

IV. Role of the Inspector

Description

(Specification 1105.07; Construction Manual section 3.01)

Inspection is one of the most important processes in any highway project. The quality of the finished product generally reflects the quality of the inspection performed.

An inspector must be honest and fair, exercising responsibilities with firmness and good nature. Inspectors must work cooperatively with fellow employees, supervisors, and contractors to promote the progress of the project. The inspector needs to be familiar with the construction schedule and know how the work to be inspected fits into the overall schedule.

Responsibilities

Inspectors are accountable to the project engineer for satisfactory performance of their duties. The primary responsibilities for an inspector include:

- Plan Familiarity
- Work Done Without Inspection
- Contract Compliance
- Unacceptable Work
- Testing
- Daily Diary

Authority

Inspectors have the authority to reject materials or suspend work if the quality of either is in dispute with the contractor. The project engineer decides settlement of a dispute. The grade inspector should immediately inform their

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supervisor and the contractor of any materials or work they feel is outside of specification limits. The actual decision to reject materials or suspend work would come from a higher level of authority, typically the project engineer, following discussions with the inspector and contractor.

The inspector's authority does not extend to modification of any of the provisions of the contract documents, approval or acceptance of the work, supervising the contractor's work operations, or performing any other activity that is the responsibility of the contractor.

Important Documents

(Specification 1105)

Proposal

Proposals are supplied to the contractors upon request for the purpose of bidding on the work proposed. Some of the information listed on the proposal includes:

- Items of work to be performed on the project.
- Estimated quantities for each item of work.
- Proposed work period.
- Supplemental specifications, special provisions, and special notes, applicable to the project.
- Special job mix requirements for the project.

Proposals are subject to Addendums that may alter the work originally proposed (make sure you have all of the addendums).

ESTIMATING PROPOSAL -- FOR NON-FEDERAL AID CONTRACT PAGE: 1
 To be valid for bidding, the Proposal Schedule of Prices form included with this Estimating Proposal or a computer generated BBS Schedule of Prices form must be included with a "BIDDING DOCUMENT" issued by the IOWA D.O.T., Office of Contracts.

 A Proposal ID No.: 12-0033-053 Bid Order No.: 152 A
 A Primary County: BUTLER Locating Date: July 14, 1998 A
 A Type of Work: ACC RESURFACING Design: METRIC A
 A Bid Goal: None 1995 Std Spec A
 A Pre-Qual Group: ACC PAVEMENT/RESURFACING A
 A Contracting Authority: IOWA DEPARTMENT OF TRANSPORTATION A
 A Proposal Guaranty: \$ 150,000.00 A
 A Bid Proposal Package: None assigned to, or allowed with this Bid Order. A

This Proposal includes The Following Project(s):

 Project: STPH-3-5(23)--23-12 County: BUTLER
 Work Type: ACC RESURFACING / HEATER SCARIFICATION Plans: Yes
 Route: IOWA 3 Design: METRIC
 Location: FROM JUST EAST OF THE JCT. WITH IOWA 188, EASTWARD TO THE WEST JCT. WITH U.S. 219 IN MAVERLY IN BREWER COUNTY.
 Road System: PRIMARY ROAD (non-MS) Milepost: 210.59 To 220.19
 Length: 16.25 Kilometers A
 Non-Federal Aid - Predetermined Wages Are Not In Effect

 Project: STPH-3-5(23)--24-12 County: BUTLER
 Work Type: ACC RESURFACING Plans: Yes
 Route: IOWA 3 Design: METRIC
 Location: FROM JUST EAST OF THE EAST JCT. WITH IOWA 18, EASTWARD TO JUST EAST OF THE JCT. WITH IOWA 188.
 Road System: TRUNK ROAD (non-MS) Milepost: 202.62 To 210.59
 Length: 12.58 Kilometers A
 Non-Federal Aid - Predetermined Wages Are Not In Effect

 Project: RP-16-2(703)158--16-18 County: GRUNDY
 Work Type: ACC RESURFACING Plans: No
 Route: IOWA 18 Design: METRIC
 Location: FROM NEAR THE SOUTH JCT. OF U.S. 30, NORTHEAST TO THE ELUD COUNTY LINE.
 Road System: MAINTENANCE Milepost: 138.38 To 170.43
 Non-Federal Aid - Predetermined Wages Are Not In Effect

