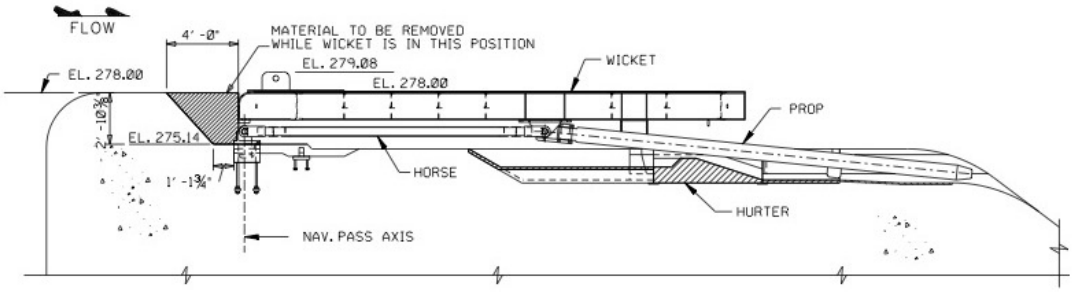
FAQs – Wicket Cleaning System

Last updated August 30, 2023

What are the dimensions of the area that needs to be dredged? What is the width and length along with the approximate deposit thickness of material that needs to be pumped?

The trench is 1400' long and wedge shaped. It is 4' wide at the top, 1'-1 ¾" at the bottom, and 2'-10 3/8" deep. It has been known to be filled full depth. Occasionally, with some small depth of material over the top of the trench. All of the material does not have to be removed to prevent the compaction while the wicket is being raised. Approximately 8" of material can remain in the trench and not cause an issue. Upstream and bottom surface is concrete. Downstream surface is steel and stainless components of the wicket.

Example:



ELEVATION - LOWERED WICKET GATE

What is the width of the Area of Sediment Compaction and the rate at which it fills with sediment after a cleaning? How frequently are the wickets raised and lowered?

The width of the sediment compaction is addressed by the drawing located at www.erdcwerx.org/wicket-cleaning-system/.

The wickets are raised and lowered from about 4 to 12 times per year. The sediment generally does not build up that quickly after cleaning. It may take a week or two in water conditions that are conducive to raising the wickets. If higher flows are experienced, it could likely fill up in a couple of days.

What information (qualitative or quantitative) can you provide for the sediment composition, sediment density, water temperature, and water visibility?

Please see the image below of material being dredged out of another area at the site. It is usually a silt, sand, and small gravel mix. Water temp varies from around 36°F to 87°F. Visibility is typically a few inches.

If the maximum trench depth is 30', what is the minimum trench depth when water levels are low?

Minimum depth would be approximately 20'.

What method do the divers currently use to remove sediment from the trench?

Typically, divers can scoop up the material and get it up into the current stream where it is taken away. Air lifts have been used when the trench is full.

Is sediment in the trench generally loose or is it compacted?

The sediment is generally loose enough to be removed.