PROJECT MANUAL

FALCON DRIVE SE
FROM 8TH ST SE TO SE 50TH AVE.

CITY OF ALTOONA, IA

As part of

New Middle School
Southeast Polk Community School District

Bishop Project No. 200605-2

Bishop Engineering
"Planning Your Successful Development"
3501 104th Street
Des Moines, Iowa 50322-3825
Phone: (515)276-0467 Fax: (515)276-0217
Civil Engineering & Land Surveying Established 1959

FALCON DRIVE SE – 8TH STREET SE TO NE 50TH AVENUE
CITY OF ALTOONA

AS PART OF NEW MIDDLE SCHOOL
SOUTHEAST POLK COMMUNITY SCHOOL DISTRICT
ALTOONA, IA

Bishop Project No. 200605-2

Prepared By :
Bishop Engineering Company, Inc.
3501 104th St.
Urbandale, IA 50322

Phone: 515-276-0467

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNED:_____ DATE:_____
JOEL E. JACKSON, P.E. 18397

LICENSE RENEWAL DATE: DEC. 31, 2024
PAGES OR SHEETS COVERED BY THIS SEAL: _____

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BE = Bishop Engineering

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ADVERTISEMENT FOR BIDS

PROJECT: **FALCON DRIVE SE – 8TH STREET TO NE 50TH AVENUE, ALTOONA, IA**

BIDS DUE: JUNE 1ST, 2023 at 10:00AM

BIDS TO: The Owner (hereinafter referred to as OWNER):

Southeast Polk Community School District

407 8th St. SE

Altoona, IA 50009

TO: POTENTIAL BIDDERS

Sealed lump sum bids will be received by the Owner at the Southeast Polk Community School District Office, 407 8th St. SE until 10:00AM, Central Time, on **June 1st, 2023**.

Sealed lump sum bids will be opened and publicly read at the Southeast Polk Community School District Office, 407 8th St. SE at 10:00AM, Central Time, on June 1st, 2023 or at such later time and place as may then be fixed.

Lump Sum Bids will be considered by the Owner at the Southeast Polk Community School District Office, 407 8th St. SE at 5:30PM, Central Time, on June 15th, 2023 or at such later time and place as may then be fixed.

The general nature of the work is as follows:

The project site is located north of Falcon Dr. SE, from 8th St. SE to NE 50th Ave. along the site of the new 6-7 grade school, in Altoona, IA.

Project includes the grading and paving of a 9" PCC roundabout, approximately 2,400 LF of 2-lane 8" PCC pavement and associated driveways, and approximately 2,370 LF of 5" PCC sidewalk. Utility construction includes approximately 3,800 LF of storm sewer, 1,190 LF of 6" subdrain, and associated intakes and manholes. Also includes pavement markings, signage, fencing, subgrade preparation, seeding, and erosion control.

The site will be split into three divisions of work. Division IA & IB will available for work starting June 19, 2023 and must be substantially completed by November 22. 2023. Division II will be available starting July 17, 2023 and must be substantially completed by June 7, 2024. Final completion of both Division I and II shall be by June 28, 2024.

Bidding documents may be examined at the Engineer's office, and copies of the bidding documents obtained at:

Beeline and Blue, 2507 Ingersoll Avenue, Des Moines, IA 50312. Phone: 515-244-1611. Copies will be made available upon receipt of a refundable check or cash in the amount of $50. The deposit will be refunded in full upon return of the documents in good condition within ten days after receipt of bids.

Each Bidder shall accompany the Bid with a Bid security, in a separate envelope, as security that the successful bidder will enter into a contract for the work bid upon and will furnish after the award of the contract corporate surety bond or bonds, acceptable to the Owner, for the faithful performance of the contract, in an amount equivalent to one hundred percent of the amount of the contract. The bidder's security shall be in an amount equivalent to 5% of the bid amount, and shall be in the form of a cashier's or certified check drawn on a bank in Iowa or a bank chartered

under the laws of the United States of America, or a certified bank share draft drawn on a credit union in Iowa or chartered under the laws of the United States of America or a bid bond with corporate surety satisfactory to the Owner. The bid security will be held by the Owner until a contract is fully executed and bonds are approved by the Owner.

All Bidders are required to provide a statement regarding their residency status as required by 875 Iowa Administrative Code Chapter 156.

Contractors using “materials, supplies, and equipment” on projects in designated “exempt entities” may purchase these items without liability for the sales tax. The contractor must have a purchasing agent authorization letter and an exemption certificate from the public entity to present to the retailer, which specifies the construction project and will be available for that project only.

Southeast Polk Community School District will issue an authorization letter and an exemption certificate to the contractor and/or subcontractors for the purchase or use of building materials, supplies, and equipment to be used on this project only. DO NOT include sales tax on your bid form.

No bid may be withdrawn for a period of 30 days after the date of the scheduled closing time for the receipt of bids.

Bidders shall be prepared to submit a performance bond and payment bond conditioned on the faithful performance of the contract. Out-of-state bidders shall be prepared to submit an Out-of-State Contractor Bond to the Iowa Division of Labor in accordance with Chapter 91C of the Code of Iowa.

By virtue of statutory authority, a preference will be given to products and provisions grown and coal produced within the State of Iowa, and to Iowa labor to the extent lawfully required under Iowa law.

The owner reserves the right to accept or reject any or all bids and waive informalities in Bidding.

Published by order of the Board of Education

Southeast Polk Community School District
Altoona, Iowa.

By: Board President

Attest: Chief Financial Officer/ Board Secretary

END OF SECTION

SECTION 00 11 15
NOTICE OF PUBLIC HEARING

NOTICE OF PUBLIC HEARING

You are hereby notified that at 5:30 PM, Central Time on May 4, 2023, at 407 8th Street SE, Altoona IA 50009, there will be a public hearing on the proposed plans, specifications, form of contract, and estimated cost of the project. Any persons interested may appear and file objections to the proposed plans, specifications, form of contract, or cost of such improvement.

The following is a description of the Work: Construction of a new roadway and re-engineering of an existing roadway to incorporate a roundabout to service a new school building that is currently under construction. Work includes site development, site utilities, and site paving.

The location of the project is as follows:

8th Street SE and Falcon Drive, Altoona, IA 50009

Proposed drawings and specifications may be examined by submitting a request to the Owner.

Published by order of the Southeast Polk School Board - Altoona, IA.

Southeast Polk School Board

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SECTION 00 21 13

INSTRUCTIONS TO BIDDERS

1. OWNER

The Owner of this project is the Southeast Polk Community School District, 407 8th St. SE, Altoona, IA 50009.

2. ENGINEER

The Engineer of this project is Bishop Engineering, 3501 104th St., Urbandale, Iowa 50322.

3. PROPOSAL (BID) FORM

Each bid must be submitted on the Proposal Form as contained in the contract documents, see Section 00 41 00.

4. BIDDER RESIDENT STATUS FORM

The Iowa Department of labor has adopted new rules to enforce the resident bidder statute, Iowa Code §73A.21. The new rules require that the pubic body request a statement from each bidder regarding bidder's resident status on a form provided by the Labor Commissioner. **This form is included in the Bid Forms (see Appendix B), Section 00 41 00, and must be submitted by all bidders with their bids.**

5. COST BREAKDOWN – APPENDIX C TO BID FORM

Within 24 hours of the bid opening, the apparent low bidder shall submit the completed APPENDIX C – Cost Breakdown of the Bid Form to the Owner. This document shall be used for determining reimbursement amounts from the City to the Owner, for setting Bond values, and for use in other financial documents. It shall be a condition of the Bid.

6. BID SECURITY

Each proposal must be accompanied by a bid security of the type and in an amount described below. The bid security will be retained until a Contract is entered into by the successful low Bidder and the required Bonds and Insurance Certificates filed.

Each proposal must be accompanied by a certified or cashier's check drawn on an Iowa bank or a bank chartered under the laws of the United States, or a certified share draft on a credit union in Iowa or chartered under the laws of the United States, in an amount equal to five percent (5%) of the Bid Price, made payable to the Southeast Polk Community School District, Altoona, Iowa, or a bid bond on the form furnished with the contract documents for a like amount, which shall be considered as liquidated damages and shall be forfeited to the Owner if said proposal or bid is accepted and the bidder fails to execute the contract and file the required Performance, Payment and Maintenance Bond as required in the Contract Documents.

7. SUBMITTING PROPOSALS

Each **Proposal** and **Bidder Status Form** must be submitted in ink or typewritten in a sealed envelope with the following information on the outside: The Bidder's name, address, name of the project and the word "PROPOSAL".

The **bid security** must be submitted in a separate sealed envelope with the following information on the outside: The Bidder's name, address, name of the project and the words "BID SECURITY". If the proposal is mailed, the two separate envelopes shall be placed in a mailing envelope, sealed and addressed to the Owner. The mailing envelope must have the following information on the outside: The Bidder's name, address, name of the project and the words "PROPOSAL AND BID SECURITY".

8. TARGETED SMALL BUSINESS

A. Program Description:

1. Owner seeks to provide opportunities for Certified Iowa Targeted Small Businesses in the award of all contracts in accordance with State of Iowa requirements.
2. Certified Iowa Targeted Small Business participation target for Project is ten percent of Bid.
3. Certified Targeted Small Business database access may be obtained at http://www.dia.iowa.gov/tsb/index.php/search or call 515-281-5796.

B. Definitions:

1. Certified Iowa Targeted Small Business: Small business, fifty-one percent or more owned, operated, and actively managed by one or more women or minority persons.
2. Certified: Targeted Small Business shall be certified by the Iowa Department of Inspections and Appeals.
3. Small Business: Enterprise which is located in the State of Iowa, operated for profit under a single management, and has an annual gross income of less than three million dollars computed as the average of the three preceding fiscal years.
4. Minority Persons: Individual who is African-American, Hispanic, Asian, Pacific Islander, American Indian, or Alaskan native.
5. Actively Managed: Exercising the power to make policy decisions affecting the business.
6. Operated: Actively involved in the day-to-day management of the business.

9. WITHDRAWAL PERIOD

No Bidder may withdraw a proposal within thirty (30) days after the date of opening of bids.

10. INFORMALITIES

The Owner may waive any informalities or reject any or all bids.

11. QUALIFICATIONS OF BIDDER

The Owner may make such investigations as he deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein. Conditional bids will not be accepted.

12. FAILURE TO ENTER INTO CONTRACT

The successful Bidder, upon his failure or refusal to execute and deliver the Contract, Bonds and Insurance Certificate required within ten (10) days after he has received notice of the acceptance of his bid shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid.

13. CONDITIONS OF WORK

Each Bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful Bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his Contract. Insofar as possible the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor.

Reference is made to the Supplementary Conditions for the availability of surveys and investigations made for the Owner by Independent Testing Laboratories of subsurface or physical conditions at the site or otherwise affecting the performance of the work which have been relied upon by Bishop Engineering in preparing the Drawings and Specifications. Before submitting his bid, each Bidder shall, at his own expense, make such additional surveys and

investigations as he may deem necessary for performance of the work at his bid price within the terms of the Contract Documents.

14. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Drawings, Specifications or other prebid documents will be made to any Bidder orally. Every request for such interpretation should be in writing addressed to Bishop Engineering, at the address hereinbefore given, and to be given consideration must be received at least 7 days prior to the date fixed for the opening of bids.

Any and all such interpretation and any supplemental instructions will be in the form of written Addenda which, if issued, will generally be sent to all parties recorded as having received bidding documents (at the respective addresses furnished for such purposes), prior to the date fixed for the opening of bids; however, it will be the Bidder's responsibility to verify with the Engineer that all Addenda have been received prior to submitting a bid. All Addenda so issued shall become part of the Contract Documents.

15. SUBSTITUTIONS

Substitute products will be considered in accordance with Divisions 00 and 01. Where Bidding Documents stipulate a specific product, a substitute product will be considered when written request is received by the Engineer at least 12 calendar days prior to the date and time fixed for the opening of bids. The Engineer will list acceptable products in an Addendum.

See Section 01 60 00 for request form and details.

16. CONTRACT SECURITY

Simultaneously with his delivery of the executed Contract, the Contractor shall furnish a Performance, Payment and Maintenance Bond, as security for faithful performance of this Contract (including warranty, guarantee and maintenance provisions) and for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract. The surety on such bond shall be a duly authorized corporate surety company satisfactory to the Owner. Surety shall be currently listed as holding Certificate of Authority in U.S. Dept. of Treasury, Fiscal Service Circular 570 for full amount of contract. Bond forms shall be as bound herein.

17. POWER OF ATTORNEY

Attorneys-in-fact who sign Bid Bonds, Performance Bonds or Labor and Material Payment Bonds must file with each bond a certified and effectively dated copy of their power of attorney.

18. LAWS AND REGULATIONS

The Bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though therein written out in full.

19. OBLIGATION OF BIDDER

At the time of the opening of bids each Bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Drawings, Specifications and other Contract Documents including all Addenda. The failure or omission of any Bidder to examine any form, instrument or document shall in no way relieve any Bidder from any obligation in respect of his bid.

20. METHOD OF AWARD

Except where the Owner exercises the right reserved herein below to act otherwise, the lowest bid submitted by a responsive, responsible Bidder will be awarded the Contract providing such bid is considered reasonable and in the best interest of the Owner.

The Owner reserves the right to reject any or all bids and to pass upon the regularity or waive any irregularities of the bidders and to determine the acceptability of the surety offered.

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SECTION 00 31 00

AVAILABLE PROJECT INFORMATION - GEOTECHNICAL

1. SUMMARY

A. Document Includes:
   1. Geotechnical exploration, evaluation and recommendations for subsurface conditions of the project site.

B. Related Documents:
   1. Document 00 21 13 - Instructions to Bidders: Condition of Work.

2. SUBSURFACE INVESTIGATION REPORT

A. Copies of geotechnical investigation is included with this document and titled as follows:
   1. Report/Date: "GEOTECHNICAL EXPLORATION – SOUTHEAST POLK 6-7 SCHOOL NE 80TH STREET AND 8TH STREET ALTOONA, IOWA" / November 11, 2021.

      AND

   2. Report/Date: "GEOTECHNICAL EXPLORATION – 8TH STREET SE IMPROVEMENTS – PHASE I FROM 8TH AVENUE SE TO FALCON DRIVE ALTOONA, IOWA" / November 30, 2022.

   3. Prepared by: Allender Butzke Engineers Inc.
      3660 109th St.
      Urbandale, IA 50322

B. Report identifies existing soil and type of subgrade treatment needed immediately below pavement.

C. The Report by its nature, cannot reveal all conditions that exist on the site. Should subsurface conditions be found to vary substantially from this report or addendum, changes in the design and construction of foundations will be made, with resulting credits or expenditures to the Contract Price/Sum accruing to Owner.

D. Contractor shall assume responsibility for conclusions they draw from report. They may employ their own experts to analyze available information, and shall be responsible for any conclusions drawn from that additional source.

END OF SECTION

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ALLENDER BUTZKE ENGINEERS INC.
GEOTECHNICAL • ENVIRONMENTAL • CONSTRUCTION Q. C.

NOVEMBER 11, 2021 **PN 211157**

GEOTECHNICAL EXPLORATION

SOUTHEAST POLK 6-7 SCHOOL
NE 80TH STREET AND 8TH STREET
ALTOONA, IOWA

PERFORMED FOR

SOUTHEAST POLK SCHOOL DISTRICT
407 8TH STREET SE
ALTOONA, IOWA 50009

3660 109TH STREET • URBANDALE, IOWA 50322 • PHONE 515-252-1885 • FAX 515-252-1888

ALLENDER BUTZKE ENGINEERS INC.

GEOTECHNICAL • ENVIRONMENTAL • CONSTRUCTION Q. C.

November 11, 2021

Southeast Polk School District
407 8th Street SE
Altoona, Iowa 50009
Attn: Kevin Baccam

RE: Geotechnical Exploration
Southeast Polk 6-7 School
NE 80th Street and 8th Street
Altoona, Iowa
PN 211157

Dear Mr Baccam:

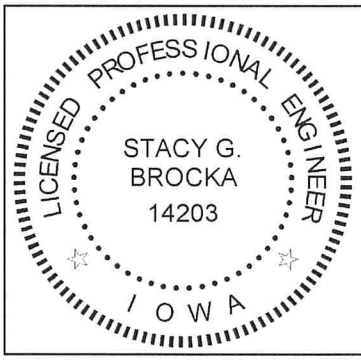
As authorized by you, Allender Butzke Engineers Inc. (ABE) has completed the geotechnical exploration for the above referenced project. The geotechnical exploration was conducted to evaluate physical characteristics of subsurface conditions with respect to design and construction of this project. The enclosed report summarizes the project characteristics as we understand them, presents the findings of the borings and laboratory tests, discusses the observed subsurface conditions.

We appreciate the opportunity to provide our geotechnical engineering services for this project. If you have any questions or need further assistance, please contact us at your convenience. We are also staffed and equipped to provide construction testing and inspection services on this project.

Respectfully submitted,
ALLENDER BUTZKE ENGINEERS INC.

Jason Ruffcorn, E.I.
Staff Engineer

Stacy G. Brocka, P.E.
Principal Engineer



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

11/11/21

Stacy G. Brocka, P.E. License Number 14203 Date

My license renewal date is December 31, 2021.

Pages covered by this seal: All Pages .

1 PC and Email Above
1 Email – RRE – Attn: Connor Schaeffer
1 Email – FRK – Attn: John Darveau, AIA, ALEP
1 Email – Weitz – Attn: B.J. Frideres and Ryan Catus

GEOTECHNICAL EXPLORATION

SOUTHEAST POLK 6-7 SCHOOL
NE 80TH STREET AND 8TH STREET
ALTOONA, IOWA

PN 211157

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GEOTECHNICAL EXPLORATION

SOUTHEAST POLK 6-7 SCHOOL
NE 80TH STREET AND 8TH STREET
ALTOONA, IOWA

PN 211157

November 11, 2021

PROJECT INFORMATION

Southeast Polk School District with design assistance from FRK Architects+Engineers (FRK), Raker Rhodes Engineering (RRE), and Bishop Engineering Company, Inc. (Bishop) is preparing plans for the construction of a new middle school for grades 6 and 7 to be located about 1300 feet northwest of the intersection of NE 80th Street and 8th Street in Altoona, Iowa. The new school will be a two-story slab-on-grade structure. Based on the preliminary structural loading information provided by RRE, the structure will generate maximum structural wall loads and column loads on the order of 16 kips per lineal foot and 360 kips, respectively. The preliminary grading plan provided by Eric Miller, P.E. with Bishop indicates the proposed middle school may have a finish floor elevation (FFE) near 950 feet, but the FFE may be raised to 952 feet.

A truck height dock is anticipated on the north side of the west wing of the school near the proposed kitchen area. Appurtenant construction will include associated parking lots, bus drive to the east and parent drive to the west, sidewalks around the school, detention ponds to the north and south of the building, and access drives.

This site is located on a gently sloping upland area of Polk County and has been used for agricultural crops in the past. Based on the topographic site survey prepared by Bishop, existing grades at the site are near elevation 964 in the southwest corner and slope gently down to near elevation 929 in the southwest corner and 910 in the northeast corner of the site. The preliminary grading plan provided by Bishop indicates cut depths of 5 feet or less and fill thicknesses of 11 feet or less may be required to achieve desired final building grades. Maximum cut depths of 11 feet or less and fill thicknesses of 8 feet or less may be required to meet desired parking lot and access drives grades. North and south detention ponds may require cut depths on the order of 9 feet and fill thicknesses of 4 feet or less to meet desired grades.

FIELD EXPLORATION

Thirty-six borings were conducted at this site to depths of 15 to 25 feet below existing grades between June 8 and 11, 2021. Six borings (S-1 to S-6) were drilled for the street on the west side of the site, while thirty borings (B-1 to B-30) were drilled for the school and adjacent areas. Approximate locations of the borings are shown on the enclosed Site Plan. The boring locations were staked by Bishop. The boring surface elevations, indicated on the enclosed Boring Logs, were provided by Bishop. Methods of drilling, sampling, standard laboratory testing, and classifying of subsurface materials are discussed in the Boring Log Description/Legend pages of the Appendix.

SUBSURFACE CONDITIONS

Site Geology

This project site is located within a geomorphic region known as the "Des Moines Glacial Lobe". The Wisconsinan glacier was the last glacier to advance into north central Iowa. The Wisconsinan glacial till present near the surface typically consists of sandy lean clay with random zones of high sand and silt content. It is not uncommon to encounter relatively thick sand layers, termed glacial outwash deposits, within the glacial till formation. Fine grained deposits of very dark gray locally derived alluvium are commonly encountered at the surface in isolated upland depressions. Loess is typically encountered underlying the Wisconsinan glacial till. The loess is an eolian "wind-blown" deposit derived from flood plain sediments associated with major glacial meltwater streams and tends to have relatively uniform silt and clay particle sizes.

Soil Profile

Detailed descriptions of soils encountered by this exploration are provided on the Boring Logs enclosed in the Appendix. The Profile of Borings (Plates A-1 through A-5) presented in the Appendix depicts the relative deposit elevations in the borings. Unless otherwise indicated, the depths of soil stratum and groundwater levels are referenced from below the top of existing ground at the individual boring locations at the time of drilling.

Topsoil - Topsoil was encountered at the ground surface in Boring Nos. 1 through 19, 21, 22, 24 through 27, 30, S-1, S-2, S-4, S-5, and S-6. These soils consisted of dark brown sandy lean clay (CL) with trace amounts of organics and extended to depths of 0.3 to 3 feet.

Local Alluvium – Local alluvium was encountered at the ground surface in Boring Nos. 19, 29, and S-3. These soils consisted of damp to moist and medium stiff to stiff, dark brown sandy

lean clay (CL) and lean to fat clay (CL-CH) with various amounts of organic content. The lower boundary of the local alluvium extended to depths of 4 to 5.5 feet.

Fill – Fill was encountered at the ground surface in Boring No. 23. The fill consisted of moist dark brown and brown sandy lean clay (CL) and extended to a depth of 4 feet. Boring No. 23 was drilled near a field tile line; therefore, we assume the existing fill is associated with that line.

Wisconsinan Glacial Till – Wisconsinan glacial till was present beneath the topsoil, local alluvium, and fill in all of the borings. These soils consisted of moist to very moist and soft to very stiff, brown to brown-gray and dark gray to gray-brown sandy lean clay (CL) with trace amounts of gravel and various amounts of organic content. The lower boundary of the Wisconsinan glacial till was encountered near depths of 8.5 to 25 feet. Boring Nos. 1 through 4, 6, 8 through 16, 18 through 21, 23 through 28, 30, S-1, and S-3 through S-6 terminated in the Wisconsinan glacial till near depths of 15 to 25 feet.

Glacial Outwash – Glacial outwash was encountered within the Wisconsinan glacial till layer in Boring No. 30. The outwash consisted of moist and loose, brown-gray silty sand (SM) and extended to a depth of 7 feet.

Loess – Loess was encountered underlying the Wisconsinan glacial till in Boring Nos. 5, 7, 17, 22, 29, and S-2. These soils consisted of moist to very moist and soft to stiff, dark gray to gray and brown-gray lean clay (CL). Boring Nos. 5, 7, 17, 22, 29, and S-2 terminated in the loess near depths of 15 to 20 feet.

Groundwater Level Observations

The borings were monitored during and shortly after drilling operations to detect moisture seepage and groundwater accumulation. The results of our groundwater level observations are noted on the Boring Logs enclosed in the Appendix.

During drilling operations, moisture seepage was noted near depths of 4 to 12 feet below existing grades in Boring Nos. 1, 6, 7, 9 through 12, 14, 19, 20, 21, 23, 27, 30, S-2, and S-3. Groundwater accumulation was observed between depths of 5.25 and 17.3 feet in Boring Nos. 1, 6, 7, 10, 11, 12, 17 through 20, 27, 30, S-2, and S-3 at the completion of drilling operations while no groundwater accumulation was observed in the remaining borings. It should be recognized that these short-term water levels are not necessarily a true indication of the groundwater table. Long-term observations would be necessary to accurately define the groundwater variations at this site.

Brown-gray coloring of the Wisconsinan glacial till is an indication of past fluctuations of the groundwater in this zone. Furthermore, local alluvium soils typically develop under high seasonal groundwater levels at or near the surface. Therefore, we interpret that past seasonal high groundwater tables have been near or above the surface in the isolated depressions and shallow drainageways across the site and as high as 1.5 feet below existing grades in the upland areas of the site. Fluctuation of groundwater levels can occur due to seasonal variations in the amount of rainfall, surface drainage, subsurface drainage, site topography, irrigation practices, and ground cover (pavement or vegetation).

ANALYSIS AND RECOMMENDATIONS

In our opinion, this site would be conducive to the construction of the proposed school and associated parking, drives, etc. The majority of the on-site soils consist of predominately low plasticity sandy lean clay (CL) soils. Some of the upper soils (upper 6 to 8 feet) in some of the borings were soft to medium stiff which would require some removal and replacement with engineered compacted fill. Seasonal high groundwater may impact portions of the site in deep cut areas. Some small isolated areas where fill (Boring No. 23) or moderately expansive soils (Boring No. 19) were encountered, may impact movement sensitive structures depending upon final grades. The following sections provide further detailed geotechnical recommendations.

Expansive Soil

The lean to fat clay (CL-CH) local alluvium soils encountered in Boring No. 19 are moderately plastic and are considered moderately expansive. These soils are subject to moderate volumetric change with changes in soil moisture content which can cause movement and distress to movement sensitive structures. These soils should not adversely impact building performance due to being outside the footprint of the building. However, these soils may be present at or near pavement slab level and may impact the performance of the pavements in the south parking lot.

Typical pavement movements due to moderately expansive (CL-CH) soils are similar to movements commonly experienced from frost heave. Considering the proposed pavements will be subject to frost heave movements, the risk of movement due to moderately expansive soils may be acceptable to the owner. If the owner choses to accept the risk of possible future movements for pavements bearing on the moderately expansive soils, we recommend pavements be supported on 12 inches or more of prepared compacted subgrade as further discussed in the *Pavement Subgrade Preparation* section of the report. If the owner prefers to take a more proactive approach to reduce pavement movement due to moderately expansive soils, pavements could bear on 1 foot or more of low plasticity buffer materials, such as low plasticity (Liquid Limit (LL) of 45 or less and

Plasticity Index (PI) of 23 or less) cohesive soils, granular soils, or chemically treated moderately expansive soils.

Existing Fill

Existing fill was encountered at the ground surface in Boring No. 23 and extended to a depth of 4 feet. This boring was drilled near a field tile line; therefore, we assume the fill is associated with that line. Although tests were not performed in the existing fill, based on our experience, field tile trench backfill is not typically well compacted and may not provide adequate support for settlement sensitive structures. Other undocumented fill exhibiting less desirable support characteristics could be present in other unexplored areas of the site. Without documented background of the fill placement there would be risk associated with constructing settlement sensitive structures on existing fill. These soils should not adversely impact building performance due to being outside the footprint of the building. However, these soils could be present at pavement slab level and may impact the performance of the pavements in the west parking lot and driveway. In our opinion, the risk of pavement movements due to the assumed poorly compacted field tile trench backfill is high. Therefore, we recommend the complete over-excavation of the existing fill and replacement with engineered compacted fill materials.

Site Preparation

Prior to the placing of concrete floors or pavements on this site, or before any fill is placed, the organic and loose materials in addition to all vegetation must be stripped. We expect that a minimum stripping depth of 6 inches will be required. The stripping depths may vary due to localized variations in vegetation cover and subgrade stability. Deeper stripping may be necessary to remove soft local alluvium in isolated depressions and shallow drainageways. The strippings could be used for landscaping purposes in non-critical areas where support for foundations, floor slabs, and pavements is not required. The subgrade should then be proof-rolled to delineate zones of soft soils present near the surface which may require additional removal or compaction.

A field tile line was likely encountered near Boring No. 23 at the time of drilling. We recommend that any field tile encountered during construction be completely removed and properly disposed of or recycled. Furthermore, the tile drainage system could be part of a larger system and provisions should be made to intercept and continue the drainage through the project area upon direction of the project design team. This should be conducted early in the grading process to cut off the water flow into the cut areas. A map of the field drain tile at this site may be on file with Polk County and/or with the previous landowner/farmer, and would be helpful in determining the extent of any field tile at the site.

Site Grading

Cut-and-fill construction will be performed at this site to achieve the desired final grades. Based on the preliminary grading plan and an FFE of 950 to 952 feet, cut depths on the order of 5 feet and fill thicknesses of 11 feet or less may be required to meet desired building grades. Maximum cut depths of 11 feet or less and fill thicknesses of 8 feet or less may be required to meet desired parking lot and access drives grades. North and south detention ponds may require cut depths on the order of 9 feet and fill thicknesses of 4 feet or less to meet desired grades.

We recommend that low plasticity (LL $\leq$ 45 and PI $\leq$ 23) cohesive or cohesionless soils, free of rubble and organics, be used as compacted fill. Inorganic existing soil such as the silty sand (SM), sandy lean clay (CL), and lean to fat clay (CL-CH) fill, topsoil, local alluvium, loess, glacial outwash, and Wisconsinan glacial till would be suitable soil types for general fill applications. However, the lean to fat clay (CL-CH) local alluvium should not be utilized as fill within 2 feet of movement sensitive structures. The following Table A lists recommended minimum compaction requirements for cohesive and cohesionless fill materials in specific applications. For cohesive soils, moisture contents within a range of -1 to +4 percent of the material's optimum moisture content are necessary to achieve the desired fill qualities. Soils compacted closer to optimum moisture content would exhibit greater stability under repeated construction traffic loading.

TABLE A
RECOMMENDED DEGREE OF COMPACTION GUIDELINES

Construction Application	Standard Proctor (ASTM D698) Cohesive Soil	Standard Proctor (ASTM D698) Cohesionless Soil	*Relative Density (D4253 & D4254) Cohesionless Soil
Class 1	95%	98%	70%
Class 2	90%	93%	45%
Class 3	85%	88%	20%

Class 1 - Subgrade for building foundations, slabs-on-grade, pavements and other critical backfill areas.
Class 2 - Backfill adjacent to structures not supporting other structures - Minor subsidence possible.
Class 3 - Backfill in non-critical areas - Moderate subsidence possible.

*Use Relative Density technique (ASTM D4253 & D4254) where Standard Proctor technique (ASTM D698) does not result in a definable maximum dry density and optimum moisture content.

The on-site soils can be excavated utilizing conventional excavation equipment. Granular soils can generally be suitably compacted with vibratory compaction equipment whereas cohesive soils are more suitable for compaction with sheepsfoot or pneumatic type compactors. Care should be exercised in properly backfilling and compacting all trenches, especially utility trenches under or adjacent to the pavement. Loosely compacted or sand backfilled trenches can collect surface water and inadvertently direct it to the pavement subgrade and cause softening of the soil as well as increasing frost heave potential.

At the time of this geotechnical exploration, moisture content of the topsoil, fill, local alluvium, loess, glacial outwash, and Wisconsinan glacial till was slightly above to well above the recommended moisture content for compaction. Adjustment of soil moisture content may be required in order to lower or raise the moisture to within the recommended moisture content range. Discing and aeration is generally the most economical method to lower soil moisture content, if climatic conditions allow. Chemical modification (drying) of very moist soils with Class C fly ash, Portland cement, or quicklime can be accomplished if construction scheduling does not permit field drying. Common chemical modification methods may not be reactive when temperatures are near or below 40° Fahrenheit if grading or fill placement at the site will be conducted during colder weather.

Deep Fill

New compacted fill thicknesses of 11 feet or less may be required to achieve the desired building, pavement, and site grades. Weight of the new fill sections will consolidate the underlying compressible local alluvium, loess, and soft to medium stiff Wisconsinan glacial till soils, resulting in general area settlements. The magnitude of settlement will depend upon the fill depth and thickness of the underlying compressible soils Estimated area settlements are shown in the following Table B.

TABLE B
ESTIMATED SETTLEMENTS

Fill Thicknesses (feet)	Estimated Settlements (inches)[1]
1 – 5	< 1
5 - 10	1 to 2
10 - 15	2 to 3

1) Actual settlements may vary due to depth and thickness of underlying compressible layers and thicknesses of fill sections

Based on our experience, approximately 75 percent of the settlement occurs during and within 4 to 6 weeks after the completion of fill placement. We recommend that the deep fill sections be placed to final grade and allowed to settle prior to constructing settlement sensitive structures over these deep fill areas. Settlement plates/monuments could be installed to determine the amount and rate of settlement. The settlement information could indicate when construction of foundations and floor slabs could begin in these areas. In areas where less than 5 feet of fill has been placed, construction may continue without a delay period.

Excavation Stability and Dewatering

Boring information indicates excavations at the site will encounter predominately cohesive soils with the possibility of wet sand seams or glacial outwash layers within the Wisconsinan glacial till such as encountered near a depth of 4 feet in Boring No. 30. Other granular zones may be present in unexplored areas. If excavations encounter only cohesive soils with no wet sand seams or layers, it is expected that the water seepage can be controlled by permitting it to drain into temporary construction sumps and be pumped outside the perimeter of the excavations. More extensive dewatering such as sand points and wells may be required for excavations which extend down into water bearing sand layers. We recommend that prior to excavating in saturated sand, water levels be lowered and maintained 2 feet or more below the bottom of excavations to prevent upward seepage forces which could reduce subgrade support.

The extent of bracing or sloping of open cut excavations will be dependent upon depth of cut, groundwater conditions, soils encountered, length of time the excavation will be open, area available for excavation and local governing regulations. Predominately cohesive soils may appear to stand nearly vertical in shallow excavations for short periods of time. However, soil creep, surcharge loads, precipitation, subsurface moisture seepage, construction activity vibrations and other factors may cause these soils to cave within an unpredictable period of time. Excavations encountering sand may tend to cave rapidly, especially if water is flowing through the sand. Unstable granular excavation walls may also cause surrounding cohesive soils to become unstable. Temporary shoring, flattening of the excavation slopes or use of trench boxes may be required to maintain a safe condition. Determining the appropriate OSHA classifications of the soil types encountered and implementing the required provisions for sloping, shoring, and bracing of excavations throughout the project during construction are the responsibility of the contractor per OSHA.

Foundation Design

Foundation information was provided by Connor Schaeffer with RRE. Mr. Schaeffer indicated the two-story structure will generate structural loads with maximum wall and column loads on the order of 16 kips per lineal foot and 360 kips, respectively.

With a proposed building FFE between 950 to 952 feet, we assume that exterior frost-depth footings will bear approximately 4 feet below finish floor, near elevations 946 to 948 feet, and interior footings may bear at shallower depths of 2 feet, near elevations 948 to 950 feet. Truck dock footings on the north wall of the west wing will bear deeper, likely near 8 feet below finish floor, near elevations 942 to 944 feet.

Soft to medium stiff natural Wisconsinan glacial till soils are present in the upper 4 to 8 feet across 1/2 of the proposed building. These soils exhibit low bearing capacity and footings bearing on these soil types may experience total settlements on the order of 1 inch or more, even if designed for low bearing pressures.

To improve bearing capacity, reduce settlement, and provide uniform support below exterior and heavy interior footings, we recommend that portions of the soft to medium stiff soils present in the upper 4 to 8 feet be over-excavated under footings and replaced with new engineered compacted fill. Considering the magnitude of grading required at this site, over-excavation of soft soils below the heavy interior and exterior footings could be conducted during the early stages of grading after the site has been stripped.

Over-excavation of soft soils should be planned beneath some exterior and interior foundations as shown on the Highlighted Foundation Plan attached in the Appendix. Over-excavations depths range from 2 feet beneath exterior foundations to 3 feet beneath interior foundations, and over-excavations of up to 4 feet will be necessary for isolated heavily loaded foundations. Over-excavations should extend 9 inches laterally in all directions below footing edges for each foot of over-excavation depth as shown in Figure No. 2. Provisions should be made to account for variation in extent and depth of over-excavation based on findings during construction. Natural soft to medium stiff soils outside of the primary foundation pressure distribution zone will not require removal and replacement.

We recommend that continuous and isolated spread foundations bearing on newly placed engineered compacted fill and suitable stiff natural soils be proportioned for maximum net allowable soil bearing pressures of 2,000 and 2,500 pounds per square foot (psf), respectively. We estimate long-term total settlement due to structural loads will be less than 1 inch and differential settlement of similarly loaded footings may be on the order of ½ of the total settlement when foundations bear on newly placed engineered compacted fill and suitable natural soils. This assumes that settlement caused by the weight of new fill is essentially complete prior to construction of settlement sensitive building elements.

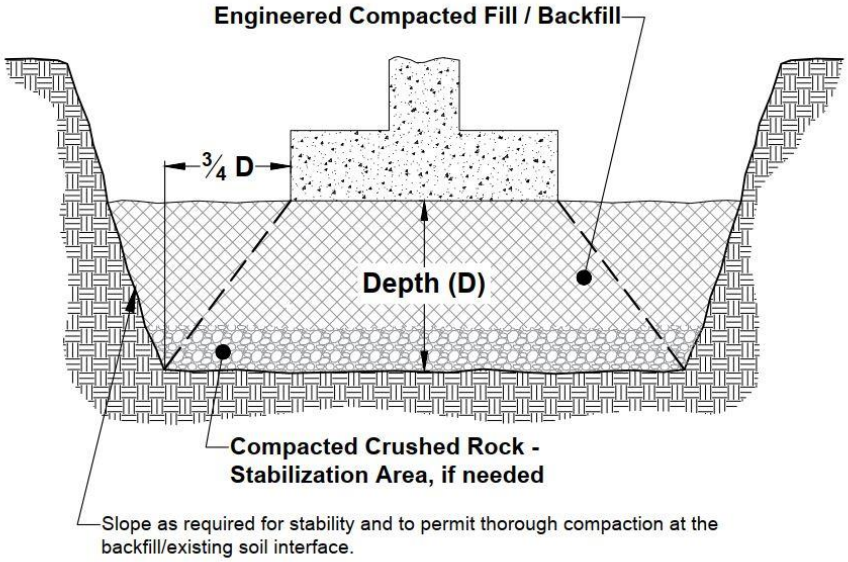


Figure No. 2 – Typical Footing Over-Excavation

Continuous foundations should be adequately reinforced to limit deflections caused by non-uniform soil support characteristics. All exterior foundations and foundations in unheated areas should be placed a minimum of 3.5 feet below final grade to provide protection against frost penetration and reduce movements associated with changes in soil moisture content. The on-site cohesive soils and newly placed cohesive fill would generally be suitable for shallow (less than 4 feet) trench foundations; however, random sand seams or very sandy zones within the natural glacial till will not remain stable and should be expected to cave, particularly if groundwater is high at the time of construction and the sands are water bearing.

Footing excavations should be kept free of water accumulation to prevent softening of subgrade soils. Some of the natural soils are easily disturbed by construction traffic and can even become unstable under repeated foot traffic, especially if wet. Where these conditions are encountered, it may be beneficial to place a granular working mat of clean coarse crushed rock or recycled concrete aggregate at the bottoms of footing excavations extending into natural soils. The need for granular working mats will be impacted by the use and effectiveness of dewatering measures implemented during initial site grading. Observations and test probing of the foundation subgrade soils should be conducted by an ABE geotechnical engineer to determine that the soils are compatible with the design criteria.

Ground Improvement

As an alternative to over-excavation and backfill below the foundations, a ground improvement system of compacted aggregate piers (CAPs) could be used to improve bearing

capacity and reduce settlement. These are a design-build system which consist of shallow piers of highly compacted crushed limestone under spread footings. CAPs are typically constructed by drilling a 2.5 to 3-foot diameter hole in the ground to depths of about 10 to 15 feet below the base of footings, possibly terminating in the stiff to very stiff Wisconsinan glacial till, and backfilling the holes with lifts of compacted aggregate. Once the CAPs are installed, conventional spread foundations may be placed directly on top of the design elevation of the CAP. The spread foundations can typically be proportioned for bearing pressures on the order of 4,000 psf or more, dependent on the specialty contractor design. The design-build contractor should be given a copy of this report so that they can adequately design their system.

Floor Slab Support

Interior floor slabs can be adequately supported on a minimum of one foot of reworked inorganic existing soils or newly placed engineered compacted fill required to provide the desired final grades. Unsuitable soils encountered during the observations should be removed and replaced with engineered compacted fill. The floor slabs can be designed for a modulus of subgrade reaction value of 100 pounds per cubic inch when bearing on a minimum of one foot of prepared subgrade. Testing, observations, and probing should be conducted during construction to delineate zones of soft soils which may require repair prior to concrete placement.

Seismic Design

Boring information indicates soft to stiff Wisconsinan glacial till soils are present above medium stiff to stiff loess soils to termination depths of 15 to 25 feet. Publicly available well logs from site around this site indicate bedrock may be near depths of 100 to 200 feet below the ground surface at those locations. Although a deep boring was not conducted at this site, based on our experience in this area of Altoona stiff to very stiff glacial till soils, underlying the loess, likely extend to bedrock. In our analysis we assume stiff to very stiff glacial till, underlying the loess, extends to a depth of 100 feet or more. Therefore, we estimate this project site to be Site Class C as defined in the 2015 International Building Code (IBC) and 2010 ASCE-7 Standard. IBC 2015 Figures 1613.3.1 (1) and (2), Tables 1613.3.3 (1) and (2), and information obtained from the US Geological Survey indicate the site coefficients for mapped spectral response acceleration at shot period (Fa) equal to 1.2 and at 1 second (Fv) equal to 1.7 could be utilized for this project.

