ORIGINATION FORM
Proposed Revisions to the Specifications
(Please provide all information - incomplete forms will be returned)

Date: 5/31/23

Office: Construction

Originator: Juan Castellanos

Specification Section: 108

Telephone: 954 677 7032

Article/Subarticle: 108-1 and 108-2

email: juan.castellanos@dot.state.fl.us

Associated Section(s) Revisions:

Will the proposed revision require changes to the following Publications:

Publication	Yes	No	Office Staff Contacted	Date
Standard Plans Index	○	◉	Rick Jenkins/Joshua Turley	3/18/22
Traffic Engineering Manual	○	◉	Javier Ponce	3/18/22
FDOT Design Manual	○	◉	Gevin McDaniel	3/18/22
Construction Project Administration Manual	○	◉	Scott Arnold	3/18/22
Basis of Estimate/Pay Items	○	◉	Ryan Gray	3/18/22
Structures Design Guidelines	○	◉	Ben Goldsberry	3/18/22
Approved Product List	○	◉	Karen Byram	3/18/22
Materials Manual	○	◉	Tim Counts	3/18/22
Maintenance Specs	○	◉	Deanna Hutchison	3/18/22

Will this revision necessitate any of the following:

Design Bulletin ☐ **Construction (DCE Memo)** ☐ **Estimates Bulletin** ☐ **Materials Bulletin** ☐

Have all references to internal and external publications in this Section been verified for accuracy? (Select)

Synopsis: Summarize the changes:

108-1: add missing words. 108-2.1: Add sentence to ensure the substructure is monitored for FDOT bridges.

Justification: Why does the existing language need to be changed?

To improve the safety of our existing bridges that could be in risk while the contractor performs construction activities in their vicinity, and to address FHWA concerns regarding our need to improve our monitoring of existing structures

Do the changes affect either of the following types of specifications (Hover over type to go to site.):

Special Provisions ☐ **Developmental Specifications** ☐

List Specifications Affected: (ex. SP3270301, Dev330TL, Dev334TL etc.)

Contact the State Specifications Office for assistance completing this form.

Daniel Strickland 850-414-4130 Daniel.Strickland@dot.state.fl.us, Darla Hunsicker 850-414-4114 Darla.Hunsicker@dot.state.fl.us,
Jennifer Burnsed 850-414-4101 Jennifer.Burnsed@dot.state.fl.us, MaryElizabeth Parker 850-414-4155 MaryElizabeth.Parker@dot.state.fl.us

1. Are changes in line with promoting and making meaningful progress on improving safety, enhancing mobility, inspiring innovation, and fostering talent; explain how?

Safety. The changes are intended to improve the protection our existing structures during constru

2. What financial impact does the change have; project costs, pay item structure, or consultant fees?

None.

3. What impacts does the change have on production or construction schedules?

None.

4. How does this change improve efficiency or quality?

It does not improve efficiency, but it does improve the quality of the monitoring during construction

5. Which FDOT offices does the change impact?

Construction.

6. What is the impact to districts with this change?

It should help District Construction personnel to ensure our structures are properly monitored duri

7. Does the change shift risk and to who?

No.

8. Provide summary and resolution of any outstanding comments from the districts or industry.

Comments and Responses are available on the Track the Status of Revisions hyperlink located on the Specifications landing page: https://www.fdot.gov/programmanagement/Specs.shtm
Note: Changes have already been reviewed by FTBA from a draft of revisions prepared last year that did not get past the internal review. FTBA proposed revisions to that draft that were included in the current draft.

9. What is the communication plan?

Through the established specification revision process (e.g., Internal and Industry Review)

10. What is the schedule for implementation?

The Standard Specifications eBook and Workbook are effective July 1st every year. These changes will be effective on July 2024.

MONITOR EXISTING STRUCTURES.
(REV 7-31-23)

ARTICLE 108-1 is deleted and the following substituted:

108-1 Description.

Provide inspection, settlement, vibration, and groundwater monitoring in accordance with the requirements of this Section. The work required under this Section does not modify the requirements or responsibilities for preservation of existing property from damage in accordance with 7-11.1.

Evaluate the need for, design of, and provide any necessary precautionary features to protect existing structures from damage. Employ construction methods that will not produce damaging vibrations, soil movement, soil loss, settlement, or instability of existing structures.

ARTICLE 108-2 is deleted and the following substituted:

108-2 Construction.

