Ontario Line NX750

Year of Construction: 2023
Location: Ontario Line
Product Installed: Tensar NX750 + 270R
System: Reinforcement and Stabilization

CASE STUDY

CHALLENGE

Metrolinx and its stakeholders chose geogrids to Value Engineered (VE) to leverage technological advancements by boosting reliability, enhancing the design life, and incorporating a more cost-effective cross-section.

The geotechnical investigation indicated the presence of wet/soft soils along the access road alignment, which required additional strengthening by sub-excavation (and replacement of granular material), or an alternative approach by incorporating geosynthetic material into the access road pavement. To provide additional pavement strengthening, it was recommended two layers of inter-axial geogrid (NX750) be placed within and at the bottom of the access road pavement, as follows:

- 200 mm Granular A Base (19 mm Crusher Run Limestone)
- Tri-axial or Inter-Axial Geogrid (NX 750)
- 250 mm Granular B Type II
- Tri-axial or Inter-Axial Geogrid (NX 750)
- 200 mm Granular B Type II

These cross-section alternatives provide value over currently considered design options by leveraging the performance provided by InterAx geogrid.

SOLUTION

Geogrid was specified for its performance as a soil stabilization element and for its quantified ability to create a stiff mechanically stabilized layer which directly contributes to pavement longevity.

From the early ground improvement works perspective, the main design criteria for the geogrid was to improve the resilient modulus of the subgrade and enhance the load distribution for a platform design approach since Ontario Line was reallocating existing structures to be able to accommodate the Ontario Line Elevated Guideway and Stations.

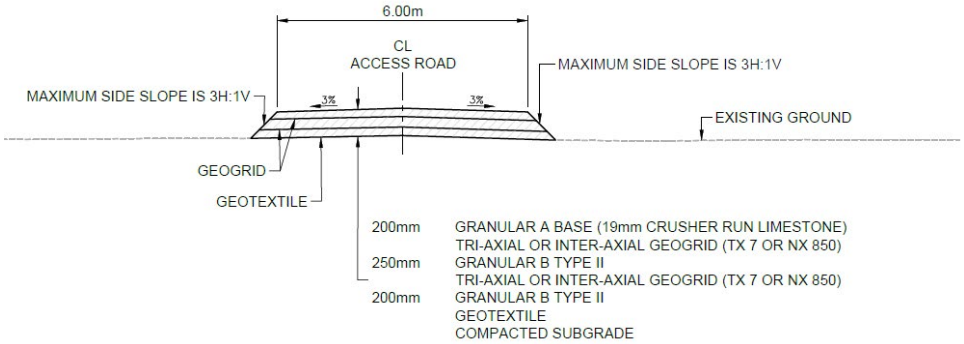
SPECIAL NOTE

Terrafix provided technical support with an alternative solution with geosynthetics... (continued on page 2)

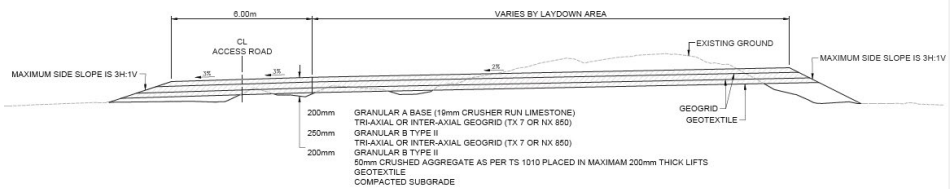
SPECIAL NOTE

con't.. (non-woven geotextile and geogrids) without any additional undercut from the original design.

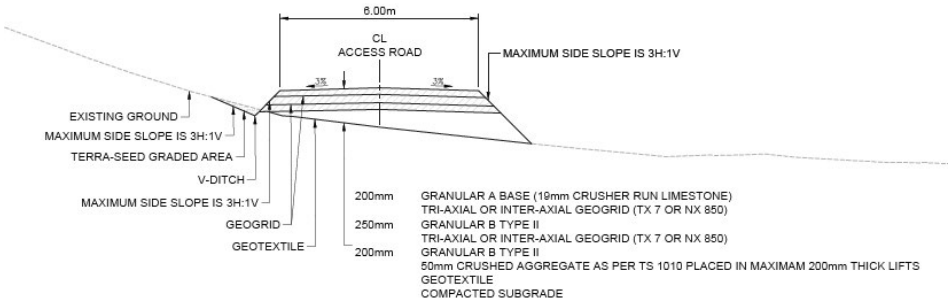
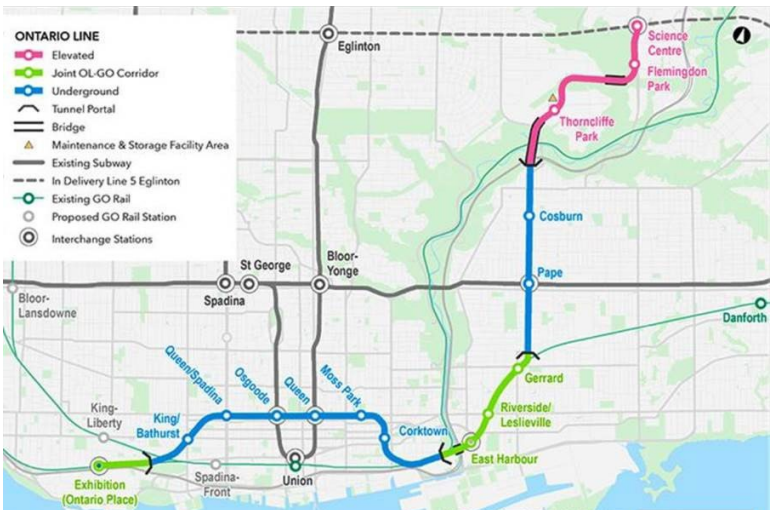
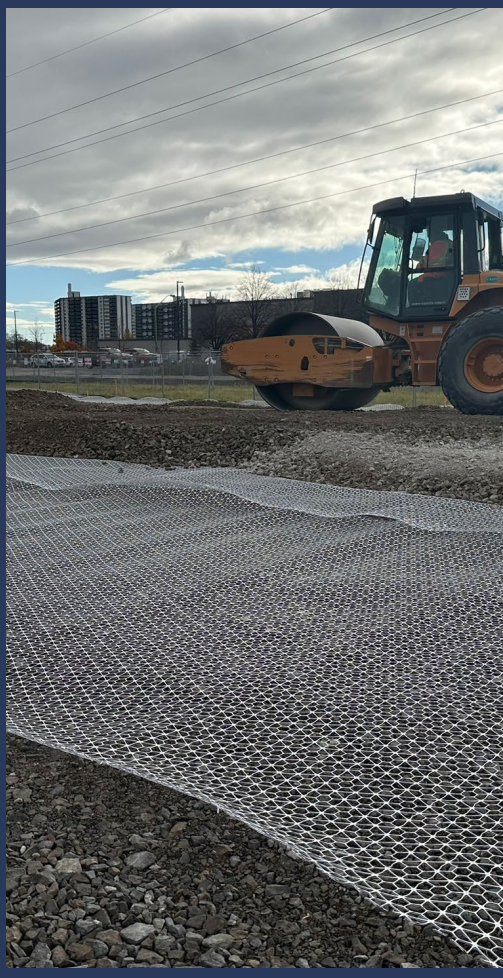
Three detailed designs are below:



TYPICAL SECTION 1
CONSTRUCTION ACCESS ROAD



TYPICAL SECTION 2
CONSTRUCTION ACCESS ROAD AND LAYDOWN AREA



TYPICAL SECTION 3
CONSTRUCTION ACCESS ROAD