Lateral Earth Pressures

Walls constructed to retain soil should be designed to accommodate unbalanced lateral earth pressures. Estimated lateral earth pressures for cohesive and cohesionless (granular) backfill are presented in the following Table C. Cohesionless (granular) backfill lateral earth pressure parameters may be used where granular backfill is installed behind the subsurface wall in

accordance with the following Figure No. 3. The granular backfill should have a minimum width of 2 feet and be wide enough to accommodate the back slope limit line of 2:1 (vertical to horizontal) or flatter. The area between the required minimum zone of granular material and the actual limits of excavation may be backfilled with either cohesive or granular soils.

TABLE C
LATERAL EARTH PRESSURE PARAMETERS

Condition	Cohesive Soil (non-expansive clay)	Cohesionless Soil (granular-sand)
Assumed Backfill Characteristics		
Approximate Total Density	130 pcf	120 pcf
Approximate Friction Angle	15° - 20°	30° - 35°
Active Pressure Coefficient, K_a	0.5	0.3
At-Rest Pressure Coefficient, K_o	0.7	0.5
Passive Pressure Coefficient, K_p	2	3.3
Estimated Lateral Earth Pressure[1] (Equivalent Fluid Pressures)		
Active - Drained	65 pcf	35 pcf
Active - Undrained[2]	95 pcf	80 pcf
At-Rest - Drained	90 pcf	60 pcf
At-Rest - Undrained[2]	110 pcf	90 pcf
Passive - Drained	260 pcf	400 pcf
Passive - Undrained[3]	135 pcf	190 pcf

1) Assumes no safety factor, negligible wall friction, vertical wall, level backfill, zero surcharge loads and ignores cohesion shear strength.
2) Combined buoyant backfill unit weight and hydrostatic (water @ 62.4 pcf) loading.
3) Excludes hydrostatic loading.

Coefficient of sliding friction values of 0.3 and 0.6 may be used for P.C. concrete on cohesive and granular (sand) subgrades, respectively. These ultimate values assume no safety factors. Design with these ultimate values should include a minimum factor of safety of 1.5.

Active earth pressure design assumes that the wall can rotate and deflect at the top. If the wall is rigidly fixed, higher lateral earth pressures will develop against the wall and at-rest pressure parameters should be used for design. Increased earth pressures can also develop from restricted soil drainage, surcharge loads adjacent to the wall, and compaction of the adjacent backfill. Expansive materials (CH), either natural or backfill, should not be within 3 feet of below grade walls.

Walls retaining fine-grained soils, and subjected to seasonally depressed temperatures, may be subject to long-term accumulative movement due to soil creep and freeze-thaw action. It is

desirable to use free draining granular backfill behind such walls to reduce this movement. We recommend that a chimney of clean granular material (similar to Iowa DOT Specification 4131) be placed directly against the back of these walls and that the chimney be connected to a drain system. An acceptable drain system may be constructed using perforated pipe encased in clean granular material and sloped to sumps or storm drains.

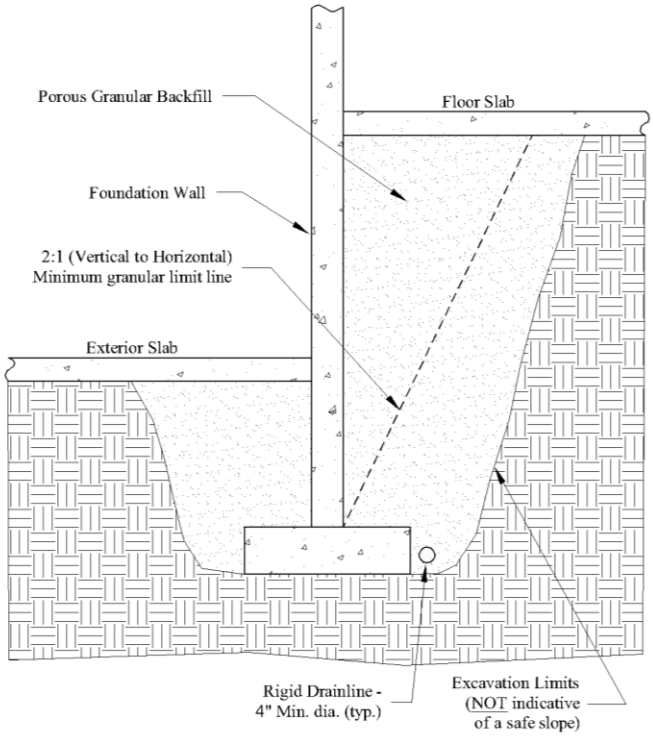


Figure No. 3 – Lateral Earth Pressures Example Section

Pavement Subgrade Preparation (Parking Lots and Drives)

Recommendations for the street on the west side of the site will be provided under a separate report. Uniform subgrade support is critical in pavement performance. As discussed in the *Expansive Soil* and *Existing Fill* sections of this report, there is risk of constructing pavements over existing lean to fat clay (CL-CH) local alluvium and lean clay (CL) field tile backfill encountered at this site. Typical pavement movements due to moderately expansive soils are similar to movements commonly experienced from frost heave. Therefore, the risk of pavement settlement and cracking may be acceptable to the owner, as pavements are more easily repaired than footings and floor slabs. In our opinion, the risk of pavement movements due to the assumed poorly compacted existing fill is high. Therefore, we recommend the complete over-excavation of the existing fill and replacement with engineered compacted fill materials.

If the owner choses to accept the risk of possible future movements for pavements bearing on the moderately expansive soils and/or existing fill, as a minimum we recommend pavements be supported on 12 inches or more of prepared compacted subgrade. If the owner prefers to take a more proactive approach to reduce pavement movement due to moderately expansive soils, pavements could bear on 1 foot or more of low plasticity buffer materials.

Depending upon conditions encountered at the time of construction, it may be necessary to moisture condition existing soils to achieve the recommended moisture content range of -1 to +4 percent of optimum moisture content. Soils compacted closer to optimum moisture content will exhibit greater stability under construction traffic loading. Suitable cohesive soil compacted to a minimum of 95 percent of maximum dry density determined by ASTM D698 would provide a design support capability equivalent to a CBR value of 3 or a modulus of subgrade reaction value of 100 pounds per cubic inch. Subgrade compaction, moisture content and depth should be verified by an ABE representative.

The pavement subgrade should be proof-rolled to delineate zones of soft soils present near the surface which may require additional removal or compaction. The subgrade support should be relatively uniform with no sudden changes in degree of support to provide satisfactory pavement performance. Transition between cut and fill areas, varying soil types, improper subgrade preparation such as inadequate proof-rolling, compaction, and removal of vegetation can result in non-uniform subgrade support. The subgrade should be prepared shortly before paving operations commence and be maintained in suitable conditions until paved. Damages caused by construction traffic or deterioration due to adverse weather are to be repaired prior to paving.

Subsurface Pavement Drainage

Based on the anticipated cut depths of 11 feet or less and fill thicknesses of 8 feet or less for the parking lot and access drives and the anticipated high seasonal groundwater levels at this site, it is our opinion that subsurface pavement drainage would not be necessary in areas of fill but would be beneficial for extending the life of pavements in cut areas of 3 feet or more. Subsurface drainage is also recommended if a granular subbase is to be utilized beneath the pavement. Subsurface pavement drainage would remove water that would otherwise tend to accumulate in the granular material, reduce frost heave, and prevent ponding and potential softening of the cohesive subgrade soils.

Subsurface drainage may be accomplished with the installation of drainlines similar to the Iowa DOT detail DR-303 or Iowa SUDAS Figure 4040.231. If used, the permeable subbase should be hydraulically connected to the free draining granular backfill (similar to Iowa DOT Specification 4131) in the subsurface drains. Subdrains should be spaced approximately 50 feet

center to center and may be constructed to daylight or be connected to gravity flow storm drains capable of handling the discharge.

Pavement Thicknesses (Parking Lots and Drives)

Pavement thickness recommendations for the street on the west side of the site will be provided under a separate report. Either rigid (Portland cement concrete, PCC) or flexible (hot mix asphalt, HMA) pavement types could be constructed on the prepared cohesive subgrade. The following Table D summarizes alternate pavement thicknesses for typical lightly-loaded, moderately-loaded and heavily-loaded paved areas. If a minimum 6-inch-thick crushed rock base (such as Iowa DOT 4123 Modified Subbase) with drains is constructed on the compacted subgrade to support the pavement, the recommended thicknesses of PCC or HMA pavement may be reduced by ½ and 1 inch, respectively. However, we recommend the lightly-loaded 5-inch-thick PCC pavement section not be reduced. A more specific pavement evaluation can be provided if traffic volume and loading information is available.

TABLE D
TYPICAL PAVEMENT THICKNESSES

Traffic Volume	Rigid: PCC [1]	Flexible: HMA [2]
Lightly-Loaded [3]	5" [4]	6"
Moderately-Loaded	6"	7"
Heavily-Loaded [5]	7"	8"

1) PCC - Flexural strength of 550 psi
2) Type A HMA - Structural coefficient of 0.44/inch
3) Automobile and 1 to 2 trucks average daily traffic
4) Thickness reduction due to crushed rock subbase does not apply
5) Entrances, delivery areas, dumpster areas or other areas of heavier truck traffic (25 trucks or less per day)

The above pavement thicknesses are considered to be typical and would require periodic maintenance. This maintenance would consist of sealing cracks/joints and replacement of isolated distressed areas. Thicker pavement sections would reduce maintenance and increase the pavement service life. Likewise, thinner sections would be expected to have a shorter service life that still may satisfy particular project needs but may require more maintenance. Other criteria which influence pavement service life include surface drainage, subsurface drainage, paving material

quality, reinforcement, and joint design. Construction procedures involving placement, finishing, curing, jointing and weather protection can significantly impact pavement performance.

Frost Heave

Key elements contributing to frost heave including freezing temperatures, available water, and fine-grained frost susceptible soils are generally present at sites in Iowa. As a result, frost heave problems are generally common (and most noticeable) in pavements or sidewalks adjacent to non-frost susceptible elements such as manholes, light poles, and exterior doors or frost protected stoops. Frost heave can cause pavement cracks to develop parallel to and several feet from curbs. This generally occurs where cleared paved areas exposed to freezing temperatures heave more than adjoining paved areas insulated by piled snow. Areas cleared of snow not exposed to periodic sunshine during the winter, such as under canopies, on the north shaded side of buildings and other shaded areas may experience more frost heave than other sunshine exposed areas. Sometimes it is not readily apparent why frost heave problems occur at one location and not at another seemingly similar location.

While it is appropriate to implement measures to reduce frost heave such as insulation, replacing frost susceptible soils with less frost susceptible soils, void forms, sealing cracks/joints to reduce surface water infiltration, or drainage improvements (surface and subsurface), these measures may simply move the frost heave problem to a different location where preventative measures have not been implemented. Having a smooth transition between heaved and non-heaved areas is desirable, but may be difficult and/or costly to accomplish. We are available to consult with you to discuss options for your consideration to reduce frost heave potential on this project.

GENERAL

The analyses and recommendations in this report are based in part upon the data obtained from the soil borings performed at the indicated locations and from any other information discussed in this report. This report does not reflect any variations which may occur between borings or across the site. The nature and extent of such variations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.

It is recommended that the geotechnical engineer be provided the opportunity to review the plans and specifications so that comments can be made regarding the interpretation and implementation of our geotechnical recommendations in the design and specifications. It is further recommended that the geotechnical engineer be retained for testing and observation during

earthwork and foundation construction phases to help determine that the design requirements are fulfilled.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranty, expressed or implied, is made. In the event that any changes in the nature, design or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing by the geotechnical engineer.

The scope of our service was not intended to include any environmental assessment or exploration for the presence of hazardous or toxic materials in the soil, surface water, groundwater or air on, below or adjacent to this site.

APPENDIX

BORING LOG DESCRIPTION/LEGEND

The material types encountered during the drilling operations were recorded on field logs. The profile represented on the Boring Log is based on final classification performed by a geotechnical engineer using the field logs, laboratory observation and testing. The material stratigraphy demarcation lines shown on the Boring Logs indicate changes in soil characteristics, however, actual soil changes or variations may occur as a gradual transition. Soil profile discussion, Log Boring information, water levels and recommendations presented in this report are based upon measured depths below ground levels existing at time of the field exploration, unless otherwise specified.

DRILLING AND SAMPLING

The borings were conducted with either a truck or all-terrain rotary drill rig using the drilling methods indicated on each Boring Log. Soil sampling and/or in-situ testing such as Shelby Tube (ST), split-spoon (SS), drive cone (DC), or core (C) was conducted at depth intervals which were selected in consideration of the characteristics of the proposed construction. Generally undisturbed soil samples are taken at 5 foot depth intervals or change in soil types. Disturbed soil samples from the auger, either jar size or bulk size samples, may be taken at intermediate intervals for the purpose of soil classification or laboratory testing. Borings conducted for soil classification only, will show no designation of sampling although disturbed sampling is performed. Soil samples obtained in the field were identified and sealed for transportation to the laboratory for performance of pertinent physical testing and engineering classification.

Drilling Methods

CFA - Continuous Flight Auger: 4, 6, or 8-inch diameter (ASTM D1452).
RD - Rotary Drilling: Using drilling fluid in cased or uncased boring (ASTM D2113).
HSA - Hollow Stem Auger: 6 or 8-inch diameter, continuous flight auger remains in boring with soil removed from the hollow stem through which undisturbed sampling is conducted.
HA - Hand Auger: 4-inch or less diameter.

Sample Types

ST - Shelby Tube: Thin-walled tube samples of cohesive soils (ASTM D1587).
SS - Split Spoon with 140 lb. manual hammer: Standard penetration test and split-barrel samples (ASTM D1586).
SSA - Split Spoon with 140 lb. automatic hammer: Standard penetration test and split-barrel samples (ASTM D1586).
DC - Drive Cone: Dynamic in-place testing of soil using a 2-inch diameter cone with a 60 degree point driven into the soil for continuous 1-foot intervals in the same manner as Split Spoon, no sample is obtained.
C - Core: Sampling hard soil or bedrock with a diamond core barrel in a rotary drill boring (ASTM D2113).
SPT - Standard Penetration Test: Number of blows required to drive sampler (split spoon or drive cone) into the soil with a 140-pound weight dropping a distance of 30-inches (ASTM D1586), number of blows recorded for each 6-inch interval in an 18-inch (or more) penetration depth, values shown are for each 6-inch interval (if series of number sets are shown) or a total of the last two 6-inch intervals (if only one number is shown) which is commonly referred to as "N" in blows per foot. High resistance is indicated by a high number of blows for a lesser penetration depth listed in inches.
BS - Bulk Sample: Disturbed.
CPT - Cone Penetration Test: Quasi-static in-place testing of soils using a 60 degree cone and friction sleeve which are steadily pushed into the soil and measure skin friction and end bearing (ASTM D3441).

STANDARD LABORATORY TESTING

Representative undisturbed soil samples obtained by the Shelby Tube sampler were tested for moisture content (ASTM D2216), density (dry) and unconfined compressive strength (ASTM D2166) in the laboratory. Results of these tests appear on the respective Boring Logs. Additional soil testing including particle size analysis (ASTM D422) and Atterberg Limits (ASTM D4318) may be conducted, if necessary, to define in more detail pertinent soil characteristics for classification in accordance with the Unified Soil Classification System. Specialized laboratory tests (if conducted) to determine pertinent soil characteristics are discussed in the "Laboratory Testing" section of the report.

WATER LEVEL MEASUREMENT

Water levels indicated on the Boring Logs are the levels measured in the borings at the times indicated. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels is not possible with short term observations.

BORING LOG DESCRIPTION/LEGEND

DESCRIPTIVE SOIL CLASSIFICATION

Soil description is based on the Unified Classification System as outlined in ASTM Designations D-2487 and D-2488. This classification is primarily based upon visual and apparent physical soil characteristics, comparison with other soil samples, and our experience with the soil. Additional laboratory testing may be conducted, if necessary to define in more detail pertinent soil characteristics. The Unified Soil Classification group symbol shown on the boring logs corresponds with the group names listed below. The description includes soil constituents, moisture conditions, color and any other appropriate descriptive terms.

Group Symbol	Group Name	Group Symbol	Group Name	Group Symbol	Group Name	Group Symbol	Group Name
GW	Well-Graded Gravel	SW	Well-Graded Sand	CL	Lean Clay	CH	Fat Clay
GP	Poorly-Graded Gravel	SP	Poorly-Graded Sand	ML	Silt	MH	Elastic Silt
GM	Silty Gravel	SM	Silty Sand	OL	Organic Clay Organic Silt	OH	Organic Clay Organic Silt
GC	Clayey Gravel	SC	Clayey Sand			PT	Peat

RELATIVE PROPORTIONS			GRAIN SIZE TERMINOLOGY	
Descriptive Term(s) (Of components also present in sample)	Sand and Gravel % of Dry Weight	Fines % of Dry Weight	Major Component of Sample	Size Range
Trace	<15	<5	Cobbles	12 in. to 3 in. (300mm to 75mm)
With	15-30	5-12	Gravel	3 in. to #4 sieve (75mm to 4.75mm)
Modifier	>30	>12	Sand	#4 to #200 sieve (4.75mm to 0.074mm)
			Silt or Clay	Passing #200 sieve (.074 mm)

CONSISTENCY OF FINE-GRAINED SOILS			RELATIVE DENSITY OF COARSE-GRAINED SOILS	
Unconfined Compressive Strength, Qu, psf	Consistency	SPT, bpf	SPT, bpf	Relative Density
< 500	Very Soft	0-2	0-4	Very Loose
500-1,000	Soft	2-4	4-10	Loose
1,000-2,000	Medium Stiff	4-8	10-30	Medium Dense
2,000-4,000	Stiff	8-15	30-50	Dense
4,000-8,000	Very Stiff	15-30	50-80	Very Dense
8,000-16,000	Hard	30-100	80+	Extremely Dense
> 16,000	Very Hard	>100		

BORING LOG DESCRIPTION/LEGEND

ABBREVIATIONS

COMMONLY USED ABBREVIATIONS	
ft. or ' - feet	elev. - Elevation
in. or " - inches	% - Percent
psf - pounds per square foot	No. - Number
plf - pound per lineal foot	TB - Test Boring
pcf - pounds per cubic feet	N - blow count (SPT, bpf)
kip - 1000 pounds	USCS - Unified Soil Classification System
ksf - 1000 pounds per square foot	LL - Liquid Limit
klf - 1000 pounds per lineal foot	PL - Plastic Limit
tsf - tons per square foot	PI - Plasticity Index
bpf - blows per foot (SPT, N)	

BORING LOG NO. 1

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **945.7'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
945	0							Dark brown sandy lean clay, trace organics, moist		CL		1.3
								TOPSOIL		CL		944.4
								Brown sandy lean clay, trace gravel, moist				
942		1	SSA	4	22.4			Brown-gray after 3.5'				
	6											
939		4	ST		24.1	98	1720					
								Moisture seepage near 8'			▽	
		2	SSA	7	22.6			Interbedded sand seam from 8' to 9'				
936								**WISCONSINAN GLACIAL TILL**				
	12											
933		3	SSA	13	19.4							15
930								End of Boring				930.7
	18											
927												
924												
	24											
921												
918												
	30											
915												
912												
	36											
909												
906												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: **8.5** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 2

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **946.7'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Dark brown sandy lean clay, trace organics, moist		CL		
945		4	SSA	7	20.8			**TOPSOIL**				2
								Brown sandy lean clay, trace gravel, moist		CL		944.7
		1	SSA	2	21.3			Brown-gray after 3'				
942								Moist to very moist after 4'				
	6											
								Gray-brown after 6.5'				
939												
								WISCONSINAN GLACIAL TILL				
		2	SSA	12	18.3			Moist after 8.5'				
936												
	12											
								Dark gray after 12'				
933		3	ST		17.3	108	4140					15
								End of Boring				931.7
930												
	18											
927												
924												
	24											
921												
918												
	30											
915												
912												
	36											
909												
906												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 3

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **948.4'**
Datum: **Site Datum**

Date Drilled: **6/9/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
948	0							Dark brown sandy lean clay, trace organics, moist		CL		1.3
								TOPSOIL		CL		947.1
945								Brown sandy lean clay, trace gravel, moist				
		1	SSA	3	23.7			Brown-gray after 3.5'				
942	6	4	ST		18.0	100	3260					
								WISCONSINAN GLACIAL TILL				
939		2	ST		20.5	104	2450					
936	12											
		3	SSA	9	17.7			Dark gray after 13.5'				15
933								End of Boring				933.4
930	18											
927												
924	24											
921												
918	30											
915												
912	36											
909												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 4

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **949.5'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
948	0	4	SSA	6	25.7			Dark brown sandy lean clay, trace organics, moist **TOPSOIL**		CL		3
945		1	ST		22.2	94	2610	Brown-gray sandy lean clay, trace gravel, moist		CL		946.5
942	6	2	ST		18.7	105	2890	Interbedded sand seam near 8.5' **WISCONSINAN GLACIAL TILL**				
939												
936	12	3	SSA	9	22.8							15
933								End of Boring				934.5
930	18											
927												
924	24											
921												
918	30											
915												
912	36											
909												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 5

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **946.1'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
945	0							Dark brown sandy lean clay, trace organics, moist **TOPSOIL**		CL		2
								Brown-gray sandy lean clay, trace gravel, moist		CL		944.1
942		1	ST		16.7	95	2000**					
	6											
939		4	SSA	6	19.6							
								Interbedded sand seam near 7.5'				
		2	ST		14.4	110	2000	**WISCONSINAN GLACIAL TILL**				
936												
	12											
933												14
		3	SSA	6	30.3			Brown-gray lean clay, moist **LOESS**		CL		932.1 15
930								End of Boring **Estimated from calibrated hand penetrometer				931.1
	18											
927												
924												
	24											
921												
918												
	30											
915												
912												
	36											
909												
906												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 6

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **950.4'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Dark brown sandy lean clay, trace organics, moist		CL		1.5
								TOPSOIL				
948								Brown-gray sandy lean clay, trace gravel, moist		CL		948.9
		1	SSA	7	17.3							
945	6											
		5	ST		20.1	102	3210					
942												
		2	ST		20.8	103	1610					
								Moisture seepage near 10'				
939								**WISCONSINAN GLACIAL TILL**				
	12											
		3	ST		19.5	108	4300	Gray-brown after 13.5'			▽	
936												
								Dark gray after 16.5'				
933	18											
		4	SSA	9	18.8							20
930								End of Boring				930.4
927	24											
924												
921	30											
918												
915	36											
912												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **15** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 7

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **950.1'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
950	0							Dark brown sandy lean clay, trace organics, moist **TOPSOIL**		CL		2.5
		1	SSA	3	26.4			Brown-gray sandy lean clay, trace gravel, moist to very moist		CL		947.6
945	6	5	ST		26.1	81	1560	Moisture seepage near 7'				
942		2	SSA	7	19.2			Moist after 8.5'			▽	
								WISCONSINAN GLACIAL TILL				
939	12											
936		3	ST		19.1	108	4430	Dark gray after 14.5'				
933	18											18.5
		4	SSA	11	30.1			Dark gray lean clay, very moist **LOESS**		CL		931.6
930												20
								End of Boring				930.1
927	24											
924												
921	30											
918												
915	36											
912												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: **9** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 8

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **951.1'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
951	0							Dark brown sandy lean clay, trace organics, moist		CL		0.5
								TOPSOIL		CL		950.6
948								Brown sandy lean clay, trace gravel, moist Brown-gray after 2'				
		1	SSA	2	22.0							
945	6	5	ST		18.9	104	2490					
942		2	SSA	9	19.8			**WISCONSINAN GLACIAL TILL**				
939	12											
		3	SSA	11	18.9							
936								Dark gray after 15'				
933	18											
		4	ST		16.5	109	3380					20
930								End of Boring				931.1
927	24											
924												
921	30											
918												
915	36											
912												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 9

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **950.8'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Dark brown sandy lean clay, trace gravel, moist		CL		0.5
								TOPSOIL		CL		950.3
948								Brown sandy lean clay, trace gravel, moist				
		1	SSA	5	17.0			Brown-gray after 4'				
945	6											
		5	ST		18.2	107	3340					
942		2	ST		19.9	105	2980	Moisture seepage near 8.5'				
								WISCONSINAN GLACIAL TILL				
939	12											
		3	ST		17.7	108	4560					
936								Dark gray after 15.5'				
								Trace wood near 16'				
933	18											
		4	SSA	9	18.8							20
930								End of Boring				930.8
927	24											
924												
921	30											
918												
915	36											
912												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 10

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **955.3'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **25**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
954	0							Dark brown sandy lean clay, trace organics, moist		CL		1.5
								TOPSOIL				
								Brown sandy lean clay, trace gravel, moist		CL		953.8
951		1	SSA	6	24.6			Brown-gray after 4'				
	6											
		6	ST		24.4	94	3120					
948												
		2	ST		28.4	--	2720	Very moist after 9'			▽	
945								Moisture seepage near 10'				
	12											
942								Moist after 13'				
		3	SSA	10	19.4			**WISCONSINAN GLACIAL TILL**				
								Gray after 15'				
939								Dark gray after 16.5'				
	18											
936		4	ST		17.9	107	5160					
933												
	24	5	SSA	12	17.8							25
930								End of Boring				930.3
927												
	30											
924												
921												
	36											
918												
915												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **9.5** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 11

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **951.7'**
Datum: **Site Datum**

Date Drilled: **6/9/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
951	0							Dark brown sandy lean clay, trace organics, moist **TOPSOIL**		CL		1.5
								Brown sandy lean clay, trace gravel, moist		CL		950.2
948		1	SSA	3	22.4			Brown-gray after 3.5'				
945	6	5	ST		17.8	110	1560					
942		2	SSA	9	19.3			Interbedded sand seam near 9'				
939	12							**WISCONSINAN GLACIAL TILL** Moisture seepage near 11.5' Dark gray after 11.5'				
		3	ST		19.8	109	2200					
936												
933	18	4	SSA	10	20.2						▽	20
								End of Boring				931.7
930												
927	24											
924												
921	30											
918												
915	36											
912												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **18** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 12

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **950.3'**
Datum: **Site Datum**

Date Drilled: **6/9/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Dark brown sandy lean clay, trace organics, moist		CL		1.3
								TOPSOIL		CL		949
948								Brown sandy lean clay, trace gravel, moist				
		1	SSA	4	26.8			Brown-gray and moist to very moist after 3'				
945												
	6	5	ST		26.1	89	800					
942												
		2	ST		27.3	--	2310					
								Moist after 10'				
939								**WISCONSINAN GLACIAL TILL**				
	12							Gray after 12'				
								Moisture seepage near 12'				
936		3	SSA	9	19.1							
											▽	
933												
	18											
		4	ST		19.5	107	2700					20
930								End of Boring				930.3
927												
	24											
924												
921												
	30											
918												
915												
	36											
912												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **17** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 13

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **953.4'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **25**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Dark brown sandy lean clay, trace organic, moist		CL		
								TOPSOIL				1.8
951								Brown sandy lean clay, trace gravel, moist		CL		951.6
		1	SSA	9	18.5			Brown-gray after 4'				
948	6											
		6	ST		16.1	110	3830					
945												
		2	SSA	15	17.0							
942	12											
								WISCONSINAN GLACIAL TILL				
939		3	ST		17.8	107	4380	Dark gray after 14'				
936	18											
		4	SSA	12	18.5							
933												
930	24	5	ST		17.8	107	4500					25
								End of Boring				928.4
927												
924	30											
921												
918	36											
915												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 14

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **949.8'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
948	0							Dark brown sandy lean clay, trace organic, moist **TOPSOIL**		CL		2
								Brown sandy lean clay, trace gravel, moist		CL		947.8
945		1	ST		16.8	104	1220	Brown-gray after 4' Moisture seepage near 4'				
	6	5	SSA	8	18.6							
942		2	ST		19.2	108	2980					
939								**WISCONSINAN GLACIAL TILL**				
	12											
936		3	ST		20.9	101	2260	Dark gray after 14.5'				
933											▽	
	18	4	SSA	9	18.4							20
930								End of Boring				929.8
927												
	24											
924												
921												
	30											
918												
915												
	36											
912												
909												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **17.3** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 15

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **946.3'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
945	0							Dark brown sandy lean clay, trace organic, moist **TOPSOIL**		CL		1.5
								Brown sandy lean clay, trace gravel, moist		CL		944.8
942		1	SSA	5	22.7			Brown-gray after 4'				
	6											
		4	ST		19.6	93	2180					
939								**WISCONSINAN GLACIAL TILL**				
		2	ST		18.8	108	3440					
936												
	12							Dark gray after 11.5'				
933		3	SSA	13	19.7							15
930								End of Boring				931.3
	18											
927												
924												
	24											
921												
918												
	30											
915												
912												
	36											
909												
906												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 16

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **941.5'**
Datum: **Site Datum**

Date Drilled: **6/8/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Dark brown sandy lean clay, trace organic, moist		CL		0.3
								TOPSOIL		CL		941.2
939								Brown sandy lean clay, trace gravel, moist Brown-gray after 2.5'				
		1	SSA	6	21.5							
936	6											
		4	ST		19.2	105	2560					
								WISCONSINAN GLACIAL TILL				
933		2	ST		18.8	105	3220					
930	12											
								Dark gray after 13'				
927		3	SSA	9	18.0							15
								End of Boring				926.5
924	18											
921												
918	24											
915												
912	30											
909												
906	36											
903												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 17

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **930.3'**
Datum: **Site Datum**

Date Drilled: **6/9/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
930	0							Dark brown sandy lean clay, trace organic, moist **TOPSOIL**		CL		1.5
								Brown sandy lean clay, trace gravel, moist		CL		928.8
927		1	SSA	5	20.8			Brown-gray after 4'				
924	6							**WISCONSINAN GLACIAL TILL**			▽	
921		2	ST		19.8	96	1310					11.5
918	12							Brown-gray lean clay, very moist Gray after 13'		CL		918.8
		3	SSA	8	28.9			**LOESS**				15
915								End of Boring				915.3
912	18											
909												
906	24											
903												
900	30											
897												
894	36											
891												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: **8** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 18

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **940.8'**
Datum: **Site Datum**

Date Drilled: **6/9/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
940	0							Dark brown sandy lean clay, trace organic, moist **TOPSOIL**		CL		1.5
939								Brown sandy lean clay, trace gravel, moist		CL		939.3
936		1	SSA	5	17.1			Brown-gray after 4'				
	6											
933								**WISCONSINAN GLACIAL TILL**				
		2	ST		20.0	92	2360					
930								Dark gray after 10.3'				
	12											
927		3	SSA	8	18.2						▽	15
								End of Boring				925.8
924												
	18											
921												
918												
	24											
915												
912												
	30											
909												
906												
	36											
903												
900												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **14** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 19

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **943.7'**
Datum: **Site Datum**

Date Drilled: **6/9/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
942	0							Dark brown lean to fat clay, moist **LOCAL ALLUVIUM**		CL-CH		
939		1	ST		23.4	96	3890					5.5
936	6							Brown-gray sandy lean clay, trace gravel, moist Moisture seepage near 7' Dark gray after 8.5'		CL		938.2
933		2	SSA	9				**WISCONSINAN GLACIAL TILL**			▽	
930	12	3	ST		23.8	100	2850					15
927								End of Boring				928.7
924	18											
921												
918	24											
915												
912	30											
909												
906	36											
903												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **11** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 20

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **951.2'**
Datum: **Site Datum**

Date Drilled: **6/9/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
951	0							Dark brown sandy lean clay, trace organic, moist		CL		0.5
								TOPSOIL		CL		950.7
948								Brown sandy lean clay, trace gravel, moist				
		1	SSA	7				Brown-gray after 4'				
945	6											
								WISCONSINAN GLACIAL TILL				
942		2	SSA	7				Gray-brown after 8.5'			▽	
								Dark gray after 11'				
939	12							Moisture seepage near 11.5'				
		3	ST		18.3	109	3740					15
936								End of Boring				936.2
933	18											
930												
927	24											
924												
921	30											
918												
915	36											
912												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **10.5** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 21

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **957.0'**
Datum: **Site Datum**

Date Drilled: **6/11/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
957	0							Dark brown sandy lean clay, trace organics, moist		CL		1.5
								TOPSOIL				
954								Brown sandy lean clay, trace gravel, moist		CL		955.5
		1	SSA	5	23.5			Brown-gray after 4'				
951	6											
								Moisture seepage near 8'				
948		2	SSA	6	21.3							
								WISCONSINAN GLACIAL TILL				
945	12											
		3	ST		22.6	99	2510	Dark gray after 14'				
942												
939	18											
		4	ST		24.6	96	3000**					20
936								End of Boring **Estimated using calibrated hand penetrometer				937
933	24											
930												
927	30											
924												
921	36											
918												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 22

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **955.5'**
Datum: **Site Datum**

Date Drilled: **6/11/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
954	0							Dark brown sandy lean clay, trace organics, moist **TOPSOIL**		CL		1.5
								Brown sandy lean clay, trace gravel, moist		CL		954
951		1	ST		20.6	93	1510	Brown-gray after 4'				
	6							Interbedded sand seam from 4.7' to 5'				
948												
		2	SSA	11	22.1			**WISCONSINAN GLACIAL TILL**				
945												
	12											
942		3	ST		20.6	105	3210	Dark gray after 14'				
939												
	18											18.5
936		4	SSA	5	32.6			Dark gray lean clay, very moist **LOESS**		CL		937 20
								End of Boring				935.5
933												
	24											
930												
927												
	30											
924												
921												
	36											
918												
915												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 23

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **949.6'**
Datum: **Site Datum**

Date Drilled: **6/9/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
948	0							Dark brown and brown sandy lean clay, moist **FILL**** 4		CL		
945		1	ST		21.7	--	1910	Brown-gray sandy lean clay, trace gravel, moist 945.6		CL		
942	6											
939		2	SSA	7	21.0			Moisture seepage near 9' **WISCONSINAN GLACIAL TILL** Dark gray after 9'				
936	12	3	SSA	12	19.6			15				
933								End of Boring **Drilled near field tile line 934.6				
930	18											
927												
924	24											
921												
918	30											
915												
912	36											
909												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 24

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **953.2'**
Datum: **Site Datum**

Date Drilled: **6/11/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Dark brown sandy lean clay, trace organics, moist **TOPSOIL**		CL		1.5
951								Brown sandy lean clay, trace gravel, moist		CL		951.7
		1	SSA	5	23.2			Brown-gray after 4'				
948	6											
945								**WISCONSINAN GLACIAL TILL**				
		2	ST		20.6	93	2670					
942	12							Gray after 11.5'				
939		3	ST		15.8	109	3440					15
								End of Boring				938.2
936	18											
933												
930	24											
927												
924	30											
921												
918	36											
915												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 25

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **952.6'**
Datum: **Site Datum**

Date Drilled: **6/11/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
951	0							Dark brown sandy lean clay, moist **TOPSOIL**		CL		1.7
								Brown sandy lean clay, trace gravel, moist		CL		950.9
948		1	SSA	5	17.7			Brown-gray after 4'				
	6											
945												
		2	ST		19.7	107	3120					
942								**WISCONSINAN GLACIAL TILL**				
	12											
939		3	SSA	11	20.2			Dark gray after 14'				
936												
	18											
933		4	ST		23.4	97	2530					20
								End of Boring				932.6
930												
	24											
927												
924												
	30											
921												
918												
	36											
915												
912												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 26

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **946.1'**
Datum: **Site Datum**

Date Drilled: **6/11/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
945	0							Dark brown sandy lean clay, moist **TOPSOIL**		CL		2.5
942		1	ST		22.0	--	680	Brown sandy lean clay, trace gravel, moist Brown-gray and very moist after 4'		CL		943.6
939	6							Moist after 6.5'				
936		2	SSA	14	19.4			**WISCONSINAN GLACIAL TILL**				
933	12	3	ST		20.3							15
930								End of Boring				931.1
927	18											
924												
921	24											
918												
915	30											
912												
909	36											
906												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 27

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **945.4'**
Datum: **Site Datum**

Date Drilled: **6/11/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
945	0							Dark brown sandy lean clay, trace organics, moist		CL		1.3
								TOPSOIL		CL		944.1
942								Brown sandy lean clay, trace gravel, moist				
		1	SSA	5	27.0			Brown-gray after 4'				
939	6											
								Gray after 8'				
936		2	ST		22.4	93	1740	**WISCONSINAN GLACIAL TILL**				
								Moisture seepage near 9'				
933	12										▽	
		3	ST		21.2	101	2610					15
930								End of Boring				930.4
927	18											
924												
921	24											
918												
915	30											
912												
909	36											
906												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **12.8** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 28

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **920.6'**
Datum: **Site Datum**

Date Drilled: **6/11/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Brown sandy lean clay, trace gravel, moist		CL		
918								Brown-gray after 3'				
		1	SSA	9	20.3							
915	6							Gray after 5'				
								WISCONSINAN GLACIAL TILL				
912		2	ST		17.1	95	2000					
909	12							Dark gray after 13'				
906		3	ST		18.3	95	1970					15
								End of Boring				905.6
903	18											
900												
897	24											
894												
891	30											
888												
885	36											
882												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 29

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **930.2'**
Datum: **Site Datum**

Date Drilled: **6/10/2021**
Drilling Depth, ft.: **15**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
930	0							Dark brown sandy lean clay, trace organics, moist **LOCAL ALLUVIUM**		CL		4
927		1	SSA	7				Brown sandy lean clay, trace gravel, moist Brown-gray after 6' **WISCONSINAN GLACIAL TILL**		CL		926.2 8.5
924	6											
921		2	ST		33.6	85	1220	Brown-gray lean clay, very moist **LOESS** Dark gray after 12'		CL		921.7
918	12											
		3	ST		26.6	92	1650					15
915								End of Boring				915.2
912	18											
909												
906	24											
903												
900	30											
897												
894	36											
891												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. 30

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **942.6'**
Datum: **Site Datum**

Date Drilled: **6/10/2021**
Drilling Depth, ft.: **20**

Drilling Method: **4" CFA**
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
942	0							Dark brown sandy lean clay, trace organics, moist **TOPSOIL**		CL		1.5
								Brown sandy lean clay, trace gravel, moist **WISCONSINAN GLACIAL TILL**		CL		941.1
939		1	SSA	8	27.2			Brown-gray after 3.5'				4
								Brown-gray silty sand, moist **GLACIAL OUTWASH**		SM	▽	938.6
936	6											7
		2	SSA	9	19.4			Gray-brown sandy lean clay, trace gravel, moist Moisture seepage near 7'		CL		935.6
933												
	12							Dark gray after 11.5'				
930								**WISCONSINAN GLACIAL TILL**				
		3	SSA	11								
927												
	18											
924		4	SSA	13								20
								End of Boring				922.6
921												
	24											
918												
915												
	30											
912												
909												
	36											
906												
903												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **5.25CW** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. S-1

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **959.9'**
Datum: **Iowa RTN**

Date Drilled: **6/10/2021**
Drilling Depth, ft.: **15**

Drilling Method:
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Dark brown sandy lean clay, trace organics, moist		CL		1.5
								TOPSOIL				
957								Brown sandy lean clay, trace gravel, moist		CL		958.4
		1	SSA	5	17.4			Brown-gray after 3.5'				
954	6											
		4	ST		17.0	104	4230					
								WISCONSINAN GLACIAL TILL				
951		2	ST		21.7	102	4140					
948	12											
		3	SSA	9	18.8			Dark gray after 13.5'				15
945								End of Boring				944.9
942	18											
939												
936	24											
933												
930	30											
927												
924	36											
921												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. S-2

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **964.1'**
Datum: **Site Datum**

Date Drilled: **6/10/2021**
Drilling Depth, ft.: **15**

Drilling Method:
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
963	0							Dark brown sandy lean clay, trace organics, moist **TOPSOIL**		CL		2
								Brown sandy lean clay, trace gravel, moist		CL		962.1
960		1	SSA	4	25.1			Brown-gray after 4'				
	6											
957								**WISCONSINAN GLACIAL TILL**				
		2	ST		18.6	96	1970	Gray after 8.5' Moisture seepage near 9'			▽	
954												
	12											
951												13.5
		3	SSA	11	25.4			Gray lean clay, very moist **LOESS**		CL		950.6 15
948								End of Boring				949.1
	18											
945												
942												
	24											
939												
936												
	30											
933												
930												
	36											
927												
924												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **10.25** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. S-3

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **955.5'**
Datum: **Site Datum**

Date Drilled: **6/10/2021**
Drilling Depth, ft.: **15**

Drilling Method:
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
954	0							Dark brown lean to fat clay, damp to moist **LOCAL ALLUVIUM**		CL-CH		4
951		1	SSA	5	21.3			Brown-gray sandy lean clay, trace gravel, moist Moisture seepage near 4'		CL		951.5
948	6	2	SSA	7	23.6			**WISCONSINAN GLACIAL TILL**				
945												
942	12	3	SSA	13	17.8			Dark gray after 11.5'			▽	15
939								End of Boring				940.5
936	18											
933												
930	24											
927												
924	30											
921												
918	36											
915												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: **13CW** ft. ▽ _____ ft. ▼ _____ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. S-4

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **949.9'**
Datum: **Site Datum**

Date Drilled: **6/10/2021**
Drilling Depth, ft.: **15**

Drilling Method:
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Dark brown sandy lean clay, trace organics, moist		CL		1.5
								TOPSOIL				
948								Brown sandy lean clay, trace gravel, moist		CL		948.4
		1	SSA	3	16.0			Brown-gray after 4'				
945												
	6											
942								**WISCONSINAN GLACIAL TILL**				
		2	ST		19.6	104	2360	Gray after 9'				
939												
	12											
936		3	ST		18.8	104	3540	Dark gray after 14.5'				15
								End of Boring				934.9
933												
	18											
930												
927												
	24											
924												
921												
	30											
918												
915												
	36											
912												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. S-5

