

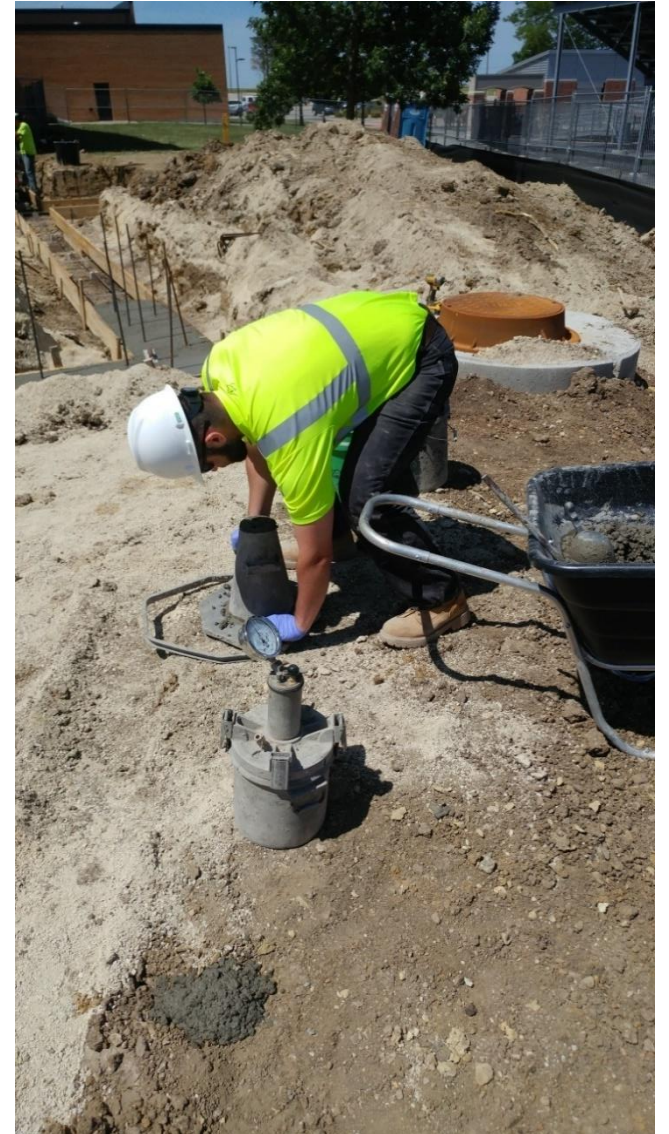


## Iowa DOT / ACEC / AGC Partnering Committee B2 Consultant Training Program for Construction Administration and Inspection



# Mission Statement

Develop a recommended consultant training program for construction administration and inspection.



# Committee Members

Iowa DOT	ACEC	AGC / Contractors
Jim Schnoebelen*	Andre' Gallet - Terracon*	Ron Otto - Iowa AGC
Kate Murphy	Patrick Kueter - Foth	Greg Mulder - ICPA/IRMCA
Hugh Holak	Daniel Sturm - JEO	Andy Warren - Iowa AGC
Bob Welper	Jeff Koenig - HR Green	Robert Cramer - Cramer & Assoc
Brian Squier	Mark Crawford - CGA	Duane McDonald - Manatts
Jeff DeVries	Travis Lampe - Snyder	Steve Mallicoat - ICPA/IRMCA
Ron Loecher	Steve Oldfield - Snyder	Milt Dakovich - Aspro
Tom Brunscheon	Eva Green - Foth	Kurt Rasmussen - Jensen
Keith Norris		Bill Rosener - APAI
Deanna Maifield		Cork Peterson - PCI
John Dostart		Scott Newhard - Iowa AGC
Kevin Merryman		
Brenda Boell		
Deanna Maifield		
Danny Steenhard		
Mitchell Dillavou		
Donna Buchwald		* Committee Co-Chairs



# Why are we doing this? Why the change?

- Budget constraints from state government
- Reduction in DOT field personnel through attrition
- Increase in state projects from gas tax revenues



# Why was it important to have this committee?

- Lots of concerns about having consultants providing inspection!
  - Will consultants be qualified and competent?
  - Will consultants provide same services as current DOT staff?
  - How will consultants maintain consistency among firms?
  - Will consultants make it more difficult to work with to prove their value?
  - How will this affect my projects?
  - Who will be making decisions?
  - How will change orders be addressed?
  - How will dispute resolutions be handled?
  - Will we get timely responses?
  - Will we get timely project close-outs?
- Needed to get everyone's perspective and opinions!
- Needed to get everyone on the same page & understand the goal!

