FORT HAYS STATE UNIVERSITY

Forward thinking. World ready.

Request for Proposal (RFP) 22017

Date Issued:	February 24, 2022
Question Deadline:	Thursday, March 3, 2022 by 4:30 p.m.
Mandatory Pre-Bid Meeting:	Tuesday, March 8, 2022 at 1:30 p.m. at the FHSU Tiger Stadium
Vendor Submit Alternate Manufacturer:	Tuesday, March 8, 2022 at 1:30 p.m.
Approve Alternate Manufacturers:	Tuesday, March 10, 2022 by 4:30 p.m.
Bid Closing Date:	Thursday, March 17, 2022 at 2:00 p.m.

Address:	Fort Hays State University Purchasing Office 601 Park Street, Sheridan Hall 318, Hays, KS 67601
Telephone:	785-628-4251
Fax:	785-628-4046
E-Mail Address:	purchasing@fhsu.edu
Web Address:	https://fhsu.edu/purchasing/bids/

Item: **FHSU Softball Turf Replacement located at Tiger Stadium, 1439 U.S. Hwy. 183 Alt., Hays, KS.**

Agency: **Fort Hays State University (FHSU), Hays, KS**

Term of Contract: **Contract Award from date of award through August 15, 2022**

Drawings: The softball field layout and Geotechnical Exploration Report are attached.

Performance Bond upon notification of award in the amount of the contract. Public Works Bond and Proof of Insurance are also required.

Questions/Addenda. Questions and requests for clarification of the RFP must be submitted by email to the attention of the Kathy Herrman, FHSU Purchasing Director at purchasing@fhsu.edu by Thursday, March 3, 2022, at 4:30 p.m. Additional questions will be allowed at the pre-bid meeting and answers posted in the final addenda. Each question or clarification should reference the appropriate RFP section. Impromptu questions may be permitted and spontaneous unofficial answers provided, however bidders should understand that the only official answer or position of Fort Hays State University will be in writing. Answers to questions will be available in the form of an addendum on the FHSU Purchasing website, **http://www.fhsu.edu/purchasing/**.

Pre-Proposal Conference. A mandatory pre-proposal conference will be held on Tuesday, March 8, 2022 at 1:30 p.m. at the FHSU Softball Facility, FHSU Tiger Stadium, 1439 U.S. Hwy. 183 Alt., Hays, KS. Attendance is required at the pre-proposal conference. *Failure to attend the pre-bid conference will result in your bid rejection.*

Failure to notify the FHSU Purchasing Director of any conflicts or ambiguities in this RFP may result in items being resolved in the best interest of FHSU. Any modification to this RFP shall be made in writing by addendum and posted on the Purchasing website, https://fhsu.edu/purchasing/bids/index.html. Only written communications are binding.

It shall be the responsibility of all participating vendors to acquire any and all addenda and additional information as it is made available from the web site cited above. Vendors are required to check the website periodically for any additional information or instructions.

READ THIS REQUEST CAREFULLY

Failure to abide by all of the conditions of this Request for Proposal (RFP) may result in the rejection of a bid. Inquiries about this RFP should indicate the contract number and be directed to the Fort Hays State University Purchasing Office.

It is the vendor's responsibility to monitor the FHSU Purchasing website on a regular basis for any changes/addenda.

SIGNATURE SHEET

Item: **FHSU Softball Turf Replacement**
Agency: **Fort Hays State University**
Closing Date: **Thursday, March 17, 2022 at 2:00 p.m.**

By submission of a bid and the signatures affixed thereto, the bidder certifies all products and services proposed in the bid meet or exceed all requirements of this specification as set forth in the request and that all exceptions are clearly identified.

Legal Name of Person, Firm or Corporation_____

Mailing Address_____

City & State_____Zip _____

Toll Free Telephone_____Local _____Fax_____

Tax Number_____
CAUTION: If your tax number is the same as your Social Security Number (SSN), you must leave this line blank. DO NOT enter your SSN on this signature sheet. If your SSN is required to process a contract award, including any tax clearance requirements, you will be contacted by an authorized representative of the FHSU Purchasing Office at a later date.

E-Mail_____

Signature_____Date_____

Typed Name of Signature_____Title_____

In the event the **contact for the bidding process** is different from above, indicate contact information below.

Bidding Process Contact Name_____

Mailing Address_____ City & State_____Zip _____

Toll Free Telephone_____Local_____ Cell: _____Fax_____

E-Mail_____

If **awarded a contract and purchase orders** are to be directed to an address other than above, indicate mailing address and telephone number below.

Award Contact Name_____

Mailing Address_____ City & State_____Zip _____

Toll Free Telephone_____Local_____ Cell: _____Fax_____

E-Mail_____

Fort Hays State University may use the Procurement Card (P-Card / Visa) in lieu of a state warrant to pay for some of its purchases. State of Kansas Law does not allow retailers to charge a credit fee for using their cards. *(Refusal will not be a determining factor in award of this contract.)* Yes ___ No ___
Would this contract be available to other political subdivisions of the State of Kansas? Yes ____ No ____
(Award will not be based on accepting or declining)

TAX CLEARANCE

Fort Hays State University strongly supports the State of Kansas Tax Clearance Process. Vendors submitting bids or proposals which exceed $25,000 over the term of the contract shall include a copy of a Tax Clearance Certification Form with their submittal. Failure to provide this information may be cause for rejection of vendor's bid or proposal.

A "Tax Clearance" is a comprehensive tax account review to determine and ensure that the account is compliant with all primary Kansas Tax Laws administered by the Kansas Department of Revenue (KDOR) Director of Taxation. Information pertaining to a Tax Clearance is subject to change(s), which may arise as a result of a State Tax Audit, Federal Revenue Agent Report, or other lawful adjustment(s).

To obtain a Tax Clearance Certificate, you must:

- Go to https://www.kdor.ks.gov/apps/taxclearance/Default.aspx to request a Tax Clearance Certificate
- Return to the website the following working day to see if KDOR will issue the certificate
- If issued an official certificate, print it and attach it to your bid response
- If denied a certificate, engage KDOR in a discussion about why a certificate wasn't issued

Bidders (and their subcontractors) are expected to submit a current Tax Clearance Certificate with every event response.

Please Note: *Individual and business applications are available. For applications entered prior to 5:00 PM Monday through Friday, results typically will be available the following business day. Tax clearance requests may be denied if the request includes incomplete or incorrect information.*

Please Note: You will need to sign back into the KDOR website to view and print the official tax clearance certificate.

A copy of the **Certification of Tax Clearance** form received from the Kansas Department of Revenue should be sent along with the bid response(s) to:

Fort Hays State University
Purchasing Office
601 Park Street, Sheridan Hall 318
Hays, KS 67601

Failure to provide this information may be cause for rejection of vendor's bid or proposal.

Information about Tax Registration can be found at the following website:
http://www.ksrevenue.org/forms-btreg.html

The FHSU Purchasing Office reserves the right to confirm tax status of all potential contractors and subcontractors prior to the release of a purchase order or contract award.

In the event that a current tax certificate is unavailable, the FHSU Purchasing Office reserves the right to notify a bidder (one that has submitted a timely event response) that they have to provide a current Tax Clearance Certificate within ten (10) calendar days, or FHSU may proceed with an award to the next lowest responsive bidder, whichever is determined by the Purchasing Director to be in the best interest of FHSU and the State.

CERTIFICATION REGARDING
IMMIGRATION REFORM & CONTROL

All Contractors are expected to comply with the Immigration and Reform Control Act of 1986 (IRCA), as may be amended from time to time. This Act, with certain limitations, requires the verification of the employment status of all individuals who were hired on or after November 6, 1986, by the Contractor as well as any subcontractor or sub-subcontractor. The usual method of verification is through the Employment Verification (I-9) Form. With the submission of this bid, the Contractor hereby certifies without exception that Contractor has complied with all federal and state laws relating to immigration and reform. Any misrepresentation in this regard or any employment of persons not authorized to work in the United States constitutes a material breach and, at the State's option, may subject the contract to termination and any applicable damages.

Contractor certifies that, should it be awarded a contract by the State, Contractor will comply with all applicable federal and state laws, standards, orders and regulations affecting a person's participation and eligibility in any program or activity undertaken by the Contractor pursuant to this contract. Contractor further certifies that it will remain in compliance throughout the term of the contract.

At the State's request, Contractor is expected to produce to the State any documentation or other such evidence to verify Contractor's compliance with any provision, duty, certification, or the like under the contract.

Contractor agrees to include this Certification in contracts between itself and any subcontractors in connection with the services performed under this contract.

_____

Signature, Title of Contractor Date

VENDOR RESPONSE CHECK-LIST

The following items are provided to bidders to ensure that all requirements are met and all required submissions are included with the bid. Vendors are instructed to utilize this list in order to ensure fair and accurate evaluation.

_____	Signature Sheet	page 2
_____	Provide a copy of the **Tax Clearance Certificate** received from the Kansas Department of Revenue.	page 3
_____	Sign the Certification Regarding Immigration Reform & Control form.	page 4
_____	References	page 6
_____	Instructions Submit W-9 (form can be found at http://www.irs.gov/)	pages 7 - 9 page 8
_____	Proposal Response Late Penalty information	pages 10 - 11 page 11
_____	Terms and Conditions	pages 12 – 21
_____	Specifications - Technical Proposal/Submittals Warranty - introduction paragraph Section 321813, 13.10 Warranty	pages 22-60 page 21 page 46 and 47
_____	Evaluation Form	page 61 and 62
_____	Cost Proposal	page 63
_____	Fort Hays State University DA-146a	pages 64 - 65
_____	Addenda Acknowledgement: If applicable, bidder acknowledges receipt of any addenda submitted by signing and dating each form.	
_____	Performance Bond upon notification of award in the amount of the contract. Public Works Bond and Proof of Insurance are also required.	
_____	Provide Bidder's Standard Terms and Conditions	

Important Dates:

Questions Deadline: **Thursday, March 3, 2022, by 4:30 p.m.**
Questions and requests for clarification of the RFP must be submitted by email to the attention of the Kathy Herrman, FHSU Purchasing Director at purchasing@fhsu.edu.

Mandatory Pre-Bid Meeting: **Tuesday, March 8, 2022 at 1:30 p.m. at the FHSU Tiger Stadium**
NOTE: Please bring two samples, minimum of 12 x 12 inch in size, to the pre-bid meeting, illustrating details of finished product. Also bring the completed Evaluation Form and detailed laboratory testing report and email to Kathy Herrman, Purchasing Director, purchasing@fhsu.edu.

Approve Alternate Manufacture: **Tuesday, March 10, 2022 by 4:30 p.m.**
Alternate Manufacturers are acceptable but must be pre-approved and meet and/or be equivalent to all listed requirements, qualifications, specifications, and lab reports by 1:30 p.m. March 8, 2022 (see above). Submit technical information to Kathy Herrman, Purchasing Director, purchasing@fhsu.edu.

Closing Date: **Thursday, March 17, 2022 at 2:00 p.m.**
Submit one document through FHSU's bid solicitation Vendor Registry portal, https://fhsu.edu/purchasing/bids/index.html, of all documents required.

REFERENCES

Provide four (4) references. References shall have purchased similar items/services from the vendor in the last three (3) years. Vendor employees and FHSU shall not be shown as references. If available, provide higher education references within FHSU's geographical location.

1. NAME: _____
   COMPANY: _____
   ADDRESS: _____
   TELEPHONE: _____
   EMAIL: _____
2. NAME: _____
   COMPANY: _____
   ADDRESS: _____
   TELEPHONE: _____
   EMAIL: _____
3. NAME: _____
   COMPANY: _____
   ADDRESS: _____
   TELEPHONE: _____
   EMAIL: _____
4. NAME: _____
   COMPANY: _____
   ADDRESS: _____
   TELEPHONE: _____
   EMAIL: _____

Provide a list of clients who have discontinued or terminated services within the past three (3) years, indicating reasons for termination. Provide the firm name, contact person, address, email address and phone number of each referenced organization.

1. NAME: _____
   COMPANY: _____
   ADDRESS: _____
   TELEPHONE: _____
   EMAIL: _____

Section I
INSTRUCTIONS

1. **Proposal Reference Number:** The RFP number, indicated in the header of this page, as well as on the first page of this proposal, has been assigned to this RFP and MUST be shown on all correspondence or other documents associated with this RFP and MUST be referred to in all verbal communications. All inquiries, written or verbal, shall be directed only to the Fort Hays State University Purchasing Office reflected on Page 1 of this proposal. There shall be no communication with any other University employee regarding this RFP except with designated University participants in attendance **ONLY DURING:**

   Negotiations
   Contract Signing
   as otherwise specified in this RFP.

   Violations of this provision by vendor or Fort Hays State University personnel may result in the rejection of the proposal.

2. **Negotiated Procurement:** This is a negotiated procurement pursuant to K.S.A. 75-37,102. Final evaluation and award will be made by The Procurement Negotiation Committee (PNC) consisting of the following entities (or their designees):
   FHSU Controller or their designee;
   FHSU Director of Purchasing or their designee; and
   Member of Requesting Department

3. **Appearance Before Committee:** Any, all or no vendors may be required to appear before the PNC to explain the vendor's understanding and approach to the project and/or respond to questions from the PNC concerning the proposal; or, the PNC may award without conducting negotiations, based on the initial proposal. The PNC reserves the right to request information from vendors as needed. If information is requested, the PNC is not required to request the information of all vendors.

   Vendors selected to participate in negotiations may be given an opportunity to submit a revised proposal and/or their revised offer to the PNC. Prior to a specified cut-off time for revised offers, vendors may submit revisions to their technical and cost proposals. Meetings before the PNC are not subject to the Open Meetings Act. Vendors are prohibited from electronically recording these meetings. All information received prior to the cut-off time will be considered part of the vendor's revised offer.

   No additional revisions shall be made after the specified cut-off time unless requested by the PNC.

4. **Cost of Preparing Proposal:** The cost of developing and submitting the proposal is entirely the responsibility of the vendor. This includes costs to determine the nature of the engagement, preparation of the proposal, submitting the proposal, negotiating for the contract and other costs associated with this RFP.

5. **Tax Clearance.** Fort Hays State University strongly supports the State of Kansas Tax Clearance Process. Vendors submitting bids or proposals which exceed $25,000 over the term of the contract shall include a copy of a Tax Clearance Certification Form with their submittal. Failure to provide this information may be cause for rejection of vendor’s bid or proposal. Tax Clearances may be obtained at the following website: **http://www.ksrevenue.org/taxclearance.html**.

6. **Preparation of Proposal:** Prices are to be entered in spaces provided on the proposal cost form if provided herein. Computations and totals shall be indicated where required. In case of error in computations or totals, the unit price shall govern. The Committee has the right to rely on any price quotes provided by vendors. The vendor shall be responsible for any mathematical error in price quotes. The Committee reserves the right to reject proposals which contain errors.

A proposal shall not be considered for award if the price in the proposal was not arrived at independently and without collusion, consultation, communication or agreement as to any matter related to price with any other vendor, competitor or public officer/employee.

Technical proposals shall contain a concise description of vendor's capabilities to satisfy the requirements of this RFP with emphasis on completeness and clarity of content. Repetition of terms and conditions of the RFP without additional clarification shall not be considered responsive.

7. **Signature of Proposals:** Each proposal shall give the complete mailing address of the vendor and be signed by an authorized representative by original signature with his or her name and legal title typed below the signature line. If the contract's contact will be a different entity, indicate that individual's contact information for communication purposes. Each proposal shall include the vendor's tax number.

8. **Acknowledgment of Addenda:** All vendors shall acknowledge receipt of any addenda to this RFP by returning a signed copy with the bid. Failure to acknowledge receipt of any addenda may render the proposal to be non-responsive. Only the FHSU Purchasing Office shall issue changes to this RFP, which will be in writing.

9. **Modification of Proposals:** A vendor may modify a proposal through the portal at any time prior to the closing date and time for receipt of proposals.

10. **Withdrawal of Proposals:** A proposal may be withdrawn on written request from the vendor to the FHSU Purchasing Office prior to the closing date.

11. **New Vendors**: Vendors who are new to the university should submit the following with your bid: a FHSU vendor registration form, https://vrapp.vendorregistry.com/Vendor/Register/Index/fort-hays-state-university-ks-vendor-registration and a copy of the vendor's W-9, http://www.irs.gov/pub/irs-pdf/fw9.pdf?portlet=3.

12. **Competition:** The purpose of this RFP is to seek competition. The vendor shall advise the FHSU Purchasing Office if any specification, language or other requirement inadvertently restricts or limits bidding to a single source. Notification shall be in writing and must be received by the FHSU Purchasing Office no later than five (5) business days prior to the bid closing date. The FHSU Purchasing Director reserves the right to waive minor deviations in the specifications which do not hinder the intent of this RFP.

13. **Evaluation of Proposals:** Award shall be made in the best interest of the University as determined by the Procurement Negotiating Committee or their designees. Although no weighted value is assigned, consideration may focus toward but is not limited to:
    - Cost. Vendors are not to inflate prices in the initial proposal as cost is a factor in determining who may receive an award or be invited to formal negotiations. The University reserves the right to award to the lowest responsive bid without conducting formal negotiations, if authorized by the PNC.
    - Adequacy and completeness of proposal
    - Vendor's understanding of the project
    - Compliance with the terms and conditions of the RFP
    - Experience in providing like services
    - Qualified staff
    - Methodology to accomplish tasks
    - Response format as required by this RFP

14. **Acceptance or Rejection:** The Committee reserves the right to accept or reject any or all proposals or part of a proposal; to waive any informalities or technicalities; clarify any ambiguities in proposals; modify any criteria in this RFP; and unless otherwise specified, to accept any item in a proposal.

15. **Proposal Disclosures:** At the time of closing, only the names of those who submitted proposals shall be made public information. No price information will be released.

Bid results will not be given to individuals over the telephone. Results may be obtained after contract finalization by obtaining a bid tabulation from the FHSU Purchasing Office by sending (do not include with bid):

- A check for $5.00, payable to the Fort Hays State University
- A self -addressed, stamped envelope
- Contract Proposal Number

Send to:
Fort Hays State University
Purchasing Office
601 Park Street Sheridan Hall Rm 318
Hays, KS 67601

Copies of individual proposals may be obtained under the Kansas Open Records Act by calling 785-628-4251 to request an estimate of the cost to reproduce the documents and remitting that amount with a written request to the above address or a vendor may make an appointment by calling the above number to view the proposal file. Upon receipt of the funds, the documents will be mailed. Information in proposal files shall not be released until a contract has been executed or all proposals have been rejected.

16. **Disclosure of Proposal Content and Proprietary Information:** All proposals become the property of Fort Hays State University. The **Open Records Act** (K.S.A. 45-205 et seq) of the State of Kansas requires public information be placed in the public domain at the conclusion of the selection process, and be available for examination by all interested parties. (http://admin.ks.gov/offices/chief-counsel) No proposals shall be disclosed until after a contract award has been issued. The University reserves the right to destroy all proposals if the RFP is withdrawn, a contract award is withdrawn, or in accordance with Kansas law. Late Technical and/or Cost proposals will be retained unopened in the file and not receive consideration or returned to the bidder.

Trade secrets or proprietary information legally recognized as such and protected by law may be requested to be withheld if clearly labeled "Proprietary" on each individual page **and** provided as separate from the main proposal. Pricing information is not considered proprietary and the vendor's entire proposal response package will not be considered proprietary.

All information requested to be handled as "Proprietary" shall be submitted separately from the main proposal and clearly labeled, in a separate envelope or clipped apart from all other documentation. The vendor shall provide detailed written documentation justifying why this material should be considered "Proprietary". The FHSU Purchasing Office reserves the right to accept, amend or deny such requests for maintaining information as proprietary in accordance with Kansas law.

Fort Hays State University does not guarantee protection of any information which is not submitted as required.

17. **Exceptions:** By submission of a response, the vendor acknowledges and accepts all terms and conditions of the RFP unless clearly avowed and wholly documented in a separate section of the Technical Proposal to be entitled: "Exceptions".

18. **Notice of Award:** An award is made on execution of the written contract by all parties.

19. **News Releases:** Only Fort Hays State University is authorized to issue news releases relating to this RFP, its evaluation, award and/or performance of the contract.

Section 2
PROPOSAL RESPONSE

1. **Submission of Proposals: Vendor's proposal shall consist of:**
   - **Submit one document through FHSU's bid solicitation Vendor Registry portal, https://fhsu.edu/purchasing/bids/index.html, of the documents required: Technical Proposal/Submittals, Cost Proposal, Tax Clearance Certificate (see page 3 for details), etc. Please do not send bid response through the mail.**
   - **Submit two samples, minimum of 12 x 12 inch in size, illustrating details of finished product. Please bring the samples, completed Evaluation Form and detailed laboratory testing report to the mandatory pre-bid meeting on Tuesday March 8, 2022, at 1:30 p.m. at the FHSU Softball Facility, Tiger Stadium, 1439 U.S. Hwy. 183 Alt., Hays, KS.**

   Faxed, e-mailed or telephoned proposals are not acceptable.

   Vendor's proposal shall be received no later than the time and closing date specified indicated on Page 1.

   Proposals received prior to the closing date shall be kept secured and sealed until closing. Late Technical and/or Cost proposals will be retained unopened in the file and not receive consideration.

   It is the vendor's responsibility to ensure bids are received by the closing date and time. Delays in mail delivery or any other means of transmittal, including couriers or agents of the issuing entity shall not excuse late bid submissions.

2. **Proposal Format:** Vendors are instructed to prepare their Technical Proposal following the same sequence as this RFP.

3. **Transmittal Letter:** All bidders shall respond to the following statements:
   (a) the vendor is the prime contractor and identifying all subcontractors;
   (b) the vendor is a corporation or other legal entity;
   (c) no attempt has been made or will be made to induce any other person or firm to submit or not to submit a proposal;
   (d) the vendor does not discriminate in employment practices with regard to race, color, religion, age (except as provided by law), sex, marital status, political affiliation, national origin or disability;
   (e) no cost or pricing information has been included in the transmittal letter or the Technical Proposal;
   (f) the vendor presently has no interest, direct or indirect, which would conflict with the performance of services under this contract and shall not employ, in the performance of this contract, any person having a conflict;
   (g) the person signing the proposal is authorized to make decisions as to pricing quoted and has not participated, and will not participate, in any action contrary to the above-statements;(h)whether there is a reasonable probability that the vendor is or will be associated with any parent, affiliate or subsidiary organization, either formally or informally, in supplying any service or furnishing any supplies or equipment to the vendor which would relate to the performance of this contract. If the statement is in the affirmative, the vendor is required to submit with the proposal, written certification and authorization from the parent, affiliate or subsidiary organization granting the State and/or the federal government the right to examine any directly pertinent books, documents, papers and records involving such transactions related to the contract. Further, if at any time after a proposal is submitted, such an association arises, the vendor will obtain a similar certification and authorization and failure to do so will constitute grounds for termination of the contract at the option of the University;
   (i) vendor agrees that any lost or reduced state or federal matching money resulting from unacceptable performance in a contractor task or responsibility defined in the RFP, contract or modification shall be accompanied by reductions in University payments to Contractor; and
   (j) the vendor has not been retained, nor has it retained a person to solicit or secure a state contract on an agreement or understanding for a commission, percentage, brokerage or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies maintained by the vendor for

the purpose of securing business. For breach of this provision, the Committee shall have the right to reject the proposal, terminate the contract and/or deduct from the contract price or otherwise recover the full amount of such commission, percentage, brokerage or contingent fee or other benefit.

4. **Vendor Information:** The vendor must include a narrative of the vendor's corporation and each subcontractor if any. The narrative shall include the following:
   (a) date established;
   (b) ownership (public, partnership, subsidiary, etc.);
   (c) number of personnel, full and part-time, assigned to this project by function and job title;
   (d) resources assigned to this project and the extent they are dedicated to other matters;
   (e) organizational chart;
   (f) financial statement may be required.

5. **Qualifications:** A description of the vendor's qualifications and experience providing the requested or similar service, including resumes of personnel assigned to the project stating their education and work experience, shall be submitted with the bid. The vendor must be an established firm recognized for its capacity to perform. The vendor must have sufficient personnel to meet the deadlines specified in the Request.

6. **Timeline:** A timeline for implementing services must be submitted with the bid.

7. **Methodology:** Bidders shall submit with the bid, a detailed explanation of the methodology for implementing services.

8. **References:** Provide four (4) references who have purchased similar items or services from the vendor in the last three (3) year(s). References shall show firm name, contact person, address, e-mail address and phone number. Vendor employees and Fort Hays State University shall not be shown as references.

   Provide a list of clients who have discontinued or terminated services within the past three (3) years, indicating reasons for termination. Provide the firm name, contact person, address, email address and phone number of each referenced organization.

9. **Technical Literature:** All bids shall include specifications and technical literature sufficient to allow the University to determine that the equipment/services meet(s) all requirements. If a requirement is not addressed in the technical literature, it must be supported by additional documentation and included with the bid. Bid responses without sufficient technical documentation may be rejected.

10. **Procurement Card (P-Card):** Presently, Fort Hays State University uses a State of Kansas Business Procurement Card (Visa-branded) in lieu of a state warrant to pay for some of its purchases. No additional charges will be allowed for using the card. **Please indicate on the Signature Sheet if you will accept the Business Procurement Card for payment.**

11. **Late Penalty:** For each day the project is not completed after August 15, 2022, a late fee of $250 per day will be assessed. Contractor should anticipate the following weather days in the following months listed below:
    April – 6 days
    May – 9 days
    June – 8 days
    July – 8 days

    Weather days in excess of those listed may be requested as time extensions to the contract. All claims for weather days must be made within (10) days of the date in question. Criteria for an unusual weather day may include:
    1. Rainfall equal to, or greater than 0.10 inches.
    2. Average temperature less than 20 degrees Fahrenheit.
    3. Snowfall in excess of 1.0 inches.
    4. Sustained wind speed in excess of 25 mph.

Section 3
TERMS AND CONDITIONS

1. **Contract Documents:** This RFP and any amendments and the response and any amendments of the Contractor shall be incorporated along with the DA-146a into the written contract which shall compose the complete understanding of the parties.