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **940.2'**
Datum: **Iowa RTN**

Date Drilled: **6/10/2021**
Drilling Depth, ft.: **15**

Drilling Method:
Page: **1** of **1**

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
939	0							Brown sandy lean clay, trace organics, damp **TOPSOIL**		CL		2
								Brown sandy lean clay, trace gravel, moist		CL		938.2
936		1	SSA	4	15.9			Brown-gray after 4'				
	6											
933												
		2	ST		17.9	99	2700	**WISCONSINAN GLACIAL TILL** Gray-brown after 9'				
930												
	12											
927		3	ST		19.0	--	4230					15
924								End of Boring				925.2
	18											
921												
918												
	24											
915												
912												
	30											
909												
906												
	36											
903												
900												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. S-6

Project No.: 211157

Project: **Southeast Polk 6-7 School**
NE 80th Street and 8th Street
Altoona, Iowa

Client: **Southeast Polk Community School**
8379 NE University Avenue
Pleasant Hill, Iowa 50327

Surface Elevation: **930.1'**
Datum: **Iowa RTN**

Date Drilled: **6/10/2021**
Drilling Depth, ft.: **15**

Drilling Method:
Page: **1** of **1**

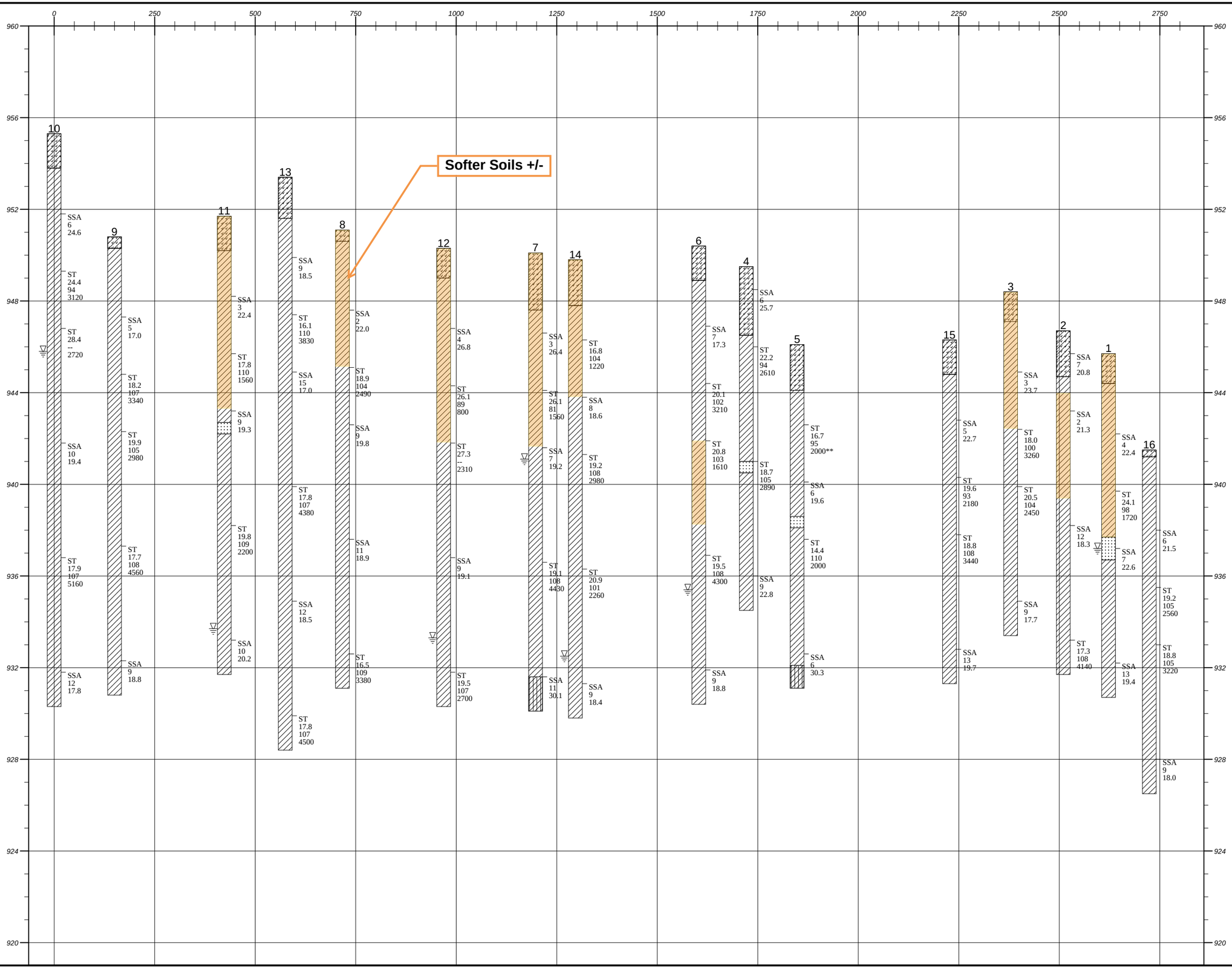
Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
930	0							Dark brown sandy lean clay, trace organics, damp **TOPSOIL**		CL		1.5
								Brown sandy lean clay, trace gravel, moist		CL		928.6
927		1	SSA	5	21.0			Brown-gray after 4'				
924	6											
								WISCONSINAN GLACIAL TILL				
921		2	ST		20.1	99	2240	Gray after 9'				
918	12											
		3	ST		20.8	108	2570	Dark gray after 14'				15
915		0						End of Boring				915.1
912	18											
909												
906	24											
903												
900	30											
897												
894	36											
891												

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

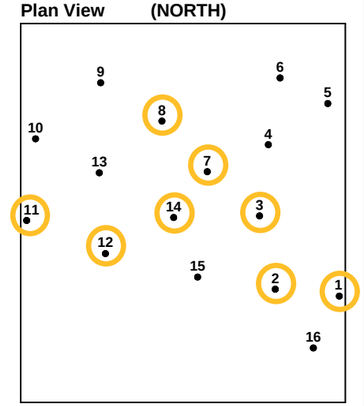
Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

PROFILE OF BORINGS



Plan View (NORTH)



Profile of Borings Legend

Symbol	Description
Strata symbols	
	Lean Clay Topsoil
	Lean Clay
	Poorly Graded Sand
	Silty Clay
Misc. Symbols	
▽	Water table at completion

ALLENDER BUTZKE ENGINEERS, INC.

Southeast Polk 6-7 School
NE 80th Street and 8th Street
Altoona, Iowa

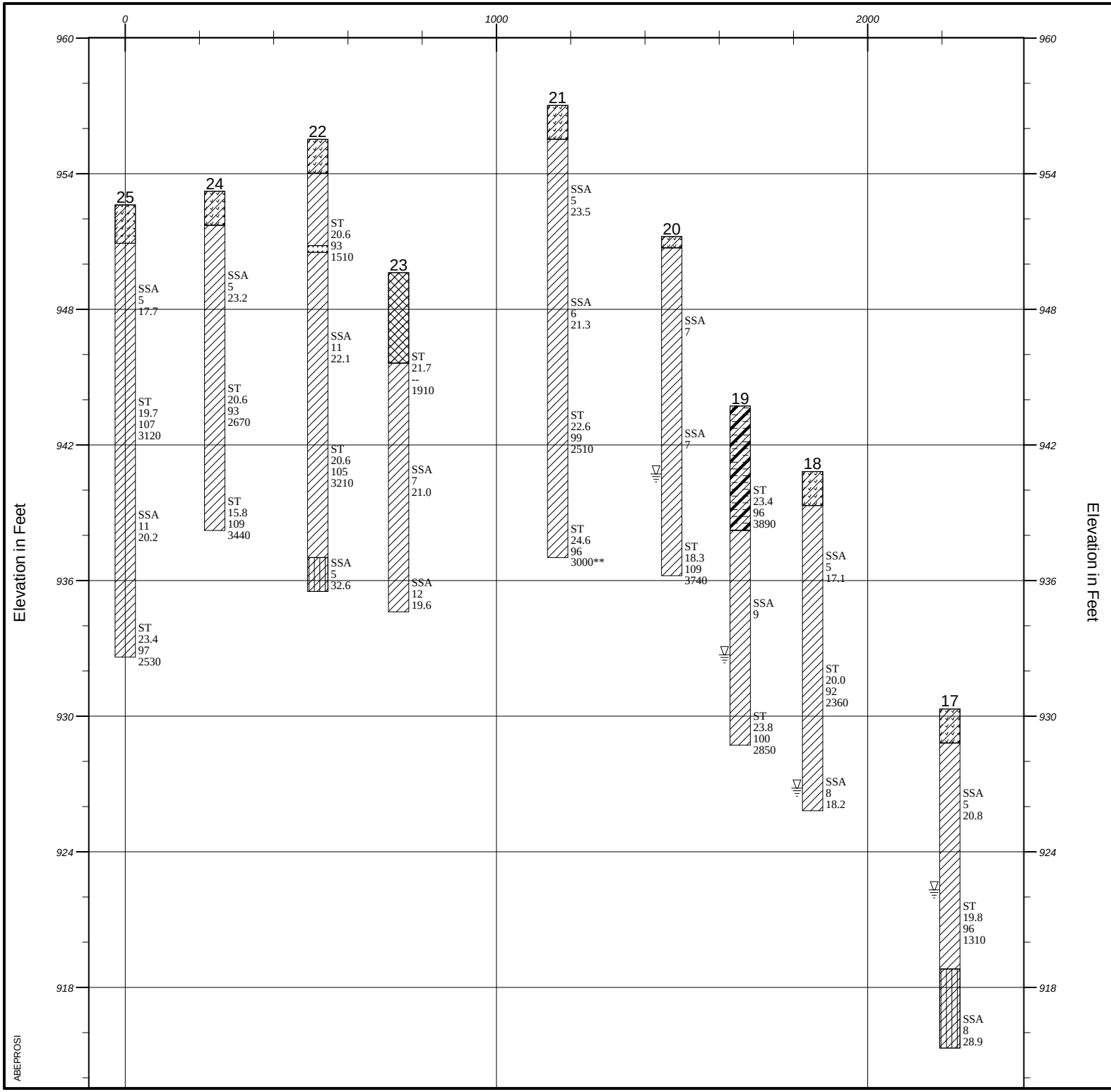
PN 211157

Vertical Scale: 1 inch = 4 feet

Plate: A-1

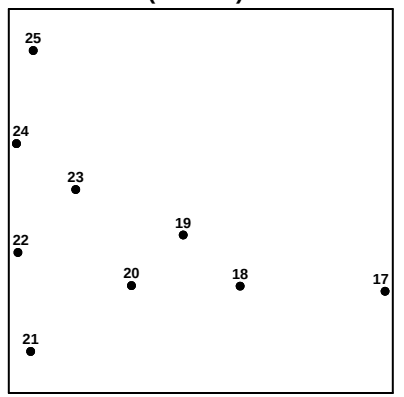
Prolan17 with Site Plan

PROFILE OF BORINGS



ABEPROSI

Plan View (NORTH)



Profile of Borings Legend

Symbol	Description
Strata symbols	
	Lean Clay Topsoil
	Lean Clay
	Poorly Graded Sand
	Silty Clay
	Lean Clay Fill
	Lean to Fat Clay Alluvium
Misc. Symbols	
▽	Water table at completion

ALLENDER BUTZKE ENGINEERS, INC.

Southeast Polk 6-7 School

NE 80th Street and 8th Street

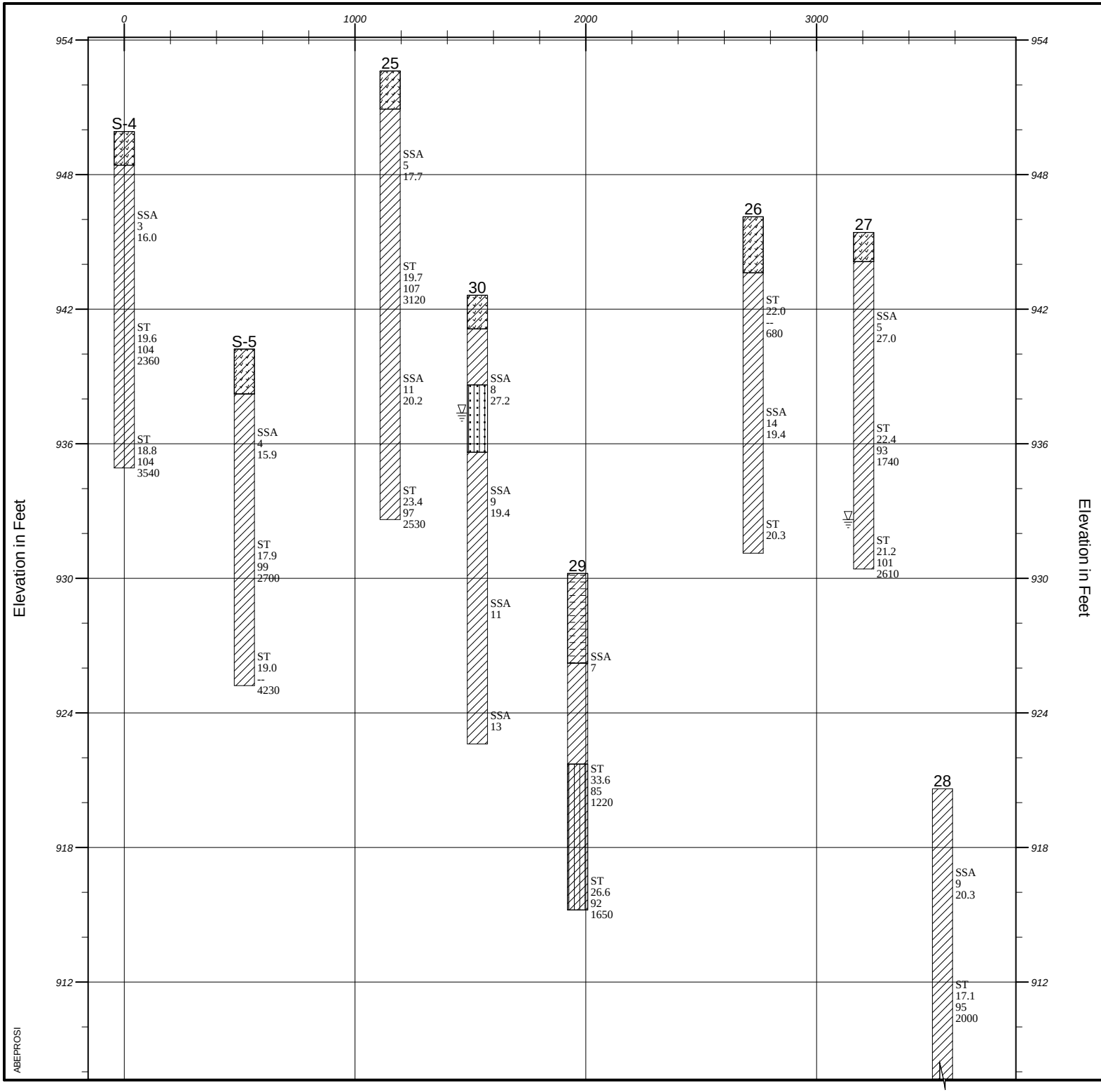
Altoona, Iowa

PN 211157

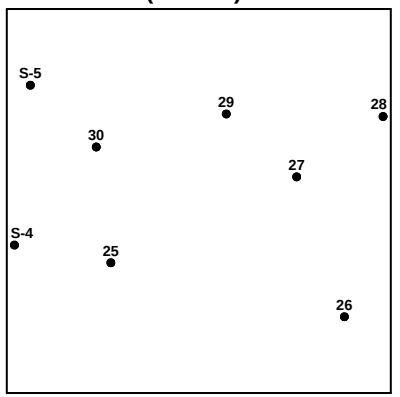
Vertical Scale: 1 inch = 6 feet

Plate A-2

PROFILE OF BORINGS



Plan View (NORTH)



Profile of Borings Legend

Symbol	Description
Strata symbols	
	Lean Clay Topsoil
	Lean Clay
	Silty Sand
	Lean Clay Alluvium
	Silty Clay
Misc. Symbols	
	Water table at completion
	Boring continues

ALLENDER BUTZKE ENGINEERS, INC.

Southeast Polk 6-7 School

NE 80th Street and 8th Street

Altoona, Iowa

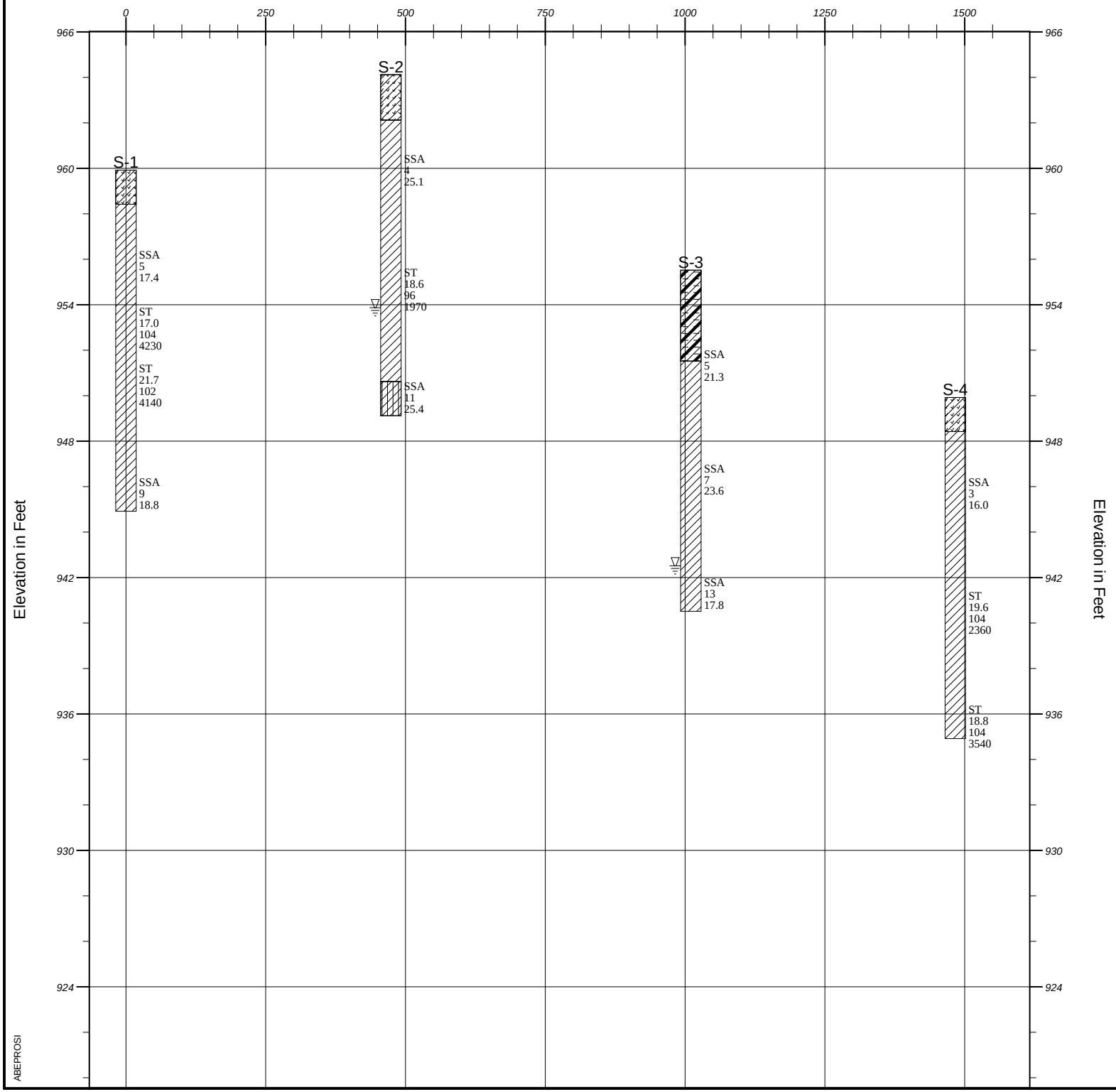
PN 211157

Vertical Scale: 1 inch = 6 feet

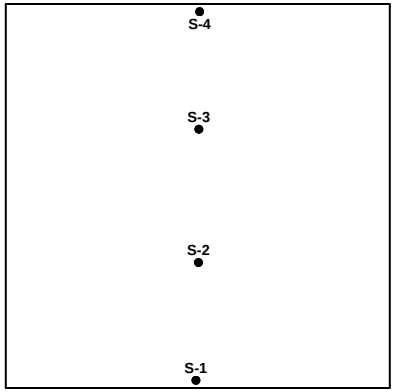
Plate A-3

ABEPROSI

PROFILE OF BORINGS



Plan View (NORTH)



Profile of Borings Legend

Symbol	Description
Strata symbols	
	Lean Clay Topsoil
	Lean Clay
	Silty Clay
	Lean to Fat Clay Alluvium
Misc. Symbols	
	Water table at completion

ALLENDER BUTZKE ENGINEERS, INC.

Southeast Polk 6-7 School

NE 80th Street and 8th Street

Altoona, Iowa

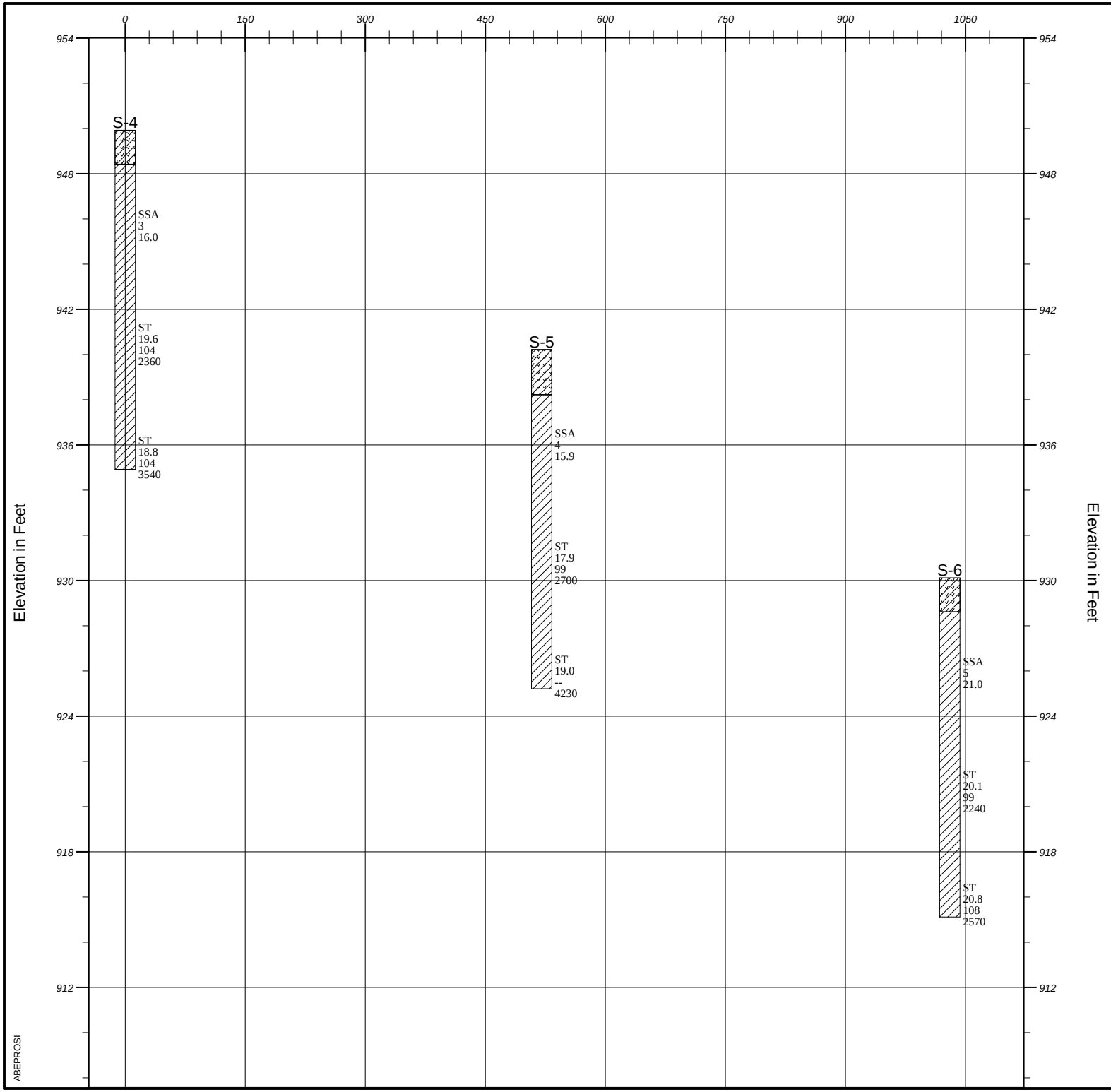
PN 211157

Vertical Scale: 1 inch = 6 feet

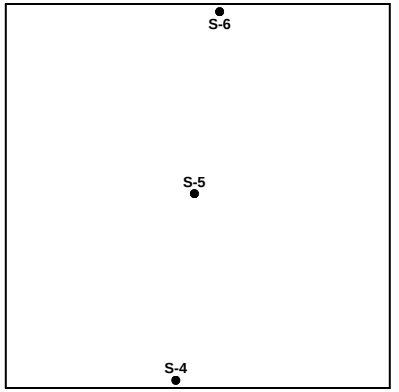
Plate A-4

ABEPROSI

PROFILE OF BORINGS



Plan View (NORTH)



Profile of Borings Legend

Symbol	Description
Strata symbols	
	Lean Clay Topsoil
	Lean Clay

ALLENDER BUTZKE ENGINEERS, INC.

Southeast Polk 6-7 School

NE 80th Street and 8th Street

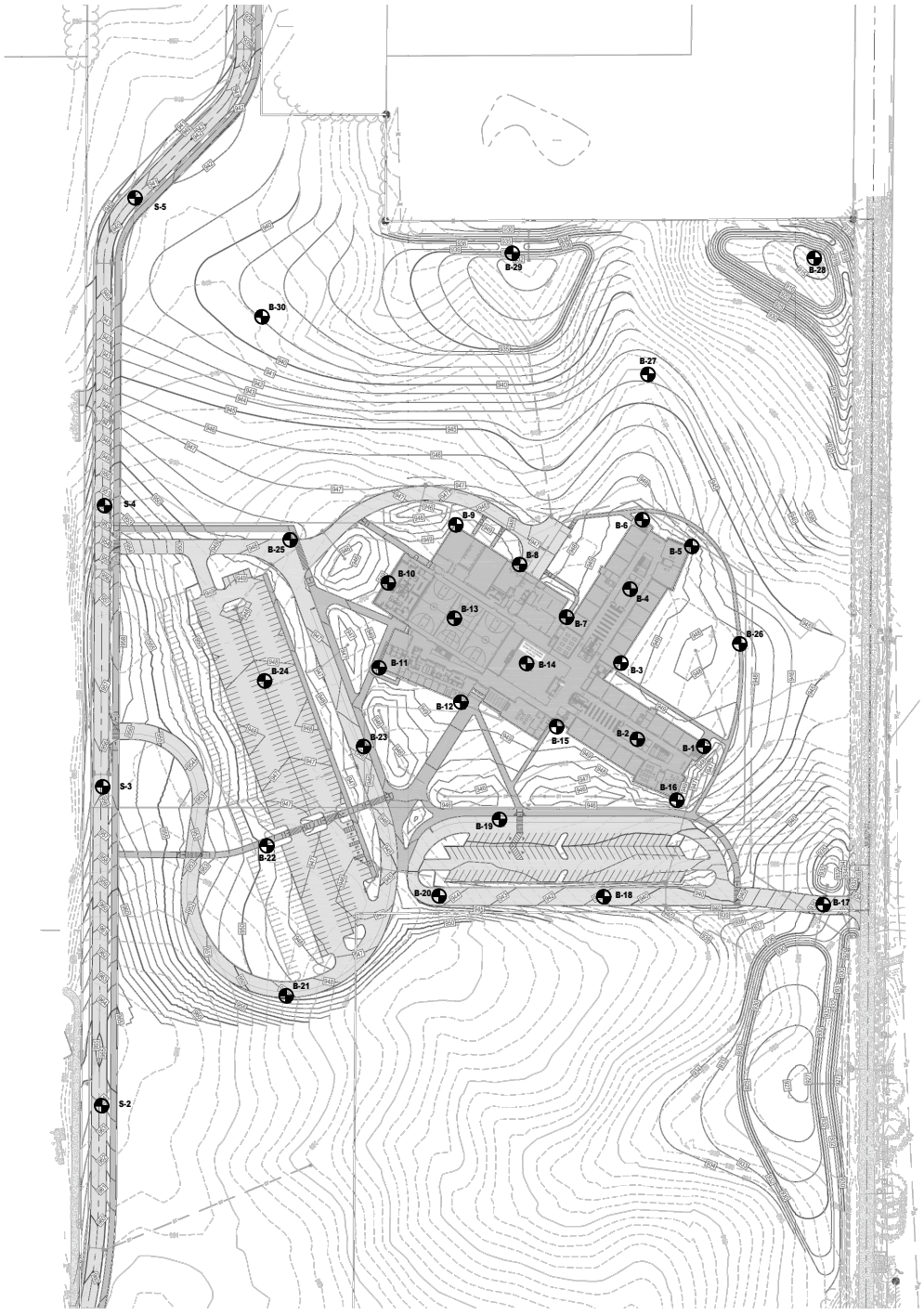
Altoona, Iowa

PN 211157

Vertical Scale: 1 inch = 6 feet

Plate A-5

ABEPROSI



B/S-# **Approximate Soil Boring Location**

Base Plan by Bishop

ALLENDER BUTZKE ENGINEERS INC. **3660 - 109th Street** **Urbandale, IA 50322**	**Southeast Polk 6-7 School** **NE 80th St. and 8th St.** **Altoona, Iowa**	**PN 211157** **Site Plan**

B/S-# **Approximate Soil Boring Location**

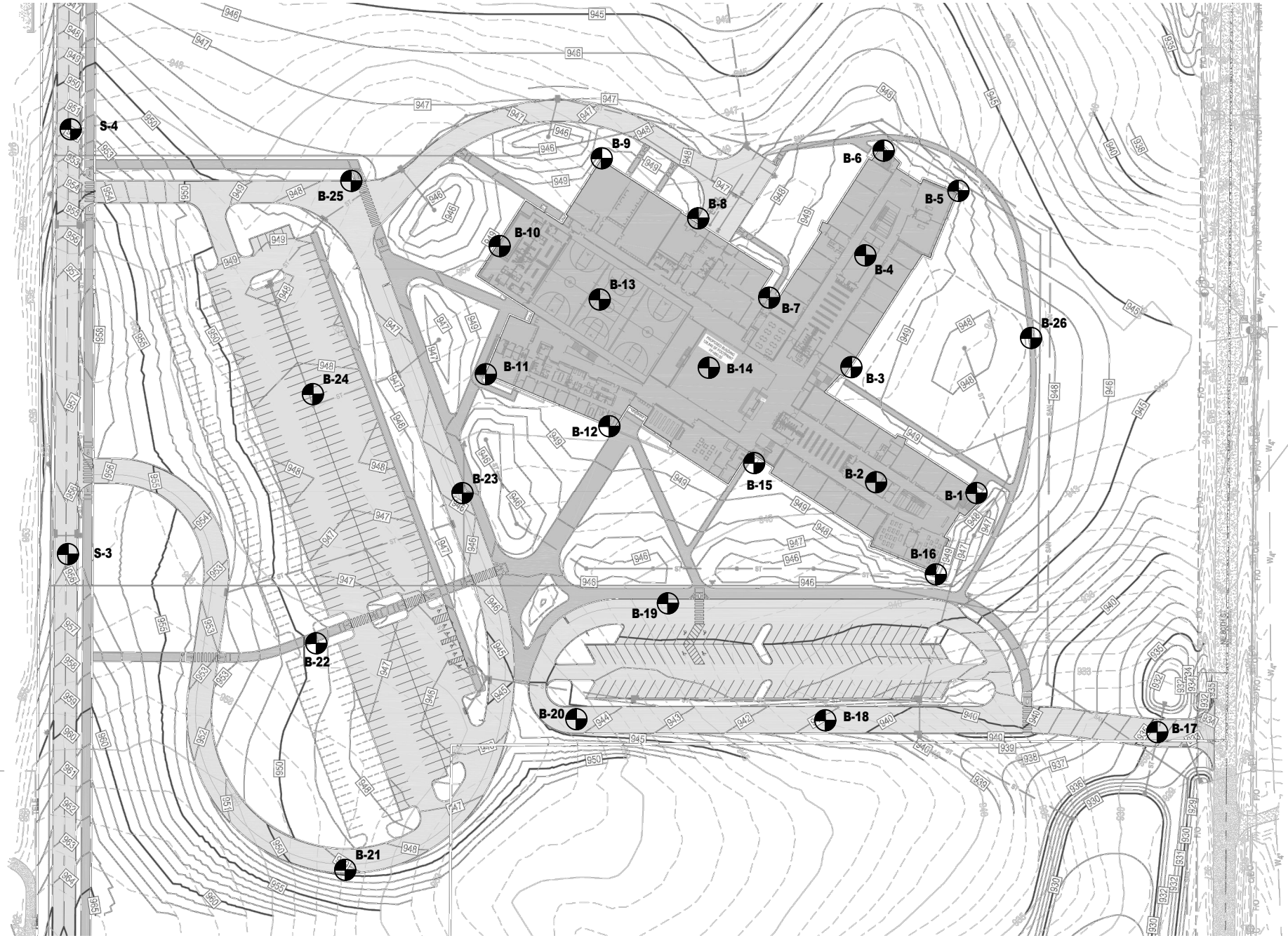
Base Plan by Bishop

ALLENDER BUTZKE ENGINEERS INC.
3660 - 109th Street
Urbandale, IA 50322

Southeast Polk 6-7 School
NE 80th Street and 8th Street
Altoona, Iowa

PN 21157

Site Plan



B/S-# **Approximate Soil Boring Location**

0 150' 300'

Base Plan by Bishop

ALLENDER BUTZKE ENGINEERS INC.
3660 - 109th Street
Urbandale, IA 50322

Southeast Polk 6-7 School
NE 80th Street and 8th Street
Altoona, Iowa

PN 21157

Site Plan

ABE PN 211157

Highlighted Foundation Plan

Approximate potential over-excavation areas.
Assumed FFE - 952 feet

Other areas not highlighted may require over-excavation which may become apparent during construction and field testing where isolated zones of softer soils may be encountered.

8/27/21

Preliminary Foundation Plan provided by Raker Rhodes (8/16/21)

Allender Butzke Engineers Inc.

NOTES

ALLENDER BUTZKE ENGINEERS INC.
GEOTECHNICAL • ENVIRONMENTAL • CONSTRUCTION Q. C.

NOVEMBER 30, 2022 **PN 221190**

GEOTECHNICAL EXPLORATION

8TH STREET SE IMPROVEMENTS - PHASE 1
FROM 8TH AVENUE SE TO FALCON DRIVE
ALTOONA, IA

PERFORMED FOR

KIRKHAM MICHAEL
4390 114TH STREET
URBANDALE, IA 50322

3660 109TH STREET • URBANDALE, IOWA 50322 • PHONE 515-252-1885 • FAX 515-252-1888

ALLENDER BUTZKE ENGINEERS INC.
GEOTECHNICAL • ENVIRONMENTAL • CONSTRUCTION Q. C.

November 30, 2022

Kirkham Michael
4390 114th Street
Urbandale, IA 50322
Attn: Mr. Scott Almeida, P.E.

RE: Geotechnical Exploration
8th Street SE Improvements - Phase 1
From 8th Avenue SE to Falcon Drive
Altoona, IA
PN 221190

Dear Mr. Almeida:

As authorized by you, Allender Butzke Engineers Inc. (ABE) has completed the geotechnical exploration for the above referenced project. The geotechnical exploration was conducted to evaluate physical characteristics of subsurface conditions with respect to design and construction of this project. The enclosed report summarizes the project characteristics as we understand them, presents the findings of the borings and laboratory tests, discusses the observed subsurface conditions, and provides geotechnical engineering recommendations for this project.

We appreciate the opportunity to provide our geotechnical engineering services for this project. If you have any questions or need further assistance, please contact us at your convenience. We are also staffed and equipped to provide construction testing and inspection services on this project as well as environmental site assessments.

Respectfully submitted,
ALLENDER BUTZKE ENGINEERS INC.

Abigail Ellerman, E.I.
Staff Engineer

Stacy G. Brocka, P.E.
Principal Engineer

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

11/30/22

Stacy G. Brocka, P.E. License Number 14203 Date
My license renewal date is December 31, 2023.
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GEOTECHNICAL EXPLORATION

8TH STREET SE IMPROVEMENTS- PHASE 1
FROM 8TH AVENUE SE TO FALCON DRIVE
ALTOONA, IA

PN 221190

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November 30, 2022

PROJECTINFORMATION

The City of Altoona, with design assistance from Kirkham Michael (KM), is planning the widening of 8th Street SE in Altoona, Iowa from 8th Avenue SE to Falcon Drive. Based on the working set of plans provided by KM, roadway construction will include two proposed roundabouts located along 8th Street SE at the intersections of 8th Avenue SE and Falcon Drive SE. We anticipate cut and fill depths on the order of 4 feet or less may be required to achieve the desired final grades.

FIELD EXPLORATION

Eight borings (B-1 to B-4, B-6 to B-9) were conducted at this site to depths between 10 and 15 feet below existing grades on April 7th and 8th, 2022. Boring No. B-5 was not drilled to due site access restriction. Approximate locations of the borings are shown on the enclosed Site Plan. Boring locations and ground surface elevations were determined by ABE using GPS survey equipment. The boring surface elevations, indicated on the enclosed Boring Logs, were Iowa Real-Time Network (RTN) derived. Methods of drilling, sampling, standard laboratory testing, and classifying of subsurface materials are discussed in the Boring Log Description/Legend pages of the Appendix.

SUBSURFACE CONDITIONS

Site Geology

This project site is located within a geomorphic region known as the "Des Moines Glacial Lobe". The Wisconsinan glacier was the last glacier to advance into north central Iowa. The Wisconsinan glacial till present near the surface typically consists of sandy lean clay with random zones of high sand and silt content. Loess is typically encountered underlying the Wisconsinan glacial till. The loess is an eolian "wind-blown" deposit derived from flood plain sediments

associated with major glacial meltwater streams and tends to have relatively uniform silt and clay particle sizes.

Soil Profile

Detailed descriptions of soils encountered by this exploration are provided on the Boring Logs enclosed in the Appendix. The Profile of Borings (Plate A-1) presented in the Appendix depicts the relative deposit elevations in the borings. Unless otherwise indicated, the depths of soil stratum and groundwater levels are referenced from below the top of existing ground at the individual boring locations at the time of drilling.

Boring No. 1 was conducted through 7 inches of hot mix asphalt (HMA) over 8 inches of Portland Cement concrete (PCC). Boring Nos. 7 and 9 were conducted through 7 and 8 inches of PCC, respectively.

Dark brown sandy lean clay (CL) topsoil was encountered at ground surface in Boring No. 8. The moist topsoil extended to a depth of 1.8 feet.

Very dark brown, dark brown and brown-gray sandy lean clay (CL) and dark brown, gray and brown-gray clayey sand (SC) fill containing varying amounts of trace gravel, brick fragments, and crushed rock was encountered at ground surface or underlying the pavement and topsoil in Boring Nos. 2, 3, 4, 6 ,7, and 9. The damp to moist and medium stiff to stiff fill extended to depths of 1.5 and 4 feet.

Very dark gray lean to fat clay (CL-CH) local alluvium was encountered underlying the pavement in Boring No. 1 and the fill in Boring Nos. 3 and 6. The very dark lean to fat clay (CL-CH) local alluvium in Boring No. 3 transitioned to a dark gray fat clay (CH) local alluvium near a depth of 4.5 feet. The moist and medium stiff local alluvium extended to depths of 4 to 8.5 feet.

Gray lean to fat clay (CL-CH) and brown, brown-gray and gray sandy lean clay (CL) Wisconsinan glacial till underlaid the topsoil in Boring No. 8, fill in Boring Nos. 2, 4, 7, and 9 and local alluvium in Boring Nos. 1, 3, and 6. Each of the test borings drilled terminated in the moist and medium stiff to stiff Wisconsinan glacial till near depths of 10 and 15 feet.

Groundwater Level Observations

The borings were monitored during and shortly after drilling operations to detect moisture seepage and groundwater accumulation. The results of our groundwater level observations are noted on the Boring Logs enclosed in the Appendix.

During drilling operations, moisture seepage was noted near depths of 4 to 12 feet below existing grades in Boring Nos. 4, 6, 7, and 8. Groundwater accumulation was observed between depths of 6.7 to 12 feet below existing grades in Boring Nos. 4, 6, and 8 at the completion of drilling operations while no groundwater accumulation was observed in the remaining borings. It should be recognized that these short-term groundwater levels are not necessarily a true indication of the groundwater table. Long-term observations would be necessary to accurately define the groundwater variations at this site. Fluctuation of groundwater levels can occur due to seasonal variations in the amount of rainfall, surface drainage, subsurface drainage, site topography, irrigation practices, and ground cover (pavement or vegetation).

