

DOCUMENTATION GUIDE

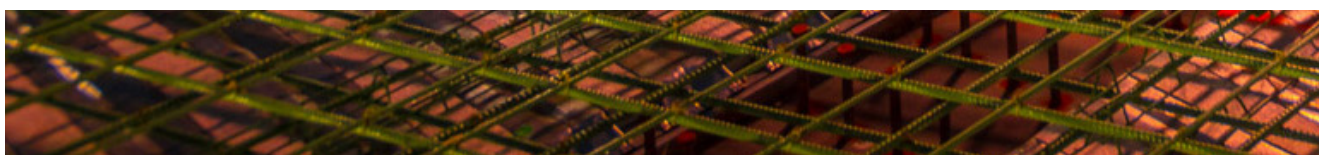
(Minimum Documentation Requirements
for Pay Item Approvals and Material Acceptance)

*2019 Edition, Version 2.0
February 2019*



CONSTRUCTION
Field Services Division

 **MDOT**
Michigan Department of Transportation



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DOCUMENTATION REQUIREMENTS FOR PROJECTS

This document is intended for use as a **GUIDE** to assist in project documentation of construction operations. It is a working document and will be updated as required. It is the responsibility of the managing office preparing the project record files to verify that the requirements are current.

FINAL PROJECT REVIEWS

The purpose of the Final Project Review is to determine whether the documentation is in substantial compliance with the plans, specifications and properly authorized contract modifications. Refer to [MDOT Construction WIKI 109.07.06](#).

When the Construction/Project Engineer has determined the final quantities of all pay items and has received all material documentation, the Region Construction Engineer should be notified that the project is ready for a final project review. A review team will meet with the Construction/Project Engineer to review the project documentation. The Construction/Project Engineer is to provide the review team with work space, read only access to the FieldManager files, all of the project files and access to personnel familiar with the project and file documentation. All of the files shall be provided at one physical location.

The review team will evaluate the following questions:

- Was the pay item measured according to specifications?
- Were the source documents (pay items and testing) validated by signatures and dates?
- Were the prescribed forms used?
- Were the testing frequencies correct?
- Were the materials listed on the signed Material Source List?
- Were the materials approved per MDOT specifications?
- Were the pay items and materials used and approved in FieldManager?

Particular attention will be focused on the proper use of FieldManager, FieldBook, and ProjectWise in the cross-referencing of pay items and source documents (IDRs, certifications, test reports, project file for numbers/descriptions/forms, etc.). The correct use of FieldManager provides reviewers with good cross-references for finding the documentation in the files.

NOTES PAGE:**INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS**

Aggregate:	A minimum of one satisfactory test per tester/per season (NHS Routes ONLY)
Concrete Field Testing:	A minimum of one satisfactory test, per tester/per season (NHS Routes ONLY)
Concrete Cylinder Strength Testing:	A minimum of one satisfactory test, per tester/per season
Density:	A minimum of one satisfactory test per tester/per type/per season (NHS Routes ONLY)
HMA:	A minimum of one satisfactory test, per tester/ per type / per season (NHS Routes ONLY)

MDOT LET PROJECTS:

Aggregate, Concrete Field Testing, Density, and HMA testing must be performed by: QA testing personnel must be CERTIFIED.

AGGREGATES:

One scale test per year if plant is stationary (if material is paid by the ton), per subsection 104.01.F of the current Standard Specification and per [1964 PA 283 Michigan Weights and Measures](#).

BUY AMERICA:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See [MDOT Construction Wiki Section 105.10](#).

Construction Manual WIKI:

Refer to the Construction Manual for current and updated information. [MDOT Construction Wiki](#).

MATERIAL ACCEPTANCE REQUIREMENTS TABLE:

Verify requirements from current edition of the guide at the time of letting. [MDOT Materials Source Guide](#).

MATERIAL SOURCE LIST (FORM 501):

The completed 501 form must be submitted in to ProjectWise by the contractor. See the MQAP Chapter 1.04 for the requirements. [MDOT MQAP](#)

QUALIFIED PRODUCTS LIST (QPL):

A QPL material should be field verified by construction staff to the extent possible. The Office Tech must verify that material listed on the Material Source List is from the QPL. See the [MDOT Materials Source Guide](#).

TICKETS:

Immediate possession of tickets is required for items paid by ton (weight).

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BACKFILL, SWAMP

Pay Unit: Cubic Yard

MATERIALS: Granular Material Class III**ACCEPTANCE TESTING REQUIREMENTS****Granular Materials****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See [Procedures for Aggregate Inspection Manual](#) for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____."
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**.
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files.
 - a. One test per 10,000 cubic yards.

2050001**BACKFILL, SWAMP**

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Job Site/On Site Sources:

1. Test reports must be in project files.
 - a. One test per 10,000 cubic yards.

Visual Inspection: Maximum 500 cubic yards per project

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure volume in original position.
If it is not practical to calculate the volume in its original position, the engineer will calculate the volume within the limits of the plans, or from soil borings and increase the volume by 15%.
3. Density Reports
 - a. Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 1000 cubic yards have been achieved.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

NOTE: Refer to Standard Plan R-103-C

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EMBANKMENT, CIP

Pay Unit: Cubic Yard

MATERIALS: Granular Material Class II or Granular Material Class III, Sound Earth

ACCEPTANCE TESTING REQUIREMENTS**Granular Materials****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____".
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**.
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files.
 - a. Class II – One test per 3,000 cubic yards.
 - b. Class III - One test per 10,000 cubic yards.

2050010**EMBANKMENT, CIP**

Pg 2 of 2

Job Site/On Site Sources:

1. Test reports must be in project files.
 - a. Class II – One test per 3,000 cubic yards.
 - b. Class III – One test per 10,000 cubic yards.

Visual Inspection: Maximum 500 cubic yards per material class per project.

Sound Earth

1. No Organic Material
2. Unit Weight of at least 95 pounds per cubic foot.
3. Compact to the Required Density for the Item of Work.

Visual Inspection: All material placed.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Grade checks once every 50 feet across the section. Tolerance +/- 1 inch if subbase is required and +/- ¾ inch if subbase is not required.
2. Measurement and payment.
 - a. Engineer will determine if payment will be based on plan quantity.
 - b. Engineer will measure volume based on the grade and cross section shown on the plans if not by plan quantity.
3. Density Reports.
 - a. Controlled Density Method (Standard Specifications 205.03.H.4.a). Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 1000 cubic yards, and regardless of the volume of material placed, a minimum of one test must be taken for each layer.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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EMBANKMENT, LM

Pay Unit: Cubic Yard

MATERIALS: Granular Material Class II or Granular Material Class III, Sound Earth

ACCEPTANCE TESTING REQUIREMENTS**Granular Materials****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____.
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**.
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files.
 - a. Class II – One test per 3,000 cubic yards.
 - b. Class III - One test per 10,000 cubic yards.

2050011**EMBANKMENT, LM**

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Job Site/On Site Sources:

1. Test reports must be in project files.
 - a. Class II – One test per 3,000 cubic yards.
 - b. Class III - One test per 10,000 cubic yards.

Visual Inspection: Maximum 500 cubic yards per material class per project.

Sound Earth

1. No Organic Material
2. Unit Weight of at least 95 pounds per cubic foot.
3. Compact to the Required Density for the Item of Work.

Visual Inspection: All material placed.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Grade checks once every 50 feet across the section. Tolerance +/- 1 inch if subbase is required and +/- ¾ inch if subbase is not required.
2. Measurement and payment.
 - a. Engineer will measure by volume, LM.
3. Density Reports.
 - a. Controlled Density Method (Standard Specifications 205.03.H.4.a). Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 1000 cubic yards, and regardless of the volume of material placed, a minimum of one test must be taken for each layer.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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EMBANKMENT, STRUCTURE, CIP

Pay Unit: Cubic Yard

MATERIALS: Granular Material Class III, Sound Earth (if allowed)**ACCEPTANCE TESTING REQUIREMENTS****Granular Materials****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____".
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**.
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files.
 - a. Class III - One test per 10,000 cubic yards.

2050012**EMBANKMENT, STRUCTURE, CIP**

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Job Site/On Site Sources:

1. Test reports must be in project files.
 - a. Class III - One test per 10,000 cubic yards.

Visual Inspection: Maximum 500 cubic yards per material class per project.

Sound Earth

1. For use under structure footing supported by piling if allowed by Engineer.

Visual Inspection: All material placed.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment.
 - a. Engineer will measure based on the grade and cross section shown in the plans.
3. Density Reports.
 - a. Controlled Density Method (Standard Specifications 205.03.H.4.a). Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 1000 cubic yards, and regardless of the volume of material placed, a minimum of one test must be taken for each layer.
 - b. Original ground must be compacted to 95 percent of maximum unit weight.
 - c. Backfill material must be compacted to 100 percent of maximum unit weight under structure footing for which piling is not specified.
 - d. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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EXCAVATION, EARTH

Pay Unit: Cubic Yard

MATERIALS: Existing Material at Cut Depth**ACCEPTANCE TESTING REQUIREMENTS****Existing Material**

1. Compact the subgrade to at least 95 percent of its maximum unit weight to a depth of at least 10 inches.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Grade checks once every 50 feet across the section. Tolerance +/- 1 inch if subbase is required and +/- ¾ inch if subbase is not required.
2. Measurement and payment.
 - a. Engineer will determine if payment will be based on plan quantity.
 - b. Engineer will measure volume based on the grade and cross section shown on the plans if not by plan quantity.
3. Density Reports.
 - a. Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of 1 test per 500 feet per width of 24 feet or less.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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SUBGRADE UNDERCUTTING, TYPE I

Pay Unit: Cubic Yard

MATERIALS: Selected Clay or other Engineer Approved Material**ACCEPTANCE TESTING REQUIREMENTS****Clay****Visual Inspection:** All material placed.**Engineer Approved Material**

1. If approved material is used, follow the acceptance testing requirements from the Current Standard Specification.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Grade checks once every 50 feet across the section. Tolerance +/- 1 inch if subbase is required and +/- ¾ inch if subbase is not required.
2. Measurement and payment.
 - a. Engineer will measure in its original position.
3. Density Reports.
 - a. Controlled Density Method (Standard Specifications 205.03.H.4.a). Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 500 feet per width of 24 feet or less. Material must be compacted to 95 percent of maximum unit weight.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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SUBGRADE UNDERCUTTING, TYPE II

Pay Unit: Cubic Yard

MATERIALS: Granular Material Class II**ACCEPTANCE TESTING REQUIREMENTS****Granular Materials****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____".
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files
 - a. Class II - One test per 3,000 cubic yards.

2050041**SUBGRADE UNDERCUTTING, TYPE II**

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Job Site/On Site Sources:

1. Test reports must be in project files.
 - a. Class II - One test per 3,000 cubic yards.

Visual Inspection: Maximum 500 cubic yards per project.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page at the beginning of this document for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Grade checks once every 50 feet across the section. Tolerance +/- 1 inch if subbase is required and +/- ¾ inch if subbase is not required.
2. Measurement and payment.
 - a. Engineer will measure in its original position.
3. Density Reports.
 - a. Controlled Density Method (Standard Specifications 205.03.H.4.a). Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 150 feet per width of 24 feet or less. Material must be compacted to 95 percent of maximum unit weight.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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SUBGRADE UNDERCUTTING, TYPE III

Pay Unit: Cubic Yard

MATERIALS: Excavated Material effectively mixed or Engineer Approved Material

ACCEPTANCE TESTING REQUIREMENTS**Excavated Material**

Visual Inspection: All material placed.

Engineer Approved Material

1. If approved material is used in lieu of excavated material, follow the acceptance testing requirements from the Current Standard Specification.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Grade checks once every 50 feet across the section. Tolerance +/- 1 inch if subbase is required and +/- ¾ inch if subbase is not required.
2. Measurement and payment.
 - a. Engineer will measure in its original position.
3. Density Reports.
 - a. Controlled Density Method (Standard Specifications 205.03.H.4.a). Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 500 per width of 24 feet or less. Material must be compacted to 95 percent of maximum unit weight.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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BACKFILL, STRUCTURE, CIP

Pay Unit: Cubic Yard

MATERIALS: Granular Material Class II**ACCEPTANCE TESTING REQUIREMENTS****Granular Materials****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____".
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**.
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files.
 - a. Class II - One test per 3,000 cubic yards.

2060002**BACKFILL, STRUCTURE, CIP**

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Job Site/On Site Sources:

1. Test reports must be in project files.
 - a. Class II - One test per 3,000 cubic yards.

Visual Inspection: Maximum 500 cubic yards per project.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment.
 - a. Engineer will base payment on plan quantity, Increase and Decreases required an approved Plan Revision.
3. Density Reports.
 - a. Controlled Density Method (Standard Specifications 205.03.H.4.a). Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 300 cubic yards with 6 inch layers, and regardless of the volume of material placed, a minimum of one test must be taken for each layer.
 - b. Backfill material must be compacted to 95 percent of maximum unit weight.
 - c. Backfill material must be compacted to 100 percent of maximum unit weight in the load bearing area.
 - d. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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EROSION CONTROL, SILT FENCE

Pay Unit: Foot

MATERIALS: Geosynthetics, Stakes and Lath (Silt Fence)**ACCEPTANCE TESTING REQUIREMENTS****Silt Fence**

1. A certification from the Approved Manufacturer of the silt fence system.
2. Fabric must be on Qualified Product List.

Or

If not from an approved manufacturer then test prior to incorporation. Sample size: 1 sample for the first 3000 ft or fraction thereof; 1 sample for each additional 10,000 ft or fraction thereof; 1 piece 8 ft long by full fence height include 2 attached posts and lath.

Visual Inspection: Maximum 500 feet.**CONSTRUCTION**

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment.
 - a. Engineer will measure in place excluding overlap.

3010002**3010003**

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SUBBASE, CIP**SUBBASE, LM**

Pay Unit: Cubic Yard

MATERIALS: Granular Material Class II**ACCEPTANCE TESTING REQUIREMENTS****Granular Materials****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____".
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files
 - a. Class II - One test per 3,000 cubic yards.

3010002**SUBBASE, CIP****3010003****SUBBASE, LM**

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Job Site/On Site Sources:

1. Test reports must be in project files.
 - a. Class II - One test per 3,000 cubic yards.

Visual Inspection: Maximum 500 cubic yards per project.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENT

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Grade checks once every 50 feet across the section. Tolerance + 1 inch.
2. Measurement and payment.
 - a. Engineer will measure CIP based on cross sections.
 - b. LM will be based on hauling unit dimensions and load counts.
3. Density Reports.
 - a. Refer to section 301 Subbase. Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 500 feet per width of 24 feet or less. Material must be compacted to 95 percent of maximum unit weight.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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3020002
3020008 – 3020030
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AGGREGATE BASE
AGGREGATE BASE, LM
AGGREGATE BASE, __ INCH
 Pay Unit: Cubic Yard, Square Yard, Ton

MATERIALS: Dense Graded Aggregate - 21AA, 21A, 22A
 or O.G.D.C. if added by special provision

ACCEPTANCE TESTING REQUIREMENTS

Aggregates

Prequalified Sources:

1. One ticket REQUIRED per load containing the following data
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. If paid by square yard or cubic yard, truck number and time are not required on tickets/documentation.
3. Documentation verifying passing QA test results in project files.
4. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
5. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
 Date _____ Signature _____.
 This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number

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3020001**3020002****3020008 – 3020030**

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AGGREGATE BASE**AGGREGATE BASE, LM****AGGREGATE BASE, __ INCH****3. Density Reports**

- a. Refer to subsection 302.03A, Placing and Compacting. Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 500 feet per width of 24 feet or less.
- b. Backfill material must be compacted to 95 percent of maximum unit weight under concrete
- c. Backfill material must be compacted to 98 percent of maximum unit weight under HMA pavement.
- d. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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OPEN-GRADED DR CSE, __ INCH

Pay Unit: Square Yard

MATERIALS: Open Graded Aggregate 4G, See special provisions in the proposal

ACCEPTANCE TESTING REQUIREMENTS**Aggregates****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____.
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files
 - a. One test per 1,000 Tons

3030004 – 3030006 OPEN-GRADED DR CSE, __ INCH

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Job site/On site Sources:

1. Test reports must be in project files
 - a. One test per 1,000 Tons

Visual Inspection: Maximum 100 Ton per material class

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR
 - c. Depth checks required. One test per 400 lft per traffic lane width. One test per 1,200 syds for intersections, crossovers, ramps, widening strips, and acceleration lanes. Note depth checks on IDR.
2. Measurement and payment
 - a. Engineer will measure and the department will pay for OGDC according to the contract.
3. Density Reports
 - a. Refer to contract documents. Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency requirement per the contract.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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HMA BASE CRUSHING AND SHAPING

Pay unit: Square Yard

MATERIALS: If required 21A, 21AA, 22A, (to be paid separately as aggregate base)

ACCEPTANCE TESTING REQUIREMENTS**Job site/On site Sources:**

Visual Inspection: All material placed. Check specification for gradation requirements on crushed material.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENT

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. After final Shaping, grade checks once every 50 feet across the section. Tolerance +/- 1/2 inch when tested with a 10 foot straightedge.
2. Measurement and payment
 - a. Engineer will measure based on plan quantity in accordance with standard specifications 109.01A regardless of any variations in depth. Increase and Decreases required an approved Plan Revision.
3. Density Reports
 - a. Refer to subsection 305.03C, Compacting and Shaping in the standard specifications. Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 500 feet per width of 24 feet or less. Material must be compacted to 98 percent of maximum unit weight.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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AGGREGATE SURFACE CSE**AGGREGATE SURFACE CSE, __ INCH**

Pay Units: Ton, Cubic Yard, Square Yard

MATERIALS: Dense Graded Aggregate 21A, 21AA, 22A, or 23A**ACCEPTANCE TESTING REQUIREMENTS****Aggregates****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. If paid by square yard or cubic yard, truck number and time are not required on tickets/documentation.
3. Documentation verifying passing QA test results in project files.
4. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
5. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____".
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data if applicable
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files
 - a. One test per 1,000 Tons.

