

October 8, 2018

Phil Erwin
Chief Arborist
(214) 948-4117
philip.erwin@dallascityhall.com

RE: Revision to the Recommended Vegetation Remediation Plan (dated 09-28-18)

Dear Mr. Erwin,


The City of Dallas has requested that a written vegetation remediation plan be provided regarding the Quincy Roberts Site Improvements (Remediation Plan within Escarpment Zone and GSA) project.

ICONIC recommends the following vegetation plan for the anticipated remediation:

- Grading shall comply with the Grading Remediation Plan (Alt 2) sheet 4 of 11, dated 09-10-2018 from the previously mentioned project (see attached);
- Placement of topsoil shall be in accordance with NCTCOG 4th Edition, Item 202.2 (see attached);
- Fertilizing shall be in accordance with NCTCOG 4th Edition, Item 202.4 for pre-planting and post-planting (see attached);
- Turfgrass planting shall be in accordance with NCTCOG 4th Edition, Item 202.5 for sodding. Turfgrass sod shall be "Cynodon dactylon" (Common Bermudagrass). Turfing shall be executed across the slope, parallel to finished grade contours (see attached).
- Where the fill (within the Escarpment and GSA) of this project exceeds 3:1 slope, soil retention blankets shall be used. Soil retention blankets shall be in accordance with TxDOT Item 169 "Soil Retention Blanket". Soil retention blankets shall be of spray type blanket (Class 1, Type C, Flexterra) (see attached).

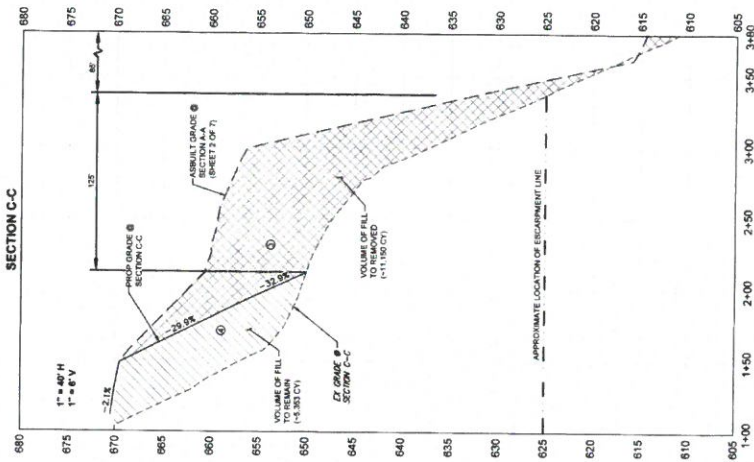
Please consider these recommendations for vegetation remediation so that this project can move forward. If you have any questions, my contact information is below.

ICONIC Consulting Group, Inc.
TBPE Firm No. F-10715



Derek A. White
10/08/18
Derek A. White, Ph.D., P.E.
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NOTE: This document was prepared under the Texas Occupation Code §1052.003 (a) (11) (B) for landscaping and does not reflect recommendations from a landscape architect regulated under Chapter 1052 of the Texas Statutes.



LEGEND

- EXISTING PROPERTY LINE
- MCTCOO MINOR CONTOUR ELEVATIONS
- MCTCOO MAJOR CONTOUR ELEVATIONS
- PROPOSED MAJOR CONTOUR ELEVATIONS
- PROPOSED MINOR CONTOUR ELEVATIONS
- 864.53 TW SPOT ELEVATIONS:
- TW = TOP OF WALL
- TC = TOP OF CURB
- G = GUTTER
- FG = FINISH GRADE
- NG = NATURAL GROUND
- EXISTING CONCRETE DRIVE
- EXISTING REMOVED
- EXISTING GRAVEL

BLOCKS SOO WILL BE INSTALLED IN ALL DISTURBED AREAS FOR GROWTH OF VEGETATION AND FOR THE STABILIZATION OF SOIL

GENERAL NOTES:

1. TOPOGRAPHIC MAPPING IS BASED ON MCTCOO 2007 2-FOOT DIGITAL ELEVATION CONTOURS.
2. ASBUILT SURVEY MAPPING WAS PROVIDED BY PJB SURVEYING, LLC.
3. THE BOUNDARY SURVEY DATA IS APPROXIMATE AND BASED ON DALLAS CENTRAL APPRAISAL DISTRICT.
4. THE APPROXIMATE 100-YEAR FLOOD PLAIN BOUNDARY IS BASED ON FEMA MAP NUMBER 811000001, DATE 07/07/2014.
5. ESCARPMENT LINE AND ESCARPMENT ZONE DELINEATED ARE BASED ON THE ESCARPMENT DEVELOPMENT PLANS (DATE: 02/08/17, BY: T. 1988) PREPARED BY FOOSE ENGINEERING COMPANY.
6. REMOVAL AND RELOCATION OF FILL FROM THE ESCARPMENT ZONE SHALL BE COORDINATED WITH THE PROJECT OWNER AND CITY OF DALLAS.