ANALYSES AND RECOMMENDATIONS

Existing Fill

Existing cohesive and granular fill sections were encountered beneath pavement or at ground surface in Boring Nos. 2, 3, 4, 6, 7, and 9 which extended to depths of 1.5 to 4.5 feet. Portions of the existing fill appears to be comprised of sandy lean clay (CL) and clayey sand (SC) materials. The majority of the fill appears to be well compacted. Other undocumented fill exhibiting less desirable support characteristics could be present in other unexplored areas. Without documented background, there would be risk associated with constructing settlement sensitive structures on existing fill. The performance of the existing pavement over the existing fill would provide a good indication to quality and support of the existing fill. If the boring data is representative of most of the existing fill, then in our opinion, the risk of settlement due to poorly compacted fill would be low and it would be reasonable for the owner to accept risk by constructing pavements to bear directly on further evaluated existing fill.

If the owner (City) does not want to accept rick of constructing over the existing fill, then the most conservative approach in dealing with unknowns within the existing fill would be to completely over-excavate the existing fill beneath the proposed roadway and replace with engineered compacted fill. The existing clean portions of the fill soils could be reused and recompacted as engineered compacted fill.

As a minimum, if the owner elects to build on the existing fill, extensive geotechnical probing, testing, and observations should be conducted by an ABE geotechnical engineer during over-excavation/construction to further note suitability and support capability of the existing soils beneath the proposed building. If any deficient zones are encountered within the fill, we recommend that an over-excavation and backfill procedure be implemented. It should be recognized that test probing is intended to reduce the frequency of inadvertently constructing over

deficient soils, but because of the methods and practical extent (3 feet deep) of hand probing, not all deficient zones may be detected and corrected, especially in the lower portions of fill, which would still leave the owner accepting the risk of less desirable building and structure performance.

Moderately Expansive Soil

The lean to fat (CL-CH) and fat clay (CH) local alluvium and glacial till soils encountered underlying the existing pavement Boring No. 1 and underlying the fill in Boring No. 3 are moderately plastic and are considered moderately expansive. These soils are subject to moderate volumetric change with changes in soil moisture content which can cause movement and distress to pavements. The most severe problems occur where higher clay content soils (CL-CH) are in a natural state of low moisture or are highly compacted at moisture contents near or below optimum moisture content on a relatively incompressible base. Subsequent moisture content increases below the floor slab or pavement after construction then cause the moderately expansive soils to swell appreciably. If the moisture content does not fluctuate much, then the soil swelling and heave will be minor.

Typical pavement movements due to moderately expansive soils (CL-CH) are similar to movements that pavements commonly experience from frost heave. Considering that proposed pavements will be subject to frost heave movements, the risk of movement due to moderately expansive soils may be acceptable to the owner. Subgrade condition and moisture content should be maintained until the slabs or pavements are placed. If the soil is allowed to dry prior to slab or pavement placement, the risk of future slab movement would then increase. Since the pavement will be on 8 inches of granular subbase, this will be a more proactive approach in reducing potential pavement movements due to the expansive soils.

Newly planted vegetation (trees and shrubs) or the existing vegetation currently growing close to the proposed street remove moisture from the nearby soils. Pavements can potentially settle due to shrinkage of soils beneath the pavements as the soils dry, especially during drought periods when mature trees withdraw moisture from nearby soils. As a general guideline, trees and shrubs should be kept a minimum horizontal distance away from the street equal to the ultimate height of the vegetation. Likewise, excessive irrigation next to the street can contribute to soil swelling and should be avoided.

Site Grading

The on-site soils can be excavated utilizing conventional excavation equipment. Granular soils can generally be suitably compacted with vibratory compaction equipment whereas cohesive soils are more suitable for compaction with sheepsfoot or pneumatic type compactors. Care should

be exercised in properly backfilling and compacting all trenches, especially utility trenches under or adjacent to the pavement. Loosely compacted or sand backfilled trenches can collect surface water and inadvertently direct it to the pavement subgrade and cause softening of the soil as well as increasing frost heave potential.

We recommend that cohesive or cohesionless soils, free of rubble and organics, be used as compacted fill. Inorganic existing soil such as the sandy lean clay (CL) fill and Wisconsinan glacial till would be suitable soil types for general fill applications. The following Table A lists recommended minimum compaction requirements for cohesive and cohesionless fill materials in specific applications. For cohesive soils, moisture contents within a range of -1 to +4 percent of the material's optimum moisture content are necessary to achieve the desired fill qualities. Soils compacted closer to optimum moisture content would exhibit greater stability under repeated construction traffic loading.

TABLE A
RECOMMENDED DEGREE OF COMPACTION GUIDELINES

Construction Application	Standard Proctor (ASTM D698) Cohesive Soil	Standard Proctor (ASTM D698) Cohesionless Soil	*Relative Density (D4253 & D4254) Cohesionless Soil
Class 1	95%	98%	70%
Class 2	90%	93%	45%
Class 3	85%	88%	20%

Class 1 - Subgrade for building foundations, slabs-on-grade, pavements and other critical backfill areas.
Class 2 - Backfill adjacent to structures not supporting other structures - Minor subsidence possible.
Class 3 - Backfill in non-critical areas - Moderate subsidence possible.

*Use Relative Density technique (ASTM D4253 & D4254) where Standard Proctor technique (ASTM D698) does not result in a definable maximum dry density and optimum moisture content.

At the time of this geotechnical exploration, moisture contents of the natural cohesive soil deposits were generally near to slightly above the recommended moisture content range for compaction. Adjustment of soil moisture content may be required in order to lower or raise the moisture to within the recommended moisture content range for compaction purposes. Discing and aeration is generally the most economical method to lower soil moisture content, if climatic conditions allow. Chemical modification of very moist soils can be accomplished with quicklime

or Class C fly ash if construction scheduling does not permit field drying. It should be recognized that Class C fly ash is not effective when working temperatures are below 40º F.

Excavation, Stability and Dewatering

Boring information indicates that excavations at the site will encounter predominately cohesive soils with possible interbedded wet sand seams or layers which can be randomly present within the Wisconsinan glacial till. If excavations encounter only cohesive soils with no wet sand seams or layers, it is expected that the water seepage can be controlled by permitting it to drain into temporary construction sumps and be pumped outside the perimeter of the excavations. More extensive dewatering such as sand points and wells may be required for excavations which extend down into water bearing sand layers such as encountered in several borings. We recommend that prior to excavating in saturated sand, water levels be maintained 2 feet or more below the bottom of excavations in saturated sand to prevent upward seepage forces which could reduce subgrade support.

The extent of bracing or sloping of open cut excavations will be dependent upon depth of cut, groundwater conditions, soils encountered, length of time the excavation will be open, area available for excavation and local governing regulations. Predominately cohesive soils may appear to stand nearly vertical in shallow excavations for short periods of time. However, soil creep, surcharge loads, precipitation, subsurface moisture seepage, construction activity vibrations and other factors may cause these soils to cave within an unpredictable period of time. Excavations encountering sand may tend to cave rapidly, especially if water is flowing through the sand. Unstable granular excavation walls may also cause surrounding cohesive soils to become unstable. Temporary shoring, flattening of the excavation slopes or use of trench boxes may be required to maintain a safe condition. Determining the appropriate OSHA classifications of the soil types encountered and implementing the required provisions for sloping, shoring, and bracing of excavations throughout the project during construction are the responsibility of the contractor per OSHA.

Street Subgrade Preparation

The soils which will likely be encountered to support the new pavement sections will consist of further verified existing fill, natural soils and engineered compacted cohesive fill required to achieve the desired final grades and replace any unsuitable existing fill soils. The subgrade soils are to be free of rubble and organics and have an acceptable AASHTO soil classification. Based on our experience with the soils in this area, the on-site sandy lean clay (CL) fill and Wisconsinan glacial till soils encountered would be suitable for use as pavement subgrade materials. The lean to fat (CL-CH) and fat clay (CH) local alluvium soils could be used as fill 1 foot or more below pavements.

To provide satisfactory pavement performance, it is important that the subgrade support be relatively uniform with no abrupt changes in the subgrade support. Transition between cut-and-fill areas, varying soil types, and improper subgrade preparation such as inadequate proof-rolling, compaction, and removal of vegetation can result in non-uniform subgrade support. The street subgrade should be proof-rolled to delineate zones of soft soils present near the surface which may require additional removal or compaction. Subgrade preparation should be completed shortly before paving operations commence and is to be maintained in suitable condition until paved. Damages caused by construction traffic or deterioration due to adverse weather are to be repaired prior to paving.

Our experience has shown that where new pavements are constructed over existing roadways, reflective cracking sometimes occurs in the transition area from the old roadway to new fill sections required to fill ditches and widen the roadway. Because of the densification that occurs with time directly below the old pavement, this is most critical in areas where new grades will be near existing grades. As a result, we recommend a minimum of 2 feet of newly compacted subgrade be placed where new pavement sections are within 2 feet of the existing roadway subgrade to provide a more uniform subgrade through this transition. This may require over-excavating the existing roadbed to accommodate the minimum 2 feet thick uniform compacted subgrade. The existing sideslopes of the roadway ditches should be deeply scarified and benched to integrate new fill sections with the existing terrain, especially critical where the new pavement extends out to or beyond the existing roadway embankment.

We recommend that the prepared soil subgrade depth be at least 1 foot deep after fine grading or trimming and extend 2 feet beyond the edge of the pavements. Deeper preparation would be required as discussed above. The recommended 1 foot of compacted subgrade will necessitate undercutting and reworking soils in cut areas.

Subgrade preparation to 1-foot depths for some soil types is generally adequate, but isolated zones of very moist and/or low clay content soils may not be stable under heavy construction vehicle loads which may require stabilization to depths of 2 feet or more for paving purposes only (including over-excavation and replacement with more cohesive soils). If subgrade conditions deteriorate, the placement of a thicker granular (rock) subbase or a Portland cement stabilized subgrade could also be constructed to support construction traffic and the final pavements.

Depending upon conditions encountered at the time of construction, it may be necessary to moisture condition existing soils to achieve the recommended moisture content range of -1 to +4 percent of optimum moisture content. Soils compacted closer to optimum moisture content will exhibit greater stability under construction traffic loading. Suitable cohesive soil compacted to a minimum of 95 percent of maximum dry density determined by ASTM D698 would provide a design support capability equivalent to a CBR value of 3 or a modulus of subgrade reaction value of 100 pounds per cubic inch. The 8-inch-thick granular subbase compacted to a minimum of 98 percent of the materials maximum dry density would provide a higher design support capability equivalent to a CBR value on the order of 6 or a modulus of subgrade reaction value of 125 pounds per cubic inch. Subgrade compaction, moisture content and depth should be tested by an ABE representative.

Surface drainage around the pavement sections is important to long-term pavement performance. Curbs should be backfilled as soon as possible once adequate pavement strength is achieved. Water allowed to pond adjacent to the pavement could saturate and soften the subgrade soils as well as increase the frost heave potential which can contribute to premature pavement deterioration. In addition, water running next to the pavement could erode subgrade soils which could result in undermining the pavement. The backfill should be compacted and sloped to prevent water from ponding and infiltrating under the pavement.

Subsurface Pavement Drainage

The preliminary Typical Cross Sections provided by Kirkham Michael indicates that the new pavement sections will include 8-inch-thick modified subbase with subdrains. In our opinion, installation of subsurface drainage would be beneficial for extending pavement life. Subsurface drainage is recommended when a granular subbase such as IDOT 4121 Granular Subbase or 4123 Modified Subbase is utilized beneath the pavement to provide an outlet for water that flows into and would otherwise be trapped in the rock base to cause subgrade softening and pavement deterioration. The permeable base should by hydraulically connected to the free draining granular

lines similar to the Iowa Department of Transportation detail DR-303 or other comparable systems. All drainlines should be sloped to drain to a suitable outlet.

Frost Heave

Key elements contributing to frost heave including freezing temperatures, available water, and fine-grained frost susceptible soils are generally present at sites in Iowa. As a result, frost heave problems are generally common (and most noticeable) in pavements or sidewalks adjacent to non-frost susceptible elements such as manholes, intakes, and light poles. Frost heave can cause pavement cracks to develop parallel to and several feet from pavement edges. This generally occurs where cleared paved areas exposed to freezing temperatures heave more than adjoining paved areas insulated by piled snow, especially in low-lying areas. Sometimes it is not readily apparent why frost heave problems occur at one location and not at another seemingly similar location.

While it is appropriate to implement measures to reduce frost heave such as replacing frost susceptible soils with less frost susceptible soils, sealing cracks/joints to reduce surface water infiltration, or drainage improvements (surface and subsurface), these measures may simply move the frost heave problem to a different location where preventative measures have not been implemented. Having a smooth transition between heaved and non-heaved areas is desirable, but may be difficult and/or costly to accomplish. We are available to consult with you to discuss options for your consideration to reduce frost heave potential on this project.

GENERAL

The analyses and recommendations in this report are based in part upon the data obtained from the soil borings performed at the indicated locations and from any other information discussed in this report. This report does not reflect any variations which may occur between borings or across the site. The nature and extent of such variations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.

It is recommended that the geotechnical engineer be provided the opportunity to review the plans and specifications so that comments can be made regarding the interpretation and implementation of our geotechnical recommendations in the design and specifications. It is further recommended that the geotechnical engineer be retained for testing and observation during earthwork and foundation construction phases to help determine that the design requirements are fulfilled.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranty, expressed or implied, is made. In the event that any changes in the nature, design or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing by the geotechnical engineer.

The scope of our service was not intended to include any environmental assessment or exploration for the presence of hazardous or toxic materials in the soil, surface water, groundwater or air on, below or adjacent to this site.

APPENDIX

BORING LOG DESCRIPTION/LEGEND

The material types encountered during the drilling operations were recorded on field logs. The profile represented on the Boring Log is based on final classification performed by a geotechnical engineer using the field logs, laboratory observation and testing. The material stratigraphy demarcation lines shown on the Boring Logs indicate changes in soil characteristics, however, actual soil changes or variations may occur as a gradual transition. Soil profile discussion, Log Boring information, water levels and recommendations presented in this report are based upon measured depths below ground levels existing at time of the field exploration, unless otherwise specified.

DRILLING AND SAMPLING

The borings were conducted with either a truck or all-terrain rotary drill rig using the drilling methods indicated on each Boring Log. Soil sampling and/or in-situ testing such as Shelby Tube (ST), split-spoon (SS), drive cone (DC), or core (C) was conducted at depth intervals which were selected in consideration of the characteristics of the proposed construction. Generally undisturbed soil samples are taken at 5 foot depth intervals or change in soil types. Disturbed soil samples from the auger, either jar size or bulk size samples, may be taken at intermediate intervals for the purpose of soil classification or laboratory testing. Borings conducted for soil classification only, will show no designation of sampling although disturbed sampling is performed. Soil samples obtained in the field were identified and sealed for transportation to the laboratory for performance of pertinent physical testing and engineering classification.

Drilling Methods

CFA - Continuous Flight Auger: 4, 6, or 8-inch diameter (ASTM D1452).
RD - Rotary Drilling: Using drilling fluid in cased or uncased boring (ASTM D2113).
HSA - Hollow Stem Auger: 6 or 8-inch diameter, continuous flight auger remains in boring with soil removed from the hollow stem through which undisturbed sampling is conducted.
HA - Hand Auger: 4-inch or less diameter.

Sample Types

ST - Shelby Tube: Thin-walled tube samples of cohesive soils (ASTM D1587).
SS - Split Spoon with 140 lb. manual hammer: Standard penetration test and split-barrel samples (ASTM D1586).
SSA - Split Spoon with 140 lb. automatic hammer: Standard penetration test and split-barrel samples (ASTM D1586).
DC - Drive Cone: Dynamic in-place testing of soil using a 2-inch diameter cone with a 60 degree point driven into the soil for continuous 1-foot intervals in the same manner as Split Spoon, no sample is obtained.
C - Core: Sampling hard soil or bedrock with a diamond core barrel in a rotary drill boring (ASTM D2113).
SPT - Standard Penetration Test: Number of blows required to drive sampler (split spoon or drive cone) into the soil with a 140-pound weight dropping a distance of 30-inches (ASTM D1586), number of blows recorded for each 6-inch interval in an 18-inch (or more) penetration depth, values shown are for each 6-inch interval (if series of number sets are shown) or a total of the last two 6-inch intervals (if only one number is shown) which is commonly referred to as "N" in blows per foot. High resistance is indicated by a high number of blows for a lesser penetration depth listed in inches.
BS - Bulk Sample: Disturbed.
CPT - Cone Penetration Test: Quasi-static in-place testing of soils using a 60 degree cone and friction sleeve which are steadily pushed into the soil and measure skin friction and end bearing (ASTM D3441).

STANDARD LABORATORY TESTING

Representative undisturbed soil samples obtained by the Shelby Tube sampler were tested for moisture content (ASTM D2216), density (dry) and unconfined compressive strength (ASTM D2166) in the laboratory. Results of these tests appear on the respective Boring Logs. Additional soil testing including particle size analysis (ASTM D422) and Atterberg Limits (ASTM D4318) may be conducted, if necessary, to define in more detail pertinent soil characteristics for classification in accordance with the Unified Soil Classification System. Specialized laboratory tests (if conducted) to determine pertinent soil characteristics are discussed in the "Laboratory Testing" section of the report.

WATER LEVEL MEASUREMENT

Water levels indicated on the Boring Logs are the levels measured in the borings at the times indicated. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels is not possible with short term observations.

BORING LOG DESCRIPTION/LEGEND

DESCRIPTIVE SOIL CLASSIFICATION

Soil description is based on the Unified Classification System as outlined in ASTM Designations D-2487 and D-2488. This classification is primarily based upon visual and apparent physical soil characteristics, comparison with other soil samples, and our experience with the soil. Additional laboratory testing may be conducted, if necessary to define in more detail pertinent soil characteristics. The Unified Soil Classification group symbol shown on the boring logs corresponds with the group names listed below. The description includes soil constituents, moisture conditions, color and any other appropriate descriptive terms.

Group Symbol	Group Name	Group Symbol	Group Name	Group Symbol	Group Name	Group Symbol	Group Name
GW	Well-Graded Gravel	SW	Well-Graded Sand	CL	Lean Clay	CH	Fat Clay
GP	Poorly-Graded Gravel	SP	Poorly-Graded Sand	ML	Silt	MH	Elastic Silt
GM	Silty Gravel	SM	Silty Sand	OL	Organic Clay Organic Silt	OH	Organic Clay Organic Silt
GC	Clayey Gravel	SC	Clayey Sand			PT	Peat

RELATIVE PROPORTIONS			GRAIN SIZE TERMINOLOGY	
Descriptive Term(s) (Of components also present in sample)	Sand and Gravel % of Dry Weight	Fines % of Dry Weight	Major Component of Sample	Size Range
Trace	<15	<5	Cobbles	12 in. to 3 in. (300mm to 75mm)
With	15-30	5-12	Gravel	3 in. to #4 sieve (75mm to 4.75mm)
Modifier	>30	>12	Sand	#4 to #200 sieve (4.75mm to 0.074mm)
			Silt or Clay	Passing #200 sieve (.074 mm)

CONSISTENCY OF FINE-GRAINED SOILS			RELATIVE DENSITY OF COARSE-GRAINED SOILS	
Unconfined Compressive Strength, Qu, psf	Consistency	SPT, bpf	SPT, bpf	Relative Density
< 500	Very Soft	0-2	0-4	Very Loose
500-1,000	Soft	2-4	4-10	Loose
1,000-2,000	Medium Stiff	4-8	10-30	Medium Dense
2,000-4,000	Stiff	8-15	30-50	Dense
4,000-8,000	Very Stiff	15-30	50-80	Very Dense
8,000-16,000	Hard	30-100	80+	Extremely Dense
> 16,000	Very Hard	>100		

BORING LOG DESCRIPTION/LEGEND

ABBREVIATIONS

COMMONLY USED ABBREVIATIONS	
ft. or ' - feet	elev. - Elevation
in. or " - inches	% - Percent
psf - pounds per square foot	No. - Number
plf - pound per lineal foot	TB - Test Boring
pcf - pounds per cubic feet	N - blow count (SPT, bpf)
kip - 1000 pounds	USCS - Unified Soil Classification System
ksf - 1000 pounds per square foot	LL - Liquid Limit
klf - 1000 pounds per lineal foot	PL - Plastic Limit
tsf - tons per square foot	PI - Plasticity Index
bpf - blows per foot (SPT, N)	

BORING LOG NO. W-1

Project No.: 221190

Project: 8th Street SE Improvements Phase 1
From 8th Ave SE to Falcon Drive
Altoona, Iowa

Client: Kirkham Michael
4390 114th Street
Urbandale, Iowa 50322

Surface Elevation: 957.6'
Datum: Iowa RTN Derived

Date Drilled: 4/8/2022
Drilling Depth, ft.: 10

Drilling Method: 4" CFA
Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							**HMA (7"±) over PCC (8"±)**				1.3
956	2	3	SSA	10	25.0			Very dark gray lean to fat clay, trace sand, moist **LOCAL ALLUVIUM**		CL-CH		956.3
954	4	1	SSA	7	23.8			Gray lean to fat clay, trace gravel, moist		CL-CH		953.6
952	6							**WISCONSINAN GLACIAL TILL**				
950	8							Brown-gray sandy lean clay, trace gravel after 7.5'		CL		
948	10	2	ST		19.8	104	2490					10
								End of Boring				947.6
946	12											
944	14											
942	16											
940	18											
938	20											

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: Dry ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. W-2

Project No.: 221190

Project: 8th Street SE Improvements Phase 1
From 8th Ave SE to Falcon Drive
Altoona, Iowa

Client: Kirkham Michael
4390 114th Street
Urbandale, Iowa 50322

Surface Elevation: 958.8'
Datum: Iowa RTN Derived

Date Drilled: 4/7/2022
Drilling Depth, ft.: 10

Drilling Method: 4" CFA
Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
958	0							Very dark brown and brown-gray sandy lean clay, trace gravel and brick fragments, moist **FILL**		CL		1.5
	2	3	SSA	5	19.2			Brown sandy lean clay, trace gravel, moist		CL		957.3
956												
	4	1	SSA	5	19.2			Brown-gray after 4'				
954												
	6							**WISCONSINAN GLACIAL TILL**				
952												
	8											
950		2	SSA	7	21.4							10
	10							End of Boring				948.8
948												
	12											
946												
	14											
944												
	16											
942												
	18											
940												
	20											

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. W-3

Project No.: 221190

Project: 8th Street SE Improvements Phase 1
From 8th Ave SE to Falcon Drive
Altoona, Iowa

Client: Kirkham Michael
4390 114th Street
Urbandale, Iowa 50322

Surface Elevation: 958.6'
Datum: Iowa RTN Derived

Date Drilled: 4/8/2022
Drilling Depth, ft.: 10

Drilling Method: 4" CFA
Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
958	0							Dark brown and gray clayey sand with gravel, damp Crushed rock from 0.5' to 1' **FILL**		SC		2.5
	2	3	SSA	15	7.2							
956								Very dark gray lean to fat clay, moist		CL-CH		956.1
	4	1	SSA	8	37.6							
954								Dark gray fat clay after 4.5'		CH		
	6							**LOCAL ALLUVIUM**				
952												
	8											8.5
950		2	ST		22.8	102	1280	Gray sandy lean clay, trace gravel, moist **WISCONSINAN GLACIAL TILL**		CL		950.1
	10											10
948								End of Boring				948.6
	12											
946												
	14											
944												
	16											
942												
	18											
940												
	20											

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. ___ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. W-4

Project No.: 221190

Project: 8th Street SE Improvements Phase 1
From 8th Ave SE to Falcon Drive
Altoona, Iowa

Client: Kirkham Michael
4390 114th Street
Urbandale, Iowa 50322

Surface Elevation: 960.8'
Datum: Iowa RTN Derived

Date Drilled: 4/7/2022
Drilling Depth, ft.: 15

Drilling Method: 4" CFA
Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
960	0							Dark brown sandy lean clay, trace gravel, moist		CL		
	2	4	SSA	8	19.1			Dark brown and brown-gray after 1'				
958								**FILL**				
	4	1	ST		16.4	117	1500**					4
956								Brown-gray sandy lean clay, trace gravel, moist		CL		956.8
	6											
954												
	8											
952		2	ST		21.1	101	2670	**WISCONSINAN GLACIAL TILL**				
	10											
950												
	12							Moisture seepage near 12'			▽	
948								Dark gray after 13'				
	14	3	SSA	10	20.0							15
946								End of Boring				945.8
	16							**Estimated using calibrated hand penetrometer				
944												
	18											
942												
	20											

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: 12 ft. ▽ _____ ft. ▼ ___ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. W-5

Project No.: 221190

Project: 8th Street SE Improvements Phase 1
From 8th Ave SE to Falcon Drive
Altoona, Iowa

Client: Kirkham Michael
4390 114th Street
Urbandale, Iowa 50322

Surface Elevation:
Datum:

Date Drilled:
Drilling Depth, ft.:

Drilling Method:
Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth -------- Elevation ft.
								Not Drilled (Did Not Receive Permission to Access)				

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: _____ ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. W-6

Project No.: 221190

Project: 8th Street SE Improvements Phase 1
From 8th Ave SE to Falcon Drive
Altoona, Iowa

Client: Kirkham Michael
4390 114th Street
Urbandale, Iowa 50322

Surface Elevation: 958.3'
Datum: Iowa RTN Derived

Date Drilled: 4/7/2022
Drilling Depth, ft.: 10

Drilling Method: 4" CFA
Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
958	0							Dark brown sandy lean clay, trace organics, moist		CL		
		3	SSA	6	21.0			Dark brown and brown-gray sandy lean clay, trace gravel after 1.3' **FILL**				
956	2											
	4	1	ST		21.3	94	2360					4.5
954								Very dark gray lean to fat clay, moist **LOCAL ALLUVIUM**		CL-CH		953.8 / 5.5
	6							Brown-gray sandy lean clay, trace gravel, moist		CL		952.8
952								Moisture seepage near 6'			▽	
950	8							**WISCONSINAN GLACIAL TILL**				
		2	SSA	6	23.0							10
948	10							End of Boring				948.3
946	12											
944	14											
942	16											
940	18											
938	20											

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion _____ hrs. _____ days
Depth to water: 6.7 ft. ▽ _____ ft. ▼ ___ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. W-7

Project No.: 221190

Project: 8th Street SE Improvements Phase 1
From 8th Ave SE to Falcon Drive
Altoona, Iowa

Client: Kirkham Michael
4390 114th Street
Urbandale, Iowa 50322

Surface Elevation: 955.8'
Datum: Iowa RTN Derived

Date Drilled: 4/7/2022
Drilling Depth, ft.: 10

Drilling Method: 4" CFA
Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							**PCC (7"±)**				0.6
								Very dark brown and dark brown-gray sandy lean clay, trace gravel, moist		CL		955.2
954	2	3	SSA	7	24.4			**FILL**				2.5
								Brown-gray sandy lean clay, trace gravel, moist		CL		953.3
952	4	1	SSA	4	31.1			Moisture seepage near 4'				
950	6							**WISCONSINAN GLACIAL TILL**				
948	8							Gray after 8.5'				
		2	ST		23.1	100	2720					
946	10											10
								End of Boring				945.8
944	12											
942	14											
940	16											
938	18											
936	20											

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. _____ ft.

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. W-8

Project No.: 221190

Project: 8th Street SE Improvements Phase 1
From 8th Ave SE to Falcon Drive
Altoona, Iowa

Client: Kirkham Michael
4390 114th Street
Urbandale, Iowa 50322

Surface Elevation: 959.9'
Datum: Iowa RTN Derived

Date Drilled: 4/7/2022
Drilling Depth, ft.: 10

Drilling Method: 4" CFA
Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Dark brown sandy lean clay, trace organics, moist		CL		
								TOPSOIL				1.8
958	2	3	SSA	6	26.5			Brown sandy lean clay, trace gravel, moist		CL		958.1
956	4	1	ST		21.0	97	2090	Brown-gray after 4'				
954	6							**WISCONSINAN GLACIAL TILL**				
952	8							Moisture seepage near 8'				
		2	ST		23.6	97	2060				▽	
950	10											10
								End of Boring				949.9
948	12											
946	14											
944	16											
942	18											
940	20											

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

Time: at completion _____ hrs. _____ days

Depth to water: 9.5 ft. ▽ _____ ft. ▼ ___ ft. ▼

ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

BORING LOG NO. W-9

Project No.: 221190

Project: 8th Street SE Improvements Phase 1
From 8th Ave SE to Falcon Drive
Altoona, Iowa

Client: Kirkham Michael
4390 114th Street
Urbandale, Iowa 50322

Surface Elevation: 957.9'
Datum: Iowa RTN Derived

Date Drilled: 4/8/2022
Drilling Depth, ft.: 10

Drilling Method: 4" CFA
Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							**PCC (8"±)**				0.7
								Dark brown and brown-gray clayey sand with gravel, damp		SC		957.2
956	2	3	SSA	11	13.7			**FILL**				2
								Brown-gray sandy lean clay, trace gravel, moist		CL		955.9
954	4	1	SSA	7	20.8							
952	6							**WISCONSINAN GLACIAL TILL**				
950	8							Dark gray after 8'				
		2	ST		19.3	106	2260					10
948	10							End of Boring				947.9
946	12											
944	14											
942	16											
940	18											
938	20											

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation

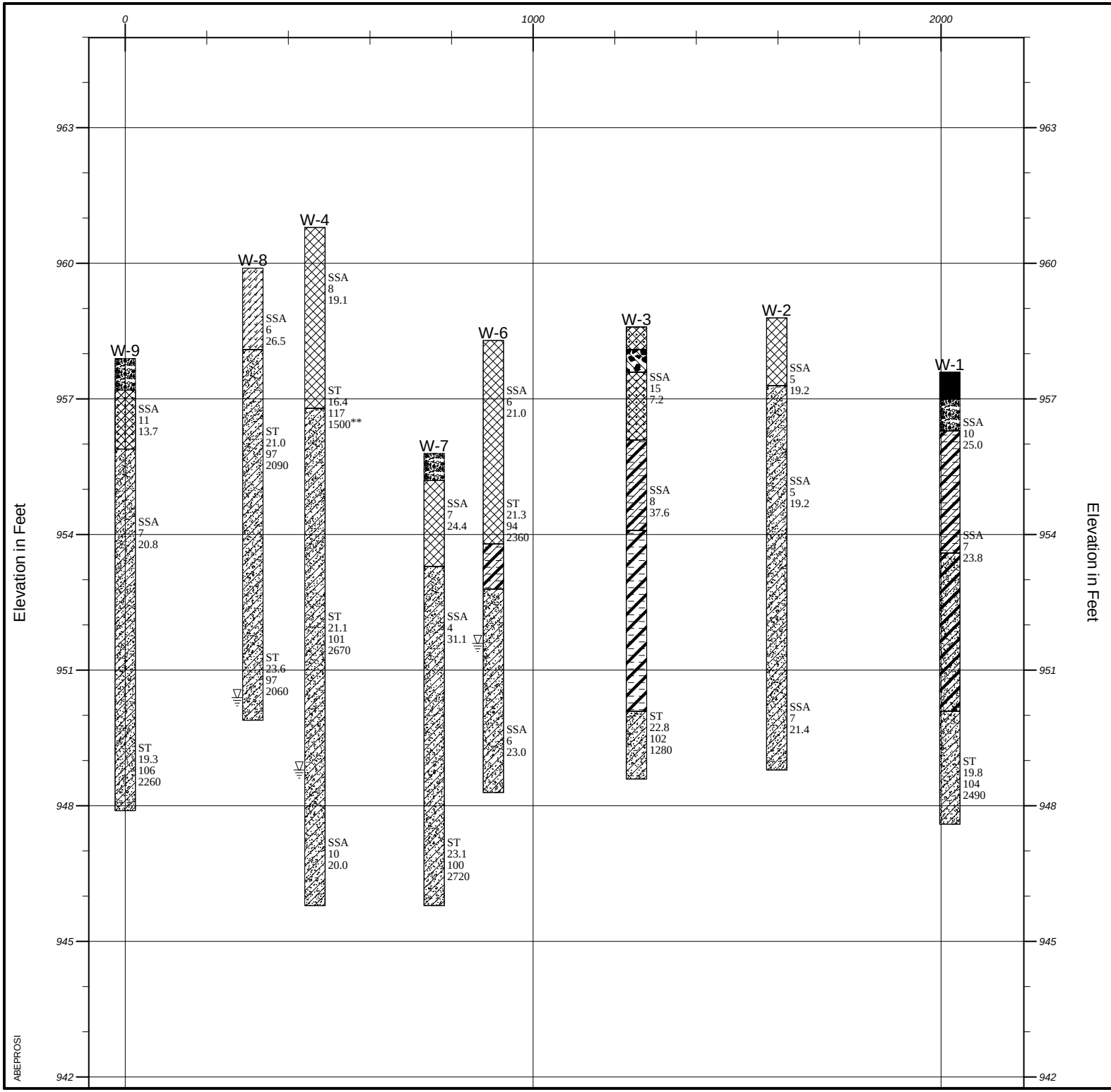
Time: at completion _____ hrs. _____ days

Depth to water: **Dry** ft. _____ ft. ___ ft.

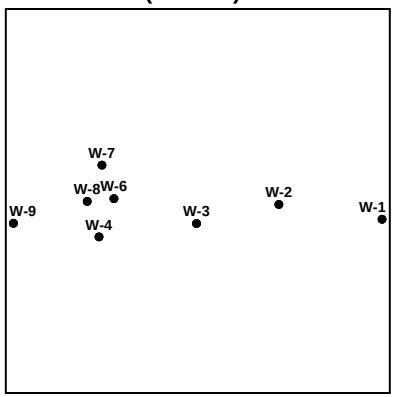
ALLENDER BUTZKE ENGINEERS, INC.

Geotechnical | Environmental | Construction Q.C.

PROFILE OF BORINGS



Plan View (NORTH)



Profile of Borings Legend

Symbol	Description
	Strata symbols
	PC Concrete
	Clayey Sand Fill
	Sandy Lean Clay
	Lean Clay Topsoil
	Lean Clay Fill
	Lean to Fat Clay Alluvium
	Crushed Rock
	Fat Clay Alluvium
	Paving
	Sandy Lean to Fat Clay

ALLENDER BUTZKE ENGINEERS, INC.

8th Street SE Improvements Phase 1

From 8th Ave SE to Falcon Drive

Altoona, Iowa

PN 221190

Vertical Scale: 1 inch = 3 feet

Plate A-1

ABEPROSI

Plan is intended to show the approximate boring locations only.

Overview Plan by KM 12.2021 - Polk County 2022 Aerial

ALLENDER BUTZKE ENGINEERS INC.
3660 109th Street
Urbandale, IA 50322

8th Street SE Improvements Phase 1
From 8th Avenue SE to Falcon Drive
Altoona, Iowa

PN 221190

Site Plan

NOTES

DOCUMENT 00 41 00

BID FORMS

To: Board of Education
Southeast Polk Community School District

Project: **Falcon Drive SE – 8th Street SE to NE 50th Avenue**
Altoona, IA

Date: _____

Submitted by: _____(Contractor)

_____ (Address)

_____ (City/State/Zip Code)

_____(Telephone/Fax)

1. OFFER

Having examined the Place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by the Architect/Engineer for the above-mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum/Price of:

_____Dollars ($ _____),
in lawful money of the United Stated of America.

We have included the required Bid security as required by the Instructions to Bidders.

All applicable Federal, State, and City taxes are included in the Bid Sum, excluding Iowa Sales tax.

NOTE: INCLUDE ALL 9 PAGES WITH BID FORM SUBMITTAL

2. ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for thirty days from the bid closing date.

If this bid is accepted by the Owner within the time period stated above, we will:

- Execute the Agreement within ten days of receipt of Notice of Award.
- Furnish the required Bonds and Insurance Certificates within ten days of receipt of Notice of Award in the forms described in Bonds and Certificates and Supplementary Conditions.
- Commence the work as stated in the Supplementary Conditions.

If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bonds or Insurance Certificates, the security deposit shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instruction to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for any extended period of time.

3. CONTRACT TIME

If this Bid is accepted, we will:

- Substantially complete Divisions IA & IB Work on or before November 22nd, 2023.

- Substantially complete Division II Work on or before June 7th, 2024

- Finally complete Divisions IA, IB and II Work by June 28th, 2024.

4. ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.

Addendum Number_____, Dated_____.

Addendum Number_____, Dated_____.

Addendum Number_____, Dated_____.

Addendum Number_____, Dated_____.

5. APPENDICES

The following documents are attached to and made a condition of the Bid:

Appendix A - Targeted Small Business.
Appendix B – Bidder Status Form.
Appendix C - Cost Breakdown (Cost Breakdown to only be completed within 24 hours by apparent low bidder, after bids are opened.)

6. BID FORM SIGNATURE(S)

Respectfully submitted this_____day of_____, 20_____. The Corporate Seal of

_____

(Bidder - Print the full name of your firm) was

hereunto affixed in the presence of:

_____

(Authorized signing officer Signature) (Title)

(Seal)

_____

(Authorized signing officer Signature) (Title)

(Seal)

If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

[Blank Space]

APPENDIX A - TARGETED SMALL BUSINESS

Herewith is the list of Certified Iowa Targeted Small Business' referenced in the bid submitted by:

(Bidder) _____

(Owner) Southeast Polk Community School District.

Dated_____, 20_____ and which is an integral part of the Bid Form.

The following Targeted Small Business' were contacted, and if bid is accepted by the Owner, will perform or provide the following work described below. Refer to Section 00 21 13 - Instructions to Bidders: Targeted Small Business.

1. (Name of Targeted Small Business)

_____
(Address)

_____
(Contact Person) (Telephone Number)

_____ $ _____
(Work Description) (Dollar Amount)

2. (Name of Targeted Small Business)

_____
(Address)

_____
(Contact Person) (Telephone Number)

_____ $ _____
(Work Description) (Dollar Amount)

3. (Name of Targeted Small Business)

_____
(Address)

_____
(Contact Person) (Telephone Number)

_____ $ _____
(Work Description) (Dollar Amount)

The following Targeted Small Business' were contacted, and declined to participate:

1. (Name of Targeted Small Business)

_____

(Address)

_____

(Contact Person) (Telephone Number)

_____

(Reason for Declining) (Date Contacted)

2. (Name of Targeted Small Business)

_____

(Address)

_____

(Contact Person) (Telephone Number)

_____

(Reason for Declining) (Date Contacted)

3. (Name of Targeted Small Business)

_____

(Address)

_____

(Contact Person) (Telephone Number)

_____

(Reason for Declining) (Date Contacted)

To be completed by all bidders — Part A

Please answer "Yes" or "No" for each of the following:

☐ Yes ☐ No My company is authorized to transact business in Iowa.
(To help you determine if your company is authorized, please review the worksheet on the next page).

☐ Yes ☐ No My company has an office to transact business in Iowa.

☐ Yes ☐ No My company's office in Iowa is suitable for more than receiving mail, telephone calls, and e-mail.

☐ Yes ☐ No My company has been conducting business in Iowa for at least 3 years prior to the first request for bids on this project.

☐ Yes ☐ No My company is not a subsidiary of another business entity or my company is a subsidiary of another business entity that would qualify as a resident bidder in Iowa.

If you answered "Yes" for each question above, your company qualifies as a resident bidder. Please complete Parts B and D of this form.

If you answered "No" to one or more questions above, your company is a nonresident bidder. Please complete Parts C and D of this form.

To be completed by resident bidders — Part B

My company has maintained offices in Iowa during the past 3 years at the following addresses:

Dates:_____/_____/_____to_____/_____/_____Address: _____

City, State, Zip: _____

Dates:_____/_____/_____to_____/_____/_____Address: _____

City, State, Zip: _____

Dates:_____/_____/_____to_____/_____/_____Address: _____

You may attach additional sheet(s) if needed. City, State, Zip _____

To be completed by non-resident bidders — Part C

1. Name of home state or foreign country reported to the Iowa Secretary of State:

_____

2. Does your company's home state or foreign country offer preferences to bidders who are residents? ☐ Yes ☐ No
3. If you answered "Yes" to question 2, identify each preference offered by your company's home state or foreign country and the appropriate legal citation.

_____

_____

You may attach additional sheet(s) if needed.

To be completed by all bidders — Part D

I certify that the statements made on this document are true and complete to the best of my knowledge and I know that my failure to provide accurate and truthful information may be a reason to reject my bid.

Firm Name: _____

Signature: _____ Date: _____

You must submit the completed form to the governmental body requesting bids per 875 Iowa Administrative Code Chapter 156. This form has been approved by the Iowa Labor Commissioner.

Worksheet: Authorization to Transact Business

This worksheet may be used to help complete Part A of the Resident Bidder Status form. If at least one of the following describes your business, you are authorized to transact business in Iowa.

☐ Yes ☐ No My business is currently registered as a contractor with the Iowa Division of Labor.

☐ Yes ☐ No My business is a sole proprietorship and I am an Iowa resident for Iowa income tax purposes.

☐ Yes ☐ No My business is a general partnership or joint venture. More than 50 percent of the general partners or joint venture parties are residents of Iowa for Iowa income tax purposes.

☐ Yes ☐ No My business is an active corporation with the Iowa Secretary of State and has paid all fees required by the Secretary of State, has filed its most recent biennial report, and has not filed articles of dissolution.

☐ Yes ☐ No My business is a corporation whose articles of incorporation are filed in a state other than Iowa, the corporation has received a certificate of authority from the Iowa secretary of state, has filed its most recent biennial report with the secretary of state, and has neither received a certificate of withdrawal from the secretary of state nor had its authority revoked.

☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in this state and the statement has not been canceled.

☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in a state other than Iowa, has filed a statement of foreign qualification in Iowa and a statement of cancellation has not been filed.