   In the event of a conflict in terms of language among the documents, the following order of precedence shall govern:

   - Form DA-146a;
   - written modifications to the executed contract;
   - written contract signed by the parties;
   - this RFP including any and all addenda;
   - any supporting manuals/documents that have been incorporated in this Request; and
   - Contractor's written proposal submitted in response to this RFP as finalized.

2. **Contract:** The successful vendor will be required to enter into a written contract with the University. The vendor agrees to accept the provisions of form DA-146a (Contractual Provisions Attachment) which is incorporated into all contracts with the University and is attached to this RFP.

3. **Contract Formation:** No contract shall be considered to have been entered into by the University until all statutorily required signatures and certifications have been rendered and a written contract has been signed by the successful vendor.

4. **Notices:** All notices, demands, requests, approvals, reports, instructions, consents or other communications (collectively "notices") which may be required or desired to be given by either party to the other shall be **IN WRITING** and addressed as follows:

   Fort Hays State University
   Purchasing Office
   601 Park Street Sheridan Hall Rm 318
   Hays, KS 67601
   RE: Bid number *see page 1*

   or to any other persons or addresses as may be designated by notice from one party to the other.

5. **Termination for Cause:** The FHSU Purchasing Director may terminate this contract, or any part of this contract, for cause under any one of the following circumstances:

   - the Contractor fails to make delivery of goods or services as specified in this contract; or
   - the Contractor provides substandard quality and/or workmanship;
   - the Contractor fails to perform any of the provisions of this contract, or so fails to make progress as to endanger performance of this contract in accordance with its terms.

   The FHSU Purchasing Director shall provide Contractor with written notice of the conditions endangering performance. If the Contractor fails to remedy the conditions within ten (10) days from the receipt of the notice (or such longer period as FHSU may authorize in writing), the FHSU Purchasing Director shall issue the Contractor an order to stop work immediately. Receipt of the notice shall be presumed to have occurred within three (3) days of the date of the notice.

   If it is determined, after notice of termination for cause, that Contractor's failure was due to causes beyond the control of or negligence of the Contractor, the termination shall be a termination for convenience.

6. **Termination for Convenience:** The FHSU Purchasing Director may terminate performance of work under this contract in whole or in part whenever, for any reason, the FHSU Purchasing Director shall determine that the termination is in the best interest of FHSU. In the event that the FHSU Purchasing Director elects to terminate this contract pursuant to this provision, it shall provide the Contractor written notice at least 30 days prior to the termination date. The termination shall be effective as of the date specified in the notice. The Contractor shall continue to perform any part of the work that may have not been terminated by the notice.

7. **Debarment of University Contractors:** Any vendor who defaults on delivery or does not perform in a satisfactory manner as defined in this RFP may be barred for a period up to three (3) years, pursuant to KSA 75-37,103, or have their work evaluated for pre-qualification purposes.

8. **Rights and Remedies:** If this contract is terminated, FHSU, in addition to any other rights provided for in this contract, may require the Contractor to transfer title and deliver to FHSU in the manner and to the extent directed, any completed materials. FHSU shall be obligated only for those services and materials rendered and accepted prior to the date of termination.

   In the event of termination, the Contractor shall receive payment prorated for that portion of the contract period services were provided to and/or goods were accepted by FHSU subject to any offset by FHSU for actual damages including loss of state or federal matching funds.

   The rights and remedies of FHSU provided for in this contract shall not be exclusive and are in addition to any other rights and remedies provided by law.

9. **Force Majeure:** The Contractor shall not be held liable if the failure to perform under this contract arises out of causes beyond the control of the Contractor. Causes may include, but are not limited to, acts of nature, fires, tornadoes, quarantine, strikes other than by Contractor's employees, and freight embargoes, etc.

10. **Waiver:** Waiver of any breach of any provision in this contract shall not be a waiver of any prior or subsequent breach. Any waiver shall be in writing and any forbearance or indulgence in any other form or manner by FHSU shall not constitute a waiver.

11. **Independent Contractor:** Both parties, in the performance of this contract, shall be acting in their individual capacity and not as agents, employees, partners, joint ventures or associates of one another. The employees or agents of one party shall not be construed to be the employees or agents of the other party for any purpose whatsoever.

    The Contractor accepts full responsibility for payment of unemployment insurance, workers compensation and social security as well as all income tax deductions and any other taxes or payroll deductions required by law for its employees engaged in work authorized by this contract.

12. **Staff Qualifications:** The Contractor shall warrant that all persons assigned by it to the performance of this contract shall be employees of the Contractor (or specified Subcontractor) and shall be fully qualified to perform the work required. The Contractor shall include a similar provision in any contract with any Subcontractor selected to perform work under this contract.

    Failure of the Contractor to provide qualified staffing at the level required by the proposal specifications may result in termination of this contract and/or damages.

13. **Subcontractors:** The Contractor shall be the sole source of contact for the contract. FHSU will not subcontract any work under the contract to any other firm and will not deal with any subcontractors. The Contractor is totally responsible for all actions and work performed by its subcontractors. All terms, conditions and requirements of the contract shall apply without qualification to any services performed or goods provided by any subcontractor.

14. **Proof of Insurance:** Upon request, the vendor shall present Certificates of Insurance to the FHSU Purchasing Office evidencing the following coverage during the performance of the Services:

(a) Worker's Compensation with statutory limits;
(b) Employers Liability, with a minimum $1,000,000 limit of liability per occurrence;
(c) Commercial General Liability, including Contractual Liability coverage, with the following minimum limits of liability: $1,000,000 per occurrence for Bodily Injury and Property Damage, and $1,000,000 General Aggregate; and
(d) Professional Liability in the minimum amount of $1,000,000 per claim.

15. **Conflict of Interest:** The Contractor shall not knowingly employ, during the period of this contract or any extensions to it, any professional personnel who are also in the employ of the FHSU and who are providing services involving this contract or services similar in nature to the scope of this contract to the University. Furthermore, the Contractor shall not knowingly employ, during the period of this contract or any extensions to it, any FHSU employee who has participated in the making of this contract until at least two years after his/her termination of employment with FHSU.

16. **Confidentiality:** The Contractor may have access to private or confidential data maintained by FHSU to the extent necessary to carry out its responsibilities under this contract. Contractor must comply with all the requirements of the Kansas Open Records Act in providing services under this contract. Contractor shall accept full responsibility for providing adequate supervision and training to its agents and employees to ensure compliance with the Act. No private or confidential data collected, maintained or used in the course of performance of this contract shall be disseminated by either party except as authorized by statute, either during the period of the contract or thereafter. Contractor must agree to return any or all data furnished by FHSU promptly at the request of FHSU in whatever form it is maintained by Contractor. On the termination of expiration of this contract, Contractor will not use any of such data or any material derived from the data for any purpose and, where so instructed by FHSU, will destroy or render it unreadable.

17. **Nondiscrimination and Workplace Safety:** The Contractor agrees to abide by all federal, state and local laws, rules and regulations prohibiting discrimination in employment and controlling workplace safety. Any violations of applicable laws, rules and regulations may result in termination of this contract.

18. **Environmental Protection:** The Contractor shall abide by all federal, state and local laws, rules and regulations regarding the protection of the environment. The Contractor shall report any violations to the applicable governmental agency. A violation of applicable laws, rule or regulations may result in termination of this contract.

19. **Hold Harmless:** The Contractor shall indemnify FHSU against any and all loss or damage to the extent arising out of the Contractor's negligence in the performance of services under this contract and for infringement of any copyright or patent occurring in connection with or in any way incidental to or arising out of the occupancy, use, service, operations or performance of work under this contract.

FHSU shall not be precluded from receiving the benefits of any insurance the Contractor may carry which provides for indemnification for any loss or damage to property in the Contractor's custody and control, where such loss or destruction is to state property. The Contractor shall do nothing to prejudice the FHSU's right to recover against third parties for any loss, destruction or damage to State property.

20. **Care of State Property:** The Contractor shall be responsible for the proper care and custody of any state-owned personal tangible property and real property furnished for Contractor's use in connection with the performance of this contract, and Contractor will reimburse FHSU for such property's loss or damage caused by Contractor, normal wear and tear excepted.

21. **Prohibition of Gratuities:** Neither the Contractor nor any person, firm or corporation employed by the Contractor in the performance of this contract shall offer or give any gift, money or anything of value or any promise for future reward or compensation to any FHSU employee at any time.

22. **Retention of Records:** Unless FHSU specifies in writing a different period of time, the Contractor agrees to preserve and make available all of its books, documents, papers, records and other evidence involving transactions related to this contract for a period of five (5) years from the date of the expiration or termination of this contract.

Matters involving litigation shall be kept for one (1) year following the termination of litigation, including all appeals, if the litigation exceeds five (5) years.

The Contractor agrees that authorized federal and state representatives, including but not limited to, personnel of FHSU; independent auditors acting on behalf of state and/or federal agencies shall have access to and the right to examine records during the contract period and during the five (5) year post-contract period. Delivery of and access to the records shall be at no cost to FHSU.

23. **Antitrust**: If the Contractor elects not to proceed, the Contractor assigns to FHSU all rights to and interests in any cause of action it has or may acquire under the anti-trust laws of the United States and FHSU relating to the particular products or services purchased or acquired by FHSU pursuant to this contract.

24. **Modification:** This contract shall be modified only by the written agreement of the parties with the approval of the PNC. No alteration or variation of the terms and conditions of the contract shall be valid unless made in writing and signed by the parties. Every amendment shall specify the date on which its provisions shall be effective.

25. **Assignment:** The Contractor shall not assign, convey, encumber, or otherwise transfer its rights or duties under this contract without the prior written consent of the University.

This contract may terminate in the event of its assignment, conveyance, encumbrance or other transfer by the Contractor without the prior written consent of the University.

26. **Third Party Beneficiaries:** This contract shall not be construed as providing an enforceable right to any third party.

27. **Captions:** The captions or headings in this contract are for reference only and do not define, describe, extend, or limit the scope or intent of this contract.

28. **Severability:** If any provision of this contract is determined by a court of competent jurisdiction to be invalid or unenforceable to any extent, the remainder of this contract shall not be affected and each provision of this contract shall be enforced to the fullest extent permitted by law.

29. **Governing Law:** This contract shall be governed by the laws of the State of Kansas and shall be deemed executed at Hays, Ellis County, Kansas, unless otherwise specified and agreed upon by FHSU.

30. **Jurisdiction:** The parties shall bring any and all legal proceedings arising hereunder in the State of Kansas, District Court of Ellis County, unless otherwise specified and agreed upon by FHSU. The United States District Court for the State of Kansas sitting in Topeka, Shawnee County, Kansas, shall be the venue for any federal action or proceeding arising hereunder in which the State is a party.

31. **Mandatory Provisions:** The provisions found in Contractual Provisions Attachment (DA-146a) which is attached are incorporated by reference and made a part of this contract.

32. **Integration:** This contract, in its final composite form, shall represent the entire agreement between the parties and shall supersede all prior negotiations, representations or agreements, either written or oral, between the parties relating to the subject matter hereof. This contract between the parties shall be independent of and have no effect on any other contracts of either party.

33. **Criminal Or Civil Offense:** Any conviction for a criminal or civil offense of an individual or entity that controls a company or organization or will perform work under this contract that indicates a lack of business integrity or business honesty must be disclosed. This includes (1) conviction of a criminal offense as an incident to obtaining or attempting to obtain a public or private contract or subcontract or in the performance of such contract or subcontract; (2) conviction under state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property; (3) conviction under state or federal antitrust statutes; and (4) any other offense to be so serious and compelling as to affect responsibility as a state contractor. For the purpose of this section, an individual or entity shall be presumed to have control of a company or organization if the individual

or entity directly or indirectly, or acting in concert with one or more individuals or entities, owns or controls 25 percent or more of its equity, or otherwise controls its management or policies. Failure to disclose an offense may result in disqualification of the bid or termination of the contract.

34. **Injunctions:** Should FHSU be prevented or enjoined from proceeding with the acquisition before or after contract execution by reason of any litigation or other reason beyond the control of the University, vendor shall not be entitled to make or assert claim for damage by reason of said delay.

35. **Statutes:** Each and every provision of law and clause required by law to be inserted in the contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein. If through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then on the application of either party the contract shall be amended to make such insertion or correction.

36. **Materials and Workmanship:** The Contractor shall perform all work and furnish all supplies and materials, machinery, equipment, facilities, and means, necessary to complete all the work required by this solicitation, within the time specified, in accordance with the provisions as specified.

The contractor shall be responsible for all work put in under these specifications and shall make good, repair and/or replace, at the contractor's own expense, as may be necessary, any defective work, material, etc., if in the opinion of Fort Hays State University said issue is due to imperfection in material, design, workmanship or contractor fault.

37. **Industry Standards:** If not otherwise provided, materials or work called for in this contract shall be furnished and performed in accordance with best established practice and standards recognized by the contracted industry and comply with all codes and regulations which shall apply.

38. **Federal, State and Local Taxes:** Unless otherwise specified, the RFP price shall include all applicable federal, state and local taxes. The successful vendor shall pay all taxes lawfully imposed on it with respect to any product or service delivered in accordance with this RFP. **FHSU is exempt from state sales or use taxes and federal excise taxes for direct purchases. These taxes shall not be included in the vendor's price quotation.**

The University makes no representation as to the exemption from liability of any tax imposed by any governmental entity on the Contractor.

39. **Accounts Receivable Set-Off Program:** If, during the course of this contract the Contractor is found to owe a debt to the State of Kansas, agency payments to the vendor may be intercepted / setoff by the State of Kansas. Notice of the setoff action will be provided to the Contractor. Pursuant to K.S.A. 75-6201 et seq., Contractor shall have the opportunity to challenge the validity of the debt. If the debt is undisputed, the Contractor shall credit the account of the agency making the payment in an amount equal to the funds intercepted.

K.S.A. 75-6201 et seq. allows the Director of Accounts & Reports to setoff funds the State of Kansas owes Contractors against debts owed by the Contractors to the State of Kansas. Payments setoff in this manner constitute lawful payment for services or goods received. The Contractor benefits fully from the payment because its obligation to the State is reduced by the amount subject to setoff.

40. **Immigration and Reform Control Act of 1986 (IRCA):** All contractors are expected to comply with the Immigration and Reform Control Act of 1986 (IRCA), as may be amended from time to time. This Act, with certain limitations, requires the verification of the employment status of all individuals who were hired on or after November 6, 1986, by the contractor as well as any subcontractor or sub-contractors. The usual method of verification is through the Employment Verification (I-9) Form.

With the submission of this bid, the contractor hereby certifies without exception that such contractor has complied with all federal and state laws relating to immigration and reform. Any misrepresentation in this regard or any employment of persons not authorized to work in the United States constitutes a material breach and, at FHSU’s option, may subject the contract to termination and any applicable damages.

Unless provided otherwise herein, all contractors are expected to be able to produce to FHSU any documentation or other such evidence to verify Contractor's IRCA compliance with any provision, duty, certification or like under the contract.

41. **Worker Misclassification:** The contractor and all lower tiered subcontractors under the contract shall properly classify workers as employees rather than independent contractors and treat them accordingly for purposes of workers' compensation insurance coverage, unemployment taxes, social security taxes, and income tax withholding. Failure to do so may result in contract termination.

42. **Definitions:** A glossary of common procurement terms used by the State of Kansas is available at http://da.ks.gov/purch, under "Purchasing Forms".

43. **Graphic Identity Standards and Use of University Marks:** Compliance with FHSU Graphic Identity Standards and Use of University Marks Policies is required and may not be waived with equivalents.

44. **Definite Quantity Contract:** This Request is for a close-ended contract between the vendor and FHSU to furnish a predetermined quantity of a good or service in a given period of time.

45. **Off-Shore Sourcing:** Bidders shall disclose in their bid response the location where the contracted services will be performed and whether or not any of the work necessary to provide the contracted services will be performed at a site outside the United States.

    If, during the term of the contract, the Contractor or subcontractor moves work previously performed in the United States to a location outside of the United States, the Contractor shall immediately notify the FHSU Purchasing Office in writing, indicating the new location and the percentage of work relocated.

46. **On-Site Inspection**: Failure to adequately inspect the premises shall not relieve the successful vendor from furnishing without additional cost to FHSU any materials, equipment, supplies or labor that may be required to carry out the intent of this RFP. Submission of a bid shall be construed as evidence that the vendor has made necessary examination, inspection and investigation. Failure to properly inspect the site may result in rejection of the vendor's bid.

47. **Experience:** All bidders must have at least five (5) years continuous active participation in the applicable industry, providing equipment/services comparable in size and complexity to those specified herein.

    Bidders may be required to furnish information supporting the capability to comply with conditions for bidding and fulfill the contract if receiving an award of contract. Such information may include, but not be limited to, a list of similar size and type projects the Bidder has completed.

48. **Prices:** Prices shall remain firm for the entire contract period and subsequent renewals. Prices quoted shall be net delivered, including all trade, quantity and cash discounts. Any price reductions available during the contract period shall be offered to FHSU. Failure to provide available price reductions may result in termination of the contract.

49. **Payment:** Payment Terms are Net 30 days. Payment date and receipt of order date shall be based upon K.S.A. 75-6403(b). This Statute requires Fort Hays State University to pay the full amount due for goods or services on or before the 30th calendar day after the date Fort Hays State University receives such goods or services or the bill for the goods and services, whichever is later, unless other provisions for payment are agreed to in writing by the vendor and Fort Hays State University. NOTE: If the 30th calendar day noted above falls on a Saturday, Sunday, or legal holiday, the following workday will become the required payment date.

    Payments shall not be made for costs or items not listed in the vendor's response.

50. **Unit Pricing:** Each item required by the bid must be individually priced (i.e. priced per single unit) and be able to be ordered individually.

51. **Upgrades:** Bidders shall indicate the upgrade price and policy for any software, firmware, or hardware upgrades anticipated for the equipment bid. If the upgrades are provided without cost, this should be indicated.

52. **Shipping and F.O.B. Point:** Unless otherwise specified, bid prices shall be F.O.B. DESTINATION, PREPAID AND ALLOWED (included in the price bid), which means delivered to FHSU's receiving dock or other designated point as specified in this RFP without additional charge. Shipments shall be made in order to arrive at the destination at a satisfactory time for unloading during receiving hours.

53. **Deliveries:** All orders shall be shipped FOB destination, prepaid and allowed clearly marked with the purchase order number. If delays in delivery are anticipated, the Contractor shall immediately notify the Fort Hays State University of the revised delivery date or partial delivery date. The order may be cancelled if delivery time is unsatisfactory. The Contractor shall inform the FHSU Purchasing Office of any supply or delivery problems. Continued delivery problems may result in termination of the contract.

    In the event delivery minimums apply, bidders shall submit that information with their bid response.

54. **Charge Back Clause:** If the contractor fails to deliver the product within the delivery time quoted on the contract, FHSU reserves the right to purchase the product from the open market and charge back the difference between contract price and open market price to the contractor.

55. **Demonstration Requirements:** A demonstration of the selected devices/equipment/solution for FHSU may be required before final contract approval. FHSU reserves the right to request said devices/equipment/solution fully configured/operational for testing, which shall be furnished at no expense to FHSU within ten (10) days after receipt of request. Devices/equipment will be returned at the bidder's expense if found to be non-compliant with the specifications as set forth in this RFP.

56. **Subcontractors:** Kansas Statute K.S.A. 75-3741, as amended, requires a Bidder to list and identify the "Major Sub-Contractors" for Mechanical Construction, Plumbing Construction, and/or Electrical Construction included as a part of the Proposed, when a single contract for the "Project as a whole" is to be awarded.

    FHSU requires tax clearance certificates for all subcontractors be submitted with the proposal, and that the bidder additionally provide subcontract(s) legal company name, contract information and tax ID number (FEIN/TIN) as well.

57. **Public Works Bond:** The Successful Contractor shall file with the FHSU Purchasing Office a Public Works Bond as required by K.S.A. 60-1111, as amended, in an amount equal to one hundred percent (100%) of contract price and shall be filed with the Clerk of the District Court in the County where the project is being constructed.

    The bond funding will be released upon the completion of this contract subject to total or partial forfeiture for failure to perform adequately the terms of this contract. If damages exceed the amount of the guaranty, FHSU may seek additional damages. A Public Works Bond is not required for projects with a contract price below $100,000.00.

    Necessary bond forms will be furnished by the FHSU Purchasing Office. The forms can be completed by any General Insurance Agent. Bonds shall be issued by a Surety Company licensed to do business in the State of Kansas.

58. **Performance Bond:** The Contractor shall file with the FHSU Purchasing Office a performance guaranty/bond in the amount of 100% of the contract price. The guaranty shall be released upon the completion of this contract subject to total or partial forfeiture for failure to adequately perform the terms of this contract. If damages exceed the amount of the guaranty, FHSU may seek additional damages.

    A performance guaranty must be one of the following: 1) certificate of deposit payable to Fort Hays State University.

Necessary bond forms will be furnished by the FHSU Purchasing Office. The forms can be completed by any General Insurance Agent. Bonds shall be issued by a Surety Company licensed to do business in the State of Kansas.

Contractor agrees and shall pay $250 to Fort Hays State University per day for failure to timely meet the stated deadline of the project.

61. **Warranty:** Refer to warranty information on page 21, the introduction and page 46, Section 321813, 13.10 Warranty.

This warranty shall be included in the cost of the equipment. The successful bidder will be the sole point of contact on any problems with the equipment or systems during the warranty period.

The Contractor shall be responsible for all work performed under these specifications. The Contractor shall make good, repair and replace, at the Contractor's own expense, as may be necessary, any defective work, material acceptance, if in the opinion of the FHSU Purchasing Office said defect is due to imperfection in material, design, or workmanship for the warranty period specified.

62. **Acceptance:** No contract provision or use of items by FHSU shall constitute acceptance or relieve the vendor of liability in respect to any expressed or implied warranties.

63. **Ownership:** All data, forms, procedures, software, manuals, system descriptions and work flows developed or accumulated by the Contractor under this contract shall be owned by FHSU. The Contractor may not release any materials without the written approval of FHSU.

64. **Software Code and Intellectual Property Rights:** As applicable, all original software and software code and related intellectual property developed or created by the Contractor in the performance of its obligations under this Contract or any Task Order issued under this Contract, shall become the sole property of the State of Kansas. The Contractor will surrender all original written materials, including any reports, studies, designs, drawings, specifications, notes, documents, software and documentation, computer-based training modules, electronically or magnetically recorded material, used to develop this software and/or software code and related intellectual property to the state entity for which it was developed.

65. **Data:** Any and all data required to be provided at any time during the bid process or contract term shall be made available in a format as requested and/or approved by FHSU.

66. **Submission of the Bid:** Submission of the bid will be considered presumptive evidence that the vendor is conversant with local facilities and difficulties, the requirements of the documents and of pertinent State and/or local codes, state of labor and material markets, and has made due allowances in the RFP for all contingencies. Later claims for labor, work, materials, equipment, and tax liability required for any difficulties encountered which could have foreseen will not be recognized and all such difficulties shall be properly taken care of by Contractor at no additional cost to FHSU.

67. **Alternate Proposals/Equivalent Items:** Bids on goods and services comparable to those specified herein are invited. Whenever a material, article or piece of equipment is identified in the specifications by reference to a manufacturer's or vendor's name, trade name, catalog number, etc., it is intended to establish a standard, unless otherwise specifically stated. Any material, article or equipment of other manufacturers or vendors shall perform to the standard of the item specified. Equivalent bids must be accompanied by sufficient descriptive literature and/or specifications to provide for detailed comparison. Samples of items, if required, shall be furnished at no expense to the university and if not destroyed in the evaluation process, shall be returned at vendor's expense, if requested.

FHSU reserves the right to determine and approve or deny “equivalency” in comparison of alternate bids.

68. **Certification of Materials Submitted:** The response to this RFP, together with the specifications set forth herein and all data submitted by the vendor to support the response including brochures, manuals, and descriptions covering the operating characteristics of the item(s) proposed, shall become a part of any contract between the

successful vendor and FHSU. Any written representation covering such matters as reliability of the item(s), the experience of other users, or warranties of performance shall be incorporated by reference into the contract.

69. **Inspection:** FHSU reserves the right to reject, on arrival at destination, any items which do not conform with specification of this RFP.

70. **New Materials, Supplies or Equipment:** Unless otherwise specified, all materials, supplies or equipment offered by a vendor shall be new, unused in any regard and of most current design. All materials, supplies and equipment shall be first class in all respects. Seconds or flawed items will not be acceptable. All materials, supplies or equipment shall be suitable for their intended purpose and, unless otherwise specified, fully assembled and ready for use on delivery.

71. **Vendor Contracts:** Include a copy of any contracts, agreements, licenses, warranties, etc. proposed. (State of Kansas form DA-146a remains a mandatory requirement in all contracts.)

72. **Transition Assistance:** In the event of contract termination or expiration, Contractor shall provide all reasonable and necessary assistance to FHSU to allow for a functional transition to another vendor.

73. **Award:** Award will be by line item or group total, whichever is in the best interest of FHSU.

74. **Acceptance:** Acceptance of Bid and Agreement is formalized upon execution of a contract and issuance of an FHSU purchase order, which incorporates all terms of this RFP, and corresponding execution of FHSU marks licensing agreement by the parties.

Section 4
SPECIFICATIONS

FHSU Softball Synthetic Turf Replacement

Project provides for the removal of existing grass turf and portions of chain link fencing. Contractor to perform subgrade modification, install new under turf drainage system and new synthetic turf. Work also includes concrete slabs, perimeter curb, and installation of portions of new chain link fencing.

Turf warranty (8 years) is covered in Specification section 321813, Section 13.10 Warranty. The standard one (1) year warranty is required for items such as the fencing, except for the turf requires an eight (8) year warranty.

This project is sales tax exempt. Work is to be completed between **May 16, 2022 through August 15, 2022.**

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all sections of Request for Proposal (RFP) as issued by Fort Hays State University, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Temporary erosion- and sedimentation-control measures.

B. Related Sections:
1. Division 01 Section "Temporary Facilities and Controls" for temporary utility services, construction and support facilities, security and protection facilities, and temporary erosion- and sedimentation-control measures.
2. Division 01 Section "Execution" for field engineering and surveying.

1.3 DEFINITIONS

A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.

D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.

E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and indicated on Drawings.

F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIAL OWNERSHIP

A. Except for stripped topsoil and other materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site. All stripped topsoil shall remain onsite and be distributed onsite per the Construction Manager's direction. See Earth Moving specification for soil material instruction.