NO.	DATE	REVISION DESCRIPTION

QUINCY ROBERTS
6455 DIXIE GARDEN COURT
DALLAS, TX 75236

ICONIC CONSULTING GROUP, INC.
100 W. WALA CIRCLE, SUITE 1700
OFFICE: DALLAS, TEXAS 75201
PHONE: 214.750.1234
WWW.ICONICCONSULTING.COM

DESIGN: CEV
DRAWING: CEV
CHECK: DAP
DATE: SEPTEMBER 15, 2017
SCALE: 1" = 40'

PROJECT NO. 20181008001
CITY PLAN FILE NO. SXXX-XXX
REVISION: 4
SHEET OF 11

ITEM 202. LANDSCAPING

202.1. REMOVAL, PROTECTION, AND REPLACEMENT OF TREES, SHRUBBERY, PLANTS, SOD, AND OTHER VEGETATION

No trees shall be removed unless so noted on the plans or upon the specific approval of the OWNER. Where trees, plants, shrubbery, etc., are adjacent to the line of the work and are not to be removed or are designated on the plans to be removed and replaced, the CONTRACTOR shall protect such trees, plants, shrubbery, etc. by substantial wooden boxes and guards and shall not permit machinery or employees to scrape, tear the limbs from, damage or attach guy cables to them. If, in the opinion of the OWNER, such trees, plants, shrubbery, etc., would be damaged by machinery, etc., hand excavation may be required. Shrubby, plants, etc. shall be removed with a ball of dirt about their roots and shall be carefully stored and given proper attention.

Sod shall be removed in squares cut out with a sharp spade and of such sizes that they may be handled conveniently without breaking. They shall be carefully stored and given proper attention. During hot, dry weather, the stored sod shall be protected by covering with canvas or burlap.

The CONTRACTOR shall be responsible for all damage to adjacent trees, plants, shrubbery, etc., and any such damage shall be remedied to the satisfaction of the OWNER. All damaged limbs over 1-inch in diameter shall be sawed clean adjacent to the damaged area or at the trunk and dressed with acceptable tree wound treatment material, unless dressing is waived by the OWNER.

The cost of removal shall be paid for as a separate contract pay item if a separate pay item is provided; otherwise, the costs thereof shall be included in such pay items as are provided in the proposal and contract. The cost of protection shall not be paid for as a separate contract pay item; the costs thereof shall be included in such pay items as are provided for in the proposal and contract.

Where sod, shrubbery, plants, etc., are removed in making the excavation, such areas shall have the same sod, shrubbery, plants, etc., of the same kind and in good condition, replaced in their prior positions. Trees that are to be removed and subsequently replaced shall be designated on the plans. When backfilling is completed, the sod, shrubbery, plants, etc. shall be carefully replaced in their original location and the area thoroughly wet down.

The cost of such replacement shall be paid for as a separate contract pay item if a separate pay item is provided; otherwise, the costs thereof shall be included in such pay items as are provided in the proposal and contract.

202.2. TOPSOIL

202.2.1. Description. This Item shall consist of furnishing and placing topsoil, free from rock and foreign material, as indicated on the plans, to the lines and grades as established by the construction plans.

202.2.2. Materials and Storage. All excavated material which is suitable for topsoil shall be used before any topsoil is obtained from a borrow source. Topsoil shall be secured from borrow sources as required to supplement suitable material secured from project excavation. Topsoil material secured from excavations shall be stockpiled at locations approved by OWNER.

202.2.3. Construction Methods. Approved topsoil shall be a minimum thickness of 6-inches unless otherwise specified on the plans, and shall be placed on areas formed to the line and grade specified in the plans.

202.2.4. Measurement And Payment. Topsoil secured from borrow sources shall be measured by the square yard (m²) in place on the project site. Measurement for payment shall be made only on topsoils secured from borrow sources. All work performed as ordered and measured as provided under this Item shall be paid for at the unit price bid for topsoil. The price shall be full compensation for excavating (except as noted below), loading, hauling, placing and furnishing all labor, equipment, tools, supplies and incidentals necessary to complete the work.

All labor, equipment, tools and incidentals necessary to place salvage topsoil as specified shall be included in the price bid for Item 203.4. Unclassified Street Excavation or Item 203.5. Unclassified Channel Excavation. All excavation required by this Item in cut section shall be measured in accordance with provisions for the various excavation items involved with the provision that excavation shall be measured and paid for once only, regardless of the manipulations involved.

