



## **INDIANA DEPARTMENT OF TRANSPORTATION Division of Materials and Tests**

### **Directive 109c**

### **Material Certification Procedure for Contracts Utilizing AASHTOWare Project**

#### **1.0 INTRODUCTION**

##### **1.1 Purpose**

Material Certification is required in the Code of Federal Regulations, CFR, as described in 23 CFR 637. This Directive details the INDOT procedures required to reasonably ensure that the quality of all materials incorporated into the project is in conformance with the contract (plans and specifications).

Contract Material Certification is a shared process with roles and responsibilities for Construction Field Personnel, District Testing Personnel, and the Division of Materials and Tests. Construction and Testing personnel will strive to ensure that the Contractor uses the required materials, beginning with the preconstruction conference and continuing throughout the life of the contract. The Pay Items, Plans, Special Provision, Specifications, and Frequency Manual provide direction in the acceptance of materials. AASHTOWare Project (AWP) and the reports described herein simply document those decisions.

*(Note: Contract information will be documented in either the SiteManager or AWP software. In no case will contract information be documented in both systems. The Department will determine which software is utilized prior to the Notice to Proceed date of the contract.)*

##### **1.2 Scope of Process**

Material Certification requires the use of 10 reports. These reports are necessary to confirm the proper acceptance requirements for materials incorporated into the scope of work. Construction will run the reports throughout the life of the contract. Construction and Testing personnel will update and maintain material record data throughout the life of a contract, thus enabling that the Final Material Certification review occur quickly and efficiently after completion of the final IC-642 Comparison of Original and Final Quantity Amounts.

The Final Material Certification Review will occur by District Testing upon submittal of a Material Review Letter by the PE/M/S in Construction. District Testing will perform a final review of all 10 reports, and a probability-based

check of select sample records for completeness. The District Testing Engineer will issue the Final Material Certification Letter upon resolution of found errors.

### 1.3 Reports

AWP lists multiple reports within the recording software. This Directive details the required reports for Material Certification. The reports may be found by going to <http://inawp.indot.in.gov/>. Enter your AWP Username and Password to Login the AWP software. From your Dashboard select the Global Action Menu button. Then select Generate Report to access the list of AWP reports.

### 1.4 Terminology

**AASHTOWare Project (AWP)** - <definition>

**Area Engineer (AE)** – An INDOT employee assigned to manage and oversee construction projects in a few counties or other defined area within a district.

**Design Mix Formula (DMF)** – A mix design for hot mix asphalt detailing the materials used and their corresponding sources as well as the target testing criteria for that design.

**Dispute Credit Adjustments** – A \$500.00 credit adjustment should be included in the quality adjustment for failed materials pay item for each disputed subplot in which retest results did not improve the Sublot Composite Pay Factor (SCPF) or Lot PF, in accordance with 401.20.

**District Testing Engineer (DTE)** – An INDOT employee assigned to manage and oversee testing operations at the district.

**Failed Materials Committee (FMC)** – A committee that consists of select INDOT employees from construction, design, materials, and pavement divisions, as well as other specialized representation, that review, determine, and resolve cases of materials or finished products identified as not in conformance with the contract.

**HMA Pay Wizard Application** – An application that exists in the INDOT Technical Applications Pathway (ITAP). The application's purpose is to collect and compile QC/QA-HMA test results, dispute retest results, and subplot quantities to calculate HMA quality adjustments and credit adjustments based on pay item and DMF usage.

**IC-642** –Comparison of Original and Final Quantity Amounts Report that lists pay items including their original quantity amount, change ordered quantity amount, and final quantity amounts.

**Mixture Adjustment Factor (MAF)** – The MAF is required to assure that every DMF provides the planned design pavement thickness and that pay quantities

and pay factors are adjusted accordingly. The DMF shall state the Mixture Adjustment Factor, MAF. Prior to paving, both the planned quantity and lay rate shall be adjusted by multiplying by the MAF. When mixture is produced from more than one DMF for a given pay item, the MAF will be applied to the applicable portion of the mixture for each. The measured quantity will be divided by the MAF to determine the pay quantity. See 401.05, 402.05 and 410.05 for calculations and further details.

**PE/M/S** – Project Engineer, Construction Project Manager, Project Supervisor, or other duly assigned personnel who is either an INDOT employee or a Consultant-employee hired by INDOT and who is assigned to supervise and manage a contract and the completion of that contract.

