

BIDDING DOCUMENTS
First Quality Drive Industrial Site
Site Preparation Project



**Anderson County Economic Development
Association**

245 North Main Street, Suite 200

Clinton, Tennessee 37716

May 2023



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END OF SECTION 000110

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C8.0	DETAILS

END OF SECTION 000115

**SECTION 001116
INVITATION FOR BIDS**

**ANDERSON COUNTY, TENNESSEE
FIRST QUALITY DRIVE
SITE PREPARATION PACKAGE
DAVID JONES INDUSTRIAL PARK**

ADVERTISEMENT FOR BIDS

Sealed Bids for the construction of the First Quality Drive Site Preparation Package in David Jones Industrial Park will be received by the Anderson County Economic Development Association (ACEDA) in care of the Anderson County Finance Department located at 100 North Main Avenue, Suite 214 and 218, Clinton, TN 37716, Attention: Mr. James "Andy" Wallace, President of ACEDA, until **2:00 pm** local time on **Friday, July 14, 2023** at which time the Bids received will be publicly opened and read aloud.

The Project consists of the rough grading and drainage for the future development of the First Quality Drive site in the David Jones Industrial Park in Andersonville, Tennessee. The scope will include the erosion control, rough grading and drainage improvements associated with the site preparation for a future industrial site. The scope of the project will include all site work and any necessary tools or equipment required to complete the jobs according to the specifications. The allotted time for construction is 120 calendar days.

A Pre-Bid meeting will be held at the project site on **Thursday, June 8, 2023 at 2:00 pm**. The pre-bid meeting is NOT mandatory for submission of bids. Questions will be received via email (trutherford@smeinc.com) until Thursday, June 29, 2023 at 2:00 pm. Responses will be issued to interested parties by COB on Friday, June 30, 2023.

Bids will be received for a single prime Contract. Bids shall be on a lump sum basis.

The Issuing Office for the Bidding Documents is: S&ME, Inc.; 6515 Nightingale Lane, Knoxville, TN 37909, contact Tyler Rutherford, 865-970-0003, trutherford@smeinc.com. Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 8:00 am and 4:00 pm, and may obtain copies of the Bidding Documents from the Issuing Office as described below.

The information for Bidders; Bid Form; Form of Agreement; Drawings; Specifications information; Bid Bond, Performance Bond, and Payment Bond information; and other contract documents may be examined at the addresses below:

S&ME, Inc.
6515 Nightingale Lane
Knoxville, TN 37909

Builder's Exchange of Tennessee
Knoxville Office
300 Clark Street
Knoxville, TN 37921

Bidding Documents also may be examined at the ACEDA office, 245 North Main Avenue, Suite 200, Clinton, TN 37716, on Mondays through Fridays between the hours of 8:00 a.m. to 4:00 p.m.

Printed copies of the Bidding Documents may be obtained from the Issuing Office, during the hours indicated above, upon payment of a non-refundable charge of \$50.00 for each set.

Bidders shall submit proof of qualifications to perform the Work as described in the Instructions to Bidders.

Owner reserves the right to reject any or all bids, to waive informalities and to re-advertise.

Owner: **Anderson County Economic Development Association**

By: **Mr. James Wallace**

Title: **President of ACED**

Date: **May 18, 2023**

END OF SECTION 001116

SECTION 002113 – INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.1 DEFINITIONS:

- A. Definitions set forth in the Standard Short Form of Agreement Between Owner and Contractor, AIA Document A105-2017, are applicable to these Instructions to Bidders.
- B. Bidding Documents include the Bidding Requirements and the proposed Contract Documents including Addenda issued prior to receipt of bids.
- C. Addenda are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the bidding documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed.
- D. Other Contracts are subject to the Provisions of the Contract, General Provision Conditions and General Requirements where applicable.

1.2 OBTAINING BID DOCUMENTS

- A. Bidders must be licensed Contractor by the State of Tennessee. Each qualified Contractor must obtain a complete set of Bid Documents for bidding purposes from location stated in Section 001116 Invitation for Bids.
- B. Subcontractors, vendors or others desiring to obtain Drawings and Specifications may do so by paying the actual cost of reproduction, plus postage if any; this may be arranged directly with the professional printer entrusted with the original Drawings and Specifications during the bidding process.

1.3 SUBMISSION OF BIDS

- A. All bids must be prepared on the forms provided by the Engineer and submitted in accordance with the Instructions to Bidders. Bids with bid security shall be enclosed in a sealed opaque envelope, which shall be plainly marked on the outside with the following:
 - 1. "Proposal for the construction of the (NAME AND ADDRESS OF PROJECT AS SHOWN ON TITLE PAGE).
 - 2. Statements that bidder has complied with the Instructions to Bidders and has fully completed all bid forms without any qualifying statements or modifications.
 - 3. T.C.A 62-6-103 Name of bidder, TN State contractor's license number, license limits, expiration date, and applicable classifications for Bidder and listed subcontractors, as defined by TN State licensing law.
 - 4. Name of mechanical and electrical sub-contractors, license numbers, and expiration date of licenses.
- B. A bid shall be invalid if it has not been deposited at the designated location prior to the time and date for receipt of bids indicated in the advertisement or invitation to bid, or prior to any extension thereof issued to the Bidders.
- C. Unless otherwise provided in any supplement to these Instructions to Bidders, no Bidder shall modify, withdraw or cancel his bid or any part thereof for the time designated in the Bid Form
- D. Seven days prior to the receipt of bids, Addenda will be mailed or delivered to each person or

firm recorded by the Engineer as having received the bidding documents and will be available for inspection wherever the bidding documents are kept available for that purpose. Addenda issued after receipt of bids will be mailed or delivered only to the selected Bidder.

- E. Each bid shall be accompanied by a bid guarantee for the sum designated in the Invitation to Bidders. Bid Bonds shall be executed on standard Bid Bond forms, AIA Document A310, and shall be secured through a Surety licensed to operate in the State of Tennessee.
- F. Documents shall remain bound and not, for any reason, be unbound.
- G. No electronic bid or electronic modification of bid will be considered.