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AGGREGATE SURFACE CSE
AGGREGATE SURFACE CSE, __ INCH

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Job site/On site Sources:

1. Test reports must be in project files
 - a. One test per 1,000 Tons

Visual Inspection: Maximum VI is 500 Tons per material class per project

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS (IAT)

1. See Notes page for IAT requirements

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Immediate possession of tickets is required if paying by ton (weight).
 - d. Moisture check required on ton pay items by inspector and note on the IDR.
 - e. Depth check required. One test per 400 lft per traffic lane width. One test per 1,200 syds for intersections, crossovers, ramps, widening strips, and acceleration lanes. Note depth checks on IDR for SYD pay item specified depth.
 - f. Grade checks required once every 50 feet across the section. Tolerance +/- 1/2 inch.
2. Measurement and payment
 - a. Tons: Engineer will measure scale weight of the material, including ad mixtures and moisture content no greater than 6%, if over 6% refer to section 109.01.
 - b. SYD: Engineer will measure based on the width and length for the specified depth as shown on the plans.
 - c. CYD: Engineer will measure based on hauling unit/load count for LM or computations for CIP.
3. Density Reports
 - a. Controlled Density Method (subsection 306.03b). Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 500 feet per width of 24 feet or less. Material must be compacted to 95 percent of maximum unit weight.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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APPROACH, CL I; CL II AND CL III
SHOULDER, CL I; CL II; CL III AND CL IV
Pay Units: Ton, Cubic Yard, Square Yard

MATERIALS: Dense Graded Aggregate 21A, 21AA, 22A, 23A or Salvaged Material

ACCEPTANCE TESTING REQUIREMENTS

Aggregates

Prequalified Sources:

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____.
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**.
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files.
 - a. One test per 1,000 Tons

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APPROACH, CL I; CL II AND CL III
SHOULDER, CL I; CL II; CL III AND CL IV

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Job site/On site Sources:

1. Test reports must be in project files.
 - a. One test per 1,000 Tons

Visual Inspection: Maximum 500 Tons per material class per project.

Salvaged Material

Visual Inspection: All material for 2 inch maximum particle size, document on IDR.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Immediate possession of tickets is required if paying by ton (weight).
 - d. Moisture check required on ton pay items by inspector and note on the IDR.
 - e. Depth check required: One test per 400 lft per traffic lane width. One test per 1,200 syds for intersections, crossovers, ramps, widening strips, and acceleration lanes. Note depth checks on IDR for SYD items.
2. Measurement and payment.
 - a. Tons: Engineer will measure scale weight of the material, including additives and moisture content no greater than 6%, if over 6% refer to section 109.01.
 - b. LM: Engineer will measure based on hauling unit dimensions and load count before placement and compaction.
 - c. SYD: Engineer will measure based on the width and length for the specified depth as shown on the plans.
3. Density Reports.
 - a. Refer to subsection 307.03C, Placing and Compacting. Review reports to see that all test and retests meet MDOT requirements (see form 0582B) and the minimum frequency of one test per 500 feet per width of 24 feet or less.
 - b. Class I must be compacted to 98 percent of maximum unit weight, Class II, Class III and Class IV must be compacted to 95 percent of maximum unit weight.
 - c. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

3080005**3080010**

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Geotextile, Separator**Geotextile, Stabilization**

Pay unit: Square Yard

MATERIALS: Separator Geotextile and Stabilization Geotextile.**ACCEPTANCE TESTING REQUIREMENTS**

Test for Acceptance allow up to 28 days.

Job site/On site Sources:

1. Test required for the first 500 syd to 1500 Syd and then one test for every addition 25,000 Syd or less.

Visual Inspection: Maximum 500 syd per material type per project.**CONSTRUCTION**

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. The Engineer will measure Geotextile, Separator and Geotextile, Stabilization in place, to the limits shown on the plans.

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CULVERT END SECTIONS

Pay Unit: Each

MATERIALS: Concrete End Section, Metal End Section**ACCEPTANCE TESTING REQUIREMENTS****End Section**

1. Concrete End Section.
 - a. Certification from Approved Manufacturer.
- Or**
- b. Test per lot prior to incorporation. Test 1 percent of pieces per the Materials Quality Assurance Manual.

Visual Inspection: Maximum 10 pieces

2. Metal End Section.
 - a. General Certification.

Visual Inspection: Maximum 4 pieces**NOTE:**

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.

Note The unit price for Culv End Sect, Metal also includes the cost of providing and placing the length of associated culvert represented by the "c" dimension shown on the plans, per section 401.04 of the Current Standard Specification.

2. Measurement and payment.
 - a. Engineer will base payment for each end section used.

Notes: Refer to Standard Plan R-86

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CULVERTS

Pay Unit: Foot

MATERIALS:

Aggregate 6A, 17A, 34R, Granular Material Class II, III, IIIA, Geosynthetic, Joint Sealers, Pipe Gaskets, Reinforced/Nonreinforced Concrete pipe, or Corrugated & Spiral Ribbed Al-Alloy/Steel pipe, Smooth-Lined Corrugated Plastic Pipe (CPE/HDPE and CPV), Water Tight Joint

ACCEPTANCE TESTING REQUIREMENTS**Aggregates & Granular Materials****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____.
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**.
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number

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2. Test reports must be in project files.
 - a. Class II – One test per 3,000 cubic yards
 - b. Class III – One test per 10,000 cubic yards
 - c. Class IIIA – One test per 1,000 cubic yards
 - d. Aggregates 6A, 17A and 34R – One test per 1,000 tons

Job site/On site Sources:

1. Test reports must be in project files.
 - a. Class II – One test per 3,000 cubic yards
 - b. Class III – One test per 10,000 cubic yards
 - c. Class IIIA – One test per 1,000 cubic yards

Visual Inspection:

Class II – Maximum 500 cubic yards per project.

Class III – Maximum 500 cubic yards per project.

Class IIIA – Maximum 100 cubic yards per project.

Aggregates 6A, 17A and 34R – Maximum 100 tons per material class per project.

Geosynthetics

1. Geotextile blanket – Test for acceptance

Visual Inspection: Maximum 500 Syd**Joint Sealers**

1. Cold applied joint sealers (Mastic).
 - a. VI

Pipe

1. Concrete and Steel Pipe.
 - a. A Certification from the Approved Manufacturer.

Or

- b. Test prior to incorporation. Test per the Materials Quality Assurance Procedures Manual.

Visual Inspection: Maximum 10 pieces Conc. Non Reinforced, 5 pieces 42 inch or less Conc Reinforced, 125 ft steel 12 inch or less, 50 ft steel 15 inch to 54 inch, 25 ft 60 inches or greater.

2. Plastic Pipe.
 - a. Shipment of Tested Stock Report, Form 1922, from approved source.
Note: Class A, B and F plastic pipe must be from QPL (909.06).

Or

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- b. Test prior to incorporation. One per 1,000 feet for 12 inch diameter and over.

Note: All Class A, B and F plastic pipe must be from QPL (909.06).

Visual Inspection: Maximum 100 ft 12 inch and greater.

3. Aluminum Alloy Pipe.
 - a. A General Certification

Visual Inspection: Maximum 250 ft

NOTE: Mandrel testing required only for all plastic pipe 12 Inches to 48 Inches. For additional information refer to [CA-2011-08](#), or as superseded, for additional information. Video inspection required per subsections 401.03.C.1 and 401.03.M.

Water Tight Joint System

1. Water Tight Joint/Gaskets.
 - a. Must be on Qualified Product List.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See [MDOT Construction Wiki Section 105.10](#).

INDEPENDENT ASSURANCE TEST (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Check for the 12SP401B or Current SP for wrapping all Joints
2. Measurement and payment.
 - a. Engineer will measure culverts of the diameter, class or material required, by length, excluding the length of the end sections as shown on the plans.
3. Density Reports.
 - a. Review reports to see that all test and retests meet MDOT requirements (see form 0582B).
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

Note: Refer to Standard Plan R-82

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SEWER, CL __, __ INCH, TR DET __

Pay Unit: Foot

MATERIALS:

Aggregate 6A, 17A, 34R, Granular Materials Class II, III, IIIA, Geosynthetics, Joint Sealers, Reinforced/Non-reinforced Concrete Pipe, or Corrugated & Spiral Ribbed Al-Alloy/Steel Pipe, Smooth-Lined Corrugated Plastic Pipe (CPE and HDPE), Corrugated Polyvinyl Chloride Pipe (CPV), Polyvinyl Chloride (PVC), Steel Pipe Jacked-in-Place, Water Tight Joint System

ACCEPTANCE TESTING REQUIREMENTS**Aggregate/Granular Material****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____.
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**.
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number

4020001 – 4021133 SEWER, CL __, __ INCH, TR DET __

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2. Test reports must be in project files.
 - a. Class II – One test per 3,000 cubic yards
 - b. Class III – One test per 10,000 cubic yards
 - c. Class IIIA – One test per 1,000 cubic yards
 - d. Aggregates 6A, 17A and 34R – One test per 1000 tons

Job site/On site Sources

1. Test reports must be in project files.
 - a. Class II – One test per 3,000 cubic yards
 - b. Class III – One test per 10,000 cubic yards
 - c. Class IIIA – One test per 1,000 cubic yards

Visual Inspection

Class II – Maximum 500 cubic yards per project

Class III – Maximum 500 cubic yards per project

Class IIIA – Maximum 100 cubic yards per project

Aggregates 6A, 17A and 34R – Maximum 100 tons per material class per project

Geosynthetic

1. Geotextile Blanket – Test for Acceptance

Visual Inspection: Maximum 500 Syd**Joint Sealers:**

1. Cold applied joint sealers (Mastic).
 - a. VI.

Pipe

1. Corrugated Polyvinyl Chloride Pipe (CPV and PVC).
 - a. Test prior to incorporation. One test per 1000 feet of 12 inch or greater diameter straight lengths of pipe.
 2. Corrugated Polyethylene pipe (CPE and HDPE)
 - a. Shipment of Tested Stock Report, Form 1922, from approved source.
- Or**
- b. Test prior to incorporation. One per 1,000 feet for 12 inch diameter and over.

NOTE: All Class A, B and F Plastic Pipe CPE, HDPE, CPV and PVC must be on Qualified Product List**Visual Inspection:** Maximum 100 ft. 12 inches or greater.

3. Concrete/Steel Pipe.
 - a. A Certification from the Approved Manufacturer.

Or

- b. Test prior to incorporation.

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Visual Inspection: Maximum 10 pieces Conc. Non Reinforced, 5 pieces 42 inch or less Conc Reinforced., 125 ft steel 12 inch or less, 50 ft steel 15 inch to 54 inch, 25 ft 60 inches or greater.

4. Aluminum Alloy Pipe
 - a. A General Certification

AND

- b. Test prior to incorporation. One test per 1000 feet of pipe.

Visual Inspection: Maximum 250 ft

5. Steel Pipe, Jacked-in-Place
 - a. A General Certification

Water Tight Joint/Gaskets

1. VI and must be on Qualified Product List for Compression or External Rubber Type. VI as part of the Watertight Joint System and note on IDR.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

INDEPENDENCE ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Check for the 12SP401B or Current SP for wrapping all Joints
2. Measurement and payment.
 - a. Engineer will measure Sewer and Sewer, Reinf conc, Ellip of the size, class, and trench detail required, in-place from center to center of manhole, catch basin, or inlet.
 - b. Engineer will measure Sewer, Jack in Place, of the size and class required, by multiplying the number of units jacked by the commercial laying length.

Note: Refer to Standard Plan R-83

4020001 – 4021133**SEWER, CL __, __ INCH, TR DET __**

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3. Density Reports.
 - a. Review reports to see that all test and retests meet MDOT requirements (see form 0582B).
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

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DR STRUCTURE COVER , Type _ XX

Pay Units: Ea

MATERIALS: Castings, malleable iron and steel**ACCEPTANCE TESTING REQUIREMENTS****Malleable iron and steel****Visual Inspection:** All material placed**NOTE:**

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure drainage structure covers based on placed quantity.

Note: Refer to Standard Plans R-7, R-8, R-8X, R-9, R-9X, R-10, R-12, R-14, R-15, R-18, R-20, R-20X, R-22, R-23, and R-24.

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DR STRUCTURE, __ INCH DIA**DR STRUCTURE, ADD DEPTH, __ INCH DIA, 8 TO 15 FT****DR STRUCTURE, ADD DEPTH, __ INCH DIA, OVER 15 FT**

Pay Unit: Each, Ft

MATERIALS:

Mortar Standard (R-2), Granular Material Class II, III, Steel
Reinforcement, Concrete Brick or Block, Pre-cast Reinforced
Concrete Units, Manhole Bases & Sumps, Concrete Grade S3

ACCEPTANCE TESTING REQUIREMENTS**Mortar**

1. Standard (R-2), VI and document on IDR

GRANULAR MATERIALS**Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____.
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**.
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate

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DR STRUCTURE, ___ INCH DIA**DR STRUCTURE, ADD DEPTH, ___ INCH DIA, 8 TO 15 FT****DR STRUCTURE, ADD DEPTH, ___ INCH DIA, OVER 15 FT**

- e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
- 2. Test reports must be in project files.
 - a. Class II – One test per 3,000 cubic yards
 - b. Class III – One test per 10,000 cubic yards

Job site/On site Sources:

- 1. Test reports must be in project files.
 - a. Class II – One test per 3,000 cubic yards
 - b. Class III – One test per 10,000 cubic yards

Visual Inspection:

Class II – Maximum 500 cubic yards per project
Class III – Maximum 500 cubic yards per project

Concrete Brick and Block

- 1. A Test Data Certification.

Visual Inspection: Maximum 1,000 pieces each.

Pre-cast Reinforced Concrete Units

- 1. A General Certification from the Approved Manufacturer.

Or

- 2. Test prior to incorporation. Test 1 percent per each size. Test per the Materials Quality Assurance Procedures Manual.

Visual Inspection: Maximum 10 pieces.

