ADDENDUM #1 January 22, 2019

This addendum forms a part of the Contract Documents and modifies the original Bid Documents and Project Manual dated January 8, 2019.

Acknowledgement of the addendum is required in the Bid Form.

CLARIFICATIONS:

1. The pre-bid meeting attendee list is attached.
2. The tear out of the existing artificial turf inside the running track is the responsibility of the turf supplier and is under contract directly to the school district. The supply and installation of the artificial turf on both the football and soccer field is the responsibility of the district’s turf supplier.
3. The contractor is responsible for building a “bridge” over the track to protect the track material and asphalt from damage. The “bridge” will consist of a layered system of filter fabric, plywood or steel places and soil or gravel. The contractor is responsible for building and removing the “bridge” in its entirety and cleaning the track as necessary for inspection prior to applying the new structural spray. More than one bridge may be built if the contractor desires.
4. The contractor is encouraged to photograph and/or video tape the existing conditions prior to commencing work.
5. The Owner will be responsible for grow-in of all natural grass.
6. The sports lighting of the baseball field is the responsibility of the contractor and is included in the base bid.

CHANGES TO PROJECT MANUAL

1. Bid Form – Remove in its entirety and place with the attached Bid Form. Base bid description has been clarified.
2. Section 01010 - Remove in its entirety and place with the attached Bid Form. Base bid description has been clarified.
3. Section 31 2150 Fly Ash Soil Stabilization – Item 1.1 replace with:
   1.1 Fly Ash will be applied under the NEW artificial turf Soccer field.
4. Section 31 2150 Fly Ash Soil Stabilization – Item 1.2 replace with:
   1.2 Contractor is responsible for submitting existing site soil to a geo-technical lab for Proctor Density testing and determination of mix design. It is anticipated that 15% Fly-Ash will be incorporated to a depth of 12”. (Contractor may substitute 5% Cement or 5% Code L lime as deemed appropriate by the testing lab).
5. Section 32 2902 – Sodding (Alternate) Item 3.5.A General – remove and replace with:
   1. The Owner is responsible for growing in the fields after acceptance of sod placement.
   2. The Contractor is responsible for adjusting irrigation, filling seams, filling low areas, replacement of dead sod, etc., after installation.

CHANGES TO DRAWINGS

1. Sheet C100-Remove and replace with the attached sheet.
2. Sheet C190-Remove and replace with the attached sheet.
3. Sheet C200-Remove and replace with the attached sheet.
4. Sheet C300-Remove and replace with the attached sheet.
5. Sheet PF1.00 – Remove and replace in its entirety with the attached sheet.
6. Sheet PF1.01 – Remove and replace in its entirety with the attached sheet.
7. Sheet PF1.02 – Remove and replace in its entirety with the attached sheet.
8. Sheet PF1.03 – Remove and replace in its entirety with the attached sheet.

END OF ADDENDUM 1
<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brock Wilson</td>
<td>Mid America Golf &amp; Sports Construction</td>
<td></td>
<td><a href="mailto:bwilson@mid-americagolf.com">bwilson@mid-americagolf.com</a></td>
</tr>
<tr>
<td>Damon Johnson</td>
<td>Clarkson Construction</td>
<td></td>
<td><a href="mailto:bidinfo@clarksonconstruction.com">bidinfo@clarksonconstruction.com</a></td>
</tr>
<tr>
<td>Gabe Brown</td>
<td>Brown Midwest Construction</td>
<td></td>
<td><a href="mailto:gbrown@brownmidwest.com">gbrown@brownmidwest.com</a></td>
</tr>
<tr>
<td>Brian Haselwood</td>
<td>Brown Midwest Construction</td>
<td></td>
<td><a href="mailto:bhaselwood@brownmidwest.com">bhaselwood@brownmidwest.com</a></td>
</tr>
</tbody>
</table>
PROPOSAL FORM

PROPOSAL for:

Park Hill High School Athletic Complex Renovation

PROPOSAL OF:
(Hereinafter called “Bidder”),

A CORPORATION* ORGANIZED AND EXISTING UNDER THE LAWS
OF THE STATE OF_________________________________________________

A PARTNERSHIP* CONSISTING OF_____________________________________

AN INDIVIDUAL* TRADING AS__________________________

*Complete applicable designation.

TO: PARK HILL MISSOURI PUBLIC SCHOOLS
4500 NW River Park Drive
Parkville, MO

1. The undersigned, having familiarized itself with local conditions affecting the cost of the work
   at the place where the work is to be done and with all Bidding Documents, including the
   Instructions to Bidders, Plans and Specifications, General and Supplementary Conditions, the
   Standard Form of Agreement and the other Contract Documents, and having examined the
   location of the proposed work and considered the availability of labor and materials, hereby
   proposes and agrees to perform everything required to be performed, and to provide and
   furnish any and all labor, materials, supervision, necessary tools, equipment, and all utility
   and transportation service necessary to perform and complete in a workmanlike and timely
   manner all of the work required for the project, all in strict conformance with the Instructions
   to Bidders and other Contract Documents (including Addenda Nos. ______, through ______, the
   receipt of which is hereby acknowledged), for the lump sums hereinafter specified.

2. FOR BASE BID

   Lump Sum price to: Football Stadium – Installation of new concrete curb around long/triple
   jump sand pits, new concrete sidewalks and drainage improvements around the track,
   removal and replacement of pole vault runway and pad, including base mat and structural
   spray on runway, structural spray and re-stripe existing track and runways and D-zone.
   (Removal and disposal of the artificial turf field inside running track, installation of turf and pad
   matching Park Hill South are the responsibility of the turf company, Shaw Sports Turf, and are
   contracted separately from the General Construction) Soccer Field - Excavation and
   grading for new soccer field, softball field, and parking lot, installation of field drainage pipe,
   gravel, filter fabric, perimeter nailer, perimeter fencing, and sidewalks. (Installation of turf and
   pad are the responsibility of the turf company, Shaw Sports turf, and are contracted separate
   from the General Construction Contract). Baseball Field Lighting – Installation of a new
   Musco sports lighting system around the existing baseball field (center field fencing will be
   installed by the District).

