SECTION 6
CONTROL OF MATERIALS

6-1 Acceptance Criteria.

6-1.1 General: Acceptance of materials is based on the following criteria. All requirements may not apply to all materials. Use only materials in the work that meet the requirements of these Specifications. The Engineer may inspect and test any materials, at points of production, distribution and use.

6-1.2 Sampling and Testing: Use the Department's current sample identification and tracking system to provide related information and attach such information to each sample. Restore immediately any site from which material has been removed for sampling purposes to the pre-sampled condition with materials and construction methods used in the initial construction, at no additional cost to the Department.

Ensure when a material is delivered to the location as described in the Contract, there is enough material delivered to take samples, at no expense to the Department.

6-1.2.1 Pretest by Manufacturers: Submit certified manufacturer's test results to the Engineer for qualification and use on Department projects. Testing will be as specified in the Contract Documents. The Department may require that manufacturers submit samples of materials for independent verification purposes.

6-1.2.2 Point of Production Test: Test the material during production as specified in the Contract Documents.

6-1.2.3 Point of Distribution Test: Test the material at Distribution facilities as specified in the Contract Documents.

6-1.2.4 Point of Use Test: Test the material immediately following placement as specified in the Specifications. After delivery to the project, the Department may require the retesting of materials that have been tested and accepted at the source of supply, or may require the testing of materials that are to be accepted by producer certification. The Department may reject all materials that, when retested, do not meet the requirements of these Specifications.

6-1.3 Certification:

6-1.3.1 Producer Certification: Ensure completeness and correlate certification(s) of materials provided. Furnish to the Engineer for approval, certification from the producer for all products listed on the Department's Qualified Products List (QPL) and when required by the applicable material Specification(s). Do not incorporate any manufactured product(s) or material(s) into the project without approval from the Engineer. Materials will not be considered for payment when not accompanied by Producer Certification. Producers may obtain sample certification forms through the Department's website. Ensure that the certification is provided on the producer's letterhead and is signed by a legally responsible person from the producer.

6-1.3.1.1 Qualified Products List: The Product Evaluation Section in the State Specifications Office publishes and maintains a Qualified Products List (QPL). The list provides assurance to Contractors, consultants, designers, and Department personnel that specific products and materials are approved for use on Department facilities. The Department will limit the Contractor's use of products and materials that require pre-approval to items listed on the QPL effective at the time of placement. Manufacturers seeking evaluation in accordance with Departmental procedures of an item must submit a Product Evaluation Application with a certified test report from an independent test laboratory that shows that the material meets all

applicable specifications, to the Product Evaluation Section in Tallahassee. Manufacturers successfully completing the Department's evaluation are eligible for inclusion on the QPL. The Department will consider any marked variations from original test values for a material or any evidence of inadequate field performance of a material as sufficient evidence that the properties of the material have changed, and the Department will remove the material from the QPL.

6-1.3.1.2 Approved Products List: The State Traffic Operations Office maintains the Approved Products List (APL) of Traffic Control Signal Devices. Traffic Monitoring Site Equipment and Materials are also included on the APL. This list provides assurance to Maintaining Agencies, Contractors, consultants, designers, and Department personnel that the specific items listed are approved for use on Department facilities. The Department will limit the Contractor's procurement and use of Traffic Control Signal Devices, and Traffic Monitoring Site equipment and materials to only those items listed on the APL that is effective at the time of procurement, except as provided in Section 603.

The approval process is described in detail on the State Traffic Operation website, www.dot.state.fl.us/trafficoperations/terl/apl2.htm . Manufacturers seeking evaluation of a specific device must submit an application on form number 750-010-12, which can be obtained from the Department's State Traffic Operations Office.

6-1.3.2 Contractor Installation Certification: Provide installation certifications as required by the Specifications.

6-2. Designation of a Specific Product as a Criterion ("Or Equal" Clause).

Reference in the Contract Documents to any proprietary article, device, product, material or fixture, or any form or type of construction, by name, make, or catalog number, with or without the words "or equal", establishes a standard of quality and is not intended to limit competition. The Contractor may use any article, device, product, material or fixture, or any form or type of construction, that, in the judgment of the Engineer (expressed in writing), is equal, for the purpose intended, to that named.

6-3 Applicable Documented Authorities other than Specifications.

6-3.1 General: Details on individual materials are identified in various material specific Sections of the Specifications. These Specifications may refer to other documented authorities for requirements. When specified, meet the requirements as defined in such references.

6-3.2 Test Methods: Methods of sampling and testing materials are in accordance with the Florida Methods (FM). If a Florida Method does not exist for a particular test, perform the testing in accordance with the method specified in the Specification. When test methods or other standards are referenced in the Specifications without identification of the specific time of issuance, use the most current issuance, including interims or addendums thereto, at the time of bid opening.

