

3.01 MATERIALS CERTIFICATION PROCEDURES

3.01.01. Scope

- A. This procedure covers the requirements for General Certifications and Test Data Certifications.
- B. Certifiable materials are designated under "Basis of Acceptance" in the Materials Acceptance Requirements Table of Chapter 7. This table can also be found in the "Materials Source Guide" (MSG).
- C. Additional detailed procedures have been written to cover certification of materials from Approved Manufacturers and Approved Suppliers. See Section 3.02 for the requirements for Approved Manufacturers and Approved Suppliers.
- D. See Chapter 4.12 of this manual for the requirements for Buy America Certification of Steel and Iron products.

3.01.02. General

- A. It is the Contractor's responsibility to ensure that ALL certifications for material to be incorporated into the project are accurate and are delivered as required by Section 3.01.03C of this document.

3.01.03. Certification Documentation

- A. Where more than one piece of paper is included in the certification document, all pages must be numbered (___ of ___) and include Contract I.D. in order to reunite them should they become separated.
- B. Stencil, stamp, or otherwise mark all certified material prior to delivery to a supplier or project. This mark must identify the AASHTO, ASTM, or MDOT specification that the material meets, to allow the material to be recognized and checked against the manufacturer's or supplier's certification document.
- C. General Certification - This documentation must consist of ALL of the following:
 - 1. Company name, address, and contact information.
 - 2. Date of shipment.
 - 3. Contract number (Control Section/Job Number).
 - 4. Name of Contractor.
 - 5. If material is certified by a supplier, the manufacturer's name must be included on the certification.
 - 6. A list of all applicable specifications (ASTM, AASHTO, MDOT or other designations as appropriate) which the material is certified to meet.

7. Any applicable specification modifier such as class, grade, type, etc.
8. Name of material (MDOT designation). The proper name of materials can be found in the Materials Acceptance Requirements Table of Chapter 7, and the Standard Specifications for Construction.
9. Identification markings on shipment as required by Section 3.01.03B.
10. Quantity of material represented by the certification.
11. For certification of Qualified Product List (QPL) materials, indicate QPL specification section number as shown in the Materials Source Guide and the product name.
12. A statement, signed by a responsible representative of the manufacturer or supplier, that the material represented by the certification meets all MDOT listed specification requirements.

D. Test Data Certification – This documentation must consist of all the requirements of a General Certification. In addition to the requirements of Section 3.01.03C, the following information must also be included:

1. Laboratory test report(s) for samples obtained from the same lot(s), batch, heat, etc. of material represented by the certification and tested in accordance with the applicable specifications.

3.01.04. Certifications Distribution

A. Certification documents must be distributed as follows:

1. One copy must accompany the shipment for the Contractor's files and one copy must be mailed, emailed or faxed to the Construction/Project Engineer's office on the date of shipment.

NOTE: See Section 3.02.07 of this manual for Certification Distribution requirements of Approved Manufacturers/Suppliers.

3.01.05. Acceptance/Rejection of Certified Materials

- A. Certified material may be accepted by the Construction/Project Engineer if the sources of all applicable materials are listed on the project's *Materials Source List* (Form 501). If visual inspection at the project site shows the condition of the material to be unsatisfactory, or a material source is different from what was identified on the Materials Source List, MDOT reserves the right to reject the material, conduct further inspection, or test the material.
- B. If any laboratory reports submitted as part of a Test Data certification indicate that a critical parameter falls outside of specification limits the material may be rejected. Prior to rejection of the material, an investigation of circumstances may be made. This may include consultation with CFS, Design, Traffic and Safety, or Maintenance Divisions and the Construction/Project Engineer.

3.02 PROCEDURES FOR APPROVED MANUFACTURERS/SUPPLIERS

3.02.01. Scope

- A. MDOT will accept some highway materials provided from a Manufacturer/Supplier on the Approved Manufacturer/Supplier lists, provided the manufacturer or supplier complies with all program requirements. Approved Manufacturer/Suppliers are required to provide MDOT with written documentation that all applicable material specifications are met (a certification statement).
- B. Materials that must be provided from an Approved Manufacturer/Supplier are designated "Appr Mfr" under "Basis of Acceptance" in the Materials Acceptance Requirements Table of Chapter 7. This table can also be found in the "Materials Source Guide" (MSG).
- C. These procedures apply only to manufacturers and suppliers who have been given the privilege of certifying *specific* materials which would otherwise be tested on a job-by-job basis.
- D. Where necessary, additional detailed procedures have been written to cover certification of individual materials. These detailed procedures follow and include these Procedures for Manufacturers/Suppliers.

3.02.02. General

- A. The Construction Field Services Division (CFS), Materials Control, is responsible for overseeing the Manufacturers/Suppliers Certification Program, including granting and withdrawing certification privileges based on Division and Region recommendations.
- B. It is the Contractor's responsibility to ensure that ALL certifications for material to be incorporated into the project are accurate and are delivered as required by 3.02.03C of this document.
- C. When used in these procedures, a *Manufacturer* refers to a producer or fabricator of highway materials with control over the quality, workmanship, and handling of material shipped to an MDOT project.
- D. When used in these procedures, a *Supplier* refers to an individual or company who has no control, other than through careful handling, over the quality and workmanship of material shipped to an MDOT project.
- E. When used in these procedures, *Approved Manufacturer* refers to a manufacturer who has submitted quality control documentation and/or material samples for evaluation and who has been given approved status in accordance with Section 3.02.03 to *certify specific* materials.
- F. When used in these procedures, *Approved Supplier* refers to a supplier who has been given approved status in accordance with 3.02.05 to supply materials which are manufactured by Approved Manufacturers.

3.02.03. Request for Approved Manufacturer Status

- A. The manufacturer of the material to be certified must contact CFS, Materials Control, in writing or by email, to request consideration for approval status. See Section 3.02.07.A2 of this manual for submittal address, please specify "Approved Manufacturer Status Request". Requests must include the following information:
1. Specific name of the material (MDOT designation) to be certified.
 2. Reference to AASHTO, ASTM, MDOT Standard Specification or other specification covering the material.
 3. Manufacturer's quality control procedure for the material. This can be a narrative description or a formal procedures manual.
 4. Quality control test reports, independent laboratory test reports, and/or acceptance test reports from other agencies, covering a minimum of five consecutive production runs/lots/heats. Any combination of these reports is acceptable, provided that each report is for a different production run/lot/heat. Test reports must be for material produced no more than two years prior to submittal for MDOT approval.
 5. Names of other state DOTs using the material.
 6. Sample of the material if requested.
 7. Sample certification form to be used when supplying material.
 8. Shop drawing if required.
 9. A written statement agreeing to comply with all the general certification requirements in addition to applicable procedures covering individual materials.
 10. Buy America Certification if applicable. To be included on the Buy America Compliance listing, see Chapter 4.12 of this Manual for details.
- B. The evaluation may include the following steps:
1. A review of MDOT's experience with the material and the manufacturer to determine if it is appropriate to allow certification of the material.
 2. A review of the quality control program and test reports to verify that the manufacturer is capable of producing uniform material which consistently meets established specifications.
 3. Contact with other agencies to determine their experience with the material and the manufacturer.
 4. An onsite review of the manufacturing process and facility.
- C. If the review indicates an adequate quality level, MDOT will permit certification on a provisional basis. During the time of provisional certification, the frequency of certification verification sampling by MDOT will be increased. Assuming that these samples continue to meet MDOT specifications, certification will be allowed on a continuing basis.

3.02.04. Approved Manufacturer Certification Documentation

- A. Approved Manufacturers must provide General Certification documentation in accordance with section 3.01 of this manual.

3.02.05. Request for Approved Supplier Status

- A. Once a manufacturer has been granted Approved Manufacturer status for a material, a supplier may request Approved Supplier status to supply that material. The supplier of the material to be certified must contact CFS, Materials Control, in writing or by email, to request consideration for approval status. See Section 3.02.07.A2 of this manual for submittal address, please specify "Approved Supplier Status Request". Requests must include the following information:

1. Company name, address, and contact information.
2. Specific name of the material (MDOT designation) to be certified.
3. Sample Recertification form to be used when supplying material.
4. A written statement agreeing to comply with all General Certification requirements in addition to applicable procedures covering individual materials.

- B. If the Approved Supplier performs additional processing on the material subsequent to receiving it from the Approved Manufacturer, the material is no longer covered by the Approved Manufacturer's certification. The processed material must be independently approved for certification according to Section 3.02.04 of this manual.

3.02.06. Approved Supplier Recertification Documentation

- A. Approved Supplier Recertification documentation must meet the requirements of Section 3.01 with the following modifications:

1. The certification from the Approved Manufacturer to the Approved Supplier is not required to show a project number.
2. When any portion of this material is shipped to a project, the Approved Supplier must issue a Supplier's Recertification which states that the material represented is the same material covered by the Approved Manufacturer's certification. Approved Suppliers may not modify any material.
3. The original Approved Manufacturer's certification must accompany the Approved Supplier's Recertification.

