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TO: Region Engineers
Region Delivery Engineers
TSC Managers
Resident/Project Engineers
Region Construction Engineers

FROM: Gregory C. Johnson, P.E.
Chief Operations Officer

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Bureau Director of Statewide Field Services

SUBJECT: Bureau of Highway Instructional Memorandum 2011-04
Final Estimate Review Procedure

The Final Estimate Review Procedure applies to MDOT let projects that utilize a non-certified delivery/project engineer. This includes all projects where full consultant construction engineering is used. A non-certified delivery/project engineer is a delivery/project engineer that has not achieved a passing score under MDOT's project record Certification Review Program, or is not eligible to obtain certification under this program. The non-certified delivery/project engineer is required to adhere to these procedures on every project until they successfully graduate into the department's Project Record Certification Program. This Final Estimate Review Procedure supersedes the procedures set forth in Section 109 of the MDOT Construction Manual.

Purpose of the Review

The purpose of the review is to verify that final contract quantities are supported by proper documentation and have been paid in accordance with contract documents and MDOT's Standard Specifications for Construction. The review provides assurance that the project records are in substantial conformance with the plans and specifications, as well as the department's policies and procedures. Substantial conformance is defined as having attained a passing evaluation on 80 percent of the contract items sampled and listed on the Final Estimate Review Summary (Form #1147), and in the section of this document titled Individual Pay Item Review.

When actions depart from specifications and established MDOT policies/procedures, the basis for acceptance must be documented by the delivery/project engineer in accordance with BOH IM 2005-09, or as superseded.

Review Teams

Each Final Estimate Review Team will have a leader, as well as members with knowledge and experience in MDOT construction and materials documentation. The team leader will be responsible for scheduling the review, ensuring that the review is completed in a timely and thorough manner, management of review documentation, and completing final deliverables of the closeout review by compiling the final estimate review report, and signing the Final Estimate Review Summary at the completion of the review. Upon request, consultation or assistance on project related review issues is available with the Construction Contracts Unit, Construction & Technology Division.

MDOT Projects: The region construction engineer will appoint team members. Members may consist of MDOT engineering and/or technical staff from other TSCs, the region, or prequalified consultants. However, staff from the overseeing TSC office shall not be part of the review team.

Local Agency Projects: The region construction engineer will appoint team members. Members may consist of MDOT engineering and/or technical staff from TSC offices not involved in oversight of the project, the region office, or prequalified consultants. Consultants and TSC staff who had involvement in the design or construction of the project shall not be part of the review team.

Format of the Review

When the delivery/project engineer has determined the final quantities of all pay items and completed required documentation for the project, the region construction engineer shall be advised that the project is ready for a final estimate review. It is important for the delivery/project engineer to complete the project closeout in a timely manner to allow adequate processing time for the entire final estimate review process, and post review submission of the final estimate within 120 calendar days of project completion. If a project closeout is not completed within the department's established timelines, the delivery/project engineer will be required to provide the region construction engineer with an explanation. This information will also be reported to the MDOT administration monitoring the overdue project finals.

Each individual project involving a non-certified delivery/project engineer must be reviewed separately. The review will cover two major areas:

1. Construction pay item documentation, including contract related project documentation.
2. Materials documentation.

Overall Documentation Review

The Final Estimate Review Team shall review the project records for the following items, at a minimum:

1. Required administrative documents, per MDOT's File Manual for Construction Records, which are attached to BOH IM 2008-09.
2. Contractor Certified Payroll documentation that has been properly reviewed by the delivery/project engineer in accordance with current department policy.

3. Contract modifications containing overruns, extras, adjustments, and any necessary project contract change to ensure that they contain proper formatting and content, and are consistent with the procedure for processing contract modifications.
4. Supporting documentation for extensions of time approved with or without liquidated damages, incentives, and/or value engineering change proposals are included in the project files.
5. Confirmation that the person performing office technician duties for the certified delivery/project engineers on MDOT, local agency, and consultant projects have successfully completed office technician training.

Pay Item Selection

The selection of pay items to be reviewed shall be based on the following:

1. Measurement characteristics, including volume, weight, length, area, lump sum, unit, removal, force account, and adjustment items.
2. A minimum of 10 pay items per project. For projects with less than 100 pay items, 10 percent of the items will be reviewed, with a minimum of 3 items.
3. If irregularities or deficiencies are found with a pay item, the review must be expanded into similar or related items.
4. Pay items covering major items of work such as removal, earthwork, hot mix asphalt (HMA), concrete, aggregate surfaces, and structures.
5. Items containing significant increases/decreases, adjustments, or other funding related changes during construction.
6. At least one force account pay item, when applicable.

Documentation requirements for most pay items can be found in the Documentation Guide (Minimum Acceptance Requirements for Material Approvals, and Documentation), which is available on MDOT's Web site at: www.michigan.gov/mdot, Maps & Publications, Manuals, Guides, and Advisories & Memos.

