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SPECIFICATIONS FOR LABOR AND MATERIALS

FOR

**CHIDDIX JUNIOR HIGH SCHOOL BORE FIELD**

300 S. WALNUT ST., NORMAL, IL 61761

FOR

McLEAN COUNTY UNIT DISTRICT NO. 5

MAINTENANCE OFFICE: 1999 EAGLE RD., NORMAL, IL 61761

DISTRICT OFFICE: 1809 W. HOVEY, NORMAL, IL 61761

PROJECT NUMBER: 23462320

ISSUE DATE: January 11, 2021

**PRE-BID: 11:00 a.m., Monday, January 18, 2021, at Chiddix Junior High School. Meet at the East side of the building.**

**SITE VISITS: Arrange ahead of desired visit. Contact Thomas Rockwell at 309/530-1283.**

**BID DATE: Friday, February 5, 2021 – 10:30 a.m. prevailing time**  
Maintenance Office  
1999 Eagle Road  
Normal, IL 61761

Specification Booklet #: \_\_\_\_\_



Expiration Date  
11/30/22

A handwritten signature in black ink, appearing to read "Randall E. Middleton", written over a horizontal line.

[Seal and Signature]



DIVISION 0 – BIDDING & CONTRACT REQUIREMENTS

Section 00 0020 – Table of Contents

PROJECT TITLE: McLean County Unit District No. 5  
**CHIDDIX JUNIOR HIGH SCHOOL BORE FIELD**  
**CHIDDIX Junior High School**  
300 S. Walnut St., Normal, IL 61761

FOR: McLean County Unit District No. 5  
District Office: 1809 Hovey Ave., Normal, IL 61761-4339  
Maintenance Warehouse: 1999 Eagle Rd., Normal, IL 61761

SUPERINTENDENT OF SCHOOLS: Dr. Kristen Weikle

ARCHITECT/ENGINEER: Middleton Associates, Incorporated  
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A/E PROJECT NO.: 23462320

ISSUE DATE: January 11, 2021

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DOCUMENT LIABILITY

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END 00 0020

DIVISION 0 - BIDDING & CONTRACT REQUIREMENTS

Section 00 0045 – Prevailing Wage

1. GENERAL

- 1.1. This is a project requiring the payment of prevailing wages. Proper written notification as required under Public Act 96-0437:

This contract calls for the construction of a “public work,” within the meaning of the Illinois Prevailing Wage Act, 820ILCS 130/.01 *et seq.* (“the Act”). The Act requires contractors and subcontractors to pay laborers, workers and mechanics performing services on public works projects no less than the current “prevailing rate of wages” (hourly cash wages plus amount for fringe benefits) in the county where the work is performed. The Department publishes the prevailing wage rates on its website at <http://labor.illinois.gov/>. The Department revises the prevailing wage rates and the contractor/subcontractor has an obligation to check the Department’s web site for revisions to prevailing wage rates. For information regarding current prevailing wage rates, please refer to the Illinois Department of Labor’s website. All contractors and subcontractors rendering services under this contract must comply with all requirements of the Act, *including but not limited to*, all wage requirements and notice of record keeping duties.

END 00 0045



DIVISION 0 - BIDDING & CONTRACT REQUIREMENTS  
Section 00 0050 - General Conditions of the Contract

1. GENERAL

- 1.1. The General Conditions of these Contract Documents are included herein by reference: AIA Document A201, 1997 Edition and 2007 Edition.
- 1.2. Copies are available for inspection and review from the Architect and will be made available upon request. Copies that are checked out of the Architect's office shall be recorded as an attachment to the documents and shall be subject to return in usable condition along with the Drawings and Specifications Booklets.
- 1.3. See Section 007000 Supplementary General Conditions.

END 00 0050





DIVISION 0 - BIDDING & CONTRACT REQUIREMENTS  
Section 00 0860 - Drawings Index

1. GENERAL

1.1. SCHEDULE OF APPLICABLE DRAWING SHEETS: CHIDDIX JUNIOR HIGH SCHOOL BORE FIELD

T1 TITLE SHEET – JOB INFORMATION – JOB LOCATION

MO.1 BOREFIELD SITE LAYOUT

MO.2 BOREFIELD SITE LAYOUT

END 00 0860



DIVISION 0 – BIDDING & CONTRACT REQUIREMENTS

Section 00 1116 – Invitation for Bids

Sealed proposals will be received by: McLean County Unit District No. 5

For Project: McLean County Unit District No. 5  
Chiddix Junior High School Bore Field  
A/E Project No. 23462320

Date and Time of Bid Submission: **Friday, February 5, 2021 – 10:30 a.m., prevailing time.**  
Public Opening following due time.

Location: McLean County Unit District No. 5 Warehouse, Attn: Joe Adelman, 1999 Eagle Rd., Normal, Illinois 61761

Proposals shall be delivered to the above location prior to 10:30 a.m. Proposals shall be clearly identified on the outside of the envelope as "Sealed Proposal" and list the project title as shown above. Proposals will be opened and publicly read following the due time.

Terms of the proposal:

- Bid Security is required, 5% Bid Bond or Certified Check.
- Owner protective bonds are required in the amount of 100% of the Contract value after award.
- Illinois Prevailing Wage Act 820 ILCS 130/.01 *et seq.* applies to this job.
- 1992 Revised Statutes Illinois Criminal Code 720 ILCS: Article 33E Public Contracts: Bid Rigging (5/33E-3); Bid Rotating (5/E-4) Disclosure (5/33E-5); Interference (5/33E-1); Kickbacks (5/33E-7); Bribery (5/33E-8); Change Orders (5/33E-8), Drug-free Work Place Act 30 ILCS 580/1, Educational Loan Default 5 ILCS 385/1, Felony/Bribery Conviction 30 ILCS 505/10.2 and 505/10.3 apply to this job.
- E-mail proposals received prior to bid due date and time will be read at bid opening. See specification section 002113 Paragraph 2.6.A.5.

The Board of Education has the right to reject or accept the bids submitted or to waive any bidding irregularities.

**A Pre-Bid Meeting is scheduled for 11:00 a.m., Monday, January 18, 2021, at CHIDDIX JUNIOR HIGH SCHOOL, 300 S. Walnut St., Normal, IL 61761. Meet at the Track – East side of the building.**

Plans and specifications are available at Middleton Associates Incorporated, 1702 W. College Avenue, Normal, IL 61761-2793. Phone 309/452-1271. FAX 309/454-8049, and at [www.middletonassociates.net](http://www.middletonassociates.net). Scroll down and click on "Contractors". Additional sets may be purchased directly from The Copy Shop, Bloomington, IL. Tel: 309/827-5466.

END 00 0030



DIVISION 00 – PROCUREMENT REQUIREMENTS

Section 00 21 13 – Instructions to Bidders

1. GENERAL

1.1. QUALIFICATION

- A. Competency and responsibility of the Bidder, and of their proposed subcontractors, may be considered in making awards. Determination of responsibility prior to award may include:
1. A detailed statement regarding the business, technical organization, crew availability and evidence of capability for the work that is contemplated.
  2. Evidence of successful experience of personnel and previously completed construction projects
    - a. Contractor and personnel, five years or more commercial construction experience, including recent projects of similar or greater value, similarity of types of work, technical content, and complexity
    - b. Evidence that recent projects as described above have been scheduled and delivered on time, aggressively pursued to conclusion without delay.
    - c. Experience does not include frivolous claims for additional costs, or work requiring abnormal or extensive corrections.
    - d. Evidence that equipment was properly installed and started and functioned without abnormal warranty calls for installation related problems.
    - e. Evidence that the contractor coordinated with the Owner, scheduled work in a progressive manner to allow Owner reasonable access to get facilities ready for occupancy in a timely manner.
    - f. Evidence that phased projects have been completed without loss of services between phases.
  3. Information pertaining to the financial resources of the contractor to pursue the work may be considered prior to making the award:
    - a. Evidence of financial resources to cover retainage, meet payrolls, contract for and acquire or pre-pay materials. Resources and Contractor net worth available to this project less than 35% of the contract award may be grounds to disqualify the bid.
    - b. Evidence of unpaid bills, unresolved liens, outstanding claims by the Department of labor for wage, benefits or workman compensation violations or failure to provide accurate payroll information.

## 2. CONTRACT CONDITIONS

### 2.1. EXAMINATION OF DOCUMENTS, SITE AND WORK INCLUDED

A. LOCATION OF THE PROJECT: McLean County Unit District No. 5  
Chiddix Junior High School, 300 S. Walnut Street, Normal, IL 61761

#### B. PRE BID MEETINGS

1. **Pre-Bid Meeting is scheduled for 11:00 a.m., Monday, January 18, 2021, Chiddix Junior High School, 300 S. Walnut Street, Normal, IL 61761. Meet at the Track at east side of building. In case of inclement weather, meet at east exit from building to track.**
2. Building may be available for inspection after 4:00 p.m. on school days, or all day on no school days when staff is available.
  - a. Call ahead to schedule. (Maintenance Office, phone 309/275-8803, Joe Adelman)

#### C. EXAMINATION OF SITE AND CONTRACT DOCUMENTS

1. Bidder shall carefully examine bidding documents and inspect the site to obtain first-hand knowledge of existing conditions.
2. Access may not be available on short notice.
3. Do not ask for directions or interpretations of the work during these visits unless in combination with a pre-bid meeting, you may discuss the work but if any clarifications or questions become evident these must be handled through the A/E and no change to the project requirements will result from verbal clarifications of the work during a visit.
4. Each Bidder, by submitting his bid, represents that he has examined the bidding documents, inspected the site and premises, compared task requirements and time constraints to installation conditions and that he understands the obligations of the bidding documents. By providing a proposal he is certifying that he has familiarized himself with the local conditions under which the work is to be performed. Bidders will not be given extra payment or contract time for conditions that could have been determined by on site examination.

#### D. INTERPRETATION OF DOCUMENTS

1. Anyone having a doubt concerning the meaning of the Contract Documents, or any other questions, may submit a request for interpretation from the Architect/Engineer. All pre-bid interpretation shall be requested not later than FIVE (5) DAYS prior to the bid due date. Response, other than minor clarification, will be in the form of Addenda and will be mailed to each Bidder.
2. It shall be the Architect/Engineer's responsibility to clarify conflicts in requirements as may be reported to the Architect/Engineer. After bid due date, the Architect/Engineer shall determine the course to be

followed for said clarification with no cost change to the Owner.

E. ADDENDA

1. Addenda may be issued before the bid opening date to clarify or modify the Contract Documents. Addenda are posted at [www.middletonassociates.net](http://www.middletonassociates.net)
2. Addenda will be issued electronically. Email address is required to receive addenda.  
If you have not registered your interest in the bid with the Architect, and do not receive or seek out the addendums then failure to recognize any Addendum may disqualify the bid.
3. Said addenda shall become a part of the Contract documents and supersede any conflicting specifications and/or clarify intent of same.

F. INTENT, ERRORS AND OMISSIONS

1. Any known conflict between requirements of various portions of the Contract Documents shall be reported to the Architect/Engineer prior bid due date and shall fall under the authority of Interpretation of Documents.
2. The Drawings are descriptive and directive in concept and are not intended to exhaust all detail situations required to complete the work. The procedures detailed shall establish the general character of solutions needed for typical, non-typical, and peculiar situations at the job site.
3. It is the intent of the documents that specified work and equipment be installed in a proper and finished manner, fully operational, at a minimum of generally accepted standards for good quality commercial construction. All necessary materials, labor, controls, accessories, brackets, fasteners, sealants, etc., to properly install and complete the work shall be provided unless specifically noted otherwise.
4. Each Contractor and Subcontractor shall coordinate and cooperate with the other Contractors to provide proper installation. Verify dimensions, services, installation conditions, obstacles to the work and modifications necessary to complete the work and coordinate the fit, finish and scheduling of the work.

G. DOCUMENT INTENT, PROJECT COMPLETION, FITTING AND FINISHING FULLY FUNCTIONAL, USER READY

1. It is the intent that all items of work included in the project are to be completely finished and all necessary associated components and accessories for proper completion are to be included in the work.
2. Drawings are schematic in nature; every single element needed is not necessarily labeled, dimensioned or positioned. Unless specifically exempted, the Contractor shall provide as follows:
3. Good quality fit, finish and workmanship at a level of competency and quality equal to or exceeding commercial construction in the area.

- a. Sealants, caulks, flashings, transitions, closures and components to assure infiltration and weather tight result and finished appearance inside and out.
  - b. Sealants, flashings, closures at building connections.
  - c. Upper and lower flashings, in new construction and whenever possible, to shed water outward.
  
- 4. All components and assemblies to assure proper installation and performance of manufactured equipment, per manufacturer's or industry association standards as a minimum.
  - a. Mechanical equipment, plumbing, piping, ventilation, valves back checks, connections etc.
  - b. Mechanical and electrical coordination, coordination of installation locations, hidden where possible, routed through the construction in the most expedient but concealed manner,
    - 1) Minor relocation of piping, equipment, installations shall be provided without cost change within 10' either way or reasonable pathways of similar distance.
  - c. All other equipment, kitchen, doors, hardware, windows and any other operable equipment
  - d. Service access, filters, repairs always allow for reasonable repair and maintenance access.
  
- 5. Proper protection of dissimilar materials or components for bond problems, galvanic action, movement, moisture, and/or chemical reaction.
- 6. New finished appearance for all new work and work abutting existing where applicable.
- 7. Code compliance:
  - a. All equipment and installations.
  - b. Electrical NEC, circuit protection, grounding, disconnecting means, GFI, and installation practices
  - c. Water, back checks, vacuum breakers, back flow preventers, service valves, hammer arrestors, expansion tanks.
  
- 8. Construction assembly details, setting forth special requirements, keyed to a specific section, detail or I.D. number, shall be considered applicable to similar assemblies throughout the contracted work unless specifically designated otherwise.



## 2.2. DRAWINGS & SPECIFICATIONS

### A. OBTAINING INFORMATION

1. Drawings and Specifications may be reviewed at the office of the Architect, Middleton Associates Incorporated, 1702 W. College Ave., Suite E, Normal, IL 61761-2793, Telephone 309/452-1271, Fax 309/454-8049.
2. Contractor may purchase additional documents directly from The Copy Shop in Bloomington, or print on-line.
3. To obtain documents provide the A/E all contact information as well as an email address for delivery of addendums and bidding information during the bid period.
4. Method of document distribution is at the option of the Owner and the Architect whether it is paper, or digital.

### B. RETURNING DOCUMENTS

1. All documents remain the property of the Architect and shall be promptly returned after the bidding. The low bidder may keep documents and sub bidders may retain same until awards have been made.
2. Failure to return documents within 20 days after bidding will result in loss of deposit or compensation will be required for the replacement cost in the event there was not a plan deposit.

## 2.3. ALTERNATES

### A. The Bidder shall submit a proposal for every alternate listed in the Contract Documents. Failure to provide alternate prices may disqualify the bid.

1. There are no alternates unless added by Addendum.

## 2.4. BID SECURITY

### A. The Bidder shall furnish bid security, along with his proposal:

1. Form of security to be bid bond or certified check payable to the Owner.
2. Amount 5% of the base bid proposal
3. Said security shall serve as a guarantee that the Contractor will enter into the Contract with the Owner as per his bid and the contract terms should the job be awarded to him.

### B. Should said Contractor refuse or fail to enter into a Contract with Owner per his bid for the work included in these Contract Documents within fifteen days following notification of award and/or receipt of a contract for signature, said bid security shall become collectible, in full, by the Owner in payment for damages.

1. Failure to enter into an agreement shall mean failure to return or

submit:

- a. A signed agreement.
- b. Owner's protective bond(s) for Labor, materials and performance.
- c. Approved subcontractor/supplier lists.
- d. Certificates of insurance within stated time period.
- e. Evidence that this contractor intends to pursue this contract in a timely and deliberate manner, including ordering of materials and committing or arranging for necessary manpower to accomplish the work.

## 2.5. WITHDRAWAL OF BIDS

- A. Bids may be withdrawn by an authorized person prior to the bid due date and time, after which time no bids may be withdrawn for a period of forty-five (45) days unless a Bidder has been released by the Owner's action.
- B. Authorized person shall mean an Owner or Officer of the Contractor offering the proposal or other evidence of authority.

## 2.6. PROPOSAL (BID) FORMS

- A. Each bidder shall submit his proposal, on proposal form provided.
  1. Submitted bid forms may be copied
  2. All applicable blank spaces on forms shall be filled out fully.
  3. Numbers shall be stated in writing where noted and in figures.
  4. Signatures shall be live in longhand by person authorized to sign bids as Owner or corporate officer or shall include Power of Attorney to sign the bid.
  5. **Proposals emailed to Joe Adelman ([adelmanj@unit5.org](mailto:adelmanj@unit5.org)) and copy sent to Martin Hickman ([hickmanms@unit5.org](mailto:hickmanms@unit5.org)) PRIOR TO THE BID DUE DATE AND TIME will be read at the Bid Opening. Bids sent by email prior to Bid Opening will be retained on the respective computer until Bid due time.**
- B. Completed forms shall be without delineation, clarification, alteration or modification.
  1. Correction of contractor inserted is acceptable if clearly identified and initialed by the signatory to the bid. Irregularities of such corrections may be grounds to disqualify the bid.
  2. Offers to clarify or modify may be made on voluntary alternates and substitution forms if provided in the bid package, but in no case should the base bid or requested alternate bids offered be based on anything but the document requirements.
- C. Voluntary alternates or offers for substitutions may be attached on forms provided or on the bidder's letterhead. These will be considered at the

Owners option. Additional information may be requested prior to consideration.

