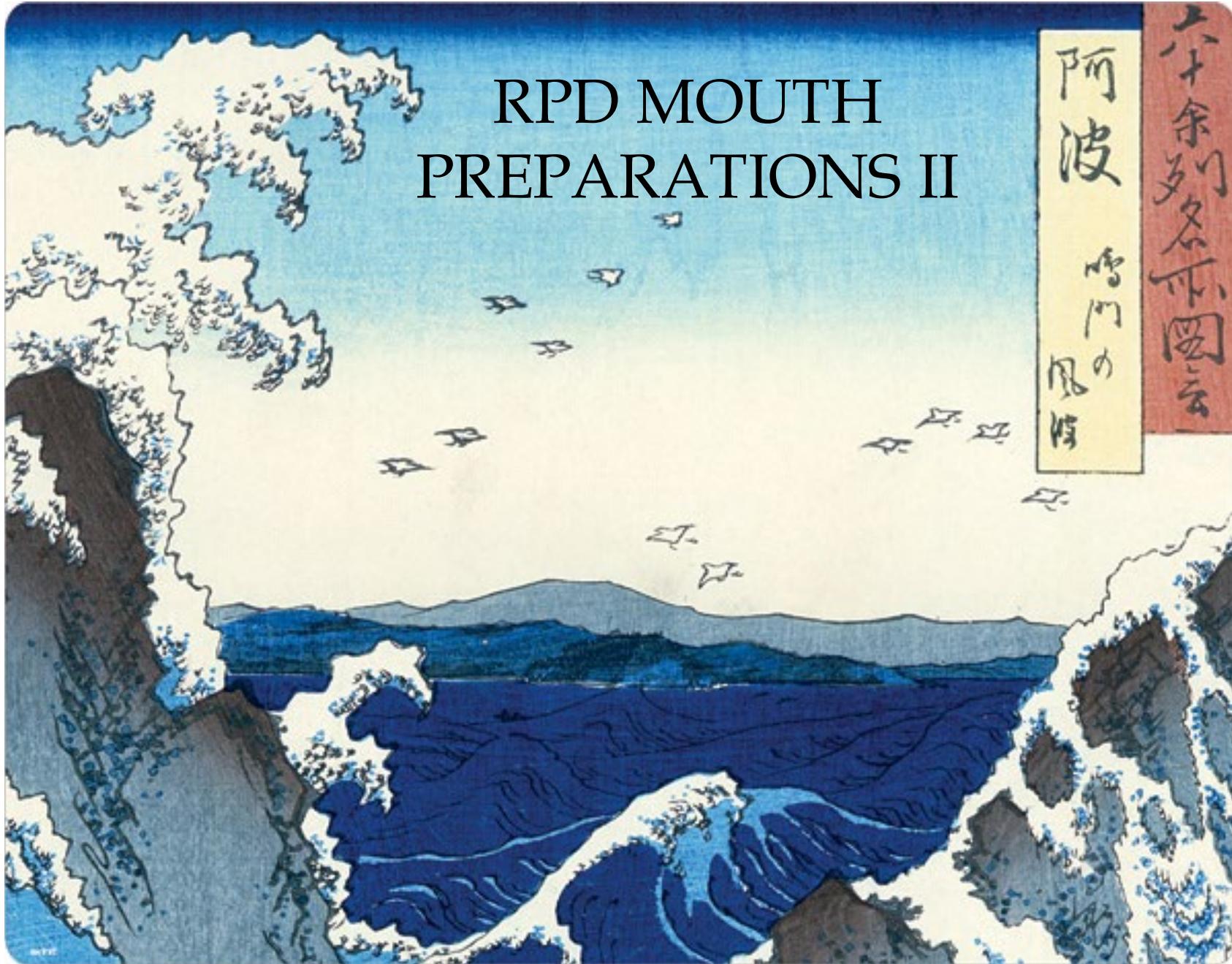


六十余景名所圖

阿波

鳴門の風情

# RPD MOUTH PREPARATIONS II

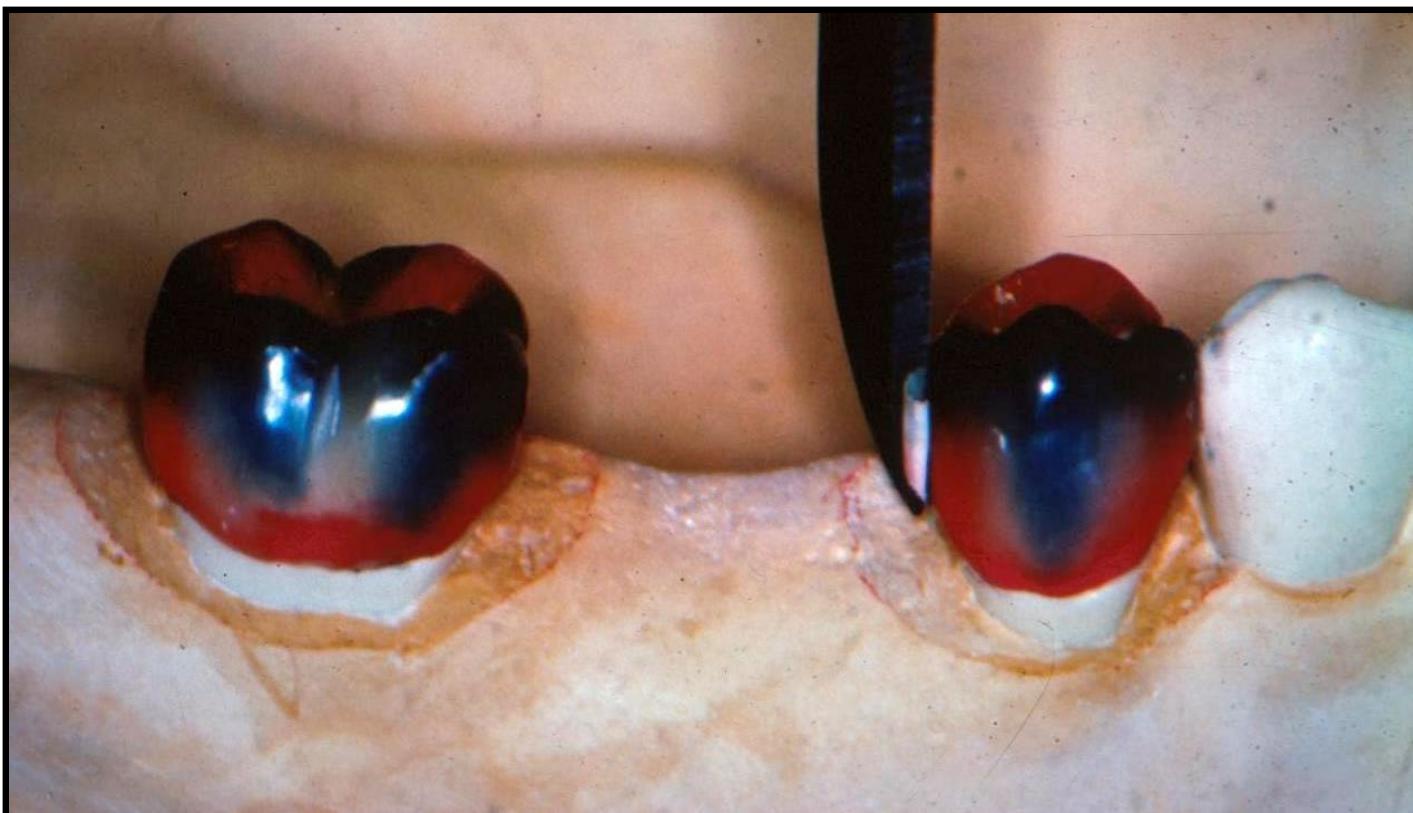


# RPD Mouth Preparations

- ✓ • Guiding Planes
- ✓ • Rest seats
- Survey line modifications
- Enhanced undercuts
- Lingual reciprocating elements
  - Clasp vs. plate

# Surveyed Crowns

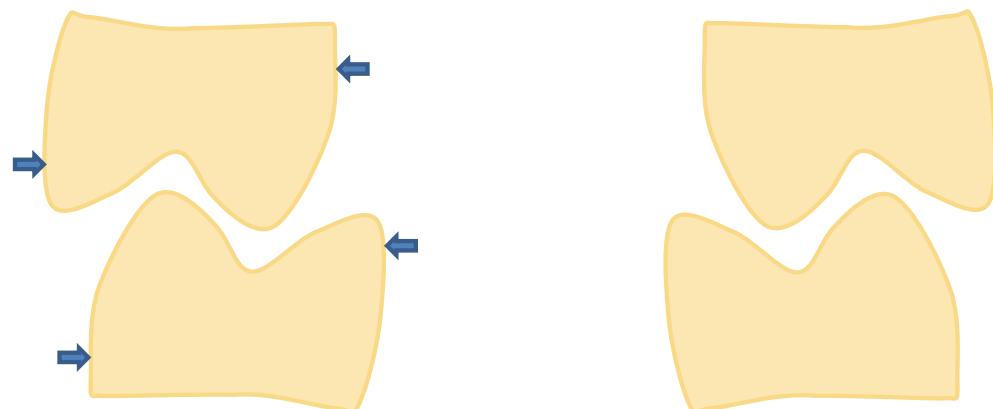
- Guide planes refined using a wax knife in the surveyor.
- Parallelism of surfaces on opposing sides of the dental arch.



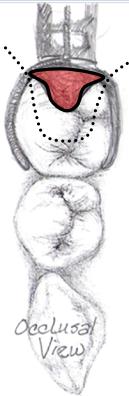
# **SURVEY LINE MODIFICATIONS**

# Tooth contours

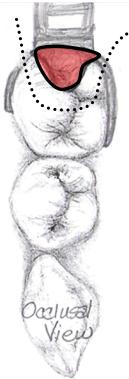
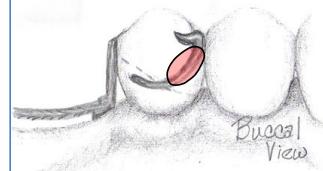
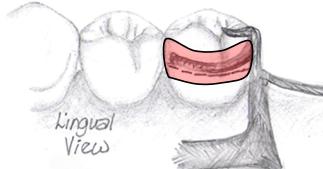
- -Maxillary posterior teeth tilt toward the buccal. This means that there are usually available undercuts for retention available, but also that the survey lines for surrabulge retainer shoulders must be lowered. Usually the lingual survey lines are low and do not interfere with lingual clasps or plating.
- -Mandibular posterior teeth tilt toward the lingual. This means that often it is hard to find buccal undercuts. DL undercuts may be used for retention on Md molars bilaterally, but not premolars. Retainers such as C clasps and ring clasps may be considered. Often lingual survey lines must be lowered to accommodate lingual reciprocating clasps and plating.



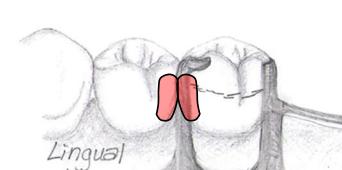
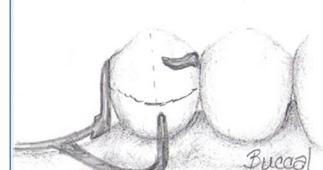
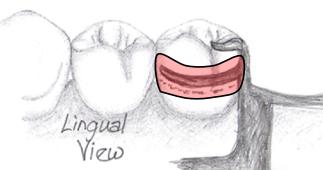
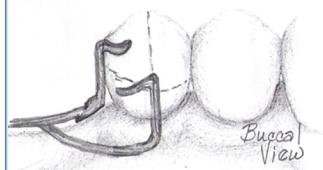
# Possible survey line adjustments



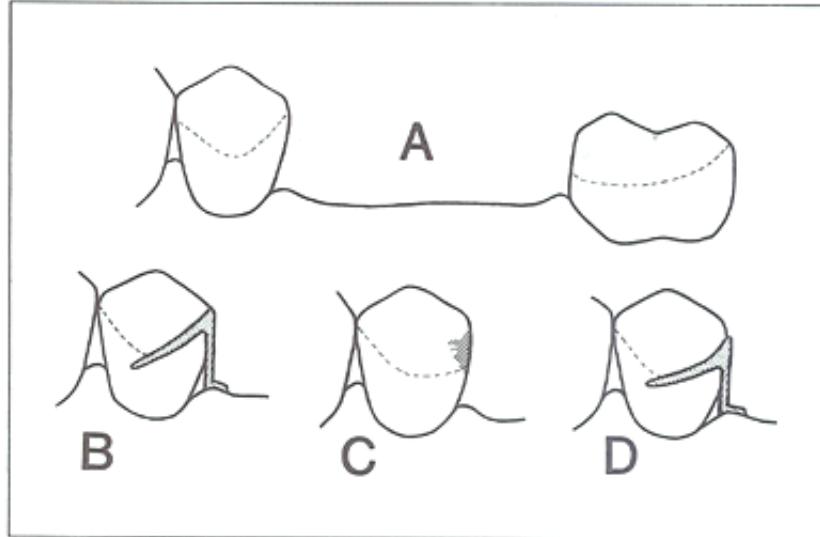
For shoulders of  
circlet clasps and  
lingual  
reciprocating  
elements.



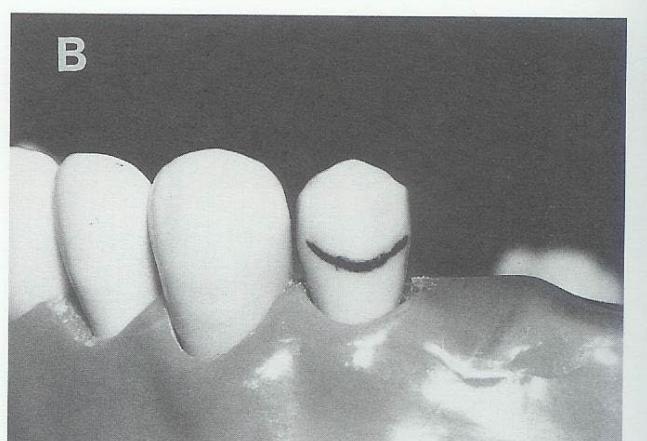
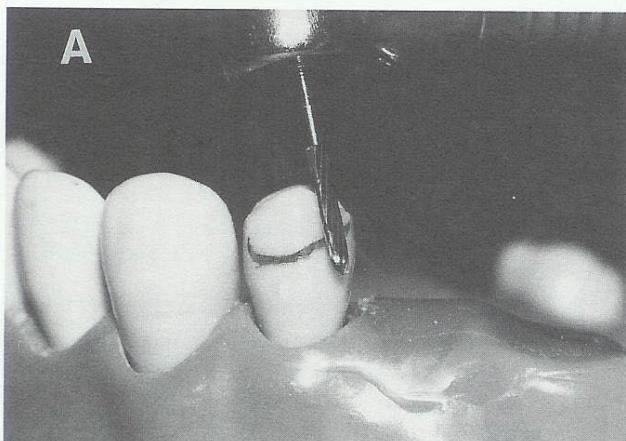
For reciprocating  
elements.



