



## **Pile Material Recommendations**

Common pile types that can be used effectively for Texas bridges include steel H-piling and square prestressed concrete piling.

When piling is in contact with soil or water known to be corrosive, prestressed concrete piling fabricated with High Performance Concrete (HPC) is recommended over steel piling.

## **Pile Use Recommendations by Bridge Site:**

### *Grade Separations:*

Trestle bents are not recommended for grade separation bridges since they are seen as vulnerable to vehicular impact, but can be the right foundation type in select situations. If used, concrete piling is preferred over steel H-piling.

Both steel and concrete piling can be used for pile-supported footings and abutments in grade separation bridges. If historical cost data doesn't clearly point to one pile material having an advantage over the other, providing alternate designs with both steel and concrete helps ensure low construction cost.

### *Stream Crossings:*

Foundation elements for stream crossings are subject to scour, drift impact, and corrosion. Both steel and concrete piling can be used for stream crossings, with some restrictions. For instance, trestle bents should not be used in streams if the scour analysis predicts excessive exposed pile length during the expected structure life, where there is evidence or history of drift load, or in the case of steel pile trestle bents, in corrosive soil or water environments. Likewise, pile supported footings should not be used for stream crossings if the scour analysis indicates the piling would be exposed excessively during the expected structure life.

When using steel piling for stream crossings, it is recommended to require, by plan note, that the piling be coated to a minimum depth of 15' below the maximum predicted scour elevation (for trestle bents) and for 15' below the bottom of footings (for pile-supported footings). The specified coating can be found in Item 407 "Steel Piling". Piling can be used for stub-type abutments in stream crossings.

### *Bay Crossings:*

Prestressed concrete piling fabricated with HPC is recommended over steel piling for all bridges in salt water.