**Source Material Identifier (SMI)** – Samples submitted by a material source directly to the INDOT Division of Materials and Tests prior to being incorporated into the contract. Material testing results found to meet or exceed INDOT Specifications are assigned an SMI number for the represented quantity and selected by the PE/M/S as acceptance for the material used on the contract. SMI number acceptance is time and/or quantity dependent and will be removed from selection in AWP once exhausted.

## **1.5 Responsibilities**

**DTE** – Performs final Material Certification review in accordance with this Directive. Works with other personnel to ensure timely reconciliation of any issues. Performs or directs additional checks on acceptance records. Completes the Letter of Certification by State Engineer when all issues are reconciled.

**Division of Materials and Tests (M&T)** – Provides technical support and processing of Failed Materials Committee determinations and resolutions.

**PE/M/S** – Creates and maintains the contract material record in AWP and utilizes AWP reports throughout the life of the contract to track material records and resolve material record errors and omissions.

Performs reviews to ensure that all reports comply with requirements at the time of submittal of the final construction record to the District Final Records Coordinator. Communicates exceptions in writing to the AE and DTE as they are recognized. Submits signed Material Review Letter to the DTE when construction records are ready for the Testing Department Material Record Review.

**Testing Material Records Administrator** – A district employee who revises default contract sample checklist settings in coordination with the PE/M/S. Reviews, reports, and assists the PE/M/S throughout the life of a contract at request of the PE/M/S. Performs final review of all reports upon receipt of the Material Review Letter and the final IC-642 from the Construction Review Office. Performs additional checks of acceptance testing records. Seeks clarification from the DTE and/or M&T as needed to assist the PE/M/S during the life of a contract.

Notifies the PE/M/S of problems that need correction. Compiles exceptions and observations, and prepares the draft Letter of Certification by State Engineer for the DTE.

## **1.6 Resources**

Testing and acceptance requirements for each of the materials used for each of the pay items should align with the requirements as set forth in the following contract resources. Resource documents should be utilized in the order-of-importance as described in section 105.04 of the Standard Specifications.

1. Schedule of Pay Items (located in Contract Information Book)  
(<https://erms.indot.in.gov/viewdocs/>)
2. Construction Memorandums  
([https://in.gov/dot/div/contracts/conmemo/con\\_memo.htm](https://in.gov/dot/div/contracts/conmemo/con_memo.htm) )
3. Unique Special Provisions (located in Contract Information Book)  
(<https://erms.indot.in.gov/viewdocs/>)
4. Plans and Standard Drawings  
(<https://erms.indot.in.gov/viewdocs/>) and  
(<https://www.in.gov/dot/div/contracts/standards/>)
5. Recurring Special Provisions (located in Contract Information Book)  
(<https://www.in.gov/dot/div/contracts/standards/>)
6. Qualified Products Lists Qualified Sources Lists (QPL)  
([https://www.in.gov/doing-business-with-indot/contractorsconstruction/division-of-materials-and-tests/qualified-products-lists\\_qualified-sources-lists/](https://www.in.gov/doing-business-with-indot/contractorsconstruction/division-of-materials-and-tests/qualified-products-lists_qualified-sources-lists/))
7. Standard Specifications  
(<https://www.in.gov/dot/div/contracts/standards/book/index.html>)

### Other Resources

1. Manual for Frequency of Sample and Testing and Basis for Use of Materials (<https://www.in.gov/indot/2736.htm>)
2. Final Construction Record Guide  
(<https://www.in.gov/indot/div/construction.htm>)
3. General Instructions to Field Employees  
(<https://www.in.gov/indot/div/construction.htm>)
4. Approved change orders generated on the contract

## **2.0 MATERIAL REVIEW LETTER**

Steps below to be completed by the PE/M/S

- 2.1** Run all reports as described below. Make corrections until all reports are complete and accurate. (See Material Certification Guide for detailed instructions)

- 2.2** Complete and sign Material Review Letter upon successful project level review and correction of all reports (see template in Appendix).
- 2.3** Submit completed letter to District Testing through Testing Material Records Administrator.