# Modify Survey Lines: Direct Retainers



- Shoulder of circlet clasp must stay above survey line.
- This can put the clasp shoulder very high on tooth if survey is also high.
- Recontour to lower survey line so non flexible shoulder can lay lower on tooth.

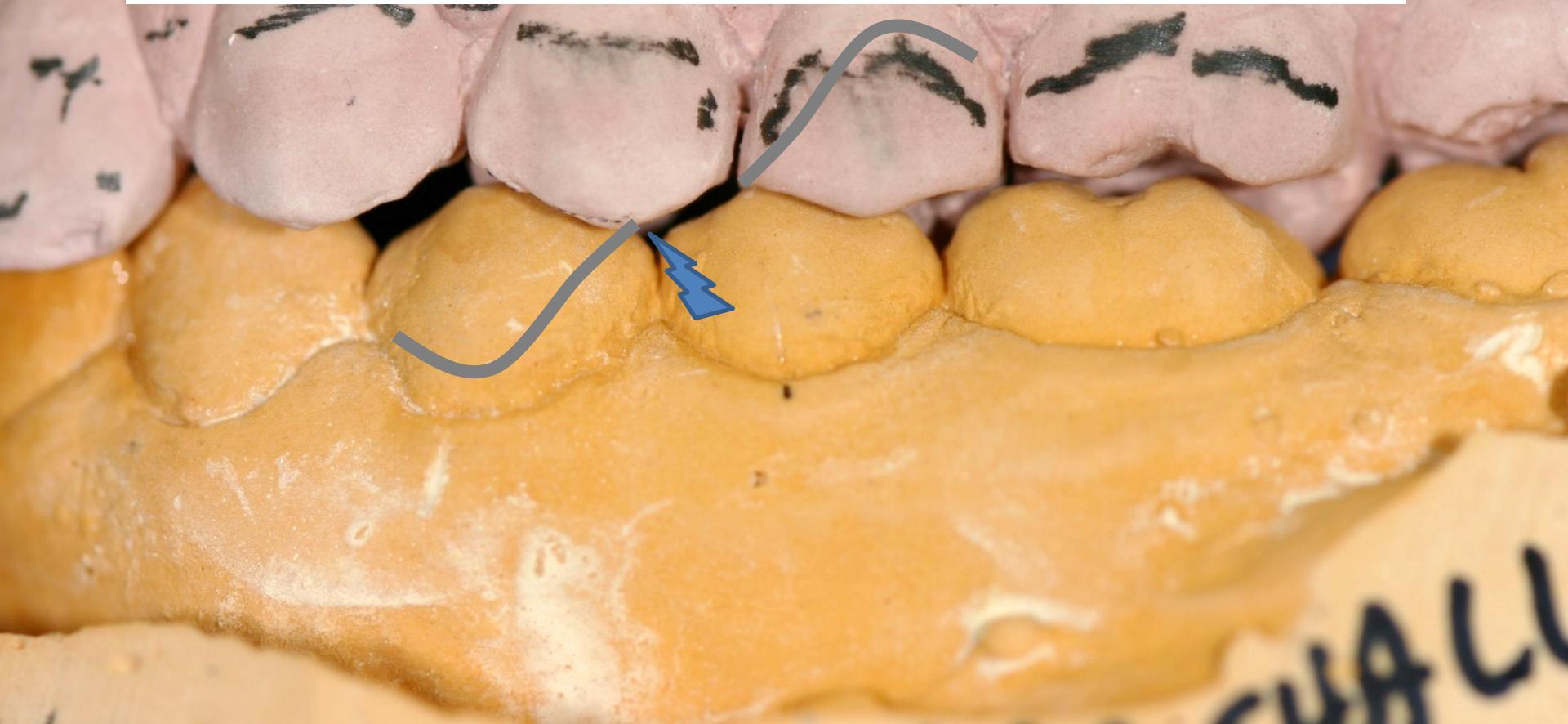


## Shoulder of circlet clasps:

If too high on tooth:

Can be unesthetic.

Can cause occlusal interference  
particularly on mandibular teeth.



- The lingual plate is very high on lingual surface, which should ideally be halfway down lingual surface.
- For maxillary tooth, may interfere with occlusion.
- If the tooth had been recontoured to lower the survey line, this could have been avoided.



# **ENHANCING UNDERCUTS**

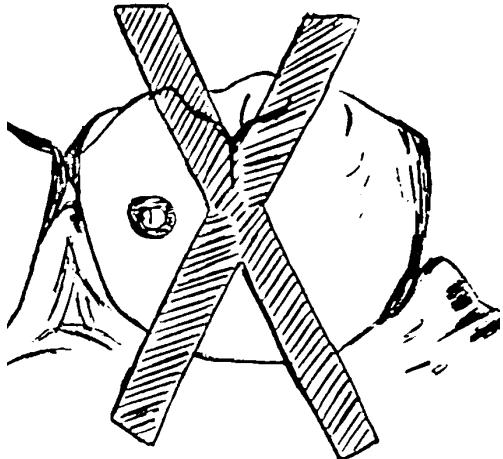
# Retentive Dimples

- Can be considered if no retentive undercut is available, and
- There is no other indication for surveyed crown, such as large pre-existing inappropriate restoration.
- Criteria
  - Not in caries prone region.
  - Must remain in enamel.
  - Tooth must have parallel opposing walls.
  - Must be polished and sharp edges blended.
  - To correct depth, .010 inch equals .25 mm.

# Dimple Dimensions

- Height 1 mm
- Depth .5 mm
- Length usually 2mm
- Oval shaped
- Follows contour of gingiva
- Use football bur

# **Location of Dimple**



- Dimple is too high, too deep, and not at line angle.



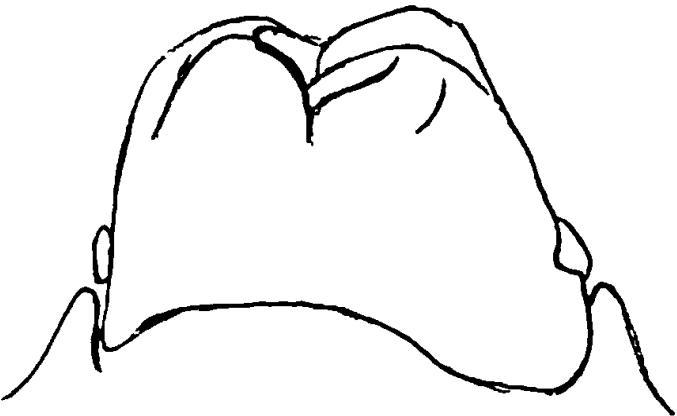
- Better position of clasp is result when placed lower and at line angle.

# **Location of dimple determines ultimate location of clasp**



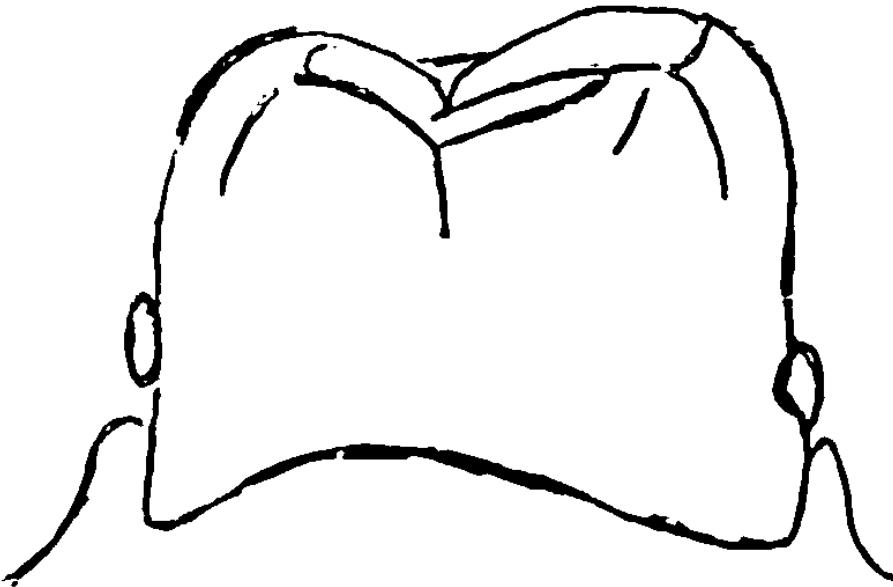
- **Ideal location at junction of gingival and median thirds**

# Incorrect Tooth Selection for Retentive Dimple



- **Undercut placed on tapering tooth surface will not be retentive in relation to the path of insertion/dislodgement.**

# Correct Tooth Selection for Retentive Dimple

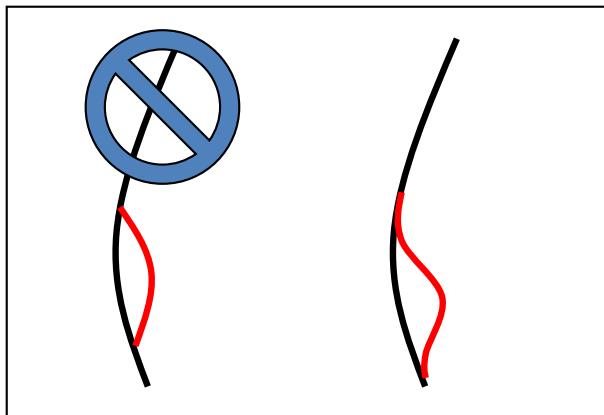


- Opposing buccal and lingual surfaces are parallel

# Location of Dimple

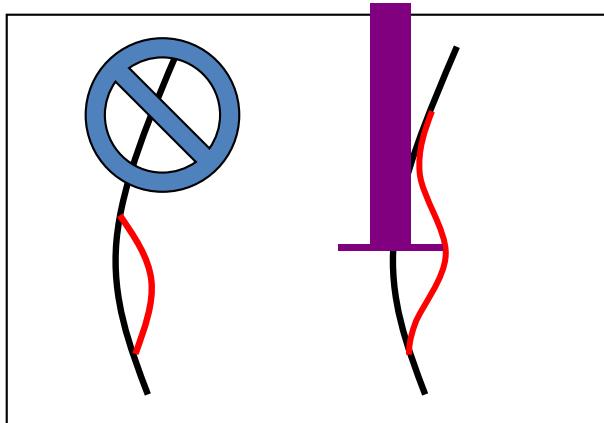


- Follows gingival margin
- 0.5mm deep
- Smoothed margins





- Retentive clasp should be able to smoothly engage undercut



# “Enhancing retentive undercuts”

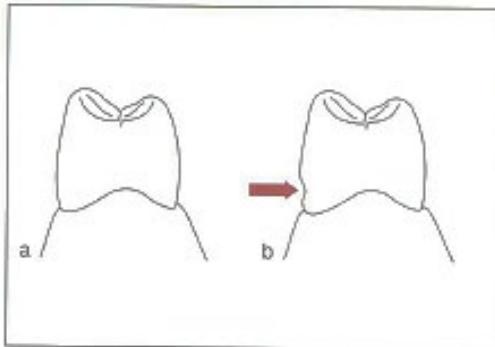


Fig 10-34 (a) The facial and lingual surfaces of the tooth are relatively vertical. (b) As a result, a gentle depression (arrow) may be created. In this instance, the depression has been created on the facial surface.

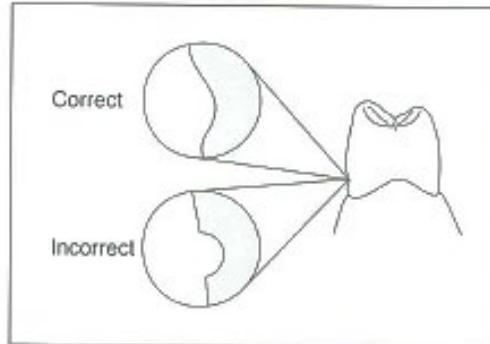


Fig 10-35 A depression should exhibit smooth, flowing contours. Sharply defined dimples and pits should be avoided since retentive clasps cannot flex into and out of these indentations.

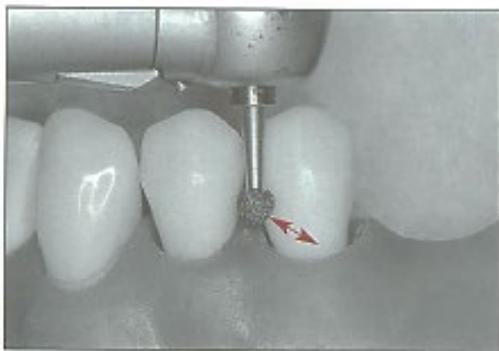


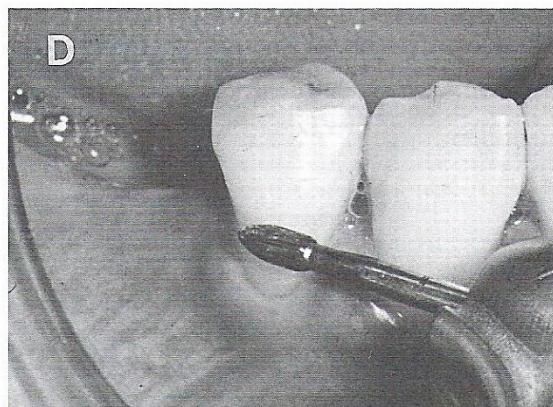
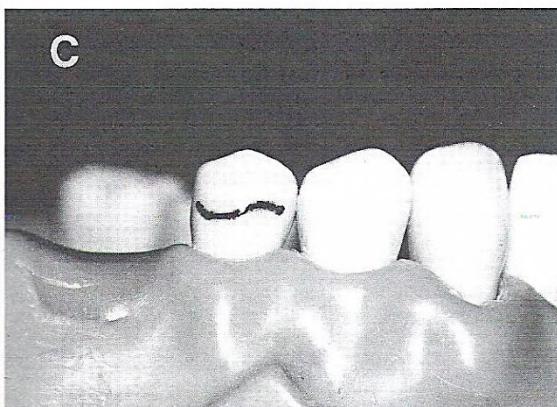
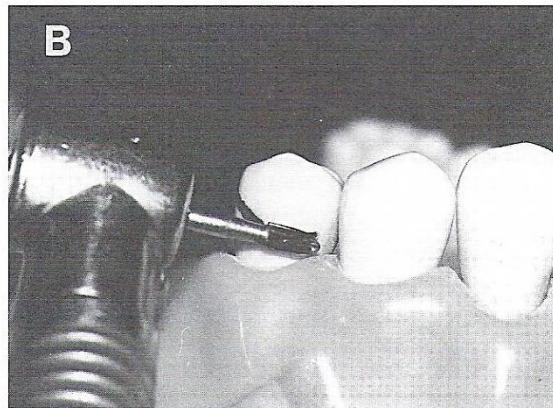
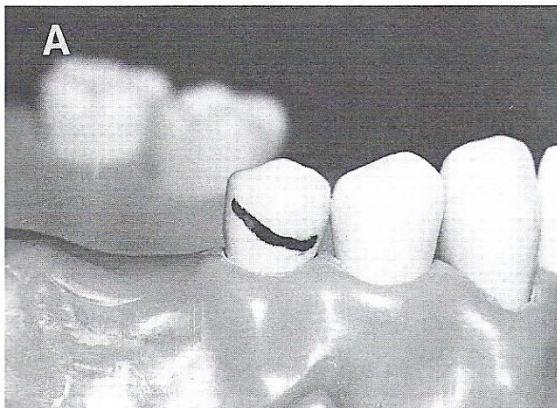
Fig 10-36 A gentle depression is prepared using a round diamond bur in a high-speed handpiece. The bur is moved in an anteroposterior direction (arrow).