3.02.07. Certification Distribution

- A. Certification documents must be distributed as follows:

1. One copy must accompany the shipment for the Contractor's files and one copy must be mailed, emailed or faxed to the Construction/Project Engineer's office on the date of shipment.

2. One copy must be mailed, emailed, or faxed on date of shipment to:

Michigan Department of Transportation
Construction Field Services Division
Materials Control
8885 Ricks Road
P.O. Box 30049
Lansing, MI 48909
Fax: 517-322-5664
Email: MDOT-MaterialsControl@michigan.gov please specify "Approved Manufacturer/Approved Supplier Certification" in the subject line of the email.

3.02.08. Approved Manufacturer/Supplier Status

- A. Approved Manufacturers/Suppliers must maintain quality control records and material certificates for a period of three years after the date of shipment for all material supplied on the basis of certification to MDOT projects. These records must be made available to MDOT representatives upon request.
- B. Lists of Approved Manufacturers and Approved Suppliers are included in the Materials Source Guide.
- C. Buy America compliance lists of Approved Manufacturers and Approved Suppliers are published on the internet at the following link; http://www.michigan.gov/mdot/0,1607,7-151-9622_11044_11367---,00.html
- D. Approved Manufacturers/Suppliers must notify CFS Materials Control of any changes in company name, location, ownership, etc.

3.02.09. Acceptance/Rejection of Certified Materials

- A. Certified material may be accepted by the Construction/Project Engineer if the sources of all applicable materials are listed on the project's *Materials Source List* (Form 501). If visual inspection at the project site shows the condition of the material to be unsatisfactory or a material source is different from what was identified on the Materials Source List, MDOT reserves the right to reject the material, conduct further inspection, or test the material.

3.02.10. Withdrawal and Reinstatement of Approved Manufacturer/Supplier Status

- A. Failure to comply with these procedures may result in withdrawal of Approved Manufacturer/Supplier status. A warning letter may be written indicating the improper procedure and requesting action to rectify the problem.
- B. Approved Manufacturer/Supplier status may be withdrawn if the certified material deviates from specification requirements in a critical parameter or if the material repeatedly fails to conform to specification requirements by any amount in any aspect.
- C. Withdrawn Approved Manufacturer/Supplier status can be reinstated only if the certifier has corrected the identified deficiencies and has documented, to the satisfaction of MDOT, the actions taken to prevent these deficiencies in the future. In the case of an Approved Manufacturer, testing of samples or review of other data may be required.
- D. Additional requirements covering the withdrawal and reinstatement of certification privileges may be included in the detailed procedures for individual materials.

3.03 CERTIFICATION VERIFICATION SAMPLING AND TESTING

3.03.01. Scope

- A. Certification Verification consists of periodic sampling and testing or field inspection of materials accepted on the basis of certification, for the purpose of validating the quality of the manufacturer's product.
- B. When the certification verification sample fails critical parameters of the specification, the information can be used as the basis for either rejecting the material or delaying its use until additional samples can be tested.
- C. Materials listed in the Materials Source Guide as certifiable, but not listed in these procedures, may be sampled and tested as circumstances warrant.
- D. The frequency for Certification Verification may be adjusted at any time by the Michigan Department of Transportation, as deemed necessary.

3.03.02. General Responsibilities

- A. The Construction Field Services Division (CFS) will notify the appropriate Region Staff of the need to perform Certification Verification sampling and/or field inspection for the items listed in Schedule No. 1.
 - 1. If the sampling and/or inspection cannot be performed within five days of the receipt of these requests, the Region Staff must notify CFS, Materials Control, by telephone or email.
- B. Materials not listed in Schedule No. 1, but which also require regular Certification Verification sampling and/or inspection are listed in Schedule No. 2.
 - 1. It is the responsibility of the Region materials staff to see that the Certification Verification required in Schedule No. 2 is performed.

3.03.03. Submitting Samples

- A. When submitting samples to the laboratory for testing, check the box "Certification Verification" on the "Sample ID", (Form 1923), in the area reserved for the "Type of Sample".
- B. If available, attach a copy of the certification representing the material sampled to the Sample Identification.

3.03.04. Field Inspection Reports

- A. All field inspection reports submitted to CFS must note "Certification Verification" in the area normally reserved for project number.
- B. Project numbers may be shown under "Remarks".

- C. A statement indicating whether the material does or does not meet specification requirements will be entered under "Remarks".
- D. If available, a copy of the certification representing the material inspected must accompany these field inspection reports.
- E. Construction/Project Engineers will not receive copies of Certification Verification Field Inspection Reports except when failures occur in critical parameters, per paragraph 3.03.01B.

3.03.05. Laboratory Reports

- A. Test reports issued by the Testing Laboratory will be reported as "Certification Verification" rather than for specific projects.
- B. Project numbers, if shown on the Sample Identification, will be entered under "Remarks".

3.03.06. Sampling Schedules

- A. CFS, Materials Control will issue the appropriate instructions to the Region Staff for sampling and/or inspection for those items in Schedule No. 1.
- B. The Region materials staff is responsible for the control of the Certification Verification sampling and/or testing on the items in Schedule No. 2 in accordance with the references noted.

SCHEDULE NO. 1

Spec. Number	Material Name	First Sample	Subsequent Samples	Unit
905.03	Uncoated Steel Reinforcement	20,000	100,000	lbs.
905.03C*	Epoxy Coated Steel Reinforcement	20,000	100,000	lbs.
909.05A*	Corrugated Metal Pipe (Metal Sheets)	500	5,000	ft.
909.07B	Corrugated Plastic Tubing for Underdrains	5,000	50,000	ft.
910.05A	Prefabricated Drainage System	10,000	100,000	ft.
914.07	Dowel Bars	3,000	30,000	ea.
916.02	Silt Fence	3,500	10,000	ft.
919.05	Sawed Wood Posts for Highway Signs	250	2,500	ea.

*See Special Instructions on next page for these items.

SCHEDULE NO. 1 SPECIAL INSTRUCTIONS

- 905.03C *Epoxy Coated Steel Reinforcement* - Wrap samples to protect the coating from possible damage during shipment. Both the bar manufacturer and the coater's name must be shown on the Sample Identification, (Form 1923).
- 908.12 *Steel Post for Guardrail* - Field inspection to determine average weight per meter, dimensions and weight of Spelter coating. Submit one post to laboratory. Report test results on Report of Field Inspection, (Form 566).
- 909.05A *Corrugated Metal Pipe (Metal Sheets)* - Samples will be obtained from fabricated pipe or from stock at the fabricator's yard per instructions of CFS. The Sample Identification, (Form 1923), must include the sheet manufacturer's name and the pipe fabricator's name.

SCHEDULE NO. 2 SPECIAL INSTRUCTIONS

- 902.01 *Aggregates* - See Section 3.04.08 of this manual.
- 904.03A *Asphalt Binder* - See Section 3.05.06 of this manual.
- 904.03C *Emulsified Asphalt* – See Section 3.06.06 of this manual.
- 905.07 *Strand for Prestressed Concrete* - One per fabricator, per strand manufacturer, per year.
- 909.04 *Concrete Pipe Products; RCP & NRCP and Related Items* - See Section 3.10.12 of this manual.

3.04 PREQUALIFIED AGGREGATE SUPPLIER PROGRAM

3.04.01. Scope

- A. The Michigan Prequalified Aggregate Supplier Program allows eligible aggregate suppliers the opportunity to provide material to Michigan Department of Transportation or federally funded projects by assuming responsibility for quality control testing. Prequalified aggregate suppliers approved by MDOT's Construction Field Services Division, with concurrence from the controlling Region, will maintain compliance with the following procedures and other special circumstances which may be issued to assure adequate quality control. Status as a Prequalified aggregate source does not make any representation of the relative quality of the aggregate material produced.

3.04.02. Definitions

Supplier - An aggregate producer or distribution point having ownership of the material.

Source – The physical location from which the aggregate will be delivered.

Controlling Region - The MDOT Region in which the aggregate source or distribution point is located.

Using Region - The MDOT Region where the project is located.

CFS - Michigan Department of Transportation's Construction Field Services Division Aggregate Quality Control Group.

Michigan Certified Aggregate Technician (MCAT) – Qualified aggregate testing technicians whom possess a current certification with the appropriate level for the materials that are being tested.

Warning Band - The upper and lower gradation limits before corrective action is started. This value is established by the supplier to maintain a uniform product.

AASHTO Accredited Lab – A laboratory that has a Certificate of Accreditation from the AASHTO Accreditation Program (AAP). The scope of the laboratory accreditation must include aggregate and be listed in the directory of accredited laboratories on the AMRL website. Laboratory accreditation does not waive the requirements in section 3.04.03.

Laboratory Inspection – A site visit to the laboratory to verify that the prerequisite requirements in section 3.04.03 have been met. The inspection will be conducted by the controlling Region, although the controlling Region may request CFS to conduct the inspection.

3.04.03. Prerequisite Requirements

- A. **Testing Area** - The area used for aggregate testing must meet Michigan Occupational Safety and Health Standards. It must be large enough, with ample work surfaces, to conduct the prescribed tests. This area must provide lighting, good ventilation, a water supply, and a heated work area for use in cold weather. MDOT does not require the testing area to be located in a permanent structure.