   The Lump Sum of__________________________
   ____________________________ Dollars ($__________________________).

Proposal Form
Section 00020- 1
(THIS PROJECT IS A PREVAILING WAGE LABOR RATE JOB. ALL WAGES FOR THIS PROJECT MUST COMPLY WITH STATE OF MISSOURI, PLATTE COUNTY, MOST CURRENT ANNUAL WAGE ORDER #25. RECORDS OF COMPLIANCE SHALL BE KEPT BY CONTRACTOR AND SUBMITTED TO OWNER WITH EACH PAY APPLICATION)

Additional breakdown requirements are described in Section 01010 Summary of Work, Part 1.11 – Additional Owner Requested Bid Breakdown. The Owner intends to evaluate each bid in its entirety and will make its decision based on the information included described in the Summary of Work Part 1.11, as well as the price included above.

3. Alternate Proposals: The Owner intends to consider multiple turf types and companies in their evaluation of the overall proposal. Bidder will complete the work designated by the alternates that follow and accept in full payment for those parts of the work at the following Bid Prices. Bidders are encouraged to submit additional voluntary alternates.

1. Softball Field and Parking Lot- Lump Sum price to construct the softball field and parking lot. (Grading for Softball field and site detention/water quality structures are part of base bid)

   Lump Sum price of: ________________________________
   Dollars ($______________________________).

2. Voluntary Alternative.

   Description ____________________________________________
   Lump Sum Add or (Deduct) price of: ________________________________
   Dollars ($______________________________).


   Description ____________________________________________
   Lump Sum Add or (Deduct) price of: ________________________________
   Dollars ($______________________________).


   Description ____________________________________________
   Lump Sum Add or (Deduct) price of: ________________________________
   Dollars ($______________________________).

5. Voluntary Alternative.

   Description ____________________________________________
   Lump Sum Add or (Deduct) price of: ________________________________
   Dollars ($______________________________).
Additional voluntary alternates may be submitted on separate pages.

4. **Unit Prices:**

   1. Replacement of rotted or otherwise defective perimeter nailer (Football).

      Per foot price (100 LF minimum): ____________________________

      Dollars ($__________________________).

   2. Per ton replacement of top gravel due to unstable conditions or excessive fines causing reduced drainage (Football Stadium).

      Cubic Yard price of: ____________________________

      Dollars ($__________________________).

5. **TAX EXEMPTION**

   This project shall be considered Tax Exempt. Federal, State and local taxes shall not be included with the Bid. Subsequent to the award of the construction contract, the District will obtain from the State of Missouri a sales tax exemption certificate number. The sales tax exemption certificate will permit the Contractor to purchase materials for incorporation into this project without paying sales tax, provided that the Contractor furnishes the certificate number to the material supplier.

7. **CHANGES IN THE WORK**

   Changes in the work shall be as established in the Contract Documents. The following fees shall be used for lump sum pricing and actual cost pricing of additions and deletions to the work included in the Bid, Namely:

<table>
<thead>
<tr>
<th></th>
<th>Not to Exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>To Contractor for work performed by his own forces</td>
</tr>
<tr>
<td>B.</td>
<td>To Contractor for work performed by other than his own forces</td>
</tr>
<tr>
<td>C.</td>
<td>To Subcontractor for work performed by his own forces</td>
</tr>
<tr>
<td>D.</td>
<td>To Subcontractor for work performed by other than his own forces</td>
</tr>
</tbody>
</table>

   Percentages for overhead and profit will not be allowed on bond premiums.

8. **Equal Opportunity**

   A. In the execution of the Agreement, no person shall on the grounds of race, color, religion, sex, disability, or national origin be excluded from full employment rights, be denied the benefits of, or otherwise subject to discrimination under any program, service or activity under the provisions of any and all applicable Federal and state laws against discrimination. Bidder shall furnish all information and reports required by the rules, regulations, and order of the Secretary of Labor for purposes of investigating to determine compliance with such laws.

   B. Bidder shall not discriminate against any person in the performance of work under the Agreement because of race, religion, color, sex, physical handicap unrelated to such person's ability to engage in the particular work, national origin or ancestry.

   C. In all solicitations or advertisements for employees, Bidder shall include the phrase, "equal opportunity employer", or similar phrase approved by the Owner.

   D. If bidder is found guilty of a violation of Discrimination under a decision or order of Owner that has become final, bidder shall be deemed to have breached the present

Proposal Form
Section 00020-3
Agreement and it may be canceled, terminated, or suspended in whole or in part, by Owner.

E. Bidder shall include the provisions of paragraphs A through D above in every subcontract or purchase order so that such provisions shall be binding upon all subcontractors and vendors.

9. The undersigned hereby proposes and agrees to substantially and/or finally complete the work or segments of the work on or before the scheduled dates listed in Section 01010-Summary of Work, and to pay as liquidated damages the corresponding amount stipulated in Section 01010-Summary of Work for each consecutive calendar day thereafter that the work or segment of the work remains substantially and/or finally incomplete in accordance with the Contract Documents. This provision shall be applied, and the daily liquidated damages amount(s) shall be calculated separately as to each substantial and/or final complete date stated.

10. Accompanying the Bid is Bid Security of at least 5% of the bid in the form of a Bid Bond in the amount of ________________ Dollars ($______________), payable without condition to the Owner, which it is agreed shall be retained as liquidated damages for the delay and extra expense caused the Owner, if the undersigned fails to execute the Contract and furnish the bonds required by the Contract Documents, within the time stated in the Contract Documents.

11. In submitting the Bid it is understood that the right to reject any and all bids has been reserved by the Owner and that this bid may not be withdrawn for a period of sixty (60) days from the opening.

Date this________________________ day of________________________, 20___.