1. Voluntary alternates or substitutions cannot and will not affect or change the Base Bid Proposal. Voluntary alternates and/or substitutions will be implemented after the low bid proposal is accepted if the voluntary alternate and/or substitutions is beneficial to the owner.

## 2.7. AWARD OR REJECTION OF BIDS

- A. Although it is the intention of the Owner to accept the lowest qualified bid the Owner specifically reserves the right to waive all formalities and/or informalities, to reject any and all bids and/or accept the bid that, in the Owner's judgment is the lowest responsible bid.
- B. Contractor will note all alternates that are applicable, or as may become applicable by addendum, should be bid. Failure to bid an alternate may be grounds to disqualify the proposal, at the Owners discretion.
- C. Should the time for award exceed the time stated for the proposal's expiration period, the Owner reserves the right to continue to negotiate with bidders in the line of award succession as a prior option rather than re-bid.

## 2.8. RETURN OF BID SECURITY

- A. After bids have been read along with alternates as applicable and a successful Bidder has been approved by Owner, a Letter of Intent will be sent to the successful bidder and bid security may be returned to the unsuccessful bidders except the deposits of the two (2) most advantageous bidders will be retained until Owner/Contractor agreements have been consummated.
- B. Following the signing of the Contracts and receipt of bonds, remaining bid security will be returned. If the successful Bidder fails to accept the Contract and submit acceptable bonds, same will be grounds for forfeiture of his bid security.

## 2.9. OWNER'S PROTECTIVE BONDS: A 100% of value Labor and Material Payment Bond and Performance Bond including all alternates accepted is required in the Contract and shall be included in the Contractor's Proposal

- A. Periodic Change Orders that may occur to the Contract shall be included in each respective bond.
- B. Bonds shall cover the entire Contract without regard to the Contractor's assignment of work of Subcontractors or Suppliers.
- C. Inclusive of all awarded Alternates accepted.

## 2.10. CONTRACT AWARD

- A. The Owner will make an award based on the selection of the lowest cost responsible bidder. After award is approved by the Board of Education, the contract timeline is as follows:
1. The Architect will fill in the Contract Form of Agreement (specification section 00 41 13). The Architect will obtain the signature of the person designated by the Board of Education.
  2. The Architect will send three (3) Forms of Agreement, and the Contractor shall sign all, keep one (1) for their file, send two (2) back to Architect. This shall happen within seven (7) calendar days of the date of award.
  3. When the Contractor has signed both copies of the Form of Agreement, the project starts.
  4. The Contractor shall immediately obtain Proof of Insurance, Labor and Materials, Payment and Performance Bonds. All of the above to be completed fifteen (15) days after award.
  5. Master Cost Breakdown (CVS), thirty (30) days after award.
  6. Proposed Schedule and timeline: Contractor to present at Pre-Construction meeting, fifteen (15) days after award.
  7. Contractor to send Shop Drawings and Catalog Cuts/Samples or bring same to Pre-Construction meeting.
- B. Failure or refusal to provide the preceding Contract information in a timely manner may be cause for cancellation of the award or termination of the agreement if signed and the Owner will be entitled to compensation under the terms of the Bid Security for failure to execute contract terms in good faith.

## 2.11 SCHEDULING

- A. Master Schedule
1. The Borefield Contractor shall maintain a Master Schedule. The HVAC Contractor may be referred to as the Prime Contractor on this project, however, the Borefield Contractor will be a separate contractor not under the Prime Contractor.
  2. The Borefield Contractor must cooperate with the Prime HVAC Contractor to coordinate joining the exterior piping with the interior loop piping and the circulation pumps which will be installed by the Prime HVAC Contractor.
  3. Upon preparation of a detailed schedule, same shall be reviewed by the Assigned Contractors and the Owner. Once accepted, it shall become the basis for determining the on time progress of the work.
    - a. Provide manpower, overtime, and equipment as needed to maintain the schedule. The Owner will not authorize additional payment for overtime or additional manpower needed to maintain, achieve, or make up time to meet the schedule. The Prime Contractor shall notify the Architect and

the Owner promptly of any deficiency in performance, which is unacceptably impacting the schedule or delaying progress.

- b. The Subcontractor(s) shall immediately notify the Prime Contractor, in the event any trade area Contractor's progress is impeding their ability to maintain the schedule.
- c. The Prime Contractor shall immediately provide notification of this report to the Architect and the Owner and shall include a plan of action to regain schedule.

B. Schedule

1. Submittals shall be prepared immediately following award. **Award is anticipated to be on February 10, 2021.**
2. Upon receipt of review submittals, schedule material and equipment for delivery.
  - a. Materials and equipment may be stored on site in trailers or in suitable insured warehouse.
  - b. Materials and equipment delivered on site or suitably stored with proof of insurance may be submitted for payment, subject to inspection.
  - c. The Owner requests that equipment and materials to do the work be on site or readily available for delivery prior to the start of operations.
3. **Well Field & Loop Piping: Drilling may begin after February 23, 2021, after insurance and bonds are submitted.**
  - a. Provide adequate barrier around drilling unit. Consult Architect.
  - b. Well drilling, loop piping, flushing must be complete by May 30, 2021. Grading and seeding must be completed June 30, 2021.

C. Manning the work

1. Contractors shall work Saturdays if work falls one (1) week behind schedule and shall continue to work Saturdays and 10-hour days, full crews or with additional crews until lost time is recovered.
2. Loss of schedule identified prior to March 15, 2021 and thereafter shall automatically require additional crews be added to complete work for start of school.

D. Sequence of work

1. Well drilling needs to begin after Contract award, and continue non-stop until completed. Coordinate with the Prime HVAC Contractor regarding location of the purge pit.

## 2.12. COMMENCEMENT OF CONSTRUCTION

- A. Contractor shall not commence work until the agreement has been executed by both Owner and Contractor and Insurance Certificate and Owner's Protective Bonds have been accepted by the Owner and the Architect.
  - 1. **All insurance certificates shall specifically list McLean County Unit District No. 5 and the Architect, Middleton Associates Incorporated and their consultants and sub-consultants to the work, as added insureds or named insureds.**
  - 2. The start date of the project will be February 24, 2021.
  - 3. Work can be done at all times when students are not in the building during regular class attendance times. This would be from 8:15 a.m. to 4:15 p.m. during the regular school attendance days.
  - 4. Progress at job site shall be continuous once work has commenced,

## 2.13. ALLOWANCE

- A. **The Borefield Contractor shall include in his bid an allowance of \$8,000 for additional time and material or Change Order work as directed and approved IN WRITING by the Owner and A/E. \$8,000 to be added to the bid.**
  - 1. Unused portion of allowance will be returned to owner at time of Final Payment request via Change Order.
- B. This is not for assignment or use by the Contractor or Subcontractors for any work that either perceives as additional effort unless the Owner is in concurrence IN WRITING.

## 2.14. PROGRESS PAYMENTS

- A. Pay Requests must be approved by the Architect / Engineer and the District Executive Director of Operations, Joe Adelman. Submit all Pay Requests to the Architect, five (5) business days before the end of each month. Pay Requests will be accepted once per month.
- B. Payment will be made within thirty (30) days following approval.
- C. In accordance with the terms of the Contract periodic partial progress payments may be made monthly to the Contractor for: 90% of the value of the labor, materials, and/or equipment incorporated in the construction. Payment will be for installed materials only.
- D. After Contract award and before commencement of work, the Contractor shall submit a complete master cost breakdown. Said cost breakdown shall be used by the Owner only for the purpose of checking and certifying requests for payment.
- E. Pay requests shall indicate amounts completed of all items listed from the master breakdown.

- F. Submit notarized Contractor's affidavits with each pay request showing that total owed on Contract by Owner (after subject request has been paid to Contractor) is more than the amount to become due the Contractor for material, subcontractors and labor.
  - 1. 10% of each request will be retained by Owner until work has been satisfactorily completed. After 75% of the Contract has been satisfactorily completed retainage reduction will be considered.
- G. All the applications for payment shall be made in two (2) copies with all copies bearing live seals and signatures, notarized and complete and accurately filled in.
  - 1. See AIA General Conditions, Paragraph 9.3.1, 9.3.2 and 9.3.3.
  - 2. Applications for payment shall be submitted to Architect/Engineer on AIA G-702A Forms.
  - 3. EACH SUCCESSIVE PAY REQUEST SHALL BE ACCOMPANIED BY PARTIAL WAIVERS OF LIEN, DOLLAR FOR DOLLAR MATCHING THE PRECEDING PAY REQUEST.
  - 4. Attach one (1) copy of Contractor's Payroll with Pay Request in accord with Dept. of Labor requirements. Include Payroll for the major Subcontractors and upon request any minor or intermittent on-site Subcontractor.

#### 2.15. CHANGE ORDERS

- A. Changes to the scope of work may occur after Contract Award. Contractor may initiate a Change Order by send an RFI to the Architect. The Architect and Owner may initiate a Change Order by verbal or written inquiry to the Contractor.
- B. When a change to the scope must occur the following procedure shall apply:
  - 1. The Change Order may be indicated as a fixed price or time and material. In all cases a written summation of work to be done shall be submitted to the Architect or written by the Architect. In all case the Contractor shall be provided a signed Letter to Proceed before accruing any expenses toward the Change Order.
  - 2. The Architect will try to provide the Letter to Proceed within twenty-four (24) hours of the time of origination of the request.
- C. Cost of Change Orders
  - 1. Cost of Change Orders shall be broken down into Labor, Material and Mark-up.
  - 2. The Mark-up will include a percentage of the cost of Labor and Material and shall include everything (bonds, insurance, project management, overhead and profit, etc.). Mark-up allowed is:
    - a. Borefield Contractor on own labor and materials – maximum

- 15%.
- b. Subcontractor on own labor and material – maximum 15%.
- c. Borefield Contractor on labor and material of Subcontractor – maximum 7.5%.
- d. Change Orders may be by T & M with above add-on.

#### 2.16. LIST OF SUBCONTRACTORS AND SUPPLIERS

- A. Within seven (7) business days after notification of intent to award, and prior to the Contract being signed, the Contractor shall submit to the Architect/Engineer, a list of proposed subcontractors and major equipment suppliers and other persons or organizations to be assigned part(s) of the contract.
- B. This list is subject to the review and approval of the Owner. Basis for this review may include supporting evidence the proposed Subcontractor or Supplier has experience and adequate resources to accomplish the assigned responsibilities on time and in compliance with the requirements.
  - 1. The Owner reserves the right to request justifiable changes in the list.
  - 2. The changes requested are intended to be made at no additional cost to the Owner.
  - 3. If it is not possible to make requested changes at no additional cost, the Owner reserves the right to terminate the award and negotiate with the next successive bidder based on his original proposal.

#### 2.17. MATERIALS SPECIFIED AND QUALITY OF WORK

- A. Materials shall be as specified or approved equal.
  - 1. Approved equal" and "or equal" shall mean that the Contractor shall be required to receive the approval (via the Architect) on any substitute materials.
  - 2. Requests for substitution approval shall be submitted to the Architect/Engineer, seven (7) days prior to the bid due date.
  - 3. Prior to considering substitutions, the Owner and/or the Architect/Engineer may require submission of samples, descriptive, technical and catalog data and lab reports of tests for verification of equivalency.
  - 4. If approved and selected, all adaptations to fit and accommodate the substitute or equal equipment including coordinating other trades is the responsibility of the Contractor requesting the change.

#### 2.18. PROGRESS PAYMENTS

- A. Will be made not more frequently than monthly, per the Owners payment schedule.

#### 2.19 PROJECT ACCESS: The Contractor shall be aware that the Town/City, Township, County or State has authority over various approach roads for site access and the



Contractor is responsible to:

- A. Observe load limits and arrange for any exceptions to load restrictions that may be required for this project.
- B. Make arrangements for road cleanup, barricades and surface patches and repairs shall comply with applicable regulations and be subject to the governing authority approval.

2.20. EQUAL OPPORTUNITY EMPLOYMENT: The following clause is applicable unless this Contract is exempt under the rules and regulations of the Secretary of Labor of the State of Illinois.

- A. During the Performance of this Contract, the Contractor agrees as follows:
  - 1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin. The Contractor will take affirmative action to ensure that all applicants are considered and that employees are treated, during employment, without regard to their race, color, religion, sex, age or national origin."

2.21. ILLINOIS DEPARTMENT OF LABOR AND LABOR RELATED REQUIREMENTS

- A. IDLR regulations apply to all work on site without exception.
- B. Publicly funded projects or projects managed by Public Bodies require the following:
  - 1. PREVAILING WAGE 820 ILCS 130/4: The Contractor shall pay and shall require his subcontractors to pay the prevailing hourly wages as is determined by the Illinois Department of Labor pursuant to the Illinois Prevailing Wage (820 ILCS 130/1 et. seq.) included at the end of this section.
  - 2. CERTIFIED PAYROLL REPORTS: Will be required with each successive pay application for payroll periods preceding the application date.
  - 3. SUBSTANCE ABUSE PREVENTION ON PUBLIC WORKS 820 ILCS 265: All Contractors must be prepared to certify upon request that they have complied with the Illinois Substance Abuse Act, including a written program that meets or exceeds the requirements of this act for the prevention of substance abuse among its employees.

2.22. SALES TAX

- A. Materials supplied to a public school district are exempt from state sales taxes. The Contractor shall determine the extent of exemption and shall

comply with the regulations established by the Illinois Department of Revenue.

1. Sales tax exemption number for Unit District No. 5 is: E99949091

#### 2.23. TOBACCO AND ALCOHOL PRODUCTS

- A. Smoking, chewing, tobacco use; shall not be permitted anywhere on public school property by State Statute.
- B. Alcoholic beverages, controlled substances, unauthorized prescription medication are not allowed on school property.
  1. Working under the influence of any of the above and/or a legal prescription that causes impairment is not allowed.
- C. Violators may be removed from the job sites subject to conditional return privileges in the future.
- D. The Contractor shall comply with 820 ILCS 265/. The Contractor shall have a place in a written program that meets the requirements of the ACT.

#### 2.24. SUBSTANCE ABUSE PREVENTION ON PUBLIC WORKS PROJECTS

- A. The Contractor shall comply with 820 ILCS 265/ which establishes a process for Drug Abuse on Public Projects. The Contractor shall have in place a written program that meets the requirement of this Act.
  1. Should evidence that a Contractor, or a Contractor's employee, has harassed staff, student or other individuals, that employee shall be removed from the job site permanently or until such time that the circumstances have been determined to have been resolved satisfactorily.

#### 2.25. SEXUAL HARASSMENT POLICY

- A. The Owner will not tolerate sexual harassment in any form. Sexual harassment is defined, for the purpose of this policy, as "unsolicited, deliberate or repeated sexually derogatory statements, gestures or physical or implied physical contact that cause discomfort or humiliation. Sexual harassment may involve pressure from a person of either sex against a person of the opposite sex or same sex . . ."
  1. Should evidence that a Contractor, or a Contractor's employee, has harassed staff, student or other individuals, that employee shall be removed from the job site permanently or until such time that the circumstances have been determined to have been resolved satisfactorily.

2.26. BACKGROUND INVESTIGATION AND SEX OFFENDERS ON SCHOOL GROUNDS

- A. Illinois Criminal Background checks are applicable to this Contract. The Contractor or subcontractor shall only send construction workers to the site that have successfully passed an Illinois Criminal Background check, per 105 ILCS 5/10-21.9 and 105 ILCS 5/14-7.02
- B. The Contractor shall provide:
  - 1. Prior to start of work; maintain a list available to the Owner of all the employees who will be or are anticipated will be employed on site. This list shall be updated when new persons not originally listed will be working on site. This list shall also include names of personnel employed by subcontractors.
  - 2. Persons temporarily on site such as truck drivers or employees making deliveries do not need to be listed, but the Owner reserves the right to request a background check.
  - 3. Provide an affidavit to the Owner that the Contractor or his subcontractor has performed an ISP approved background check by name on all personnel on site.
  - 4. Copies of employee lists and affidavits shall be promptly provided to the owner upon request.
- C. The Contractor shall not knowingly employ on school grounds any person who has not signed or will not sign an authorization for a criminal background check.
- D. The Owner or Regional Office of Education, reserves the right to run fingerprint background checks on any or all employees on site, randomly or specifically, and the cost of this check will be borne by the Owner. Upon request, provide information, which will not be shared, as needed to complete checks. This may include SSN, home addresses, fingerprint, address, etc. and any alias or former names used.
- E. The Contractor shall assume the responsibility to notify all on site employees or potential employees of this provision, and of the consequences of this provision.

2.27. EMPLOYEE-STUDENT RELATIONSHIPS

- A. Except in an emergency situation involving safety, intermingling of the Contractors' employees and the school faculty, staff and students is be avoided. Contractor or Subcontractor personnel violating this requirement shall be removed from employment at this site. The Contractor Superintendent shall monitor this to the best of his ability. Contractor employees experiencing problems with students or faculty shall report same to their Project Superintendent, who shall promptly report the problem to an authorized representative of the Owner and the Architect/Engineer.
  - 1. Avoid profanity and inappropriate subject matter in conversation as

- students and staff may be within audible range and walls or ceiling spaces may allow sound transmission.
2. Verbal or physical action interpreted as sexual in nature or as sexual harassment will be grounds for removal of the employee. Further legal action remains the option of the persons affected.
  3. In all aspects of this provision, the Contractor's employees as adults have the greater responsibility and should not respond to inappropriate student behavior.
- B. Authorized agents of the Owner include the District Superintendent, the District Financial Services Director and the Architect/Engineer. The School Principal is authorized to discuss concerns regarding operations on site, but is not authorized to order changes in the work.
- C. Smoking shall not be permitted in the existing school or on school property - State law.