# What's the goal?

## Why develop a consultant training program?

- Establish the roles, responsibilities and expectations of the consultants
- Ensure consultants are qualified and knowledgeable for the requested scope of services
- Increase consistency among consultants and among DOT Districts
- Increase communication among all parties
- Increase efficiency, and thereby, reduce Project Close-out delays

# How are we going to accomplish these goals?

## Process / Recommendations

1. Evaluated the current technical training and certification programs (TTCP) in order to determine if the existing programs are sufficient or if additional programs are needed or require some enhancement.
  - Existing programs are thorough & satisfactory
  - Committee members identified a couple of classes that should be enhanced: HMA Paving Field Inspection, PCC Paving Field Inspection, and Structural Field Inspection. These classes should include contractor's perspectives as well as safety awareness.





TRAINING HOME

TECHNICAL TRAINING AND CERTIFICATION PROGRAM

CERTIFIED TECHNICIANS

TTCP MANUALS

WEB-BASED TRAINING

OTHER RESOURCES AND TECHNOLOGY

CONTACT INFORMATION

## TRAINING

### Technical Training and Certification Program

The Iowa DOT Technical Training and Certification Program provides training courses in the areas of construction and materials. The program includes certifications for agencies, industry, producers, and consultants for highway materials testing and inspection.

### Web-based training

The online courses offered through this site are for use by individuals for convenience. These courses are offered for an individual to take online. These courses do include questions, but a formal test is not normally

### Iowa DOT U

Iowa Department of Transportation's learning management system.



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## TRAINING

### CERTIFIED TECHNICIANS

2017 Certified Technicians Book

### PRINTABLE CERTIFICATES

- Level I Aggregate
- Level II Aggregate
- Erosion Control
- HMA Sampler
- Level I HMA
- Level II HMA
- Level I PCC
- Level II PCC
- Level III PCC
- Nuclear Gauge
- Profilograph
- Prestress
- Soils

Erosion Control Basic

# Cont. - Process / Recommendations

2. Defined the various levels of inspectors desired by Iowa DOT in order for consultants to understand their role, responsibilities and expectations. Developed the following classifications:

- Level 0 – Seasonal Intern
- Level 1- Introductory; new hire
- Level 2- Experienced Inspector; supervises Level 0-1
- Level 3- Senior Inspector; for large and or multiple projects

## Inspector Level 2

### Required Certifications:

Agg 1&2 and or PCC 1 and or HMA 1, Erosion Control Technician, Level 2 Contract Administration, Contract Administration Core levels (Doc Express or equivalent), Field Book, Traffic Control.

### Suggested Training:

Soils, PCC 2, PCC paving, drilled shaft inspection, structures field inspection, bridge deck grades as appropriate for type of project being inspected.

Equipment: Inspector should have laptop with field book, cell phone, iPad, and test equipment for work being performed.

### Level of Responsibility:

Serves as lead inspector on a medium size project, or multiple small projects ensuring the work is completed according to contract documents, which includes sampling and testing materials to be used, ensuring proper certification of materials, coordinating and reviewing the activities of inspectors, maintaining records, preparing authorization for vouchers and project progress reports, and informing supervisors of problems. Mentors Intern and Level 1 inspectors.

Competently perform duties described in Standard Specification 1105.06 Authority and Duties of Inspector.

### Description of work:

Performs field testing for concrete and HMA. Documents construction activities in computerized record keeping programs by maintaining detailed project records and preparing periodic reports on project progress and expenditures including item progress, materials used, and test results. Prepares "as-built" plans for engineer to review.

Works and communicates with internal and external clients and customers such as contractors, suppliers, government entities, property owners, motorists, and law enforcement to provide information, address project issues, and provide quality service to all customers. Interacts with public as first contact person.

Communicate effectively, tactfully, verbally and in writing with employees, contractors, cities, counties, utilities and the public.

Creates and reviews project documentation, inspection records, and contractor's certifications for materials utilizing current DOT electronic records and software.

Provides plant monitor duties as described in IM's. Must be able to demonstrate Level 2 Inspector duties to the RCE.