Pre-cast Concrete Bases

- 1. A General Certification from the Approved Manufacturer

Or

- 2. Test prior to incorporation. Test 5 percent of total

Visual Inspection: Maximum 10 pieces

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DR STRUCTURE, ___ INCH DIA**DR STRUCTURE, ADD DEPTH, ___ INCH DIA, 8 TO 15 FT****DR STRUCTURE, ADD DEPTH, ___ INCH DIA, OVER 15 FT****Concrete Grade S3****Note: Refer to 12SP604 for concrete QC/QA requirement****NRMCA Plants**

1. Plant
 - a. Current NRMCA certification
2. Scales Check
 - a. Inspection certification every 6 months
3. Dispenser Check
 - a. Inspection certification every 90 days
4. Concrete Mix Design
 - a. Copy in project files

For Portable Batch Plants

1. Plant
 - a. Documentation of Inspection after each move per 601.03.A.1.a.

For non NRMCA Plants

All of the following documentation is required including FORM 1174 CONCRETE PLANT PROPORTIONING (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Copy in project files

For all Plants

1. Cement
 - a. A General Certification from the Approved Manufacturer.

Visual Inspection: Maximum VI 45 tons

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DR STRUCTURE, __ INCH DIA**DR STRUCTURE, ADD DEPTH, __ INCH DIA, 8 TO 15 FT****DR STRUCTURE, ADD DEPTH, __ INCH DIA, OVER 15 FT****2. Coarse Aggregates**

- a. Test prior to incorporation. One test per 1,000 tons. Maximum VI 100 tons for total grade used on job. L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.

Visual Inspection: Maximum 100 tons for total grade used on job

- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

3. Fine Aggregate

- a. Test prior to incorporation. One test per 1,000 tons.

Visual Inspection: Maximum 100 tons for total FA used on job

- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

4. Concrete Admixtures

- a. VI and must be on Qualified Product List.

5. Fly Ash

- a. A General Certification from the Approved Manufacturer

6. Slag Cement

- a. A General Certification from the Approved Manufacturer.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

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DR STRUCTURE, ___ INCH DIA**DR STRUCTURE, ADD DEPTH, ___ INCH DIA, 8 TO 15 FT****DR STRUCTURE, ADD DEPTH, ___ INCH DIA, OVER 15 FT****CONSTRUCTION**

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will base payment for DR STRUCTURE, INCH DIA. from 0 to 8 feet as each.
3. Additional payment is required for
 - a. DR STRUCTURE, ADD DEPTH, ___ INCH DIA, 8 FT TO 15 FT will be paid by the foot
 - b. DR STRUCTURE, ADD DEPTH, ___ INCH DIA, OVER 15 FT will be paid by the foot.
4. Density Reports
 - a. Review reports to see that all test and retests meet MDOT requirements (see form 0582B).
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.
5. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or Fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers signature required.
 - e. QA and QC Optimized aggregate test reports as required per the Materials Quality Assurance Procedures Manual.
6. Local Agency Projects

Refer to [12SP604A](#) (or as superseded) Quality Control and Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

Note: Refer to Standard Plans R-1, R-2, R-3, and R-4

4040001 – 4040089**UNDERDRAIN (Subgrade, Bank, Fdn., Subbase,
Pipe, PDS and Edge of Pavt.)****4040091 – 4040099****UNDERDRAIN OUTLETS**

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Pay Unit: Foot

MATERIALS:

OGDC Aggregate (34R), Granular Material Class IIAA,
Geosynthetics, Prefabricated Drainage System (PDS), Corrugated
Plastic Tubing, Acrylonitrile-Butadiene-Styrene Pipe (ABS),
Smooth Plastic Pipe and Corrugated Steel Pipe.

ACCEPTANCE TESTING REQUIREMENTS**Aggregate/Granular Materials****Prequalified Sources:**

1. One ticket per load containing
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT Control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____.
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket per load containing
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT Control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
 - h. If paid by square yard or cubic yard, truck number and time are not required on tickets/documentation

4040001 – 4040089**UNDERDRAIN (Subgrade, Bank, Fdn., Subbase,
Pipe, PDS and Edge of Pavt.)****4040091 – 4040099****UNDERDRAIN OUTLETS**

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2. Test reports must be in project files
 - a. Class IIAA – See the Aggregate Manual for Testing Frequency
 - b. Aggregates 34R – One test per 1,000 tons

Job site/On site Sources:

1. Test reports must be in project files
 - a. Class IIAA – See the Aggregate Manual for Testing Frequency

Visual Inspection:

Class IIAA – See the Aggregate Manual for Maximum VI
34R – Maximum 100 Tons

Geosynthetics

1. Geotextile Blanket
 - a. Test prior to incorporation

Visual Inspection: Maximum 500 Syd.**Underdrain**

1. Corrugated Steel Pipe
 - a. A General Certification from the Approved Manufacturer.
- Or**
- b. Test prior to incorporation. Test per Chapter 4.02 of the Materials Quality Assurance Procedures Manual.

Visual Inspection: Maximum 125 feet 12 inch or less, 50 feet for 15 inch to 54 inch

2. Smooth Plastic Pipe
 - a. Test prior to incorporation. One test per 2,500 feet or fraction thereof

Visual Inspection: Maximum 250 feet

3. Corrugated Plastic Tubing (PE or PVC) (wrapped and unwrapped)
 - a. A General Certification from approved manufacturer.
- Or**
- b. Test prior to incorporation. One test per 5,000 feet with sample from coil.

Visual Inspection: Maximum 250 feet.

4040001 – 4040089**UNDERDRAIN (Subgrade, Bank, Fdn., Subbase,
Pipe, PDS and Edge of Pavt.)****4040091 – 4040099****UNDERDRAIN OUTLETS**

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4. Prefabricated Drainage System (910.05)
 - a. A Test Data Certification from approved manufacturer
- Or**
- b. Test prior to incorporation. One test per 10,000 feet or less.
5. Acrylonitrile-Butadiene-Styrene Pipe (ABS, Misc # 7)
 - a. Test prior to incorporation. One test per 6,000 feet or less.

Visual Inspection: Maximum 600 feet**NOTE:**

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure underdrains in place.
3. Density Reports
 - a. Review reports to see that all test and retests meet MDOT requirements (see form 0582B).
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

Note: Refer to Standard Plans R-80

4040111 – 4040115

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UNDERDRAIN, OUTLET ENDING, __ INCH

Pay Unit: Each

MATERIALS: Concrete or Steel End Section with Rodent Screen**ACCEPTANCE TESTING REQUIREMENTS****Outlet Ending**

1. Steel

Visual Inspection: All material placed of complete unit and note on IDR.

2. Concrete

Visual Inspection: All material placed and note on IDR.

3. Rodent Screen

Visual Inspection: All material placed and note on IDR.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure each outlet ending in place.

Note: Refer to Standard Plans R-80

5010025 – 5010806
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HMA, __; HMA Approach
Pay Unit: Ton, Square Yard

MATERIALS: Asphalt Binder, Emulsified Asphalt (Bond Coat), and HMA Mixture

Note: Refer to SP 501 U and SP 501 V SUPERPAVE HOT MIX ASPHALT PERCENT WITHIN LIMITS (PWL) and CA 2006-07

ACCEPTANCE TESTING REQUIREMENTS

Asphalt Binder

1. A General Certification from the Approved Certifier.
- Or**
2. Test prior to incorporation. One test per day per contractor's tank of asphalt binder.

NOTE:

Daily Asphalt Binder Sample: Contractor shall submit one sample per grade, per project, per day of production for certification verification (see form 1923B).

Witness Sample: The Engineer may request to witness the sampling of the asphalt binder upon any visit to the HMA plant. The engineer will complete the 1923B form for the witness sample. The witness sample will become the daily asphalt binder sample of record. Any other binder sample taken that same day will be discarded.

Failing binder notification letters must be in the project files.

Emulsified Asphalt (Bond Coat)

1. A General Certification from approved manufacturer.
- Or**
2. Test prior to incorporation.

HMA Mixtures

HMA Plant:

1. Plant certification will be verified by RMI on Form 1911. JMF (Job Mix Formula) Form 1911 must be in project file.

5010025 – 5010806 HMA, __; HMA Approach

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HMA mixture

1. Test for acceptance. A written statement from the supplier certifying all materials used in mix are of the same source submitted for JMF. This requirement must be met by separate letter in file from producer.

Visual Inspection: Maximum 500 tons per project per mix.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.
2. HMA Mixtures testing in the lab.
 - a. Contact Region IAT Coordinator or Region Mix Inspector (RMI) to schedule IAT as soon as possible. One satisfactory test/per sampler and tester/per season. A certified bituminous technician is required for testing on all state and federally funded projects.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay. Including Temperature and Yield calculations
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Delivery tickets required per load which includes control section/job number, mix type, date, time, truck number, tare weight, tonnage delivered and accumulated tonnage.
 - d. Immediate possession of tickets is required if paying by ton (weight).
 - e. HMA sampling needs to be obtained by a qualified technician, to be qualified contact the RMI.
3. Measurement and payment
 - a. Engineer will measure and pay for HMA of the mix specified based on weight placed as supported by weigh tickets.
4. Additional Documentation Requirements in project file
 - a. Form 1903B Verification/Acceptance Report (minimum frequency, one report per lot placed)
 - b. Form 1903C Report of Contractor's Quality Control Tests
 - c. Form 1907 Core Density
 - d. Form 1907J Joint Core Density
 - e. MDOT QA Plan
 - f. Contractor QC Plan
 - g. Random number sheets signed by MDOT and Contractor
 - h. Pre-production meeting minutes
 - i. PWL Calculation spreadsheet (if required)

5010025 – 5010806**HMA, __; HMA Approach**

Pg 3 of 3

Local Agency Projects

- a. Form 1903 Daily report of bit plant inspection for each day of production, and 582B. Check special provision SP 501 J for additional requirements.
5. Density Reports
 - a. Refer to section 501 HMA Construction Practices. One test per 1000 feet, width of 24 feet (minimum) or as defined per special provision if any in the proposal.
 - b. All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum.

6020002 – 6020010	CONC BASE CSE, REINF, __ INCH
6020015 – 6020023	CONC BASE CSE, NONREINF, __ INCH
6020030 – 6020031	CONC, GRADE __
6020050 – 6020062	CONC PAVT, MISC, NONREINF, __ INCH
6020070 – 6020082	CONC PAVT, MISC, REINF, __ INCH
6020100 – 6020115	CONC PAVT, NONREINF, __ INCH
6020120 – 6020135	CONC PAVT, REINF, __ INCH
6020500 – 6020523	CONC PAVT, HIGH PERFORMANCE
Pg 1 of 5	Pay Unit: Square Yard, Cubic Yard

MATERIALS: Adhesive System, Bituminized Fiber Joint Filler, Concrete Grade P1, P1-M and P2, Curing Compound-White, Hot Poured Rubber, Lane Tie bars, Wire Fabric

Note: Refer to 12SP604 for concrete QC/QA requirement

ACCEPTANCE TESTING REQUIREMENTS

Adhesive System

1. VI and must be on Qualified Product List
2. Pull out test required per section 602.03.F.2 on form 1928

Bituminized Fiber Joint Filler

1. A Test Data Certification.

Visual Inspection: Maximum 150 square feet for all other sizes.

Concrete Grade P1, P1-M, P2

NRMCA Plants

1. Plant
 - a. Current NRMCA certification.
2. Scales Check
 - a. Inspection certification every 6 months.
3. Dispenser Check
 - a. Inspection certification every 90 days.
4. Concrete Mix Design
 - a. Form 1976 in project files

For Portable Batch Plants

1. Plant
 - a. Documentation of Inspection after each move per 601.03.A.1.b. With Waiver certification per 601.03.C from the Engineer

6020002 – 6020010	CONC BASE CSE, REINF, __ INCH
6020015 – 6020023	CONC BASE CSE, NONREINF, __ INCH
6020030 – 6020031	CONC, GRADE __
6020050 – 6020062	CONC PAVT, MISC, NONREINF, __ INCH
6020070 – 6020082	CONC PAVT, MISC, REINF, __ INCH
6020100 – 6020115	CONC PAVT, NONREINF, __ INCH
6020120 – 6020135	CONC PAVT, REINF, __ INCH
6020500 – 6020523	CONC PAVT, HIGH PERFORMANCE

Pg 2 of 5

For non NRMCA Plants

All of the following documentation is required including FORM 1174 CONCRETE PLANT PROPORTIONING (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Form 1976 in project files

Materials

1. Cement
 - a. General Certification from the Approved Manufacturer.

Visual Inspection: Maximum 45 tons

2. Coarse/Intermediate Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons. Maximum VI 100 tons for total grade used on job. L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total grade used on job

3. Fine Aggregate
 - a. Test prior to incorporation. One test per 1,000 tons.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total FA used on job

6020002 – 6020010	CONC BASE CSE, REINF, __ INCH
6020015 – 6020023	CONC BASE CSE, NONREINF, __ INCH
6020030 – 6020031	CONC, GRADE __
6020050 – 6020062	CONC PAVT, MISC, NONREINF, __ INCH
6020070 – 6020082	CONC PAVT, MISC, REINF, __ INCH
6020100 – 6020115	CONC PAVT, NONREINF, __ INCH
6020120 – 6020135	CONC PAVT, REINF, __ INCH
6020500 – 6020523	CONC PAVT, HIGH PERFORMANCE

Pg 3 of 5

4. Liquid Concrete Admixtures
 - a. VI and must be on Qualified Product List (903.01, 903.02 & 903.03).
5. Slag Cement
 - a. General Certification from the Approved Manufacturer
6. Fly Ash
 - a. General Certification from the Approved Manufacturer

Curing Compound

1. A Test Data Certification.

NOTE: Must be used within one year of manufacturer date.

Visual Inspection: Maximum 200 gallons for total material used on project.

Hot Poured rubber

1. Per Special Provision 12SP914B

Lane Tie Bars

1. A General Certification from the Approved Manufacturer for Bar
2. Coating Company is an Approved Manufacturer
3. Coating is a VI and must be on Qualified Product List (905.03C1).

Or

Test prior to incorporation. One test per project per manufacturer.

Visual Inspection: Maximum 500 pounds

NOTE: Pullout test required per Standard Specification section 602.03.F.2 – Documentation placed in the Project Files.

6020002 – 6020010	CONC BASE CSE, REINF, __ INCH
6020015 – 6020023	CONC BASE CSE, NONREINF, __ INCH
6020030 – 6020031	CONC, GRADE __
6020050 – 6020062	CONC PAVT, MISC, NONREINF, __ INCH
6020070 – 6020082	CONC PAVT, MISC, REINF, __ INCH
6020100 – 6020115	CONC PAVT, NONREINF, __ INCH
6020120 – 6020135	CONC PAVT, REINF, __ INCH
6020500 – 6020523	CONC PAVT, HIGH PERFORMANCE

Pg 4 of 5

Welded Wire Fabric

1. General Certification from the Approved Manufacturer

Or

2. Test prior to incorporation. One test per project per manufacturer.

Visual Inspection: Maximum 500 square yards.**NOTE:**

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See the [MDOT Construction Wiki Section 105.10](#).

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements

CONSTRUCTION

1. Inspector’s Daily Report
 - a. IDR shall show the inspector’s computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Signed certification statement and batch weights required on each concrete delivery tickets from supplier for each load. Water additions must be noted and signed. Refer to [MDOT Construction Manual WIKI](#), for additional information.
 - d. Form 1174R - Inspector’s Report of Concrete Placed - roadway. One report per day of placement completely filled out. Document all underruns.
 - e. Contractors QC documentation
2. Measurement and payment
 - a. Engineer will measure and determine quantity.

Note: Refer to Standard Plan R-41

6020002 – 6020010	CONC BASE CSE, REINF, __ INCH
6020015 – 6020023	CONC BASE CSE, NONREINF, __ INCH
6020030 – 6020031	CONC, GRADE __
6020050 – 6020062	CONC PAVT, MISC, NONREINF, __ INCH
6020070 – 6020082	CONC PAVT, MISC, REINF, __ INCH
6020100 – 6020115	CONC PAVT, NONREINF, __ INCH
6020120 – 6020135	CONC PAVT, REINF, __ INCH
6020500 – 6020523	CONC PAVT, HIGH PERFORMANCE

Pg 5 of 5

3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or Fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
 - e. Attach pavement core thickness forms and document on IDR whether a penalty was required.
 - f. Pull out test for lane ties required per section 602.03.F.2
 - g. QA and QC Optimized aggregate test reports as required per the Materials Quality Assurance Procedures Manual 4.13.
4. Local Agency Projects

Refer to [12SP604A](#) (or as superseded) Quality Control and Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

6020200 - 6020211

Pg 1 of 2

JOINT, CONTRACTION, (TYPE____)**JOINT, EXPANSION, (TYPE____)****JOINT, PLANE -OF- WEAKNESS, (TYPE____)**

Pay Unit: Foot

MATERIALS:

Backer Rod, Expansion Caps, Hot Poured Rubber Sealant, Joint Filler Fiber, Load Transfer Assemblies

ACCEPTANCE TESTING REQUIREMENTS**Backer Rod**

1. VI and document on IDR

Dowel Bars

1. A General Certification from the Approved Manufacturer for Bar
2. Coating Company is an Approved Manufacturer
3. Coating is a VI and must be on Qualified Product List (905.03C1).

