

COMPILATION OF APPROVED SPECIFICATIONS

**RHODE ISLAND DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION**

**REVISIONS
SUPPLEMENTAL SPECIFICATIONS
SPECIAL PROVISIONS**

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Replace the final paragraph of **Subsection 401.02.5(b); Composition of Mixtures – Mix Design Procedures**, page 4-2 of the RI Standard Specifications for Road and Bridge Construction with the following.

SECTION 401

DENSE GRADED BITUMINOUS CONCRETE PAVEMENTS

401.02.5(b) Mix Design Procedures

All mix designs shall be developed and signed by an individual certified in “Superpave HMA Mix Design” by the Asphalt Institute. Mix Designs shall be submitted no later than two weeks prior to the date when production of the mixture is scheduled to begin and shall be accompanied by a copy of that individual’s certification. No mixture may be produced for State projects until the mix design is approved by the Engineer.

[Remainder of Subsection is unchanged]

Remove **Subsection 601.03.3(b); Mixing and Delivery**, pages 6-12 and 6-13 of the RI Standard Specifications for Road and Bridge Construction in its entirety and replace with the following:

SECTION 601

PORTLAND CEMENT CONCRETE

601.03.3 Concrete Mixing, Delivery and Discharge.

b. Mixing and Delivery. Ready-mixed concrete shall be mixed and delivered to the point designated by the Engineer by means of one of the following combinations of operations, central-mixed and truck-mixed concrete.

Agitators and non-agitating equipment shall only be used for delivering pre-mixed concrete.

Mixers and agitators shall be operated within the limits of capacity and speed of rotation designated by the manufacturer of the equipment.

Ready-mix concrete delivery trucks shall be National Ready Mixed Concrete Association (NRMCA) (nrmca.org) certified via a non-expired certificate affixed to the truck in a location readily visible to the inspector (see Section 5 of NRMCA Plant Inspector's Guide).

1. Central Mixed Concrete. Concrete that is mixed completely in a stationary mixer and transported to the point of delivery either in a truck agitator, or a truck mixer operating at agitating speed, or in non-agitating equipment approved by the Engineer and meeting the requirements specified herein shall conform to the following: The mixing time shall be counted from the time all the solid materials are in the drum. The batch shall be so charged into the mixer that some water will enter in advance of the cement and aggregate, and all water shall be in the drum by the end of the first one-fourth of the specified mixing time.

Where no mixer performance tests are made, the acceptable mixing time for mixers having capacities of 1 cubic yard or less shall not be less than 1 minute. For mixers of greater capacity, this minimum shall be increased 15 seconds for each cubic yard or fraction thereof of additional capacity. For mixer performance refer to AASHTO M157 Annex A1.

2. Truck Mixed Concrete is that which is completely mixed in a truck mixer, 70 to 100 revolutions at the mixing speed designated by the manufacturer, to produce the uniformity of concrete indicated in AASHTO M157 Annex A1. Concrete uniformity tests shall be made in accordance with AASHTO M157 and if requirements for uniformity of concrete indicated in AASHTO M157 Annex A1 are not met with 100 revolutions of mixing, after all ingredients, including water, are in the drum, that mixer shall not be used until the condition is corrected.

When satisfactory performance is found in one truck mixer, the performance of mixers of substantially the same design and condition of blades may be regarded as satisfactory. Additional revolutions of the mixer beyond the number found to produce the required uniformity of concrete shall be at a designated agitating speed.

3. Use of Non-agitating Equipment. Central-mixed concrete may be transported in suitable non-agitating equipment approved by the Engineer. The proportions of the concrete will be approved by the Engineer and the following limitations shall apply:

Bodies of non-agitating equipment shall be smooth, watertight, metal containers equipped with gates that will permit control of the discharge of the concrete. Covers shall be provided for protection against the weather when required by the Engineer.

The concrete shall be delivered to the site of the work in a thoroughly mixed and uniform mass and discharged with a satisfactory degree of uniformity as prescribed in AASHTO M157 Annex A1.

Remove **Section 930; Plant Field Laboratory**, pages 9-58 through 9-62 of the RI Standard Specifications for Road and Bridge Construction and pages AC12-12 through AC12-16 of the December 2011 Compilation of Approved Specifications in its entirety and replace with the following.

SECTION 930

PLANT FIELD LABORATORY

930.01 DESCRIPTION. This work consists of furnishing a building at the site of the production plant suitable for the housing and use of equipment required to carry out the various tests and for the recording and processing of the results of said tests, all in accordance with these Specifications.

The building shall be for the exclusive use of the Engineer or his representatives during all production for the purpose of testing and recording the results of said testing.