Name of Bidder

__________________________________________________________________________

Address of Bidder

__________________________________________________________________________

Authorized Officer

__________________________________________________________________________

Title

__________________________________________________________________________

Telephone Number

(Seal)

ATTESTED:

__________________________________________________________________________
SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Description of the Work.
B. Work under other contracts.
C. Products furnished by the owner.
D. Contractor use of site (and premises).
E. Code of Conduct.
F. Existing conditions.
G. Work sequence, Schedule for Completion and liquidated damages.
H. Time extensions for adverse weather.
I. Owner occupancy.
J. Time extension for factors other than weather.
K. Additional owner requested bid breakdown.

1.02 DESCRIPTION OF THE WORK

A. The Contractor shall furnish; all labor, materials, facilities, insurance, management, equipment, services, employee training and testing, permits and agreements necessary to perform the work required for the Park Hill High School Athletic Complex Renovation. The bidder must perform the work in its entirety. Transferring or sharing prime responsibility for the work will not be allowed and will be considered cause for termination.

B. The work includes, but is not necessarily limited to the following:

1. Base Bid includes: **Football Stadium** – Installation of new concrete curb around long/triple jump sand pits, new concrete sidewalks and drainage improvements around the track, removal and replacement of pole vault runway and pad, including base mat and structural spray on runway, structural spray and re-stripe existing track and runways and D-zone. (Removal and disposal of the artificial turf field inside running track, installation of turf and pad matching Park Hill South are the responsibility of the turf company, Shaw Sports Turf, and are contracted separately from the General Construction) **Soccer Field** - Excavation and grading for new soccer field, softball field, and parking lot, installation of field drainage pipe, gravel, filter fabric, perimeter nailer, perimeter fencing, and sidewalks. (Installation of turf and pad are the responsibility of the turf company, Shaw Sports turf, and are contracted separate from the General Construction Contract). **Baseball Field Lighting** – Installation of a new Musco sports lighting system around the existing baseball field (center field fencing will be installed by the District).

   i. The Owner will purchase the artificial turf and installation from the same vendor as Park Hill South (Shaw).

2. Alternates include a new softball field and parking lot.

1.03 WORK UNDER OTHER CONTRACTS.

A. There are other contractors on site. Other Contractors may be present to perform repair work on adjacent facilities.

B. Items noted ‘NIC’ (Not in Contract), will be furnished and installed by owner.

C. Owner will remove and retain possession of the following items prior to start of building and/or demolition activities: NONE
D. The owner has paid $0 for plan check fee with the applicable City. The contractor is responsible for the balance of fee required to obtain the building permit. All other permits required remain the contractor’s responsibility.

1.04 CONTRACTOR USE OF SITE AND PREMISES
A. Limit use of site and premises to allow owner occupancy and use of the existing building, parking lots, during construction.
B. The contractor shall coordinate the use of the site and locations for all equipment storage, job trailers, portable lavatory facilities, generators, etc., with the architect and owner. The owner shall have the final approval for all site use by the contractor.

1.05 CONTRACTOR AND VENDOR EMPLOYEES CODE OF CONDUCT
Park Hill Missouri Public Schools requests that all contractor and vendor employees conduct themselves in an acceptable manner while performing work on school district property. The following items are prohibited on school district property:

1. No physical or verbal contact is to be made with students or non-designated staff.
2. No smoking in public or student occupied areas of the building or areas of the site.
3. No drugs and/or alcohol are to be consumed or present on district sites.
4. No firearms, or hunting items, are to be present on the site.
5. Foul and/or abrasive language is not to be used.
6. All workers are to wear clothing on all parts of their body; no shirtless workers. Apparel should be appropriate to a school campus.
7. Utilize designated areas for vehicle access and parking, material storage, etc.
8. All workers are to wear a nametag, which identifies the company name and the individual’s name.

1.06 EXISTING CONDITIONS
A. The contract drawings are based on information taken from original construction drawings and from inspections of the site.
B. Bidders are advised that “as-built” conditions may vary from those shown on the drawings. Bidders shall not later request, nor expect to receive, additional payment for work related to variations which can be determined by examination of the existing building and site, by the date set for receipt of Bids for this Contract.

1.07 WORK SEQUENCE AND SCHEDULING
A. The Contractor and all Subcontractors, sub-subcontractors and Suppliers shall furnish sufficient forces, supervision, construction plant and equipment, and shall work such hours as may be required to insure the prosecution of the work in accordance with the Progress Schedule stated herein. If in the opinion of the Owner, the Contractor falls behind the Progress Schedule, the Contractor shall take such steps as may be necessary to improve the progress and the Owner may require them to increase the number of shifts, and/or overtime operations, days of work including holidays, Saturdays and Sundays, all without additional costs to the Owner.
B. Schedule requirements for each Option and Phase are outlined as follows:
1. The soccer and softball field and parking lot sites will be made available to the contractor on or about April 1, 2019. The stadium site will be made available on or about May 25, 2019. Mobilization and set-up prior to the start date will be allowed. Parking and Material storage will be coordinated with the District staff.
2. Substantial Completion shall be achieved on or before August 5, 2019.
C. Liquidated Damages (See Contractor Agreement)
1.08 ADVERSE WEATHER

A. The Contractor understands that “time is of the essence” and therefore completion dates must be met.

1.09 OWNER OCCUPANCY

A. The existing building, parking lots and adjacent play areas will be used and occupied by the Park Hill School District during portions of the Contract Time. Occupants will include, but not be limited to: students, faculty, parents, and other groups so authorized to use the building and/or site by the school district.

B. School will be in session from 7:30 a.m. to 2:40 p.m., Monday through Friday, spring and fall semesters, throughout the contract time.

C. The work shall be confined to limited areas of the site. The contractor shall work with the Project Team to develop a schedule of areas to receive work. The schedule will identify specific areas of the building and site to receive work at specific times. This schedule shall be submitted by the Contractor to the Architect for approval before the work begins.

1.10 TIME EXTENSION FOR FACTORS OTHER THAN WEATHER

A. If the contractor incurs a delay due to factors out of his control, the contractor shall submit a claim within twenty-one (21) days after the occurrence for additional time to the architect and project team.