Or

Test prior to incorporation. One test per project per manufacturer.

Visual Inspection: Maximum 1200 Bars**Expansion Caps****Visual Inspection:** All material placed must conform to Standard Plan R-40 series, and Buy America**Hot Poured Joint Sealant**

1. Per Special Provision 12SP914B

Joint Filler Fiber

1. Test Data Certification

Visual Inspection: Maximum VI 150 square feet for all other sizes.**Recycled Rubber Joint Filler**

1. VI and must be on Qualified Product List

6020200 - 6020211

Pg 2 of 2

JOINT, CONTRACTION, (TYPE____)**JOINT, EXPANSION, (TYPE____)****JOINT, PLANE -OF- WEAKNESS, (TYPE____)****Load Transfer Assemblies**

1. General Certification from an Approved manufacturer for Assemblies
2. General Certification from an Approved manufacturer for the Bars
3. General Certification from an Approved manufacturer for the Coating company
4. VI and must be on Qualified Product List for the Coating.
5. VI and must be on Qualified Product List for the Bond release agent
6. Fabrication inspection of the Assemblies, minimum one inspection per manufacturer per project, on Form 0553.

Visual Inspection: Maximum 100 assemblies

NOTE:

Each Bundle of Assemblies need to have a tag on them with the assembly manufacturer name and plant location, Control section/project number, Lot number or other identification that will also be shown on the accompanying certification, and Supplier and/or contractor's name.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. Inspection of the Load Transfer Assemblies needs to be completed on form 0553 and placed in the Project Files.
 - c. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will pay based on measurement

Note: Refer to Standard Plans R-37, R-39, R-40, R-42, R-43

6030035

Pg 1 of 1

NON CHLORIDE ACCELERATOR

Pay Unit: Gal

MATERIALS: Non-Chloride accelerator

ACCEPTANCE TESTING REQUIREMENTS

Non Chloride Accelerator

1. VI and must be on Qualified Product List (903.04)

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure and pay based on the quantity printed on the automated batch ticket.

6030040 – 6030053**6030060 – 6030072**

Pg 1 of 4

PAVT REPAIR, NONREINF CONC, __ INCH**PAVT REPR, REINF CONC, __ INCH**

Pay Unit: Square Yard

MATERIALS:

Adhesive System, Concrete Grade P1, P1-M, P-MS and P-NC,
Curing Compound-White, Hot Poured Rubber, Insulation Blankets,
Lane Tie Bars Wire Fabric

ACCEPTANCE TESTING REQUIREMENTS**Adhesive system**

1. VI and must be on Qualified Product List (712.03J).

Concrete Grade P1, P1-M, P-MS and P-NC**NRMCA Plants**

1. Plant
 - a. Current NRMCA certification.
2. Scales Check
 - a. Inspection certification every 6 months.
3. Dispenser Check
 - a. Inspection certification every 90 days.
4. Concrete Mix Design
 - a. Form 1976 in project files

For non-NRMCA Plants

All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Form 1976 in project files

Materials

1. Cement
 - a. General Certification from the Approved Manufacturer.

Visual Inspection: Maximum 45 tons

6030040 – 6030053**6030060 – 6030072**

Pg 2 of 4

PAVT REPAIR, NONREINF CONC, __ INCH**PAVT REPR, REINF CONC, __ INCH****2. Coarse Aggregates**

- a. Test prior to incorporation. One test per 1,000 tons L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.

Visual Inspection: Maximum 100 tons for total grade used on job

- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

3. Fine Aggregate

- a. Test prior to incorporation. One test per 1,000 tons.

Visual Inspection: Maximum 100 tons for total FA used on job.

- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

4. Slag Cement

- a. General Certification from the Approved Manufacturer

5. Fly Ash

- a. General Certification from the Approved Manufacturer

6. Liquid Concrete Admixtures

- a. VI and must be on Qualified Product List (903.01, 903.02 & 903.03).

Curing Compound

1. A Test Data Certification.

NOTE: Must be used within one year of manufacturer date.**Visual Inspection:** Maximum 200 gallons.

6030040 – 6030053**PAVT REPAIR, NONREINF CONC, __ INCH****6030060 – 6030072****PAVT REPR, REINF CONC, __ INCH**

Pg 3 of 4

Hot Poured Joint Sealant

1. Per Special Provision 12SP914B

Insulation Blankets

1. A Test Data Certification

Visual Inspection: Maximum 10 sheets.**Lane Tie Bars**

1. A General Certification from the Approved Manufacturer for Bar
2. A General Certification from the Approved Manufacturer for the Coating Company
3. VI and must be on Qualified Product List for the Coating(905.03C1).

Or

4. Test prior to incorporation. One test per project per manufacturer.

Visual Inspection: Maximum 500 pounds.**NOTE:** Pullout test required – Documentation placed in the Project Files.**Welded Wire Fabric**

1. General Certification from an Approved Manufacturer

Or

2. Test prior to incorporation. One test per project per manufacturer.

Visual Inspection: Maximum 500 square yards.**NOTE:**

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See the [MDOT Construction Wiki Section 105.10](#).

INDEPENDENCE ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements

6030040 – 6030053**6030060 – 6030072**

Pg 4 of 4

PAVT REPAIR, NONREINF CONC, __ INCH**PAVT REPR, REINF CONC, __ INCH****CONSTRUCTION**

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Signed certification statement and batch weights required on each concrete delivery tickets from supplier for each load. Water additions must be noted and signed. Refer to [MDOT Construction Manual WIKI](#), or as superseded, for additional information.
 - d. Form 1174R - Inspector's Report of Concrete Placed - roadway. One report per day of placement completely filled out. Document all underruns.
 - e. Contractors QC documentation
2. Measurement and payment
 - a. Engineer will measure based on pavement surface
3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or Fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
 - e. Attach pavement core thickness forms and document on IDR whether a penalty was required.
 - f. Pull out test for lane ties required per section 602.03.F.2
 - g. QA and QC Optimized aggregate test reports as required per the Materials Quality Assurance Procedures Manual 4.13.

Note: Refer to Standard Plan R-44

6030095-6030096**6030100-6030101**

Pg 1 of 1

SAWING AND SEALING PAVT JOINTS**RESEALING JOINTS W/HOT POURED RUBBER**

Pay Unit: Foot

MATERIALS: Backer Rod, Hot Poured Joint Sealant**ACCEPTANCE TESTING REQUIREMENTS****Backer Rod****Visual Inspection:** All material placed.**Hot Poured Joint Sealant**

1. Per Special Provision 12SP914B

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure length of the joint.

7040001

Pg 1 of 1

STEEL SHEET PILING, PERMANENT

Pay Unit: Square Foot

MATERIALS: Steel Sheet Piling**ACCEPTANCE TESTING REQUIREMENTS****Steel Sheet Piling**

1. General Certification and Buy America Certification.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "BUY AMERICAN" statement which may also be listed.

"BUY AMERICAN" is not an acceptable alternate to "BUY AMERICA". See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will calculate quantity based on the lines and lengths below cut off shown on the plans.

7040002**7040003**

Pg 1 of 1

STEEL SHEET PILING, TEMP**STEEL SHEET PILING, TEMP, LEFT IN PLACE**

Pay Unit: Square Foot

MATERIALS: Steel Sheet Piling**ACCEPTANCE TESTING REQUIREMENTS****Steel Sheet Piling**

1. Temporary Piling
 - a. General Certification.
2. Temporary Piling Left in Place
 - a. General Certification along with Buy America Certification

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will calculate quantity based on the area of earth retention.
3. Additional Documentation Requirements in project file.
 - a. Approved Shop Drawings and required Calculations

7050020 **PILE, CIP CONC, FURN AND DRIVEN, 12 INCH**
7050021 **TEST PILE, CIP CONC, 12 INCH**
7050025 **PILE POINTS, CIP CONC**
Pg 1 of 3 Pay Unit: Foot, Each

MATERIALS: Concrete Grade S1, Pile Points, Pile Shells

Note: Refer to 12SP604 for concrete QC/QA requirement

ACCEPTANCE TESTING REQUIREMENTS

Concrete Grade S1

NRMCA Plants

1. Plant
 - a. Current NRMCA certification.
2. Scales Check
 - a. Inspection certification every 6 months.
3. Dispenser Check
 - a. Inspection certification every 90 days.
4. Concrete Mix Design
 - b. Form 1976 in project files

For non NRMCA Plants

All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - c. Form 1976 in project files

Materials

1. Cement
 - a. General Certification from the Approved Manufacturer.

Visual Inspection: Maximum 45 tons

2. Coarse Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.

Visual Inspection: Maximum 100 tons for total grade used on job

7050020

7050021

7050025

Pg 2 of 3

PILE, CIP CONC, FURN AND DRIVEN, 12 INCH**TEST PILE, CIP CONC, 12 INCH****PILE POINTS, CIP CONC**

- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
- 3. Fine Aggregate
 - a. Test prior to incorporation. One test per 1,000 tons.

Visual Inspection: Maximum 100 tons for total FA used on job.

- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
- 4. Slag Cement
 - a. General Certification from the Approved Manufacturer
- 5. Fly Ash
 - a. General Certification from the Approved Manufacturer
- 6. Liquid Concrete Admixtures
 - a. VI and must be on Qualified Product List (903.01, 903.02 & 903.03).

Foundation Piles and Points

- 1. A Test Data Certification

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

- 1. See Notes page for IAT requirements

7050020**7050021****7050025**

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PILE, CIP CONC, FURN AND DRIVEN, 12 INCH**TEST PILE, CIP CONC, 12 INCH****PILE POINTS, CIP CONC****CONSTRUCTION**

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Signed certification statement and batch weights required on each concrete delivery tickets from supplier for each load. Water additions must be noted and signed. Inspector Must sign all delivery tickets. Refer to [MDOT Construction Manual WIKI](#), or as superseded, for additional information.
 - d. Form 1174S - Inspector's Report of Concrete Placed - structure. One report per day of placement completely filled out. Document all underruns.
 - e. Contractors QC documentation
 - f. Need forms 1125, 1138, 1161 and 1157.
2. Measurement and payment
 - a. Test Piles - Department will pay for test piles in addition to the contract unit prices for furnished and driven pile pay items.
 - b. Production Piles - Engineer will measure by the length of piling left in place below cut off.
 - c. Pile Points – Engineer will base payment for each pile point used
3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
 - e. QA and QC Optimized aggregate test reports as required per the Materials Quality Assurance Procedures Manual 4.13.
2. Additional Documentation Requirements in project file
 - a. Need form 1157A and 1956
 - b. Approved welding plan and welding certifications for welders.
 - c. SP 705A, SP 705B, and SP 705C

**7050030 & 7050034
7050031 & 7050035
7050039**

Pg 1 of 1

**PILES, STEEL FURN AND DRIVEN, __ INCH
TEST PILES, STEEL ____ INCH
PILE POINT, STEEL ____**

Pay Unit: Ea, Foot,

MATERIALS: Steel Piles, Pile Points

ACCEPTANCE TESTING REQUIREMENTS

Steel Piles and Points

1. A Test Data Certification

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Need form 1161 and 1157.
2. Measurement and payment
 - a. Test Piles - Department will pay for test piles in addition to the contract unit prices for furnished and driven pile pay items.
 - b. Production Piles - Engineer will measure by the length of piling left in place below cut off.
3. Additional Documentation Requirements in project file
 - a. Need form 1157A and 1956
 - b. Approved welding plan and welding certifications for welders.
 - c. SP 705A and SP 705B

7060090

Pg 1 of 1

REINFORCEMENT, STEEL

Pay Unit: Pound

MATERIALS: Steel Reinforcement**ACCEPTANCE TESTING REQUIREMENTS****Steel Reinforcement**

1. A General Certification from the Approved Manufacturer.

Or

Test prior to incorporation. One test per project per Manufacturer and per Size.

Visual Inspection: Maximum 500 pounds

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Form 1138 needs to be turned in with the IDR. Refer to [MDOT Construction Manual WIKI](#) for additional information.
2. Measurement and payment
 - a. Engineer will calculate the weight of the bar from the theoretical bar weight per table 706-2 of Standard Specifications.

7060092

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REINFORCEMENT, STEEL, EPOXY COATED

Pay Unit: Pound

MATERIALS: Steel Reinforcement Epoxy Coated**ACCEPTANCE TESTING REQUIREMENTS****Steel Reinforcement Epoxy Coated**

1. A General Certification from the Approved Manufacturer for Bar
2. A General Certification from the Approved Manufacturer for Coating Company.
3. VI and must be on Qualified Product List for the Coating (905.03C1).

Or

4. Test prior to incorporation. One test per project per Manufacturer and per Size.

Visual Inspection: Maximum 500 pounds**NOTE:**

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Form 1138 needs to be turned in with the IDR. Refer to [MDOT Construction Manual WIKI](#), for additional information.
2. Measurement and payment
 - a. Engineer will calculate the weight of the bar from the theoretical bar weight per table 706-2 of Standard Specifications.

7060010 – 7060013	CONC, GRADE, ____
7060100	SUBSTRUCTURE CONC
7060101	SUBSTRUCTURE CONC, HIGH PERFORMANCE
7060110	SUPERSTRUCTURE CONC
7060113	SUPERSTRUCTURE CONC, NIGHT CASTING
7060116	SUPERSTRUCTURE CONC, HIGH PERFORMANCE
7060117	SUPERSTRUCTURE CONC, NIGHT CASTING, HIGH PERFORMANCE
Pg 1 of 3	Pay Unit: Cubic Yard

NOTES: For Substructure and Superstructure Concrete refer to [Construction Manual WIKI](#), or as superseded. Refer to [12SP604B](#), or as superseded, for concrete QC/QA requirement

MATERIALS: Bituminized Fiber Joint Filler, Concrete Grade S2, S2M, T, DM, and D, Curing Compound, Hot Poured Rubber

ACCEPTANCE TESTING REQUIREMENTS

Bituminized Fiber Joint Filler

1. A Test Data Certification

Or

2. Test prior to incorporation. One test per 1,000 square feet or fraction thereof.

Visual Inspection: Maximum 150 square feet

Concrete Grade S2, S2M, T, DM, and D

NRMCA Plants

1. Plant
 - a. Current NRMCA certification.
2. Scales Check
 - a. Inspection certification every 6 months.
3. Dispenser Check
 - a. Inspection certification every 90 days.
4. Concrete Mix Design
 - a. Form 1976 in project files

For Portable Batch Plants

1. Plant
 - a. Documentation of Inspection after each move per 601.03.A.1.b. With Waiver certification per 601.03.C from the Engineer

For non NRMCA Plants

All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months

7060010 – 7060013	CONC, GRADE, —
7060100	SUBSTRUCTURE CONC
7060101	SUBSTRUCTURE CONC, HIGH PERFORMANCE
7060110	SUPERSTRUCTURE CONC
7060113	SUPERSTRUCTURE CONC, NIGHT CASTING
7060116	SUPERSTRUCTURE CONC, HIGH PERFORMANCE
7060117	SUPERSTRUCTURE CONC, NIGHT CASTING, HIGH PERFORMANCE

Pg 2 of 3

2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Form 1976 in project files

Materials

1. Cement
 - a. Approved Manufacturer.

Visual Inspection: Maximum 45 tons

2. Coarse/Intermediate Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons. Maximum VI 100 tons for total grade used on job. L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total grade used on job

3. Fine Aggregate
 - a. Test prior to incorporation. One test per 1,000 tons.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total FA used on job

4. Liquid Concrete Admixtures
 - a. VI and must be on Qualified Products List (903.01, 903.02 & 903.03).
5. Slag Cement
 - a. Approved Manufacturer
6. Fly Ash
 - a. Approved Manufacturer

Hot Poured rubber

1. VI Per Special Provision 12SP914B

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements

7060010 – 7060013	CONC, GRADE, —
7060100	SUBSTRUCTURE CONC
7060101	SUBSTRUCTURE CONC, HIGH PERFORMANCE
7060110	SUPERSTRUCTURE CONC
7060113	SUPERSTRUCTURE CONC, NIGHT CASTING
7060116	SUPERSTRUCTURE CONC, HIGH PERFORMANCE
7060117	SUPERSTRUCTURE CONC, NIGHT CASTING, HIGH PERFORMANCE

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CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Signed certification statement and batch weights required on each concrete delivery tickets from supplier for each load. The Engineer must collect, verify the mixture proportions (JMF) and record discharge time, and sign each concrete delivery ticket prior to discharge. Water additions must be noted. Refer to [MDOT Construction Manual WIKI](#), for additional information.
 - d. Form 1174S - Inspector's Report of Concrete Placed - structure. One report per day of placement completely filled out and name of inspector is required. Document all underruns.
 - e. Forms 1125 and 1131 wet and dry check to be completed by inspection
 - f. Form 2082 to be started by the inspector
 - g. Contractors QC documentation
2. Measurement and payment
 - a. Concrete Grade S2, S2M, T, DM, and D – The Engineer will calculate and pay quantities for pay items based on the lines and dimensions shown on the plans.
 - b. Superstructure – The Engineer will measure superstructure concrete for decks based on batch plant tickets with deductions made for material wasted or rejected.
3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or Fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
 - e. Attach pavement core thickness forms and document on IDR whether a penalty was required.
 - f. QA and QC Optimized aggregate test reports as required per the Materials Quality Assurance Procedures Manual 4.13.
4. Local Agency Projects

Refer to [12SP604A](#) (or as superseded) Quality Control And Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

7060140

Pg 1 of 1

WATER REPELLENT TREATMENT, PENETRATING

Pay Unit: Square Yard

MATERIALS: Penetrating Water Repellents**ACCEPTANCE TESTING REQUIREMENTS****Penetrating Water Repellents**

1. VI of the Qualified Products List (706.03S).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. The Engineer will calculate and pay quantities for pay items based on the lines and dimensions shown on the plans.