### **3.0 MATERIAL RECORD REVIEW PROCEDURES**

The Procedure for Material Certification of contracts utilizing AWP is an AWP Report centric and probability driven process that is structured to verify each of the individual parts of the contract material record. For the purpose of this review procedure, a contract material record is divided into seven parts:

- 1) Verification of Contract Testing Requirements
- 2) Verification of General Sample Data
- 3) Verification of Materials Accepted by Certification
- 4) Verification of Materials Accepted by SMI
- 5) Verification of Materials Accepted by Test Results
- 6) Verification of Failed Materials, and
- 7) Verification of QC/QA-HMA/SMA/OG Quality Adjustments

#### **3.1 Verification of Contract Testing Requirements**

Objective: Utilize each of the following AWP reports for the designated contract to ensure that all contract items and associated materials are accounted for and that the testing and/or acceptance requirements for each material comply with the contract requirements.

##### **3.1.1 Contract Estimate Quantity & Final Quantity Discrepancy Report**

Review to determine items which may have unpaid reported quantities, which will result in additional tests required. This report will be blank if all material testing requirements have been satisfied for the contract.

##### **3.1.2 Contract Potential Testing Shortages Report** – Review to determine which items have testing shortages based on the Contract Testing Requirements established during contract generation in AWP. This report will be blank if all material testing requirements have been satisfied for the contract.

##### **3.1.3 Items Not on Contract Sample Checklist Report** – Review to determine which items (original and change order items alike) may need to have material testing requirements added to the Contract Sample Checklist. The PE/M/S shall request the change through District Testing. This report will be blank if all material testing requirements have been satisfied for the contract.

**3.1.4 Contract Sample Checklist Report** – Review materials and testing requirements for compliance with contract requirements and identify all errors and omissions. The Contract Sample Checklist should reflect the materials that were used and their respective acceptance requirements.

### **3.2 Verification of General Sample Data**

Objective: Utilize the following reports for the designated contract to ensure that all critical basic sample information is complete.

**3.2.1 Unauthorized Sample Records Report** – Review this report to verify all samples are authorized. All samples listed in the report shall be addressed by the PE/M/S. This report will be blank if all material testing requirements have been satisfied for the contract.

**3.2.2 Contract Sample Record Summary Report** – Review this report to verify all samples have a status reported as “Pass/Completed” or “Failed & Resolved”. Any sample with the status mentioned below will need corrected as described.

“**Pending**” – Complete all requirements for the Sample ID to be reported as “Pass/Completed” or “Failed & Resolved”

“**Void**” – Disassociate the Sample ID from the Contract by removing any Contract CLN or PLN items listed in the Contract tab of the sample and then re-authorize the sample.

“**Fail/Completed**” – Sample is awaiting FMC Resolution Letter. Once a Resolution Letter is received, attach letter to Sample ID, change status to “Failed & Resolved”, then re-authorize the sample.

### **3.3 Verification of Materials Accepted by Certification**

Objective: Utilize the following AWP report for the designated contract to ensure that the correct type of certification is being reported for each material that was used on the contract and accepted by certification, and that all certifications are attached in AWP and are correct and passing.

**3.3.1 Sample Records Accepted by Certification Report** – Review the Certification Type for each Sample ID listed and that it corresponds with the Manual for Frequency of Sampling and Testing and Basis for Use of Materials. Attachment column should read “YES” for each Sample ID.

### **3.4 Verification of Materials Accepted by SMI**

Objective: Confirm that material has been pretested, reflected by the SMI number reported. (Example: Template AV 6006 reports SMI numbers for structural steel coating material(s).)

#### **3.4.1 Sample Records Accepted by SMI Report**

### **3.5 Verification of Materials Accepted by Test Results**

Objective: Utilize the following AWP report for the designated contract to do the following. Observe material assignments to multiple PLNs. Confirm appropriate test method groupings, accurate represented quantities, and valid sample authorizations. Conduct a probability driven review of test templates in AWP in accordance with Appendix (A) Testing - Additional Review Process for Acceptance Method by Test Results to verify completeness, correctness, accuracy, and passing status of test results.

#### **3.5.1 Sample Records Accepted by Test Results Report**

### **3.6 Verification of Failed Materials**

Objective: Verify that all failed materials are accounted for and reported in AWP with a status of "Failed & Resolved". (Note: Must ensure that all known failures are included in AWP and marked "Fail / Completed" or "Failed & Resolved" before utilizing this report.)

**3.6.1 Failed Contract Samples Report** – Each "Sample ID" listed shall be reported with a status of "Failed & Resolved". This report will be blank if all material testing requirements have achieved passing results and reported with a status of "Pass/Completed".

All failed materials require determination or resolution in accordance with Directive 112. This report helps to verify that the IC-642 final pay quantities for the Quality Adjustment, Failed Materials pay item reflects all determination and resolutions in the form of credits to the contract (i.e. negative transactions). This report also verifies that all FMC remove and replace orders have been completed.