B. *Equipment* - Scales must meet ASTM C 136 accuracy requirements for all sample sizes and be calibrated annually. The necessary wire cloth sieves meeting ASTM E 11 criteria must be kept in the laboratory and maintained in good condition. Aggregate drying equipment must meet the requirements listed in Michigan Test Methods 108 and 109. Mechanical splitters must conform to ASTM C 702. All other equipment which is used in aggregate sampling and testing must be in good working order. The supplier must maintain documentation that the equipment requirements in this section have been met.

1. Failure to maintain equipment meeting proper standards may result in the withdrawal of prequalified status.

C. *Personnel* - The supplier must employ or have under contract an MCAT as defined. All sampling and testing must be conducted by an MCAT.

1. Failure to maintain current MCAT certification may result in the withdrawal of prequalified status.

3.04.04. Aggregate Supplier Prequalification Requirements

A. Submit a written request to CFS asking for admission into the Prequalified Supplier Program. An Initial Request Letter flow chart is included at the end of section 3.04 to assist in understanding the approval process. CFS will forward a copy of the letter to the controlling Region office. The letter must include the following items:

- Source name(s)
- Aggregate Source Inventory (ASI) number(s)
- Contact person
- Alternate contact person
- Work telephone number(s) for each person
- Location or type of testing facility
- The Michigan aggregate series (MDOT designation) produced or supplied at each source to be prequalified.
- List of all MCAT's that may be involved in the sampling and testing of the aggregate.

1. When a supplier wants to add another source or aggregate series to this program, the supplier must notify the Controlling Region in writing. The Controlling Region will forward a copy of the request to CFS. The source will be added if current laboratory facilities are used for quality control. A laboratory inspection may be required before approval if the laboratory facilities have not been previously inspected. The laboratory inspection requirement may be waived if the laboratory is an AASHTO accredited lab. All other requirements in this program must be met for the new source.

2. If ownership of a prequalified source changes, the new owner must notify CFS in writing. CFS will forward a copy of the letter to the Controlling Region. A laboratory inspection may be conducted. If significant changes are made a new Quality Control plan may be required. All requirements of section 3.04.03 must be met.

B. Sampling and testing procedures followed by the supplier must be in accordance with Michigan Test Methods, ASTM, and AASHTO standards as referenced in the contract documents.

- C. *Documentation* – Retain all test results for a minimum of three calendar years. Document an approximation of each week’s production for each prequalified aggregate. Provide this information to MDOT upon request.
- D. *Quality Control Plan* - Establish and maintain a process control program that has been reviewed and approved by CFS and the Controlling Region. This program will aid the supplier in producing uniform materials. The Quality Control Plan approval process flow chart is included at the end of section 3.04.
1. A quality control plan must include at least the following information, unless a waiver is granted for a specific item:
 - a. Production sampling frequency and location
 - The plant checks that are routinely performed.
 - Where and when samples are obtained.
 - Approximate amount of material covered by each test.
 - b. Document major events, including plant start up, screen changes, and breakdowns which affect aggregate production.
 - c. Analysis of test results to produce a control chart must be posted in a prominent location and kept up to date. If the supplier does not produce or supply enough material for the test results to be statistically significant no control chart is required.
 - State the update interval of the control chart.
 - d. Action Plan, for suppliers who produce their own aggregates, to be used when material is outside the warning band or specification limits, must include at least the following:
 - List what operational procedures will be followed to bring the material back within the warning band or specification limits.
 - State when and where sampling and testing the new production will occur.
 - When the material is outside the specification limits; halt or divert the new production from adding to the existing stockpile until test results indicate the material is within specification limits.
 - Describe the method that will be used to distinguish the failing material from the specification material.
 - Record the disposition of any material failing to meet specifications.
 - e. Action Plan for docks, concrete plants, or transfer points when a failing result occurs must include at least the following:
 - Remove the failing aggregate from the stockpile until specification material is located.
 - Increase the testing frequency for the aggregate remaining in the stockpile.
 - Record the disposition of all failing material.
 - Describe the method that will be used to distinguish the failing material from the specification material.
 - f. Specify the load-out sampling and testing frequency.

2. Send a copy of the Quality Control Plan to the Controlling Region for review. The Controlling Region will review the Quality Control plan and coordinate with the supplier to make any changes required. The Controlling Region will forward a copy of the completed Quality Control plan to CFS for approval. CFS will send an acknowledgment to the supplier upon completion of review.
3. Quality Control Plan changes must be reviewed by both the Controlling Region and CFS. The Controlling Region will review the changes and coordinate with the supplier to make any additional changes. The Controlling Region will forward a copy of the completed Quality Control plan to CFS for approval. CFS will send an acknowledgment to the supplier after the review is finished.

3.04.05. Supplier Notification of Shipment

- A. Notify the Controlling Region's Materials Supervisor by fax or email the same day as the first aggregate shipment for each calendar year.
- B. Accompany each aggregate shipment delivered to a project or concrete plant with a delivery ticket containing the MDOT aggregate source number, date of shipment, control section number, job number, concrete plant number (if applicable), Michigan series number and class letter of aggregate, weight or volume shipped, supplier's name, telephone number and location. In addition, print or stamp the following statement on each trip ticket:

"I attest that aggregate as delivered from this prequalified source meets specification requirements for listed Michigan series and class for quantity stated.

Date_____ Signature_____."

This statement must be signed by an authorized company representative. No electronic signatures are permitted.

1. Lack of delivery tickets or proper documentation will result in rejection of the aggregate.
- C. Generate a summary report each week, whether or not any material is shipped. Fax or email the report to the Controlling Region's Materials Supervisor and email to CFS at MDOT-PASS@michigan.gov by the close of business on Monday of the week following shipment. The weekly summary report must have the date it is generated, be sequentially numbered, and include the following information for each type of aggregate: Source, quantity and date shipped, the destination including MDOT project number, concrete plant number (if applicable), or Purchase Order Number.
 1. When the supplier does not anticipate any aggregate shipments to MDOT or federal aid projects for several weeks, they may write "Until further notice, no state work" on the last weekly summary. Once this report is transmitted, the supplier will not be required to continue sending the weekly summaries. *Notification by fax or email to the Controlling Region's Materials Supervisor, or otherwise designated personnel, must be made on the same day shipments resume to federally funded or MDOT projects during the construction season.*
 2. At the close of the construction season, the supplier may write "Last shipment for the season" on the weekly summary report. Once this report is transmitted, the supplier will not be required to continue sending the weekly summaries.

3. Failure of the supplier to provide the Controlling Region and CFS with weekly shipping summaries may result in withdrawal of prequalified status as stated in Section 9. In addition, improper use of the options in paragraphs 3.04.05.C.1. and 3.04.05.C.2. may also lead to a withdrawal of prequalified status.
4. CFS will notify the supplier by certified mail or electronic read receipt of withdrawal of prequalified status, however, withdrawal is effective immediately. CFS will send a copy of this letter to the Controlling Region and notify all other affected MDOT Regions.
5. Withdrawn prequalified privileges may be reinstated by consensus agreement between CFS and the controlling Region after the supplier has corrected their deficiencies to the satisfaction of MDOT in accordance with Section 3.04.11.

3.04.06. Distribution

- A. Submit all documentation to the following address as required:

Michigan Department of Transportation
Construction Field Services Division
Aggregate Quality Control
8885 Ricks Road
P.O. Box 30049
Lansing, MI 48909
Fax: 517-636-5363
Email: MDOT-PASS@michigan.gov

- B. Weekly summary reports shall be submitted to CFS via email at MDOT-PASS@michigan.gov

3.04.07. MDOT Monitoring and Quality Assurance Program

- A. Each controlling Region's Materials Supervisor will have on file a copy of each supplier's weekly summary and a copy of each aggregate test run by Region personnel on materials used within their Region on MDOT projects.
- B. A laboratory inspection of prequalified aggregate suppliers' equipment, procedures, and personnel will be conducted, prior to admission to the program and every two years thereafter. If significant production changes are made, or if problems are indicated by other aspects of the monitoring program, more frequent inspections may occur. This inspection will cover but is not limited to the following: the testing area, equipment, and quality control plan. At a minimum, the Equipment Check section of the IAT form 0504 will be completed during the inspection. In addition, MDOT will evaluate the supplier's sampling and testing procedures.
1. If a consulting firm is used by the supplier for quality control testing, a laboratory inspection will be required prior to admission to the program, and every two years thereafter. The laboratory inspection requirement may be waived if the laboratory is an AASHTO accredited laboratory.
 2. If a Prequalified Supplier switches consulting firms, their prequalified status will be withdrawn until a new inspection and approval of the testing facilities can be obtained. If the new consulting firm is an AASHTO accredited laboratory or already participating in this program, the inspection may be waived.

3. A formal report will be prepared following each biennial inspection. This report will be sent to the supplier and copies sent to the controlling Region and CFS. Deficiencies will be listed and requirements for corrective action given, including a required time frame. Follow-up monitoring or testing may be performed to assure that deficiencies have been rectified. Failure by the supplier to correct deficiencies may result in withdrawal of prequalified status.