202.3. SOIL AMENDMENTS

202.3.1. General. Where indicated on the plans and defined in the specifications, soil amendments shall be added as defined or as noted in these specifications.

202.3.2. Sand. All sand shall be thoroughly washed, coarse grade construction or brick sand, free of clay balls, weeds or grass. So-called cushion sand, blow sand, creek silt or water treatment solid byproducts shall not be acceptable. A quart sample of the sand proposed to be used shall be submitted for the OWNER'S approval.

202.3.3. Minerals.

202.3.3.1. Elemental Sulfur. Sulfur shall be a commercially produced, granular product of pure sulfur.

202.3.3.2. Gypsum. Gypsum (calcium sulphate) shall be ground to the size specified on the plans.

202.3.3.3. Lime. Lime shall be of finely ground or pulverized raw, commercial grade dolomitic limestone, all of which shall pass through a #10 (210mm) sieve, and at least half of which shall pass through a #100 (150mm) sieve. Solomitic lime shall contain roughly equal portions of magnesium and calcium carbonates, which together total 90-percent or more of the value of neutralizing power or the calcium oxide equivalent. A producer's specification or a sample label of the lime proposed to be used shall be submitted for the OWNER'S approval.

202.3.4. Compost. This Item shall govern for the furnishing and placing of approved compost material to the depths and area shown on the plans or as directed by the Engineer.

202.3.4.1. Materials. Compost material shall be an organic substance produced by the aerobic (biological) decomposition of organic matter. All compost is to be clean and free of visible refuse, live plants, seed, excessive cotton lint and any chemical elements harmful to plant growth. Composted matter may include, but is not limited to, leaves and yard trimmings, brush, biosolids, food scraps, food processing residues, manure and/or other agricultural residuals, forest residues and bark, and soiled and/or unrecyclable paper. Mixed municipal solid waste compost, and Class B Biosolids (as defined in 40 CFR part 503) shall not be allowed. Raw organics in the finished compost shall not be allowed.

Compost materials furnished shall meet all applicable Federal (40 CFR Part 503 Standards for Class A Biosolids) and TCEQ health and safety regulations (TAC Chapter 332). All compost material supplied shall be processed to meet the time and temperature standards in TAC Chapter 332 Subchapter B Part 23 to control noxious weeds, pathogen and vector attraction; and the physical requirements shown in Table 202.3.4.1.(a) Compost Physical Requirements.

Table 202.3.4.1.(a) Compost Physical Requirements

Compost for Manufactured Topsoil	Erosion Control Compost	General Use Compost
Organic Matter Content as determined by loss on ignition (ASTM D5268 Standard Specification for Topsoil Used for Landscaping Purposes @ 824°F)		
30% (dry mass)	40-60% (dry mass)	40-60% (dry mass)
Particle Size as determined by TEX-110-E Particle Size Analysis of Soils		
100% passing 1"	100% passing 3" <70% passing 2"	100% passing 3/4" <70% passing No. 20
Soluble Salts as determined by TEX-129-E Measuring the Resistivity of Soil Materials		
5.0 max. mmhos/cm)	5.0 max. mmhos/cm	5.0 max. mmhos/cm
Maturity		
Finished	Finished	Finished
pH as determined by TEX-128-E Determining Soil pH		
5.5 - 8.5	5.5 - 8.5	5.5 - 8.5

202.3.4.2. Construction Methods. After the designated areas have been completed to the lines, grades, and cross sections shown on the plans and as provided for in other items to the contract, compost of the type specified shall be placed in accordance with the requirements hereinafter described and as directed by the Engineer. Any stockpile areas shall be well drained, and shall be left in a neat and presentable condition upon completion of the removal of the materials. Where rolling is specified, the roller shall be a light corrugated drum roller of the type approved by the Engineer. Compost shall be loose and friable and not dusty at the time of application. Compost may be required to be brought to an acceptable moisture content, as directed by the Engineer. No compost materials shall be placed within 30-yards of any source of surface water or drinking water supply.

202.3.4.2.1. Compost Manufactured Topsoil. Compost manufactured topsoil shall consist of soil constituents amended with 5- to 30-percent compost, measured by volume, as shown on the plans. Any trash, stumps, roots, weeds, or other objectionable materials in the soil shall be removed and disposed of, as approved by the Engineer, prior to beginning the mixing process.

Blended On-Site. Compost shall be spread in a uniform layer over the previously prepared subgrade area and thoroughly incorporated into the soil materials, to the depths shown on the plans, by rototilling, harrowing, or other suitable methods. After the topsoil has been produced and shaped, it shall be sprinkled and rolled as directed by the Engineer.