1.4 EXAMINATION OF BIDDING DOCUMENTS

- A. Each Bidder shall examine the bidding documents carefully and, not later than eight days prior to the date for receipt of bids, shall make written request to the Engineer for the true meaning of any part of the Contract Documents, or for interpretation or correction of any ambiguity, inconsistency or error therein which he may discover. Any interpretation or correction will be issued as an Addendum by the Engineer. Only a written interpretation or correction by Addendum shall be binding. No bidder shall rely upon any interpretation or correction given by any other method.

1.5 PRE-BID CONFERENCE

- A. A pre-bid conference may be scheduled prior to the bid date at a time and place to be announced by the Engineer. Three representatives of each prime bidder may attend.
- B. Questions as to the intent of the drawings and specifications may be entertained but proposed product substitutions may not. Discrepancies in the drawings or specifications should be brought to the attention of the Engineer as soon as discovered.

1.6 SUBSTITUTES

- A. Each bidder represents that his bid is based upon the materials and equipment described in the bidding documents.
- B. Bidder shall submit in writing any significant reservations he may have to the proposed use of any specified products prior to the opening of bids.

1.7 QUALIFICATION OF BIDDERS

- A. If required, a bidder shall submit to Engineer a properly executed Contractors Qualification Statement, AIA Document A305.
- B. The Contractor affirms by submission of a Bid that the Company is certified (at time of bid opening) as a state licensed Contractor for the scope of works on the Bid Form.

1.8 BIDDER'S REPRESENTATION

- A. Each bidder by making his bid represents that he has read and understands the bidding documents.
- B. Before submitting a bid, each bidder shall visit the site and fully inform himself as to all existing conditions and limitations under which the Work is to be performed. Each bidder shall then include in his bid a sum to cover all costs of all items necessary to perform the Work as set forth in the proposed Contract Documents. After bidding no concessions will be made to any bidder who fails to examine the project site. The submission of a bid will be construed as conclusive evidence that the bidder is aware of existing conditions.

1.9 WITHDRAWAL OF BIDS

- A. Any bidder may withdraw his bid, either personally or by written request, at any time prior to scheduled time for opening bids. No bidder may withdraw his bid for a period of sixty (60) days after the date set for opening thereof, and all bids shall be subject to acceptance by the Owner during this period.

1.10 REJECTION OF BIDS

- A. The bidder acknowledges the right of the Owner to reject any or all bids and to waive any informality or irregularity in any bid received, and to award a Contract or contracts to other than the low bidder.
- B. Counterproposals or qualified bids shall be subject to rejection at the discretion of the Owner.
- C. Bidder recognizes the right of the Owner to reject a bid if bidder failed to furnish required bid security, to submit the data required by the bidding documents, or to complete bid in any way.

1.11 SUBMISSION OF POST-BID INFORMATION

- A. Upon request by the Engineer, the selected bidder shall within ten days thereafter submit the following:
 - 1. A statement of costs for each major item of work included in the bid.
 - 2. A designation of the work to be performed by the bidder with his own forces.
 - 3. A list of names of Subcontractors, other persons or organizations (including those who are to furnish materials or equipment fabricated to a special design) proposed for such portions of the work. The bidder will be required to establish to the satisfaction of the Engineer and the Owner the reliability and responsibility of the proposed Subcontractors to furnish and perform the work described in the sections of the Specifications pertaining to such proposed Subcontractor's respective trades. Subcontractors and other persons and organizations proposed by the bidder and accepted by the Owner and the Engineer must be used on the work for which they were proposed and accepted and shall not be changed except with the written approval of the Owner and the Engineer.

1.12 CONTRACT FORM

- A. The Contract between Owner and Contractor will be written on Standard Short Form of Agreement Between Owner and Contractor, AIA Document A105-2017, as issued by The American Institute of Architects.

1.13 CONTRACT BOND

- A. The successful bidder will be required to execute the AIA Document A312-2010, Performance Bond and Payment Bond. The amount of the bond shall equal 100% of the bid.
 - 1. Power of Attorney shall accompany bonds signed by Attorney-In-Fact.
 - 2. Company writing bond shall be licensed to transact business in the State of Tennessee.
 - 3. Agent signing bond shall be a resident of the State of Tennessee

1.14 TIME FOR COMPLETION

- A. The time for completion is shown on the Bid Form. Refer to Article 15.4 of the General Provisions of the Contract for governing liquidated damages.

1.15 PROOF OF COMPETENCY

- A. Any bidder may be required to furnish evidence satisfactory to the Owner that he and his proposed Subcontractors have sufficient resources and experience to accomplish the Work of the Project in a satisfactory manner.

1.16 EQUAL OPPORTUNITY

- A. Bidders should be aware of the requirements of Section 00 45 36 Nondiscrimination in Employment and Equal Opportunity.

1.17 CODES AND REGULATIONS

- A. Comply with applicable and current local, state and national codes and regulations including but not limited to the following:
 - 1. 2009 International Building Code as adopted by Anderson County, Tennessee.
 - 2. 2006 International Energy Conservation Code.
 - 3. 2009 International Plumbing Code.
 - 4. 2009 International Mechanical Code.
 - 5. Standard Building Codes, where not replaced by IBC.
 - 6. 2009 International Fire Code.
 - 7. National Board of Fire Underwriter's Code.
 - 8. Occupational Safety and Health (OSHA).
 - 9. Americans with Disabilities Act (ADA).

END OF SECTION 002113

SECTION 004113 – BID FORM – STIPULATED SUM

TO: Mr. James Wallace
245 North Main Street
Clinton, Tennessee 37716

PROJECT: FIRST QUALITY DRIVE SITE PREPARATION
DAVID JONES INDUSTRIAL PARK
ANDERSONVILLE, TN 37716

BID NO.

The undersigned as Bidder acknowledges by his signature that he has visited and examined the site of the proposed construction and has received and examined the Project Manual, the Drawings, and other documents and has included their provisions in his Bid. The Bidder further acknowledges that he has received the following Addenda:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

In submitting this Bid, the Bidder agrees:

1. To hold open his Bid for 30 days from the date shown above.
2. To enter into and execute a Contract, if awarded, on the basis of this Bid, and to furnish the required Bonds.
3. To abide by Public Chapter 587 of 2007, as codified in Tennessee Code Annotated Section 49-5-413 as stipulated on the Background Check Compliance Form to be submitted with bid.
4. To accomplish work in accord with the Contract Documents.
5. To achieve substantial completion of Base Bid, and accepted alternates 180 calendar days from and including the date stipulated within the Notice to Proceed.
6. To accept the conditions for liquidated damages in the amount of \$200.00 per calendar day.