930.02 GENERAL PLANT FIELD LABORATORY REQUIREMENTS.

930.02.1 Location. The laboratory shall be located within its own building, or if the Engineer permits, it may be part of an existing building. In this case, the laboratory portions of the building shall be entirely partitioned off from the remaining unrelated areas and must meet all other laboratory requirements. The use of a trailer, utility control room such as electric, telephone, water, sewage, etc., as a Department designated laboratory and/or office is not permitted. The laboratory shall be within sight distance of the plant and sampling rack (bituminous only) and an unobstructed line-of-sight shall be maintained at all times.

930.02.2 Construction. The laboratory building shall be a room at least 200 square feet with ceiling height at least 7½-feet. The floor shall be sturdy and level (note that some equipment requires mounting to a concrete foundation). The building shall be watertight. There shall be at least two standard windows equipped with shades and screens and two doors equipped with adequate locks. At least one door and window shall open to the outside external environment when the laboratory is located on an external wall.

930.02.3 Other Requirements.

a. In case of theft or breakdown, all equipment involved shall be repaired or replaced by the Contractor within 48 hours. Production of any material shall be discontinued until the equipment is repaired or replaced. In the event buildings are destroyed or rendered untenable for any reason they shall be replaced within two weeks. In the interim, the Contractor shall provide temporary facilities for laboratory operations.

b. The Contractor shall furnish all water, fuel, and electrical power required to conduct the various tests. Additional laboratory equipment not listed herein may be required to properly facilitate an AASHTO or ASTM test procedure (i.e. water bath thermometers, water bath heater / circulator, timers / stopwatches, etc.) and are considered incidental to this item.

c. When both bituminous and cement concrete mixing plants are located in the same compound and when the Contractor provides one laboratory building for both bituminous and cement concrete

testing facilities, duplication of laboratory equipment will not be required with the exception of the chairs, calculator and the computer equipment specified in **Subsection 930.03.4**.

930.02.4 ADA Considerations. The Rhode Island Department of Transportation (RIDOT) is committed to providing equal access and opportunity for all persons in conjunction with Federal Law under Title I of the American's with Disabilities Act (ADA).

The United States Access Board defines a reasonable accommodation as; "a modification or adjustment to a job, an employment practice, or the work environment that makes it possible for a qualified individual with a disability to enjoy an equal employment opportunity."

In keeping with these directives, those private entities that provide field material laboratories utilized by RIDOT staff, especially those with a disability, must ensure that said facilities provide reasonable accommodation to allow Department employees to be efficient and productive in their work. Reasonable accommodations shall be provided in a manner consistent with the ADA.

Private entities that provide such facilities must demonstrate to the Department in advance that reasonable accommodations consistent with ADA have been made available.

Department employees should contact RIDOT Human Resources with any reasonable accommodation requests.

930.03 SPECIFIC PLANT FIELD LABORATORY REQUIREMENTS.

930.03.1 Interior Utilities.

a. Power. The electrical power supply shall be adequate to simultaneously operate all laboratory and office equipment, heating and air conditioning units, lighting and all other utilities.

b. Heating and Air Conditioning. The heating and cooling systems shall be capable of maintaining the laboratory at a year round temperature between 68°F and 78°F, with controls in the laboratory.

c. Sanitary Facilities. Restroom facilities shall include a toilet, lavatory sink, slop sink, vent fan and running hot and cold water, with a minimum 5-gallon capacity water heater tank. The restroom shall be fully equipped and located within the laboratory or existing building and shall be accessible at all times during production.

d. Lighting. Adequate and satisfactory lighting inside the laboratory (10 foot-candles minimum per OSHA Standard 1926.56) shall be provided.

e. Telephone. One handset with an answering machine shall be provided.

930.03.2 Outside Facilities.

a. Parking Area. A parking area (adequate for two vehicles) adjacent to the building shall be provided, such that safe and easy access to the laboratory building is ensured. Parking areas shall be paved or well-compacted crushed gravel with maintained surface characteristics.

b. Lighting. Adequate outside lighting (5 foot-candles minimum per OSHA Standard 1926.56) for bins, stockpiles, sampling racks, laboratory access and parking area shall be provided for all night and early morning work.

c. Security. The laboratory building shall have locking doors and windows.

d. Equipment. Bins for coarse and fine aggregates shall be safe and accessible for sampling.