Pre-Blended. Topsoil manufactured from sources outside the right-of-way shall be produced in accordance with the requirements for Blended On-Site topsoil, and spread over the prepared subgrade so as to form a uniform layer of loose material of the thickness shown on the plans. After the topsoil has been placed, it shall be raked carefully to remove all objectionable materials and to yield a consistent grade, and then sprinkled and rolled as directed by the Engineer.

202.3.4.2.2. Erosion Control Compost. Compost shall be spread evenly over the previously prepared subgrade or slopes so as to form a uniform layer of loose material of the thickness shown on the plans. Erosion Control Compost shall not be placed on any slope having a slope ratio steeper than 2:1. After the compost has been placed, it shall be sprinkled and rolled as directed by the Engineer.

202.3.4.2.3. General Use Compost. General use compost shall be applied as a top dressing by placing the material evenly upon established areas of turf, grass, or other ground cover growth to the depth specified on the plans or as directed by the Engineer. Compost applications shall not bury or kill existing vegetation. All stems, roots, or other debris larger than 2-inches diameter shall be removed from the ground surface.

202.3.5.3. Measurement and Payment. "Compost Manufactured Topsoil (Blended On-Site)", "Compost Manufactured Topsoil (Pre-Blended)", "Erosion Control Compost" and "General Use Compost" will be measured by the cubic-yard (m^3) in vehicles at the point of delivery.

The work performed and materials furnished in accordance with this Item and measured as provided for shall be paid for at the unit price bid for "Compost Manufactured Topsoil (Blended On-Site)", "Compost Manufactured Topsoil (Pre-Blended)", "Erosion Control Compost" or "General Use Compost" for the depth specified. This price shall be full compensation for securing any necessary source(s) and any royalty involved; for furnishing all materials, for all excavation, loading, hauling, stockpiling, placing, rototilling, harrowing, raking, rolling and sprinkling; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

202.4. FERTILIZER

202.4.1. General. Fertilizer shall be a commercial product, uniform in composition, free flowing, with uniform particle size, minimal dust, and suitable for application with approved equipment. Fertilizer may be a natural organic, synthetic organic or inorganic fertilizer. A sample label or specification of proposed fertilizer(s) to be used shall be submitted to the OWNER for approval.

All fertilizer used shall be delivered in original bags or containers clearly labeled to show analysis of the contents. Fertilizer shall be in good physical condition. Fertilizer which has been exposed to high humidity and moisture or has become caked or otherwise damaged, making it unsuitable for use, shall be rejected.

The fertilizer is subject to testing by the OWNER in accordance with the Texas Fertilizer Law. A fertilizer shall be used with an analysis as indicated below. The figures in the analysis represent the percent of nitrogen, phosphoric acid and potash nutrients, respectively, as determined by the methods of the Association of Official Agricultural Chemists. In the event it is necessary to substitute a fertilizer of a different analysis with a lower concentration, the total amount of nutrients furnished and applied per unit area shall equal or exceed that specified for each nutrient.

202.4.2. Preplanting Application. Fertilizer analysis shall be based on soil test results and the nitrogen requirements for the turfgrass specified. If the OWNER waives soil testing, fertilizer analysis shall be, by weight, in a 1-1-1 or 1-2-1 (N-P-K) ratio (such as 13-13-13 or 10-20-10,) and 10- to 15-percent sulphate and traces of iron and zinc as required and approved by the OWNER.

Preplanting application rate shall be 10-lbs.-fertilizer-per-1,000-sq.ft.

202.4.3. Post Planting Application. Fertilizer analysis shall be based on soil test results and the nitrogen requirements for the turfgrass specified. If the OWNER waives soil testing, fertilizer analysis shall be as specified below except that for autumn applications a complete fertilizer with a 4-1-2 to 3-1-2 (N-P-K) ratio shall be applied.

Fertilizer shall contain 30- to 50-percent slow release nitrogen, unless specified otherwise by the OWNER.

202.4.3.1. Seeds or Sprigs. As soon as new growth starts after seeding or sprigging, grass shall be fertilized every 10- to 14-days with 0.75- to 1.0-lb.-nitrogen-per-1,000-sq.ft. Applications shall alternate between nitrogen only fertilizer whose analysis is, by weight, 21-0-0 or 45-0-0 (N-P-K) and a complete fertilizer with a 3-1-2 or 4-1-2 (N-P-K) ratio (such as 21-7-14.)

202.4.3.2. Sod. Fertilizer analysis shall be based on soil test results. Fertilizer shall be applied every 4- to 6-weeks at 1.0-lb.- (actual)nitrogen-per-1,000-sq.ft.

