

**Center School District
Request for Proposal
(RFP)**

Stadium Improvement Project

Proposal Due Date: 10:00 AM on December 5, 2019

Return Proposal to:

Center High School
8715 Holmes Road
Kansas City, MO 64131

Contact Person:

Brad Sweeten, Activities Director
bsweeten@center.k12.mo.us

Invitation to Bid

Proposals will be received until 10:00 AM on December 2, 2019, for furnishing all labor and material for all improvements as shown within the specifications. All bids must be sealed and marked as follows:

“Center HS Stadium Improvement Project”
Attn: Brad Sweeten, Activities Director
Center School District
8701 Holmes Road
Kansas City, MO 64131

It is the responsibility of the offeror (hereafter sometimes “bidder”, “vendor” or “contractor”) to ensure timely delivery of the bid. Any bid received after the said bid closing time will be returned unopened. Electronic or facsimile bids will not be considered. Incomplete or unsigned proposals will be considered non-responsive and will be rejected.

All questions must be received in writing by noon on November 18, 2019. Please write your questions to: Brad Sweeten, Activities Director bsweeten@center.k12.mo.us . Questions will be answered through addendum on November 22, 2019.

Center School District reserves the right to reject any and all bids. The owner is not liable for any cost incurred by the vendor in the preparation or production of its bid or for any work performed prior to the issuance of a valid contract under State Law.

Center School District will not be accepting phone calls or visits from bidders of any kind after bid opening. If the owner has any questions regarding bids, they will contact the bidder directly.

Bid Form

Only bids on the provided bid forms will be accepted. No modifications shall be made to this bid form.

The undersigned Bidder, in response to your Notice of Bid for construction of the above project having examined the drawings, specifications, other bidding Documents and the site of proposed work, and being familiar with all conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to construct the project in accordance with the proposed Contract documents, within the time set forth therein, and at the prices stated below. Bidder agrees to all conditions and terms of the proposed contract agreement.

Contractor is required complete all documents and price all line items. Failure to complete documents may result in automatic rejection of bid. The owner has the right to reject any and all bids and except any abnormality as they see fit. Voluntary alternates will not be accepted. Any volunteer alternate bid submitted may lead to immediate disqualification of the bidder.

Name of Bidder:		
(Circle One)		
Proprietorship	Partnership	Corporation
Authorized Signature:		Date:
Printed Name:		Title:
Address (Street):		Address (City, State, Zip Code):
Phone #:	Fax #:	Email Address:

The undersigned acknowledges the receipt of the following Addenda:

Addendum No. _____ Date: _____ Addendum No. _____ Date: _____

Addendum No. _____ Date: _____ Addendum No. _____ Date: _____

Bid Form (continued)

Base Bid:

The undersigned bidder agrees to perform all work required as shown and indicated in the Contract Documents for the sum of:

\$ _____

\$ _____ Dollars

Amounts shall be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.

Synthetic Turf System included in Base Bid: _____

Alternate Bids: (As Specified)

- 1. 8-Year Turf and Sub-Base Warranty \$ _____
- 2. Mid-Field Logo "C" \$ _____
- 3. Colored End Zones and Letters \$ _____
- 4. Coaches and Players Boxes \$ _____
- 5. Brock SP14XL Shock Pad \$ _____
- 6. Schmitz ProPlay 20 Shock Pad \$ _____
- 7. 2 - 25/40 Second Clocks on poles/wired to meet NFHS regulations \$ _____

Unit Prices: (As Specified)

- 1. Code L Stabilization \$ _____ Per Square Yard (SY)

Authorized Signature: _____

Printed Name & Title:

Date:

Construction Schedule Form

Submit a signed copy of this document with the bid. The Contractor shall agree to construction start and completion dates, per the attached Construction Schedule, for the work which is being bid.

Construction Schedule:

Item	Description / Scope of Work	Start	Complete
1	Bid Documents Released	November 18, 2019	
2	Bid Date	December 2, 2019	
3	Board of Education Approval	January 27, 2020	
4	Notice to Proceed	February 3, 2020	
5	Mobilization Construction Start	March 2, 2020	
6	Substantial Completion		May 22, 2020
7	Final Completion		May 29, 2020
8	Liquidated Damages Begin		May 30, 2020

Liquidated Damages:

Liquidated damages will be assessed at the rate of \$1,000.00 per day for each calendar day beyond final completion date as stated above. Any missed events that are missed due to the project not being completed on time will incur a financial penalty of \$5,000.00 per event day.

