September 5, 2019
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA
Addendum No. 3, IFB Y20-702-RC
ORANGE COUNTY CONSTRUCTION OF COMMUNITY PARK ON PARCEL J

THE BID OPENING DATE IS: September 17, 2019

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to, and shall take precedence over, the original documents. Underlining indicates additions, deletions are indicated by ~~strikethrough~~.

A. The bid opening date remains September 17, 2019 at 2:00 P.M.

B. Additions, Revisions, Deletions, Clarifications, Questions and Answers:

1. **The following specifications have been added.**
   - Specification Section 01580 – Project Sign
2. **The following specifications have been revised in their entirety.**
   - Specification Section 32 92 01 – Turf and Grasses (Bermuda)

3. **Question:** Sheet C406 has local rep contacts for playground equipment are we supposed to use only listed manufactures or can we request for alternate manufacture's approval. Please clarify.
   Answer: Use the manufacturers listed.

4. **Question:** Please Confirm that Orange County is Paying for all Permits per Section 31. Section A on Page C-21.
   Answer: The County shall pay for all Building Permits. Any sub permit (such as hauling, electrical, mechanical, plumbing, etc.) is the responsibility of the Contractor.

5. **Question:** Sheet A-100 Architectural Site Plan show 4 parking lot lights, however the details are not shown on the blueprints.
   Answer: Please refer to sheet E001 through E104 for Site Electrical Plans, Part of Parcel J Community Park Plans with civil sheets.

6. **Question:** Sheet A-100 Architectural Site Plan show an electrical service rack and transformer, please provide details.
   Answer: Please refer to sheet E001 through E104 for Site Electrical Plans, Part of Parcel J Community Park Plans with civil sheets.

7. **Question:** Please confirm if the footing and foundations for playground equipment and shade structure are part of Bid Additive #1 with perimeter sidewalk.

Answer: Playground foundation, shade structure foundation and perimeter sidewalk are part of Bid Additive #1 as noted on sheet C101.

8. **Question:** Part H Specification section 02831 and detail 3/C403 indicate that there is a requirement for chain link fence and/or gates; however, we cannot locate the chain line fence/gate on the plan sheets. Please advise.
   Answer: Sheet C101 and C102 do show chain link fence against the property line abutting the fire station and ball field.

9. **Question:** Part H Specification section 10 14 00 indicates a requirement for exterior signage, please provide a location or Sign Schedule for the required exterior signs.
   Answer: Contractor shall be responsible for placement of a temporary project identification sign. Sign shall be 4 ft. x 8 ft. mounted on posts, with 7 feet clearance from existing grade. The sign shall be similar to the sample shown below. Contractor shall submit a design sample to OC Project Manager for review and approval. Contractor will be responsible for all design and permitting of the project identification sign.

C. ACKNOWLEDGEMENT OF ADDENDA

a. The Bidder/Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of the bid or proposal.
b. All other terms and conditions of the IFB remain the same.
c. **Receipt acknowledged by:**

_____ _____
Authorized Signature Date Signed

_____
Title

_____
Name of Firm

SECTION – TURF AND GRASSES (BERMUDA)

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. The General Contractor shall utilize one of the following approved sod suppliers and installer for material and installation source for all of the sport fields. No other field building subcontractors or General Contractor's subcontractors shall provide materials or installation services relative to the sport field sodding.

1. Golf Agronomics Supply and Handling
   Contact: Bobby Ellis, 407-509-7417, ETSI1960@yahoo.com
   390 Keuka Road
   Interlachen, FL 32148
2. Lake Jem Farms Inc.
   Contact: Jim Grainger, 352-267-4068, JimG@LakeJemFarms.com
   862 S. Duncan Drive
   Tavares, FL 32784
3. JSM Services Inc.
   Contact: Chris Coscia, 863-659-2032, CCoscia@JSMServicesInc.com
   P.O. Box 897
   Lutz, FL 33548
4. Sadlers Site Works LLC
   Contact: Art Hamilton, 863-206-4673, AHampton@SadlersSiteworks.com
   530 N. Commonwealth Avenue
   Polk City, FL 33868
5. World Sports Turf and Marketing LLC
   Contact: Luis Lauretti, 813-434-7074, Lauretti@WorldWportsUSA.com
   3808 South Nin Dr.
   Valrica, FL 33596
6. T. Mac Wilder & Associates, LLC
   Contact: Benny Hall, 229-256-9729, office: 229-382-9690, TMW@FriendlyCity.net
   P.O. Box 2525
   Tifton, Georgia 31793

