

Georgia Department of Transportation
Office of Materials and Research

Standard Operating Procedure (SOP) 21
Cantilever Sign Structure Inspection Method

I. General

The purpose of this Standard Operating Procedure is to outline the responsibilities of contractors, GDOT project engineer, and the duties of Inspection Services Branch personnel assigned to perform footing inspections.

It is the joint function of the Inspection Services Branch of the [Office of Materials and Research](#) and GDOT project engineers to inspect and verify that Type II cantilever sign footings meet Specification requirements. Such verification will be evidenced by documentation on file at the [Office of Materials and Research](#), Forest Park, Georgia. Project personnel are to verify footing condition prior to scheduling inspections with the Inspection Services Branch. Project personnel should refer to Field Construction Memo FCM-638-95-67.

II. Inspection Services Branch Procedures

The Inspection Services Branch performs two inspections on each new installation of Type II sign footings. These are referred to as first and final inspections. Each inspection is documented on an [inspection form](#) which is filed at the [Office of Materials and Research](#). Copies are distributed to the project engineer and the sign contractor for their files.

A. First Inspection

After notification by the project engineer, the Inspection Services Branch performs the first inspection. This inspection must be performed prior to the setting of the upright. Inspection personnel check the following items, compare to the approved shop drawings and note in the first inspection report:

1. Pedestal Dimension
2. Bolt Diameter
3. Bolt Pattern
4. Bolt Projection
5. Bolt Plumb

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6. Fastener Hardware Present
7. Pedestal Elevation in Relation to Ground Line

Footings found acceptable are stenciled with a GDT number for future reference.

B. Final Inspection

After notification by the project engineer, the Inspection Services Branch performs the final inspection. This inspection must be performed after the setting of the upright and truss arm. Inspection personnel perform visual and non-destructive testing at this time. Trained inspectors utilize ultrasonic flaw detection instruments to distinguish any fatigue cracks. These instruments are coupled with 1 in (25.4 mm) diameter 2.25 MHz longitudinal wave transducers. Calibration procedures involve 10 in (250 mm), 20 in (500 mm), and 50 in (1250 mm) bolts to ensure correct distance calibration. Inspection personnel check the following items and note on the final inspection report:

1. Distance measurement between top of footing and bottom of leveling nut.
2. Fastener hardware installation
3. Leveling nuts, lock washers, and lock nuts properly seated.
4. Ultrasonically test all anchor bolts.
5. Bolt plumb
6. Degree of post tilt
7. Visual inspection of the various connections i.e. upright to truss, sign hanger to truss, sign to sign hanger, etc.
8. Upright to truss connection type
9. Structural shape of truss arm

After the final inspection is completed, all accepted sign structures are entered into the Department's Type II sign structure inspection program.

III. Type II Sign Structure Inspection Form

The Inspection Services Branch performs anchor bolt inspections on all Type II sign structures on 36-month intervals.

A. Structure Locations

Structure locations are established by noting route, county, district, and GDOT sign structure inventory number.

B. Non-destructive Evaluation

Non-destructive evaluation is performed on each anchor bolt to verify integrity. Each structure is examined visually and any concerns are noted.

C. Cracked Anchor Bolts

Any indications of cracked anchor bolts are immediately reported to the Inspection Services Branch Supervisor for action.

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D. Report to Maintenance Office

Once the inspections are completed, reports are reviewed and a list of concerns is generated for action by GDOT Maintenance Forces.

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**GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF MATERIALS AND RESEARCH**

FOOTING INSPECTION REPORT

PROJECT _____ COUNTY _____ DATE _____
 CONTRACTOR _____ STRUCTURE FABRICATOR _____
 STRUCTURE NO.: _____ STATION NO.: _____ STRUCTURE TYPE _____

	APPROVED DRAWING REQUIREMENTS	FIRST INSPECTION	FINAL INSPECTION
DATE			
PEDESTAL DIMENSION			N/A
BOLT DIAMETER			N/A
BOLT PATTERN			N/A
BOLT PROJECTION			N/A
BOLTS PLUMB			
LEVELING NUT			
FLAT WASHERS			
LOCK WASHERS			
TOP NUT			
PEDESTAL ELEVATION BASE PLATE DISTANCE ABOVE TOP OF FOOTING	N/A	N/A	
BOLTS ULTRASONICALLY TESTED	ACCEPTED <input type="checkbox"/>	REJECTED <input type="checkbox"/>	
FOOTING STAMPED APPROVED GDT #			

COMMENTS: _____

INSPECTION BRANCH SIGNATURE _____

PROJECT ENGINEER SIGNATURE _____

