TECHNICAL SPECIAL PROVISIONS

FOR

Surcharge Embankment

Project Name

Project Number

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Prepared By: Name , P.E.

Date: Date

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SECTION T120

SURCHARGE EMBANKMENT

T120-1 Description

A. The surcharge geometry and dimensions are shown in the project construction plans. The west side of the surcharge will be a vertical MSE wall, while the three other sides (north, east and south) will be graded at 2H:1V slopes. A summary of the surcharge geometry is presented in the following table:

Surcharge	Approximate Station (I-4 B/L Const.)	Approximate Offset (ft)	Approximate Elevation (ft NAVD)	Estimated Surcharge Duration After Construction (Years)
Top	108+28 to 111+71	43 RT to 262 RT	+122	3 to 5*
Base	107+64 to 114+00	52 RT to 335 RT	+90	

* Surcharge will remain in place until I-4 reconstruction project begins.

B. Geotechnical instrumentation shall be installed by the Contractor prior to embankment and surcharge (including the MSE wall) construction for the purpose of monitoring the rate and amount of consolidation and general performance of the surcharge. Installation procedures and locations for geotechnical instrumentation are in accordance with these Technical Special Provisions.

T120-2 Surcharge Construction / Monitoring

A. Construction phases associated with the surcharge program shall be performed in the following sequence:

1. The Contractor shall establish settlement monitoring points and monitor settlement of the adjacent WB Maitland bridge and I-4 pavement during dewatering, subsoil excavation and fill placement operations for working platform construction. Establish one settlement monitoring point on each of Piers 4 and 5 of the existing WB Maitland bridge and five settlement monitoring points behind the barrier wall on the I-4 pavement between Stations 109+00 and 111+00. The points should be monitored at least once a day until the working platform is established, or as directed by the Engineer.
2. Dewater the existing pond to bring the water/groundwater level to a minimum of two feet below the bottom of excavations (corresponding to an approximate elevation of +62 ft NAVD).
3. Excavate organic material deposits from pond bottom as indicated on the pond cross sections in the plans.
4. Backfill the pond to create a work platform at an approximate elevation of +90 ft NAVD. Place fill in layers no thicker than 24 inches and compact them to the

98% of the standard Proctor maximum dry density (AASHTO T99). The fill material shall meet the FDOT Standard Index-505 requirements for "Select" fill.

5. Complete the grouting program in accordance with these Technical Special Provisions, Section T173.
6. Install geotechnical instrumentation (settlement plates and pore pressure transducers) in accordance with these Technical Special Provisions, Section T141.
7. Place one foot of Select (S) soil cover to stabilize the geotechnical instrumentation.
8. Construct the surcharge including the MSE wall (on west side). The surcharge fill shall be compacted to 100% of the standard Proctor maximum dry density. The surcharge fill shall be placed in layers no thicker than 12 inches. During fill placement, the Engineer will monitor geotechnical instrumentation results.
9. Place surcharge fill while monitoring settlement and in accordance with these Technical Special Provisions.
10. Once the surcharge embankment construction is complete, the Engineer will continue monitoring instrumentation and reporting results.
11. Surcharge to remain in place and will not be removed under this contract.

B. Monitoring of settlement plates shall be performed daily during embankment and surcharge construction. The monitoring shall continue every two weeks during the contract duration. The settlement information shall be provided to the Engineer for his use in developing graphs of settlement versus fill height. The Contractor shall coordinate the work of the contract to allow the Engineer to perform instrumentation monitoring at times determined by the Engineer.

C. The Contractor shall be responsible for maintaining a working platform to allow grout injection and installation of the geotechnical instrumentation. Working platform fill shall be free-draining sand and shall contain less than 10% passing the No. 200 sieve. The top of the working platform shall be at least two feet above standing water or groundwater levels, whichever is higher.

D. Embankment and surcharge fill shall be placed in level lifts. The scheduled placement of fill must be time-phased based on the settlement plate and pore pressure transducer readings so that the soft subsurface soils have time to gain enough strength to support further loading. Filling rate will be variable; however, it is anticipated that a filling rate of one to two feet per week should be stable. The Engineer will make all determinations concerning the allowable number of fill lifts per day and whether or not any temporary suspensions of filling are necessary to maintain stability. If any signs of "mud-waving" or other instability are observed during filling, they shall be immediately reported to the Engineer and all filling shall be halted. Filling may be resumed upon the approval of the Engineer. Fill placement shall not be attempted at any time when the rate of settlement exceeds 0.5 inches per day at any monitor location, or when otherwise directed by the Engineer. The Contractor shall remove previously placed fill to the limits directed by the Engineer, when necessary to achieve stability of the embankment.

E. Surcharge fill shall meet the FDOT Standard Index 505 requirements for Select (S) fill. The embankment and surcharge fill shall be placed and compacted in the same manner as the embankment fill below the standard minimum slope in accordance with FDOT Specification Section 120. Each lift of fill shall be placed in a level layer of uniform thickness across the entire length and width of the embankment and surcharge area. Fill soils awaiting placement shall not be stockpiled more than two feet high in the embankment and surcharge area. The Contractor shall be responsible for maintenance of surcharge areas including compliance with all permit requirements and environmental regulations.

F. The full surcharge loading shall be left in place at the completion of this construction contract. The surcharge height does not need to be maintained during the surcharge duration.

G. The average total embankment settlement at the surcharge location is estimated to be 24 inches under the work platform embankment (top at +90 ft NAVD) and an additional settlement of about 18 inches under the surcharge embankment (top at +122 ft NAVD).

T120-3 Method of Measurement

The work of constructing the surcharge fill as shown in the plans and any extensions thereof directed by the Engineer shall be included in the price and payment for Surcharge Embankment. The quantity shall be measured as provided in FDOT Specification Section 120-13.7 with the exception that the original ground line used in computations shall be the finished grading template for the permanent construction (final grade). The measurement shall include surcharge material actually placed above the original ground line, (as defined above), and within the lines and grades for surcharge construction as indicated in the plans or directed by the Engineer. No allowance will be made for subsidence of material below the original ground line as defined above.

T120-4 Basis of Payment

The price and payment for Surcharge Embankment shall be full compensation for all work required to construct surcharge fill including furnishing, from areas provided by the Contractor, any borrow excavation required.

Payment will be made under:

Item No. 120-74 - Surcharge Embankment - per cubic yard

END OF SECTION