☐ Yes ☐ No My business is a limited partnership or limited liability limited partnership which has filed a certificate of limited partnership in this state, and has not filed a statement of termination.

☐ Yes ☐ No My business is a limited partnership or a limited liability limited partnership whose certificate of limited partnership is filed in a state other than Iowa, the limited partnership or limited liability limited partnership has received notification from the Iowa secretary of state that the application for certificate of authority has been approved and no notice of cancellation has been filed by the limited partnership or the limited liability limited partnership.

☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in Iowa and has not filed a statement of termination.

☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in a state other than Iowa, has received a certificate of authority to transact business in Iowa and the certificate has not been revoked or canceled.

APPENDIX C - COST BREAKDOWN

The following is a Cost Breakdown of civil items referenced in the bid submitted by:

(Bidder) _____

(Owner) SE Polk Community School District

Dated _____, 20_____ and which is an intergral part of the Bid Form.

The following itemized **Cost Breakdown is an integral part of this Bid Sum**. The Owner and City of Altoona have entered into an agreement to share costs for certain items, and Breakdown indicated below will be used by the Engineer to calculate those costs. Include installation in cost of each item. Refer to Drawing C-0.1 for additional information.

Note: Quantities below are shown for reference only. Contractor responsible for supplying total cost of each item based off their own quantity calculations. Total costs of all 3 divisions shown add up to the total project bid. Any costs not accounted for in individual items shall be included as an incidental part of the 'Mobilization' item below.

Item No.	Bid Item	Unit	Est. Div. IA Quantity	Total Item Cost	Est. Div. IB Quantity	Total Item Cost	Est. Div. II Quantity	Total Item Cost
2								
2.01	Clearing and Grubbing	LS	1		1		1	
2.02	Topsoil, On-site	CY	1340		1470		3835	
2.03	Excavation, Class 10	LS	1		1		1	
2.04	Subgrade Preparation	SY	100		100		8130	
2.05	Subgrade Preparation, 6" Modified	TN					278	
2.06	Subgrade Preparation, 8" Modified	TN					3831	
2.07	Removal of Storm Structure	EA					7	
2.08	Removal of Storm Sewer	LF					463	
4								
4.01	Storm Sewer, Trenched, 15" RCP	LF	213		725		906	
4.02	Storm Sewer, Trenched, 18" RCP	LF	376		68			
4.03	Storm Sewer, Trenched, 24" RCP	LF	520				124	
4.04	Storm Sewer, Trenched, 30" RCP	LF	141				727	
4.05	Pipe Apron, 15" RCP with footing & guard	EA					1	
4.06	Pipe Apron, 30" RCP with footing & guard	EA	1				1	
4.07	Subdrain, 6" diameter	LF					1197	
4.08	Subdrain Cleanout	EA					14	
5								
5.01	Valve, 16"	EA			1			
5.02	Valve Box Adjustment	EA					2	
5.03	Fire Hydrant Assembly Relocation	EA					1	
6								
6.01	Manhole, SW-401, 48"	EA	1				2	
6.02	Manhole, SW-401, 60"	EA	1				2	
6.03	Manhole, SW-401, 72"	EA					1	
6.04	Intake, SW-505 with SW-603 type R casting	EA	6		4		5	
6.05	Intake, SW-506 with SW-603 type R casting	EA	4		4		4	
6.06	Intake, SW-511with SW-604 type 6 casting	EA					7	
7								
7.01	Pavement, PCC, 7" Non-reinforced	SY	136		131		238	
7.02	Pavement, PCC, 8" with CD Baskets	SY	3878		4520			
7.03	Pavement, PCC, 9" with CD Baskets	SY					5239	
7.04	Pavement, PCC, 9" with CD Baskets, Colored	SY					695	
7.05	Concrete Median Mow Strip	LF					1254	
7.06	Temporary Pavement, HMA, 6"	SY					405	
7.07	Pavement, HMA, 7"	SY					576	
7.08	Sidewalk, PCC, 5"	SY	1435		1354		1210	
7.09	Detectable Warning Panels	SF	72		80		320	
7.10	Pavement Removal, 8th Street	SY					2388	
7.11	Pavement Removal	SY	60		735		1668	
8								
8.01	Painted Pavement Markings, Durable	LS	1		1		1	
8.02	Temporary Traffic Control	LS	1		1		1	
9								
9.01	Hydraulic Seeding, Seeding, Fertilizing, and Mulching	AC	1.5		1.5		3	
9.02	Roundabout Landscaping & decorative rock	LS					1	
9.03	SWPPP Preparation & Erosion Control	LS	1		1		1	
9.04	Rip Rap, Class 'D'	TON	45				45	
9.05	Chain Link Fence, 48" black vinyl with mow strip	LF					277	
11								
11.01	Construction Staking	LS	1		1		1	
11.02	Mobilization	LS	1		1		1	
11.03	Signage	LS	1		1		1	
11.04	Tree Removal	LS					1	
	TOTAL OF EACH DIVISION	-	-		-		-	

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SECTION 00 43 13

BID BOND FORM

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____
_____,as Principal, and
_____,as Surety, are hereby held and firmly bound unto the Southeast Polk Community School District, as Owner in the penal sum of
_____
DOLLARS($_____), or 5% of the amount bid in lawful money, for which payment said Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns jointly and severally, firmly by these presents.

The condition of the above obligation is such that whereas the Principal has submitted to a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the **FALCON DRIVE SE – 8TH STREET SE TO NE 50TH AVENUE** project.

NOW, THEREFOR,

(a) If said Bid shall be rejected, or in the alternate,
(b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, this _____ day of _____ , 20____.

Principal:_____

By:_____

Surety _____

By: _____

END OF SECTION

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SECTION 00 52 00

AGREEMENT FORMS

1. DOCUMENT INCLUDES

A. Agreement.

2. RELATED DOCUMENTS

A. Document 00 72 00 - General Conditions.

B. Document 00 73 00 - Supplementary Conditions.

3. AGREEMENT

A. AIA Document A101-2017, Standard Form of Agreement Between Owner and Contractor where basis of payment is a Stipulated Sum, forms the basis of Contract between the Owner and Contractor.

B. AIA Document A101-2017 may be examined on-line at www.aiacontracts.org.

END OF SECTION

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SECTION 00 61 00

PERFORMANCE AND

PAYMENT BONDS

1. DOCUMENT INCLUDES

A. Performance Bond

B. Payment Bonds.

2. RELATED DOCUMENTS

A. Document 00 72 00 - General Conditions.

B. Document 00 73 00 - Supplementary Conditions.

3. PERFORMANCE BOND

A. AIA Document A312-2010 Edition, Performance and Payment Bond, forms the basis of Performance Bond between the Owner and Contractor.

B. AIA Document A312-2010 Edition, Performance and Payment Bond, forms the basis of Payment Bond between the Owner and Contractor.

C. AIA Documents may be examined on-line at www.aiacontracts.org.

END OF SECTION

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SECTION 00 61 19

MAINTENANCE BOND

1. DOCUMENT INCLUDES

A. Maintenance Bond

2. RELATED DOCUMENTS

A. Document 00 72 00 - General Conditions.

B. Document 00 73 00 - Supplementary Conditions.

3. MAINTENANCE BOND

A. Use Maintenance Bond, Exhibit No. 1 on the following page, between the City of Altoona and the Contractor.

EXHIBIT NO. 1

MAINTENANCE BOND

Bond Number _____
Job Number _____

KNOW ALL MEN BY THESE PRESENTS:

That _____ of _____ as Principal, and _____ of _____as Surety, are held and firmly bound unto the CITY OF ALTOONA, 900 Venbury Dr., Altoona, Iowa 50009, in the penal sum of _____ ($_____) Dollars, lawful money of the United States of America, for the payment of which, well and truly to be made, the Principal and Surety bind themselves, their, and each of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal entered into a certain contract, dated the_____day of _____, 20___, with the _____, to furnish all the material and labor necessary for the construction of

_____

_____

_____

in the County of Polk, State of Iowa, in conformity with certain specifications according to the subdivision ordinances of the City of Altoona, Iowa; and

WHEREAS, a further condition of said contract, and acceptance of the work by the City of Altoona, Iowa, is that said Principal shall furnish a bond of indemnity, guaranteeing to remedy any defects in workmanship or materials that may develop in the aforesaid work and improvements, and to otherwise keep said improvements in good repair, for a period of four (4) years from the date of the issuance of a Certificate of Completion by the City Council; and

WHEREAS, a request for a Certificate of Completion for the work has been submitted and is being considered by the City Council, and this bond is being submitted in support of said request; and

WHEREAS, the said _____of_____, Iowa, for a valuable consideration, has agreed to join with said Principal in such bond and/or guarantee, indemnifying said City of Altoona, Iowa as aforesaid.

Now, the Principal and the Surety on this Bond hereby agree, at their own expense:

A. To remedy any and all defects that may develop in, or result from, said work by reason of bad workmanship or poor material used in the construction of said work and improvements, and shall otherwise keep all work in continuous good repair, and shall in all other respects, comply with all the terms and conditions of the specifications and ordinances of the City of Altoona, Iowa with respect to maintenance and repair of said work and improvements for a period of ___four___(4) year(s) from the date of issuance of a Certificate of Completion for said work by the City Council; and

B. In addition, Principal and Surety shall pay the testing, expert evaluation, reports, and all associated costs incurred by the City (collectively referred to generally as Testing) related to the City's ascertaining the nature and extent of any defect that appears in said work for which Principal and/or Surety are responsible under Paragraph A above.

Prior to undertaking such Testing, the Parties shall attempt to reach agreement as to the person or firm who shall undertake the Testing, however, if the parties cannot reach agreement, the City shall select the person or firm to undertake the Testing and associated work, in its discretion.

NOW THEREFORE, the condition of this obligation is such that if said Principal shall faithfully perform all of the promises of the Principal, as set forth and provided in this Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seal this _____ day of _____, 20 _____.

_____,
Principal

By: _____
Name and Title

_____,
Surety

By:_____
Name and Title

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SECTION 00 72 00
GENERAL CONDITIONS

Table of Contents

SECTION 1010 - DEFINITIONS

1.01 DESCRIPTION

Wherever the following definitions, terms, and abbreviations, or pronouns in place of them, are used in the plans, specifications, or other contract documents, the intent and meaning shall be

interpreted as specified in this Section.

1.02 ABBREVIATIONS

Wherever in these specifications and contract documents the following abbreviations are used, they shall be understood to mean as follows: The serial designation of each reference shall be the latest year of adoption or revision, unless otherwise specified.

AAN - American Association of Nurserymen
AAR - Association of American Railroads
AASHTO (or AASHO) - American Association of State Highway and Transportation Officials
ACI - American Concrete Institute
AIA - American Institute of Architects
ANSI - American National Standards Institute
APWA - American Public Works Association
ARA - American Railway Association
AREA - American Railway Engineering Association
ASA - America Standards Association
ASCE - American Society of Civil Engineers
ASLA - American Society of Landscape Architects
ASTM - American Society for Testing and Materials
AWPA - American Wood Preservers Association
AWS - American Welding Society
AWWA - American Water Works Association
BSC - Bituminous Seal Coat
CFR - Code of Federal Regulations
CLSM - Controlled Low Strength Material
CPM - Critical Path Method
CRSI - Concrete Reinforcing Steel Institute
DNR - Department of Natural Resources
DOT - Department of Transportation
EEI - Edison Electric Institute
EPA - Environmental Protection Agency
FHWA - Federal Highway Administration
FSS - Federal Specification and Standards
ESAL - Equivalent Single Axle Load
GGBFS - Ground Granulated Blast Furnace Slag
GRI - Geosynthetic Research Institute
HMA - Hot Mix Asphalt
IAC - Iowa Administrative Code
IEEE - Institute of Electrical and Electronics Engineers
IES - Illuminating Engineering Society
ICEA (or IPCEA) - Insulated Cable Engineers Association
IMSA - International Municipal Signal Association, Inc.
ISO - Insurance Services Office
ITE - Institute of Transportation Engineers
MUTCD - Manual on Uniform Traffic Control Devices
NEC - National Electrical Code
NEMA - National Electrical Manufacturers Association
NFPA - National Fire Protection Association
NSF - National Sanitation Foundation
OSHA - Occupational Safety of Health Administration
PCC - Portland Cement Concrete
PLS - Pure Live Seed
RAP - Recycled Asphalt Pavement
SAE - Society of Automotive Engineers
SDR - Standard Dimension Ratio
SSPC - Steel Structures Painting Council
SUDAS - Statewide Urban Design and Specifications
UL - Underwriters' Laboratories, Inc.
US - United States

USC - United States Code

1.03 DEFINITIONS AND TERMS

ADDENDUM. A revision to the contract documents written and issued after the notice to bidders, and prior to the time for receipt of proposals. Changes reflected in the Addendum shall govern over all other contract documents.

ALLEY. See Street.

APPROVED EQUAL (EQUIVALENT). A product, process, equipment, or material that, upon approval of the Engineer, is determined to meet or exceed the requirements called for by the specifications. Upon approval, the item will be allowed in lieu of the specified material, process, equipment, or product.

AWARD. The acceptance of the proposal of the lowest responsive, responsible bidder for the work, which shall not be binding upon the Contracting Authority until the contract for the said work has been executed by the bidder and by the Contracting Authority and bond(s) has been provided by the bidder as required by law.

BID. A properly signed and guaranteed written offer of the bidder containing the bid amount to perform the work. Bid is the same as Proposal.

BID AMOUNT. The aggregate sum obtained by totaling the amounts arrived at by multiplying the quantity of each bid item, as shown in the bid or proposal, by the unit price specified in the proposal for that bid item, including lump sum bid items.

BID ITEM. A specifically described unit of work for which a price is provided in the proposal. A bid item may also be referred to as a contract item.

BID SECURITY. The security furnished by the bidder with its bid as guaranty that the bidder will execute the contract and furnish bond for the work if the proposal is accepted. For bids submitted to governmental entities, the bidder shall furnish bid security as defined in Iowa Code Chapter 26.

BIDDER. Any individual, firm, partnership, joint venture, corporation, or association licensed or otherwise authorized by law to do business where the work is located, which has submitted a proposal for the work, acting directly or through a duly authorized representative.

CALENDAR DAY. Every day shown on the calendar.

CHANGE ORDER. A written order to the Contractor signed and approved by the Contracting Authority, ordering a change in the work from that originally shown by the plans and specifications. Change orders duly signed and executed by the Contracting Authority and the Contractor shall constitute authorized modifications of the contract.

COMMENCEMENT OF WORK. Work will be considered commenced when the Contractor's operations are started on items of work covered by the contract documents, or when the Contractor notifies the Engineer, and the Engineer agrees, that the Contractor's equipment and personnel are available to the site but the operations are prevented by conditions outside the Contractor′s control.

COMPETITIVE QUOTATION. A properly signed written offer of the Contractor according to Iowa Code Chapter 26.

CONTRACT. The written agreement, between the Contractor and the Contracting Authority, setting forth the terms and conditions under which the work is to be performed. The contract includes all contract documents.

CONTRACT AMOUNT. The bid amount plus approved change orders.

CONTRACT DOCUMENTS. The contract documents consist of the following: The notice to

bidders and notice of public hearing; the instructions to bidders; special provisions; standard specifications; supplemental specifications; plans; addenda; proposal; contract; performance, payment, and maintenance bond; insurance certificate(s); Notice to Proceed; and change orders. These documents form the agreement whereby the Contractor will furnish all labor, equipment, tools, and materials, and perform all work necessary to satisfactorily accomplish the proposed improvement. The contract documents are complementary and what is called for by one shall be as binding as if called for by all.

CONTRACTING AUTHORITY. The body, entity, board, commission, officer, or governmental entity having authority to award a contract.

CONTRACTOR. The individual, firm, partnership or corporation, and the heirs, executors, administrators, successors and assigns thereof, or the lawful agent of any such individual, firm, partnership, or corporation, or the surety thereof under the contract bond, constituting one of the principals to the contract and undertaking to perform the work herein specified. Where the pronoun "it" is used as referring to the word "Contractor" it shall mean the Contractor as defined above.

CONTROLLING ITEM OF WORK. The unique activity of a contract that will determine the duration of the construction period or if a working day is charged. The character of this work may change during the project. It is the work that could be in progress at any time that would have the greatest influence on the duration of the project.

DEPARTMENT OF TRANSPORTATION, (THE DEPARTMENT). The Department of Transportation, as defined in Iowa Code Chapter 307.

EMPLOYEE. Any person working on the project mentioned in the contract of which these specifications are a part, and who is under the direction or control, or receives compensation from, the Contractor or subcontractor.

ENGINEER. For publicly owned projects, the Engineer is a Professional Engineer licensed in the State of Iowa and is the authorized representative of the Contracting Authority. For privately contracted projects, with improvements that are to become publicly owned, the Engineer is the Professional Engineer licensed in the State of Iowa and is the authorized representative of the Jurisdiction ultimately accepting ownership of the improvement. For all other projects, the Engineer is the Professional Engineer licensed in the State of Iowa and is the owner’s authorized representative. The Engineer may act directly or through duly authorized representatives.

EQUIPMENT. All machinery and equipment, together with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for the proper construction and acceptable completion of the work.

EXTRA WORK. Work not provided for in the contract, as awarded, but deemed essential to the satisfactory completion of the contract and authorized by the Engineer. Extra work shall not include additional materials, equipment, and labor used due to natural variations in surface and subsurface conditions, except as specifically provided for elsewhere in the contract documents.

GOVERNMENTAL ENTITY. As defined in Iowa Code Chapter 26.

IMPROVEMENT. Shall mean any public improvements as defined in Iowa Code Chapter 26 and shall also include highway, bridge, or culvert projects.

INCIDENTAL ITEMS. Materials, equipment, or labor essential for the proper completion of the work that are not specified as bid items in the contract documents and the cost of which shall be included in other bid items.

IOWA DEPARTMENT OF TRANSPORTATION (DOT) STANDARD SPECIFICATIONS. The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction and the General Supplemental Specifications effective at the date of publication of the Notice to Bidders unless a different effective date is identified in the contract documents.

JOINT VENTURE. The joining of two or more qualified contractors for the purpose of combining equipment, personnel, and finances in order to submit a bid on a single project.

JURISDICTION. When a publicly contracted project, a governmental entity, acting through its governing body, or through the authorized representatives of such governing body when so authorized. When privately contracted and owner project, the OWNER of the project.

JURISDICTIONAL ENGINEER. See Engineer.

LABORATORY. The testing laboratory of the Jurisdiction, or any other testing laboratory which may be designated by the Engineer.

LIQUIDATED DAMAGES. The dollar amount established by the Contracting Authority and set forth in the contract documents as compensation for the damage to the Contracting Authority, or public, for delay in completion of the work, to be paid to the Contracting Authority, or to be deducted from any payments due or to become due the Contractor.

LUMP SUM. Unit of measurement for a bid item where no direct measurement will be made. The bid item amount is complete payment for all work described in the contract documents and necessary to complete the work for that item. The estimated quantities of lump sum work shown in the contract documents are approximate.

MATERIALS. Any substances specified for the use in the construction of the project and its appurtenances.

MATERIALS INSTRUCTIONAL MEMORANDUM (MATERIALS I.M.). This is an instruction prepared by the Iowa DOT's Office of Materials. These may identify approved sources of various qualities or types of materials, sampling, testing, and approval procedures, and conditions for acceptance and use.

MOBILIZATION. Mobilization shall consist of preparatory work and operations for all items under the contract, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site, and for the establishment of all offices, buildings, and other facilities, which must be performed or costs incurred prior to beginning work on the various items on the project site.

NOTICE OF PUBLIC HEARING. The public announcement or publication by the governmental entity, as required under Iowa Code Chapter 26, notifying the public of the time and place where any interested person may appear and file objections to the proposed plans, specifications, contract, or estimated cost of the improvement.

NOTICE TO BIDDERS. The public announcement, publication, or solicitation by the Contracting Authority, inviting bids for work to be performed or materials to be furnished as required by Iowa Code Chapter 26.

NOTICE TO PROCEED. A written notice to the Contractor issued by the Engineer stating the date, on or before which, the Contractor is to begin the work. The date set forth in this notice shall be considered as the official starting date.

PERFORMANCE, PAYMENT, AND MAINTENANCE BOND. The bond submitted by the designated low bidder, in the amount specified in the contract documents, for the faithful performance of the contract and the terms and conditions therein contained, for payment for all labor and materials provided, and for maintenance of improvements in good repair for the specified number of years from the time of acceptance of the improvements by the Jurisdiction.

PLANS. Plans are the official drawings, standard plans, profiles, typical cross-sections, and supplemental drawings or reproductions thereof, approved and furnished by the Jurisdiction, which show the location, character, dimensions, and details of the work. All such documents are to be considered as a part of the plans whether attached to the plans or separate.

PROJECT AREA. The area of the specified project limits shown on the plans, and any additional

area which is necessary for the Contractor to place traffic control devices required by the contract documents or necessary to protect the work.

PROPOSAL. The proposal is a properly signed and guaranteed written offer of the bidder containing the bid amount to perform the work. Proposal is the same as Bid.

PROPOSAL FORM. A form provided by the Jurisdiction, to the bidder, containing a listing of the bid items and quantities, and locations to enter unit prices and the bid amount.

RESPONSIVE, RESPONSIBLE BID. A bid submitted in accordance with the Notice to Bidders by a bidder that acknowledged all addenda, that responded to all proposal requirements, and that agreed to do everything required by the plans and specifications and other bid documents without any conditions, qualifications, or exclusions.

A bid submitted by a bidder that is capable of performing the work, possess the necessary financial and technical capability to perform the work, as well as the ability to complete the work in a timely and acceptable manner as demonstrated by past performance or other appropriate considerations, including but not limited to the ability to obtain and maintain insurance and bonding requirements.

RESPONSIVE, RESPONSIBLE BIDDER. A bidder that has submitted a bid that has been determined by the governmental entity to be both responsive and responsible.

RIGHT-OF-WAY. The land area of which the right to possession is secured or reserved by the Jurisdiction for the project, including permanent roadway easements.

ROAD. See Street.

ROADWAY. The portion of the right-of-way designated or ordinarily used for vehicular travel.

SHOP DRAWINGS. Information and details for materials, products, or equipment to be supplied for the project, which are typically delivered to the project in an assembled or ready-to-use condition.

SIDEWALK. That portion of the street primarily constructed for the use of pedestrians.

SPECIAL PROVISIONS. Additions and revisions to the Standard, General, and Supplemental Specifications covering conditions peculiar to an individual project. They only apply to a project when specified in the contract documents.

SPECIALTY ITEMS. Portions of work designated in the contract documents requiring equipment, skills, or crafts not ordinarily associated with the expertise of the Contractor or the major types of work covered by the contract; typically including, but not limited to, earthwork for building construction, electrical, mechanical, masonry, roofing, drywalling, floor covering, glass and glazing, painting, conveying systems, etc.

SPECIFICATIONS. The general term comprising all the written directions, provisions, and requirements including the Standard Specifications and those added or adopted as Supplemental Specifications or Special Provisions all of which are necessary for the proper performance of the contract.

STANDARD ROAD PLAN. The Iowa Department of Transportation's manual of detailed drawings showing standardized design features, construction methods, and approved materials.

STATE. The State of Iowa acting through its authorized representatives.

STREET. A general term denoting public way for vehicular travel, including the entire area within the right-of-way.

SUBCONTRACTOR. The subcontractor is any individual, firm, partnership, joint venture, corporation, or association to whom the Contractor, with the written consent of the Jurisdiction,

sublets a part of the work.

STANDARD SPECIFICATIONS. The requirements contained herein applying to the contract, and pertaining to the method and manner of performing the work, or to the quantity and quality of the materials to be furnished under the contract.

SUPERINTENDENT. The Contractor's authorized representative in responsible charge of the work.

SUPPLEMENTAL CONTRACT (AGREEMENT). Written agreement between the Contractor and Contracting Authority modifying the original contract pursuant to the Iowa Code.

SUPPLEMENTAL SPECIFICATIONS. Specifications adopted by a Jurisdiction that involve changes to the Standard Specifications. They only apply to a project when specified in the contract documents.

SURETY. The corporation, partnership, or individual, other than the Contractor, executing a bond furnished by the Contractor.

TARGET VALUE. When a target or target value is specified, a continuous and determined effort is expected to reach and maintain that value, as a goal.

UNAUTHORIZED WORK. Unauthorized work is work done contrary to, in addition to, or regardless of, the contract documents, or the instruction of the Engineer; work done without lines, grade, and/or cross-section stakes and grades shown on the plans or as given by the Engineer; or work done in deviation from the contract documents without written authority.

UTILITY. Includes all privately, publicly, municipally, or co-operatively owned structures and systems for supplying water, sewer, electric lights, street lights and traffic lights, gas, power, telegraph, telephone, communications, transit, pipelines, and the like.

UTILITY AGENCY. Means and includes (1) all franchised utilities having utility system facilities within the Jurisdiction, including but not limited to gas, electric, telephone, cable television, and communications; (2) communications systems licensed by the Jurisdiction; and (3) all governmental agencies owning or operating governmental utility systems, including but not limited to water, sewer, traffic control, and communications.

WORK. The work shall mean the furnishing of all labor, materials, equipment, and other incidentals necessary for construction of the improvement, successful completion of the contract, and the carrying out of all duties and obligations imposed by the Contract, including the submission of all necessary paperwork relating to payrolls, sales tax, warranties, owner's manuals, maintenance manuals, and the like.

WORKING DAY. Any calendar day, exclusive of Saturdays, Sundays, or a recognized legal holiday, on which weather or other conditions (not under control of the Contractor) will permit construction operations to proceed for not less than 3/4 of a normal work day in the performance of a controlling item of work.

END OF SECTION

SECTION 00 10 20 PROPOSAL REQUIREMENTS AND CONDITIONS

1.01 QUALIFICATION OF THE BIDDERS

A. The bidder must be qualified by experience, financing, and equipment to do the work described in the contract documents. Whenever required in the special provisions, the bidder shall furnish a statement of its construction experience and its general ability to perform the work contemplated, and shall submit same along with its proposal.

B. The Jurisdiction shall have the right to take such action as it may deem necessary in determining the ability of the bidder to perform the work satisfactorily. The Jurisdiction reserves the right to reject any bid that is not responsive to the proposal form or contract documents, or not submitted by a responsive, responsible bidder.

C. Upon request of the Engineer, the bidder, whose bid is under consideration for award of a contract, shall submit evidence of its financial resources, construction experience, and organization available for performance of the proposed work. A bidder's inability to promptly secure the required bonds and insurance coverages for the proposed work, as well as the bidder's demonstrated inability to continuously maintain insurance coverages on past projects, may be considered an indication of financial responsibility and the bidder's qualification as a responsive, responsible bidder.

D. Alternatively, the Jurisdiction may require the qualification or prequalification of bidders pursuant to a program adopted by the Jurisdiction.

1.02 CONTENTS OF THE PROPOSAL FORMS

A. Each prospective bidder will be furnished with a proposal form showing the location and description of the proposed work, the approximate quantities of work to be performed for which bid prices are requested, and the completion provisions. The contract documents will contain any special provisions that shall apply to the work to be performed.

B. The purpose of the contract documents is to require the furnishing of highest quality equipment, material, and workmanship, and best accepted construction practice. The Bidder is expected to base its bid on materials and equipment complying fully with the contract documents. Each bidder, in submitting its bid, acknowledges its willingness to comply with the terms of these contract documents.

1.03 QUANTITIES AND UNIT PRICES

A. Bidders shall submit a lump sum bid as required by the proposal for the work covered by the contract documents. Prices shall cover complete work and include all costs incidental thereto.

B. When unit prices are requested in the proposal form, the quantities indicated on the proposal form are approximate only, and do not constitute a warranty or guarantee by the Jurisdiction as to the actual quantities involved in the work. Such quantities are to be used for the purpose of comparison of bids and determining the amount of bid security, contract, and performance, payment, and maintenance bond. In the event of discrepancies between unit prices and unit price extensions listed in a bidder’s proposal, unit prices shall govern and unit price extensions shall be corrected, as necessary, for agreement with unit prices. The Jurisdiction expressly reserves the right to increase or decrease the quantities during construction as outlined in Section 1040, 1.06 - Increase or Decrease of Work, and to make reasonable changes in design, provided such changes do not materially change the intent of the contract. The amount of work to be paid for shall be based upon the actual quantities performed.

C. The proposal may have a lump sum item for mobilization. The bidder will indicate its bid price in dollars, and this will be the contract price for mobilization.

D. Materials, equipment, or labor essential for the proper completion of the work that are not specified as bid items in the contract documents and are incidental, and the cost of which shall be included in other bid items.

1.04 EXAMINATION OF THE CONTRACT DOCUMENTS AND SITE OF WORK

A. By submission of a proposal on the work, the bidder represents that it has carefully examined the site of the proposed work; the plans, specifications, and all other contract documents; and that the bidder is fully informed concerning the requirements of the contract, the physical conditions to be encountered in the work, and the character, quality, and the quantity of work to be performed, as well as materials to be furnished. The Contractor will not be entitled to additional compensation if it subsequently finds that conditions require methods or equipment other than that anticipated by the Contractor in making its proposal, except as provided in Section 1040, 1.09 - Changed Site Conditions.

B. The attention of the bidder is directed to the fact that contracts for work, other than the proposed work, may have been awarded or may be awarded in the future. Completion of the proposed work may be contingent upon certain work by others or covered by other contracts being performed on the project in advance of this work; likewise, completion of work by others or covered by other contracts may be dependent upon completion of the proposed work. The bidder is expected to become familiar with work already in progress or previously let on this project, the contract periods, the progress being made, and any other conditions regarding work that may affect the bid or the bidder's performance under this contract.

C. The bidder on this work acknowledges the facts set out in the proceeding paragraph and agrees it is in the public interest to have the work of other contracts and agencies performed concurrently rather than consecutively. The bidder further agrees to cooperate and coordinate the work with other contractors or agencies to the mutual interest of all parties doing work on the project.

D. By the submission of a bid on this work, the bidder acknowledges and agrees investigation and inquiry has been made regarding the contracts for work with which this work must be coordinated. In the event disputes arise between contractors or other agencies doing work on the project as to their mutual rights or obligations, the Engineer will define the rights of all interested parties regarding the work.

E. The Jurisdiction does not warrant, impliedly or explicitly, the nature of the work, the conditions that will be encountered by the bidder, the adequacy of the contract documents for the Contractor to perform the work, or the conditions or structures to be encountered under any surface. Any such data supplied on the plans or other contract documents, or interpretation thereof by the Engineer, are merely for the convenience of the prospective bidders, who are to rely upon their own explorations of latent or subsurface site conditions, before completing and filing their proposal, except as provided in Section 1040, 1.09 - Changed Site Conditions.

1.05 INTERPRETATION OF THE CONTRACT DOCUMENTS

If any prospective bidder is in doubt as to the true meaning of any parts of the contract documents, the bidder may request an interpretation from the Engineer. Any interpretation of the contract documents will be made only by an addendum duly mailed or delivered to each prospective bidder who received, or in the future requests, contract documents from the Jurisdiction.

1.06 ADDENDUM

Each bidder will receive a notice of addendum for any changes in the contract documents made prior to the time established for the receipt of bids. The notice will be delivered in the manner chosen by the Jurisdiction to the bidder’s business address with an acknowledgement of receipt required. Acknowledgement of the receipt of the addendum will be as provided in the proposal form.

1.07 PREFERENCE FOR LABOR AND MATERIALS

A. By virtue of statutory authority, preference will be given to products and provisions grown and coal produced within the State of Iowa, and to Iowa domestic labor, to the extent lawfully required under Iowa Code Chapter 73.

B. Such preferences will not be given where funding requirements, federal or otherwise, prohibit the giving of such preferences.

1.08 TAXES

A. Sales and Use Tax:

See Supplementary Conditions.

B. Alternate Sales and Use Tax (Sales Tax Exemption Certificate): The Jurisdiction, if a public entity and a designated exempt entity awarding construction contracts, may issue Sales Tax Exemption Certificates to contractors and subcontractors allowing them to purchase, or withdraw from inventory, materials for the contract free from sales tax pursuant to Iowa Code Sections 423.2 and 423.45. This Sales Tax Exemption Certificate may also allow a manufacturer of building materials to consume materials in the performance of a construction contract without owing tax on the fabricated cost of those materials. If the Jurisdiction, at its option, decides to utilize this exemption option, it will so state prior to the signing of Contracts or at the Pre-Construction meeting.

1. Upon award of contract, the Jurisdiction will register the contract, Contractor, and each subcontractor with the Iowa Department of Revenue and Finance; and distribute Sales Tax Exemption Certificates and authorization letters to the Contractor and each subcontractor duly approved by the Jurisdiction according to Section 1080, 1.01 - Subletting or Assignment of Contract. These documents allow the Contractor and subcontractors to purchase materials for the contract free from sales tax. The Contractor and subcontractors may make copies of the Sales Tax Exemption Certificate and provide a copy to each supplier providing construction material. These Sales Tax Exemption Certificates and authorization letters are applicable only for the work under the contract.

2. At the time the Contractor requests permission to sublet according to Section 1080, 1.01 -Subletting or Assignment of Contract, the Contractor shall provide a listing to the Jurisdiction identifying all subcontractors. For each subcontractor, include the Federal Employee Identification Number (FEIN), contact information, the name of a representative for the organization, a description of the work to be sublet, and the associated cost.

3. The Contractor and each subcontractor shall comply with said Iowa Code sales tax requirements, shall keep records identifying the materials and supplies purchased and verify they were used on the contract, and shall pay tax on any materials purchased tax free and not used on the contract.

C. Income Tax: The bidder who is awarded the contract will be subject to payment of Iowa income tax on income from this work in amounts prescribed by law. If such bidder is a non-Iowa partnership, individual, or association, it shall furnish evidence, prior to execution of contract, that bond or securities have been posted with the State of Iowa Department of Revenue in the amount required by law and shall file a certificate issued by the Department, as provided in Iowa Code Section 422.17, releasing the Jurisdiction from withholding any and all sums required by the provision of Iowa Code Section 422.17.

1.09 PREPARATION OF THE PROPOSAL

A. Proposal: Proposals shall be legibly written in ink or typed on the forms provided by the Jurisdiction and shall be completely executed by the bidder with the requisite full signatures. The business address of the bidder shall be typed or printed on the proposal.

B. The bidder, as a business organization, shall comply with the requirements of Section 1070, 1.11 - Business Organization Requirements.

C. When unit prices are requested, they shall be submitted on each and every item of work included for which bids are requested. The format for unit prices will be in dollars and whole cents only. In case of discrepancy, the unit price figures shall govern.

1.10 BIDDERS CERTIFICATION

By the submission of its proposal, the bidder certifies its bid is genuine and is not made in the interest of, or on behalf of, any undisclosed person, firm, or corporation; the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid; the bidder has not solicited or induced any person, firm, or corporation to refrain from bidding; and the bidder has not sought, by collusion or otherwise, to obtain for itself any advantage over any other bidder or over the Jurisdiction.

1.11 IRREGULAR AND NONRESPONSIVE PROPOSALS

A. Proposals will be considered irregular and may be rejected for any unauthorized changes in the proposal form or for any of the following reasons:

1. If submitted on a form other than that furnished by the Jurisdiction, or if the form is altered or any part thereof is detached or missing;

2. If the bidder submits an obviously unbalanced bid. An unbalanced bid shall be defined as a bid containing lump sum prices or unit bid prices that do not reflect reasonable actual costs plus a reasonable proportionate share of the bidder's anticipated profit, overhead costs, and other indirect costs to complete that item;

3. If the proposal does not contain a unit price for each pay item listed, except in the case of authorized alternate pay items; or

4. If the bidder submits more than one proposal for the same work under the same or different names.

B. Proposals will be considered nonresponsive and shall be rejected for any of the following reasons:

1. If there are unauthorized additions, conditional or alternate bids, or irregularities of any kind that may tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning;

2. If the bidder adds any provisions reserving the right to accept or reject an award or to enter into contract pursuant to an award;

3. If a bid on one project is tied to a bid on any other project, except as specifically authorized on the proposal form by the Jurisdiction;

4. If the bidder makes corrections or alterations to the unit prices it submits and such corrections or alterations are not initialed by the bidder. The Jurisdiction may require the bidder to identify any corrections or alteration so initialed;

5. If the bidder makes any omission of prices on items shown on the proposal forms, or any addition in writing to the form of the bid, or any condition or limitation on its proposal.

C. If the bidder notes a requirement in the contract documents it believes will require a conditioned or unsolicited alternate bid, it shall immediately notify the Engineer in writing

identifying such requirement. If the Engineer finds that such a requirement does exist in the contract documents, the Jurisdiction will make corrections thereto by an addendum.

D. Proposals will be evaluated by the Jurisdiction pursuant to the provisions of Section 1030, 1.01 - Acceptance or Rejection of Proposals.

1.12 SUBMISSION OF THE PROPOSAL, IDENTITY OF BIDDER, AND BID SECURITY

A. The proposal shall be sealed in an envelope, properly identified as the proposal with the project title and the name and address of the bidder, and deposited with the Jurisdiction at or before the time and at the place provided in the Notice to Bidders. It is the sole responsibility of the bidder to see its proposal is delivered to the Jurisdiction prior to the time for opening bids, along with the appropriate bid security sealed in the separate envelope identified as bid security and attached to the outside of the bid proposal envelope. Any proposal received after the scheduled time for the receiving of proposals will be returned to the bidder unopened and will not be considered.

B. A corporation, limited liability company, or limited partnership shall bid in the name under which it is registered with the Iowa Secretary of State. A partnership shall bid in the name under which it is registered with the County recorder. An individual operating under a trade name shall bid using the trade name registered with the County recorder if such registration is required. The bidder's exact name as registered, if required, shall appear as the "principal" on any bid bond and shall appear on any cashier's check or share draft submitted to fulfill the bid security requirement. A bidder's failure to satisfy these requirements may be grounds for rejection of the bidder's proposal.

1.13 WITHDRAWAL OR REVISION OF THE PROPOSAL PRIOR TO OPENING OF PROPOSALS

A. A bidder may request, without prejudice, to withdraw its proposal after it has been deposited with the Jurisdiction, provided such request is made in writing to the Jurisdiction prior to the time set for receiving proposals.

B. Modifications or corrections to proposals may be made on the withdrawn proposal, provided such modifications or corrections are initialed by the Bidder and are received by the Jurisdiction prior to the time set for receiving proposals. Modifications or corrections to a proposal will not be accepted if the modifications or corrections render the bid security inadequate or if not accompanied by sufficient additional bid security.

C. If a bidder has requested in writing to withdraw its proposal, said bidder may submit a different proposal and bid security at that time or any time prior to the time set for receiving proposals.

1.14 OPENING OF PROPOSALS

At the time and place set forth in the notice to bidders, proposals will be opened and read aloud. Proposals will be rejected if not accompanied by a bid security submitted in a separate, marked envelope, or if the Bidder Status Form is not submitted with the Proposal. Submittals that do not include acknowledgement of each addendum to the contract documents will be rejected, except in those instances, in the opinion of the Engineer, where the addendum not acknowledged by a bidder will have no effect on the bid amount. Bid openings will be open to the public.

1.15 LIMITATION ON WITHDRAWAL OF PROPOSALS AFTER OPENING OF PROPOSALS

A. A bidder shall not withdraw its proposal for period of 30 calendar days after the date designated for opening of proposals, or such other period of time specified in the Notice or Instruction to Bidders. However, in those projects involving special assessments, and confirmation by the District Court, no bidder shall withdraw its proposal for a period of 30 calendar days after the confirmation of the assessments by the Court.

B. In the event a bidder desires to withdraw its proposal, it shall make request therefore in writing to the Engineer stating the reasons for such withdrawal.

END OF SECTION

SECTION 00 10 30 APPROVAL FOR AWARD AND AWARD OF CONTRACT

1.01 ACCEPTANCE OR REJECTION OF PROPOSALS

A. The Jurisdiction reserves the right to accept the proposal that, in its judgment, is the lowest responsive, responsible bid; to award the contract by sections, if so specified in special provisions; to reject any or all proposals; to reject irregular or nonresponsive proposals as defined in Section 1020, 1.11 – Irregular and Nonresponsive Proposals; and to waive irregularities and/or technical deficiencies in the proposals to the extent allowed by law.

B. An individual, firm, partnership, corporation, or any association under the same or different names shall not submit more than one proposal. When reasonable evidence exists that a bidder has submitted more than one proposal at any letting for the same work under the same or different names, said proposals may be rejected.

C. Any or all proposals may be rejected if there is reason to believe collusion exists among bidders. Proposals received from participants in such collusion may not be considered for the same work if re-advertised.

D. Proposals may be rejected if the bidder has failed to promptly meet financial obligations undertaken in connection with other work under contract, or is in default on a previous contract with the Jurisdiction, or has an unsatisfactory record of performance and cooperation on any such previous contract with the Jurisdiction, or has failed to maintain satisfactory progress on work already under contract with the Jurisdiction.

E. In the event the bid specifies the use of materials, workmanship, methods, or equipment not in conformance with the contract documents, the bid will be rejected. In the event the bid was based on, but did not specify, the use of materials, workmanship, methods, or equipment not in conformance with the contract documents, the bidder will be held responsible for furnishing or using materials, workmanship, methods, and equipment in conformance with the contract documents at no change in the bid price.

F. Promptly after the proposals are opened and evaluated, the Jurisdiction shall give careful consideration to its needs, available funding, and other project considerations; and shall either designate the lowest responsive, responsible bidder and proceed with award of contract, or reject all bids and reconsider the project.