Fig 10-37 The preparation is smoothed using a carbide-impregnated rubber point in a low-speed handpiece. Care must be taken not to obliterate the depression.

# “Retentive Grooves”

Krol's Syllabus



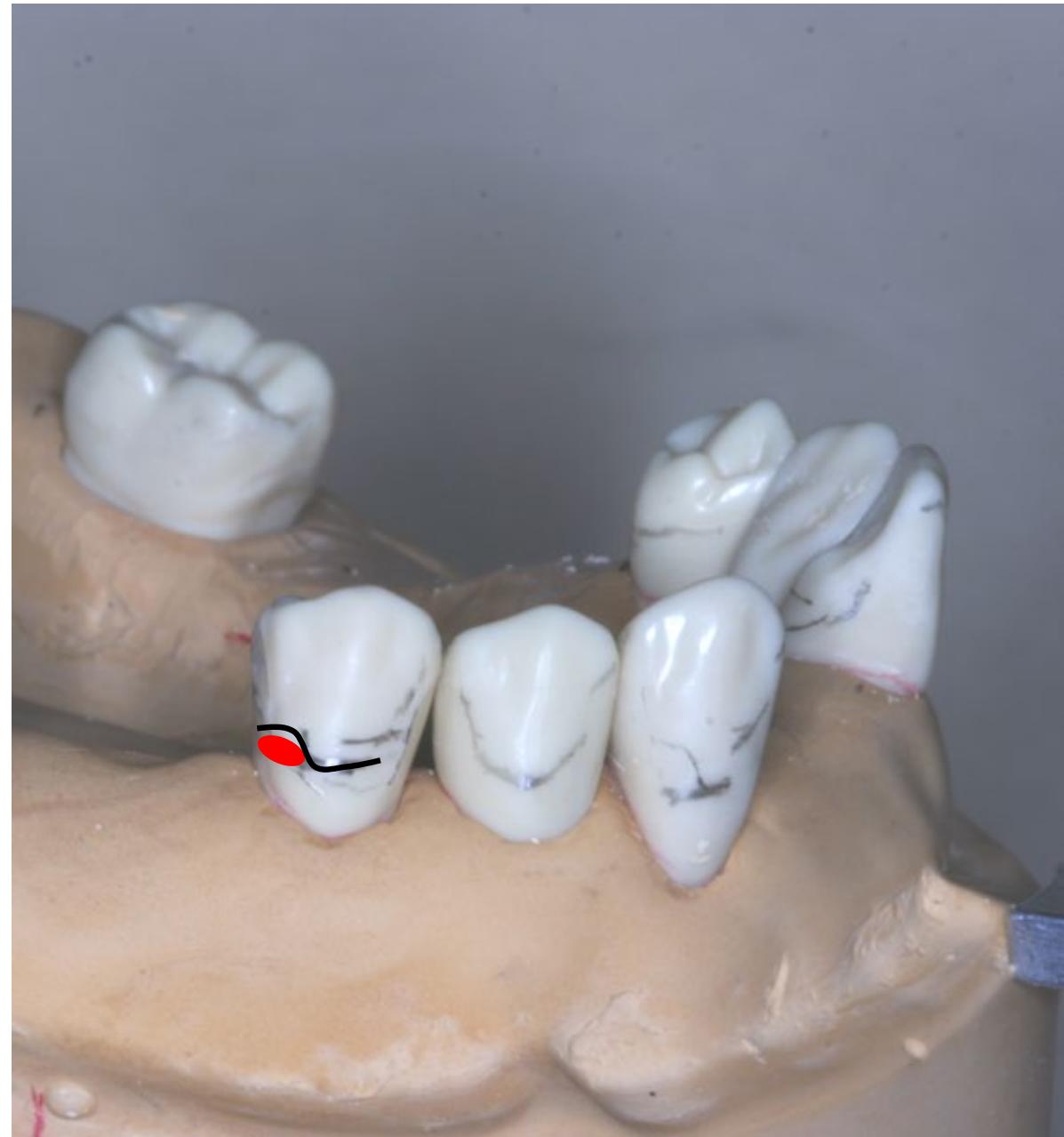
When  
enhancement  
finished,  
should have  
appearance of  
adjusted  
survey line.

Fig. 16-7. (A) This survey line demonstrates the absence of an adequate mesiofacial undercut. (B) An elliptical bur enhances the depth of undercut. (C) The redrawn survey line demonstrates an increased undercut which should be confirmed on the surveyor. (D) A clinical example.



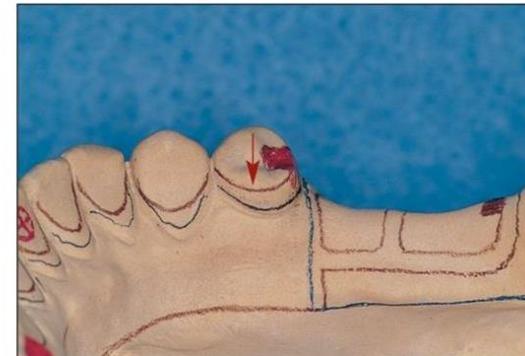
**Add “dimple” at  
DB line angle,  
1/3 height of  
surface from  
gingival margin.**

**Changes survey  
line.**



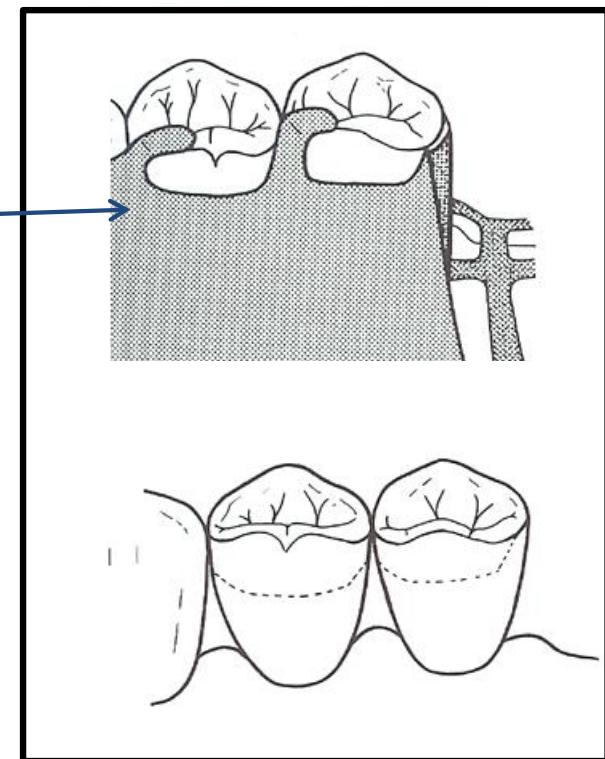
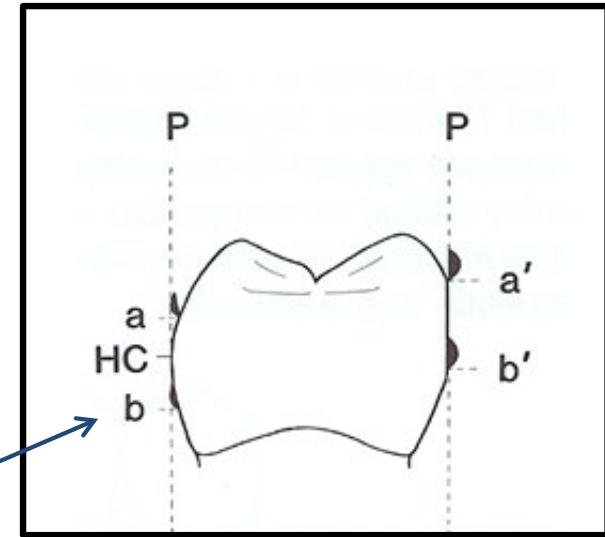
# MODIFICATIONS FOR LINGUAL RECIPROCATION

Lingual Clasp and Lingual Plate

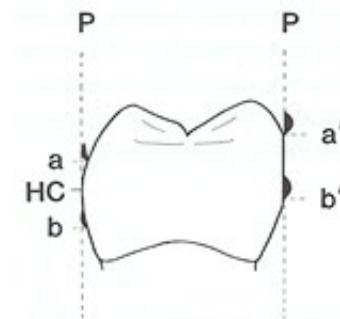
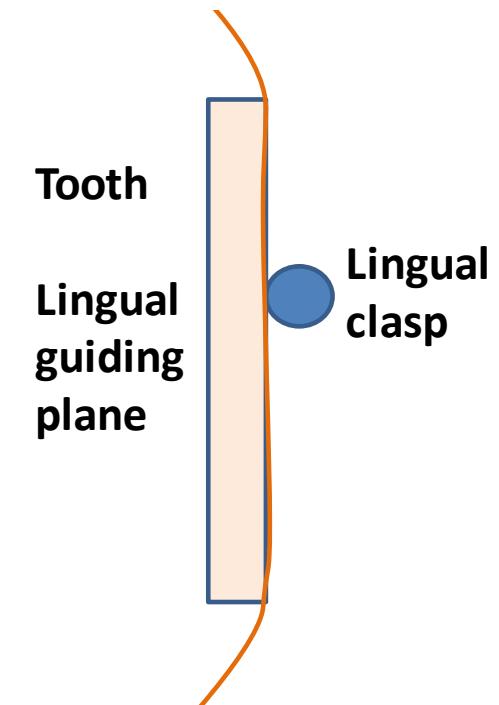
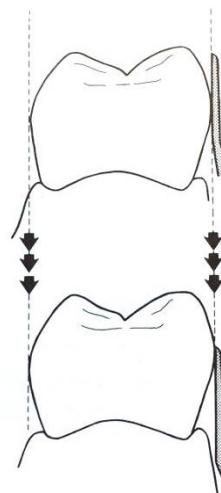
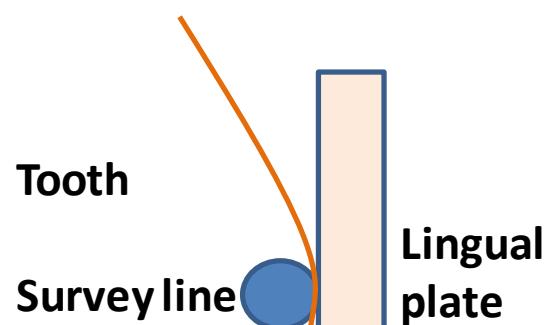
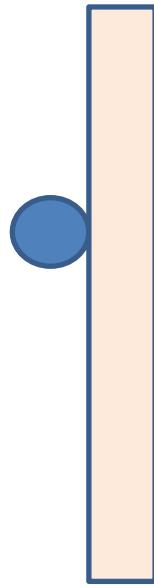


# Modify Survey Lines: Reciprocation

- Reciprocation to brace tooth needed as retentive clasp passes over survey line.
- Reciprocating clasps:
  - Need guiding plane.
- Reciprocating lingual plate:
  - Need low survey line so top of plate will not be positioned too occlusally.
- If clasp or plate is too high on tooth, can interfere with occlusion as well as not bracing retentive clasp.



To effectively provide stability while retentive clasp is flexing over survey line, a line should guide along a plane.