7070050 - 7070071

Pg 1 of 1

Structural Steel, Mixed, Erect
Structural Steel, Mixed, Furn and Fab
Structural Steel, Plate, Erect
Structural Steel, Plate, Furn and Fab
Structural Steel, Rolled Shape, Erect
Structural Steel, Rolled Shape, Furn and Fab
Pay Unit: Pound

MATERIALS: High Strength Bolts, Nuts and Washers, Structural Steel___,

ACCEPTANCE TESTING REQUIREMENTS**High Strength Bolts, Nuts and Washers**

1. Test prior to incorporation.

Structural Steel

1. Fabrication inspection documents, According to MQAP manual section 4.05, and Elements will be stamped or tagged "Approved for Use" by the QA shop inspector.
1. LAPs are responsible for all testing requirements.

NOTE: Local Government Agency is required to hire independent agency to perform all required testing. Reports must be signed by inspector performing the testing and/or inspection.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials must be stamped approved before incorporation and must be VI and accepted by the inspector with notation on the IDR.
 - c. Ensure bolts are tightened and document on IDR per section 707.03.D.7.c
 - d. Stamped Bill of Lading Must be collected at time of delivery, scanned and placed in ProjectWise
 - e. When item is completed FFM (Final Field Measurement) will be based on approved pay weights.
2. Measurement and payment
 - a. The Engineer will measure structural steel by the calculated weight of metal in the finished structure excluding filler material in welding (Approved Pay Weights) per section 707.04 of the Standard Specification.

Additional Requirements

1. Need approved shop drawings
2. MDOT Field Welding Plans (Form 0394 and 0395) are required to be approved by Operations Field Services – Structural Fabrication Unit. Field welders must be endorsed by MDOT for the field welding taking place in accordance with [MDOT's Welder Certification Program](#) or [MDOT's Welder Qualification Program](#).
3. See current special provisions 12SP-707A (Structural Steel and Aluminum Construction), 12SP-707B, and 12SP-707F (Structural Steel Construction Revisions) for additional construction requirements.

7070010 – 7070024

Pg 1 of 1

BEARING, ELASTOMERIC, __ INCH

Pay Unit: Square Inch

MATERIALS: Elastomeric Bearing Pads**ACCEPTANCE TESTING REQUIREMENTS****Elastomeric Bearing Pads**

1. A Test Data Certification. Show test result for Shear Modulus, ASTM D 4014.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector’s Daily Report
 - a. IDR shall show the inspector’s computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure, with no deduction for holes.

7070040

Pg 1 of 1

SHEAR DEVELOPERS

Pay Unit: Lump Sum

MATERIALS: Shear Developers**ACCEPTANCE TESTING REQUIREMENTS****Shear Developers**

1. VI of the Qualified Products List (906.09).

Note on Testing Studs

Studs are tested by *ringing* with a hammer. To test the studs, the inspector should allow studs to cool before testing. The first two studs welded will be bent to a 30 degree angle without breaking the weld. If the weld breaks, repairs will be made and the next set of studs tested along with the studs that were repaired. The rest of the studs on that beam can then be checked for proper welding. Sufficient tests should be made to ensure proper procedures are being followed (bend over additional studs). If a weld defect is found, the stud may be bent to an angle of 15 degrees away from the defect. If no weld break occurs, the stud is acceptable. No welding will be done when the temperature of the base material is below 32 degrees F (0 degrees C) or when the surface is wet or exposed to rain or snow.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction WIKI section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure as a unit for each structure.

7080001 - 7080010

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PREST CONC DECK, __ INCH

Pay Unit: Square Foot

MATERIALS: Concrete, Precast Panels**ACCEPTANCE TESTING REQUIREMENTS****Precast Panels**

1. Fabrication inspection documents, According to MQAP manual section 4.04, and Elements will be stamped or tagged "Approved for Use" by the QA shop inspector.
2. LAP is responsible for all testing requirements.

NOTE: Local Government Agency is required to hire independent agency to perform all required testing. Reports must be signed by QA inspector performing the testing and/or inspection.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials must be stamped approved before incorporation and must be VI and accepted by the inspector with notation on the IDR.
 - c. Stamped Bill of Lading Must be collected at time of delivery, scanned and placed in ProjectWise.

Measurement and payment

1. Engineer will measure based on the nominal overall length of the units, multiplied by the overall plan width.

Additional Requirements

1. Need approved shop drawings
2. See current special provisions 12SP-708A and 12SP-708C for additional construction requirements.

7080015

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POST TENSIONING, (STRUCTURE NO.)

Pay Unit: Lump Sum

MATERIALS: Grout E-1, Post Tensioning Strands (Tendons)**ACCEPTANCE TESTING REQUIREMENTS****Grout E-1**

1. Test Data Certification

Post Tensioning Strands (Tendons)

1. Strands
 - a. A General Certification from an Approved Manufactures.

NOTE: Sampling and testing may be waived if strand from same reel is tested for beam fabrication.

NOTE: Visual Inspection: All material placed. Verify mix proportioning per Standard Specifications table 702.1A and 702.1B.

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Test for slump and air when required.
2. Measurement and payment
 - a. Engineer will pay as Lump Sum per structure number.

7080021 – 7080041	PREST CONC I BEAMS, __, __ INCH
7080051 – 7080096	PREST CONC BOX BEAM, __, __ INCH
7080101 – 7080102	PREST CONC 1800 BEAM, __
7080110 – 7080176	PREST CONC Bulb-Tee Beam, __ INCH
Pg 1 of 2	Pay Unit: Foot

MATERIALS: Prest Concrete Beams

ACCEPTANCE TESTING REQUIREMENTS

Prest Concrete Beams

1. Fabrication inspection documents, According to MQAP manual section 4.04, and Elements will be stamped or tagged “Approved for Use” by the QA shop inspector.
2. LAP are responsible for all testing requirements.

NOTE: Local Government Agency is required to hire independent agency to perform all required testing. Reports must be signed by QA inspector performing the testing and/or inspection.

CONSTRUCTION

1. Inspector’s Daily Report
 - a. IDR shall show the inspector’s computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Notation on IDR confirming the fabrication acceptance stamp on beams.
 - d. Stamped Bill of Lading Must be collected at time of delivery, scanned and placed in ProjectWise.
2. Measurement and payment
 - a. Engineer will measure based on the nominal length of the unit.

Additional Requirements

1. Need approved shop drawings
2. See current special provisions 12SP-708A 12SP-708B and 12SP-708C for additional construction requirements.

7100001

Pg 1 of 1

JOINT WATERPROOFING

Pay Unit: Square Foot

MATERIALS: Waterproofing Membrane - Preformed

ACCEPTANCE TESTING REQUIREMENTS

Waterproofing Membrane - Preformed

1. VI of the Qualified Products List (914.11).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure based on width of 18 inch and the plan length of the joint.

7110005

Pg 1 of 3

BRIDGE RAILING, AESTHETIC PARAPET TUBE

Pay Unit: Foot

MATERIALS: Anchor Studs, Concrete - Grade D & DM, Curing Compound
High Strength Bolts, Tubing, Steel Railing

ACCEPTANCE TESTING REQUIREMENTS**Anchor Studs**

1. Test. One test per heat per diameter per project.

Concrete - Grade D**NRMCA Plants**

1. Plant
 - a. Current NRMCA certification.
2. Scales Check
 - a. Inspection certification every 6 months.
3. Dispenser Check
 - a. Inspection certification every 90 days.
4. Concrete Mix Design
 - a. Form 1976 in project files

For non NRMCA Plants: All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Form 1976 in project files

Materials

1. Cement
 - a. Approved Manufacturer.

Visual Inspection: Maximum 45 tons

2. Coarse Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.

Visual Inspection: Maximum 100 tons for total grade used on job

7110005
Pg 2 of 3

BRIDGE RAILING, AESTHETIC PARAPET TUBE
Pay Unit: Foot

- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
- 3. Fine Aggregate
 - a. Test prior to incorporation. One test per 1,000 tons.

Visual Inspection: Maximum 100 tons for total FA used on job.

- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
- 4. Slag Cement
 - a. Approved Manufacturer
- 5. Fly Ash
 - a. Approved Manufacturer
- 6. Liquid Concrete Admixtures
 - a. VI and must be on Qualified Products List (903.01, 903.02 & 903.03).

Curing Compound

- 1. A Test Data Certification. One test per lot or batch.

Visual Inspection: Maximum 200 gallons.

NOTE: Must be used within one year of manufacturer date.

High Strength Bolts

- 1. Test. One test per heat per diameter per project

NOTE: Standard Plan B-25-Series.

Tubing, Steel Railing

- 1. MDOT gets Memo to file for Fabrication inspection, Shop inspection of structural steel reports (Form 538). According to MQAP manual section 4.05 and SP 12SP707B.
- 2. LAP needs Fabrication inspection, Shop inspection of structural steel reports (Form 0538), Buy America certification and According to MQAP manual Chapter 4.05 in the project file.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

7110005**BRIDGE RAILING, AESTHETIC PARAPET TUBE**

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CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Signed certification statement and batch weights required on each concrete delivery tickets from supplier for each load. Inspector Must sign all delivery tickets, Water additions must be noted. Refer to [MDOT Construction Manual Wiki](#), for additional information.
 - d. Form 1174S - Inspector's Report of Concrete Placed - structure. One report per day of placement completely filled out and name of inspector is required. Document all underruns.
 - e. Notation on IDR confirming the fabrication acceptance stamp on Tube Railing.
 - f. Stamped Bill of Lading Must be collected at time of delivery, scanned and placed in ProjectWise
 - g. Contractors QC documentation
2. Measurement and payment
 - a. Engineer will measure based on Plan Quantity
3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
 - e. QA and QC Optimized aggregate test reports as required per the Materials Quality Assurance Procedures Manual 4.13.
4. Local Agency Projects
Refer to [12SP604A](#) (or as superseded) Quality Control And Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

7120010**7120015 - 7120016****7120110 - 7120115**

Pg 1 of 3

PATCH, FULL DEPTH**PATCHING MORTAR OR CONC****PATCHING CONC, C; C-HE; C-L; C-L-HE; F-L; M**

Pay Units: Cubic Foot, Cubic Yard

MATERIALS:

Concrete – Grade C, C-HE, M, Curing Compound, and Structure
Patching Mixture (Conc C; C-HE; C-L; C-L-HE; F-L; M)

ACCEPTANCE TESTING REQUIREMENTS**Concrete - Grade C; C-HE; M****NRMCA Plants**

1. Plant
 - a. Current NRMCA certification.
2. Scales Check
 - a. Inspection certification every 6 months.
3. Dispenser Check
 - a. Inspection certification every 90 days.
4. Concrete Mix Design
 - a. Form 1976 in project files

For non NRMCA Plants: All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Form 1976 in project files

Materials

1. Cement
 - a. Approved Manufacturer.

Visual Inspection: Maximum 45 tons

2. Coarse Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.
 - b.

Visual Inspection: Maximum 100 tons for total grade used on job

- c. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

PATCH, FULL DEPTH

PATCHING MORTAR OR CONC

PATCHING CONCRETE, C; C-HE; C-L; C-L-HE; F-L; M

Pg 2 of 3

- Visual Inspection:** Maximum 100 tons for total FA used on job.

6. Liquid Concrete Admixtures
- a. VI and must be on Qualified Products List (903.01, 903.02 & 903.03).

Curing Compound

1. A Test Data Certification. One test per lot or batch.

Visual Inspection: Maximum 200 gallons.

NOTE: Must be used within one year of manufacturer date.

Structural Patching Mixture(Conc C; C-HE; C-L; C-L-HE; F-L; M)

1. Portable Mixing Unit
 - a. Provide annual certification to the engineer or demonstrate by field test, the equipment is calibrated for yield and proportioning.
 - b. Delivery tickets
 - c. Latex admixture – A Certification from an Approved Manufacture.

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements

7120010**7120015 - 7120016****7120110 - 7120115**

Pg 3 of 3

PATCH, FULL DEPTH**PATCHING MORTAR OR CONC****PATCHING CONCRETE, C; C-HE; C-L; C-L-HE; F-L; M****CONSTRUCTION**

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Form 1174S - Inspector's Report of Concrete Placed - structure. One report per day of placement completely filled out and name of inspector is required. Document all underruns.
2. Measurement and payment
 - a. Engineer will measure based on volume in-place.
Note: Patch, Full Depth in conjunction with overlay, the Department will only pay for patching the area shown on the plans.
3. Additional Documentation Requirements in project file
 - a. Work progress specimen if necessary
 - b. Alkali – Silica Reactivity (ASR) test report per special provision.
4. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or Fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. Local Agency Projects
Refer to [12SP604A](#) (or as superseded) Quality Control And Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

7120028 – 7120038**7120040 – 7120044****7120050 – 7120052**

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ADHESIVE ANCHORING OF ___ BAR, ___ INCH**BOLT, ADHESIVE ANCHORED, ___ INCH****BOLT, MECHANICAL EXPANSION ANCHORED, ___ INCH**

Pay Unit: Each

MATERIALS: Adhesive System, Bolts**ACCEPTANCE TESTING REQUIREMENTS****Adhesive System**

1. VI of the Qualified Products List (712.03J).

Bolts

1. Test One bolt per diameter/heat/per project. A Test Data Certification must be submitted with sample for testing.

Structure Expansion Anchored (Mechanical Expansion Anchored)

1. VI of the Qualified Products List (712.03K).

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See [MDOT Construction Wiki Section 105.10](#).

Pull-Out Testing

1. Field Inspection Report (see form 0566). See subsection 712.03.J and 712.03.K.

CONSTRUCTION

1. Inspector’s Daily Report
 - a. IDR shall show the inspector’s computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure based on each item placed.

7120084

Pg 1 of 1

REINFORCEMENT, MECHANICAL SPLICE

Pay Unit: Each

MATERIALS: Reinforcement Mechanical Splice**ACCEPTANCE TESTING REQUIREMENTS****Reinforcement Mechanical Splice**

1. VI of the Qualified Products List (712.03L).
 - a. Test – The contractor must make test splices, witnessed by the Engineer, on the largest bar size being spliced.
 - b. Mechanical and other splices: Make two test splices on the largest bar size being spliced. Test splice consists of 2 pieces of reinforcing bar joined by the coupler with a minimum of 12 inches of bar exposed on each end of the coupler.

NOTE: Use these tests to establish a splicing procedure. Demonstrate that splices have a tensile strength of 125 percent of the bar's yield strength. For all required tests, supply sample bars with 12 inches of exposed bar on each end. If the existing reinforcing steel being spliced has an inferior or badly corroded exterior deformation pattern, the Engineer may require additional qualification testing on these bars. The Department will test all test splices.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure based on each item placed.

