



INDIANA DEPARTMENT OF TRANSPORTATION

Office of Geotechnical Services
120 South Shortridge Road
Indianapolis, IN 46219

PHONE: (317) 610-7251
FAX: (317) 356-9351

Michael R. Pence, Governor
Brandye L. Hendrickson, Commissioner

Pavement Improvement Projects

Pavement Improvement Projects include the following project work types; *Concrete Pavement Restoration (CPR)*, *Functional HMA Overlay*, *Structural HMA Overlay* and *Preventative Maintenance HMA Overlay*. Below are the geotechnical investigation guidelines for these projects:

Pavement Coring

Pavement cores shall be taken at the frequency described in Section 304-13.03 of the IDM:

- One core per lane per mile in a staggered pattern
- At select joints with distress
- In Existing widened areas where it is obvious there is a different pavement structure than the mainline
- At cracks to determine top-down or bottom-up cracking
- At predominant distress locations
- If shoulders are to be used for MOT purposes, they should be cored at a frequency of every two miles

The overall coring program shall be designed such as to fully characterize the pavement section throughout the project limits in the most thorough yet economical manner. Core reports shall be created for each core taken containing a detailed description of the core along with photographs of the core and the location at which the core was taken. A compilation report shall also be prepared summarizing findings and including a summary table in the attached format and file structure. Prior to creating the proposed coring location plan the appropriate District Pavement Engineer should be contacted for potential additional guidance on coring locations and special testing.

Soil Borings

Soil borings shall be completed at a minimum spacing of four per mile, approximately 1320 ft, in a staggered pattern. The staggering shall be per bound, as an example; northbound – southbound – northbound. On four lane-divided highways, borings shall only be completed in the driving lane. Borings shall only be completed within the passing lane if there is an area of special concern within that lane. Sampling shall consist of three continuous split spoon samples. Soundings shall be completed either on or just off of the shoulder at a spacing of every 2 miles in a staggered pattern. These soundings shall be to a depth of ten feet and shall be left open for a minimum of 24hrs for water level readings.

Shelby Tube and Bag Samples

A minimum of one Shelby tube sample shall be taken per mile for Natural Subgrade Resilient Modulus testing. These samples shall be taken in accordance with the procedure detailed in INDOT Geotechnical Design Manual Section 3.6.4.1. Additionally, bag samples shall be collected from the subgrade for Moisture/Density testing. The samples collected shall be representative of the predominant soil types within the project limits.

Geotechnical Recommendations

The geotechnical report shall include the following items:

- Description of existing subsurface conditions including groundwater conditions
- Subgrade treatment recommendations
- Pavement Design Parameters (as indicated in the table below)
- Evaluation of Planned Pavement Treatment
- Boring Logs
- Pavement Core Reports
- Lab Testing Reports
- The below table shall be included with all applicable data

Soil Parameters for Pavement Design	
Resilient Modulus (MR) of Natural Subgrade	
Predominant Soil Type	
Critical Soil Type	
Percent Passing #200	
% Silt	
LL	
PL	
PI	
Depth to Water Table	
Natural Density(pcf) of Natural Subgrade	
% Moisture of Natural Subgrade	
Organic Content	(if encountered)
Marl Content	(if encountered)
Sulfate Content	
Rock elevation	(if encountered)
Filter Fabric Required for Underdrains	
Subgrade Treatment	
Foundation Treatment	