Authorized Signature:

Printed Name & Title:

Date:

Synthetic Turf Product Form

Synthetic Turf Product: _____

Turf Product Type: _____

Infill System: _____

Oldest field still in use that meets performance and safety standards

Field: _____ Date Installed: _____

Owner Representative: _____
(name) (Phone Number)

Product Testing			
ASTM Test Method	Test Description	Unit(s)	Test Result
D-5823	Pile Height (Nominal)	In.	
D-5848	Face Weight	Oz/yd ²	
D-5848	Total Fabric Weight	Oz/yd ²	
D-5848	Primary Backing Weight	Oz/yd ²	
D-5848	Secondary Coating Weight	Oz/yd ²	
D-1335	Tuft Bind	Lbs.	
D-2256	Grab Tear Strength Average	Lbs.	
D-2765	Lead Content	Ppm	
D-1577	Total Yarn Linear Density (Yarn 1)	Denier	
D-5034	Tensile Strength	Lbs.	
D-5793	Stitch Rate	Per 3"	
D-5793	Machine Gauge	In.	
F-1551	Water Permeability w/ infill	In./Hr.	
D-3218	Fiber Thickness	Microns	

Authorized Signature: _____ Printed Name & Title: _____ Date: _____
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State Bid Clause

STATE OF _____)

COUNTY OF _____)

_____, being first duly sworn, deposes and says:

That he or she is (an owner, partner or officer, etc.) of the firm of:

(Company Name Here)

Above Bidder hereby certifies: A) that this bid is genuine and is not made in the interest of or on behalf of any undisclosed person, firm, or corporation; B) that Bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid; C) that Bidder has not solicited or induced any person, firm, or corporation to refrain from bidding; and D) that bidder has not sought by collusion to obtain any advantage over the bidder or over the Owner.

Non-resident Corporation certified by submittal of this document that the corporation has complied with all State Codes and Bidding laws.

Authorized Signature: _____ Printed Name & Title: _____ Date: _____
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Subscribed and sworn to before me this ___ day of _____ 20__

My commission expires _____

Base Bid Scope of Work:

- Site Address: Center High School, 8715 Holmes Rd, Kansas City, MO 64131
- Site Existing Conditions: The site is an existing stadium, asphalt parking lots and completed landscaping, the contractor must take all precautions to prevent damage. Any damage that occurs will be the contractor's responsibility to repair at no additional cost.
- The bidder shall furnish with the submitted bid a Bid Bond in the amount of five percent (5%) of the total contract amount, including any alternates. In the event of multiple prices, the Bid Bond shall be for the maximum possible contract amount. Bid Bond will be returned to unsuccessful bidders promptly after the owner has accepted a bid. All bids shall remain open for thirty (30) days after the date of the opening.
- Upon award of bid, bidder shall furnish bonds covering faithful performance of the work provided and payment obligations arising there under. Bonds will come from a surety company with an A+ best rating and licensed in all states.
- Upon award of bid, the bidder shall furnish to the owner evidence of Insurance in forms and amounts acceptable to Owner.
- Prime Contractor Qualification:
 - Prime contractor must specialize in sports facilities construction with over 5 years of experience building synthetic turf fields, all-weather tracks, and sports stadiums.
 - Prime contractor shall be a standing member with the ASBA for over 5 years and have a current CFB-S (Certified Field Builder - Synthetic) certification.
 - Prime contractor must have completed a minimum of 10 turf field projects within 150 miles of the project's location.
 - Primer contractor must provide an on-site superintendent with a minimum of 10 turf field projects within 150 miles of the project's location.
- It is the bidders' responsibility to visit the site prior to bidding. No change orders will be approved and no additional costs will be paid to the successful bidder should they fail to include anything that maybe required for this to be a fully functional sports stadium
- The project scope of work may or may not include all work necessary to complete the project. It is each bidder's responsibility to review the entire set of specifications and visit the site to determine the scope of work. This is to be a turnkey project and all bidders should include all costs necessary to complete the project.
- Bidders are required to comply with all other public works related requirements including OSHA construction training, drug testing, background checks for all personnel visiting the site, E-Verify compliance, Buy American and equal employment opportunity commitments
- Provide 3rd party permeability testing on each 500 tons of rock brought to the site.