7150045

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STEEL STRUCTURES CLEANING, TYPE 4

Pay Unit: Lump Sum

MATERIALS: Low Dusting Abrasive, Steel Grit/Shot***Note: Refer to Construction Manual WIKI and 12SP-715B in proposal*****ACCEPTANCE TESTING REQUIREMENTS****Low Dusting Abrasive**

1. VI of the Qualified Products List (715.02).

Steel Grit/Shot

1. VI

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR
 - c. Form 1941 to be completed by the Inspector.
 - d. Form 2081 started in the Field by the inspector and finished in the office.
2. Measurement and payment.
 - a. Engineer will measure as a unit for each structure.

7150046

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STEEL STRUCTURE, COATING, TYPE 4

Pay Unit: Lump Sum

MATERIALS: Coating System***Note: Refer to Construction Manual WIKI and 12SP-715A in proposal*****ACCEPTANCE TESTING REQUIREMENTS****Coating System**

1. VI of the Qualified Products List (915).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR
 - c. Form 1941 completed by the inspector.
 - d. Form 2081 started in the Field by the inspector and finished in the office.
2. Measurement and payment.
 - a. Engineer will measure as a unit for each structure.

8010001 – 8010004**8010005 – 8010008**

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DRIVEWAY, REINF CONC, __ INCH**DRIVEWAY, NONREINF CONC, __ INCH**

Pay Unit: Square Yard

MATERIALS:Bituminous Fiber Filler, Concrete Grade P1, P-NC and S2,
Curing Compound-White, Wire Fabric***Note: Refer to 12SP-604 B for concrete QC/QA requirement*****ACCEPTANCE TESTING REQUIREMENTS****Bituminized Fiber Joint Filler**

1. A Test Data Certification.

Visual Inspection: Maximum 150 square feet for all other sizes.**Concrete Grade P1, P-NC, S2****NRMCA Plants**

1. Plant
 - a. Current NRMCA certification.
2. Scales Check
 - a. Inspection certification every 6 months.
3. Dispenser Check
 - a. Inspection certification every 90 days.
4. Concrete Mix Design
 - a. Form 1976 in project files

For Portable Batch Plants

1. Plant
 - b. Documentation of Inspection after each move per 601.03.A.1.b. With Waiver certification per 601.03.C from the Engineer

For non NRMCA Plants: *All of the following documentation is required including FORM 1174 CONCRETE PLANT PROPORTIONING (a minimum of one report per mix).*

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Form 1976 in project files

8010001 – 8010004**8010005 – 8010008**

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DRIVEWAY, REINF CONC, __ INCH**DRIVEWAY, NONREINF CONC, __ INCH****Materials**

1. Cement
 - a. Approved Manufacturer.

Visual Inspection: Maximum 45 tons

2. Coarse/Intermediate Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons. Max. VI 100 tons for total grade used on job. L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total grade used on job

3. Fine Aggregate
 - a. Test prior to incorporation. One test per 1,000 tons.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total FA used on job

4. Liquid Concrete Admixtures
 - VI and must be on Qualified Products List (903.01, 903.02 & 903.03).
5. Slag Cement
 - a. Approved Manufacturer
6. Fly Ash
 - a. Approved Manufacturer

8010001 – 8010004**DRIVEWAY, REINF CONC, __ INCH****8010005 – 8010008****DRIVEWAY, NONREINF CONC, __ INCH**

Pg 3 of 4

Curing Compound

1. A Test Data Certification. One test per lot or batch.

Visual Inspection: Maximum 200 gallons**NOTE:** Must be used within one year of manufacturer date.**Wire Fabric**

1. A General Certification from an Approved Manufacturer
- Or
2. Test prior to incorporation. One test per project per manufacturer.

Visual Inspection: Maximum 500 square yards.**NOTE:**

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See the [MDOT Construction Wiki Section 105.10](#).

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - c. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Signed certification statement and batch weights required on each concrete delivery tickets from supplier for each load. Water additions must be noted and signed. Refer to [MDOT Construction Manual Wiki](#), for additional information.
 - d. Form 1174R - Inspector's Report of Concrete Placed - roadway. One report per day of placement completely filled out and name of inspector is required. Document all underruns.
 - e. Contractors QC documentation.
2. Measurement and payment
 - a. Engineer will measure quantity based on surface area in place.

8010001 – 8010004**DRIVEWAY, REINF CONC, __ INCH****8010005 – 8010008****DRIVEWAY, NONREINF CONC, __ INCH**

Pg 4 of 4

3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
 - e. Pull out test for lane ties required per section 602.03.F.2
 - f. QA and QC Optimized aggregate test reports as required per the Materials Quality Assurance Procedures Manual 4.13.
4. Local Agency Projects
Refer to [12SP604A](#) (or as superseded) Quality Control And Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

8020001 – 8020006
8020010
8020015 – 8020040
Pg 1 of 4

Curb, Conc, Det ____
Curb and Gutter, Bridge Approach
Curb and Gutter, Conc, Det ____
Pay Unit: Foot

MATERIALS:

Bituminous Fiber Filler, Concrete Grade P1 and S2,
Curing Compound-White, Lane Ties Bars,
Mortar Standard, Steel Reinforcement-Epoxy Coated

ACCEPTANCE TESTING REQUIREMENTS**Bituminized Fiber Joint Filler**

1. A Test Data Certification.

Visual Inspection: Maximum 150 square feet.

Concrete Grade P1, S2**NRMCA Plants**

1. Plant
 - a. Current NRMCA certification
2. Scales Check
 - a. Inspection certification every 6 months
3. Dispenser Check
 - a. Inspection certification every 90 days
4. Concrete Mix Design
 - a. Copy in project files

For Portable Batch Plants

1. Plant
 - a. Documentation of Inspection after each move per 601.03.A.1.a.

For non NRMCA Plants

All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Copy in project files

8020001 – 8020006**8020010****8020015 – 8020040**

Pg 2 of 4

Curb, Conc, Det ____**Curb and Gutter, Bridge Approach****Curb and Gutter, Conc, Det ____****Materials**

1. Cement
 - a. Approved Manufacturer.

Visual Inspection: Maximum 45 tons

2. Coarse/Intermediate Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons. Max. VI 100 tons for total grade used on job. L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons

3. Fine Aggregate
 - a. Test prior to incorporation. One test per 1,000 tons.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons

4. Liquid Concrete Admixtures
 - a. VI and must be on Qualified Products List (903.01, 903.02 & 903.03).
5. Slag Cement
 - a. Approved Manufacturer
6. Fly Ash
 - a. Approved Manufacturer

8020001 – 8020006**8020010****8020015 – 8020040**

Pg 3 of 4

Curb, Conc, Det ____**Curb and Gutter, Bridge Approach****Curb and Gutter, Conc, Det ____****Curing Compound**

1. A Test Data Certification.

Visual Inspection: Maximum 200 gallons**NOTE:** Must be used within one year of manufacturer date.**Lane Tie Bars**

1. A General Certification from the Approved Manufacturer for Bar
2. A General Certification from the Approved Manufacturer for Coating Company
3. VI and must be on Qualified Products List for coating (905.03C1).

Visual Inspection: Maximum 500 pounds**Mortar Standard**

1. Visual Inspected

Steel Reinforcement Epoxy Coated

1. A General Certification from the Approved Manufacturer for Bar
2. A General Certification from the Approved Manufacturer for Coating Company
3. VI and must be on Qualified Products List for coating (905.03C1).

Visual Inspection: Maximum 500 pounds**NOTE:**

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See the [MDOT Construction Manual Wiki Section 105.10](#).

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Curb, Conc, Det ____**Curb and Gutter, Bridge Approach****Curb and Gutter, Conc, Det ____****INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS**

1. See Notes page for IAT requirements

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Signed certification statement and batch weights required on each concrete delivery tickets from supplier for each load. Water additions must be noted and signed. Refer to [MDOT Construction Manual Wiki](#) for additional information.
 - d. Form 1174R - Inspector's Report of Concrete Placed - roadway. One report per day of placement completely filled out and name of inspector is required. Document all underruns.
 - e. Contractors QC documentation
2. Measurement and payment
 - a. Engineer will measure in place along the joint of the curbing with the pavement.
3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or Fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
 - e. Pull out test for lane ties required per section 602.03.F.2
 - f. QA and QC Optimized aggregate test reports as required per the Materials Quality Assurance Procedures Manual 4.13.
4. Local Agency Projects
Refer to [12SP604A](#) (or as superseded) Quality Control And Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

Note: Standard Plans R-27, R-30, R-31, R-32, and R-33

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8030033 - 8030037
8030043 – 8030047
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CURB RAMP OPENING, CONC
SIDEWALK RAMP
SIDEWALK, CONC, __ INCH
 Pay Unit: Foot, Square Foot

MATERIALS
 Bituminous Fiber Filler, Concrete Grade P1, P2, S2 and S3,
 Curing Compound-White, Granular Material CI II, Steel
 Reinforcement-Epoxy Coated

Note: Refer to SP 604 B for concrete QC/QA requirement

ACCEPTANCE TESTING REQUIREMENTS

Bituminized Fiber Joint Filler

1. A Test Data Certification.

Visual Inspection: Maximum 150 square feet for all other sizes.

Concrete Grade P1, P2, S2, S3

NRMCA Plants

1. Plant
 - a. Current NRMCA certification
2. Scales Check
 - a. Inspection certification every 6 months
3. Dispenser Check
 - a. Inspection certification every 90 days
4. Concrete Mix Design
 - a. Copy in project files

For Portable Batch Plants

1. Plant
 - a. Documentation of Inspection after each move per 601.03.A.1.a.

For non NRMCA Plants

All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Copy in project files

Materials

1. Cement
 - a. Approved Manufacturer.

Visual Inspection: Maximum 45 tons

8030030**8030033 - 8030037****8030043 – 8030047**

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Curb Ramp Opening, Conc**SIDEWALK RAMP****SIDEWALK, CONC, __ INCH****2. Coarse/Intermediate Aggregates**

- a. Test prior to incorporation. One test per 1,000 tons. Max. VI 100 tons for total grade used on job. L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.
- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons**3. Fine Aggregate**

- a. Test prior to incorporation. One test per 1,000 tons.
- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons**4. Liquid Concrete Admixtures**

- a. VI and must be on Qualified Products List (903.01, 903.02 & 903.03).

5. Slag Cement

- a. Approved Manufacturer

6. Fly Ash

- a. Approved Manufacturer

Curing Compound

1. A Test Data Certification.

Visual Inspection: Maximum 200 gallons**NOTE:** Must be used within one year of manufacturer date.**Steel Reinforcement Epoxy Coated**

1. A General Certification from the Approved Manufacturer for Bar
2. A General Certification from the Approved Manufacturer for Coating Company
3. VI and must be on Qualified Products List for coating (905.03C1).

Visual Inspection: Maximum 500 pounds

NOTE: Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See the [MDOT Construction Manual Wiki Section 105.10](#).

8030030**8030033 - 8030037****8030043 – 8030047**

Pg 3 of 3

CURB RAMP OPENING, CONC**SIDEWALK RAMP****SIDEWALK, CONC, __ INCH****INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS**

1. See Notes page for IAT requirements

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Signed certification statement and batch weights required on each concrete delivery tickets from supplier for each load. Water additions must be noted and signed. Refer to [MDOT Construction Manual Wiki](#), for additional information.
 - d. Form 1174R - Inspector's Report of Concrete Placed - roadway. One report per day of placement completely filled out and name of inspector is required. Document all underruns.
 - e. Contractors QC documentation.
2. Measurement and payment
 - a. Engineer will measure in place area.
3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current 12SP604B, prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or Fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
 - e. QA and QC Optimized aggregate test reports as required per the Materials Quality Assurance Procedures Manual 4.13.
4. Local Agency Projects
 - a. Refer to [12SP604A](#) (or as superseded) Quality Control And Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).
5. Density Reports
 - a. Density testing as per subsection 302.03 of the standard specifications.

NOTE:

All density reports are to be placed in ProjectWise on a daily basis and must be sent weekly to the Area Density Specialist and the Lansing Density Technology Unit at a minimum. Field staff must perform moisture checks on weight pay items and note the value on the IDRs.

Note: Standard Plans R-28 and R-29 and Special Provision 12SP803B

8070000 – 8070009**8070010 – 8070012**

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GUARDRAIL, TYPE ____**GUARDRAIL, CURVED, TYPE ____**

Pay Unit: Foot

MATERIALS:

Blocks (Plastic or Wood), Guardrail Beam Elements and Hardware (includes all components from same manufacturer), Wood Post

ACCEPTANCE TESTING REQUIREMENTS**Blocks (Plastic or Wood)**

1. VI and must be on Qualified Products List for Plastic Block (912.09Q).
 2. Wood –
 - a. A General Certification from the Approved Manufacturer.
- Or**
- b. Test prior to incorporation. One test per charge.

Guardrail Beam Element and Hardware

1. A General Certification from the Approved Manufacturer.
- Or**
2. Test prior to incorporation. Beam element - One test per project per manufacturer.

Visual Inspection: Maximum VI for beam elements 125 feet
Maximum VI for steel post 25 Each.

Wood Post

1. A General Certification from the Approved Manufacturer.
- Or**
2. Test prior to incorporation. One test per charge.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See the [MDOT Construction Wiki Section 105.10](#).

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GUARDRAIL, TYPE ____**GUARDRAIL, CURVED, TYPE ____****CONSTRUCTION**

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.

Note: Standard Plans R-59, R-60, R-73 and Special Detail 21.

2. Measurement and payment
 - a. Engineer will measure along the face of the rail.

8070020 – 8070033

Pg 1 of 1

GUARDRAIL ANCHORAGE, BRIDGE, DETAIL ____

Pay Unit: Each

MATERIALS:Blocks (Plastic or Wood), Guardrail Beam Elements and
Hardware (includes all components from same manufacturer),

Wood Post

ACCEPTANCE TESTING REQUIREMENTS**Blocks (Plastic or Wood)**

1. VI and must be on Qualified Product List Plastic Blocks(912.09Q).
 2. Wood
 - a. A General Certification from the Approved Manufacturer.
- Or**
- b. Test prior to incorporation. One test per charge.

Guardrail Beam Element and Hardware

1. A General Certification from the Approved Manufacturer.
- Or**
2. Test prior to incorporation. Beam element - One test per project per manufacturer.

Visual Inspection: Max VI for beam elements 125 feet
Max VI for steel post 25 Each.

Wood Post

1. A General Certification from the Approved Manufacturer.
- Or**
2. Test prior to incorporation. One test per charge.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.

Note: Standard Plan R-67

2. Measurement and payment
 - a. Engineer will measure each item in-place.

8070080

Pg 1 of 1

GUARDRAIL REFLECTOR

Pay Unit: Each

MATERIALS: Reflectorized Washer**ACCEPTANCE TESTING REQUIREMENTS****Reflectorized Washer**

1. VI on IDR. Inspect galvanizing, dimensions and type of sheeting.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure each item in-place.