Individual Pay Item Review

The individual pay item review shall include, at a minimum, the following items:

1. Pay items measured and paid in accordance with the applicable specifications and special provisions.
2. Supporting documentation that is properly identified (MDOT control section and job number) and signed.
3. Documentation that is properly completed on current contract time frame prescribed forms.
4. Component materials for each pay item properly documented, approved, and accepted.
5. A sample of the Inspector's Daily Reports (IDRs) containing each pay item, which demonstrates conformance with MDOT's policies and procedures.

If irregularities or deficiencies are found, the review should be expanded into similar or related items.

Materials Review

For each pay item reviewed, the acceptance of the materials component shall also be examined. If irregularities or deficiencies are found, the review should be expanded into similar or related items.

During the review, ensure that documentation for the following emphasis areas is adequate:

1. Signed Material Source List forms are included in project files.
2. The materials were approved in accordance with the MDOT Materials Quality Assurance Procedures Manual and Materials Source Guide.
3. Sufficient quantity of each material was approved for materials accepted by test for all pay items reviewed.
4. All materials approved for use under General Certification, Test Data Certification, and Approved Manufacturer/Supplier are in accordance with BOH IM 2002-05, or as superseded.
5. All required testing was completed at appropriate intervals.
6. All testing personnel were properly qualified.
7. Items included on the Qualified Product List are noted on an IDR, including a reference to the product and manufacturer as verified in the field, placement of a label/copy, or tag in the project files.
8. Materials approved by visual inspection are noted on the appropriate IDRs, and quantities are within the threshold limits in accordance with the Materials Source Guide in effect at the time of letting.
9. Proper sampling and testing of concrete items, including frequency and results of slump tests, modulus of rupture, atmosphere and concrete temperatures, air content, and yield/evaporation (bridge projects only) tests.
10. Verification of proper sampling and testing of HMA items, including frequency and results of mix and air temperatures tests, application yield rate data, loose mixture tests, density tests, and all other information required in the MDOT Construction Manual, and clarified in Construction Advisory 2006-07, or as superseded.
11. Steel and iron certifications for Buy America provisions.

The Materials Review Worksheets (Form #1972) should include reference to specific test documents examined, so that an auditor can easily trace these documents. Also, total quantities tested must be reported.

Independent Assurance Testing

Independent Assurance Testing (IAT) is required for all federally funded projects on the National Highway System (NHS). IAT is also required for each individual inspector or tester, and their equipment in four areas:

1. Concrete sampling and testing.
2. Aggregate sampling and testing.
3. In-place density testing.
4. HMA mixture testing.

A listing of current IATs for an individual can be found in the Independent Assurance Testing Database. The Final Estimate Review Team must verify and document that all required IATs were completed.

Final Estimate Review Report

The Final Estimate Review Report contains the review work papers documenting the findings of the review. The report, developed by the Final Estimate Review Team, should provide sufficient data for the delivery/project engineer, FHWA, region personnel, and external department project auditors to make an assessment of the level of administrative compliance of the documentation. The evaluation of the final estimate review determines whether a timely payment of federal funds will be made.

The following forms, which are available on MDOT's Web site, shall be used to develop the Final Estimate Review Report:

1. Contract and Related Document Checklist (Form #1969).
2. Construction Item/IDR Checklist (Form #1970).
3. HMA Item Checklist (Form #1971).
4. Material Review Checklist (Form #1972).
5. Concrete Item Checklist (Form #1973).

MDOT's control section and job number should appear on each sheet to properly identify the work papers. Clearly identify the pay item or material reviewed on each form. Fill in the MDOT standard specifications for construction section number for the item, and/or proposal reference page of the special provision for the item detailing the basis of measurement and payment. The special provision modifies the standard specification for the item reviewed. The support documents examined by the Final Estimate Review Team should be listed on the forms. All forms should be signed by the member of the review team who completed that portion of the review.

Verify that pay items documentation is:

1. Cross-referenced in Field Manager under the documentation tab.
2. Identified by MDOT project number, date, inspector, and file reference number.
3. Properly identify indexed and cross-referenced to source documents in the field measurement books.

Final Estimate Review Summary

The Final Estimate Review Team will complete the Final Estimate Review Summary and meet with the delivery/project engineer to discuss their findings. If deficiencies are found the engineer will be required to address the deficiencies and notify the Final Estimate Review Team when all issues have been addressed. The Final Estimate Review Team will then conduct a follow-up review.

Once all deficiencies noted in the review have been resolved, and the project records are in substantial conformance with current department policies/procedures, the Final Estimate Review

Team leader shall sign the Final Estimate Review Summary. The original signed Final Estimate Review Report is then placed in the official project files. On local agency projects, provide the overseeing TSC with a copy for their records. The TSC delivery engineer shall verify that the final estimate review summary has been completed and signed, and that all deficiencies noted on the form have been resolved prior to submitting the final project estimate for payment.

If you have any questions, please contact Mohammad Azam, Operations Review Engineer, Construction Contracts Unit, by telephone (517-636-0832) or e-mail (AzamM1@michigan.gov).

Chief Operations Officer

Bureau Director of Statewide Field Services

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BOHD:C/T:MA:mnn

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