202.4.4. Measurement and Payment. Fertilizing may be paid for as a separate pay item or considered subsidiary to other pay items as specified by the OWNER.

202.5. SODDING

202.5.1. Description. Sodding shall consist of furnishing and planting grass as designated on the plans and in accordance with the requirements of this specification and special conditions.

202.5.2. Materials. Sod shall be "Stenotaphrum secundatum" (St. Augustine grass), "Cynodon dactylon" (Common Bermudagrass), "Buchloe dactyloides" (Buffalograss), an approved hybrid of Common Bermudagrass, or an approved Zoysiagrass. Sod shall consist of stolons, leaf blades, rhizomes, and roots with a healthy, virile system of dense, thickly matted roots throughout the soil of the sod for a thickness not less than 0.75-in. (2cm). Sod shall be alive, healthy, vigorous, free of insects, disease, stones, and undesirable foreign materials, weeds and grasses deleterious to its growth or which might affect its subsistence or hardiness when transplanted. The grass shall have been mowed prior to sod cutting so that the height of the grass shall not exceed 2-inches (5cm). St. Augustine grass sod shall have been produced on growing beds of clay or clay loam topsoil. Bermudagrasses and zoysiagrasses shall have been grown on sand or sandy loam soils. Sod shall not be harvested or planted when its moisture condition is so excessively wet or dry that its survival shall be affected. Sod shall be protected from exposure to wind, sun and freezing. If sod is stacked, it shall be kept moist and shall be stacked roots to roots and grass to grass.

Sod to be placed between curb and walk and on terraces shall be the same type grass as adjacent grass or existing lawn.

Sod to be placed during the dormant stage of these grasses shall be inspected by the OWNER to verify that the grass is acceptable.

202.5.2.1. Dimensions. All sod shall have been machine cut to uniform soil thickness of ½-in. (13mm) ± ⅛-in. (3mm). All sod shall be of the same thickness. Rectangular sections of sod may vary in length, but all shall be of equal width and of a size that permits the sod to be lifted, handled and rolled without breaking. Broken pads and torn, uneven ends shall be rejected.

202.5.3. Construction Methods. After the designated areas have been completed to the lines, grades and cross sections shown on the plans and as provided for in other items of the contract, sodding of the type specified shall be performed in accordance with the requirements hereinafter described. Sodding shall be either plugging or solid.

Care shall be taken at all times to retain native soil on the roots of the sod during the process of excavating, hauling and planting. Sod material shall be kept moist from the time it is dug until planted. When so directed by the OWNER, the sod existing at the source shall be watered to the extent required prior to excavating. Sod material shall be planted within 3-days after it is excavated unless preserved by techniques such as shrink wrapping and transporting in refrigerated trucks, in which case the OWNER shall approve the time interval between excavation and planting.

When necessary, the sodded areas shall be smoothed after planting has been completed and shaped to conform to the cross section previously provided and existing at the time sodding operations were begun. Any excess dirt from planting operations shall be spread uniformly over the adjacent areas or disposed of as directed by the OWNER, so that the completed surface shall present a slightly appearance.

202.5.3.1. Plugging. Furrows parallel to the curb line or sidewalk lines, 12-in. (300mm) on centers or to the dimensions shown on the plans, shall be opened on areas to be sodded. In all furrows, sod approximately 3-in.-square (75mm-square) shall be placed on 12-in. (300mm) centers at proper depth so that the top of the sod shall not be more than ½-in. (13mm) below finished grade. Holes of equivalent depth and spacing may be used instead of furrows. Soil shall be firm around each block; then the entire sodded area shall be carefully rolled with a heavy, hand roller developing 15- to 25-lb.-per-square-inch (100- to 170-kPa) compression. Hand tamping may be required on terraces.

202.5.3.2. Solid Sodding. At locations on the plans, or where directed, sod blocks shall be carefully placed on the prepared areas. Sod shall be so placed that the entire designated areas shall be covered. Any voids left in the solid sodding shall be filled with additional sod and tamped. The entire sodded area shall be rolled and tamped to form a thoroughly compact solid mass. Surfaces of solid sod which, in the opinion of the OWNER, may slide due to the height or slope of the surface or nature of the soil, shall, upon direction of the OWNER, be pegged with wooden pegs driven through the sod block to the firm earth, sufficiently close to hold the sod firmly in place.

202.5.3.3. Fertilizing Sod. Fertilizing shall consist of providing and distributing fertilizer over such areas as are designated on the plans and in accordance with these specifications. The fertilizer shall be applied uniformly over the area specified to be fertilized and in the manner directed. Fertilizer for sod shall comply with applicable provisions of Item 202.4. Fertilizer.