1.2 DESCRIPTION OF WORK

A. This section includes the field building requirements for furnishing and installation Growing Medium Mix and Bermuda grassing materials at areas indicated on the drawings. These specifications for the field building portions of this scope will be in addition to other project specifications on drawings and specifications. The contractor shall disclose the source(s) of all materials imported to the site, for the field building operations, to the County's Project Management team prior to delivery. All delivery tickets and invoices shall be forwarded to the Project Management Team at the weekly project site meeting.

B. Soil preparation.

C. Soil placement and fine grading.

D. As built certifications of each Laser Graded field

E. Soil testing.

F. Soil amendments as recommended by soil test results.

G. Soil treatment with pre-emergent and post-emergent herbicides.

H. Maintenance/grow-in program to include the furnishing and installation of fertilization, herbicides and insecticides and all necessary maintenance including mowing and hand weeding. Re-application of grassing materials as necessary to insure a healthy, dense, weed- free stand of grass.

I. Coordination with irrigation system installation/adjustment as shown on plans and as specified for purposes of continued watering for turf establishment and adjustment of heads in relation to turf height to prevent head damage during mowing operations.

1.3 QUALITY ASSURANCE

A. Comply with regulations of all governing agencies when applying herbicides and pesticides. Applications shall follow manufacturer instructions.

B. Grassing shall be performed by Bermuda turf specialist knowledgeable with climate conditions and planting requirements of the geographical area and whose work has resulted in successful lawn establishment. Installer shall maintain an experienced full-time supervisor on the project site when grassing operations are in progress.

C. Installation equipment shall be properly maintained, professional grade, and employed so as not damage to turf or field incurs.

D. A.S.P.A. (American Sod Producers Association) – Guideline Specifications to Sodding.

E. Athletic Fields: Design, Construction and Maintenance by the University of Florida – Institute of Food and Agricultural Sciences (IFAS) – Bulletin #202. 2009 Pest Control Guide for Turfgrass Managers by the University of Florida/IFAS.

F. Rootzone Construction: Standard Guide for Construction of High Performance Sand-Based Rootzones for Athletic Fields ASTM Designation: F2396-11, F1647-11.

G. Subgrade Topsoil layer soil report: Submit analysis report for the topsoil specified in PART 2 – MATERIALS.

1. Furnish a soil analysis produced by a licensed qualified soil testing laboratory confirming compliance with the specified horticultural and agronomic requirements. This soil analysis shall include percentages of organic matter (including, but not limited to, silt, clay and organic content) and present levels of phosphorous, potassium and acidity (pH). Soil testing shall include heavy metals, the gradation of all test samples shall be tested individually and cumulatively.

2. The analysis shall also include the infiltration rate performance in inches per hour. A

minimum of 10 inches per hour is required.

3. Provide a complete laboratory analysis of the fill placed beneath the Subgrade Topsoil layer prior to the delivery of the sand to the site. That analysis shall include particle size, pH, and percentages of sand, silt, clay and organic matter. Deliver the analysis to the Owner's Representative and project engineer. See this section, Part 1.3.I.

H. All sod specified herein shall be certified Tiffway 419 Bermuda grass. Provide sod source including name and telephone number of sod farm. Certifications of sod shall be provided to the Owner's Representative and Project Engineer.

I. Sod type bid alternate note: Submit bid add alternate shall include the Bermuda Latitude 36, procured and installed to the same standard as set forth with the Bermuda Tifway 419.