C. If the supplier prequalifies aggregate to a MDOT or federally funded project the Controlling Region will conduct Independent Assurance Tests on the supplier's quality control technician(s) according to the frequency given in the Independent Assurance Sampling and Testing chapter of the Materials Quality Assurance Procedures Manual.

1. If test results exceed Independent Assurance comparison limits, an investigation will immediately be made to determine the cause of the differences and what corrective action needs to be taken.

3.04.08. MDOT Quality Assurance Testing

A. The Controlling Region's materials personnel will obtain random quality assurance (reduced acceptance) samples on each prequalified aggregate series. The aggregate may be randomly tested at any time prior to use. The sampling should be conducted as close as possible to the point where the material is incorporated into a mixture or project. The minimum testing frequency for Coarse, Dense-Graded, Open-Graded, Fine, and Granular Material Class I will be one test per 10,000 tons of material shipped. The minimum testing frequency for Granular Material Class II and IIA will be one test per 10,000 cyd. The minimum testing frequency for Granular Material Class III will be one test per 30,000 cyd. The minimum testing frequency for Granular Material Class IIIA will be one test per 3,000 cyd.

1. When more than 5000 tons of a single aggregate type is being shipped per week, the minimum testing frequency may be further reduced to one test per 30,000 tons, provided the supplier has a two-year history of quality assurance (reduced acceptance) tests exceeding 90 percent compliance with specifications.

2. The project quality assurance samples will be checked against the appropriate specification requirements and not to the supplier's load out test results.

B. The Controlling Region will retain a copy of all quality assurance test records for a minimum of three years.

1. A copy or computer record of the quality assurance test results will be forwarded to CFS.

3.04.09. Failing Material Resolution

A. If a quality assurance sample taken from the source or point of use does not meet the contract document's specifications, the Controlling Region will immediately notify the supplier by telephone and inform the supplier of the resample time and location. In addition, the supplier's quality control tests will be reviewed.

1. Aggregate Resample at Source - If the original sample was taken from the stockpile's shipping face at the aggregate's source, which includes docks or yards, two resamples will be obtained from the same stockpile's shipping face using the

mini-stockpile sampling method. If the average of the original and two resamples meets specifications, then the material will be approved for use and no further action is required. If the average of the original sample and two resamples does not meet specifications, then the failing material must be removed from the stockpile until specification material is located within the stockpile. Continued production of borderline material will result in three months' probation. If the supplier refuses to remove the failing material, their prequalified status will be withdrawn and the controlling Region's materials personnel will immediately inform the Construction/Project Engineer, Contractor, and CFS.

2. Aggregate Resample at Point of Use - If the original sample was taken from the point of use, two resamples will be obtained from either the same location or another point of use, provided the aggregate is from the same source. If the average of the original sample and two resamples meets specifications, the material will be approved for use and no other action is required. The using Region may increase the acceptance testing frequency. If the average of the original sample and the two resamples fail to meet specifications, the Controlling Region's materials personnel will immediately inform the Construction/Project Engineer, Contractor, supplier, and CFS. All shipments from the source must stop until the supplier can sample their aggregate and prove their material meets specifications. The supplier will not be allowed to ship the disputed material until the Controlling Region's materials personnel have confirmed the supplier's test results. Only test results taken from the source will affect the supplier's prequalified status.

3.04.10. Withdrawal of Prequalified Status

- A. The following infractions may result in the immediate withdrawal of prequalified status:

- Being uncooperative with MDOT in removing failing aggregate from a stockpile.
- Refusing to supply MDOT with copies of quality control records when requested.
- Falsification of any documents or test results.
- Shipping from a non-prequalified source.
- If the percentage of acceptance test results meeting specification requirements drops below 90 percent.
- Knowingly delivering non-specification material to MDOT or federal aid projects
- Failure to maintain a Michigan Certified Aggregate Technician
- Failure to maintain equipment meeting the requirements stated in this document
- Failure to maintain proper documentation
- Failure to follow their approved quality control plan
- Failure to notify the Controlling Region when aggregate shipment starts
- Failure to send MDOT the weekly shipment summaries

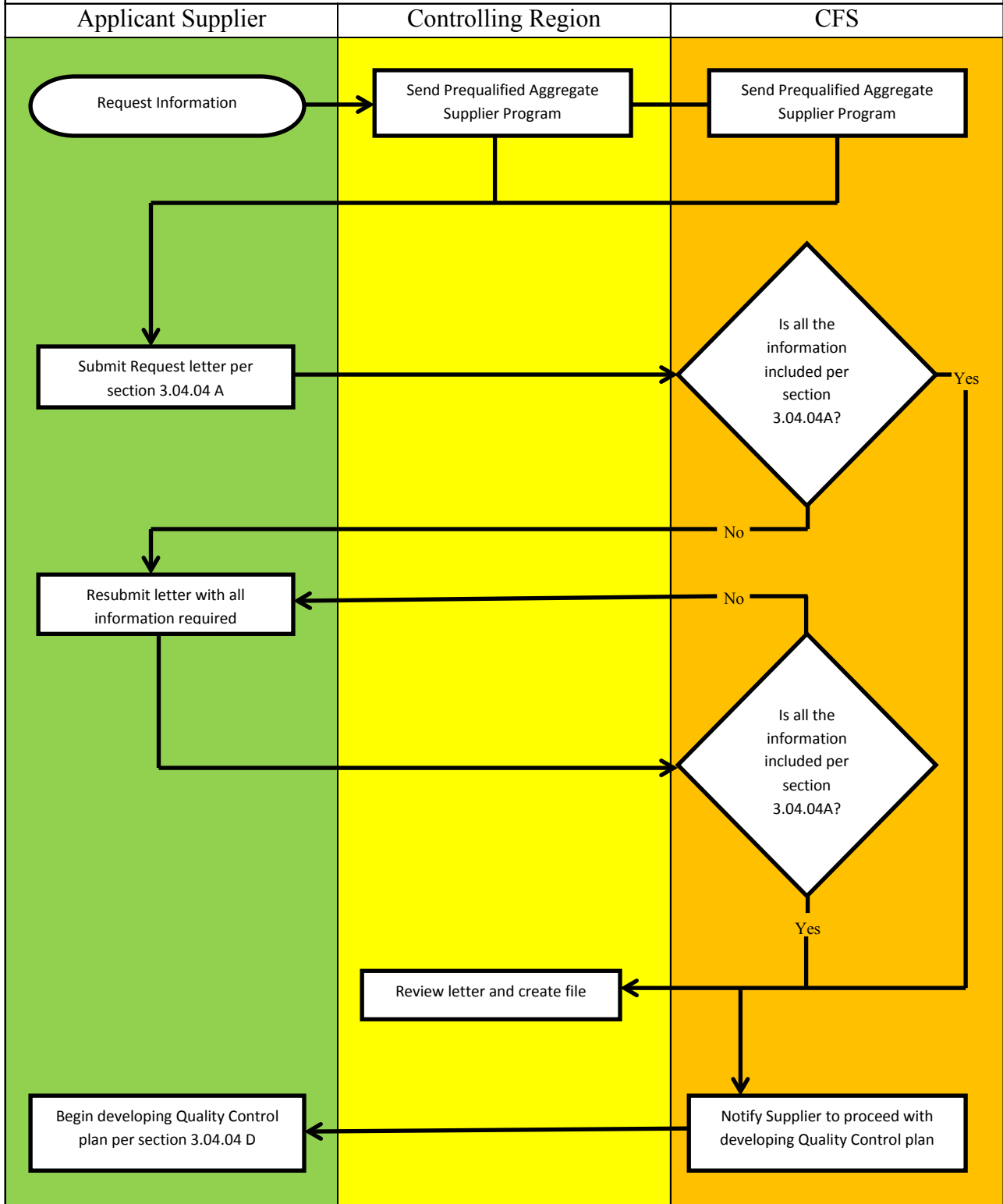
3.04.11. Reinstatement of Prequalified Status

- A. The following steps must be taken for a supplier who has had their prequalified status withdrawn:

