

FHWA RC - Baltimore



Proposed
NHI course **130088 – Bridge
Construction Inspection**

By: M. Arasteh

TCCC – December 3-4, 2003
Orlando, FL

Team Focus



- *Gather Team Members*
- *Set Goals/Priorities*
- *Formulate the RFP*
- *Follow thru w/NHI*

Team Members



- **Mike Arasteh, RC - Baltimore**
- **Shay Barrows, NJ Div**
- **Linda Hughes, WSDOT**
- **Tom Iefehik, Ohio Div**
- **Robert Salazar, NMSHTD**
- **Keith Wong, EFLHD**

Work Progress



- **June '03 - Work Initiation thru Office of Asset Management**
 - **Team members were contacted**
 - **Semi Final Draft RFP Developed**
 - **The RFP was sheared with FHWA members**
 - **Finalized version was submitted to NHI**
- **July '03 - NHI Came onboard**
 - **New outstanding issues to be resolved**
- **Aug '03 - A video Conference was suggested,**
 - **A Date and a Time was coordinated.**

Work Progress – Cont'd.

- **Sept '03 - VC Sept 29, 2003 @ 10:30 am ET**
 - **Minutes were prepared and distributed by NHI**
 - **Participants:**
 - Mike Arasteh,**
 - Shay Barrows,**
 - Linda Hughes,**
 - Keith Wong, and**
 - Richard Usmiller, NHI.**
 - **Issues**
 - Course Length (2 Days vs. 4 ½ Days)**
 - Curriculum (modularized approach)**
 - Target Audience (min. insp. W/ HS Diploma)**
 - Certification Issues (TBR by TCCC)**

Work Progress – Cont'd.



- **Oct '03 - Sample RFP was given to NHI**
 - **Additional comments:**
 - Revision rights by the agency**
 - Composite materials inclusion**
 - Use of photographs and video clips**
 - Use of Available Materials**
 - Copyright issues**
- **Nov '03 - NHI version of RFP distributed to Team Members**
 - **Finalized RFP out to NHI for Possible Advertisement !!!**

Available Training Materials

- **New Mexico Quality Bridge Deck Workshop**
- **MDSHA “in-house” Bridge Construction Manual**
- **132022A Driven Pile Foundation Construction Monitoring - 2 days**
- **132069A Driven Pile Foundation Inspection - 2.5 days - This course is for inspector certification and includes a 3 hour examination**
- **132070A Drilled Shaft Foundation Inspection - 2.5 days - This course is for inspector certification and includes a 3 hour examination**

Course Modules - Lesson 1.0



Bridge Plans and Specifications

- 1.1 Review of bridge plans; drawings, notes, and quantities.**
- 1.2 Review of Specifications.**
- 1.3 Review of Shop Drawings.**
- 1.4 Inspector checklist for review of plans, drawings, notes, quantities and specs.**
- 1.5 Bridge plans and specifications common problems, mistakes, overlooked areas, and solution session.**

Course Modules - Lesson 2.0

Bridge Staking and Layout

- 2.1 Alignment and Grade control prior to construction.**
- 2.2 Setting Benchmarks, string lines, batterboards, and other controls.**
- 2.3 Preserving stakes and monuments.**
- 2.4 Review of staking with contractor**
- 2.5 Understanding survey notes and stake markings.**
- 2.6 Check for accuracy prior to construction**
- 2.7 Inspector checklist for staking and layout of bridges.**
- 2.8 Bridge staking and layout common problems, mistakes, overlooked areas, and solution session.**

Course Modules - Lesson 3.0



Foundations

- 3.1 Introduction into Types of foundations; piling, micro piles, auger cast in-place, cofferdams, settlement platforms, drilled shafts, and concrete placement under water.**
- 3.2 Construction procedures for foundation types.**
- 3.3 Inspection procedures for foundation types.**
- 3.4 Inspector checklist for inspection of foundation types.**
- 3.5 Foundations common problems, mistakes, overlooked areas, and solution session.**

Course Modules - Lesson 4.0



Substructure

- 4.1 Introduction to Substructure components; footings, piers, columns, pier caps, post tensioning and grouting, abutments and bearings.**
- 4.2 Construction procedures for substructure components; footings, piers, columns, pier caps, abutments and bearings.**
- 4.3 Inspector procedures for footings, piers, columns, pier caps, abutments and bearings.**
- 4.4 Inspector checklist for footings, piers, columns, pier caps, abutments and bearings.**
- 4.5 Substructure common problems, mistakes, overlooked areas, and solution session.**

Course Modules - Lesson 5.0

Superstructure

- 5.1 Introduction to Superstructure and Girder Bridges; Structural Steel, Pre-cast Concrete and Segmental Construction, and cast-in-Place Concrete.**
- 5.2 Construction procedures for Superstructure.**
- 5.3 Inspection procedures for Superstructure.**
- 5.4 Inspectors Checklist for Superstructure.**
- 5.5 Superstructure common problems, mistakes, overlooked areas, and solution session.**

Course Modules - Lesson 6.0

Bridge Deck

- 6.1 Introduction to; Girders, Girder Profile Elevations, Deck False Work, Rebar Placement, Bulk Heads and Expansion Joints, Forms, Pre-Cast Concrete Deck Panels, Finishing Machine Placement and Dry Run, Deck Placement Pre-Con. Concrete Placement, Finishing, Curing, and checking for deflection.**
- 6.2 Construction Procedures for Bridge Deck Construction.**
- 6.3 Inspection Procedures for Bridge Deck Construction.**

Course Modules - Lesson 6.0 (Cont'd)

Bridge Deck

6.4 Inspectors Checklist for Bridge Deck Construction (Girders, Girder Profile Elevations, Deck False Work, Rebar Placement, Bulk Heads and Expansion Joints, Forms, Pre-Cast Concrete Deck Panels, Finishing Machine Placement and Dry Run, Deck Placement Pre-Con. Concrete Placement, Finishing, Curing, and checking for deflection.)

6.5 Bridge Deck common problems, mistakes, overlooked areas, and solution session.

Course Modules - Lesson 7.0

Miscellaneous Structure Items

7.1 Introduction to Curb and Sidewalk, Concrete Barrier Rail, Bridge Rail, Surface Finishing and Painting, Approach Slabs.

7.2 Construction Procedures for Curb and Sidewalk, Concrete Barrier Rail, Bridge Railing, Surface Finishing and Painting, Approach Slabs.

7.3 Inspection Procedures for Miscellaneous Structure Items.

7.4 Inspectors Checklist for Curb and Sidewalk, Concrete Barrier Rail, Bridge Railing Surface Finishing and Painting, Approach Slabs.

7.5 Miscellaneous Structure Items common problems, mistakes, overlooked areas, and solution session.

Course Modules - Lesson 8.0

Materials Sampling and Testing

8.1 Introduction to materials sampling, testing, and certification.

8.2 Construction Procedures for materials sampling, testing, and certification.

8.3 Inspection Procedures for materials sampling, testing, and certification.

**8.4 Inspectors Checklist for materials sampling, testing, and certification.
Materials Sampling and Testing common problems, mistakes, overlooked areas, and solution session.**

Course Modules - Lesson 9.0



Final Course Examination

9.1 Conduct pre examination review

9.2 Participants take examination.

9.3 Instructors collect examination questions and participant score sheets.

9.4 Class discussion of examination

9.5 Course evaluation.

Thank You!

Questions?