930.03.3 Furnishings, Equipment and Supplies – new or used in a condition acceptable to the Engineer (minimum quantities shown).

a. One office desk, 30 inches high with minimum 32 inches by 60 inches top dimensions. The desk shall have two or more drawers on each side.

b. One work table or bench.

c. Two swivel desk chairs.

d. One fireproof filing cabinet with lock.

e. A cabinet or closet with lock.

f. One wastebasket.

g. A cooling fan.

h. A hood with an exhaust fan or dust eater for ventilation near the scales.

i. A copy machine with paper and toner.

j. A minimum 4.0 cubic foot refrigerator.

k. A Microwave oven.

l. One water cooler and fresh drinking water or a supply of bottled drinking water (to be restocked as necessary).

m. Clock.

n. Calculator.

o. Electric pencil sharpener.

p. One First-Aid kit, fully stocked.

q. One fire extinguisher.

r. Cleaning Supplies for lab and lavatory, to be restocked as necessary.

s. Shop vacuum.

- t. Toilet paper holders, paper towel dispensers, and soap dispensers in the lavatory.
- u. Rugs with non-slip backing for all doors (2' by 3' minimum size or interior door mats).

930.03.4 Computer Equipment. The items of computer equipment and software to be furnished, installed, tested, made operational, and maintained within the Plant Field Laboratory are set forth in **Special Provision Code 930.1000**. If a plant is producing both asphalt and concrete, two complete sets of computer equipment will be required.

930.03.5 Maintenance and Custodial Service. The Contractor shall provide the following maintenance and custodial services:

a. Maintenance. The Contractor shall properly maintain equipment and keep in working condition for all production. The Contractor shall replace supplies as needed to maintain the office, office equipment, and lavatory.

b. Custodial Services.

1. Weekly trash removal.
2. Weekly restroom cleaning.
3. Bi-weekly floor cleaning.
4. Bi-monthly window cleaning.

Although the laboratory is for the exclusive use of the State during all production, other Quality Control testing may be performed at the facility on a temporary or intermittent basis. The laboratory and equipment shall remain clean and functional if such testing occurs prior to commencing production for the State.

930.03.6 Special Plant Field Laboratory Requirements for Bituminous Concrete Mixing Plants. In addition to the requirements of **Subsections 930.02 and 930.03.1 through 930.03.5** above, the Contractor shall provide the following at the bituminous mixing plant:

a. Access. Access to the laboratory must be provided at least one hour before production begins.

b. Equipment and Supplies. (minimum quantities shown)

1. One automatic Marshall bituminous compactor complete with hammer assembly; 4-inch, 10-pound drop hammer and counter, with automatic shutoff.
2. Four Marshall bituminous compaction molds complete with mold body, base plate and collar (4-inch inside diameter).
3. One Superpave Gyratory Compactor conforming to AASHTO T 312, complete with two molds and capable of recording and printing height measurements.
4. One Material Handling Chute to properly charge gyratory molds.

5. One assembly to perform theoretical maximum specific gravity tests in accordance to AASHTO T 209. A metal pycnometer, mechanical agitator and electronic digital vacuum gauge shall be provided.

6. One sample splitter ½-inch chute with width - 16 chutes.

7. One sample splitter 2½-inch chute width - 8 chutes.

8. One asphalt ignition oven capable of automatically determining the corrected asphalt content of a 3,000 gram sample. The oven shall have an integral weighing system and printer capable of providing a hard copy of test results. A suitable work area and adequate ventilation for the oven's exhaust shall be provided. Two pair of high-temperature resistant heavy-duty gloves, two sample trays and a face shield shall be provided and shall meet OSHA requirements as applicable. The internal scale shall conform to **Subsection 930.03.4** of these Specifications. The Contractor shall perform all maintenance of the oven at intervals recommended by the manufacturer.

9. One motor-driven 12-inch sieve shaker, complete with belt driven mechanism to produce combination rocking and tapping action on each sieve, capacity for 6 full-height 12-inch sieves plus pan and cover; all parts mounted on a sturdy base (commonly known as a Mary Ann type shaker).

10. One gravity drying oven of rugged construction with 3/8-inch thick insulated walls, minimum inside dimensions to be 18 inches wide, 14 inches deep and 19 inches high, equipped with two expanded metal shelves, automatic thermostat and other controls, a glass thermometer reading 0^o to 300^oC by 1^o divisions.

11. One set of US Standard 12-inch round intermediate height testing sieves. Sizes shall include 1", 3/4", ½", 3/8", Nos. 4, 8, 16, 30, 50, 100, and two-200s with No. 14 mesh backing, with square openings, two pans and one cover.

12. One 12-inch round No. 200 wet wash sieve with 4" minimum depth.

13. One large utility sink complete with spray hose to perform wet washes in accordance with AASHTO T 30. This sink must be separate from the restroom facilities.