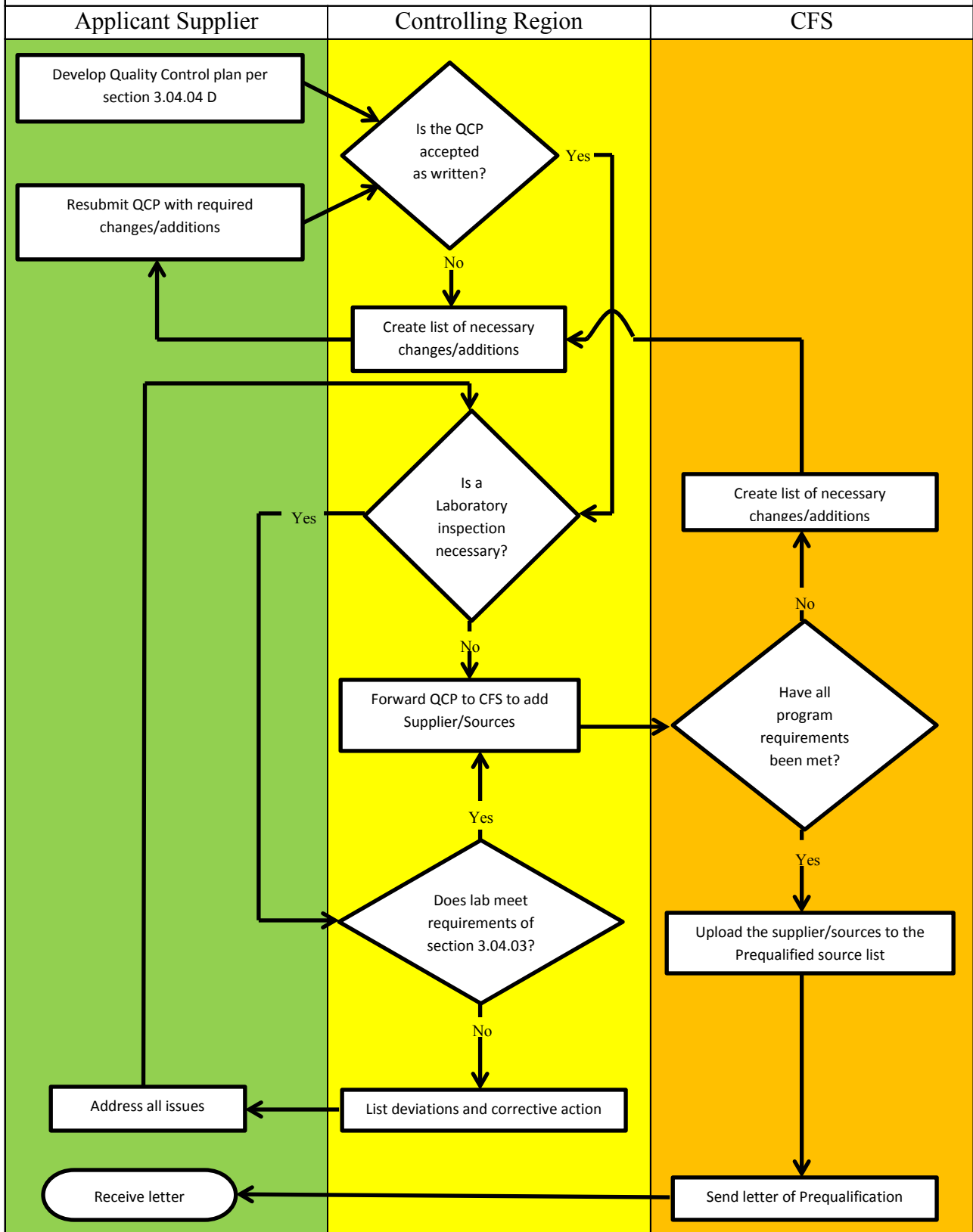
- Reapply in accordance with 3.04.04 of this procedure.
- Update all application documentation.
- Specifically address the reason for losing prequalification status, and demonstrate successful remediation of the original problem.

- B. The Controlling Region Materials Supervisor or otherwise designated personnel, in conjunction with CFS, will review the new application. If all steps in 3.04.11.A, have been met, reinstatement of prequalified status may be granted.

Michigan Prequalified Aggregate Supplier Program – Initial Request letter Process



Michigan Prequalified Aggregate Supplier Program – Quality Control plan acceptance Process



3.05 CERTIFICATION PROCEDURES FOR ASPHALT BINDER

3.05.01. Scope

- A. This document describes how the Construction Field Services Division (CFS) will allow suppliers to certify asphalt binder for use on MDOT projects if the criteria specified below are met.
- B. Definitions:
 - 1. Approved Asphalt Binder Certifier - A refinery, terminal, or hot mix asphalt (HMA) producer that provides asphalt binder that meets MDOT specifications. If any modifications or blending of asphalt binder from different sources are made at the HMA producer's plant, the HMA producer must be the Approved Asphalt Binder Certifier. Exceptions to these modifications at the HMA plant include using a water-injection foaming device, water foaming additives, and products listed on the Colorado Department of Transportation approved list of unrestricted warm mix asphalt (WMA) technologies. An Asphalt Binder Certifier must be approved at each location that supplies asphalt binder to MDOT projects.
 - 2. Laboratory - The laboratory shall be AASHTO accredited for all asphalt binder tests required by MDOT specifications.
- C. Letters and samples referred to in these procedures should be sent to:

Michigan Department of Transportation
Construction Field Services Division
HMA Operations Unit
8885 Ricks Road
P.O. Box 30049
Lansing, MI 48909
Fax Number: (517)322-5226

3.05.02. Request for Initial Certification Privileges

- A. The request for initial certification privileges must be submitted in writing to the CFS, HMA Operations Unit. Requests must include the following information:
 - 1. Requesting asphalt binder certifier's name.
 - 2. Location (Legal Address).
 - 3. Primary contact information. This must include contact name, phone number, email, and fax number. It is the responsibility of the asphalt binder certifier to ensure the CFS HMA Operations Unit has the most current information.
 - 4. List of asphalt binder grades which will be certified.
 - 5. A Quality Control Plan for review and approval by HMA Operations Unit.

6. Test results for five production runs of asphalt binder. This must be performed for each grade of asphalt binder that will be certified.
 7. Submit two 1.0 quart samples of each binder grade to be certified with the request letter.
 8. All specification tests must be performed for each grade of asphalt binder to be certified. The specification requirements for asphalt binder can be found in the current Standard Specifications for Construction. These test results must be submitted in a report.
 9. An example copy of the Certification Document (meeting the requirements of 3.05.05).
 10. The AASHTO Materials Reference Laboratory Reports for Asphalt Binder Proficiency Samples from the past two years. These must be submitted by the laboratory that performs the quality control testing for the certifier.
 11. Proof of current AASHTO accreditation.
 12. A written and signed statement that the certifier will abide by the certification requirements.
- B. CFS will evaluate the request for certification privileges and may grant provisional approval to certify asphalt binder for an MDOT project. The provisional approval for certification will be on a project-by-project basis for one construction season and based on continued satisfactory field and laboratory performance of asphalt binder from this location.
- C. If certification privileges are granted, the applying supplier will be notified in writing by the CFS HMA Operations Unit. The list containing the MDOT Approved Asphalt Binder Certifiers, and the grades of asphalt binder which they are approved to certify, is found on the MDOT website under the Construction Field Services section.
- D. Requests for initial certification are accepted in the months of November through April. During this period, MDOT will perform any required testing without cost to the asphalt binder certifier. Any requests for initial certification received during the months of May through October will be sent to a third party, AASHTO accredited asphalt binder laboratory, chosen by MDOT. The cost of the sample testing must be paid by the asphalt binder certifier.
- 3.05.03. Request for Certification Privileges of Additional Grades of Asphalt Binder by an Established Approved Asphalt Binder Certifier
- A. The request for certification privileges of additional grades of asphalt binder must be submitted in writing to CFS, HMA Operations Unit. Requests must include the following information:
1. List of asphalt binder grades which will be certified.
 2. Submit two 1.0 quart samples of each asphalt binder grade with the request letter.
 3. All specification tests pertaining to the asphalt binder grade must be performed for each grade of asphalt binder to be certified.

- B. Requests for the addition of asphalt binder grades are accepted in the months of November through April. During this period, MDOT will perform any testing required without cost to the asphalt binder supplier. Any requests for the addition of asphalt binder grades received during the months of May through October will be sent to a third party, AASHTO accredited asphalt binder laboratory, chosen by MDOT. The cost of the sample testing must be paid by the asphalt binder supplier.

3.05.04. Monthly Requirements

- A. On a monthly basis, from May through October, submit quality control test reports that comply with the quality control plan referred to in Subsection 3.05.02A5 to CFS, HMA Operations Unit. This must be done for each grade of asphalt binder supplied for MDOT projects during the previous month.

3.05.05. Certification Document

- A. Accompany each shipment with a certification document. Transmit the certification document to the Contractor. The certification document must contain the following:

- A. Approved Asphalt Binder Certifier's name and location (city, state).
- B. Grade of asphalt binder.
- C. Tank or lot number.
- D. Quantity of asphalt binder shipped to MDOT projects (gallons at 60°F {liters at 12°C}).
- E. Date and time of shipment.
- F. Purchaser (and/or consignee) and point of delivery.
- G. MDOT project and control section numbers.
- H. Bill of lading number.
- I. Carrier and truck or car number.
- J. The certification statement:

“(Name of Approved Asphalt Binder Certifier) certifies that the asphalt binder, as transported to the Contractors plant, conforms to the MDOT specifications.”

This certification document will be signed by a representative of the approved asphalt binder certifier.

3.05.06. MDOT Monitoring

- A. Asphalt binder samples will be taken at the HMA plant before incorporation into the HMA mixture. The asphalt binder samples will be randomly tested for compliance to the specification requirements described in the current Standard Specifications for Construction. These samples are taken to insure that the asphalt binder meets the required specifications for the project.

