Request for Proposal 09-X-20062

For: Concrete Transit Mix, (Gray & White) Pick Up and Delivered

Event	Date	Time
Bidder's Electronic Question Due Date (Refer to RFP Section 1.3.1 for more information.)	04/18/08	5:00 PM
Mandatory Pre-bid Conference	N/A	N/A
Mandatory Site Visit	N/A	N/A
Bid Submission Due Date (Refer to RFP Section 1.3.2 for more information.)	05/06/08	2:00 PM

Dates are subject to change. All changes will be reflected in Addenda to the RFP posted on the Division of Purchase and Property website.

Small Business Set-Aside (Refer to RFP Section 4.4.2.2 for more information.)	Status	Category
	☒ Not Applicable	☐ I
	☐ Entire Contract	☐ II
	☐ Partial Contract	☐ III
	☐ Subcontracting Only	

RFP Issued By

State of New Jersey
Department of the Treasury
Division of Purchase and Property
Trenton, New Jersey 08625-0230

Using Agency/Agencies

State of New Jersey
Cooperative Purchasing Members

Date: March 31, 2008

Table of Contents

1.0 INFORMATION FOR BIDDERS

1.1 PURPOSE AND INTENT

This Request for Proposal (RFP) is issued by the Purchase Bureau, Division of Purchase and Property, Department of the Treasury on behalf of the State Using Agencies. The purpose of this RFP is to solicit bid proposals for Transit Mix Portland cement concrete. This RFP is structured to establish prices to permit obtaining concrete materials, which are either delivered to specified locations, described in this bid proposal or is picked up F.O.B. plant.

The intent of this RFP is to award contracts to those responsible bidders whose bid proposals, conforming to this RFP are most advantageous to the State, price and other factors considered. However, the State reserves the right to separately procure individual requirements that are the subject of the contract during the contract term, when deemed by the Director to be in the State's best interest.

The NJ Standard Terms and Conditions version 07/27/07 will apply to all contracts or purchase agreements made with the State of New Jersey. These terms are in addition to the terms and conditions set forth in this RFP and should be read in conjunction with them unless the RFP specifically indicates otherwise.

The State intends to extend the contract[s] awarded to the Purchase Bureau's cooperative purchasing partners. These partners include quasi-state agencies, counties, municipalities, school districts, volunteer fire departments, first aid squads, independent institutions of higher learning, County colleges and State colleges.

Although the State, with the assent of the vendor(s), is making the use of any contract resulting from this RFP available to non-State Agencies, the State makes no representation as to the acceptability of any State RFP terms and conditions under the Local Public Contracts Law or any other enabling statute or regulation.

1.2 BACKGROUND

This is a reprocurement of the **Concrete Transit Mix, (Gray and White) Pick Up and Delivered** term contract, presently due to expire on **June 30, 2008.** Bidders who are interested in the current contract specifications and pricing information may review the current contract T#0157 at http://www.state.nj.us/treasury/purchase/contracts.htm.

1.3 KEY EVENTS

1.3.1 ELECTRONIC QUESTION AND ANSWER PERIOD

The Purchase Bureau will accept questions and inquiries from all potential bidders electronically via web form. To submit a question, please go to Current Bid Opportunities webpage or to http://ebid.nj.gov/QA.aspx

Questions should be directly tied to the RFP and asked in consecutive order, from beginning to end, following the organization of the RFP. Each question should begin by referencing the RFP page number and section number to which it relates.

Bidders are not to contact the Using Agency directly, in person, by telephone or by email, concerning this RFP.

The cut-off date for electronic questions and inquiries relating to this RFP is indicated on the cover sheet. Addenda to this RFP, if any, will be posted on the Purchase Bureau website after the cut-off date (see Section 1.4.1. of this RFP for further information.)

1.3.2 SUBMISSION OF BID PROPOSAL

In order to be considered for award, the bid proposal must be received by the Purchase Bureau of the Division of Purchase and Property at the appropriate location by the required time. **ANY BID PROPOSAL NOT RECEIVED ON TIME AT THE LOCATION INDICATED BELOW WILL BE REJECTED. THE DATE AND TIME IS INDICATED ON THE COVER SHEET. THE LOCATION IS AS FOLLOWS:**

BID RECEIVING ROOM - 9TH FLOOR
PURCHASE BUREAU
DIVISION OF PURCHASE AND PROPERTY
DEPARTMENT OF THE TREASURY
33 WEST STATE STREET, P.O. BOX 230
TRENTON, NJ 08625-0230

Directions to the Purchase Bureau can be found at the following web address:
http://www.state.nj.us/treasury/purchase/directions.htm.

Note: Bidders using USPS Regular or Express mail services should allow additional time since USPS mail deliveries are not delivered directly to the Purchase Bureau.

Procedural inquiries on this RFP may be directed to RFP.procedures@treas.state.nj.us. This e-mail address may also be used to submit requests to review bid documents. The State will not respond to substantive questions related to the RFP or any other contract via this e-mail address.

To submit an RFP or contract related question, go to the Current Bidding Opportunities webpage or to http://ebid.nj.gov/QA.aspx.

1.4 ADDITIONAL INFORMATION

1.4.1 ADDENDA: REVISIONS TO THIS RFP

In the event that it becomes necessary to clarify or revise this RFP, such clarification or revision will be by addendum. Any addendum to this RFP will become part of this RFP and part of any contract awarded as a result of this RFP.

ALL RFP ADDENDA WILL BE ISSUED ON THE DIVISION OF PURCHASE AND PROPERTY WEB SITE. TO ACCESS ADDENDA, SELECT THE BID NUMBER ON THE BIDDING OPPORTUNITIES WEB PAGE AT THE FOLLOWING ADDRESS:

HTTP://WWW.STATE.NJ.US/TREASURY/PURCHASE/BID/SUMMARY/BID.SHTML.

There are no designated dates for release of addenda. Therefore interested bidders should check the Purchase Bureau "Bidding Opportunities" website on a daily basis from time of RFP issuance through bid opening.

It is the sole responsibility of the bidder to be knowledgeable of all addenda related to this procurement.

1.4.2 BIDDER RESPONSIBILITY

The bidder assumes sole responsibility for the complete effort required in submitting a bid proposal in response to this RFP. No special consideration will be given after bid proposals are opened because of a bidder's failure to be knowledgeable as to all of the requirements of this RFP.

1.4.3 COST LIABILITY

The State assumes no responsibility and bears no liability for costs incurred by a bidder in the preparation and submittal of a bid proposal in response to this RFP.

1.4.4 CONTENTS OF BID PROPOSAL

Subsequent to bid opening, all information submitted by bidders in response to the bid solicitation is considered public information, except as may be exempted from public disclosure by the Open Public Records Act, N.J.S.A. 47:1A-1 et seq., and the common law. Because the State proposes to negotiate and/or pursue a Best and Final Offer, bid proposals will not be made public until the Letter of Intent to Award is issued.

A bidder may designate specific information as not subject to disclosure when the bidder has a good faith legal/factual basis for such assertion. The State reserves the right to make the determination and will advise the bidder accordingly. The location in the bid proposal of any such designation should be clearly stated in a cover letter. **The State will not honor any attempt by a bidder either to designate its entire bid proposal as proprietary and/or to claim copyright protection for its entire proposal.**

By signing the cover sheet of this RFP, the bidder waives any claims of copyright protection set forth within the manufacturer's price list and/or catalogs. The price lists and/or catalogs must be accessible to State using agencies and cooperative purchasing partners and thus have to be made public to allow all eligible purchasing entities access to the pricing information.

All bid proposals, with the exception of information determined by the State or the Court to be proprietary, are available for public inspection after the Letter of Intent to Award is issued. At such time, interested parties can make an appointment with the Purchase Bureau to inspect bid proposals received in response to this RFP.

1.4.5 BID OPENING

On the date and time bid proposals are due under the RFP, only the names of the bidders submitting bid proposals will be publicly announced. The contents of the bid proposals shall remain confidential until the Notice of Intent to Award is issued by the Director.

1.4.6 PRICE ALTERATION

Bid prices must be typed or written in ink. Any price change (including "white-outs") must be initialed. Failure to initial price changes shall preclude a contract award from being made to the bidder.

1.4.7 BID ERRORS

In accordance with N.J.A.C. 17:12-1.22, "Bid Errors," a bidder may withdraw its bid as follows:

A bidder may request that its bid be withdrawn prior to bid opening. Such request must be made, in writing, to the Supervisor of the Business Unit. If the request is granted, the bidder may submit a revised bid as long as the bid is received prior to the announced date and time for bid opening and at the place specified.

If, after bid opening but before contract award, a bidder discovers an error in its proposal, the bidder may make written request to the Supervisor of the Business Unit for authorization to withdraw its proposal from consideration for award. Evidence of the bidder's good faith in making this request shall be used in making the determination. The factors that will be considered are that the mistake is so significant that to enforce the contract resulting from the proposal would be unconscionable; that the mistake relates to a material feature of the contract; that the mistake occurred notwithstanding the bidder's exercise of reasonable care; and that the State will not be significantly prejudiced by granting the withdrawal of the proposal. Note: a PB-36 complaint form may be filed and forwarded to the Division's Contract Compliance and Audit Unit (CCAU) for handling. A record of the complaint will also be maintained in the Division's vendor performance file for evaluation of future bids submitted.

All bid withdrawal requests must include the bid identification number and the final bid opening date and sent to the following address:

Department of the Treasury
Purchase Bureau, PO Box 230
33 West State Street – 9th Floor
Trenton, New Jersey 08625-0230
Attention: Supervisor, Business Unit

If during a bid evaluation process, an obvious pricing error made by a potential contract awardee is found, the Director shall issue written notice to the bidder. The bidder will have five days after receipt of the notice to confirm its pricing. If the vendor fails to respond, its bid shall be considered withdrawn, and no further consideration shall be given it.

If it is discovered that there is an arithmetic disparity between the unit price and the total extended price, the unit price shall prevail. If there is any other ambiguity in the pricing other than a disparity between the unit price and extended price and the bidder's intention is not readily discernible from other parts of the bid proposal, the Director may seek clarification from the bidder to ascertain the true intent of the bid.

1.4.8 JOINT VENTURE

If a joint venture is submitting a bid proposal, the agreement between the parties relating to such joint venture should be submitted with the joint venture's bid proposal. Authorized signatories from each party comprising the joint venture must sign the bid proposal. A separate Ownership Disclosure Form, Disclosure of Investigations and Actions Involving Bidder, Affirmative Action Employee Information Report, MacBride Principles Certification, and Business Registration or Interim Registration must be supplied for each party to a joint venture.

1.5 PRICE LIST AND/OR CATALOG PRICING

Not applicable to this RFP.

1.6 STANDARD DOT SPECIFICATION REFERENCES

Standard DOT Specification References will appear as follows where applicable: Standard DOT Specification XXX.XX. All such paragraph numbers appearing throughout his RFP refer to specific sections of standard New Jersey Department of Transportation specifications and reference books. The relevant specifications may be accessed online at:
http://www.state.nj.us/transportation/eng/specs/english/EnglishStandardSpecifications.htm

2.0 DEFINITIONS

2.1 GENERAL DEFINITIONS

The following definitions will be part of any contract awarded or order placed as result of this RFP.

Addendum - Written clarification or revision to this RFP issued by the Purchase Bureau.

Amendment - A change in the scope of work to be performed by the contractor after contract award. An amendment is not effective until signed by the Director, Division of Purchase and Property or his/her designee.

Bidder – A vendor submitting a bid proposal in response to this RFP.

Contract - This RFP, any addendum to this RFP, the bidder's bid proposal submitted in response to this RFP and the Division's Notice of Acceptance.

Contractor - The contractor is the bidder awarded a contract.

Director - Director, Division of Purchase and Property, Department of the Treasury. By statutory authority, the Director is the chief contracting officer for the State of New Jersey.

Division - The Division of Purchase and Property.

Joint Venture – A business undertaking by two or more entities to share risk and responsibility for a specific project.

May - Denotes that which is permissible, but not mandatory.

Request for Proposal (RFP) - This document, which establishes the bidding and contract requirements and solicits bid proposals to meet the purchase needs of [the] Using Agency[ies], as identified herein.

Shall or Must - Denotes that which is a mandatory requirement.

Should - Denotes that which is recommended, but not mandatory.

State - State of New Jersey

Using Agency[ies]- The entity[ies] for which the Division has issued this RFP.

2.2 CONTRACT SPECIFIC DEFINITIONS

Abbreviations

Standard DOT Specification 101.01& 101.2

Wherever in the specifications or other contract documents the following abbreviations and terms, or pronouns in place of them, are used, the intent and meaning, unless a different intent or meaning is clearly indicated, shall be interpreted as set forth in the following subsection.

When a publication is specified, it shall refer to the most recent date of issue as a specific date or year is provided for.

Wherever the following abbreviations are used, they are to be constructed the same as the respective expressions represented.

AASHTO – American Association of State Highway and Transportation Officials
ACI – American Concrete Institute
ANSI – American National Standards Institute
ASTM – American Society for Testing and Materials
CIAP – Construction Industry Advancement Program of New Jersey
FHWA – Federal Highway Administration
FSS – Federal Specifications and Standards,
GSA – General Services Administration
NEMA – National Electrical Manufacturers Association
NJAC – New Jersey Administrative Code
NJDOT – New Jersey Department of Transportation
NJSA – New Jersey Statutes Annotated
NACE – National Association of Corrosion Engineers
OSHA – Occupational Safety and Health Administration
UL – Underwriters' Laboratories

Department – The term "Department" means the Department of Transportation of the State of New Jersey, as created by law.

Department Laboratory – The term "Department Laboratory" means the main testing laboratory located at 930 Lower Ferry Road, Trenton, New Jersey 08625 or such other laboratory as the department may designate.

Engineer – The term "Engineer" means the State transportation engineer, as created by law, acting directly or through his duly authorized representatives, such representatives acting within the scope of the particular duties delegated to them.

NOTE: In order to avoid repetition, whenever the following words are used, it shall be understood as if they were followed by the words "To the Engineer" or "By the Engineer":

"Acceptable, Accepted, Added, Allowed, Applied, Approved, Assumed, Authorized, Awarded, Calculated, Charged, Checked, Classified, Computed, Condemned, Conducted, Considered, Considered Necessary, Contemplated, Converted, Deducted, Deemed, Deemed Necessary, Deleted, Designated, Determined, Directed Disapproved, Divided, Documented Established, Evaluated, Examined, Excluded, Furnished, Given, Granted, Included, Incorporated, Increased, Indicated, Inspected, Insufficient, Issued, Made, Marked, Measured, Modified, Monitored, Notified, Observed, Obtained, Opened, Ordered, Paid, Paid For, Performed, Permitted, Provided, Received, Recorded, Reduced, Re-Evaluated, Rejected, Removed, Required, Reserved, Re-Tested, Returned, Sampled, Satisfactory, Scheduled, Specified, Stopped, Submitted, Sufficient, Suitable, Supplied, Suspended, Taken, Tested, Unacceptable, Unsatisfactory, Unsuitable Or Used.

Inspector – The engineer's authorized representative assigned to inspect contract performance, methods and materials related to the work both on and off the site of the project.

Materials Questionnaire – The specified forms on which the contractor shall notify the engineer of the sources of materials he expects to use.

Project – The specific section of highway or other public improvement together with all appurtenances and construction to be performed thereon under the contract. The necessary work of providing the various materials and services in combination or individual and performing

the work in order to obtain the product required under the terms of this contract. The project may include work by others under other contracts.

3.0 COMMODITY DESCRIPTION/SCOPE OF WORK

3.1 GENERAL

3.1.1 AUTHORITY OF THE ENGINEER

Standard DOT Specification 105.01

The engineer will decide all questions, which may arise as to the quality and acceptability of materials, furnished.

All materials furnished shall be in conformity with the material requirements, including tolerances, if any, shown in the contract documents.

In the event the engineer finds the materials or the finished product in which the materials are used, or the work performed are not in conformity with the specifications, and have resulted in any inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected at no cost to the state.

3.1.2 DUTIES OF THE INSPECTOR

Standard DOT Specification 105.13

Inspectors employed by the department will be authorized by the engineer to inspect all work done and materials furnished. Such inspection may extend to all or any part of the work and to the preparation, or manufacture of the materials to be used.

3.1.3 INSPECTION OF WORK

Standard DOT Specification 105.14

All materials and each part or detail of the work shall be subject to inspection by the engineer. The engineer shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the contractor as is required to make a complete and detailed inspection. When the engineer is in or about the premises above referred to in the course of his employment, he is deemed conclusively to be an invitee of the contractor. If the contractor is not the owner of the place where preparation or manufacture is in progress, the owner thereof shall be deemed to be the agent of the contractor with respect to the obligation assumed hereunder. The contractor or his agent shall be responsible for the payment of claims for injuries to the engineer due to negligence on the part of the said contractor or his agent.

The engineer may order any materials delivered without his supervision or inspection to be removed and replaced at the contractor's expense. Also, should the materials delivered prove unacceptable, the removal and replacement of such materials will beat the contractor's expense.

The contractor is responsible for carrying out the provisions of the contract at all times and for control of the quality of the materials regardless of whether an authorized inspector is present or not. This obligation to provide the required materials in accordance with the contract documents is not relieved by the observations of the engineer in the administration of the contract, nor by inspections, tests, or approvals by others. Materials not meeting the contract requirements shall be made good and unsuitable materials may be rejected,

notwithstanding that such materials had been previously inspected and approved by the department or that payment therefore has been included in a monthly invoice.

3.1.4 LOAD RESTRICTIONS

Standard DOT Specification 105.17

The department will monitor the contractor's observance of legal load limits in accordance with the following:

For trucks with weigh tickets, a certified weigh ticket shall be furnished with each load.

For concrete delivery trucks, a list of trucks including the certified tare weight and the maximum cubic yard load for each shall be furnished prior to the start of work and shall be updated at the start of each construction season thereafter.

Any truck found to be in excess of the legal load limit may have that load of material rejected and will not be accepted for delivery.

3.2 CONTROL OF MATERIALS

Standard DOT Specification 106

3.2.1 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS

Standard DOT Specification 106.01

All materials shall be furnished by the contractor shall unless otherwise specifically prescribed in the contract documents. The materials shall conform to the requirements of the contract documents and shall be from approved sources. Only materials, which have been approved by the engineer, shall be used.

Promptly after the execution of the contract, the engineer shall be notified on materials questionnaire forms furnished by the department, of the sources of materials expected to be used during the 6-month period thereafter. Such notice shall be received by the engineer no later than 10 days prior to the shipment of materials from a previously approved source and no later than 30 days prior to the shipment of materials from a source not previously approved, except that, with the engineer's consent, shipments of materials from approved stocks may be permitted to be made 3 days after notice to the engineer.

Within 12 hours after receiving a shipment of materials, the engineer shall be notified of the quantity and location thereof.

In any item, the sources, brands or types of materials shall not be changed without the consent of the engineer. Request for such changes shall be filed with the engineer the number of days in advance of such changes as required above.

The foregoing provisions shall apply with regard to requests by subcontractors for the sources of the materials they propose to use, such requests to be submitted through the contractor.

The notice provisions of this subsection shall not be so construed as to relieve the contractor of his obligation to ensure that all materials required shall be available at the time and place as set forth in subsection 108.10 is met. If any doubt exists as to the timely availability of a material, the engineer shall be immediately informed, in writing, of the potential problem and of the action to be taken to guaranty the availability of such materials.

