Florida Department of Transportation

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GOVERNOR

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KEVIN J. THIBAULT, P.E.
SECRETARY

August 3, 2020

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section: **548**
Proposed Specification: **5480805 RETAINING WALL SYSTEMS.**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

The changes are proposed by Juan Castellanos to add clarification to articles (548-8.5 and 548-8.6) and to update the references of Standard Proctor testing from AASHTO T-99 to FM 1-T099 to the Standard Specification..

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to daniel.strickland@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Daniel Strickland, P.E.
State Specifications Engineer

DS/dh
Attachment
cc: Florida Transportation Builders' Assoc.
State Construction Engineer

RETAINING WALL SYSTEMS
(REV 6-29-20)

SUBARTICLE 548-8.5.1 is deleted and the following substituted:

548-8.5 Backfill Placement:

548-8.5.1 Compacted Select and Coarse Aggregate Backfill: A LOT is defined as a single lift of finished embankment not to exceed 500 feet in length ~~or cumulative length~~ of continuous or~~,~~ interconnected walls. Backfill within 3~~three~~ feet from the panels and backfill beyond 3~~three~~ feet from the panels are separate LOTs. Overlapping retaining wall volumes may be considered one LOT, excluding the 3-foot~~three feet~~ width behind the panels. Strips up to 8~~eight~~ feet wide between two retaining wall volumes constructed with the same material in a single~~one~~ operation may be considered as one LOT with the retaining wall volumes. Isolated compaction operations will be considered as separate LOTs. For multiple phase construction, a LOT will not extend beyond the limits of the phase. When bridge abutments on spread footings are shown in the Plans, the material within 3~~three~~ feet behind the wall face and within the limits defined in 548-9.4.2 are considered as separate LOTs.

SUBARTICLE 548-8.6 is deleted and the following substituted:

548-8.6 Compressible Free Draining Seal: Seal all joints between panels of reinforced concrete panel MSE walls with compressible free draining material (open cell) to prevent plant growth from seeds or spores that may be in the joints or transported to the joints by wind or rain. Install the seal at least ~~one and one-half~~1 1/2~~-~~ inches from both the front and rear faces of the panel. Protect the free draining seal during the application of coatings and sealants. Should the seal become coated or clogged, remove and replace the coated or clogged free draining seal. The installation must be secure and free draining to keep the seal securely in place until uninstalled and to prevent hydrostatic forces from building up behind the panel.

SUBARTICLE 548-9.2 is deleted and the following substituted:

548-9.2 Maximum Density Determination: For select backfill, determine the maximum QC density in accordance with FM 1-T180, Method D. When compacting A-3 or A-2-4 materials to meet the alternate acceptance criteria in 548-9.4.1, determine the maximum density in accordance with FM 1-T099~~AASHTO T99, Method C~~.

Perform gradation tests on the sample collected in accordance with AASHTO T27 and FM 1-T011. Classify soils in accordance with AASHTO M145~~ in order~~ to determine compliance with embankment utilization requirements.

SUBARTICLE 548-9.4.1 is deleted and the following substituted:

548-9.4.1 Optional Acceptance Criteria for A-3 and A-2-4 Materials: Obtain a minimum density of 95% of the maximum dry density as determined by FM 1-T099~~AASHTO T99~~ within 3~~three~~ feet behind the wall face and obtain a minimum density of 100% of the maximum dry density as determined by FM 1-T099~~AASHTO T99~~ beyond 3~~three~~ feet behind the wall face.

The combined width from both MSE wall backfill (excluding the 3-~~three~~foot zone from the panels) and embankment material may be considered the same LOT if the same material is used; the material in both wall backfill and embankment is compacted with the same procedure, equipment and compacting effort; and the maximum lift thickness after compaction in both wall backfill and embankment is 6~~six~~ inches.

SUBARTICLE 548-9.4.2 is deleted and the following substituted:

548-9.4.2 Acceptance Criteria for Wall Backfill Supporting Spread Footings: When spread footings at bridge abutments are shown in the Plans, obtain a minimum of 95% of the maximum dry density as determined by FM 1-T180 on the material within 3~~three~~ feet behind the wall face, and underneath the footing as defined by the following limits:

1. All lifts below the bottom of the footing for a depth equal to at least the footing width
2. A minimum distance of 3~~three~~ feet beyond the edges of the footing width

If the optional criteria specified in 548-9.4.1 is used, compact the backfill material within the limits specified above to obtain a minimum density of 100% of the maximum dry density as determined by FM 1-T099~~AASHTO T99~~. Compact the remainder of the backfill in accordance with 548-9.4 or 548-9.4.1 as applicable. Do not use compaction equipment larger than permitted in 548-8.5 within 3~~three~~ feet behind the wall face; decrease the lift thickness if necessary.