B. If a proposal request for additional work causes the contractor additional time to perform the original contract requirements the contractor may submit a claim for additional time to the Architect and Project Team. The Contractor shall include in his proposal its request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the contract in its entirety.

C. The determination that delays have occurred beyond the Contractor's control does not automatically mean an extension of time will be granted. The Contractor must substantiate the delay by indicating suspended work activities on the critical portion of the project schedule.

1.11 ADDITIONAL OWNER REQUESTED BID BREAKDOWN

A. The following listing of major subcontractors/material suppliers performing work on the project is to be submitted within 72 hours of the bid. Substitutions in the submitted list require the owner’s written permission.

<table>
<thead>
<tr>
<th>Work Scope</th>
<th>Subcontractor/Material Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td></td>
</tr>
<tr>
<td>Asphalt</td>
<td></td>
</tr>
<tr>
<td>Turf Drainage</td>
<td></td>
</tr>
<tr>
<td>Laser Grading</td>
<td></td>
</tr>
<tr>
<td>Track surfacing</td>
<td></td>
</tr>
</tbody>
</table>

END OF SECTION
PART 1 - GENERAL

1.1 Fly Ash will be applied under the NEW artificial turf Soccer field.  
1.2 Contractor is responsible for submitting existing site soil to a geo-technical lab for Proctor Density testing and determination of mix design. It is anticipated that 15% Fly-Ash will be incorporated to a depth of 12". (Contractor may substitute 5% Cement or 5% Code L lime as deemed appropriate by the testing lab)  
1.3 Sufficient equipment shall be in operation on the project so that all operations can be carried on in their proper sequence without delay and so that final compaction, rolling and finishing can be completed during daylight hours.  
1.4 At the end of each day's operations, or in case of construction delays that will cause operations to cease, and at a point where satisfactory construction has been completed, a straight transverse construction joint shall be formed by cutting back into the completed work to form a true vertical face. A protective covering of earth shall be placed on the newly constructed base course for a distance back of the joint required for the turning of equipment used on the following day's work. The thickness of the covering shall be such that the equipment will not mar or damage completed work.

PART 2 – MATERIALS

2.1 Materials: Fly ash shall comply with the physical requirements of ASTM International D-5239 6.4, maintaining a minimum compressive strength of 345 MPa (500 psi) at 7 days, and the chemical requirements of ASTM C618, Table 1, for Class "C" fly ash. Self cementing ash not meeting the above requirements can be used provided the sulfur trioxide content does not exceed 10% and the self cementing properties have been demonstrated to provide the required degree of stabilization. The source of the ash shall be identified and approved in advance of the stabilization operations so that laboratory tests can be completed prior to commencing work.  
2.2 Equipment: Perform operations using suitable, well maintained equipment capable of excavating subsoil, mixing and placing materials, wetting, consolidation and compaction of material.

PART 3 – EXECUTION

3.1 MIXING AND COMPACTION - FLY ASH:  
3.1.1 Mixing: Mixing of the fly ash with the sub grade soil shall follow application and spreading as a continuous construction operation. Mixing lifts shall not exceed plan lift thickness unless previously approved. Work areas for mixing shall not exceed 5,000 square yards unless otherwise authorized by the Engineer.  
3.1.2 The mixing procedure shall be as hereinafter described:  
a) **First mixing.** The moisture content of the sub grade soil shall not exceed eighty percent (80%) of optimum at the time of first mixing. The soil and fly ash shall be mixed until a uniform mixture is obtained in which all clods and non-aggregate lumps are reduced to a maximum of two and one-half inches (2.5") diameter size. The addition of water will not be permitted during first mixing. First mixing operations shall begin no later than four (4) hours after application of the fly ash.  
When deemed necessary by the Engineer, any portion of the work area shall be re-scarified and additional fly ash added to insure adequate soil modification.  
The fly ash and soil shall be thoroughly mixed to the satisfaction of the Engineer prior to the beginning of final mixing operations.  
b) **Final mixing.** After the dry soil and fly ash have been satisfactorily mixed, additions of water shall be made in the final mixing operations to initiate soil-fly ash reaction. The method of mixing shall be an approved procedure utilizing a traveling rotary mixing plan which
demonstrates uniform dispersion of fly ash and water throughout the soil materials. The quantity of water necessary for the final mixing operations will vary with the nature of the materials, normally two to five percentage (2-5%) points above the optimum moisture content of the compacted modified soil. Sufficient water in any case shall be added in the final mixing process to insure chemical reaction between the fly ash and soil.

All clods shall be reduced in size by mixing until the soil-fly ash mixture meets the following size requirements when tested with laboratory sieves:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ½ inch</td>
<td>100</td>
</tr>
<tr>
<td>¾ inch</td>
<td>50-100</td>
</tr>
</tbody>
</table>

c) **Optional:**

The following alternate mixing procedure may be used at the option of the Contractor and with the approval of the Engineer in lieu of the procedure described in the above paragraphs. The moisture content of the soil shall be adjusted to between two (2) and five (5) percentage points above optimum prior to application of any fly ash. Fly ash shall then be applied and mixing shall begin immediately. The soil and fly ash shall be mixed until a uniform mixture is obtained in which all clods and non-aggregate lumps are reduced to a size such that one hundred percent (100%) will pass a one and one-half inch (1½") screen and fifty percent (50%) to one hundred percent (100%) will pass a three quarters inch (3/4") screen. Sufficient water shall be added in this mixing process to insure chemical reaction between the fly ash and water throughout the soil materials. Compaction shall begin immediately after the mixing is completed when this prescribed procedure is used.

3.2 **COMPACTION:**

3.2.1 Compaction of the soil-fly ash mixture shall be performed immediately after final mixing, wherein the compaction operation shall be a continuation of the final mixing operation. Each lift of mixed fly ash-soil material shall be compacted full depth to a density of not less than ninety-five percent (95%) of standard compaction of the fly-ash soil material as determined by the Engineer.

