

SPECIFICATIONS

FINAL

Terry Wright Park Improvements

Town of Brunson
Hampton County, SC

Commission No. 4397

Town of Brunson
Ms. Barbara Johnson-Mayor

August 15, 2023



DOCUMENT 000010 – TABLE OF CONTENTS

DIVISION 31 – EARTHWORK

31 10 00 Site Clearing
31 20 00 Earth Moving

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 13 13 Concrete Paving
32 92 00 Turf and Grasses
First Team, Inc., Brute Playground Basketball System (or equivalent)

END OF DOCUMENT 000010

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- C. Notify utility locator service for area where Project is located before site clearing.
- D. Do not begin site-clearing operations until temporary erosion and sedimentation control measures are in place.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance.
- B. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to a sediment and erosion control plan, specific to the site, that complies with EPA document No. EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent.
- C. Protect site improvements to remain from damage. Restore damaged improvements to condition existing before start of site clearing.
- D. Locate and clearly flag trees and vegetation to remain or to be relocated.
- E. Protect remaining trees and shrubs from damage and maintain vegetation. Employ a licensed arborist to repair tree and shrub damage. Restore damaged vegetation. Replace damaged trees that cannot be restored to full growth, as determined by arborist.
- F. Do not store materials or equipment or permit excavation within drip line of remaining trees.
- G. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.
 - 1. Arrange with utility companies to shut off indicated utilities.

3.2 SITE CLEARING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.
- B. Strip topsoil. Stockpile topsoil that will be reused in the Work.
 - 1. Stockpile surplus topsoil to allow for respreading deeper topsoil.
- C. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.
- D. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
 - 1. Neatly saw-cut length of existing pavement to remain before removing existing pavement.
- E. In areas not to be further excavated, fill depressions resulting from site clearing. Place and compact satisfactory soil materials in 6-inch thick layers to density of surrounding original ground.
- F. Dispose of waste materials, including trash, debris, and excess topsoil, off Owner's property. Burning waste materials on-site is not permitted.
 - 1. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Unauthorized excavation consists of excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
- B. Do not interrupt existing utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Satisfactory Soil: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation, or other deleterious matter.
- B. Unsatisfactory Soil: ASTM D 2487 Soil Classification Groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.
- C. Backfill and Fill: Satisfactory soil materials.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

PART 3 - EXECUTION

3.1 EARTHWORK

- A. Protect and maintain erosion and sedimentation controls, which are specified in Division 31 Section "Site Clearing," during earthwork operations.

- B. Protect subgrades and foundation soils from softening and damage by water, freezing temperatures, or frost.
- C. Explosives: Do not use explosives.
- D. Excavate to subgrade elevations regardless of character of materials and obstructions encountered.
- E. Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Engineer. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents.
- F. Excavate for structures, building slabs, pavements, and walkways. Trim subgrades to required lines and grades.
- G. Utility Trenches: Excavate trenches to indicated slopes, lines, depths, and invert elevations. Maintain 12 inches of working clearance on each side of pipe or conduit.
 - 1. Place, compact, and shape bedding course to provide continuous support for pipes and conduits over rock and other unyielding bearing surfaces and to fill unauthorized excavations.
 - 2. Place and compact initial backfill of satisfactory soil material or subbase material, free of particles larger than 1 inch, to a height of 12 inches over the utility pipe or conduit. Place and compact final backfill of satisfactory soil material to final subgrade.
- H. Plow strip or break up sloped surfaces steeper than 1 vertical to 4 horizontal to receive fill.
- I. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface, pulverize, moisture-condition or aerate soil, and recompact.
- J. Place backfill and fill in layers not more than 8 inches in loose depth at optimum moisture content. Compact each layer under structures, building slabs, pavements, and walkways to 95 percent of maximum dry unit weight according to ASTM D 698; elsewhere to 90 percent.
- K. Grade areas to a smooth surface to cross sections, lines, and elevations indicated. Grade lawns, walkways, and unpaved subgrades to tolerances of plus or minus 1 inch and pavements and areas within building lines to plus or minus 1/2 inch.
- L. Under pavements and walkways, place subbase course material on prepared subgrades and compact at optimum moisture content to required grades, lines, cross sections, and thicknesses.
- M. Under slabs-on-grade, place drainage course on prepared subgrade and compact to required cross section and thickness.
- N. Allow testing agency to inspect and test each subgrade and each fill or backfill layer and verify compliance with requirements.
- O. Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