#### 2.28. BUILDING PERMITS

- A. This project will require the Contractor to obtain a permit from the McLean County Health Department Environment Division.
1. This Contractor shall fully cooperate with the local authorities and shall apply for and obtain all required permits and comply with local regulations and requirements. **THE FEE FOR THE MCLEAN COUNTY HEALTH DEPARTMENT PERMIT WILL BE \$1,624.00, INCLUDE THIS AMOUNT IN THE BASE BID.**
  2. Provide necessary permit related information to local city authorities.
  3. Fees for permits will be paid by Unit District No. 5. Notify Architect when permit application will be sought so Owner has a chance to negotiate.

#### 2.29. CONTRACT DOCUMENTS CHECK LIST

- A. Proposal
1. Proposal Form properly filled out and signed, (live signatures)
  2. Bid Bond/Bid Security for 5% of base bid amount (live signatures)
  3. Low bidders exempt, return of documents within fifteen (15) working days after bid due date
- B. Letter of Intent
1. Supplier - Subcontractors List, (10 days after Award)
  2. Employee list and criminal background affidavit, (prior to start on site.)
  3. Proposal & Contract Form prepared by the Architect, (signed and returned 10 days after receipt).
  4. Labor and Material Payment Bond, two copies (10 days after award)
  5. Performance Bond, two copies (10 days after Award)
  6. Insurance Certificates, liability and hold harmless, three copies (10

- days after award)
      - 7. CSV - Master Cost Breakdown (Preconstruction meeting)
      - 8. Bar Graph/Progress Schedule, copies as required (Preconstruction meeting)
    - C. Periodically as needed
      - 1. Update employee list and criminal background affidavit as needed.
    - D. Periodic Application for Payment
      - 1. Submit per the monthly scheduling, to be determined
      - 2. Application and Certificate for Payment, 2 copies (AIA G702A)
      - 3. Contractor's Affidavit, 2 copies (AIA G706)
      - 4. Breakdown Estimate, 3 copies
      - 5. Partial Waivers of Lien, 2 copies
        - a. Partial Waiver of Lien from Subcontractors/Suppliers for previous payment, 2 copies.
        - b. Updated Progress Schedule, submit with each pay request
      - 6. Certified Payroll for all trades employed on site. Certified Payrolls may be e-mailed to our office manager at: pschildt@middletonassociates.net
    - E. Substantial Completion
      - 1. Notification work is ready for inspection.
      - 2. List of deficiencies or incomplete work.
    - F. Final Application for Payment:
      - 1. Letter to Architect that deficiency work is complete
      - 2. Final Lien Waiver from the Contractor, 2 copies
      - 3. Final Lien Waivers from Subcontractors/Suppliers, 2 copies
      - 4. Final Affidavit showing \$0.00 due to Subcontractors and \$0.00 due to Suppliers, 2 copies
      - 5. Final Payment Approval Letter from Bonding Co., 2 copies
      - 6. Certification of all guarantees, warranties and service contracts, O & M Manual
      - 7. Final Application & Certificate for Payment, 3 copies (AIA G702A)
      - 8. Additional certifications as may be requested, 2 copies
      - 9. Operating manuals & instructions, 3 copies-indexed and bound
      - 10. Figure Bonus / Penalty and Liquidated Damages if applicable.
- 2.30. **PREVAILING WAGE:** The Contractor shall pay and shall require his subcontractors to pay the prevailing hourly wages for the type of work performed in the job locality as is determined by the Illinois Department of Labor pursuant to the Illinois Prevailing Wage (820 ILCS 130/.01 et.seq.) see section 00045. **Provide Certified Payroll data per Dept. of Labor and HB 188.**

2.31. FINAL PAYMENT: The final application for payment shall not be made until all work and deficiency (punch list) items have been satisfactorily completed and approved by the Architect/Engineer for documents compliance.

A. Contractor to submit Operation Manuals and As-Built Drawings to Architect, prior to Final Payment.

END 00 21 13

DIVISION 0 – BIDDING & CONTRACT REQUIREMENTS  
Section 00 4000 – Proposal Form

1 GENERAL

1.1. WORK INCLUDES

A. Base Bid

1. All vertical loop pipe installation, all horizontal collector pipe installation, cleaning / flushing of system, installation of glycol, grading, compacting and seeding.
2. Purge Pit provided and installed by this Contractor. This contractor must install the Borefield loop pipe into the Mechanical Room 14..
3. **ADD ALLOWANCE OF \$8,000.00 TO BASE BID for unforeseen conditions.**

1.2. Contractor submit bid on the following pages: 00 4000-2 and 00 4000-3.

PROPOSAL FORM, SUBMIT WITH LIVE SIGNATURES

BID DUE DATE: **Friday, February 5, 2021** TIME: **10:30 a.m. (prevailing time)**

PROPOSAL TO: Joe Adelman, Executive Director of Operations  
McLean County Unit District No. 5 Warehouse  
1999 Eagle Rd.  
Normal, IL 61761

BID FOR: **Project No. 23462320**  
**Specifications & Drawings Titled:**  
**CHIDDIX JUNIOR HIGH SCHOOL BORE FIELD**  
**A/E #: 23462320**

SUBMITTED BY: \_\_\_\_\_

This proposal is in compliance with the documents for the: Chiddix Junior High School Bore Field, Middleton Associates Incorporated Project Number 23462320. This proposal is made without exception to any requirements as set forth or reasonably inferred in the documents and in making this proposal, I/we agree that we are familiar with on site existing conditions, the work required, the Specifications, inclusive of DIVISION 0, DIVISION 1, the Drawings, and all Addenda received and the extent of labor and materials necessary to fully complete the work within the time slot allowed between on site start-up and on site substantial completion. This proposal is made by the Contractor and the Contractor's signature thereto demonstrates his concurrence with the Owner's rights as advertised and restated herein as follows:

It is the intention of the Owner to accept the lowest bid received in accordance with the documents. The Owner, however, reserves the right to reject any or all bids, waive formalities and informalities as may be applicable to the bidding, and accept a bid, as deemed, by the Owner to be most advantageous to the Owner's interest.

ADDENDA: Addenda received and included (please check as applicable):

#1 \_\_\_\_\_ #2 \_\_\_\_\_ #3 \_\_\_\_\_ #4 \_\_\_\_\_ #5 \_\_\_\_\_

BASE BID: \_\_\_\_\_ \$ \_\_\_\_\_  
(Include Allowance of \$8,000.00 plus Permit Fee of \$1,624.00)

5% BID SECURITY ENCLOSED

- BID BOND
- CASHIER'S CHECK

**START/COMPLETION:** I/We agree to provide all the labor and material in a timely sequence to allow for construction commencement at the earliest possible date after **February 24, 2021** (see Section 00 0040) and to allow for Substantial Completion of all work on or prior to: **May 30, 2021**(see Section 00 0040).



**CERTIFICATIONS:**

**I CERTIFY THAT:** All labor and wage compensation required in the execution of this contract and provided by this contractor or his subcontractors will comply with the Illinois Prevailing Wage (820 ILCS 130/.01 et. seq.) see <http://labor.illinois.gov/>

**I CERTIFY THAT:** This proposal is made without any connection with any person making another bid for the same contract, that the bid is in all respects fair and without collusion or fraud, that no member of the Board of Education, officer thereof, or any person in the employment of designated school district is directly or indirectly interested in the bid or any portion of the profit therefrom, except as allowed by the Illinois School Code.

**I CERTIFY THAT:** I have not been barred from bidding on a contract involving public funds as a result of a conviction for either bid rigging or bid rotating or other violation under Article 33E Criminal Code of the Illinois Revised Statutes, or convicted of a felony pursuant to the Illinois Procurement Code, Section 50-10.

**I AGREE** to provide a drug-free workplace as required by the Illinois Drug-free Workplace Act. I, the undersigned, do hereby certify that I am either the bidder or duly authorized agent of the referenced bidder, and I am authorized to execute the certifications hereon.

**I AGREE** to comply with applicable provisions of the Illinois Human Rights Act (775 Illinois Compiled Statutes 5), the U.S. Civil Rights Act, the Americans with Disabilities Act, Section 504 of the U.S. Rehabilitation Act and the rules applicable to each. The equal opportunity clause of Section 750.10 of the Illinois Department of Human Rights Rules is incorporated herein. Contractor/vendor shall comply with Executive Order 11246, entitled "Equal Employment Opportunity", as amended by Executive Order 11375, and as supplemented by U.S. Department of Labor regulations (41 C.F.R. Chapter 60). Contractor/vendor agrees to incorporate this clause into all Subcontracts under this Contract.

**I CERTIFY THAT:** By submission of this proposal the bidder confirms that he is familiar with the site, existing conditions, the Bid Documents and the project schedule. **Project completion by May 30, 2021 (grading and seeding completed by June 30, 2021).**

EXPIRATION OF PROPOSAL - I/We agree that this proposal shall be binding for a period of thirty (30) days following the bid due date set forth in the advertisement for bids.

SUBMITTED BY: \_\_\_\_\_

SIGNED BY: \_\_\_\_\_

END 00 0300

CORPORATE SEAL  
(for corporations only)



DIVISION 0 - BIDDING & CONTRACT REQUIREMENTS  
Section 00 4113 – Award & Contract Form

1 GENERAL

- 1.1. The following Agreement (00 4113-2) will be filled out by the Architect after the bidding process and sent to the Owner and Contractor for signature.

**OWNER-CONTRACTOR FORM OF AGREEMENT**

Between:

The Owner: McLean County Unit District No. 5  
1809 W. Hovey Ave.  
Normal, IL 61761

And the Contractor: \_\_\_\_\_

For the Project:

**CHIDDIX JUNIOR HIGH SCHOOL BORE FIELD  
FOR MCLEAN COUNTY UNIT DISTRICT NO. 5**

The Owner and Contractor agree to enter into a contract in accordance with the terms and conditions of the Documents (Plans & Specifications), A/E Project Number 23462320 and the Contractor's Proposal dated February 5, 2021 which become the Contract for completion of the project as follows:

Base Bid Substantial Completion Date: May 30, 2021

Additional Terms & Conditions: None (or as applicable)

Addenda: #1 \_\_\_\_\_ #2 \_\_\_\_\_ #3 \_\_\_\_\_ #4 \_\_\_\_\_ (list as applicable)

**Contract Amount:** (to be listed as appropriate)

Base Bid Proposal	\$ _____
Alternate Bids as awarded to be listed	\$ _____
Total Contract Amount	\$ _____

(Written) \_\_\_\_\_ Dollars

**Date of Agreement:** \_\_\_\_\_

**Signatures:**

**Owner:**  
McLean County Unit District No. 5

**Contractor:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contractor's Seal  
(Corporation Only)

This Agreement must be signed and returned with the Contractor's Performance Labor and Materials Payment Bonds within fifteen (15) days of notice to the Contractor.

END 00 0301

DIVISION 00 – PROCUREMENT REQUIREMENTS  
Section 00 70 00 – General and Supplementary Conditions

1. GENERAL

1.1. GENERAL CONDITIONS

- A. The conditions outlined in this and following paragraphs are to supplement and complement the conditions found in the articles of the AIA Document A201, 2007 Edition.
  - 1. Included in these Specifications by reference is AIA Document A201 General Conditions.
- B. AIA Document A201, 2007 Edition, can be purchased directly on line from a variety of vendors including the AIA and are available in electronic format as well as printed.
  - 1. AIA A201 2007 version can be reviewed at the Architects office without charge.
- C. To the page one of the AIA A201 General conditions Document:
  - 1. Project: Borefield  
Chiddix Junior High School, 300 S. Walnut, Normal, IL 61761
  - 2. The Owner: McLean County Unit School District No.5, 1809 W. Hovey, Normal, IL 61761
  - 3. The Architect: Middleton Associates Incorporated, 1702 W. College Ave., Suite E, Normal, IL 61761

1.2. SIGNING OF DOCUMENTS AND INSTRUMENTS OF THE CONTRACT

- A. All documents shall be signed by persons fully and duly authorized to so sign. Any documents signed by a person other than person prescribed by the Contractor's legal organization shall enclose with his signature the evidence of "Power of Attorney."

2. SUPPLEMENTARY GENERAL CONDITIONS

2.1. SUPPLEMENTS TO AIA DOCUMENT A201 (2007 EDITION) THE GENERAL CONDITIONS OF THE CONTRACT.

- A. The following sections represent modifications or additions to the AIA A201 - 2007 Document.
- B. TO ARTICLE 2/OWNER
  - 1. Add Subparagraph 2.2.2.1 Easements off site required by the Contractor to execute the work, such as space for storage, access, scaffolding, lane enclosure, etc., shall be arranged for by the Contractor and included in the contract amount.

C. TO ARTICLE 3 CONTRACTOR

To Subparagraph 3.3.1, delete the last two (2) sentences listed under 3.3.1 in their entirety.

1. To Subparagraph 3.3.1 insert: If the Contractor determines that such means, methods, techniques, sequences or proceedings may not be safe, or may not be appropriate to the equipment and task as becomes apparent, then said Contractor shall have included in his proposal amount allowance to complete this work per a revised plan for which he can assume responsibility and shall notify the Owner and Architect before proceeding. In no case do the Owner and Architect take responsibility for directing Contractor Operations.
2. To Subparagraph 3.12
  - a. Add 3.12.6.1 Submittals unmarked will not be reviewed at the Architect's option. Said unmarked submittals may be returned to the Contractor for re-submittal and the time loss shall not extend the time of completion of the project.
  - b. Add 3.12.6.2 Submittals reviewed by the A/E and returned or held as a record copy presume the Contractor responsibilities in paragraph 3.12.6 have been included whether noted or not.

D. TO ARTICLE 5 SUBCONTRACTORS

1. To Subparagraph 5.2
  - a. Add 5.2.5 The assignment of work or a portion of the work by the Contractor to Subcontractor(s) is the election of the Contractor and in no way changes or reduces the Contractor's obligations under the Contract to properly complete the work and/or provide clear title to the work, including the work by said Subcontractor(s).

E. TO ARTICLE 7 CHANGES IN THE WORK

1. To Subparagraph 7.1.2
  - a. Add 7.1.2.1 The Contractor and/or his Subcontractor shall not proceed with any work, directive or change for which he intends to claim extra cost without providing written notice to the Architect.
  - b. Add 7.1.2.2 The Architect and Owner shall provide response to claims for additional cost within a reasonable time period upon receipt of notice or quote.
  - c. Add 7.1.2.3 Work for which an agreement cannot be reached prior to implementation can proceed as time and material work with all parties to agree on what is additional work over that which should have been included to complete the work as originally intended.

2. To Subparagraph 7.2.2
  - a. Add 7.2.2.1 Change Order quotes shall be based on an approved quote or estimate which shall be based on labor and material cost, actual or estimated as prior agreed upon, and:
  - b. Add 7.2.2.2 Overhead and profit may be charged proportional to this category of work on the Contractor's CSV or not to exceed the greater of:
    - 1) Fifteen percent (15%) for the Contractor's own work forces
    - 2) Seven and ½ percent (7.5%) Subcontractor plus ten percent (10%) Contractor, for seventeen and ½ percent (17.5%) total for work completed under a Subcontractor arrangement.
    - 3) These allowances shall include all off site and indirect costs, including insurance, project management, bonds and profit.

F. TO ARTICLE 9 PAYMENT AND COMPLETION

1. To Subparagraph 9.6.1
  - a. Add 9.6.1.1 Wherein the Owner is governed by a public Board, payment requests must be received by the A/E 5 days prior to the end of the month prior to the next monthly Board Meeting. Payments will be made within twenty-five (25) days following Board approval. Failure to make agenda dates will result in a minimum one (1) month delay in payment.

G. TO ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

1. To Subparagraph 10.2.1
  - a. Add 10.2.1.4 The Contractor shall be responsible to provide and maintain on site MSDS Sheets for all required materials to be brought on site.
    - 1) These sheets shall be readily available upon request to the owner on remodeling renovation projects which are Owner occupied.
    - 2) Comply with VOC regulations.
    - 3) Comply with IEPA regulations.
2. To Subparagraph 10.2.3
  - a. Add 10.2.3.1 Provide for the general safety of public and Owners employees, such safety provision shall be adjusted as appropriate to the age and volume of public anticipated in

- the project vicinity.
- b. Add 10.2.3.1 Provide for traffic safety as appropriate to the operations; cooperate with the governing authorities on road activities, lane closures, excavations, surface cleaning etc.

H. TO ARTICLE 11 INSURANCE & BONDS

1. To Subparagraph 11.1.2

- a. Add 11.1.2.1 Minimum Limits of Liability for preceding coverage are:

- 1) Workers Compensation - Statutory Limit
- 2) Applicable Federal (*such as Longshoreman's*) Statutory limits.
- 3) Liability Insurance may be written as Comprehensive General Liability policy form or Commercial General Liability policy form with the following coverages:

- a) Bodily Injury - \$1,000,000 each occurrence, \$2,000,000 aggregate
- b) Property Damage - \$1,000,000 each occurrence, \$5,000,000 aggregate.
- c) Property Damage – Broad Form - \$1,000,000 each occurrence, \$2,000,000 aggregate.
- d) Personal injury (*with employment clause deleted*) \$1,000,000 aggregate.
- e) Products and completed operations \$1,000,000 to be maintained one year following final completion.
- f) Business Automobile Liability, (*including owned and non-owned and hired vehicles*)
- g) Bodily Injury and Property damage \$1,000,000 each person, \$1,000,000 each occurrence.

