Tensar® Geogrid Solution Provides a Stable Haul Road Over Pumping Subgrade



Sullivan County Switchyard

Sullivan County, Indiana

CHALLENGE

During construction of the Sullivan County Switchyard in Sullivan County, Indiana, the contractor encountered very soft subgrade and pumping soils while attempting to construct haul roads across the site. The weak ground conditions limited access and raised concerns about the amount of undercut and imported aggregate that would be required to create a stable working surface.

To better understand site conditions, Tensar was called to evaluate the in-place soil strength. The team performed on-site Dynamic Cone Penetrometer (DCP) testing to characterize the subgrade and document existing conditions. Testing revealed extensive areas of extremely weak soil, with some DCP readings indicating very low strength to depths of approximately 24 inches. The original design consisted of 10 inches of aggregate placed over HX165 geogrid, but site conditions suggested a more robust solution would be required.

SOLUTION

Based on observations and DCP testing results, Tensar recommended a mechanically stabilized section that incorporated a layer of InterAx geogrid placed beneath 18 inches of 3-inch-minus aggregate (INDOT #2 stone). A layer of HX165 geogrid was then installed above the aggregate, followed by 6 inches of 1.5-inch-minus capping material (INDOT #53 stone).

The combined geogrid solution was designed to improve load distribution and provide the support needed to bridge weak, pumping soils. By strengthening the haul road section, the system created a more stable working surface capable of supporting construction traffic across challenging ground conditions. The solution proved highly effective in the field and allowed the project team to move forward while minimizing the extent of undercut that would otherwise have been required.

RESULTS

- Created a stable haul road over very soft, pumping subgrade.
- Minimized the amount of undercut required across the project site.
- Improved constructability in areas with extremely weak soils.
- Provided an effective bridging solution that impressed the contractor's field team.

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PROJECT DETAILS

Product
Tensar® HX165™ and InterAx® Geogrid

Installation
May 2026



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