

## **DIVISION 31**

## **EARTHWORK**

**SECTION 31 20 00****EARTHWORK****PART 1 GENERAL****1.01 SUMMARY**

- A. Provide earthwork as shown and as specified. Comply with applicable provisions of Div. 0 and 1.
- B. Excavation and Embankment shall be constructed in accordance with Section 120 of the Florida Department of Transportation Standard Specifications for Road and Bridge, Latest Edition, and the FDOT Design Standards, 2014 (Index 500 and 505).

**1.02 CLASSIFICATION**

- A. Excavation of materials encountered under this work will be unclassified without regard to type, difficulty to remove, or suitability for use in construction.

**1.03 SUBMITTALS**

- A. Test Reports: Submit certifications that all soils used for embankment (shoulder construction) meet the requirements of FDOT Design Standards, Latest Edition (Index 500 and 505)

**1.04 TESTING**

- A. Contractor shall arrange and pay for soil sampling and testing by a qualified testing agency, acceptable to the County and independent of Contractor. Test soil materials for suitability for intended purpose using standard, recognized procedures.
- B. Determine mechanical analysis, liquid and plastic limit, and moisture-density curve (ASTM D1557) for each type of soil encountered.
- C. During course of work, testing agency shall inspect and approve fill layers before further construction work is performed on each layer.
- D. If in opinion of Engineer of Record and the County, based on reports of testing agency and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional cost to the County.

**1.05 PROTECTION**

- A. Protect existing improvements, utilities, trees and shrubs, and reference.

**1.06 BLASTING**

- A. Use of explosives is not permitted.

**PART 2 PRODUCTS****2.01 SOIL MATERIALS, GENERAL**

- A. Soil materials shall be free of organic matter, debris and other objectionable materials. Rock particles larger than maximum size specified shall be removed prior to placement of soil.
- B. Select existing material from required excavations may be used for fill or backfill if it meets the specified product requirements. If necessary, furnish additional approved material from suitable off-site sources.

**2.02 GRANULAR FILL, BEDDING, AND BACKFILL**

- A. Select soils to comply with AASHTO M-145 - Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes.

**2.03 FILL AND BACKFILL**

- A. Previously excavated soils, free of aggregate larger than 3 in., and suitable for intended purpose.

**PART 3 EXECUTION****3.01 PREPARATION**

- A. Prepare site for work. Layout and stake lines and grades as required to complete the work.

**3.02 EXCAVATION**

- A. Excavate to achieve necessary dimensions, lines, grades, and cross-sections. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 ft.

**3.03 TRENCHING**

- A. Excavate trenches so that asphaltic base can be placed safely and accurately to required line and grade.

**3.04 UNAUTHORIZED EXCAVATION**

- A. Unauthorized excavation consists of removal of materials beyond indicated elevations or side dimensions without specific direction of Engineer of Record. Unauthorized excavation, as well as remedial work, shall be at Contractor's expense. Notify Engineer of Record and the County if unauthorized excavations are made.
- B. Backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed.

**3.05 ADDITIONAL EXCAVATION (OVER EXCAVATION)**

- A. When excavation has reached required subgrade elevation, notify Engineer of Record and the County who will make an inspection of conditions. Inform Engineer of Record and the County of unsuitable, unconsolidated subgrade soils.
- B. If unsuitable bearing materials, such as poorly compacted fill, existing foundations, rubble, debris, or organic deposits, are encountered at required subgrade elevations, carry excavations deeper and replace excavated material with properly compacted Fill as directed by Engineer of Record and the County.
- C. Removal of unsuitable material and its replacement as directed will be paid for as extra work. Do not proceed with extra work until authorized by the County.

**3.06 STABILITY OF EXCAVATIONS**

- A. Maintain sides and slopes of excavations in a safe condition per OSHA guidelines until completion of backfilling. Slope sides of excavations to angle of repose of material excavated; otherwise, shore and brace where sloping is not possible either because of space restrictions or stability of material excavated. Comply with applicable codes and ordinances.

**3.07 DEWATERING**

- A. Perform earthwork in a manner to prevent surface water and ground water from flowing into excavations. Promptly remove water from excavations using pumps, sumps, and dewatering system components necessary to convey water away from excavations.

If underground springs are encountered, notify Engineer of Record and the County before proceeding.

- B. Dewatering may require a "Generic Permit for the Discharge of Produced Groundwater from Any Non-Contaminated Site Activity." Groundwater testing may be required. The cost of any dewatering permit and required testing shall be paid by the Contractor.

### **3.08 STOCKPILING**

- A. Stockpile excavated materials meeting the requirements for fill and backfill where directed until required for the work. Place, grade, and shape stockpiles for proper drainage. Locate stockpiles a sufficient distance from edge of excavations to prevent such material from falling or sliding into excavations and to prevent cave-ins.

### **3.09 COLD WEATHER PROTECTION**

- A. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F by covering with dry insulating materials of sufficient depth to prevent frost penetration.