- 4) Umbrella Insurance \$10,000,000 over primary insurance limits.
- 5) \$10,000 Retention for self insured hazards each occurrence
- 6) In the event that a claim is filed or a settlement reached whether related to this project or not which compromises the aggregate limits of liability then the Owner and Architect shall be notified and arrangements shall be made to provide additional insurance as needed to keep aggregate limits in force for the remainder of the Contract.

2. To Subparagraph 11.1.4

- a. Add 11.1.4.1 The Owner, Architect, and Consulting



Engineers including their employees and representatives shall be included as Additional Insureds or Named Insureds on the insurance and shall be shown as such on the Certificate.

3. To Article 11
  - a. Add 11.1.5 Contractor's insurance shall be maintained in force through basic warranty and guarantee periods, not less than one (1) year following Final Completion.
4. To 11.3. Property Insurance
  - a. Add 11.3.1.1 The Owner's property and vandalism insurance has \$1,000 deductible. The Contractor shall insure and thus pay the costs not covered by the Owner's deductibles.
  - b. Add 11.3.1.2 The Owner's Builder's Risk will cover only normally included Owner risks, on site, Owner's interest only, excluding tools and property of the Contractor and improperly stored or unsecured materials.
5. To Paragraph 11.4.1 add the following Subparagraphs:
  - a. Add 11.4.1.1 The Contractor shall furnish Performance and Labor and Material Payment Bonds covering the faithful performance by the Contractor of the work specified in accordance with the plans and specifications and according to the time and terms and Conditions of the Contract, and also that the Contractor shall properly pay all debts incurred in the prosecution of the work, including those for labor and materials furnished and including labor obligations as interpreted by the Illinois Department of Labor and/or the courts.
  - b. Add 11.4.1.2 The cost of each bond shall be included in the Contract Sum plus any changes to the Contract Sum. The Contractor shall include in all bonds provisions as will guarantee faithful performance of the prevailing wage provisions of the Contract if applicable.
  - c. Add 11.4.1.3 Bonds shall be written by surety, approved by Owner, with a minimum rating of B or better, Financial Class V, or higher, in A.M. Best's Insurance Guide, current edition. The company must also be licensed in the State of Illinois.
  - d. Add 11.4.1.4 The Contractor shall require the attorney-in-fact who executes the bonds on behalf of the surety to affix thereto a certified and current copy of power-of-attorney.
  - e. Add 11.4.1.5 The Contractor shall deliver the required bonds to the Owner not later than fifteen (15) days following the date the agreement is executed.

I. TO ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

1. To Subparagraph 12.2.2.1 After Substantial Completion:
  - a. Add 12.2.2.1.1 Latent Defects, for a period of 10 years after Substantial Completion, upon demand by the Owner, the Contractor shall promptly repair or replace, including associated work repairs and cleanup necessary, defective or non-conforming work resulting from or constituting latent defects, fraud, fraudulent concealment or gross negligence.
  - b. Add 12.2.2.1.2 Seasonal equipment such as temperature controls and building systems subject to seasonal loads such as heating equipment and air conditioning, shall be warranted to perform as intended for two years. Exception would be equipment damaged by incorrect operation or maintenance procedures, specifically covered in training, but improperly implemented by the Owner.
  - a. Add 12.2.2.1.3 Prompt Repair. Upon notice from the Owner or Architect of defects or nonconforming work, the Contractor shall promptly visit the site in the company of the Owner's representative to determine the extent of all defects or nonconforming work. The Contractor shall provide all labor, material and equipment to promptly repair or replace the defective or nonconforming work. The repair shall include all adjacent work not necessarily provided by the Contractor, but damaged as a result of correcting or remedying such defects or non-conforming work. If the Contractor does not promptly pursue correction, the Owner may repair or replace such work and charge the cost to the Contractor. Work which is repaired or replaced by the Contractor shall be inspected and shall be warranted by the Contractor in accordance with this Article.
  - b. Add 12.2.2.1.4 The warranties set forth herein are in addition to all warranties or guarantees expressed or implied by operation of law, statute or ordinance.
2. To Subparagraph 12.2.2.3, Delete the word 'not'. Clarification; all materials and equipment are expected to perform satisfactorily for one year, items or equipment needing periodic attention during the first year of use, shall continue to be serviced by the Contractor until such time that the material, item or equipment is deemed to be doing its intended purpose without repeated service.
3. To Subparagraph 12.2.5
  - a. Add 12.2.5.1 Extended Warranties and Commercial Warranties. The Contractor shall deliver all commercial and extended warranties received from manufacturers to the A/E prior to Final Payment. Extended warranties and guarantees will be as described under the various trade work sections of these documents, and may be the responsibility of third parties to the contract such as dealers or manufacturer's from whom such extended coverage is specified or as

advertised such as a commercial limited warranty of performance or service. Such extended warranties may or may not include labor unless specified, or in the case of commercially advertised warranties as offered by the party selling the product or equipment.

- b. 12.2.5.2 Prompt Repair. Upon notice from the Owner or Architect of such defects or nonconforming work, the Contractor shall promptly visit the site in the company of the Owner's representative to determine the extent of all defects or nonconforming work. The Contractor shall provide all labor, material and equipment to promptly repair or replace the defective or nonconforming work. The repair shall include all adjacent work not necessarily provided by the Contractor, but damaged as a result of such defects or nonconforming work or as a result of remedying them. If the Contractor does not promptly repair or replace defective or non-conforming work, the Owner may repair or replace such work and charge the cost thereof to the Contractor. Work which is repaired or replaced by the Contractor shall be inspected and shall be warranted by the Contractor in accordance with this Article. The warranties set forth herein are in addition to all warranties or guarantees expressed or implied by operation of law, statute or ordinance.

J. TO ARTICLE 13 MISCELLANEOUS PROVISIONS

1. To Subparagraph 13.1

- a. Add 13.1.1 Location of the project is Illinois.
- b. Add 13.1.2 The Contractor shall, to the best of his knowledge and capability, perform all work encompassed by the documents, in compliance with the Environmental Barriers Act (Ill. Rev. Stat. 1985, ch. 111-1/2, pars. 3711 et seq. as amended), the Illinois Accessibility Code, 71 Illinois Administrative Code 400; The Uniform Federal Accessibilities Standards (UFAS); Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990 (effective January 26, 1992) known as ADA requirements. This obligation shall apply to the contractual work described as the project and the conduct of work processes initiated to accomplish the work.
- c. Add 13.1.3 All parties to this Contract are subject to the rules and regulations of the Illinois Department of Human Rights and the statutory requirements thereof, including the requirement that every party to a public contract shall have adopted written sexual harassment policies (PA 87-1257).
- d. Add 13.1.4 It shall be mandatory that the Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin or ancestry, age, marital status, physical or mental disabilities.

- e. Add 13.1.5 Illinois Department of Labor requirements. It shall be mandatory upon the Contractor to whom the Contract is awarded and upon any Subcontractors thereof to be in compliance with applicable wage and reporting regulations. This project is a Prevailing Wage Public Works contract.
- 2. To Subparagraph 13.3.
    - a. Add 13.3.1 Notice served by facsimile (fax) to facsimile number used during bidding and construction shall be official written notice.
    - b. Add 13.3.2 Notice served by electronic means (email) to the electronic address used during bidding and construction shall be official written notice.
    - c. Add 13.3.3 The Bidder shall notify the Architect and/or the Owner at anytime of changes in the facsimile or electronic contact addresses that will reach the contractor. Failure to so notify is the Contractors responsibility.

K. TO ARTICLE 15 CLAIMS AND DISPUTES

- 1. To Subparagraph 15.3.1 Delete the word 'SHALL' and Insert the word 'MAY'.
  - a. Add 15.3.1.1 Mediation may be employed to resolve disputes if agreed to by both parties to the Contract.
- 2. To Subparagraph 15.4.1 Delete the word Shall and insert the word 'MAY'.
  - a. Add 15.4.1.1 Arbitration may be employed to resolve disputes if agreed to by both parties to the Contract.

End 00 70 00

DIVISION 1 – GENERAL REQUIREMENTS  
Section 01 0010 – Project Summary

DIVISION 0 and DIVISION 1 are hereby made a part of each division and section of the project specifications as related items specified elsewhere.

1. GENERAL

1.1. REQUIREMENTS INCLUDE

A. Base Bid – Chiddix Junior High School, Vertical Heat Exchanger & Loop Piping

1. Bid Package

- a. Contractor furnish: Site wells, site collection / distribution piping, site valves, cleaning / flushing heater pit, glycol site restoration, purge pit and piping to Purge Pit, and piping into Mechanical Room 14. Terminate two (2) Borefield supply/return pipes in Mechanical Room 14 with shut-off valves 4' above floor.
- b. Purge Pit furnished and installed by this Contractor.
- c. All work performed under one (1) Contract.
- d. Bid shall include McLean County Environmental Health Department fee of \$1,624.00. This contractor shall pay the fee when applying for permit.

1.2. PRODUCTS FURNISHED BY OTHERS: All products, components, spaces, and equipment furnished by the Owner are currently in place and are to be relocated, disconnected and reconnected as set forth in these Documents (Specifications and Drawings) and/or required to accomplish these Documents. All added components shall be new and furnished by the Contractor.

1.3. WORK SEQUENCE

- A. The Owner will occupy the adjacent school facilities at varied occupation levels (full occupation during school year minimal occupation summer) during construction.
- B. Coordinate the work schedule with the Executive Director of Operations, Joe Adelman, phone 309/275-8803.

1.4. CONTRACTOR USE OF PREMISES

- A. Confine operations at site to areas permitted by:
  - 1. Law
  - 2. Contract
  - 3. The Owner's Representative, per 1.3.B. above.
- B. Do not unreasonably encumber site with materials or equipment. Do not

block the Owner's pedestrian traffic patterns except as prior arranged with the Owner's approval.

- C. Do not load structure, or components thereof, with weight that will endanger or damage structure.
- D. Assume full responsibility for protection and safekeeping of products stored on premises.
- E. Move and relocate as necessary all stored products or equipment that interferes with operations of the Owner.
- F. Obtain and pay for use of additional off site storage or work area needed for operations.
- G. Limited use of site for work and storage
  - 1. All vehicular on site activity shall have been prearranged and approved by the Owner.
- H. Cooperate with the Owner's use of the premises and other Contractors providing work on site under separate Contracts with the Owner.

#### 1.5. CONTINUOUS OCCUPANCY BY OWNER

- A. Owner will occupy areas for general maintenance during construction.
- B. Contractors shall provide
  - 1. Access by Owner's personnel and pupils when applicable.
  - 2. Operation of Mechanical and Electrical systems with a minimum of down time.
  - 3. Operation of exhaust systems with a minimum of down time.
  - 4. Adequate security of the premises in which work is in progress.
- C. Upon (after) the work being completed and accepted by Owner, the Owner shall provide:
  - 1. Custodial services
  - 2. Security
  - 3. General custodial maintenance

#### 1.6. COORDINATION AND COOPERATION

- A. It is the intent and purpose of the Owner to cooperate with the Contractor to the extent feasible under existing applicable laws and regulations and the Owner and the Contractor alike shall not construe this portion of the documents, that is, Section Paragraph 1.6.A, and B to the disadvantage of the other.
- B. Should the bidding Contractor not understand the foregoing, he shall notify the Architect/Engineer for clarification prior to bidding in accordance with

Section 00 2113, Paragraph 2.1C., 2.1D., and 2.1F.

- C. This Contractor shall cooperate with other Contractors and their Subcontractors working on site duly employed by the Owner to perform service related and unrelated to work outlined by these Documents.

#### 1.7. FITTING AND FINISHING THE WORK

- A. Contractor shall verify all field conditions, dimensions, elevations that relate to the work and properly accommodate these in the work as appropriate to the intended result within the Contract amount.
  - 1. In place construction, obstacles and site conditions and elements which can be seen and reasonably inferred.
  - 2. New construction, obstacles and conditions that can be seen or are to occur in the completion of the work.
  - 3. Allow to fit structural elements and all equipment as occur or will occur during the implementation of the Contract.
  - 4. Make adjustments as needed to fit and properly complete the work. This includes coordination of work by all trades.
- B. Contractor and his Subcontractors shall coordinate, accommodate, adjust and fit as appropriate all work to achieve the intended finished intent to normal commercial industry standards.
  - 1. Provide finishing elements, trim, sealants, scribes, receivers and accessories necessary and normal to the installations proposed and as recommended by manufacturers for proper use of products.
  - 2. All construction (all trades) to be weather and infiltration tight. Include appropriate weather seals, infiltration barriers, sealants, non-corrosive flashings and sealants to properly complete the intent of the project.

END 01 0010





DIVISION 1 - GENERAL REQUIREMENTS

Section 01 0040 - Field Engineering

1. GENERAL

1.1. DESCRIPTION OF DRAWINGS AND LAYOUT

- A. Drawing data is intended to be reasonably accurate, however, strict accuracy in detail is not guaranteed. The Contractor must verify all of the conditions, measurements, dimensions, rough-in requirements, piping, conduit, wiring, duct work requirements and coordination necessary for each item or piece of equipment in the Contract Documents. Verification is the Contractor's responsibility and shall be completed prior to the fabrication or installation processes. All corrections necessary to provide properly installed, finished and operable system, in accordance with the intent of the Documents, shall be made at no cost beyond the contract agreement.
- B. All measurements and conditions must be verified by actual observation at the building and the Contractor shall be responsible for all of his work fitting into place in a satisfactory and workmanlike manner in every aspect and detail subject to the approval of the Architect. The Contractor shall provide layout work and verification measurement at his own cost.
- C. Before starting his work, the Contractor shall examine all Contract Area Drawings and Specifications and if any discrepancies occur, he shall report same to the Architect IN WRITING and obtain WRITTEN INSTRUCTIONS for interpretation of the work. The Contractor shall perform all layout work pursuant to site, building, grades and levels, and furnish such engineering services as he may require to execute the intent of the work included.
- D. The Drawings are instructive and diagrammatic and shall be followed as closely as actual construction will permit. All changes from Drawings necessary to make the work of the Contractor conform to the documents shall be done at no added cost charge to the Owner above the amount shown on the Owner/Contractor Agreement.

END 01 0040



DIVISION 1 – GENERAL REQUIREMENTS  
Section 01 0051 - Grades, Lines & Levels

1. GENERAL

1.1. WORK INCLUDES

- A. The Contractor will lay out the work within and on the site.
- B. The Contractor will establish all working lines, levels, elevations and measurements.
- C. Each Contractor shall lay out his own work, including lines, levels, grades, slopes and shall coordinate with other trades.

1.2. RELATED WORK

- A. Specified elsewhere
  - 1. DIVISION 0 - BIDDING & CONTRACT REQUIREMENTS
  - 2. DIVISION 1 - GENERAL REQUIREMENTS
  - 3. DIVISION 23 – HEATING, VENTILATING, AND  
AIR-CONDITIONING (HVAC)
  - 4. DIVISION 31 - EARTHWORK

1.3. QUALITY ASSURANCE

- A. Layout Personnel
  - 1. Layout personnel shall be experienced in layout work of similar complexity.
  - 2. A layout person shall be at the job site during all major component erection, installation processes to verify adherence to lines and levels at all times.

1.4. CONTRACTOR RESPONSIBILITIES

- A. Each Contractor shall
  - 1. Lay out construction work for his trade area.
  - 2. Establish all working lines, levels, elevations and measurements for the work.
  - 3. Employ qualified personnel to perform the work.
- B. Each Contractor shall provide qualified personnel to perform layout work for specific system and equipment installations, as necessary.
- C. Each Contractor shall contact all utilities to spot locate all applicable utilities and verify the correctness of the locations indicated on the Drawings.
  - 1. The toll-free telephone number for the Joint Utilities Location

- Information for Excavators (J.U.L.I.E.) is 800/892-0123.
2. Call other utilities, if information is not provided by this source, i.e., water department, street department, telecable, etc.
  3. Some existing Pontiac Correctional Facilities need to be accommodated temporarily.

1.5. ARCHITECT/ENGINEER RESPONSIBILITIES

- A. The Architect/Engineer shall furnish
1. General data and instruction.
    - a. Improvements as applicable.
  2. Information as to available service and utility lines, both public and private.
    - a. Branch distribution on site lines are not all recorded and therefore the location and depth of some are not known.
  3. General work location from fixed points not affected by the Construction.
  4. Benchmark location and elevation where applicable.

END 01 0051

DIVISION 1 - GENERAL REQUIREMENTS  
Section 01 0310 - Construction Schedules

1. GENERAL

1.1. DESCRIPTION

A. Work Includes:

1. Submittals of project construction schedules for work within seven (7) business days after Notice of Award.
2. Revision of schedules monthly. Said schedule shall accompany each Pay Request.

B. Content of Schedules:

1. Indicate complete sequence of construction by activity.
  - a. Shop drawings, product data and samples: In accordance with Section 01 0340.
  - b. Decision dates for the selection of finishes.
  - c. Product procurement date, fabrication of each element of the construction work.
  - d. Dates for beginning and completion of each element of the construction work.
  - e. Work to be substantially complete May 30, 2021 (grading and seeding by June 30, 2021).
2. Indicate cumulative percentage of work completed as of the day of Contractor's submittal of monthly pay request.
3. Furnish separate schedule, showing submittals, review items, procurement schedules and delivery dates, as required.
4. Define critical portions of entire schedule.

C. Updating monthly by indicating:

1. Progress of each activity since previous submission.
2. Projected completion dates for all activities.
3. Activities modified since previous submission.

