First Used: March 17, 2006

GEORGIA DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

SUPPLEMENTAL SPECIFICATION

Section 866—Precast Concrete Catch Basin, Drop Inlet, and Manhole Units

Delete Section 866 and substitute the following:

866.1 General Description

This section includes the requirements for manufacturing the following to the dimensions shown on the Plans:

- Precast reinforced concrete catch basins
- Drop inlets
- Manhole units

866.1.01 Related References

A. Standard Specifications

Section 500–Concrete Structures

Section 853–Reinforcement and Tensioning Steel

B. Referenced Documents

AASHTO M 199

AASHTO T 22

AASHTO T 24

SOP 19

QPL 4

QPL 86

866.2 Materials

The materials to be used shall meet AASHTO M 199 and the following requirements:

Material	Section
Concrete, Class AA-1, Vibrated, Air Entrained	500*
Reinforcement for Concrete	

Steel Bars	853.2.01
Steel Wire	853.2.06
Welded Steel Fabric	853.2.07
Macro-Synthetic Fibers	941
*Ensure that the concrete compressive strength is at least 4,000 psi (28 MPa). Do not use the gradation requirements.	

For a list of sources, see QPL 4.

866.2.01 Precast Concrete Catch Basin, Drop Inlet, and Manhole Units

A. Requirements

1. Reinforcement

   Follow the Plans, except as follows:

   a. Do not let steel reinforcement vary by more than 1/4 in (5 mm) from the position shown in the design, except at pipe connections.

   b. Ensure the cover on the steel reinforcement is not less than that shown on the Plans.

   c. Macro-synthetic fibers are permitted as reinforcement in lieu of steel reinforcement in precast manhole riser sections only. Approved fibers are listed on the Department's Qualified Products List 86 (QPL 86), entitled Macro-Synthetic Fibers for Concrete Reinforcement.

2. Ensure all precast concrete units are true to shape with smooth, dense, and uniform surfaces.

B. Fabrication

1. Casting

   a. Place the concrete in each unit without interruption.

   b. Consolidate the concrete with an approved vibrator and hand-tamping as necessary. Force the concrete into the corners of the forms to prevent stone pockets or cleavage planes.

2. Holes for Pipes

   Make each hole about 4 in (100 mm) larger than the outside diameter of the appropriate pipe.

3. Curing:

   Cure the units with one of the following methods until the minimum compressive strength has been achieved, or for 24 hours, whichever comes first.

   a. Method 1

      1) Place the units in a curing chamber, free from outside drafts, and cure them in a moist atmosphere not exceeding 160 °F (70 °C).

      2) Use steam injection for the time and temperature needed to obtain proper curing.

      3) Construct the curing chamber and place the units so that steam may fully circulate around the entire unit.

   b. Method 2

1) Keep the units wet by covering the concrete not in contact with the forms with wet burlap or other suitable material.

2) Protect the units from freezing between when you place the concrete until curing is complete.

4. Removing the Forms

   Leave the forms in place until you can remove them without damaging the unit.

5. Quality of Work

   a. Correct minor surface cavities or irregularities that do not impair the service value of the unit by pointing with an approved mortar. Apply the mortar immediately after removing the forms.

   b. Minor defects will not be cause for rejection.

C. Acceptance

1. Testing Facilities

   Ensure that the manufacturer furnishes facilities and assistance as required for the Inspector to sample and test quickly and efficiently.

NOTE: Check QPL 4 for pre-approved manufacturers that supply material compliant with this Specification.

2. The Department will accept the units based on the results of compressive tests on concrete cylinders and on inspection during manufacture. The tests will determine the unit's conformance with the design and quality of work prescribed in these Specifications and on the Plans.

3. The Department will accept any unit that meets the test requirements, regardless of age.

4. Rejection

   The Inspector will reject units if they fail to meet any requirements in this Specification, and for any of the following defects:

   - Imperfect mixing and molding
   - Honeycombed or open texture
   - Exposure of the reinforcement that indicates the reinforcement is misplaced

5. Marking

   Ensure that each approved unit is marked with the name or trademark of the manufacturer and the date it was cast. The mark will be stenciled or otherwise placed on the inside of the unit so it is clearly legible at time of delivery.

   a. When approved by the Inspector, each unit will be stamped with the official mark of the Department or Certified Pipe Technician number (CPT).

   b. Accepted units or finished units will be rejected at any time if found to be defective.

6. Test as follows:

Test	Method
Compressive strength	AASHTO T 22 and AASHTO T 24

7. Compressive Strength Test

   The Inspector shall do the following:

   a. Make compression tests on cylinders to satisfy the minimum strength requirements.

   b. Make at least three cylinders from each day's pour and cure them in the same manner as the precast units.

D. Materials Warranty

1. Shipping

   Do not ship or transport any unit to the installation site unless it bears the required markings, stated in Subsection 866.2.01.C.5.