14. Six drying pans approximately 10" x 14" x 2½" for use in the oven.

15. One digital scale - 8,000 grams plus/minus 0.1 grams.

16. Two brass wire briquette brushes.

17. Two sieve or sash brushes.

18. Two approved dial type thermometers - 50^oF to 500^oF.

19. One approved two-burner electric hot plate, UL approved.

20. Two metal mixing bowls, 14 inches or greater diameter.

21. Sample splitting tool.

22. Two putty knives.
23. Five metal sampling buckets.
24. Dust masks.
25. Two pairs of suede work gloves.
26. Four (4) approximately 20 inch x 40 inch towels.
27. An approved cleaning solvent for the equipment must be provided.
28. Two pairs of safety goggles and two pairs of gloves for high heat applications.
29. One Marshall core specific gravity apparatus. To include: 30 gallon tank, overflow and drain valves, stainless steel core hanger, water heater and thermometer (0°F to +160°F) accurate to 0.1°F
30. One Density tank for Marshall core specific gravity.
31. Two sampling spoons.
32. Two spatulas.
33. One long handle spade shovel.
34. A sampling rack with minimum dimensions 4 feet x 4 feet located within sight distance of the plant laboratory to allow sampling of bituminous material from truck haulers.

930.03.7 Special Plant Field Laboratory Requirements for Cement Concrete Mixing Plants. In addition to the requirements above, the Contractor shall provide the following at the concrete mixing plant:

- a. Access.** Access to the laboratory must be provided at least two hours before production begins.
- b. Equipment and Supplies.** (minimum quantities shown):
 1. One digital platform beam scale, capacity 45 kilograms (100 pounds), sensitivity 5 grams (0.01 pounds).
 2. One approved two-burner electric hot plate, UL approved.
 3. One gravity drying oven of rugged construction with 3/8-inch thick insulated walls, minimum inside dimensions to be 18 inches wide, 14 inches deep and 19 inches high, equipped with two expanded metal shelves, automatic thermostat and other controls, a glass thermometer reading 0° to 300° C. by 1° divisions.
 4. One sieve shaker (samples less than 1 cubic foot) with built in timer or equivalent, consisting of eight changeable screens secured by a hydraulic clamping system; screens to be within US Standard

tolerances and have openings as follows: 1", 3/4", 1/2", 3/8", No. 4, No. 8, No. 16, and pan. The unit shall be secured on a one foot concrete pad, enclosed and cover and adequate ventilation shall be provided.

5. One motor-driven portable sieve shaker for operation on 110-volt, 60-cycle single phase current, complete with belt driven mechanism to produce combination rocking and tapping action, capacity for 6 full-height sieves plus pan and cover; all parts mounted on a sturdy base.

6. One set of brass-frame United States Standard testing sieves, all to be full height, 8 inches in diameter and matched for nesting; one each of the following: 3/4", 1/2", 3/8", Nos. 4, 8, 16, 30, 50, two No. 100, and one No. 200 with No. 14 mesh backing, two pans and one cover.

7. Two fine, 2-inch sieve or sash brushes and two brass wire briquette brushes.

8. One set of 8 steel pans for drying soils, approximately 10" x 14" x 2 1/4".

9. One complete air meter test outfit, 1/4 cubic foot, (Ref. AASHTO T152 and ASTM C231).

10. One complete slump test outfit (Ref. AASHTO T23 and T119), to include a steel pan with reinforced rims 24" x 24" x 3".

11. One sample splitter 1/2-inch chute width - 16 chutes.

12. One sample splitter 2 1/2-inch chute width - 8 chutes.

13. One digital scale - 2,000 grams plus/minus 0.1 gram.

14. One small concrete scoop (#1).

15. Two dial thermometers (0°F to +160°F).

16. Four plastic buckets, approximately 2.5-gallon capacity.

17. One long handle spade shovel.

18. One steel brush, long handle.

19. Two putty knives.

20. Two pairs of suede work gloves.

21. One square steel trowel (6-inch length center handle).

22. One plastic storage tote (10-gallon capacity, 24" x 16" x 8.75" minimum) or acceptable equivalent.

23. One large concrete scoop (#2).

24. One square shovel.

25. Table or bench to run air test and fabricate cylinders.

Should the Contractor fail to provide any of the supplies or equipment described above, the Engineer may not accept any mixes or products dispatched from subject site.

930.03.8 Scales. All laboratory scales for bituminous and cement concrete mixing plant testing equipment must be calibrated every six months and must conform to the requirements of applicable Specifications.

930.04 METHOD OF MEASUREMENT. Not applicable.

930.05 BASIS OF PAYMENT. Provision of "Plant Field Laboratory" will not be paid for separately, but shall be considered a subsidiary obligation of the Contractor, with the costs thereof distributed among the contract unit prices for other items of work.