END 01 0310



1. GENERAL

1.1. DESCRIPTION

- A. Prior to commencing the work, the Contractor shall verify the submittal procedure to assure compliance with the submittal requirements.
- B. Required Submittals
  - 1. Shop Drawings, Submittals, and Submittal Brochures
    - a. Submit four (4) copies minimum unless notes otherwise in a particular section.
    - b. Architect and/or Owner will retain two (2) copies.
    - c. Contractor will receive remaining copies for his use.
    - d. Shop drawings and material schedules shall be accompanied by catalog cuts or fliers giving full data, description, function, and capacity of item or component thus submitted. Catalogs and fliers shall be clearly and precisely marked as to submittal content. The Architect/Engineer's office will provide no sorting to assure the submittals compliance with documents.
  - 2. Samples
    - a. When samples are requested submit two (2) minimum.
    - b. All samples will be retained unless otherwise noted in the Specifications.
  - 3. The Contractor shall, within seven (7) days of Notice of Award, submit to the Architect the following:
    - a. Name of person under Contractor employment at the job site in charge of safety.
    - b. Name of project on site Superintendent of the work.
    - c. Submit three (3) bound, indexed copies minimum.
    - d. THE SHOP DRAWINGS RETAINED BY THE OWNER AND ARCHITECT ARE NOT AVAILABLE FOR PREPARING THESE MANUALS. If additional copies are required for this, the Contractor shall make allowance and submit additional sets.
  - 4. The Contractor, within thirty-one (31) business days of Notice of Award, submit in accord with 00 0040/1.17.
- C. IDENTIFICATION OF SUBMITTALS
  - 1. The Contractor shall clearly mark each submittal of the Shop Drawings, Catalog Cuts, Pamphlet, or Specification Sheet for

identification and record, for example:

- a. DATE: As submitted
  - b. BUILDING: Project Name
  - c. LOCATION: City
  - d. TYPE OF EQUIPMENT: (Example - Heating/Ventilating)
  - e. UNIT: (Example - #1)
  - f. SUBMITTED BY: Contractor's Name
2. Data shall also indicate model number selected for furnishing and indicate capacities or conditions or operation.
    - a. Catalog data of general advertising nature, without specific outline or rating for equipment, will be rejected.
    - b. Marked product manufacturer's catalogs and engineering data shall accompany the submittal.

#### D. AS-BUILT DRAWINGS AND OPERATION MANUALS

1. The Contractor shall provide the Architect/Engineer's Office with a marked set of drawings showing changes from the original drawings. Marked As-Built Drawings shall be submitted upon progress having complied with Substantial Completion progress.
2. The Contractor shall submit three (3) copies of bound equipment Operation Manuals.
  - a. These manuals shall include all Shop Drawings and all Submittals, all Equipment Brochures, Operating Manuals, Operating Instructions, names, addresses, and telephone numbers for guarantee work, all bound into a good quality binder or loose-leaf notebook, clearly labeled.

#### E. REVIEW OF SUBMITTALS

1. Submittals will be reviewed by the Architect and/or the Owner and will be checked for Contract compliance and the basic fabrication methods.
2. The Contractor must verify all the dimensions, field conditions, field clearances, and rough-in requirements with adaptations as necessary.
  - a. Architect/Engineer review of a submittal shall not relieve the Contractor of specification compliance unless same is specifically brought to the attention of the Architect and/or Owner IN A LETTER FORM attached to the submittal data and subsequently approved by the Architect/Engineer IN WRITING.
  - b. An omission on the shop drawings followed by a review oversight thereof by the Architect/Engineer shall not be construed as the calling of specific attention thereto.

END 01 0340



1. GENERAL

1.1. DESCRIPTION

- A. Related work specified elsewhere:
  - 1. 01 0010 - Summary of Work
  - 2. 01 0041 - Project Coordination
  - 3. 01 0310 - Construction Schedules
  
- B. Contractor shall provide:
  - 1. Submittals of Master Cost Breakdown to Architect/Engineer at least fifteen days prior to submitting first Application and Certificate for Payment.
  - 2. Data to substantiate Master Cost Breakdown values if requested by Architect/Engineer.
  - 3. Submittal of quantities of designated materials where applicable.
  - 4. Listing of quantities for materials specified under unit prices.
  - 5. The Master Cost Breakdown shall serve as the only basis for the applications for payment.
  
- C. The Master Cost Breakdown shall serve as the only basis for the applications for payment.
  
- D. NOTE: PAYMENT FOR MATERIALS STORED ON OR OFF SITE WILL BE LIMITED TO THOSE MATERIALS LISTED IN THE MASTER COST BREAKDOWN.
  - 1. If Contractor requests payment for materials stored off the site, such materials must be insured and the Contractor must submit a Certificate of Insurance (identifying the location of the stored material and the stated value thereof) with the pay request.
  - 2. Said certificate shall insure the Owner's investment and identify the location of stored materials.

1.2. FORMAT OF SUBMITTALS

- A. Submit typewritten Master Cost Breakdown. (Contractor may use AIA Schedule of Value Form, i.e., continuation page from AIA Application and Certificate for Payment Form G702).
  
- B. Use the Table of Contents in these Specifications for the order of listing costs of all work. Verify all costs of the work.
  
- C. Identify each line item with the same number and title listed in the Table of Contents of these Specifications.

### 1.3. PREPARATION

- A. Itemize separate line item cost for each of the following cost items assignable to the entire project:
  - 1. Overhead and Profit.
  - 2. Bonds.
  - 3. Insurance.
  - 4. General Conditions and Operations.
- B. Itemize separate line item cost for work required by each section of specifications. Identify work of:
  - 1. Contractor's own labor forces.
  - 2. Each Subcontractor.
  - 3. Each major Supplier of products or equipment.
- C. Break down installed cost into:
  - 1. Delivered cost of product.
  - 2. Labor cost, excluding overhead and profit.
- D. Round off figures to the nearest ten dollars.
- E. Make sum of total costs of all items listed in the Schedule of Values equal to total Contract sum.

### 1.4. REVIEW AND RESUBMITTAL

- A. After review by the Architect/Engineer, revise and resubmit the Master Cost Breakdown, should same be required.
- B. Resubmit revised cost breakdowns in the same manner.

### 1.5. UPDATE

- A. Update the Master Cost Breakdown when:
  - 1. Directed by the Architect/Engineer - monthly.
  - 2. Change of Subcontractor or Supplier occurs.
  - 3. Change of product or equipment occurs.
  - 4. List change orders by number should same become applicable to the Contract.

END 01 0370

DIVISION 1 – GENERAL REQUIREMENTS  
Section 01 0400 – Quality Control

1. GENERAL

1.1. DESCRIPTION

A. Work includes

1. Testing Services: The Contractor shall perform material or installation tests as requested by Architect/Engineer wherein Architect/Engineer has doubt of compliance with Contract Documents. If tests indicate inadequate sizes, materials, product chemical make-up inadequacy or strength factors, any portions or areas of the job involving said materials shall be rectified by the Contractor as directed by Architect/ Engineer at no additional expense to the Owner. If tests indicate adequate materials and methods have been employed, the A/E will pay the cost of testing.
2. All tests as required by the Owner or Architect/Engineer shall be performed by an approved independent testing service assigned by the Architect/Engineer with procedures outlined in the applicable ASTM standards and/or as specifically requested by the Architect/Engineer.
3. Inspections: The Architect/Engineer or the Owner shall make periodic or continuous inspections at times deemed advisable to the Architect/Engineer or the Owner. If circumstances on the job site, however, required Architect/Engineer inspection due to unforeseen developments, etc., the Architect/Engineer or Owner shall make such inspections within a reasonable period of time following notification by the Contractor.
4. Employment of testing laboratory shall in no way relieve the Contractor of his obligation to perform work in accordance with the Contract Documents.
5. Inspections shall be made and judgment passed on the Contractor's performance based on the requirements of the Contract Documents.

1.2. CONTRACTOR'S RESPONSIBILITIES

A. Furnish product data.

B. Cooperate with laboratory personnel and provide access to the work or to Manufacturer's operations.

1. Provide or direct the superintendent to prepare each inspection, sampling and test and affix date, location, and time of sampling.
2. Provide laboratory with WRITTEN ACKNOWLEDGMENT of each inspection, sampling or test.
3. Within twenty-four (24) hours, notify the Architect/Engineer IN WRITING of reasons for not acknowledging laboratory field procedures.

- C. Provide to laboratory representative samples of the materials to be tested in the required quantities.
- D. Furnish casual labor and facilities:
  - 1. To provide access to work to be tested.
  - 2. To obtain and handle samples at site.
  - 3. To facilitate inspections and tests.
  - 4. For laboratory's exclusive use for storage and curing of test samples.
  - 5. Prepare concrete test cylinders and slump cone tests.
- E. Correct work which is defective or which fails to conform to the Contract Documents in accordance with the General Conditions. Corrective work shall not delay the project schedule or the work of other Contractors.
- F. All tests required by the Contract Documents shall be included in the Contractor's base bid for the work.
- G. Pay all the costs of retesting, after correction, when test results indicate noncompliance with Contract requirements.
- H. Patch all surfaces and areas disturbed by testing operations.

END 01 0400

1. GENERAL

1.1. DESCRIPTION

A. Related work specified elsewhere

1. All work provided under the Contract Documents shall be inspected by the Contractor for conformance with the documents prior to the Architect's inspection.
2. All in place work shall be subject to inspection by the Architect/Engineer and the Owner for conformance with the requirements and standards set forth in the Contract Documents and first quality general construction standards.

1.2. WORK BY THE CONTRACTOR INCLUDES

A. The Contractor's superintendent of the project shall inspect all work performed by the Contractor, his employees, Subcontractors and the Installing Suppliers before same is submitted to the Architect/Engineer as work performed.

1. Inspect for proper installation.
2. Inspect for proper materials.
3. Inspect for workmanship.

1.3. WORK BY THE ARCHITECT/ENGINEER INCLUDES

A. The Architect/Engineer shall have access to the work at all times and shall make inspection of work in place, construction components and allow or disallow in accordance with these Specifications and the accompanying Drawings.

1.4. PROCEDURES AND REPORTS

A. The Architect/Engineer, after making inspections, may report same to Contractor separately or jointly, verbally or in writing, as related to the Contract Documents in general and related to certain requirements specifically.

B. Notice shall be given the Contractor of unsatisfactory materials, handling, and storing of project materials, in place installation, workmanship, and documents compliance conduct on the job site property.

C. The Contractor shall correct or replace same as applicable to the inspection report.

1.5. QUALITY ASSURANCE

A. The Architect/Engineer or appointed special inspector for certain

processes:

1. Will make intermittent inspections at the job site and notify the Contractor of deficiencies as and when observed.
  - a. Notifications to the Contractor will be written (if not agreed upon and/or promptly corrected following verbal notification) wherein the deficiency shall or may become covered up by continuation of progress, wherein the deficiency does not comply with the required procedures.
2. Will be available to the Contractor upon call for inspections which may come to the attention of the Contractor at times not corresponding with intermittent inspections by the Architect/Engineer.
  - a. The Architect/Engineer will endeavor to respond to the Contractor's call with due promptness and no later than twenty-four (24) hours.
3. Will disallow payment for uncorrected work on the upcoming submittal by the Contractor for periodic progress payment.

B. The Contractor

1. Shall correct all work associated with the inspections made by the Architect/Engineer promptly or present an approved schedule for same.
2. Shall, wherein redeliveries of materials and components are involved:
  - a. Promptly respond IN WRITING to the deficiency notice.
  - b. Issue a schedule of correction, if applicable.
  - c. Make right damages effected to work of other contractors involved, as applicable.
3. Shall notify the Architect/Engineer of the schedule for the following day by day operations at the job site:
4. Contractor shall notify Architect/Engineer twenty-four (24) hours in advance of commencement of operations.

1.6. OWNER

- A. Owner Representatives shall have access to the work at all times.

END 01 0420

DIVISION 1 – GENERAL REQUIREMENTS  
Section 01 0510 – Temporary Utilities

1. GENERAL

1.1. REQUIREMENTS INCLUDE

- A. Contractor shall provide and maintain specified temporary utilities.
- B. Contractor may extend services from Owner's existing sources.
  - 1. Tap on and extension of services shall be implemented and paid for by the Contractor requiring utility.
- C. Contractor shall furnish (included in his Base Bid):
  - 1. The cost of all utilities required by him which:
    - a. Are in excess of existing available at the building and are necessary for the completion of his work.
    - b. Exceed the capacity of existing or permanent systems and are necessary for the completion of his work.
  - 2. Hoses and fittings from temporary standpipes or water service connection to his work.
  - 3. Drinking water for his own forces.
  - 4. Extension cords, extension lights and lamps from approved temporary power centers to his work.
  - 5. Ventilation for his storage spaces containing volatile or hazardous materials.
  - 6. Security for materials and equipment.
  - 7. Temporary toilet facilities.

1.2. RELATED REQUIREMENTS

- A. Furnished by Owner
  - 1. Authorization of existing facilities for temporary use.
    - a. Electrical power service.
    - b. Lighting extended by drop cords from existing sources.
    - c. Water service extended from existing outlets by the Contractor.
  - 2. Owner will pay all costs of consumables used for construction purposes for utilities it furnishes.
  - 3. The Contractor requiring Owner-furnished services shall provide and pay for extension or modification of services to perform the work and for restoration of services and Owner equipment at completion of the work.

### 1.3. DESCRIPTION OF UTILITY SYSTEMS

#### A. Electrical system:

1. Power is supplied to the site by Ameren IP.
2. The Contractor is advised to contact Ameren IP. to get temporary protection at electrical service entrance (over and adjacent to) the construction area. Phone 800/755-5000, as printed in the area phone book, further contact number may be provided by Owner.
3. The Contractor shall provide and maintain extensions of existing electric power system for construction needs throughout construction period.

#### B. Natural Gas

1. Provided by Nicor Gas Company (verify with Owner).

#### C. Water Service:

1. Water provided by the Town of Normal.
2. For construction purposes: The Contractor shall provide and maintain temporary water service connection throughout construction period. Continually running water during construction operations is not allowed.
  - a. For temporary fire control.
  - b. For material preparation and mixing.
  - c. For cleaning operation.
3. The Contractor provides drinking water for his own employees.

### 1.4. REQUIREMENTS OR REGULATORY AGENCIES

- #### A. Compliance with specified codes and regulations (latest editions in effect as of the date of bidding documents) is the responsibility of the Contractor. See 01 0060.

### 1.5. USE OF OWNER'S EXISTING SYSTEMS - RULES AND REGULATIONS

- #### A. Owner's mechanical systems shall remain in service throughout the construction except for prearranged temporary shutdowns.
- #### B. Make all arrangements with the Owner's Representative for use of electrical power for hand tools, temporary lighting, toilets and use of water. Temporary connections shall not interfere with or starve the ordinary use of the building or for ongoing maintenance and service activities therein.
- #### C. Limitations
1. Keep work areas enclosed to avoid energy waste.
  2. Keep away from any areas as directed by Owner/Representative.



- D. Modify temporary utility systems if requested by the Architect/ Engineer or the Owner.
- E. Upon completion of work, or when directed by Architect/Engineer, restore existing systems to original condition or specified conditions.

END 01 0510



1. GENERAL

1.1. WORK INCLUDES

A. Base Bid:

1. Provide and maintain clicker type temporary fence around entire well field during all work opportunities. Fence must be at least five feet (5') high.
2. Provide a movable section for entry and exit during work operations.
3. Remove when no longer needed, at completion of work or as directed to facilitate the Owner's regular use of this building and site.
4. Contractor shall replace any and all damage to buildings and grounds including plantings, walks, drives, trees, sod, and utilities and lights to pre-construction or better condition.
5. Do not leave construction aids, where accessible to passers-by or intruders in place overnight unattended.

1.2. RELATED REQUIREMENTS

A. Specified elsewhere

1. 01 0010 - Project Summary

2. PRODUCTS

2.1. MATERIALS

- A. Temporary materials may be new or used, suitable for purpose.
- B. Do not violate specified codes.
- C. Installed materials shall be new except as specifically noted by the drawings.

2.2. BARRIERS:

- A. Plastic clicker-type fence at least five feet (5') high.

3. EXECUTION

3.1. INSTALLATION

- A. Install to a neat and uniform appearance, structurally adequate for purposes.
- B. Maintain barriers during entire construction period.
- C. Relocate barriers as construction progresses.

### 3.2. TREE AND PLANT PROTECTION

- A. Preserve and protect existing trees and plants at site and those adjacent to site.
- B. Replace or repair, trees and plants which are damaged or destroyed due to construction operations.

### 3.3. UTILITIES

- A. Take all reasonable precautions against damage to utilities.
- B. The Contractor shall confirm locations of all existing utilities in the work areas before commencing any of his work. See Site Plan.
- C. Verification should be made with electrical, telephone, cable, water, sewer, gas, and any other utility normally servicing the area. Before commencing any excavation call the Joint Utilities Location Information for Excavators (J.U.L.I.E.) toll free number 1-800-892-0123; call the City Sanitary Department; call the Telecable Service Company; and call the City Street Department, all as applicable.
- D. Whenever inadvertent damage or breaks occur in an existing gas, water, sewer, steam conduit, telephone, electrical main or service, the Contractor responsible shall immediately notify proper officials of utility interruptions.
- E. The Contractor shall render all possible assistance in restoring the services cut by him and shall assume all costs, charges or claims connected with the interruptions and repair of the same.