CONTRACT SCHEDULE OF PRICES Page: 5
 Vendor No.: PAB11 Bid Order No.: 152
 Contract ID No.: 12-0033-053 Locating Date: July 14, 1998
 Primary Work Type: ACC RESURFACING
 Primary County: BUTLER

Line No.	Item Number	Quantity and Unit	Unit Price	Bid Amount
			Dollars / Cts.	Dollars / Cts.
0130	12000-10000 ASPHALT CEMENT CONCRETE BASE, TYPE B, CLASS 1, 4.5% MINIMUM PARTICLES	AC 2,277.000	29.93000	77,063.95
0130	12000-10000 ASPHALT CEMENT CONCRETE SURFACE (CONCRETE TYPE B, 3% OR R10 750 CHANGED PART, 5% 4.5-10 FELT ROAD	MS 15,177.000	19.37000	293,979.45
0140	12000-10000 ASPHALT CEMENT	MS 1,048.000	149.00000	155,154.00
0150	12000-20000 ASPHALT CEMENT (MINIMUM 10 TRAVELER) SAMPLES	LUMP	LUMP	2,000.00
0160	12000-10000 SURFACE HEATING BY HEATER SCARIFICATION	MS 110,413.000	0.71800	79,275.83
0170	12000-10000 REINFORCING, CLASS A CONCRETE STONE	MS 6.000	20.00000	120.00
0180	12000-10000 REMOVAL OF EXISTING STRUCTURES	LUMP	LUMP	500.00
0190	12000-20000 REMOVAL OF EXISTING ROADWAY	LUMP	LUMP	1,800.00
0200	12000-10000 RETRAFIT CONCRETE SANDWICH BEARING	A 416.440	105.00000	43,745.50
0210	12000-10000 CONCRETE 1000 ROADWAY PIPE EQUIVANT. 600 MM DIA.	A 100.500	98.00000	9,845.00
0220	12000-10000 CONCRETE 1000 ROADWAY PIPE EQUIVANT. 600 MM DIA.	A 9.400	128.00000	1,203.20

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Contract

The contractor and the contracting authority enter into a contract after the acceptance of the bid. It obligates the contractor to perform the work as outlined in the proposal. The contract lists the unit prices and extended prices for all items of work outlined in the proposal.

Project Plans

Project plans show the location, character, dimensions, and details of the work to be performed. The plans generally include typical drawings, plan notes, standards, and supplemental drawings. Also included are traffic control plans, layouts, and standards.

Plans are subject to revisions (make sure you have all of the revisions).

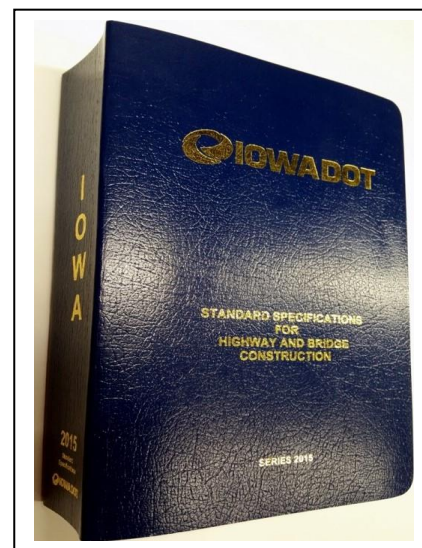
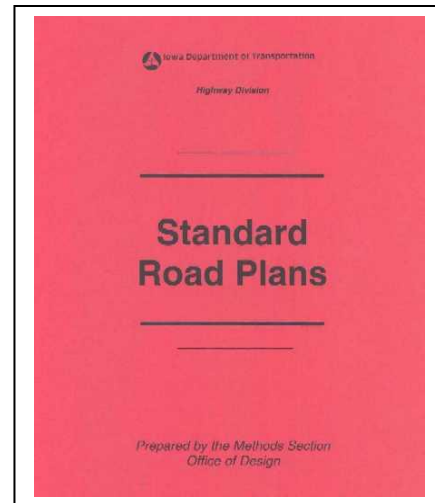
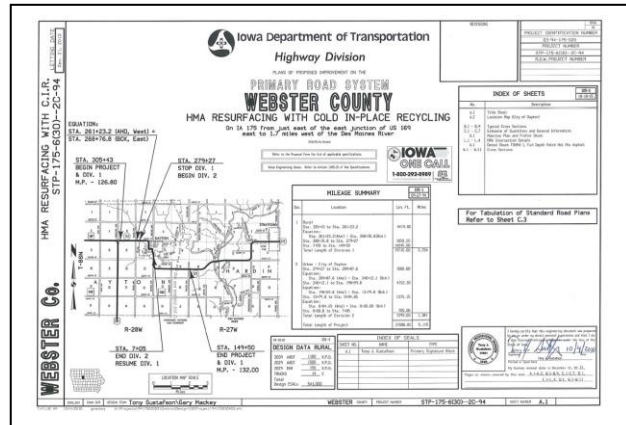
Standards