- Conformance surveys will be required for sub-grade and finished rock grade by a certified 3rd party testing company licensed in the state on Missouri and approved by the school district.
- Provide County, DNR, City, State and any other permits required for construction
- Provide engineered stamped construction drawings
- Provide as-built drawings to the owner upon final completion
- Provide all surveying and staking
- All bids must be prevailing wage using the most current wage order.
- Conduct pre-construction meeting.
- Provide dumpsters, portable restrooms and construction fencing as needed.
- Provide proper active school, secure and safe site action plan.
- Provide on-site supervision of all staging area, materials, and equipment.
- Inspect quality of work.
- Conduct final walk thru with owner.
- All improvements will meet NFHS requirements in order to host state sanctioned events
- Build a track bridge to protect track. Contractor will be responsible for any damage to the track
- Demo any item necessary to provide a regulation synthetic turf multipurpose field, including existing natural grass, irrigation, goal post, long jump, triple jump, and pole vault pits/areas.
- Remove and relocate existing delay of game clocks outside of track
- Remove and salvage current goal post for reuse by the district
- Perform cuts and fills as needed. All excavated materials to be hauled to a site off campus and not supplied by the owner
- Saw cut inside track perimeter. Spoils to be hauled off site
- 6"X12" concrete curbing with 2 pieces of #4 rebar around the entire inside perimeter of the track
- Install pressure treated 2"x4" nailer boards around entire perimeter of football field.
- Install Mirafi 140N non-woven fabric to cover the entire field, including under collector drains and along the face of the inside curb totaling at approximately 96,000 SF. Seams will be overlapped at 12".
- Install 12" perforated perimeter drain system around entire outside edge of field with 1" clean backfill and installed in a fabric-laced trench.
- Install 12" wide flat panel drains on 25' centers in a herringbone pattern that will gravity feed into the collection drain.
- Install 8 inches of 1-inch clean drainable base (approximately 96,000 SF).
- Install 2 inches of 3/8-inch clean drainable base (approximately 96,000 SF). Rock must be installed within a 1/8-inch tolerance in 10 foot.
- Laser grade sub-grade, base stone, and surface stone in the synthetic turf area
- Install approximately 96,000 SF (contractor to verify exact SF) of synthetic turf that meets or exceeds the following specifications.
 - A. The turf system shall meet or exceed the following requirements
 1. Product Type: 100% fibrillated fiber or fibrillated fiber / monofilament fiber blend
 2. Pile Height: 2 1/4"

3. Face Weight: 52 oz. minimum (60 oz. face weight minimum if including thatch fiber)
4. Total Fabric Weight: 82 oz.
5. Primary Backing Weight: 8 oz.
6. Secondary Coating Weight: 22 oz.
7. Tuft Bind: >10 lbs.
8. Grab Tear Strength Average: >200 lbs.
9. Lead Content: <50 ppm
10. Total Yarn Linear Density: $\geq 10,000$ denier
11. Tensile Strength: 16 lbs.
12. Stitch Rate: as needed
15. Stitch Gauge: 3/8" to 1/2"
16. Flammability: PASSED
17. Water Permeability with Infill: >40" per hour
18. Fiber Thickness: 110 microns (fibrillated fiber) or 300 microns (monofilament)
19. Fabric Width: 15 ft.
20. Infill Type: performance mix of SBR crumb rubber and silica sand per manufacturer's specifications
 - a. 5 lb minimum
 - b. Rubber shall be recycled, non-compacting, 100% SBR rubber granules size 10-20 mesh, ambient or cryogenically ground, clean of dust or foreign materials
 - c. Sand shall be siliceous (95%) washed and dried, round grain and uniform in shape, size 0.5-1.8mm
21. Seaming Method: Sewn Seams
 - a. Line markings for both football and soccer to be tufted to the greatest extent possible.
 - b. Secondary line markings, numbers and logos to be tufted, inlaid, or cut in as standard with manufacturer
22. Gmax (Shock Attenuation) in accordance with ASTM F1936 – standard specification for shock-absorbing properties
 - a. Upon completion, maximum average Gmax value of 120
 - b. Life of the field warranty, maximum average Gmax value of 165
 - c. 1 Gmax test upon completion by a certified shock attenuation technician. Certification required.
23. Manufacturer:
 - a. At least five years of experience in manufacturing infilled synthetic turf systems and 10 successful synthetic turf projects within 150 miles of our location
 - b. 100% U.S. Ownership with its main office in the United States and regional offices within 300 miles of our location