## Inspector Level 3

### Required Certifications:

Agg 1&2, PCC 1 & 2, HMA 1, Soils, Erosion Control Technician, Field Inspection, Field Book, Advanced Construction Inspection, Field Manager, Traffic Control, Level 3 Contract Administration, Contract Administration Core levels (Doc Express or equivalent).

### Suggested Certifications:

HMA 2, Profilograph, PCC paving, drilled shaft inspection, structures field inspection, bridge deck grades as appropriate for type of project being inspected. Blood borne pathogen/MSDS/Behavioral Based safety training.

Equipment: Inspector should have laptop with field book, cell phone, iPad, and test equipment for work being performed.

### Level of Responsibility:

Manages the inspection and documentation of large complex highway construction projects and /or several small highway projects, ensuring that work is done according to applicable contract documents, permits, laws, and other governmental regulations. Reviews projects daily to ensure there is adequate inspection and that the work is in compliance. Solves problems on projects when the plans do not completely and accurately address site conditions, when there are plan errors, survey errors, constructability problems, utility conflicts and traffic control issues. Makes timely decisions to prevent non-complying work, avoid delays in the completion of the project and avoid potential claims due to loss of production by the contractor. Assists in negotiating change orders. Competently perform duties described in Standard Specification 1105.06 Authority and Duties of Inspector.

### Description of work:

Ensures proper certification and testing of materials and makes judgements based on knowledge of aggregate testing, concrete plant and grade inspection, asphalt plant and grade inspection, QMC/QMA inspection, electronic survey, nuclear density testing, soil testing, hazardous materials, pavement smoothness and tracks various shop drawings.

Ensures that the Department and contractor follow applicable environmental regulations through familiarization with regulations such as Storm Water Pollution Prevention Plans, The Endangered Species Protection Act, Leaking Underground Storage Tanks, Asbestos Abatement and Wetlands Mitigation.

Capable of performing field testing for concrete and HMA. Documents construction activities in computerized record keeping programs by maintaining detailed project records and preparing periodic reports on project progress and expenditures including item progress, materials used, and test results. Prepares "as-built" plans for engineer to review.

Works and communicates with internal and external clients and customers such as contractors, suppliers, government entities, property owners, motorists, and law enforcement to provide information, address project issues, and provide quality service to all customers. Interacts with public as first contact person.

Communicate effectively, tactfully, verbally and in writing with employees, contractors, cities, counties, utilities and the public. Creates and reviews project documentation, inspection records, and contractor's certifications for materials utilizing current DOT electronic records and software.

This position may have many administrative duties that limit the amount of time that is spent physically on the project site but would be responsible for subordinate inspector's work.

# Cont. - Process / Recommendations

3. Evaluated the current Contract Administration Core Level training being used for Local Systems, and determined it can be modified for this consultant training program.

- Brenda Boell (Iowa DOT Local Systems) plans to modify her current training program and correlate the training to the Consultant Inspector Levels 0, 1, 2 & 3; the courses will be prerequisites prior to achieving the inspector level.

## Contract Administration Core Levels

### Basic Contract Administration course - divided into two levels

- Level 1:
  - “Basic Contract Administration”,
  - Chapters 1 and 2 of the existing course:
    - Roles & Responsibilities
    - Contract Documents \* move Certified Transcript of Labor Payroll, pages 195 to 212 to Level 2,
  - An on-line course,
  - No test or certification
    - Half to one day course (4-6 hours).
- Level 2:
  - Pre-requisite – Completion of Level 1
  - “Intermediate Contract Administration”
  - Chapters 3 and 4 of the existing course:
    - Field Book Forms
    - Record Keeping
    - \*Add Certified Transcript of Labor Payroll, pages 195 to 212 from “Contract Documents” to the “Record Keeping” section,
  - Test and Certification:
    - Two day course:
      - Classroom work and review 1-1/2 days,
      - Test afternoon of second day (8 hours + 6 hours),
    - Test only day for individuals who have record of previous attendance.

### Advanced Contract Administration

- Level 3:
  - Conducting a Materials Audit,
  - Preparation for a Final Review,
  - Interest Payment,
  - Final Payment,
  - Test and Certification:
    - 1-1/2 day course:
      - Classroom work on day one,
      - Review and test morning of second day,
    - Test only day for individuals who have record of previous attendance.