1.5 SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
1. Use sufficiently detailed photographs or videotape.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises.

C. Utility Locator Service: Notify utility locator service and appropriate City and County agencies for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.

E. Protect existing trees as indicated on drawings.

F. The following practices are prohibited within protection zones:
1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
8. Sediment encroachment.

G. Do not direct vehicle or equipment exhaust towards protection zones.

H. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

I. Soil Stripping, Handling, and Stockpiling: Perform only when the topsoil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material shall be provided by the Geotechnical Engineer.
1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site. Coordinate with Geotechnical engineer for acceptable soil material.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Locate and clearly identify trees, shrubs, and other vegetation to remain.

C. Protect existing site improvements to remain from damage during construction.
1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

D. Contractor to keep inspection logs of erosion control measures and update provided Storm Water Pollution Prevention Plan (SWPPP).

3.3 TREE AND PLANT PROTECTION

A. General: Protect trees and plants remaining on-site according to requirements in Division 01 Section "Temporary Tree and Plant Protection."

B. Contractor to protect existing trees onsite as indicated on drawings.

C. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, as indicated on drawings.

D. For trees to be removed, remove entire root ball, all root and organic materials.

3.4 EXISTING UTILITIES

A. Contractor to arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.

1. Utility service shall be maintained to the existing site during construction. Contractor shall coordinate with utility service providers to provide temporary service to the existing site as necessary. See demolition notes on drawings.

B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Do not proceed with utility interruptions without Construction Managers and Owners written permission.

3.5 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density per geotechnical report requirements.

3.6 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil in a manner to prevent intermingling with underlying subsoil or other waste materials.
1. Remove subsoil and non-soil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.
2. Geotechnical engineer to monitor stripping operations to observe that all unsuitable materials have been removed.

C. Topsoil shall be disposed of off-site in accordance with Section 3.8.

D. Remove all topsoil and all organic material from proposed building footprint and pavement areas. Excavate as deep as necessary to ensure all organic material has been removed.

3.7 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated from the site. See demolition notes on drawings.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus unsuitable soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 311000

SECTION 312000 – EARTH MOVING

PART 4 - GENERAL

4.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and all sections of Request for Proposal (RFP) as issued by Fort Hays State University, apply to this Section.

B. The geotechnical report referenced was prepared by GSI Engineering, LLC, dated December 23, 2021, Project #2173198.

4.2 SUMMARY

A. Section Includes:
1. Excavating and backfilling trenches for utilities and pits for buried utility structures.
2. Preparing subgrade for pavements and grass areas.
3. General earthwork and excavation.

B. Related Sections:
1. Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.

4.3 UNCLASSIFIED SITE

A. All site work for this project is considered “unclassified.” The term “unclassified” excavation shall be defined as meaning the site contractor bears the entire risk of the soil quantities and/or types (e.g. rock, clay, peat, silt, shale, etc.) encountered above the bottom of required excavations and over-excavated / treated soils areas. Above the bottom of required excavations, the site contractor shall bear the entire cost of such additional work in the event it becomes necessary for unsuitable soils to be handled, removed from the site, or for suitable fill material to be imported to the site. This definition of “unclassified” supersedes any contrary definitions or statements which may be contained in the specifications, plans, or other contract documents. The unclassified site shall include all work above the bottom of required excavations and/or required soil remediation/replacement.

B. The contractor shall be responsible to determine earthwork quantities and shall familiarize themselves with the geotechnical report. All import or export of earth material shall be the responsibility of the contractor at his expense.

4.4 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

D. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

E. Fill: Soil materials used to raise existing grades.

F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

G. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

H. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

4.5 SUBMITTALS

A. Product Data: For each type of the following manufactured products required:
1. Geotextiles.
2. Controlled low-strength material, including design mixture.
3. Warning tapes.

B. Qualification Data: For qualified testing agency.

C. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill according to Geotechnical Engineer requirements.

D. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

4.6 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

B. Preexcavation Conference: Conduct conference at Project site.

4.7 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.
1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
1. Do not proceed with work on adjoining property until directed by Architect.

C. Utility Locator Service: Notify utility locator service and City and County agencies for area where Project is located before beginning earth moving operations.

D. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures, are in place.

PART 5 - PRODUCTS

5.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Engineered structural fill may comprise cohesive or granular material but should be free from organic matter or debris. Granular materials used as general structural fill should be well graded, have a maximum particle size of 1.5 inches, and meet KDOT freeze/thaw durability and sulfate soundness requirements.

C. Unsatisfactory Soils:
1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Bedding Course: Naturally or artificially graded mixture of natural stone or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

E. Sub-drainage Aggregate: Naturally or artificially graded mixture of natural stone, clean with no fines. Aggregate range shall be ½" to ¾".

5.2 GEOTEXTILES

A. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
1. Survivability: Class 3; AASHTO M 288.
2. Grab Tensile Strength: 120 lbf; ASTM D 4632.
3. Sewn Seam Strength: 222 lbf; ASTM D 4632.
4. Tear Strength: 50 lbf; ASTM D 4533.
5. Puncture Strength: 90 lbf; ASTM D 4833.
6. Apparent Opening Size: No. 70 sieve, maximum; ASTM D 4751.
7. Permittivity: 1.7 second-1, minimum; ASTM D 4491.
8. UV Stability: 70 percent after 500 hours' exposure; ASTM D 4355.

5.3 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:
1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 6 - EXECUTION

6.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

B. Protect and maintain erosion and sedimentation controls during earth moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

D. Prepare subgrade material beneath proposed synthetic per geotechnical report recommendations.

6.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

6.3 EXPLOSIVES

A. Explosives: Do not use explosives.

6.4 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials as determined by the Geotechnical Engineer.

6.5 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.
1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.
1. Clearance: As indicated on plans.

6.6 SUBGRADE INSPECTION

A. Notify testing agency when excavations have reached required subgrade.

B. If Geotech Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below proposed pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 20 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades. Proof-roll within two days of paving operations.
1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by the Geotechnical Engineer, and replace with compacted backfill or fill as directed to the proper moisture content and density.
3. After proof rolling and repairing deep subgrade deficiencies, the entire subgrade should be scarified to a depth of 9 inches and uniformly compacted to at least 95% of the standard proctor maximum dry density to provide a uniform subgrade for

pavement construction. Moisture content and density of subgrade to be checked within two days prior to the commencement of paving operations.

4. If necessary, clean materials such as crushed concrete or crushed stone may be used to stabilize areas where wet soil or water is present. Geogrid or structural geotextile may be used in conjunction with crushed concrete or stone to provide additional stabilization.

D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, without additional compensation.

E. Authorized additional excavation and replacement / stabilization of soils will be paid for according to Contract provisions for unit prices and allowances for work necessary below the bottom of required excavations only.

F. Subgrades under pavements and building pads shall be free of all organic material.

6.7 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

6.8 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring and bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

C. Backfill tree root ball excavations with structural fill per geotechnical report. Areas under pavements or building pads shall be compacted to 95% standard density. All other areas shall be compacted to 90% standard density.

6.9 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

D. Install a clay plug around pipes within 5’ of the building face to prevent water migration through the trench into the building. Plug material should consist of clay compacted at a water content at or above the soils optimum water content.

E. Utility trenches should be backfilled per the requirements of the geotechnical report and plan details.

6.10 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in 9 inch loose lifts and compacted to at least 95% of the materials max dry density and moisture control as recommended in the geotechnical report.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

D. The exposed grade prior to fill being placed shall be scarified to a minimum depth of 12" and the moisture content should be adjusted to within the range recommended for structural fill. The material should then be proof-rolled and compacted per the geotechnical report requirements.

E. Bench existing slopes of 5:1 or greater where fill is to be placed.

F. Fill placement and compaction requirements shall conform to the geotechnical report.

6.11 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction per the geotechnical report requirements.
1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, soil material that is not in conformance with the guidelines of the geotechnical report.

6.12 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil materials to requirements determined by Geotechnical Engineer.

D. Utility trenches – compaction testing to be performed every 200 cubic yards at backfill or each lift within 200 linear feet of trench, whichever is less.

6.13 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1/4 inch.
3. Pavements: Plus or minus 1/4 inch.

6.14 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
   1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
   2. Determine that fill material and maximum lift thickness comply with requirements.
   3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.

B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

6.15 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Install erosion control measures as indicated on the plans. Install additional measures as necessary to prevent erosion or damage to erosion control measures.

C. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
   1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

D. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
   1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

6.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Transport surplus satisfactory soil offsite. Stockpile / spread topsoil per contract documents prior to soil removal from site.
   1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

SECTION 321313 - CONCRETE PAVING

PART 7 - GENERAL

7.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and all sections of Request for Proposal (RFP) as issued by Fort Hays State University, apply to this Section.

7.2 SUMMARY

A. Section Includes:
1. Curbs

B. Related Sections:
1. Section 321373 "Concrete Paving Joint Sealants" for joint sealants in expansion and contraction joints within concrete paving and in joints between concrete paving and asphalt paving or adjacent construction.

7.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

7.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Other Action Submittals:
1. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Qualification Data: For qualified ready-mix concrete manufacturer, and testing agency.

D. Material Certificates: For the following, from manufacturer:
1. Cementitious materials.
2. Steel reinforcement and reinforcement accessories.
3. Admixtures.
4. Curing compounds.
5. Applied finish materials.
6. Bonding agent or epoxy adhesive.
7. Joint fillers.

E. Material Test Reports: For each of the following:
1. Aggregates. Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.

F. Field quality-control reports.

7.5 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

B. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

C. Concrete Testing Service: Engage a qualified testing agency to perform material evaluation tests and to design concrete mixtures.

D. ACI Publications: Comply with ACI 301 unless otherwise indicated.

E. Preinstallation Conference: Conduct conference at Project site.
1. Review methods and procedures related to concrete paving, including but not limited to, the following:
a. Concrete mixture design.
b. Quality control of concrete materials and concrete paving construction practices.
2. Require representatives of each entity directly concerned with concrete paving to attend, including the following:
a. Contractor's superintendent.
b. Independent testing agency responsible for concrete design mixtures.
c. Ready-mix concrete manufacturer.
d. Concrete paving subcontractor.

7.6 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 8 - PRODUCTS

8.1 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

8.2 STEEL REINFORCEMENT

A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from steel wire into flat sheets.

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.

C. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.

D. Tie Bars: ASTM A 615/A 615M, Grade 60, deformed.

8.3 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:
1. Portland Cement: ASTM C 150, gray or white portland cement Type I.
a. Fly Ash: ASTM C 618, Class C.
2. Blended Hydraulic Cement: ASTM C 595, Type IS, portland blast-furnace slag or Type IP, portland-pozzolan cement.

B. Normal-Weight Aggregates: ASTM C 33, Class 4S, uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.
1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: Potable and complying with ASTM C 94/C 94M.

D. Air-Entraining Admixture: ASTM C 260.

E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

8.4 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
a. Axim Italcementi Group, Inc.; Caltexol CIMFILM.
b. BASF Construction Chemicals, LLC; Confilm.
c. ChemMasters; Spray-Film.
d. Conspec by Dayton Superior; Aquafilm.
e. Dayton Superior Corporation; Sure Film (J-74).
f. Edoco by Dayton Superior; BurkeFilm.
g. Euclid Chemical Company (The), an RPM company; Eucobar.
h. Kaufman Products, Inc.; VaporAid.
i. Lambert Corporation; LAMBCO Skin.
j. L&M Construction Chemicals, Inc.; E-CON.
k. Meadows, W. R., Inc.; EVAPRE.
l. Metalcrete Industries; Waterhold.
m. Nox-Crete Products Group; MONOFILM.
n. Sika Corporation, Inc.; SikaFilm.
o. SpecChem, LLC; Spec Film.
p. Symons by Dayton Superior; Finishing Aid.
q. TK Products, Division of Sierra Corporation; TK-2120 TRI-FILM.
r. Unitex; PRO-FILM.
s. Vexcon Chemicals Inc.; Certi-Vex EnvioAssist.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Anti-Hydro International, Inc.; A-H Curing Compound #2 DR WB.
   b. ChemMasters; Safe-Cure Clear.
   c. Conspec by Dayton Superior; D.O.T. Resin Cure, DSSCC Clear Resin Cure.
   d. Dayton Superior Corporation; Day-Chem Rez Cure (J-11-W).
   e. Edoco by Dayton Superior; DSSCC Clear Resin Cure, Resin Emulsion Cure V.O.C. (Type I).
   f. Euclid Chemical Company (The), an RPM company; Kurez W VOX.
   g. Kaufman Products, Inc.; Thinfilm 420.
   h. Lambert Corporation; AQUA KURE - CLEAR.
   i. L&M Construction Chemicals, Inc.; L&M CURE R.
   j. Meadows, W. R., Inc.; 1100-CLEAR SERIES.
   k. Nox-Crete Products Group; Resin Cure E.
   l. SpecChem, LLC; PaveCure Rez.
   m. Symons by Dayton Superior; Resi-Chem Clear.
   n. Tamms Industries, Inc., Euclid Chemical Company (The); TAMMSCURE WB 30C.
   o. TK Products, Division of Sierra Corporation.
   p. Vexcon Chemicals Inc.; Certi-Vex Enviocure 100.

8.5 RELATED MATERIALS

A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork in preformed strips.

B. Epoxy Bonding Adhesive: ASTM C 881/C 881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:
   1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

C. Chemical Surface Retarder: Water-soluble, liquid, set retarder with color dye, for horizontal concrete surface application, capable of temporarily delaying final hardening of concrete to a depth of 1/8 to 1/4 inch.
   1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      a. ChemMasters; Exposee.
      b. Conspec by Dayton Superior; Delay S.
      c. Dayton Superior Corporation; Sure Etch (J-73).
      d. Edoco by Dayton Superior; True Etch Surface Retarder.
      e. Euclid Chemical Company (The), an RPM company; Surface Retarder Formula S.
      f. Kaufman Products, Inc.; Expose.
      g. Meadows, W. R., Inc.; TOP-STOP.
      h. Metalcrete Industries; Surftard.
      i. Nox-Crete Products Group; CRETE-NOX TA.
      j. Scofield, L. M. Company; LITHOTEX Top Surface Retarder.
      k. Sika Corporation, Inc.; Rugasol-S.
      l. SpecChem, LLC; Spec Etch.
      m. TK Products, Division of Sierra Corporation; TK-6000 Concrete Surface Retarder.
      n. Unitex; TOP-ETCH Surface Retarder.
      o. Vexcon Chemicals Inc.; Certi-Vex Envioset.

8.6 CONCRETE CURBS

A. Curbs to comply with the plan details.

8.7 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience. Use ASTM C150, Type 1 – portland cement. Aggregates per ASTM C33, Class 4.

1. See concrete requirements in geotechnical report.
2. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
3. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that meet or exceed requirements.

B. Proportion mixtures to provide normal-weight concrete with the following properties:
1. Compressive Strength (28 Days): 4000 psi.
2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45.
3. Slump Limit: 4 inches plus or minus 1 inch for paving and 2" plus or minus one inch for curbs and gutters.

C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
1. Air Content: 6 percent plus or minus 1 percent.

D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

F. Cementitious Materials: Limit percentage by weight of cementitious materials other than portland cement according to ACI 301 requirements as follows:
1. Fly Ash or Pozzolan: 25 percent.
2. Ground Granulated Blast-Furnace Slag: 50 percent.
3. Combined Fly Ash or Pozzolan, and Ground Granulated Blast-Furnace Slag: 50 percent, with fly ash or pozzolan not exceeding 25 percent.

8.8 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M, and ASTM C 1116/C 1116M. Furnish batch certificates for each batch discharged and used in the Work.
1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
1. For concrete batches of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
2. For concrete batches larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

PART 9 - EXECUTION

9.1 EXAMINATION

A. Notify testing agency when excavations have reached required subgrade.

B. Proof-roll subgrade below proposed pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 20 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades. Proof-roll within two days of paving operations.
1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by the Geotechnical Engineer, and replace with compacted backfill or fill as directed to the proper moisture content and density.

3. After proof rolling and repairing deep subgrade deficiencies, the entire subgrade should be scarified to a depth of 9 inches and uniformly compacted to at least 95% of the standard proctor maximum dry density to provide a uniform subgrade for pavement construction. Moisture content and density of subgrade to be checked within two days prior to the commencement of paving operations.
4. If necessary, clean materials such as crushed concrete or crushed stone may be used to stabilize areas where wet soil or water is present. Geogrid or structural geotextile may be used in conjunction with crushed concrete or stone to provide additional stabilization.

C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, without additional compensation.

D. Proceed with paving only after unsatisfactory conditions have been corrected.

9.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

9.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

9.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M.

F. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch (50-mm) overlap of adjacent mats.

9.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.

2. Provide tie bars at sides of paving strips where indicated.
3. Butt Joints: Use bonding agent or epoxy bonding adhesive at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
4. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
5. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
1. Locate expansion joints at intervals of 50 feet unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:
1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.
   a. Tolerance: Ensure that grooved joints are within 3 inches either way from centers of dowels.
2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
   a. Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.
3. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

9.6 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.

H. Screed paving surface with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.

K. Slip-Form Paving: Use design mixture for automatic machine placement. Produce paving to required thickness, lines, grades, finish, and jointing.
1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of slip-form paving machine during operations.

L. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

M. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

9.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.
2. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

9.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these as follows:
   1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
      a. Water.
      b. Continuous water-fog spray.
      c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
   2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period using cover material and waterproof tape.
   3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

9.9 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:
   1. Elevation: 1/4 inch.
   2. Thickness: Plus 3/8 inch, minus 1/4 inch.
   3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/2 inch.
   4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
   5. Lateral Alignment and Spacing of Dowels: 1 inch.
   6. Vertical Alignment of Dowels: 1/4 inch.
   7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
   8. Joint Spacing: 3 inches.
   9. Contraction Joint Depth: Plus 1/4 inch, no minus.
   10. Joint Width: Plus 1/8 inch, no minus.

9.10 CONCRETE CURBS

A. Install curbs per plan details.

9.11 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements outlined in the geotechnical report.

9.12 REPAIRS AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 321373 - CONCRETE PAVING JOINT SEALANTS

PART 10 - GENERAL

10.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and all sections of Request for Proposal (RFP) as issued by Fort Hays State University, apply to this Section.

10.2 SUMMARY

A. Section Includes:
1. Cold-applied joint sealants.
2. Hot-applied joint sealants.

B. Related Sections:
1. Section 321313 "Concrete Paving" for constructing joints in concrete pavement.

10.3 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Pavement-Joint-Sealant Schedule: Include the following information:
1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

10.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Product Certificates: For each type of joint sealant and accessory, from manufacturer.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for joint sealants.

10.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain each type of joint sealant from single source from single manufacturer.

C. Product Testing: Test joint sealants using a qualified testing agency.
1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

10.6 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 11 - PRODUCTS

11.1 MATERIALS

A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer based on testing and field experience.

B. Colors of Exposed Joint Sealants: As indicated by manufacturer's designations.

11.2 COLD-APPLIED JOINT SEALANTS

A. Single-Component, Nonsag, Silicone Joint Sealant for Concrete: ASTM D 5893, Type NS.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Crafco Inc., an ERGON company; RoadSaver Silicone.
   b. Dow Corning Corporation; 888.
   c. Pecora Corporation; 301 NS.

B. Single-Component, Self-Leveling, Silicone Joint Sealant for Concrete: ASTM D 5893, Type SL.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Crafco Inc., an ERGON company; RoadSaver Silicone SL.
   b. Dow Corning Corporation; 890-SL.
   c. Pecora Corporation; 300 SL.

C. Multicomponent, Pourable, Traffic-Grade, Urethane Joint Sealant for Concrete: ASTM C 920, Type M, Grade P, Class 25, for Use T.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Pecora Corporation; Urexpan NR-200.

11.3 HOT-APPLIED JOINT SEALANTS

A. Hot-Applied, Single-Component Joint Sealant for Concrete: ASTM D 3406.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Crafco Inc., an ERGON company; Superseal 444/777.

B. Hot-Applied, Single-Component Joint Sealant for Concrete and Asphalt: ASTM D 6690, Types I, II, and III.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Meadows, W. R., Inc.; Sealtight Hi-Spec or Sealtight 3405.
   b. Right Pointe; D-3405 Hot Applied Sealant.

11.4 JOINT-SEALANT BACKER MATERIALS

A. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.

B. Round Backer Rods for Cold- and Hot-Applied Joint Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

C. Round Backer Rods for Cold-Applied Joint Sealants: ASTM D 5249, Type 3, of diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.

D. Backer Strips for Cold- and Hot-Applied Joint Sealants: ASTM D 5249; Type 2; of thickness and width required to control joint-sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

11.5 PRIMERS

A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 12 - EXECUTION

12.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

12.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

12.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.

B. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install joint-sealant backings of kind indicated to support joint sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
   1. Do not leave gaps between ends of joint-sealant backings.
   2. Do not stretch, twist, puncture, or tear joint-sealant backings.
   3. Remove absorbent joint-sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install joint sealants using proven techniques that comply with the following and at the same time backings are installed:
   1. Place joint sealants so they directly contact and fully wet joint substrates.
   2. Completely fill recesses in each joint configuration.
   3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants according to the following requirements to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint:
   1. Remove excess joint sealant from surfaces adjacent to joints.
   2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.

F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.

12.4 CLEANING

A. Clean off excess joint sealant or sealant smears adjacent to joints as the Work progresses, by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

12.5 PROTECTION

A. Protect joint sealants, during and after curing period, from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations in repaired areas are indistinguishable from the original work.

12.6 PAVEMENT-JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Joints within cement concrete pavement:
   1. Joint Location:
      a. Expansion and isolation joints in cast-in-place concrete pavement.
      b. Other joints as indicated.
   2. Silicone Joint Sealant for Concrete: Single component, nonsag or single component, self-leveling.
   3. Urethane Joint Sealant for Concrete: Multicomponent, pourable.
   4. Hot-Applied Joint Sealant for Concrete: Single component.
   5. Joint-Sealant Color: Grey.

B. Joint-Sealant Application: Joints between cement concrete and asphalt pavement.
   1. Joint Location:
      a. Joints between concrete and asphalt pavement.
   2. Hot-Applied Joint Sealant for Concrete and Asphalt: Single component.
   3. Retain subparagraph below if joint sealants specified are offered in a choice of colors and colors are not specified on Drawings. Typically, color choice is not available for pavement joint sealants.
   4. Joint-Sealant Color: As indicated by manufacturer's designations.

END OF SECTION 321373

SECTION 321813 - SYNTHETIC GRASS SURFACING

PART 13 - GENERAL

13.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and all sections of Request for Proposal (RFP) as issued by Fort Hays State University, apply to this Section.

13.2 SUMMARY

A. Section includes synthetic grass surfacing for the purpose of collegiate softball competition.

B. Furnish all labor, materials, tools and equipment necessary to install, in place, all synthetic turf material as indicated on the plans and as specified herein. The installation of all new materials shall be performed in strict accordance with the manufacturer's written installation instruction, and in accordance with all approved shop drawings.

C. Related Requirements:
1. Section 312000 "Earth Moving" for preparation, compaction, and grading of granular base.
2. Section 334100 "Storm Utility Drainage Piping" for storm sewer installation.

13.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference at Tiger Stadium on the Fort Hays State University campus, Hays, KS.

13.4 ACTION SUBMITTALS

A. Product Data including lab test results for each type of product.

B. Shop Drawings: For synthetic grass surfacing.
1. Include sections and details.
2. Show locations of seams and method of seaming.
3. Show dimensioned of game lines. Indicate application method of each line and marking.
4. Show location and layout of team logo/graphics.

C. Samples: For each type of synthetic grass surfacing indicated.
1. All Turf Fabric Colors: 12 inches by 12 inches square.
2. Game Line Turf Fabric: 6" by actual width.
3. Infill Material: 4 oz. each type.
4. Seam Sample: 24 inches by 12 inches square with seam centered in sample.

D. Prior to the beginning of installation, the manufacturer/installer of the synthetic turf shall inspect the subbase and supply a Certificate of Subbase Acceptance for the purpose of obtaining manufacturer's warranty for the finished synthetic playing surface.

13.5 INFORMATIONAL SUBMITTALS

A. Contractor/Installer qualification Data

B. Product Test Reports: For each synthetic grass surfacing assembly.

C. Field quality-control reports.

D. Sample Warranties

E. Provide a list of existing synthetic turf installations completed over the past five years and currently in use on high school, collegiate, or professional sports fields, including location, owner representative, and telephone number for each.

13.6 PROJECT CLOSEOUT

A. Maintenance Data: Provide digital copy of all manuals and information necessary for proper care and preventative maintenance of synthetic grass surfacing, infill and underdrain system, including cleaning instructions. Maintenance manuals and information shall include precautions against all materials and methods that may be detrimental to the product finishes and performance.

B. Contractor/Installer shall provide on-site maintenance training for the Owner's maintenance personnel on how to properly maintain the field for the amount of time as required to fully demonstrate proper field maintenance.

13.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Infill Material: Minimum of two SuperSacks of each type.
2. Seaming Tape and Adhesive: One roll of seaming tape and one gallon of adhesive.
3. One new set of maintenance tools of type recommended by synthetic grass surfacing manufacturer for installation.

13.8 QUALITY ASSURANCE

A. Installer Qualifications
1. Contractor/Installer shall employ installers and supervisors who are trained and approved by manufacturer.
2. Contractor/Installer shall be certified and have a Certified Field Builder on staff during bidding and through final completion.
3. Contractor/Installer shall be a member in good standing with American Sports Builders Association (ASBA) during bidding and through final completion.

13.9 DELIVERY, STORAGE, AND HANDLING

A. Store materials in location and manner to allow installation of synthetic grass surfacing without excess disturbance of granular base.

13.10 WARRANTY

A. The special warranty in this article shall not deprive the Owner of rights the owner may have under other provisions of the Contract Documents and is intended to be and shall be in addition to, and run concurrent with, other warranties made by the contractor.