# **CLINICAL USE OF STUDY MODEL**







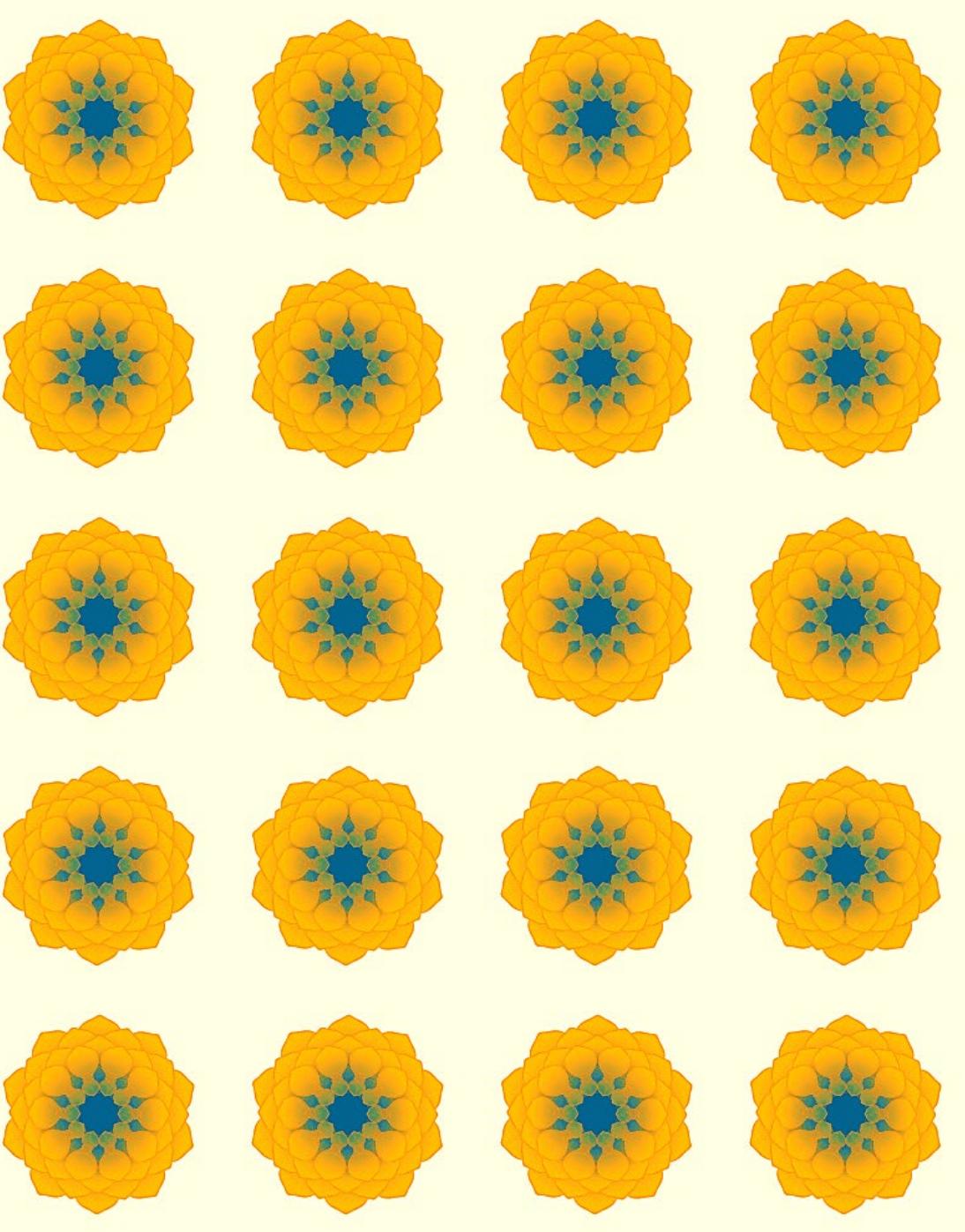




一輪の海

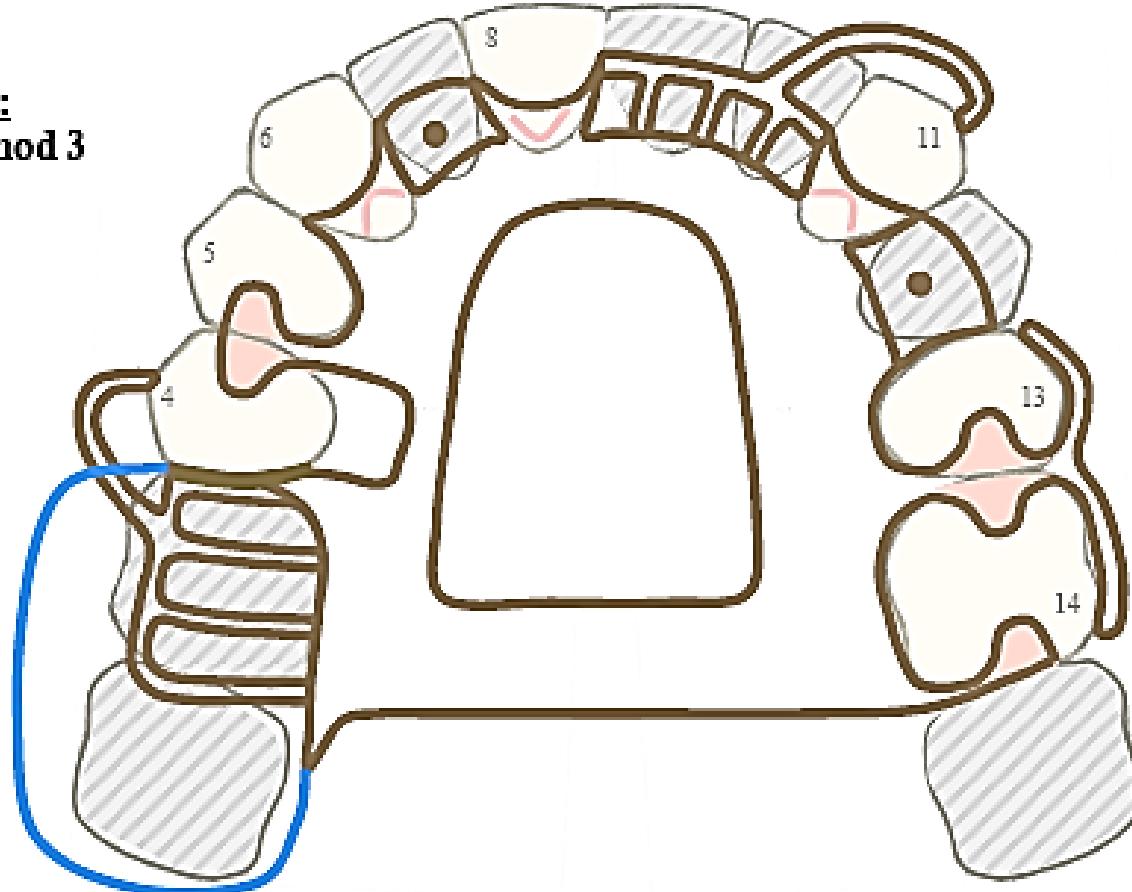


Three Small Fishing Boats on the Sea



MX  
PREPS

Design:  
Cl II, mod 3



Design has special aspects to  
maximize preps to cut.

## Preparations:

Red areas: solid lines and cross hatched areas.

-prep required by design.

R = rest seats

- occlusal,
- cingulum,
- alternate cingulum.

A = approach space for minor connectors leading to occlusal rests.  
(prep with needle-ended tapered bur)

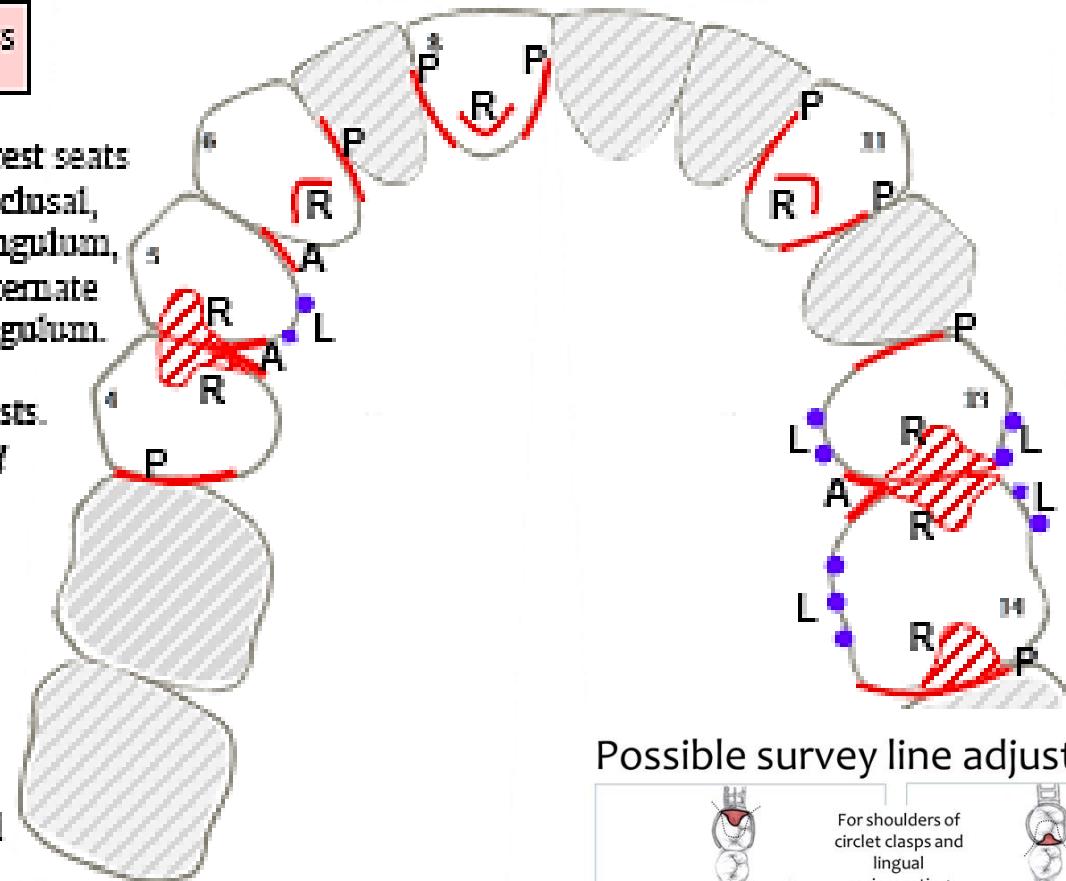
Purple areas: Dotted line

-may need prep adjustment.

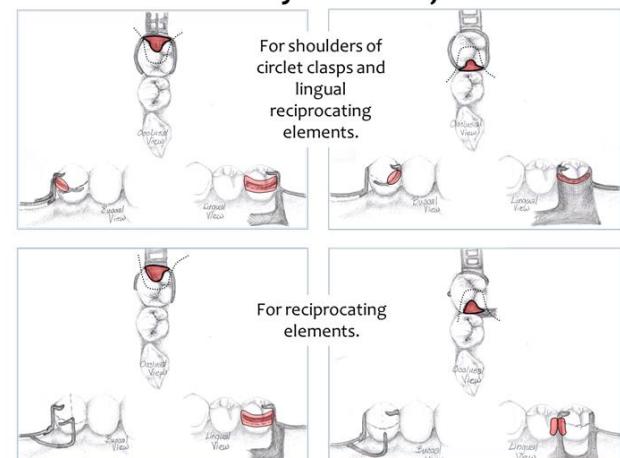
-determine by survey of study model duped from ivorine cast.

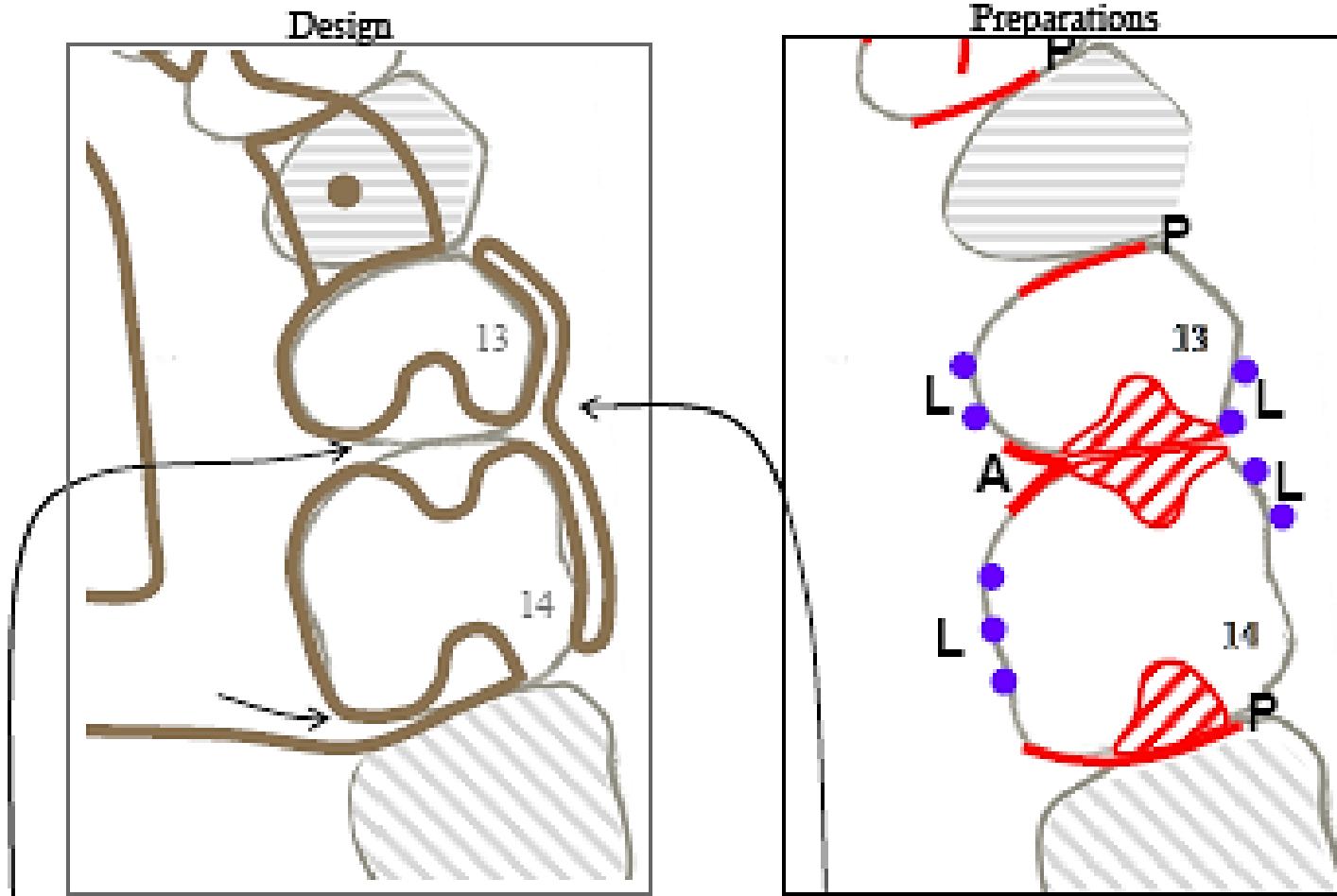
L = lower survey line for lingual reciprocation and shoulders of circlet clasps if needed.