202.5.3.4. Watering and Finishing Sod. Sodded areas shall be thoroughly watered immediately after they are planted. Large areas shall be planted by irrigation zones, so areas can be watered as soon as they are planted. Sod shall be subsequently watered and mowed at such time and in a manner and quantity directed by the OWNER until completion and final acceptance of the project by the OWNER.

Sod shall not be considered finally accepted until the sod has started to peg down (roots growing into the soil), and is free from dead blocks or rolls of sod.

202.5.4. Measurement and Payment. Plugging and solid sodding shall be measured for payment in square yards (m²) of sodded area completed in accordance with the plans and specifications. Plugging or solid sodding, as the case may be, shall be paid for at the contract unit price per square yard (m²), complete in place, as provided in the proposal and contract. The contract unit price shall be the total compensation for furnishing and placing all sod, for all rolling and tamping, for all water, for disposal of all surplus material, and for all material, labor, equipment, tools and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

202.6. SEEDING TURFGRASS

202.6.1. General. Seeding shall consist of preparing the ground, providing and planting seed or a mixture of seed of the kind specified along and across such areas as may be designated on the plans and in accordance with these specifications.

202.6.2. Materials. All material for turfgrass provided shall be in accordance with these specifications and as noted in the plans and contract documents. Prior to planting, CONTRACTOR shall provide the OWNER with the State of Texas Certificate stating analysis of purity and germination of seed.

Seed shall be labeled in accordance with U.S. Department of Agriculture rules and regulations.

202.6.2.1. Bermuda Grass Seed. Turfgrass seed shall be "Cynodon Dactylon" (Common Bermuda Grass). The seed shall be harvested within 1-year prior to planting, free of Johnsongrass, field bind weed, dodder seed, and free of other weed seed to the limits allowable under the Federal Seed Act and applicable seed laws. The seed shall not be a mixture. The seed shall be hulled, extra fancy grade, and have a germination and purity that shall produce, after allowance for Federal Seed Act tolerances, a pure live seed content of not less than 85-percent. Pure Live Seed (PLS) Percent shall be determined using the formula:

Percent Pure Live Seed = %Purity x [(%Germination + %Firm or Hard Seed) ÷ 100]

202.6.2.2. Ryegrass Seed. Turfgrass seed shall be "Lolium multiflorum" (Italian or Annual Ryegrass). The seed shall be harvested within 1-year prior to planting and shall be free of perennial ryegrass seed, other grass seed and weed seed to the limits allowable under the Federal Seed Act and applicable seed laws. Seed shall be at least 95-percent pure, treated with fungicide, and shall have a 90-percent minimum germination rate.

202.6.2.3. Sprigs. Turfgrass sprigs and stolons shall be "Cynodon Dactylon" (Common Bermuda Grass) (Hybrid Bermuda Grass of the Tifway 419/ Tifton 10/Tifgreen Strain). Sprigs shall be acquired from a healthy stand of grass, free of weeds and other grasses. The source is to be inspected and approved by the OWNER. Sprigs and stolons are to be delivered and planted within 24-hours of harvest unless special precautions are taken to prevent drying of sprigs to assure optimum rooting.

202.6.3. Planting Season and Application Rates. All planting shall be done between the dates specified for each grass type except when specifically authorized in writing. The seeds planted per acre shall be of a type specified with the mixture, rate and planting dates as shown in Table 202.6.3.(a) Seeding Turfgrass, or as specified by the OWNER.

Table 202.6.3.(a) Seeding Turfgrass

Type	Planting Season	Seed and Rate
Type I	March through September	Bermuda Grass, hulled, 50-lb.- (22.7-kg)-PLS ¹ -per-acre
Type II	October through February	Rye Grass, 100-lb.- (45.4-kg)-PLS ¹ -per-acre combined with Bermuda Grass, unhulled, 20-lb.- (9.1-kg)-PLS ¹ -per-acre
Other	specified on the plans	specified on the plans

1. Pure Live Seed (PLS) is determined by multiplying the gross weight times purity times the germination. (For example, a 100-lb. (45.4-kg) bag with 85% purity and 80% germination: PLS = pounds (kg) in bag x purity x germination = 100-lb. (45.4-kg) x 0.85 x 0.80 = 60.8-lb. (27.6-kg) of pure live seed.)

202.6.4. Construction Methods.

202.6.4.1. General. After the designated areas have been completed to the lines, grades and cross sections shown on the plans and as provided for in other items of this contract, seeding of the type specified shall be performed in accordance with the requirements hereinafter described. All seeding operations shall be performed by either "drilling" or "cultipacker" process or approved equivalent. Seed shall be covered by + ¼" (6mm) topsoil.