1.4 DELIVERY, STORAGE; & HANDLING

A. Deliver, store, protect and handle products to site under provisions of Division 1.

B. Do not deliver more grassing materials than can be installed within 24 hours of delivery.

C. Store all chemicals off-site. Keep all pesticides, herbicides and fertilizers in a secure area when in use on-site and keep away from public.

1.5 COORDINATION

A. Coordinate work under provisions of Division 1.

B. Coordinate installation of underground sprinkler system, piping, and heads.

C. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required.

1.6 JOB CONDITIONS

A. Planting time: Best to install sod during the active growing season.

B. When work on the project has progressed sufficiently to commence root zone placement and planting, then the planting operations shall be conducted only under favorable weather conditions which are normal for such work as determined by accepted sports field sodding practices.

1.7 WARRANTY

A. Provide a 90 day warranty from the date of final completion and acceptance. After a period of ninety days a warranty inspection will be performed by a certified agronomist (chosen by whom?) at the expense of the contractor. The warranty inspection will be performed to determine the health of the turf including the presence of any noxious weed growth, insect infestations, and contamination by other grass species, overall color of the turf and general health.

B. If during the warranty and replacement period any of the turf is found to be damaged or destroyed due to vandalism, poor OWNER maintenance practices, over-use, malicious mischief and/or vehicle rutting, then the responsibility of replacing those grass areas is not that of the Contractor.

1.8 DEFINITIONS:

A. Weeds: Includes Torpedo grass, Bahia grass, St. Augustine, Nut Sedge, Dandelion, Goose grass,

Dollar Weed, Quack grass, Dogfennel, Horseweed or Marestail, Morning Glory, Rushes, Common Bermuda, and any other weed or grass noted in “Weeds of Southern Turfgrasses”, as published by the University of Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences.

B. Submit manufacturer data on herbicides, pesticides and fertilizers.

C. Submit maintenance/operation instructions for continuing Owner maintenance. Include seasonal cutting instructions and height, watering rates, soil amendment, fertilization, herbicide and insecticide application rates and frequencies.

PART 2 - PRODUCTS

A. ENGINEERED ROOT ZONE GROWING MEDIUM The contractor shall provide an 8” deep layer clean sand which has a maximum of 6% passing #200 sieve without any clays, debris, or aggregates with a minimum permeability rate of 10 inches per hour. Contractor shall submit laboratory testing of the material by a registered geotechnical engineer prior to placement of the growing layer within the ball field. Final pH of Engineered Root Zone Mix shall be between 6.0 and 7.0. The 20 percent (%) of the soil mix shall be organic peat using “Restore”, “Command”, Canadian Peat, or Florida Peat. The contractor shall indicate the product utilized within the Root Zone Mix submittal.

B. The Subgrade Base, Subgrade Topsoil and Engineered Root Zone Mix shall be free of any and all toxic substances, grass, roots, weeds, stones, weed seeds and insects, heavy metals.

C. The final pH shall be between 6.0 and 7.0. Any pH less than 6.0 shall have amendments tilled as required in this specification.

D. Growing Mix organic matter content shall range from 1.35% to 1.75%. Organic materials blended with the 80% as certified USGA Construction Sand base material and the 20% shall be Canadian Peat. Organic materials, if required, for the Root Zone Subgrade, and Subgrade Base may be locally sourced Peat from Reliable Peat or Hillary Peat Inc. or equal. All Organic materials shall be tested separately from base constituent material prior to blending.

2.2 FERTILIZER:

A. Fertilization is specified in Section 3.1.B

2.3 HERBICIDES/INSECTICIDES/PESTICIDES/SOIL FUMIGANTS:

A. “Roundup” (Glyphosate) post-emergent herbicide, to kill emergent weeds prior to placement of root zone mix and as otherwise required.

B. Delay the use of post emergent herbicides as long as possible, and for at least the first four weeks, to allow the turf to become established. “Monument” may be used for nutsedge control.

