

5 WIND/WAVE BASED TOP OF LEVEE ELEVATION

For design purposes, all modeling results for wave height and wind setup have been converted from meters to feet. The values given in this section of the report will all be reported in feet. Vertical elevation is in NAVD 88 Datum.

5.1 Design Cross-Section

The preliminary design of the OHB levee assumes the 1% ACE and 0.2% ACE SWL to be maintained at the same elevation of 922.2 ft. The required levee height above the SWL for the current design includes an estimated 4 ft for wind-wave induced height and estimated 0.5 ft for geotechnical settlement of the levee for a total of 4.5 ft. This sets the top of levee at 926.7 ft. The preliminary levee slope design to meet stability and access requirements includes a 1V:4H slope for the exterior side (flood-side) and a 1V:5H slope for the interior of the levee. See Figure 34 for a drawing of a typical levee section.

More recent hydraulic model runs indicate the water surface in the staging area could peak at a slightly higher elevation of 922.5 ft for the 1% and 0.2% ACE events. The wind-wave modeling was performed assuming the water surface was at elevation 922.5 ft and the recommended wind/wave based top of levee assumes a height above this elevation.

One additional important aspect of the design is that the top of levee for OHB must be adequately above the overflow spillway embankment to the west. The preliminary plan for this spillway embankment is to set it at an elevation of 0.5 ft above the 0.2% AEP water surface of 922.5 ft. The OHB design would want to ensure that the ring levee does not get overtopped until an extreme event well beyond the trigger level for the overflow spillway.

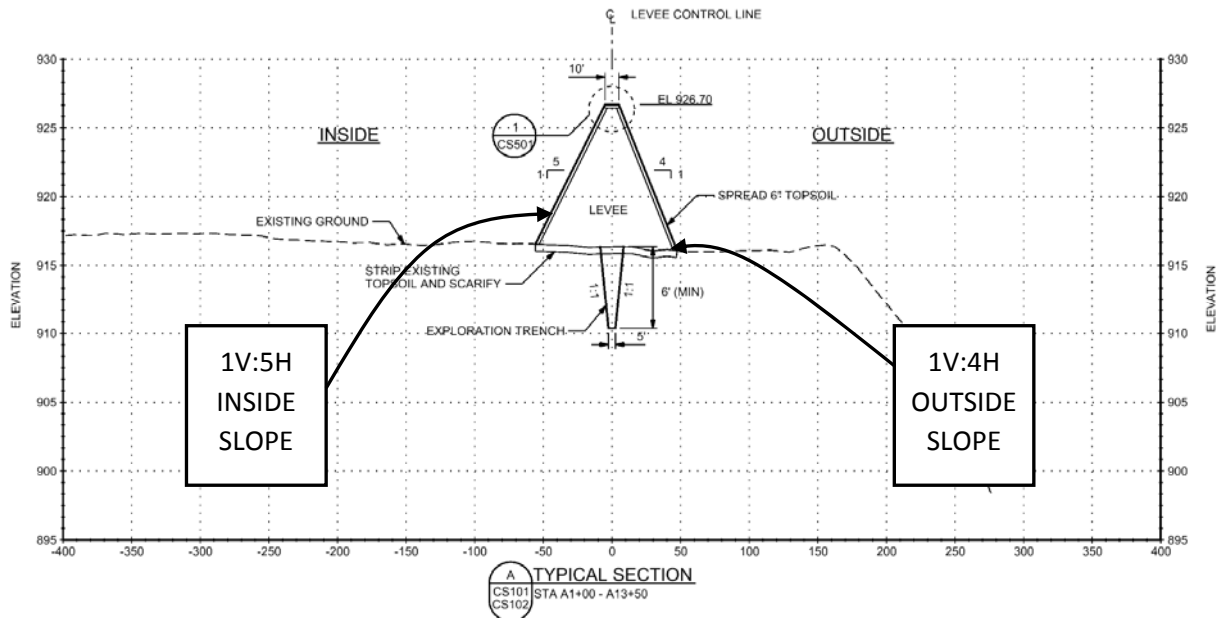


Figure 34 – Preliminary Plan Drawing of a Typical Section of the OHB Levee.