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Commission No. 4397
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END OF SECTION 312000

2.2 CONCRETE MIXTURES

- A. Proportion normal-weight concrete mixes to provide the following properties:
1. Compressive Strength: 4000 psi at 28 days.
 2. Slump Limit: 4 inches, plus or minus 1 inch at point of placement.
 3. W/C Ratio: 0.45 maximum at point of placement.
 4. Air Content: 4-1/2 percent plus or minus 1.5 percent.
 5. Synthetic Fiber: 1.0 lb/cu. yd.

PART 3 - EXECUTION

3.1 PAVING

- A. Accurately position and support reinforcement, and secure against displacement.
- B. Locate and install contraction, construction, isolation, and expansion joints as indicated or required.
- C. Place concrete in a continuous operation within planned joints or sections. Do not add water to adjust slump.
- D. Float surfaces to true planes within a tolerance of 1/4 inch in 10 feet and medium-to-fine-textured broom finish.
- E. Tool edges and joints to a radius of 1/4 inch
- F. Slip-Resistive Aggregate Finish: Before final floating, spread slip-resistive aggregate finish on pavement surface according to manufacturer's written instructions.
- G. Begin curing after finishing concrete. Apply membrane-forming curing compound to concrete.
- H. Apply traffic paint with mechanical equipment to a minimum wet film thickness of 15 mils.
- I. Contractor will employ a testing agency to sample concrete, perform tests, and submit test reports during concrete placement.
- J. Remove and replace concrete paving that is broken, damaged, or defective. Exclude traffic from paving for at least 14 days.

END OF SECTION 321313

2.2 CONCRETE MIXTURES

- A. Proportion normal-weight concrete mixes to provide the following properties:
 - 1. Compressive Strength: 4000 psi at 28 days.
 - 2. Slump Limit: 4 inches, plus or minus 1 inch at point of placement.
 - 3. W/C Ratio: 0.45 maximum at point of placement.
 - 4. Air Content: 4-1/2 percent plus or minus 1.5 percent.
 - 5. Synthetic Fiber: 1.0 lb/cu. yd.

PART 3 - EXECUTION

3.1 PAVING

- A. Accurately position and support reinforcement, and secure against displacement.
- B. Locate and install contraction, construction, isolation, and expansion joints as indicated or required.
- C. Place concrete in a continuous operation within planned joints or sections. Do not add water to adjust slump.
- D. Float surfaces to true planes within a tolerance of 1/4 inch in 10 feet and medium-to-fine-textured broom finish.
- E. Tool edges and joints to a radius of 1/4 inch
- F. Slip-Resistive Aggregate Finish: Before final floating, spread slip-resistive aggregate finish on pavement surface according to manufacturer's written instructions.
- G. Begin curing after finishing concrete. Apply membrane-forming curing compound to concrete.
- H. Apply traffic paint with mechanical equipment to a minimum wet film thickness of 15 mils.
- I. Contractor will employ a testing agency to sample concrete, perform tests, and submit test reports during concrete placement.
- J. Remove and replace concrete paving that is broken, damaged, or defective. Exclude traffic from paving for at least 14 days.

END OF SECTION 321313

SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Certification of grass seed, product certificates, and planting schedule.
- B. Sod: Harvest, deliver, store, and handle sod according to requirements in TPI's "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in its "Guideline Specifications to Turfgrass Sodding."
- C. Planting Restrictions: Plant during one of the following periods.
 - 1. Spring Planting: March 1st – June 1st
 - 2. Fall Planting: September 1st – December 1st
- D. Maintain lawn until established, but for not less than 60 days.