BASE BID

The Bidder agrees to construct the Work of the Base Bid for this project for the lump sum price of (show amount in both words and figures) (All allowances described in section 01 21 00 are to be included in the base bid price):

_____ Dollars \$ _____

UNIT PRICES

A. Undercut and Replacement of Unsuitable Soil

\$ _____ per cubic yard

The Bidder acknowledges by his signature that he agrees to requirements contained in the Invitation to Bid and the Instructions to Bidders and, that should he fail to execute a Contract with the Owner, should the Owner award said Contract to him, that the Owner may rightfully collect the sum of the Bid Bond.

The required Bid Security is attached to this Bid.

Name of Firm _____

Signed By _____

Title _____

Bidder's Telephone Number _____

Note: If a corporation, Bid must be signed by person authorized by the corporation by-laws to bind it to contract.

END OF SECTION 004113

SECTION 004536 – NON-DISCRIMINATION IN EMPLOYMENT AND EQUAL OPPORTUNITY

- 1.1 In determining the suitability and acceptability of proposed bidders, the Owner reserves the right to consider each bidder's commitment to hire minorities and/or subcontract with minority contractors, relative to certain phases of the contracted services.
- 1.2 During the Performance of the Contractual Agreement, the contracting party agrees as follows:
 - A. The contracting party will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The contracting party will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, creed, color, or national origin. Each action shall include, but not be limited to, the following: recruitment advertising; layoff or termination; rates of pay or other forms of compensation; selecting for training, including apprenticeship. The contracting party agrees to post in conspicuous places, available to employees and applicants for employment, Executive Order No. 17, State of Tennessee, regarding Equal Opportunity and Nondiscrimination in Employment.
- 1.3 The Contractor will, in all solicitations for employees or job orders for employees placed with any employment agency, union, or other firm or agency, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, disability, national origin, sex or age. The words "equal opportunity employer" in all advertisements shall constitute compliance with this Section.
- 1.4 The Contractor will include the provisions of the foregoing paragraphs in every subcontract or purchase order for goods or services which are subject matter of this Agreement. The Owner shall have the right, at his option, to cancel the Agreement in whole or in part.
- 1.5 The Contractor shall have an affirmative action plan.

END OF SECTION 004536

SECTION 0045213 – AGREEMENT FORM – STIPULATED (SINGLE PRIME CONTRACT)

1.1 AGREEMENT

- A. The Contract between the Owner and the Contractor shall be executed on AIA Document A105-2017 Standard Short Form of Agreement Between Owner and Contractor, where the basis of payment is a Stipulated Sum. This form includes General Provisions, Articles 1-17, and may be examined at the office of the Engineer upon request.

END OF SECTION 005213

SECTION 006000 – PROJECT FORMS

PART 1 - GENERAL

1.1 SUMMARY

Unless otherwise permitted by the Engineer, the following forms shall be employed by the Contractor for their specific purposes during the course of this Project:

- A. Anderson County Government Forms (Attached at the End of Section).
 - 1. Vendor Information Sheet
 - 2. Non-Collusion Affidavit
 - 3. Diversity Business Information
 - 4. Insurance Requirement Acknowledgement
 - 5. Conflict of Interest Statement
 - 6. New Contract Terms - Services
 - 7. Drug Free Workplace Affidavit
 - 8. General Terms and Conditions
- B. Certifying Agencies Bond Forms
 - 1. AIA Document A312-2010, Performance Bond and Payment Bond.
 - 2. Certificates and Other Forms
 - 3. AIA Document G705-2001 List of Subcontractors.
 - 4. AIA Document G715-2017, Instruction Sheet and Attachment for ACCORD Certificate of Insurance.
- C. Clarifications and Modification Forms
 - 1. AIA Document G702-1992 Application and Certificate for Payment.
 - 2. AIA Document G703-1992 Continuation Sheet.
 - 3. AIA Document G707A-1994 Consent of Surety to Reduction in or Partial Release of Retainage.
 - 4. AIA Document G716-2004 Request for Information.
- D. Closeout Forms
 - 1. AIA Document G704-2017 Certificate of Substantial Completion.
 - 2. AIA Document G706A-1994 Contractor's Affidavit of Release of Liens.
 - 3. AIA Document G707-1994 Consent of Surety to Final Payment

END OF SECTION 006000

**Attachment 1
BID NUMBER:**

SECTION 1 - BID INFORMATION

Acknowledgment of Addenda:
(Write "Yes" if received)

Addenda 1 _____ Addenda 2 _____
Addenda 3 _____ Addenda 4 _____

SECTION 2 - VENDOR INFORMATION

Vendor Name

Vendor Address

City

State

Zip

Telephone Number

Contact Person *(Please Print)*

E-Mail Address

Taxpayer Identification Number, Social Security or
Employer Identification Number:

State of Tennessee Business License Number:
License # _____

I agree to abide by all Terms and Conditions of this Invitation to Bid and certify that I am authorized to sign this bid for the vendor. Failure to include any information mentioned in the bid or to comply with these bid instructions may result in rejection of your entire bid. Signing this form affirms that the original Invitation for Bid document has not been altered in any way.

Authorizing Signature:

(Please sign original in blue ink)

Attachment 2

Non-Collusion Affidavit

- This Non-Collusion Affidavit is material to any contract awarded pursuant to this bid.
- This Non-Collusion Affidavit must be executed by the member, officer, or employee of the bidder who makes the final decision on prices and the amount quoted in the bid.
- Bid rigging and other efforts to restrain competition and the making of false sworn statements in connection with the submission of bids are unlawful and may be subject to criminal prosecution. The person who signs the affidavit should examine it carefully before signing and assure himself or herself that such statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the bidder with responsibilities for the preparation, approval, or submission of the bid.
- In the case of a bid submitted by a joint venture, each party to the venture must be identified in the bid documents, and an affidavit must be submitted separately on behalf of each party.
- The term "complementary bid" as used in the affidavit has the meaning commonly associated with that term in the bidding process and includes the knowing submission of bids higher than the bid of another firm, an intentionally high or noncompetitive bid, and any other form of bid submitted for the purpose of giving a false appearance of competition.
- Failure to file an affidavit in compliance with these instructions may result in disqualification of the bid.