3.2.2 The soil-fly ash mixture shall be compacted without delay and before any appreciable loss of mixing moisture occurs. Mixing and compaction operations shall be performed in such a manner that the mixture will be compacted within plus or minus three percentage (3%) points of optimum moisture content. However, when deemed necessary by the Engineer during the course of construction, changes or adjustments in the specified moisture requirements to meet field conditions may be authorized.

3.2.3 Compaction shall continue until the entire depth of the mixture is uniformly compacted. The rate of operation and the number of rollers shall be sufficient to compact uniformly the section of roadway being processed within two (2) hours after introduction of water.

3.2.4 During the early stages of sub grade construction, the Engineer will work closely with the Contractor by reporting compaction test results promptly for each stage of fly ash modified sub grade construction as an aid to the Contractor to establish a construction procedure that will attain the required density within the prescribed two (2) hours.

3.2.5 The material shall be sprinkled and rolled. All irregularities, depressions or weak spots which develop shall be corrected immediately by scarifying the areas affected, adding or removing material as required, and reshaping and recompacting by sprinkling and rolling.

3.2.6 In addition to the requirements specified for density, the full depth of the material shown on the Plans shall be uniformly compacted to the extent necessary to remain firm and stable under construction equipment. After each section is completed, density tests as necessary will be made by the Engineer. If the material fails to meet the density requirements, it shall be reworked as necessary to meet these requirements. Rework shall include the addition of more fly ash at a rate determined by the Engineer. Throughout this entire operation, the shape of the course shall be maintained and the surface upon completion shall be smooth and in conformity with the typical
sections shown on the Plans and to the established lines and grades. Should the material, due to any reason or cause, lose the required stability, density or finish before the next course is placed or the work is accepted it shall be recompacted and refinished at the sole expense of the Contractor.

3.3 CURING AND PROTECTION:
3.3.1 The completed cement/fly ash/code L lime treated sub grade shall be protected against loss of moisture for a period of seven (7) days. The curing time may be reduced to a minimum period of three (3) days only when approved by the Engineer and as further determined by individual project conditions. The completed cement/fly ash treated sub grade shall be protected against loss of moisture by covering with an approved moisture barrier such as moist burlap or polyethylene sheet, or at the option of the Contractor and at his own expense, an application of emulsified asphalt may be applied, using approved pressure-distributing equipment immediately after the completion of the finishing operations. The asphalt emulsion shall contain not less than forty percent (40%) of asphalt and shall preferably be of the quick-breaking type of emulsion.

3.3.2 Immediately prior to the application of the bituminous curing membrane, however, the surface shall be thoroughly wetted by means of approved pressure-distributing equipment. No free water shall remain on the surface when the bituminous material is applied. The Contractor shall keep all traffic off the cement/fly ash treated sub grade after the curing medium has been applied and until the base has cured for the specified length of time.

3.3.3 The Contractor shall be required to maintain, at his own expense, the entire roadway within the limits of the improvement, in good condition, satisfactory to the Engineer, from the time he first starts work until all work has been completed. Maintenance shall include immediate repair of any defects that may occur either before or after the cement/fly ash is applied to the sub grade soil.

3.3.4 Stabilized sub grades shall be constructed to elevations such that it will not be necessary to cut or trim in excess of one inch (1") of material off the sub grade.

END OF SECTION 31 2150
SECTION 32 2902 - SODDING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Provisions of Contract, Supplemental General Conditions and Division-1 Specifications, apply to work of this section.

1.2 SUMMARY

A. This Section covers furnishing live sod from approved sources of the site, placing the sod on prepared areas, finishing watering, maintaining and repairing in accordance with this specification at the locations shown on the plans.
B. The areas to be sodded will be fine graded by the Contractor.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Section.
B. Plant & Material Certifications
   1. Certificates of Inspection as required by governmental authorities.
   2. Seed Vendors Certified Statement for each grass seed mixture required, stating botanical and common name, percentages by weight and percentages of purity, germination and weed seed for each grass seed species growing in sod.

1.4 GUARANTEE

A. The Contractor is responsible for growing in the sod until an average root depth of 1 inch is obtained as verified at 3 locations on each playing field.
B. Turf will be free of weeds, pests, and diseases.

PART 2 – PRODUCTS

2.1 SOIL TEST

A. Contractor shall obtain soil test of topsoil that will be used as the growing medium for the sod, and guidelines in this specification may be adjusted as required.

2.2 SOD

A. Sod shall be nursery grown Bluegrass sod, not less than 18 months old.
   a. Seed varieties: Sod shall be comprised of seed varieties that are wear tolerant and have an early spring green-up.
   b. Thickness of Cut: All sod shall be machine stripped at a uniform soil thickness of approximately ¾ inch. Measurement for thickness shall exclude top growth and thatch and shall be determined at the time of cutting in the field.
   c. Big Roll: Sod shall be “Big roll sod. Width shall be 30” minimum. Split 42 inch rolls are acceptable.
   d. Netting in the sod will not be allowed. Netting used for harvest must be removed prior to placement on the field.
   e. Mowing height: Before harvesting, sod shall be mowed uniformly at a height of 2"
f. Diseases and Insects: Sod shall be reasonably free from diseases and soil borne insects. State nursery and/or Plant Material laws require that all sod entering Interstate commerce be inspected and approved for sale.
g. Weeds: Cultivated sod shall be free from objectionable grasses, annual bluegrass, velvetgrass and broadleaf weeds.
h. Moisture Content: Sod shall be harvested, delivered, and installed within a period of 18 hours. Sod not transplanted within this period shall be inspected and is subject to rejection.

2.3 DELIVERY

A. All sod shall be tarped on trucks during delivery to prevent desiccation. If temperatures are high enough to damage turf under the tarps, delivery times shall be modified to ship during cool periods, and tarps shall be removed immediately upon arrival at site.