MDOT will also randomly test asphalt binder samples, taken at the HMA plant before incorporation into the HMA mixture, for the presence of reclaimed engine oil based products. Asphalt binder prepared with reclaimed engine oil based products is not allowed.

3.05.07. Certification Verification

- A. When any test result is out of specification from the testing of the asphalt binder samples described in section 3.05.06, CFS HMA Operations Unit will notify the approved asphalt binder certifier in writing. The CFS HMA Operations Unit will determine the extent of the deficiencies through the following concurrent actions.
1. The Construction/Project Engineer will be notified.
 2. An increase in asphalt binder sample testing (described in 3.05.06) for the consecutive days surrounding the original failing tests from the project.
 3. The Approved Asphalt Binder Certifier will be required to investigate all aspects of material loading, handling, and delivery.
 4. MDOT will witness certification verification sampling from a transport truck when deliveries are made to a HMA plant. Samples will be taken by the Contractor according to AASHTO T 40 (2007) Section 10, Sampling From Tank Cars, Vehicle Tanks, Distributor Trucks or Recirculating Storage Tanks. There must be four one gallon samples taken: for testing by MDOT, an independent AASHTO accredited asphalt binder laboratory, a retained sample, and a sample for the Approved Asphalt Binder Certifier. MDOT's test results will be used to determine specification compliance. If MDOT finds the certification verification sample not meeting specification, MDOT will send a one-gallon sample to an independent AASHTO accredited asphalt binder laboratory for dispute resolution. The test results reported by this lab will be final.

3.05.08. Withdrawal and Reinstatement of Certification Privileges

- A. If two consecutive samples from separate transport trucks are found to be out of specification by more than the tolerance limits, the CFS HMA Operations Unit will notify the approved asphalt binder certifier by fax and certified letter that their certification privileges have been withdrawn, for the subject asphalt binder only. CFS HMA Operations Unit will also notify all MDOT regions. Contractors with projects affected by this change will then be required to have the asphalt binder, from this source and grade, tested and accepted for use on specific projects.
- B. Withdrawn certification privileges can be reinstated only if the asphalt binder certifier has corrected the identified deficiencies and has documented, to the satisfaction of MDOT, the actions taken to prevent these deficiencies in the future.

3.06 CERTIFICATION PROCEDURES FOR EMULSIFIED ASPHALT

3.06.01. Scope

- A. This document describes how the Construction Field Services (CFS) Division will allow suppliers to certify emulsified asphalt for use on MDOT projects if the criteria specified below are met.
- B. Definitions:
 - 1. Approved Emulsified Asphalt Certifier - A supplier that provides emulsified asphalt to meet MDOT specifications. A certifier may be an emulsified asphalt manufacturer or a tank storage facility. A supplier must be approved at each location.
 - 2. Laboratory - Must be either the approved certifier's laboratory or a commercial laboratory.

- C. Letters and samples referred to in these procedures should be sent to:

Michigan Department of Transportation
Construction Field Services Division
HMA Operations Unit
8885 Ricks Road
P.O. Box 30049
Lansing, MI 48909

3.06.02. Request for Initial Certification Privileges

- A. The request for initial certification privileges must be submitted in writing to CFS, HMA Operations Unit. Requests must include the following information:
 - 1. Requesting supplier's name.
 - 2. Location.
 - 3. List of the types of emulsified asphalt which will be certified.
 - 4. A Quality Control Plan for review and approval by HMA Operations Unit.
 - 5. Test results for five production runs of emulsified asphalt. This must be performed for each type of emulsified asphalt that will be certified.
 - 6. Submit two 1 gallon samples of each type of emulsified asphalt with the request letter.
 - 7. All specification tests must be performed for each type of emulsified asphalt to be certified. The specification requirements for emulsified asphalt can be found in the current Standard Specifications for Construction. These test results must be submitted in a report.

8. An example copy of the Certification Document (meeting the requirements of 3.06.05).
 9. The AASHTO Materials Reference Laboratory Reports for Emulsified Asphalt Proficiency Samples from the past two years, and proof of AASHTO accreditation for emulsified asphalt testing. These must be submitted by the laboratory that performs the quality control testing for the certifier.
 10. A written and signed statement that the certifier will abide by certification requirements.
- B. If certification privileges are granted, the applying supplier will be notified in writing by HMA Operations Unit. The list containing the MDOT Approved Certifiers of Emulsified Asphalt, and the types of emulsified asphalt which they are approved to certify, is found on the MDOT website under the Construction Field Services Division section.
- C. Requests for initial certification are accepted in the months of November through April. During this period, MDOT will perform any required testing without cost to the emulsified asphalt supplier. Any requests for initial certification received during the months of May through October will be sent to a third party, AASHTO accredited laboratory, chosen by MDOT. The cost of the sample testing must be paid by the emulsified asphalt supplier.
- 3.06.03. Request for Certification Privileges of Additional Types of Emulsified Asphalt
- A. The request for additional certification privileges must be submitted in writing to CFS, HMA Operations Unit. Requests must include the following information:
1. List of types of emulsified asphalt which will be certified.
 2. Two 1.0 gallon samples of each type of emulsified asphalt shall be submitted with the application letter.
 3. All specification tests must be performed and submitted on split samples for each type of emulsified asphalt to be certified.
- B. Requests for additional certification are accepted in the months of November through April. During this period, MDOT will perform any required testing without cost to the emulsified asphalt supplier. Any requests for additional certification received during the months of May through October will be sent to a third party, AASHTO accredited laboratory, chosen by MDOT. The cost of the sample testing must be paid by the emulsified asphalt supplier.
- 3.06.04. Monthly Requirements
- A. On a monthly basis, from May through October, submit quality control test reports that comply with the quality control plan referred to in Subsection 3.06.02.A.4 to HMA Operations Unit. This must be done for each type of emulsified asphalt supplied to MDOT projects during the previous month.

3.06.05. Certification Document

- A. Accompany each shipment with a certification document. Transmit the certification document to the Contractor. The certification document must contain the following:

1. Approved certifier's name.
2. Type of emulsified asphalt.
3. Tank or lot number.
4. Quantity of emulsified asphalt shipped to the MDOT projects (gallons at 60°F).
5. Name and location of the certifier.
6. Purchaser (and/or consignee) and point of delivery.
7. MDOT project and control section numbers.
8. Bill of lading number.
9. Carrier and truck or car number.
10. A certification statement:

"The _____ (name of approved certifier) certifies that the emulsified asphalt as transported to the Contractor's plant conforms to the MDOT specifications."

This certification will be signed by a representative of the approved certifier.

3.06.06. MDOT Monitoring

- A. Submit Certification Verification (CV) samples to the HMA Operations Unit whenever a tank of emulsified asphalt is prepared for MDOT projects. This includes whenever emulsified asphalt is added to a tank which is supplying MDOT projects. These samples must be received by the HMA Operations Unit within seven days of shipment of the emulsified asphalt to MDOT projects. The CV samples will be randomly tested in accordance with the specification requirements described in the contract documents. These samples are taken to verify that the certified emulsified asphalt meets the required specifications.
- B. CV samples must consist of two ½ gallon containers of emulsified asphalt accompanied by a completed MDOT Sample Identification form (Form 1923 found on the MDOT website).

3.06.07. Withdrawal and Reinstatement of Certification Privileges

- A. When any test result, on a certification verification sample, is out of specification, CFS will notify the approved certifier by phone and in writing. The CFS HMA Operations Unit will increase the amount of CV sample testing on the type of emulsified asphalt in question.
- B. If another CV sample, taken after the approved certifier was initially notified of a deficiency, is found to be out of specification, CFS will notify the approved certifier by fax and certified letter that their certification privileges have been withdrawn for the subject type of emulsified asphalt only. CFS will also notify all MDOT regions. Contractors with projects affected by this change will then be required to have the emulsified asphalt, from this source, tested and accepted for use on specific projects.
- C. Withdrawn certification privileges can be reinstated only if the certifier has corrected the identified deficiencies and has documented, to the satisfaction of CFS HMA Operations Unit, the actions taken to prevent these deficiencies in the future.

3.07 PORTLAND CEMENT

3.07.01. General

- A. The Construction Field Services Division (CFS) will authorize plants having a satisfactory record of production of acceptable cement to ship Portland cement to Michigan Department of Transportation (MDOT) projects for immediate incorporation in the work. Each shipment must be accompanied by a producer certification that the cement meets MDOT specification requirements for the specified type of cement. Certification Verification samples from certified shipments will be taken by MDOT to confirm compliance with the specifications. Certified cement from authorized plants generally will not be tested by MDOT prior to use.