1.02 RELEASE OF BID SECURITY

A. After the proposals are opened, verified, and duly considered, the Jurisdiction will promptly release the bid security of all except the lowest two bidders after the Jurisdiction's designation of the lowest responsive, responsible bidder. The bid security of the lowest two bidders will be promptly released after the Jurisdiction's approval of the contract executed by the lowest bidder. If all bids are rejected, all bid security will be promptly released.

B. Bid security shall be released to bidders, either by making such bid security available for retrieval by bidders, or, if requested by a bidder, by mailing the bid security to the bidder.

1.03 AWARD OF CONTRACT

A. Contract Document Submittal: Within 10 calendar days after notification by the Engineer, unless otherwise provided in the contract documents, the Contractor shall present the signed and executed contract documents, including contract, performance, payment, and maintenance bond; certificate of insurance; and all other items required by the contract documents. The performance, payment, and maintenance bond and insurance certificate shall meet the requirements of Section 1070, Part 3 - Bonds and Insurance as required by the Jurisdiction. The Jurisdiction will thereupon receive and file such documents and award the contract.

B. Deferred Award: The Jurisdiction reserves the right to defer award of any contract for a period not to exceed 60 calendar days from the date of opening of proposals. No claims for compensable delay shall arise as the result of delay in the approval of award.

C. Failure to Execute the Contract: It is agreed by the bidder that upon its failure to enter into the contract and furnish the necessary insurance certificate and performance, payment and maintenance bond within 10 calendar days after notification by the Jurisdiction, the amount of the bidder's bid security may at the Jurisdiction's option be forfeited and shall become the property of the Jurisdiction, to be retained not as a penalty, but as liquidated damages. The award of the contract may then, at the discretion of the Jurisdiction, be made to the next lowest responsive, responsible bidder, or the work may be re-advertised or may be constructed by the Jurisdiction in any legal manner.

D. Disclosure of Subcontractors:

1. The lowest responsive, responsible bidder shall be required to file a list of the names and subcontract amounts of all subcontractors who are expected to work on the project according to Section 1080, 1.01 - Subletting or Assignment of Contract.

2. If after award of the contract a subcontractor is replaced, or the subcontract price or the work under the subcontract is changed, the bidder shall disclose the name of the new subcontractor, the revised subcontract price, or the change in the scope of subcontract work.

   If a new subcontractor is added after award of the contract, the Contractor shall disclose the name of the new subcontractor.

END OF SECTION

1.01 INTENT OF THE CONTRACT DOCUMENTS

A. These documents have been prepared to provide construction utilizing the best general practices and construction methods, utilizing first quality materials and work. The Contractor shall be responsible for providing or undertaking all work, labor, materials, equipment, tools, transportation, supplies, and activities included in these specifications, unless the responsibility for undertaking or providing same is specifically assigned to an identified party other than the Contractor.

B. The intent of the contract documents is to provide for the construction and completion in every detail of the work described or as may be amended. The Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work according to the plans, specifications, and terms of the contract documents. The apparent silence or omission of the contract documents as to any detail shall be regarded as meaning only the best general practice is to prevail and only first quality materials and work are to be used.

C. To prepare the plans, specifications, and contract documents, the Engineer may have performed exploratory work to gain information relative to surface and subsurface conditions. This information, when shown in the contract documents, represents a summary of conditions as of the date the survey was made; it is only an approximate estimation of the site conditions made for the Jurisdiction to identify construction conditions and quantities and classes of work. The appearance of this information in the contract documents will not constitute a guarantee conditions other than those indicated will not be encountered at the time of construction. The Contractor's bid shall be prepared based upon its examination of the site and its exploratory work.

D. Before making whatever additional investigations it feels are advisable, a bidder should contact the Engineer to determine available project area. If the Jurisdiction has not obtained right-of-entry for such investigation, the bidder shall be responsible to secure right-of-entry to any parcels where the Jurisdiction has not previously obtained right-of-entry before doing any investigation work. The bidder shall also be responsible for any traffic control necessary for any investigation work. The bidder shall further be responsible to obtain prior utility locates necessary to conduct such investigations.

1.02 CORRELATION OF THE CONTRACT DOCUMENTS

The plans and specifications are intended to supplement each other so any work shown on the plans and not mentioned in the specifications, or vice versa, shall be as binding and shall be completed the same as if that work was mentioned or shown on both and to the true intent and meaning of said plans and specifications.

1.03 COORDINATION OF SPECIFICATIONS, PLANS, AND SPECIAL PROVISIONS

A. In case of any discrepancy between the various items included in the contract documents, the items shall prevail, or govern, in the following descending order:

1. Change Orders
2. Addenda
3. Proposal and Contract
4. Special Provisions
5. Plans, including plan notes
6. Supplemental Specifications
7. General Supplemental Specifications

8. Standard Specifications

In case of a discrepancy within any contract document, the following shall prevail, or govern, in descending order: written text, numerals, drawings.

B. The Contractor shall not take advantage of any apparent error or omission in the plans or specifications or of any discrepancy between the plans or specifications.

1.04 CONFORMITY WITH THE CONTRACT DOCUMENTS

A. Reasonably Close Conformity: All work performed and all materials furnished shall comply with the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown in the contract documents. Where tolerances are not specified, work shall comply with reasonable and customary manufacturing and industry standards. The Engineer may, in the Engineer's sole discretion, accept variations beyond such requirements or tolerances where they will not materially affect the value or utility of the work and interests of the Jurisdiction.

B. Defective Work: Work not in reasonably close conformity with the contract documents, or requirements thereof that, in the sole discretion of the Engineer, has resulted in inferior or unsatisfactory work. Defective work shall be removed and replaced or otherwise corrected by and at the expense of the Contractor.

C. Deficient Work: Work not in reasonably close conformity with the contract requirements but that, in the sole discretion of the Engineer, may be accepted and allowed to remain in place with a price adjustment and/or extended warranty period. In the event the Engineer agrees to accept deficient work with a price adjustment/extended warranty, the Engineer will document the basis of acceptance by contract modification making appropriate adjustments in the contract price for such work or materials.

1.05 PLANS

The final plans on file in the Jurisdiction show the location, typical construction details, and dimensions of the work contemplated. The work shall be performed in conformity therewith, except in case of error or unforeseen contingency.

1.06 INCREASE OR DECREASE OF WORK

A. The Jurisdiction reserves the right to make such alterations in the plans or in the quantities of work as may be considered necessary. Such alterations shall be in writing by the Engineer and shall not be considered as a waiver of any conditions of the contract documents or to invalidate any of the provisions thereof.

B. Unless such alterations, increases, or decreases materially change the character of the work to be performed or the cost thereof, the altered work shall be paid for at the same unit prices as other parts of the work. Quantity changes amounting to 20% or less of the total bid for an item shall not affect the unit price of that item. If, however, the character of the work or the unit costs thereof are materially changed, due to unforeseen events, an allowance shall be made on such basis as may have been agreed to in advance of the performance of the work.

1.07 CHANGE ORDERS

A. Oral Orders: The Engineer shall have authority to give oral orders for minor or incidental changes in the work not involving extra cost and not inconsistent with the proposed purpose of the work.

B. Written Orders: The Engineer may in his/her discretion, and subject to formal approval by the Jurisdiction, if required, issue written change orders changing the scope of the work and/or adjusting the amount to be paid to the Contractor for performing such work; however, the Engineer may, in case of emergency of endangering life or property, orally authorize such a change order without formal approval by the Jurisdiction. Each written change order for

extra work shall be explicit in its instruction and shall be duly executed by the Jurisdiction. One copy of said change order shall be filed with the Contractor. Each change order shall stipulate the amount and method of payment.

1.08 SITE CONDITIONS

A. The Contractor is required by Section 1020, 1.04 - Examination of the Contract Documents and Site of Work to make reasonable investigation and examination to determine latent and subsurface conditions at the site of the work prior to preparing its proposal. The Jurisdiction makes no guarantee of any conditions, latent or subsurface, at the site of the work. The Jurisdiction shall not be obligated to make any payments to the Contractor by reason of any latent or subsurface conditions.

B. Failure of the Contractor in determining adverse site conditions prior to filing its proposal, or in any phase of its performance of the work, shall be grounds for refusal by the Jurisdiction to agree to pay for additional work by the contractor necessitated by such site conditions.

1.09 CHANGED SITE CONDITIONS

A. Latent or Subsurface Conditions:

1. If the Contractor encounters latent or subsurface conditions differing materially from those indicated in the contract documents or from those ordinarily encountered in performing work of the character involved, and which the Contractor could not have discovered by a reasonable site investigation and examination of the type customarily undertaken by prudent and competent contractors, and if these unusual or changed conditions are considered by the Contractor as a basis for compensation in addition to the contract price, the Contractor shall promptly after discovery thereof notify the Engineer of its claim in writing. Before disturbing the site at which the latent or subsurface condition is alleged to exist, the Contractor shall give the Engineer the opportunity to inspect the same.

2. After inspection by the Engineer, the Jurisdiction may, in its discretion, authorize the Contractor to proceed with or abandon the work. The Contractor shall resume construction operations pending a decision regarding its claim by the Jurisdiction. Failure of the Contractor to give prompt written notice and to give the Engineer full opportunity to inspect the condition before disturbing the site shall be deemed a waiver by the Contractor of all claims for extra compensation arising out of the alleged condition.

B. Compensation:

1. If the Engineer determines the condition could not reasonably have been discovered, the Contractor is entitled to additional compensation by reason of increased expense caused by the condition, and said condition requires work not contemplated by the contract, a change order will be executed by the parties providing for additional compensation for such amount as the parties may agree upon.

2. If the Engineer determines the condition to be such as to justify an extension in contract time, such additional time will be granted according to Section 1040, 1.11 - Delays Caused by the Jurisdiction and Section 1080, 1.09 - Extension of Time.

1.10 DISPUTED CLAIMS FOR EXTRA COMPENSATION

A. Basis of Claim for Extra Compensation:

1. In any case where the Contractor believes extra compensation is due for work or material beyond the scope of the work under the contract and not ordered by the Engineer as extra work as defined herein, the Contractor shall notify the Engineer in writing of its intention to make claim for such extra compensation before beginning the work on which the claim is based. The Contractor shall not proceed with that work until the Contractor and the Jurisdiction have executed a change order with respect to extra compensation.

2. The Jurisdiction shall be responsible for damages attributable to the performance, nonperformance, or delay, of any other contractor, governmental agency, utility agency, firm, corporation, or individual authorized to do work on the project, only when such damages result from negligence on the part of the Jurisdiction, its Engineer, or any of its officers or employees.

3. In any case where the Contractor deems that extra compensation is due from the contracting authority as damages resulting from such performances, nonperformances, or delays, the Contractor shall notify the Engineer in writing at the time the delay occurs.

4. In either case, if such notification is not given, or if after such notification is given, the Engineer is not allowed facilities for keeping strict account of actual costs as defined for force-account construction, the Contractor thereby agrees to waive the claim for extra compensation for such work. Such notice by the Contractor, and the fact the Engineer has kept account of the cost as aforesaid, shall not be construed as establishing the validity of the claim.

5. The claim, when filed, shall be in writing and in sufficient detail to permit auditing and an evaluation by the Jurisdiction. The claim shall be supported by such documentary evidence as the claimant has available and shall be verified by affidavit of the claimant or other person having knowledge of the facts.

B. Presentation and Consideration of Claim: If the claimant wishes an opportunity to present its claim in person, the claim shall be accompanied by a written request to do so. Where the claimant asks an opportunity to present its claim in person, the Jurisdiction, within 30 calendar days of the filing of the claim, shall fix a time and place for a meeting between the claimant and the Jurisdiction or its designated representatives or representative. The Jurisdiction shall, within a reasonable time after the filing of the claim or the meeting above referred to, whichever is later, rule upon the validity of the claim and notify the claimant, in writing, of its ruling together with the reasons therefore. In case the claim is found to be just, in whole or in part, it shall be allowed and paid to the extent so found.

C. Request for Arbitration: In the event a Contractor's claim as outlined in the above procedure has been disallowed, in whole or in part, the Contractor may, within 30 calendar days from the date the ruling of the Jurisdiction is mailed, make a written request to the Jurisdiction that its claim or claims be submitted to a board of arbitration. The Jurisdiction shall decide if the matter is subject to arbitration and shall, within 30 calendar days of the receipt of the request for arbitration, grant or deny the request for arbitration. The Jurisdiction's decision shall be final.

D. Board of Arbitration:

1. The board of arbitration shall consist of three persons - one to be appointed by the Jurisdiction, one to be appointed by the Contractor, and the third to be appointed by the two arbitrators thus chosen.

2. The arbitrators selected shall be persons experienced and familiar with construction or engineering practices in the general type of work involved in the contract, but shall not have been a regular employee or an individual retained by either party at the time the claim arose, or at the time of arbitration.

F. Arbitration Proceedings: The board of arbitration shall make its own rules of procedure and shall have authority to examine records kept by the Jurisdiction and the Contractor. If the desired records are not produced within 10 calendar days after they are requested, the board of arbitration shall proceed without them as best it may. Notification of arbitration proceedings shall be made by the arbitration board to both the Jurisdiction and the Contractor, and each shall have the opportunity to attend all sessions of the arbitration board. In determining the findings or award or both, a majority vote of the board shall govern. Copies of the findings or award or both, signed by the arbitrators, shall be filed with the Jurisdiction and the Contractor. A unanimous report or majority report may be used. The

board of arbitration shall fix the cost of the proceedings, including a reasonable compensation to the arbitrators, and shall determine how the total cost shall be borne by the parties.

G. Jurisdiction of Board of Arbitration: The board of arbitration shall have jurisdiction to pass upon questions involving compensation to the Contractor for work actually performed or materials furnished and upon claims for extra compensation that have not been allowed by the Jurisdiction. The board's jurisdiction shall not extend to a determination of quality of workmanship or materials furnished, or to an interpretation of the intent of the plans and specifications except as to matters of compensation. Jurisdiction of the board shall not extend to setting aside or modifying the terms or requirements of the contract.

H. Determination of Board of Arbitration Final: The findings or award, or both, of the arbitration board, if acceptable to both parties to the contract, may become a basis for final payment. If the findings of the arbitration board are unacceptable to either party to the contract, said findings may become the basis for further negotiation between the parties. In the event a solution agreeable to both parties has not been reached through the filing of a claim, through arbitration, or if arbitration has been denied, either party may resort to whatever other methods for resolving the claim are available to it. The Contractor shall not initiate any suit against the Jurisdiction for the adjudication of any claim until said claim has been first presented to the Jurisdiction, pursuant to this article, and either submitted to arbitration or a request for arbitration is denied.

1.11 DELAYS CAUSED BY THE JURISDICTION

If the Jurisdiction or its agents should cause a delay in any part of the work or in the final completion of the job, this fact shall not make void the provisions of the contract as to liquidated damages; but the Contractor will promptly be given such extension of time for the final completion of the job as the Jurisdiction may deem proper to compensate the Contractor for such delay.

1.12 ORAL AGREEMENTS, CONVERSATIONS, AND INFORMAL COMMUNICATIONS

No oral agreement or conversation made or had with any officer, agent, or employee of the Jurisdiction, and no informal written communication from any officer, agent, or employee of the Jurisdiction, occurring either before or after execution of the contract, shall affect or modify any of the terms or obligations contained in any of the contract documents. Such oral contact and such informal writings shall be considered as unofficial information and in no way binding upon the Jurisdiction.

1.13 ERRORS OR OMISSIONS

The Contractor shall examine the plans before beginning construction work. If errors or omissions are discovered in the plans, the Contractor shall call them to the attention of the Engineer before proceeding with the work. In no case shall the Contractor make the corrections therefore without written permission from the Jurisdiction. In case revised plans of a supplementary or explanatory nature are necessary or desirable for clarification, or to correct any errors or omissions, they will be furnished by the Jurisdiction from time to time as the work progresses.

END OF SECTION

SECTION 00 10 50 - CONTROL OF WORK

1.01 AUTHORITY OF THE ENGINEER

A. The work included in the contract is to be done to the complete satisfaction of the Engineer, and the decision of the Engineer as to the true construction and meaning of the contract documents, plans, specifications, estimates, and as to all questions arising as to proper performance of the work, shall be final, except as provided in Section 1040, 1.10 - Disputed Claims for Extra Compensation.

B. The Engineer shall determine the unit quantities and the classification of all work done and materials furnished under the provisions of the contract documents, and the Engineer's determination thereof shall be final except as provided in Section 1040, 1.10 - Disputed Claims for Extra Compensation.

C. The Engineer shall decide any and all questions that may arise regarding the quality or acceptability of materials furnished and work performed, the rate of progress of the work, including cleanup and restoration, acceptable fulfillment and performance of the contract on the part of the Contractor, and compensation. The decision of the Engineer in such matters shall be final except as provided in Section 1040, 1.10 - Disputed Claims for Extra Compensation.

D. Nothing contained in this section or in the contract documents shall be construed as requiring or permitting the Engineer to direct the means, methods, sequences, or procedures, including safety measures, of performing any work under the contract or contract documents, except to ensure the quality of work conforms to these specifications and other provisions of the contract documents and the contract will be completed as scheduled.

1.02 AUTHORITY AND DUTIES OF THE ENGINEER'S AUTHORIZED REPRESENTATIVE

A. The Engineer may appoint a representative to monitor any or all materials used and work done. Such observation may extend to any or all parts of the work and to the preparation or manufacture of the materials to be used. The Engineer's authorized representative will not be authorized to revoke, alter, enlarge, or relax the provisions of these specifications. When placed on the work, the Engineer's authorized representative will keep the Engineer informed as to the progress and quality of the work and the manner in which it is being done.

B. Results of tests and examinations may be available to the Contractor on an informational basis. Absence or presence of representative test data does not alter the Contractor's responsibility for compliance with the contract documents. The Engineer's authorized representative will call to the attention of the Contractor any lack of compliance with the contract documents. However, failure of the Engineer's authorized representative or the Engineer to call the attention of the Contractor to faulty work or to lack of compliance with the contract documents shall not constitute acceptance of such work.

C. The Engineer's authorized representative will not be authorized to approve or accept any portion of the work or to issue instructions contrary to the contract documents. The Engineer's authorized representative will act under the authority of the Engineer to reject defective work or material, and to suspend any work that is not being properly performed, subject to the final decision of the Engineer.

D. The Engineer's authorized representative will not act as supervisor or perform other duties for the Contractor, nor improperly interfere with management of the work. The Engineer's authorized representative will exercise such additional authority as may, from time to time, be delegated by the Engineer.

1.03 COOPERATION BY THE CONTRACTOR

A. A set of approved plans, specifications, contract documents, and any special provisions and authorized alterations will be supplied to the Contractor, and the Contractor shall have them available on the job site at all times.

B. A competent, authorized representative of the Contractor shall be present on the site of the work continually during its progress. This representative must be capable of reading and thoroughly understanding the contract documents and experienced in the type of work being performed. This representative shall supervise, direct, and control the Contractor's operations, personnel, and work, and oversee the Subcontractor's operations.

C. The Contractor shall give the Engineer written notification of the name of the Superintendent. The Contractor or its Superintendent shall receive from the Engineer all explanations and directions necessary for the satisfactory prosecution and completion of the work.

D. The Contractor shall not cause any unnecessary delay or hindrance to other contractors on the work and shall be required to cooperate with other contractors to the fullest extent.

1.04 COOPERATION WITH OTHER CONTRACTORS

A. The Jurisdiction reserves the right to award other contracts in connection with this work and the total improvement. The Contractor is required to become fully informed of the conditions relating to construction and labor under which the work will be or is now being performed, and the Contractor shall employ, as far as possible, such methods and means in the carrying out of its work as will not cause any interruption or interference with any other contractor or agency. The Contractor shall give other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly integrate, incorporate, and/or coordinate its work with theirs.

B. If any part of the Contractor's work depends for proper execution or results on the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defect in such work by another contractor that renders it unsuitable for such proper execution and results. The Contractor's failure to inspect and report such defects shall constitute an acceptance of the other contractor's work as fit and proper for the integration or incorporation of its work, except as to defects that may develop in the other contractor's work after the execution of the Contractor's work.

C. Wherever work being done by the Jurisdiction's forces or by other contractors is contiguous to work covered by the contract, the respective rights of the various interests involved shall be established by the Engineer, in order to secure the completion of the various portions of the work in general harmony.

D. Unless otherwise specified in the contract documents, the Contractor shall give notice, as hereafter provided, to all utilities, public and private agencies, abutting property owners, and all others affected by its operations as to time for starting and for completion of its work, names of streets or locations of alleys closed, schedule of operations, and routes of detours where possible. Notification shall be made sufficiently ahead of time to provide proper re-routing of traffic and erecting of signs before the work is to begin.

E. The Contractor shall properly coordinate and expedite its work in such a manner as to cause the least amount of conflict and interference between its operation and those of all others affected by its operations. Any or all damages or claims resulting from the improper or insufficient notification of all others affected by its operations shall be the responsibility of the Contractor.

1.05 SHOP DRAWINGS, CERTIFICATES, AND EQUIPMENT LISTS

A. Submission of Drawings:

1. The Contractor shall submit to the Engineer all shop drawings and equipment drawings or lists as called for in the contract documents or as requested by the Engineer. Drawings and listings shall be complete and shall contain all required detail information conveyed according to the latest recommended standards for detailing.

2. The Contractor shall make any corrections required by the Engineer and submit the revised shop or equipment drawings or listings for review. After review by the Engineer, the shop or equipment drawings or listings will be so marked, dated, signed by the Engineer, and forwarded to the Contractor for reproduction and distribution.

B. Submission of Equipment Lists:

1. If requested in the contract documents, as soon as practicable after award of contract and before any items of material or equipment are purchased, the Contractor shall submit to the Engineer for review a complete list of the principal fixtures and equipment to be incorporated into the work.

2. The Contractor shall also submit applicable brochures, technical data, catalogs, cuts, diagrams, manufacturer's drawings and installation instructions, samples if required, and other descriptive data including the complete description, trade name, model number, type, size, and rating.

C. Engineer's Review:

1. Review by the Engineer shall not be construed as a complete check but will indicate only that the general method of construction and detail is satisfactory. The Engineer assumes no responsibility for errors in dimensions in the shop drawings and assumes the Contractor will use material complying with requirements of the contract documents or, where not specified, those of sound and reasonable quality, and will erect the subjects of such shop drawings according to recognized standards of first quality work or, when specified, according to standards of the contract documents.

2. Any work done or material ordered by the Contractor prior to review by the Engineer shall be at the Contractor's risk.

1.06 CONFLICT AVOIDANCE

A. Expose possible conflicts, such as utility lines and drainage structures. Verify elevations of each and verify clearances for proposed construction.

B. Complete elements of the work that can affect line and grade in advance of other open cut construction unless noted on the plans.

C. See Section 1040, 1.09 - Changed Site Conditions if unknown or changed conditions are encountered.

1.07 EXAMINATION OF MATERIALS AND WORK

A. The Contractor shall furnish the Engineer and its agents every reasonable opportunity to ascertain whether the work and materials are in reasonably close conformity with the contract documents. At any time before final acceptance of the work, at the request of the Engineer, the Contractor shall remove or uncover portions of the work for examination. After examination, the Contractor shall restore such portions of the work to the standards required by the contract documents.

B. Should the work thus exposed and examined prove acceptable, the uncovering, removing, and replacing of such work shall be paid for as specified in Section 1090, 1.04 - Payment for Change Orders. Should the work thus exposed and examined prove unacceptable, the uncovering, removing, and replacing of such work shall be at the Contractor's expense.

1.08 REMOVAL OF DEFECTIVE WORK AND MATERIALS

A. Defective work or materials may be condemned by the Engineer any time before the final acceptance of the work. Notice of such condemnation shall be given in writing by the Engineer. Such condemned work shall be immediately corrected to the satisfaction of the

Engineer. Failure or neglect on the part of the Engineer to condemn unsatisfactory material or reject inferior workmanship shall not release the Contractor, nor shall it be construed as an acceptance of such work, nor shall the final acceptance of such work bar the Jurisdiction from recovering damages on account thereof.

B. Any defective work shall be removed and replaced at the Contractor's expense. Should the Contractor fail or refuse to remove defective work when so ordered by the Engineer, the Engineer shall have authority to order the Contractor to suspend further operations, and may withhold payment on estimates until such defective work has been removed and replaced according to the contract documents.

C. Continued failure or refusal on the part of the Contractor to correct defective work promptly shall be sufficient cause for the Jurisdiction to declare the contract in default. No compensation will be paid to Contractor for defective work or materials, or for the satisfactory removal, correction, or disposal thereof.

1.09 UNAUTHORIZED WORK

A. Unauthorized work is work done contrary to the work shown in the contract documents. The Jurisdiction will not pay for unauthorized work.

B. Unauthorized work may be ordered to be removed and replaced immediately at the Contractor's expense.

1.10 PROTECTION OF LINE AND GRADE STAKES

A. The work shall be performed in strict conformity with the contract documents and to the lines and grades as fixed by the Engineer, and shall be according to such instructions as may be given by the Engineer. When such stakes or lines are given by the Engineer, the Jurisdiction will be responsible for the correctness thereof, and the Contractor will be responsible for their proper use, interpretation, and preservation.

B. The Contractor shall protect and preserve in their original position all stakes, points, or marks set for the work by the Engineer. Where the Engineer shall consider such stakes, points, or marks to have been unnecessarily altered or destroyed, the Engineer may cause the expense of correcting or replacing them to be charged to the Contractor and the amount of such costs deducted from any monies due or which may become due to the Contractor under the contract.

1.11 PROVIDING JOB SITE UTILITIES

A. The Contractor shall make all necessary arrangements for the provision to the job site of all required utilities for the project. The Contractor shall arrange its work so it will not be delayed because such regulations or requirements relating to the use of utilities. All costs for the provision of utilities to the job site shall be borne by the Contractor.

B. Fire hydrants shall not be used by the Contractor or its subcontractors unless authorization for such use has been obtained from the appropriate water utility agency.

1.12 SALVAGE

A. When the contract documents specify salvage of materials for the Jurisdiction as part of the work, the material to be salvaged shall be carefully salvaged and delivered to the designated location in the best condition and ready for storage. When the contract documents provide for salvage of such materials by the Contractor, the Contractor shall salvage such materials and promptly remove them from the site.

B. The Contractor shall not allow inspection or sale of salvage materials to third parties at the site without written approval of the Jurisdiction.

1.13 PROTECTION OF WATER QUALITY AND WETLANDS

A. The Contractor shall comply with the requirements of the Clean Water Act (33 U.S.C. 1344 and 33 CFR 323) and Executive Order 11990. When it becomes necessary for the Contractor to work in waters of the United States, the Contractor shall be aware that a Section 404 permit may be required.

B. When required, the Contracting Authority will obtain a Section 404 permit for essential work on the right-of-way prior to the award of the contract. The Contractor shall adhere to the requirements of the permit. Activities occurring in or across waters of the United States not specifically reviewed and approved in the permit are not authorized. If the Contractor desires to use construction methods that are not specifically approved by the permit, the Contractor shall be responsible for obtaining approval in the form of a new Section 404 permit from the U.S. Army Corps of Engineers and possibly Iowa DNR. The Contractor shall not use construction methods that require additional mitigation by the Contracting Authority. The Contractor will not be granted additional compensation or contract time due to their request for a new permit. If, however, due to no fault of the Contractor, a Section 404 permit modification involving activities within the right-of-way is deemed necessary by the Engineer, additional contract time and/or compensation may be considered.

1.14 FINAL INSPECTION AND ACCEPTANCE

A. As soon as practicable after the completion of the work, it will be inspected thoroughly by the Engineer. The Contractor will be notified when the inspection is to be made so it or its representative may be present.

B. If the inspection reveals any defects in the work as contemplated by the specifications, such defects shall be repaired or unsatisfactory work shall be replaced, as the Engineer may direct, before final acceptance. The cost of all such repairs and replacement shall be borne by the Contractor, and no extension of the contract time shall be granted because of the time required to remedy such defects.

C. When the work is found to be satisfactory, it will be accepted as provided in Section 1090, 1.08 - Acceptance and Final Payment. Such final acceptance will not be reopened after having once been made, except on evidence of collusion, fraud, or obvious error.

END OF SECTION

SECTION 00 10 60 - CONTROL OF MATERIALS

1.01 MATERIALS SOURCE OF SUPPLY AND QUALITY REQUIREMENTS

A. Materials used in the work shall meet all quality requirements of the contract documents. In order to expedite inspection and testing of materials, the Contractor shall notify the Engineer in writing of the proposed sources of those materials requested by the Engineer promptly after being awarded the contract. Any material shall be produced with a reasonably uniform quality and within requirements specified; the producer shall perform quality control tests and evaluations the producer believes necessary to control the product adequately. All materials for use in the project are subject to inspection and tests at any time prior to being incorporated into the work.

B. For the convenience of the Contractor, and when convenient to the Engineer, materials may be inspected at the site of production. Materials tested and found in compliance at the site of production may be later inspected for reasonably close conformity and normally will not be rejected except for obvious mistakes, contamination, quality change, or mishandling. To avoid later rejection, materials that usually show an extreme change in character or quality prior to or during the process of incorporation into the work should be produced to more rigid limits than those required by the specifications.

C. At the option of the Engineer, approval of the source, or approval of materials at the source prior to delivery, may be required. If it is found after trial that sources of supply for previously approved materials do not produce specified products or when conditions are such that use of unfit materials can not be prevented except by extraordinary inspection methods, the Contractor shall furnish materials from other sources. Before delivery, and at any time during the process of preparation and use, materials shall be subject to the approval of the Engineer.

D. Materials not previously inspected will be inspected at the project site. Acceptance at that time will be based on sampling and testing, producer's certifications, visual inspection, or any combination of these at the discretion of the Engineer.

E. Use of materials on the basis of the producer's certification, quality control tests, and evaluations may be permitted or required. The Engineer may require specific data obtained by qualified persons and procedures be provided with the material, when delivered. Certified gradation testing by a certified aggregate technician will be required for all aggregates to be furnished by the Contractor, and shall be done according to the current Iowa DOT Materials I.M. 209.

1.02 ALTERNATE PROCESSES, EQUIPMENT, OR MATERIALS

A. General: In order to establish a basis of quality for the work, performance, or economy of operation, certain processes, types of machinery and equipment, or kind of material may be referenced in the contract documents by designating a manufacturer by name and referring to its brand or model numbers. Such reference is not intended to foreclose other processes, equipment or materials that will in the sole discretion of the Engineer meet, or exceed, the designated standards. There may be instances where the Engineer will not consider alternate processes, equipment, or materials.

B. Consideration:

1. The Jurisdiction may consider alternate processes, equipment, or materials for those specified in the contract documents; however, it is only an indication that the Jurisdiction will not foreclose consideration of the bidder’s/contractor’s request, and is not an approval. Following are the steps for consideration of alternate processes, equipment, or materials:

    a. If a bidder/contractor desires to use alternate processes, equipment, or materials, the bidder/contractor shall contact the Engineer to confirm the Jurisdiction would consider alternate processes, equipment, or materials for those as specified in the contract documents.
    b. Support/requirements for submissions of alternatives:

1) The Engineer will consider and evaluate other products, equipment, methods, and systems only when such items are accompanied by full and complete technical data, test data, code compliance, and other relevant information, including samples and finishes where appropriate.
2) The bidder/contractor shall submit design information, material compatibility, performance, durability, laboratory tests, chemical analysis, color, manufacturer's specifications, and other relevant information as proof of quality and integrity when presenting proposed alternatives to the Engineer for consideration. The bidder/contractor must include the kind, quality, design, and performance of the proposed materials and equipment.
3) If alternate methods are proposed, the contractor shall furnish complete engineering plans covering the proposed change.
4) It is the sole responsibility of the proposer of any alternative product to have pre-qualified the product proposed for its intended use for compliance with all applicable codes within the Jurisdiction prior to submittal to the Engineer for consideration.

c. In making an alternative request, the contractor shall be responsible for all costs including reimbursing the Engineer for services furnished and any time required to review the proposed change.
d. If the bidder/contractor desires to use alternate processes, equipment, or materials for those as specified in the contract documents, the bidder/contractor shall secure the written approval of the Engineer before entering an order therefore.
e. Proposed alternative processes, equipment, or materials that will in the sole discretion of the Engineer meet, or exceed, the designated standards will be given written approval to be used on the project as an "Approved Equal" or "Equivalent" to the specified item.
f. If approval as an "Approved Equal" or "Equivalent" is given by the Engineer, such approval will be on the condition that the bidder/contractor shall be fully responsible for producing construction work in reasonably close conformity with contract requirements.
g. In order to ensure fair competitive bidding, it is critical that all bidders base their bids on providing the material, equipment or process (including those trade named) fully complying with the contract documents.
h. The contractor shall not be entitled to any additional compensation if the Engineer does not approve the contractor's request for alternate processes, equipment, or materials after the contract is awarded. The bidder/contractor is solely at risk until the Engineer issues written notification of "Approved Equal" or "Equivalent."
i. The Jurisdiction reserves the right to adjust the contract price when the cost of an "Approved Equal" or "Equivalent" is less than the cost of the specified item. The contractor shall estimate the net savings of the proposed alternate and if the Engineer approves the proposal, a change order may be processed to reduce the contract amount by up to 50% of the estimated net savings of the "Approved Equal" or "Equivalent."

2. If the contract documents state that the Jurisdiction will not consider alternate processes, equipment, or materials, the bidder/contractor shall not propose any alternates to those specified in the contract documents.

1.03 SAMPLES AND TESTING

A. Each consignment of material shall be tested or inspected before being incorporated into the work and shall be approved by the Engineer in charge of the work before it is used. The Contractor shall allow such facilities for collecting and forwarding samples and subsequent testing as the Engineer may require.

B. Samples shall be supplied to allow ample time for testing without delaying the work. No material for which samples are requested shall be used until the samples have been approved. If necessary, work will be delayed or suspended, at no cost to the Jurisdiction, to permit the completion of all specified tests and examinations. Tests made on the samples of materials utilized for improvements constructed under these specifications will be made by

the Jurisdiction at no cost to the Contractor.

C. All tests shall be made by the Jurisdiction testing laboratory, or at such independent testing laboratories as the Engineer shall approve. Except as otherwise specified, the testing of materials furnished for use under these specifications shall be done according to the methods described in the specific ASTM, AASHTO, AWWA, or other authorized specifications for each material. Results of all tests shall be submitted to the Engineer.

1.04 STORAGE OF MATERIALS

The Contractor shall be responsible for care and storage of materials delivered to the work site or purchased for use. Material delivered to the work site and damaged before actual incorporation in the work may be rejected by the Engineer even though it may have been previously acceptable. Stored materials shall be located to facilitate thorough inspections, to minimize environmental damage, and not interfere with operations.

1.05 UNACCEPTABLE MATERIALS

All materials not conforming to the requirements of the specifications at the time they are to be used shall be considered unacceptable, and all such materials will be rejected and shall be removed immediately from the work site unless otherwise instructed by the Engineer. No rejected material, the defects of which have been corrected, shall be used until approval has been given by the Engineer.

1.06 MATERIALS SUPPLIED BY THE JURISDICTION

When any materials are to be furnished by the Jurisdiction, the designation of such materials and the time of availability will be included in the contract documents.

1.07 MATERIALS SUPPLIED BY THE CONTRACTOR

A. Unless otherwise stated in the contract documents, all materials and equipment needed for, or to become a part of, the work shall be furnished by the Contractor. The Contractor shall assume full responsibility for ordering materials and equipment of the quality specified and of the quantity necessary, and shall be responsible for payment of the purchase and/or delivery cost of such materials and equipment.

B. All materials and equipment that become the property of the Jurisdiction as a part of the project shall be unused and newly produced or manufactured with original materials (as opposed to recycled or used materials), shall be state of the art for that material or equipment, and shall be properly stored to protect the integrity of the material and equipment. The Engineer may waive this provision and accept used or recycled material or equipment prior to submission of the bid. Such waiver must be in the form of an addendum.

END OF SECTION

SECTION 00 10 70 - LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

PART 1 - LEGAL RELATIONS

1.01 MUNICIPAL REGULATIONS, STATE, AND FEDERAL LAWS AND REGULATIONS

A. The Contractor shall at all times observe and comply with all applicable Federal, State, County, or City laws, ordinances, orders, and regulations.

B. References in these specifications to particular chapters or sections of the Iowa Code shall be to those chapters or sections as they appear in the current version of the Iowa Code. In the event such chapters or sections of the Iowa Code are subsequently amended, the specifications shall be deemed to refer to those chapters or sections as amended.

1.02 GOVERNING LAW

The law of the State of Iowa shall govern this contract and all subcontracts for materials and services entered into by the Contractor.

1.03 PERMITS AND LICENSES

The Contractor shall procure all necessary permits for the construction of the work and for temporary excavations, obstructions, enclosures, and street openings arising from the construction and completion of the work described in the contract documents. The cost for all required Jurisdictional permits and licenses will be waived by the Jurisdiction. The Contractor shall be responsible for all violations of the law for any cause in connection with the construction of the work or caused by the obstruction of roads, streets, highways, or sidewalks, and shall give all requisite notices to the Jurisdiction or other public authorities in connection therewith.

1.04 PATENTS AND ROYALTIES

The Contractor shall defend, indemnify, and save the Jurisdiction harmless against all claims arising from alleged infringements of patents and royalties covering tools, machinery, processes, appliances, devices, or materials used in connection with the work. Unit prices provided in the proposal shall include payment of all necessary royalties or licenses.

1.05 USE AND OCCUPANCY PRIOR TO COMPLETION OF CONTRACT

The Contractor shall complete any portion or portions of the work in such order and at such time as the Engineer may require. The Jurisdiction shall have the right to use any completed or partially completed portions of the work at any time, but such possession and use shall not be deemed an acceptance of the work so used or any part thereof. If such prior use increases the cost of or delays the work, the Contractor shall be entitled to such extra compensation or extension of time, or both, as the Engineer may determine appropriate. When improvements are released to the Jurisdiction for public use prior to final approval and acceptance, the Contractor will be relieved of the responsibility for damages due to the elements or due to ordinary public use, but only the released and used portion of the improvements. Such release by the Contractor to the Jurisdiction for public use shall be directed in writing by the Engineer.

1.06 CONTRACTOR'S RESPONSIBILITY FOR THE WORK

A. Until the work is accepted by the Jurisdiction, it shall be in the custody of and under the charge, care, and control of the Contractor, who shall take every precaution against damage to the work by action of the elements or any other cause. The Contractor shall rebuild, repair, restore, and make good at its own expense, all damages to any portion of the work before acceptance thereof by the Jurisdiction. Issuance of any estimate or partial payment for work done will not be considered as final acceptance of any work completed.

B. If the Contractor completes a unit or portion of the work, the Jurisdiction may at its discretion accept such work and the Contractor may be relieved of further responsibility for such unit or portion of the work. Such partial acceptance shall not void or alter any of the terms of the contract, nor shall it constitute final acceptance of the work as provided in Section 1090, 1.08 - Acceptance and Final Payment.

1.07 RESPONSIBILITY FOR DAMAGE CLAIMS

The parties agree that it is their intent that there be no third-party beneficiaries to this contract. No provision of this contract or of any addendum, materials instructional memorandums, plans, proposal, special provision, developmental specification, supplemental specification, or general supplemental specification shall be construed as creating any third-party beneficiaries.

1.08 PERSONAL LIABILITY OF PUBLIC OFFICIALS

Neither the Engineer nor the Engineer's authorized representatives, agents, or assistants shall have any liability, either personally or as officials of the Jurisdiction, in carrying out any of the provisions of the Contract or in exercising any power or authority granted to them thereby. It being understood that in such matters they will act as the agents and representatives of the Jurisdiction.

1.09 WAIVER OF LEGAL RIGHTS

A. The Jurisdiction shall not be precluded or estopped by any measurement, estimate, or certificate made either before or after the completion and acceptance of the work and payment therefore, from showing the true amount and character of the work performed and the materials furnished by the Contractor, or from showing that any such measurement, estimate, or certificate is untrue or incorrectly made, or from showing that the work or materials do not in fact conform to the contract documents.

B. The Jurisdiction shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor and its surety such damages as it may sustain, and all outlay and expense it incurs, by reason of the Contractor's failure to comply with the terms of the Contract. Neither the acceptance by the Jurisdiction nor any of its representatives, nor any payment for acceptance of the whole or any part of the work, nor any extension of time, nor any possession taken by the Jurisdiction, shall operate as a waiver of any portion of the contract, or any powers herein reserved, or any right to damages herein provided. A waiver of any breach of the contract shall not be held to be a waiver of any other subsequent breach.

C. The Contractor hereby waives any claims it may hereafter be entitled to assert against the Jurisdiction, its officers, agents, employees, or consultants, on its behalf or on behalf of its employees, agents, subcontractors, sub-subcontractors, and suppliers, for loss of or damage to personal property, tools, or equipment owned by it or its employees, agents, subcontractors, sub-subcontractors, and suppliers, which loss or damage is sustained on the Jurisdiction's project property, or which occurs during work on the project, and the Contractor agrees to assume liability or responsibility for such claims and to procure insurance to cover its exposure in that regard.

1.10 ACCEPTANCE BY THE JURISDICTION - NOT A WAIVER OF CONTRACTOR'S OBLIGATIONS OR A WAIVER OF THE JURISDICTION'S RIGHTS

A. In various provisions of the contract documents, including these specifications, the Jurisdiction has reserved to itself or the Engineer the authority to test or inspect materials, equipment, or manufactured assemblies and to accept or reject those and other elements of the work.