PART 3 - EXECUTION

3.1 PREPARATION

A. The Surfaces to be sodded shall be cleared of all stones, roots or other objects and of all wire, brush, debris, or other objects that may interfere with subsequent planting or maintenance operation.
B. Eliminate surface irregularities by use of a weighted drag, making passes at 90 degrees to each other.
C. Portions not readily worked by machine shall be worked by hand. Areas adjacent to fences, warning tracks, curbs, walks, signs, existing trees, light poles and other site items shall be hand worked and blended into adjacent grades.
D. No fine grading shall be done when the soil is in a muddy or frozen condition.

3.2 PRE-SOD FERTILIZATION

A. Fertilizer should be applied to all disturbed areas to be sodded or areas where any plant materials will be grown. Fertilizer shall be disturbed evenly over the area prior to sodding and should be incorporated into any topsoil mix.
B. Apply a starter fertilizer immediately before sodding at a rate of 7.5 lbs/1,000 s.f. of 13-25-12 turf grade fertilizer.
C. Additional soil amendments shall be distributed uniformly over the areas to be seeded or by a common fertilizer distributor, or other approved equipment at the following rates:
   a. 25-lbs/1000 s.f. of agricultural dolomitic limestone.
   or
   b. 20-lbs/1,000 s.f. of Agricultural Sulfur
D. All fertilizer shall be incorporated into the topsoil to a depth of 2-inches by harrowing, diskling, or cultipacking.
E. Immediately prior to sod placement (same day), contractor shall apply one application of liquid “Launch” or approved equal, at the manufacturers recommended rate.

3.3 FINISH GRADING

A. Definition
   1. The words “finish grading,” as used herein, mean the establishment of the required final grade elevations indicated on the Drawings.
   2. All surfaces shall be brought to the indicated grades and contours, and left in a “finish-graded” condition, free of all clods, stones larger than 1/4 -inch or weeds and other debris, ready for seeding or sodding.
B. Grading Tolerances
1. Playing field areas shall be graded to a tolerance of +/- 0.04' (0.50-inches) as measured with a 25' string line.
C. All areas are to be laser graded using cone shaped laser technology and machinery equipped with flotation type turf tires. This operation shall be completed and acceptable to the Architect prior to sodding. Contractor shall be responsible for repair of damaged, finished graded areas until sodding operations begin.

D. Upon completion of surface preparation, and fertilization operations, and immediately prior to sodding, the areas shall be given a final grading as needed to correct irregularities in the surface, due to the above operations or other causes, and to restore the prescribed grades.

E. All grades are to be held a distance down below infield and warning track material to match the thickness of sod soil. After sod is placed, there should be no “lip” in either direction as felt by the foot.

3.4 PLACING SOD

A. Lay first rows of sod along warning track edge and infield arc to provide clean uniform lines. Subsequent rows shall be placed tightly against previous roll with no visible seams. “Picture Frame” field to minimize the amount of “end of rolls” exposed to play.
B. Contractor to use tractors equipped with flotation type tires, or track type machinery to minimize disturbance of subgrade below newly placed sod, and/or on top of previously laid roll of sod.
C. Contractor to have adequate manpower at time of sodding to push/pull sod rolls tight with previously laid strips, remove netting if present, patch thin areas as needed, and cut fresh joints between ends of sod rolls. Contractor to also have adequate equipment to unload trucks and transport sod to field to minimize time sod is on truck or ground. Sod rolls must be laid within 16 hours of cutting.

D. Overlap all ends of sod rolls and cut fresh joints of both rolls of sod.
E. Take care not to stretch sod as subsequent shrinking will produce gaps in seams.
F. Any patching required shall be no smaller than 12 inches in length and width to match the sod roll.
G. Contractor is responsible for operating irrigation system and or placing hose and sprinklers as necessary to water freshly aid sod within 30 minutes of placement, depending on weather conditions.
H. Contractor is expected to roll the sod to remove any undulations and provide a smooth safe playing surface.
I. Any gaps in seams shall be filled by hand with a sandy loam soil mix. Seams will be checked for gaps at time of sodding through acceptance. Gaps larger than 1” are grounds for rejection, and may require total sod replacement, at the Architects discretion. Cost of this replacement will be the responsibility of the Contractor.

3.5 GROW-IN

A. General
   1. The Owner is responsible for all aspect of growing-in the fields.
   2. The grow-in period shall be from time of sodding through owner acceptance.
   3. Owner will accept playing fields when fields have an average root depth of 1”, as measured in three locations on the playing field.

B. Protection
   1. The installer shall protect the area against traffic or other use by placing warning signs, and erecting any barricades that may be required before or immediately after sodding is completed.

C. Repairing
   1. When the surface has developed gullies or is otherwise damaged during the period of establishing turf, the affected areas shall be repaired to re-establish the grade and the condition of the soil, and shall be re-sodded with the original sod. No sod patches shall be shorter than 12 inches or narrower than the width of the sod roll.
2. Any gaps in seams shall be filled by hand with a sandy loam soil mix. Seams will be checked for gaps at time of sodding through acceptance. Gaps larger than 1” are grounds for rejection, and may require total sod replacement, at the Architects discretion. Cost of this replacement will be the responsibility of the Contractor.

D. Rolling
1. Contractor to roll the sod in two different directions after initial sod placement. Care shall be taken not to damage irrigation heads or rut/tear new sod. One and one half to two ton rollers maximum.

E. Watering
1. The Contractor shall be proficient in operating the irrigation system and in making the judgment decisions of when to water and how much water to apply.
2. The grass shall receive sufficient water to promote active growth and prevent extended periods of wilt, however, excessive watering shall also be avoided since it encourages diseases and weeds.
3. The Contractor shall monitor the grass daily to adjust irrigation frequency and amount.
4. Initially, light and frequent irrigation will be needed to keep only the surface wit where the seeds are germinating, i.e. water for 3 to 5 minutes, at 30 to 60 minute intervals, during the day light hours.
5. Gradually reduce the frequency of irrigation, while at the same time increasing the amount of water applied at each watering, i.e. 4 times a day for 10 minutes each.
6. Keep the soil moist only as deep as the roots are growing.
7. Mowing will begin after the grass reaches 2.5 inches and irrigation frequency can be reduced to every other day if conditions allow.