### 3.4. REMOVAL

- A. Completely remove barriers when construction has progressed to the point that they are no longer needed, and when approved by the Architect/Engineer.
  - 1. The steel chain link type fence needs to remain in place continuously as long as school is in session.
  - 2. Other barriers after students are no longer on site may be removed when security is provided by locked entry doors.
- B. Clean and repair damage caused by installation, fill and grade site areas to indicated elevations and slopes, and clean the area.

END 01 0530

1. GENERAL

1.1. WORK INCLUDES

- A. The Contractor shall
  - 1. Protect work, stored materials and construction equipment from theft and vandalism.
  - 2. Protect premises and project from entry by unauthorized persons.
  - 3. Cooperate with the Owner's maintenance personnel and protect the Owner's operations at the job site from theft, vandalism or damage from entry by unauthorized persons.
- B. The Contractor shall be responsible for the security of his materials and tools. The Contractor shall exercise reasonable security precautions at all times that the project is left unattended.
- C. The Contractors shall cooperate in maintaining the construction security by closing and locking all openings whenever the work is not manned and at the close of each day's work.

1.2. RELATED REQUIREMENTS

- A. Specified elsewhere
  - 1. 01 0010 - Project Summary
  - 2. 01 0530 - Barriers

1.3. MAINTENANCE OF SECURITY

- A. Initiate security program in compliance with Owner's system prior to mobilization.
- B. Maintain security program throughout construction period until substantial completion.
- C. Cooperate with the Owner to maintain security.
- D. Comply with Owner regulations for safety and security.

END 01 0540



DIVISION 1 – GENERAL REQUIREMENTS  
Section 01 0550 – Access Roads & Parking Areas

1. GENERAL

1.1. REQUIREMENTS INCLUDE

A. Contractor

1. The existing running track must be protected for access to the football field. The area around the access will need to be restored when project is done.
2. Maintain equipment and materials vehicular delivery access to buildings in the project for the Owner's normal use of the facility.
3. Provide access to temporary construction facilities, storage and work areas for use by persons and equipment involved in project construction and for use by emergency vehicles.
4. Provide parking and work area access separate from regular school parking and access.

1.2. RELATED REQUIREMENTS

A. Specified elsewhere

1. 01 0010 - Project Summary

1.3. ON SITE ROADS AND PARKING AREAS

A. Contractor shall utilize existing roads, drives, walks and to provide access to construction work, storage and other areas required for execution of the Contract.

1. Location: The Contractor shall consult with the Owner's building administrator and comply with all regulations and limitations imposed thereby.
2. The Contractor arranges for parking facilities: Adequate to provide for employees and subcontractor employees.
3. The Contractor shall make his own arrangements concerning street traffic interference and barricade requirements.

B. Provide access for emergency vehicles.

C. Keep fire hydrants and water control valves free from obstruction and accessible for use.

1.4. EXISTING CONDITIONS

A. City improvements

1. Obtain city permission to operate equipment of excessive width or weight on public right-of-way.

B. Owner site improvements include paved parking areas, concrete sidewalk landscaping and play equipment.

1. Discuss with Owner planned equipment and material delivery routes to minimize damage.

2. PRODUCTS (Not Applicable)

3. EXECUTION

3.1. MAINTENANCE

A. Maintain roads, walks and parking areas (where use of same has been allowed by the Owner) in a sound, safe and clean condition.

B. Repair or replace all surfaces damaged during construction work progress.

1. Contractor repair pavements, landscaping, or lawn areas damaged during construction.

2. Contractor document any damage to pavement, landscaping or lawns that exist prior to construction operations.

a. This may be accomplished by photographs or in conference at the site with A/E and Owner.

END 01 0550



1. GENERAL

1.1. WORK INCLUDES

- A. The transportation and handling of material and equipment are the full responsibility of the Contractor and/or his subcontractors and suppliers for all work. The Contractor shall accept full responsibility for the conduct of and cooperation on the part of his subcontractors and suppliers.
- B. On site storage of the materials shall be limited to the materials immediately required to maintain progress.
  - 1. Such storage shall be prior arranged and the Contractor shall be fully responsible for damage or loss to stored materials.
  - 2. Storage of any materials not immediately required for progress shall be the Contractor's responsibility.
- C. All the stored materials shall be completely protected from damage due to abuse, vandalism and the environmental elements.
- D. All the stored materials shall be located as remote from the public access as possible and shall not interfere with exiting.

1.2. INSTALLATION

- A. All materials and equipment, as specified, are selected in accordance with manufacturer's data.
- B. The Contractor shall verify the actual installation refinements of each piece of material or equipment as delivered to the job by the Supplier and make all necessary fitting allowance for that equipment.
- C. All replaced equipment shall be properly installed and made operable without claim for additional charge to the Owner.
- D. Do not extend services to equipment in the Contract, or the associated contracts, until same is set in place and/or Manufacturer data is received indicating all clearances, piping, venting, and electrical requirements are met.
- E. All specified equipment shall be properly installed and made operable without claim for additional charge to the Owner. The Contractor shall make allowance in his proposal for fitting work.

1.3. MATERIAL AND EQUIPMENT SELECTION

- A. Most materials are specified by a specific manufacturer's trade name and model number to establish the standards of quality and performance and not for the purpose of limiting competition. Where one or more other

manufacturers are mentioned, the materials manufactured by them will be acceptable, providing they meet the requirement and intent of the Contract Documents.

- B. The naming of other manufacturers beyond the "first named" does not imply automatic approval of their materials. The materials, other than those "first named", in these Contract Documents will be approved only if they do indeed meet the requirements and intent of these Contract Documents.
- C. Where a specified piece of equipment is no longer available, the Contractor shall provide equivalent equipment by the same manufacturer or by another manufacturer as approved by the Owner or Architect. Said equipment shall be provided at no additional cost to the Contract.
- D. All extra costs for additional work, rearrangement of work, larger bases or enclosures, etc. caused by using other than the "first named" systems shall be borne entirely by the Contractor furnishing such equipment.

#### 1.4. SUBSTITUTIONS

- A. If a specific product is named and it is indicated that a product of equal quality may be used, the named product must be used unless substitute product is approved prior to signing contract.
- B. Requests for substitution shall include the following:
  - 1. Written request for substitution.
  - 2. Complete description of proposed substitute material or equipment.
  - 3. A submittal drawing showing equipment as it would be installed in this work.
  - 4. A listing of changes by the Contractor to services, piping, space allowance, etc. which may become necessary to accommodate the proposed substitute equipment.
- C. Following the bid date, requests for substitution may be made as described above. The Owner and Architect/Engineer may consider such requests and accept or deny the request without explanation.
- D. The Contractor or his Supplier requesting a substitution shall verify all conditions applicable to the product in this Contract or in the associated contracts. All costs for additional work, including rearrangement of work, larger bases, piping or electrical modifications as become necessary to accommodate the substitution, shall be borne by the Contractor furnishing the product and/or equipment.

END 01 0600

DIVISION 1 - GENERAL REQUIREMENTS  
Section 01 0700 - Project Closeout

1. GENERAL

1.1. WORK INCLUDES

- A. Project Closeout procedures cannot be initiated until the steps on the following checklist have been taken:

FINAL APPLICATION FOR PAYMENT CHECKLIST

- \_\_\_\_ 1. Letter to A/E that deficiency work is complete
- \_\_\_\_ 2. Final Lien Waiver from the Contractor (2 copies)
- \_\_\_\_ 3. Final Lien Waivers from Subcontractor/Suppliers (2 copies)
- \_\_\_\_ 4. Final Affidavit showing \$0.00 due to Subcontractors and \$0.00 due to Suppliers (2 copies)
- \_\_\_\_ 5. Bonding Company Final Payment Approval Letter (2 copies)
- \_\_\_\_ 6. Certification of all guarantees beyond standard 1-year (2 copies)
- \_\_\_\_ 7. Contractor's Periodic Remaining for partial payments (2 copies)
- \_\_\_\_ 8. Additional warranty certifications as may be requested (2 copies)
- \_\_\_\_ 9. Operating manuals and instructions, neatly bound (3 copies)
- \_\_\_\_ 10. Manufacturer's Product Warranty Certification
- \_\_\_\_ 11. Care and Maintenance Instructions

- B. All the above documents submitted must bear live signatures.
- C. Signatures on all documents submitted shall be by an official within the company's legal organization designated to represent the company in legal transactions.
- D. The Contractor's signature shall be the same signature as appears on the Owner/Contractor Agreement. See 00 4113 – Award & Contract Form.

END 01 0700



1. GENERAL

1.1. DESCRIPTION

- A. Work includes: The work in this section is required of the Contractor unless otherwise specified. The Contractor shall:
1. Maintain premises and adjacent properties free of waste, debris, and rubbish caused by construction operations.
  2. Clean up rubbish, tools, equipment, machinery, and surplus materials at the completion of work or when directed by Owner or Architect/Engineer.
  3. Clean all sight-exposed surfaces; leave work clean and ready for intended use at the completion of work.
  4. All ground loop piping must be totally clean and free of all sediment from construction process.
    - a. If there is any sediment in the piping system it will not function.
    - b. The well field contractor will be responsible for any malfunction of the interior system if earth sediment is the cause of malfunction.

1.2. SAFETY REQUIREMENTS

- A. Maintain the project in accordance with following safety and insurance standards:
1. Applicable Federal and State requirements.
  2. National Fire Protection Association (NFPA).
- B. Maintain hazards control.
1. Store volatile wastes in covered metal containers and remove from premises daily.
  2. Prevent accumulation of wastes that create hazardous conditions.
  3. Provide adequate ventilation during use of volatile or noxious substances.

2. PRODUCTS

2.1. MATERIALS

- A. Select and use all cleaning materials and equipment with care to avoid damage to surfaces cleaned.
- B. Use only cleaning materials recommended by the Manufacturer of surface to be cleaned.

- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

### 3. EXECUTION

#### 3.1. DURING CONSTRUCTION

- A. Wet down materials and rubbish to lay dust and to prevent blowing dust.
- B. Weekly, and as needed during the progress of work, clean project area and adjacent properties, and dispose of waste materials, debris, and rubbish.

#### 3.2. FINAL CLEANING

- A. Clean all surfaces adjacent to work area of all evidence of spillage or mud tracks, etc, on parking lots, sidewalks and streets.
- B. Remove all discarded debris resulting from the construction operations.
- C. Restore all areas to same condition of adjacent property to the construction operations.

END 01 0710

DIVISION 1 – GENERAL REQUIREMENTS  
Section 01 0720 – Project Record Documents

1. GENERAL

1.1. REQUIREMENTS INCLUDE

A. Each Contractor

1. At the project site, shall maintain one (1) copy of:
  - a. Contract Drawings
  - b. Project Manual
  - c. Interpretations and supplemental instructions
  - d. Addenda
  - e. Reviewed, approved shop drawings and product data
  - f. Other modifications to Contract
  - g. Field test records
  - h. All schedules
2. Working and record documents shall be kept on the job site.
3. File documents in format in accord with Project Manual Table of Contents.
4. Maintain documents in clean, dry, legible condition.
5. Do not use record documents for field construction purposes.
6. Make documents available at all times for inspection by the Architect/Engineer and the Owner.

1.2. RELATED REQUIREMENTS

A. Specified elsewhere

1. 01 0340 - Submittals
2. 01 0700 - Project Closeout
3. 01 0730 - Operating & Maintenance Data
4. 01 0740 - Guarantees, Warranties & Bonds

1.3. MARKING DEVICES

- A. Provide black ballpoint pens for marking all work.

1.4. RECORDING

- A. Label each document "PROJECT RECORD DOCUMENTS" in two-inch (2") high printed letters.
1. Label front and back covers of Drawings and Project Manual with felt tip marker.
- B. Keep record documents current.

- C. Do not permanently conceal any work until specified information has been recorded.
- D. CONTRACT DRAWINGS - Legibly mark to record actual construction:
  - 1. Horizontal and vertical location of underground utilities and appurtenance referenced to permanent surface improvements.
  - 2. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
  - 3. Field changes of dimension and detail.
  - 4. Changes made by Change Order.
  - 5. Details not on original Contract Drawings.
- E. SPECIFICATIONS AND ADDENDA. Legibly mark up each section to record:
  - 1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
  - 2. Changes made by Change Order or Field Order.
  - 3. Other matters not originally specified.
- F. SHOP DRAWINGS Maintain as record documents and legibly annotate drawings to record changes made after review.

1.5. SUBMITTAL

- A. At completion of project each Contractor shall deliver record documents to the Prime Contractor. The Prime Contractor shall check all material and transmit to the Architect/Engineer within ten (10) days after Substantial Completion.
- B. Accompany submittal with transmittal letter, in duplicate, containing:
  - 1. Date
  - 2. Project title and number
  - 3. Contractor's name and address
  - 4. Title and number of each record document
  - 5. Certification that each document submitted is complete and accurate.
  - 6. Signature of the Contractor, or the Contractor's authorized representative.

END 01 0720



DIVISION 1 – GENERAL REQUIREMENTS  
Section 01 0730 – Operating & Maintenance Data

1. GENERAL

1.1. REQUIREMENTS INCLUDE

- A. It shall be the Contractor's responsibility to compile product data and related information appropriate for Owner's maintenance and operation of products and equipment provided under the Contract.
- B. The Contractor shall be responsibility to instruct Owner's personnel in the operation and maintenance of products, equipment and systems.

1.2. RELATED REQUIREMENTS

- A. Specified elsewhere
  - 1. 01 0340 - Submittals
  - 2. 01 0700 - Project Closeout
  - 3. 01 0720 - Project Record Documents
  - 4. 01 0740 - Warranties & Bonds
  - 5. DIVISION 23 – HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)
  - 6. DIVISION 31 – EARTHWORK

1.3. SUBMITTALS

- A. Manufacturer's standard product or equipment data of same type and form furnished to manufacturer's maintenance personnel. Provide sturdy manila or Kraft envelope, properly labeled, of sufficient size to contain all submittals.

1.4. MANUAL CONTENT

- A. Neatly typewritten Table of Contents for each volume, arranged in systematic order. Follow Project Manual Format.
  - 1. Contractor, name of responsible principal, address and telephone number.
  - 2. List of each product specified to be included, indexed to volume content.
  - 3. List with each product, the name address and telephone number of:
    - a. Subcontractor
    - b. Maintenance contractor, as appropriate
    - c. Identify area of responsibility of each
    - d. Local supply source for parts and/or replacement
- B. Product Data
  - 1. Include only sheets pertinent to specific product
  - 2. Annotate each sheet to:

- a. Clearly identify specific product or part installed
- b. Clearly identify data applicable to installation
- c. Delete references to inapplicable installation

C. Drawings

1. Coordinate Drawings with information in Product Record Documents to assure correct illustration of completed installation.
2. Do not use Project Record Documents as maintenance drawings.

D. Written text to supplement product data for particular installation

1. Organize in consistent format under separate headings for different procedures.
2. Provide logical sequence of instructions for each procedure.

E. Copy of each warranty, bond and service contract issued

1. Provide information sheet for Owner's personnel with:
  - a. Proper procedures in event of failure
  - b. Instances which might affect validity of warranties or bonds

1.5. MANUAL FOR MECHANICAL INSTALLATIONS AND EQUIPMENT

A. Provide the Owner, via the A/E, with two (2) copies of complete manual in final form, index as to contents.

1. Furnish to the Owner, three (3) copies of Operating & Maintenance Manuals as prepared by the equipment manufacturers for all items of equipment and systems furnished under this Contract.
2. Reviewed Shop Drawings shall be neatly folded to approximately 8-1/2" X 11" signed and inserted individually into Mylar No. 213 sheet protectors (Chicago Desk Pad Co.), punched and inserted into the Manual.

B. Provide a minimum of one (1) man day in two (2) trips to the job before the mob is accepted for the instruction and training of the Owner's representative in the operation and maintenance of the complete system. The equipment manufacturer's representative shall also visit the job and furnish such instruction as may be required.

1. The above does not relieve the Contractors of their responsibility of making service calls due to any defects which may develop during the guarantee period as stated in the "Guarantee" paragraph.

1.6. SUBMITTAL SCHEDULE

A. Contractor shall provide specified number of manual copies of approved data in final form ten (10) business days after final acceptance or approval and prior to final payment by the Owner.

END 01 0730

DIVISION 1 - GENERAL REQUIREMENTS  
Section 01 0740 - Guarantees, Warranties & Bonds

1. GENERAL

1.1. WORK INCLUDES

- A. Provide all guarantees, warranties and bonds, as specified.

1.2. RELATED WORK

- A. Specified elsewhere

1. All work.

- B. Submittals: The Contractor shall process, acquire and submit the Guarantees, Warranties and Bonds as specified below:

1. Bid Bond.
2. Labor & Material Payment and Performance Bonds, following award.
3. Guarantees: Submit on Contractor's letterhead a one-year material and labor guarantee for all work except for special warranties.

1.3. WARRANTY

- A. The Contractor warrants that all work provided under the Contract will be in conformance with the Contract and free from defects in workmanship, materials and equipment for a period of two (2) years or such longer period as may be specified in the Contract documents. Warranty time periods shall commence with the date of Owner acceptance of the Certificate of Substantial Completion or the whole or any part of the project. The warranty time period for any incomplete or uncorrected work at the time of Substantial Completion shall commence with the date of Final Completion.
- B. The Contractor warrants that all workmanship, materials and equipment for those building systems subject to seasonal loads will be in conformance with the Contract and free from defects for a period of two (2) years, commencing with the date of Owner acceptance of the Certificate of Substantial Completion. This includes, but is not limited to, Heating, Ventilation, Air Conditioning, Temperature Control and Test and Balance work as specified in the Project Specifications.
- C. Upon notice from the Owner or the Architect/Engineer of such defects or nonconformity, the Contractor shall promptly visit the site in the company of the Owner's representative to determine the extent of all defects on nonconformance and shall promptly repair or replace the defective or nonconforming work, including all adjacent work not necessarily provided by the Contractor, but damaged as a result of such defect or nonconformity or as a result of remedying them. If the Contractor does not promptly repair or replace a defective or nonconforming work the Owner may repair or

replace such work and charge the cost thereof to the Contractor. Work which is repaired or replaced by the Contractor shall be inspected and accepted in accord with the original standards of the Contract. The warranties set forth herein are in addition to all warranties or guarantees expressed or implied by operation of law, statute or ordinance.