C. “Ronstar” pre-emergent herbicide.

D. Pesticides: Sod Webworms, Mole Crickets – “Orthene”. Fire Ants: “Amdro”.

E. APPLY HERBICIDE TO ALL WEEDS OR GRASSED AREAS TO BE REMOVED. APPLY WHEN WIND SPEEDS ARE BELOW 5 MPH AND MINIMIZE ANY DRIFT OR OVER SPRAY ONTO LANDSCAPING TO REMAIN. UTILIZE A STICKER/SPREADER TO ENHANCE PERFORMANCE OF HERBICIDE IF RECOMMENDED BY MANUFACTURER. THOROUGHLY WASH ANY NEW OR EXISTING PLANT FOLIAGE THAT IS SPRAYED WITH HERBICIDE AND REPLACE ANY PLANTS KILLED OR DAMAGED BY MISUSE OF HERBICIDES.

F. SPREAD TOPSOIL SUBGRADE TO MINIMUM DEPTH REQUIRED TO MEET LINES, GRADES AND SPECIFIED ELEVATIONS, AFTER LIGHT ROLLING AND NATURAL SETTLEMENT. ALLOW FOR TURF THICKNESS WHERE TURF IS ADJACENT TO PAVED SURFACES.

G. The objective of pre-planting fumigation shall be to kill nematodes, soil-borne fungi and insects, and effectively kill plant propagules such as Bermuda grass stolons and rhizomes, nutsedge tubers and most broadleaf and grassy weed seeds.

2.4 SOD

A. Sod shall be **Tiffway 419 Bermuda** grass. All sod shall be **"Blue Tag" certified** turf grass from a certified Bermuda Tifway 419 sod grower. Any and all replacement sod required for repairs shall be from the same grower to maintain consistent color, texture and density.

1. Sod shall be strongly rooted Tiffway 419 Bermuda sod, true-to-type, high quality grass which has been propagated in a controlled cultural environment, grown on fumigated farms not less than two years old, free of noxious weeds and undesirable native grasses. Provide only sod capable of vigorous growth and development when planted (not dormant).

2.5 Thickness of Cut: Bermuda Turfgrass sod shall be machine cut at a uniform soil thickness of 0.60 inch (15 mm), plus or minus 0.25 inch (6 mm), at the time of cutting. Measurement for thickness shall exclude top growth and thatch.

2.6 Pad Size: Individual pieces of turfgrass sod shall be cut to the supplier's standard width and length. Maximum allowable deviation from standard widths and lengths shall be plus or minus 0.5 inch (15 mm) on width and plus or minus five percent on length. Broken pads and torn or uneven ends will not be acceptable.

2.7 Strength of Turf Sod Sections: Standard size sections of turfgrass sod shall be strong enough that it can be picked up and handled without damage.

2.8 Moisture Content: Turfgrass sod shall not be harvested or transplanted when its moisture content (excessively dry or wet) may adversely affect its survival.

2.9 Mowing Height: Before harvesting, the Bermuda turfgrass shall be mowed uniformly at a height of 1 to 2.5 inches (25 to 60 mm) on cool season grasses (i.e., bluegrass, bentgrass, rye and fescue), and 0.75 to 1.50 inches (20 to 40 mm) on warm season grasses (i.e., zoysiagrass, bermudagrass, St. Augustinegrass, etc.).

2.10 Time Limitations: Bermuda Turfgrass sod shall be harvested, delivered and installed/transplanted within a period of 24 hours, unless a suitable preservation method is submitted in writing by contractor and formally approved by owner prior to delivery. Bermuda Turfgrass sod not transplanted within this period shall be inspected and approved by the inspecting officer or his representative prior to its installation.

PART 3 - EXECUTION

3.1 GRADING AND DRAINAGE

A. Construct and Prepare Subgrade Base—Contour the Sub- grade Base in accordance with specifications at a maximum tolerance of 2 in. within 25 ft. of linear direction as specified herein. The Subgrade Base should be a 12" depth installed and laser graded such to accommodate the final profile depth of engineer's field finish grade. The subgrade should be compacted sufficiently from **85 % minimum to 90 % of the Modified Proctor maximum dry density (ASTM D 1557)**

to prevent future settling. Subgrade base should be designed to conform to surface contour of finished playing surface.