3.07.02. Qualification of New Plants

- A. Plants for which MDOT does not have a record of past production, which desire to furnish cement for use on MDOT projects, will be required to furnish the following information:
- A written official request for plant/source approval to certify Portland cement for MDOT projects.
 - A written and signed statement that the cement company will comply with all MDOT Portland cement specifications and conditions to maintain certification privileges.
 - A written statement that the cement company will inform MDOT in a timely manner of any changes to their product, production processes, ownership, etc.
 - Plant information including address and contact personnel.
 - Quality control procedures manual for the facility.
 - CCRL report of laboratory inspection, if available.
 - 6 months of mill test reports for each type of cement the company intends to certify.
 - Example of the company's certification statement on a bill of lading meeting the requirements of 3.07.03.A
 - 2 samples (10 lbs/ea.) of each Portland cement type the company intends to certify. The samples must be taken from different production days.
 - Any other information that the Concrete Lab Supervisor may determine to be necessary to establish adequate assurance that cement furnished under certification will in fact comply with the specification requirements.

3.07.03. Certification of Cement

- A. *By Producer* - Each shipment must be accompanied by a certification on a copy of the bill of lading, or other form, which will be transmitted by the Contractor to the Construction/Project Engineer or his/her representative. The form must contain the following information:
- Producer's name.
 - Place of production.
 - Source of shipment, if other than place of production.
 - Purchaser and/or consignee and point of delivery.
 - Bill of lading number.
 - Carrier and truck or car number.
 - Quantity of cement in pounds.

- This certification:

"The (producing company) certifies that the cement in this shipment, produced at (producing plant) , conforms to the requirements of MDOT cement Type ."

This certification will be signed by a designated representative of the company.

1. In addition, the Producer must provide to CFS, twice yearly (April and November), test results for a complete chemical and physical analysis of each type of cement produced for use on MDOT projects. These requirements are based on ASTM C 150 and C 595.

B. *By Operators of Ready-Mix Plants* - For shipments to ready-mix plants, which are supplying to commercial work at the same time they are supplying to MDOT projects, all cement placed in the storage bin or silo that is used for MDOT work must be certified by the cement company. The ready-mix plant must also certify the cement according to one of the following requirements:

1. Certify all cement used in concrete delivered to MDOT projects on Form 1155. Form 1155 will be collected by the Region Materials staff.

2. Certify all cement used in MDOT projects on each delivery ticket. Imprint or stamp the following on the tickets:

"This is to certify that the cement used in this concrete was from a certified shipment meeting MDOT specifications.

Cement Producer _____ Cement Type _____"

3.07.04. Distribution

A. Submit all documentation to the following address as required:

Michigan Department of Transportation
Construction Field Services Division
Concrete Testing Laboratory
8885 Ricks Road
P.O. Box 30049
Lansing, MI 48917
Fax: 517-322-1045

3.07.05. Withdrawal and Reinstatement of Cement Certification Privileges

A. The Concrete Lab Supervisor will review the results of samples tested for conformance to specification requirements. Certification privileges for Portland cement may be withdrawn if the certified material deviates from specification requirements in a critical parameter or if the cement repeatedly fails to conform to specification requirements by any amount in any aspect. A warning letter may be written indicating the improper procedure and requesting action to rectify the problem.

B. Cement from a plant from which MDOT has withdrawn certification privileges may not be used on projects until each individual shipment has been tested and approved by MDOT.

- C. Withdrawn certification privileges can be reinstated only if the plant has corrected the identified deficiencies and has documented, to the satisfaction of MDOT, the actions taken to prevent these deficiencies in the future.

3.08 FLY ASH FOR USE IN PORTLAND CEMENT CONCRETE

3.08.01. General

- A. The Construction Field Services Division (CFS) of Michigan Department of Transportation (MDOT) will authorize suppliers having a satisfactory record of furnishing acceptable fly ash from approved sources to ship to MDOT projects for immediate incorporation into the work. Each shipment must be accompanied by a supplier certification indicating the fly ash meets MDOT specification requirements for the specified class. Certification Verification samples from certified shipments will be taken by MDOT to confirm compliance with the specifications. Certified fly ash from authorized plants generally will not be tested by MDOT prior to use.
- B. The supplier must regularly test the fly ash furnished for the proper requirements specified in the MDOT specifications. These are based on ASTM C 618, with modifications as indicated in MDOT's Standard Specifications, or in supplemental specifications included with each project. Records of the test results must be furnished to MDOT upon request. Determination of Loss on Ignition and Fineness must be made in order that certification will include test results from samples taken the day of the shipment or the previous working day.

3.08.02. Referenced Documents

- A. ASTM C 618 Specification for Fly Ash and Raw or Calcinated Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete

ASTM C 311 Test Method for Sampling and Testing Fly Ash or Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete

3.08.03. Qualification of New Plants

- A. Plants for which MDOT does not have a record of past production, which desire to furnish fly ash for use on MDOT projects, may be required to furnish records of fly ash quality testing, samples for testing by MDOT, and/or such other information as the Concrete Lab Supervisor may determine to be necessary to establish adequate assurance that fly ash furnished under certification will in fact comply with the specification requirements.

3.08.04. Certification of Quality of Fly Ash for Use in Concrete

- A. *By Supplier* - Each shipment must be accompanied by a certification on a copy of the bill of lading, or other form, which will be transmitted by the Contractor to the Construction/Project Engineer or his/her representative. The form shall contain the following information:
 - Supplier's name.
 - Place of production.
 - Source of shipment, if other than place of production.
 - Purchaser and/or consignee and point of delivery.
 - Bill of lading number.
 - Carrier and truck or car number.
 - Quantity of fly ash in pounds.

- This certification:

"The (Name of supplier) certifies that the fly ash in this shipment conforms to the requirements of ASTM C 618 and Michigan DOT modifications for Class fly ash. Results of test on samples taken within one work day of shipment were: Loss on Ignition, percent; Fineness, retained No. 325 sieve, percent."

This certification must be signed by a designated representative of the supplier.

1. In addition, the supplier must provide CFS a copy of the test results for each source on a monthly basis. The following information will be furnished, based on tests as described in ASTM C 311.

- Results based on daily shipment samples:

Fineness (No. 325 sieve)

Moisture Content

Loss on Ignition

Sulfur Trioxide

- Result based on composite sample (at least weekly):

Specific Gravity

- Results based on composite sample (at least monthly):

Autoclave Soundness

Sum of $\text{SiO}_2 + \text{Al}_2\text{O}_3 + \text{Fe}_2\text{O}_3$

Strength Activity Index (With Portland Cement)

Water Requirement

B. *By Operators of Ready-Mix Plants* - For shipments to ready-mix plants which are supplying to commercial work at the same time they are supplying to MDOT projects, all fly ash placed in the storage bin or silo that is used for MDOT work must be certified by the supplier. The ready-mix plant must also certify the fly ash according to one of the following requirements:

1. Certify all fly ash used in concrete delivered to MDOT projects on Form 1155. Form 1155 will be collected by the Region Materials staff.

2. Certify all fly ash used in MDOT projects on each delivery ticket. Imprint or stamp the following on the tickets:

"This is to certify the fly ash used in this concrete was from a certified shipment meeting MDOT specifications.

Fly Ash (supplier and plant) Fly Ash (class) "

3. This certification may be combined with certifications for cement and/or aggregates, provided the above information is shown.

3.08.05. Withdrawal and Reinstatement of Certification Privileges

A. The Concrete Lab Supervisor will review the results of samples tested for conformance to specification requirements. Certification privileges for fly ash may be withdrawn if the certified material deviates from specification requirements in a critical parameter or if the fly ash repeatedly fails to conform to specification requirements by any amount in any aspect. A warning letter may be written indicating the improper procedure and requesting action to

rectify the problem.

- B. Fly ash from a source from which MDOT has withdrawn certification privileges may not be used on projects until each individual shipment has been tested and approved by MDOT.
- C. Withdrawn certification privileges can be reinstated only if the source has corrected the identified deficiencies and has documented, to the satisfaction of MDOT, the actions taken to prevent these deficiencies in the future.

3.09 TEMPORARY CONCRETE BARRIER

3.09.01. Scope

- A. The Michigan Department of Transportation (MDOT) has authorized the certification of temporary concrete barriers in accordance with the Test Data Certification requirements in Section 3.01. Additional certification requirements in this section apply to all certifiers of temporary concrete barriers with pin-and-loop connections consisting of steel wire rope loops or steel bar loops. These additional requirements include pull-testing a specified number of loops and providing this test information to the Construction/Project Engineer before the barriers are put into service on a jobsite.
- B. Pull testing of temporary concrete barrier connections is only required for pin-and-loop connections consisting of steel wire rope loops or steel bar loops. Pull testing is not applicable to other temporary concrete barrier connection types.
- C. When used in this certification procedure, the term "Contractor" refers to the Prime Contractor on a project.

3.09.02. Referenced Documents

A. Publications

- 1. MTM 716
- 2. NCHRP350/MASH
- 3. MDOT Standard Specifications and Special Provisions
- 4. Materials Acceptance Requirements Table of the Appendix

3.09.03. Certification Procedure for Temporary Concrete Barriers with Pin-and-Loop Connections Consisting of Steel Wire Rope Loops or Steel Bar Loops

A. *Contractor Responsibility*

- 1. Test a minimum of 15 percent of the total number of barrier loops that are on new barrier sections or newly retrofitted sections on a project. These tests must conform to MTM 716. Provide MDOT personnel the opportunity to witness these tests.
- 2. Calibrate the equipment to test barrier loops annually. Provide a copy of the calibration certificate to the MDOT materials staff or the Construction/Project Engineer prior to the Contractor performing loop testing.
- 3. Test Data Certification is required for all barrier sections. The certification must include all applicable information required in Section 3.01. In addition, the following information is required:
 - Statement that the barrier sections meet all plan and proposal specifications for dimensional requirements, materials, fabrication and placement.