# Cont. - Process / Recommendations

4. Developed a generic scope of services in order for consultants to understand the type of inspector(s) required for the specific project and to understand their role, responsibilities and expectations.

## ▪ **Consultant Contract Administration**

*These tasks to manage the consultant effort must be directly attributable to the construction project and not general overhead (e.g. advertising). Record keeping for staff assigned to the project, invoice and progress report preparation for Department review, and similar tasks could be included.*

## ▪ **Construction Contract Administration**

*These administrative duties are not directly related to construction activities/production but directly support and augment that effort. They are typically performed in a project field office, Department/Consultant office, or other "business" location. Examples include preconstruction and progress meetings, contract modification prep, materials and construction audits, and so on.*

## ▪ **Resident Construction Inspection**

*These on-the-grade duties are directly related to construction activities. They are typically performed on the project site at the time of construction, but may occur later. Examples include observing and documenting contractor crews/equipment/activities, verifying general conformance with plans and specifications, and measuring quantities for payment.*

## ▪ **Construction Materials Sampling and Testing**

*These duties are related to assuring all materials incorporated into the project are in compliance. They may be performed on-the-grade, at a plant site, or other location. Examples include testing concrete properties (air content, flexural strength, etc.), witnessing pavement coring, and monitoring paving plant operations.*

Consultant Scope of Services  
Construction Administration and Inspection  
Submitted By: \_\_\_\_\_

Project No: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Letting Date: \_\_\_\_\_  
Work Type \_\_\_\_\_

### Consultant Requirements

#### Certification Courses

- |   |   |
|---|---|
| <input type="checkbox"/> Aggregate Level 1  | <input type="checkbox"/> PCC Level 1                      |
| <input type="checkbox"/> Aggregate Level 2  | <input type="checkbox"/> PCC Level 2                      |
| <input type="checkbox"/> HMA Level 1  | <input type="checkbox"/> PCC Level 3                      |
| <input type="checkbox"/> HMA Level 2  | <input type="checkbox"/> Profilograph                     |
| <input type="checkbox"/> HMA Sampler  | <input type="checkbox"/> Soil Technician                  |
| <input type="checkbox"/> Nuclear Gauge (Not provided by IDOT)   | <input type="checkbox"/> Erosion Control Technician (ECT) |
| <input type="checkbox"/> Erosion and Sediment Control Basics (ESC Basics) (web-based training course) |   |

#### Recommended Training

- |   |   |
|---|---|
| <input type="checkbox"/> Drilled Shaft Inspection   | <input type="checkbox"/> PCC Paving Inspection                  |
| <input type="checkbox"/> Fieldbook                  | <input type="checkbox"/> Structures Inspection                  |
| <input type="checkbox"/> Grade Inspection           | <input type="checkbox"/> Work Zone Safety Workshop/Construction |
| <input type="checkbox"/> HMA Field Inspection       | <input type="checkbox"/> Railroad Safety Training               |
| <input type="checkbox"/> Bridge Deck Grade Training |   |

#### Knowledge

- |   |  |
|---|--|
| <input type="checkbox"/> Specifications               | <input type="checkbox"/> Construction Manual       |
| <input type="checkbox"/> Standard Road Plans          | <input type="checkbox"/> Instructional Memorandums |
| <input type="checkbox"/> Project Plans                | <input type="checkbox"/> Progress scheduling       |
| <input type="checkbox"/> Bridge and Culvert Standards |  |

#### Administrative Duties

- |   |  |
|---|--|
| <input type="checkbox"/> Preconstruction meeting  | <input type="checkbox"/> Recommend project acceptance                            |
| <input type="checkbox"/> Progress meetings  | <input type="checkbox"/> Review & recommend liquidated damages                   |
| <input type="checkbox"/> Review & recommend contract modifications                      | <input type="checkbox"/> Calculation of bridge deck grades and haunch dimensions |
| <input type="checkbox"/> Check certified payrolls                                       | <input type="checkbox"/> Bridge pre-bolting meeting                              |
| <input type="checkbox"/> Check fuel adjustment worksheets                               | <input type="checkbox"/> Bridge deck pre-pour meeting                            |
| <input type="checkbox"/> Review & recommend haul roads                                  | <input type="checkbox"/> PCC pre-pour meeting                                    |
| <input type="checkbox"/> Review progress schedule & submit comments to project engineer |  |