(prep with tapered bur to lower survey line for lingual plate or clasp shoulders)



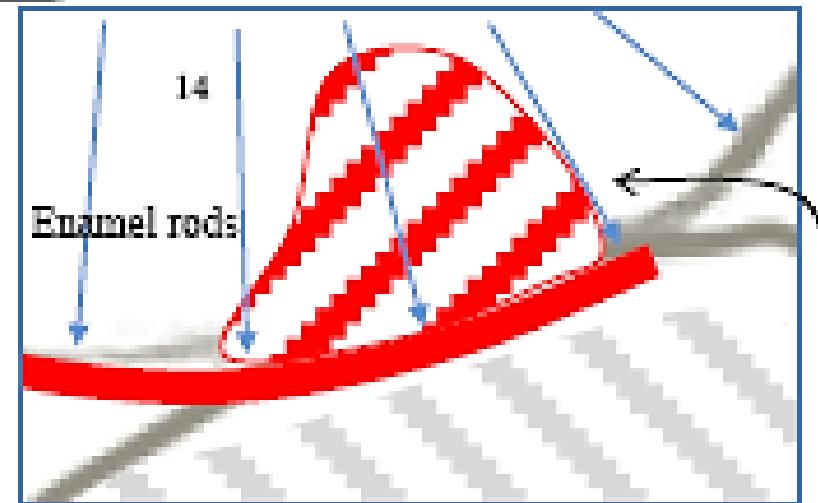
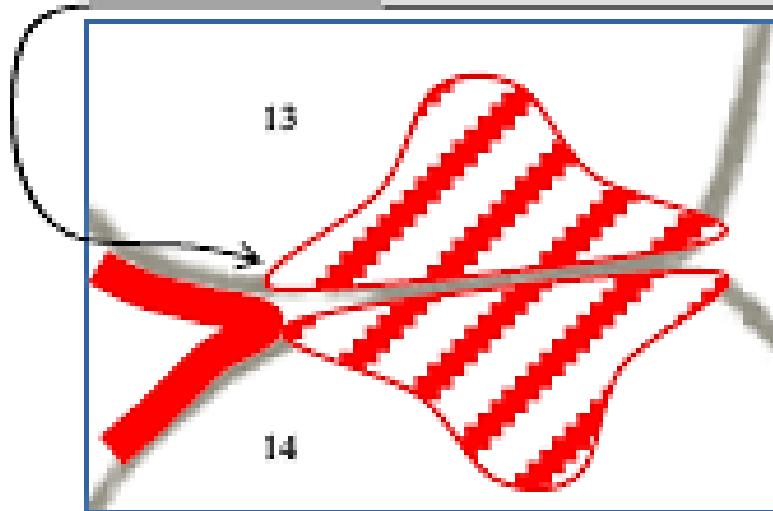
Possible survey line adjustments





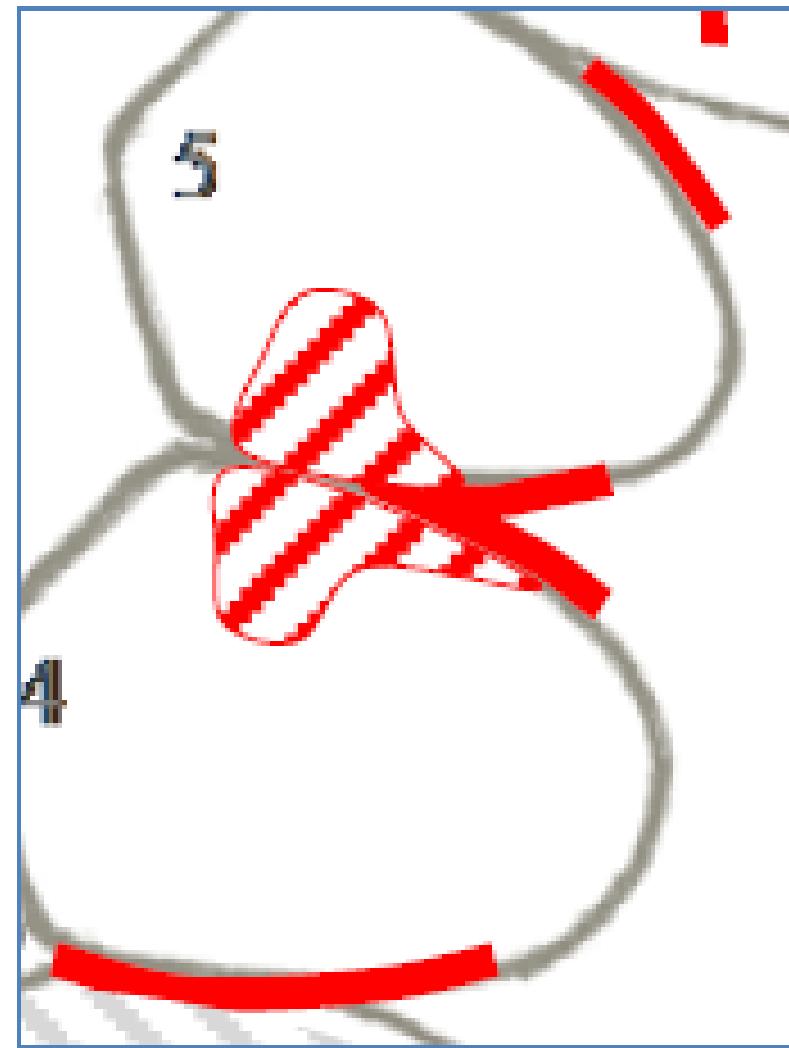
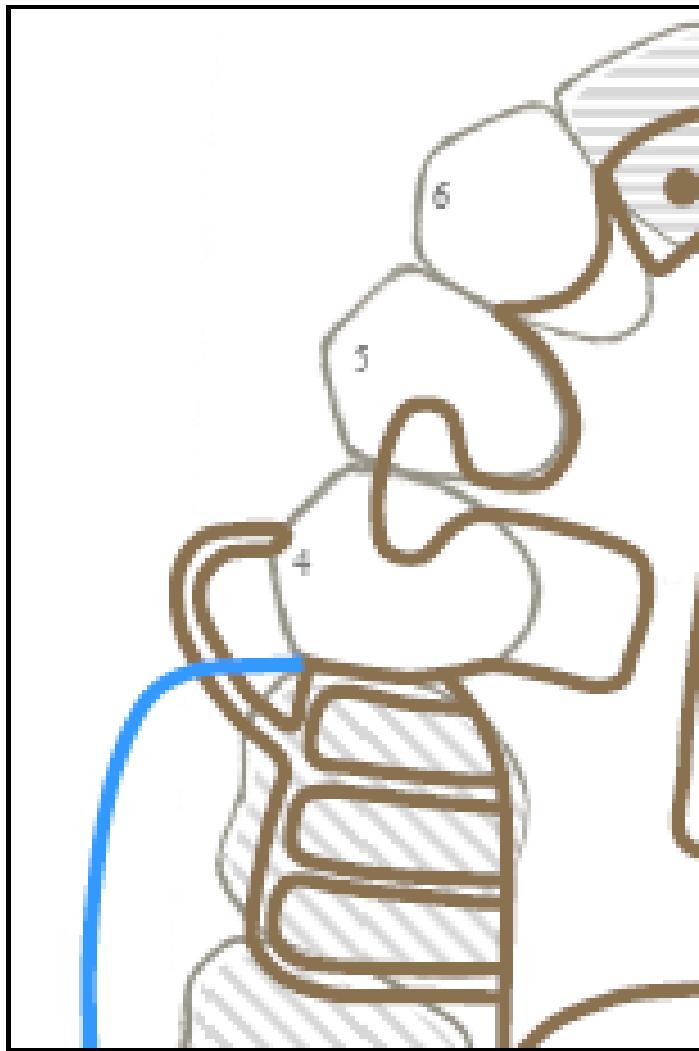
Compare the design and preparation diagrams above and correlate the framework components with the corresponding preparations. Look at the rests of the embrasure clasp on 13 and 14.) Remember that the metal of the minor connector linking the rest with the major connector of the framework must have space for an approach path, and also has to have a pass through space to the buccal for the circlet clasps. The cut rest seats in red show the flare to the lingual and buccal to allow for these needs.

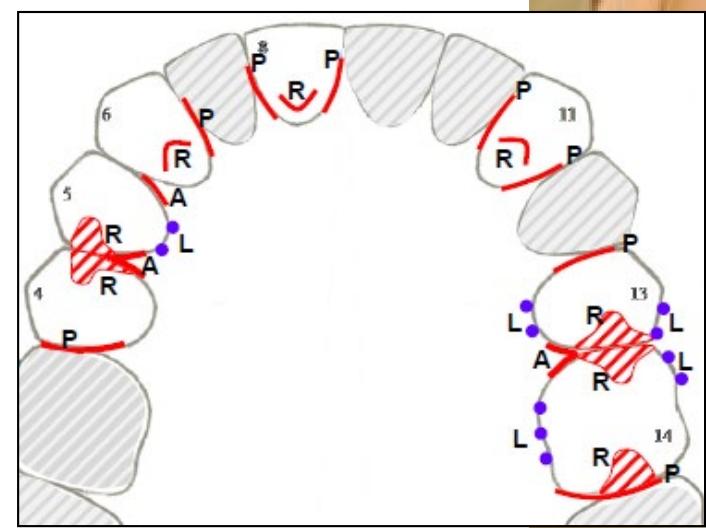
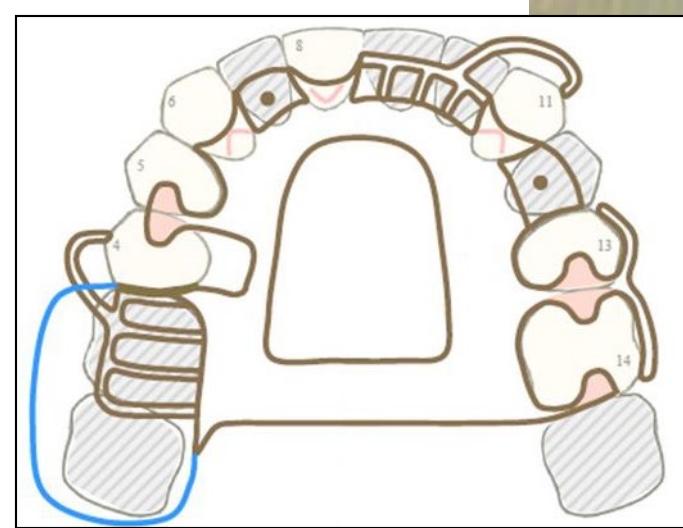
seats in red show the flare to the lingual and buccal to allow for these needs.

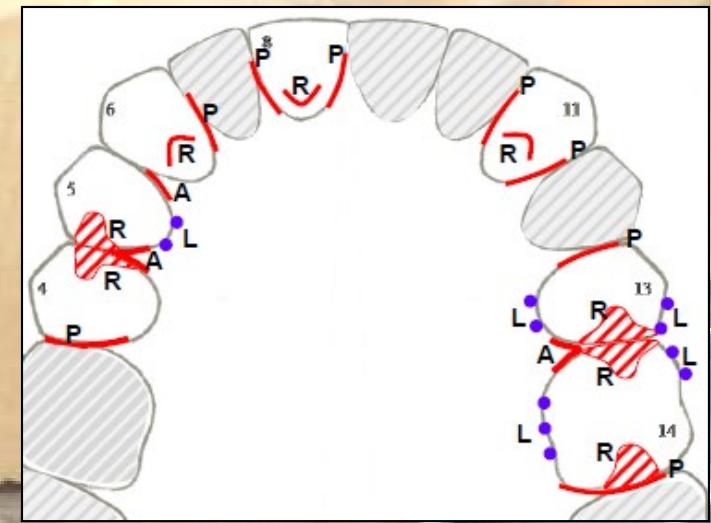
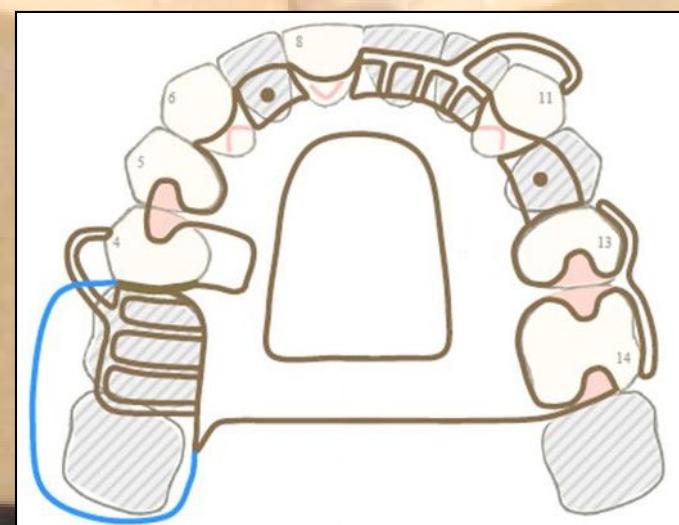


Now look at the DO rest on 14. It also has a metal approach minor connector (look at design diagram), so the rest seat has a lingual flare to allow space for it. But, unlike the rest seats of the embrasure clasp on 13 and 14, there is no buccal flare, no pass through, because there is no clasp passing around the DB line angle.

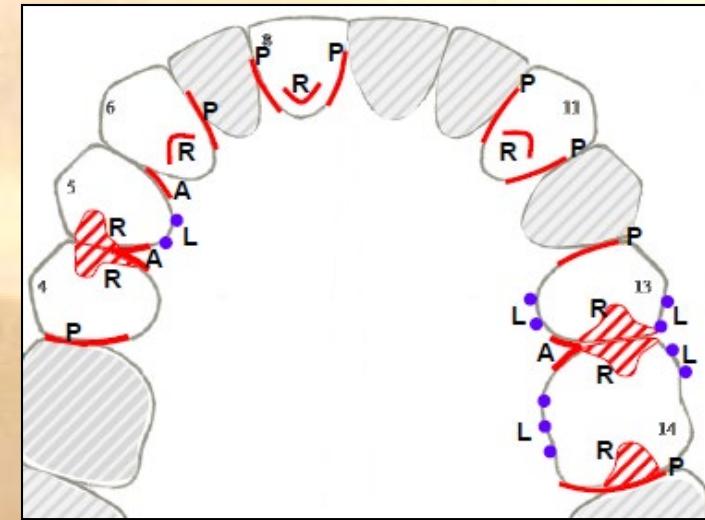
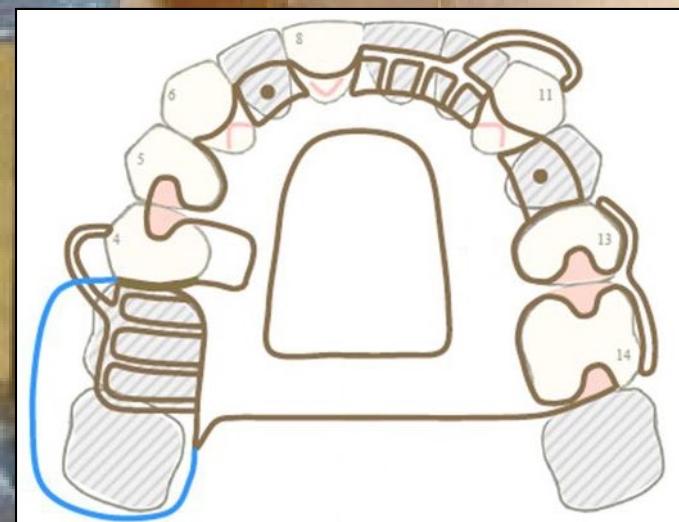
Instead, the buccal wall of the rest seat is cut parallel with the enamel rods, forming a right angle with the tooth surface. This avoids unsupported enamel. If there is no indication for a buccal flare, ie a suprabulge clasp extending from the rest, it should not be cut. Hence the line angle of the tooth is preserved.