B. Construct and Prepare Root Zone Growing Medium—Contour Engineered Root Zone Mix in accordance with specifications at a maximum tolerance of 1 in. within 25 ft. of linear direction as specified herein. The subgrade base should be a 12" depth installed and laser graded such to accommodate the final profile depth of Root Zone finish grade. Subgrade base and any gravel layer (if included). The subgrade should be compacted sufficiently from **85 % minimum to 90 % of the Modified Proctor maximum dry density (ASTM D 1557)** to prevent future settling. Subgrade base should be designed to conform to surface contour of finished playing surface.

C. Surface Drainage—All field soil lift installations should include a minimum of 1 % slope gradient (simple slope or crown) to remove water off of the playing field in case of a storm event with severe rainfall intensity and to facilitate the use of tarps, see civil engineer grading plans for finish grade elevations. Refer to engineer's grading and drainage plans to size surface drainage inlets to be installed in the perimeter of the installation (out-of-play areas) and tied into the drainage collection system for removal of surface runoff with the subsurface drainage water. All surface grading of the field shall be laser graded at each soil lift.

3.2 PREPLANTING

A. Placement: place of Subgrade base, (amended site soil mix) to achieve final elevations, minus 2 inches, using laser grading methodologies as indicated on engineer's grading plans.

B. Placement: place 8" of Engineered Root Zone mix to achieve final elevations using laser grading methodologies as indicated on engineer's grading plans. Refer to Section 3.2.I for Final Laser Grade.

C. Field Sub-Contractor shall provide all Field Laser grading . As built surveys shall be provided by the contractor at the contractor's expense, to certify laser grade is in compliance with the plans and specifications prior to beginning the next profile depth of field soil as outlined in 3.2.A thru C.

D. FUMIGATE/STERILIZE SOIL AFTER TILLAGE AND TOPSOIL PLACEMENT BUT BEFORE FINAL LASER GRADING. APPLY fumigant per label instructions in order to meet objective noted above. ALLOW SUFFICIENT TIME AFTER SOIL FUMIGATION BEFORE COMMENCING PLANTING OPERATIONS SO TURF IS NOT DAMAGED.

E. AREAS TO BE SODDED SHALL BE CULTIVATED TO A DEPTH OF 4" BELOW FINISH GRADE AND TREATED WITH COLLOIDAL PHOSPHATE AT A RATE OF ONE CUBIC YARD PER 1,000 SQUARE FEET, DOLOMITIC LIMESTONE AT A RATE OF TWO TONS PER ACRE (IF RECOMMENDED BY SOIL TEST RESULTS). **LIMESTONE, COLLOIDAL PHOSPHATE AND FERTILIZER SHALL BE THOROUGHLY INCORPORATED BY ROTO-TILLING INTO THE TOP 4" OF SOIL WITH OTHER SOIL AMENDMENTS AS RECOMMENDED BY SOIL TEST RESULTS AND AS APPROVED BY ENGINEER OF RECORD / OWNER.** PRIOR TO PLANTING SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.

F. Place fertilizer at a ratio of 1-2-4 (example 5/10/20 formulation). The nitrogen source shall be slow-release urea-formaldehyde applied at 1 lb. of nitrogen per 1,000 sq. ft. of turf. The starter fertilizer shall contain a basic micro-nutrient package.

G. **All soil amendments shall be uniformly incorporated and blended into the ENGINEERED ROOT ZONE GROWING MEDIUM MIX at the material source prior to delivery and placement.** The subgrade base and subgrade topsoil layers **shall be Roto-tilled** or mix 4" of the agronomic amendments to 4" of depth of soil prior to placement of next lift 12" of subgrade topsoil and/or the final lift of 8" of Engineered Root Zone Growing Medium Mix. If subsequent agronomic soil testing recommends additional soil amendments, then thoroughly incorporate the amendments by roto-tilling to a depth of 4". **Roto-till all areas to receive the Bermuda sod in two passes in the same direction**. Once roto-tilling effort is complete for the specific lift, then begin the laser grade for the specific layer of the field.