B. In various provisions of the contract documents, including these specifications, the Jurisdiction has reserved to itself or the Engineer the authority to require the Contractor's preparation of shop drawings for review and to accept or reject same. If unanticipated and either unusual or complex construction procedures or site conditions occur, the Engineer may require the Contractor to submit such shop drawings as, in the judgment of the Engineer, are necessary to satisfactorily complete the proposed construction.

C. Acceptance or approval by the Engineer as therein provided shall not operate to relieve the Contractor of its obligation (1) to perform the work as required by the contract documents in a

workmanlike manner and according to the standards for construction applicable to the type of work covered by this contract generally observed by contractors in this locale and (2) to provide materials and equipment meeting the quality requirements as provided in the contract documents. The Jurisdiction assumes no responsibility for errors in shop drawings and assumes the Contractor will use material complying with requirements of the contract documents or, where not specified, those of sound and reasonable quality, and will erect the subjects of such shop drawings according to recognized standards of first quality work or, when specified, according to standards of the contract documents.

D. No such acceptance by the Jurisdiction shall constitute a waiver by the Jurisdiction of its right to subsequently reject defective work, materials, or equipment. Further, no such acceptance by the Jurisdiction or the Engineer shall be deemed a waiver by the Jurisdiction of its right to recover from the Contractor all losses, damages, outlay, or expense it incurs, which is attributable to such defective work, materials or equipment, or manufactured assemblies, nor shall such acceptance or approval be deemed a waiver of the Jurisdiction's right to indemnity from the Contractor for damage or injury to third parties occasioned by such defective work, materials, or equipment.

1.11 BUSINESS ORGANIZATION REQUIREMENTS

The bidder, or contractor, as a business organization shall comply with the following:

A. A corporation, limited liability company, limited partnership, or other type of business organization governed under Iowa statutes must be registered with the Iowa Secretary of State, must use the name under which it is registered with the Iowa Secretary of State, must be authorized to do business in Iowa, and must be registered as a contractor with the Iowa Department of Labor.

B. A partnership, sole proprietorship, company operating under a trade name, or other type of business organization not governed under Iowa statutes should be registered in the Office of the County Recorder where it is located or where the work is to be performed, must use the name under which it is registered, and must be registered as a contractor with the Iowa Department of Labor. Prior to entering into contract, the designated low bidder, if it is not required to be registered with the Iowa Secretary of State, shall provide to the Jurisdiction the name and address of its registered agent or lawful representative upon whom legal notices and processes may be served. The registered agent or lawful representative must be an Iowa resident, an Iowa profit or nonprofit corporation, or a foreign profit or nonprofit corporation qualified to do business in Iowa.

C. A foreign business organization, organized under the laws of a state other than Iowa, shall file with the Engineer’s documentation that it has complied with all the provisions of this section prior to entering into a contract.

D. If a bid is proposed to be submitted by two persons or entities as a joint venture, the names of the two persons or entities appearing on the documents must be followed by the notation – “a joint venture.” In that instance, the bid must also be signed by authorized agents of both entities, and the bid security must indicate that it “applies to and covers the proposal for construction of (Project Name) submitted by the (principal on bond) and (name of other company), submitted as a joint venture proposal.” A bid submitted by two persons or entities without any indication they are submitting it as a joint venture, without being signed by authorized representatives of both entities, and without bid security covering both entities as a joint venture, will be rejected.

1.12 CONSENT TO JURISDICTION OF IOWA DISTRICT COURT OR FEDERAL DISTRICT COURT IN IOWA

The Contractor agrees that any causes of action that accrue to it, or which by subrogation or assignment accrue to its sureties or insurers, arising out of or connected with this contract shall be brought in the Iowa District Court in and for the County where the Jurisdiction is located or in the United States District Court in and for the District where the Jurisdiction is located. Contractor

further consents, on behalf of itself and its subrogees and assigns, to the jurisdiction of either the Iowa District Court in and for the County where the Jurisdiction is located or the United States District Court in and for the District where the Jurisdiction is located, as to any causes of action brought against it arising out of this contract or any work performed under it by Contractor or its subcontractors, and further agrees, on behalf of itself, its subrogees and assigns, to waive any and all objections to the jurisdiction of said court as to any such cause of action.

1.13 SEVERABILITY

It is the intent of the Jurisdiction and the Contractor that the lawful provisions of this contract shall be severable from any provisions of this contract that are hereafter declared to be illegal or void by a court of competent jurisdiction.

PART 2 - RESPONSIBILITIES TO THE PUBLIC

2.01 SANITATION

The Contractor shall arrange for the necessary sanitary conveniences, properly secluded, for the workers on the project. These shall be maintained in a manner inoffensive to the public and in compliance with the local health regulations.

2.02 CONVENIENCE AND SAFETY

A. Use of Streets: The Contractor is granted the privilege of using Jurisdictional roads, streets, or highways, as shown on the plans, for the purpose of doing work specified in the contract, but is not granted exclusive use of such roads, streets, or highways.

B. Protection of Workers and the Public: The Contractor shall erect and maintain good and sufficient guards, barricades, and signals at or near the work according to the MUTCD and all applicable laws, regulations, and specifications. The Contractor shall, in all cases, maintain safe passageways at all road crossings, crosswalks, and street intersections and shall do all other things necessary to prevent an accident or loss of any kind.

All personnel shall wear ANSI 107 Class 2 apparel at all times when exposed to traffic or construction equipment in the right-of-way.

C. Convenience and Access: The Contractor shall handle the work in a manner that will cause the least inconvenience and annoyance to the general public and to the property owners abutting the work area. The Contractor shall also provide access to the abutting property to the greatest extent practicable.

D. Worker Safety: The Contractor shall comply with all current and future federal and state OSHA requirements. Nothing in this contract or any action by the Jurisdiction shall be interpreted or construed as a waiver of OSHA requirements. It is the Contractor's obligation to follow OSHA requirements and standards at all times.

E. Project Area or Work Site Safety:

1. In accordance with Section 1030, 2.19, until the work is accepted by the Jurisdiction, the work shall be in the custody of and under the charge, care, and control of the Contractor. The Contractor is also responsible for the project area or work site. The Contractor is solely responsible for the safety of everyone on its work site.

2. The Contractor should have a safety program; however, the Contractor need not submit a safety program to the Jurisdiction, and the Jurisdiction will not review or approve the Contractor’s safety program. The Jurisdiction assumes that the Contractor will maintain a safe worksite; however, the Jurisdiction’s staff will not intrude in the Contractor’s responsibility for safety issues.

3. The Engineer may assign some or all of the duties and responsibilities of the Engineer to an authorized representative for a given project. Nothing contained in this section or in the contract documents shall be construed as requiring or permitting the Engineer to direct the means, methods, sequences, or procedures, including safety measures, of performing any work under the contract or contract documents, except to assure that the quality of work conforms to these specifications and other provisions of the contract documents and that the contract will be completed as scheduled.

4. The Engineer may appoint an authorized representative on the work site to monitor the materials used and the work done by the Contractor. The Engineer's authorized representative is not a safety inspector and is not responsible for monitoring, directing, or otherwise ensuring the safety of the Contractor, its subcontractors, its suppliers, or any others that may be on the work site.

5. Construction of the work included in the contract is by its nature dangerous work; and the Contractor is hereby notified that it is the Contractor's sole responsibility to provide as safe a working site as possible given the nature of the work. It is the Contractor's responsibility to notify and advise its employees, subcontractors, suppliers, and everyone on the worksite of the dangers associated with the work, and provide them with appropriate safety information to protect them from those dangers.

2.03 WORK AREA

A. The Contractor shall confine its work to the Jurisdiction's premises, including construction easements and construction limit lines as shown in the contract documents and verified by the Engineer. The Contractor shall not enter upon or place materials on any private property for which the Jurisdiction has not obtained an easement for such use. The Contractor agrees to defend, indemnify, and hold the Jurisdiction harmless from all suits and actions of every kind and description resulting from the Contractor's use of private property. Before beginning construction, the Contractor shall check with the Engineer for any special instructions concerning easements.

B. Temporary buildings, storage sheds, shops and office, etc., may be erected by the Contractor only with the prior approval of the Engineer and shall be built with labor and materials furnished by the Contractor without expense to the Jurisdiction. Such temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor, at its expense, after the completion of the work.

2.04 PROJECT AREA FOR THE WORK

A. Acquisition: Existing and proposed additional right-of-way or easements shown on the plans and/or in the contract documents will provide, without cost to the Contractor, adequate space for the performance of the work. If the contract documents do not contain a notice to the Contractor of non-acquired additional right of way or easements, as shown on the plans, and the Contractor provides documentation acceptable to the Engineer, compensation will be allowed for loss or damage occasioned by delays in securing said right-of-way or easements; and, if the need to acquire such additional right-of-way or easements is the sole and only cause of the impossibility of completing the work within the specified time, the Jurisdiction may grant an extension of time if requested by the Contractor. Before beginning construction, the Contractor shall obtain from the Engineer a list of any easements or right-of-way not acquired and any special instructions pertaining to properties affected by the work.

B. Location: Property lines, limits of easements, and limits of construction permits are indicated on the plans, and it shall be the Contractor's responsibility to confine its construction activities within those limits.

C. Use: The Contractor shall confine its equipment, storage of materials, and operation of work to the limits indicated by laws, ordinances, permits, or direction of the Engineer and shall not unreasonably encumber the premises with its materials. The Contractor shall comply with the Engineer's instructions regarding signs and advertisements.

D. Encroachments: Any damage resulting to persons or property from the Contractor's encroachment beyond the specified limits shall be the sole responsibility of the Contractor.

2.05 EXPLOSIVES

A. Use: The Contractor shall not blast any rock or other materials or allow the same to be done in prosecution of the work, unless it secures the Engineer's approval, proper insurance coverages, and a blasting permit when required.

B. Safety: The Contractor is solely responsible for all damage resulting from blasting operations performed by the Contractor or its agents. The Contractor shall use the utmost care to not endanger life or damage property; and whenever ordered by the Engineer, the number and size of the charges shall be reduced. Suitable coverages or mats shall be provided to confine all materials lifted by blasting within the limits of the excavation or trench. All explosives shall be stored in a secure manner and clearly marked according to all applicable laws and regulations.

C. Regulations: The Contractor shall abide by all existing Federal, State, and Local regulations regarding the use of explosives, including, but not limited to, Uniform Fire Code, Article 77, and National Fire Protection Association 495, Explosive Materials Code of the National Fire Codes.

2.06 TRAFFIC CONTROL

A. General:

1. The Contractor shall maintain traffic and shall provide and maintain traffic control devices according to the contract documents. If there is no specific traffic control plan, then the Contractor's traffic control devices shall meet the requirements of and be placed according to the current edition of MUTCD.

2. During construction, areas to be maintained for traffic shall be kept clear of all hazardous materials, including but not limited to construction debris, dust, and mud.

B. Closing Streets to Traffic:

1. Upon the Engineer's approval, the Contractor may close streets or parts of streets to vehicular traffic as soon as the construction work is started; such streets or parts of streets shall remain closed as long as construction work or condition of the finished work requires. The Engineer will determine how many streets or parts of streets may be closed by the Contractor at one time, and may refuse to allow the closing of additional streets until some of the improvement is finished and opened to traffic.

2. The Contractor shall notify the Engineer 48 hours in advance (excluding weekends) of closing any roads, streets, or public thoroughfares. No road or street shall be closed without prior approval from the Engineer.

3. The Contractor shall not remove, relocate, or reset any permanent Jurisdictional traffic control devices unless authorized to do so by the Engineer or contract documents. If a sign must be removed or relocated for any phase of construction, the Contractor shall notify the Engineer of the necessity for removal. The Engineer shall arrange for the removal, relocation, or resetting of permanent traffic control devices by Jurisdictional personnel as needed to allow the work to proceed. If Jurisdictional personnel are not available, the authorized Jurisdictional representative may give authorization to the Contractor to remove, relocate, or reset the permanent traffic control devices.

4. In the event the Contractor removes or relocates a traffic control sign without prior notice to or authorization from the Engineer, the Contractor shall bear all responsibility and liability to any person sustaining bodily injury or property damage on account thereof.

2.07 PROTECTION OF ABOVEGROUND AND UNDERGROUND FACILITIES

A. The Engineer has attempted to show on the plans all aboveground and underground facilities, including public and private utilities, which may be affected by the work. The location, depth, and size of each such facility shown on the plans is approximate only and is not guaranteed. Other underground facilities may exist and their location may not be presently known or identified. It is the Contractor's responsibility to determine the existence and exact location of all such facilities located within the construction area to avoid damage.

B. Where existing facilities are shown in the contract documents or encountered within the construction area, it shall be the responsibility of the Contractor to notify the operators of those facilities prior to beginning any construction activities. The Contractor shall allow access to those facilities for necessary modification of services. The Contractor shall support, sustain, and protect existing pipes, conduits, poles, wires, and other apparatus located under, over, along, across, or adjacent to the work site. If such utilities are damaged through Contractor's negligence, they will be repaired by the agencies having control of same, but the cost of such repairs shall be paid by the Contractor.

C. The Contractor shall, prior to commencing any excavation or other operation that may affect underground facilities, notify the "Iowa One Call" underground facility locate system, established pursuant to Iowa Code Chapter 480. The Contractor shall, if requested by the operator of an underground facility, assist in the location of its facilities; provided, however, the Jurisdiction shall not be responsible to the Contractor or to any operator of an underground facility for the cost of locating such facility, or for any damage to such facility that occurs in attempting to locate it, or for any damage to the facility occasioned by the Contractor's performance of work under the contract.

D. Claims for additional compensation will not be allowed to the Contractor for any interference, delay, or additional work occasioned by the location or adjustment of aboveground or underground facilities, or connections thereto.

2.08 PROTECTION OF PROPERTY

A. The Contractor shall continuously maintain adequate protection of all its work from damage and shall protect the Jurisdiction's property and adjacent private property from injury or loss arising in connection with the work. The Contractor shall repair or restore any such damage, injury, or loss to Jurisdiction property or adjacent private property.

B. Protect existing facilities, trees, and shrubs to remain in place. Any damage to existing trees or shrubs, branches, and root systems to remain and to be protected shall be repaired and/or pruned by an experienced tree surgeon or arborist. Do not disturb soil within 10 feet of the drip line of trees without notifying the Engineer. The Contractor shall mark the 10 foot limit from the drip line.

2.09 LAND MONUMENTS

A. The Contractor will be required to preserve all center stones, land monuments, or other property marks the Contractor may find in prosecuting the work. The Contractor shall notify the Engineer of the finding of any land monuments and shall not remove or disturb same until permission is given to do so, at which time the Contractor shall properly remove said landmarks under the direction of the Engineer.

B. For every land monument lost or destroyed by the Contractor, the Contractor may be charged, and such amount shall be deducted from any monies due or may become due to the Contractor under the contract.

2.10 DUST CONTROL

During construction operations, the Contractor shall be responsible for the control of dust to a degree compatible with the area in which the construction is being performed and with existing

environmental regulations. In the event the Contractor does not control dust as specified, the Jurisdiction reserves the right to order dust control to be performed by other forces and withhold the cost thereof from any monies due or may become due to the Contractor under the contract.

2.11 ENVIRONMENTAL AND HISTORIC ITEMS

If contaminated soils, historical artifacts, or other environmental or historic items are encountered, stop work and notify the Engineer.

2.12 RAILROAD CROSSINGS

The authority for performing work beneath, at grade, or over railroad tracks will have been previously secured by the Jurisdiction. It shall be the Contractor's responsibility to contact the railroad company officials prior to beginning the work on railroad property or easements. The Contractor shall perform the work without damage to the facilities and property of the railroad or its lessees, and in strict observance of requirements for the safety of the railroad property and operations. All such work will be subject to the inspection of the railroad's representative. The Contractor shall protect, indemnify, and hold the Jurisdiction harmless from any and all damages resulting from its operations on railroad property or easements or in the construction of railroad crossings according to Section 1070, Part 3 - Bonds and Insurance.

2.13 BORROW AND WASTE SITES

A. Unless borrow or waste sites are designated on the plans or specified in the special provisions, the Contractor shall secure and operate such sites at its own expense.

B. In all cases, borrow and waste sites shall be operated in such a manner as to meet Federal, State, and local safety, environmental, and health requirements. Site operations, or the result of such operation, that create a definite nuisance or result in damage to public or private property will not be permitted. In all cases, sites shall be approved by the Engineer before use.

2.14 MAINTAINING POSTAL SERVICE

A. It shall be the Contractor's responsibility to contact the U.S. Postal Service to ascertain its requirements for the maintenance of postal service to residents or businesses in the vicinity of the work site according to the instructions of the Postal Service. The Contractor shall be responsible for mailboxes at temporary locations designated by the Postal Service, and at the completion of the work, the Contractor shall replace all mailboxes in locations and conditions satisfactory to the Postal Service.

B. Not less than 24 hours prior to removing any mailbox, the Contractor shall notify each affected resident or business addressee in writing advising them of the move and the location of their temporary mailbox during construction.

C. For each residential or business address affected by the work, the Contractor shall place a temporary mailbox at a location approved by the Postal Service. Temporary mailboxes shall be in place so postal service is maintained at all times. Any permanent mailbox that must be removed shall be stored on the property from which it is removed and at a sufficient distance from the work area to ensure it will not be damaged by construction activities.

2.15 FINISHING AND CLEANUP REQUIREMENTS

From time to time, as may be ordered by the Engineer, and immediately after completion of the improvement, the Contractor shall, at its expense, cleanup and remove all refuse and unused materials of any kind resulting from the work. Upon failure to do so within three working days after such request by the Engineer, the work may be done by the Jurisdiction and the cost thereof charged to the Contractor and deducted from its final payment. Upon completion of the work, the Contractor shall remove all its equipment and put the area of the work in a neat and clean condition and do all other cleaning necessary to complete the work in a workmanlike manner

satisfactory to the Engineer.

PART 3 - BONDS AND INSURANCE

3.01 PERFORMANCE, PAYMENT, AND POSSIBLE MAINTENANCE BOND

A. The lowest responsive, responsible bidder shall be required to file, before the contract is awarded, a surety bond for performance and payment, and a surety bond for maintenance if called for in the Supplemental Conditions, on a form provided by the Jurisdiction and in penal sum equal to the total bid amount. Said bond shall be executed by a corporation authorized to contract as a surety in the state of Iowa. Said bond shall be filed in the specified number of copies as a part of the executed contract documents for the Jurisdiction's approval and award.

B. Said bond shall provide that the Contractor shall well and satisfactorily perform and execute the work in all respects, according to the contract documents therefore, and according to the time and conditions of the contract documents, and also that the Contractor shall pay all debts incurred by it in the prosecution of such work, including those for labor and materials furnished. IF called for in Supplemental Conditions, said bond may also provide for the maintenance of the improvement for the number of years stipulated in the contract documents, and shall remain in full force for the entire maintenance period. Said bond shall in all cases comply with the laws of the State of Iowa and shall be subject to the approval of the Jurisdiction.

C. If maintenance bond is called for in Supplemental Conditions, then within the time period specified in the maintenance portion of the bond, the Contractor shall, as and when ordered by the Engineer, repair, replace, or rebuild such portions of the work found to be faulty because of materials or workmanship. After being notified of the need for repairs, the Contractor shall submit, within seven calendar days, a written report stating its intentions and schedule for completing the repairs for approval by the Engineer. If the Contractor fails to submit such written report or to make the repairs as approved by the Engineer, the Jurisdiction shall have the right to make such repairs and to collect from the Contractor or its surety all outlay and expense the Jurisdiction incurs in making the repair, and in attempting to enforce the terms of the contract and the bond against the Contractor and its surety. Persistent failure by the Contractor to make such repairs may constitute grounds for disqualification of the Contractor from bidding on future projects.

3.02 INSURANCE REQUIREMENTS

A. The Contractor shall purchase and maintain insurance to protect the Contractor and the Jurisdiction against all hazards herein enumerated throughout the duration of the contract. Said insurance shall be provided by an insurance company or companies, “admitted” or “non-admitted” to do business in the State of Iowa, having an A.M. Best rating of no less than “B+.”

B. "Insurance," "insurance policy," or "insurance contract" when used in these specifications shall have the same meaning as "insurance policy" and "insurance contract" under Iowa Code Section 507B.2. All insurance required by this section shall provide coverage on an occurrence basis, not on a claims-made basis, and the person or other entity shall provide evidence of such coverage through an "insurance policy," "contract of insurance," or "certificate of insurance" that clearly discloses on its face coverage on an occurrence basis. Insurance coverage required for hazardous materials abatement including removal of lead, asbestos, PCB's, or the like may be provided on a claims-made basis when it is demonstrated to the satisfaction of the Jurisdiction that occurrence coverage is not reasonably available.

C. Except for workers compensation insurance, the Contractor shall purchase and maintain such insurance as will protect the Contractor and the Jurisdiction as set forth below, which may arise out of or result from the Contractor’s operations under the contract, whether such operations be by the Contractor, its subcontractors or consultants, suppliers, third parties, or the agents, officers, or employees of any of them. In addition, the Contractor shall purchase and maintain workers compensation insurance to cover its employees.

1. Workers Compensation: A standard Workers Compensation policy approved for use in the State of Iowa shall be issued with the following coverages.
   a. Statutory Benefits covering all employees injured on the job by accident or disease as prescribed by Iowa Code Chapter 85.
   b. Employers Liability insurance with the following limits:

Bodily injury by accident	$500,000 each accident
Bodily injury by disease	$500,000 each accident
Bodily injury by disease	$500,000 policy limit

2. Commercial General Liability Insurance: No less comprehensive and no more restrictive than the coverage provided by a standard form Commercial General Liability Policy (ISO CG 0001 or its equivalent) with all standard exclusions with minimum limits shown below covering claims for damages because of bodily injury, personal injury, or damage to property that occur on the premises under contract or arise out of the operations in performance of the contract. Any additional exclusions shall be identified on the Certificate of Insurance and shall be subject to the review and approval of the Jurisdiction.

General Aggregate Limit	$2,000,000
Products' Completed Operations Aggregate Limit	$2,000,000
Personal and Advertising Injury Limit	$1,000,000
Each Occurrence Limit	$1,000,000
Fire Damage Limit (any one fire)	$50,000
Medical Damage Limit (any one person)	$5,000

   This insurance must include the following features:
   a. Coverage for all premises and operations. The policy shall be endorsed to provide the Designated Construction Project(s) General Aggregate Limit Endorsement (ISO CG 2503 or its equivalent).
   b. Personal and advertising injury.
   c. Operations by independent contractors.
   d. Contractual liability coverage. If work to be performed by Contractor includes construction or demolition operations within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, roadbeds, tunnel, underpass, or crossing, then such policy will include a Railroad's Contractual Liability Endorsement (ISO CG 2417 or its equivalent).
   e. Coverage for demolition of any building or structure, collapse, explosion, blasting, excavation, and damage to property below the surface of the ground (XCU coverage).
   f. Any fellow employee exclusions shall be deleted as it applies to managerial and supervisory employees.
   g. The policy shall not contain a total or absolute pollution exclusion. Coverage shall be provided for pollution exposures arising from products and completed operations.
   h. Products and completed operations shall be maintained for the duration of the work; and shall be further maintained for a minimum period of time after final acceptance and payment if required in the Special Provisions.
   i. Contractual liability coverage will also include contractually assumed defense costs in addition to policy limits.
   j. In lieu of including the Jurisdiction as an additional insured on the Contractor's Commercial General Liability Insurance, the Jurisdiction, at its option, may require the Contractor to provide an Owner's Protective Liability Policy by Special Provision, or may allow the Contractor to provide an Owner's Protective Liability Policy by Change Order. If an Owner's Protective Liability Policy is provided, the minimum coverage, limits, and exclusions shall be as shown above; and the Contractor's premium cost of obtaining such insurance shall be considered incidental to the work and shall not be subject to reimbursement by the Jurisdiction.

3. Automobile Liability Insurance: Covers all owned, non-owned, hired, and leased vehicles with a minimum combined single limit of $1,000,000 per accident covering claims for damages because of bodily injury, personal injury, or damage to property that arise out of operations in performance of the contract. The insurance must include contractual liability

coverage. Any fellow employee exclusion shall be deleted. The policy shall provide Auto Cargo Pollution Endorsement (ISO CA 99 48 or its equivalent), if required in the special provisions.

4. Railroad Protective Liability: If required by the Jurisdiction by special provision, or by an affected railroad, the Contractor shall procure and maintain Railroad Protective Liability Insurance naming the railroad as the insured with minimum limit for bodily injury and property damage liability of $2,000,000 per occurrence, $6,000,000 aggregate, or with such other limits as the railroad shall require. The original of said policy shall be furnished to the railroad and a certified copy of said policy shall be furnished to the Jurisdiction prior to any construction or entry upon the railroad easement premises by the Contractor.

5. Umbrella/Excess Insurance: At the Contractor's option, the limits specified in Section 1070, 3.02, C, 1, 2, 3 may be satisfied with a combination of primary and Umbrella/Excess Insurance. At the Jurisdiction's option, the minimum insurance limits specified above may be increased by special provision. This increase may be satisfied with a combination of primary and Umbrella/Excess Insurance.

6. Additional Insured Endorsements: Except for Workers Compensation, the insurance specified shall:
   a. Include the Jurisdiction as an additional insured, per Section 1070, 3.06, B; and
   b. Be primary to and not in excess of or contributory with any other insurance available to the Jurisdiction.

7. Reference to ISO: Wherever the term "ISO" appears in these specifications, any subsequent equivalent ISO form or non-ISO equivalent form may be used.

3.03 CONTRACTOR'S INDEMNITY - CONTRACTUAL LIABILITY INSURANCE

A. To the extent covered by the standard insurance forms listed in Section 1070, 3.02, the insurance shall include contractual liability insurance to cover all indemnification and hold harmless agreements and provisions in the contract documents, including the following provision.

B. To the fullest extent permitted by law, the Contractor shall defend, indemnify, and hold harmless the Jurisdiction and its officers, agents, employees, and consultants from and against all claims, damages, losses, and expenses, including but not limited to, attorney's fees, arising out of or resulting from the performance or prosecution of the work by the Contractor, its subcontractors, agents, or employees; or arising from any neglect, default, or mismanagement or omissions by the Contractor, its subcontractors or consultants, suppliers, third parties, or the agents, officers, or employees of any of them in the performance of any duties imposed by the contract or by law; provided any such claim, damage, loss, or expense:

   1. is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including economic damages and the loss of use resulting therefrom, and

   2. is caused in whole or in part by any act or omission of the Contractor, its subcontractors or consultants, suppliers, third parties, or the agents, officers, or employees of any of them, or anyone for whose acts any of them may be liable, regardless whether or not it is caused in part by a party indemnified hereunder.

      Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity that would otherwise exist as to any party or person described in this subsection.

C. In any and all claims against the Jurisdiction or the Engineer or any of their agents, officers, employees, or consultants by any employee of the Contractor, its subcontractors or consultants, suppliers, third parties, or the agents, officers, or employees of any of them, or

anyone for whose acts any of them may be liable, the indemnification obligation under this subsection shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

D. The obligations of the Contractor under this subsection shall not extend to the liability of the Engineer, the Engineer's agents, employees, or consultants, arising out of:

1. the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, design standards, or specifications; or

2. the giving of or the failure to give directions or instructions by the Engineer, the Engineer's agents, employees, or consultants.

provided the preparation or the giving or failure to give directions or instructions is the sole proximate cause of the injury or damage.

E. If any litigation on account of such claims shall be commenced against the Jurisdiction, the Contractor, upon notice thereof from the Jurisdiction, shall defend the same at its sole cost and expense; and the record of any judgment rendered against the Jurisdiction on account of such claims for damages shall be conclusive as against said Contractor and entitle the Jurisdiction to recover the full amount thereof, with interest and cost, and attorney's fees incurred by said Jurisdiction, whether the Jurisdiction paid such amounts or not.

3.04 CONTRACTOR'S INSURANCE FOR OTHER LOSSES; WAIVER OF SUBROGATION

A. The Contractor shall assume full responsibility for all loss or damage from any cause whatsoever to any tools owned by the mechanics; or any tools, machinery, equipment, or motor vehicles owned or rented by the Contractor, its subcontractors or consultants, suppliers, third parties, or the agents, officers, or employees of any of them; or to any shed or other temporary structures, scaffolding and stagings, protective fences, and bridges belonging to the contractor, its subcontractors or consultants, suppliers, third parties, or the agents, officers, or employees of any of them, not covered by the Jurisdiction’s Builders Risk Insurance.

B. Contractor shall cause each of its subcontractors, consultants, suppliers, third parties, or the agents of any of them, to carry insurance sufficient to cover all loss to such materials, tools, motor vehicles, and equipment. All insurance carried by the Contractor, or its subcontractors, consultants, suppliers, third parties or the agents of any of them, covering risk of loss or damage to materials, tools, motor vehicles, and equipment used in the performance of the Work, shall provide a waiver of subrogation against the Jurisdiction. To the extent that any subcontractors, consultants, suppliers, third parties or the agents of any of them, do not provide such coverages, any uninsured loss shall be the sole responsibility of the Contractor.

3.05 PROPERTY INSURANCE

A. Unless otherwise provided, the Jurisdiction shall purchase and maintain property insurance, a.k.a. Builder's Risk Insurance, on building construction projects, or other projects by special provisions, in the amount of the initial bid amount, or in an amount equal to the estimated value of actual building construction, whichever is less, as well as applicable modifications thereto for the entire work at the site on a replacement cost basis. Such property insurance shall be maintained, unless otherwise provided in the contract documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final acceptance of the work by the Jurisdiction. The insurance shall include interests of the Jurisdiction, the Contractor, subcontractors, and sub-subcontractors in the work. This property insurance covering the work will have a deductible of $5,000 for each occurrence, which will be the responsibility of the Contractor.

B. Property insurance shall be on an all-risk policy form and shall insure against the perils of fire and extended coverage and physical loss or damage including, without duplication of coverage, flood and earthquake, theft, vandalism, malicious mischief, collapse, falsework,

temporary buildings and debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for the Jurisdiction's services and expenses required as a result of such insured loss. Coverage for other perils shall not be required unless otherwise provided in the contract documents.

C. Unless otherwise provided in the contract documents, this property insurance shall cover portions of the work stored off the site, after written approval of the Jurisdiction, at the value established in the approval, and portions of the work in transit. Coverage for work stored off the site and in transit will be not less than 10% of the policy amount.

D. Boiler and Machinery Insurance: The Jurisdiction, at the Jurisdiction's option, may purchase and maintain Boiler and Machinery Insurance required by the contract documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Jurisdiction; this insurance shall include interest of the Jurisdiction, Contractor, subcontractors, and sub-subcontractors in the work, and the Jurisdiction and Contractor shall be named insureds.

E. Loss of Use Insurance: The Jurisdiction, at the Jurisdiction's option, may purchase and maintain insurance to insure the Jurisdiction against loss of use of the Jurisdiction's property due to fire or other hazards, however caused. In the event the Jurisdiction purchases such insurance, the Jurisdiction shall waive all rights of action against the Contractor for loss of use of the Jurisdiction's property, including consequential losses due to fire or other hazards, however caused.

F. If the Contractor requests in writing that insurance for risks other than those described herein or for other special hazards be included in the property insurance policy, the Jurisdiction shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate change order.

G. If during the project construction period, the Jurisdiction insures properties, real or personal or both, adjoining or adjacent to the site by property insurance under policies separate from those insuring the project or if after final acceptance, property insurance is to be provided on the completed project through a policy or policies other than those insuring the project during the construction period, the Jurisdiction shall waive all rights according to the terms of Section 1070, 3.05, I, for damages caused by fire or other perils covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

H. Before an exposure to loss may occur, the Jurisdiction shall file with the Contractor a copy of each policy that includes insurance coverages required by this section. Each policy shall contain all generally applicable conditions, definitions, exclusions, and endorsements related to this project. Each policy shall contain a provision that the policy will not be cancelled or allowed to expire until at least 30 calendar days prior written notice has been given to the Contractor.

I. Waivers of Subrogation: The Jurisdiction and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other, and (2) the Jurisdiction's consultants, separate contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this section or other property insurance applicable to the work, except such rights as they have to proceeds of such insurance held by the Jurisdiction as fiduciary. The Jurisdiction or Contractor, as appropriate, shall require of the Jurisdiction's consultants, separate contractors, if any, and the subcontractors, sub-subcontractors, agents, and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

J. A loss insured under the Jurisdiction's property insurance shall be adjusted by the Jurisdiction as fiduciary and made payable to the Jurisdiction as fiduciary for the insureds, as their interest may appear, subject to requirements of any applicable mortgagee clause and of Section 1070, 3.05, K. The Contractor shall pay subcontractors their shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require subcontractors to make payments to their sub-subcontractors in a similar manner.

K. The Jurisdiction as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five calendar days after occurrence of loss to the Jurisdiction's exercise of this power; if such objection be made, arbitrators shall be chosen according to Section 1040, 1.10, D, provided one arbitrator shall be appointed by the Jurisdiction, one by the party in interest making objection, and the third to be appointed by the two arbitrators thus chosen. Arbitration shall thereafter proceed as provided in Section 1040, 1.10, E through G. The Jurisdiction as fiduciary shall, in that case, make settlement with insurers according to the direction of such arbitrators. If distribution of insurance proceeds by arbitration is required, the arbitrators will direct such distribution.

L. Partial occupancy or use of the work shall not commence until the insurance company or companies provided property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Jurisdiction and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance.

M. Installation Floater: Under contracts where the Jurisdiction does not provide Builders Risk Insurance, the Jurisdiction may by special provision require the Contractor to provide coverage under an “Installation Floater” covering all materials, fixtures, equipment, and supplies provided for the job. Such insurance shall be on an “*all risk*” form in an amount equal to the maximum value of such materials, equipment, or supplies covered on the job site, off-premises at any temporary storage location, or in transit. The Installation Floater covering the equipment shall have a maximum deductible no greater than $5,000 for each occurrence, which will be the responsibility of the Contractor.

3.06 ENDORSEMENT NAMING JURISDICTION AS AN ADDITIONAL INSURED / CANCELLATION AND MATERIAL CHANGE / GOVERNMENTAL IMMUNITIES ENDORSEMENT

A. All liability insurance policies the Contractor is required to provide pursuant to this Section 1070, Part 3 - Bonds and Insurance shall be by endorsement name and designate the Jurisdiction as an additional insured.

B. The Additional Insured Endorsement shall include the following provisions:

The Jurisdiction, including all its elected and appointed officials, all its employees and volunteers, all its boards, commissions and/or authorities and their board members, employees, and volunteers, and all its officers, agents, and consultants, are named as Additional Insureds with respect to liability arising out of the Contractor’s work and services performed for the Jurisdiction. This coverage shall be primary to the Additional Insureds, and not contributing with any other insurance or similar protection available to the Additional Insureds, whether other available coverage by primary, contributing, or excess.

The Additional Insured Endorsement shall be included on all Commercial General Liability, Automobile Liability, and Umbrella/Excess Insurance policies.

C. The Cancellation and Material Change Endorsement shall include the following provisions:

Thirty calendar days advance written Notice of Cancellation, Non-Renewal or Reduction in Insurance coverage and/or Limits, and 10 calendar days written Notice of Non-payment of Premium, shall be sent to the Jurisdiction at the office and attention of the Certificate Holder. This endorsement supersedes the standard cancellation statement on the Certificate of Insurance to which this endorsement is attached.

D. All liability polices that include the Jurisdiction as an additional insured shall include a Governmental Immunities Endorsement, pursuant to Iowa Code Section 670.4, which endorsement shall include the following provisions:

1. Nonwaiver of Government Immunity: The insurance carrier expressly agrees and states the purchase of this policy and including the Jurisdiction as an Additional Insured does not waive any of the defenses of governmental immunity available to the Jurisdiction under Iowa Code Section 670.4 as it now exists and as it may be amended from time to time.

2. Claims Coverage: The insurance carrier further agrees this policy of insurance shall cover only those claims not subject to the defense of governmental immunity under Iowa Code Section 670.4 as it now exists and as it may be amended from time to time.

3. Assertion of Government Immunity: The Jurisdiction shall be responsible for asserting any defense of governmental immunity, and may do so at any time and shall do so upon the timely written request of the insurance carrier. Nothing contained in this endorsement shall prevent the carrier from asserting the defense of governmental immunity on behalf of the Jurisdiction.

4. Non-Denial of Coverage: The insurance carrier shall not deny coverage or deny any of the rights and benefits accruing to the Jurisdiction under this policy for reasons of governmental immunity unless and until a court of competent jurisdiction has ruled in favor of the defense(s) of governmental immunity asserted by the Jurisdiction.

5. No Other Change in Policy: The insurance carrier and the Jurisdiction agree the above preservation of governmental immunities shall not otherwise change or alter the coverage available under the policy.

This Government Immunities Endorsement shall be included on all insurance policies that include the Jurisdiction as Additional Insured.

E. All liability policies purchased in the Jurisdiction's name shall include a Governmental Immunities Endorsement, pursuant to Iowa Code Section 670.4, which endorsement shall include the following provisions:

1. Nonwaiver of Government Immunity: The insurance carrier expressly agrees and states the purchase of this policy does not waive any of the defenses of governmental immunity available to the Jurisdiction under Iowa Code Section 670.4 as it now exists and as it may be amended from time to time.

2. Claims Coverage: The insurance carrier further agrees this policy of insurance shall cover only those claims not subject to the defense of governmental immunity under Iowa Code Section 670.4 as it now exists and as it may be amended from time to time.

3. Assertion of Government Immunity: The Jurisdiction shall be responsible for asserting any defense of governmental immunity, and may do so at any time and shall do so upon the timely written request of the insurance carrier. Nothing contained in this endorsement shall prevent the carrier from asserting the defense of governmental immunity on behalf of the Jurisdiction.

4. Non-Denial of Coverage: The insurance carrier shall not deny coverage or deny any of the rights and benefits accruing to the Jurisdiction under this policy for reasons of governmental immunity unless and until a court of competent jurisdiction has ruled in favor of the defense(s) of governmental immunity asserted by the Jurisdiction.

5. No Other Change in Policy: The insurance carrier and the Jurisdiction agrees that the above preservation of governmental immunities shall not otherwise change or alter the coverage available under this policy.

This Government Immunities Endorsement shall be included in all Insurance Policies in the Jurisdiction's name.

3.07 PROOF OF INSURANCE

A. The Contractor shall, prior to the Jurisdiction's approval and execution of the Contract, provide to the Jurisdiction a certificate or certificates of insurance evidencing all required insurance coverages as required in this Section 1070, Part 3 – Bonds and Insurance, utilizing the ACORD certificate form, or equivalent, required by the Jurisdiction. The Certificate of Insurance requirement may be satisfied with a blanket certificate.

B. The Description of Operations on the Certificate of Insurance for the work must state either: 1) Blanket certificate of coverage of all work, services, or projects with the Jurisdiction, or 2) Identify the specific project by name and project number. The Contract will not be submitted for approval execution by the Jurisdiction until all certificates of insurance are correct and have received staff approval.

C. The Cancellation statement on the Certificate of Insurance shall be superseded by the Cancellation and Material Changes Endorsement, which shall be attached to the certificate.

D. All endorsements required for the work shall be attached to the appropriate Certificate or Certificates of Insurance and shall be, on the face thereof, listed by name.

E. If an Owner's Protective Policy is provided, the policy with appropriate endorsements shall be submitted to the Jurisdiction. The Contract will not be submitted for approval and execution by the Jurisdiction until the Owner's Protective Policy and all certificates of insurance are correct and have received staff approval.

3.08 NOTIFICATION IN EVENT OF LIABILITY OR DAMAGE

A. Upon the occurrence of any event, the liability for which is herein assumed by the Contractor, the Contractor agrees to forthwith notify the Jurisdiction in writing of such happening, which notice shall give the details as to the happening, the cause as far as can be ascertained, the estimate of loss or damage done, the names of witnesses, if any, and stating the amount of any claim.

B. In the event the Jurisdiction has or obtains actual knowledge of any event that may result in a claim, the liability for which is herein assumed by the Contractor, the Jurisdiction agrees to notify the Contractor of such event within a reasonable period of time after acquiring knowledge thereof; provided however, the Jurisdiction shall have no duty to inspect the project to obtain knowledge of such events; and provided further the Jurisdiction's failure to so notify the Contractor shall not relieve the Contractor of any liability or obligation herein assumed by the Contractor.

END OF SECTION

1.01 SUBLETTING OR ASSIGNMENT OF CONTRACT

A. Work by Contractor:

1. The Contractor shall perform, with its own organization and forces, work amounting to no less than 50% of the total contract cost, except any items designated in the contract documents as "specialty items" may be performed by subcontract, and the cost of any such "specialty items" may be deducted from the total contract cost before computing the amount of work required to be performed by the Contractor with its own organization. Any items that have been selected as "specialty items" for the contract will be listed as such in the contract documents.

2. In order to meet this 50% requirement, the Contractor shall not purchase any materials for a subcontracted item, nor shall it place other contractor's employees on its payroll.

3. The Contractor shall not assign this Contract to another person, firm, or corporation without the prior consent of the Jurisdiction. The Jurisdiction may refuse to approve a proposed assignment of contract if such assignment would not be in the best interests of the Jurisdiction, or if such assignment would be contrary to law or public policy. An assignment of contract and all subcontracts shall be in writing.

B. Permission to Sublet:

1. The Contractor shall not sublet, assign, or otherwise dispose of any portion of the contract, except for the furnishing and transportation of materials, without a written "permission to sublet" order duly approved by the Jurisdiction.

