Section 6:

Subbase

SECTION 6 – SUBBASE

6.1 SUBBASE

Most PCCP paving projects provide for a course of material, or subbase, to be placed under the pavement and on top of a thoroughly compacted subgrade. The purpose of the subbase course is to produce a uniformly composed foundation layer for the pavement. The subbase course has a low susceptibility to frost action which helps to greatly reduce or eliminate soil conditions that contribute to subsequent pavement pumping.

Prior to placing subbase, the subgrade must be completed and approved in accordance with the SS.

There are three types of subbase utilized with concrete pavements, reinforced concrete bridge approaches, or concrete patching operations. One type is “Subbase for PCCP” and consists of two aggregate layers. The top layer consists of coarse aggregate No. 8 and serves as the drainage layer for the subbase. The intent of this type is to allow water that enters the concrete pavement structure or concrete patch to flow through this drainage layer to the underdrain system. The bottom layer of subbase consists of coarse aggregate No. 53, which serves as a separation layer for the subbase. The separation layer function is to prevent the migration of fine particles from the subgrade below up and into the drainage layer.

A second type of subbase that may be specified is “Dense Graded Subbase” and only consists of a 6 in. layer of coarse aggregate No. 53.

A third type of subbase consists of a lean concrete used as a base material for concrete pavements, reinforced concrete bridge approaches, or concrete patches. This material must be in accordance with the SS for this type of application.

Refer to the typical sections within the plans to determine which subbase type is utilized for the contract.

Subbase material types consisting of only aggregates must be from sources on the QPL. Stockpiling and spreading of the material shall be by approved methods to prevent segregation.

Offset grade stakes may be set on both sides of the area to be covered with subbase. Forms are then placed, a scratch template will be used to check the subgrade. When forms are not used, checking shall be performed by measuring the appropriate distance down from a string stretched between the grade stakes. “Blue tops” may be set at subgrade elevation and used for final subgrade checking.

A tolerance of 1/2 in. from true subgrade is allowable. This 1/2 in. tolerance should be an average and not the normal tolerance for every elevation check made. If the Contractor uses a Global Positioning System, GPS, to control grades, the PEMS may require sufficient staking be performed to be able to check grade.

Subbase must be placed and compacted in accordance with 302 of the SS or RSP 309-R-793.

After the subbase has been completed to its finished grade, depth determinations should be made as required by the Frequency of Sampling and Testing Manual. If deficiencies are found, appropriate corrective steps must be taken. A permanent record should be kept of the date, location, and depth of all checks.

For aggregate subbases and unless otherwise specified, payment should be by theoretical (neat line) volume as shown on the contract plans. Material placed beyond the neat lines is considered to be excess. Any subbase material placed beyond the neat lines shown on the plans, will be considered as excess material and will not be considered for payment. If the Contractor is directed to place additional material outside of the planned neat lines by the Engineer, payment will be made for the additional theoretical volume of subbase material placed.

For lean concrete material used for subbase, measurement and payment should be by the square yard.

The method for using the Light Weight Deflectometer for testing compaction of granular materials will be in accordance with ITM 508.