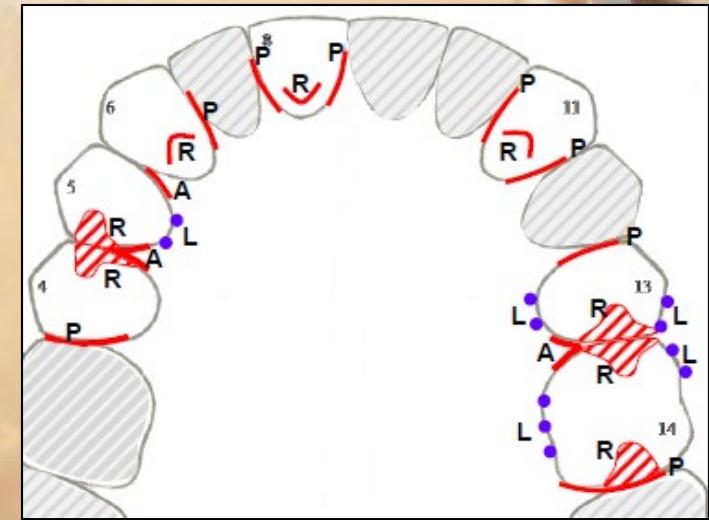
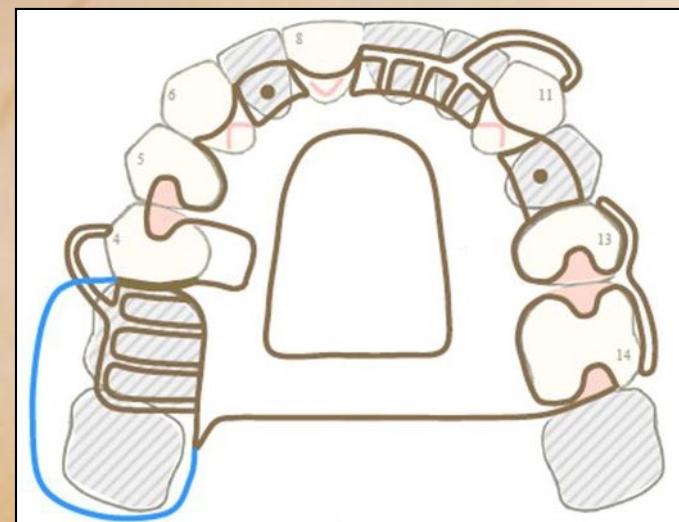




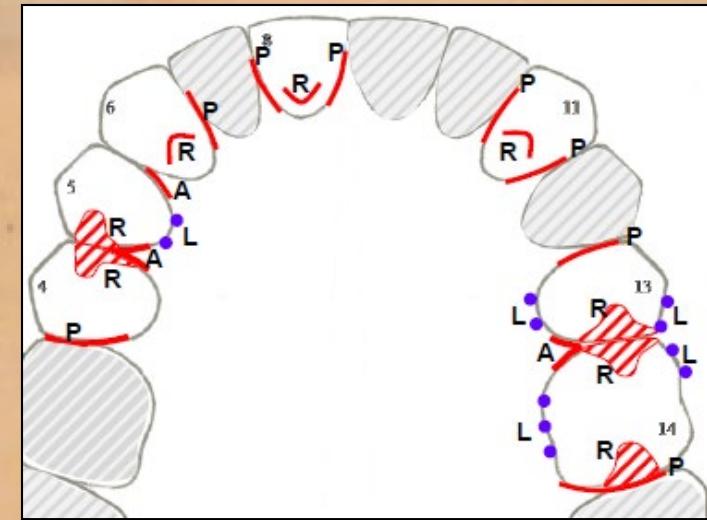
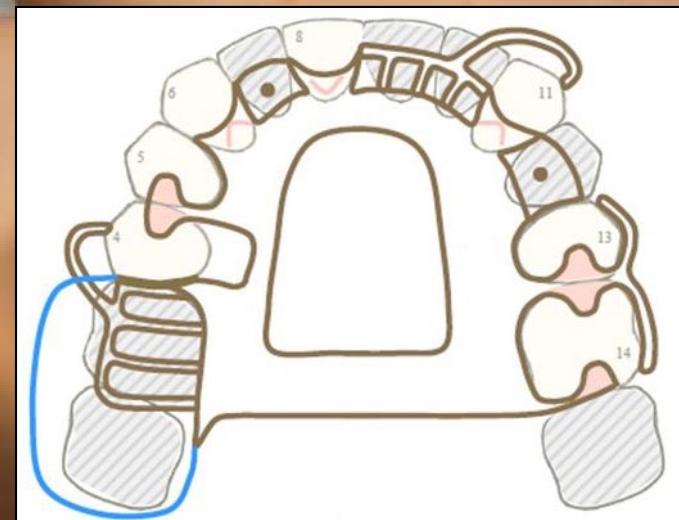




















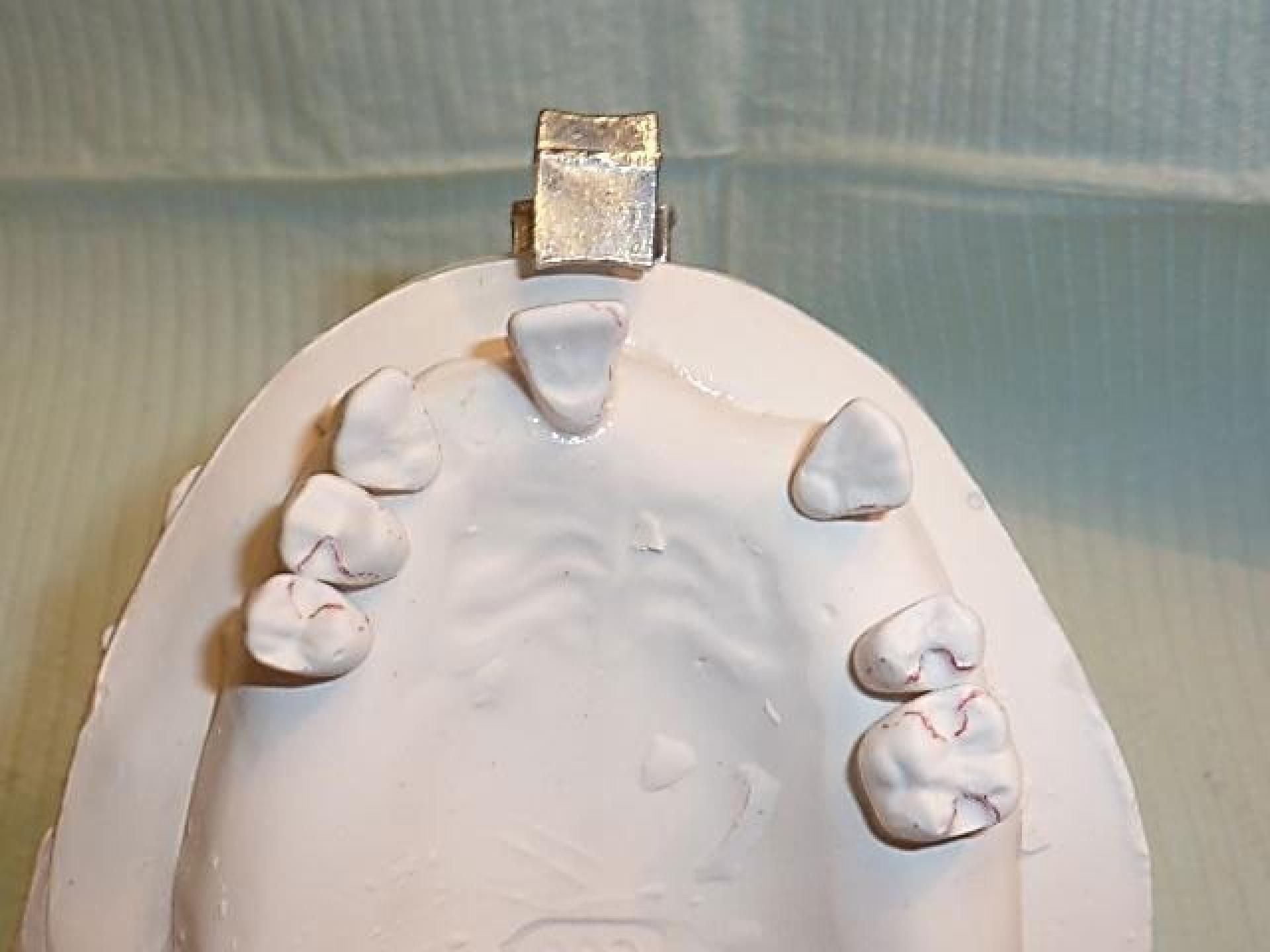






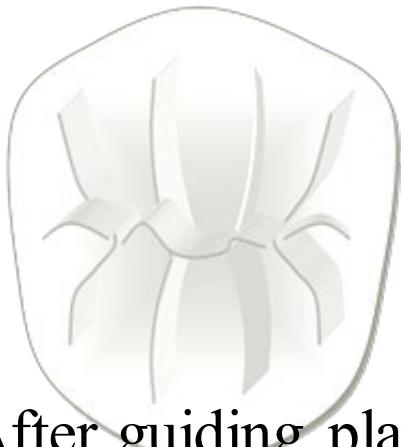
**You may remove typodont from phantom head at any time to place on survey table to judge your progress.**

**You may not cut ivorine teeth outside of phantom head.**

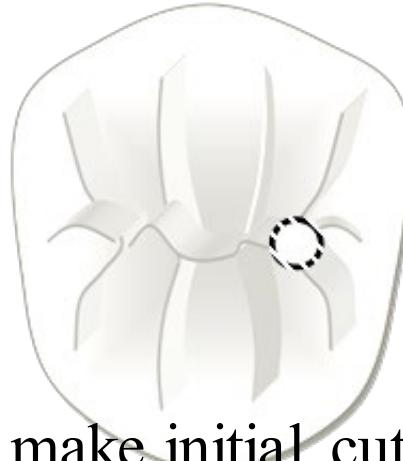




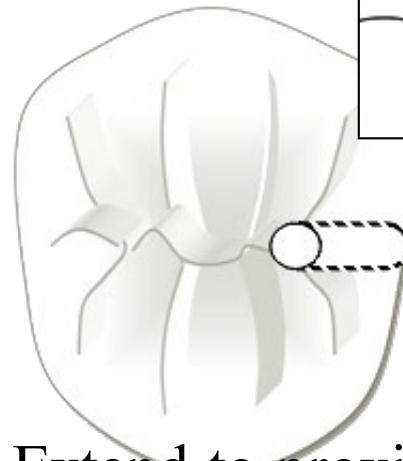
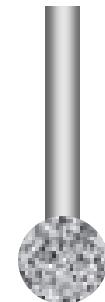
# Occlusal Rest Seat



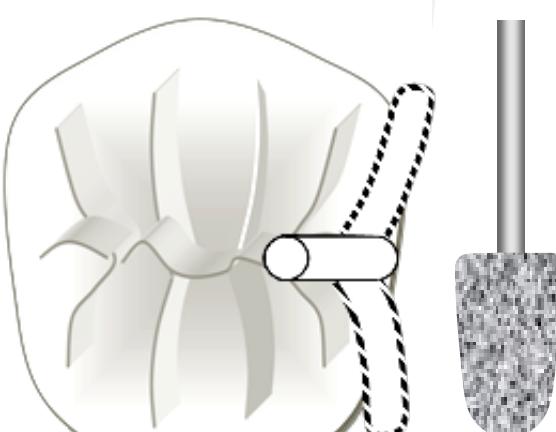
After guiding plane has been prepped...



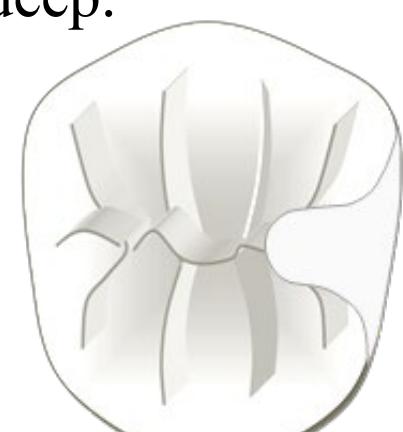
make initial cut in fossa about 1mm deep.



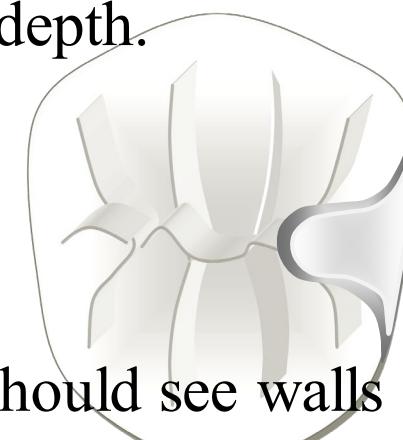
Extend to proximal surface at same 1mm depth.



Flare cut to lingual (and buccal for circlet clasps).



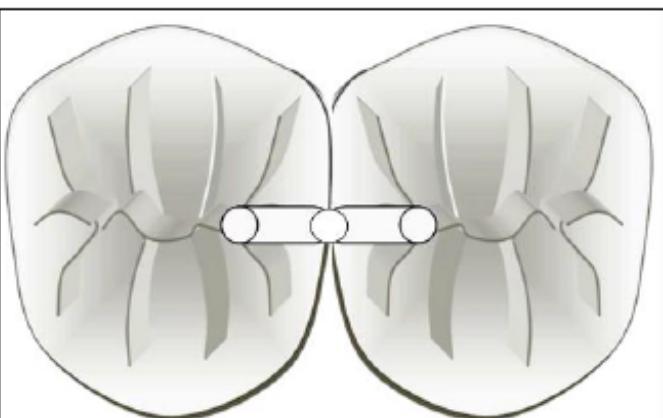
Rest seat has reverse S shape.



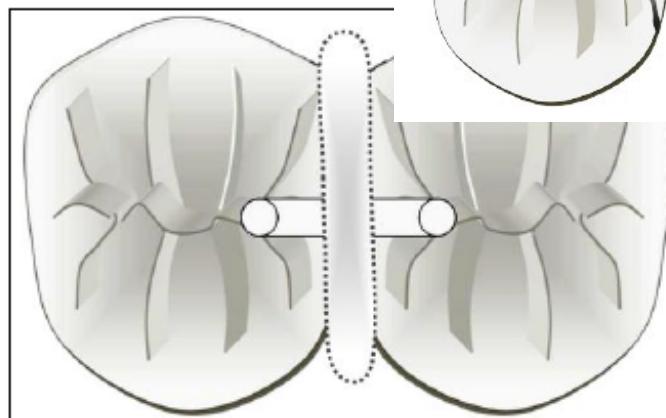
Should see walls and line angle of floor, walls divergent.  
Deepen fossa. Polish.