B. The turf contractor shall submit the synthetic turf manufacturer's warranty. The warranty shall guarantee the usability and playability of the synthetic turf system for its intended uses for an eight (8) year period commencing with the date of substantial completion. Warranty shall cover synthetic surfacing or base materials that fail in materials or workmanship.
1. The warranty submitted must have the following characteristics:
    a. Must provide coverage for eight (8) years from the date of Substantial Completion.
    b. Must warrant materials and workmanship.
    c. Must verify through a third party that the materials installed meet or exceed the product specifications.

d. Must have a provision to either make a cash refund or repair or replace such portions of the installed materials that are no longer serviceable to maintain a serviceable and playable surface.
e. Must be a manufacturer's warranty from a single source covering workmanship and all manufactured or procured materials.
f. Contractor must provide a full eight-year third party insured warranty on the synthetic turf with an aggregate coverage of $1,000,000.

2. Material and workmanship failures include, but are not limited to, the following:
a. Premature wear and tear provided the material is maintained in accordance with the provided maintenance instructions.
b. Seam failure, including raveling, delamination, and separation.
c. Settling of aggregate base.
d. Failure of system to meet performance requirements.

3. Yearly inspections and G_{max} testing per ASTM F355 shall be performed to maintain warranty.

13.11 EXISTING CONDITIONS

A. See Sections "312000 Earth Moving" and "311000 Site Clearing".

13.12 SURFACE AREA

A. The Turf Contractor to verify all dimensions provided in the drawings.

PART 14 - PRODUCTS

14.1 MATERIALS

A. Synthetic turf shall be comprised of a helix shaped monofilament fiber and a secondary grass-like fiber tufted and coated with a secondary backing of high-grade polyurethane. The synthetic turf yarn shall be comprised of a C8-based linear low density polyethylene polymer (LLDPE) with a 10,000 PPM UV Stabilizer. The fibers shall be tufted to a finished pile height of approximately 1 ¼" – 2 ¼". The turf fabric shall be filled with a layered system of pea gravel and rubber. Alternate products submitted and approved as equal are acceptable.

B. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, should be able to withstand full climatic exposure in all climates, be resistant to insect infestations, rot, fungus, and mildew; to ultraviolet light and heat degradation, and shall have the basic characteristic of flow through-drainage allowing free movement of surface run-off through the turf fabric where such water may flow to the existing subbase and into the field drainage system.

C. The finished playing surface shall appear as mowed grass with no irregularities and shall afford excellent traction for conventional athletic shoes of al types. The finished surface shall resist abrasion and cutting from normal use. The installed system shall be suitable for baseball, softball, PE classes, intramurals and recreational use.

D. Pile yarn (polyethylene) shall be proven athletic caliber yarn designed specifically for outdoor use and stabilized to resist the effect of ultraviolet degradation, heat, foot traffic, water and airborne pollutants.

E. Infill materials shall be layered system of pea gravel and rubber in accordance with the manufacturer's recommendations and meet all specified performance and testing requirements.

F. See plan details and related Sections for Perimeter and interior edge details, underground storm sewer piping and connections.

G. Material and Performance Properties

STANDARD	PROPERTY	SPECIFICATION
ASTM D418/D5848	Pile Weight Includes an 18 oz polyethylene secondary yarn (grass-like thatch)	Infield 50 oz. / SY Hi-Traffic 80 oz. / SY Outfield 50 oz. / SY Warning Track 50 oz. / SY
ASTM D5848	Primary and Secondary Backing Weight	7.9 oz. / SY
ASTM D5848	Secondary Coating Weight	22 oz. / SY
ASTM D5848	Total Weight	Infield 79.9 oz. / SY Hi-Traffic 109.9 oz. / SY Outfield 79.9 oz. / SY Warning Track 79.9 oz. / SY
ASTM D1907	Yarn Denier primary yarn Yarn Denier secondary yarn	12,400 5,000
ASTM D418/D5848	Pile Height	Infield 1 ½" – 2" Hi-Traffic 1 ¼" – 1 ¾" Outfield 1 ¾" – 2 ¼" Warning Track 1 ¼" – 1 ¾"
ASTM D5793	Tufting Gauge	½"
ASTM D5848	Primary Backing	Tri-layer woven Polypropylene
ASTM D5848	Secondary Coating	Polyurethane
ASTM D1335	Tuft Bind without Infill	10 lbs. +/-
ASTM D1682/D5034	Grab Tear (length)	>300 lbs. Force
ASTM D1682/D5034	Grab Tear (width)	>350 lbs. Force
ASTM D4991	Carpet Permeability	>40 inches/hour

ASTM D2859	Flammability (Pill Burn)	Pass
ASTM F355	G-max (Impact Attenuation)	<200 over warranty life
ASTM E-11	Infill Weight	4.5-5.5 lbs.
	Infill Ratios Infield Hi-Traffic Outfield Warning Track	 70% pea gravel / 30% rubber 80% pea gravel / 20% rubber 65% pea gravel / 35% rubber 100% pea gravel and sand
	Fabric Width	15’
	Perforation	3/16” Holes 4”x4”
ASTM D3218	Yarn	Average thickness 170 microns C8 LLDPE Resin 10,000 PPM UV stabilizer
All Characteristics listed above are nominal +/- 5%		

PART 15 - EXECUTION

15.1 General

A. The installation shall be performed in full compliance with approved shop drawings.

B. Only factor-trained technicians, skilled in the installation of athletic caliber synthetic turf systems working under the direct supervision of the synthetic turf manufacturer’s installation supervisors shall undertake the placement of the system.

15.2 INSTALLATION

A. The subbase and curbs shall be inspected by the Engineer or Sitework Contractor by means of a laser level and plotted on a 10-foot grid. Based upon the Turf Contractor’s inspection of the topological survey, the Sitework Contractor shall fine grade the subbase suitably - including properly rolling and compacting the base to achieve a surface planarity within ¼” in 10 feet (+0, -1/4”0). OWNER, ENGINEER OR PRIME CONTRACTOR SHALL NOT APPROVE THE SUBBASE FOR TOLERANCE TO GRADE WITHOUT OBTAINING THE TOPOLOGICAL SURVEY.

B. The contractor shall thoroughly inspect all materials delivered to the site both for quality and quantity to assure that the entire installation shall have sufficient materials to maintain the schedule and proper mixing ratios.

C. Synthetic turf shall be loose laid across the field and attached to the perimeter edge detail. Turf shall be of sufficient length to permit full cross-field installation. No head or cross seams will be allowed, expect as required for inlaid fabric striping or to accommodate programmed cut-outs.

D. All seams shall be flat, tight, and permanent with no separation or fraying. All seams and markings shall be adhered to a special tape with a single component, high strength polyurethane adhesive applied per the Turf Supplier’s standard procedures for outdoor applications.

E. Infill materials shall be properly applied in numerous thin lifts using special broadcasting equipment to produce a layered system of pea gravel and SBR rubber particles. The turf shall be raked and brushed properly as the mixture is applied. The layered system of pea gravel and rubber infill materials can only be applied when the turf fabric is dry.

F. Should the ambient outdoor temperatures fall below 45 degrees Fahrenheit, the contractor and Owner will discuss available options and/or stoppage of work.

15.3 FIELD MARKINGS AND DECORATIONS

A. Field markings and decorations shall be installed in accordance with approved project shop drawings.

15.4 CLEAN UP

A. Turf Contractor shall provide the labor, supplies and equipment as necessary for final cleaning of surfaces and installed items.

B. All usable remnants of new material shall become the property of the Owner.

C. The Turf Contractor shall keep the area clean throughout the project and clear of debris.

D. Surfaces, recesses, enclosures, etc., shall be cleaned as necessary to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the Owner.

15.5 OTHER MATERIALS AND EQUIPMENT

A. Provide one (1) towed, non-powered Turf Sweeper with hitch, excluding prime mover vehicle. The sweeper attachment shall be of sufficient size to cover a 36” wide swath in a single pass. The sweeper attachment shall be fitted with synthetic bristle brushes as recommended by the synthetic turf manufacturer and shall be used primarily to collect surface debris.

END OF SECTION 321813

SECTION 323113 - CHAIN LINK FENCES AND GATES

PART 16 - GENERAL

16.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and all sections of Request for Proposal (RFP) as issued by Fort Hays State University, apply to this Section.

16.2 SUMMARY

A. Section Includes:
1. Chain-link fences.
2. Gates: Swing.

16.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.
1. Fence and gate posts, rails, and fittings.
2. Chain-link fabric, reinforcements, and attachments.
3. Gates and hardware.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show accessories, hardware, gate operation, and operational clearances.

16.4 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

16.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
a. Faulty operation of gates.
b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
2. Verify available warranties and warranty periods for units and components and insert number below.
3. Warranty Period: Two years from date of Substantial Completion.

PART 17 - PRODUCTS

17.1 CHAIN-LINK FENCE FABRIC

A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with CLFMI Product Manual and with requirements indicated below:
1. ASTM standards and CLFMI Product Manual limit height of fence fabric to 12 feet (3.66 m).
2. Fabric Height: Fence to surround field to be 8’ high.
3. Steel Wire Fabric: Wire with a diameter of 0.148 inch, 9 gauge

4. Mesh Size: 2 inches
   a. Zinc-Coated Fabric: ASTM A 392, Type II, Class 1, 1.2 oz./sq. ft. with zinc coating applied after weaving.
   b. Vinyl-Coated Fabric: ASTM F 668, Class 2b fused over zinc -coated steel wire.
      1) Color: Black, complying with ASTM F 934.
   c. Coat selvage ends of fabric, that is metallic coated before the weaving process, with manufacturer's standard clear protective coating.
5. Selvage: Knuckled at both selvages.

17.2 FENCE FRAMING

A. Posts and Rails: Comply with ASTM F 1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043based on the following:
1. Fence Height: As indicated on Drawings.
2. Light Industrial Strength: Material Group IC-L, round steel pipe, electric-resistance-welded pipe.
   a. Line Post: 2.375 inches in diameter, SS40 (3.12 lbs/ft)
   b. End, Corner and Pull Post: 2.875 inches in diameter, SS40 (4.64 lbs/ft)
3. Horizontal Framework Members: Top rails complying with ASTM F 1043.
   a. Top Rail: 1.66 inches in diameter.
4. Metallic Coating for Steel Framing:
   a. Type A zinc coating.
5. Vinyl coating over metallic coating.
   a. Color: Black, complying with ASTM F 934.

17.3 TENSION WIRE

A. Vinyl-Coated Steel Wire: 0.177-inch diameter, tension wire complying with ASTM F 1664, Class 2b fused zinc-coated steel wire.
1. Color: Black, complying with ASTM F 934.

17.4 SWING GATES

A. General: Comply with ASTM F 900 for gate posts and single and double swing gate types.
1. Gate Leaf Width: As indicated on drawings.
2. Gate Fabric Height: As indicated on drawings.

B. Pipe and Tubing:
1. Zinc-Coated Steel: Comply with ASTM F 1043 and ASTM F 1083; protective coating and finish to match fence framing.
2. Gate Posts: Round tubular steel, 2.875 inches in diameter (5.79 lbs/ft)
3. Gate Frames and Bracing: Round tubular steel matching fencing

C. Frame Corner Construction: Assembled with corner fittings.

D. Hardware:
1. Hinges: 360-degree inward and outward swing.
2. Latches permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
3. Provide a gate stop for all gates.

17.5 HORIZONTAL SLIDE GATES

A. General: Comply with ASTM F1184 for gate posts and single sliding gate types.
1. Contractor to provide design of horizontal sliding gate and submit to Architect for approval. See size of gate on plans. Gate height to match fence height.

B. Pipe and Tubing:

1. Zinc-Coated Steel: Protective coating and finish to match fence framing.
2. Gate Posts: Round tubular steel, 4.00 inches in diameter (9.11 lf/ft), coating matching fencing.
3. Gate Frames and Bracing: Round tubular steel, matching fencing

C. Frame Corner Construction: Welded and 3/8 inch diameter, adjustable truss rods for panels 5 feet or wider

D. Hardware:
1. Provide latch. Padlock and chain to be provided by the Owner.
2. Tire with Post: Provide inflatable tire on galvanized post at leading edge of gate. Tire shall swivel on post.

17.6 FITTINGS

A. General: Comply with ASTM F 626.

17.7 GROUT AND ANCHORING CEMENT

A. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.

B. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer, for exterior applications.

PART 18 - EXECUTION

18.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
1. Do not begin installation before final grading is completed unless otherwise permitted by Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

18.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

18.3 INSTALLATION, GENERAL

A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements indicated.

18.4 CHAIN-LINK FENCE INSTALLATION

A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.

2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
   a. Concealed Concrete: Top 2 inches below grade to allow covering with concrete sidewalk.

C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 30 degrees or more.

D. Line Posts: Space line posts uniformly at 8' o.c.

E. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:
   1. Extended along bottom of fence fabric. Install top tension wire through post cap loops. Install bottom tension wire within 6 inches of bottom of fabric and tie to each post with not less than same diameter and type of wire.

F. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

G. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1 inch between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

H. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
   1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.

18.5 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

18.6 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

END OF SECTION 323113

SECTION 334100 - STORM UTILITY DRAINAGE PIPING

PART 19 - GENERAL

19.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and all sections of Request for Proposal (RFP) as issued by Fort Hays State University, apply to this Section.

19.2 SUMMARY

A. Section Includes:
1. Pipe and fittings.
2. Cleanouts.
3. PVC drain basins.
4. Stormwater inlets.
5. End sections / pipe outfalls.

19.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings:
1. Drain Basin: Include elevations, details, covers, and depths.
2. End Sections: Product specifications and grate protection.

19.4 DELIVERY, STORAGE, AND HANDLING

A. Do not store plastic manholes, pipe, and fittings in direct sunlight.

B. Protect pipe, pipe fittings, and seals from dirt and damage.

C. Handle manholes according to manufacturer's written rigging instructions.

D. Handle stormwater inlets according to manufacturer's written rigging instructions.

19.5 PROJECT CONDITIONS

A. Interruption of Existing Storm Drainage Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
1. Notify Construction Manager and Owner no fewer than two days in advance of proposed interruption of service.

PART 20 - PRODUCTS

20.1 PE PIPE AND FITTINGS

A. HDPE Dual-Wall Pipe and Fittings NPS 3 to NPS 10: AASHTO M 252M, Type S, with smooth waterway for coupling joints.
1. Soiltight Couplings: AASHTO M 252M, corrugated, matching tube and fittings.

B. HDPE Dual-Wall Pipe and Fittings NPS 12 to NPS 60: AASHTO M 294M, Type S, with smooth waterway for coupling joints.
   1. Soiltight Couplings: AASHTO M 294M, corrugated, matching pipe and fittings.

20.2 PVC PIPE AND FITTINGS

A. Pipe: ASTM D1785 Schedule 40 PVC, with plain ends for solvent-cemented joints.

B. PVC pipe to be used as riser pipe for building downspouts below grade.

20.3 CLEANOUTS

A. Plastic Cleanouts:
   1. Manufacturers: Subject to compliance with requirements available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Canplas LLC.
      b. IPS Corporation.
      c. NDS Inc.
      d. Plastic Oddities; a division of Diverse Corporate Technologies, Inc.
      e. Sioux Chief Manufacturing Company, Inc.
      f. Zurn Light Commercial Products Operation; Zurn Plumbing Products Group.
   2. Description: PVC body with PVC threaded plug. Include PVC sewer pipe fitting and riser to cleanout of same material as sewer piping.

20.4 PVC DRAIN BASINS

A. Drain basins shall be manufactured from PVC pipe stock conforming to ASTM D1784 cell class 12454. Structure and pipe connections shall be watertight conforming to ASTM D3212.
   1. Frames and grates shall be ductile iron and shall meet loading requirements shown.

20.5 PIPE OUTLETS

A. Install concrete toe wall on pipe end section and turf reinforcement mat at pipe end sections. See plans for location and details.

B. Pipe outfalls shall have HDPE pre-manufactured end sections.

C. HDPE end sections shall conform to ASTM D3530 minimum cell classification 213320C. End sections shall have a toe plate to cast into a concrete toe wall.

20.6 CONCRETE

A. General: Cast-in-place concrete according to ACI 318, and the following:
   1. Cement: ASTM C 150, Type II.
   2. Fine Aggregate: ASTM C 33, sand.
   3. Coarse Aggregate: ASTM C 33, crushed gravel.
   4. Water: Potable.

B. Portland Cement Design Mix: 4000 psi minimum, with 0.45 maximum water/cementitious materials ratio.
   1. Reinforcing Fabric: ASTM A 185/A 185M, steel, welded wire fabric, plain.
   2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 deformed steel.

PART 21 - EXECUTION

21.1 EARTHWORK

A. Excavation, trenching, and backfilling are specified in Section 312000 "Earth Moving."

21.2 PIPING INSTALLATION

A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.

B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.

C. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

D. When installing pipe under streets or other obstructions that cannot be disturbed, use pipe-jacking process of microtunneling.

E. Install gravity-flow, nonpressure drainage piping according to the following:
1. Install piping pitched down in direction of flow.
2. Install PE corrugated sewer piping according to ASTM D 2321.
3. Install PVC sewer piping according to ASTM D 2321 and ASTM F 1668.

21.3 PIPE JOINT CONSTRUCTION

A. Join gravity-flow, nonpressure drainage piping according to the following:
1. Join corrugated PE piping according to ASTM D 3212 for push-on joints.
2. Join PVC cellular-core piping according to ASTM D 2321 and ASTM F 891 for solvent-cemented joints.
3. Join dissimilar pipe materials with nonpressure-type flexible couplings.

21.4 CLEANOUT INSTALLATION

A. Install cleanouts and riser extensions from sewer pipes to cleanouts at grade. Install piping so cleanouts open in direction of flow in sewer pipe.
1. Use Light-Duty, top-loading classification cleanouts in earth or unpaved foot-traffic areas.
2. Use Heavy-Duty, top-loading classification cleanouts in vehicle-traffic service areas.

B. Set cleanout frames and covers in concrete pavement and roads with tops flush with pavement surface.

21.5 PVC DRAIN BASINS

A. PVC drain basins shall be installed per ASTM D2321 and manufacturer specifications.

21.6 CONNECTIONS

A. Connect nonpressure, gravity-flow drainage piping in building's storm building drains specified in Section 221413 "Storm Drainage Piping."

B. Make connections to piping.
   1. Use commercially manufactured wye fittings for piping branch connections unless a structure is indicated.
   2. Make connections to structures by cutting into existing unit and creating an opening large enough to allow 3 inches of concrete to be packed around entering connection. Cut end of connection pipe passing through pipe or structure wall to conform to shape of and be flush with inside wall unless otherwise indicated. On outside of pipe, manhole, or structure wall, encase entering connection in 6 inches of concrete for minimum length of 12 inches to provide additional support of collar from connection to undisturbed ground.
      a. Use concrete that will attain a minimum 28-day compressive strength of 3000 psi unless otherwise indicated.
      b. Use epoxy-bonding compound as interface between new and existing concrete and piping materials.
   3. Protect existing piping, manholes, and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

21.7 IDENTIFICATION

A. Materials and their installation are specified in Division 31 Section "Earth Moving." Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.
   1. Use warning tape or detectable warning tape over ferrous piping.
   2. Use detectable warning tape over nonferrous piping and over edges of underground structures.

21.8 FIELD QUALITY CONTROL

A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
   1. Submit separate reports for each system inspection.
   2. Defects requiring correction include the following:
      a. Alignment: Less than full diameter of inside of pipe is visible between structures.
      b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
      c. Damage: Crushed, broken, cracked, or otherwise damaged piping.
      d. Infiltration: Water leakage into piping.
      e. Exfiltration: Water leakage from or around piping.
   3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
   4. Reinspect and repeat procedure until results are satisfactory.

B. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
   1. Do not enclose, cover, or put into service before inspection and approval.
   2. Test completed piping systems according to requirements of authorities having jurisdiction.
   3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
   4. Submit separate report for each test.
   5. Gravity-Flow Storm Drainage Piping: Test according to requirements of authorities having jurisdiction, UNI-B-6, and the following:
      a. Exception: Piping with soiltight joints unless required by authorities having jurisdiction.
      b. Option: Test plastic piping according to ASTM F 1417.
      c. Option: Test concrete piping according to ASTM C 924.

C. Leaks and loss in test pressure constitute defects that must be repaired.

D. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

21.9 CLEANING

A. Clean interior of piping of dirt and superfluous materials. Flush with water.

END OF SECTION 334100

Evaluation Form

The evaluation form below must be completed with the details of the product being submitted for evaluation. Must meet or exceed specifications indicated below and on pages 48 and 49. All characteristics listed must be within +/- 5%. Please bring the completed form and a detailed laboratory testing report to the pre-bid meeting on Tuesday, March 8, 2022 at 1:30 p.m. and also email to purchasing@fhsu.edu as well.

Vendor Name _____ **Product Name** _____

STANDARD	PROPERTY	SPECIFICATION --- PRODUCT SUBMITTED
ASTM D418/D5848	Pile Weight Includes an 18 oz polyethylene secondary yarn (grass-like thatch)	Infield 50 oz. / SY - _____ Hi-Traffic 80 oz. / SY - _____ Outfield 50 oz. / SY- _____ Warning Track 50 oz. / SY- _____
ASTM D5848	Primary and Secondary Backing Weight	7.9 oz. / SY - _____
ASTM D5848	Secondary Coating Weight	22 oz. / SY- _____
ASTM D5848	Total Weight	Infield 79.9 oz. / SY - _____ Hi-Traffic 109.9 oz. / SY - _____ Outfield 79.9 oz. / SY - _____ Warning Track 79.9 oz. / SY - _____
ASTM D1907	Yarn Denier primary yarn Yarn Denier secondary yarn	12,400 - _____ 5,000 - _____
ASTM D418/D5848	Pile Height	Infield 1 ½" – 2" - _____ Hi-Traffic 1 ¼" – 1 ¾"- _____ Outfield 1 ¾" – 2 ¼"- _____ Warning Track 1 ¼" – 1 ¾"- _____
ASTM D5793	Tufting Gauge	½" - _____

ASTM D5848	Primary Backing	Tri-layer woven Polypropylene _____
ASTM D5848	Secondary Coating	Polypropylene _____
ASTM D1335	Tuft Bind without Infill	10 lbs. +/- _____
ASTM D1682/D5034	Grab Tear (length)	>300 lbs. Force _____
ASTM D1682/D5034	Grab Tear (width)	>350 lbs. Force _____
ASTM D4991	Carpet Permeability	>40 inches/hour _____
ASTM D2859	Flammability (Pill Burn)	Pass _____
ASTM F355	G-max (Impact Attenuation)	<200 over warranty life _____
ASTM E-11	Infill Weight	4.5-5.5 lbs. _____
	Infill Ratios	
	Infield	70% pea gravel / 30% rubber _____% /_____%
	Hi-Traffic	80% pea gravel / 20% rubber _____% /_____%
	Outfield	65% pea gravel / 35% rubber _____% /_____%
	Warning Track	100% pea gravel and sand _____% /_____%
	Fabric Width	15’ _____
	Perforation	3/16” Holes 4”x4” - _____
ASTM D3218	Yarn	Average thickness 170 microns C8 LLDPE Resin 10,000 PPM UV stabilizer _____
All Characteristics listed above are nominal +/- 5%		

Notes:

_____

_____

COST PROPOSAL

Vendor Name: _____

Base:

Project provides for the removal of existing grass turf and portions of chain link fencing. Contractor to perform subgrade modification, install new under turf drainage system and new synthetic turf. Work also includes concrete slabs, perimeter curb, and installation of portions of new chain link fencing. Work is to be completed between **May 16, 2022 through August 15, 2022.**

$_____ (lot price)

Alternate No. 1

On an annual basis replace heavily worn turf at locations such as home plate.

$_____ (lot price)

State of Kansas
Fort Hays State University
DA-146a (Rev. 12/19)

CONTRACTUAL PROVISIONS ATTACHMENT

Important: This form contains mandatory contract provisions and must be attached to or incorporated in all copies of any contractual agreement. If it is attached to the vendor/contractor's standard contract form, then that form must be altered to contain the following provision:

"The Provisions found in Contractual Provisions Attachment (Form DA-146a, Rev. 12/19), which is attached hereto, are hereby incorporated in this contract and made a part thereof."

The parties agree that the following provisions are hereby incorporated into the contract to which it is attached and made a part thereof.

1. **Controlling Provisions**: It is expressly agreed that the terms of each and every provision in this attachment shall prevail and control over the terms of any other conflicting provision in any other document relating to and a part of the contract in which this attachment is incorporated. Any terms that conflict or could be interpreted to conflict with this attachment are nullified.

2. **Disclaimer Of Liability**: No provision of this contract will be given effect that attempts to require Fort Hays State University or any of its affiliates (“University”) to defend, hold harmless, or indemnify any contractor or third party for any acts or omissions. The terms, conditions, and limitations of liability of the State of Kansas, the University, and their employees are defined under the Kansas Tort Claims Act (K.S.A. 75-6101 et seq.).

3. **Termination Due To Lack Of Funding Appropriation**: If, in the judgment of the Director of Accounts and Reports, Department of Administration, sufficient funds are not appropriated to continue the function performed in this agreement and for the payment of the charges hereunder, the University may terminate this agreement at the end of its current fiscal year. The University agrees to give written notice of termination to contractor at least 30 days prior to the end of its current fiscal year, and shall give such notice for a greater period prior to the end of such fiscal year as may be provided in this contract, except that such notice shall not be required prior to 90 days before the end of such fiscal year. Contractor shall have the right, at the end of such fiscal year, to take possession of any equipment provided under the contract for which it has not been paid. The University will pay contractor all regular contractual payments incurred through the end of such fiscal year, plus contractual charges incidental to the return of any such equipment. Upon termination of the agreement under this provision, title to any such equipment shall revert to contractor at the end of the University’s current fiscal year. The termination of the contract pursuant to this paragraph shall not cause any penalty to be charged to the agency or the contractor.

4. **Kansas Law and Venue**: All matters arising out of or related to this agreement shall be subject to, governed by, and construed according to the laws of the State of Kansas, and jurisdiction and venue of any suit arising out of or related to this agreement shall reside only in courts located in the State of Kansas.