The OWNER may reject seeded area on the basis of weed populations.

202.6.4.2. Broadcast Seeding. Area to be treated shall be rough graded and raked. Seed or seed mixture in the quantity specified shall be uniformly distributed over the areas shown on the plans and where directed. If the sowing of seed is by hand, rather than by mechanical methods, the seed shall be sown in two directions at right angles to each other. Seed and fertilizer may be distributed at the same time, provided the specified uniform rate of application for both is obtained.

202.6.4.3. Disced Seeding. Soil over the area shown on the plans as directed to be seeded shall be loosened to a minimum depth of 3-in. (75mm). All particles in the seedbed shall be reduced to less than 1-in. (25mm) in diameter, or they shall be removed. The area shall then be finished to the line and grade as specified under Item 202.6.4.6. Watering, Maintaining, and Finishing Seeded Areas.

Seed or seed mixture specified shall then be planted at the rate required, and application shall be made uniformly. If the sowing of seed is by hand rather than by mechanical methods, seed shall be sown in two directions at right angles to each other. Seed and fertilizer may be distributed at the same time, provided the specified uniform rate of application for both is obtained. After planting, the seed shall be raked or harrowed into the soil to a depth of approximately 0.125-in. (3mm).

202.6.4.4. Hydraulic Mulching. All mulch shall be cellulose fiber mulch and shall be refined specifically for lawn hydraulic mulch applications. Use "Conwed" or an approved equal. Adhesive (Tacking) agents for mulch may include guar gum, polyacrylamide, or other tacking agent, as approved by the OWNER. Tacking agent shall be evenly distributed in the hydraulic mulch before land application in the proportion recommended by the mulch manufacturer.

Seed or seed mixture, in the quantity specified, shall be uniformly distributed over the areas shown on the plans or where directed. Seed and fertilizer are to be distributed as a water slurry, and the mixture shall be applied to that area to be seeded within 30-minutes after all components are placed in the equipment. Fertilizer shall conform to the applicable requirements of Item 202.4. Fertilizer. After placement is completed, the planted area shall be watered sufficiently to assure uniform moisture from the surface to a minimum 6-in. (150mm) depth.

202.6.4.5. Fertilizing. Fertilizing shall consist of providing and distributing fertilizer over such areas as are designated on the plans and in accordance with applicable requirements of Item 202.4. Fertilizer. The fertilizer shall be applied uniformly over the area specified to be fertilized and in the manner directed.

202.6.4.6. Watering, Maintaining, and Finishing Seeded Areas. Seeded areas shall be thoroughly watered immediately after they are planted. Seeded areas shall be watered as directed by the OWNER at least twice daily for at least 14-days after seeding in such a manner as to prevent washing of the slopes or dislodgment of the seed. Water shall be applied to the cultivated areas until a minimum depth of 6-inches is thoroughly moistened. CONTRACTOR shall re-seed washed areas. The CONTRACTOR shall be responsible for proper watering until final acceptance.

Seeded areas shall be maintained, including watering and mowing, at such time and in a manner and quantity directed by the OWNER until completion and final acceptance of the project by the OWNER. At minimum, the CONTRACTOR shall maintain the seeded area until each of the following conditions is achieved: vegetation is evenly distributed, without large bare areas, and covers 70% of the seeded area.

Where applicable, the shoulders, slopes and ditches shall be smoothed after seeding has been completed and shaped to conform to the cross section previously provided and existing at the time planting operations were begun.

202.6.5. Measurement And Payment. Acceptable material for broadcast seeding, disced seeding, and hydraulic mulching shall be measured by the square-yard (m²) or by the acre (m²) complete in place. The work performed and materials furnished and measured as provided in this Item shall be paid for at the unit price for broadcast seeding, disced seeding, or hydraulic mulching of the type specified, as the case may be. The price shall be full compensation for furnishing all materials, including water for seed-fertilizer slurry and hydraulic mulching, fertilizer, and for performing all operations necessary to complete the work.

Water for sprinkling the cultivated area or seedbed when required shall meet the requirement of and shall be measured and paid for in accordance with the provisions governing Item 203.8. Dust Control.

202.7. REJECTION

Landscape materials may be rejected for failure to meet any of the requirements of this specification or as shown on the plans or in the contract specifications.

US-1S US-2S US-1X Winters Coir WR-1	
<ul style="list-style-type: none"> Product names are arranged in alphabetical order. Contact information and private label names for products can be found on the Vendors List. Refer to the General Product Material Descriptions page for additional information about product material. 	