#### Material Sampling and Testing

- |  |   |
|--|---|
| <input type="checkbox"/> Air, slump & beams  | <input type="checkbox"/> Sampling and testing per Materials IM 204  |
| <input type="checkbox"/> Witness cutting, collect and deliver PCC cores to field lab for testing | <input type="checkbox"/> Layout HMA core locations, witness cutting, collect and deliver to field lab for testing |
| <input type="checkbox"/> Soil density and moisture content                                       | <input type="checkbox"/> Nuclear gauge testing  |
| <input type="checkbox"/> Collect HMA samples   |   |

#### Inspection Requirements

- |   |   |
|---|---|
| <input type="checkbox"/> HMA plant monitoring   | <input type="checkbox"/> Force account work                 |
| <input type="checkbox"/> PCC plant monitoring   | <input type="checkbox"/> Traffic safety inspections         |
| <input type="checkbox"/> Inspection of work   | <input type="checkbox"/> Storm water site inspections       |
| <input type="checkbox"/> Use of Fieldbook program   | <input type="checkbox"/> Confirm certified welders          |
| <input type="checkbox"/> Daily diary  | <input type="checkbox"/> Confirm trained flaggers           |
| <input type="checkbox"/> Working days   | <input type="checkbox"/> Confirm traffic control technician |
| <input type="checkbox"/> Measurement and payment  | <input type="checkbox"/> Wage rate interviews               |
| <input type="checkbox"/> Punch list   |   |
| <input type="checkbox"/> Unacceptable work - noncompliance notices  |   |
| <input type="checkbox"/> Review contractor bulletin boards – EEO Project Site Inspection/Wage Rate Report |   |
| <input type="checkbox"/> Evaluation of pavement and bridge deck smoothness                                |   |

#### Submittals

- |   |   |
|---|---|
| <input type="checkbox"/> Fieldbook files                              | <input type="checkbox"/> Project engineer's audit |
| <input type="checkbox"/> Review & recommend project acceptance        | <input type="checkbox"/> Material approvals       |
| <input type="checkbox"/> Review & recommend final payment             | <input type="checkbox"/> Survey books             |
| <input type="checkbox"/> Complete electronic as-builts                | <input type="checkbox"/> Traffic control diary    |
| <input type="checkbox"/> Bridge inventory data                        |   |
| <input type="checkbox"/> Submit input on contractor evaluation report |   |

#### Other

- Survey

#### State will provide

- |   |   |
|---|---|
| <input type="checkbox"/> Provide material acceptance report | <input type="checkbox"/> Process haul road requests |
| <input type="checkbox"/> Process contract modifications     | <input type="checkbox"/> Project acceptance         |
| <input type="checkbox"/> Process FieldManager vouchers      |   |

# What does this all mean?

- Change!
- Will the consultant training program be easy to implement?
- Will inspections be the same as it is today?
- Will there be challenges during this transition period?
- What will success look like?
  - Everyone is trained and performs in a consistent manner.
  - The role, responsibilities and expectations of the consultants are well outlined and understood by everyone.
  - Everyone working for a common purpose; providing the best product for the public.
  - Everyone working together with open & honest communication.



# Next Steps

- **Recommend implementing the proposed consultant training program asap in order to allow Brenda Boell time to establish meeting schedules, modify her current contract administration program and develop the on-line Level 1 Contract Administration course.**
- **Recommend continuing with this committee in order to discuss and evaluate issues, challenges and potential changes to the consultant training program.**
- **Recommend that Iowa DOT re-initiate a “Partnering Meeting” prior to commencement of major projects; a committee could be established to help develop guidelines for the meeting; the meeting should not extend beyond 1 day.**

# Next Steps

- **Recommend for projects where consultant provided construction administration and inspection is used, meetings be established/required with project members prior to major construction phases to review roles, responsibilities and expectations.**
- **Recommend Iowa DOT establish an accountability evaluation process for consultants. This could include compliance of training and certification training, efficiency of uploading documents in Doc Express (or other electronic work control system), and efficiency on Project Close-out.**
- **Recommend establishing another partnering committee to address “dispute resolution” during projects.**
- **Recommend that Iowa DOT continue to work on the consultant’s scope of services in order to set clear expectations.**