5. **Required Non-Discrimination Provision**: Contractor agrees to comply with all applicable state and federal anti-discrimination laws. Contractor specifically agrees: (a) to comply with the Kansas Act Against Discrimination (K.S.A. 44-1001 et seq.) and the Kansas Age Discrimination in Employment Act (K.S.A. 44-1111 et seq.) and the applicable provisions of the Americans With Disabilities Act (42 U.S.C. 12101 et seq.) (ADA) and to not discriminate against any person because of race, religion, color, sex, disability, national origin or ancestry, or age in the admission or access to, or treatment or employment in, its programs or activities; (b) to include in all solicitations or advertisements for employees, the phrase "equal opportunity employer"; (c) to comply with the reporting requirements set out at K.S.A. 44-1031 and K.S.A. 44-1116; (d) to include those provisions in every subcontract or purchase order so that they are binding upon such subcontractor or vendor; (e) that a failure to comply with the reporting requirements of (c) above or if the contractor is found guilty of any violation of such acts by the Kansas Human Rights Commission or if it is determined that the contractor has violated applicable provisions of ADA, such violation(s) shall constitute a breach of contract and the contract may be cancelled, terminated or suspended, in whole or in part, by the University. The provisions of this paragraph (except the provisions relating to the ADA) are not applicable to a contractor who employs fewer than four employees during the term of such contract or whose contracts with the University cumulatively total $5,000 or less during the fiscal year.

Contractor shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take

affirmative action to employ and advance individuals in employment without regard to race, color, religion, sex, national origin, protected veteran status or disability.

6. **Acceptance Of Contract**: This contract shall not be considered accepted, approved or otherwise effective until the statutorily required approvals and certifications have been given.

7. **Arbitration, Damages, Warranties**: Notwithstanding any language to the contrary, no interpretation of this contract shall find that the University has agreed to binding arbitration, or the payment of damages or penalties. Further, the University does not agree to pay attorney fees, costs, or late payment charges beyond those available under the Kansas Prompt Payment Act (K.S.A. 75-6403), and no provision will be given effect that attempts to exclude, modify, disclaim or otherwise attempt to limit any damages or rights of action available to the University at law, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.

8. **Authority To Contract**: By signing this contract, the representative of the contractor thereby represents that such person is duly authorized by the contractor to execute this contract on behalf of the contractor and that the contractor agrees to be bound by the provisions thereof.

9. **Responsibility For Taxes**: The University shall not be responsible for, nor indemnify a contractor for, any federal, state or local taxes which may be imposed or levied upon the subject matter of this contract.

10. **Insurance**: The University shall not be required to purchase any insurance against loss or damage to property or any other subject matter relating to this contract, nor shall this contract require the University to establish a "self-insurance" fund to protect against any such loss or damage.

11. **Information/Confidentiality**: As a state agency, the University's contracts are generally public records. Accordingly, no provision of this contract shall restrict the University's ability to produce this contract in response to a lawful request or from otherwise complying with the Kansas Open Records Act (K.S.A. 45-215 et seq.). Moreover, no provision of this contract shall be construed as limiting the Legislative Division of Post Audit from having access to information pursuant to K.S.A. 46-1101 et seq.

12. **The Eleventh Amendment**: The Eleventh Amendment is an inherent and incumbent protection of the State of Kansas and need not be reserved, but the University here reiterates that nothing in or related to this contract shall be deemed a waiver of the Eleventh Amendment.

13. **Campaign Contributions / Lobbying**: Funds provided through a grant award or contract shall not be given or received in exchange for the making of a campaign contribution. No part of the funds provided through this contract shall be used to influence or attempt to influence an officer or employee of any State of Kansas agency or a member of the Legislature regarding any pending legislation or the awarding, extension, continuation, renewal, amendment or modification of any government contract, grant, loan, or cooperative agreement.

14. **Privacy of Student Records**: Contractor understands that the University is subject to FERPA (Family Educational Rights and Privacy Act, 20 U.S.C. § 1232g) and agrees to handle any student education records it receives pursuant to this Agreement in a manner that enables the University to be compliant with FERPA and its regulations. Contractor agrees to protect the privacy of student data and educational records in a commercially reasonable manner and shall not transmit, share, or disclose any data about a student without the student's written consent, except to other University officials who seek the information within the context of his/her professionally assigned responsibilities and used within the context of official University business. Contractor shall promptly report to the University any disclosure of University's student educational records.

15. **Boycotts of Israel Prohibited**: Kansas 2018 HB 2482 generally prohibits the University from entering into a contract with a company to acquire or dispose of services, supplies, information technology or construction, unless such company submits a written certification that such company is not currently engaged in a boycott of Israel. For the purposes of this Section, "company" means an organization, association, corporation, partnership, venture or other entity, its subsidiary or affiliate, that exists for profitmaking purposes or to otherwise secure economic advantage. Accordingly, by executing this contract, Contractor hereby certifies that it is not currently engaged in a boycott of Israel.

16. **Harassment Policy:** Fort Hays State University prohibits sexual harassment, discrimination, and retaliation. The University's applicable policies on sexual harassment, discrimination, and retaliation are available at https://fhsu.edu/policies/documents/harassment-policy/index.pdf and include the procedures for submitting a complaint of sexual harassment, discrimination, or retaliation, including an anonymous complaint. Contractor and its employees, officials, agents, or subcontractors shall at all times comply with the University's policies on sexual harassment, discrimination, and retaliation.

GSI Engineering

4503 E. 47th St. S.
Wichita, KS 67210
(316) 554-0725 tel
(316) 554-0744 fax
www.gsinetwork.com

GEOTECHNICAL EXPLORATION REPORT
FHSU Tiger Stadium Turf Subgrade
401 Custer Drive, Fort Hays State University
Hays, Kansas

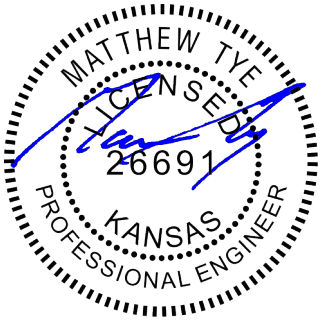
GSI Project No. 2173198
December 23, 2021

Prepared by:

GSI Engineering, LLC
4503 East 47th Street South
Wichita, Kansas 67210
(316) 554-0725

Prepared for:

MKEC Engineering, Inc.
11827 W. 112th Street, Suite 200
Overland Park, Kansas 66210
(316) 684-9600



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Kansas.

December 23, 2021
Matthew N. Tye, P.E. Date

My license renewal date is April 30, 2023.
Sections covered by this seal: Sections 1 through 6 and all pages included as appendices within this bound document.

GSI

TABLE OF CONTENTS

APPENDICES

1. INTRODUCTION

1.1 General

This report summarizes the findings of our geotechnical exploration for the proposed Tiger Stadium Turf replacement located at 401 Custer Drive on the Fort Hays State University Campus in Hays, Kansas. The scope of work was outlined in our proposal dated September 30, 2021. Mr. Mark Buckingham of MKEC authorized this exploration on November 11, 2021.

The purpose of this geotechnical study is to explore the subsurface conditions at the proposed site with exploratory borings, evaluate the engineering properties of the subsurface materials with appropriate field and laboratory tests, and perform engineering analyses for developing design and construction recommendations for the proposed project.

1.2 Project Description

The proposed project will be located at the Tiger Stadium Baseball Complex at Fort Hays State University in Hays, Kansas. We understand the development will consist of the replacing the existing grass with a synthetic turf. We estimate that the turf layer will be underlain by a 2-3 inch sand cushion with a subsequent 8-10 inch layer of granular material underneath.

We assume site grading required to accomplish the turf installation will be minimal, with cuts or fills less than 2 feet. Please contact us if site grading will be more significant so we may evaluate and adjust our recommendations if necessary.

A site and boring location plan are included in Appendix A for reference.

2. FIELD EXPLORATION

We drilled 3 borings for this geotechnical exploration on December 20, 2021 with a CME-45 truck-mounted drilling rig using 4-inch diameter continuous flight augers. We drilled the borings within the stadium athletic field to a depth of approximately 10 feet below the site grade at the time of our exploration.

We selected boring locations based on the existing location of the athletic field. GSI personnel established field locations using a hand-held GPS unit. Boring locations in relation to existing and proposed features are indicated on the Boring Location Plan included in Appendix A. The boring locations should be considered accurate only to the degree implied by the methods used in their determination.

We interpolated ground surface elevations at the boring locations using elevations obtained from ground surface profiling provided by Google Earth. The ground surface elevations at the borings are shown on the boring logs included in Appendix B. The boring elevations should be considered accurate only to the degree implied by the methods used in their determination.

Our drill crew obtained soil samples at the intervals shown on the boring logs in Appendix B. Recovered samples were sealed in plastic containers, labeled, and protected for transportation to the laboratory for further examination, testing, and classification.

We obtained split-barrel samples (designated “Split Spoon” or “S” samples) while performing Standard Penetration Tests (SPT) with a 1-3/8 inch I.D. thick-walled sampler, driven using an automatic hammer in general accordance with ASTM D1586, “*Penetration Test and Split-Barrel Sampling of Soils*.” The “N” value, reported in blows per foot (bpf), equals the number of blows required to drive the sampler through the last 12 inches of the 18-inch sample interval using a 140-pound hammer falling 30 inches.

Our drilling personnel prepared field boring logs during drilling operations. These field logs report drilling and sampling methods, sampling intervals, groundwater measurements and the subsurface conditions we encountered. At the conclusion of drilling, our drill crew made groundwater measurements and backfilled the borings in accordance with Kansas state regulations.

3. SITE CONDITIONS

3.1 Regional Geology

This project lies within the Smoky Hills geomorphic region of north central Kansas. Where the bedrock is exposed at the surface, the topography in this region is strongly sloped or steep, while the areas mantled by more recent deposits exhibit a relatively level or gently rolling surface. The surface soils in the northern portion of the region generally comprise wind-blown deposits of silt and clay particles (loess) as well as alluvial and terrace deposits associated with current and former river channels. The bedrock in the Smoky Hills is of Cretaceous Age and includes the Dakota Sandstone in the east, the Niobrara Chalk in the west, and the Greenhorn Limestone (occasionally referred to as the "Fencepost Limestone") in the central portion of the region.

3.2 Surface Conditions

The project site comprises the existing baseball field inside the Tiger Stadium Baseball Complex. The site slopes gently downgradient from northwest to southeast towards the outfield

3.3 Subsurface Conditions

Although we observed some variability, the subsurface materials we encountered within the depths of exploration generally comprised 3 to 4 inches of topsoil overlying lean to fat clay soils transitioning to poorly graded sand with varying amounts of clay. General descriptions of the strata we encountered are presented below, while more detailed subsurface information is presented on the boring logs located in Appendix B. Please note that the indicated depths are relative to the site grade at the time of our exploration.

Stratum 1

We encountered lean to fat clay soils underlying the surficial material in each of our three borings extending to depths between 6.5 feet below grade in B-1 and B-2 to the boring termination depth of 10 feet below grade in B-3. This material was generally described as brown with dark brown or dark brown and slightly moist to moist. We measured Standard Penetration Test (SPT) N-values between 5 and 11 blows per foot (bpf), indicating the clay soils are in a medium stiff to stiff condition.

Stratum 2

We encountered poorly graded sand with varying amounts of clay underlying the lean to fat clay soils in borings B-1 and B-2 and extending to the termination depth of the borings at 10 feet below site grade. This material was generally described as dark yellowish brown or yellow and slightly moist.

We measured SPT N-values between 9 and 15 bpf, indicating the poorly graded sand is in a loose to medium dense condition.

3.4 Groundwater Conditions

Our drill crew made water level observations during drilling and after completion of the borings to evaluate groundwater conditions. We did not encounter groundwater in any of our soil borings.

The groundwater conditions we observed during our exploration program should not be construed to represent an absolute or permanent condition. Uncertainty is involved with short-term water level observations in boreholes.

The free groundwater surface or groundwater table within unconfined aquifers is generally a subdued reflection of surface topography. Water generally flows downward from upland positions (recharge zones) to low lying areas or surface water bodies (discharge zones). As such, the groundwater level and the amount and level of any perched water on the site may be expected to fluctuate with variations in precipitation, site grading, drainage and adjacent land use. Long-term monitoring utilizing piezometers or observation wells is required to evaluate the potential range of groundwater conditions.

4. LABORATORY TESTING

Our engineering staff reviewed the field boring logs to outline the depth, thickness and extent of the soil strata. The samples taken from the borings were examined in our laboratory and visually classified in general accordance with ASTM D2488, "*Description and Identification of Soils (Visual-Manual Procedure)*." We established a testing program to evaluate the engineering properties of the recovered samples. A GSI technician performed laboratory testing in general accordance with the following current ASTM test methods:

- Moisture Content (ASTM D2216, "*Laboratory Determination of Water (Moisture) Content of Soil and Rock*")
- Atterberg Limits (ASTM D4318, "*Liquid Limit, Plastic Limit, and Plasticity Index of Soils*")
- Minus No. 200 Sieve Wash (ASTM D1140, *"Amount of Material in Soils Finer Than the No. 200 (75-µm) Sieve")*

Laboratory test results are presented on the boring logs in Appendix B and tabulated in Appendix C.

Moisture content tests were used to evaluate the existing moisture condition of the soils. The Atterberg limits and Minus No. 200 sieve tests were used to help classify the soils under the Unified Soils Classification System. The Atterberg limits were also used to evaluate the plasticity characteristics of the soils.

The following data summarize our laboratory test results. We used these data to develop the allowable bearing values, anticipated settlements, and other geotechnical design criteria for the project.

- Natural Moisture Content..... 10.8 to 27.8%
- Liquid Limit..... 44 to 51
- Plastic Limit..... 15 to 18
- Plasticity Index..... 29 to 33
- Percent Passing the No. 200 Sieve..... 68.2 to 93.8%
- Standard Penetration Test (SPT 'N' blows per foot)..... 5 to 15

Based on the results of this testing program, we reviewed and supplemented the field logs to arrive at the final logs as presented in Appendix B. The final logs represent our interpretation of the field

logs and reflect the additional information obtained from the laboratory testing. Stratification boundaries indicated on the boring logs were based on observations made during drilling, an extrapolation of information obtained by evaluating samples from the borings, and comparisons of similar engineering characteristics. Locations of these boundaries are approximate and the transitions between soil types may be gradual rather than clearly defined.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 General Geotechnical Considerations

The near-surface clay soils we encountered at the site are classified as moderately to highly plastic and may be susceptible to changes in strength and volume (shrink/swell) with changes in moisture content.

5.2 Earthwork

5.2.1 Site Preparation

In preparing the site, the existing surficial material and topsoil containing a significant percentage of organic matter should be removed from the areas beneath the artificial turf and any other areas that are to be cut or receive fill. The removal depth for this site is expected to be approximately 4 inches. However, the removal depth should be monitored during stripping and adjusted as required. This material should either be removed from the site or stockpiled for later use in landscaping of unpaved or non-structural areas.

Prior to fill placement, the top 9 inches of the ground surface in fill areas should be scarified, moisture conditioned and recompacted in accordance with Section 5.2.3 to eliminate a plane of weakness along the contact surface.

The subgrade should be proof rolled with a loaded tandem axle dump truck or equivalent (loaded water truck, loaded concrete mixer or motor grader with a minimum weight of 20 tons). A proof-roll is considered acceptable if no ruts greater than one inch deep appear behind the loaded vehicle, and no pumping or weaving is observed as the wheels pass over the area. Any soft or unsuitable areas should be compacted or removed and replaced with stable fill material similar in composition to the surrounding soils. If necessary, clean materials such as crushed concrete or crushed stone may be used to stabilize areas where wet soil or water is present. Geogrid or structural geotextile may be used in conjunction with crushed concrete or stone to provide additional stabilization.

Whether in cut or fill, the final subgrade surface must be maintained in a stable condition at the moisture content and level of compaction identified in Section 5.2.3. Verification and maintenance of the completed subgrade may require scarification, moisture conditioning, recompaction, and proof rolling.

5.2.2 Engineered Structural Fill

Engineered structural fill may comprise cohesive or granular material but should be free from organic matter or debris. Granular materials used as general structural fill should be well graded, have a maximum particle size of 1.5 inches, and meet KDOT freeze/thaw durability and sulfate soundness requirements. Cohesive material used as general structural fill should have a liquid limit (LL) of less than 50 and a plastic index (PI) of less than 25.

If free of organic matter or debris, the on-site soils may be reused as engineered structural fill.

We understand that granular material for beneath the new turf will be specified by others.

5.2.3 Compaction of Engineered Structural Fills

Unless otherwise noted, fill materials should be placed in loose lifts not to exceed 9 inches and be compacted to a minimum of 95 percent of the maximum dry unit weight obtained from ASTM D698 (Standard Proctor). Moisture content at the time of compaction should be controlled to between optimum and 4 percent above optimum moisture content.

Granular fill materials which produce a definable moisture-density curve when tested according to ASTM D698 should be compacted to a minimum of 95 percent of the maximum dry unit weight obtained from ASTM D698. Granular fill materials which do not produce a definable moisture-density curve should be compacted to a minimum of 75 percent relative density (ASTM D4253, *"Maximum Index Density and Unit Weight of Soils Using a Vibratory Table"* and ASTM D4254, "*Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density"*). Granular materials should be placed at a moisture content that will achieve the desired densities. Please note that relative density and standard Proctor tests measure different parameters and are not interchangeable.

In general, proper compaction of cohesive soils can be achieved with sheepsfoot or pneumatic-type compactors, while compaction of granular soils can be achieved with smooth-drum or smooth-plate vibratory compactors. Water flooding, or "jetting", is not an acceptable compaction method for any soil type.

5.2.4 Excavation Slopes

Vertical cuts and excavations may stand for short periods of time, but should not be considered stable in any case. All excavations should be sloped back, shored, or shielded for the protection of workers. As a minimum, trenching and excavation activities should conform to federal and local regulations.

The clay soils we encountered in the test borings generally classify as a type “B” soil according to OSHA's Construction Standards for Excavations, while the sandy soils we encountered generally classify as type “C”. In general, the maximum allowable slope for shallow excavations of less than 20 feet in a type “B” soil is 1.0H:1V, while the maximum allowable slope for type “C” is 1.5H:1.0V, although other provisions and restrictions may apply. If different soil types are encountered, the maximum allowable slope may be different.

The Contractor is responsible for designing any excavation slopes or temporary shoring. The Contractor must also be aware that slope height, slope inclination, and excavation depths (including utility trench excavations) should in no case exceed those specified in federal, state, or local safety regulations, such as OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations.

The information presented in this section is solely for our client’s reference. **GSI assumes no responsibility for site safety or the implementation of proper excavation techniques.**

5.3 Artificial Turf Field Recommendations

The performance of the new artificial turf fields is directly affected by the degree of compaction, uniformity, and stability of the soil subgrade beneath the granular subbase.

The moderately plastic clay soils we encountered in our explorations are suitable for supporting the granular drainage layers for the turf field.

We recommend the proposed synthetic turf fields be supported on a minimum of 16 inches of engineered structural fill material as defined in Section 5.2.3. The 16-inch engineered structural fill layer includes an estimated 8 inches of granular turf drainage layers overlying 8 inches of native soils moisture conditioned and recompacted in place as outlined in Section 5.2.3.

The service life of the new field can be reduced if the turf system is constructed on a poor subgrade. We emphasize the importance of preparing the subgrade in accordance with the procedures listed in the previous sections of this report.

Drainage of surface and subsurface water is also a critical component of the subgrade performance. Wetting of the subgrade soils will cause loss of support strength resulting in premature distress. Surface and subsurface drainage should be provided to remove all water that may enter the turf drainage layer.

We anticipate based on our experience with similar soils in the area that the infiltration rate of the on-site soils will initially be fairly high, but will slow down significantly as the soils become saturated. We anticipate the on-site soils will exhibit a permeability on the order of 10^{-7} to 10^{-8} cm/second upon saturation.

5.4 Surface Drainage and Landscaping

The success of the artificial turf section is contingent upon keeping the moisture content of subgrade soils as constant as possible and not allowing surface drainage to have a path to the subsurface soils. Positive surface drainage must be maintained throughout the life of the artificial turf. Landscaped areas should be designed and constructed such that irrigation and other surface water will be prevented from collecting or pooling on the artificial turf.

5.5 Construction Considerations

If construction of the project is to be performed during periods of freezing temperatures, steps should be taken to prevent the soils under the artificial turf from freezing. In no case should the fill materials or turf be placed on frozen or partially frozen materials. Frozen materials should be removed and replaced with a suitable material as described in earlier sections of this report.

Construction performed during periods of high precipitation may result in saturated unstable soils, and caving or sloughing of excavations. Control of soil moisture will be necessary for successful soil compaction, and to maintain soil bearing capacity.

5.6 Construction Observation and Quality Assurance

We recommend that GSI review those portions of the plans and specifications that pertain to foundations and earthwork to evaluate consistency with our findings and recommendations. GSI will provide up to 2 hours of engineering support services at no charge to review project documents for adherence to our recommendations.

Site grading, including proof-rolling, replacement or recompaction of material, and placement of fill and backfill, should be observed by a quality assurance technician from GSI under the direction of a registered professional engineer. The technician should perform density tests and make any other observations necessary to assure that the requirements of the specifications are being achieved.

It is the opinion of GSI that construction observation by the geotechnical engineer of record or his designated representative is necessary to complete the design process. Field observation services are viewed as essential and a continuation of the design process. Unless these services are provided by GSI, the geotechnical engineer will not be responsible for improper use of our recommendations or failure by others to recognize conditions which may be detrimental to the successful completion of the project.

GSI will be available to make field observations and provide consultation services as may be necessary. A written proposal outlining the cost of construction testing services such as soil quality assurance can be provided upon request.

6. CLOSING REMARKS AND LIMITATIONS

This report is presented in broad terms to provide an assessment of the subsurface conditions and their potential effect on the adequate design and economical construction of the proposed artificial turf section. The analyses, conclusions, and recommendations contained in this report are based on the site conditions existing at the time of the exploration, the project layout described herein, and the assumption that the information obtained from our three borings is representative of subsurface conditions throughout the site.

Any changes in the design or location of the proposed turf should be assumed to invalidate the conclusions and recommendations given in this report until we have had the opportunity to review the changes and, if necessary, modify our conclusions and recommendations accordingly. If subsurface conditions different from those encountered in the explorations are observed during construction or appear to be present beneath excavations, GSI should be advised at once so that the conditions can be reviewed and recommendations reconsidered where necessary.

If there is a substantial lapse in time between the submission of this report and the start of construction, or if site conditions or the project layout have significantly changed (due to further development of grading plans, natural causes, or construction operations at or adjacent to the site), we recommend that this report be reviewed to determine the applicability of our previous conclusions and recommendations.

Our geotechnical exploration and subsequent recommendations address only the design and construction considerations contained in this report. We make no warranty for the contents of this report, neither expressed nor implied, except that our professional services were performed in accordance with engineering principles and practices generally accepted at this time and location.

The scope of services for this exploration did not include a wetlands evaluation, an environmental assessment, or an investigation for the presence of hazardous or toxic materials in the soil, surface water, groundwater, or air within or adjacent to this site. If contamination is suspected or is a concern, we recommend the scope of this study be expanded to include an environmental assessment.

This report was prepared by the firm of GSI Engineering, LLC (GSI) under the supervision of a professional engineer registered in the State of Kansas. Report preparation was in accordance with

generally accepted geotechnical engineering practices for the exclusive use of our client for evaluating the design of the project as it relates to the geotechnical aspects discussed herein. Recommendations are based on the applicable standards of the profession at the time of this report within this geographic area. GSI Engineering, LLC will not be responsible for misrepresentation of this report resulting from partial reproduction or paraphrasing of its contents.

We appreciate the opportunity to be of service on this project. Please contact us if we can provide further information regarding the contents of this report or the scope and cost of additional services.