SUBARTICLE 548-9.7.1 is deleted and the following substituted:

548-9.7 Verification Comparison Criteria and Resolution Procedures:

548-9.7.1 Maximum Density Determination: The Engineer will collect enough material to split and create two separate samples and retain one for resolution until LOTs represented by the samples are accepted.

The Engineer will meet the requirements of 120-10.4.1 except replace FM 1-T099~~AASHTO T99, Method C~~ with FM 1-T180~~, Method D~~. If the Contractor selects the Optional Acceptance Criteria, the Engineer will verify the QC results of FM 1-T099~~AASHTO T99, Method C~~ in accordance with 120-10.4.1.

RETAINING WALL SYSTEMS
(REV 6-29-20)

SUBARTICLE 548-8.5.1 is deleted and the following substituted:

548-8.5 Backfill Placement:

548-8.5.1 Compacted Select and Coarse Aggregate Backfill: A LOT is defined as a single lift of finished embankment not to exceed 500 feet in length of continuous or interconnected walls. Backfill within 3 feet from the panels and backfill beyond 3 feet from the panels are separate LOTs. Overlapping retaining wall volumes may be considered one LOT, excluding the 3-foot width behind the panels. Strips up to 8 feet wide between two retaining wall volumes constructed with the same material in a single operation may be considered as one LOT with the retaining wall volumes. Isolated compaction operations will be considered as separate LOTs. For multiple phase construction, a LOT will not extend beyond the limits of the phase. When bridge abutments on spread footings are shown in the Plans, the material within 3 feet behind the wall face and within the limits defined in 548-9.4.2 are considered as separate LOTs.

SUBARTICLE 548-8.6 is deleted and the following substituted:

548-8.6 Compressible Free Draining Seal: Seal all joints between panels of reinforced concrete panel MSE walls with compressible free draining material (open cell) to prevent plant growth from seeds or spores that may be in the joints or transported to the joints by wind or rain. Install the seal at least 1 1/2-inches from both the front and rear faces of the panel. Protect the free draining seal during the application of coatings and sealants. Should the seal become coated or clogged, remove and replace the coated or clogged free draining seal. The installation must be secure and free draining to keep the seal securely in place until uninstalled and to prevent hydrostatic forces from building up behind the panel.

SUBARTICLE 548-9.2 is deleted and the following substituted:

548-9.2 Maximum Density Determination: For select backfill, determine the maximum QC density in accordance with FM 1-T180, Method D. When compacting A-3 or A-2-4 materials to meet the alternate acceptance criteria in 548-9.4.1, determine the maximum density in accordance with FM 1-T099.

Perform gradation tests on the sample collected in accordance with AASHTO T27 and FM 1-T011. Classify soils in accordance with AASHTO M145 to determine compliance with embankment utilization requirements.

SUBARTICLE 548-9.4.1 is deleted and the following substituted:

548-9.4.1 Optional Acceptance Criteria for A-3 and A-2-4 Materials: Obtain a minimum density of 95% of the maximum dry density as determined by FM 1-T099 within 3

feet behind the wall face and obtain a minimum density of 100% of the maximum dry density as determined by FM 1-T099 beyond 3 feet behind the wall face.

The combined width from both MSE wall backfill (excluding the 3-foot zone from the panels) and embankment material may be considered the same LOT if the same material is used; the material in both wall backfill and embankment is compacted with the same procedure, equipment and compacting effort; and the maximum lift thickness after compaction in both wall backfill and embankment is 6inches.

SUBARTICLE 548-9.4.2 is deleted and the following substituted:

548-9.4.2 Acceptance Criteria for Wall Backfill Supporting Spread Footings: When spread footings at bridge abutments are shown in the Plans, obtain a minimum of 95% of the maximum dry density as determined by FM 1-T180 on the material within 3 feet behind the wall face, and underneath the footing as defined by the following limits:

1. All lifts below the bottom of the footing for a depth equal to at least the footing width
2. A minimum distance of 3 feet beyond the edges of the footing width

If the optional criteria specified in 548-9.4.1 is used, compact the backfill material within the limits specified above to obtain a minimum density of 100% of the maximum dry density as determined by FM 1-T099. Compact the remainder of the backfill in accordance with 548-9.4 or 548-9.4.1 as applicable. Do not use compaction equipment larger than permitted in 548-8.5 within 3 feet behind the wall face; decrease the lift thickness if necessary.

SUBARTICLE 548-9.7.1 is deleted and the following substituted:

548-9.7 Verification Comparison Criteria and Resolution Procedures:

548-9.7.1 Maximum Density Determination: The Engineer will collect enough material to split and create two separate samples and retain one for resolution until LOTs represented by the samples are accepted.

The Engineer will meet the requirements of 120-10.4.1 except replace FM 1-T099 with FM 1-T180. If the Contractor selects the Optional Acceptance Criteria, the Engineer will verify the QC results of FM 1-T099 in accordance with 120-10.4.1.