Non-Collusion Affidavit

STATE OF _____

COUNTY OF _____

I state that I am (Title) _____ of (Name of My Firm) _____ and that I am authorized to make this affidavit on behalf of my firm and its owners, directors, and officers. I am the person responsible in my firm to the price(s) and the amount of this bid.

I STATE THAT:

- The price(s) and amount of this bid have been arrived at independently and without consultation, communication, or agreement with any other contractor, bidder, or potential bidder.
- Neither the price(s) nor the amount of this bid and neither the approximate price(s) nor approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before bid opening.
- No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.
- The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
- (Name of My Firm) _____, its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency and have not in the last three years been convicted or found liable for any act prohibited by State of Federal law in any jurisdiction involving conspiracy or collusion with respect to bidding on any public contract, except as follows:

I state that (Name of My Firm) _____ understands and acknowledges that the above representation are material and important and will be relied on by ACEDA in awarding the contract(s) for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from ACEDA of the true facts relating to submission of bids for this contract.

Representative's Signature

Title

Sworn to and subscribed before me this _____ day of _____, _____.

Notary Public

My commission expires: _____

Attachment 3



DIVERSITY BUSINESS INFORMATION

Definitions for Determining Minority, Women And Small-Owned Firms

The guidelines for determining minority, women and small-owned firms are defined as follows:

- “MINORITY”** means a person who is a citizen or lawful permanent resident of the United States and who is:
- o Black (a person having origins in any of the black racial groups of Africa);
 - o Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
 - o Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or
 - o American Indian and Alaskan Native (a person having origins in any of the original peoples of North America).

“MINORITY BUSINESS ENTERPRISE” shall mean a minority business:

A continuing, independent, for profit business which performs a commercially useful function, and is at least 51 percent owned and controlled by one or more minority individuals; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned and controlled by one or more minorities. Whose management and daily business operations are controlled by one or more of minority individuals. “Control” as used in the above clause, means exercising the power to make policy decision. “Operate,” as used in the above clause, means being actively involved in the day-to-day management of the business.

“WOMEN BUSINESS ENTERPRISE” shall mean women business:

A continuing, independent, for profit business which performs a commercially useful function, and which is at least 51 percent owned and controlled by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned and controlled by one or more women. Whose management and daily business operations are controlled by one or more of such individuals. “Control” as used in the above clause, means exercising the power to make policy decision. “Operate,” as used in the above clause, means being actively involved in the day-to-day management of the business.

Attachment 3

**DIVERSITY BUSINESS INFORMATION
ANDERSON COUNTY GOVERNMENT**

NOTE: This form is to be submitted only by those who qualify. Bidders do not have to be a minority business to be considered.

IMPORTANT! NOTARY AND COPY OF CERTIFICATION REQUIRED

SECTION 6 – DIVERSITY INFORMATION

VENDOR/CONTRACTOR NAME: _____

Type of Company: (Check One)

(____) Corporation (____) Partnership (____) Limited Liability (____) Sole Proprietor

Is your company 51% Owned or Operated by a Minority Group? Yes ___ No___

If yes, check the ethnic category and indicate % of ownership:

- American Indian/Alaskan Native ____%
- African American ____%
- Hispanic ____%
- Asian/Pacific Islander ____%
- Other ____% _____ (please indicate)

Please name the entity of certification: _____

Please provide copy of certification letter or certificate

I, HEREBY CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

Signature: _____ **OFFICER OF THE COMPANY**

Name: _____ **Title:** _____

NOTARY ACKNOWLEDGEMENT:

STATE OF _____)

COUNTY OF _____)

ON _____, 20____, BEFORE ME, _____,

PERSONALLY APPEARED _____, PERSONALLY KNOWN TO ME (OR PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE) TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/ THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON (S) ACTED, EXECUTED THE INSTRUMENT.

WITNESS MY HAND AND OFFICIAL SEAL.

SIGNATURE OF NOTARY: _____

PRINTED FULL NAME OF NOTARY: _____

MY COMMISION EXPIRES: _____

**Attachment 4
Insurance Requirement Acknowledgment**

The bidder awarded this bid or contract will maintain, at their expense adequate insurance coverage to protect them from claims arising under the Worker's Compensation Act, any and all claims for bodily injury and property damage to the Bidder and to ACEDA while delivery and service are being done. A certificate of insurance *must* be on file in the before work may begin and must be maintained until work is completed.

Only the items marked with an "X" are applicable to this bid and or contract.

1. **Workers Compensation Employers Liability** Statutory limits
100,000/100,000/500,000
2. **Commercial General Liability** \$500,000 per occurrence
\$1,000,000 aggregate
 - Occurrence Form Only
 - Include Premises Liability
 - Include Contractual
 - Include XCU
 - Include Products and Completed Operations
 - Include Personal Injury
 - Include Independent Contractors
 - Include Vendors Liability
 - Include Professional or E&O Liability
3. **Business Auto**
 - Include Garage Liability
 - Include Garage Keepers Liability
 - Copy of Valid Driver's License
 - Copy of Current Motor Vehicle Record
 - Copy of Current Auto Liability Declarations Page
4. **Crime Coverages**
 - Employee Dishonesty
 - Employee Dishonesty Bond
5. **Property Coverages**
 - Builders Risk
 - Inland Marine
 - Transportation
6. Performance Bond Required – A One Hundred Percent (100%) performance or an irrevocable letter of credit in favor of Anderson County Government at a federally insured financial institution. This ***MUST*** be submitted before purchase order issued.

Certificate Holder Shall Be: Anderson County Economic Development Association, Clinton, Tennessee, and shall show the bid number and title. ACEDA shall be named as an additional insured on all policies except worker's compensation and auto. Insurance carrier ratings shall have a Best's rating of A-VII or better, or its equivalent. Cancellation clause on certificate should strike out "endeavor to" and include a 30-day notice of cancellation where applicable. Any deviations from the above requirements ***must*** be disclosed to the ACEDA. Any liability deductibles or exclusions must also be disclosed. Exceptions can be granted if applicable.