### **3.7 Verification of QC/QA-HMA/SMA/OG Quality Adjustment**

Objective: Assist the PE/M/S and Construction Review Officer as needed to ensure that QC/QA-HMA information is properly accounted for and processed. Help verify that delivered quantities, DMF's, and completed sample records are available and properly accounted for. Help verify that this information is properly synced between AWP and the HMA Pay Wizard Application to ensure proper calculation of quality adjustments and dispute credit adjustments. Help verify MAF adjustments are applied correctly to determine final pay quantities. Help verify that the IC-642 final pay quantities for the Quality Adjustment, HMA and

Quality Adjustment, Failed Materials pay items reflect the incentives (bonuses) and disincentives (credits) that are due to be paid and collected, respectively.

#### **4.0 COMMUNICATION TRACKING FOR ERROR CORRECTIONS**

If multiple errors exist, then an error summary report may be created by District Testing. The error summary report will be sorted by Material Code, identifying sample IDs reviewed that are incorrect, and/or sample IDs that the PE/M/S needs to review. See Appendix (B) Errors and Observations for resolution options.

#### **5.0 EXCEPTIONS**

##### **5.1 Exception Letter**

An Exception Letter is required to document testing shortages that cannot be resolved by any other means. Example situations for when an Exception Letter is applicable are, but not limited to:

1. INDOT fails to obtain a sample that the specifications do not instruct the Contractor to sample and submit.
2. INDOT failed to test a material that the specifications do not instruct the Contractor to test.
3. INDOT failed to retain a document (a certification or report) submitted by the Contractor.
4. Time has lapsed to the extent that testing the material or obtaining documentation is not possible.

The Exception Letter is written by the PE/M/S on company letterhead/email, and must include the following in as much detail as possible:

- 5.1.1** Contract Number
- 5.1.2** Date
- 5.1.3** PE/M/S and AE Signature/Email Sender Identified
- 5.1.4** Project Control Number (PCN)
- 5.1.5** Project Line Number (PLN)
- 5.1.6** Contract Line Number (CLN)
- 5.1.7** Item description(s)
- 5.1.8** Location(s) of material/work
- 5.1.9** Quantity resented by missing/non-passing test results
- 5.1.10** Contract requirements for testing (i.e. Testing Frequency)
- 5.1.11** Total number Tests Required
- 5.1.12** Shortage of passing tests
- 5.1.13** Reasons(s) for shortages/non-compliances; and
- 5.1.14** How the non-conforming/untested material is performing to-date
- 5.1.15** Any additional information or details the PE/M/S believes important

The Exception Letter will need to be reviewed for concurrence by the AE before being sent to the DTE for review.



## 5.2 Exception Letter Sample Record

Upon DTE approval of an Exception Letter, create a Sample Record with the appropriate following information:

### 5.2.1 General tab

- 5.2.1.1 Material Code
- 5.2.1.2 Represented Quantity / Units
- 5.2.1.3 Lot/Sublot if applicable
- 5.2.1.4 Sample Date = Date of Exception Letter
- 5.2.1.5 Sample Type
- 5.2.1.6 Acceptance Method
- 5.2.1.7 Scan and attach the Exception Letter to the Sample Record

### 5.2.2 Source tab

- 5.2.2.1 Source ID
- 5.2.2.2 SMI or Product Name if applicable
- 5.2.2.3 Mix Design Type and ID if applicable

### 5.2.3 Assignments Tab

- 5.2.3.1 Assign the Destination Lab that would have performed the test

### 5.2.4 Tests tab

- 5.2.4.1 Assign the test method(s) covered by the Exception Letter
- 5.2.4.2 Open each respective test method template, select the appropriate Reference Specification Condition (if applicable), and mark the test as "Info"
- 5.2.4.3 Mark the test method(s) "Complete" to complete the sample test review and sample record review

### 5.2.5 Contracts tab

- 5.2.5.1 Associate the sample record to the appropriate Project line items covered by the Exception Letter

### 5.2.6 AWP – Additional Steps

- 5.2.6.1 Review the test method(s) assigned to the sample
- 5.2.6.2 Review the sample while assigning a Status of "Pass/Completed"
- 5.2.6.3 Authorize the sample