Stockpiles of materials whose availability is or may be problematical shall be established at an early date.

3.2.2 MATERIALS, INSPECTIONS, TESTS AND SAMPLES

Standard DOT Specification 106.03

After notification of bid award and prior to shipment of the material, the contractor shall contact the Chief, Bureau of Materials, **PO Box 607 Trenton, New Jersey 08625,** to arrange for inspection and testing of their batching plant, mixing equipment and sources of materials. All of these items must be approved within fifteen (15) days following the date of award of contract. Failure to secure approval within the specified time shall be due cause for the department to request cancellation of the contract and make an award to the next low bidder.

All materials being used are subject to inspection, testing or rejection at any time prior to acceptance. Samples will be taken by a representative of the department. Results of tests made with the department laboratory's apparatus and conforming to the requirements specified in the prescribed methods of tests are official and copies of test results will be furnished upon request.

Testing will be performed in accordance with AASHTO or ASTM methods of tests or in accordance with specified departmental test methods as described in section 990.

Except as otherwise provided, all materials will be tested at the expense of the state.

The required number of samples and rate of sampling or certifications of compliance for the various materials are as specified in the respective methods of test or in the subsections applicable to that particular material or pay item.

The state reserves the right to reject any material not complying with the requirements set forth in this specification. If the material fails to comply with the requirements, it shall be removed and replaced by the contractor, at no cost to the state, with material complying with the requirements set forth herein.

3.2.3 CERTIFICATION OF COMPLIANCE

Standard DOT Specification 106.04

Materials specified will be accepted on the basis of certificates of compliance stating that such materials fully comply with requirements of the contract. The form of certificates of compliance shall be approved by the engineer.

Materials used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with the contract requirements, will be subject to rejection whether in place or not. The contractor shall require the manufacturer or supplier to furnish four copies of certificates of compliance with each delivery of materials that are acceptable by certification. One copy shall be furnished to the engineer, two copies shall be furnished to the department laboratory and one copy shall be retained by the contractor.

Certificates of compliance are to contain the following information:

- Project to which the material is consigned.
- Name of the contractor to which the material is supplied.
- Kind of material supplied.
- Quantity of material represented by the certificate.
- Means of identifying the consignment, such as label marking, seal number, etc.

- Date and method of shipment.
- Statement that the material has been tested and found in conformity with the pertinent contract requirements stated in the certificate. Signature of a person having legal authority to bind the supplier.
- Signature attested to by a notary public or other properly
- Authorized person.

Payments will not be made for materials specified to be accepted on the basis of certificates of compliance until the engineer has received the required certificate of compliance.

3.2.4 PLANT INSPECTION

Standard DOT Specification 106.05

The engineer may undertake the inspection of materials at the source. Manufacturing plants may be inspected periodically for compliance with specified manufacturing methods. Material samples may be obtained for laboratory testing for compliance with materials quality requirements. This may be the basis for acceptance of manufactured lots as to quality.

3.3 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Standard DOT Specification 107

3.3.1 SANITARY, HEALTH, AND SAFETY PROVISIONS.

Standard DOT Specification 105.01

The contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees and for state field offices and materials field laboratory as may be necessary to comply with the requirements of the state and local health departments or of other bodies or tribunals having jurisdiction.

The contractor shall observe all rules and regulations of the federal, state and local health officials. Attention is directed to Federal, State and local laws, rules and regulations concerning construction safety and health standards. The contractor shall not require any worker to work in surroundings or under conditions, which are unsanitary, hazardous or dangerous to his health or safety.

The contractor shall admit, without delay and without the presentation of an inspection warrant, any inspector of the occupational safety and health administration or other legally responsible agency involved in safety and health administration upon presentation of proper credentials.

3.3.2 PUBLIC CONVENIENCE AND SAFETY

Standard DOT Specification 107.11

Precaution shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, OSHA regulations, building and construction codes, and the rules and regulations of the State Department of Labor and Industry, shall be observed.

3.4 PROSECUTION AND PROGRESS

Standard DOT Specification 108

3.4.1 TIME OF COMPLETION

Standard DOT Specification 108.10

The contract duration as specified in the proposal shall be the period that orders may be submitted for the receipt of material. The contractor will be required to make delivery of all ordered materials after expiration of the contract provided an order for the item(s) was submitted prior to the expiration date.

3.5 MEASUREMENT AND PAYMENT

3.5.1 MEASUREMENT OF QUANTITIES

Standard DOT Specification 109.01

Measurements will be made in accordance with United States standard measure.

The method of measurement and computations to be used in determination of quantities of work performed under the contract are those methods generally recognized as conforming to good engineering practice.

All materials, which are measured or proportioned by weight, shall be weighed on accurate, approved scales by competent, qualified personnel at locations designated by the engineer.

Platform truck scales shall be direct-reading, cabinet dial type or an electronic load cell type with a visual indicating device capable of automatically printing both gross and tare weights and time and date on the delivery ticket. The time and date may be printed automatically by a time clock each time the truck passes over the scale. The scales shall be equipped with a motion detection device or a time delay relay, which prevents printing the weight on the delivery ticket until the scale is fully at rest. Tare beams must be removed or permanently locked in place. The scale shall have a manufacturer's rating equal to or greater than the maximum gross load being weighed.

Scales or slave systems shall be so located that they are plainly visible to the plant operator at all times.

The graduation of scales used in weighing amounts of aggregates less than 5,000 pounds shall not be greater than 5 pounds; for amounts of aggregates from 5,000 to 10,000 pounds, not greater than 10 pounds; and for amounts of aggregates in excess of 10,000 pounds, not greater than 0.1 percent of the capacity of the scales.

3.5.2 SCOPE OF PAYMENT

Standard DOT Specification 109.02

The contractor shall receive and accept the compensation provided for in the contract as full payment for furnishing all labor, materials, tools, batching, trucking expense, mixing, proper UNLOADING where directed, equipment and incidentals necessary to provide complete and acceptable deliveries of various types and classes of Transit Mix Portland cement concrete; also, except where specifically provided elsewhere in the contract documents for all risk, loss, damage, or expense of whatever character arising out of the nature of preparing and transporting of the Portland cement concrete mixtures or the prosecution thereof, or for the action of the elements, or for any unforeseen difficulties which may be encountered during the prosecution of the required work under this contract.

3.6 CONCRETE SURFACE COURSE

Standard DOT Specification 405

3.6.1 DESCRIPTION

Standard DOT Specification 405.01

This work shall consist of the proper batching, mixing and transporting to a job site a specified type and class of portland cement concrete.

3.6.2 MATERIALS
Standard DOT Specification 405.02

Portland cement concrete shall conform to Section 914. Other materials shall conform to the following subsections:

- Sand 901.09
- Curing Materials 905.03
- Preformed expansion Joint Sealer 908.01
- Joint Sealer 908.02
- Reinforcement Steel For Concrete Base & Concrete Surface Courses 915.03

Patching materials for filling core holes in the Portland cement concrete pavement shall be fresh concrete conforming to section 914 and of the same strength as the existing pavement or a commercial patch mix approved by the Engineer that will provide the same strength as the existing pavement.

Ties Shall Conform To ASTM A 996, Grade 40

Epoxy grout shall be a two-component, solvent free, 100 percent solids epoxy resin compound that cures under normal temperatures, is non-shrinking and is of high chemical resistance. The epoxy grout system shall consist of a high modulus, gel epoxy resin system meeting the requirements of ASTM c 881, Type 1, Grade 3, Classes B and C, and meeting the performance requirements tabulated below:

3.7 PERFORMANCE REQUIREMENTS

Property	***ASTM Test Procedure***	***Required Results***
Compressive Strength	*D 695*	*10,000 PSI MIN.*
Tensile Strength	*D 638*	*3,000 PSI MIN.*
Flexural Strength	*D 790*	*3,800 PSI MIN.*
Shear Strength	*D 732*	*2,800 PSI MIN.*
Water Absorption	*D 570*	*1.0% MAXIMUM*
Bond Strength	*C 882*	*PSI (SEE NOTE)*
Effective Shrinkage	*C 883*	*PASS*

Note: Shall meet specifications of ASTM c 881.

The epoxy grout materials will require the submission of certified testing results in compliance with all of the above requirements and manufacturer's specifications for materials and installation procedures before acceptance for use.

3.8 EQUIPMENT/FACILITIES
Standard DOT Specification 405.03

3.8.1 BATCHING PLANT

Portland cement concrete shall be supplied by a plant, which meets all requirements of the specifications and has the facilities necessary to ascertain and control the quality of the concrete.

The plant shall include bins, weighing hoppers and scales for the fine aggregate and for each size of coarse aggregate. If cement is used in bulk, a bin, hopper and separate scale for cement shall be included. The weighing hoppers shall be sealed and vented to preclude dusting during operation. The batch plant shall be equipped with a non-resetable batch counter, which indicates the number of batches proportioned.

Bins and Hoppers: Bins with separate compartments for fine aggregate and for each size of coarse aggregate shall be provided at the batching plant.

Scales: The scales for weighing aggregates and cement shall be of either the beam type or the springless dial type or the electronic load cell type with a read-out. They shall be accurate within 0.5 percent for cement and 1 percent for aggregate throughout the range of use. When beam type scales are used, a telltale dial shall be provided for indicating to the operator the required load in the weighing beams and for indicating critical position clearly. Poises shall be designed to be locked in any position and to prevent unauthorized change. The weigh beam and telltale device shall be in full view of the operator who shall have convenient access to all controls while charging the hopper.

Plant scales shall be accurate within the tolerances permitted by the New Jersey Department of Law and Public Safety, Office of Weights and Measures, and shall conform to the requirements of the National Bureau of Standards Handbook 44. Scales shall be tested semiannually and certified by the Office of Weights and Measures, New Jersey Department of Law and Public Safety, or a municipal Weights and Measures agency.

There shall be not less than ten 50-pound weights at hand for frequent testing of all scales. A convenient means of temporarily attaching the weights to the weigh hopper shall be provided.

Water Measuring Equipment: Water may be measured either by volume or by weight. The accuracy of measuring the water shall be within a range of error not over 1 percent. Unless the water is to be weighed, the water measuring equipment shall include an auxiliary tank from which the measuring tank shall be filled. The measuring tank shall be equipped with outside taps and valves or other means to permit accurate calibration and to provide for readily and accurately determining the amount of water in the tank. The volume of the auxiliary tank shall be at least equal to that of the measuring tank.

Admixture Dispenser: An automatic displacement dispenser with plant operation shall be used for adding each admixture.

Automatic Batching System: Batching plants equipped to proportion aggregates and bulk cement by means of automatic weighting and recordation devices shall consist of a combination of automatic batching controls meeting the following requirements:

A. All batching equipment in the system for batching by weight must be actuated by a single starting mechanism. A separate starting mechanism is permitted for volumetric batching of water and/or admixtures not batched at the time of initial weighing.

B. Each automatic batcher must return to zero tolerance and each volumetric device must reset to start or signal empty before it may be charged.

C. The discharge of any ingredient in the system shall not start unless all batching controls have been cleared of the previous batch with scale returning to zero tolerance and volumetric

devices resetting to start or signaling empty. The discharge of any weighed ingredient shall not start until all weighed ingredients have been batched.

D. For cumulative batchers, interlocked sequential controls shall be provided.

E. The automatic batching controls shall start the weighing operation of each material and stop automatically when the designated weight of each material has been reached, interlocked in such a way that:

1. The charging device cannot be actuated until the scale has returned to zero balance within plus or minus 0.3 percent of the scale capacity.

2. The discharge device cannot be actuated until the required material is within the applicable tolerances.

3. The discharge device cannot be actuated if the charging device or the discharge device is open.

Recordation: Each automatic batching plant shall be equipped with an accurate recorder or recorders, which provide a permanent and continuous record of batching operations. A maximum of two recording units in lockable enclosures shall be provided with each plant. A batching record shall be removed as directed and it shall become the property of the department. Each recorder shall produce a digital record on tickets and shall provide the following information:

A. The quantity or batched weights of each aggregate, and of Portland cement, water and admixture.
B. The zero balance condition of each scale after batchers have been discharged, or prior to the start of the batching operation.
C. A means of identifying each admixture batched.
D. The time, date and batch number of each batch delivered.
E. Mix formula or concrete classification identification.

Plant Laboratory: A plant laboratory shall be provided and maintained at each plant site for use of the engineer for sampling and testing and for use of the producer for quality control functions. The plant laboratory shall also include an office area for use by the engineer.

A quality control technician shall be available during production. The quality control technician must be certified by ACI as a concrete field technician Grade 1. Control testing shall include moisture content and gradation of the aggregate, and slump and air tests of the plastic concrete.

The plant laboratory shall be located to provide an unobstructed view of the trucks as they are loaded.

The plant laboratory shall have a floor area of not less than 225 square feet, a ceiling height of not less than 7 1/2 feet, adequate ventilation and artificial lighting, and shall have sanitary facilities in accordance with subsection 107.10.

The plant laboratory shall be weather tight, heated and air-conditioned to maintain temperatures for testing purposes between 68 and 80 degrees f.

The plant laboratory shall have the following:

A.	WORK BENCHES, TOTALING NOT LESS THAN 2 BY 15 FEET, AND TWO STOOLS.

B.	DESK, TABLE AND AT LEAST TWO CHAIRS.
C.	FOUR-DRAWER, LEGAL-SIZE FILE CABINET WITH LOCK AND TWO KEYS.
D.	SHELVES AND SUPPLY CABINETS.
E.	ELECTRONIC CALCULATOR WITH PRINTOUT TAPE.
F.	WATER COOLER SUPPLIED WITH BOTTLED WATER.
G.	TELEPHONE, DIRECT PRIVATE LINE WITH NO MONITORING OR RECORDING DEVICES ATTACHED.
H.	CLASS ABC FIRE EXTINGUISHER, OR A CLASS A AND A CLASS B FIRE EXTINGUISHER, MEETING FIRE UNDERWRITERS' APPROVAL.
I.	FIRST AID BOX, CONTAINING THE FOLLOWING LIST OF SUPPLIES:

QUANTITY	**SIZE**	**ITEM**
32	3/4 BY 3 IN	BRAND SHEER BANDAGES
20	1 BY 3 IN	BRAND FABRIC BANDAGES
4	MEDIUM	NON-STICK PADS
2	2 IN	SOF-GAUZE BANDAGES
2		OVAL EYE PADS
1	52 IN	TRIANGLE BANDAGE
1	1/2 BY 180 IN	HYPO-ALLERGENIC FIRST AID TAPE
10		ANTISEPTIC WIPES
1	1.2 OZ	BURN CREAM, FOIL PACK
1	8 OZ	FIRST AID CREAM
1	100 CAPLETS	TYLENOL EXTRA STRENGTH CAPLETS
1		SCISSORS
1		TWEEZERS
1		FIRST AID GUIDE
1	1/2 OZ	OPHTHALMIC IRRIGATION SOLUTION
1		CONTENTS CARDS
10		DISPOSABLE GLOVES
10	0.1 OZ	AMMONIA INHALANTS

J.	ELECTRIC OUTLETS SUFFICIENT IN NUMBER AND CAPACITY FOR OPERATING THE REQUIRED EQUIPMENT AND FOR DRYING SAMPLES.
K.	DISPLAY BOARDS, APPROXIMATELY 4 BY 4 FEET, FOR MOUNTING CONTROL CHARTS.
L.	MECHANICAL SHAKERS, SCREENS AND SIEVES CONFORMING TO AASHTO M 92. THE MECHANICAL SHAKER SHALL BE INSTALLED AND BOLTED DOWN IN A SOUND DAMPENING AND DUSTPROOF ENCLOSURE.
M.	A MINIMUM 12 INCH DIAMETER EXHAUST FAN SHALL BE PROVIDED IN PROXIMITY TO THE MECHANICAL SHAKER.
N.	SINK WITH HOT AND COLD RUNNING WATER HAVING ADEQUATE PRESSURE, DRAINBOARD AND DRAIN CAPABLE OF HANDLING ELUTRIABLE MATERIAL
O.	STAND TO HOLD SIEVES USED IN WASHING ELUTRIABLE MATERIAL.
P.	TWO-ELEMENT HOT PLATE OR ELECTRIC RANGE HAVING DIAL-TYPE THERMOSTATIC CONTROLS TO ADJUST THE HEAT FOR DRYING AGGREGATES.
Q.	PLATFORM SCALE OF 200 POUNDS MINIMUM CAPACITY WITH A BEAM OR DIAL WITH SIGNIFICANT GRADUATIONS OF 1/10 POUND OR LESS.

R.	BALANCE OR BALANCES CONFORMING TO AASHTO T 27.
S.	SAMPLE SPLITTER OR SPLITTERS CAPABLE OF SPLITTING AGGREGATES FROM 2 1/2 INCHES GRADATION SIZE THROUGH CONCRETE SAND SIZE.
T.	CALIBRATED CONTAINER FOR UNIT WEIGHT OF AGGREGATES, CONFORMING TO AASHTO T 19/T19M.
U.	UNIT WEIGHT CONTAINER, 1/2 CUBIC FEET, FOR CONCRETE, IN ACCORDANCE WITH AASHTO T 121.
V.	SLUMP CONE AND ROD.
W.	PRESSURE AIR METER (AND VOLUMETRIC AIR METER WHEN REQUIRED FOR LIGHTWEIGHT CONCRETE.)
X.	EQUIPMENT FOR DETERMINING SPECIFIC GRAVITY OF BOTH FINE AND COARSE AGGREGATES.
Y.	MISCELLANEOUS ITEMS INCLUDING RUBBER HAMMER, MASON'S TROWELS, POINTED SHOVEL, SMALL AND LARGE SUGAR SCOOPS, HEAVY GALVANIZED PAIL APPROXIMATE 14 QUART CAPACITY, AGGREGATE SAMPLE PANS, BRUSHES, FLASHLIGHT, GLASSWARE, STEEL STRAIGHT-EDGE APPROXIMATE 18 BY 2 INCHES, AND SUCH EXPENDABLE SUPPLIES AS ARE NECESSARY FOR THE TESTS TO BE MADE.

All weighing devices utilized for the testing of samples shall be inspected semi annually and sealed by the office of weights and measures, New Jersey Department of Law and Public Safety or a municipal Weights and Measures Agency.

Accuracy and certification requirements for all weighing devices for the testing of samples shall be as specified for plant scales in subheading 4 of the fourth and fifth paragraph of subpart B in Section 404.04

Safety: Adequate and safe stairways shall be provided at points where accessibility to plant operations is required. Overhead protection shall be provided at locations where deemed necessary. All gears, pulleys, chains, sprockets and other hazardous moving parts shall be guarded and protected.

The plant shall conform to all state and local safety requirements. When plant production occurs during nighttime hours, additional lighting shall be provided throughout the stockpile, plant, and laboratory areas to ensure a clear view of the operations.

3.9 HANDLING, MEASURING AND BATCHING MATERIALS

Standard DOT Specification 405.07

The batch plant site, layout, equipment and provisions for transporting material shall be such as to assure a continuous supply of concrete to the work.

Stockpiles shall be in accordance with subsection 901.02.

The fine aggregate and each size of coarse aggregate shall be weighed separately into hoppers in the amounts in the job mix design.