2. Requests for permission to sublet, assign, or otherwise dispose of any portion of the contract shall be in writing and shall provide the name, address, telephone number, and representative of the organization that will perform the work, a description of the work is to be sublet, and the associated cost. When requested by the Engineer, the Contractor shall provide a written report showing the organization that will perform the work is particularly experienced and equipped for such work.

3. Consent to sublet, assign, or otherwise dispose of any portion of the contract shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract or in any way create any contractual relationship between the subcontractor and the Jurisdiction.

C. Subcontracts:

1. Upon request of the Engineer, the Contractor shall submit a copy of each subcontract agreement within 10 calendar days.

2. The Contractor shall be responsible to include all conditions and requirements of the contract documents in all its subcontracts and enforce said requirements with its subcontractors.

1.02 CONTRACT TIME

A. When a completion date is specified in the contract documents, the contract time shall be the time from the starting date stated in the Notice to Proceed to the date specified for completion as shown in the contract, both dates inclusive. When working days or calendar days are specified in the contract documents, the contract time shall be the time as calculated with the number of working days or calendar days as specified in the contract and the starting date in the Notice to Proceed. The contract time may be extended by the Jurisdiction as provided in these specifications, in which event the contract time includes the new extension of time~~. The Contractor acknowledges that if it fails to complete the contract in said time, liquidated damages will be assessed against it as specified in Section 1080, 1.12 - Liquidated Damages.~~

1. Completion Date Contracts: The Contractor shall complete the contract on or before the completion date. Unless otherwise noted in the proposal form, the Contractor may commence work any time after receipt of the signed contract, specifications permitting and issuance of the Notice to Proceed. Section 1080, 1.06 will not apply~~. Liquidated damages will be assessed according to Section 1080, 1.12 for each calendar day beyond the completion date that the contract remains uncompleted.~~

2. Calendar Day Contracts: The Contractor shall complete the contract within the number of consecutive calendar days specified. The calendar day count will commence on the date specified by the Notice to Proceed. Section 1080, 1.06 will not apply~~. Liquidated damages will be assessed according to Section 1080, 1.12 for each calendar day beyond the specified number of calendar days that the contract remains uncompleted.~~

3. Working Day Contracts: The three types of start dates are as follows:

   a. Specified Start Date: Working days will be charged to the Contractor starting on the specified start date, the date noted in the Notice to Proceed, or 14 calendar days after execution of the contract, whichever is later. Starting work prior to the specified start date will be considered upon request, and working days will be charged when work starts.

   b. Approximate Start Date: It is expected the site will be available by the approximate start date. If it appears the site will not be available by the approximate start date, the Engineer will inform the Contractor of the delay and if possible the duration of the delay. The Contractor may commence work, weather and specifications permitting, any time after execution of the contract, after receipt of the Notice to Proceed, and on or after the approximate start date provided the site has become available. If work is started under these conditions, working days will be charged. Starting work before the approximate start date and before the site is available, will be considered only after the Contractor has submitted a signed waiver of any right to claim extra compensation for damages due to delays from any cause related to early commencement. If approved, working days will not be charged when working prior to the date of site availability. If the Contractor is working on the project when the site becomes available, working days will be first charged on the following day.

   c. Late Start Date: Unless otherwise noted in the proposal form, the Contractor may commence work any time after receipt of the signed contract, receipt of the Notice to Proceed, and weather and specifications permitting. Working days will begin to be charged whenever the Contractor starts work. Charging of working days will begin on the late start date if the Contractor has not started work prior to this date.

      If the Contractor wishes to start preliminary work prior to the late start date and move out intending to return at a later date to complete the project, the Contractor shall request approval from the Engineer for temporary suspension of work according to Section 1080, 1.08. Approval of suspension of work in this circumstance will be based on if the project area is in a condition that is at least as safe as it was before the start of the work. The Engineer will submit in writing to the Contractor approval for suspension of work and a computed revised late start date. The revised late start date will be computed by adding the working days used for the preliminary work to the late start date listed on the proposal form. The charging of the remainder of the working days will resume on the revised late start date or when the Contractor recommences work if prior to the revised late start date.

B. Intermediate contract periods may be designated for completion of a specific item or certain portions of the contract. The contract period and the liquidated damages, if any, for each portion will be listed in the contract documents.

1.03 WORK PROGRESS AND SCHEDULE

A. The progress of the work shall be at a rate sufficient to complete the contract within the time allowed. The Contractor's sequence of operations shall be such as to cause as little inconvenience to the general public as possible.

B. After being awarded the contract, and if requested by the Engineer, the Contractor shall immediately prepare and submit to the Engineer for approval a progress schedule that will ensure the completion of the project within the time specified. Adequate equipment and

forces shall be made available by the Contractor to start work immediately upon Notice to Proceed by the Engineer and to prosecute the work to completion according to schedule and within the time specified.

C. If it appears the rate of progress is such that the contract will not be completed within the time allowed, or if the work is not being executed in a satisfactory and workmanlike manner, the Engineer may order the Contractor to take such steps as necessary to complete the contract within the period of time specified or to prosecute the work in a satisfactory manner. If the Contractor fails to comply with such order within two weeks after receipt of the order, the Contractor may be disqualified from receiving any additional contracts, and the Jurisdiction will have the right to declare the contract in default.

1.04 PRECONSTRUCTION CONFERENCE

The Engineer may schedule and conduct a preconstruction conference. The Contractor and the intended subcontractors, if known, shall participate in this conference. The Engineer will invite representatives of railroads and utilities and others having responsibilities or interest in the work.

1.05 NOTICE TO PROCEED

A. The return of the signed and executed contract to the Contractor shall serve as notice the contract bond is acceptable, the contract is in force, and the Contractor may complete arrangements for materials and other work according to the contract documents.

B. The Contractor shall begin work as specified in the Notice to Proceed issued by the Engineer and shall prosecute the work vigorously and continuously to completion, except when it is physically impossible to do so due to weather conditions or other unavoidable handicaps. The necessity of discontinuing and resuming work on any portion of the contract shall be determined by the Engineer.

C. The Jurisdiction may, if provided for in the contract documents, give a limited Notice to Proceed as to any portion of the work under the contract.

1.06 WEEKLY RECORD OF WORKING DAYS

A. On contracts with completion provisions based upon working days, the Engineer will furnish the Contractor a weekly statement showing the number of working days charged to the Contractor for the preceding week, the number of working days specified for completion of the project, the number of working days remaining to complete the contract, and the revised date for completion.

B. Working days will be charged under the following circumstances:

1. Prior to Commencement of Work: Beginning on the date designated in the Notice to Proceed, or beginning on the specified starting date or as soon thereafter as provided in the specifications, a working day will be charged for every calendar day other than Saturday, Sunday, or a recognized legal holiday. Working days will be charged for Saturdays if a mandatory six-day work week is specified in the contract documents.

2. After Commencement of Work: One full working day will be charged for any weekday, exclusive of Saturdays, Sundays, or a recognized legal holiday, when weather or other conditions (not under control of the Contractor) will permit construction operations to proceed for not less than 3/4 of a normal workday in the performance of a controlling item of work as determined by the Engineer. If such conditions allow operations to proceed for at least 1/2 but less than 3/4 of the normal working hours, one-half working day will be charged.

   Working days will not be charged for Saturdays (unless a mandatory six-day work week is specified in the contract documents), Sundays, and recognized legal holidays the Contractor does not work. Working days will be charged for Sundays and recognized legal holidays the contractor does work.

As an incentive to the Contractor to expedite the work, working days will not be charged for Saturdays that the Contractor does work, unless a mandatory six-day work week is specified in the contract documents.

C. Any objection by the Contractor to such weekly determinations shall be deemed waived and shall not thereafter be made the basis of any claim, unless the Contractor shall, within seven calendar days after receipt of a weekly statement, file with the Engineer its written protest setting forth its objections and reasons. If the Contractor's objection to the working day count is made on the grounds it was unable to work due to causes beyond its control, the Contractor shall state its reasons in writing, furnish proof to establish its claim, and state the approximate number of calendar days it estimates it was delayed. The Engineer shall then determine the appropriate number of working days to be charged under the contract.

1.07 WORK ON SUNDAYS OR LEGAL HOLIDAYS

A. Except when an accelerated work schedule is required in the contract documents, no work requiring inspection will be allowed on Sundays or holidays observed by the Jurisdiction except with permission of the Engineer. The Contractor should request a determination of the holidays observed by the Jurisdiction.

B. Such work as may be required to properly maintain or protect completed or partially completed construction, or to maintain lights and barricades, will be permitted on Sundays or holidays without specific permission of the Engineer.

1.08 TEMPORARY SUSPENSION OF WORKING DAYS

When, in the judgment of the Engineer, unfavorable weather makes it impractical to secure acceptable results or other conditions warrant an order to suspend working days, the Engineer shall issue to the Contractor a written order to suspend working days wholly or on any part of the contract. When conditions are again favorable for prosecution of the working days, the Engineer shall issue to the Contractor a written order to resume the suspended working days. Orders to suspend working days will not be written for short intermittent shutdowns due to weather conditions. The Contractor shall take every precaution to prevent any damage or unreasonable deterioration of the work during the time of suspended operations.

1.09 EXTENSION OF TIME

A. Allowances for Delays: The Contractor expressly covenants and agrees that in undertaking to complete the work within the contract time, it has taken into consideration and made allowance for all delays and hindrances that would ordinarily be anticipated in performing such work.

B. Request for Extension of Time: Whenever the Contractor becomes aware of its inability to complete the work under the contract within the contract period, it shall request an extension in writing. Such request shall be submitted to the Engineer at least two weeks prior to the expiration of the contract time to allow for the Jurisdiction's action before termination. The submission or acceptance of a request for extension of time shall not guarantee such extension will be granted. The following items may be justification for extension of time:

1. **Weather:** Extension of time due to adverse weather conditions at the site, so unusual or severe as not to be reasonably anticipated, as determined by the Engineer, may be requested. An average or usual number of inclement working days when work cannot proceed are to be anticipated during the construction period and are not to be considered as warranting extension of time.

2. **Other Contractors:** An extension of time may be requested for delays caused by the noncompletion of essential work of other contractors, provided such noncompletion is the sole and only cause of delay, and where the Contractor has available on the site of the work all equipment, material, and labor necessary to proceed with the work.

3. **Change Orders:** An extension of time may be requested for delays caused by the issuance of a change order, where the work occasioned by the change order is the sole and only cause of the impossibility to complete the work within the specified time.

4. **Work Stoppage:** An extension of time may be requested for delays caused by a general work stoppage in the area or a work stoppage affecting this project that is beyond the control of the Contractor, or where the Contractor has taken in good faith all steps made available to it by law to resolve the causes thereof and to terminate such work stoppage.

5. **Acts by U.S. Government:** An extension of time may be requested for delays caused by any act taken by the United States government that would affect fabrication or delivery of materials or equipment to the work site.

6. **Court Proceedings:** An extension of time may be requested for delays caused by any court proceedings.

7. **Other Delays:** An extension of time may be requested for other delays encountered by the Contractor beyond its control and impossible for the Contractor to complete the contract within the specified time.

C. Claims for Damages: The Contractor shall have no claim for damages for any extensions or delays provided or mentioned in the preceding portions of this section; but the Contractor shall, in such cases, be allowed to petition for such extension of time as the Jurisdiction may grant in writing on account of such delay, provided, however, the claim for such extension of time is made by the Contractor in writing to the Jurisdiction immediately after any such delay occurs.

D. Extension of Time Granted: No extension of time shall be granted or recognized except as specifically approved by the Jurisdiction in writing to the Contractor. Oral representations or agreements by Jurisdiction agents or employees regarding time extension shall not be binding on the Jurisdiction.

1.10 CONTRACTOR'S EMPLOYEES, METHODS, AND EQUIPMENT

A. Superintendent:

1. All work under the contract shall be performed under the continuous supervision of competent personnel, thoroughly experienced in the class of work specified.

2. Prior to beginning work, the Contractor shall give the Engineer, in writing, the name of the Contractor's official representative or superintendent for the project. The superintendent shall be capable of providing adequate supervision of the project and shall be responsible for receiving instructions, notices, and written orders from the Engineer. A change of the superintendent shall be reported to the Engineer in writing. Failure to provide adequate supervision of the project shall be grounds for the Engineer to require a change in supervision before allowing the work to proceed. The superintendent shall be responsible for reporting to the Engineer any inconsistencies, omissions, or lack of definite detail in the plans, special provisions, or contract documents that may be discovered.

3. The lack of proper supervision by the Contractor or by its supervisory personnel shall be just cause for termination of the contract.

B. Workers:

1. The Contractor shall employ competent and efficient workers for every kind of work. The Jurisdiction reserves the right to direct the suspension or discharge from the work any worker, employee, agent, overseer, foreman, or superintendent in the employ of the Contractor, who, in the opinion of the Engineer, shall be incompetent, negligent, unfaithful, insubordinate, or disorderly, and any such person shall immediately be suspended or discharged by the Contractor whenever so directed by the Engineer.

2. The Contractor shall not employ or hire any of the employees of the Jurisdiction without permission of the Engineer.

C. Methods and Equipment:

1. The methods and equipment used by the Contractor shall produce a satisfactory quality of work and shall be adequate to maintain the schedule of progress specified. Equipment used on any portion of the project shall be such, and its use so regulated, that no serious or irreparable damage to the roadway, adjacent property, or other streets or highways will result from its use. If damage does occur to the street or highway, suitable repairs shall be made at the Contractor's expense.

2. When the methods and equipment to be used by the Contractor in accomplishing the construction are not prescribed in the contract documents, the Contractor is free to use any methods or equipment that will accomplish the contract work in conformity with the requirements of the contract documents, as demonstrated to the satisfaction of the Engineer.

3. When the contract documents specify that the construction be performed by use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Engineer.

4. If the Contractor desires to use a method or type of equipment other than specified in the contract documents, the Contractor may request authority from the Engineer to do so. The request shall be in writing and shall include a full description of the method and equipment proposed to be used and an explanation of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor shall be fully responsible for producing construction work in conformity with contract requirements.

5. If after trial use of the substituted methods or equipment, the Engineer determines the work produced does not meet the requirements of the contract documents, the Contractor shall discontinue use of the substitute method or equipment and shall complete the remaining construction with the specified methods and equipment. The Contractor shall remove the defective work and replace it with work of specified quality, or take such other corrective action as the Engineer may direct. No change will be made in basis of payment for the construction items involved, or in contract time, as a result of authorizing a change in methods or equipment under these provisions.

1.11 CONTRACTOR'S EQUIPMENT IDENTIFICATION

All vehicles and major construction equipment utilized on Jurisdiction's projects, with the exception of vehicles used for personal purposes and rented equipment bearing the name, address, and telephone number of the rental company, shall exhibit the Contractor's name in at least two locations on each piece of equipment. This identification can be either a decal or painted lettering of a type and size, and with a contrasting color, rendering it legible from a distance of no less than 50 feet.

1.12 LIQUIDATED DAMAGES

(This Section Not Used)

1.13 BREACH OF CONTRACT

A. The Contractor's failure to perform in any of the following particulars shall constitute a breach of contract:

1. Failure by the Contractor to begin work at the time specified;

2. Failure by the Contractor to complete the work within the contract period or any extension thereof;

3. Failure or refusal by the Contractor to comply with an order of the Engineer within a reasonable time;

4. Contractor's persistent disregard of laws, ordinances, or instructions of the Engineer;

5. Contractor's repeated failure to provide sufficient workers, equipment, or materials to ensure the proper and timely completion of the work;

6. Failure or refusal by the Contractor to remove rejected materials;

7. Failure or refusal by the Contractor to replace, perform anew, or correct any defective or unacceptable work;

8. Contractor's discontinuance of the work without authorization by the Jurisdiction;

9. Bankruptcy or insolvency of the Contractor, or the making of an assignment for the benefit of creditors by the Contractor; or

10. Failure by the Contractor to carry on the work in an acceptable manner.

Upon Contractor's breach of the contract in any particular above, the Jurisdiction shall be entitled to give notice of default to the Contractor. The notice of default shall indicate how the contract has been breached and shall indicate what action the Contractor must take to cure such breach.

B. If the Contractor or its surety does not, within the time for cure provided in the notice of default, take action to cure such breach, the Contractor shall, at the direction of the Engineer, relinquish possession and control of the work, and the Jurisdiction shall thereupon have full power and authority, without violating the contract or bond, to take over the completion of the work, to appropriate or use any or all materials and equipment at the site that may be suitable and acceptable, to enter into agreements with others for the completion of said contract according to the terms and provisions thereof, or to use such other methods as in the Jurisdiction's opinion may be required for the completion of said contract in an acceptable manner.

C. The Contractor and its surety shall be liable for all outlay and expense incurred by the Jurisdiction, together with the costs of completing the work, and such costs may be deducted from any monies due or which may become due to the Contractor. In case the outlay and expense incurred by the Jurisdiction in completing the work is less than the sum that would have been payable under the contract if it had been completed by the Contractor, then the Contractor will be entitled to receive the difference. In case such outlay and expense exceeds the sum that would have been payable under the contract, then the Contractor and its surety shall be liable for and shall pay to the Jurisdiction the amount of said excess.

D. Neither the Jurisdiction, nor any officer, agent, or employee thereof, shall be in any way liable or accountable to the Contractor or the Contractor's surety for the method by which the completion of said work, or any portion thereof, may be accomplished, or for the price paid therefore. Neither by taking over the work nor by declaring the contract in default shall the Jurisdiction forfeit the right to recover damages from the Contractor or the Contractor's surety for failure to complete the entire contract.

E. The Contractor shall be liable for the Jurisdiction’s attorney fees incurred as a result of the Contractor’s breach of contract.

1.14 TERMINATION OF CONTRACTOR'S RESPONSIBILITY

The contract will be considered completed when the work has been accepted in writing by the Jurisdiction as provided in Section 1090, 1.08 - Acceptance and Final Payment hereof. Such final acceptance shall release the Contractor from all further obligation with respect thereto, except as to conditions and requirements as set forth in the bond and Jurisdiction's specifications regarding insurance.

END OF SECTION

SECTION 00 10 90 - MEASUREMENT AND PAYMENT

1.01 MEASUREMENT

The determination of quantities of work performed under the contract will be made by the Engineer, based upon the lines and grades as shown on the plans and as given during the progress of the work or as evidenced by approved tickets for weight or liquid measure or by measurements made by the Engineer. All items will be computed in the units shown in the contract.

1.02 SCOPE OF PAYMENT

A. The Contractor shall receive and accept the compensation provided in the contract at unit prices, if it be a unit price contract; or at the lump sum price, if it be a lump sum price contract, except as may be modified by change orders. The compensation provided for in the contract shall constitute full payment for furnishing all labor, equipment, tools, and materials and for performing all work contemplated and embraced under the contract; for all loss or damage arising out of the nature of the work or from the action of the elements; for all expenses incurred by, or in consequence of, the suspension or discontinuance of the said prosecution of the work or from any unforeseen difficulties or obstructions that may arise or be encountered during the prosecution of the work; and for all risks of every description connected with the prosecution of the work until the final acceptance of the work by the Jurisdiction.

B. Neither the payment of any progress payment nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material. Payment will be made only for materials actually incorporated in the work, except as provided in Section 1090, 1.05 - Progress Payments.

C. The contract price for any item shall be full compensation for all labor, materials, supplies, equipment, tools, and all things of whatsoever nature required for the complete incorporation of the item into the work the same as though the item were to read "in place," unless the contract documents shall provide otherwise.

1.03 LUMP SUM BREAKDOWNS

A. If the contract is based on a lump sum bid price, or contains one or more lump sum items for which progress payments are to be made, the Contractor shall prepare and submit a breakdown estimate covering each lump sum item to the Engineer for approval. The breakdown estimate shall show the estimated value of each kind or item of work. The sum of the lump sum items listed in the breakdown estimates shall equal the contract lump sum. Overhead and profit shall not be listed as separate items.

B. The breakdown estimate shall be approved by the Engineer before any progress payments are prepared. An unbalanced breakdown estimate providing for overpayment to the Contractor for items of work to be performed first will not be approved but shall be revised by the Contractor and resubmitted until acceptable to the Engineer.

1.04 PAYMENT FOR CHANGE ORDERS

A. The Contractor's claims for extra work will not be paid unless the extra work covered by such claims was authorized by a change order as specified in Section 1040, 1.07 - Change Orders.

B. Payment for extra work shall be made in one or more of the following ways as determined by the agreement between the parties to the contract prior to the starting of the work.

1. Unit Prices: By unit prices contained in the Contractor's original proposal and incorporated in the construction contract, so far as the same may apply.

2. Supplemental Schedule: By supplemental schedule of prices to include costs of all equipment, material, labor, supervision, management, insurance, overhead, and

incidentals, said schedule to be submitted by the Contractor upon request of the Engineer and to be accepted by the Jurisdiction.

3. Lump Sum: By an acceptable lump sum proposal from the Contractor.

1.05 PROGRESS PAYMENTS

A. Limits: Progress payments made under the contract, unless provided otherwise by law, shall be made according to Iowa Code Chapter 573, and shall be made on the basis of monthly estimates of labor performed and material delivered and incorporated in to the work, as determined by the Engineer. Payment may be made for materials not incorporated into the project if they can be specifically identified and cost verified by invoice. Progress payment requests shall be accompanied by the documentation required in Section 1090, 1.07, B - Sales Tax and Use Tax.

B. Retainage: The Jurisdiction shall retain from each monthly progress payment 5% of the amount determined to be due according to the estimate of the Engineer. Early release of retained funds may be requested by the Contractor according to Iowa Code Section 26.13.

C. Quantities: Quantities used for progress payments shall be considered as only approximate and provisional and shall be subject to recalculation, adjustment, and correction by the Engineer in subsequent partial payments and in the final payment. Inclusion of any quantities in a progress payment, or failure to disapprove the work at the time of any progress payment, shall not be construed as acceptance of the corresponding work or materials.

D. Mobilization: When the contract documents provide a separate bid item for mobilization, progress payments for mobilization shall be made as follows:

1. When 5% of the original bid amount is earned, either 25% of the contract price for mobilization or 2.5% of the bid amount, whichever is less, may be paid.

2. When 10% of the original bid amount is earned, either 50% of the contract price for mobilization or 5% of the bid amount, whichever is less, may be paid.

3. When 50% of the original bid amount is earned, either 100% of the contract price for mobilization or 10% of the bid amount, whichever is less, may be paid.

4. Upon completion of all work on the project required by the contract, full payment will be made for mobilization, including any amount not paid as a progress payment.

1.06 PAYMENT OF RETAINAGE

A. Retained funds shall be retained by the Jurisdiction for a period of 30 calendar days after the completion and final acceptance of the improvement by the Jurisdiction. If at the end of the 30 calendar day period claims are on file as provided, the Jurisdiction shall continue to retain from the unpaid funds, a sum equal to double the total amount of all claims on file. The remaining balance of the unpaid fund, or if no claims are on file, the entire unpaid fund, shall be released and paid to the Contractor.

B. The Jurisdiction, the Contractor, any claimant for labor or material who has filed a claim, or the surety on any bond given for the performance of the contract, may, at any time after the expiration of 30 calendar days, and not later than 60 calendar days, following the completion and final acceptance of said improvement, bring action in equity in the county where the improvement is located to adjudicate all rights to said fund, or to enforce liability on said bond, pursuant to Iowa Code Chapter 573. Upon written demand of the Contractor, served in the manner prescribed for original notices, on the person filing a claim, requiring the claimant to commence action in court to enforce the claim, an action shall be commenced with 30 calendar days, otherwise the retained and unpaid funds due the Contractor shall be released to the Contractor.

1.07 SALES AND USE TAX STATEMENT

A. At the completion of the contract and before final payment can be made thereon, the Contractor and all subcontractors shall file with the Engineer in triplicate, with original signatures on all three sets, a statement under oath on forms provided by the Iowa Department of Revenue and Finance showing the data with reference to sales, use, and service taxes required by Iowa Code Section 423.4, as amended. On projects with a total contract cost greater than $1 million or with supplies and materials in excess of 50% of the contract price and when directed by the Engineer, the Contractor shall submit with each progress pay estimate completed sales and use tax forms from the Iowa Department of Revenue listing all supplies and materials purchased since the previous progress payment.

B. If a Sales Tax Exemption Certificate(s) is issued by the Jurisdiction according to Section 1020, 1.08, no sales, use, or service statement is required.

1.08 ACCEPTANCE AND FINAL PAYMENT

A. Final payment will be based on the actual final total amount of the work accomplished and finally accepted by the Jurisdiction under the contract. Under no circumstances or conditions will the Contractor be paid anything for anticipated profits for the work, nor will it be paid for any work not actually included in the improvement. The Jurisdiction will not give final acceptance of the work until the Contractor has submitted all documentation required by the contract documents.

B. The Engineer shall, after determining the work has been finally and fully completed according to the contract documents, make a final estimate of the amount of work done and the value thereof.

C. Final acceptance of construction shall be defined as final approval of the project only in the sense that it has been constructed, cleaned up, and completed in apparent substantial compliance with the contract documents. Said final acceptance is stipulated to mean a written acceptance by the Jurisdiction.

D. It is mutually agreed between the parties to the contract that a certificate of completion of the project, submitted by the Engineer and approved by the Jurisdiction, shall constitute final acceptance of the work and materials included in the contract on the date of such approval, subject to the provision any such approval, acceptance, or payment as herein provided shall not constitute an acceptance of any unauthorized or defective work, or of any improper material.

END OF SECTION

SECTION 00 73 00

SUPPLEMENTARY CONDITIONS

INDEX

1. COMMENCEMENT

1.1 -**The Division IA and IB work shall commence no sooner than June 19TH, 2023** after the issuance of the Notice to Proceed.
- **The Division II work shall commence no sooner than July 17th, 2023** after the issuance of the Notice to Proceed.

2. SHOP DRAWINGS

2.1 The CONTRACTOR shall submit to the ENGINEER for review the following information:

a. Pavement concrete mix.
b. Water main, storm sewer and structures.
c. Signage, Seeding, and Sub-drainage.

Provide 2 copies plus copies required by Contractor, or submit pdf versions by email.
The data shown in the Shop Drawings shall be complete with respect to dimensions, design criteria, materials of construction and the like to provide the ENGINEER with information as required.

2.2 The CONTRACTOR shall check and verify all field measurements, all dimensions on shop and setting drawings, and schedules required for the work of all the various trades and shall verify that all of the various parts of the work will properly fit together. All costs incurred as a result of the CONTRACTOR'S failure to perform this verification shall be borne by the CONTRACTOR. All shop and setting drawings, certificates, concrete or asphalt mix designs, and required design computations approved by the CONTRACTOR, shall be submitted in sufficient number of copies to provide the ENGINEER with four copies and up to three additional copies as may be desired by the CONTRACTOR for himself, his subcontractors and/or suppliers. The Shop Drawings shall be neatly packaged by the CONTRACTOR into identical collated sets with a signed submittal form stapled to each set.

2.3 The review of Shop Drawings by the ENGINEER is for the purpose only of checking for general conformance with the design concept of the project and for general compliance with the information given in the Contract Documents. Any action taken on Shop Drawings by the ENGINEER does not relieve the CONTRACTOR of responsibility for proper dimensioning, for detailing of connections and incorporating into the work satisfactory materials and equipment meeting the requirements of the Contract Documents. If errors in Shop Drawings are not detected in the ENGINEER'S review, the CONTRACTOR is not relieved from the responsibility to comply

with the Contract Documents and the ENGINEER'S review shall never be construed as permitting the CONTRACTOR to proceed in error. It is understood that where a Shop Drawing is submitted for review for compliance with a performance specification, it is impossible to determine with certainty whether the item or process covered by the Shop Drawing will conform to the requirements of the Contract Documents. Regardless of any information contained or not contained in the Shop Drawings, the requirements of the drawings and specifications and other Contract Documents must be followed and are not waived or superseded in any way by the Shop Drawing review.

3. PROJECT SITE

3.1 This project will be constructed within property owned by the Southeast Polk Community School District.

3.2 Confine construction operations to within areas shown as being restored on the Landscape Plan, protect all trees and plants not marked for removal. Replacement of damaged grass and plantings will be at Contractor's expense.

3.3. Contractor to arrange for and provide additional storage of materials and equipment if needed.

4. EXISTING UTILITIES

4.1 The location of existing utilities indicated on these plans are taken from existing records and are not guaranteed by the owner or engineer. The contractor shall confirm exact locations and elevations of these and other facilities that may exist but are not shown on these plans. The contractor shall expose those utilities and sewers so that exact locations and elevations may be determined. No direct payment shall be made for this work and it shall be considered incidental to other applicable work.

5. MEASUREMENT AND PAYMENT

5.1 Contract lump sum price is full compensation for furnishing all materials, equipment, tools and labor necessary to construct and complete each item of work as specified. No separate payment will be made for any work included in this project. Lengths of materials and quantities shown in the plans are for showing intent of design and not payment; any quantity greater than that shown on the construction drawings will not be allowed for additional payment.

6. TAXES

6.1 Iowa Use Taxes shall be paid on all supplies and materials used in, and made component parts of, the Project.

6.2 Iowa Sales Taxes shall not be paid on qualified building materials purchased, or withdrawn from inventory, which will be incorporated into real property for Project.

6.3 The Owner is a designated exempt entity and will complete an online application to register this Contract with the Iowa Department of Revenue and Finance. The Owner will distribute Tax Exemption Certificates and Authorization Letters to the Contractor and a" Subcontractors who have been identified at, or before filing of the Performance Bond. Refer to Iowa Department of Revenue and Finance publications available at http://www.state.ia.us/taxibusiness/Contr-ExEnt-Index.html.

6.4 At or before the time the Performance Bond is filed, Contractor shall provide a listing to the Owner identifying all Subcontractors. Listing shall indicate company name, address, telephone

number, fax number, contact name, and Employer ID # for Contractor and each Subcontractor. Contractor and Subcontractors shall make copies of the Tax Exemption Certificate and provide to each supplier providing construction material, a copy of the Tax Exemption Certificate. This Certificate will allow the Contractor and Subcontractors to purchase qualified building materials free from sales tax for the Project. The Tax Exemption Certificate and Authorization Letter have been developed exclusively for this purpose and are applicable only for the specific Project under this Contract.

6.5 If online registration is not available from the Department of Revenue and Finance at the time this Contract is approved by the Owner, the Owner will notify the Contractor in writing, and the cost of sales tax on all construction materials used for the Project will be added to the Contract Sum/Price. The Contractor shall then submit Form 35-002 to the Owner for Iowa sales/use tax paid.

6.6 Payment will be made in accordance with the payment provisions set out in these specifications and in the Advertisement for Bids and Notice of Public Hearing. Notwithstanding anything in these specifications and the Advertisement for Bids and Notice of Public Hearing to the contrary, no Final Payment shall be released until Form 35-002 has been filed with the Owner, where applicable, and all lien waivers are on file.

7. SCHEDULE OF VALUES – APPENDIX C

7.1 The apparent low bid contractor shall submit a Schedule of Values within 24 hours for all work as identified in Appendix C, the Estimate of Quantities for the project, as listed in the plan drawings. Appendix C will be used to determine payment as the project progresses. No payment shall be made until the schedule submitted and accepted.

8. BONDS AND INSURANCE

8.1. The Contractor shall submit bonds and Insurance forms as specified in Section 00 72 00 – General Conditions, section 1070, Part 3 “Bonds and Insurance Requirements”.

8.2 The Southeast Polk Community School District, and Bishop Engineering shall be listed as additional insureds on the Insurance forms.

8.3 A 4-year Maintenance Bond, on a form approved by the City of Altoona, shall be provided to the City by the Contractor. See Section 00 61 19. A separate Maintenance Bond shall be required for each Division of work. Form of Proposal - Appendix C shall be used for determining value of bond.

9. SUBSTANTIAL COMPLETION

9.1 Substantial Completion is when the construction is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the constructed project for its intended use, subject only to completion of minor punch list items. The Contractor assumes the responsibility for notifying the Owner and Engineer in writing when ready for final review of the work.

1. For this project designated as **Falcon Drive SE – 8th Street SE to NE 50th Avenue** project, Substantial Completion shall mean that all grading, underground utility work, paving, and striping is complete.

2. It is recognized that landscaping material and ground vegetation cannot be completed until the planting season time frame, and will not be included in Substantial Completion.

3. **Substantial Completion for Divisions IA and IB shall be by November 22, 2023. Substantial Completion for Division II shall be by June 7, 2024**.

9.2 When the Contractor considers that the work is substantially complete, the Contractor shall prepare and submit to the Owner and Engineer a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents.

9.3 Upon receipt of the Contractor's list, the Engineer and Owner will make an inspection to determine whether the work is substantially complete. If the inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the project, the Contractor shall complete or correct such items upon notification. The Contractor shall then submit a request for another inspection by the Engineer and Owner to determine Substantial Completion.

1. The Engineer will perform no more than 1 inspection to determine whether the work has attained Substantial Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Engineer for any additional inspections.

9.4 When the work is substantially complete, the Engineer will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for maintenance, damage to the work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate.

9.5 The Contractor shall reimburse the Owner for any Engineer’s additional services made necessary by the Contractor's failure to Finally Complete the Work within the time outlined in the Contract Documents or within sixty (60) days after the date specified in the Contract Documents for Project Substantial Completion, whichever occurs first.

9.6 Upon receipt of the fully executed Certificate of Substantial Completion, the Contractor may request release of all or part of retained funds due in accordance with Iowa Code Chapter 26 provisions. Remaining retained funds shall not become due until the Contractor submits to the Architect/Engineer:

1. Sworn statement that 10 calendar days prior to filing request for release of retained funds, a notice was given to all know subcontractors, sub-subcontractors, and suppliers that Contractor was requesting release of retained funds. The notice shall be substantially similar to the following:

'Notice of Contractor's Request for Early Release of Retained Funds'

'You are hereby notified that [name of contractor] will be requesting an early release of funds on a public improvement Project designated as [name of project] for which you have or may have provided labor or materials. The request will be made pursuant to Iowa Code section 26. 13. The request may be filed with the [name of public entity] after ten calendar days from the date of this notice. The purpose of the request is to have [name of public entity] release and pay funds for all work that has been performed and charged to [name of public entity] as of the date of this notice. This notice is provided in accordance with Iowa Code section 26.13.'

2, Itemized list of work left to complete, including estimated value of labor and materials.

3. Itemized list of Iowa Code Chapter 573 claims currently on file at time request for release of retained funds is received.

4. Written confirmation from governmental agencies that all permit and inspection fees, including SWPPP inspections fees have been paid by Contractor.

5. Operation, Maintenance, and Warranty Manuals and Record Drawings and Specifications.

9.7 If documentation requested in Subparagraph 9.6 is received from Contractor, Owner shall make payment due Contractor at Owner's next monthly Board meeting or within thirty days, whichever is less, except the Owner may retain the following:

1. An amount equal to 200% of the value of labor and materials yet to be provided on the Project. Final values to be withheld shall be determined by the Engineer based on initial estimates provided by Contractor and Engineer's on-site visits and observations.

2. Double the amount of any Iowa Code Chapter 573 claims currently on file.

3. An amount equal to 1/2% of the total value of the Project for Operation, Maintenance, and Warranty Manuals and Record Drawings and Specifications not submitted ten days prior to Substantial Completion inspection.

9.8 If the Owner withholds any amounts of retained funds, the Engineer shall provide an itemization and list of reasons why amounts are being withheld within thirty calendar days of receipt of request.

10. FINAL COMPLETION AND FINAL PAYMENT

10.1 Upon receipt of the Contractor's written notice that the work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Engineer will promptly make such inspection. When the Engineer finds the work acceptable under the Contract Documents and the Contract fully performed, the Engineer will promptly issue a final Certificate for Payment stating that to the best of their knowledge and information, that the work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable.

1. The Engineer will perform no more than 1 inspection to determine whether the work has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect/Engineer for any additional inspections.

2. - **Final Completion of Divisions IA, IB and II shall be by June 28th, 2024.**

10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Engineer:

1. An affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Project for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied.

2. If required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

3. The Contractor shall provide the following documents listed under the applicable project category:
Final list of subcontractors.
Punch list items completed and approved by Owner.
As-built redline drawings of the utilities, site, and appurtenances.

10.3 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of Claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

10.4 Final Payment will be made not earlier than 31 days following approval by Owner at a regularly scheduled Board meeting, receipt of all Lien Waiver and/or Chapter 573 Claim Releases, Sales Tax information, and all other required closeout documents, and subject to

conditions of, and in accordance with provisions of Iowa Code Chapter 573 and Iowa Code Chapter 26. Owner may withhold from final payment any and all amounts required to reimburse Owner for all costs, fees (including reasonable attorney's fees) it incurred as a result of any Chapter 573 Claims filed on
Project.

11. EMPLOYEES (SCHOOL PROJECT)

11.1 Qualifications.

A. The Contractor and his subcontractors shall at all times enforce strict discipline and good order among his employees, and shall not employ on the work any person considered by the Engineer/Architect, Owner or Owner's Representative to be unfit or not skilled in the work assigned. The Contractor shall also keep its employees and those of its subcontractor from socializing upon the site of the work after normal work hours and from fraternizing at any time with staff, students, parents, and other persons who are at the school or the site of the work.

B. No contractor shall allow any of its employees listed on the Iowa Sex Offender Registry to perform work on District projects. The District has interpreted an "unfit employee" for purposes of this contract to be any employee currently listed on the Iowa Sex Offender Registry. **The Contractor shall fill out and sign the "Acknowledgement and Certification" form located after end of this section prior to executing the Contract.**

11.2 Drug-Free Zone.

The Southeast Polk Community School District is a drug-free zone. In furtherance of this standard, the Contractor shall establish and maintain a safe and efficient work environment for all employees, free from the effects of alcohol, controlled substances, and illicit drugs. The manufacture, distribution, dispensing, possession, or use of alcohol, controlled substances, and illicit drugs is prohibited on or adjacent to the project site and all of the Owner's property at all times. Illicit drug use is the use of illegal drugs and the abuse of alcohol and other drugs, including anabolic steroids. Controlled substances are drugs specifically identified and regulated under state or federal law and include, but are not limited to, opiates, narcotics, cocaine, amphetamines and other stimulants, depressants, hallucinogenic substances, and marijuana. The Contractor will strictly enforce this prohibition among his own employees and his subcontractors and their employees at all times. Employees who violate these prohibitions will be subject to disciplinary action by their employers up to and including termination and may be denied access to the site of the work. Violation of this provision shall also constitute sufficient grounds for termination of the Contract or any subcontract without damages or penalty to the Owner.

11.3 No Smoking . Statewide smoking ban – HF 2212

1. Smoking now is prohibited in all areas of school buildings, including nonpublic schools, as well as all school grounds, parking lots, athletic fields, including inside any vehicle located on school grounds or school parking lots. No longer can a school designate a smoking area.

2. Smoking is prohibited inside all publicly owned vehicles, even if parked in a private drive.

3. Smoking is prohibited inside a private vehicle that is parked in a school parking lot. The Iowa Department of Public Health (DPH) is in charge of writing administrative rules for the enforcement of this new law.

4. In addition, the use of tobacco and nicotine products; including , but not limited to, cigarettes, nicotine chew, snus, dissolvables, electronic cigarettes, any electronic or other devices that can be used to deliver nicotine to the person inhaling from the device; any other look-alike products in which the original product would include tobacco and/or nicotine and/or other nicotine products that are not approved by the Federal Drug Administration for tobacco cessation; on district property; including in district buildings, on district grounds, in district transportation vehicles, or at any district activity; is prohibited.

11.4 Equal Opportunity Policy.

Because it is the desire of the School District to encourage equal employment policies, all contractors, including suppliers supplying goods or services to the School District, are expected to comply with the spirit of equal opportunity employment, as well as with the letter of all applicable statutes and regulations. Compliance shall require Contractor not to discriminate and, in addition, to take reasonable affirmative action to ensure that members of minority groups are effectively accorded equal employment opportunities.

11.5 Responsibility for Employees. The Contractor shall be responsible to the Owner for the acts and omissions of all its employees. The Contractor shall further be responsible for the acts and omissions of all subcontractors, their agents and employees, and all other persons acting on behalf of the Contractor or subcontractors as set forth herein.

END OF SECTION

ACKNOWLEDGMENT AND CERTIFICATION

_____ ("Company") is providing services to
[name of vendor/supplier/contractor/sub-contractor]
the Southeast Polk Community School District ("District") as a vendor, supplier, contractor or subcontractor and/or is operating or managing the operations of a vendor, supplier or contractor. The services provided by the Company may involve the presence of the Company's employees upon the real property of the schools of the District.

The Company acknowledges that Iowa law prohibits a sex offender who has been convicted of a sex offense against a minor from being present upon the real property of the schools of the District. The Company further acknowledges that, pursuant to law, a sex offender who has been convicted of a sex offense against a minor may not operate, manage, be employed by, or act as a contractor, vendor or supplier of services or volunteer at the schools of the District.

The Company hereby certifies that no one who is an owner, operator or manager of the Company has been convicted of a sex offense against a minor. The Company further agrees that it shall not permit any person who is a sex offender convicted of a sex offense against a minor to provide any services to the District in accordance with the prohibitions set forth above.

This Acknowledgment and Certification is to be construed under the laws of the State of Iowa. If any portion hereof is held invalid, the balance of the document shall, notwithstanding, continue in full legal force and effect.

In signing this Acknowledgment and Certification, the person signing on behalf of the Company hereby acknowledges that he/she has read this entire document, that he/she understands its terms, and that he/she not only has the authority to sign the document on behalf of the Company, but has signed it knowingly and voluntarily.

Dated:_____ _____
[Name of Vendor/Supplier/Contractor/Sub-contractor]

By: _____

Printed Name: _____

Title: _____