Bidders Statement and Certification

I understand the insurance requirements of these specifications and will comply in full within **21 (twenty-one) calendar days** if awarded this bid and or contract. I agree to furnish the county with proof of insurance for the entire term of the bid and or contract.

Vendor Name

Authorized Signature

Bid Representative Name (Please Print)

Date

Attachment 5

ANDERSON COUNTY ECONOMIC DEVELOPMENT ASSOCIATION

CONFLICT OF INTEREST AFFIDAVIT/STATEMENT

NOTE: PLEASE SIGN AND RETURN PAGE TWO IN YOUR BID PACKET.

T. C. A. 5-14-114. Conflicts of interest -- Illegal payments.

(a) Neither the county purchasing agent, nor members of the county purchasing commission, nor members of the county legislative body, nor other officials of the county, shall be financially interested, or have any personal beneficial interest, either directly or indirectly, in any contract or purchase order for any supplies, materials, equipment or contractual services used by or furnished to any department or agency of the county government.

(b) Nor shall any such persons accept or receive, directly or indirectly, from any person, firm or corporation to which any contract or purchase order may be awarded, by rebate, gift or otherwise, any money or anything of value whatsoever, or any promise, obligation or contract for future reward or compensation.

(c) A violation of this section is a Class D felony.

T. C. A. 12-4-101 Personal interest of officers prohibited.

(a) (1) It is unlawful for any officer, committee member, director, or other person whose duty it is to vote for, let out, overlook, or in any manner to superintend any work or any contract in which any municipal corporation, county, state, development district, utility district, human resource agency, or other political subdivision created by statute shall or may be interested, to be directly interested in any such contract. "Directly interested" means any contract with the official personally or with any business in which the official is the sole proprietor, a partner, or the person having the controlling interest. "Controlling interest" includes the individual with the ownership or control of the largest number of outstanding shares owned by any single individual or corporation. This subdivision (a)(1) shall not be construed to prohibit any officer, committee person, director, or any person, other than a member of a local governing body of a county or municipality, from voting on the budget, appropriation resolution, or tax rate resolution, or amendments thereto, unless the vote is on a specific amendment to the budget or a specific appropriation or resolution in which such person is directly interested.

(2) (A) Subdivision (a)(1) shall also apply to a member of the board of directors of any not-for-profit corporation authorized by the laws of Tennessee to act for the benefit or on behalf of any one (1) or more counties, cities, towns and local governments pursuant to title 7, chapter 54 or 58.

(B) Subdivision (a)(2)(A) does not apply to any county with a metropolitan form of government and having a population of four hundred thousand (400,000) or more, according to the 1980 federal census or any subsequent federal census.

(b) It is unlawful for any officer, committee member, director, or other person whose duty it is to vote for, let out, overlook, or in any manner to superintend any work or any contract in which any municipal corporation, county, state, development district, utility district, human resource agency, or other political subdivision created by statute shall or may be interested, to be indirectly interested in any such contract unless the officer publicly acknowledges such officer's interest. "Indirectly interested" means any contract in which the officer is interested but not directly so, but includes contracts where the officer is directly interested but is the sole supplier of goods or services in a municipality or county.

(c) (1) Any member of a local governing body of a county or a municipality who is also an employee of

Attachment 5

ANDERSON COUNTY ECONOMIC DEVELOPMENT ASSOCIATION

CONFLICT OF INTEREST AFFIDAVIT/STATEMENT

such county or municipality and whose employment predates the member's initial election or appointment to the governing body of the county or municipality may vote on matters in which the member has a conflict of interest if the member informs the governing body immediately prior to the vote as follows: "Because I am an employee of (name of governmental unit), I have a conflict of interest in the proposal about to be voted. However, I declare that my argument and my vote answer only to my conscience and to my obligation to my constituents and the citizens this body represents." The vote of any such member having a conflict of interest who does not so inform the governing body of such conflict shall be void if challenged in a timely manner. As used in this subdivision (c)(1), "timely manner" means during the same meeting at which the vote was cast and prior to the transaction of any further business by the body.

(2) Any member of a local governing body of a county or a municipality who is also an employee of such county or municipality and whose employment began on or after the date on which the member was initially elected or appointed to serve on the governing body of the county or municipality shall not vote on matters in which the member has a conflict of interest.

(3) (A) In the event a member of a local governing body of a county or a municipality has a conflict of interest in a matter to be voted upon by the body, such member may abstain for cause by announcing such to the presiding officer.

(B) (i) Any member of a local governing body of a municipality who abstains from voting for cause on any issue coming to a vote before the body shall not be counted for the purpose of determining a majority vote.

(ii) This subdivision (c)(3)(B) shall in no way be construed to apply to any county having a metropolitan form of government and having a population in excess of five hundred thousand (500,000), according to the 1990 federal census or any subsequent federal census.

(d) This section shall apply to a member of the board of directors or officer of any nonprofit corporation required under § 8-44-102(b)(1)(E) to conduct all meetings of its governing body as open meetings.

I have read and understand both T.C. A. 5-14-114 and T. C. A. 12-4-101, and will comply.

NOTE: PLEASE SIGN AND RETURN PAGE TWO IN YOUR BID PACKET.

Contractor or Company Owner (signature)

Date

Contractor or Company Name (print)

**Attachment 6
Not Applicable**

Attachment 7

DRUG-FREE WORKPLACE AFFIDAVIT

STATE OF _____

COUNTY OF _____

The undersigned, principal officer of _____, an employer of five (5) or more employees contracting with _____ County Government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company"), and is duly authorized to execute this Affidavit on behalf of the Company.
2. The Company submits this Affidavit pursuant to T.C.A. 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9 of the *Tennessee Code Annotated*.
3. The Company is compliance with T.C.A. 50-9-113

Further affiant saith not.

Principal Officer

STATE OF _____

COUNTY OF _____

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purpose therein contained.

Witness my hand and seal office this _____ day of _____, 20_____.

Notary Public

My commission expires: _____, 20_____.