Cement shall be measured by weight. Each bag of cement shall weigh 94 pounds and 94 pounds of bulk cement shall be considered one bag. Batches involving fractional bags are not allowed except when bulk cement is used. When bulk cement is used, separate scales and hoppers shall be used for the cement with a device to indicate the complete discharge of the batch of cement into the batch box or container. The weighing hopper and scale shall be of

adequate size, completely encased, with provisions for locking. The hopper discharge mechanism shall be interlocked against opening until the full batch is in the hopper and the scale balanced, against opening while the hopper is being filled, against closing until the hopper is entirely discharged and the scale back in balance, and against opening if the batch in the hopper is either overweight or underweight by more than 1 percent of the amount specified. The weighing hopper discharge gate shall operate in such a manner so as not to affect the scale balance. The discharge chute, boot or other such device shall be suspended from the encasement and not from the weighing hopper and shall be so constructed that cement does not lodge therein and there is no loss of cement by air currents or otherwise. There shall be means to assure the presence in each batch of the entire cement content required.

Where bulk cement is to be used, there shall be provided separate storage for tested and approved cement, which shall be held in such storage for the particular project or projects for which it was consigned. Different brands of cement, or the same brand of cement from different mills, shall not be mixed nor shall they be used alternately unless approved.

For individual batches, the following tolerances shall apply based on the required scale reading:

Cement: plus or minus 1 percent of the required weight of material being weighed or plus or minus 0.3 percent of scale capacity, whichever is greater. Aggregates 1 1/2 inches or smaller: plus or minus 2 percent of the required weight of material being weighed or plus or minus 0.3 percent of the scale capacity, whichever is greater. Aggregates larger than 1 1/2 inches: plus or minus 3 percent of the required weight of material being weighed or plus or minus 0.3 percent of scale capacity, whichever is greater.

The water measuring system shall be capable of incorporating in the batch, the predetermined quantity of water, to an accuracy of plus or minus 1 percent. The measuring device shall automatically register and stop the flow of the water when the designated quantity has been delivered into the mixing drum.

Plants shall be equipped with a separate dispensing system with a visual sight gauge for each admixture incorporated into the concrete.

Admixtures shall be added to the mixing water or sand. Each system shall be capable of dispensing the total amount required to within plus or minus 3.0 percent or 1 ounce, whichever is greater. Convenient means shall be provided to calibrate each system. Such admixture devices shall also be provided with each truck mixer approved for dispensing admixtures at the project or placement site.

Fly ash shall be stored at the batching plant in a separate storage facility. The scales and batching tolerances shall be equivalent to those specified for Portland cement. When fly ash is weighed cumulatively with the cement, the fly ash shall be last in the batching sequence. A split silo containing fly ash and cement will not be permitted.

A representative of the fly ash producer shall be available for technical assistance.

3.10 MIXING CONCRETE

Standard DOT Specification 405.08

Concrete may be mixed at the job site in transit-mix trucks

Mixing time shall be measured from the time all materials are in the drum.

The following mixing methods are permissible:
(3) Mixing on the project in truck mixers,
(4) Transit mixing, and
(1) Mixing on the project in continuous mixing type truck mixers.

The following shall apply to mixing methods (1) and (3):

Mixing on the Project in Truck Mixers - Mixing on the project in truck mixers shall not be used for concrete surface or structural concrete items.

Truck-mixed concrete shall be material proportioned at a batching plant and mixed in a revolving-drum truck mixer at the point of delivery following the addition of the proper amount of mixing water.

Each truck mixer shall have attached a metal plate or plates on which is plainly marked the manufacturer's capacity rating in terms of the gross drum volume, the capacity of the drum in terms of the volume of mixed concrete, and the manufacturer's designated drum speed of rotation for both mixing and agitation. Truck mixers shall be equipped with electrically actuated counters by which the number of revolutions of the drum may be readily verified.

The counter unit shall be positioned on the truck so as to be plainly visible if the driver's door is open.

The mixer shall be capable of producing a thoroughly mixed and uniform mass and discharging the concrete with satisfactory uniformity within the ranges of slump and air entrainment specified for the class and type of concrete being furnished.

Each truck mixer shall be equipped to carry sufficient water to mix a full capacity load of concrete within the required range of slump, and shall also carry wash water as necessary.

The mixing water tank, pump and all piping shall be kept clean and free of leaks. An in-line multi-jet or positive displacement meter shall be provided which indicates the amount of mixing water added to the batch. Either meter shall be provided, as a minimum, on one truck mixer for each concrete pay adjustment item per day. The device shall have an accuracy of plus or minus 1 1/2 percent, by volume, of the indicated amount dispensed. The meter shall have a non-reset register with a capacity of 100,000 gallons. A remote readily visible, with a 3 or 4 digit counter that can be reset shall be mounted in the truck cab. The counter shall measure water added to the nearest liter and shall be provided with a unique mechanical or electrical device for resetting. This device shall remain in the possession of the engineer during production. The distribution system shall be equipped with three-way valves and bypasses or other suitable means for calibration of the water-measuring device. The water-measuring device shall be calibrated prior to use and recalibrated whenever any repairs or modifications are made that may affect the calibration. Documentation showing the date and results of the calibration of the water-measuring device shall be carried on each truck mixer and copies shall be furnished upon request. On the mixing water tank, there shall be stenciled the word calibrated and the date of the last calibration.

The mixing water-measuring device shall be located so as to be plainly visible to the truck operator when he is operating the mixing water and the drum controls and to the engineer while he is standing on the ground. All measuring indicators shall be kept clean and in good condition.

Truck mixers shall be subject to inspection by the Engineer, including the mechanical condition of the truck mixer, verifying the mixing and agitation rates, the accuracy of the water-measuring device, the size of discharge opening and chutes, and the general condition and wear of the blades. The truck mixer will not be approved for use if any part or section of the pickup and throw-over blades is broken, missing, or excessively worn. Truck mixers shall be examined daily for cleanliness of the drum and blades, leaks in the mixing water system, and the condition of the water-measuring device and the revolution counter.

The concrete supplier shall maintain, at a convenient location, a copy of the manufacturer's design for each size and type of truck showing dimensions and arrangements of the blades, the dimensions of the drum, the gross volume of the drum, the recommended rates of rotation for all types of operations, and any other pertinent information.

Prior to the time mixing water is added at the job site, no water or other fluids shall be permitted in the drum of the truck mixer except concrete admixtures which are measured and dispersed with the dry ingredients. Truck mixers may be required to pull under the batch plant with the drums revolving in discharge rotation as an indication that the drum is empty.

The truck mixer, when loaded for mixing concrete, shall not contain more than 63 percent of the gross drum volume.

The maximum elapsed time from the loading of the Portland cement into the drum to the discharge of all the concrete from the mixer shall be 90 minutes except that, under conditions contributing to quick stiffening of the concrete or when the temperature of the concrete is 85 degrees f or above, such time limit shall be changed to 60 minutes. However, if retardants are used, the time limit may be increased to a maximum of 90 minutes, if approved. Under very severe conditions, further reductions of the time limits or the size of the loads may be required.

Immediately following the addition of all the mixing water, the mixing revolution counter shall be reset to zero with the drum revolving at the rate of speed designated by the manufacturer for mixing.

Each batch shall be mixed not less than 50 and not more than 100 revolutions at the rate of rotation designated as mixing speed. The concrete shall be mixed into a plastic, uniform mass complying with the specified range of slump and air entrainment. The number of revolutions within the limits specified above and the control of the consistency shall be as directed.

If the concrete cannot be entirely discharged within 10 minutes after the mixing has been completed, the concrete remaining in the drum shall be kept plastic and workable by revolving the truck drum, at the manufacturer's designated speed for agitation, for a period of 2 minutes in each 10 minutes. In no case shall the total revolutions exceed 200.

Prior to the completion of 100 mixing revolutions, the operator may add water or air entraining agent or both incrementally in order to produce concrete within the required slump or air content range in conformance with subsection 914.02.

During discharge, drum gates and cover shall be fully opened and the rate of discharge shall be governed by drum speed.

Discharge chutes shall be ample in size, without struts, and capable of handling the concrete within the specified slump range. Use of extension chutes shall be restricted as much as practicable.

Wash water shall be provided in addition to the water required for mixing. If the wash water runs through the measuring device for the mixing water, it shall not be used during any of the periods when mixing water is being measured into the drum. Under no circumstances shall the wash down hose be used to temper the concrete or to aid the flow of concrete in the chute except for pre-wetting the chute. Any concrete that has been wetted with wash water will be discarded.

Immediately after the discharge of each load, the drum shall be washed out and the wash water and any residue from the previous batch shall be completely discharged before reloading the drum at the batch plant.

Transit Mixing. Transit mix concrete shall be materials, including water, proportioned and introduced into a truck mixer from a one-stop or two-stop batching plant and mixed while the truck is at the plant and mixed while the truck is at the plant or a combination of mixing at the plant and on the job site.

A one-stop batching plant shall be a plant where all dry ingredients for each batch of concrete are loaded into the mixer truck simultaneously while water is being introduced.

A two-stop batching plant shall be a plant where the ingredients for each batch of concrete are loaded into the mixer truck at two separate locations.

Each transit mixer shall comply with the requirements for truck mixers except that the mixing water tank and measuring device shall be used only for providing tempering water if necessary.

In addition, all truck mixers used for transit mix concrete shall be equipped with an electrically operated counter unit which shall be nonresettable except by use of a 110-volt device utilizing a nonstandard plug located at the batching plant. The counter unit shall contain two counters. one counter shall record only those revolutions at speeds recommended by the manufacturer of the truck mixer as mixing speed and shall record the total of all such mixing revolutions from the time the truck is loaded. the other counter shall record revolutions of the drum at all speeds and shall record the total revolutions from the time the truck is loaded. the unit shall include an indicator on the front panel which shows if the instrument has been turned off or tampered with in any manner after being reset at the time of loading. The counter unit and the resetting device shall conform to the national electric code.

The counter unit shall be positioned on the truck so as to be plainly visible if the driver's door is open.

in lieu of the time clock, the counter unit may contain a third counter, an electrically-operated timer, which shall be not allow resetting except by use of the 110-volt device.

Mixing and delivery for transit mix concrete shall comply with the requirements for truck mix concrete accept as follows:

A. All ingredients including water shall be introduced into the transit mixer at the batch plant.

B. At a one-stop batching plant, at least one third of the mixing water shall be introduced into the mixer prior to the dry ingredients and sufficient mix water to wash down the chute shall be introduced after all the dry ingredients have been added.

C. At a two-stop batching plant, the loading sequence shall be: one half to three quarters of the mixing water, aggregates, cement and remaining water.

D. As an alternative, at either a one-stop or two-stop batching plant, when the mixing water is less than 100 degrees f, slurry mixing can be used. When this method is used, all mixing water is added first, followed by the cement, and mixed at mixing speed for one minute. The remaining ingredients shall then be added.

E. At either a one-stop or two-stop batching plant, when the temperature of the mixing water exceeds 38 degrees c, the loading sequence shall be the mixing water, then the aggregates and then the cement.

F. Sufficient mix water to wash down the chute shall be introduced after all the dry ingredients have been added. However, not less than 80 percent of the mixing water, as established by the mix design, shall be added at the plant.

Mixing shall begin immediately following the complete charging of the drum and continue for not less than 50 nor more than 100 revolutions of the drum at the mixing speed recommended by the manufacturer of the truck mixer. Upon completion of at least the minimum number of mixing revolutions at the plant, the speed of the drum shall be reduced to the agitation speed recommended by the manufacturer. Concrete delivered to the job with less than 100 mixing revolutions may be mixed to not more than 100 revolutions at mixing speed.

Prior to acceptance testing, mixing water or air entraining agent or both may be added incrementally, at the project site, in order to achieve the proper slump or air content range in conformance with subsection 914.02.

If the concrete cannot be entirely discharged within 10 minutes after the mixing has been completed, the concrete remaining in the drum shall be kept plastic and workable by revolving the truck drum at the manufacturer's designated speed for agitation for a period of 2 minutes in each 10 minutes.

The maximum elapsed time from loading at the plant to the discharge of all the concrete from the mixer shall be 90 minutes except that under conditions contributing to quick stiffening of the concrete or when the temperature of the concrete is 85 degrees f or above, such time limit shall be changed to 60 minutes. However, if the use of retarders is approved, the time limit may be increased to a maximum of 75 minutes. Under very severe conditions, further reduction of the time limits or in the size of the loads may be required.

Transit mix concrete will be rejected for any of the following reasons:

A. If the concrete is not discharged within the specified time limit after loading all ingredients into the drum

B. If the indicator on the counter shows that the instrument has been turned off or tampered with

C. If the nonresettable total revolution counter shows more than 300 revolutions

D. If the mixing revolution counter shows more than 120 revolutions

E. If water has been added while the truck mixer is en route to the project.

Two-way telephone or radio communication between the site of the placement of concrete and the batching plant shall be provided.

Mixing on the Project in Continuous-Mixing-Type-Truck-Mixers - Mixing on the project in continuous-mixing-type truck mixers shall be used for headwalls, utility encasement, manhole and inlet foundations and top slabs, gutters, curb, headers, barrier curbs and bases, sidewalks, islands, driveways, fence post footings, sign foundations, foundations for electrical items, guide rail end treatment footings, junction boxes and other miscellaneous items as approved.

If concrete additives are to be used in the mix, means shall be provided for storing the additives on the truck and incorporating them into the mix. A way to check the rate of flow of the additive into the mix and a meter to register the total volume of additive incorporated into the mix during each mixing operation shall be included. Trucks not having functional meters will not be permitted on the project site.

The concrete shall be mixed in a mixing unit, which is part of the truck carrying the dry ingredients. The mixing unit shall be an auger type incorporated in the truck's discharge chute or other approved mixing mechanism. The mixer shall produce concrete of uniform consistency and shall discharge the mix without segregation.

The truck mixer shall have permanently attached thereto, in a prominent place, a metal plate or plates on which are plainly marked the gross volume of the unit in terms of mixed concrete, operating speed, and the cement constant of the machine in terms of an indicator revolution count required to deliver 94 pounds of cement, all as rated by the manufacturer.

The truck mixer shall be equipped with a cement bin of sufficient capacity to store and supply the quantity of dry cement required to produce the maximum volume concrete capacity of the truck mixer as rated by the manufacturer. The cement bin shall be free of moisture and contamination at all times.

The truck mixer shall be equipped with aggregate bins of sufficient capacity to store separately the quantities of fine and coarse aggregates required to produce the maximum volume concrete capacity of the truck mixer as rated by the manufacturer. Means shall be provided to prevent contamination or intermixing of the fine and coarse aggregates during loading and transporting. Aggregate bins shall be covered when there is a possibility of moisture entering the bins.

The truck mixer shall be equipped with a means of readily determining the level of aggregates in the aggregate bins without the need for climbing up on the truck. The aggregates shall be maintained at the proper level to cause the correct volume to enter the mix.

The aggregate bins shall be equipped with vibrators or other means of maintaining a smooth, even, and continuous flow of aggregate from the bins.

The truck mixer shall be equipped with water tanks of sufficient capacity to store the quantity of water required to produce the maximum volume concrete capacity of the truck mixer as rated by the manufacturer and at the slump specified for each concrete item.

If concrete additives are to be used in the mix, means shall be provided for storing the additives on the truck and incorporating them in the mix including a way to check the rate of flow of the additive into the mix.

The truck mixer shall include a feeder unit mounted under the compartment bins to deliver the ingredients to the mixing unit.

Each bin on the truck shall have an accurately controlled individual gate or feeding mechanism to form an orifice for volumetrically measuring the material drawn from each bin compartment. The cement bin feeding mechanism shall be set to discharge continuously and at a uniform rate, a given volumetric weight equivalent of cement during the concrete mixing operation. The gates of the aggregate bins shall be calibrated at the various openings to discharge the volumetric weight equivalent of aggregates required for various concrete mixes. The mixer truck shall be equipped with a material flow indicator attached to the metering gates to monitor continuous flow of materials. The indicator shall sound an alarm when a continuous flow of material does not pass through the metering gates.

The truck mixer shall be so constructed as to permit checking the calibration of the gate openings and meters by means of weight test samples.

The calibration of the gate openings and meters shall be checked and certified for each class concrete mix design at least once a year by a testing agency. When approved, a representative of the contractor may perform the calibration if it can be shown that the representative is knowledgeable in the proper techniques of calibration. The department shall be notified, at least 1 week prior to the date of the annual calibration, in order that the department may approve the calibration.

A calibration check or a yield test may be required at any time. The accuracy of the mixer to proportion the specified mix is acceptable if the calibration check shows that the equivalent weights of each component are within the following tolerances:

CEMENT	*0 TO + 4 PERCENT*
FINE AGGREGATE	*+/- 2 PERCENT*
COARSE AGGREGATE	*+/- 3 PERCENT*
ADMIXTURES	*+/- 3 PERCENT*
WATER	*+/- 1 PERCENT*

Each truck mixer shall be equipped with a revolution counter indicator permitting the reading of the volumetric weight equivalent of cement discharged during the concrete mixing operation.

Each truck mixer shall be equipped with fine and coarse aggregate dials to permit adjustment of the gates of the aggregate bins for volumetric proportioning of aggregates.

Each truck mixer shall be equipped with a water meter or gauge to register the discharge rate of water by volume entering the mix.

Each truck mixer shall be equipped with automatic means of maintaining the operating speed of the proportioning and mixing operations. The truck mixer shall be operated within plus or minus 8 percent of the revolutions per minute established by the manufacturer, noted on the aforementioned plate, and the value used during calibration. This tolerance shall be met when the mixer is moving or standing still. A tachometer shall be mounted on the unit to indicate the operating speed.

All indicators, dials, meters, tachometer and controls shall be in full view and near enough to be read or adjusted by the operator while mixing concrete.

Handling, measuring and batching of materials shall conform to subsection 405.07 except as follows:

A. Cement and aggregates shall be proportioned, measured and batched by a volumetric weight equivalent method. Separate batching equipment and storage bins will not be required and the materials shall be batched in the continuous-mixing-type - truck mixer.

B. Each truck load of ingredients shall be accompanied by a sufficient number of delivery tickets such that the operator may supply one copy of the delivery ticket for each project and for each class of concrete delivered, the delivery tickets shall show the brand name and type of cement, the calibrated cement constant of the machine in terms of the indicator revolution count, the source of aggregates and the size of the coarse aggregate. The delivery tickets shall be signed by a responsible officer or employee of the concrete supplier. At each project, for each class of concrete and for each separate mixing operation, the mixer operator shall enter on the tickets the name of the project, the name of the contractor, the revolution counter readings indicating the volumetric weight equivalent of cement discharged during that mixing operation, the concrete additive meter reading indicating the total volume of additive discharged into the mix during that mixing operation, the aggregate dial settings, the water and concrete additive flow rates and the class of concrete delivered. The operator shall sign each completed ticket and furnish one copy.

3.11 COMPENSATION

3.11.1 METHOD OF MEASUREMENT
Standard DOT Specification 405.24

Transit mix Portland cement concrete will be the quantity ordered and delivered as recorded on the certified delivery ticket provided with each delivery.

3.11.2 Basis of Payment
Standard DOT Specification 405.25

Payment will be made under:

PAY ITEM	PAY UNIT
"Various types and classes of Portland cement concrete transit mixes as specified in the proposal."	*Cubic yard*

3.12 BID PROPOSAL

The submitted unit bid price in the proposal shall include the complete cost without any additional charge for transportation to the specific location which price shall include all necessary labor, loading and unloading costs, and required shipping provisions to insure compliance with all laws, rules and regulations of the department of motor vehicles. Also, all costs of materials, batching, mixing and labor as herein required and all other costs necessary therefore and incidental thereto.

