



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

Design Memorandum No. 20-04

April 13, 2020

TO: All Design, Operations, and District Personnel, and Consultants

FROM: /s/ Elizabeth W. Phillips
Elizabeth W. Phillips
Director, Standards and Policy
Engineering Department

SUBJECT: Subgrade Treatment

REVISES: *Indiana Design Manual (IDM) Section 17-4.02 Subgrade Treatment*

EFFECTIVE: Lettings on or after September 1, 2020

Standard Specifications section 207, Subgrade, has been revised. Revisions are incorporated in RSP 207-R-687 and include:

- Subgrade Treatment Type IB, 14 in. chemical soil modification, has been further divided to indicate the modification material. Type IBC will be used to indicate cement modification. Type IBL will be used to indicate lime modification.
- Subgrade Treatment Type IIA, 8 in. chemical soil modification, has been deleted.

Pay Items

Pay Item	Pay Item Description	Unit
New pay items created in conjunction with RSP 207-R-687		
207-12635	SUBGRADE TREATMENT, TYPE IBC	SYS
207-12636	SUBGRADE TREATMENT, TYPE IBL	SYS
For lettings on or after September 1, 2020, pay items shown below should no longer be used.		
207-09934	SUBGRADE TREATMENT, TYPE IB	SYS
207-08265	SUBGRADE TREATMENT, TYPE IIA	SYS

Revising Subgrade Recommendations in the Project Geotechnical Report

For lettings on or after September 1, 2020, where the project geotechnical report includes a subgrade treatment recommendation of Type IB (without a specific modification material) or Type IIA, designers should contact the INDOT Division of Geotechnical Services, Athar Khan, for a revised recommendation (addendum).

Subgrade Treatment Type IB recommendations that include a specific modification material should be revised to Type IBC or Type IBL, as appropriate.

Plans, quantities, and estimate should be updated to reflect the revised subgrade treatment.

Revising Pavement Designs

For lettings on or after September 1, 2020, previously approved pavement designs need not be resubmitted, but should be amended as follows.

Where the pavement design includes subgrade treatment Type IB or Type IIA, designers should include the revised subgrade treatment recommendation with the approved pavement design file.

Plans, quantities, and estimate should be updated to reflect the revised subgrade treatment type.

IDM Revisions

The referenced IDM section has been revised to delete subgrade treatment descriptions and instead direct designers to the *Standard Specifications* section 207 for subgrade treatment descriptions. The section is included for reference.

Questions

Questions regarding revised subgrade treatment recommendations should be directed to the INDOT Geotechnical Services Division, Athar Khan, at ATKhan@indot.in.gov

Questions regarding pavement designs should be directed to the INDOT Office of Pavement Design, Kumar Dave, at kdave@indot.in.gov.

17-4.02 Subgrade Treatment [Rev. Apr. 2020]

The subgrade is defined as the top surface of a roadbed upon which the pavement structure and shoulders are constructed. The subgrade area should be computed for all areas of new pavement or shoulders, including cuts and fills. The width of the treatment is between points which are 2 ft, or as determined, outside the edges of paved shoulders or back faces of curbs, as shown in Part 6, or as instructed by INDOT Geotechnical Services. The lateral limits and type of subgrade treatment should be shown on the Typical Cross Sections on the plans.

17-4.02(01) Subgrade Treatment Types [Rev. Jan. 2011, Mar. 2014, Dec. 2017, Apr. 2020]

Standard subgrade treatment types are defined in INDOT *Standard Specifications* section 207. Where non-standard or modified subgrade treatments are recommended by INDOT Geotechnical Services, a unique special provision is required.

17-4.02(02) Subgrade Treatment Type Determination [Rev. Apr. 2020]

INDOT Geotechnical Services should be informed of possible shallow utilities, temporary pavement, need for a temporary runaround, or night construction so that it can make suitable recommendations for subgrade type. Such considerations should be documented in the field check minutes.

Chemical soil modification should not be used where groundwater is within 5 ft of the proposed subgrade treatment elevation. Due to equipment limitations, chemical soil modification should be limited to a subgrade width of at least 8 ft.

The type or types of subgrade treatments for each project will be specified in the geotechnical report. If the geotechnical report does not specify the subgrade treatment type, the designer should coordinate with INDOT Geotechnical Services for a subgrade treatment recommendation.

17-4.02(03) Determining Pay Items and Quantities

A divided highway may have parallel but separate subgrade treatment areas, likely of the same type, depending upon the width of the median. An isolated area such as that on an S-line, median crossover, or possibly a portion of the mainline, may be of a different treatment type than that of the mainline. Quantities should be determined for each required subgrade treatment pay item.