H. Provide grades to the elevations indicated on the engineer's plan. Compact to **85 % minimum to 90 % of the Modified Proctor maximum dry density (ASTM D 1557)**.

I. Final Laser Grading: Remove all construction debris, vegetation, roots, rocks, weeds, depressions, undulations and irregularities. Smooth the surface with a trap rake machine with drag. A Coordinate with irrigation head placement and final setting and proceed with final laser grade. Apply a pre-emergent herbicide/fertilizer (15-0-15) application (Ronstar .67% Oxadiazon), per manufacturer's instructions at the rate of 300 lbs. /acre, just prior to grassing installation.

3.3 SOD PLANTING AND GROW IN MAINTENANCE

A. **No turfgrass sod shall be placed on soil which has been chemically treated until sufficient time has elapsed to permit dissipation of all toxic materials, as per manufacturer's recommendations.** Contractor shall assume full responsibility for any loss or damage to turfgrass sod arising from improper use of chemicals or due to his failure to allow sufficient time to permit dissipation of toxic residues, whether or not such materials are specified herein.

B. No heavy machinery such as tractors, hydro-spray tanks, or trucks should be allowed on the surface, unless equipped with turf-type tires.

C. Moistening the Soil: During periods of higher than optimal temperature for the species being specified, and after all unevenness in the soil surface has been corrected, the soil shall be lightly moistened immediately prior to installation of the turfgrass sod.

D. Sodding: Sod to be installed in 48" rolls. Sod must be planted within 24 hours of harvesting. Lay sod in straight lines butted tightly together without stretching.

E. Starter Strip: The first row of turfgrass sod shall be laid in a straight line, with subsequent rows placed parallel to and tightly against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Care shall be exercised to insure that the pieces are not stretched or overlapped and that all joints are butted tightly to prevent voids that would cause air drying of the roots.

F. Sloping Surfaces: On 3:1 or greater slopes, traditional size (1 sq yd) turfgrass sod shall be laid across the angle of the slope (perpendicular), with staggered joints and secured by tamping, pegging, stapling or other approved methods of temporarily securing each piece. Large-roll turfgrass sod shall be laid in the direction of the slope, with temporary securing being at the discretion of the installation contractor.

G. Swales and Intermittent Waterways: The installation of turfgrass sod within drainage-ways or intermittent waterways shall be determined after considering maximum channel velocities for storms of a designated intensity. Traditional size turfgrass sod shall be laid perpendicular to the direction of flow and pegged to resist washout during the establishment period, while large-roll pieces shall be laid in the direction of the flow, with temporary securing being at the discretion of the installation contractor.

H. Watering and Rolling: The installation contractor shall water the turfgrass sod immediately after transplanting to prevent drying. As sodding is completed in any one section, the entire area shall be lightly rolled. It shall then be thoroughly watered to a depth sufficient to ensure the underside of the new sod pad and soil immediately below the pad are thoroughly wet. The general contractor shall be responsible for having adequate water available at the site prior to and during installation.

I. Hand Topdressing: After the field has dried, hand top-dress any cracks between sod caused by shrinkage. Allow four weeks for rooting prior to using the field for traffic and/or play. Topdressing any cracks shall utilize certified USGA Construction sand as the topdressing material.

J. Fertilization: After planting, new turf grass shall be fertilized as required. The nitrogen source during grow-in will be mostly water soluble (21-0-0 and 15-0-15). Potassium and nitrogen shall be added in a balanced ratio (15-0-15), alternating every seven days with 21-0-0. Apply four weekly applications of fertilizer (two 15-0-15 and two 21-0-0 at the rate .50 lbs. nitrogen/potassium/1,000 sq. ft.) for the first 30 days of grow-in. Micro nutrient sprays of iron, magnesium and manganese shall be applied to aid in turf establishment. Supplemental liquid potassium and iron (such as 0-0-28, plus iron) shall be applied every two weeks in conjunction with an insecticide application, if insects are active. Any and all granular fertilizations shall be watered-in immediately to avoid foliar turf grass burn.