If the bidder does not indicate an additional charge on the proposal bid sheet for either retarders, the high early strength additive or for heated material, these materials will be supplied to the department at the prices submitted for the appropriate class and type of portland cement concrete as ordered. If the vendor does not intend to supply these items, he should so indicate in the block provided on the proposal bid sheet that he intends to "no bid" these items. (Price lines 00169 to 00174 of the RFP)

Similarly, any additional charges for standby time, must be indicated on the proposal bid sheet for each quantity amount: (a) 2-4 cubic yards; (b) excess of 4 cubic yards, otherwise such additional charges will not be allowable. (Price lines 00175, 00176, 00182, 00183 and 00184 of the RFP)

3.13 SHIPMENT AND DELIVERIES

Shipments shall be delivered no later than forty-eight (48) hours after notification from the department to ship. No deliveries will be accepted unless shipment had been requested by the department. When a shipment is requested, deliveries will be accepted, as required, within the designated zones as specified in the proposal.

In the event deliveries are not received within the forty-eight (48) hours after notification, the Director may authorize the department to secure the full quantity of the requested delivery from the nearest available source, and the difference in price, if any, will be deducted from monies due the defaulting contractor.

A delivery ticket, completely filled out, shall be furnished for each load. The tickets shall be serially numbered, and shall bear the printed heading of the supplier and the location of the batch plant. Each ticket shall show the name of the project, the name of the contractor and subcontractor, if pertinent; the number of cubic yards of concrete and the class and type; the name of each admixture and the quantity shown in liquid measure or weight; the time when loading into the drum was completed as imprinted on the ticket by an automatic clock; and the time when the concrete was completely discharged; the amount of mixing water and the amount of tempering water, if used, both in gallons; the total number of revolutions on the counter at the time of complete discharge for truck-mix concrete plus the total number of mixing revolutions for transit-mix; the date; and the truck number. In addition, for the first ticket of each day, for the first ticket of each pour, and when changes occur in the information, the number of pounds of Portland cement with the brand name and type, the number of pounds and the source of the fine aggregate, and the number of pounds and the sizes and sources of the coarse aggregates shall be indicated. The ticket shall be authenticated by an authenticated representative of the supplier.

The concrete will be rejected if:

The mixer fails to maintain the manufacturer's stated speed of rotation for both mixing and agitation, or is not able to promptly discharge the concrete; there is any indication of improper batching, lack of uniform distribution of constituents throughout the load, or balling of the cement and aggregates; the concrete is not discharged within the specified time limit, or if the revolution counter shows a total of more than the permitted number of revolutions. However, if the load has been partially discharged and if the concrete yet to be discharged complies with the specified ranges for slump and entrained air without further addition of water, the discharge and use of the concrete may be permitted.

3.14 CONCRETE STRUCTURES

Standard DOT Specification 501

3.14.1 CHEMICAL ADMIXTURES

Standard DOT Specification 501.03

In the event that the scheduled concrete placement date may produce ambient conditions where it is desirable to control the concrete reactionary properties, or control the concrete reactionary properties is otherwise warranted, the contractor may add chemical admixtures, subject to the approval of the engineer, as an integral part of the design mix for structural concrete members. The use of the chemical admixtures shall conform to the requirements of subsection 905.02. Additionally, the use of chemical admixtures shall be in accordance with the manufacturer's product specifications. In accordance with the requirements of subpart b of subsection 913.02, to facilitate verification of the concrete mix, mix designs that incorporate the chemical admixture shall be submitted for approval. The admixture quantity that is to be used shall be a dosage rate that is in accordance with the manufacturer's product specifications.

3.15 AGGREGATES

Standard DOT Specification 901

3.15.1 GENERAL

Standard DOT Specification 901.01

Aggregates from a single source shall be used in any one item unless otherwise authorized.

Aggregates from different sources may be permitted if they are of the same geological classification and have similar specific gravities and color.

Gradations of aggregates in the various tables of this and other sections are the percentages passing by weight.

3.15.2 STOCKPILES

Standard DOT Specification 901.02

The area for each stockpile shall be of adequate size, reasonably uniform in cross section, well drained and cleared of foreign materials.

Stockpiles at Portland cement concrete mixing plants shall be of sufficient size to provide for a minimum of one day's operations. The aggregate stockpiles shall be placed on a firm, hard surface such as a compacted aggregate or stabilized base, bituminous or concrete surface and shall be constructed by placing the aggregates in layers not more than 3 feet thick.

Aggregates from the haul way areas shall not be used. The piles shall be located so that there is no contamination by foreign material and no intermingling of aggregates from adjacent piles. Aggregates from different sources and of different grading shall not be stockpiled near each other unless a bulkhead is placed between the different materials. Aggregates of different grading and from different sources for use in blends shall be blended by proportion through the weigh hoppers. Aggregates found segregated or contaminated will be rejected for use. A rejected stockpile may be reconstructed for further evaluation. Aggregates shall be removed from stockpiles in a manner such as to prevent segregation.

Aggregates which require washing shall not be used sooner than 24 hours after washing or until the surplus water has drained out and the material has uniform moisture content.

Steel tracked equipment will not be permitted on the stockpiles.

Coarse aggregate shall be broken stone or washed gravel conforming to subsections 901.04 and 901.05 and shall be graded as shown in subsection 901.20, table 901.1.

The broken stone shall be uniform in texture and quality, and shall conform to subsections 901.01, 901.02 and 901.03 and to the following quality requirements:

	Maximum Percent
Weathered And Decomposed Stone	5
Broken stone other than that classification approved for use.	5
Flat Or Elongated Pieces For Graded	
Material No. 57 & Larger	7
(Length greater than 4 times maximum thickness or width)	
Absorption In Cold Water	
No. 8 and Larger	1.7
Nos. 89 and 9..	1.8
Sodium Sulfate Soundness, Loss	
Ledge Rock.	10
Graded Sizes	10
Adherent Fines In Coarse Aggregates	
Portland Cement Concrete	1.0

The percent of wear (Los Angeles test) shall be as follows for various uses:

	Maximum Percent
Concrete surface course and bridge decks	40
Concrete, other	50

Types of rock permissible for use in white concrete shall be free from dirt and discoloring matter.

The geologic classifications are as follows:

1. Argillite shall mean a thoroughly indurated and cohesive rock composed predominantly of silt size or smaller particles of clay, quartz and feldspar or the fine-grained thermal recrystallization products of this assemblage (hornfels). It shall be bedded thickly enough so as not to break into thin pieces at planes of stratification.

2. Carbonate rock shall mean a thoroughly indurated and cohesive rock composed predominantly of calcite and dolomite, bedded thickly enough so as not to break into thin pieces at planes of stratification. Minerals insoluble in hot hydrochloric acid shall be discrete grains of quartz, clay and mica.

3. Gneiss shall mean a metamorphic rock consisting principally of quartz and feldspar. it shall have a dense structure and shall not break into thin pieces at lines of stratification and shall have a uniform distribution of minerals.

4. Granite shall mean an equigranular or porphyritic igneous rock consisting principally of quartz and feldspar. it shall be of medium or fine grain texture.

5. Quartzite shall mean a metamorphic rock composed principally of quartz. it shall be quarried so they only the nonarkosic, uniformly compacted quartzites are included in the graded products, and shall not be schistose in structure.

6. Trap rock shall mean either basalt or diabase it shall have a uniform distribution of constituent minerals.

3.15.3 WASHED GRAVEL
Standard DOT Specification 901.05

Washed gravel shall be either crushed or uncrushed as specified. The gravel shall conform to subsections 901.01, 901.02 and 901.03 and to the following quality requirements:

	Percent
Sodium Sulfate Soundness, Loss	10 maximum
Soft particles as determined by scratch hardness test (See note)	5 maximum
Absorption In Cold Water	
No. 8 Size And Larger	1.7 maximum
Nos. 89 And 9	1.8 maximum
Clay lumps, organic material, coal and other foreign or deleterious matter (Percent by weight or volume whichever is greater)	0.5 maximum
Sea Salt	0.2 maximum
Crushed gravel material with at least one fractured face. (Nicked gravel will not be considered crushed.)	60 minimum
Adherent fines in coarse aggregates	
Portland cement concrete....	1.0 maximum

The percent of wear determined in accordance with the Los Angeles Test shall be as specified for the various uses, except that the Percent maximum loss for quartz gravel shall be 50 percent. Quartz Gravel shall mean a material composed of natural pebbles of which the Overwhelming majority are coarsely crystalline quartz. The Individual crystals within each pebble shall be inter-grown into a Tenacious, nonporous, interlocking texture which fractures as a single unit.

Note: when the sodium sulfate soundness and scratch hardness tests total 10 percent or more, a petrographic analysis will be made to determine the amount of unsound and weathered material. Unsound and weathered resources shall not be more than 10 percent by weight.

3.15.4 AGGREGATES FOR PORTLAND CEMENT CONCRETE, MORTAR AND GROUT
Standard DOT Specification 901.12

A. Coarse Aggregate. Coarse aggregate shall be broken stone or washed gravel conforming to subsection 901.04 or 901.05 respectively, except that carbonate rock shall not be used for concrete surface courses or bridge decks. Coarse aggregate shall be the size or sizes shown

in subsection 914.05, tables 914-1 and 914-2. The coarse aggregate shall be washed at least 24 hours before use. Broken stone and washed gravel for use in white concrete shall be free from dirt and discoloring matter and shall conform to subsections 901.04 and 901.05 respectively. Broken stone shall be washed, and the gravel rewashed when so directed. Aggregates used in Portland cement concrete shall be tested in accordance with AASHTO TP 14 by a laboratory acceptable to the engineer. Those aggregates which produce expansion of 0.1 percent or more in 14 days in solution shall be considered potentially reactive. The use of potentially reactive aggregate in Portland cement concrete will be permitted only in conjunction with remedial agents, including fly ash and ground granulated blast furnace slab.

B. Fine Aggregate. Fine aggregate for any type or class of concrete and for mortar shall be a fine aggregate washed and processed material composed of quartz or other hard durable particles. Sand manufactured from a carbonate rock as defined in subsection 901.04 will not be permitted in concrete surface courses and bridge deck wearing surfaces. The fine aggregate shall be predominantly angular in shape and be free of soft particles. The material shall conform to subsection 901.01, 901.02 and 901.03 the following gradation and quality requirements:

Sieve Size		**Percent**
3/8 IN		*100*
NO. 4		*95-100*
NO. 8		*80-100*
NO. 16		*50-85*
NO. 30		*25-60*
NO. 50		*10-30*
NO. 100		*1-10*
NO. 200		*0-3*
NO. 200	(White Concrete-Natural Sand)	*0-5*
NO. 200	(White Concrete-Stone Sand)	*0-7*

The fine aggregate shall have not more than 45 percent retained between any two consecutive sieves, and its fineness modules shall be not less than 2.3 and not more than 3.1 for concrete and shall be not less than 2.0 and not more than 3.1 for white concrete as defined in AASHTO M 6 and shall conform to the following quality requirements:

	MAXIMUM PERCENT
MICA	*2.0*
SEA SALT	*0.2*
ABSORPTION, COLD WATER	*2.0*
SODIUM SULFATE SOUNDNESS, LOSS	*5.0*

Sampling will be performed in accordance with the following:

AGGREGATES		
COARSE, SIZE NO.		
1	150 pounds	For each 1000 tons
2 & 24	100 pounds	For each 1000 tons
3 & 357	90 pounds	For each 1000 tons
4 & 467	70 pounds	For each 1000 tons
5, 56 & 57	50 pounds	For each 500 tons
6, 67 & 68	30 pounds	For each 500 tons
7 & 78	20 pounds	For each 250 tons
8, 89, 9 & 10	10 pounds	For each 250 tons
Fine	10 pounds	For each 500 tons

Sampling and testing will be performed in accordance with the following:

AASHTO	
T 2	Sampling aggregates
T 11	Amount of material finer than no. 200 sieve in aggregate
T 19	Unit weight and voids in aggregate
T 21	Organic impurities in sands for concrete
T 27	Sieve analysis of fine and coarse aggregates
T 84	Specific gravity and absorption of fine aggregate
T 85	Specific gravity and absorption of coarse aggregate
T 96	Resistance to abrasion of small size coarse aggregate by use of the Los Angeles machine
T 112	Clay lumps and friable particles in aggregate
T 113	Lightweight pieces in aggregate
NJDOT	
A-2	Determination of reflectance value of aggregates
	AASHTO T-104
A-3	Determination of percentage of mica in fine aggregate
A-4	Determination of percentage of carbonates in crushed gravel by petrographic analysis
A-5	Determination of percentage of adherent fines present in coarse aggregate

A-8	Scratch hardness test for coarse aggregate particles

3.16 TABLES

Standard DOT Specification 901.20

Table 901-1 referenced in these specifications is available at:
http://www.state.nj.us/transportation/eng/specs/english/EnglishStandardSpecifications.htm#90120

3.17 PORTLAND CEMENT CONCRETE DESIGN, CONTROL AND ACCEPTANCE TESTING REQUIREMENTS

Standard DOT Specification 914.20

3.17.1 GENERAL REQUIREMENTS

The coarse aggregate size, slump, and entrained air for each item and class of concrete shall be as specified in subsection 914.05, tables 914.1 and 914.2. The concrete shall be designed to conform to subsection 914.05, table 914.3. Any of the coarse aggregate sizes in subsection 914.05; tables 914.1 and 914.2 may be used for a particular type of construction. Coarse aggregate sizes 357 and 467 shall be produced by weight proportioning directly into the mixer from sizes 3 and 57, and sizes 4 and 67 respectively. Conformance to gradation will be determined on the basis of separate tests on the component sizes prior to proportioning. If the size selected creates a clearance problem with reinforcement steel, a smaller size aggregate shall be used.

3.17.2 PROPORTIONING AND VERIFICATION

At least 45 days prior to the start of concrete placement, trial batches of concrete shall be prepared of the same materials and proportions proposed for use on the project.

The designs shall be computed and set up in accordance with ACI standard 211.1 or 211.2, as applicable. Each mix design shall be submitted on Portland cement concrete mix design forms furnished by the department giving the source of materials and test data.

Department personnel shall be present at the time of verification batching to confirm that the proportions and ingredients batched are in accordance with the proposed mix designs. At least six 4 by 8 inch compression test cylinders shall be prepared from each batch and cured in accordance with AASHTO T 23 or AASHTO T 126. Within 2 to 5 days after molding, the cylinders shall be delivered to the department laboratory where testing will be performed for 7 day and 28 day compressive strength.

The use of chemical admixtures shall be in accordance with the admixture manufacturer's recommendation for the given design mix and anticipated field conditions, including the admixture dosage rate(s) and the location (plant or placement site) where it is to be introduced into the mixture. The admixture manufacturer's technical representative shall be on the project site for the first full day's production of mix containing a chemical admixture in order to recommended methods and operations based on prevailing climatic and job conditions

At least one trial mix shall be designed to equal or exceed the required verification strengths listed in subsection 914.05, table 914-3 for each class of concrete included on the project. A single mix design may satisfy the requirements for more than one class of concrete and any mix design failing to meet a specific verification requirement may later be approved for use on the project if the field strengths and degree of quality control warrant.

At the department's option, verification may be done on an annual basis for a concrete plant rather than on a project-to-project basis provided the properties and proportions of the materials do not change. If the job is the continuation of work in progress during the previous construction season and written verification is submitted that the same source and character of materials are to be used, the engineer may waive the requirement for the design and verification of previously approved mixes.

Concrete furnished on the project shall conform to the approved mix design. If another previously approved mix design is to be used, the engineer shall be notified at least 1 day prior to such change.

Change in the sources, types or proportions of materials shall not be made until approved and the requirements for verification specified herein have been satisfied. The engineer may waive this requirement if the materials, other than portland cement, or proportions are not appreciably different from those used with a previously approved mix design.

The requirement to verify a new design as a result of a change in the source of portland cement may be waived only by the engineer.

Classes a, b and c concrete may be designed to achieve early strength requirements by increasing the cement content. Alternatively, an existing approved mix design may serve as a high-early-strength mix. Additional verification tests for high-early-strength mixes are not required but will be performed if requested.

If fly ash is added, its weight shall not exceed 15 percent of the minimum cement content and shall not be greater than 125 percent of the weight of cement replaced.

The combined weight of fly ash and Portland cement content shall be used to determine compliance with the cement factor and water cement ratio requirements listed in subsection 914.05, table 914-3.

If it is the opinion of the engineer that the mix properties are such that concrete of unacceptable quality is likely to be produced, the work may be ordered stopped until the cause has been determined and the necessary corrective action has been taken. The corrective action may range from a minor adjustment of proportions to the establishment of a new mix design.

If the concrete producer has satisfactorily met applicable design, control and acceptance testing requirements at the batch plant and has provided automatic recordation of the various batched weights which comply with specified design criteria, slump and air content, the concrete will be presumed to be in compliance with department standards at the time of delivery. This presumption shall not waive or alter any other requirements or otherwise affect the engineer's ability to impose pay adjustments.

3.17.3 ACCEPTANCE TESTING PROCEDURES FOR SLUMP AND AIR ENTRAINMENT

The engineer will perform sampling and testing for slump and air entrainment.

Slump and air-entrainment tests are at the rate specified for strength tests in subsection 914.05, table 914-4 and will be performed on the same samples of material from which the compressive test cylinders have been molded. While these tests are being performed, discharge from the truck is to be halted. Discharge from other trucks not scheduled for test may proceed.

For slump or air entrainment or both, if the measured value is outside the ranges specified in subsection 914.05, table 914-1 or 914-2, a second test will be performed on a different portion of

material from the same load. If the average of the two test results for either slump or air entrainment exceeds the upper limit, the load of concrete will be rejected and removed from the project site. If the average of the two test results for either slump or air-entrainment falls below the lower specification limit, a single addition of mix water (or the approved type f admixture for those mixes containing a water-reducing, high range admixture) and/or air-entraining agent will be permitted provided that this additional step can be accomplished without exceeding the time or revolution limits specified in subsection 405.08. When an air-entraining agent is added, it shall be diluted with water prior to addition to the drum.

Following any permitted additions, the drum shall be rotated at the recommended mixing speed for a minimum of 10 and a maximum of 20 revolutions, the original test results are to be disregarded, and a single test for both slump and air-entrainment performed. Further additions of mix water or admixtures will not be permitted. If the measured values for slump and air content are not within the ranges specified in subsection 914.05, tables 914-1 and 914-2, the load of concrete will be rejected and removed from the project.

Each truckload of concrete containing fly ash will be tested for slump and air entrainment.

3.17.4 GENERAL ACCEPTANCE TESTING REQUIREMENTS FOR STRENGTH

The engineer will perform sampling and testing for strength.

A sufficient number of curing facilities for the storage and curing of concrete test cylinders on the project site for the first 24 hours, as required by AASHTO t 23, shall be provided for the sole use of the engineer. The curing facilities shall be provided with a minimum-maximum thermometer and shall be securable with lock and key.

