

There are a number of issues regarding the Girard Road depressed area and the Tennessee Hollow section of the project.

It should be noted that at the time of Type Selection, the Girard Road profile dropped down to an elevation of approximately -1 foot elevation.

It should also be noted that constructing Girard Road at this elevation would result in significant intrusion into an artesian aquifer which passes under the entire area.

It is my understanding that subsequently, consideration was given to raising the profiles of Girard Road and the Doyle Drive NB & SB profiles in order to minimize the impact on the aquifer.

The effects of raising profile:

Boat section (Br. No. 34-0166):

1. Significantly reduced surface area for depressed section and reduced perimeter wall (retaining wall) requirements.
2. The height of Retaining Wall #17 will along the south side of Doyle SB roadway will increase.
3. Reduced intrusion into aquifer by eliminating the need for creation of a structural aquitard.
4. Elimination of temporary tension condition on piles during excavation.

Girard Road UC (Br. No. 34-0165L/R):

1. A raised profile will result in the need for retaining walls to contain the Doyle NB & SB roadways.

Tennessee Hollow (Br. No. 34-0164L/R, 34-0167 and 34-0168):

1. If abutment and pier location remain unchanged, the only significant change to the bridges is the profile.
2. An increased profile provides greater vertical clearance over the Habitat area and the Quartermaster Reach Trail. This may allow for increased structure depth and longer spans, thus reducing the number of foundations. Relocation of piers would likely require modification of the channels within the Habitat area which has met with considerable resistance. The minimum elevation of the Quartermaster Reach Trail should also be raised, perhaps bringing it above the high tide elevation.
3. Raising the profile of Doyle NB & SB should slightly improve conditions in the event of a tsunami. The minimum deck elevation has been held to 13'-2" in order to provide protection from flooding in the Main Post Tunnels. Profile grade at the west end of the bridges will increase, providing more protection.

Habitat:

1. As previously stated, an artesian aquifer passes under the entire area. This aquifer has an hydrostatic head of approximately 13 feet. Original ground elevation is approximately 10 feet. The natural aquitard consists of a layer of Bay Mud in the vicinity of +2 feet to -4 feet. The Habitat grading plan calls for excavation of the channels to a minimum elevation of approximately 1 foot. If the pressure head in the vicinity of the excavated channels is as indicated, the removal of approximately 9 feet of overburden creates a significant risk of rupturing the natural aquitard. Additional investigation should be done prior to grading the Habitat area to ensure the aquifer is not compromised. The Pile Installation Test project, recently conducted, may provide insight into the actual conditions in the Habitat area.