CPB 17-3 Subbases and Bases Quality Assurance Revised Standard Specifications

References: 2010 & 2015 Revised Standard Specifications
- Section 23, “General”
- Section 24, “Stabilized Soils”
- Section 25, “Aggregate Subbases”
- Section 26, “Aggregate Bases”
- Section 27, “Cement Treated Bases”
- Section 28, “Concrete Bases”
- Section 29, “Treated Permeable Bases”

Construction Manual
- Section 4-24, “Stabilized Soils”
- Section 4-25, “Aggregate Subbases”
- Section 4-26, “Aggregate Bases”
- Section 4-27, “Cement Treated Bases”
- Section 4-28, “Concrete Bases”
- Section 4-29, “Treated Permeable Bases”
- Section 6-107, “Materials Acceptance Sampling and Testing”

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Approved: RACHEL FALSETTI, Chief Division of Construction
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New Procedure

The contractor maintains responsibility for establishing, implementing, and maintaining a quality control plan under Sections 5-1.01, “General,” and 6-2.02, “Quality Control,” of the Standard Specifications to manage, control, document, and ensure that work complies with the subbases and bases specification requirements. The required quality characteristics, test methods, sampling locations, and minimum testing frequencies are listed in “QC Testing Frequencies” tables of the revised standard specifications (RSS) dated July 15, 2016 and later. Resident engineers and assistant resident engineers must supplement existing procedures with these additional procedures:

Before Work Begins
Do the following to prepare for construction and inspection of subbases and bases:

- Obtain and review the contractor’s quality control plan, which details the methods the contractor will use to conform to the contract requirements. The plan must include, but is not limited to:

“Provide a safe, sustainable, integrated and efficient transportation system to enhance California’s economy and livability”
- Frequency of quality control sampling and testing that meets or exceeds specification requirements as listed in the “Quality Control Testing” sections of the RSS.
- Time and frequency of submitting the test results. At a minimum, the quality control test data and test results must be submitted within 2 business days of test completion as specified in Section 6-2.02B, “Quality Control Program,” of the Standard Specifications.
- Action and suspension limits and details of corrective action to be taken if any process is outside of those limits. Suspension limits must not exceed specified acceptance criteria.
- Responsibilities of subcontractors and testing laboratories.
- Quality control manager’s name if the quantity of subbase or base exceeds the requirements listed in the “QC Manager Requirement” table of Section 23-1.01D(2)(a), “Quality Control,” of the RSS.

It is recommended to hold a meeting prior to construction to discuss the quality control plan and contractor’s method for performing each element of work affecting material quality.

During the Course of Work

During work operations, do the following:

- Throughout production operations, review copies of quality control records. Review control chart information to verify the contractor is following their quality control plan, including action and suspension provisions.
- Verify that acceptance testing is being performed at frequencies listed in Chapter 6, “Sample Types and Frequencies,” of the Construction Manual. For providing acceptance test results to the contractor, follow procedures in CPB 15-1, “Acceptance Sampling and Testing of Job-Produced Materials.”
- If the contractor disputes Caltrans’ acceptance results, follow Section 23-1.01D(1)(b), “Test Result Disputes,” of the RSS.

Background

Quality assurance encompasses all materials and construction activities on a project to ensure the desired service life of a transportation facility. It includes quality control by the contractor and Caltrans’ acceptance sampling and testing; inspection; independent assurance; and dispute resolution process. Quality control testing measures material quality characteristics, assists contractors to control the production process, and determines if a change to the production process is needed and should be implemented. Contractor minimum quality control requirements were incorporated in Division IV, “Subbases and Bases,” of the 2010 and 2015 RSSs’ on July 15, 2016. Projects ready to list after this date should include these provisions.

Acceptance sampling and testing frequencies and locations are listed in Chapter 6, Section 1, “Sample Types and Frequencies,” of the Construction Manual. Acceptance requirements are listed in the specifications. Historically, some contractors have used acceptance test results in lieu of performing sufficient in-process quality control testing to actively monitor and control the quality of their materials and workmanship. The quality control sampling and testing responsibilities should be borne by the contractor to ensure that the construction project achieves the desired level of quality of both materials and workmanship in a timely manner.

If you have questions or comments regarding this bulletin, please contact Ken Darby, Division of Construction, at ken.darby@dot.ca.gov or (916) 653-2032.