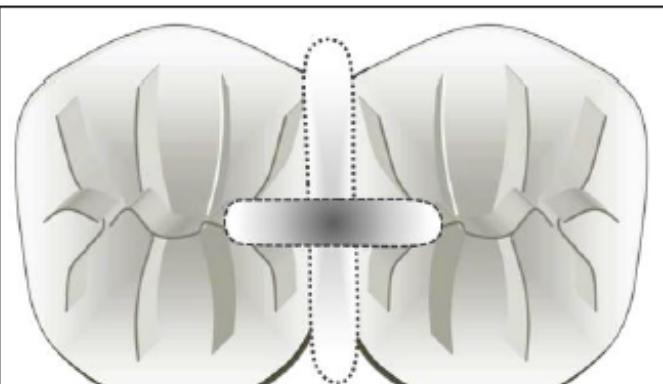
# EMBRASURE REST SEATS



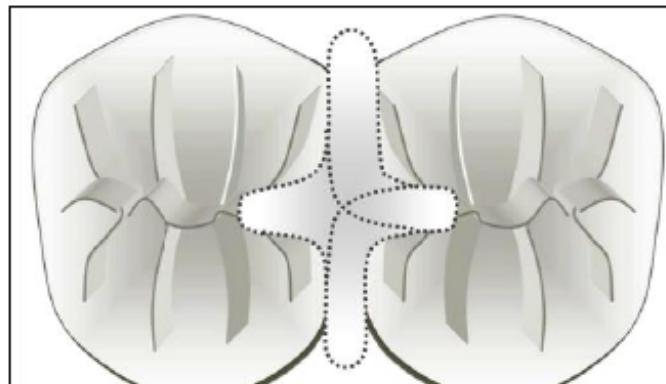
Using round diamond, go to 1mm depth in fossae and at marginal ridges. Connect the three pilot holes. The fossae holes will be more apically positioned than the marginal ridge.



Using mushroom, make a channel 1mm deep passing though lingual and buccal embrasures.

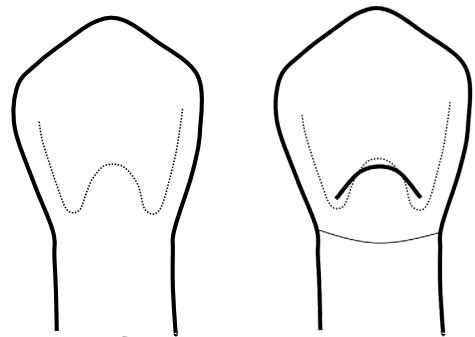


With mushroom, join fossa pilot holes, maintaining the hole depth slightly deeper than the ridge.



Join the fossa pilot holes with both buccal and lingual embrasure channels, slightly deepening the preparation and flaring walls for divergence.



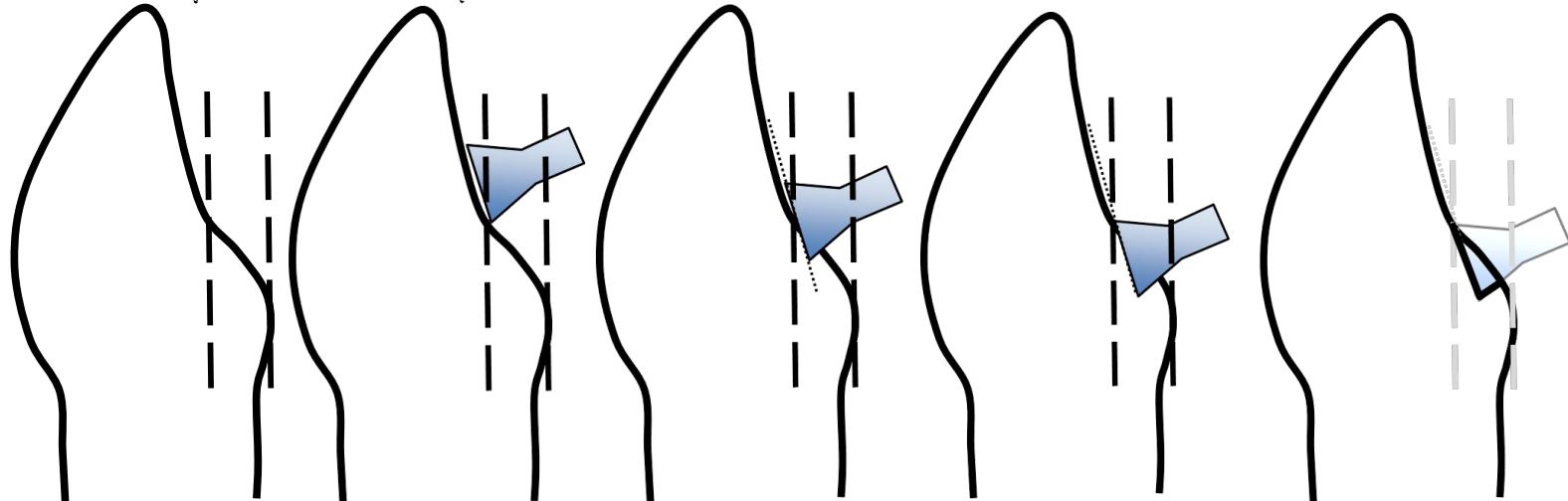


### Cingulum Rest Seats:

Use inverted cone bur aligned with slope of lingual surface.

Travel down into cingulum at that angle.

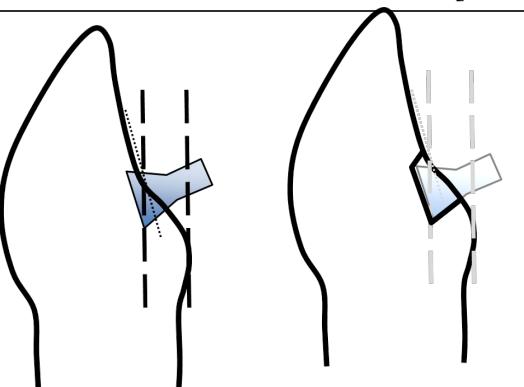
Don't go straight down into tooth.



**Don't go straight down into tooth.**

**Prep will be undercut.**

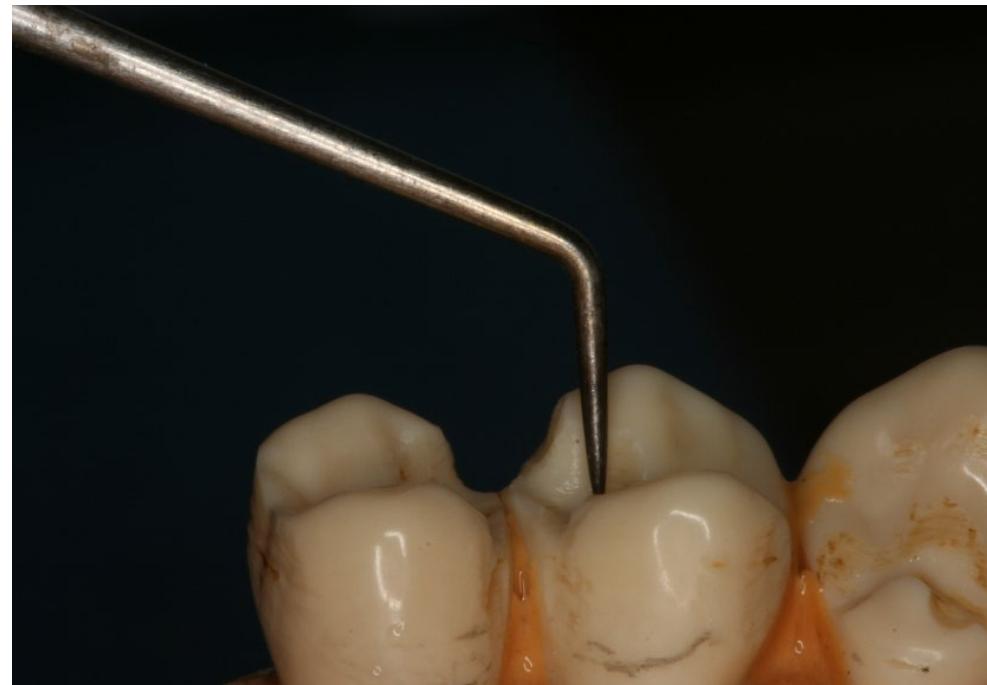
**Cut too far into tooth will expose dentin.**



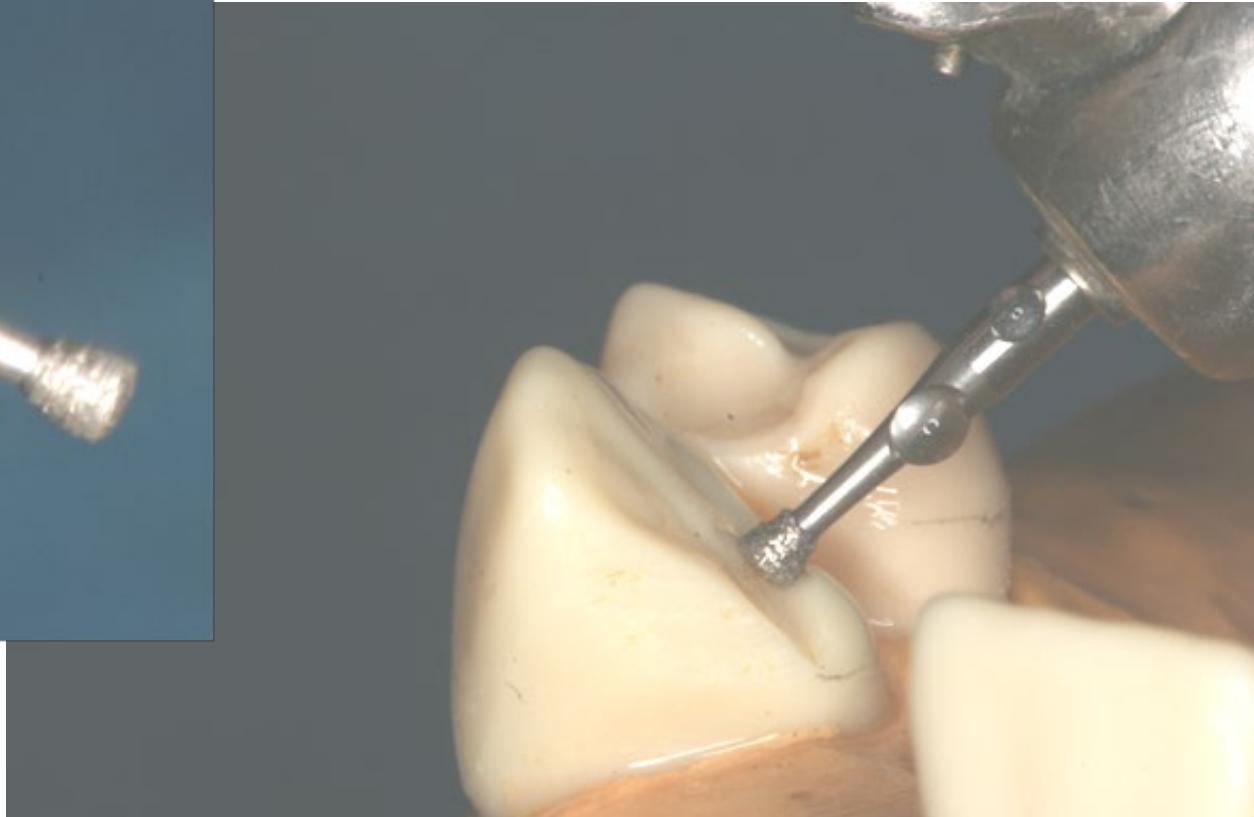
Taller than posterior guide planes, but placed more lingually. Also should be parallel to posterior guide planes.



Testing for positive rest seats. With explorer run tip from ridge to seat center and feel for dip, or from center to ridge to feel explorer rise.

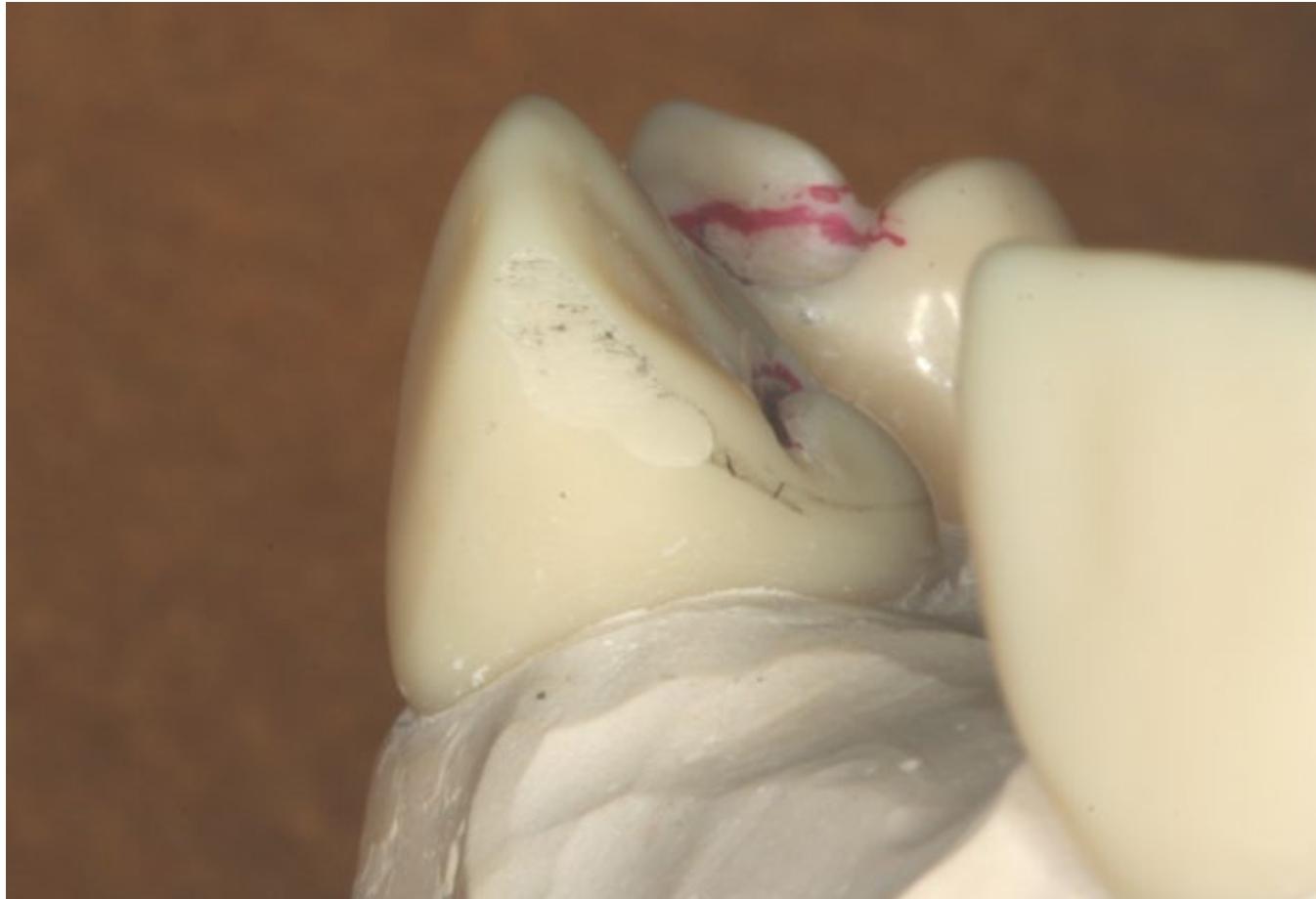


Orientation of inverted cone bur. Start at the top of the cingulum and advance at an angle, down and to the lingual.