Remove **Section 936; Mobilization**, pages 9-70 and 9-71 of the RI Standard Specifications for Road and Bridge Construction in its entirety and replace it with the following.

SECTION 936

MOBILIZATION AND DEMOBILIZATION

936.01 DESCRIPTION.

936.01.1 Mobilization consists of those efforts necessary for the movement of the Contractor's personnel and equipment to the project site, the establishment of all the Contractor's field offices, buildings and other facilities required for the performance of the Contract, and all other incurred costs for work or operations required to be performed prior to the actual commencement of work on the Proposal items in the Contract.

936.01.2 Demobilization consists of removal of all materials, equipment, temporary structures and all other facilities of a temporary nature from the project site at the conclusion of the project, and restoration of the project site, including those areas used for storage of equipment, materials or the placement of temporary facilities.

936.02 MATERIALS. Not applicable.

936.03 CONSTRUCTION METHODS. Not applicable.

936.04 METHOD OF MEASUREMENT. This work will be measured for payments as follows:

a. First Payment. The first payment of 40 percent of the lump sum price for Mobilization and Demobilization, or 4 percent of the total contract amount minus the bid amount for Mobilization and Demobilization, whichever is the lesser, will be made on the first progress payment, following notice to proceed and the complete, approved set up of the project field office.

b. Second Payment. The second payment of 20 percent of the lump sum price for Mobilization and Demobilization, or 2 percent of the total contract amount minus the bid amount for Mobilization and Demobilization, whichever is the lesser, will be made when the progress payment estimate of the amount earned, not including that amount earned for Mobilization and Demobilization, is 5 percent of the total contract amount minus the bid amount for Mobilization and Demobilization.

c. Third Payment. The third payment of 15 percent of the lump sum price for Mobilization and Demobilization, or 1.5 percent of the total contract amount minus the bid amount for Mobilization and Demobilization, whichever is the lesser, will be made when the progress payment estimate of the amount earned, not including that amount earned for Mobilization and Demobilization, is 10 percent of the total contract amount minus the bid amount for Mobilization and Demobilization.

d. Final Payment. Upon completion of all the work on the project, including the completion of all Punch List items in accordance with **Subsection 105.17(b) Para. 4** of these Specifications, and Demobilization of the project site in accordance with **Subsection 936.01.2** above, payment of the remaining balance of the lump sum price for Mobilization and Demobilization will be paid.

936.05 BASIS OF PAYMENT. "Mobilization and Demobilization" will be paid for at the contract lump sum price as listed in the Proposal, in accordance with the provisions of **Subsection 936.04** above. The price so-stated constitutes full and complete compensation for all labor, materials, equipment and other incidentals required to establish the Contractor's facilities at the site and, at the conclusion of the contract, for the complete removal thereof.

No lump sum breakdown will be required for this item of work.

Remove **Section 942; Detectable Warning Systems**, pages 9-78 and 9-79 of the RI Standard Specifications for Road and Bridge Construction in its entirety and replace it with the following.

SECTION 942

DETECTABLE WARNING PANEL

942.01 DESCRIPTION. This work consists of providing and installing a panel with truncated domes in an arrayed pattern that is compliant with Americans with Disabilities Act (ADA) warning and directional systems for the visually impaired at locations indicated on the Plans or as directed by the Engineer, all in accordance with these Specifications.

942.02 MATERIALS. The detectable warning panel shall be of dimension and color contrast within ADA standards and the discretion of the Engineer. The panels shall be gray cast iron conforming to AASHTO M105 and AASHTO M306. The panels shall have integrally cast domes and shall be manufactured with integral embedment lugs for the express installation into fresh unset Portland cement concrete.

942.03 CONSTRUCTION METHODS. Panels shall be set flush into fresh unset concrete at the required line and grade to match the running grade and cross slope of the ADA accessible ramp or blended transition that warranted the installed panel. The contractor shall ensure that the alignment of the panel will match line and grade of the ramp such that the panel is flush with the ramp, and there is no physical conflict with other castings, fittings, structures, foundations or appurtenance thereof.

942.04 METHOD OF MEASUREMENT. “Detectable Warning Panel” will be measured by the number of square feet of panel actually installed in accordance with the Plans and/or as directed by the Engineer.

942.05 BASIS OF PAYMENT. The accepted quantities of “Detectable Warning Panel” will be paid for at the contract unit price per square foot as listed in the Proposal. The price so-stated shall constitute full and complete compensation for all labor, materials, equipment, and other incidentals required to finish the work, complete and accepted by the Engineer.