

(CCC-03) Pavement Construction Specifications and Quality Assurance

COURSE OUTLINE

Day 1 (Erik/John, 2.5 hours)

- Introduction and Overview
 - What is Quality Management?
 - What isn't Quality Management?
 - Goals
 - Sessions and Topics
 - Summary
- Specifications: Types, Formats, and Relationship to the other Contract Documents
 - Definition/Intent
 - Formats/Usage: CSI, AASHTO
 - Standard Specifications
 - Supplemental Specifications
 - Special Provisions
 - Standard Specifications/Special Provisions Concept
 - Intent of the Contract Documents
 - Precedence of the Contract Documents
- Quality Assurance: Conception to Completion
 - Elements/Aspects
 - Perspective/Approach/Integration
 - Conception: Project Packaging
 - Prime Contractor Self-Performance
 - Incentive/Disincentive Provisions
 - Warranty Provisions
 - Plans, Specifications, and Estimates
 - Project Delivery Methods
 - Prequalification
 - Material Testing and Acceptance
 - Construction Management

Day 2 (Erik/John, 2.5 hours)

- Building Better Pavements (from the “Bottom-Up”): Subgrade Analysis and Preparation
 - References: Caltrans Highway Design Manual, Chapters 600, 610, 660
 - Specification References: SSPWC, Sections 300, 301; Caltrans, Sections 19, 22-24
 - Investigation/Characterization
 - Clearing and Grubbing
 - Removal of Existing Improvements
 - Mechanical Stabilization
 - Chemical Stabilization

- Quality Assurance
- Building Better Pavements (from the “Bottom-Up”): Subbase and Base Materials
 - Caltrans Highway Design Manual, Chapter 660
 - Subbase
 - Untreated Base
 - Untreated Base, Recycled, Plant-Produced
 - Untreated Base, Reclaimed In-Place
 - Cement Treated Base
 - Concrete Base
 - Stabilized Bases
 - FDR-C (Caltrans)/CSPB (SSPWC)/FDR-FA (Caltrans)/CCPR
 - Quality Assurance

Day 3 (Clay/Nathan, 2.5 hours)

- Building Better Pavements: Concrete Pavement Construction
 - Specification References: Caltrans, Section 40; SSPWC, Subsection 302-6.
 - Integration of PS&E: Traffic Control Plans, Final Pavement Delineation vs. Joint Locations
 - Jointing Plans: Preparation and Inclusion in the Contract Plans
 - Standard Specifications/Special Provisions
 - Placement: Spreading and finishing equipment descriptions/selection
 - Pre-Paving Meeting
 - Just-In-Time Training
 - Quality Assurance/Quality Control
 - Spreading, Consolidation, and Finishing
 - Smoothness
 - Measurement and Payment
 - Incentive/Disincentive Provisions
 - Management/Regulation of Pavement Cuts
 - Slab Replacement Best Practices

Day 4 (Erik/John, 2.5 hours)

- Building Better Pavements: AC/HMA Construction
 - Specification References
 - Surface Preparation: Maintenance & Rehabilitation
 - Surface Preparation: Pre-Paving
 - Cold Milling
 - Micro-Milling
 - Cleaning/Sweeping
 - Interlayers
 - Pre-Paving Meeting
 - Production Quality Assurance
 - Equipment
 - Delivery Trucks

- Windrow Pickup/Material Transfer Vehicle
- Paving Machine
- Automatic Screed Controls
- Rollers – Types
- Prime Coat
- Tack Coat
- Placement Quality Assurance
 - Delivery
 - Mix Temperature
 - Longitudinal joints
 - Transverse joints
 - Edges of gutters
- Rolling
 - Techniques/Sequence
 - Breakdown
 - Intermediate
 - Finish
 - AC/ARHM vs. AC/HMA
- RHMA/ARHM/Modified Binders
- Compaction
- Smoothness
- Incentive/Disincentive provisions
- Measurement and Payment

Day 5 (Erik/John, 2.5 hours)

- The “Specifics” of “Specifying:” Fundamentals of Specification Writing
 - Issues/challenges
 - General
 - Avoidance
 - Guidance
 - Preparation of Special Provisions
 - Interpretation
- The “E” of “PS&E:” Fundamentals of Quantity and Cost Estimates
 - Itemization: Terminology and Units of Measure
 - Quantity take-off
 - Bid Quantity Transparency
 - Cost Estimation Considerations
 - Relationship to the Contract Documents