An initial strength test result is defined in subsection 914.05, table 914-4. The required rate of sampling and the acceptance testing criteria of subsection 914.05, table 914-4 must be met. If either of the cylinders comprising a test shows definite evidence (other than low strength) of improper sampling, molding, handling, curing or testing, it is to be discarded and the strength of the remaining cylinder then is considered the test result. If the difference in compressive strength between two cylinders comprising a test equals or exceeds 600 PSI, the lower value is to be disregarded and the higher value is taken as the test result. If both cylinders comprising a test must be discarded, the lot will be evaluated on the basis of the reduced number of tests. If a batch of concrete from which compression cylinders have been prepared is rejected because it fails to meet the slump or air-entrainment requirements of this subsection, the cylinders obtained from that batch will be discarded.

If additional unscheduled compression cylinders are taken, as permitted by subsection 106.03, they are to be included with the regularly scheduled compression cylinders and the lot will be evaluated on the basis of the increased number of tests.

3.17.5 ACCEPTANCE TESTING FOR STRENGTH FOR PAY-ADJUSTMENT ITEMS

The list of concrete pay items, if any, which are subject to pay adjustment and the base prices may be found in the special provisions.

The amount of pay adjustment in dollars is the product of the item base price times the lot quantity times the percent pay adjustment. The percent pay adjustment is given by equation (1).

Equation (1): PPA = 3.0 - 0.3 PD

In which

PPA = Percent Pay Adjustment
Pd = Percent Defective (Estimate Of Percent Of Lot Below The Class Design Strength By The Use Of Equation (2) And Subsection 914.05, Table 914-5)

Equation (2) Q = (Average Lot Strength (PSI) - Class Design Strength (PSI) / S

Where
Q = quality index for pay adjustment computations
S = standard deviation of the strength test results in PSI for the lot as computed by equation (3)

Equation (3): $S = \sqrt{\frac{\Sigma (Xi - ALS)^2}{N-1}}$

in which
Σ = summation
Xi = individual test result (average strength of a test cylinder pair)
ALS = average lot strength (psi)
N = number of test results for the lot

Note - when only a single test result is available, the standard deviation is assumed to be S = 200 PSI.

When it is necessary to estimate the percentage of material below the retest limit to check the rejection criteria in subsection 914.05, table 914-4, equation (4) is used with subsection 914.05, table 914-5. All other terms are as previously defined.

Equation (4): QREJECT = (Average Lot Strength - Retest Limit) S

Provided that no individual test result falls below the retest limit listed in subsection 914.05, table 914-4, the acceptability of a lot is based upon the estimated percentage of concrete having a 28-day compressive strength less than the class design strength specified in subsection 914.05, table 914-3. To be eligible for 100 percent payment, a lot must have no more than 10 percent of the material below the class design strength.

For lots with percent defective levels less than 10 percent, equation (1) provides positive pay adjustments to the contract price. For lots having percent defective levels greater than 10 percent but not exceeding the rejection limit in subsection 914.05, table 914-4, equation (1) assesses negative pay adjustments to from the contract price.

Whenever an initial test result falls below the retest limit in subsection 914.05, table 914-4, and the concrete will be re-evaluated by coring or other suitable means. When this provision is applied to class p concrete, each beam or pile in the steam bed will be evaluated separately.

When re-evaluation is accomplished by a method other than coring, the results will be used only to determine what further action is to be taken. If any of the non-core tests results are below the class design strength, the engineer has the option to core. If this option is waived, the contractor may elect to core, at no cost to the state and within 60 days after being presented with this option or to accept the pay adjustment computed from the initial cylinder tests. If the contractor elects to core, the coring shall be performed as directed and the department will test the cores. If none of the non-core test results is below the class design strength, the engineer may elect either to core or to accept the lot at 100 percent payment.

When cores are taken, final disposition of the lot is based on the core results. Pay adjustment will be computed using the core test results provided that the estimated percentage of material below the retest limit does not exceed the maximum allowable percentage in subsection 914.05, table 914-4. If the maximum allowable percentage is exceeded, the engineer may:

(1) Require the contractor to remove and replace the defective lot at no cost to the state.
(2) Allow the contractor to leave the defective lot in place and receive a percent pay adjustment (ppa) of minus 50 percent, or
(3) Allow the contractor to submit a plan, for approval, for corrective action to be performed at no cost to the state. if the plan for corrective action is not approved, either option (1) or (2) may be applied.

3.17.6 ACCEPTANCE TESTING FOR STRENGTH FOR NON-PAY-ADJUSTMENT ITEMS

This subpart applies to all concrete items in subsection 914.05, tables 914-1 and 914-2 that are not subject to pay adjustment and other requirements in accordance with subpart (e) and that are not accepted on the basis of certificates of compliance. The lot is eligible for 100 percent payment provided that all initial test results equal or exceed the retest limit for non-pay-adjustment items in subsection 914.05, table 914-4. Whenever one or more individual test results fall below the retest limit, the lot will be re-evaluated by coring or other suitable means and is subject to pay adjustment and all other provisions in accordance with subpart (e) except that the amount of pay adjustment is the product of the unit bid price times the lot quantity times the percent pay adjustment given by equation (1).

Sampling and testing will be performed in accordance with the following:

AASHTO	
T 22	Compressive strength of cylindrical concrete specimens (including the annex providing for use of neoprene caps)
T23	Making and curing concrete test specimens in the field
T 24	Obtaining and testing drilled cores and sawed beams of concrete
T 119	Slump of Portland cement concrete
T121	Weight per cubic foot, yield and air content (gravimetric) of concrete
T126	Making and curing concrete test specimens in the laboratory
T141	Sampling fresh concrete
T152	Air content of freshly mixed concrete by the pressure method
T196	Air content of freshly mixed concrete by the volumetric method

Note: Wherever the reference to 4 inch (diameter) x 8 inch (height) compression test cylinders appears in these specifications, the use of 6 inch (diameter) x 12 inch (height) test cylinders will be permitted for mix designs containing coarse aggregate sizes not exceeding a nominal maximum size of 1 inch.

ASTM	
C 567	Unit weight of structural lightweight concrete

C 311	Sampling and testing fly ash or natural pozzolans for use as a mineral admixture in Portland cement concrete

Note: The department may modify the sampling rate for individual and composite samples.

NJDOT	
C-1	Determination Of Yield Of Concrete Produced By Continuous-Mixing-Type Truck Mixers

3.18 TABLES

Standard DOT Specification 914.05

Tables referenced in the specifications are as follows except for tables 914-1 and 914-2, which are not attached to these specifications.

The following note is added at the end of table 914-1:

***Note I** - According to the provisions of sub section 561.03, a Type F - water-reducing, high range admixture will be permitted in accordance with subsection 905.02 and subsection 914.02 subparts (B) and (C). When a Type F admixture is used, the table slump and air content values for the given concrete item shall be changed as follows:*

***NOTE 2** - Added to 2001 Spec. Book*

SLUMP	6 +/- 2 INCHES
AIR CONTENT	Increase both the target value and tolerance percentages by 0.5.

The following note is added at the end of table 914-2:

***Note I** According to the provisions of sub section 501.03; A Type F, a type f - water-reducing, high range admixture will be permitted in accordance with subsection 905.02 and subsection 914.02 subparts (B) and (C). When a Type F admixture is used, the table slump and air content values for the given concrete item shall be changed as follows:*

SLUMP	6 +/- 2 INCHES
AIR CONTENT	Increase both the target value and tolerance percentages by 0.5.

***Note I** at the end of table 914-3 is changed to:*

***Note I** - in accordance with PCI manual, except as indicated in note 2.*
***Note 2**. The following note is added at the end of table 914-3:*

***Note 2** - the maximum water/cement ratio for all classes of concrete, when a type f, water reducing, high range admixture is used in accordance with tables 914-1 and 914-2, shall be 0.40 lb/lb (4.5 gals/bag).*

3.18.1 MIX DESIGN REQUIREMENTS

Standard DOT Specification Table 914-3

	CLASS OF CONCRETE						
	A	***B***	***C***	***S***	***P***	***P-1***	***P-2***
Class design strength (28 days, PSI, note 3)	4600	3700	3200	2000	5500	6000	6500
Verification strength (28 days, PSI, note 3)	5000	4500	4000	-----	6000	6500	7000
Maximum							
Water/cement ratio LB/LB							
GAL/BAG	0.443	0.488	0.532	0.577	NOTE 1	NOTE 1	NOTE 1
	5.0	5.5	6.0	25	NOTE 1	NOTE 1	NOTE 1
Minimum cement content							
Lb/Cy	611	564	517	658	NOTE 1	NOTE 1	NOTE 1
Bags/Cy	6.5	6.0	5.5	7.0	NOTE 1	NOTE 1	NOTE 1

Note 1: In accordance with PCI manual, except as indicated in note 2.

Note 2: The maximum water/cement ratio for all classes of concrete, when a Type F, water-reducing, high range admixture is used in accordance with Tables 914-1 and 914-2 shall be 0.40lb/lb (4.5 gal./bag).

Note 3: All concrete test results shall be recorded to the nearest one-tenth megapascals.

3.18.2 LOT SIZES, SAMPLING RATES, RETEST AND REJECTION LIMITS

Standard DOT Specification Table 914-4

	CLASS OF CONCRETE						
	A	***B***	***C***	***S***	***P***	***P-1***	***P-2***
LOT SIZE, MINIMUM		*ONE DAY'S PRODUCTION*			*ONE DAY'S PRODUCTION OF A SINGLE STREAM BED*		
PAY-ADJUSTMENT ITEMS							
INITIAL SAMPLING RATE	6/LOT	5/LOT	4/LOT		6/LOT	6/LOT	6/LOT
RETEST LIMIT, PSI	4000	3000	3000	2000	5000	5500	6000
RETEST SAMPLING	6/LOT	6/LOT	6/LOT	6/LOT	6/UNIT OR LOAD TEST		

RATE, MIN							
REJECTION LIMIT, PERCENT	10	10	20	20	5	5	5
NON-PAY ADJUSTMENT ITEMS							
INTIAL SAMPLING RATE	3/LOT	2/LOT	1/LOT	1/LOT	----	----	----
RETEST LIMIT, PSI	4400	3600	3100	2000	----	----	----

The lot sizes are maximums and, at the option of the engineer, any lot may be subdivided into two or more smaller lots. When such a subdivision is made, the specified sampling rate applies to each of the smaller lots.

An initial strength test result is defined as the average strength of two 4 x 8 inches compression test cylinders, cured for 28 days, and tested in the department laboratory except for classes P, P-1, and P-2 cylinders, which may be tested at the fabricator's plant under the supervision of the Engineer.

A retest result is defined as the strength of an individual test result obtained by coring or other suitable means. JF retest is performed by coring each retest. Results are defined as the corresponding nominal core strength divided by 0.25.

The specified sampling rates shall apply except that no more than one test per truckload or batch of concrete will be required. At the option of the engineer, lots consisting of fewer than three truckloads or batches, or containing 120 cubic yards or less, may be accepted without strength tests.

No lots shall include more than one class of concrete nor include concrete of the same class having different specified levels of slump or air entrainment.

For pre-stressed concrete, if more than one bed is used or if more than 80 cubic yards of concrete are used, the production shall be subdivided as equally as possible into 2 or more lots.

Retest limits for non-pay adjustment roadway and structural items requiring the use of class B, white concrete, shall be 3000 PSI.

3.18.3 ESTIMATION OF LOT PERCENT DEFECTIVE
Standard DOT Specification Table 914-5

Variability-Known Procedure					**Standard Deviation Method**					
Sample Size										
1										
Q	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	50.00	48.98	47.96	46.94	45.92	44.90	43.88	42.86	41.84	40.82
0.1	39.80	38.78	37.76	36.73	35.71	34.69	33.67	32.65	31.63	30.61
0.2	29.59	28.57	27.55	26.53	25.51	24.49	23.47	22.45	21.43	20.41
0.3	19.39	18.37	17.35	16.33	15.31	14.29	13.27	12.24	11.22	10.20
0.4	9.18	8.16	7.14	6.12	5.10	4.08	3.06	2.04	1.02	0.00

Numbers in the body of the table are estimates of lot percent defective corresponding to specific values of Q, the quality index. For values of Q greater than or equal to zero, the estimate of

percent defective is read directly from the table. For values of Q less than zero, the table value must be subtracted from 100.

This empirically derived table is suitable only for use with this specification.

Variability-Unknown Procedure					**Standard Deviation Method**					
Sample Size										
2										
Q	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	50.00	49.66	49.33	48.99	48.99	48.32	47.99	47.65	47.32	46.98
0.1	46.64	46.31	45.97	45.64	45.30	44.97	44.63	44.30	43.96	43.62
0.2	43.29	42.95	42.62	42.28	41.95	41.61	41.28	40.94	40.60	40.27
0.3	39.93	39.60	39.26	38.93	38.59	38.26	37.92	37.58	37.25	36.91
0.4	36.58	36.24	35.91	35.57	35.23	34.90	34.56	34.23	33.89	33.56
0.5	33.22	32.89	32.55	32.21	31.88	31.54	31.21	30.87	30.54	30.20
0.6	29.87	29.53	29.19	28.86	28.52	28.19	27.85	27.52	27.18	26.85
0.7	26.51	26.17	25.84	25.50	25.17	24.83	24.50	24.16	23.83	23.49
0.8	23.15	22.82	22.48	22.15	21.81	21.48	21.14	20.81	20.47	20.13
0.9	19.80	19.46	19.13	18.79	18.46	18.12	17.79	17.45	17.11	16.78
1.0	16.44	16.11	15.77	15.44	15.10	14.77	14.43	14.09	13.76	13.42
1.1	13.09	12.75	12.42	12.08	11.75	11.41	11.07	10.74	10.40	10.07
1.2	9.73	9.40	9.06	8.72	8.39	8.05	7.72	7.38	7.05	6.71
1.3	6.38	6.04	5.70	5.37	5.03	4.70	4.36	4.03	3.69	3.36
1.4	3.02	2.68	2.35	2.01	1.68	1.34	1.01	0.67	0.34	0.00

Numbers in the body of the table are estimates of lot percent defective corresponding to specific values of Q, the quality index. For values of Q greater than or equal to zero, the estimate of percent defective is read directly from the table. For values of Q less than zero, the table value must be subtracted from 100. This empirically derived table is suitable only for use with this specification.

TABLE 914-5 (CONTINUED)

Variability-Unknown Procedure					**Standard Deviation Method**					
Sample Size										
3										
Q	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	50.00	49.72	49.45	49.17	48.90	48.62	48.35	48.07	47.79	47.52
0.1	47.24	46.96	46.69	46.41	46.13	45.85	45.58	45.30	45.02	44.74
0.2	44.46	44.18	43.90	43.62	43.34	43.05	42.77	42.49	42.20	41.92
0.3	41.63	41.35	41.06	40.77	40.49	40.20	39.91	39.62	39.33	39.03
0.4	38.74	38.45	38.15	37.85	37.56	37.26	36.96	36.66	36.35	36.05
0.5	35.75	35.44	35.13	34.82	34.51	34.20	33.88	33.57	33.25	32.93
0.6	32.61	32.28	31.96	31.63	31.30	30.97	30.63	30.30	29.96	29.61
0.7	29.27	28.92	28.57	28.22	27.50	27.50	27.13	26.76	26.39	26.02
0.8	25.64	25.25	24.86	24.47	23.67	23.67	23.26	22.84	22.42	21.99
0.9	21.55	21.11	20.66	20.19	19.73	19.25	18.75	18.25	17.74	17.21
1.0	16.67	16.11	15.53	14.93	13.66	12.98	12.27	11.51	11.51	10.71
1.1	9.84	8.89	7.82	6.60	5.08	2.87	0.00	0.00	0.00	0.00

Numbers in the body of the table are estimates of lot percent defective corresponding to specific values of Q, the quality index. For values of Q greater than or equal to zero, the estimate of

percent defective is read directly from the table. For values of Q less than zero, the table value must be subtracted from 100.

TABLE 914-5 (CONTINUED)

Variability-Unknown Procedure					**Standard Deviation Method**					
Sample Size										
4										
Q	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	50.00	49.67	49.33	49.00	48.67	48.33	48.00	47.67	47.33	47.00
0.1	46.67	46.33	46.00	45.67	45.33	45.00	44.67	44.33	44.00	43.67
0.2	43.33	43.00	42.67	42.33	42.00	41.67	41.33	41.00	40.67	40.33
0.3	40.00	39.67	39.33	39.00	38.67	38.33	38.00	37.67	37.33	37.00
0.4	36.67	36.33	36.00	35.67	35.33	35.00	34.67	34.33	34.00	33.67
0.5	33.33	33.00	32.67	32.33	32.00	31.67	31.33	31.00	30.67	30.33
0.6	30.00	29.67	29.33	29.00	28.67	28.33	28.00	27.67	27.33	27.00
0.7	26.67	26.33	26.00	25.67	25.33	25.00	24.67	24.33	24.00	23.67
0.8	23.33	23.00	22.67	22.33	22.00	21.67	21.33	21.00	20.67	20.33
0.9	20.00	19.67	19.33	19.00	18.67	18.33	18.00	17.67	17.33	17.00
1.0	16.67	16.33	16.00	15.67	15.33	15.00	14.67	14.33	14.00	13.67
1.1	13.33	13.00	12.67	12.33	12.00	11.67	11.33	11.00	10.67	10.33
1.2	10.00	9.67	9.33	9.00	8.67	8.33	8.00	7.67	7.33	7.00
1.3	6.67	6.33	6.00	5.67	5.33	5.00	4.67	4.33	4.00	3.67
1.4	3.33	3.00	2.67	2.33	2.00	1.67	1.33	1.00	0.67	0.33
1.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note 1 -Numbers in the body of the table are estimates of lot percent defective corresponding to specific values of Q, the quality index. For values of q greater than or equal to zero, the estimate of percent defective is read directly from the table. For values of Q less than zero, the table value must be subtracted from 100.

TABLE 914-5 (CONTINUED)

Variability-Unknown Procedure					**Standard Deviation Method**					
Sample Size										
5										
Q	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	50.00	49.64	49.29	48.93	48.58	48.22	47.86	47.51	47.15	46.80
0.1	46.44	46.09	45.73	45.38	45.02	44.67	44.31	43.96	43.60	43.25
0.2	42.90	42.54	42.19	41.84	41.48	41.13	40.78	40.43	40.08	39.72
0.3	39.37	39.02	38.67	38.32	37.97	37.62	37.28	36.93	36.58	36.23
0.4	35.88	35.54	35.19	34.85	34.50	34.16	33.81	33.47	33.12	32.78
0.5	32.44	32.10	31.76	31.42	31.08	30.74	30.40	30.06	29.73	29.39
0.6	29.05	28.72	28.39	28.05	27.72	27.39	27.06	26.73	26.40	26.07
0.7	25.74	25.41	25.09	24.76	24.44	24.11	23.79	23.47	23.15	22.83
0.8	22.51	22.19	21.87	21.56	21.24	20.93	20.62	20.31	20.00	19.69
0.9	19.38	19.07	18.77	18.46	18.16	17.86	17.55	17.25	16.96	16.66
1.0	16.36	16.07	15.78	15.48	15.19	14.91	14.62	14.33	14.05	13.76
1.1	13.48	13.20	12.93	12.65	12.37	12.10	11.83	11.56	11.29	11.02
1.2	10.76	10.50	10.23	9.97	9.72	9.46	9.21	8.96	8.71	8.46
1.3	8.21	7.97	7.73	7.49	7.25	7.02	6.79	6.56	6.33	6.10
1.4	5.88	5.66	5.44	5.23	5.02	4.81	4.60	4.39	4.19	3.99
1.5	3.80	3.61	3.42	3.23	3.05	2.87	2.69	2.52	2.35	2.19
1.6	2.03	1.87	1.72	1.57	1.42	1.28	1.15	1.02	0.89	0.77

1.7	0.66	0.55	0.45	0.36	0.27	0.19	0.12	0.06	0.02	0.00

Numbers in the body of the table are estimates of lot percent defective corresponding to specific values of Q, the quality index. For values of Q greater than or equal to zero, the estimate of percent defective is read directly from the table. For values of Q less than zero, the table value must be subtracted from 100.