K. Mowing: Use reel mowers with sharp blades. The first mowing shall not be attempted until the turfgrass sod is firmly rooted and securely in place. Provide first mowing when Bermuda grass reaches one inch height, just after the field has been rolled with a 2.5 ton double steel drum, then reduce the height over time until the turf grass becomes established at ¾" height. Continue to mow as long as grass clipping are observed (generally 2-3 times/week). Do not mow when the turf grass is extremely wet to avoid tire rutting.

L. Weed control: Use of post-emergent herbicides for control of grassy weeds should be discouraged and avoided the first four weeks. Certified "Blue Tag" sod is guaranteed to be weed and insect free, therefore post-emergents should not be needed. Use "Monument" to control nut sedge grass after the initial four week grow-in period. Delay herbicide applications as long as possible to allow the turf grass to become well established. Hand pulling of weeds shall be conducted if only a few weeds are present however, if many weeds emerge, the use of selective post-emergent herbicides may be required. For the first 2-3 weeks care not to operate any heavy equipment on the newly installed sod for fear of tire rutting the field. Turf tired tractors can be used, but not on saturated soils. Apply fertilizers and pesticides on dryer fields, if at all possible initially.

M. Maintenance Rolling: Sodded areas shall be rolled throughout the grow-in period to push roots into the soil, to settle or "firm" the root zone and to smooth the surface to prevent mower scalping. Weekly rolling should be performed until the eventual permanent mowing height is achieved.

N. Field Topdressing: The fields should be broadcast sand top-dressed using certified USGA

Construction Sand, the last week of the grow-in period in order to achieve consistent coverage of exposed soil surface.

O. Pest Control: The fields shall be kept insect free (sod web worms, fire ants and mole crickets) during the grow-in period.

E. Clean-up: All excess soil, grass materials, stones, and other waste shall be removed from the site daily and not allowed to accumulate. Paved areas must be kept clean at all times.

F. Grow-in maintenance: The Contractor shall provide grow-in maintenance of turf to extend for 30 days after placement of all turf and playing fields or until Certificate of Occupancy has been issued, whichever is longer. Maintenance shall begin immediately upon placement of the sod and shall continue until final acceptance inspection of entire project is held. Maintenance shall include watering, fertilizer applications mowing, pesticide applications, rolling, topdressing, replanting, and all other work necessary to produce a uniform, pest-free, weed-free and healthy turf playing field.

G. Watering: The general contractor shall supply adequate water to the site. The single-most important factor in the successful rooting of newly installed turfgrass sod is adequate, regular watering. Watering should begin immediately after installation. The amount of water required will vary depending upon season, weather, temperature, wind, slope and turfgrass variety. The general contractor shall designate the party responsible to ensure adequate water supply and application.

1. First Week: The contractor shall provide all labor and arrange for all watering necessary for rooting of the turfgrass sod. Soil on sod pads shall be kept moist at all times. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of at least 4 inches (100 mm). Watering should be done during the heat of the day to prevent wilting. No watering shall take place at night. The contractor shall have the irrigation water tested to assure it's acceptability for use on Bermuda sod.

2. Second and Subsequent Weeks: The contractor shall water the turfgrass sod as required to maintain adequate moisture in the upper 4 inches (100 mm) of soil, necessary for the promotion of deep root growth.

H. Irrigation: The fields shall be irrigated immediately after installation with enough water to keep the root zone mix moist at all times without being saturated.

3.4 GUARANTEE AND REPLACEMENT

A. Replacement of sod necessary during the grow-in maintenance and warranty period shall be the responsibility of the Contractor.

B. The General Contract warranty period shall also include field grading and/or settlement, sod viability, and all other aspects of installation.