8070095

Pg 1 of 1

POST, MAILBOX

Pay Unit: Each

MATERIALS: Wood Post

ACCEPTANCE TESTING REQUIREMENTS

Wood Post

1. Visual Inspection

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure each item in-place

8080001**8080002**

Pg 1 of 3

FENCE, WOVEN WIRE WITH WOOD POST**FENCE, WOVEN WIRE WITH STEEL POSTS**

Pay Unit: Foot

MATERIALS:Barbed Wire, Concrete Grade P2, Steel Post, Wood Posts,
Woven Wire Fabric and Hardware**ACCEPTANCE TESTING REQUIREMENTS****Barbed Wire**

1. VI along with BUY AMERICA statement required. Document source on IDR.

Concrete Grade P2**NRMCA Plants**

1. Plant
 - a. Current NRMCA certification
2. Scales Check
 - a. Inspection certification every 6 months
3. Dispenser Check
 - a. Inspection certification every 90 days
4. Concrete Mix Design
 - a. Copy in project files

For Portable Batch Plants

1. Plant
 - a. Documentation of Inspection after each move per 601.03.A.1.a.

For non NRMCA Plants

All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Copy in project files

Materials

1. Cement
 - a. Approved Manufacturer.

Visual Inspection: Maximum 45 tons

8080001**8080002**

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FENCE, WOVEN WIRE WITH WOOD POST**FENCE, WOVEN WIRE WITH STEEL POSTS**

2. Coarse/Intermediate Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons. Max. VI 100 tons for total grade used on job. L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons

3. Fine Aggregate
 - a. Test prior to incorporation. One test per 1,000 tons.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons

4. Liquid Concrete Admixtures
 - a. VI and must be on Qualified Products List (903.01, 903.02 & 903.03). .
5. Slag Cement
 - a. Approved Manufacturer
6. Fly Ash
 - a. Approved Manufacturer

Steel Post

1. Test Data Certification.

Woven Wire Fabric and Hardware

1. Test Data Certification.

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#)

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**FENCE, WOVEN WIRE WITH WOOD POST
FENCE, WOVEN WIRE WITH STEEL POSTS****Wood Post**

Visual Inspection

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - d. Signed certification statement and batch weights required on each concrete delivery tickets from supplier for each load. Water additions must be noted and signed. Refer to [MDOT Construction Manual Wiki](#), for additional information.
 - e. Form 1174R - Inspector's Report of Concrete Placed - roadway. One report per day of placement completely filled out and name of inspector is required. Document all underruns.
 - f. Contractors QC documentation

Note: Standard Plans R-101 and R-102

2. Measurement and payment
 - a. Engineer will measure fence in place and will not include gate openings and the measurement.
3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or Fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
 - e. QA and QC Optimized aggregate test reports as required per the Materials Quality Assurance Procedures Manual 4.13.
4. Local Agency Projects
 - b. Refer to [12SP604A](#) (or as superseded) Quality Control And Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

8100370 - 8100371

Pg 1 of 1

POST, STEEL, __ LB

Pay Unit: Foot

MATERIALS: Steel post**ACCEPTANCE TESTING REQUIREMENTS****Steel Post**

1. A Test Data Certification.

Visual Inspection: Maximum 20 posts**NOTE:**

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See the [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will measure sign supports to the nearest commercial length required.

8100392 – 8100414

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SIGN, TYPE ____

Pay Unit: Square Foot

MATERIALS: Reflective Sheeting, Sign-Type I, III, IV, V, Sign-Type II.**ACCEPTANCE TESTING REQUIREMENTS****Reflective Sheeting**

1. VI and must be on Qualified Products List (919.02B1).

Sign, Type I, III, IV, V

1. Shipment of Tested Stock Report, Form 1922.

Visual Inspection: Maximum 100 square feet (Type III, IV and V)**Sign, Type II**

1. General Certification must be attached and inspected at project site.
AND
2. Grade mark on materials serves as certification

Sign Hardware

2. General Certification

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR
2. Measurement and payment
 - a. Engineer will measure Sign by the Square Foot, without reduction for rounded corners.

8110022 – 8110295

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PAVEMENT MARKINGS

Pay Unit: Foot & Each

MATERIALS:

Cold Plastic, Glass Beads, Polyurea, Regular Dry, Sprayable, Thermoplastic, Thermoplastic, Waterborne, Wet Reflective Beads/Elements

ACCEPTANCE TESTING REQUIREMENTS**Cold Plastic**

1. VI and must be on Qualified Products List

Glass Beads

1. General Certification.

Visual Inspection: Maximum 500 pounds.

Polyurea

1. VI and must be on Qualified Products List (811.0D3).

Regular Dry

1. VI and must be on Qualified Products List (811.0D2).

Sprayable Thermoplastic

1. VI and must be on Qualified Products List (811.03D6).

Thermoplastic

1. VI and must be on Qualified Products List (811.03D4).

Waterborne

1. VI and must be on Qualified Products List (811.0D1).

Wet Reflective Beads/Elements

1. VI and must be on Qualified Products List

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Sample plates are required for All Permanent Liquid Applied Pavement Marking see the [MDOT Construction Manual Wiki Section 811](#), for the most updated sample frequency.
 - d. 1585 is required one per project per season.
 - e. Verify Truck Certification.
2. Measurement and payment
 - a. Engineer will verify the measured Pavement Markings.

8120080 – 8120083

Pg 1 of 1

CONC BARRIER, TEMP, ____

Pay Unit: Foot

MATERIALS

Barrier Reflective Markers Temporary, Concrete Barrier

ACCEPTANCE TESTING REQUIREMENTS**Barrier Reflective Markers Temporary**

1. Certification per MQAP 4.10

Concrete Barrier

1. A Test Data Certification from contractor and meets 922.04.A of the Standard Specification for Construction 2012.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Document the barrier wall meet ATSSA standard as shown in Latest Edition.
 - d. Check for fully engaged connection between sections.

Note: Refer to Standard Plan R-126

2. Measurement and payment
 - a. Engineer will measure in-place at initial location with barrier reflector marker attached.

8120100

Pg 1 of 1

DUST PALLATIVE, APPLIED

Pay Unit: Ton

MATERIALS

Calcium Chloride Solids, Calcium Chloride Solutions

ACCEPTANCE TESTING REQUIREMENTS**Calcium Chloride Solutions**

1. Test Data Certification. Load ticket or bag count required.

Visual Inspection:

1000 gals

Calcium Chloride Solids

1. Test Data Certification. Load ticket or bag count required.

Visual Inspection:

5000 lbs

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.

Note: see section 922.12 of the Standard Specifications for Construction 2012.

2. Immediate possession of delivery tickets or shipping document is required.
3. Measurement and payment
 - a. Engineer will pay based on weight of calcium chloride.

8120200**8120215 – 8120246****8120255 – 8120259**

Pg 1 of 1

PAVT MRKG COVER, TYPE R, BLACK**PAVT MRKG, TYPE R AND PAVT MRK, TYPE NR****PAVTMRKG, WTREF, TYPE R, TAPE**

Pay Unit: Foot

MATERIALS:Glass Beads, Temp Pavement Marking Tape,
Temp Pavement Marking Paint, Wet Reflective Beads/Elements**ACCEPTANCE TESTING REQUIREMENTS****Glass Beads**

1. A General Certification.

Visual Inspection: Maximum 500 pounds.**Temp Pavement Marking Paint**

1. VI and must be on Qualified Products List (811.03).

Temp Pavement Marking Tape

1. VI and must be on Qualified Products List (922.06A).

Wet Reflective Beads/Elements

1. VI and must be on Qualified Products List

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Type R – Engineer will pay based on each unit placed and includes the cost of providing, installing, maintaining, removing and disposing of temporary pavement markings.
 - b. Type NR Tape and Paint - Engineer will pay based on each unit placed and includes the cost of providing and placing temporary pavement markings.

8120280 – 8120301

Pg 1 of 1

**RAISED PAVT MRK, TEMP, TYPE __,
(COLOR), (DIRECTION)**

Pay Unit: Each

MATERIALS: Temp Raised Pavement Marker**ACCEPTANCE TESTING REQUIREMENTS****Temp Raised Pavement Marker**

1. VI and must be on Qualified Products List (922.06B).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will pay based on each unit placed and includes the cost of providing, installing, maintaining, removing and disposing of raised pavement markers.

8120250 -- 8120261	Plastic Drums, _____, _____
8120340 -- 8120341	Sign, Type A, Temp, Prismatic, _____
8120350 -- 8120351	Sign, Type B, Temp, Prismatic, _____
8120352 -- 8120353	Sign, Type B, Temp, Prismatic, Special, _____
Pg 1 of 1	Pay Unit: Each and Sft

MATERIALS

Plastic Drums, Sign Temporary Prismatic

ACCEPTANCE TESTING REQUIREMENTS SP 105 B**No Materials Source List required****Plastic Drums**

1. General Certification per MQAP 4.10

Sign Temporary Prismatic

General Certification per MQAP 4.10,

Note:

Hyperlinks in the Crash Worthy Certification letter from contractor must work, taking you to ProjectWise Certification Documents

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Document that the devices meet ATSSA standard as shown in Latest Edition
2. Measurement and payment
 - a. The Engineer will measure Sign, Type __, Temp, Prismatic, __ as the total area of the maximum number of signs with dissimilar sign legends in use, at one time on the project.
 - b. The Engineer will count Plastic Drums as the maximum number in use, at one time on the project.

8130005 – 8130012

Pg 1 of 1

RIPRAP, _____

Pay Unit: Square Yard, Cubic Yard or Ton

MATERIALS: Geotextile Liner, Riprap**ACCEPTANCE TESTING REQUIREMENTS****Geotextile Liner**

1. Test as follows:
 - a. Plain Riprap: 1 test from 500 to 1500 Syd, additional tests every 5,000 Syd.
 - b. Heavy Riprap: 1 test from 500 to 1500 Syd, additional tests every 4,000 Syd.

Visual Inspection: Maximum 500 square yards.**Riprap**

1. VI - Check special provision. Load tickets are required if paying by Ton. Document quantity used on IDR.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Riprap (Cyd) – Engineer will pay based on measured in-place volume.
 - b. Riprap (Syd) – Engineer will pay based on measured in-place quantity.
 - c. Riprap (Ton) - Engineer will pay based on weight.

8160020 – 8160022

Pg 1 of 1

FERTILIZER, CHEMICAL NUTRIENT, CL ____

Pay Unit: Pound

MATERIALS: Chemical Fertilizer**ACCEPTANCE TESTING REQUIREMENTS****Chemical Fertilizer**

Visual Inspection: Provide the bag label, showing the guaranteed analysis.

NOTE: The requirements are for pounds of nutrient (must be calculated) - not total pounds of fertilizer. See subsection 816.04.C or per special provision.
Example of a 50 lbs bag of fertilizer "19-19-19" is 28.5 lbs of Nutrient.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will pay based on measurements and calculations.

8160026

Pg 1 of 1

MULCH ANCHORING

Pay Unit: Square Yard

MATERIALS: Mulch Anchoring - (Tackifier)

ACCEPTANCE TESTING REQUIREMENTS

Mulch Anchoring - (Tackifier)

1. VI and must be on Qualified Products List (917.15C5).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will pay based on measurements and calculations.

8160027 - 8160028

Pg 1 of 1

MULCH BLANKET_____

Pay Unit: Square Yard

MATERIALS: High Velocity Mulch Blankets, Mulch Blanket,**ACCEPTANCE TESTING REQUIREMENTS****High Velocity Mulch Blankets**

1. VI and must be on Qualified Products List (917.15B1).

Mulch Blankets

1. VI and must be on Qualified Products List (917.15B2).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.

Note: Refer to Standard Plan R-100

2. Measurement and payment
 - a. Engineer will pay based on measurements and calculations and includes providing, placing and anchoring.

8160035 – 8160045

Pg 1 of 1

SEEDING, MIXTURE ____

Pay Unit: Pound

MATERIALS: Seed Mixture**ACCEPTANCE TESTING REQUIREMENTS****Seed Mixture**

1. All Projects with 5 acres or more of restoration, tests are required if the Grass Seed Testing Special Provision is included in the Contract.

Grass Seed Varieties:

VI and must be on Qualified Product list

Visual Inspection: Maximum 1100 pounds.**CONSTRUCTION**

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Date on seed ticket not to exceed of one year

NOTE: Computations must be shown on IDR using rates of application as shown in the spec book or proposal.

2. Measurement and payment
 - a. Engineer will pay based on pounds of seed applied.

8160100 - 8160103

Pg 1 of 2

SLOPE RESTORATION, _____

Pay Unit: Square Yard

MATERIALS:

Fertilizer, Herbicides, High Velocity Mulch Blanket, Mulch, Mulch Anchoring, Mulch Blanket, Permanent Turf Reinforcement Mat (TRM), Seed Mixture, Sod, Pegs for Sodding, Top soil

ACCEPTANCE TESTING REQUIREMENTS**Fertilizer**

Visual Inspection: Provide the bag label, showing the guaranteed analysis.

Herbicides

1. A Test Data Certification.

High Velocity Mulch Blankets

1. VI and must be on Qualified Products List (917.15B1).

Mulch

1. VI

Mulch Anchoring Material

1. VI and must be on Qualified Products List (917.15C5).

Mulch Blankets

1. VI and must be on Qualified Products List (917.15B2).

Permanent Turf Reinforcement Mat (TRM)

1. Must meet Special Provision Requirements

Seed Mixture

1. All Projects with 5 acres or more of restoration, tests are required if the Grass Seed Testing Special Provision is included in the Contract.

Grass Seed Varieties:

VI and must be on Qualified Product list

Visual Inspection: Maximum 1100 pounds.

Sod

Visual Inspection: All material placed.

8160100 - 8160103**SLOPE RESTORATION, _____**

Pg 2 of 2

Pegs for Sodding

Visual Inspection: All material placed.

Top Soil

Visual Inspection: All material placed. Per section 917.07 of the Standard Specification for Construction.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Verify topsoil depths.

Note: Refer to Standard Plan R-100

Note: Computations must be shown on IDR using rates of application as shown in the spec book or proposal.
The requirements are for pounds of nutrient (must be calculated) - not total pounds of fertilizer. See subsection 816.04.C or per special provision.
Example of a 50 lbs bag of fertilizer "19-19-19" is 28.5 lbs of Nutrient.

1. Measurement and payment
 - a. Engineer will pay based on measured Syd in place.

8160055

Pg 1 of 1

SODDING

Pay Unit: Square Yard

MATERIALS: Sod, Pegs for Sodding

ACCEPTANCE TESTING CRITERIA

Sod

Visual Inspection: All material placed.

Pegs for Sodding

Visual Inspection: All material placed.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will pay based on measured Syd in place.

8190055 – 8190213

Pg 1 of 3

Conduit, Encased, __, __ inch

Pay Unit: Ft

MATERIALS: Electric Conduit, Conc S2, Granular CI II**ACCEPTANCE TESTING REQUIREMENTS****Concrete Grade S2****NRMCA Plants**

1. Plant
 - a. Current NRMCA certification.
2. Scales Check
 - a. Inspection certification every 6 months.
3. Dispenser Check
 - a. Inspection certification every 90 days.
4. Concrete Mix Design
 - a. Form 1976 in project files

For Portable Batch Plants

1. Plant
 - a. Documentation of Inspection after each move per 601.03.A.1.b. With Waiver certification per 601.03.C from the Engineer

For non NRMCA Plants

All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Form 1976 in project files

Materials

1. Cement
 - a. General Certification from the Approved Manufacturer.

Visual Inspection: Maximum 45 tons

2. Coarse/Intermediate Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons. Maximum VI 100 tons for total grade used on job. L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.

8190055 – 8190213**Conduit, Encased, __, __ inch**

Pg 2 of 3

Pay Unit: Ft

- b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total grade used on job

- 3. Fine Aggregate
 - a. Test prior to incorporation. One test per 1,000 tons.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total FA used on job

- 4. Liquid Concrete Admixtures
- 5. VI and must be on Qualified Product List (903.01, 903.02 & 903.03).
- 6. Slag Cement
- 7. Approved Manufacturer
- 8. Fly Ash
 - a. Approved Manufacturer

Granular Materials**Prequalified Sources:**

- 1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
- 2. Documentation verifying passing QA test results in project files.
- 3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
- 4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____.
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

- 1. One ticket REQUIRED per load containing the following data **if applicable**
 - a. MDOT aggregate source number
 - b. Date and time of shipment

8190055 – 8190213

Pg 3 of 3

Conduit, Encased, __, __ inch

Pay Unit: Ft

- c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files
 - a. Class II - One test per 3,000 cubic yards.

Visual Inspection:

- a. Class II – Maximum 500 cubic yards per project.

Conduit

1. General Certification.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will pay based on length measured in place.
3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
4. Local Agency Projects
Refer to [12SP604A](#) (or as superseded) Quality Control And Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

8190200 - 8190213

Pg 1 of 2

DB Cable, in Conduct, 600V, ___/C#___

Pay Unit: Ft

MATERIALS: Electric Conduit, Cable, Granular CI II**ACCEPTANCE TESTING REQUIREMENTS****Granular Materials****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____".
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files
 - a. Class II - One test per 3,000 cubic yards.

Visual Inspection:

- a. Class II – Maximum 500 cubic yards per project.

8190200 - 8190213

Pg 2 of 2

DB Cable, in Conduct, 600V, ___/C#___

Pay Unit: Ft

Conduit

1. General Certification.

Cable

1. Visual Inspection
2. The Maintaining Agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and that the material is acceptable.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will pay based on length measured in place.