PART 2 - PRODUCTS

2.1 GRASSES

- A. Seed Species: State-certified seed of grass species, as follows:
- B. Seed Species: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:
 - 1. Seed Mixture: Bermuda
- C. Turfgrass Sod: Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with TPI's "Specifications for Turfgrass Sod Materials" in its "Guideline Specifications to Turfgrass Sodding."
 - 1. Species: Bermuda grass, Cynadon dactylon – Tifway 419 Bermuda

2.2 SOILS AND AMENDMENTS

- A. Topsoil: ASTM D 5268, free of stones 1 inch (25 mm) or larger.
- B. Lime: ASTM C 602, Class T, agricultural limestone.
- C. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8.
- D. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture, free of chips, stones, sticks, soil, or toxic materials.

- E. Commercial Fertilizer: Commercial-grade complete fertilizer, consisting of 1 lb/1000 sq. ft. (0.5 kg/100 sq. m) of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
- F. Slow-Release Fertilizer: Granular fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium; 20 percent nitrogen; 10 percent phosphorous; and 10 percent potassium; by weight.
- G. Straw Mulch: Clean, mildew- and seed-free salt hay or threshed straw of wheat, rye, oats, or barley.
- H. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic; free of plant-growth or germination inhibitors; with maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

2.3 PLANTING SOIL MIX

- A. Mix topsoil with the following soil amendments and fertilizers in the following quantities:
 - 1. Ratio of Loose Compost to Topsoil by Volume: 1:3
 - 2. Ratio of Loose Wood Derivatives to Topsoil by Volume: 1:4, 0.25 lbs./ft³
 - 3. Weight of Lime per 1000 Sq. Ft. (92.9 Sq. m): 11b./1000 ft²
 - 4. Weight of Commercial Fertilizer per 1000 Sq. Ft. (92.9 Sq. m): 11b./1000 ft²
 - 5. Weight of Slow-Release Fertilizer per 1000 Sq. Ft. (92.9 Sq. m): 11b./100 ft²

PART 3 - EXECUTION

3.1 PREPARATION

- A. Loosen subgrade to a minimum depth of 6 inches (150 mm), remove stones, sticks, existing grass, vegetation, and other extraneous materials.
 - 1. At newly graded subgrades, spread planting soil mix to a depth of 4 inches (100 mm) but not less than required to meet finish grades.
 - 2. At unchanged grades, apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches (100 mm) of soil. Till soil to a homogeneous mixture of fine texture.
- B. Grade lawn areas to a smooth, even surface with loose, uniformly fine texture. Moisten before planting.

3.2 PLANTING

- A. Seeding: Evenly distribute seed by sowing with a spreader or a seeding machine. Rake seed lightly into top 1/8 inch (3 mm) of topsoil, roll lightly, and water with fine spray. Protect seeded areas by spreading straw mulch 1-1/2 inches (38 mm) in loose depth.

1. Seeding Rate: 3 to 4 lb/1000 sq. ft. (1.4 to 1.8 kg/92.9 sq. m).
- B. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Uniformly blended into a homogeneous slurry.
1. Apply slurry uniformly at a rate so that mulch component is deposited at no less than 1500-lb/acre (15.6-kg/92.9 sq. m) dry weight, and seed component is deposited at no less than the specified seed-sowing rate.
 2. Seeding Rate: 3 to 4 lb/1000 sq. ft. (1.4 to 1.8 kg/92.9 sq. m).
- C. Sodding: Lay sod within 24 hours of harvesting. Lay sod with tightly fitted joints, offsetting joints in adjacent courses. Tamp and roll lightly. Fill minor cracks between pieces of sod with soil or sand. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples. Saturate sod with fine water spray within two hours of planting. During first week, water daily.
- D. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn. Provide materials and installation the same as those used in the original installation.
- E. Mow lawn as soon as top growth is tall enough to cut. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet.

END OF SECTION 329200