Respectfully submitted,
GSI Engineering, LLC

Kaleb Meyer
Staff Geologist

Matthew N. Tye, P.E.
Senior Geotechnical Engineer

KAM/MNT

APPENDIX A

General Vicinity Map
Boring Location Plan

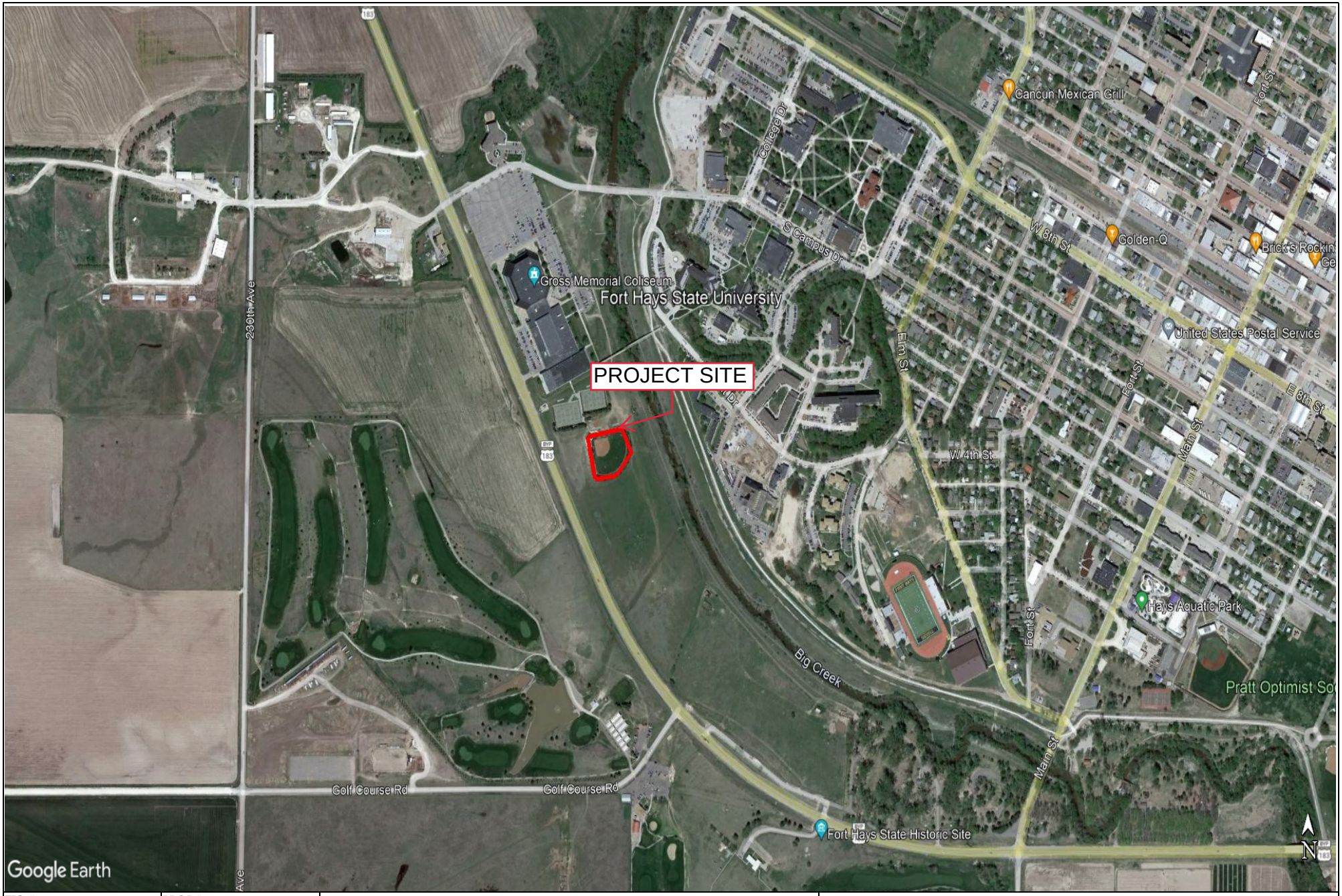


FIG. #: 1	PROJ. #: 2173198	GSI Engineering	**GSI Engineering, LLC** **4503 E. 47th Street South** **Wichita, KS 67210** **(316) 554-0725** **www.gsinetwork.com**
DATE: 12/22/2021	SCALE: NTS		
DRAWN BY: KAM	PROJECT MANAGER: MNT		

GENERAL VICINITY MAP
FHSU TIGER STADIUM SUBGRADE
HAYS, KANSAS

FIG. #: 2	PROJ. #: 2173198	GSI Engineering	GSI Engineering, LLC 4503 E. 47th Street South Wichita, KS 67210 (316) 554-0725 www.gsinetwork.com
DATE: 12/22/2021	SCALE: NTS		
DRAWN BY: KAM	PROJECT MANAGER: MNT		

BORING LOCATION PLAN
FHSU TIGER STADIUM SUBGRADE
HAYS, KANSAS

APPENDIX B

Boring Logs
Key to Symbols
Legend & Nomenclature
Unified Soil Classification System (USCS)

BORING LOG No. B-1

BORING NO.	LOCATION OF BORING	ELEVATION	DATUM	DRILLER	LOGGER
B-1	See Boring Location Plan	1998 ft.	Google Earth	J. Crawford	M. Lintz

WATER LEVEL OBSERVATIONS				TYPE OF SURFACE	DRILL RIG
WHILE DRILLING	END OF DRILLING	24 HOURS AFTER DRILLING	AFTER DRILLING	Athletic Field	CME-45
				DRILLING METHOD	TOTAL DEPTH
N.E.	N.E.	Boring Plugged After Drilling		4-inch Diameter Continuous Flight Augers	10.0 ft.

DEP. FT.	SAMPLE DATA: SAMPLE NO. & TYPE	SAMPLE DATA: "N" (BLOWS /FT)	SAMPLE DATA: % REC.	SOIL DESCRIPTION: COLOR, CONSISTENCY, MOISTURE / GEOLOGIC DESCRIPTION & OTHER REMARKS	USCS CLASS.	LABORATORY DATA: MC %	LABORATORY DATA: Dry Dens. pcf	LABORATORY DATA: q_u ksf	ELEV. FT.
				4" ATHLETIC CLAY					
				0.4'					
	S-1	8		LEAN CLAY - brown with dark brown, moist, stiff, trace sand LL=44; PL=15; PI=29	CL	17.7			
				2.2'					
2.5									1995.5
	S-2	5		SANDY LEAN CLAY - dark yellowish brown, slightly moist, medium dense, fine sand % Pass #200: 68.2		10.8			
5									1993
	S-3	6		- as above	CL	10.9			
7.5									1990.5
				8.5'					
	S-4	9		POORLY GRADED SAND - yellow, slightly moist, loose, medium to coarse sand, clay lenses, and trace gravel	SP	22.5			
10									1988
				10.0'					
				Bottom of Boring @ 10'					
12.5									1985.5
15									1983
17.5									1980.5
20									1978

GSI Engineering
4503 East 47th Street South
Wichita, KS 67210
316-554-0725

PROJECT: FHSU Tiger Stadium Turf Subgrade
LOCATION: Hays, Kansas
JOB NO.: 2173198
DATE: December 20, 2021

BORING LOG No. B-2

BORING NO.	LOCATION OF BORING	ELEVATION	DATUM	DRILLER	LOGGER
B-2	See Boring Location Plan	1995 ft.	Google Earth	J. Crawford	M. Lintz

WATER LEVEL OBSERVATIONS				TYPE OF SURFACE	DRILL RIG
WHILE DRILLING	END OF DRILLING	24 HOURS AFTER DRILLING	AFTER DRILLING	Athletic Field	CME-45
				DRILLING METHOD	TOTAL DEPTH
N.E.	N.E.	Boring Plugged After Drilling		4-inch Diameter Continuous Flight Augers	10.0 ft.

DEP. FT.	SAMPLE DATA: SAMPLE NO. & TYPE	SAMPLE DATA: "N" (BLOWS /FT)	SAMPLE DATA: % REC.	SOIL DESCRIPTION: COLOR, CONSISTENCY, MOISTURE / GEOLOGIC DESCRIPTION & OTHER REMARKS	USCS CLASS.	LABORATORY DATA: MC %	LABORATORY DATA: Dry Dens. pcf	LABORATORY DATA: q_u ksf	ELEV. FT.
				4" TOPSOIL					
				0.4'					
	S-1	8		LEAN CLAY - brown with dark brown, slightly moist, medium stiff, trace sand and roots		20.5			
2.5									1992.5
	S-2	7		- dark brown, else as above LL=48; PL=18; PI=30 % Pass #200: 93.8		23.3			
5					Cl				1990
	S-3	7		- as above		20.9			
7.5									1987.5
	S-4	15		- stiff, else as above		23.8			
10				9.5' CLAYEY SAND - dark yellowish brown, slightly moist, medium dense, fine to medium sand 10.0'	SC				1985
				Bottom of Boring @ 10'					
12.5									1982.5
15									1980
17.5									1977.5
20									1975

GSI Engineering
4503 East 47th Street South
Wichita, KS 67210
316-554-0725

PROJECT: FHSU Tiger Stadium Turf Subgrade
LOCATION: Hays, Kansas
JOB NO.: 2173198
DATE: December 20, 2021

BORING LOG No. B-3

BORING NO.	LOCATION OF BORING	ELEVATION	DATUM	DRILLER	LOGGER
B-3	See Boring Location Plan	1994 ft.	Google Earth	J. Crawford	M. Lintz

WATER LEVEL OBSERVATIONS				TYPE OF SURFACE	DRILL RIG
WHILE DRILLING	END OF DRILLING	24 HOURS AFTER DRILLING	AFTER DRILLING	Athletic Field	CME-45
				DRILLING METHOD	TOTAL DEPTH
N.E.	N.E.	Boring Plugged After Drilling		4-inch Diameter Continuous Flight Augers	10.0 ft.

DEP. FT.	SAMPLE DATA: SAMPLE NO. & TYPE	SAMPLE DATA: "N" (BLOWS /FT)	SAMPLE DATA: % REC.	SOIL DESCRIPTION: COLOR, CONSISTENCY, MOISTURE / GEOLOGIC DESCRIPTION & OTHER REMARKS	USCS CLASS.	LABORATORY DATA: MC %	LABORATORY DATA: Dry Dens. pcf	LABORATORY DATA: q_u ksf	ELEV. FT.
				4" TOPSOIL					
				0.4'					
	S-1	6		FAT CLAY - brown with dark brown, slightly moist, medium stiff, trace roots LL=51; PL=18; PI=33 % Pass #200: 92.0	CH	26.6			
2.5				2.5'					1991.5
	S-2	11		LEAN CLAY - dark brown, slightly moist, stiff, trace sand		22.4			
5				- as above					1989
	S-3	8			CL	22.4			
7.5									1986.5
	S-4	10		- as above		27.8			
10				10.0'					1984
				Bottom of Boring @ 10'					
12.5									1981.5
15									1979
17.5									1976.5
20									1974

GSI Engineering
4503 East 47th Street South
Wichita, KS 67210
316-554-0725

PROJECT: FHSU Tiger Stadium Turf Subgrade
LOCATION: Hays, Kansas
JOB NO.: 2173198
DATE: December 20, 2021

KEY TO SYMBOLS

Symbol	Description
Strata symbols	
	Topsoil
	Low plasticity clay
	Sandy Lean Clay
	Poorly graded sand
	Clayey sand
	High plasticity clay

Notes:

1. Exploratory borings were drilled on December 20, 2021 using 4-inch diameter continuous flight augers.

2. These logs are subject to the limitations, conclusions, and recommendations in this report.

3. Results of this tests conducted on samples recovered are reported on the logs.

Boring Log
Legend and Nomenclature

Items shown on boring logs refer to the following:

1. **Depth** - Depth below ground surface or drilling platform

2. **Sample** -Types designated by letter:

   A - Disturbed sample, obtained from auger cuttings or wash water.

   S - Split barrel sample, obtained by driving a 2-inch split-barrel sampler unless otherwise noted.

   C - California liner sample, obtained using a thick-walled liner sampler containing 2-inch-diameter liner tubes.

   U - Undisturbed sample, obtained using a thin-walled tube, 3-inch-diameter, or as noted, and open sampling head.

   Recovery - Recovery is expressed as a percentage of the length recovered to the total length pushed, driven or cored.

   Resistance - Resistance is designated as follows:

   P - Sample pushed in one continuous movement by hydraulic rig action.

   12 - The Standard Penetration Resistance is the number of blows for the last 12 inches of penetration of split spoon sampler, driven by a 140-pound hammer falling 30 inches.

   50/4" - Number of blows to drive sampler distance shown.

3. **Soil Description** - Description of material according to the Unified Soil Classification: word description giving soil constituents, consistency or density, and other appropriate classification characteristics. Geologic name or type of deposit and other pertinent information, where appropriate, is shown under Geologic Description or other Remarks. A solid line indicates the approximate location of stratigraphic change.

4. **Lab Data** – Laboratory test data.

5. **Legend**

A.D.	—	After drilling	N.A.	—	Not Applicable
A.T.D.	—	At time of drilling	N.D.	—	Not detectable due to drilling method
C.F.A.	—	Continuous flight auger			
D.W.L.	—	Drill water loss	N.E.	—	None encountered
D.W.R.	—	Drill water return	N.R.	—	Not recorded
E.D.	—	End of drilling	R.Q.D.	—	Rock quality designation
H.B.	—	Hole backfilled	R.W.B.	—	Rotary wash boring

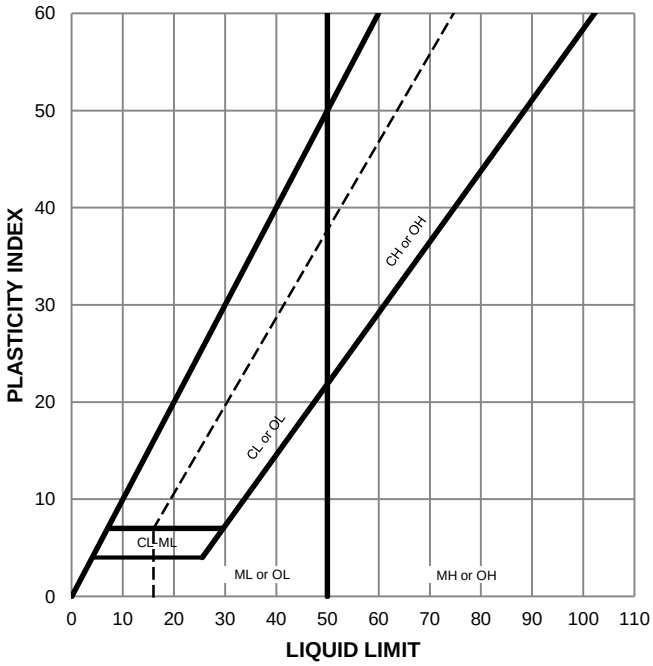
6. **Limitations** - The lines between materials shown on the boring logs represent approximate boundaries between material types and the changes may be gradual. Water level readings shown on the logs were made at the time and under the conditions indicated. Fluctuations in the water levels may occur with time. The boring logs in this report are subject to the limitations, explanations and conclusions of this report.

UNIFIED SOIL CLASSIFICATION SYSTEM

GROUP NAME	GROUP SYMBOL	SOIL DESCRIPTION	COMMENTS
Peat	Pt	Highly Organic Soils	50% or More Is Smaller than No. 200 Sieve
Fat Clay	CH	Clay - Liquid Limit => 50*	
Elastic Silt	MH	Silt - Liquid Limit => 50*	
Lean Clay	CL	Clay - Liquid Limit < 50*	
Silt	ML	Silt - Liquid Limit < 50*	
Silty Clay	CL-ML	Silty Clay*	
Clayey Sand	SC	Sands with 12 to 50% Smaller than No. 200 Sieve	More than 50% Is Larger than No. 200 Sieve and % Sand > % Gravel
Silty Sand	SM		
Poorly-Graded Sand with Clay	SP-SC	Sands with 5 to 12% Smaller than No. 200 Sieve	
Poorly-Graded Sand with Silt	SP-SM		
Well-Graded Sand with Clay**	SW-SC		
Well-Graded Sand with Silt**	SW-SM		
Poorly-Graded Sand	SP	Sands with Less than 5% Smaller than No. 200 Sieve	
Well-Graded Sand**	SW		
Clayey Gravel	GC	Gravels with 12 to 50% Smaller than No. 200 Sieve	More than 50% Is Larger than No. 200 Sieve and % Gravel > % Sand
Silty Gravel	GM		
Poorly-Graded Gravel with Clay	GP-GC	Gravels with 5 to 12% Smaller than No. 200 Sieve	
Poorly-Graded Gravel with Silt	GP-GM		
Well-Graded Gravel with Clay**	GW-GC		
Well-Graded Gravel with Silt**	GW-GP		
Poorly-Graded Gravel	GP	Gravels with Less than 5% Smaller than No. 200 Sieve	
Well-Graded Gravel**	GW		

*See Plasticity Chart for definition of silts and clays. If organic, use OL or OH.
**See definition of well-graded

PLASTICITY CHART



LEGEND OF TERMS

MOISTURE CONDITIONS
Dry, Slightly Moist, Moist, Very Moist, Wet (Saturated)

SOIL CONSISTENCY

Fine-Grained Soils

Description	SPT (N)	UCS (q_u, tsf)
Very Soft	0-2	0-0.25
Soft	2-4	0.25-0.50
Medium Stiff	4-8	0.50-1.0
Stiff	8-16	1.0-2.0
Very Stiff	16-32	2.0-4.0
Hard	>32	>4.0

Coarse-Grained Soils

Description	SPT (N)
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	>50

GSI Engineering

CLASSIFICATION OF SANDS & GRAVELS

Boulders	Cobbles	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines (Silt or Clay)
	10"	3"	3/4"	#4	#10	#40	#200

Well-Graded Sands (SW): $C_u \geq 6$ and $1 \leq C_c \leq 3$

Well-Graded Gravels (GW): $C_u \geq 4$ and $1 \leq C_c \leq 3$

APPENDIX C

Field & Laboratory Test Results

SUMMARY OF FIELD AND LABORATORY TESTS

BORING NO.	SAMPLE NO.	SAMPLE DEPTH (ft.)	DIA. (in.)	MOISTURE CONTENT (%)	UNIT WEIGHT WET (pcf)	UNIT WEIGHT DRY (pcf)	VOID RATIO (e)	SAT. (%)	UNCONF. COMPR. STR. (ksf)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	PASS NO. 200 (%)	SPT "N" (blows /ft)	USCS SOIL CLASS.
B-1	S-1	0.5-2.0		17.7						44	15	29		8	CL
	S-2	2.5-4.0		10.8									68.2	5	Sandy CL
	S-3	5.0-6.5		10.9										6	Sandy CL
	S-4	8.5-10.0		22.5										9	SP
B-2	S-1	0.5-2.0		20.5										8	CL
	S-2	2.5-4.0		23.3						48	18	30	93.8	7	CL
	S-3	5.0-6.5		20.9										7	CL
	S-4	8.5-10.0		23.8										15	Clayey Sand
B-3	S-1	0.5-2.0		26.6						51	18	33	92.0	6	CH
	S-2	2.5-4.0		22.4										11	CL
	S-3	5.0-6.5		22.4										8	CL
	S-4	8.5-10.0		27.8										10	CL

GSI Engineering

GSI Engineering, LLC
4503 E. 47th Street South
Wichita, KS 67210
(316) 554-0725
www.gsinetwork.com

PROJECT
FHSU Stadium Turf Subgrade

LOCATION
Hays, Kansas

PROJECT NUMBER
2173198

DATE
December 22, 2021

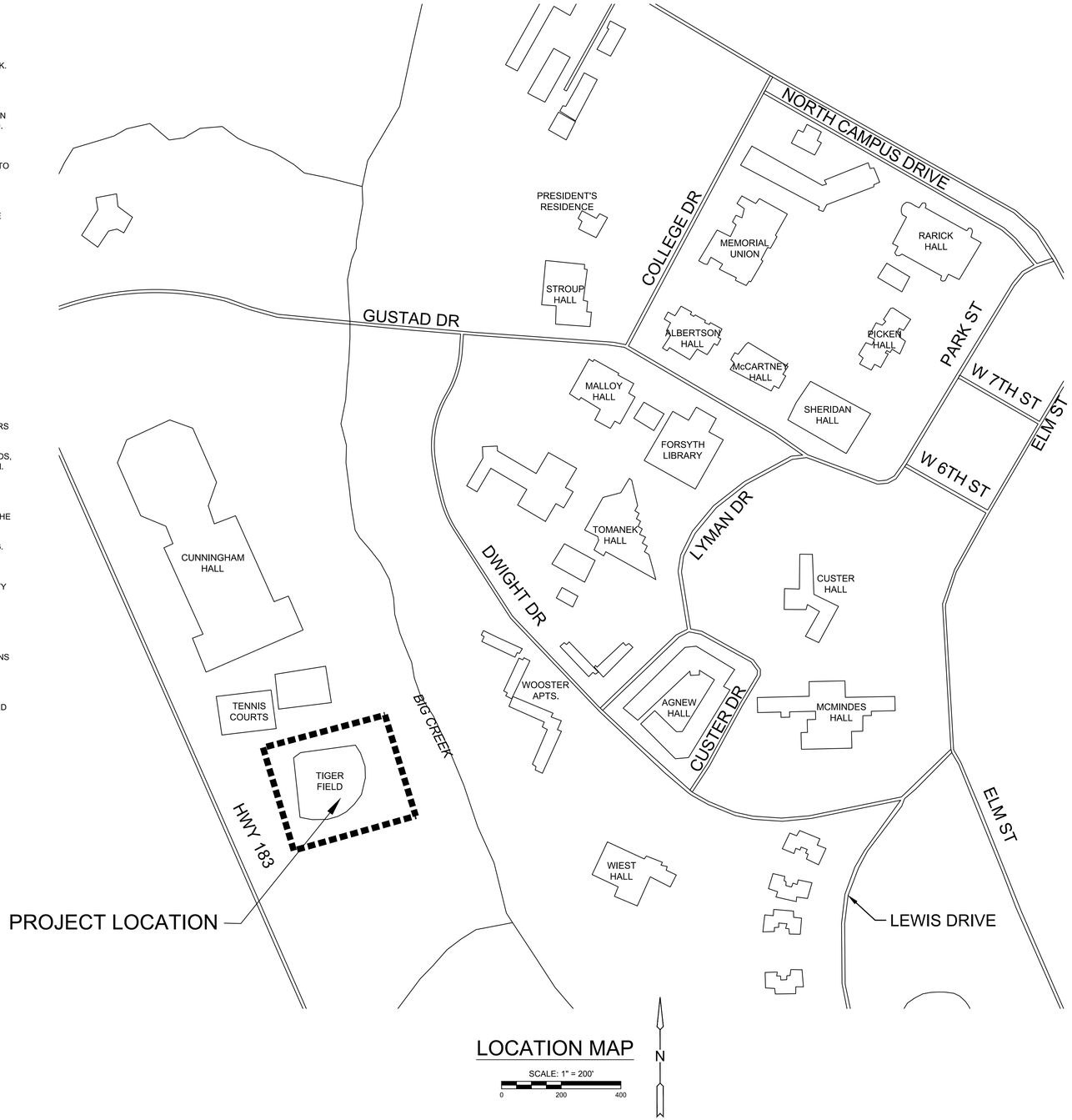
CONSTRUCTION DOCUMENTS FOR

TIGER STADIUM IMPROVEMENTS

FORT HAYS STATE UNIVERSITY 600 PARK ST, HAYS, KS 67601

GENERAL NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE COMMENCEMENT OF SITE WORK. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF DISCREPANCIES OR VARIATIONS FROM THE PLANS.
2. TRAFFIC CONTROL SIGNAGE (IF APPLICABLE) SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES, WARNING SIGNS, LIGHTS AND FLAGMEN AS WARRANTED. COST SHALL BE SUBSIDIARY TO THE PROJECT.
3. THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS, SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.
5. THE CONTRACTOR SHALL SUBMIT PROPOSED SEQUENCE OF CONSTRUCTION TO ENGINEER FOR APPROVAL BEFORE BEGINNING CONSTRUCTION.
6. COST OF EXCAVATION, HAULING, AND DUMPING OF EXCESS EXCAVATION SHALL BE SUBSIDIARY TO THE PROJECT.
7. ALL EXISTING UTILITIES AND SERVICE LINES SHALL BE KEPT IN SERVICE AT ALL TIMES DURING CONSTRUCTION OF THIS PROJECT, UNLESS OTHERWISE AUTHORIZED BY THE OWNER'S REPRESENTATIVE.
8. THE CONTRACTOR SHALL PAY ALL PERMIT & OTHER ASSOCIATED FEES REQUIRED BY LOCAL, STATE, & FEDERAL AGENCIES.
9. EXISTING UTILITIES AND FORT HAYS STATE UNIVERSITY (FHSU)-OWNED UTILITY LINES AND THEIR LOCATIONS AS SHOWN ON THE PLANS REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. THE PLAN LOCATIONS SHOWN ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY ALSO BE ENCOUNTERED.
10. CONTACT "ONE CALL" (1-800-344-7233) FOR UTILITY LOCATIONS SEVENTY-TWO (72) HOURS PRIOR TO ANY EXCAVATION.
11. CONTRACTOR SHALL REPAIR AND/OR REPLACE ALL IRRIGATION LINES, SPRINKLER HEADS, AND ANY OTHER IRRIGATION SYSTEM COMPONENTS DAMAGED DUE TO CONSTRUCTION. COST SUBSIDIARY TO PROJECT. COORDINATION WITH OWNER REGARDING IRRIGATION SYSTEMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COST SUBSIDIARY TO PROJECT. COORDINATE WITH OWNER'S REPRESENTATIVE.
12. CONTRACTOR SHALL TAKE ALL MEASURES TO PROTECT TREES AND LANDSCAPING IN THE CONSTRUCTION AREA AT ALL TIMES.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING AND TESTING. OWNER SHALL PROVIDE INSPECTION SERVICES.
14. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF OFF OF STATE PROPERTY ON SITES TO BE PROVIDED BY THE CONTRACTOR. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.
15. ALL EXISTING TRASH/DEBRIS WITHIN THE CONSTRUCTION AREAS SHALL BE REMOVED AND DISPOSED OF OFF STATE PROPERTY. THESE SITES SHALL BE APPROVED BY THE OWNER AND MEET THE REQUIREMENTS OF NOTE 14 ABOVE. THIS SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.
16. CONSTRUCTION AND MATERIALS SHALL BE IN CONFORMANCE WITH GEOTECHNICAL EXPLORATION REPORT BY GSI ENGINEERING AND DATED 12-23-21.



LOCATION MAP

SCALE: 1" = 200'

0 200 400

N

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	EXISTING CONDITIONS & DEMO PLAN
3	UTILITY PLAN
4	SITE PLAN
5	OVERALL TURF LAYOUT
6	TURF LAYOUT DETAIL 1
7	TURF LAYOUT DETAIL 2
8	TURF LAYOUT DETAIL 3
9	DETAILS

CONTACT INFORMATION

PROPERTY OWNER:
FORT HAYS STATE UNIVERSITY
DANA CUNNINGHAM
600 PARK ST.,
HAYS, KS 67601
(785)628-3478

GROUNDS SUPERVISOR:
FORT HAYS STATE UNIVERSITY
DEAN DREILING
600 PARK ST.,
HAYS, KS 67601
(785)628-4039

CIVIL ENGINEER:
MKEC ENGINEERING, INC.
MARK BUCKINGHAM
411 N. WEBB RD.,
WICHITA, KS 67206
(316)684-9600

UTILITY CONTACTS

WATER AND SEWER SERVICE
HAYS WATER DEPARTMENT
1507 MAIN ST.,
HAYS, KS 67601

ELECTRIC AND NATURAL GAS
MIDWEST ENERGY, INC.
1330 CANTERBURY DR.,
HAYS, KS 67601

TELEPHONE
NEX-TECH
2418 VINE STREET
HAYS, KS 67601
(785)625-7070

CABLE
EAGLE COMMUNICATIONS
2703 HALL, SUITE 13
HAYS, KS 67601
(785)625-5910

KANSAS ONE CALL, 811 OR 1-800-DIG-SAFE

MARK BUCKINGHAM LICENSED PROFESSIONAL ENGINEER 48472 12-16-22 KANSAS

NO.	REVISION	DATE
A	ISSUED FOR CONST.	02.16.22

MKEC
Wichita, KS • 316-684-9600

FORT HAYS STATE UNIVERSITY
Forward thinking. World ready.