General Terms and Conditions

BID ENVELOPE SUBMISSION INSTRUCTIONS:

Bids are to be received in a sealed envelope/package with the bid number, company name and opening date clearly marked. Failure to comply may result in rejection of the entire bid. Anderson County will not be responsible for any lost or misdirected mail. Late bids, e-mailed bids and faxed bids will not be considered nor returned. It is the sole responsibility of the bidder to ensure their bid is delivered to the Purchasing Department.

Please note that Anderson County Government does not receive a guaranteed delivery time for express mail and/or packages. PLEASE MAIL ACCORDINGLY.

**Anderson County Economic Development Association
c/o ANDERSON COUNTY FINANCE DEPARTMENT
100 NORTH MAIN STREET, SUITES 214 AND 218
CLINTON, TN 37716**

Email: purchasing@andersoncountyttn.gov

Website: <http://andersontn.org/purchasing>

(865) 457-6218 Phone

(865) 457-6252 Fax

**Bid documents must be completed in ink or typed, signed in ink,
and free from alterations, erasures or mark-throughs.**

SECTION 1 - GENERAL TERMS AND CONDITIONS

1.1 ALTERATIONS OR AMENDMENTS: Alterations, amendments, changes, modifications or additions to this solicitation shall not be binding on ACEDA without prior written approval.

1.2 NO CONTACT POLICY: After vendor receives a copy of this bid, any contact initiated by any vendor with any Anderson County or ACEDA representative, other than the Purchasing Department, concerning this invitation for bid is prohibited and agreements made thereto will not be considered binding on ACEDA. Any such unauthorized contact may cause the disqualification of the bidder from this procurement transaction.

1.3 QUESTIONS: Pursuant to TCA §12-4-113, questions regarding the specifications or bid procedures must be received by the Purchasing Agent and/or designer no less than ninety-six (96) hours before the bid opening date. No addenda within less than forty-eight (48) hours of the bid opening date shall be permitted. Any questions concerning the bid document must be submitted to purchasing@andersontn.org no less than ninety-six (96) hours before bid opening date.

1.4 BID CLOCK: The bid/time clock in the Anderson County Purchasing office will be the time of record.

1.5 TAXES: ACECA is not liable for Federal excise or State sales tax. Tax exemption certificates will be provided upon request.

1.6 CONFLICT OF INTEREST: If requested by the Purchasing Agent, vendors must complete and submit a "Conflict of Interest Affidavit Statement" prior to contract award, see T.C.A. 5-14-114 and T. C. A. 12-4-101.

1.7 NON-COLLUSION: Vendors, by submitting a signed bid, certify that the accompanying bid is not the result of, or affected by, any unlawful act of collusion with any other person or company engaged in the same line of business or commerce, or any other fraudulent act punishable under Tennessee or United States law.

1.8 NON-DISCRIMINATION: Contracted vendors will not discriminate against any employee or applicant for employment because of race, religion, sex, national origin or disability except where religion, sex, national origin or disability is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor.

1.9 SAME AS OR EQUIVALENT TO: Vendors are to bid as specified herein or propose an approved equal. ~~Determination of equality is solely~~ ACEDA's responsibility. Any designated brands are for reference purpose only, not a statement of preference. When an alternate manufacturer, brand, model or make is bid, ACEDA will determine if the item bid meets or exceeds the items as specified. If the bidder does not indicate that an alternate manufacturer, brand, model or make is being bid, it is understood that the item(s) bid are the same manufacturer, brand, model or make as requested in the Invitation to Bid. Comparable products of other manufacturers will be considered if proof of comparability is contained in the bid submission. It shall be the responsibility of the vendors, including vendors whose product is referenced to furnish upon request catalog pages, brochures or other data to provide an adequate basis for determining the quality and functional capabilities of the product offered. Failure to provide this data may be considered valid justification for rejection of bid.

1.10 MULTIPLE BIDS/AWARDS: NOT APPLICABLE

1.11 STATE OF TENNESSEE CONTRACTORS' LICENSE LAW (T.C.A. 62-6-119) b): Bids for which the total cost of the project is twenty-five thousand dollars (\$25,000) or more, the outside of the sealed bid envelope/package containing the bid provides the following information: the Company Name, the Contractor's license number, license classification, the date of the license expiration and that part of each license classification applying to the bid. In addition, each heating ventilation or air conditioning, plumbing and electrical subcontractor's license number, date of the license expiration and that part of each classification applying to the bid if the value of the work is \$25,000 or greater, must be notated. If the value of either the contractor or the subcontractor's work is less than \$25,000, the bid envelope/package containing the bid is to be notated with the phrase "Contractor or Subcontractor's Bid is Less than \$25,000" after each appropriate heading. In the case of joint ventures, each party submitting the bid must provide this information. If no subcontractors are being used, the outside of the envelope/package containing the bid must state, "No Subcontractors are being used on this project."

1.12 ACCEPTANCE: Vendors shall hold their price firm and subject to acceptance by ACEDA for a minimum period of sixty (60) working days from the date of the bid opening, unless otherwise indicated in their bid. Any or all bids may be rejected for good cause.

1.13 BID AWARDS: Bids will be awarded to the lowest and best bidder, taking into consideration the qualities of the articles to be supplied, their conformity with specifications and their suitability to the requirements of ACEDA and the delivery terms. ACEDA also reserves the right to not award this bid.

1.14 BIDDER'S MINIMUM QUALIFICATIONS: Bidders must have the resources and capability to provide the materials and services as described in the solicitation. ACEDA reserves the right to request additional information and/or material not specified as a bid requirement from any bidder to confirm qualifications.

1.15 DEBARMENT: By submitting a response to this solicitation, bidders are certifying that bidder is not currently debarred from doing business with any local or state Government or the Federal Government. Bidders shall provide documentation relating to any and all debarments that occurred within the last ten

years. The ACEDA will search the "System for Award Management" for federally excluded vendors before awarding a bid.

1.16 PROTEST: Any vendor wishing to protest the bid award shall notify in writing the ACEDA President 245 N. Main Street, Clinton, TN 37716. No protest will be accepted, except those protests made in writing and received within (10) ten calendar days of the bid award. Protests must be in writing and envelopes/package containing protest must be clearly marked with bid number and words "BID PROTEST". ACEDA shall review and make a final decision as to any bid protest. Appeals shall be filed in the Circuit or Chancery Courts of Anderson County within sixty (60) days of the final decision.