**APPROVED PRODUCT LIST
ITEM 169 "SOIL RETENTION BLANKET"**

Effective Date: August 2018

The Contractor has the option of utilizing the following approved products in accordance with the Class and Type as specified on the plans. The current Approved Product List may be found on TxDOT's Erosion Control Web Page at: <http://www.txdot.gov/business/resources/erosion-control.html>.

Direct all questions to Jacob Eickstead of the Maintenance Division, Vegetation Management Section, 125 E. 11th Street, Austin, TX 78701-2483, (512) 416-3092 or Jacob.eickstead@txdot.gov.

CLASS 1 – "SLOPE PROTECTION" (continued)

<u>Type C – Slopes Steeper than 3:1 - CLAY Soils:</u>	
ROLL TYPE BLANKET	SPRAY TYPE BLANKET
AEC Premier Coconut AEC Premier Straw/Coconut BIOMAC S1 BIOMAC SC BIOMAC SS 027.2 Curlax I ECB S32 Double Net Straw ECS-2 Excel PP5-10 Excel R-1 Excel Rc-1 Excel S-1 Excel SR-1 All Natural Excel SS-2 Greenfix CFS072R Greenfix WS05 GreenSolutions™ DNS 2 Haymark HMI-350PP North American Green S150 North American Green P300 North American Green S75BN Rhino Erosion King Single Net S1000 Single Net Straw TerraGuard DS US-2S US-2X	CocoFlex ET-FGM EarthGuard Fiber Matrix EcoFlex HP FGM Flexterra FGM Flexterra HP-FGM Flexterra Ultra Hy-C4 Hydra CX2 Hydro-Blanket® BFM HydroStraw BFM Soil Guard® SprayMatrix FRM Wood-Lok HPM

DMS - 6370
SOIL RETENTION BLANKETS

EFFECTIVE DATE: JUNE 2009

6370.1. Description. This Specification governs the material certification, testing, and material requirements of 3 classes of erosion control materials:

- Class I—used to protect slopes from soil erosion;
- Class II—used to protect channels from soil erosion; and
- Hydraulically Applied Mulches—used for soil erosion control.

6370.2. Units of Measurements. The values given in parentheses (if provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.

6370.3. Approved Products List. The Maintenance Division maintains an Approved Products List (APL) of products conforming to this Specification. Materials appearing on the APL, entitled "Soil Retention Blanket," require testing at the Department/Texas Transportation Institute (TTI) Hydraulics, Sedimentation, and Erosion Control Laboratory.

6370.4. Pre-Approval Procedure.

- A. Pre-Approval Request.** Submit a completed Application for Product Testing to the address shown on the application, along with appropriate fees, to obtain a slot on the evaluation waiting list schedule.
- B. Pre-Approval Sample.** Provide samples as detailed in the Introduction to the Final Performance Analysis.
- C. Evaluation.** TTI personnel will evaluate samples at the completion of an evaluation cycle, at which time the team will determine whether the product is performing at an acceptable level.
 - 1. Approval.** The Department will list materials meeting the requirements of this Specification on the APL. Materials must receive periodic recertification in accordance with the schedules listed in the Final Performance Analysis Introduction.
 - 2. Failure.** Suppliers not approved under this Specification may not furnish materials for Department projects and must retest and meet minimum performance standards for qualification.

6370.5. Material Requirements.

A. **Class I Materials.** Class I materials must meet the requirements listed in Table 1.

Table 1
Minimum Performance Standards for Slope Protection

Vegetation	Maximum Soil Sediment Loss			
Percent Density	Type A 3:1 Clay (lb./100 sq. ft.)	Type B 3:1 Sand (lb./100 sq. ft.)	Type C 2:1 Clay (lb./100 sq. ft.)	Type D 2:1 Sand (lb./100 sq. ft.)
50	7.89	284.3	7.89	631.8

B. **Class II Materials.** Class II materials must meet the requirements listed in Table 2.

Table 2
Minimum Performance Standards for Channel Protection

Vegetation	Maximum Soil Sediment Loss			
Percent Density	Type E 2 lb./sq. ft. Sheer Stress	Type E 4 lb./sq. ft. Sheer Stress	Type E 6 lb./sq. ft. Sheer Stress	Type E 8 lb./sq. ft. Sheer Stress
50	350	500	620	800

C. **Hydraulic Applied Mulch.** Hydraulic applied mulch must meet the requirements listed in Table 3.

Table 3
Minimum Performance Standards for Hydraulic Mulches

Vegetation	Maximum Soil Loss	
Percent Density	4:1 Clay (lb./100 sq. ft.)	4:1 Sand (lb./100 sq. ft.)
50	137.0	450.0

6370.6. Archived Versions. Archived versions are available.