3.5 FINISHING:

A. During grassing work, keep pavements clean and work area in an orderly condition at all times.

3.6 INSPECTION AND REVIEW:

A. When grass work is completed the Owner's Representative will, upon request, make an inspection to determine acceptability to commence 30 day grow-in/guarantee period.

B. When inspected sodding work does not comply with coverage, weed-free or insect-free requirements, replace rejected work and continue specified maintenance until re-inspected by the Owner's Representative and found to be acceptable. Remove rejected grassing materials promptly from project site.

3.7 REQUEST FOR FINAL ACCEPTANCE:

A. At the end of a minimum 30 day grow-in period the Contractor shall submit to the Owner a written request for acceptance of the MULTIPURPOSE field turf. The request shall be submitted at least ten days prior to the anticipated date of acceptance. WHEN INSPECTED GRASSING WORK DOES NOT COMPLY WITH COVERAGE OR WEED REQUIREMENTS, REPLACE REJECTED WORK AND CONTINUE SPECIFIED MAINTENANCE UNTIL RE-INSPECTED BY THE ARCHITECT AND FOUND TO BE ACCEPTABLE. REMOVE REJECTED PLANTS AND GRASSING MATERIALS PROMPTLY FROM PROJECT SITE.

B. If Acceptance is denied, the contractor shall utilize all methods necessary to achieve Acceptance.

3.8 PROTECTION:

A. Protect grassing work and materials from damage due to grassing operations, operations by other Contractors and trades and trespassers. Maintain protection during installation and maintenance periods. Protect sodded areas against damage from erosion as required. Treat, repair or replace damaged grass work as directed. Replace/repair turf areas damaged by improper use of fertilizers, herbicides, insecticides, fungicides, nematicides or other chemicals.

B. When applying herbicides, insecticides, fungicides or pesticides/nematicides coordinate use with university personnel. Post signs when chemicals are in-use or when areas are to be off limits to students or university personnel. Contractor shall assume responsibility for protecting public when chemicals are present or in use on project site.

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SECTION 1580 PROJECT SIGN

PART 1 GENERAL

1.01 DESCRIPTION

A. Furnish, install and maintain one project identification sign, 48 inches x 96 inches in size. Contractor shall verify maximum allowable job site sign size specifications prior to fabrication of sign. Contractor shall be required to obtain and pay for any and/or all permits and approvals for the erection of said project identification sign. Unless local authorities have different maximum size requirements that would not allow for such size.

B. Content required on sign:

1. Title of project/address of project
2. Name of Owner/name of Orange County chairman and commissioner(s). All names shall be those in office on the date the construction contract is awarded.
3. Tile and names of:

    a. Engineer of Record
    b. General Contractor

C. No other signs or advertising will be permitted on the project site, without approval of County, except signs for safety purposes.

1.02 CODES

A. Where required by Local Code, comply with minimum structural and foundation requirements.

1.03 SUBMITTALS

A. Shop Drawings, showing:

1. Layout, showing sizes and styles of letters
2. Type of paint.

PART 2 PRODUCTS

2.01 SIGN MATERIALS

A. Southern Pine No. 2 pressure treated, AWPB LP-2. Surfaced four sides.
B. Plywood: A-C EXT MDO APA PSI, with medium density overlay, 3/4" thick.
C. Nails: Hot-dip galvanized
D. Paint: Manufactured by Sherwin-Williams or equal

1. Primer: A-100 Ext. Wood Primer Y24W20
2. Second, and third coats: Industrial Enamel B54(S-W)

E. Sign Colors: Refer to project sign drawing attached herein.

2.02 LETTERING

A. All Lettering shall be Times Roman Bold

PART 3 EXECUTION

3.01 INSTALLATION

A. Install members plumb, in true alignment, and in concrete foundations by Local Code.
B. Securely attach framing members to each other and to foundations.

3.02 PAINT

A. Paint all exposed surfaces of sign and support construction.

3.03 REMOVAL

A. Remove sign, framing and foundations no later than date of Final Completion.

3.04 SIGN DETAILS

A. Construct sign in accordance with the attached drawing.

END OF SECTION
01580