**6.0 LETTER OF CERTIFICATION by DISTRICT TESTING**

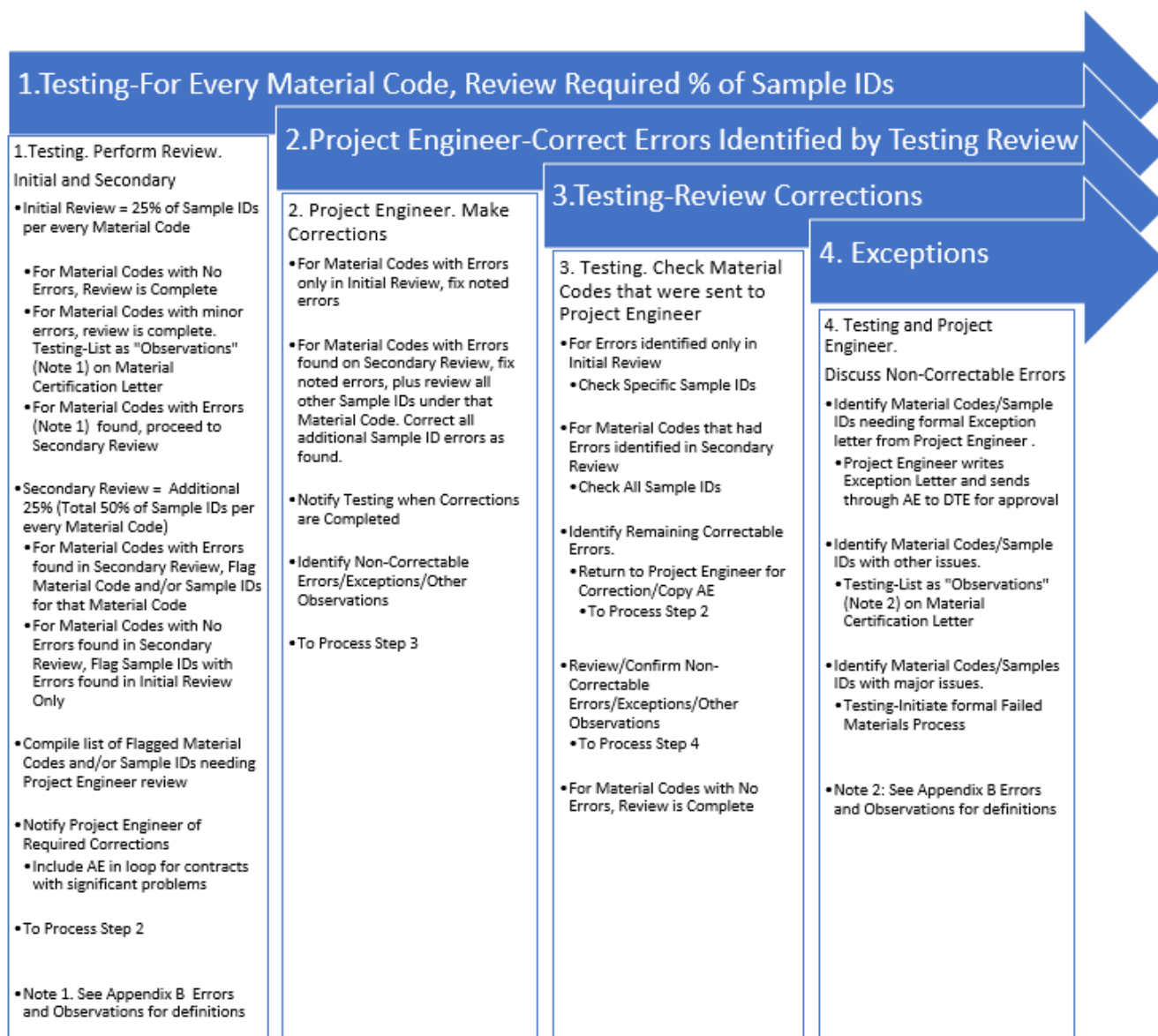
- 6.1** District Testing reviews all reports as described above and works with PE/M/S to make any remaining corrections until all reports are complete and accurate. Some examples of errors requiring correction are in Appendix (B).
- 6.2** District Testing performs checks of acceptance testing records and performs the following:
  - 6.2.1** Runs Sample Records Accepted by Test Results Report
  - 6.2.2** Reviews randomly selected AWP Sample IDs for all Material Codes in accordance with the procedure shown in Appendix (A)
  - 6.2.3** Works with PE/M/S to resolve all issues
- 6.3** District Testing performs an additional review, based on DTE analysis, for any areas of concern, when applicable.
- 6.4** District Testing compiles exceptions and observations for inclusion in the Letter of Certification by State Engineer (Appendix D). Some examples of errors that may remain and be listed as observations are in Appendix (B).
- 6.5** District Testing completes the Letter of Certification by State Engineer upon successful review and correction of all reports listed in this Directive and submits the letter to the DTE for review and signature. Once the DTE has signed the letter, attach the Material Review Letter from PE/M/S. (see template in Appendix C).
- 6.6** District Testing submits the completed letter and attachments to the District Construction Final Review Officer for inclusion in the Final Construction Record.