VENDORS PLEASE NOTE: ACEDA WILL NOT STOP THE PURCHASE PROCESS.

THE PURCHASE MAY BE COMPLETED OR THE PROJECT MAY BE RE-BID WHILE THE PROTEST PROCEDURE IS STILL IN OPERATION. IF A RE-BID IS MADE, THE PROTESTING VENDOR SHOULD SUBMIT A NEW BID. OTHERWISE, THEY WILL BE WITHOUT A BID ON THE RE-BID. FURTHER, THE RE-BIDDING WILL NOT END THE APPEALS PROCESS. IT WILL CONTINUE UNTIL A FINAL DECISION IS REACHED OR THE COMPLAINANT WITHDRAWS THE APPEAL.

1.17 DELIVERY: Bid pricing is to include complete supply and delivery to ACEDA, Tennessee. Vendors are to state the delivery time in the bid. Vendors deliver all products "free on board" to final destination unless indicated otherwise in the bid requirements.

1.18 PROOF OF FINANCIAL AND BUSINESS CAPABILITY: Bidders must, upon the request of ACEDA, provide satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these specifications. ACEDA will make the final determination as to the bidder's ability.

1.19 VENDOR'S DEFAULT: ACEDA reserves the right, in case of vendor default, to procure the articles or services from other sources and hold the defaulting vendor responsible for any excess costs occasioned thereby.

1.20 DUPLICATE COPIES: Vendors are to submit one original and at least one exact copy of their bids, including brochures; unless additional copies are requested in bid specifications.

1.21 DRUG-FREE WORKPLACE: Under the provisions of Tennessee Code Annotated §50-9-113 enacted by the General Assembly effective 2001, all employers with five (5) or more employees who contract with either the state or a local government to provide construction services are required to submit an affidavit stating that they have a drug free workplace program that complies with Title 50, Chapter 9, in effect at the time of submission of a bid at least to the extent required of governmental entities. The statute imposes other requirements on the contractor and contractors should consult private legal counsel if legal questions arise under this section or any other provision of this document. All contractors with five (5) or more employees that will be providing construction services are to return the provided written affidavit signed by the principal officer of a covered employer acknowledging that the contracting entity is in compliance with the Drug Free Workplace laws of State of Tennessee.

1.22 COMPETITION INTENDED: It is the responsibility of the bidder to review the entire Invitation to Bid document and to notify the ACEDA if the Invitation to Bid is formulated in a manner that would unnecessarily restrict competition or if it is ambiguous in what is being requested. The Purchasing Agent must receive questions regarding the specifications or bid procedures no less than ninety-six (96) hours prior to the time set for the bid opening.

1.23 SCHOOL CAFETERIA BIDS: not applicable

1.24 TERMINATION: ACEDA reserves the right to terminate contracts in whole or in part with thirty (30) days written notification to the contractor. In the event of termination, the County shall not be liable for any costs other than the cost of services performed and materials delivered and accepted prior to termination date.

1.25 OSHA SAFETY: The Vendor is responsible for training their employees in Safety and Health Regulations for the job, assuring compliance with Tennessee Occupational Safety and Health regulations and any other Regulatory Agency.

1.26 PERFORMANCE BOND: A standard surety or performance bond or an irrevocable letter of credit in favor of ACEDA at a federally insured financial institution will be required to be submitted with bid, if indicated in section four, item six insurance requirement checklist.

1.27 BACKGROUND CHECKS: Contractors shall comply with Public Chapter 587 of 2007, as codified in Tennessee Code Annotated Section 49-5-413, which requires all contractors to facilitate a criminal history records check conducted by the Tennessee Bureau of Investigation and the Federal Bureau of Investigation for each employee prior to permitting the employee to have contact with students or enter school grounds when students are present.

1.28 AWARD RESULTS: As soon as practicable after proposal or bid evaluations, Anderson County shall post the award decision to Vendor Registry at www.vendorregistry.com. Individual notices are normally not mailed or e-mailed except to the successful vendor.

1.29 INDEMNIFICATION/HOLD HARMLESS: Vendor shall indemnify, defend, save and hold harmless ACEDA and, its officers, agents and employees from all suits, claims, actions or damages of any nature brought because of, arising out of, or due to breach of the agreement by Vendor, its subcontractors, suppliers, agents, or employees or due to any negligent act or occurrence or any omission or commission of Vendor, its subcontractors, suppliers, agents or employees.

1.30 DECLARATIVE STATEMENT: Any statement or words (i.e.: must, shall, will, etc.) are declarative statements and the proposer must comply with the condition. Failure to comply with any such condition may result in their bid being non-responsive and disqualified.

1.31 WAIVING OF INFORMALITIES: ACEDA reserves the right to waive minor informalities or technicalities when it is in the best interest of ACEDA.

1.32 APPROPRIATION: Funding for multi-year contracts are subject to budget appropriations. In the event no funds are appropriated by Anderson County for the goods or services in any fiscal year or insufficient funds exist to purchase the goods or services of a contract, then that contract shall expire upon the expenditure of previously appropriated funds or the end of the current fiscal year, whichever occurs first, with no further obligations owed to or by either party. NOT APPLICABLE

1.33 ASSIGNMENT: Vendor shall not assign or sub-contract any agreement, its obligations or rights hereunder to any party, company, partnership, incorporation or person without the prior written specific consent of ACEDA.

1.34 QUANTITIES: ACEDA does not guarantee quantities to be purchased off this bid.

1.35 UNIT PRICE: In case of discrepancy between any unit price and an extended price, the unit price will be presumed to be correct, subject, however, to correction to the same extent and in the same manner as any other mistake.

1.36 MODIFICATION OR WITHDRAWAL OF BIDS: When it is certain that a mistake has been made in the preparation of the bid, a request will be made to the bidder to confirm the bid. Provisions must be made so that mistakes can be taken care of and the ambiguity resolved satisfactorily. Bids may be modified or withdrawn by written notice received in the Purchasing Department prior to the time and date set for the bid

opening. The changes or withdrawal of the bids shall be in writing and signed by an official of the company. The envelope containing the modification should clearly state "modification to bid." Either the entire bid or a particular item may be withdrawn or modified in this manner.