8190279

Pg 1 of 4

LIGHT STD FDN

Pay Unit: Each

MATERIALS: Anchor Bolts, Curing Compound, Conc S2, Grounding Rod,
Granular CI II,

ACCEPTANCE TESTING REQUIREMENTS**Concrete Grade S2****NRMCA Plants**

1. Plant
 - a. Current NRMCA certification.
2. Scales Check
 - a. Inspection certification every 6 months.
3. Dispenser Check
 - a. Inspection certification every 90 days.
4. Concrete Mix Design
 - a. Form 1976 in project files

For Portable Batch Plants

1. Plant
 - a. Documentation of Inspection after each move per 601.03.A.1.b. With Waiver certification per 601.03.C from the Engineer

For non NRMCA Plants

All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Form 1976 in project files

Materials

1. Cement
 - a. General Certification from the Approved Manufacturer.

Visual Inspection: Maximum 45 tons

8190279

Pg 2 of 4

LIGHT STD FDN

Pay Unit: Each

2. Coarse/Intermediate Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons. Maximum VI 100 tons for total grade used on job. L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total grade used on job

3. Fine Aggregate
 - a. Test prior to incorporation. One test per 1,000 tons.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total FA used on job.

4. Liquid Concrete Admixtures
5. VI and must be on Qualified Product List (903.01, 903.02 & 903.03).
6. Slag Cement
7. Approved Manufacturer
8. Fly Ash
 - a. Approved Manufacturer

Curing Compound

1. A Test Data Certification.

NOTE: Must be used within one year of manufacturer date.

Visual Inspection: Maximum 200 gallons for total material used on project.

Anchor bolt

1. Test prior to incorporation and Buy America Certification

Ground Rod

1. Visual Inspection
 - a. The Maintaining Agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and that the material is acceptable.

8190279

Pg 3 of 4

LIGHT STD FDN

Pay Unit: Each

Granular Materials**Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____".
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files
 - a. Class II - One test per 3,000 cubic yards.

Visual Inspection:

- a. Class II – Maximum 500 cubic yards per project.

8190279

Pg 4 of 4

LIGHT STD FDN

Pay Unit: Each

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See [MDOT Construction Wiki Section 105.10](#).

Note:

Submit a complete set of light standard installation shop drawings, including fabrication drawings, to the Engineer for approval.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Follow 707.03.D.07 and/or plans for Anchor Bolts.
2. Measurement and payment
 - a. Engineer will pay based on each placed.
3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or Fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
4. Local Agency Projects

Refer to [12SP604A](#) (or as superseded) Quality Control And Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

8190330 – 8190346

Pg 1 of 1

LUMINAIRE

Pay Unit: Each

MATERIALS: Luminaire**ACCEPTANCE TESTING REQUIREMENTS****Luminaire**

1. A General Certification
2. The Maintaining Agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and that the material is acceptable.

Note:

Provide the Engineer with a drawing showing a general diagram of the luminaire unit and the assembly and installation method.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will pay based on each placed.

8200017 - 8200024

Pg 1 of 1

Case Sign(LED), ____ Way, __ In by __ In

Pay Unit: Each

MATERIALS:

Traffic Signal (Case Sign), Cable, Traffic Signal Mounting Assemblies

ACCEPTANCE TESTING REQUIREMENTS**Cable**

1. Visual Inspection
 - a. The Maintaining Agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and that the material is acceptable.

Traffic Signal (Case Sign)

1. Visual Inspection
 - a. The Maintaining Agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and that the material is acceptable

Traffic Signal Mounting Assemblies

1. Visual Inspection
 - a. The Maintaining Agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and that the material is acceptable

Note:

Secure the Engineer's approval for components of vehicular traffic signals and mounting assemblies not shown on the plans, or not specified in subsection 918.04.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. The Engineer will measure traffic signal pay items based on plan quantities in accordance with subsection 109.01.A.

8200250 - 8200256

Pg 1 of 1

TS, _____ Way Mast Arm Mtd

Pay Unit: Each

MATERIALS: Traffic Signal, Cable, Traffic Signal Mounting Assemblies**ACCEPTANCE TESTING REQUIREMENTS****Cable**

1. Visual Inspection
 - a. The Maintaining Agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and that the material is acceptable.

Traffic Signal

1. Visual Inspection
 - a. The Maintaining Agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and that the material is acceptable.

Traffic Signal Mounting Assemblies

1. Visual Inspection
 - a. The Maintaining Agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and that the material is acceptable

Note: Secure the Engineer's approval for components of vehicular traffic signals and mounting assemblies not shown on the plans, or not specified in subsection 918.04.

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment

The Engineer will measure traffic signal pay items based on plan quantities in accordance with subsection 109.01.A.

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Pg 1 of 4

Strain Pole, Fnd 6 Bolt

Pay Unit: Ft

MATERIALS:

Anchor Bolts, Curing Compound, Conc S2, Electrical Conduit, Grounding Rod, Granular CI II, Slurry, Steel Casing, Steel reinforcement

ACCEPTANCE TESTING REQUIREMENTS

Review 12SP 820 B

Concrete Grade S2**NRMCA Plants**

1. Plant
 - a. Current NRMCA certification.
2. Scales Check
 - a. Inspection certification every 6 months.
3. Dispenser Check
 - a. Inspection certification every 90 days.
4. Concrete Mix Design
 - a. Form 1976 in project files

For Portable Batch Plants

1. Plant
 - a. Documentation of Inspection after each move per 601.03.A.1.b. With Waiver certification per 601.03.C from the Engineer

For non NRMCA Plants

All of the following documentation is required including Form 1174 Concrete Plant Proportioning (a minimum of one report per mix).

1. Scales Check
 - a. Inspection certification every 6 months
2. Dispenser Check
 - a. Inspection certification every 90 days
3. Concrete Mix Design
 - a. Form 1976 in project files

Materials

1. Cement
 - a. General Certification from the Approved Manufacturer.

Visual Inspection: Maximum 45 tons

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Pg 2 of 4

Strain Pole, Fnd 6 Bolt

Pay Unit: Ft

2. Coarse/Intermediate Aggregates
 - a. Test prior to incorporation. One test per 1,000 tons. Maximum VI 100 tons for total grade used on job. L.A. Abrasion, freeze-thaw durability may be request from MDOT CFS.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total grade used on job

3. Fine Aggregate
 - a. Test prior to incorporation. One test per 1,000 tons.
 - b. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.

Visual Inspection: Maximum 100 tons for total FA used on job

4. Liquid Concrete Admixtures
5. VI and must be on Qualified Product List (903.01, 903.02 & 903.03).
6. Slag Cement
 - a. Approved Manufacturer
7. Fly Ash
 - a. Approved Manufacturer

Curing Compound

1. A Test Data Certification.

NOTE: Must be used within one year of manufacturer date.**Visual Inspection:** Maximum 200 gallons for total material used on project.**Anchor bolt**

1. Test prior to incorporation and Buy America Certification

Electrical Conduit

1. General Certification

Ground Rod

1. Visual Inspection
 - a. The Maintaining Agency shall provide the project engineer with a memo or other appropriate form indicating that the inspection has been made and that the material is acceptable.

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Pg 3 of 4

Strain Pole, Fnd 6 Bolt

Pay Unit: Ft

Granular Materials**Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____.
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files
 - a. Class II - One test per 3,000 cubic yards.

Visual Inspection:

- b. Class II – Maximum 500 cubic yards per project.

Steel Casing

1. Visual Inspection
2. Buy America Certification

8200470

Pg 4 of 4

Strain Pole, Fnd 6 Bolt

Pay Unit: Ft

Steel Reinforcement

1. Certification from Approved Manufacture
2. Buy America Certification

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the "Buy American" statement which may also be listed. "Buy American" is not an acceptable alternate to "Buy America". See [MDOT Construction Wiki Section 105.10](#).

CONSTRUCTION

1. Inspector's Daily Report
 - a. IDR shall show the inspector's computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
 - c. Follow 707.03.D.07 and/or plans for Anchor Bolts.
2. Measurement and payment
 - a. Engineer will measure vertically from the bottom of the foundation and shaft to the top of the shaft.
3. Additional Documentation Requirements for Redi-mix concrete.
 - a. Approved Contractor's QC Plan per the Current [12SP604B](#), prior to work.
 - b. Form 1155 the weekly summary of concrete shipped (For NRMCA Certified Concrete Plants). Emailed or Fax copy to Regional CFS office.
 - c. Approved QA Plan
 - d. QA – Compressive Test reports for 28 day strength (work sheet not summary) per Department's latest QA testing requirements. Testers' signature required.
4. Local Agency Projects
Refer to [12SP604A](#) (or as superseded) Quality Control And Acceptance Of Portland Cement Concrete (for Local Agency Projects Only).

8230150 – 8230181**WATER MAIN**

Pg 1 of 2

Pay Unit: Foot

MATERIALS: Ductile Iron Pipe, Granular CI III and Granular CI IIIA**ACCEPTANCE TESTING REQUIREMENTS****Ductile Iron Pipe**

1. A General Certification.

Visual Inspection: Maximum 250 feet.**Granular Materials****Prequalified Sources:**

1. One ticket REQUIRED per load containing the following data.
 - a. MDOT aggregate source number (Pit Number)
 - b. Date of shipment
 - c. Time of shipment (if applicable)
 - d. MDOT control section and job number
 - e. Michigan series number and class letter of aggregate
 - f. Weight or volume shipped
 - g. Suppliers name, telephone number and location
 - h. Truck identifier number (if applicable)
2. Documentation verifying passing QA test results in project files.
3. See Procedures for Aggregate Inspection Manual for reduced acceptance testing requirements if material is from a pre-qualified supplier.
4. In addition, the following statement shall be printed or stamped on each ticket: "I attest that aggregate as delivered from this pre-qualified source meets specification requirements for the listed Michigan series and class for quantity stated.
Date _____ Signature _____."
This statement must be signed by an authorized company representative. This statement does not signify acceptance by MDOT of the aggregate.

Non-Prequalified Sources:

1. One ticket REQUIRED per load containing the following data **if applicable**
 - a. MDOT aggregate source number
 - b. Date and time of shipment
 - c. MDOT control section and job number
 - d. Michigan series number and class letter of aggregate
 - e. Weight or volume shipped
 - f. Suppliers name, telephone number and location
 - g. Truck identifier number
2. Test reports must be in project files
 - a. Class II - One test per 3,000 cubic yards.
 - b. Class III or IIIA One test per 10,000 cubic yards.

8230150 – 8230181**WATER MAIN**

Pg 2 of 2

Visual Inspection:

- Class III – Maximum 500 cubic yards per project.
- Class III A – Maximum 100 cubic yards per project

NOTE:

Check for the Buy America compliance on all steel and iron certifications which is required on Federal Aid Projects. All permanently incorporated steel or iron materials must be melted and all manufacturing processes including the coating must occur in the United States. It should be noted that this is different than the “Buy American” statement which may also be listed. “Buy American” is not an acceptable alternate to “Buy America”. See [MDOT Construction Wiki Section 105.10](#).

INDEPENDENT ASSURANCE TESTING (IAT) REQUIREMENTS

1. See Notes page for IAT requirements.

CONSTRUCTION

1. Inspector’s Daily Report
 - a. IDR shall show the inspector’s computations, measurements and supporting documentation verifying quantity submitted for pay.
 - b. All materials used must be VI and accepted by the inspector with notation on the IDR.
2. Measurement and payment
 - a. Engineer will pay based on measurements along the centerline of the pipe with no deductions for fittings.
3. Density Reports
 - a. Review reports to see that all test and retests meet MDOT requirements (see form 0582B).
 - b. All density reports are to be placed in ProjectWise on a weekly basis as a minimum.

Note: Standard Plans R-83

Construction Advisory

CA 2007-01
February 13, 2007

From Brenda O'Brien, Engineer of Construction and Technology

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Index: Traffic Control

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Construction Advisory should
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BJO:JKG

Temporary Concrete Barrier

The Special Provision for Temporary Concrete Barrier states all new temporary concrete barrier (TCB) fabricated after September 1, 2006, must meet NCHRP 350 crashworthy criteria, along with additional MDOT requirements. For the TCB to be acceptable for use on MDOT projects, the contractor must provide the following documentation before it is placed in the field:

1. A letter from FHWA verifying the TCB meets NCHRP 350 criteria.
2. A drawing to verify that the bottom width does not exceed 28 inches, and the top is at least 6 inches wide and flat.
3. Crash tests results to verify the deflection was 6.5 feet or less. The FHWA letter will state the deflection distance. If the FHWA letter states the TCB is acceptable based on a comparison to another crash tested TCB design, then the compared TCB deflection results must be provided. For example, Mack Industries has a TCB design based on a combination of designs by the Ohio and New York DOTs. In this case, the contractor will need

to provide the FHWA acceptance letter for each of these designs. In those letters, it will indicate that the Ohio design deflected 5.5 feet, and the New York design deflected 1.27 meters (4.2 feet).

If a sloped end section is needed for a run of NCHRP 350 accepted TCB, the following is required:

1. The connection side profile should match the full size TCB section being used, along with the connection design.
2. The opposite end of the section should have a 6 inch high lip, with the top edge rounded with an 8 inch radius. This is similar to the "Temporary Concrete End Section" elevation view shown on page 5 of 6 of Standard Plan R-52-E.
3. The slope should be 1:5 as a maximum.
4. A minimum of 10 feet long.
5. Reinforcement determination will be the manufacturer's responsibility. Adequate reinforcement shall be used to maintain structural integrity of the section.

The end section will be paid as Concrete Barrier, Temporary Furnished and Operated.

Intermixing of TCB shapes on a given run is discouraged. If intermixing is necessary, a transition section shall be used. The transition section as a minimum should:

1. Be 10 feet long or greater.
2. Develop a smooth transition between the two TCB shapes, with no snag points.
3. Provide connections between each TCB shape that match each section.

The transition section will be paid as Concrete Barrier, Temporary Furnished and Operated.

Please share this information with consultants and local agencies in your area.

Construction Advisory

CA 2011-08
June 20, 2011

From Brenda O'Brien, Engineer of Construction and Technology

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Index: Culverts

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Construction Advisory should
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BJO:DG

Mandrel Testing of Corrugated Polyethylene Pipe (CPE)

This construction advisory is intended to emphasize and clarify the requirements for mandrel testing of CPE pipe. During the preconstruction meeting it should be pointed out if CPE pipe is installed, **at least 50 percent of each size must be mandrel tested**. The engineer should select those runs of pipe that may have been problematic during installation or in areas subjected to a high volume of construction traffic. The mandrel testing should be conducted 5 to 10 work days prior to paving.

Prior to testing, the contractor must provide an approved mandrel which is appropriate for testing CPE pipe (mandrel size for PVC is smaller). The mandrel must have at least nine points and be 95 percent of the nominal diameter of the pipe. Per AASHTO M 294 Corrugated Polyethylene Pipe, nominal pipe diameter is defined as 12", 15", 18", etc. Mandrels can be a fixed size or a variable size and are commercially available for most pipe sizes up to 48". The diameter of the mandrel, whether it is fixed or variable size, must be verified with a proving ring. As a rule of thumb, the length of the mandrel should be equal to or greater than the diameter.

The pipe should be cleaned thoroughly before testing. Even the smallest amount of debris can hinder the passage of the mandrel. During the test, the mandrel must be pulled through the pipe by hand. The use of a winch, come-along or other mechanical means is prohibited. If the mandrel can not be pulled through the pipe, the test fails and corrective action is required.

Prior to any corrective action, the contractor may opt to video the pipe to determine the cause of the mandrel not passing through or attempt to clean the pipe again and re-run the mandrel test. If the test still fails, the CPE pipe may be removed and reinstalled providing it has been inspected for damage and approved for re-use. The other option is to remove and replace the damaged pipe with new CPE or other acceptable pipe type. If CPE pipe is used it must be mandrel tested after installation. The use of a pipe "re-rounder" is not an acceptable method for corrective action. Video taping of CPE pipe for acceptance should be conducted only after passing mandrel tests have been achieved.

Two forms have been created to document CPE pipe installation and mandrel testing results for sewers and culverts, form numbers 1974 and 1975, respectively. **All CPE pipe installed on a project must be recorded on these forms along with mandrel test results.** This information must also be documented on the IDR. Upon completion of the form(s), the original version must be placed in the project files (file folder # 304 Drainage Items Testing) and a copy sent to the Grading and Drainage Engineer at C&T for inclusion in the mandated annual report to the legislature.