Ontario

Buried Approach Slab
TCP#000-0272

Comments received by TCP			
Comment ID	**Organization**	**Comment**	**Response**
474	Individual	The draft policy indicates that the buried approach slab would typically be installed on a gradient of 5% to 10%, but there is little to no discussion on how to choose the gradient AND there is no discussion on any complications that may arise based on the GRADE of the highway approaches. I would imagine that most bridges would have approach grades of between 0.5% and 3%, so there would likely be minimal complications due to grade, but for steeper approach grades, some additional guidance or considerations may be appropriate.	The policy aims to provide clear guidance; however, due to the wide range of site-specific conditions, it cannot cover all possible scenarios in detail. As outlined in the policy, the typical inclination for the buried approach slab is 5%. However, the gradient may vary from a minimum of 2% to a maximum of 10%, depending on project-specific factors such as: • Roadway profile (upslope or downslope), • Pavement structure thickness, • Integration with adjacent features (e.g., false abutments or MSE walls). For instance, in cases involving false abutments with MSE walls, a shallower slab inclination (e.g., 2% to 5%) may be necessary to avoid conflicts with MSE wall strap installation. Conversely, for bridges with steeper downslope profiles, a higher slab inclination may be required to maintain the minimum embedment depth at the end of the buried approach slab. While most highway approaches typically have grades between 0.5% and 3%, which generally pose minimal complications, we may add additional guidance for steeper grades based on field performance and feedback.

		The cleat may also benefit from a note advising that it must be built on a specific gradient to match the approach slab gradient (it may be obvious, but best to err on the side of too much information instead of too little for less-experienced contractor staff).	Note 4 on the drawing specifies that the top of the cleat is to be constructed 35 mm below the underside of the buried approach slab. This offset is designed to accommodate the expanded polystyrene, which allows for minor vertical deflections of the slab and helps prevent stress transfer to the pavement. Regardless of whether the slab is a buried approach slab or an at-grade slab, the cleat must be constructed to match the gradient of the slab and the roadway profile. To improve clarity, particularly for less-experienced contractor staff, and reduce the risk of construction errors, the note on the drawing has been updated to explicitly state this requirement.
475	Individual	I am concerned that, since the depth of the granular backfill placed against the tapered concrete fillet will be reduced from full-depth to a theoretical zero depth, the last few inches of the granular wedge may not be properly compacted and will be the cause of pavement cracking in this location. Was this transition detail assessed or field-tested in this regard?	Based on field observations and feedback, the sloped concrete fillet detail has been intentionally designed to facilitate better compaction compared to a vertical slab termination. The angled geometry allows for more effective placement and compaction of granular backfill, reducing the likelihood of voids forming near the slab edge. It is also noted that, due to seasonal temperature fluctuations and the inherent movement of integral abutment bridges, the ends of approach slabs experience back-and-forth movement. In practice, the granular backfill and the approach slab tend to move together as a mass, which helps mitigate differential settlement and associated pavement distress. This buried approach slab detail has been successfully implemented by MTO and other jurisdictions, with no significant performance issues reported to date. Nonetheless, we acknowledge that localized compaction challenges may arise depending on site-specific

Commented [KM1]: The issue is that the cleat is detailed on the wingwall drawing. I think we should add a note to designer to adjust the depth of cleat on the wingwall drawing.

Commented [BH2R1]: Agreed.

			conditions. If concerns persist or new issues are observed, further assessment or refinement of the transition detail will be considered based on ongoing monitoring and field performance feedback.
476	Individual	On the proposed SS105-18 drawing, the Longitudinal Section indicates a minimum 250 mm of sub-base pavement layers (granular) at the end of the approach slab. Should this 250 mm dimension instead be shown to indicate minimum 250 mm at the point where the thickened section (Section 1) tapers to the 250 mm thick concrete slab section (Section 2)? As shown currently, it could be interpreted to incorrectly such that there is less than 250mm of granular cover on the slab at the transition between Section 1 and Section 2.	The note specifying a minimum 250 mm depth of sub-base granular material at the end of the buried approach slab is intended to ensure adequate backfill cover under typical conditions. However, in scenarios where the roadway profile has a steep downslope, this minimum cover may not be maintained at the end of the slab. It is acknowledged that the current drawing note may lead to confusion for designers. To address this, Note 3 in the "Notes to Designer" section has been updated to clarify the intent of the detail. This revision helps avoid misinterpretation and ensures that the minimum granular cover is maintained over the entire buried portion of the slab, regardless of the roadway grade.

Comments received by email			
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