- Number of barrier sections covered by the certification.

B. *MDOT Responsibility*

1. Conduct a field inspection of the barrier in place before accepting the Contractor's certification.
2. MDOT Operations Field Services personnel will conduct pull testing of barrier loops at the frequency specified in MTM 716, Section 6.2.

NOTE: Field inspection is detailed in MTM 716.

3.10 CONCRETE PIPE, CULVERT, AND RELATED ITEMS

3.10.01. Scope

- A. These procedures provide a means by which the Michigan Department of Transportation (MDOT) may acquire - from specific qualified sources - concrete pipe, precast units for drainage structures, and culvert sections, of the required quality while eliminating the necessity of testing on a project by project basis.
- B. These procedures include the certification of all concrete pipe, precast units for drainage structures, and culvert sections, manufactured and tested in accordance with current ASTM or AASHTO specifications. Concrete brick, block, and manhole bases are accepted from Approved Manufacturers, with a General Certification, and are not covered by this procedure.

3.10.02. Referenced Documents

- A. The items certified by these procedures must be manufactured and tested according to the following requirements:

ASTM C 14	AASHTO M 86	Concrete Sewer, Storm Drain, and Culvert Pipe
ASTM C 76	AASHTO M 170	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
ASTM C 412	AASHTO M 178	Concrete Drain Tile
ASTM C 444	AASHTO M 175	Perforated Concrete Pipe
ASTM C 478	AASHTO M 199	Precast Reinforced Concrete Manhole Sections
ASTM C 497	AASHTO T 280	Testing Concrete Pipe, Sections, or Tile
ASTM C 506	AASHTO M 206	Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe
ASTM C 507	AASHTO M 207	Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe
ASTM C 655	AASHTO M 242	Reinforced Concrete D-Load Culvert, Storm Drain, and Sewer Pipe
ASTM C 1504		Manufacture of Precast Reinforced Concrete Three-Sided Structures for Culverts and Storm Drains
ASTM C 1577		Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers

3.10.03. Qualification of New Plants

- A. Plants for which MDOT does not have a record of past production, which desire to furnish products for use on MDOT projects must apply for Approved Manufacturer status according to the requirements of section 3.02.

3.10.04. Testing Procedures

- A. Concrete Pipe and Precast Drainage Structure Units
 1. Test each production run of pipe or precast drainage structure units intended for use on MDOT projects, in accordance with current ASTM specifications. The frequency of testing must be that which the manufacturer determines necessary to assure compliance with specification requirements.

B. Precast Concrete Culvert Sections

1. Testing frequency must be as specified in ASTM C 1504, ASTM C 1577, and/or contract documents.
2. Compressive strength must be determined in accordance with the applicable ASTM or AASHTO specification.
3. Section dimensions and geometry, and reinforcement type and location must be verified and reported for each section.
4. The producer must certify the aggregates, cement, and steel reinforcement used meet the requirements of ASTM C 1504, ASTM C 1577, and the contract documents.
5. MDOT will perform Quality Assurance testing and inspection as deemed appropriate.
6. MDOT will perform Quality Assurance testing and inspection for culvert sections with span lengths 20 feet and greater (measured parallel to the roadway centerline).

C. Acceptance of Precast Culvert Sections

Acceptance consists of the following two part process for culvert sections that receive MDOT Quality Assurance testing and inspection:

1. Fabrication Inspection Acceptance: Structural elements must be inspected by the shop inspector after they are loaded for shipping. If the structural elements meet the contract requirements, the inspector will stamp them "Approved for Use". The elements must be stamped "Approved for Use" prior to shipping. Additionally, the shop inspector must stamp at least five copies of the Bill of Lading that is prepared by the fabricator. The approval stamp is for use by the Department and does not relieve the contractor of their responsibility to meet contract requirements.
2. Visual Inspection (VI) Acceptance: The engineer must collect one copy of the stamped Bill of Lading and use it to verify the delivered structural elements. Additionally, the engineer must verify that the elements are stamped and visually inspect them for signs of damage that may have occurred as a result of shipping and handling. This visual inspection should be documented in the Inspector's Daily Report.

3.10.05. Conducting Tests

- A. The required quality control testing may be conducted by an independent testing laboratory, a Professional Engineer licensed in the State of Michigan, or any responsible representative designated by the manufacturer, except as provided in Sections 3.10.04.B.5 and 3.10.04.B.6 above.

3.10.06. Load Testing Equipment

- A. In accordance with the requirements of Section 909.02 of the Standard Specifications for Construction, each pipe manufacturer must provide a suitable standard testing machine maintained in good working order.

- B. Manufacturers producing only Precast Units for Drainage Structures will not be required to provide a standard testing machine, if an independent testing laboratory is engaged to perform the testing. Independent testing laboratories must provide a suitable standard testing machine maintained in good working order.
- C. All testing machines will be calibrated by the Standard Methods of Verification of Testing Machines, ASTM E 4.
- D. Pipe testing machines must be verified yearly in accordance with the following schedule:
 - 1. On-site verification is required one year from granting Approved Manufacturer status, with succeeding on-site verification each third year thereafter. Testing performed must subject the pipe to full failure.
 - 2. Off-site verification will be permitted for each of the two intervening years. Testing may include VI or coring of pipe.

NOTE: "On-site" verification is defined as verification at the pipe manufacturing plant of the complete testing machine apparatus. "Off-site" verification is defined as verification of a portion of the testing conducted at a place other than the pipe manufacturing plant.

- E. Report and Certification – Submit a report to CFS including the information listed in ASTM E 4, Section 20 and 21, and the following:
 - A calibration table showing the actual loads applied as indicated by the calibrating device and the corresponding loads indicated by the testing machine; the error, and the percentage of error.
 - The smallest change of load, which can be estimated on the load-indicating apparatus of the testing machine. Refer to ASTM E 4, 16.3.
 - A notation indicating either on-site or off-site verification.
 - 1. The calibration table must be prominently posted near the testing equipment.

3.10.07. Test Reports

- A. Test reports must be assigned a lot number with a sub-designation of a test number. Short runs must be covered by one lot number and one test number while continuous runs must be covered by one lot number and several test numbers determined by the quantity produced in the run.
- B. Copies of all test results used for certification must be on file at the office of the manufacturer and available for review by MDOT representatives.

3.10.08. Product Identification

A. Concrete Pipe and Precast Drainage Structure Units

1. Make clearly legible markings with a permanent type marking medium. Mark each unit so the information will appear in the following order:
 - Producer's name or initials
 - Plant designation
 - Date of manufacture
 - ASTM designation, including class (if applicable)
 - Testing lot number

B. Precast Concrete Culvert Sections

1. Mark sections according to the requirements of ASTM C 1504, ASTM C 1577, and/or the contract documents.

3.10.09. Manufacturer's Certification

A. The manufacturer must complete a certification containing the following:

- Applicable ASTM or AASHTO Specification
- Manufacturer
- Project number
- Contractor
- Type and class of material
- Lot number
- Diameter, in inches
- Lineal feet
- Number of pieces
- Signature of manufacturer's authorized representative

B. Two copies of the certification must accompany the shipment.

3.10.10. Stockpiling

- A. In those instances where a manufacturer does not propose to consign total production to certified stock, the material to be certified must be readily identified and stored in areas separate from the commercial stock.

3.10.11. Records

- A. The manufacturer must maintain an accurate running inventory of certified stock, and the material must be stockpiled in such a manner the inventory can be checked by an MDOT representative as necessary.

3.10.12. Certification Verification

- A. MDOT will verify the manufacturer's certification and procedures by Certification Verification a minimum of once per year.
- B. The Certification Verification will consist of one or more of the following:
 - Random sampling and testing
 - Review of inventory records
 - Inspection of stockpiling practices
 - Observation of manufacturing process
 - Witnessing of D-loading of a random stockpiled yard sample, intended for MDOT use, to the required loading and ultimate failure to confirm compliance with strength specifications.

3.10.13. Withdrawal and Reinstatement of Certification Privileges

- A. MDOT will review the results of testing of Certification Verification samples for conformance to specification requirements. Certification privileges may be withdrawn if the certified material deviates from specification requirements in a critical parameter or if the plant produces products that repeatedly fail to conform to specification requirements by any amount in any aspect. A warning letter may be written indicating the improper procedure and requesting action to rectify the problem.
- B. Products from a plant from which MDOT has withdrawn certification privileges may not be used on projects until each individual shipment has been tested and approved by MDOT.
- C. Withdrawn certification privileges can be reinstated only if the plant has corrected the identified deficiencies and has documented, to the satisfaction of MDOT, the actions taken to prevent these deficiencies in the future.