- c. Presently under continuous ownership for no less than 10 years with no bankruptcies
 - 24. Installer:
 - a. Experienced installer that specializes in infilled synthetic turf system
 - b. A minimum of 10 successful installations within 150 miles of our location
 - 25. Warranty:
 - a. 8-Year warranty for the synthetic turf system and installation
 - b. 8-Year 3rd party warranty for the synthetic turf system
 - c. Alternate: 8-Year warranty on the sub-grade and finish rock grade
 - 26. Maintenance:
 - a. Provide three copies of the maintenance manual
 - b. Provide closeout maintenance training of owner personnel
 - c. Provide the following grooming equipment or approved equal:
 - A. GreensGroomer – 720 LitterKat with Tow Behind Magnet
 - B. GreensGroomer – 920 SDE Synthetic Turf Groomer
- Synthetic Turf Field Design:
 - A. Alternating field green and field/lime green mix every five yards; field/lime green mix from 45-yard line to 45-yard line
 - B. White football markings per NFHS regulations
 - C. Gray Soccer Markings per NFHS regulations
 - D. Royal Blue outline on each side of the 20 yd (both sides)
 - E. 1' white / 5' Royal Blue field border; 25-yard line to 25-yard line white 6ft wide officials' box
 - F. Alternate: Center "C" logo at mid-field / 20 yards wide appropriate height
 - G. Alternate: Field green end zones, 16' tall end zone letters with slanted font (navy letter with yellow outline), CENTER (East), CENTER (West)
 - H. Alternate: 6' yellow coaches with white outline from 25 yd to 25 yd and navy players box with white outline from 25 yd to 25 yd extending to the track
- Provide and install 8-foot offset, 20' goal post with access kits; Sportsfield Specialties or approved equal
- Track Events:
 - A. Install a two-way pole vault in the West d-zone to meet NFHS standards, including one (1) 5" thick runway 156'x5', two (2) 20'x20' concrete pads, 2 pole vault boxes, 2 pole vault lids, and 5/8" SP track surface (base mat and two-coat 2mm red polyurethane structural spray)
 - B. Install one long & triple jump with two sand pits on the West side of the track to meet NFHS standards, including one (1) 4" thick runway 156'x5', 5/8" SP track surface (base mat and two-coat 2mm red polyurethane structural spray), two (2) 10'x22' sand pits each with 6"X18" concrete curbing with 2 pieces of #4 rebar, take-off boards striped only (no boards), and drains for the sand pits that tie into the nearest storm sewer.

END OF SECTION

Alternate Scopes of Work:

1. 8-Year Warranty on the Turf & the Sub-Base: The contractor and turf manufacturer warrant that all base work, rock, and drainage under the turf are guaranteed against soft spots, low spots and drainage problems for a full 8 years. Also, the contractor and turf manufacturer warrant all components of the synthetic turf system (fiber, tufting, backing, and installation) for a full 8 years.
2. Mid-Field Logo: Center "C" logo at mid-field / 20 yards wide appropriate height
3. End Zones & Letters: Field green end zones, 16' tall end zone letters with slanted font (Royal Blue letter with yellow outline), CENTER (East), CENTER (West)
4. Coaches & Players Boxes: 6' yellow coaches with white outline from 25 yl to 25 yl and Royal Blue players box with white outline from 25 yl to 25 yl extending to the track
5. Brock SP14XL Shock Pad
6. Schmitz ProPlay 20 Shock Pad

END OF SECTION

Survey Requirements and Permits

Part 1: General

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the provisions of the other parts.
- B. Documents and drawings presented here are for the sole purpose of providing the Owner a bid on work to be completed.
- C. Successful contractor shall be required to provide an engineer's survey of the completed project while attesting to its accuracy. All as-built drawings shall be provided to the Owner on 24" x 36" blueprint and CD in AutoCAD format.