### **3.10 EXAMINATION OF SUBGRADE**

- A. Examine subgrade prior to placement of fill or backfill. Do not place materials on frozen subgrade. Plow, strip, or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that material will bond with subgrade. When subgrade has a density less than that specified for the particular area, breakup ground surface, pulverize, moisture-condition to optimum content, and compact top 12 in. to density specified in Part 4 Schedules.

### **3.11 FILLING AND BACKFILLING, GENERAL**

- A. Do not place fill or backfill until required excavation and subgrade preparation have been inspected and approved by Engineer of Record and the County.
- B. Place fill or backfill in approximately horizontal layers; do not exceed the maximum lift thickness specified in Part 4 Schedules before compaction. Spread piles and windrows uniformly.
- C. Adjacent to structures, place fill or backfill to prevent damage and allow structures to assume loads gradually and uniformly, at approximately the same rate on all sides of structure.

### **3.12 BACKFILL**

- A. Provide Backfill material to bring excavations to natural or designated grade.

### 3.13 GRADING

- A. Grade area within project limits by cutting and/or filling as necessary to achieve lines and grades shown. Grade areas adjacent to structure lines to drain away from structure to prevent ponding. Finish surface to be reasonably smooth and free from irregular surface changes. Tolerance for areas to receive topsoil shall be 0.3 ft above or below established grade, less allowance for topsoil. Tolerance for areas to be paved shall be 0.1 ft above or below established pavement subgrade.

### 3.14 COMPACTION

- A. Compact each layer of soil material to not less than the percentage of maximum density specified in Part 4 Schedules.
- B. Provide compaction equipment required to obtain specified compaction. Compaction by travel of grading equipment is not considered adequate for uniform compaction. Small vibratory compactors are required wherever fill is placed adjacent to foundation walls, footings, and piers. Pipe bedding and initial backfill shall be hand or mechanically tamped.
- C. During placement and compaction, maintain moisture content of materials within optimum range.

### 3.15 DISPOSAL OF EXCESS AND WASTE MATERIALS

- A. Remove excess excavated material, trash, debris, and other waste materials and legally dispose of them off-site.

## PART 4 SCHEDULES

### 4.01 COMPACTION SCHEDULE

<u>Location</u>	<u>Lift Thickness<sup>1</sup></u>	<u>Compaction<sup>2</sup></u>
Below foundations, slabs, pavements, walks, and other designated areas.	12"	98%
Bedding and initial backfill around pipe and conduit.	6"	98%

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Unpaved areas 10 ft. or less outside structure line.	12"	98%
Unpaved areas more than 10 ft. outside pavement area.	12"	95%

<sup>1</sup>Place manually compacted materials in maximum 6-in. layers.

<sup>2</sup>Percent of maximum density determined in accordance with AASHTO Modified Proctor T 188.

## **DIVISION 32**

# **EXTERIOR IMPROVEMENTS**



**SECTION 32 12 02****MILLING EXISTING ASPHALT PAVEMENT****PART 1 GENERAL****1.01 SUMMARY**

- A. Milling Existing Asphalt Pavement (1") shall be constructed in accordance with Section 327 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition, including Supplemental Specifications.

**SECTION 32 12 04****SUPERPAVE ASPHALT CONCRETE****PART 1 GENERAL****1.01 SUMMARY**

- A. Superpave Asphalt Concrete shall be constructed in accordance with Section 334 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, including Supplemental Specifications.
- B. All Quality Control testing of Superpave Asphalt Concrete for plant and roadway sampling, shall be in accordance with Sections 334-5.1.4.2 and 334-5.1.4.3 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition.
- C. Acceptance of Superpave Asphalt Concrete will be based solely on results obtained from Quality Control Testing. No reduction in pay or consideration of pay factors will be accepted by Nassau County.

**SECTION 32 12 13****PERFORMANCE TURF (Sod & Hydroseed)****PART 1 GENERAL****1.01 SUMMARY**

- A. Performance Turf, (Sod and Hydroseed) shall be in accordance with Section 570 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition and constructed to the lines, grades, and dimensions shown on the plans.

**SECTION 32 12 29****RETRO-REFLECTIVE PAVEMENT MARKERS****PART 1 GENERAL****1.01 SUMMARY**

- A. Retro-Reflective Pavement Markers shall be constructed in accordance with Section 706 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition, including Supplemental Specifications.

**SECTION 32 12 30****THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS****PART 1 GENERAL****1.01 SUMMARY**

- A. Thermoplastic, Standard, White, Solid, 6", shall be constructed in accordance with Section 711 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, including Supplemental Specifications.
- B. Thermoplastic, Standard, Yellow, Skip, 6", shall be constructed in accordance with Section 711 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, including Supplemental Specifications.
- C. Thermoplastic, Standard, Yellow, Solid, 6", shall be constructed in accordance with Section 711 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, including Supplemental Specifications.
- D. Thermoplastic, Preformed, White, Solid, 24", shall be constructed in accordance with Section 711 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, including Supplemental Specifications.
- E. Thermoplastic, Preformed, White, Message, shall be constructed in accordance with Section 711 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, including Supplemental Specifications.