6-3.3 Construction Aggregates: Aggregates used on Department projects must be in accordance with Rule 14-103, FAC.

6-4 Documentation.

6-4.1 Submission of Materials Certification and Reporting Test Results: Provide certifications prior to placement of materials. Report test results at completion of the test and meet the requirements of the applicable Specifications.

6-4.2 Database(s): Obtain access to the Department's database(s) prior to testing and/or material placement. Database access information is available through the Department's website.

Enter all required and specified documentation and test results in the Department database(s).

6-4.3 Worksheets: Make available to the Department, when requested, worksheets used for collecting test information. Ensure the worksheets as a minimum contain the following:

a. Project Identification Number,
b. Time and Date,
c. Laboratory Identification and Name,
d. Training Identification Numbers (TIN) and initials,
e. Record details as specified within the test method.

6-4.4 Retention: Meet the requirements of Section-105.

6-5 Inspections to Assure Compliance with Acceptance Criteria.

6-5.1 General: The Department is not obligated to make an inspection of materials at the source of supply, manufacture, or fabrication. Provide the Engineer with unrestricted entry at all times to such parts of the facilities that concern the manufacture, fabrication, or production of the ordered materials. Bear all costs incurred in determining whether the material meets the requirements of these Specifications.

6-5.2 Quality Control (QC) Inspection: Provide all necessary inspection to assure effective QC of the operations related to materials acceptance. This includes but is not limited to sampling and testing, production, storage, delivery, construction and placement. Ensure that the equipment used in the production and testing of the materials provides accurate and precise measurements in accordance with the applicable Specifications. Maintain a record of all inspections, including but not limited to, date of inspection, results of inspection, and any subsequent corrective actions taken.

6-5.3 Notification of Placing Order: Order materials sufficiently in advance of their incorporation in the work to allow time for sampling, testing and inspection. Provide notification, to the Engineer prior to placing orders for materials.

Submit to the Engineer a fabrication schedule for all items requiring commercial inspection, before or at the pre-construction meeting These items include, but is not limited to steel bridge components, overhead cantilevered sign supports with cantilevered arms exceeding 41 feet, moveable bridge components or any other item identified as an item requiring commercial inspection in the Contract Documents.

Notify the Engineer at least 30 days before beginning any production and include a production schedule.

6-6 Additional Requirements for Lump Sum Projects.

Prepare and submit to the Engineer a project-specific list of material items and quantities to be used on the project as a Job Guide Schedule (JGS) in the same format as the Department's current Sampling, Testing, and Reporting Guide (STRG), 21 calendar days prior to commencement of Construction. Provide an up-to-date Job Guide Schedule to the Engineer with each monthly progress estimate. The Department may not authorize payment of any progress estimate not accompanied by an up-to-date Job Guide Schedule. Maintain the Job Guide Schedule throughout the project including the quantity placed since the previous submittal, and total to date quantity and any additional materials placed. Do not commence work activities that require testing until the Job Guide Schedule has been reviewed and accepted by the Engineer. At final acceptance, submit final Job Guide Schedule that includes all materials used on the project in the same format as the monthly reports.

6-7 Personnel Qualification Programs.

Meet the requirements of Section 105 and ensure that qualifications are maintained during the course of sampling, testing and inspection. Continued personnel qualifications are subject to satisfactory results from the Department's Independent Assurance evaluations.

6-8 Quality Control Program.

6-8.1 General: Meet the requirements of the Department's approved Quality Control Program for the production and construction of Asphalt Mix, Portland Cement Concrete (Structural), Earthwork, Cementitious Materials, Timber, Steel and Miscellaneous Metals, Galvanized Metal Products, Prestressed and/or Precast Concrete Products and Drainage Products. Also include transportation, storage, placement and other related construction operations required by the Contract.

When accreditation or certification is required, make supporting documents from the two previous inspections performed by the accrediting or certifying agency available to the Department upon request.

Obtain Department approval prior to beginning production. Meet and maintain the approved QC Program requirements at all times. Production and construction of these products without the Department's prior approval of a Quality Control Program may result in rejection of the products. Continued approval will be subject to satisfactory results from Department evaluations, including the Independent Assurance program. In cases of non-compliance with the approved Quality Control Program, identify all affected material and do not incorporate or supply to the Department projects. The following conditions may result in suspension of a QC Program:

a. Failure to timely supply information required.

b. Repeated failure of material to meet Standard Specification requirements.

c. Failure to take immediate corrective action relative to deficiencies in the performance of the QC program.

d. Certifying materials that are not produced under an approved QC program for use on Department projects.

e. Failure to correct any deficiencies related to any requirement of the QC program, having received notice from the Department, within the amount of time defined in the notice.