F. Fertilization
1. Four days after sod installation, the Contractor shall apply by spray, Launch or approved equal, product at the recommended label rate for the application. Two to three weeks after sod installation, apply one half pound of nitrogen per 1,000 square feet

G. Mowing
1. The first mowing shall occur when the grass reaches 2.5 inches.
2. The first 2 mowings of the seeding turf will require lightweight walk-behind mowers.
3. The mowing height shall be 2 inches.
4. Mow frequently enough so that no more that 1/3 of the grass height is removed.
5. During first two mowings, all clippings shall be caught and removed from site.
6. Anticipate mowing at least once per week during the growing season.
7. If at any time during grow-in, clippings exceed 1/2-inch, clippings shall be caught and disposed of off site.
8. If clippings clump or remain on surface of turf, contractor shall rake/sweep/drag to remove or work clippings through the turf.
9. Mow grass with a reel type or mulch rotary mower to provide a clean cut to the grass blades.
10. Mower blades shall be kept in sharp and in good working condition.

H. Maintenance Log
1. Record a daily log of all maintenance activities performed on the field through Substantial Completion.
2. These daily records shall be submitted to the Owner and Architect on a weekly basis through Substantial Completion.
3. Sample:

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/13/17</td>
<td>Cut entire field</td>
</tr>
<tr>
<td>1/14/17</td>
<td>Adjusted irrigation head height on 4 heads</td>
</tr>
<tr>
<td>1/15/17</td>
<td>Placed Typar cover on the infield, no other work performed. Soil temperature 50 degrees.</td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1/16/17</td>
<td>At 7 a.m., the soil temperature was 3 degrees warmer under the cover, as opposed to not covered. No other work performed.</td>
</tr>
<tr>
<td>1/17/17</td>
<td>Removed grass cover. No other work performed.</td>
</tr>
<tr>
<td>1/18/17</td>
<td>Due to great deal of rain and cool temperatures, I applied Snow Mold fungicide at the rate specified in the grow-in program. Watered product into soil for 15 minutes.</td>
</tr>
<tr>
<td>1/19/17</td>
<td>Rain, no work.</td>
</tr>
</tbody>
</table>

END OF SECTION
Know what's below. Call before you dig.
LEGEND

- RED = OPERATING TRACK
- ORANGE = SMALL RESIDUE
- GRAY = CONCRETE
- GREEN = GALVANIZED CHAIN LINK FENCE
- BLACK = GALVANIZED CHAIN LINK SINGLE GATE
- BLUE = GALVANIZED CHAIN LINK DOUBLE GATE
- WHITE = GALVANIZED CHAIN LINK single gate
- BROWN = GROUND COVER
- 1/2" POLYURETHANE RESILIENT TRACK SURFACING
- 1/2" POLYURETHANE RESILIENT TRACK SURFACING

GENERAL NOTES

1. ALL UTILITIES SHOWN ON PLANS ARE BASED ON ABOVE GROUND OBSERVATION AND MAY NOT INCLUDE ALL LINES PRESENT. VSR DESIGN ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITY LOCATIONS AS SHOWN. ALL UTILITIES ARE TO BE FIELD LOCATED PRIOR TO EXCAVATION. CONTACT MISSOURI ONE-CALL, INDIVIDUAL UTILITY COMPANIES, AND OWNER FOR FIELD LOCATES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT.

2. THE CONTRACTOR SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE, AND LOCAL CODES HAVING JURISDICTION OVER THE WORK.

3. THE CONTRACTOR SHALL PAY ALL PERMIT FEES AND OTHER ASSOCIATED FEES REQUIRED TO SUCCESSFULLY COMPLETE THE PROJECT.

4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND REQUIREMENTS OF THE CONSTRUCTION SPECIFICATIONS. CLARIFICATION OF ANY DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY OWNER AND/OR ENGINEER/ARCHITECT.

5. A CADD DISK (AUTOCAD R2007) WILL BE MADE AVAILABLE TO THE CONTRACTOR FOR LAYOUT AND STAKING PURPOSES IF DESIRED, FOR A FEE AS DESIGNATED IN THE CONTRACT SPECIFICATIONS. ALLOW ONE WEEK FOR THE ARCHITECT/ENGINEER TO PROCESS THE DISK. THE ARCHITECT/ENGINEER BELIEVES THE DISK TO BE ACCURATE, HOWEVER THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THAT THE INFORMATION ON THE DISK CONFORMS TO THE DIMENSIONS AND ELEVATIONS SHOWN ON THE DRAWINGS.

6. ALL EQUIPMENT USED ON NATURAL TURF PLAYING FIELDS SHALL BE EQUIPPED WITH FLOTATION TURF TIRES OR "TRACKS" TO PREVENT OVER-COMPACTION OF SOILS. PLAYING FIELD SURFACES TO HAVE COMPACTION BETWEEN 85-90%. ANY AREAS WITH HIGHER COMPACTION SHALL BE RIPPED/DISKED TO A DEPTH OF 12" AND RE-GRADED.

1. PROVIDE AND INSTALL HIGH JUMP EVENT AREA WITH 1/2" POLYURETHANE RESILIENT TRACK SURFACING.
2. PROVIDE AND INSTALL POLE VAULT PAD/RUNWAY AND STRIPING, RE: 7, 8, 9/PF 4.0
3. PROVIDE AND INSTALL RESURFACED PERIMETER TRACK WALK
4. PROVIDE AND INSTALL GALVANIZED CHAIN LINK FENCE.
5. PROVIDE AND INSTALL 5' WIDE GALVANIZED CHAIN LINK SINGLE GATE.
6. PROVIDE AND INSTALL 10' WIDE GALVANIZED CHAIN LINK DOUBLE GATE.
7. PROVIDE AND INSTALL 20' WIDE GALVANIZED CHAIN LINK DOUBLE GATE.
8. PROVIDE AND INSTALL 12LBS OF FESCUE SEED PER 1,000 SF.
9. ALL SLOPES GREATER THAN 4:1 SHALL RECEIVE A 6-12 MONTH EROSION CONTROL BLANKET, OR HYDRO-MULCH.
GENERAL NOTES

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7. PROVIDE AND INSTALL (2) - 4" AND (2)-2" SCH. 40 PVC SLEEVES FOR FUTURE CONTROL WIRE. EXTEND 12" BEYOND EDGE OF PAVEMENT & CAP. INSTALL REBAR FOR FUTURE LOCATIONS.