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## 7.0 APPENDICES

### 7.1 Appendix A

#### Testing-Additional Review Process for Samples Accepted by Test Results



## **7.2 Appendix B - Errors and Observations**

### **7.2.1 Definitions**

#### **Errors requiring Corrective Actions**

- General tab: Input field inaccuracies and/or omissions.
- Sources tab: Input field inaccuracies and/or omissions.
- Test Tab: Anything that confirms proper acceptance of material with supportive information.
- Attachments: Type A Certifications document information as per INDOT Specifications section 916. Buy America / Build America certifications document information as per current Department requirements.
- Contract Tab: Cumulative Contract tab Represented Quantities less than or equal to the General tab Represented Quantity.
- Reports: Incomplete, incorrect, contradictory, or missing information.

#### **Observations**

- Anything else that does not hinder Material Certification but improves quality of report.

### **7.2.2 Outcomes**

#### **Errors.**

- Corrective Action options (must be addressed in order to certify material records)
- Correct report/checklist
- Failed Material / Cost Adjustment
- Exception Letter
- Change Order to adjust requirements

#### **Observations.**

- Observation options (does not need to be corrected in order to certify material record)
- Correct report/checklist
- List on Final Material Certification report

**7.3 Appendix C – Material Review Letter by PE/M/S**

(Editable pdfs of this letter are available on the Department's website

<https://www.in.gov/indot/2736.htm>. PE/S's employed by consultants should use their corporate letterhead.)

**INDIANA DEPARTMENT OF TRANSPORTATION**

Date [Click to Select Date](#)

**MATERIAL REVIEW BY PROJECT ENGINEER/MANAGER/SUPERVISOR**

Contract:

Project:

District Testing Engineer

Dear [Enter District Testing Engineer's name](#) :

The contract material record has been reviewed to the best of my knowledge in accordance with INDOT Division of Materials and Tests Directive 109. Acceptance testing was performed in accordance with INDOT Division of Materials and Tests Directive 107, the Independent Assurance and Qualified Acceptance Personnel Program. Buy America certifications, in accordance with 106.01(c), are complete and attached to the appropriate Sample IDs in AASHTOWare Project.

All of the following reports have been completed:

1. ☐ Contract Est Qty and Final Qty Discrepancies
2. ☐ Contract Potential Testing Shortages
3. ☐ Contract Sample Checklist
4. ☐ Contract Sample Record Summary
5. ☐ Failed Contract Samples
6. ☐ Items not on Contract Sample Checklist
7. ☐ Unauthorized Sample Records
8. ☐ Sample Records, Accepted by Cert
9. ☐ Sample Records, Accepted by SMI
10. ☐ Sample Records, Accepted by Test Results

Sincerely,



Construction Project Engineer/Manager/Supervisor

Cc: AE  
District Construction Final Review  
File

[www.in.gov/dot/](http://www.in.gov/dot/)  
An Equal Opportunity Employer

**7.4 Appendix D – Letter of Certification by State Engineer**  
(Editable .docx file of this letter has been sent to the six DTEs.)



Date:

LETTER OF CERTIFICATION BY STATE ENGINEER

Contract:

Project:

Mr. Joseph Novak  
State Construction Engineer

Dear Sir:

This is to certify that the above-referenced contract has been reviewed in accordance with INDOT Division of Materials and Tests Directive 109 and the materials incorporated in the construction work have been found to comply with the requirements therein.

Acceptance testing has been performed in accordance with INDOT Division of Materials and Tests Directive 107, the Independent Assurance and Qualified Acceptance Personnel Program.

Exceptions to this contract are listed below with documentation attached.

- 

Observations found during the contract review are listed below.

- 

Sincerely,

<Typed Name>

District Testing Engineer

cc: Project Engineer/Manager/Supervisor  
Construction Area Engineer  
District Construction Review  
file

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