DEPARTMENT OF ADMINISTRATION
OFFICE OF FACILITIES & PROPERTIES MANAGEMENT
DESIGN, CONSTRUCTION & COMPLIANCE
700 HARRISON, SUITE 1200
TOPEKA, KS 66603
785-291-3695

FORT HAYS STATE UNIVERSITY
TIGER STADIUM IMPROVEMENTS
HAYS, KANSAS

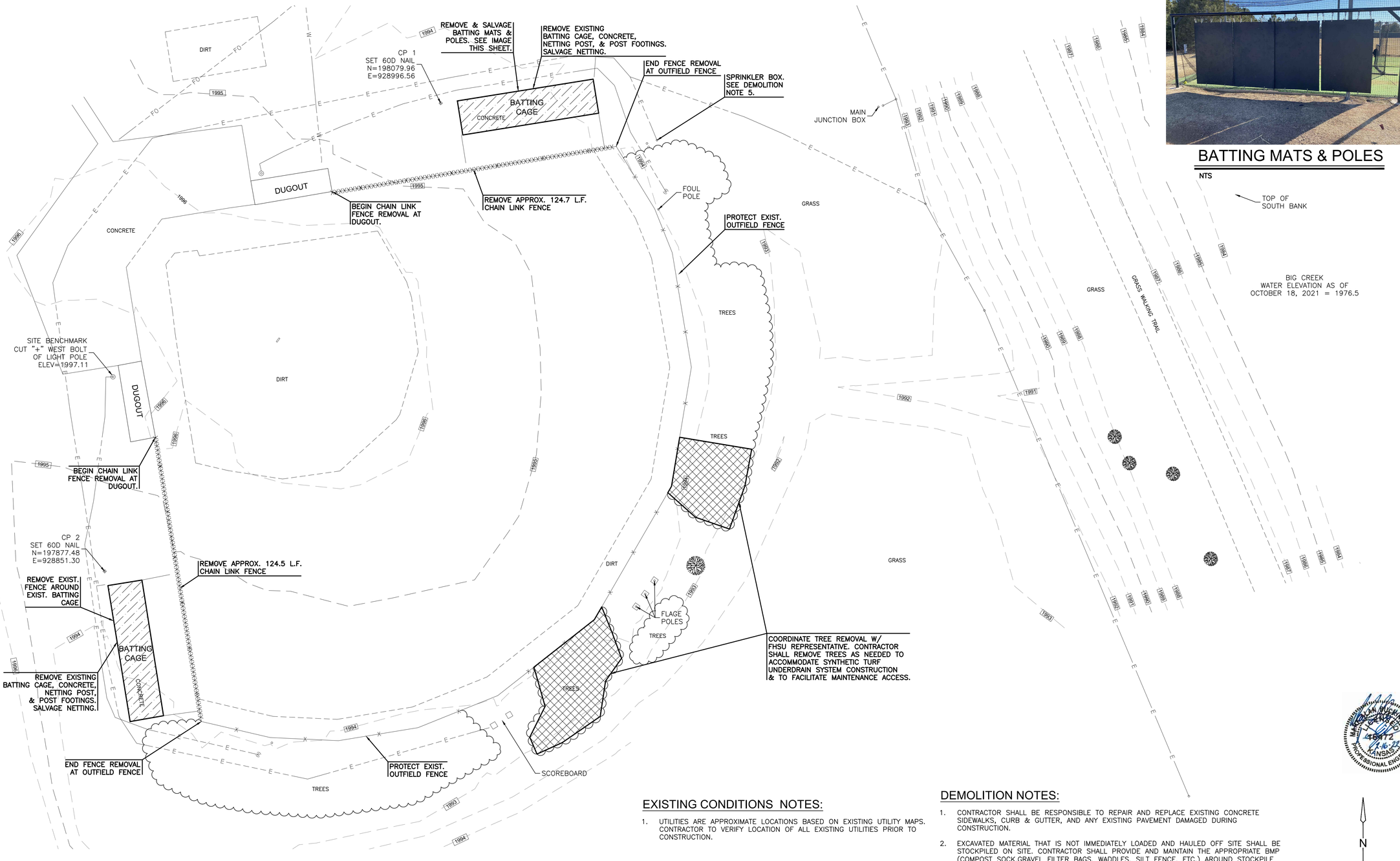
DRAWN BY: KM CHECKED BY: MB
DATE: 12.01.2021

COVER SHEET

2101010705

1 OF 9

ORIGINAL CONTRACT DOCUMENTS



BATTING MATS & POLES

NTS

EXISTING CONDITIONS NOTES:

1. UTILITIES ARE APPROXIMATE LOCATIONS BASED ON EXISTING UTILITY MAPS. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

DEMOLITION LEGEND

XXXXXXXXXXXXXXXXXXX – FENCE REMOVAL

– PAVEMENT REMOVAL

– TREE REMOVAL

DEMOLITION NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR AND REPLACE EXISTING CONCRETE SIDEWALKS, CURB & GUTTER, AND ANY EXISTING PAVEMENT DAMAGED DURING CONSTRUCTION.
2. EXCAVATED MATERIAL THAT IS NOT IMMEDIATELY LOADED AND HAULED OFF SITE SHALL BE STOCKPILED ON SITE. CONTRACTOR SHALL PROVIDE AND MAINTAIN THE APPROPRIATE BMP (COMPOST SOCK,GRAVEL FILTER BAGS, WADDLES, SILT FENCE, ETC.) AROUND STOCKPILE AREA TO PROTECT ADJACENT INLETS OR AREAS, ETC., UNTIL SUCH TIME THAT STOCKPILE IS REMOVED.
3. CONTRACTOR SHALL OBTAIN ALL PERMITS NECESSARY PRIOR TO THE START OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO, RIGHT-OF-WAY, HAULING, AND LAND DISTURBANCE PERMITS WITH THE APPROPRIATE LOCAL JURISDICTION.
4. CONTRACTOR SHALL DISPOSE OF ALL DEMOLITION ITEMS APPROPRIATELY PER LOCAL AND STATE REQUIREMENTS.
5. CONTRACTOR SHALL DECOMMISSION SPRINKLER SYSTEM COVERING THE AREAS THAT WILL BECOME SYNTHETIC TURF. ELECTRICAL ASSOCIATED WITH THE SYSTEM TO BE DISCONNECTED AND TERMINATED TO NEUTRALIZE RISK AND IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODES. EXISTING SPRINKLER HEADS TO BE SALVAGED TO THE OWENER. ALL PIPE AND APPURTENANCES SHALL BE REMOVED TO ACCOMMODATE CONSTRUCTION AND THE DEBRIS PROPERLY DISPOSED OF.

N

SCALE: 1"=20'

0 20 40

NO.	REVISION	DATE
A	ISSUED FOR CONST.	02.16.22

MKEC
Wichita, KS • 316-684-9600

FORT HAYS STATE UNIVERSITY
Forward thinking. World ready.

DEPARTMENT OF ADMINISTRATION
OFFICE OF FACILITIES & PROPERTIES MANAGEMENT
DESIGN, CONSTRUCTION & COMPLIANCE
700 HARRISON, SUITE 1200
TOPEKA, KS 66603
785-291-3695

FORT HAYS STATE UNIVERSITY
TIGER STADIUM IMPROVEMENTS
HAYS, KANSAS

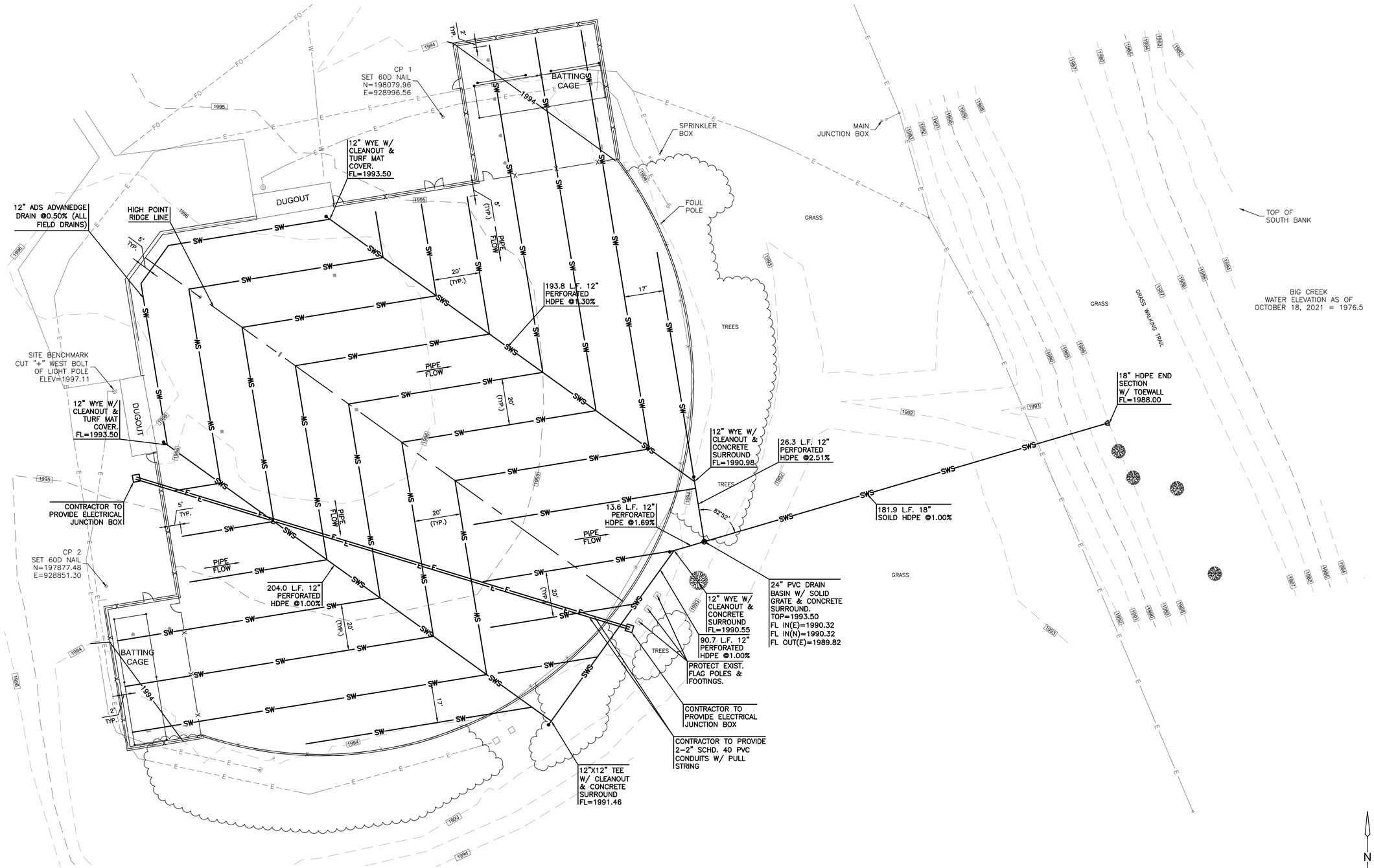
DRAWN BY: KM CHECKED BY: MB
DATE: 12.01.2021

EXISTING CONDITIONS & DEMO PLAN

2101010705

2 OF 9

ORIGINAL CONTRACT DOCUMENTS



STORM SEWER LEGEND

SWS — HDPE STORM PIPE (SEE PLANS FOR SOLID & PERFORATED LOCATIONS)

SW — 12" ADS ADVANEDGE DRAIN

UTILITY NOTES:

1. SEE SHEET 9 FOR UTILITY DETAILS.
2. REMOVE & REPLACE EXISTING OUTFIELD FENCE AS NEEDED TO ACCOMMODATE CONSTRUCTION OF PROPOSED UTILITIES.

N

SCALE: 1"=20'
0 20 40

MARK KIM MILLER LICENSED PROFESSIONAL ENGINEER 48472 2-16-22 KANSAS

NO.	REVISION	DATE
A	ISSUED FOR CONST.	02.16.22

MKEC
Wichita, KS • 316-684-9600

FORT HAYS STATE UNIVERSITY
Forward thinking. World ready.

DEPARTMENT OF ADMINISTRATION
OFFICE OF FACILITIES & PROPERTIES MANAGEMENT
DESIGN, CONSTRUCTION & COMPLIANCE
700 HARRISON, SUITE 1200
TOPEKA, KS 66603
785-291-3695

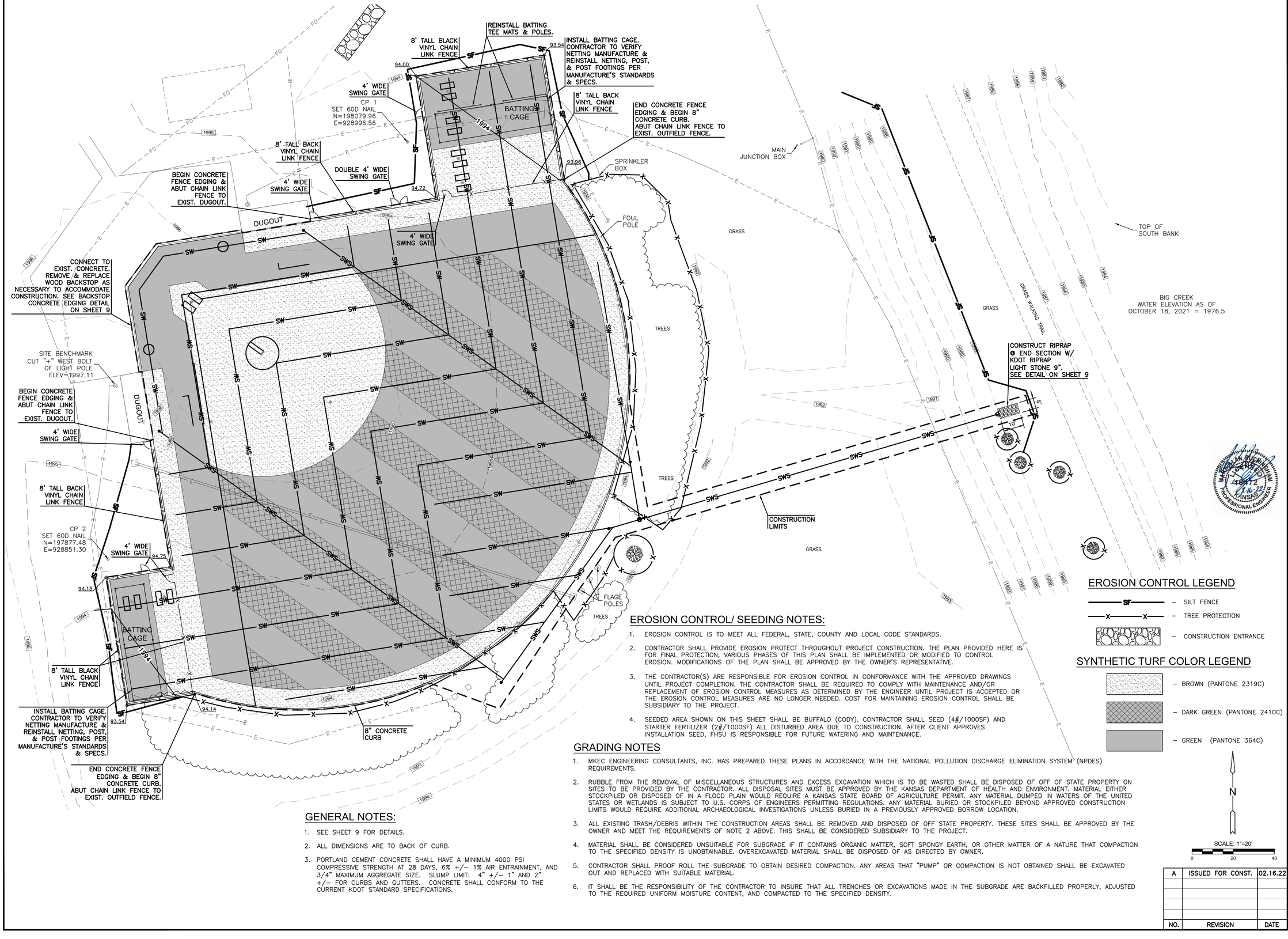
FORT HAYS STATE UNIVERSITY
TIGER STADIUM IMPROVEMENTS
HAYS, KANSAS
DATE: 12.01.2021 DRAWN BY: KM CHECKED BY: MB

UTILITY PLAN

2101010705

3 OF 9

ORIGINAL CONTRACT DOCUMENTS



GENERAL NOTES:

1. SEE SHEET 9 FOR DETAILS.
2. ALL DIMENSIONS ARE TO BACK OF CURB.
3. PORTLAND CEMENT CONCRETE SHALL HAVE A MINIMUM 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS, 6% +/– 1% AIR ENTRAINMENT, AND 3/4" MAXIMUM AGGREGATE SIZE. SLUMP LIMIT: 4" +/– 1" AND 2" +/– FOR CURBS AND GUTTERS. CONCRETE SHALL CONFORM TO THE CURRENT KDOT STANDARD SPECIFICATIONS.

EROSION CONTROL/ SEEDING NOTES:

1. EROSION CONTROL IS TO MEET ALL FEDERAL, STATE, COUNTY AND LOCAL CODE STANDARDS.
2. CONTRACTOR SHALL PROVIDE EROSION PROTECT THROUGHOUT PROJECT CONSTRUCTION. THE PLAN PROVIDED HERE IS FOR FINAL PROTECTION, VARIOUS PHASES OF THIS PLAN SHALL BE IMPLEMENTED OR MODIFIED TO CONTROL EROSION. MODIFICATIONS OF THE PLAN SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE.
3. THE CONTRACTOR(S) ARE RESPONSIBLE FOR EROSION CONTROL IN CONFORMANCE WITH THE APPROVED DRAWINGS UNTIL PROJECT COMPLETION. THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH MAINTENANCE AND/OR REPLACEMENT OF EROSION CONTROL MEASURES AS DETERMINED BY THE ENGINEER UNTIL PROJECT IS ACCEPTED OR THE EROSION CONTROL MEASURES ARE NO LONGER NEEDED. COST FOR MAINTAINING EROSION CONTROL SHALL BE SUBSIDIARY TO THE PROJECT.
4. SEEDED AREA SHOWN ON THIS SHEET SHALL BE BUFFALO (CODY). CONTRACTOR SHALL SEED (4#/1000SF) AND STARTER FERTILIZER (2#/1000SF) ALL DISTURBED AREA DUE TO CONSTRUCTION. AFTER CLIENT APPROVES INSTALLATION SEED, FHSU IS RESPONSIBLE FOR FUTURE WATERING AND MAINTENANCE.

GRADING NOTES

1. MKEC ENGINEERING CONSULTANTS, INC. HAS PREPARED THESE PLANS IN ACCORDANCE WITH THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS.
2. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF OFF OF STATE PROPERTY ON SITES TO BE PROVIDED BY THE CONTRACTOR. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.
3. ALL EXISTING TRASH/DEBRIS WITHIN THE CONSTRUCTION AREAS SHALL BE REMOVED AND DISPOSED OF OFF STATE PROPERTY. THESE SITES SHALL BE APPROVED BY THE OWNER AND MEET THE REQUIREMENTS OF NOTE 2 ABOVE. THIS SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.
4. MATERIAL SHALL BE CONSIDERED UNSUITABLE FOR SUBGRADE IF IT CONTAINS ORGANIC MATTER, SOFT SPONGY EARTH, OR OTHER MATTER OF A NATURE THAT COMPACTION TO THE SPECIFIED DENSITY IS UNOBTAINABLE. OVEREXCAVATED MATERIAL SHALL BE DISPOSED OF AS DIRECTED BY OWNER.
5. CONTRACTOR SHALL PROOF ROLL THE SUBGRADE TO OBTAIN DESIRED COMPACTION. ANY AREAS THAT "PUMP" OR COMPACTION IS NOT OBTAINED SHALL BE EXCAVATED OUT AND REPLACED WITH SUITABLE MATERIAL.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ALL TRENCHES OR EXCAVATIONS MADE IN THE SUBGRADE ARE BACKFILLED PROPERLY, ADJUSTED TO THE REQUIRED UNIFORM MOISTURE CONTENT, AND COMPACTED TO THE SPECIFIED DENSITY.

EROSION CONTROL LEGEND

- SF — SILT FENCE
- X X — TREE PROTECTION
- CONSTRUCTION ENTRANCE

SYNTHETIC TURF COLOR LEGEND

- BROWN (PANTONE 2319C)
- DARK GREEN (PANTONE 2410C)
- GREEN (PANTONE 364C)

N

SCALE: 1"=20'
0 20 40

NO.	REVISION	DATE
A	ISSUED FOR CONST.	02.16.22

MKEC
Wichita, KS • 316-684-9600

FORT HAYS STATE UNIVERSITY
Forward thinking. World ready.

DEPARTMENT OF ADMINISTRATION
OFFICE OF FACILITIES & PROPERTIES MANAGEMENT
DESIGN, CONSTRUCTION & COMPLIANCE
700 HARRISON, SUITE 1200
TOPEKA, KS 66603
785-291-3695

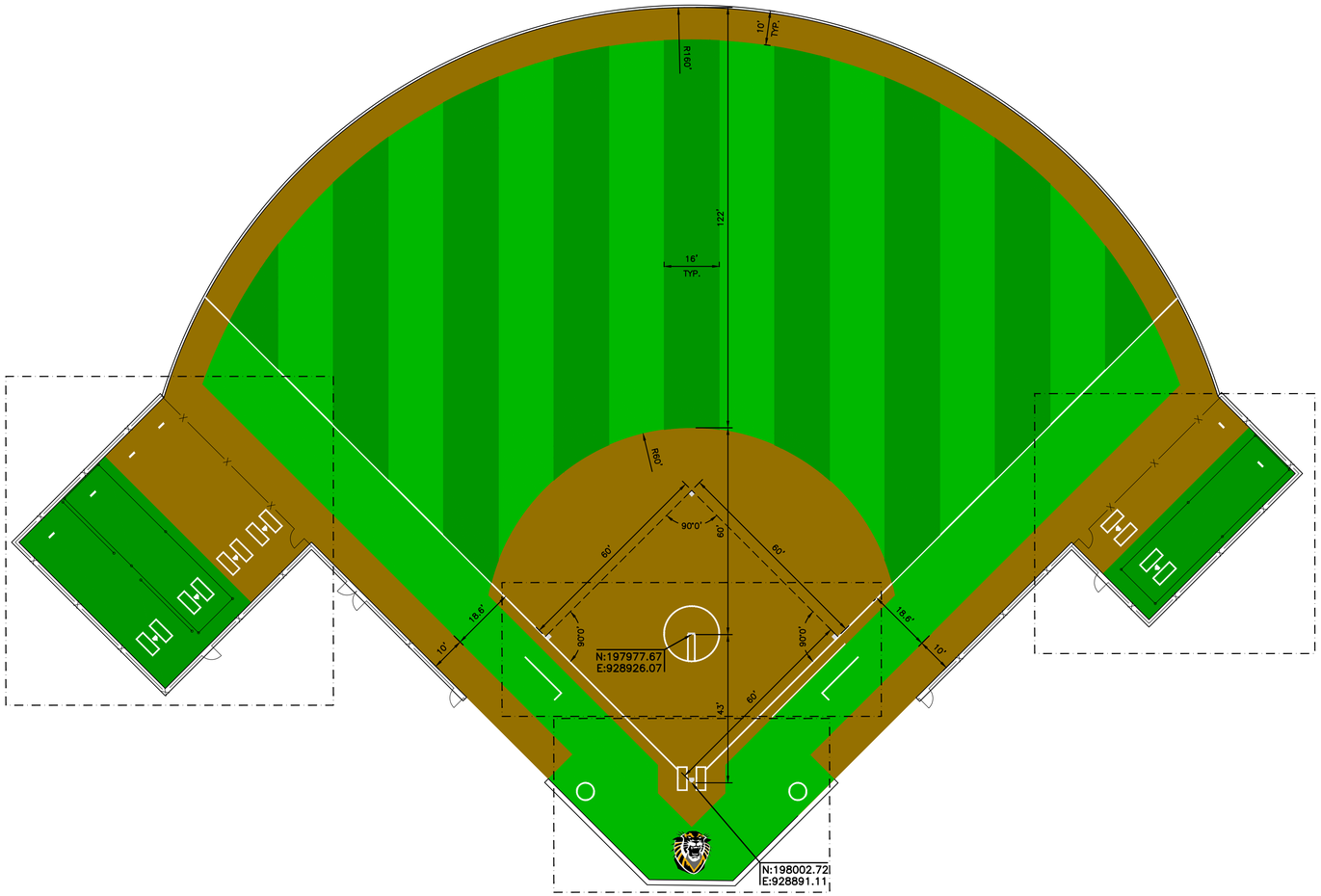
FORT HAYS STATE UNIVERSITY
TIGER STADIUM IMPROVEMENTS
HAYS, KANSAS
DRAWN BY: KM CHECKED BY: MB
DATE: 12.01.2021

SITE PLAN

2101010705

4 OF 9

ORIGINAL CONTRACT DOCUMENTS



NOTES:

1. SEE SHEETS 6–8 FOR TURF LAYOUT DETAILS.
2. ALL STRIPING SHALL BE WHITE WITH A LINE WIDTH OF 4"
3. BASE PAD PRODUCT SHALL BE SCHUTT BOLCO PRO WITH METAL ANCHOR AND SLEEVE OR APPROVED EQUAL.

SYNTHETIC TURF COLOR LEGEND

- BROWN (PANTONE 476C)
- DARK GREEN (PANTONE 2410C)
- GREEN (PANTONE 364C)

SCALE: 1"=20'

0 20 40

NO.	REVISION	DATE
A	ISSUED FOR CONST.	02.16.22

MKEC
Wichita, KS • 316-684-9600

FORT HAYS STATE UNIVERSITY
Forward thinking. World ready.