D. The Contractor shall deliver all commercial warranties received from the manufacturer to the Architect/Engineer prior to Final Completion, but this shall not reduce the Contractor's obligations under this Article.

E. Special Warranties

DIVISION 23 – Ground Loop Piping

2113.33 Contractor Warranty – Two (2) years

2113.33 Manufacturer Pipe & Fitting – Twenty-five (25) years

END 01 0740

DIVISION 1 – GENERAL REQUIREMENTS  
Section 01 25 00– Substitutions & Product Options

1. GENERAL

1.1. SPECIFIED PRODUCTS

- A. All bids shall be based on providing products exactly as specified or equal as prior approved.
- B. Products specified only by reference or performance standards, shall be met or exceeded by the standards of any manufacturer's material and subject to the Architect/Engineer's approval.
- C. Products specified by naming several products or manufacturers shall be selected from any product and manufacturer named.

1.2. SUBSTITUTIONS, BIDDER/CONTRACTOR OPTIONS

- A. PRIOR TO BID OPENING - The Architect/Engineer will consider requests to amend the bidding documents to add products not specified, provided such requests are received in adequate time prior to bid opening date.
  - 1. Requests received after ten (10) days before bid due date will not be considered.
  - 2. If a request is approved, the Architect/Engineer will endeavor to issue an appropriate addendum not less than three (3) calendar days prior to bid opening date.
  - 3. Ten (10) days is based on the start bid date, and will not be extended by bid extension unless same is extended more than ten (10) days.
- B. WITH BID - Substitutions will not be considered with the base bids, but may be offered on voluntary forms.
- C. AFTER AWARD OF CONTRACT - No substitutions will be considered after Notice of Award, except under one or more of the following conditions:
  - 1. Substitution is required for compliance with final interpretations of code requirements or insurance regulations.
  - 2. Unavailability of specified products, through no fault of the Contractor.
  - 3. Subsequent information discloses inability of specified product to perform properly or to fit in designated space.
  - 4. Manufacturer/fabricator refusal to certify or guarantee performance of specified product as required. This does not alter the requirement.
  - 5. When a substitution would be substantially to the Owner's best interest.

### 1.3. SUBSTITUTION REQUIREMENTS

- A. Submit four (4) copies of each request for substitution. Include in each request for substitution:
1. Complete data substantiating compliance of proposed substitution with Contract Documents.
  2. For products:
    - a. Product identification, including Manufacturer's name and address.
    - b. Manufacturer's literature.
      - 1) Product description.
      - 2) Performance and test data.
      - 3) Reference standards.
    - c. Samples, if applicable.
    - d. Name and address of similar projects on which product was used and date of installation.
  3. For construction methods substitution:
    - a. Detailed description of proposed methods.
  4. Itemized comparison of proposed substitution with product or method specified, including accurate and true cost data on proposed substitution in comparison with product or methods specified.
  5. Data relating to changes in construction schedule.
  6. Identify:
    - a. List other contracts affected, if applicable.
    - b. List changes or coordination required.
- B. In making requests for substitution, bidder/contractor represents:
1. He has personally investigated proposed product or method and determined that it is equal or superior in all respects to that specified.
  2. He will provide the same guarantee for substitutions as for product or method specified.
  3. He will coordinate installation of accepted substitutions into work, making all such changes as may be required for work to be complete in all respects.
  4. He will provide complete cost data including all related costs under his contract (and other Prime Contract's, as applicable) whose work may also be affected by the substitution in product or method.
  5. He will assume full responsibility for all additional costs and expenses to the Owner, Architect/Engineer (and other contractors employed on the same project, as applicable).
  6. The Contractor agrees that it is the Contractor's sole responsibility to stand any costs that may be attributable to an allowed substitution

that may surface as construction proceeds toward finalization.

C. Substitution will not be considered if:

1. It is indicated or implied on shop drawings or product data submittals without formal request submitted in accordance with Paragraph 1.4 above.
2. Acceptance will require substantial revision of Contract Documents.

END 01 25 00





DIVISION 3 - CONCRETE

Section 03 3200 – Concrete Removal / Replacement

1. GENERAL

1.1. REQUIREMENTS INCLUDE

A. Base Bid

1. Contractor cut concrete sidewalks, foundation walls and floors as required to provide pipe access.
  - a. There is an 8" x 12"+ buried section of concrete curb adjacent to the west edge of Track which should be possible to install pipe without removing. If not, remove and replace.
2. Contractor backfill and provide concrete patch. Floor coverings and finishes will be by Contractor.
3. Concrete / masonry removal and replacement will be required through foundation or perimeter walls – see Drawings.

1.2. RELATED WORK

A. Specified elsewhere

1. Section 31 2320 – Earthwork & Backfill
2. Section 23 2113.33 – Closed Circuit Vertical Heat Exchanger (VHE)

1.3. EXISTING CONTITIONS

- A. All building perimeters have concrete sidewalks. These may need small areas removed and replaced to get the piping to the building. See Drawings.
- B. The piping will need to cross the AthleticTrack. Scrape away track material at crossing and set aside for reinstallation.
  1. All material under the track must be thoroughly compacted to 90% Procter when replaced and totally smooth.

2. PRODUCTS

2.1. MATERIALS

- A. Backfill – see Section 31 2320 – Earthwork & Backfill.
- B. Concrete Mix
  1. IDOT S1
- C. Reinforcement
  1. None

### 3. EXECUTION

#### 3.1. FORMING

- A. Form so that depth of patch is equal to depth of existing concrete.
- B. Cut neat, straight lines in existing concrete.
- C. Provide compacted gravel backfill to form base.

#### 3.2. PLACING AND FINISH

- A. Place with as low water content as practical.
- B. Finish with broom finish or to match existing.
- C. Protect surface until set has occurred.

END 03320

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Ground-coupled heat exchanger and connections to building piping system, serving:
  - 1. Hydronic piping system specified here.
- B. The Contractor is responsible for all aspects involved with the complete geothermal loop field installation. All materials, drilling, excavation, hauling of backfill, pumping, soil compaction and labor required shall be included in the bid price.
- C. The contractor is personally responsible to verify all local soil conditions to determine the appropriate drilling method and when and if casing is necessary.
- D. The Contractor shall take note: There is no guarantee to the Contractor that the location of any existing utilities are exactly as indicated on the plans. Some areas may require hand digging to locate that utility. The Contractor must include in the bid price, the repair of any domestic water, electrical, communication or any service line that may be damaged during the construction of this project. Any offsets required to route over or under existing lines shall also be included in the bid price of the project.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2316.13 - Trenching: Procedures for trenching and backfilling for execution of work of this section.

**1.03 REFERENCE STANDARDS**

- A. ASHRAE Publication: Ground-Source Geothermal Systems for Commercial and Institutional Buildings by Kavanaugh, S.P., and K. Rafferty. 1997
- B. ASTM D2447 - Standard Specification for Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter; 2003.
- C. ASTM D2683 - Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing; 2014.
- D. ASTM D2837 - Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products; 2013.
- E. ASTM D3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter; 2015.
- F. ASTM D3261 - Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing; 2012.
- G. ASTM D3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Material; 2012.
- H. ASTM F714 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter; 2013.
- I. ASTM F1055 - Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene and Crosslinked Polyethylene (PEX) Pipe and Tubing; 2013.
- J. IGSHA (GROUT) - Grouting Procedures for GHP Systems; International Ground Source Heat Pump Association; 1991.
- K. IGSHA (GVERT) - Grouting for Vertical GHP Systems; International Ground Source Heat Pump Association; 2000.
- L. IGSHA (INSTALL) - Closed-Loop/Geothermal Heat Pump Systems Design and Installation Standards; International Ground Source Heat Pump Association; 2009.
- M. PPI TR-4 - PPI Listing of Hydrostatic Design Basis (HDB), Hydrostatic Design Stress (HDS), Strength Design Basis (SDB), Pressure Design Basis (PDB), and Minimum Required Strength (MRS) Ratings For Thermoplastic Piping Materials or Pipe; 2013.

#### **1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Pre-installation Meeting: Convene one week before starting work of this section. Require attendance by all installers involved with site work and HVAC work.

#### **1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. No substitutions will be allowed without authorization from the Architect/Engineer
- C. Installers Qualifications, provide documentation of Contractor's:
  - 1. Copy of the Contractor's geothermal well driller license for the Illinois
  - 2. Copy of the Contractor's certification as the proposed high density polyethylene (HDPE) pipe manufacturer's authorized installer.
- D. Product Data, Polyethylene Piping: Provide manufacturer's data for piping and pipe fittings, showing compliance with specified requirements.
  - 1. Provide manufacturer's recommendations for fusion jointing.
  - 2. Include certification of long term hydrostatic basis, or test reports.
- E. Product Data, Grout and Slurry: Provide information on thermal conductivity of proposed materials.
- F. Test Reports, provide the following reports:
  - 1. Vertical Borehole Grout Testing
  - 2. System Pressure Test
  - 3. System Purging
  - 4. Bore Log Report
- G. Samples: Provide one 2-inch length of pipe in selected size.
- H. Record Documents: Record actual locations of all underground piping installed relative to Owner's permanent structure on same property and the following:
  - 1. Vertical Bores Locations.
  - 2. Well Field Valve Locations
- I. Contractors Certification: Submit certification that work completed as specified by this section and described by the plans has been constructed accordingly and in compliance with State and local requirements.
- J. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
- K. Operation and Maintenance Data: Provide procedures for pressurizing, charging, and isolation for equipment replacement.

#### **1.06 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum five years of documented experience and accredited by IGSHPA.
- B. The Contractor shall be a licensed geothermal well driller in Illinois and shall be versed in the completion of vertical loop heat exchangers as described in this section of these specifications.
- C. Heat Fusion Technician Certification: IGSHPA training and certification, certified within three years from the date of project commencement.
- D. Fabricators must be heat fusion certified by an authorized high density polyethylene (HDPE) pipe manufacturer's representative of the brand of pipe used. Certification must include: successful completion of a written heat fusion exam as well as demonstrating proper heat fusion techniques under the direct supervision of the authorized HDPE pipe manufacturer's representative.
- E. This design has been prepared in accordance with the materials standards and accepted This design has been prepared in accordance with the materials standards and accepted practices as well as all State and local regulations pertaining to the installation.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver piping and fittings to project site in shipping containers with labeling in place.
  - 1. Verify that labels on piping indicate manufacturer's name, pipe or tube size, and PE cell classification.
  - 2. Verify that piping complies with specifications and is undamaged.
- B. Protect from weather, humidity and temperature variations, dirt and dust, and other environmental contaminants.
- C. Store piping capped or plugged until time of installation.

## **1.08 WARRANTY**

- A. Pipe (and fittings) for this section shall carry a Manufactures Warranty of no less than 25 years.

## **PART 2 PRODUCTS**

### **2.01 HEAT EXCHANGER**

- A. The ground-coupled heat exchanger has been designed; Contractor is responsible for execution as required in the Contract Documents.
- B. Heat Exchanger Performance:

### **2.02 MATERIALS**

- A. Pipe: High density polyethylene pipe, type PE3408, PE3608, or PE4710, with minimum ASTM D3350 cell classification of PE345364C.
  - 1. Each pipe shall be permanently indent marked with the manufacturer's name, nominal size, pressure rating, relevant ASTM standards, cell classification number and date of manufacture.
  - 2. Pipe Used in Vertical Bore Applications: Comply with ASTM D3035 with minimum working pressure rating of 160 psi.
    - a. All piping used for vertical heat exchanger will have factory hot-stamped lengths impressed on the side of the piping indicating the length of the Heat Exchanger at that point. The length stamp shall read zero on one end and the actual Heat Exchanger total length on the other end.
    - b. The vertical heat exchanger pipe will have a factory fused U-bend with lengths long enough to reach grade from the bottom of the bore so no field fusion are required below the header pit.
    - c. All piping used for vertical heat exchanger will ship from the factory pre-charged with air.
  - 3. Other Pipe of 3 Inches Diameter and Larger: Comply with ASTM D3035 DR15.5 or ASTM F714, with minimum working pressure rating of 100 psi.
  - 4. Other Pipe 1.25 Inches But Less Than 3 Inches In Diameter (Nominal): Comply with ASTM D3035 with minimum working pressure rating of 110 psi.
  - 5. Other Pipe Less Than 1.25 Inches in Diameter (Nominal): Comply with ASTM D3035 with minimum working pressure rating of 160 psi.
  - 6. Long Term Hydrostatic Design Basis: 1600 psi at 73 degrees F, when tested in accordance with ASTM D2837; appropriate listing in current edition of PPI TR-4 will constitute evidence of compliance with this requirement; otherwise, submit independent test results.
  - 7. Joints and Fittings: Polyethylene of same type as pipe, of sizes and types suitable for the pipe being used; use only heat fusion or stab-type mechanical fittings that are quality controlled to provide a leak-free union between piping ends that is stronger than the piping itself. Do not use other barbed fittings or hose clamps.
    - a. Electrofusion Type Fittings: Comply with ASTM F1055.
    - b. Butt Fusion Fittings: Comply with ASTM D3261.
    - c. Socket Type Fittings: Comply with ASTM D2683.
    - d. Where threaded fittings must be used for connection to equipment or dissimilar piping, use fittings and thread sealant compatible and effective with antifreeze used.

- e. Manifolds: HDPE pipe, joined together with heat fusion, shall be used for all of the main header piping.
- 8. Manufacturers:
  - a. Any manufacturer listed in PPI TR-4 for the material to be used.
- B. Detectable Underground Tape: Magnetic detectable conductor in 2 inch wide rot-resistant plastic tape or mesh, brightly colored, imprinted every 36" with "CAUTION GEOTHERMAL PIPELINE BURIED BELOW" in large letters.
- C. Backfill for Vertical Boreholes: Thermally enhanced bentonite.
  - 1. Thermally enhanced bentonite grout shall be used to seal and backfill each vertical U-bend well bore of the closed-loop ground heat exchanger to insure proper thermal contact with the earth and to ensure the environmental integrity of each vertical bore column. Once fully set (within 24 hours), the grouting material shall remain in a thick, putty-like, plastic state (moldable) throughout the life of the system and shall not generate heat during the hydration process.
    - a. A bentonite-based two-part, field mixed, high to extreme-high solids material that can be mixed to meet a range of thermal conductivity's from 0.45 to 1.40 Btu/hr-ft-°F. It shall have been specifically developed for closed-loop ground-coupled heat pump applications where thermal conductivity in the vertical bore column is critical to system performance.
    - b. The product is to certified by the National Sanitation Foundation International to ANSI/NSF Standard 60, "Drinking Water Treatment Chemical - Health Effects."
  - 2. No chemical polymers or organic matter shall be contained within the grout material.
  - 3. MIXING INSTRUCTIONS (per each unit):
    - a. When mixed according to manufactures instructions, the permeability is below the U.S. Environmental Protection Agency's maximum recommendations of  $1 \times 10^{-7}$ .
    - b. Mix Proportions of water, grout and sand per manufactures requirements.
    - c. Place fresh water in a conventional paddle mixing tank.
    - d. Start mixer and Bentonite Base (Part I).
    - e. Add silica sand at a moderate rate (in about 4 to 6 minutes) and continue to mix for another 1 to 2 minutes to obtain a consistent mixture.
    - f. Pump with a positive displacement pump (piston pump recommended) through a 1-1/4" inside diameter tremie pipe at a rate of 5 to 15 gallons per minute.

### **2.03 GROUT MANUFACTURES:**

- A. Geopro-thermal grout select
- B. Cetco
- C. Bariod-Barotherm Gold

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION AND PREPARATION**

- A. Verify location of existing structures and utilities prior to excavation.
- B. Verify soil composition and rock depth, if any, before beginning excavation.
- C. Protect adjacent structures from the effects of excavation.
- D. Verify that layout dimensions are correct and that available land is sufficient for design.
- E. Notify Architect of unsatisfactory conditions.
- F. The heat exchanger pipe must be connected as indicated on the plans. The header design accounts for balanced flow as well as flushing and purging flow rates. No variations can be made in the circuit hookup or the pipe sizes that are indicated without approval from Architect/Engineer
- G. The depth of all headers and supply and return piping is indicated on the plans and must be maintained.
- H. Do not proceed with installation until unsatisfactory conditions have been corrected.

#### **GROUND-LOOP HEAT-PUMP PIPING 23 2113.33-4**

- I. Coordinate work with site grading, site backfilling, and foundation construction.