TABLE 914-5 (CONTINUED)

Variability-Unknown Procedure					**Standard Deviation Method**					
Sample Size										
6										
Q	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	50.00	49.63	49.27	48.90	48.53	48.16	47.80	47.43	47.06	46.70
0.1	46.33	45.96	45.60	45.23	44.86	44.50	44.13	43.77	43.40	43.04
0.2	42.68	42.31	41.95	41.59	41.22	40.86	40.50	40.14	39.78	39.42
0.3	39.06	38.70	38.34	37.98	37.62	37.27	36.91	36.55	36.20	35.84
0.4	35.49	35.14	34.79	34.43	34.08	33.73	33.38	33.04	32.69	32.34
0.5	32.00	31.65	31.31	30.96	30.62	30.28	29.94	29.60	29.26	28.93
0.6	28.59	28.25	27.92	27.59	27.26	26.92	26.60	26.27	25.94	25.61
0.7	25.29	24.96	24.64	24.32	24.00	23.68	23.37	23.05	22.74	22.42
0.8	22.11	21.80	21.49	21.18	20.88	20.57	20.27	19.97	19.67	19.37
0.9	19.07	18.78	18.49	18.19	17.90	17.61	17.33	17.04	16.76	16.48
1.0	16.02	15.92	15.64	15.37	15.09	14.82	14.55	14.29	14.02	13.76
1.1	13.50	13.24	12.98	12.72	12.47	12.22	11.97	11.72	11.47	11.23
1.2	10.99	10.75	10.51	10.28	10.04	9.81	9.58	9.36	9.13	8.91
1.3	8.69	8.48	8.26	8.05	7.84	7.63	7.42	7.22	7.02	6.82
1.4	6.63	6.43	6.24	6.05	5.87	5.68	5.50	5.33	5.15	4.98
1.5	4.81	4.64	4.47	4.31	4.15	4.00	3.84	3.69	3.54	3.40
1.6	3.25	3.11	2.97	2.84	2.71	2.58	2.45	2.33	2.21	2.09
1.7	1.98	1.87	1.76	1.66	1.55	1.45	1.36	1.27	1.18	1.09
1.8	1.01	0.93	0.85	0.78	0.71	0.64	0.57	0.51	0.46	0.40
1.9	0.35	0.30	0.26	0.22	0.18	0.15	0.12	0.09	0.07	0.05
2.0	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Numbers in the body of the table are estimates of lot percent defective corresponding to specific values of Q, the quality index. For values of Q greater than or equal to zero, the estimate of percent defective is read directly from the table. For values of Q less than zero, the table value must be subtracted from 100.

TABLE 914-5 (CONTINUED)

Variability-Unknown Procedure					**Standard Deviation Method**					
Sample Size										
7										
Q	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	50.00	49.63	49.25	48.88	48.50	48.13	47.75	47.38	47.01	46.63
0.1	46.26	45.89	45.51	45.14	44.77	44.40	44.03	43.65	43.28	42.91
0.2	42.54	42.17	41.80	41.44	41.07	40.70	40.33	39.97	39.60	39.23
0.3	38.87	38.50	38.14	37.78	37.42	37.05	36.69	36.33	35.98	35.62

0.4	35.26	34.90	34.55	34.19	33.84	33.49	33.13	32.78	32.43	32.08
0.5	31.74	31.39	31.04	30.70	30.36	30.01	29.67	29.33	28.99	28.66
0.6	28.32	27.98	27.65	27.32	26.99	26.66	26.33	26.00	25.68	25.35
0.7	25.03	24.71	24.39	24.07	23.75	23.44	23.12	22.81	22.50	22.19
0.8	21.88	21.58	21.27	20.97	20.67	20.37	20.07	19.78	19.48	19.19
0.9	18.90	18.61	18.33	18.04	17.76	17.48	17.20	16.92	16.65	16.37
1.0	16.10	15.83	15.56	15.30	15.03	14.77	14.51	14.26	14.00	13.75
1.1	13.49	13.25	13.00	12.75	12.51	12.27	12.03	11.79	11.56	11.33
1.2	11.10	10.87	10.65	10.42	10.20	9.98	9.77	9.55	9.34	9.13
1.3	8.93	8.72	8.52	8.32	8.12	7.92	7.73	7.54	7.35	7.17
1.4	6.98	6.80	6.62	6.45	6.27	6.10	5.93	5.77	5.60	5.44
1.5	5.28	5.13	4.97	4.82	4.67	4.52	4.38	4.24	4.10	3.96
1.6	3.83	3.69	3.57	3.44	3.31	3.19	3.07	2.95	2.84	2.73
1.7	2.62	2.51	2.41	2.30	2.20	2.11	2.01	1.92	1.83	1.74
1.8	1.65	1.57	1.49	1.41	1.34	1.26	1.19	1.12	1.06	0.99
1.9	0.93	0.97	0.81	0.76	0.70	0.65	0.60	0.56	0.51	0.47
2.0	0.43	0.39	0.36	0.32	0.29	0.26	0.23	0.21	0.18	0.16
2.1	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.04	0.03	0.02
2.2	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Numbers in the body of the table are estimates of lot percent defective corresponding to specific value of Q, the quality index. For values of Q greater than or equal to zero, the estimate of percent defective is read directly from the table. For values of Q less than zero, the table value must be subtracted from 100.

TABLE 914-5 (CONTINUED)

Variability-Unknown Procedure					**Standard Deviation Method**					
Sample Size										
8										
Q	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	50.00	49.62	49.24	48.86	48.49	48.11	47.73	47.35	46.97	46.59
0.1	46.22	45.84	45.46	45.08	44.71	44.33	43.96	43.58	43.21	42.83
0.2	42.46	42.08	41.71	41.34	40.97	40.59	40.22	39.85	39.48	39.11
0.3	38.75	38.08	38.01	37.65	37.28	36.92	36.55	36.19	35.83	35.47
0.4	35.11	34.75	34.39	34.04	33.68	33.33	32.97	32.62	32.27	31.92
0.5	31.57	31.22	30.87	30.53	30.18	29.84	29.50	29.16	28.82	28.48
0.6	28.15	27.81	27.48	27.15	26.82	26.49	26.16	25.83	25.51	25.19
0.7	24.86	24.54	24.23	23.91	23.59	23.28	22.97	22.66	22.35	22.04
0.8	21.74	21.44	21.14	20.84	20.54	20.24	19.95	19.66	19.37	19.08
0.9	18.79	18.51	18.23	17.95	17.67	17.39	17.12	16.85	16.57	16.31

1.0	16.04	15.78	15.51	15.25	15.00	14.74	14.49	14.24	13.99	13.74
1.1	13.49	13.25	13.01	12.77	12.54	12.30	12.07	11.84	11.61	11.39
1.2	11.17	10.94	10.73	10.51	10.30	10.09	9.88	9.67	9.47	9.26
1.3	9.06	8.87	8.67	8.48	8.29	8.10	7.91	7.73	7.55	7.37
1.4	7.19	7.02	6.85	6.68	6.51	6.35	6.19	6.03	5.87	5.71
1.5	5.56	5.41	5.26	5.12	4.97	4.83	4.69	4.56	4.42	4.29
1.6	4.16	4.03	3.91	3.79	3.67	3.55	3.43	3.32	3.21	3.10
1.7	2.99	2.89	2.79	2.69	2.59	2.49	2.40	2.31	2.22	2.13
1.8	2.04	1.96	1.88	1.80	1.72	1.65	1.58	1.51	1.44	1.37
1.9	1.31	1.24	1.18	1.12	1.07	1.01	0.96	0.91	0.86	0.81
2.0	0.76	0.72	0.67	0.63	0.59	0.55	0.52	0.48	0.45	0.42
2.1	0.39	0.36	0.33	0.30	0.28	0.26	0.23	0.21	0.19	0.17
2.2	0.16	0.14	0.13	0.11	0.10	0.09	0.08	0.07	0.06	0.05
2.3	0.04	0.04	0.03	0.02	0.02	0.02	0.01	0.01	0.01	0.00

Numbers in the body of the table are estimates of lot percent defective corresponding to specific value of Q, the quality index. For values of Q greater than or equal to zero, the estimate of percent defective is read directly from the table. For values of Q less than zero, the table value must be subtracted from 100.

TABLE 914-5 (CONTINUED)

Variability-Unknown Procedure					**Standard Deviation Method**					
Sample Size										
9										
Q	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	50.00	49.62	49.24	48.85	48.47	48.09	47.71	47.33	46.95	46.57
0.1	46.18	45.80	45.42	45.04	44.66	44.29	43.91	43.53	43.15	42.77
0.2	42.40	42.02	41.64	41.27	40.89	40.52	40.15	39.77	39.40	39.03
0.3	38.66	38.29	37.92	37.55	37.19	36.82	36.46	36.09	35.73	35.37
0.4	35.00	34.64	34.29	33.93	33.57	33.21	32.86	32.51	32.15	31.80
0.5	31.45	31.10	30.76	30.41	30.07	29.72	29.38	29.04	28.70	28.36
0.6	28.03	27.69	27.36	27.03	26.70	26.37	26.04	25.72	25.39	25.07
0.7	24.75	24.43	24.11	23.80	23.49	23.17	22.86	22.56	22.25	21.94
0.8	21.64	21.34	21.04	20.75	20.45	20.16	19.87	19.58	19.29	19.00
0.9	18.72	18.44	18.16	17.88	17.61	17.33	17.06	16.79	16.53	16.26
1.0	16.00	15.74	15.48	15.23	14.97	14.72	14.47	14.22	13.98	13.73
1.1	13.49	13.26	13.02	12.79	12.55	12.32	12.10	11.87	11.65	11.43
1.2	11.21	10.99	10.78	10.57	10.36	10.15	9.95	9.75	9.55	9.35
1.3	9.16	8.96	8.77	8.59	8.40	8.22	8.04	7.86	7.68	7.51
1.4	7.33	7.17	7.00	6.83	6.67	6.51	6.35	6.20	6.04	5.89
1.5	5.74	5.60	5.45	5.31	5.17	5.03	4.90	4.77	4.64	4.51
1.6	4.38	4.26	4.14	4.02	3.90	3.78	3.67	3.56	3.45	3.34
1.7	3.24	3.14	3.03	2.94	2.84	2.75	2.65	2.56	2.47	2.39
1.8	2.30	2.22	2.14	2.06	1.98	1.91	1.84	1.76	1.70	1.63

1.9	1.56	1.50	1.44	1.37	1.32	1.26	1.20	1.15	1.10	1.05
2.0	1.00	0.95	0.90	0.86	0.82	0.77	0.73	0.70	0.66	0.62
2.1	0.59	0.55	0.52	0.49	0.46	0.43	0.41	0.38	0.36	0.33
2.2	0.31	0.29	0.27	0.25	0.23	0.21	0.20	0.18	0.17	0.15
2.3	0.14	0.13	0.11	0.10	0.09	0.08	0.08	0.07	0.06	0.05
2.4	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.01	0.01
2.5	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Numbers in the body of the table are estimates of lot percent defective corresponding to specific value of Q, the quality index. For values of Q greater than or equal to zero, the estimate of percent defective is read directly from the table. For values of Q less than zero, the table value must be subtracted from 100.

TABLE 914-5 (CONTINUED)

Variability-Unknown Procedure					**Standard Deviation Method**					
Sample Size										
10										
Q	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	50.00	49.62	49.23	48.85	48.46	48.08	47.70	47.31	46.93	46.54
0.1	46.16	45.78	45.40	45.01	44.63	44.25	43.87	43.49	43.11	42.73
0.2	42.35	41.97	41.60	41.22	40.84	40.47	40.09	39.72	39.34	38.97
0.3	38.60	38.23	37.86	37.49	37.12	36.75	36.38	36.02	35.65	35.29
0.4	34.93	34.57	34.21	33.85	33.49	33.13	32.78	32.42	32.07	31.72
0.5	31.37	31.02	30.67	30.32	29.98	29.64	29.29	28.95	28.61	28.28
0.6	27.94	27.60	27.27	26.94	26.61	26.28	25.96	25.63	25.31	24.99
0.7	24.67	24.35	24.03	23.72	23.41	23.10	22.79	22.48	22.18	21.87
0.8	21.57	21.27	20.98	20.68	20.39	20.10	19.81	19.52	19.23	18.95
0.9	18.67	18.39	18.11	17.84	17.56	17.29	17.03	16.76	16.49	16.23
1.0	15.97	15.72	15.46	15.21	14.96	14.71	14.46	14.22	13.97	13.73
1.1	13.50	13.26	13.03	12.80	12.57	12.34	12.12	11.90	11.68	11.46
1.2	11.24	11.03	10.82	10.61	10.41	10.21	10.00	9.81	9.61	9.42
1.3	9.22	9.03	8.85	8.66	8.48	8.30	8.12	7.95	7.77	7.60
1.4	7.44	7.27	7.10	6.94	6.78	6.63	6.47	6.32	6.17	6.02
1.5	5.87	5.73	5.59	5.45	5.31	5.18	5.05	4.92	4.79	4.66
1.6	4.54	4.41	4.30	4.18	4.06	3.95	3.84	3.73	3.62	3.52
1.7	3.41	3.31	3.21	3.11	3.02	2.93	2.83	2.74	2.66	2.57
1.8	2.49	2.40	2.32	2.25	2.17	2.09	2.02	1.95	1.88	1.81
1.9	1.75	1.68	1.62	1.56	1.50	1.44	1.38	1.33	1.27	1.22
2.0	1.17	1.12	1.07	1.03	0.98	0.94	0.90	0.86	0.82	0.78
2.1	0.74	0.71	0.67	0.64	0.61	0.58	0.55	0.52	0.49	0.46
2.2	0.44	0.41	0.39	0.37	0.34	0.32	0.30	0.29	0.27	0.25
2.3	0.23	0.22	0.20	0.19	0.18	0.16	0.15	0.14	0.13	0.12
2.4	0.11	0.10	0.09	0.08	0.08	0.07	0.06	0.06	0.05	0.05
2.5	0.04	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01
2.6	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00

Numbers in the body of the table are estimates of lot percent defective corresponding to specific value of Q, the quality index. For values of Q greater than or equal to zero, the estimate of

percent defective is read directly from the table. For values of Q less than zero, the table value must be subtracted from 100.

3.19 MISCELLANEOUS

Standard DOT Specification Section 919

3.19.1 FLY ASH

Standard DOT Specification Section 919.07

Fly ash for Portland cement concrete shall conform to ASTM C 618, class c or class f except that the loss on ignition shall not be more than 3.0 percent. Fly ash used to control alkali-silica reactivity shall be class f and shall contain not more than 1.5 percent available alkali in accordance with ASTM C 618, table 1a. Before each source of fly ash is approved, certified results of tests conducted by a testing agency shall be submitted to and verified by the department. Accompanying the certification shall be a statement from the supplier listing the source and type of coal, the methods used to burn, collect and store the fly ash, and the quality control measures employed.

Conformance to the requirements for loss on ignition and fineness shall be determined by the supplier for each truckload of fly ash delivered to the mixing site. The test values determined shall be included on the delivery ticket. The engineer may require that the fly ash not be used until the department has performed tests for loss on ignition and fineness.

3.19.2 PORTLAND CEMENT

Standard DOT Specification Section 919.11

Portland Cement shall conform to the following:

Portland Cement	Type II	ASTM C 150
White Portland Cement	Type I	(See Note 1) ASTM C 150

Note 1. Type III may be used only for pre-mixed or pre-cast ites.

Note 2 - Shall not contain more than 0.55 percent by weight of Ferric Oxide (Fe203).

Different brands of cement, the same brand of cement from different mills or different types of cement shall not be mixed.

Suitable means shall be provided for storing and protecting the cement against dampness. Cement which for any reason has become partially set or which contains lumps of caked cement will be rejected. The temperature of the cement at the time of delivery to the mixer shall not exceed 160o F.

Portland cement, Type II, which has been pre-blended with a maximum of 15 percent fly ash, by weight, and conforming to ASTM C 595, may be used. When blended Portland cement is used, no additional fly ash shall be added.

3.19.3 WATER

Standard DOT Specification Section 919.15

Water used in mixing or curing shall be clean and free of oil, salt, acid, alkali, sugar, vegetable, or other substance injurious to the finished product. Water will be tested in accordance with and

shall meet the requirements of AASHTO T 26. Water known to be of potable quality may be used without test. Where the source of water is relatively shallow, the intake shall be so enclosed as to exclude silt, mud, grass or other foreign materials.

3.20 METHODS OF TESTS

Standard DOT Specification Section 990

This section consists of the following NJDOT methods of tests, which have been adopted and are used by NJDOT.

3.20.1 MORTAR-MAKING PROPERTIES OF FINE AGGREGATE

Standard DOT Specification Section 990 A-1

3.20.1.1 SCOPE

This method of test is used to determine the mortar-making properties of fine aggregate by tensile strength at the age of 7 days when compared to standard Ottawa Mortar.

Note: Subsequent samples of fine aggregate, which fail to meet the minimum strength for 7 days, will be tested for both 7 and 28 days.

3.20.1.2 PROCEDURE

The standard Ottawa Mortar shall be prepared in accordance with AASHTO T 162 and tested in accordance with AASHTO T 132.

The fine aggregate sample mortar will be prepared and tested in accordance with the paragraph above by replacing the standard Ottawa sand with the same weight of fine aggregate sample and using sufficient mixing water to produce the same consistency as obtained with the standard Ottawa Mortar.

3.20.1.3 REPORT

The strength of the fine aggregate sample will be reported as a percentage of the standard Ottawa Mortar at age of 7 days.

3.20.2 DETERMINATION OF REFLECTANCE VALUE OF AGGREGATES

Standard DOT Specification Section 990 A-2

3.20.2.1 SCOPE

This method of test is used to determine the daylight 45 degree - 0 degree, luminous directional reflectance of fine and coarse aggregate.

3.20.2.2 APPARATUS

The apparatus will conform to ASTM E 1347 and to the following:

1. The receptacle for testing fine aggregate will be a flat-bottomed dish with a diameter of 3 to 4 inches and a minimum depth of 1/2 inch.

2. The receptacle for testing the coarse aggregate will be of sufficient size to hold several pounds of aggregate and will be at least 5 inches deep.

3.20.2.3 PROCEDURE

A. Fine Aggregate. Fill flat-bottomed dish to overflowing with representative sample. Strike off excess material until the fine aggregate is even with the top edge of the receptacle. Place a flat, clean, 1/8-inch glass plate, approximately 4 inches square, on the reflectance standard and standardize the reflectometer. Select the standard that is closest to the sample being tested. Place glass plate and reflectometer on sample and take a reading.

Repeat this procedure two times, using a different area selected from the total sample.

B. Coarse Aggregate. Fill flat-bottomed pan to a depth of about 4 inches with sample to be tested. Level material with a metal scoop. Standardize the reflectometer on reflectance standard as described above. Select the standard that is closest to sample being tested. Place glass plate and reflectometer on prepared sample and determine reflectance. Take two additional readings at different locations on the surface of the material.