Part 2: Detail

Successful Contractor will provide Owner the following survey, layouts and drawings:

- A. Provide 2 copies of all survey drawings.
- B. Provide survey for each of the following:
 - 1. New conditions of on a minimum 100' grid.
 - 2. As-built drawing of the finished site including location and elevations on a minimum 100' grid.
- C. Survey and install the following items:
 - 1. Survey and install permanent radius hubs, see drawing for details.
 - 2. Survey for new artificial turf for football
 - 3. Survey and locate football field goal posts.
 - 5. Earthwork and grading as shown on plans.

PART3: PERMITS

- A. Provide City, DNR, State and County Permits required to complete project

END OF SECTION

Site Demolition

Part 1: Summary

- Demo items will be required to be removed and hauled to a landfill or dumping area approved for these materials.
- Remove existing long jump pits and grade and seed as needed
- All old drainage piping, irrigation, concrete structures will be required to be removed and hauled to a landfill or dumping area approved for these materials.
- Excavate all areas as necessary
- Clean dirt fill should be hauled and dumped at Center Middle School 326 E. 103rd Street Kansas City, MO 64114 at designated site.

END OF SECTION

Site Preparation

Part 1: General

Summary:

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the provisions of the other parts.
- B. A pre-construction conference shall be held on the job site with all intended Contractors and Subcontractors prior to the start of any work.
- C. Build a track bridge to protect the track during construction per attached drawing
- D. Build access ramp for construction vehicles at Northeast corner of field to access bridge

Execution:

- A. Contractor shall provide all survey work required to locate lines and grades for the construction of this project as herein specified and shown on the drawings.
- B. The Contractor upon entering the site and before any other work is underway, shall establish and set control points as indicated on the drawings and verify all finish grades.
- C. Track radius hubs shall be set in concrete as shown on plans. The top of each galvanized hub shall serve as bench marks. An additional bench mark shall be set outside the working area in concrete for future reference.
- D. All work under this section shall be coordinated with the Owner so as to verify their understanding of the plans and intended layout.
- E. Protect all existing items not part of the demolition from damage during construction.
- F. Subgrade, drainable stone and all components of the turf must be installed and warrantied by the turf manufacture.

Removal of Debris:

- A. Promptly remove cleared debris from the site.
- B. Obtain permission from applicable regulatory authority for disposal of debris to waste disposal site.
- C. Costs of all removals shall be included in contractors bid price.

END OF SECTION

Earthwork

Part 1: General

1.1 SUMMARY

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the provisions of the other sections.
- B. Section includes:
 - 1. Excavation
 - 2. Grading
 - 3. Backfill and Fill
 - 4. Topsoil

1.2 SCOPE

- A. Furnish approved labor, materials, equipment, transportation, and services required to complete all earthwork as indicated on the drawings and specifications herein. The Base Bid includes all earthwork and grading to provide a sub grade for other improvements. Adjustment of grades will be permitted, providing the overall grading concept and the positive drainage swales are maintained. Adjustment of grades will be done only if approved in writing by owner.
- B. The Contractor is expected to visit the site to determine all conditions to be encountered, protect improvements on adjoining property, as well as those on the Owner's property, and to restore any improvements damaged by his work to their original condition, as acceptable to the owner, or other parties or authorities having such jurisdiction.

1.3 SAFETY CODES AND STANDARDS

Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

1.4 LINES AND GRADES

The plans shall indicate lines, grades and elevations of the finish work. In general, areas to be paved shall be excavated and/or filled, and graded to the bottom elevations of such pavements. Grass areas shall be finish graded prior to seeding. Grass areas shall be rough graded to 6" below finish grade prior to placement of 4" of topsoil. Contractor shall use soil from the existing site as top soil.

1.5 GRADE CONTROL

- A. Follow elevation plan.
- B. The Contractor shall perform all work so as to permit the site to be free draining at all times and to prevent ponding. Contractor shall provide positive drainage for the entire site during the course of construction to eliminate standing water in excavated areas.

1.7 PROTECTION OF TREES AND VEGETATION

Protect existing trees, and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of root skinning and bruising of bark, smothering of trees by stock piling construction materials or excavated materials within construction area. Protect from excessive foot or vehicle traffic or parking of vehicles in or around the area. Provide temporary fences, barricades or guards as required to protect trees and vegetation to be left standing. Provide protection for roots in excess of 1.5 inches in diameter that are cut during construction operations. Coat the cut faces with emulsified asphalt or other acceptable coating that is specially formulated for horticultural use on cut or damaged plant tissues. Temporarily cover all exposed roots with wet burlap to prevent roots from drying out, apply earth cover as soon as possible. Repair or replace trees or vegetation damaged by construction operations in a manner acceptable to the Architect. Tree damage repair shall be performed by a qualified tree surgeon.

