeq(0)((point 0 of oldq));
557         build_kanji.add_ltail(0)))));
558   expand_pbox;
559 enddef;

```

RARE





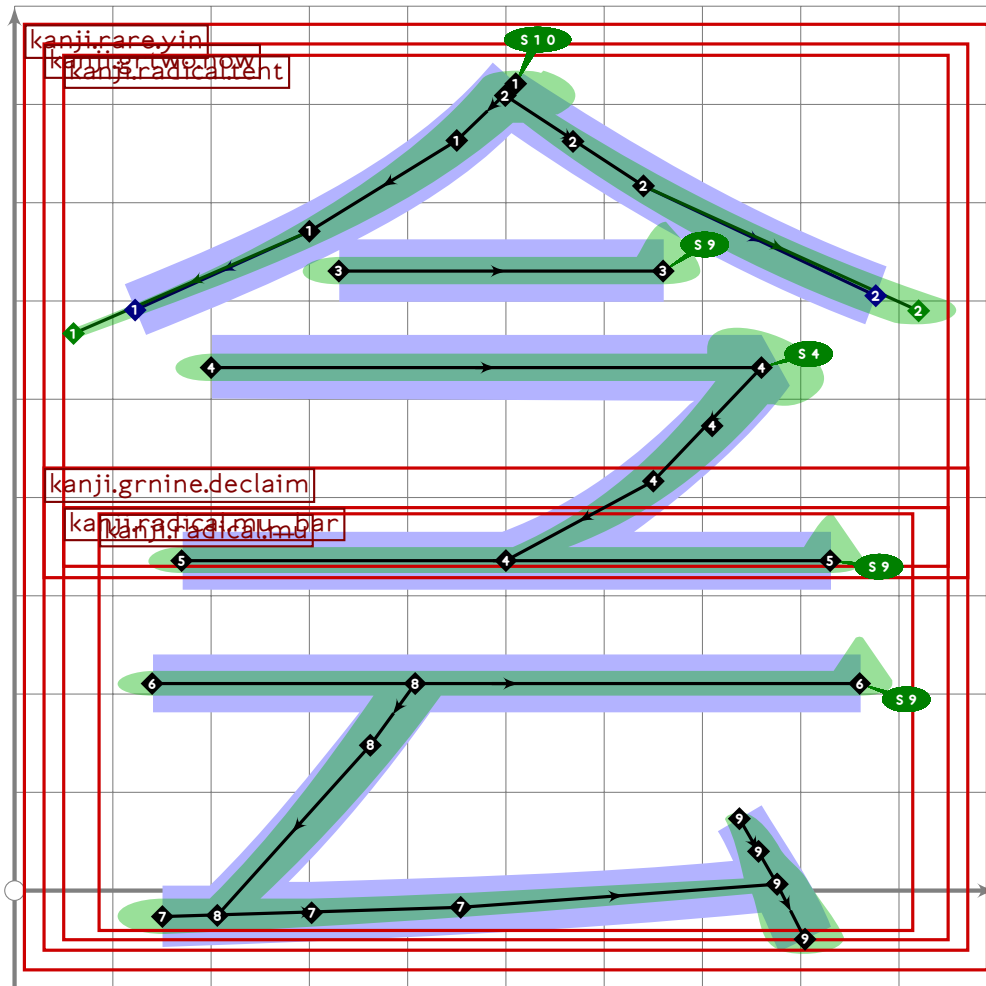
```

560
561 vardef kanji.rare.walled_road =
562   push_pbox_toexpand("kanji.rare.walled_road");
563   push_stroke((200,740)-(770,740)..tension 1.2..(630,650)..(490,590),
564     (1.6,1.6)-(1.6,1.6)-(1.4,1.4)-(1.1,1.1));
565   set_botip(0,1,0);
566   set_boserif(0,1,4);
567   push_stroke((320,660)..tension 1.2..(490,590)..(520,560),
568     (1.1,1.1)-(1.5,1.5)-(1.8,1.8));
569   push_stroke((170,-40)-(170,530)-(830,530),
570     (1.5,1.5)-(1.6,1.6)-(1.6,1.6));
571   build_kanji.add_jtail(0);
572   set_botip(0,1,1);
573   set_botip(0,2,1);
574   set_boserif(0,1,4);
575   set_boserif(0,2,4);
576   push_stroke((500,530)-(500,-20),(1.6,1.6)-(1.5,1.5));
577   push_stroke((170,370)-(830,370),(1.5,1.5)-(1.5,1.5));
578   push_stroke((170,210)-(830,210),(1.5,1.5)-(1.5,1.5));
579   expand_pbox;
580 enddef;

```

RARE

U+4F8C  
tsuku.uni4F8C



```

581
582 vardef kanji.rare.yin =
583   push_pbox_toexpand("kanji.rare.yin");
584   build_kanji.tb(380,100)
585     (kanji.grtwo.now)
586     (kanji.grnine.declaim);
587   expand_pbox;
588 enddef;

```

RARE