3.20.2.4 REPORT
Reflectance value will be an average of three reading reported to the nearest 1 percent.

3.20.3 DETERMINATION OF PERCENTAGE OF MICA IN FINE AGGREGATE
Standard DOT Specification Section 990A-3

3.20.3.1 SCOPE
This method of test is used to determine the mica content of fine aggregate.

3.20.3.2 APPARATUS
The apparatus will consist of the following:

1. Square opening no. 10 and no. 200 sieves conforming to ASTM E 11.
2. Balances for fine aggregate having a minimum capacity of 500 grams, sensitive to 0.1 gram or less. The analytical balances used in the mica determination will have a capacity of not more than 200 grams, sensitive to 1/10 of a milligram.
3. Ionizing brush, 3-inch length, equipped with a polonium ionizer built in the ferrule of the brush, which is an alpha emitter and immediately neutralizes any surface in close proximity freeing it of static electricity.
4. Microscope, wide field, low power magnification 20x, working distance 2.795 inches, field area 0.496 inches.
5. Rubber-edged scraping blade with metal stem rubber edge approximately 4 inches in length.
6. Roundometer as described in ASTM D 1155.

3.20.3.3 SELECTION OF SAMPLE

Sample as received in the laboratory will be taken from representative sample of field stockpile. Fine aggregate will be graded in conformance with current standard gradation specifications for the fine aggregate under test. A representative air-dried sample shall be split to approximately 25 grams. The sample will be representative of material passed through a no. 10 mesh sieve and retained on a no. 200 mesh sieve. The 25-gram sample will then be kept in a friction top can until ready for test. This sample will be further reduced to two representative 1-gram samples, both of which will be tested for mica content.

3.20.3.4 PROCEDURE

Weigh two 1-gram samples from the 25 gram sample on an analytical balance. Brush surface of vibrating glass panel with ionizing bush (see note). Adjust the height of slope of the glass panel to 1 3/4 inch set the vibrator amplitude control at such a position that flat particles on the upper half of the panel will move slowly up the slope, while the fine aggregate rolls down. Pour the sample onto the vibrating glass panel, at such a rate that no bunching occurs. While the flat particles are moving toward the upper end of the panel, scrape mica particles into suitable receiver.

Repeat this procedure until microscopic examination of each separation shows that 95 percent or more of the mica has been removed. Weigh the collected mica. Both 1-gram samples are to be tested.

Note: If mica adheres to the glass panel during the test, indicating static electricity, clean the panel and the brush with the ionizing brush.

3.20.3.5 CALCULATION

$$\textbf{Percent of mica} = \frac{\text{Weight of mica in grams} \times 100}{\text{Weight of sample}}$$

3.20.3.6 REPORT

Report results of the test to the nearest 0.1 percent. The average of the results of the two samples tested will be reported.

3.20.4 DETERMINATION OF PERCENTAGE OF CARBONATES IN CRUSHED GRAVEL BY PETROGRAPHIC ANALYSIS
Standard DOT Specification Section 990A-4

3.20.4.1 SCOPE

This method of test is used for the visual determination of rock types and deleterious material in coarse aggregates.

3.20.4.2 APPARATUS

The apparatus will be as follows:

1. Binocular microscope.
2. Dilute hydrochloric acid
3. Scale accurate to plus or minus 0.1 gram
4. Geology or mason hammer, or other cracking implement, and a steel striking plate.
5. Penknife, screwdriver, or similar scratching device.

3.20.4.3 PETROGRAPHER

The examiner will have a degree in geology or will be a trained technician with a general background in geology and a specific background in petrology.

3.20.4.4 SAMPLE PREPARATION

A sample of approximately 35 pounds will be split and screened to produce a representative sample of 300 grams of plus no. 4 material for aggregate sizes no. 3 through no. 5, 1000 grams of plus no. 4 material for aggregate sizes no. 56 through no. 68, and 500 grams of plus no. 8 material for aggregate sizes no. 7 through no. 9. The samples will then be washed to remove any coating, which would make particle examination difficult.

3.20.4.5 PROCEDURE

The prepared sample will be divided into rock types as defined in ASTM C 294. This will be done by visual examination with the aid of the binocular microscope, dilute HCl, and cracking and scratching implements. The resulting groups will be weighed to the nearest gram and calculated as a percent of the whole.

Deleterious material samples will be examined for weathered and leached, porous, friable, fractured, altered, or otherwise unsound particles. Pieces affected by such conditions to the degree that their performance may be impaired will be sorted out, weighed, and calculated as a percent of the whole.

Since this is a subjective determination, the following guidelines will be used in determining if particles are weathered and unsound:

1. Can be broken into several pieces by light hammer tap.
2. Show more than superficial oxidation or alteration of feldspars.
3. Are visibly porous.
4. Show numerous micro fractures or cleavage planes.
5. Are of abnormal coloration.

Particles, which are, as outlined above should be considered worthy of close examination.

3.20.4.6 REPORT

The report shall contain the percentage by weight of individual rock types, as defined in ASTM C 294, and percentage by weight of deleterious material, which will be reported as weathered and unsound.

3.20.5 DETERMINATION OF PERCENTAGE OF ADHERENT FINES PRESENT IN COARSE AGGREGATE

Standard DOT Specification Section 990A-5

3.20.5.1 SCOPE

This method of test is used to determine the percentage of adherent fines present in coarse aggregates.

3.20.5.2 APPARATUS

The apparatus will be in accordance with AASHTO T 11.

3.20.5.3 SAMPLE

The sample for the test will conform to AASHTO T 11.

3.20.5.4 PROCEDURE

The test sample will be dried to constant mass at a temperature of 230 plus or minus 9 degrees f and weighed to the nearest 0.1 percent. The sample will be sieved, for a period not to exceed 1 minute, over a no. 16 sieve. The material passing the no. 16 sieve will be considered non-adherent fines. The remaining material will then be tested in accordance with AASHTO T 11 and that material determined to be finer than the no. 200 sieve will be considered adherent fines.

3.20.5.5 REPORT

The report will include the amount of non-adherent fines computed as a percentage of the total mass of the sample and the amount of adherent fines computed as a percentage of the total mass of the sample.

3.20.6 SCRATCH HARDNESS TEST FOR COARSE AGGREGATE PARTICLES
Standard DOT Specification Section 990A-4

3.20.6.1 SCOPE

This method of test is used to determine the quantity of soft particles in coarse aggregates on the basis of scratch hardness. It is intended to be used to identify materials that are soft including those which are so poorly bonded that the separate particles in the piece are easily detached from the mass. The test is not intended to identify other types of deleterious materials, which may be designated separately in the specifications.

The scratch hardness test should be made on a freshly broken surface of the aggregate particle. If the particle contains more than one type of rock and is partly hard and partly soft, it should be classified as soft only if the soft portion is one third or more of the volume of the particle.

The scratch hardness test may be made on the exposed surface of a particle provided consideration is given to softening of the surface due to weathering. A particle with a thin, soft, and weathered surface and a hard core should normally be classed as "soft".

3.20.6.2 APPARATUS

Apparatus will be a brass rod, 1/16 inch (1.6 millimeters) in diameter, with a rounded point, mounted in a device so that a load of 2 plus or minus 0.1 pound is applied to the specimen tested. The brass rod will be of suitable hardness so that when filed to a sharp point, it will scratch a copper penny (u.s. Lincoln design), but fail to scratch a nickel (u.s. Jefferson design). For use in the field, the brass rod of the specified size and hardness can be mounted into the wooden shaft of an ordinary lead pencil. A suitable design for the scratch hardness apparatus is on file in the department laboratory.

3.20.6.3 PREPARATION OF SAMPLE

Coarse aggregate for the test will consist of material from which the sizes finer than the 3/8-inch sieve have been removed. The sample tested will be of such size that it will yield not less than the amounts of the different sizes prescribed in table 1 below which will be available in amounts of 10 percent or more.

TABLE 1 Minimum Size of Sample to be Tested (Square Opening Sieves)

SIEVE SIZE	SAMPLE
INCHES	**MASS GRAMS**
3/8" TO 1/2"	200
1/2" TO 3/4"	600
3/4" TO 1"	1500
1" TO 1 1/2"	4500
1 1/2" TO 2"	12000

Should the sample contain less than 10 percent of any of the sizes prescribed in table 1 above that size will not be tested but, for the purpose of calculating test results, it will be considered as containing the same percentage of soft particles as the average of the next larger and the next smaller size or, if one of these sizes is absent, it will be considered to have the same loss as the next larger or next smaller size, whichever is present. The above requirements cover aggregates composed of a mixture of different types of rock. When the aggregate is composed of only one type of rock, the weight of the sample tested may be reduced to an amount considered appropriate by the engineer.

3.20.6.4 PROCEDURE

Subject each particle of aggregate under test to a scratching motion of the brass rod, using a pressure of 2 lbs.. Particles are considered to be soft if, during the scratching process, a groove is made in them without deposition of metal from the brass rod, or if separate particles are detached from the rock mass.

3.20.6.5 CALCULATION AND REPORT

The report shall include the following:
1. Mass and number of particles of each size of each sample tested with the brass rod.
2. Mass and number of particles of each size of each sample classified as soft in the test.
3. Percentage of test sample classified as soft by mass and by number of particles, and
4. Weighted average percentage of soft particles calculated from percentages in e.3 above and based on the grading of the sample of aggregate received for examination or, preferably, the average grading of the material from that portion of the supply of which the sample is representative. In these calculations, sizes finer than the 9.5-millimeter sieve will not be included.

3.21 MATERIAL DATABASE

The D.O.T. approved material data base is available on the following website.
http://www.state.nj.us/transportation/eng/materials/qualified/

Important

Please list plant location (s) from which you will be delivering material (s) on Attachment "A" provided on the Advertised Solicitation, Current Bid Opportunities webpage
http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml

4.0 BID PROPOSAL PREPARATION AND SUBMISSION

4.1 GENERAL

The bidder is advised to thoroughly read and follow all instructions contained in this RFP, including the instructions on the RFP's signatory page, in preparing and submitting its bid proposal.

Note: Bid proposals shall not contain URLs (Uniform Resource Locators, i.e., the global address of documents and other resources on the world wide web) or web addresses. Inasmuch as the web contains dynamically changing content, inclusion of a URL or web address in a bid response is indicative of potentially changing information. Inclusion of a URL or web address in a bid response implies that the bid's content changes as the referenced web pages change.

4.2 BID PROPOSAL DELIVERY AND IDENTIFICATION

In order to be considered, a bid proposal must arrive at the Purchase Bureau in accordance with the instructions on the RFP signatory page http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml. Bidders are cautioned to allow adequate delivery time to ensure timely delivery of bid proposals. **State regulation mandates that late bid proposals are ineligible for consideration**. **THE EXTERIOR OF ALL BID PROPOSAL PACKAGES ARE TO BE LABELED WITH THE BID IDENTIFICATION NUMBER AND THE FINAL BID OPENING DATE OR RISK NOT BEING RECEIVED IN TIME.**

4.3 NUMBER OF BID PROPOSAL COPIES

The bidder must submit **one (1) complete ORIGINAL bid proposal**, clearly marked as the "ORIGINAL" bid proposal. The bidder should submit **one (1) full, complete and exact copies** of the original. The copies requested are necessary in the evaluation of the bid proposal. A bidder failing to provide the requested number of copies will be charged the cost incurred by the State in producing the requested number of copies. It is suggested that the bidder make and retain a copy of its bid proposal.

A bidder failing to provide the requested number of copies will be charged the cost incurred by the State in producing the requested number of copies. It is suggested that the bidder make and retain a copy of its bid proposal.

4.4 BID PROPOSAL CONTENT

4.4.1 FORMS THAT MUST BE SUBMITTED WITH BID PROPOSAL

4.4.1.1 SIGNATORY PAGE

The bidder shall complete and submit the Signatory page provided on the Advertised Solicitation, Current Bid Opportunities webpage http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml. The Signatory page shall be signed by an authorized representative of the bidder. If the bidder is a limited partnership, the Signatory page must be signed by a general partner. If the bidder is a joint venture, the Signatory page must be signed by a principal of each party to the joint venture. Failure to comply will result in rejection of the bid proposal.

4.4.1.2 OWNERSHIP DISCLOSURE FORM

In the event the bidder is a corporation, partnership or sole proprietorship, the bidder must complete the attached Ownership Disclosure Form. A current completed Ownership Disclosure Form must be received prior to or accompany the bid proposal. Failure to do so will preclude the award of a contract.

The Ownership Disclosure Form is located on the Advertised Solicitation, Current Bid Opportunities webpage http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml.

4.4.1.3 DISCLOSURE OF INVESTIGATIONS/ACTIONS INVOLVING BIDDER

The bidder shall provide a detailed description of any investigation, litigation, including administrative complaints or other administrative proceedings, involving any public sector clients during the past five years including the nature and status of the investigation, and, for any litigation, the caption of the action, a brief description of the action, the date of inception, current status, and, if applicable, disposition. The bidder shall use the Disclosure of Investigations and Actions Involving Bidder form located on the Advertised Solicitation, Current Bid Opportunities webpage http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml.

4.4.2 PROOFS OF REGISTRATION THAT MUST BE SUBMITTED WITH THE BID PROPOSAL

4.4.2.1 BUSINESS REGISTRATION CERTIFICATE FROM THE DIVISION OF REVENUE

FAILURE TO SUBMIT A COPY OF THE BIDDER'S BUSINESS REGISTRATION CERTIFICATE (OR INTERIM REGISTRATION) FROM THE DIVISION OF REVENUE WITH THE BID PROPOSAL MAY BE CAUSE FOR REJECTION OF THE BID PROPOSAL.

The bidder may go to **www.nj.gov/njbgs** to register with the New Jersey Division of Revenue or to obtain a copy of an existing Business Registration Certificate.

Refer to Section 1.1. of the NJ Standard Terms and Conditions version 07/27/07 located on the Advertised Solicitation, Current Bid Opportunities webpage
http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml.

4.4.2.2 SMALL BUSINESS SET-ASIDE CONTRACTS

Not applicable to this RFP.

4.4.3 FORMS THAT MUST BE SUBMITTED BEFORE CONTRACT AWARD AND SHOULD BE SUBMITTED WITH THE BID PROPOSAL.

4.4.3.1 MACBRIDE PRINCIPLES CERTIFICATION

The bidder is required to complete the attached MacBride Principles Certification evidencing compliance with the MacBride Principles. The requirement is a precondition to entering into a State contract. The MacBride Principles Certification Form is located on the Advertised Solicitation, Current Bid Opportunities webpage:
http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml.

4.4.3.2 AFFIRMATIVE ACTION

The bidder is required to submit a copy of Certificate of Employee Information or a copy of Federal Letter of Approval verifying that the bidder is operating under a federally approved or sanctioned Affirmative Action program. If the bidder has neither document of Affirmative Action evidence, then the bidder must complete the attached Affirmative Action Employee Information Report (AA-302). This requirement is a precondition to entering into a State contract. The Affirmative Action Employee Information Report (AA-302) is located on the Advertised Solicitation, Current Bid Opportunities webpage:
http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml.

4.4.4 SUBMITTALS

4.4.4.1 BIDDER EXPERIENCE - DATA SHEETS

The bidder must provide all of the information requested in the Bidder's Data Packet located on the Advertised Solicitation, Current Bid Opportunities webpage: http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml.

4.4.4.2 SAMPLES/SAMPLE TESTING

The samples submitted must meet the specification requirements set forth in the RFP and must be representative of the product bid. Bid samples **for pricing lines 00001-00168** for evaluation and testing purposes are to be made available at no charge and delivered to **the Department of Transportation** at the bidder's expense. The bidder must, within **five (5)** working days following a request from the State, submit bid samples to the **Department of Transportation.** Bid samples will not be returned. The [name of agency] will conduct laboratory tests to assure that the bid samples submitted **for pricing lines 00001-00168** conform to this RFP. The State reserves the right to perform any tests necessary to assure that the bid samples conform to this RFP **for pricing lines 00001-000168.** The testing results of the State are final.

4.4.5 FINANCIAL CAPABILITY OF THE BIDDER

Upon request, in order to provide the State with the ability to judge the bidder's financial capacity and capabilities to undertake and successfully complete the contract, the bidder should submit two years of certified financial statements that include a balance sheet, income statement and statement of cash flow, and all applicable notes for the most recent calendar year or the bidder's most recent fiscal year. If certified financial statements are not available, the bidder should provide either a reviewed or compiled statement from an independent accountant setting forth the same information required for the certified financial statements, together with a certification from the Chief Executive Officer and the Chief Financial Officer, that the financial statements and other information included in the statements fairly present in all material respects the financial condition, results of operations and cash flows of the bidder as of, and for, the periods presented in the statements. In addition, the bidder should submit a bank reference.

If the information is not supplied with the bid proposal, the State may still require the bidder to submit it. If the bidder fails to comply with the request within seven (7) business days, the State may deem the proposal non-responsive.

The bidder may designate specific financial information as not subject to disclosure when the bidder has a good faith legal/factual basis for such assertion. The bidder may submit specific financial documents in a separate, sealed package clearly marked "Confidential-Financial Information" along with its Bid Proposal.

The State reserves the right to make the determination whether to accept the bidder's assertion of confidentiality and will advise the bidder accordingly.

4.4.6 PRICING

The bidder must submit its pricing using the format set forth in the State supplied price sheet(s) attached to this RFP. Failure to submit all information required will result in the bid being considered non-responsive. Each bidder is required to hold its prices firm through issuance of contract.

4.4.7 METHOD OF BIDDING

Gray Transit Mix Portland Cement Concrete:

The bidder must submit bid prices in both categories (2-4 Cu. Yds. and in excess of 4 Cu. Yds.) for each of the classes of gray transit mix Portland cement concrete (class “A”, “B” and “C”) specified on the pricing pages of this proposal. If the bidder fails to submit or omits a required bid price, either intentionally or unintentionally, the entire bid for that zone/county will be rejected.

White Transit Mix Portland Cement Concrete:

The bidder must submit bid prices in both categories (2-4 Cu. Yds. and in excess of 4 Cu. Yds.) for class “B” of white transit mix Portland cement concrete specified on the pricing pages of this proposal. If the bidder fails to submit or omits a required bid price, either intentionally or unintentionally, the entire bid for that zone/county will be rejected.

The bidder is to submit only one price per line item for delivered quantities. Failure to do so will result in rejection of bid for the affected portion of the bid.

Price lines 00169 -00188 refer to charges associated with additives, additional service, standby time, Saturday delivery, and F.O.B. plant prices. It is mandatory to bid on these price line items unless bids are not being submitted for either Gray or White concrete for a particular Zone/County in which the price line item would not apply. For instance, if bidder is not bidding on “white” concrete, price line items 00181 and 00188 would not require a bid price.

5.0 SPECIAL CONTRACTUAL TERMS AND CONDITIONS

5.1 PRECEDENCE OF SPECIAL CONTRACTUAL TERMS AND CONDITIONS

The contract awarded as a result of this RFP shall consist of this RFP, addendum to this RFP, the contractor's bid proposal and the Division's Notice of Award.

Unless specifically stated within this RFP, the Special Contractual Terms and Conditions of the RFP take precedence over the NJ Standard Terms and Conditions version 07/27/07 located on the Advertised Solicitation, Current Bid Opportunities webpage: http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml.

