



August 3, 2023

Brandon S. McNeal, P.E.  
Stantec Consulting Services

RE: Landslide Repair Project BEL-147-24.65/25.88, PID 118147  
BEL-147-25.88 - Proposed Drilled Shaft Wall Design

Brandon,

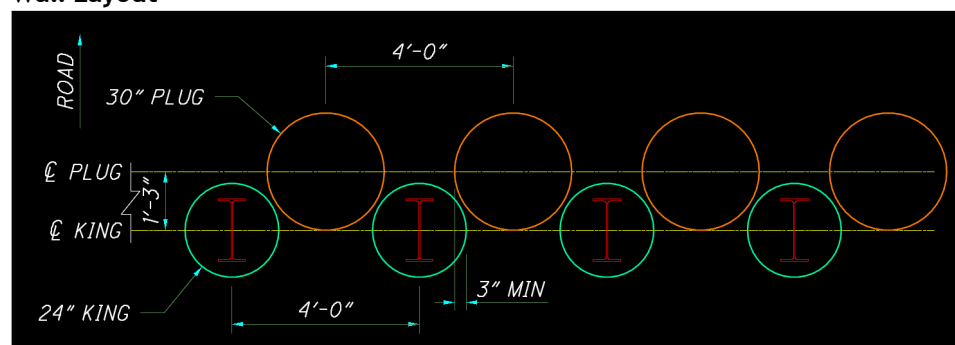
I'm providing the following preliminary wall design for BEL-147-25.88. Please note that I have assumed a guardrail offset and based my wall offset on this. If the final guardrail location requires the wall to be offset further, I will provide a check on the wall design to determine if any changes need to be made.

**Preliminary Design:**

Wall type	Drilled Shaft/Plug Pile
Wall Length/Limits	280' minimum: sta. 1365+80± to 1368+60±
King Diameter	24"
Shaft Spacing	4'
King Offset	20'
Beam Size	W-16x40
Plugs	30" diameter, 10' deep, 18.75' offset
Rock Socket	10' minimum
Beam Length	Varies. Top-of-rock to be provided @ stage 1 review

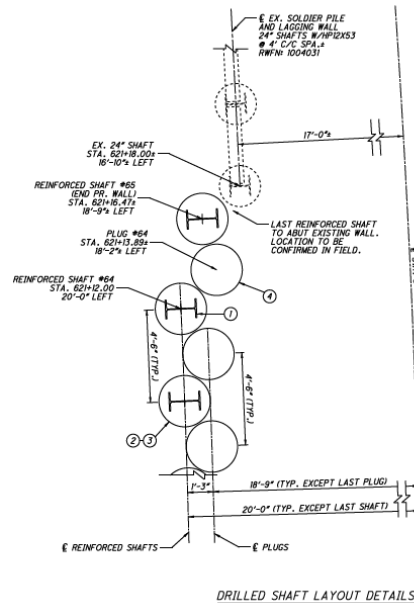
\*Other acceptable beam sizes: W-16x45, W-16x50, W-14x53. In the steel beam plan note provide these as secondary options due to beam availability issues.

**Wall Layout**



## Wall limits and connection

The end of the wall where we're butting up to the existing soldier pile wall will control the shaft locations. Here's an example of a plug pile wall that was installed adjacent to a soldier pile and lagging wall for your reference:



## Guardrail clearance

As stated above, I assumed a guardrail offset (14') which will control the wall offset. We need a minimum of 18" clear distance between the inside of the plugs and the guardrail posts. The proximity of the wall to the rail will require half-post spacing. The beginning of the wall will need flared to match the change in guardrail offset, my wall design has taken this into account.

## Top of rock

I've assumed a sloped bedrock surface between the boring locations and the wall offset. After stage 1 is submitted, I'll draft the top-of-rock profile onto the wall profile.

## Wall and Pavement drainage

We won't be installing any porous backfill and drain directly behind the wall. Instead, install a 4" underdrain under the edge of pavement.

If you have any questions or need additional details, please let me know.

Respectfully,

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