6-8.2. Producers of Asphalt Mixes, Portland Cement Concrete (Structural), Earthwork, Cementitious Materials, Timber, Steel and Miscellaneous Metals, **Galvanized Metal Products, Prestressed and/or Precast Concrete Products and Drainage Products:** Have an approved Quality Control Program, developed in accordance with the guidelines in Section 105, during the production of materials to be used on Department projects. In addition to meeting the requirements of Section 105, the producers of Portland Cement Concrete will meet the requirements Chapter 9.2, Concrete Production Facility Guidelines, of the Department's Materials Manual.

6-8.3 Prestressed Concrete Plants: Ensure that prestressed concrete plants participating in the Department's Acceptance Program are qualified. Obtaining qualification will require a current Precast/Prestressed Concrete Institute (PCI) certification and an approved Quality Control Plan, developed in accordance with the guidelines specified in Section 105.

6-8.4 Quality Control Program Approval: Producers of cementitious materials and aggregates must submit their proposed Quality Control Program to the State Materials Office for approval.

Producers of Asphalt Mixes, Portland Cement Concrete (Structural), Earthwork, Timber, Steel and Miscellaneous Metals, Galvanized Metal Products, Prestressed and/or Precast Concrete Products and Drainage Products must submit their proposed Quality Control Program to the local District Materials Office for acceptance. Producers located outside the State must contact the State Materials Office for address information of the District Materials Office responsible for the review of the proposed Quality Control Program.

Steel and Miscellaneous Metal products are steel bridge components, movable bridge components**,** overhead cantilevered sign supports, ladders and platforms, bearings, end wall grates, roadway gratings, metal drainage components, steel expansion joint and components, shear connectors, pipe handrails, galvanized steel woven wire farm fence, and guardrail.

The Department will respond to the producer within 21 calendar days of receipt of the proposed Quality Control Program. The Department may perform evaluation activities to verify compliance with submitted documents prior to acceptance.

If the Quality Control Program must be revised for any reason, including non-compliance, submit the revision to the Department. The Department will respond to the producer within 7 calendar days of receipt of the revised Quality Control Program.

6-8.5 Contractor's Quality Control Plan. Have an approved Quality Control Plan meeting the requirements of Section 105 for the transportation, storage, placement, and other related construction operations required by the Contract.

6-9 Lab Qualification Program.

Testing Laboratories participating in the Department's Acceptance Program must meet one of the following requirements. In addition to the following they must have current Department qualification when testing materials that are used on Department projects:

a. Current AASHTO (AAP) accreditation.

b. Inspected on a regular basis per ASTM D 3740 for earthwork, ASTM D 3666 for asphalt and ASTM C 1077 for concrete for test methods used in the Acceptance Program, with all deficiencies corrected, and under the supervision of a Specialty Engineer.

c. Current Construction Materials Engineering Council (CMEC) program accreditation or other independent inspection program accreditation acceptable to the Engineer and equivalent to a. or b. above.

After meeting the criteria described above, submit a Laboratory Qualification Application to the Department. The application is available from the Department's website. Obtain the Department's qualification prior to beginning testing. The Department may inspect the laboratory for compliance with the accreditation requirements prior to issuing qualification.

Meet and maintain the qualification requirements at all times. Testing without Department's qualification may result in a rejection of the test results. Continued qualifications are subject to satisfactory results from Department evaluations, including Independent Assurance evaluations. In case of suspension or disqualification, prior to resumption of testing, resolve the issues to the Department's satisfaction and obtain reinstatement of qualification. The following conditions may result in suspension of a laboratory's qualified status:

a. Failure to timely supply required information.

b. Loss of accredited status.

c. Failure to correct deficiencies in a timely manner.

d. Unsatisfactory performance.

e. Changing the laboratory's physical location.

f. Delays in reporting the test data in the Department's database.
g. Incomplete or inaccurate reporting.
h. Using unqualified technicians performing testing.

It is prohibited for a non-Department laboratory to perform Contractor Quality Control testing and any other Acceptance Program testing on the same contract.

6-10 Storage of Materials and Samples.

6-10.1 Method of Storage: Store materials in such a manner as to preserve their quality and fitness for the work, to facilitate prompt inspection, and to minimize noise impacts on sensitive receivers. More detailed specifications concerning the storage of specific materials are prescribed under the applicable Specifications. The Department may reject improperly stored materials.

6-10.2 Use of Right-of-Way for Storage: If the Engineer allows, the Contractor may use a portion of the right-of-way for storage purposes and for placing the Contractor's plant and equipment. Use only the portion of the right-of-way that is outside the clear zone, which is the portion not required for public vehicular or pedestrian travel. When used, restore the right-of-way to pre-construction condition at no additional cost to the Department or as specified in the contract. Provide any additional space required at no expense to the Department.