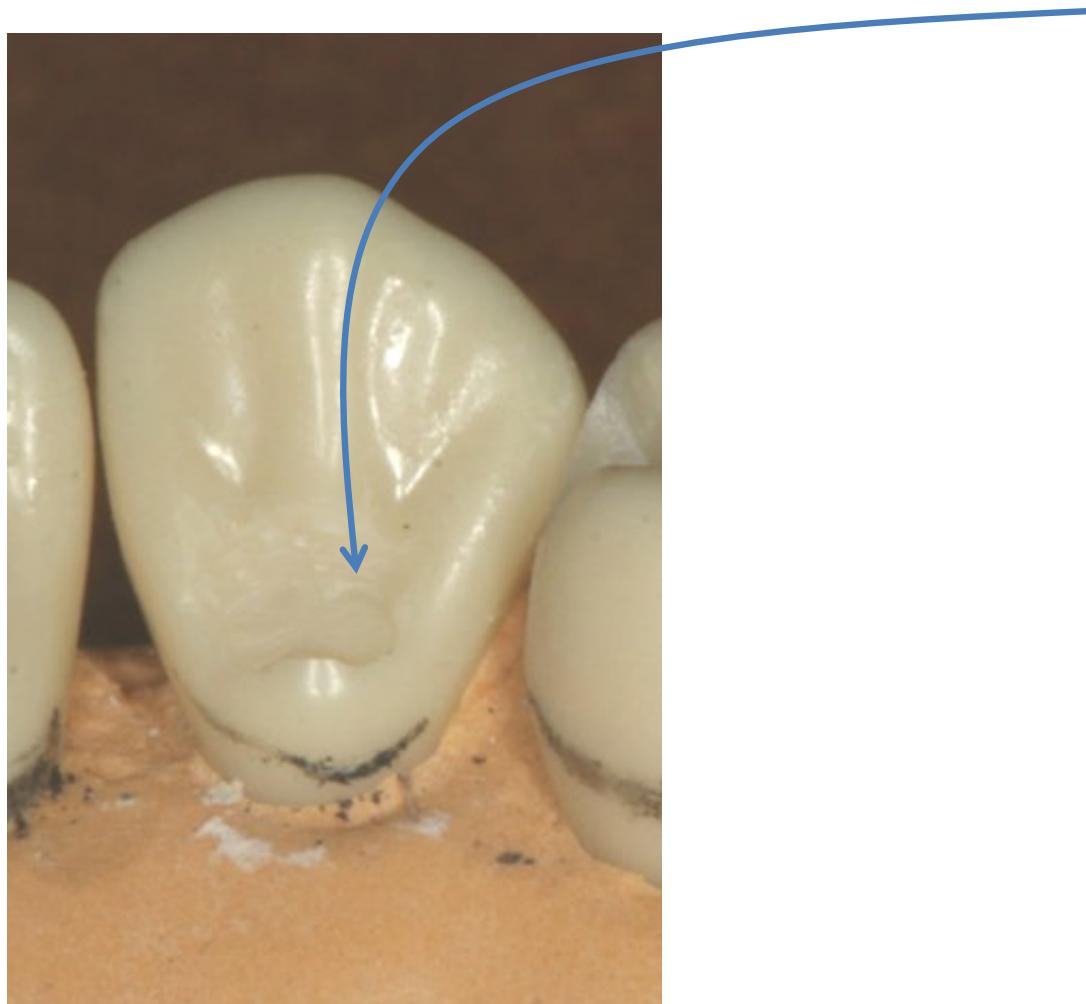


Good cingulum. Very little tooth structure cut laterally. There are no incisal undercuts so little finish is needed to blend into the lingual surface of tooth.

However, mesial guide plane could be better.



Prep too rough;  
Cingulum rest started too low and went  
into the tooth- see the top of the cut?



Cingulum rests:  
overall very nice, but should have  
stopped at marginal ridges, so are a  
little too wide.



Nice cingulum rests:  
appears straight from occlusal, chevron from lingual.



**Canine Cingulum rests:**  
too low, crooked, 11 not blended  
Nicer cingulum rest on 8, but did not follow design-  
should be alternate cingulum rest.

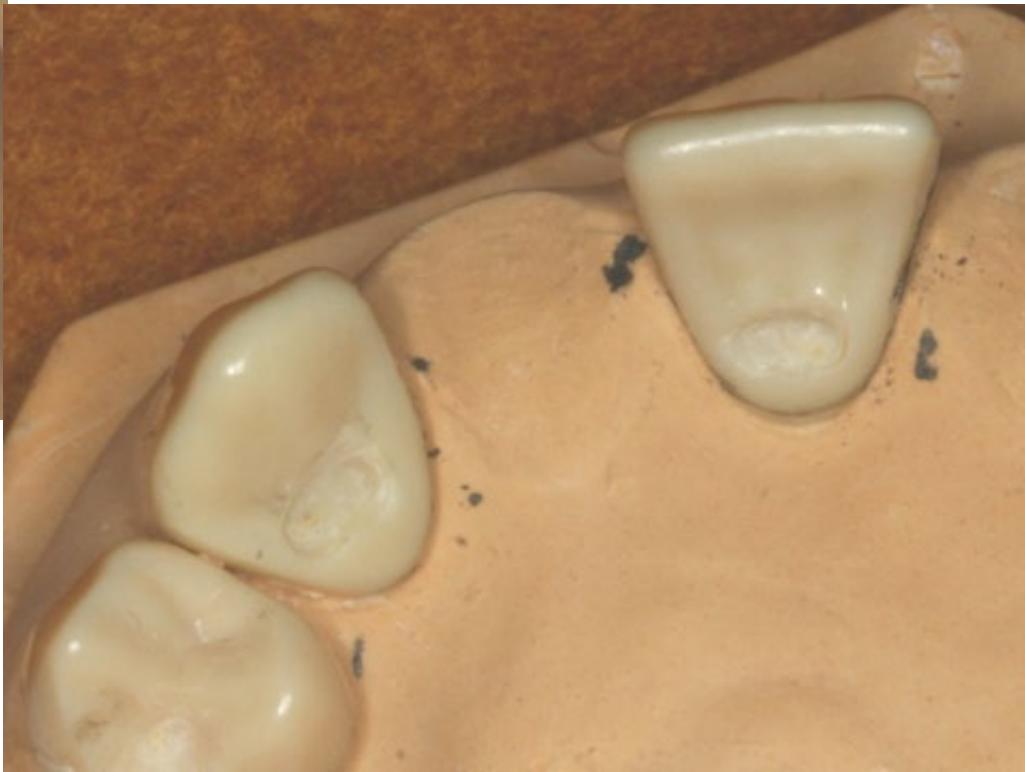


# Cingulum rests:

undercut, too high, too far into tooth;

Looks like inverted cone bur just drilled into tooth.

Wrong prep on 8, should be alternate cingulum rest.



# Cingulum Rests:

left, incorrect; right, nice:



# Cingulum rests:

too high, too much lingual tooth taken away to blend incisal-see how far they had to go to get rid of undercut?



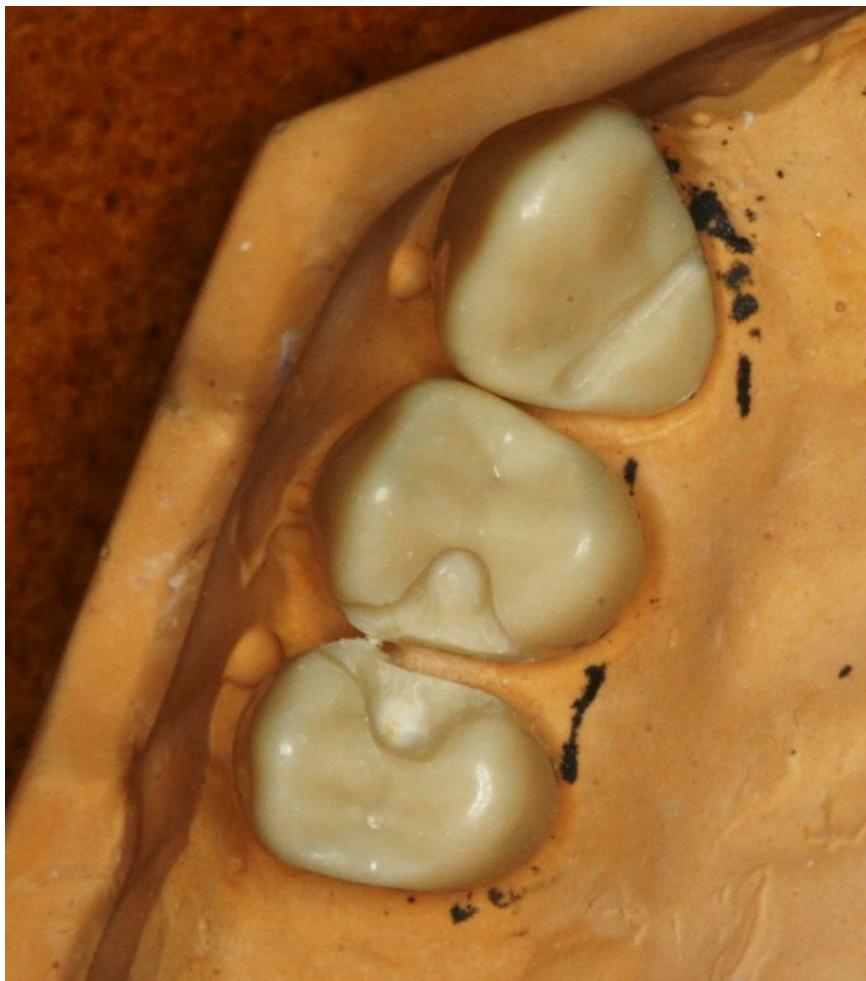
# Cingulum rest seats:

left picture, cingulum rest seat too low, not positive.  
Canine on right has very nice alternate cingulum rest  
seat, but this is wrong rest seat for tooth



## Occlusal rest seats, embrasure clasp assembly: 13 and 14 on our case.

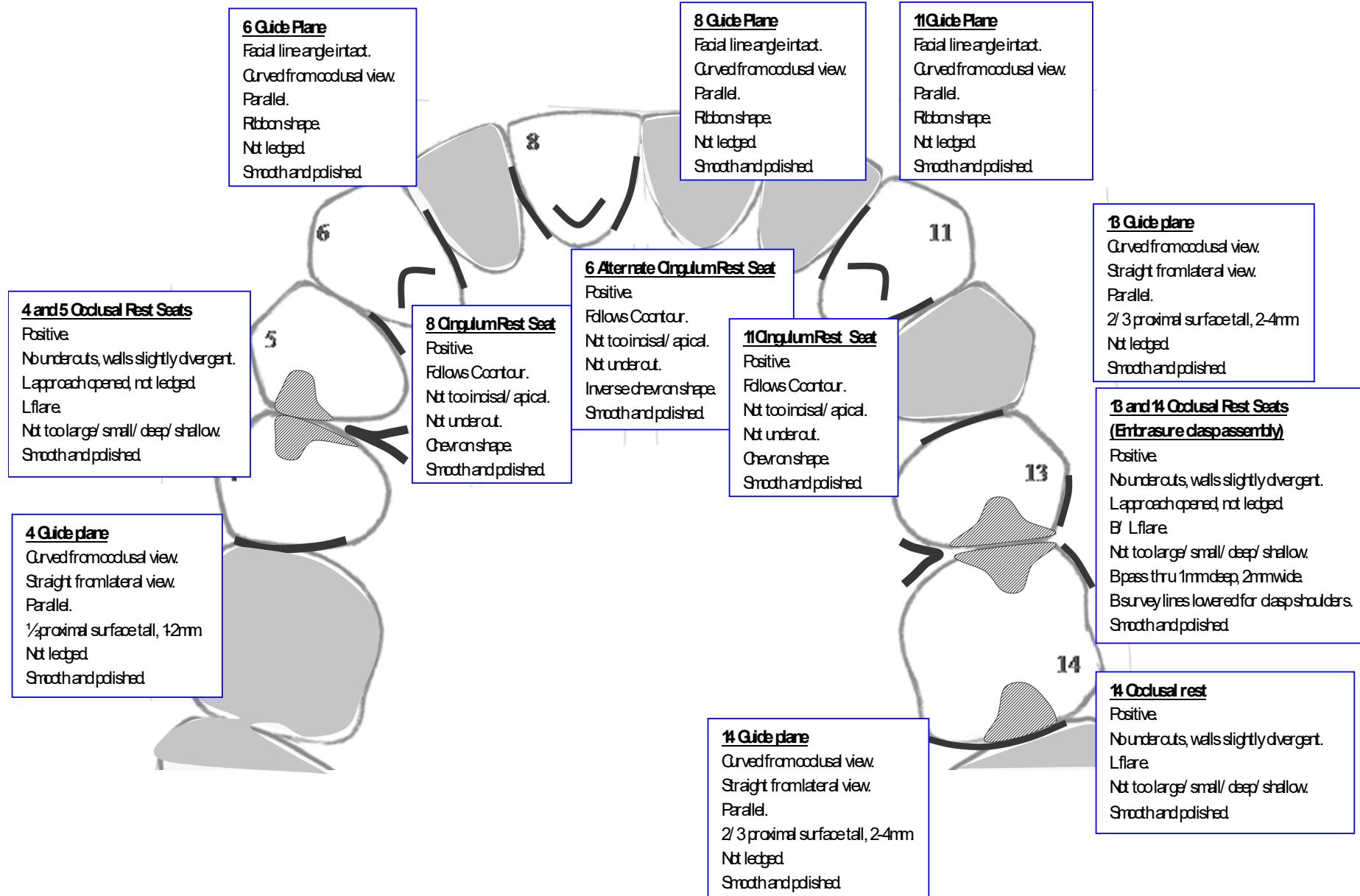
aggressive cutting of floor,  
walls are undercut, fossa pits, destroyed  
the interproximal surfaces when  
opening up lingual embrasure space for  
minor connector approach



nice form, flared to buccal and lingual  
for pass throughs, walls not undercut  
because can see the, smooth flow  
from rest floor to divergent walls



# Mk RPD Mouth Prep Guide





*The Great Wave off Kanagawa*

HOKUSAI