Scour Depth Guidance for BFI's

The following criteria is provided for guidance when addressing bents that may be vulnerable to deep scour. Such bents must have an elevation difference of 10' or more between their proposed ground elevation and the deepest scour elevation at any point across the bridge that satisfies the criteria below.

Please note that if pile footings are utilized, the proposed ground line should be the bottom of footing elevation provided by the structural engineer. However, if not available, assume 5 ft below the proposed groundline shown on the preliminary bridge layout.

Bent Location	Criteria
End Bent	End bent location is within 30 feet from the closest point with deep scour as defined above
Intermediate Bent	Intermediate bent location is within 50 feet from the closest point with deep scour as defined above

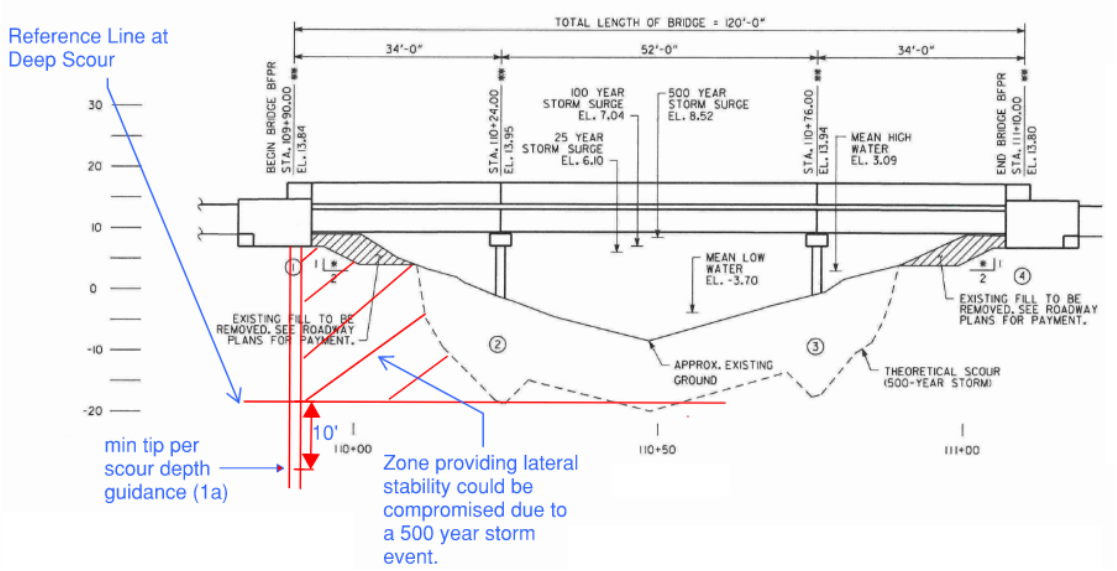
NOTE:

1. This guideline does not replace the GDOT minimum tip guidelines; it is an additional minimum tip guideline and therefore should be used in conjunction with the GDOT minimum tip guidelines.
2. This guideline is not changing the scour elevation on the preliminary bridge layout, therefore scour loads should be evaluated based on the bent scour lines on the layout.
3. This guideline does not apply to non-scourable rock conditions for the life of the structure.
4. All mention of N values in this guideline refers to uncorrected values.

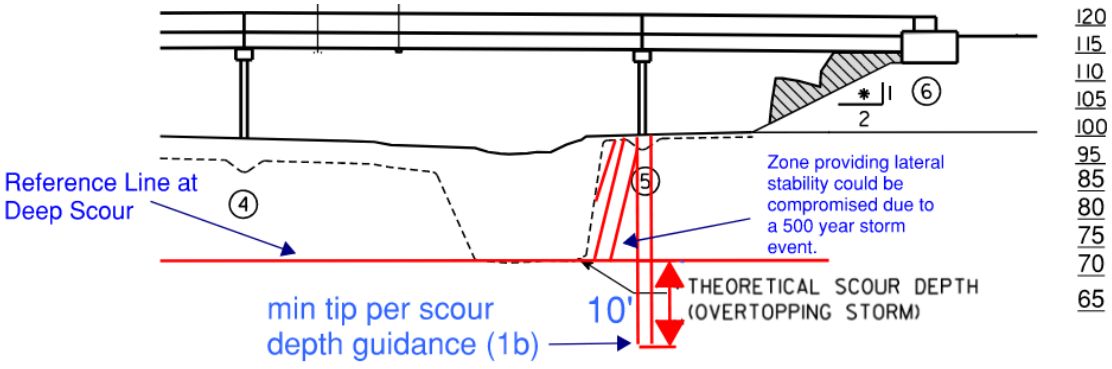
Guideline 1 - If able to drive through materials to minimum tip:

(Examples of non-drivable material – PSC/MS piles advancing through 35+ bpf material or HP piles advancing through 50+ bpf material)

a) End Bents: extend a reference line from the deepest scour elevation to the end bent adjacent to deep scour. To ensure adequate lateral stability, set pile minimum tips at least 10 ft below the reference line.