6-10.3 Responsibility for Stored Materials: Accept responsibility for the protection of stored materials. The Department is not liable for any loss of materials, by theft or otherwise, or for any damage to the stored materials.

6-10.4 Storage Facilities For Samples: Provide facilities for storage of samples as described in the contract and warranted by the test methods and Specifications.

6-11 Defective Materials.

All materials not meeting the requirements of these Specifications; segregated materials, even though previously tested and approved; materials that are or have been improperly stored; and materials that are mixed with an excess of clay, coal, sticks, burlap, hay, straw, loam or earth, or other debris will be considered defective. Do not use defective materials. The Engineer will reject all such materials, whether in place or not. Remove all rejected material immediately from the site of the work and from storage areas, at no expense to the Department.

Do not use material that has been rejected and the defects corrected, until the Engineer has approved the material's use. Upon failure to comply promptly with any order of the Engineer made under the provisions of this Article, the Engineer will remove and replace defective material and deduct the cost of removal and replacement from any moneys due or to become due the Contractor.

As an exception to the above, the Contractor may submit, upon approval of the Engineer, an engineering and/or laboratory analysis to evaluate the effect of defective in place materials. A Specialty Engineer, who is an independent consultant or the Contractor's Engineer of Record as stated within each individual Section shall perform any such analysis. The Engineer will determine the final disposition of the material after review of the information submitted by the Contractor. No additional monetary compensation or time extension will be granted for the impact of any such analysis or review.

6-12 Products and Source of Supply.

6-12.1 Source of Supply – Convict Labor (Federal-Aid Contracts Only): Do not use materials that were produced after July 1, 1991, by convict labor for Federal-aid highway

construction projects unless the prison facility has been producing convict-made materials for Federal-aid highway construction projects before July 1, 1987.

Use materials that were produced prior to July 2, 1991, by convicts on Federal-aid highway construction projects free from the restrictions placed on the use of these materials by 23 U.S.C. 114. The Department will limit the use of materials produced by convict labor for use in Federal-aid highway construction projects to:

1 materials produced by convicts on parole, supervised release, or probation from a prison or,

2 materials produced in a qualified prison facility.

The amount of such materials produced for Federal-aid highway construction during any 12-month period shall not exceed the amount produced in such facility for use in such construction during the 12-month period ending July 1, 1987.

6-12.2 Source of Supply-Steel (Federal-Aid Contracts Only): For Federal-aid Contracts, only use steel and iron produced in the United States, in accordance with the Buy America provisions of 23 CFR 635.410, as amended. Ensure that all manufacturing processes for this material occur in the United States. As used in this specification, a manufacturing process is any process that modifies the chemical content, physical shape or size, or final finish of a product, beginning with the initial melding and mixing and continuing through the bending and coating stages. A manufactured steel or iron product is complete only when all grinding, drilling, welding, finishing and coating have been completed. If a domestic product is taken outside the United States for any process, it becomes foreign source material. When using steel and iron as a component of any manufactured product incorporated into the project (e.g., concrete pipe, prestressed beams, corrugated steel pipe, etc.), these same provisions apply, except that the manufacturer may use minimal quantities of foreign steel and iron when the cost of such foreign materials does not exceed 0.1% of the total Contract amount or $2,500, whichever is greater. These requirements are applicable to all steel and iron materials incorporated into the finished work, but are not applicable to steel and iron items that the Contractor uses but does not incorporate into the finished work. Provide a certification from the producer of steel or iron, or any product containing steel or iron as a component, stating that all steel or iron furnished or incorporated into the furnished product was manufactured in the United States in accordance with the requirements of this specification and the Buy America provisions of 23 CFR 635.410, as amended. Such certification shall also include (1) a statement that the product was produced entirely within the United States, or (2) a statement that the product was produced within the United States except for minimal quantities of foreign steel and iron valued at $ (actual value). Furnish each such certification to the Engineer prior to incorporating the material into the project. When FHWA allows the use of foreign steel on a project, furnish invoices to document the cost of such material, and obtain the Engineer's written approval prior to incorporating the material into the project.

6-12.3 Unfit, Hazardous, and Dangerous Materials: Do not use any material that, after approval and/or placement, has in any way become unfit for use. Do not use materials containing any substance that has been determined to be hazardous by the State of Florida Department of Environmental Protection or the U.S. Department of Environmental Protection. Provide workplaces free from serious recognized hazards and to comply with occupational safety and health standards, as determined by the U.S. Department of Labor Occupational Safety and Heath Administration.