### **3.02 EXCAVATION**

- A. Excavate in accordance with requirements of authorities having jurisdiction.
- B. The Contractor shall do all excavating, backfilling, shoring, bailing and pumping for the installation of his work and perform necessary grading to prevent surface water from flowing into trenches or other excavations.
  - 1. Sewer lines shall not be used for draining trenches.
- C. Vertical Boreholes: Drill to depths required.
  - 1. Use sufficient quantities of water during drilling process to eliminate dust escaping from the bore hole.
  - 2. The vertical boreholes will be drilled to a depth that allows complete insertion of the pipe used in heat exchanger to its specified depth.
  - 3. The maximum borehole diameter shall be six inches. If a larger diameter is required, it must be approved by Architect/Engineer
  - 4. Piping: Assemble heat exchanger piping and test before installation.
- D. Trenches: Excavate trenches for piping to lines and grades shown on drawings.
  - 1. Minimize over-excavation; fill over-excavated areas with backfill or excavated materials.
  - 2. Only material suitable for backfilling shall be piled a sufficient distance from banks of trenches to avoid overloading.
  - 3. Excavate to accommodate grade changes.
  - 4. Excavate using the procedures specified in Section 31 2316.13, Trenching for Site Utilities.
  - 5. Sheathing and shoring shall be done as necessary for protection of work and personnel safety.
  - 6. Unless otherwise indicated, excavation shall be open cut except for short sections.
  - 7. Maintain trenches free of debris, material, and obstructions that may damage pipe.
  - 8. Piping: Assemble heat exchanger piping and test before backfilling.

### **3.03 POLYETHYLENE PIPING**

- A. Join piping and fittings using heat fusion or electrofusion; do not use solvents, adhesives, or mechanical fittings.
  - 1. During Installation the socket shall be cleaned with individual alcohol wipes prior to heating for fusion. Rags where reuse is permitted is strictly prohibited.
- B. Provide flanges or unions to connect heat exchanger piping to equipment or piping of different type; locate all transitions between piping of different types inside the building or otherwise accessible (i.e. above grade).
- C. Keep dirt, water, and debris out of pipe assemblies; cap or plug open ends until connected to adjacent piping.
- D. Do not bend piping to shorter radius than recommended by pipe manufacturer; do not kink piping; use elbow or other fittings for sharp bends.
- E. Partially backfill radius bends in narrow trenches by hand to ensure that piping is properly supported and to prevent kinking.
- F. Confirm that factory fused U-bend pipe used in vertical heat exchanger has retained the pre-charge from the factory. If pre-charge is not present re-test.
- G. Test piping to be installed in boreholes after assembly but before installation in boreholes; re-cap tested assemblies before installation.
- H. Test piping to be installed in trenches after installation but before backfilling.
- I. If necessary, an iron (sinker) bar can be attached at the base of each vertical heat exchanger piping end to overcome bouncy. This iron bar will have all sharp edges adequately taped to avoid scaring and/or cutting of the polyethylene pipe. The entire piping assembly is inserted to the specified depth in the borehole

- J. The vertical heat exchanger pipe ends will be sealed with fusion caps or tape prior to insertion into the bore hole.
- K. Reasonable care shall be taken to ensure that the geothermal loop field pipe is not crushed, kinked, or cut. Should any pipe be damaged, the damaged section shall be cut out and the pipe reconnected by heat fusion.
- L. Testing: Perform hydrostatic test on all piping; portions of assembled piping may be tested separately.
  - 1. Prior to testing, isolate piping from all connections to building systems.
  - 2. Flush all dirt and debris using potable water flowing at twice the normal operating flow rate for a minimum of four hours or until no dirt or debris is visible, whichever is longer.
  - 3. Plug or cap piping.
  - 4. Pressurize piping to 150 psi for 30 minutes and monitor.
  - 5. If there is any pressure loss or visible leakage, identify leak and repair in accordance with manufacturer's recommendations.
  - 6. Repeat test until there is no loss of pressure for the duration of the test.
- M. Where piping passes through foundation walls, provide sleeves sealed with non-hardening, waterproof material.

### **3.04 BACKFILLING**

- A. Install in compliance with local authorities having jurisdiction.
- B. Vertical Boreholes: Backfill after pipe installation in accordance with IGSHPA Grouting Procedures for GHP Systems.
- C. The vertical boreholes are to be grouted immediately on completion of the hole and insertion of the pipe. Grouting from the bottom up, in a continuous fashion, using a one inch HDPE tremie pipe. The tremie pipe will be pulled out during the grouting procedure maintaining the pipe's end just below grout level within the borehole.
- D. All State and local regulations will be met for borehole grouting of the vertical boreholes.
- E. Protect piping from displacement
- F. Trenches:
  - 1. Provide minimum cover over piping as shown on the drawings.
  - 2. Backfill trenches after pipe has been installed and tested, using fill free of rocks and other debris.
  - 3. unsuitable backfill shall be removed as directed by Architect
  - 4. Install detectable tape continuously 18 inches above top of all buried pipe
  - 5. Backfill and compact using the procedures specified in Section 31 2316.13.
  - 6. Backfill to original grades with sufficient overfill to allow for settlement.
- G. Protect piping from displacement.

### **3.05 FIELD QUALITY CONTROL**

- A. Vertical Heat Exchanger Pipe Testing
  - 1. The pipe used in vertical heat exchanger shall be filled with water and pressurized to 100psi to check for leaks before insertion.
- B. Vertical Borehole Grout Testing
  - 1. Thermally enhanced bentonite used with the backfill for Vertical boreholes shall have three sample containers and return cartons provided for return to the manufacturer for analysis. Through the course of the project, three sample specimens will be taken of the mixed grouting material: once at the beginning of the installation; once approximately one-third through the installation; and once approximately two-thirds through the installation. An analysis of each sample will be performed by the grout manufacturer to verify the minimum specified thermal performance with a report being sent immediately to the entity requesting the analysis.
- C. System Pressure Test



1. Before connection (header) trenches are backfilled, the assembled Ground-Loop Heat-Pump Piping system shall be pressure tested with water at 100 psi (689 kPa) for 30 minutes with no observed leaks.
  - a. Do not to exceed SDR 11 pipe working pressure at bottom of the pipe used in Vertical bore applications
2. Before covering the well field, when system pressure testing is taking place, the contractor shall notify the Architect 24 hours before the test taking place.

### 3.06 RECORDING

- A. The Vertical Bores Locations and all Well Field Valve Locations shall be documented by:
  1. Triangulated dimension from a known permanent bench mark and document on the Record Documents.
  2. The geographic location shall have a format in degrees, minutes, and seconds for latitude and longitude relative to the North American Datum 1983 (NAD1983) geodetic datum. Location accuracy shall be at least one place after the seconds decimal point: i.e., this format, latitude 38° 59' 59.9"N, longitude 94° 01' 01.0"W. Record and document on the Record Documents.
  3. The well driller shall take GPS coordinates of the wells and mark them on the Record Documents for future location of the Vertical Bores.
    - a. GPS coordinates shall be to the 100th of second.
- B. The Well Field Valve Locations shall be documented by:
  1. Triangulated dimension from a known permanent bench mark and document on the Record Documents.
- C. The System Purging shall be documented as to the following for min:
  1. Purge flow
  2. Pressure
  3. Time of starting
  4. Time when flow was reversed
  5. No of circuit valves open during the process
  6. Pressure on the purge pump after purging was complete.
  7. The operator who was executing the process
  8. (Certifications that water flow is free of debris)
- D. The System Pressure Test shall be documented as to the following:
  1. Date of the test
  2. Indication of what section of the well field was tested
  3. Pressure at start
  4. Time period of test
  5. Pressure at end
  6. Test operators name
- E. E. The Boring Log shall be documented as to the following:
  1. Location
  2. GPS Location
  3. Date & time vertical bore started
  4. Date & time vertical bore ended
  5. Formation recorded by depth
  6. Bore diameter
  7. Vertical pipe size
  8. Grout type used
  9. Grout portioned explained
  10. Type of drilling rig model used for bore
  11. Drilling mud
  12. Drilling log provided by
  13. Person who supervised the test bore drilling

### **3.07 CLEANING**

- A. Leave adjacent paved areas broom clean.
- B. Clear debris, including excess backfill and excavated dirt and rock, from heat exchanger area.
- C. System Purging:
  - 1. Shall be completed as per ASHRAE Publication: Ground-Source Geothermal Systems for Commercial and Institutional Buildings by Kavanaugh, S.P., and K. Rafferty. 1997
  - 2. A purging system consists of a tank (500 gal minimum), a pump capable of the conditions indicated on the drawings, suction filter in the base of the tank, return at or below the water level in the tank and a valve arrangement suitable for reversing flow through the well field.
  - 3. Before purging starts Architect shall be notified at least 24 hours in advance.
- D. Well Field System Purging:
  - 1. Each supply and return circuit shall be flushed and purged with a water velocity of two feet per second, the flow direction shall be cycled for a minimum of three times for a minimum of 10 minutes in each direction (until the water flow is free of any debris). The well field system purging shall be completed separately of the building system. The lines shall be left filled with clean water and then pressure tested.
- E. The Contractor shall be responsible for the removal of all cutting materials from the jobsite and the restoration of the site to its' original condition. The Contractor shall provide the necessary seeding and strawing to rehabilitate the disturbed areas.

### **3.08 PROTECTION**

- A. Protect area during excavation from excess runoff and erosion.
- B. Protect pipe protrusions from damage until connections to building systems are installed.
- C. During installation, all debris, and small animals shall be kept out of the pipe. Ends of the HDPE pipe used for the Heat Exchanger shall be sealed until the pipe is joined to the circuits. Sealing means heating the ends of the pipe and crimping the heat exchanger closed. Tape and or plastic caps are not considered as sealed.
- D. All pipe and conduit ends shall be kept sealed and lines left clean and unobstructed during construction.

### **3.09 CLOSEOUT ACTIVITES**

- A. Provide Owner items as specified on drawings including:
  - 1. Operator for Well Field valves. Provide written conformation indicating:
    - a. When turned over
    - b. Whom from Owner accepted

**END OF SECTION**

## **PART 1 GENERAL**

### **1.01 SECTION INCLUDES**

- A. Backfilling and compacting for utilities outside the building Ground-Loop Heat-Pump Piping.

### **1.02 RELATED REQUIREMENTS**

- A. Section 23-2113.33 - Ground-Loop Heat-Pump Piping

### **1.03 REFERENCE STANDARDS**

- A. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18 in.) Drop; 2017.
- B. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)); 2012, with Editorial Revision (2015).
- C. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN m/m<sup>3</sup>)); 2012, with Editorial Revision (2015).

## **PART 2 PRODUCTS**

### **2.01 FILL MATERIALS**

- A. General Fill: Subsoil excavated on-site.
  - 1. See drawing details.
  - 2. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
- B. Topsoil: Topsoil excavated on-site.
  - 1. Free of roots, rocks larger than 1/2 inch, subsoil, debris, large weeds and foreign matter.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that survey bench marks and intended elevations for the work are as indicated.

### **3.02 PREPARATION**

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities that remain and protect from damage.
- C. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- D. Protect plants, lawns, rock outcroppings, and other features to remain.
- E. Grade top perimeter of trenching area to prevent surface water from draining into trench. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by the Architect.

### **3.03 TRENCHING**

- A. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- B. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
- C. Do not interfere with 45 degree bearing splay of foundations.
- D. Cut trenches wide enough to allow inspection of installed utilities.
- E. Hand trim excavations. Remove loose matter.
- F. Remove excavated material that is unsuitable for re-use from site.
- G. Remove excess excavated material from site.
- H. Provide temporary means and methods, as required, to remove all water from trenching until directed by the Architect. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.

- I. Determine the prevailing groundwater level prior to trenching. If the proposed trench extends less than 1 foot into the prevailing groundwater, control groundwater intrusion with perimeter drains routed to sump pumps, or as directed by the Architect.

#### **3.04 PREPARATION FOR UTILITY PLACEMENT**

- A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
- B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- C. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.

#### **3.05 BACKFILLING**

- A. Backfill to contours and elevations indicated using unfrozen materials.
- B. Backfill with clean rounded material such as sand or pea gravel as indicated by drawing details.
- C. Employ a placement method that does not disturb or damage other work.
- D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Slope grade away from building minimum 2 inches in 10 feet, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- G. Correct areas that are over-excavated.
  - 1. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.
- H. Compaction Density Unless Otherwise Specified or Indicated:
  - 1. At other locations: 97 percent of maximum dry density.
- I. Reshape and re-compact fills subjected to vehicular traffic.

#### **3.06 BEDDING AND FILL AT SPECIFIC LOCATIONS**

- A. All header, supply and return piping.
  - 1. Backfill with clean rounded material such as sand or pea gravel as indicated by drawing
  - 2. details.

#### **3.07 FIELD QUALITY CONTROL**

- A. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D1557 ("modified Proctor"), AASHTO T 180, or ASTM D698 ("standard Proctor").
- B. If tests indicate work does not meet specified requirements, remove work, replace and retest.

#### **3.08 CLEANING**

- A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- B. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

**END OF SECTION 31 2316.13**

1. GENERAL

1.1. DESCRIPTION

- A. Provide all labor and materials for all excavation, well drilling, pipe trenches, grading, fill, seeding, lawn repair and backfill work of every kind needed to complete the construction work in accordance with the Contract Documents.
  - 1. Final fill, grading and seeding must be completed by 06/30/2021.
- B. The Contractor shall contact J.U.L.I.E. (1-800-892-0123) and verify with non-member utilities all underground services, shall mark same and maintain marking during construction.
  - 1. Mark information on Contract Record Drawings.
- C. Contractor shall be responsible for erosion control and compliance with local and IEPA regulations.
  - 1. File IEPA Erosion Control Permit for all operations opening up one (1) acre or more of soil.

1.2. RELATED WORK

- A. Specified elsewhere
  - 1. Section 23 2113.33 – Ground Loop Heat Pump Piping
- B. Contractor shall include in his contract testing by an independent testing agency all granular backfill work.
  - 1. Testing agency shall certify compaction is satisfactory for proposed construction purposes.
  - 2. Send reports and certification of compaction directly to the Architect and Owner.
- C. Owner may schedule additional independent testing at his option.

2. PRODUCTS

2.1. MATERIALS

- A. Earth fill or backfill
  - 1. Earth fill or backfill shall be natural earth, native to the general area of construction, free of debris, rocks, unnatural materials of any type, and any other material which may impair long term stability or performance of the earth.

- B. Grouting
  - 1. See Section 23 2113.33.
- C. Top soil
  - 1. Topsoil shall be natural earth, native to the general area of construction, which is suitable to support vegetation without excessive use of fertilizers or other soil treatment.
  - 2. This material shall be clean friable earth, free of sand, gravel, clay, debris or any materials which might impair the workability of the soil and/or its ability to sustain vegetation.
- D. Seed and fertilizer
  - 1. Current year date
  - 2. Standard lawn seed, 30% Tall Fescue / 50% Red Fescue / 20% Annual Rye Grass. Variations will be considered.
  - 3. 12-12-12 fertilizer.

### 3. EXECUTION

#### 3.1. SITE PREPARATION

- A. Establish working grades and lay out building and site requirements such that earth stockpiles will not interfere with construction processes or proper site drainage.
- B. Strip the vegetation and eight inches (8") to twelve inches (12") of topsoil from all areas subject to final grade changes. This earth shall be stockpiled for use as topsoil in the final grading operations.
- C. Complete base grading necessary in the work, stacking clay separately from the topsoil. Fill and compacted fill work necessary to achieve base grading may be completed at any time during the construction work coordinate with all trades to allow timely and efficient progress.

#### 3.2. EXCAVATION

- A. If earth or conditions of doubtful or unexpected character are encountered, the observing Architect shall be notified and foundation work shall not proceed until his direction has been received.
- B. The Contractor shall connect up all field drainage tile encountered in excavations as directed by the Architect. All abandoned sewer, water and gas lines encountered shall be connected or removed as directed by Architect.
- C. Keep all excavations free of standing water.

#### 3.3. FILL AND BACKFILL

- A. Fill under and within five feet (5') of paving, sidewalks, curbs, concrete

slabs, drives, streets, etc., shall be gravel compacted to at least ninety-five percent (95%) of Standard Proctor maximum dry density with a maximum permissible variation of moisture from the optimum moisture content of two percent (2%).

- B. Earth fill may be employed in lawn and yard areas.
- C. **Earth fill shall be suitably compacted to prevent future settlement.**
  - 1. School grounds must be level to allow grounds to be used for student activities.

#### 3.4. SURPLUS EARTH AND SITE DEBRIS

- A. Surplus earth from excavation and site preparation shall be:
  - 1. Clean earth, use for grading, stockpile remainder.
  - 2. Earth with rubble or construction debris; remove from site.
  - 3. Separate topsoil and clay or fill earth.

#### 3.5. GRADING

- A. The Contractor shall execute the finish grade, the top six inches (6") of which shall consist of topsoil. The Contractor shall grade to uniform level and slope away from building for drainage.
- B. All grading shall be as indicated on the Drawings. Existing drainage patterns to adjacent property shall be maintained. No areas shall pond or retain water unless specifically identified on the Drawings.
- C. Repair all areas that settle and erode within the first year of Owner occupancy.

#### 3.6. SEED - BY CONTRACTOR

- A. Fine grade and seed all areas disturbed by construction operations.
  - 1. Apply standard lawn seed Tall Fescue 30% / Red Fescue 50% / Annual Rye 20% maximum.
  - 2. Apply lawn fertilizer 12-12-12 or better to seeded area.
  - 3. Apply straw to all seeded areas.
    - a. Apply straw at the rate of 1½ bales per 1,000 sq. ft.

#### 3.7. WARRANTY

- A. During the one (1) year warranty period, re-grade any areas subject to settlement or erosion and reseed or sod as appropriate. Reseed or sod any areas of lawn which do not survive the first growing season excluding the following:
  - 1. Areas subject to excessive traffic.

END 31 2320