8. PROVIDE AND INSTALL GALVANIZED CHAIN LINK FENCE.

9. PROVIDE AND INSTALL 5' WIDE GALVANIZED CHAIN LINK SINGLE GATE.

10. PROVIDE AND INSTALL 10' WIDE GALVANIZED CHAIN LINK DOUBLE GATE.

11. PROVIDE AND INSTALL PERIMETER TRACK WALK, RE: 1/F PF 4.0

12. PROVIDE AND INSTALL (2) - 4" AND (2)-2" SCH. 40 PVC SLEEVES FOR FUTURE CONTROL WIRE. EXTEND 12" BEYOND EDGE OF PAVEMENT & CAP. INSTALL REBAR FOR FUTURE LOCATIONS.

13. PROVIDE AND INSTALL 12LBS OF FESCUE SEED PER 1,000 SF.

14. PROVIDE AND INSTALL 5' WIDE GALVANIZED CHAIN LINK SINGLE GATE.

15. PROVIDE AND INSTALL 10' WIDE GALVANIZED CHAIN LINK DOUBLE GATE.

16. PROVIDE AND INSTALL 12LBS OF FESCUE SEED PER 1,000 SF.

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18. PROVIDE AND INSTALL 5' WIDE GALVANIZED CHAIN LINK SINGLE GATE.

19. PROVIDE AND INSTALL 10' WIDE GALVANIZED CHAIN LINK DOUBLE GATE.

20. PROVIDE AND INSTALL 12LBS OF FESCUE SEED PER 1,000 SF.

21. PROVIDE AND INSTALL (2) - 4" AND (2)-2" SCH. 40 PVC SLEEVES FOR FUTURE CONTROL WIRE. EXTEND 12" BEYOND EDGE OF PAVEMENT & CAP. INSTALL REBAR FOR FUTURE LOCATIONS.

22. PROVIDE AND INSTALL 5' WIDE GALVANIZED CHAIN LINK SINGLE GATE.

23. PROVIDE AND INSTALL 10' WIDE GALVANIZED CHAIN LINK DOUBLE GATE.

24. PROVIDE AND INSTALL 12LBS OF FESCUE SEED PER 1,000 SF.
GENERAL NOTES

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6. ALL EQUIPMENT USED ON NATURAL TURF PLAYING FIELDS SHALL BE EQUIPPED WITH FLOTATION TURF TIRES OR "TRACKS" TO PREVENT OVER-COMPACTION OF SOILS. PLAYING FIELD SURFACES TO HAVE COMPACTION BETWEEN 85-90%. ANY AREAS WITH HIGHER COMPACTION SHALL BE RIPPED/DISKED TO A DEPTH OF 12" AND RE-GRADED.

7. PROVIDE AND INSTALL PERIMETER TRACK WALK, RE: 1/2 PF 4.0

8. PROVIDE AND INSTALL (2) - 4" AND (2) - 2" SCH. 40 PVC SLEEVES FOR FUTURE CONTROL WIRE. EXTEND 12" BEYOND EDGE OF PAVEMENT & CAP. INSTALL REBAR FOR FUTURE LOCATIONS.

9. PROVIDE AND INSTALL GALVANIZED CHAIN LINK FENCE.

10. PROVIDE AND INSTALL 5' WIDE GALVANIZED CHAIN LINK SINGLE GATE.

12. PROVIDE AND INSTALL 10' WIDE GALVANIZED CHAIN LINK DOUBLE GATE.

13. PROVIDE AND INSTALL 12LBS OF FESCUE SEED PER 1,000 SF.

14. PROVIDE AND INSTALL GALVANIZED CHAIN LINK DOUBLE GATE.

LEGEND

- REACTIVE TRACK SURFACING
- COOL SEASON TURF - BERMUDA
- CONCRETE PAVEMENT - LIGHT DUTY
- TRACK CONCRETE
- ARTIFICIAL TURF
- URETHANE TURF SURFACING
- MATERIALS/RECYCLED FROM conectar LANDFILL
GENERAL NOTES

1. All utilities shown on plans are based on above ground observation and may not include all lines present. VSR Design accepts no responsibility for the accuracy of the utility locations as shown. All utilities are to be field located prior to excavation. Contact Missouri One-Call, individual utility companies, and owner for field locates. The contractor shall be solely responsible for damage to existing utilities, whether shown on the plans or not.

2. The contractor shall meet the requirements of all federal, state, and local codes having jurisdiction over the work.

3. The contractor shall pay all permit fees and other associated fees required to successfully complete the project.

4. All work shall be done in accordance with the plans and requirements of the construction specifications. Clarification of any discrepancies between drawings and specifications shall be made by owner and/or engineer/architect.

5. A CAD disk (AutoCAD R2007) will be made available to the contractor for layout and staking purposes if desired, for a fee as designated in the contract specifications. Allow one week for the architect/engineer to process the disk. The architect/engineer believes the disk to be accurate, however the contractor shall be responsible for confirming that the information on the disk conforms to the dimensions and elevations shown on the drawings.

6. All equipment used on natural turf playing fields shall be equipped with flotation turf tires or "tracks" to prevent over-compaction of soils. Playing field surfaces to have compaction between 85-90%. Any areas with higher compaction shall be ripped/disked to a depth of 12" and regraded.

7. Re: Civil Documents for all work outside of softball and soccer fences and outside running track.