1.8 CONCRETE REMOVAL

- A. Remove curb and gutter, sidewalk, apron or slab from areas required or indicated.
- B. All disposals of concrete material shall be off Owner's property, unless otherwise directed.

1.9 DEBRIS

- A. All debris is to be disposed off Owner's property unless otherwise directed.
- B. Debris may not be buried over existing sewer or water mains.
- C. All debris must be removed on a daily basis.

PART 2 – BACKFILL AND FILL MATERIALS

Backfill shall be excavated soil free of rock or gravel larger than 1/2" in any dimension, debris, waste, frozen materials, vegetable matter, and other deleterious matter. Existing materials may be used for backfill, provided no silt is mixed with material. Backfill consists of placement of acceptable soil material in layers, in excavations, to required sub grade elevation, for each area classification listed below. Backfill or fill may not be used under any areas to receive paving.

Fill Material: Fill material shall be clean, hard, durable, uncoated particles of sand or sand gravel

mixture, provided that there shall be a substantial excess of sand-screenings. Embankment fill materials shall be limited to mixtures of sand, silt, gravel, silty clay, or sandy clay meeting USCS designations GW, GM, GC, SW, SP, SC, CL, or ML-CL. Soil materials that are predominately silt, organic material, or high plasticity clays shall not be used.

- C. TOPSOIL – If required, Topsoil shall be free of rock or gravel larger than 1/2" in any dimension, debris, waste, frozen materials, vegetable matter and other deleterious matter. Topsoil shall have the following sieve analysis:

Sieve Size	Size (mm)	Class	Percent Retained
#10	2	Gravel	0-3
#18	1	VcoS	5-15
#35	0.5	CoS	10-30
#60	0.25	MS	25-50
#140	0.1	FS	5.15
#270	0.05	VFS	5-10
Pan	<0.05	Si + Clay	5-10

PART 3 - EXECUTION

3.1 Excavation consists of removal of material encountered to obtain required sub grade elevations.

- A. Excavation for Ditches: Cut ditches to cross-sections and grade as shown. Deposit excavated materials a sufficient distance from the edge of ditches to prevent cave-ins or material from sliding into ditch. Keep ditches free of leaves, sticks, and other debris until final acceptance of work.
- B. Removal of Unsatisfactory Soil Materials: Excavate unsatisfactory soil materials encountered that extend below required elevations to additional depth as directed.
- C. Material Storage: Place excavated materials classified as unsatisfactory fill materials where directed by Owners geotechnical consultant.
- D. Stability: Slope sides of excavations over five feet (5') deep to angle of repose of material excavated otherwise shore and brace where sloping is not possible either because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in a safe condition until completion of backfill by scaling, benching, shelving, or bracing. Take precautions to prevent slides or cave-ins when excavations are made in locations adjacent to backfill excavations, and when sides of excavations are subjected to vibrations from vehicular traffic or the operation of machinery or any other source. Stabilize earth sub-grades under areas of paving and after excavating, but prior to filling, by disking four inches (4") deep and by compacting same as specified for fills. Remove soft or unstable soil below finish grade elevations and backfill such voids with compacted fill material.

3.2 BACKFILL AND FILL MATERIALS

- A. Remove vegetation, debris, unsatisfactory soil materials, obstruction and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than one (1) vertical to four (4) horizontal so that fill material will bond with existing surface. When the existing ground surface has a density less than that specified under "Compaction" (3.2

A2) for the particular area classification, break up ground surface, pulverize, and compact to the required depth and percentage of maximum density.