Standard Road Plans show standardized design features, construction methods, and approved materials for performing various items of work on a project. Tabulation 105-4, on the plans title sheet, lists the applicable road standards for the project.

The standards are referenced by number and revision date (make sure you have the correct version the plans refer to).

Specifications

Specifications represent the minimum requirements for performing the work of the contract. Specifications outline how the items of work are to be measured and on what basis payment will be made. The specifications for a project include the current Standard Specification Series (hardbound book) and General Supplemental Specifications (GSS), as well as any



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Supplemental Specifications (SS) or Developmental Specifications (DS) outlined on the proposal.

Special Provisions

Special Provisions (SP) are additions and amendments to the Standard and Supplemental Specifications covering conditions peculiar to an individual project.

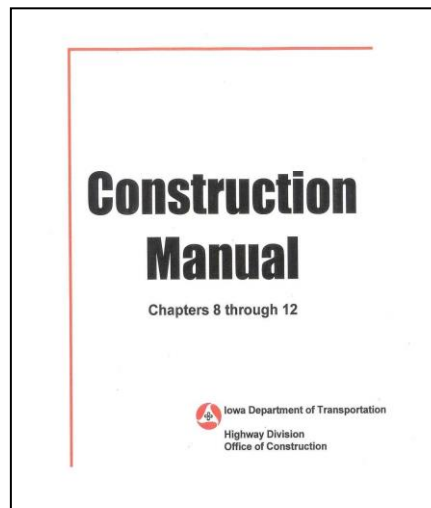
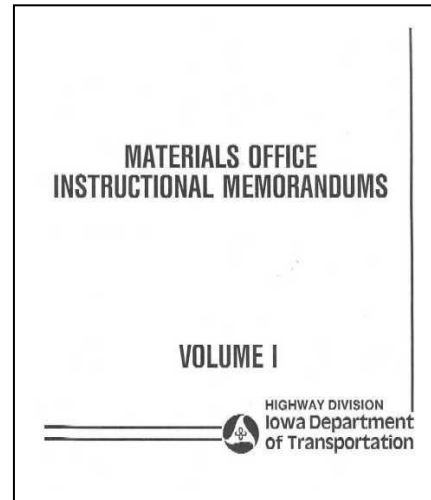
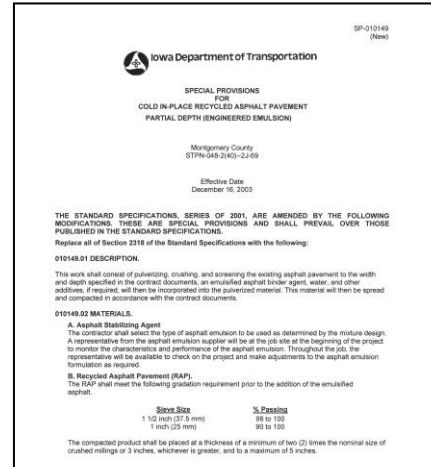
Instructional Memorandums

Materials Instructional Memorandums (IM's) are guidelines and instructions for the testing and acceptance of construction materials.

Construction Manual

The Construction Manual provides background information, required procedures, current instructions, and other departmental policy for uniform administration and inspection of construction projects. The manual is not considered a part of the contract documents for a project.

It is important to become familiar with the various contract documents, and the role they play in administering the project. It is also essential to understand how the contract documents are coordinated and their relative order of importance in case discrepancies or conflicts exist between documents.