In the event of a conflict between the provisions of this RFP, including the Special Contractual Terms and the NJ Standard Terms and Conditions version 07/27/07, and any Addendum to this RFP, the Addendum shall govern.

In the event of a conflict between the provisions of this RFP, including any Addendum to this RFP, and the bidder's bid proposal, the RFP and/or the Addendum shall govern.

5.2 CONTRACT TERM AND EXTENSION OPTION

The term of the contract shall be for a period of **two (2) years**. The anticipated "Contract Effective Date" is provided on the signatory page of this RFP: http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml. If delays in the procurement process result in a change to the anticipated Contract Effective Date, the bidder agrees to accept a contract for the full term of the contract. The contract may be extended for all or part of a one-year period, by the mutual written consent of the contractor and the Director.

5.3 CONTRACT TRANSITION

In the event that a new contract has not been awarded prior to the contract expiration date, as may be extended herein, it shall be incumbent upon the contractor to continue the contract under the same terms and conditions until a new contract can be completely operational. At no time shall this transition period extend more than **ninety (90)** days beyond the expiration date of the contract.

5.4 CONTRACT AMENDMENT

Any changes or modifications to the terms of the contract shall be valid only when they have been reduced to writing and signed by the contractor and the Director.

5.5 CONTRACTOR'S WARRANTY

a) The Contractor is responsible for the quality, technical accuracy, timely completion and delivery of all deliverables and other services to be furnished by the Contractor under the Contract. The Contractor agrees to perform in a good, skillful and timely manner all services set forth in the Contract.
b) The Contractor shall, without additional compensation, correct or revise any errors, omissions, or other deficiencies in its services and deliverables furnished under the Contract. The approval of interim deliverables furnished under the Contract shall not in any way relieve the Contractor of fulfilling all of its obligations under the Contract. The acceptance or payment for any of the services rendered under the Contract shall not be construed as a waiver by the State or Agency, of any rights under the agreement or of any cause of action arising out of the Contractor's performance of the Contract.

c) The acceptance of, approval of or payment for any of the services performed by the Contractor under the Contract shall not constitute a release or waiver of any claim the State or Agency, has or may have for latent defects or errors or other breaches of warranty or negligence.

5.6 ITEMS ORDERED AND DELIVERED

The **Using Agencies are** authorized to order and **the contractor/contractors is/are** authorized to ship only those items covered by the contracts resulting from this RFP. If a review of orders placed by the Using Agency [Agencies] reveals [reveal] that material other than that covered by the contract has been ordered and delivered, such delivery shall be a violation of the terms of the contract and may be considered by the Director as a basis to terminate the contract and/or as a basis not to award the contractor a subsequent contract. The Director may take such steps as are necessary to have the items returned by the Agency, regardless of the time between the date of delivery and discovery of the violation. In such event, the contractor shall reimburse the State the full purchase price.

The contract involves items which are necessary for the continuation of ongoing critical State services. Any delay in delivery of these items would disrupt State services and would force the State to immediately seek alternative sources of supply on an emergency basis. Timely delivery is critical to meeting the State's ongoing needs.

5.7 REMEDIES FOR FAILURE TO COMPLY WITH MATERIAL CONTRACT REQUIREMENTS

In the event that the contractor fails to comply with any material contract requirements, the Director may take steps to terminate the contract in accordance with the State administrative code and/or authorize the delivery of contract items by any available means, with the difference between the price paid and the defaulting contractor's price either being deducted from any monies due the defaulting contractor or being an obligation owed the State by the defaulting contractor.

5.8 MANUFACTURING/PACKAGING REQUIREMENTS

5.8.1 All products must conform in every respect to the standards and regulations established by Federal and New Jersey State laws.

5.8.2 All products shall be manufactured and packaged under modern sanitary conditions in accordance with federal and state law and standard industry practice.

5.8.3 All products are to be packaged in sizes as specified in this RFP and shall be packaged in such a manner as to ensure delivery in first class condition and properly marked for identification. All shipments must be comprised of original cartons associated with the commercial industry represented by the actual product contained within each carton. Deliveries containing re-used, re-labeled, re-worked or alternate cartons are subject to rejection by the Using Agency at the contractor's expense.

5.9 CLAIMS

All claims asserted against the State by the contractor shall be subject to the New Jersey Tort Claims Act, N.J.S.A. 59:1-1.1, et seq., and/or the New Jersey Contractual Liability Act, N.J.S.A. 59:13-1, et seq.

5.10 CONTRACT ACTIVITY REPORT

In conjunction with the standard record keeping requirements of this contract, as required by in paragraph 3.19 of the NJ Standard Terms and Conditions version 07/27/07, located on the Advertised Solicitation, Current Bid Opportunities webpage http://www.state.nj.us/treasury/purchase/bid/summary/09x20062.shtml, contractor(s) must provide, on a calendar quarter basis, to the Purchase Bureau buyer assigned, a record of all purchases made under their contract award resulting for this Request for Proposal. This includes purchases made by all using agencies including the State and political sub-divisions thereof. This reporting requirement includes sales to State using agencies and, if permitted under the terms of the contract, sales to counties, municipalities, school districts, volunteer fire departments, first aid squads and rescue squads, and independent institutions of higher education. The requirement also includes sales to State and County Colleges and Quasi-State Agencies. Quasi-State Agencies include any agency, commission, board, authority or other such governmental entity which is established and is allocated to a State department or any bi-state governmental entity of which the State of New Jersey is a member.

This information must be provided in a tabular format such that an analysis can be made to determine the following:

- Contractor's total sales volume to each purchaser under the contract, subtotaled by product, including, if applicable, catalog number and description, price list with appropriate page reference and/or contract discount applied.
- Total dollars paid to subcontractors.

Submission of purchase orders, confirmations, and/or invoices do not fulfill this contract requirement for information.

Contractors are strongly encouraged to submit the required information in electronic spreadsheet format. The Purchase Bureau uses Microsoft Excel.

Failure to report this mandated information will be a factor in future award decisions.

5.11 PUBLIC WORKS CONTRACT-ADDITIONAL AFFIRMATIVE ACTION REQUIREMENT

N.J.S.A. 10:5-33 requires that:

"During the performance of this contract, the contractor agrees as follows:

a) The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause;

b) The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry,

marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex;

c) The contractor or subcontractor where applicable, will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment."

6.0 PROPOSAL EVALUATION

6.1 EVALUATION CRITERIA

The following criteria will be used to evaluate all bid proposals that meet the requirements of this RFP. The criteria are not necessarily listed in order of importance:

6.1.1 Price

6.1.2 Experience of the bidder

6.1.3 The bidder's past performance under similar contracts, including if applicable, the Division's vendor performance database.

6.2 ORAL PRESENTATION AND/OR CLARIFICATION OF BID PROPOSAL

After the submission of bid proposals, unless requested by the State as noted below, vendor contact with the State is still not permitted.

The bidder may be required to give an oral presentation to the State concerning its bid proposal. The State may also require the bidder to submit written responses to questions regarding its bid proposal.

The purpose of such communication with the bidder, either through an oral presentation or a letter of clarification, is to provide an opportunity for the bidder to clarify or elaborate on its bid proposal. Original bid proposals submitted, however, cannot be supplemented, changed, or corrected in any way. No comments regarding other bid proposals are permitted. Bidders may not attend presentations made by their competitors.

It is within the State’s discretion whether to require the bidder to give an oral presentation or require the bidder to submit written responses to questions regarding its bid proposal. Action by the State in this regard should not be construed to imply acceptance or rejection of a bid proposal. The Purchase Bureau buyer will be the sole point of contact regarding any request for an oral presentation or clarification.

6.3 BID DISCREPANCIES

In evaluating bids:

- Discrepancies between words and figures will be resolved in favor of words.
- Discrepancies between unit prices and totals of unit prices will be resolved in favor of unit prices.
- Discrepancies in the multiplication of units of work and unit prices will be resolved in favor of the unit prices.

- Discrepancies between the indicated total of multiplied unit prices and units of work and the actual total will be resolved in favor of the actual total.
- Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the corrected sum of the column of figures.

6.4 NEGOTIATION AND BEST AND FINAL OFFER (BAFO)

Following the opening of bid proposals, the State shall, pursuant to N.J.S.A. 52:34-12(f), negotiate one or more of the following contractual issues: the technical services offered, the terms and conditions and/or the price of a proposed contract award with any bidder, and/or solicit a Best and Final Offer (BAFO) from one or more bidders.

Initially, the Evaluation Committee will conduct a review of all the bids and select bidders to contact to negotiate and/or conduct a BAFO based on its evaluation and determination of the bid proposals that best satisfy the evaluation criteria and RFP requirements, and that are most advantageous to the State, price and other factors considered. The Committee may not contact all bidders to negotiate and/or to submit a BAFO.

In response to the State's request to negotiate, bidders must continue to satisfy all mandatory RFP requirements but may improve upon their original technical proposal in any revised technical proposal. However, any revised technical proposal that does not continue to satisfy all mandatory requirements will be rejected as non-responsive and the original technical proposal will be used for any further evaluation purposes in accordance with the following procedure.

In response to the State's request for a BAFO, bidders may submit a revised price proposal that is equal to or lower in price than their original submission, but must continue to satisfy all mandatory requirements. Any revised price proposal that is higher in price than the original will be rejected as non-responsive and the original bid will be used for any further evaluation purposes.

After receipt of the results of the negotiation and/or the BAFO(s), the Evaluation Committee will complete its evaluation and recommend to the Director for award that responsible bidder(s) whose bid proposal, conforming to this RFP, is most advantageous to the State, price and other factors considered.

All contacts, records of initial evaluations, any correspondence with bidders related to any request for negotiation or BAFO, any revised technical and/or price proposals, the Evaluation Committee Report and the Award Recommendation, will remain confidential until a Notice of Intent to Award a contract is issued.

7.0 CONTRACT AWARD

7.1 DOCUMENTS REQUIRED BEFORE CONTRACT AWARD

7.1.1 REQUIREMENTS OF N.J.S.A. 19:44A-20.13-25 (FORMERLY EXECUTIVE ORDER 134)

In order to safeguard the integrity of State government procurement by imposing restrictions to insulate the negotiation and award of State contracts from political contributions that pose the risk of improper influence, purchase of access, or the appearance thereof, the Legislature enacted N.J.S.A. 19:44A-20.13 – 25 on March 22, 2005 the “Legislation”), retroactive to October 15, 2004, superseding the terms of Executive Order 134. Pursuant to the requirements of the Legislation, the terms and conditions set forth in this section are material terms of any contract resulting from this RFP:

7.1.1.1 DEFINITIONS

For the purpose of this section, the following shall be defined as follows:

a) Contribution – means a contribution reportable as a recipient under "The New Jersey Campaign Contributions and Expenditures Reporting Act." P.L. 1973, c. 83 (C.19:44A-1 et seq.), and implementing regulations set forth at N.J.A.C. 19:25-7 and N.J.A.C. 19:25-10.1 et seq. Through December 31, 2004, contributions in excess of $400 during a reporting period were deemed "reportable" under these laws. As of January 1, 2005, that threshold was reduced to contributions in excess of $300.

b) Business Entity – means any natural or legal person, business corporation, professional services corporation, Limited Liability Company, partnership, limited partnership, business trust, association or any other legal commercial entity organized under the laws of New Jersey or any other state or foreign jurisdiction. The definition of a business entity includes (i)all principals who own or control more than 10 percent of the profits or assets of a business entity or 10 percent of the stock in the case of a business entity that is a corporation for profit, as appropriate; (ii)any subsidiaries directly or indirectly controlled by the business entity; (iii)any political organization organized under section 527 of the Internal Revenue Code that is directly or indirectly controlled by the business entity, other than a candidate committee, election fund, or political party committee; and (iv)if a business entity is a natural person, that person's spouse or child, residing in the same household.

7.1.1.2 BREACH OF TERMS OF THE LEGISLATION

It shall be a breach of the terms of the contract for the Business Entity to (i)make or solicit a contribution in violation of the Legislation, (ii)knowingly conceal or misrepresent a contribution given or received; (iii)make or solicit contributions through intermediaries for the purpose of concealing or misrepresenting the source of the contribution; (iv)make or solicit any contribution on the condition or with the agreement that it will be contributed to a campaign committee or any candidate of holder of the public office of Governor, or to any State or county party committee; (v)engage or employ a lobbyist or consultant with the intent or understanding that such lobbyist or consultant would make or solicit any contribution, which if made or solicited by the business entity itself, would subject that entity to the restrictions of the Legislation; (vi)fund contributions made by third parties, including consultants, attorneys, family members, and employees; (vii)engage in any exchange of contributions to circumvent the intent of the Legislation; or (viii)directly or indirectly through or by any other person or means, do any act which would subject that entity to the restrictions of the Legislation.

7.1.1.3 CERTIFICATION AND DISCLOSURE REQUIREMENTS

a) The State shall not enter into a contract to procure from any Business Entity services or any material, supplies or equipment, or to acquire, sell or lease any land or building, where the value of the transaction exceeds $17,500, if that Business Entity has solicited or made any contribution of money, or pledge of contribution, including in-kind contributions to a candidate committee and/or election fund of any candidate for or holder of the public office of Governor, or to any State or county political party committee during certain specified time periods

b) Prior to awarding any contract or agreement to any Business Entity, the Business Entity proposed as the intended awardee of the contract shall submit the Certification and Disclosure form, certifying that no contributions prohibited by the Legislation have been made by the Business Entity and reporting all contributions the Business Entity made during the preceding four years to any political organization organized under 26 U.S.C.527 of the Internal Revenue Code that also meets the definition of a "continuing political committee" within the mean of

N.J.S.A. 19:44A-3(n) and N.J.A.C. 19:25-1.7. The required form and instructions, available for review on the Purchase Bureau website at http://www.state.nj.us/treasury/purchase/forms.htm#eo134, shall be provided to the intended awardee for completion and submission to the Purchase Bureau with the Notice of Intent to Award. Upon receipt of a Notice of Intent to Award a Contract, the intended awardee shall submit to the Division, in care of the Purchase Bureau Buyer, the Certification and Disclosure(s) within five (5) business days of the State's request. Failure to submit the required forms will preclude award of a contract under this RFP, as well as future contract opportunities.

c) Further, the Contractor is required, on a continuing basis, to report any contributions it makes during the term of the contract, and any extension(s) thereof, at the time any such contribution is made. The required form and instructions, available for review on the Purchase Bureau website at http://www.state.nj.us/treasury/purchase/forms.htm#eo134, shall be provided to the intended awardee with the Notice of Intent to Award.

7.1.1.4 STATE TREASURER REVIEW

The State Treasurer or his designee shall review the Disclosures submitted pursuant to this section, as well as any other pertinent information concerning the contributions or reports thereof by the intended awardee, prior to award, or during the term of the contract, by the contractor. If the State Treasurer determines that any contribution or action by the contractor constitutes a breach of contract that poses a conflict of interest in the awarding of the contract under this solicitation, the State Treasurer shall disqualify the Business Entity from award of such contract.

7.1.1.5 ADDITIONAL DISCLOSURE REQUIREMENT OF P.L. 2005, C. 271

Contractor is advised of its responsibility to file an annual disclosure statement on political contributions with the New Jersey Election Law Enforcement Commission (ELEC), pursuant to P.L. 2005, c. 271, section 3 if the contractor receives contracts in excess of $50,000 from a public entity in a calendar year. It is the contractor's responsibility to determine if filing is necessary. Failure to so file can result in the imposition of financial penalties by ELEC. Additional information about this requirement is available from ELEC at 888-313-3532 or at www.elec.state.nj.us.

7.2 FINAL CONTRACT AWARD

A. Gray Transit Mix Portland Cement Concrete: Bid pricing for a particular county and zone will be determined using the following method. For each of the classes of gray concrete specified in the proposal in Category (A) delivery of 2-4 cubic yards, it will be assumed that an average delivery of 3 cubic yards will be ordered; in category (B) delivery in excess of 4 cubic yards, it will be assumed that an average delivery of 6 cubic yards will be ordered. The sum of the products determined by multiplying the unit bid price per cubic yard submitted in Category (A) by 3 cubic yards and in Category (B) by 6 cubic yards for a particular class gray concrete divided by 9 cubic yards will provide the average unit price for each class of gray concrete. The total sum of the average unit price for each class of gray concrete divided by the number of classes of gray concrete for which bid prices have been submitted in the proposal will be the overall average unit price bid per cubic yard of gray transit mix Portland cement concrete (delivered) in the proposal. This overall average unit price bid will be used to determine the low bidder for that particular zone.

B. White Transit Mix Portland Cement Concrete: Bid pricing for a particular county and zone will be determined using the following method. For each of the classes of white concrete specified in the proposal in Category (A) delivery of 2-4 cubic yards, it will be assumed that an average delivery of 3 cubic yards will be ordered; in Category (B) delivery in excess of 4 cubic yards, it will be assumed that an average delivery of 6 cubic yards will be ordered. The sum of

the products determined by multiplying the unit bid price per cubic yard submitted in Category (A) by 3 cubic yards and in Category (B) by 6 cubic yards for a particular class white concrete divided by 9 cubic yards will provide the average unit price for each class of white concrete. The total sum of the average unit price for each class of white concrete divided by the number of classes of white concrete for which bid prices have been submitted in the proposal will be the overall average unit price bid per cubic yard of white transit mix Portland cement concrete (delivered) in the proposal. This overall average unit price bid will be used to determine the low bidder for that particular zone.

One award will be made per region per zone (if applicable) and for lines 169-188 with reasonable promptness by written notice to that responsible bidder(s), whose bid proposal(s), conforming to this RFP, is(are) most advantageous to the State, price, and other factors considered. Any or all bid proposals may be rejected when the State Treasurer or the Director determines that it is in the public interest to do so.

7.3 INSURANCE CERTIFICATES

The contractor shall provide the State with current certificates of insurance for all coverages required by the terms of this contract, naming the State as an Additional Insured.

8.0 CONTRACT ADMINISTRATION

8.1 CONTRACT MANAGER

The State Contract Manager is the State employee responsible for the overall management and administration of the contract.

The State Contract Manager for this project will be identified at the time of execution of contract. At that time, the contractor will be provided with the State Contract Manager's name, department, division, agency, address, telephone number, fax phone number, and email address.

8.1.1 STATE CONTRACT MANAGER RESPONSIBILITIES

For an agency contract where only one State office uses the contract, the State Contract Manager will be responsible for engaging the contractor, assuring that Purchase Orders are issued to the contractor, directing the contractor to perform the work of the contract, approving the deliverables and approving payment vouchers. The State Contract Manager is the person that the contractor will contact **after the contract is executed** for answers to any questions and concerns about any aspect of the contract. The State Contract Manager is responsible for coordinating the use and resolving minor disputes between the contractor and any component part of the State Contract Manager's Department.

If the contract has multiple users, then the State Contract Manager shall be the central coordinator of the use of the contract for all Using Agencies, while other State employees engage and pay the contractor. All persons and agencies that use the contract must notify and coordinate the use of the contract with the State Contract Manager.

8.1.2 COORDINATION WITH THE STATE CONTRACT MANAGER

Any contract user that is unable to resolve disputes with a contractor shall refer those disputes to the State Contract Manager for resolution. Any questions related to performance of the work of the contract by contract users shall be directed to the State Contract Manager. The contractor

may contact the State Contract Manager if the contractor can not resolve a dispute with contract users.

[END CONTRACT MANAGER SECTION]