- B. Compaction: Perform compaction of soil materials for fills and backfills using suitable soil compaction equipment for materials to be compacted and work area locations. Control soil compaction during construction for compliance with percentages of maximum density specified for each classification. All Compaction test shall be in accordance with ASTM D1557 or AASHTO T180 C Modified Proctor Method.
- C. Placement and Compaction: Place backfill materials in layers not more than eight (8") in loose depth. Before compaction, moisten or aerate each layer, as necessary, to provide the optimum moisture content. Compact each layer to required percentage of maximum density for each area classification. Do not place backfill or fill material on surfaces that are muddy, or frozen, or contain frost or ice. Thoroughly compact all fill and backfill by rolling each layer, following spreading, as close as possible. Roll the areas in equal amounts in two directions. Provide compaction equipment or type best suited to achieve the desired results with the type of soil. In general, use sheep's foot and/or tamping type rollers on soils of a cohesive type; pneumatic wheeled or vibrating rollers on granular fill material, all as approved by the Architect. Operate compacting equipment on each layer until the entire area has been thoroughly and uniformly compacted to the required density.
- D. Maximum Density Requirements: Provide not less than 95% compaction of maximum density of the same soil material compacted at optimum moisture content, for the actual density of each layer of soil material in place. Any soils found unsuitable for specified compaction requirements shall be removed as directed by Owner.
- E. Lawn or Unpaved Areas: Compact top six inches (6") of sub grade and each layer of backfill or fill material at eighty-five percent (85%) of maximum density.
- F. Walkways: Compact top six inches (6") of subgrade and each layer of backfill or fill material at a minimum of (95%) of modified compaction.
- G. Grading: Preparation of subgrade: Rough grade all areas within the limits of site grading under this section, including adjacent transition areas. The rough grade shall be compacted as required. Shape the surface of future lawn areas to the line grade and cross Section with the surface not more than 0.10 feet above or below a surface runoff. Ponding shall be non-existent or at a minimum.
- H. Gravel Areas: Shape the surface of the areas under pavement to the line grade and cross-section with the surface not more than 1/2" above or below the subgrade elevation for walks. All frost heave materials such as topsoil, organic material, mulch, peat, silt, etc., shall be removed within lines two feet (2') outside the area of the proposed paving and such material shall be removed to a depth sufficient to provide a stable base. Uniform bearing power shall be obtained by loosening exceptionally hard spots and re-compacting. Take every precaution to obtain a uniform bearing power through compacting by such means as will provide a firm base and ensure against future settlement of superimposed construction. Utility trenches and holes left from grubbing or from other removal operations shall be backfilled with suitable fill material for that application.

3.3 FINISH GRADING:

- A. Fine grade sub-soil systematically to eliminate uneven areas and low spots. Remove debris, roots branches, stones, etc., in excess of two inches (2") in size. Remove sub-soil which has been contaminated with petroleum products.
- B. Cut out areas, to sub-grade elevation, which are to receive paving and sidewalks.

- C. Bring sub-soil to required levels, profiles and contours suitable for receiving the required finish surfaces. Make changes in grade gradual; blend slopes into level areas. Maximum slope 4:1 unless otherwise indicated.
- D. Cultivate sub-grade to a depth of six inches (6") where topsoil is to be placed. Repeat cultivation in areas where equipment used for hauling and spreading topsoil has compacted sub-soil.
- E. Compact sub-soil at the following percentages to a depth of 12 inches:
 - 1. 85% Modified Proctor where topsoil is to be placed.
 - 2. 95% Modified Proctor where plant mix bituminous pavement is to be
 - 3. 95% Modified Proctor where concrete slabs are to be placed.
 - 4. 95% Modified Proctor where artificial turf is to be placed.

3.4 Placing Topsoil: Place to the following depths, up to finished grade elevations:

- A. Four inches (4") for sodded areas. The topsoil should be in a relatively dry state. Place during dry weather.
- B. Fine grade topsoil eliminating rough and low areas to ensure positive drainage. Maintain levels, profiles and contours of finish grades shown on the plans.

END OF SECTION

Code L Stabilization**Summary:**

As a unit price please provide Lime modified subgrade. The subgrade shall be treated to a minimum depth of 12- inches using CODE L at the rate of 6% by weight. The lime shall be applied uniformly on the soil and water shall be added before compaction. The lime, soil and water shall be thoroughly mixed with a high powered rotary mixer until uniform mixture throughout the required depth and width is obtained. Toothing the mixture with a high-lift or use of a grader scarifier and/or disc harrow for the mixing operation is not permitted. Compaction of the lime-soil mixture shall be completed using heavy pneumatic or vibratory pad foot rollers. After lime stabilization sub grade is to be trimmed to desired elevation of finished grade.