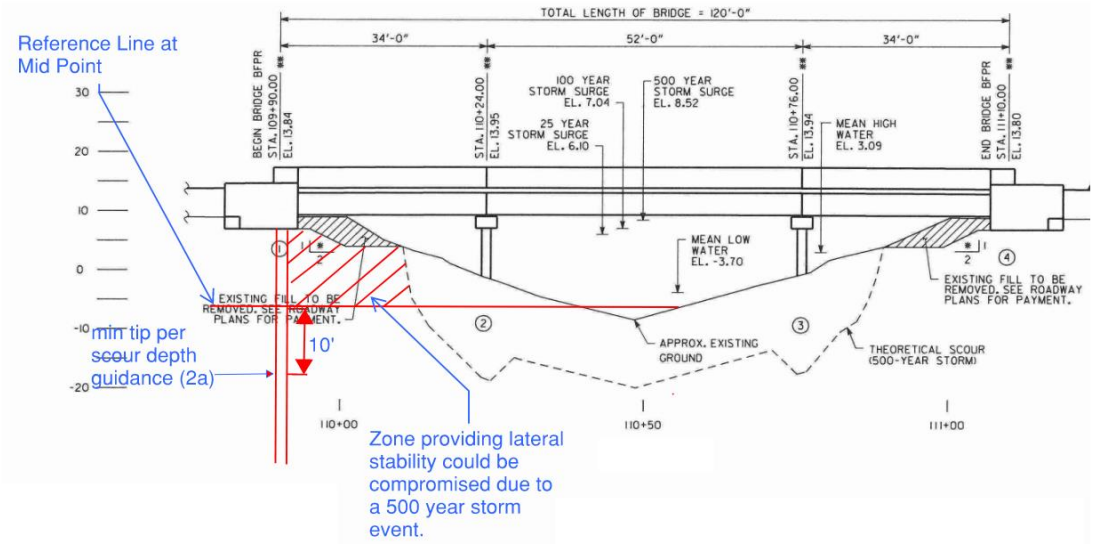
b) Intermediate Bents: extend a reference line from the deepest scour elevation to the intermediate bent(s) adjacent to deep scour. To ensure adequate lateral stability, set pile minimum tips at least 10 ft below the reference line.



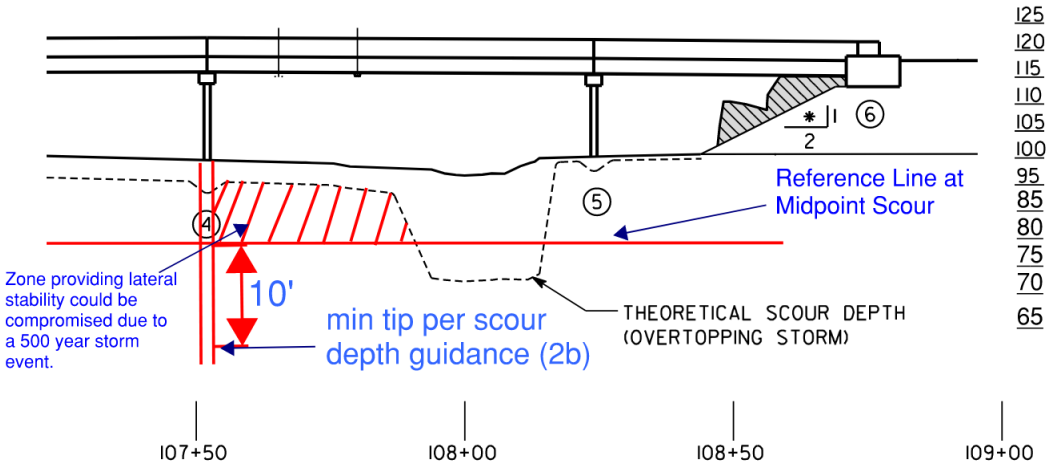
Guideline 2 - **If the driving of piles require aid (Example: pilot holes, pre-drilling, spudding, jetting, etc.):**

(Examples of material that will require aid during pile driving – PSC/MS piles advancing through 35+ bpf material or HP piles advancing through 50+ bpf material)

a) End Bents: Take the mid-point between the ground elevation/bottom of cap elevation at the end bent and the deep scour elevation adjacent to the end bent as the reference line. To ensure adequate lateral stability, set pile minimum tips at least 10 ft below the reference line.



b) Intermediate bent: Take the mid-point between the intermediate bent scour line(s) adjacent to deep scour and the deep scour elevation as the reference line. To ensure adequate lateral stability, set pile minimum tips at least 10 ft below the reference line.



Guideline 3 - Case by case basis

If deep scour is still a concern and the two guidelines above cannot be applied, please bring this to the attention of a senior geotechnical engineer or geotechnical department head for further instructions.