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Duties Typically Performed

(Construction Manual Chapter 3;
Materials IM's 204 & 511)

Checking

Checking includes reviewing the project plans, preparing field books, and acquiring a working knowledge of the specifications that apply to the project.

Observing

Observing is done continually to insure compliance with the specifications. Thorough checking and diligent observation will result in good inspection. Some of the typical items to be observed include:

- Roadway Preparation
- Handling of Mix
- Equipment
 - Type & Features
 - Operation of Equipment
- Traffic Control
- Safety

Sampling

Sampling and testing of materials are a very important part of construction work. Payment for many items of work is based on the compliance of tests performed on material that has been sampled.

Most project sampling is performed by contractor personnel, as directed and witnessed by the inspector or plant monitor. The timing and frequency of sampling is as stated in *IM 204*.

Sampling procedures shall conform to applicable Materials IM's.

There is some project sampling that will be performed by District Materials Office personnel. They should be informed



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when that material will be available for sampling so it can be tested in a timely manner.

Testing

Testing of materials to be incorporated into the project may be performed by the contractor, District Materials Office personnel or by the inspector / plant monitor, depending on the material type, nature of the testing, and project staffing. Testing requirements and responsibilities are shown in *IM 204* and *IM 511 Appendices*. Testing procedures are found in applicable Materials IM's, or as directed by other contract documents.

All personnel involved in project sampling and testing shall have received the appropriate level of training and maintained all certifications required to perform their duties. The minimum required certification level is shown in *Construction Manual Appendix 3-4*.

See Chapter 8 of this manual for additional information regarding HMA sampling and testing duties.

Documentation and Reporting

Complete documentation of all phases of the work is necessary. Good records of each item must be kept to document payment to the contractor. Some items to keep in mind:

- Keep complete, neat, accurate and up to date records and reports.
- Submit reports on time.
- Include lineal, quantitative, and unit count measurements to support pay quantities.
- Complete diary (You can never have too much information in the diary. Information found in a diary



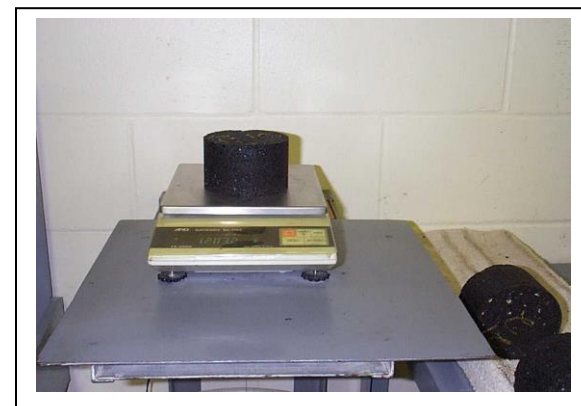
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is useful to recreate events in the future).

- Daily traffic control records. For projects let under Traffic Quality Control specifications, this is a contractor responsibility.
- Inform other inspectors and/or supervisor of any irregularities.

Other Inspection Duties

- Check Contractor's Equipment
 - Type, Size & Features
 - Operation
 - Maintenance
 - Safety
- Check Material Certifications
- Check Dimensions
 - Width
 - Depth
 - Length
 - Alignment
- Check Quantities and Yields
- Check Traffic Control Setup
 - For projects let under Traffic Quality Control specifications, this is typically a contractor responsibility.
- Check Temperatures
 - Existing pavement surface
 - Mix (Plant & Grade)
- Check Mix Uniformity
 - Temperature
 - Segregation
 - Aggregate Clumps
- Direct and Witness Sampling
 - Aggregate (Cold-feed)
 - Asphalt Binder
 - Loose Hot Mix (Hot box)
 - Compacted Hot Mix (Density Cores)
 - Determine and layout density core locations.
 - Direct and witness core drilling.



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- Measure and inspect cores for defects.
- Take possession of cores & deliver to field lab for testing (maintain agency chain of custody).
- Identify Samples
- Secure Samples (to be transported by others)
- Perform Testing
 - Compacted Hot Mix (Density Cores)
 - Perform density testing on HMA core samples.

These are some of the typical duties that the inspector will be asked to perform. Knowledge of job requirements and an interest in the work will contribute immensely to performing the duties of an inspector.

Additional detailed information and references related to HMA project inspection duties may be found in the HMA Paving Field Inspection Checklist, located in the Appendix (Chapter 10).