END OF SECTION

Cast-In-Place Concrete

Part 1: General

1.1 SUMMARY

- A. Perimeter curbs at inside and outside of track including high jump area/D-zone.
- B. Football goal post foundations.
- C. Manholes, whether cast-in-place or pre-cast.

1.2 SCOPE

- A. 6"X12" concrete curbing with 2 pieces of #4 rebar around the entire inside perimeter of the track, including curb and slot drain at the high jump area
- B. 6"X12" concrete curbing with 2 pieces of #4 rebar around the entire outside perimeter of the track.

1.3 QUALITY ASSURANCE

- A. Work performed in this section will comply with all ACI 301 and ACI 318 specifications.
- B. Follow recommendations of ACI 305R when concreting during hot weather.
- C. Follow recommendations of ACI 306R when concreting during cold weather.
- D. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source.
- E. Independent testing agent qualified according to ASTM C 1077 and ASTM E 329 to provide material evaluation tests as indicated.

Part 2: Products

2.1 FORMS

- A. Any owner approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
- B. Flexible or curved forms will be used for curves that have a radius of 100' (30.5m) or less.

2.2 STEEL REINFORCEMENT

- A. Reinforcement Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Stirrup Steel: ASTM A 82 steel wire, unfinished.
- C. Steel Welded Wire Reinforcement: ASTM A 185, plain type.
- D. Reinforcement Accessories
 - 1. Tie Wire: Annealed, minimum 6 gage.
 - 2. Chairs, Bolsters, Bar Supports and Spacers will be used in support of concrete placement.

2.3 JOINT DEVICES

- A. Construction Joints shall be true to line with faces perpendicular to surface plane of concrete. Joint shall begin at side and termination of concrete run, unless run terminates at expansion joints. Saw cutting shall be done with 1/8" diamond-rimmed blades at a depth of 1".
- B. Expansion Joints shall true to line with faces perpendicular to surface plane of concrete.
 - 1. Locate expansion joints at intervals of 50' (15.25 m), unless otherwise indicated.
 - 2. Extend joint filler full width and depth of joint in one-piece lengths.
 - 3. Set joint filler at no more than 1" and not less than 1/2" below finished surface if joint sealant is indicated.
- C. Control Joints shall be true to line with faces perpendicular to surface plane of concrete. Joint shall begin at side and termination of concrete run, unless run terminates at expansion joints.

2.4 JOINT SEALANTS

- A. Type S1 – General Purpose Exterior Sealant: Polyurethane ASTM C 920, Class 25, single, or multi-component.
- B. Type S6 – Concrete Paving Joint Sealant: Polyurethane, self-leveling ASTM C 920, Class 25, single component.

2.5 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Concrete Strength as specified in ACI 301.
 - 1. Compressive Strength (28 days): 4000psi
 - 2. Slump limit: 3" (75 mm).

2.6 CONCRETE MIXING

Ready-Mixed Concrete shall comply with requirements and with ASTM C 94/C 94M.

Part 3: Execution

3.1 PREPARATION

- A. Verify elevations and base compaction for conditions needing correcting. Proceed only when these conditions conform to the spec.
- B. Prepare any previously placed concrete by cleaning and applying bonding agent.
- C. In locations where new concrete is doweled to existing work, drill holes' in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- D. Set all forms to required lines, grades and elevations. Formed work will remain in place at least 4 hours after concrete placement.
- E. Tolerances: Top of Forms; Not more than 1/16" over 10'.

3.2 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.
- B. Ensure all forms, reinforcement and other installed devices will not be disturbed during concrete placement.
- C. Deposit and spread concrete in a continuous operation between joints.
- D. Screed surfaces with a straightedge and strike off maintaining tolerances.

3.3 CONCRETE FINISHING

- A. Float Finish: Ensure concrete surface has stiffened sufficiently to permit operations.
- B. Finish surfaces to true plane
- C. Runways/Sidewalks/pathways to be finished with medium textured broom.
- D. Throwing pads to be smooth rubbed finished with carborundum brick or other abrasive devise.

3.4 DEFECTIVE CONCRETE

- A. Failed test results by the independent testing agency.
- B. Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the Owner. Cost of such repair or replacement will be that of the Contractor.

END OF SECTION