DEPARTMENT OF ADMINISTRATION
OFFICE OF FACILITIES & PROPERTIES MANAGEMENT
DESIGN, CONSTRUCTION & COMPLIANCE
700 HARRISON, SUITE 1200
TOPEKA, KS 66603
785-291-3695

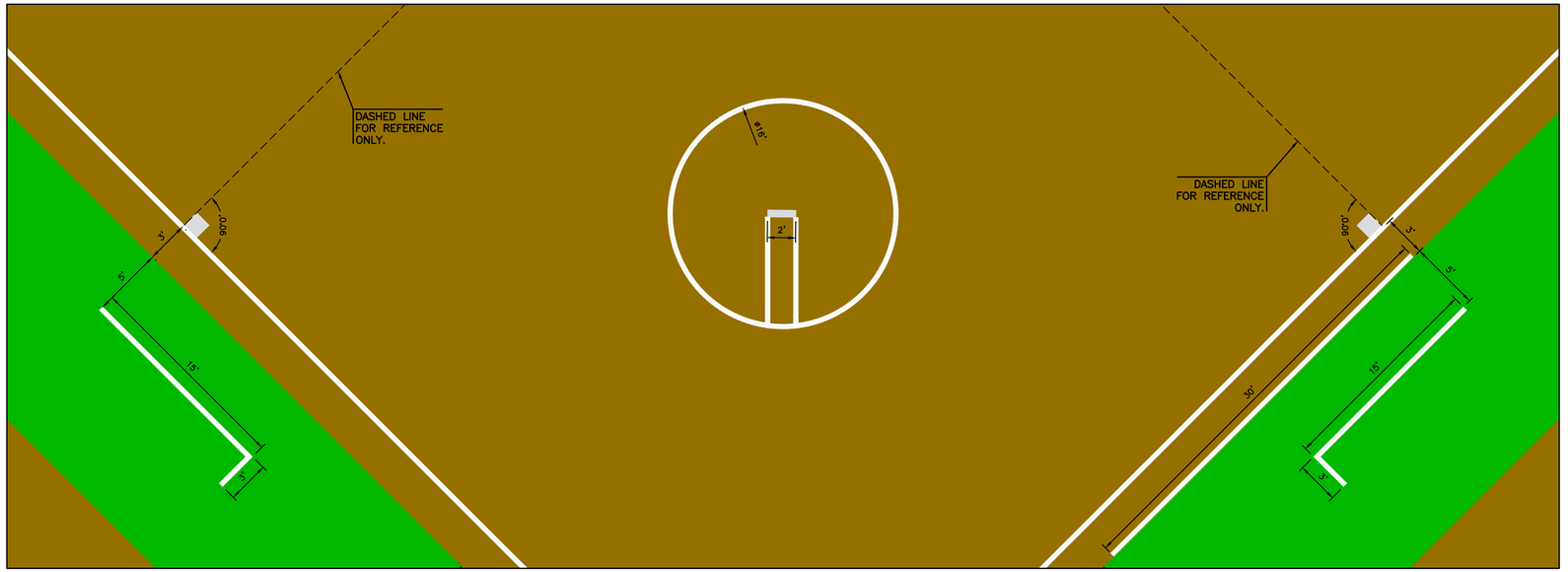
FORT HAYS STATE UNIVERSITY
TIGER STADIUM IMPROVEMENTS
HAYS, KANSAS
DRAWN BY: KM CHECKED BY: MB
DATE: 12.01.2021

OVERALL TURF LAYOUT

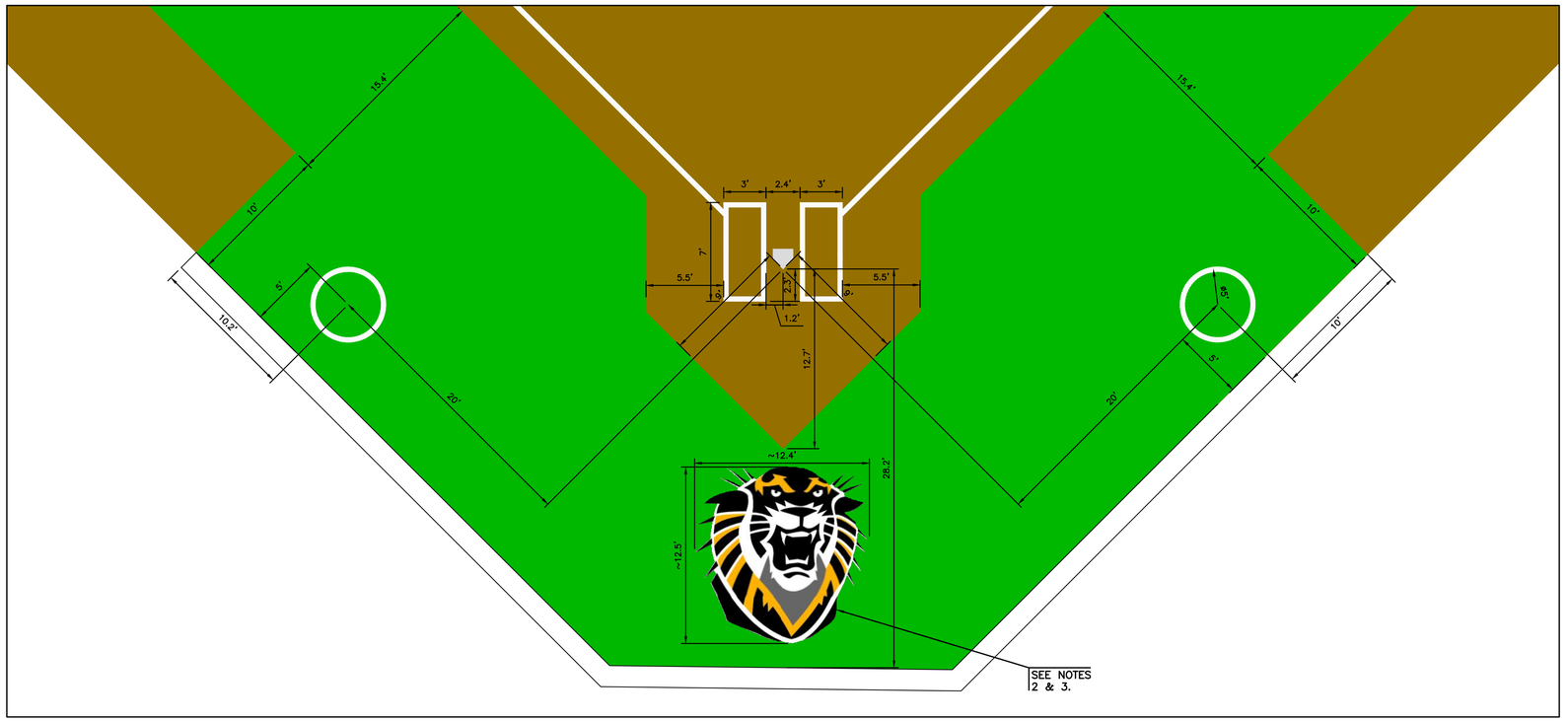
2101010705

5 OF 9

ORIGINAL CONTRACT DOCUMENTS



INFIELD DETAIL



HOME PLATE DETAIL

NOTES:

1. SEE SHEET 5 FOR OVERALL TURF LAYOUT.
2. CONTRACTOR TO COORDINATE FIELD LOGO & LOCATION WITH OWNER PRIOR TO CONSTRUCTION.
3. FORT HAYS STATE UNIVERSITY LOGO COLORS SHALL MEET THE FOLLOWING:
   - TIGER GOLD:
     - PMS: PMS 130C, PMS 129U
     - CMYK: 0-30-100-0
     - RGB: 247-168-0
     - HEX: #FDB913
   - BLACK:
     - PMS: PROCESS BLACK
     - CMYK: 0-0-0-100
     - RGB: 0-0-0
     - HEX: #000000
   - WHITE:
     - PMS: OPAQUE WHITE
     - CMYK: 0-0-0-0
     - RGB: 255-255-255
     - HEX: #FFFFFF

SYNTHETIC TURF COLOR LEGEND

- BROWN (PANTONE 2319C)
- DARK GREEN (PANTONE 2410C)
- GREEN (PANTONE 364C)

SCALE: 1"=5'
0 5 10

NO.	REVISION	DATE
A	ISSUED FOR CONST.	02.16.22

MKEC
Wichita, KS • 316-684-9600

FORT HAYS STATE UNIVERSITY
Forward thinking. World ready.

DEPARTMENT OF ADMINISTRATION
OFFICE OF FACILITIES & PROPERTIES MANAGEMENT
DESIGN, CONSTRUCTION & COMPLIANCE
700 HARRISON, SUITE 1200
TOPEKA, KS 66603
785-291-3695

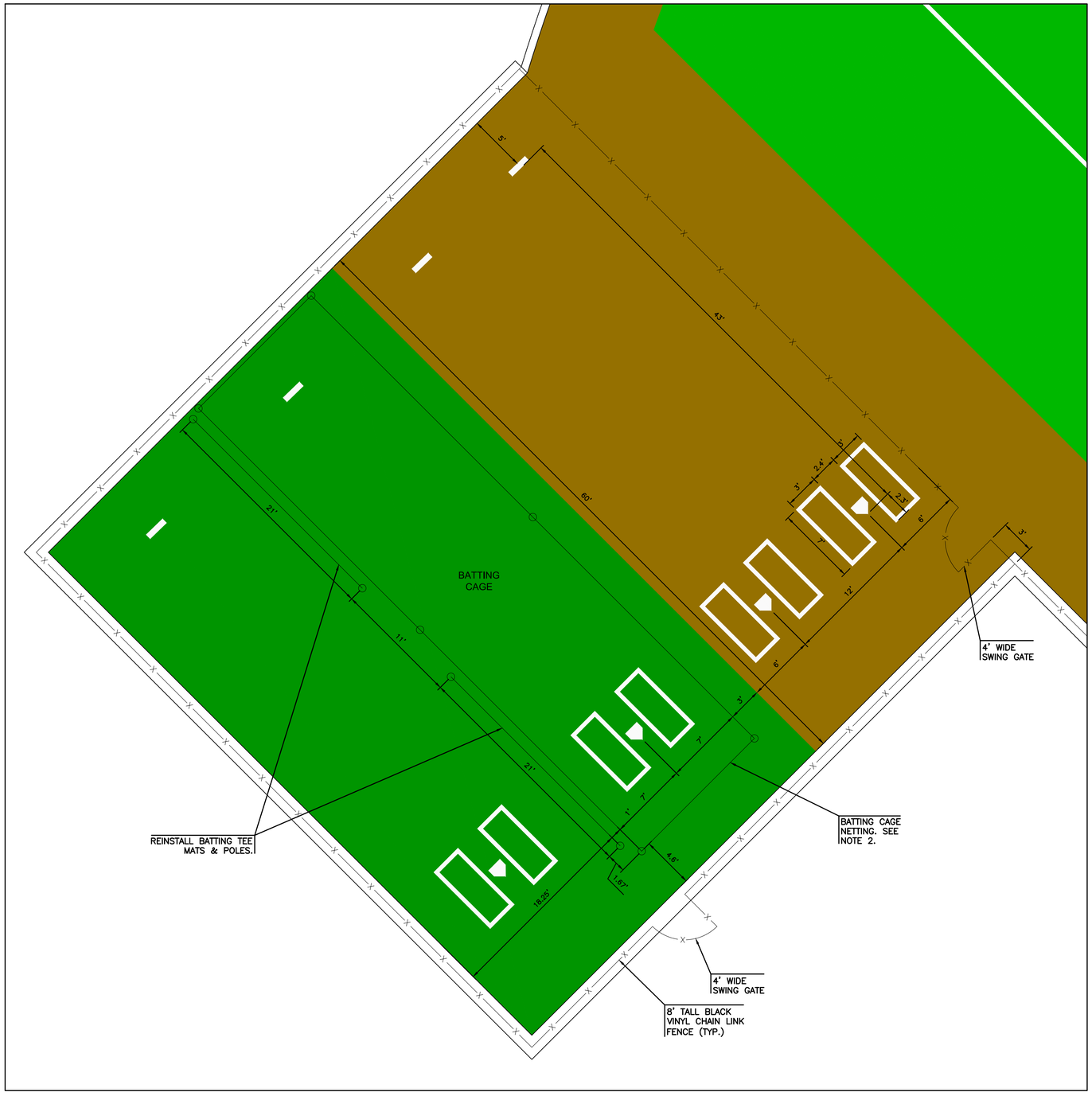
FORT HAYS STATE UNIVERSITY
TIGER STADIUM IMPROVEMENTS
HAYS, KANSAS
DRAWN BY: KM CHECKED BY: MB
DATE: 12.01.2021

TURF LAYOUT DETAIL 1

2101010705

6 OF 9

ORIGINAL CONTRACT DOCUMENTS



TIGER'S BULLPEN & BATTING CAGE DETAIL

NOTES:

1. SEE SHEET 5 FOR OVERALL TURF LAYOUT.
2. CONTRACTOR TO COORDINATE WITH OWNER BATTING CAGE PRODUCT PRIOR TO CONSTRUCTION. CONTRACTOR TO INSTALL NETTING, POST, & POST FOOTINGS PER MANUFACTURE'S STANDARDS & SPECIFICATIONS.

SYNTHETIC TURF COLOR LEGEND

- BROWN (PANTONE 2319C)
- DARK GREEN (PANTONE 2410C)
- GREEN (PANTONE 364C)

SCALE: 1"=5'
0 5 10

NO.	REVISION	DATE
A	ISSUED FOR CONST.	02.16.22

MKEC
Wichita, KS • 316-684-9600

FORT HAYS STATE UNIVERSITY
Forward thinking. World ready.

DEPARTMENT OF ADMINISTRATION
OFFICE OF FACILITIES & PROPERTIES MANAGEMENT
DESIGN, CONSTRUCTION & COMPLIANCE
700 HARRISON, SUITE 1200
TOPEKA, KS 66603
785-291-3695

FORT HAYS STATE UNIVERSITY
TIGER STADIUM IMPROVEMENTS
HAYS, KANSAS
DRAWN BY: KM CHECKED BY: MB
DATE: 12.01.2021

TURF LAYOUT DETAIL 2

2101010705

7 OF 9

ORIGINAL CONTRACT DOCUMENTS

VISITOR BULLPEN & BATTING CAGE DETAIL

NOTES:

1. SEE SHEET 5 FOR OVERALL TURF LAYOUT.
2. CONTRACTOR TO COORDINATE WITH OWNER BATTING CAGE PRODUCT PRIOR TO CONSTRUCTION. CONTRACTOR TO INSTALL NETTING, POST, & POST FOOTINGS PER MANUFACTURE'S STANDARDS & SPECIFICATIONS.

SYNTHETIC TURF
COLOR LEGEND

- BROWN (PANTONE 2319C)
- DARK GREEN (PANTONE 2410C)
- GREEN (PANTONE 364C)

SCALE: 1"=5'
0 5 10

NO.	REVISION	DATE
A	ISSUED FOR CONST.	02.16.22

MKEC
Wichita, KS • 316-684-9600

FORT HAYS STATE UNIVERSITY
Forward thinking. World ready.

DEPARTMENT OF ADMINISTRATION
OFFICE OF FACILITIES & PROPERTIES MANAGEMENT
DESIGN, CONSTRUCTION & COMPLIANCE
700 HARRISON, SUITE 1200
TOPEKA, KS 66603
785-291-3695

FORT HAYS STATE UNIVERSITY
TIGER STADIUM IMPROVEMENTS
HAYS, KANSAS
DRAWN BY: KM CHECKED BY: MB
DATE: 12.01.2021

TURF LAYOUT DETAIL 3

2101010705

8 OF 9

ORIGINAL CONTRACT DOCUMENTS

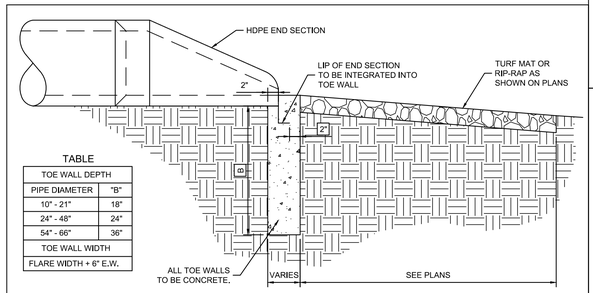
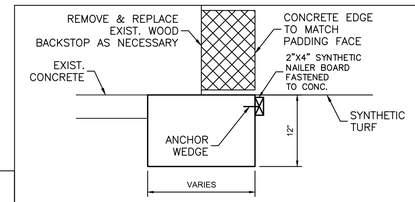


TABLE	
TOE WALL DEPTH	
PIPE DIAMETER	"B"
10" - 21"	18"
24" - 48"	24"
54" - 66"	36"
TOE WALL WIDTH	
FLARE WIDTH + 6" E.W.	

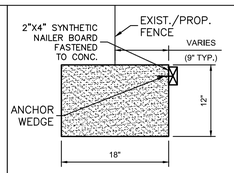
HDPE TOEWALL DETAIL

SCALE: NTS



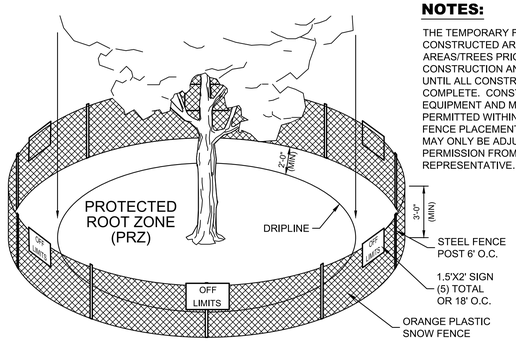
BACKSTOP CONCRETE EDGING

SCALE: NTS



CONCRETE FENCE EDGING

SCALE: NTS

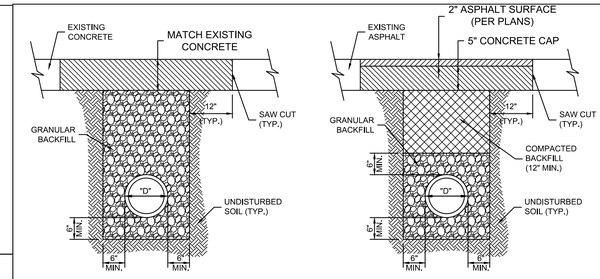


NOTES:

THE TEMPORARY FENCE IS TO BE CONSTRUCTED AROUND SPECIFIED AREAS/TREES PRIOR TO ANY CONSTRUCTION AND SHALL REMAIN UNTIL ALL CONSTRUCTION IS COMPLETE. CONSTRUCTION EQUIPMENT AND MATERIALS ARE NOT PERMITTED WITHIN THE (PRZ). THE FENCE PLACEMENT AROUND THE (PRZ) MAY ONLY BE ADJUSTED WITH PERMISSION FROM THE OWNER'S REPRESENTATIVE.

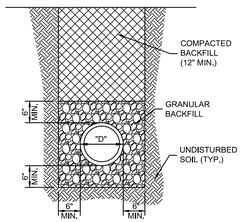
TREE PROTECTION DETAIL

SCALE: NTS

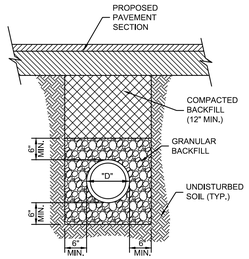


WITHIN EXISTING CONC. PAVED AREAS

WITHIN EXISTING ASPH. PAVED AREAS



OUTSIDE OF PAVED AREAS



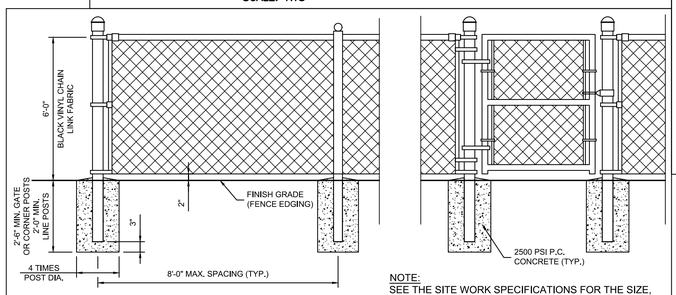
WITHIN PROPOSED PAVED AREAS

TRENCHING DETAILS

SCALE: NTS

NOTES:

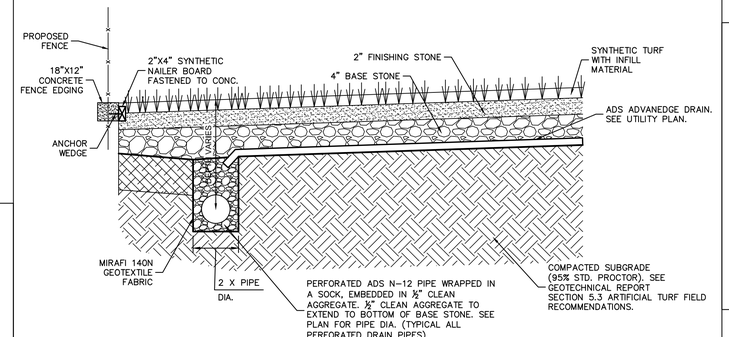
1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.
2. GRANULAR FILL SHALL BE 1/2" CLEAN ROCK, PLACED IN 6" LIFTS AND COMPACTED BY SLICING WITH A SHOVEL.
3. FILL SHALL BE FINELY DIVIDED, JOB EXCAVATED MATERIAL FREE OF DEBRIS, ORGANIC MATERIAL, AND STONES, AND COMPACTED.
4. BACKFILL TO BE COMPACTED TO 90% OF STANDARD DENSITY OUTSIDE OF PAVED AREAS.



NOTE:
SEE THE SITE WORK SPECIFICATIONS FOR THE SIZE, TYPE, AND GUAGE OF MATERIALS THAT WILL BE USED FOR CONSTRUCTION OF A CHAIN LINK FENCE.

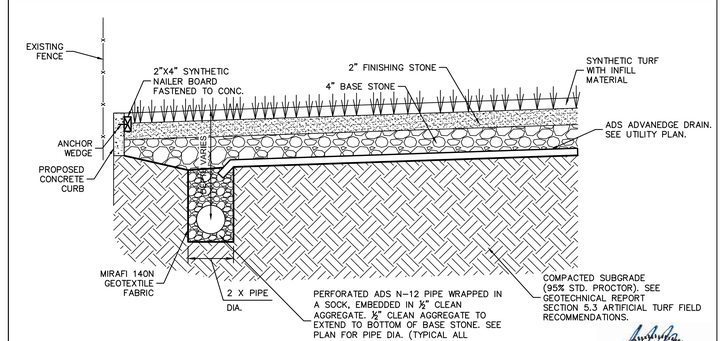
CHAIN LINK FENCE W/ GATE

SCALE: NTS



FIELD EDGE DETAIL

SCALE: N.T.S.



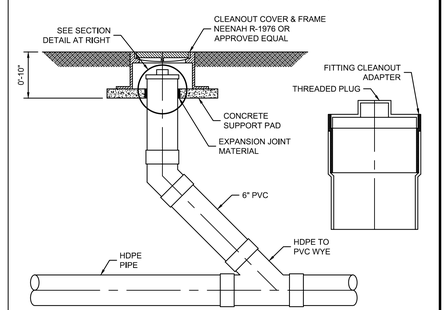
FIELD EDGE W/ CURB DETAIL

SCALE: N.T.S.

GENERAL NOTES:

1. ¾" Isolation Joints with ⅝" dia. x 2' smooth dowels shall be placed at radius points and at 150' intervals. These dowel bars shall be greased and wrapped on one end with expansion tubes.
2. 1" deep Contraction Joints shall be installed at approximately 10' intervals. these joints shall pass across the entire curb section.
3. Fix dowel bars with bar supports.
4. Concrete shall conform to Standard Specifications Section XXXXXXX.

8" CONCRETE CURB

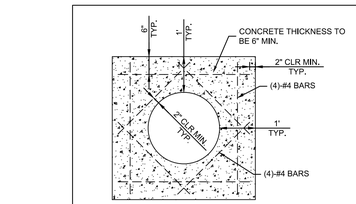


NOTES:

1. SET CLEANOUT FRAMES AND COVERS IN PAVEMENT AREAS IN A CAST-IN-PLACE-CONCRETE BLOCK, 18 BY 18 BY 12 INCHES DEEP WITH 12 INCHES OF TREATED 95% COMPACTED SUBGRADE BELOW CONCRETE, SET WITH TOP FLUSH WITH SURROUNDING PAVEMENT.
2. WHEN CLEANOUT IS INSTALLED IN CONJUNCTION WITH BENDS, THE CLEANOUT SHALL BE INSTALLED UPSTREAM OF THE BENDS.

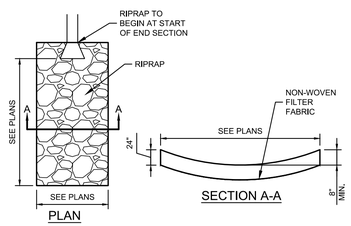
STORM SEWER CLEANOUT DETAIL

SCALE: NTS



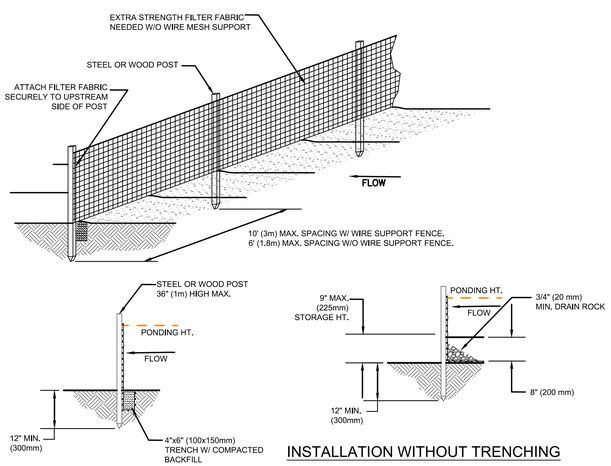
CONCRETE SURROUND

SCALE: NTS



RIPRAP AT END SECTION

SCALE: NTS



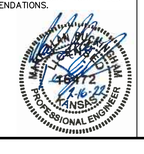
TRENCH DETAIL

INSTALLATION WITHOUT TRENCHING

NOTES:
1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

1 SILT FENCE DETAIL

SCALE: NTS



NO.	REVISION	DATE
A	ISSUED FOR CONST.	02.16.22

MKEC
Wichita, KS • 316-684-9600

FORT HAYS STATE UNIVERSITY
Forward thinking. World ready.

DEPARTMENT OF ADMINISTRATION
OFFICE OF FACILITIES & PROPERTIES MANAGEMENT
DESIGN, CONSTRUCTION & COMPLIANCE
700 HARRISON, SUITE 1200
TOPEKA, KS 66603
785-291-3695

FORT HAYS STATE UNIVERSITY
TIGER STADIUM IMPROVEMENTS
HAYS, KANSAS
DRAWN BY: KM CHECKED BY: MB
DATE: 12.01.2021

DETAILS

2101010705

9 OF 9

ORIGINAL CONTRACT DOCUMENTS