108-2.1 Inspection and Settlement Monitoring:

108-2.1.1 Miscellaneous Structures: When constructing foundations for miscellaneous structures such as sign, signal, lighting, or intelligent transportation system structures, inspect and document the condition of the existing structures ~~shown~~ listed in the Plans, and survey and monitor for settlement the existing structures ~~shown~~ listed in the Plans.

108-2.1.2 Structures other than Miscellaneous: When excavating or constructing retaining walls and foundations for bridges, buildings, and structures other than miscellaneous structures, inspect and document the condition of the following existing structures, and survey and monitor for settlement the following existing structures:

1. as ~~shown~~listed in the Plans.
2. within a distance of five shaft or auger cast pile diameters, or the estimated depth of drilled shaft or auger cast pile excavation, whichever is greater, measured from the center of these foundation elements.
3. within a distance of three times the depth of any other excavations.
4. within 200 feet of sheet pile installation and extraction operations.
5. within 100 feet of steel soldier pile installation and extraction operations.
6. for projects with pile driving operations, inspect and document the condition of all structures within a distance, in feet, of pile driving operations equal to ~~0.25~~ 1/4 times the square root of the impact hammer energy, in foot-pounds. Survey and monitor for settlement all structures within a distance, in feet, of pile driving operations equal to ~~0.5~~ 1/2 times the square root of the impact hammer energy, in foot-pounds.

When monitoring settlements of existing bridges ensure the monitoring points are located within the substructure or foundation elements.

108-2.1.3 Roadway Compaction Operations: When performing embankment and asphalt compaction, inspect and document the condition of the following existing structures, and survey and monitor for settlement the following existing structures:

1. as ~~shown~~listed in the Plans.

2. within 75 feet of vibratory compaction (in any vibratory mode) operations.

108-2.1.4 Inspection and Documentation Requirements: Inspect and document the condition of the existing structures and all existing cracks with descriptions and pictures using a qualified Specialty Engineer. Submit two reports, signed and sealed by the Specialty Engineer, documenting the condition of the structures. Submit one report before beginning the construction operations that may affect the existing structures such as but not limited to foundation construction, excavations, vibratory compaction, dewatering and retaining wall construction. Submit the second report documenting the condition of the structures after the construction operations are complete. Include in the reports the Specialty Engineer's assessment of any damage present, and in the event of damage, the Specialty Engineer's assessment of whether the observed damage is the result of the construction operations. Submit both reports to the Engineer. Inspecting and documenting the condition of bridges, sign, signal, lighting, and ITS structures owned by the Department is not required except when shown in the Contract Documents.

The Department will make the necessary arrangements to provide right-of-way entry to the existing structures.

108-2.1.5 Settlement Surveying and Monitoring Requirements: Obtain the Engineer's approval for the number and location of monitoring points. Survey and monitor the settlement of structures, providing +/-0.005 foot accuracy, recording elevations to 0.001 foot:

1. before beginning construction
2. daily, during the driving of any casings, piling, or sheeting,
3. daily, during compaction
4. daily, during foundation drilling
5. weekly, for two weeks after stopping pile driving
6. during excavation
7. during blasting
8. or, as directed by the Engineer

Upon either detecting movement of 0.010 feet or damage to the structure, immediately stop the construction operations affecting the structure, backfill any open excavations, notify the Engineer and submit a corrective action plan for acceptance by the Engineer. Submit settlement monitoring records to the Engineer on a weekly basis.

108-2.2 Vibration Monitoring: When shown in the Contract Documents, employ a Specialty Engineer to provide a system which will continuously monitor and record ground vibration levels near the structures shown in the Plans during the operation of any equipment causing vibrations or during blasting operations. Provide vibration monitoring equipment capable of detecting velocities of 0.01 inch~~es~~ per second or less. Obtain the Engineer's approval of the number and locations of the monitoring points and install the system per the Specialty Engineer's recommendations. Submit the vibration records to the Engineer within 24 hours of performing the monitoring activity.

Upon either detecting vibration levels reaching 0.5 inches per second or damage to the structure, immediately stop the source of vibrations, backfill any open excavations, notify the Engineer and submit a corrective action plan for acceptance by the Engineer.

108-2.3 Groundwater Monitoring: When shown in the Contract Documents, employ a Specialty Engineer to install a piezometer at the right-of-way line and near any existing structure that may be affected by dewatering operations, or as directed by the Engineer. Monitor the

piezometer and record the groundwater elevation level each day that dewatering activities are performed and for one week after activities have ceased, or on a schedule approved by the Engineer. Notify the Engineer of any groundwater lowering near the structure of 12 inches or more.