1.37 PRE-BID CONFERENCES: Attendance at Pre-bid Conferences is strongly encouraged. When deemed necessary a Mandatory Pre-bid Conference will be held. A company representative **MUST** be in attendance and sign the Pre-bid sign-in sheet in order to be considered for bid award.

1.38 ADDENDUM: § T.C.A. 12-14-113 ACEDA reserves the right to amend this solicitation by addendum. Addenda will be posted to the vendor registry up to 48 hours in advance of the bid/proposals due date and time. It is the bidder's responsibility to check the website for addendum. If in the ACEDA's opinion revisions are of such a magnitude, the deadline for this solicitation may be extended in an addendum.

Addenda may change specifications, reply sheets, and times and dates for pre-bid meetings as well as due dates/deadlines for questions and bids/proposals.

1.39 OWNERSHIP: All bids, once received, become property of ACEDA and will not be returned.

1.40 WEATHER AND COURTHOUSE CLOSINGS: In the event of a situation severe enough that necessitate the closing of Anderson County Government offices during a planned bid opening, vendors will receive notification of the new date and time upon re-opening of county government offices. No bids will be opened until the rescheduled date for bid opening and all bidders/proposers whose submissions meet the extended deadline will be given equal consideration at that time. Anderson County and ACEDA shall not be liable for any commercial carrier's decision regarding deliveries during inclement weather.

1.41 IRAN DIVESTMENT ACT OF 2014: Pursuant to the Iran Divestment Act of 2014, Tenn. Code Ann. § 12-12-106 requires the State of Tennessee Chief Procurement Officer to publish, using creditable information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105. Inclusion on this list makes a person ineligible to contract with Anderson County; if a person ceases its engagement in investment activities in Iran, it may be removed from the list. The State of Tennessee list is available here: <http://tennessee.gov/generalservices/article/Public-Information-library>.

1.42 ANTI-BOYCOTT OF ISRAEL: By responding to this bid the Bidder certifies that it is not currently engaged in and agrees for the duration of this Agreement not to engage in, the boycott of Israel.

SECTION 007213 – GENERAL PROVISIONS OF THE CONTRACT

STANDARD FORM

The General Provisions contained in the Standard Short Form of Agreement Between Owner and Contractor, AIA Document A105-2017 Edition, Articles 1 through 17, inclusive, are hereby made a part of this specification to the same extent as if herein written out in full. Project specific provisions or conditions traditionally included within a separate “Supplementary” section have been incorporated within these General Provisions. These expanded General Provisions may be examined at the office of the Engineer upon request.

Where any article of the General Provisions is amended, voided or superseded herein, the provision of such articles not specifically amended, voided, or superseded shall remain in effect.

The General Provisions govern all sections of the specifications and are as binding as if repeated therein.

END OF SECTION 007213

SECTION 011000 – SUMMARY

PART 1 - GENERAL

1.1 DEFINITIONS:

- A. General Description: site preparation works including grading and drainage for proposed industrial site.
- B. Project Address: First Quality Drive, Andersonville, Tennessee 37705.

1.2 CONTRACT DESCRIPTION

- A. Contract: Stipulated Sum as described in Document 005213 – Agreement Form.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 011000

SECTION 012200 – UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for unit prices.
1. Unit prices and quantities enable the Owner to forestall decision-making on unknown or indeterminate elements until more adequate information upon which to base the decision becomes available. Unit prices do not apply to elements the extent of which are readily discernible at the time of bidding nor to items at the discretion of the Contractor.
 2. A unit price is an amount proposed by a bidder, and stated on the Bid Form, as a price per unit of measurement for materials or services added to the Contract Sum, by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased. If the required Work is decreased the unit price credit shall be 95% of the unit price for increased Work.
 3. Unit prices include all necessary material, delivery, installation, insurance, overhead, profit and applicable taxes.
 4. Refer to individual Specification Sections for construction activities requiring the establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
 5. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.
- B. Schedule: A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials and methods described under each unit price.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

3.1 UNIT PRICE SCHEDULE

- A. XXXXXXXXXX

END OF SECTION 012200

SECTION 012600 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections include the following:
 - 1. Division 01 Section "Unit Prices" for administrative requirements for using unit prices.

1.2 MINOR CHANGES IN THE WORK

- A. Engineer will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Engineer are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 - 2. Unless otherwise indicated within the proposal request, within seven days of receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Engineer.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and

activity relationship. Use available total float before requesting an extension of the Contract Time.

- C. Proposals shall be draft as in response to AIA Document G709 for Proposal Request.

1.4 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, Engineer will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Engineer may issue a Construction Change Directive on AIA Document G714 Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

- 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

- 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 012600

SECTION 012900 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections include the following:
 - 1. Division 01 Section "Allowances" for procedural requirements governing handling and processing of allowances.
 - 2. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 3. Division 01 Section "Unit Prices" for administrative requirements governing use of unit prices.
 - 4. Division 01 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.

1.2 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Application for Payment with Continuation Sheets.
 - b. Submittals Schedule.
 - c. Contractor's Construction Schedule.
 - 2. Submit the Schedule of Values to Engineer at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of Engineer.
 - c. Engineer's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Submit draft of AIA Document G703 Continuation Sheets.
 - 3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

- a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
 - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
 7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
 9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.4 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

- E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
 - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
 - 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 - 2. When an application shows completion of an item, submit final or full waivers.
 - 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - 4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 - 5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of subcontractors.
 - 2. Schedule of Values.
 - 3. Contractor's Construction Schedule (preliminary if not final).
 - 4. Products list.
 - 5. Schedule of unit prices.
 - 6. Submittals Schedule (preliminary if not final).
 - 7. List of Contractor's staff assignments.
 - 8. Copies of building permits.
 - 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - 10. Initial progress report.
 - 11. Report of preconstruction conference.
 - 12. Certificates of insurance and insurance policies.
 - 13. Performance and payment bonds.
 - 14. Data needed to acquire Owner's insurance.
 - 15. Initial settlement survey and damage report if required.
- H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
 - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 - 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
 - 1. Evidence of completion of Project closeout requirements.
 - 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 - 3. Updated final statement, accounting for final changes to the Contract Sum.
 - 4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."

5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 012900

SECTION 013100 – PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Administrative and supervisory personnel.
 - 3. Project meetings.
 - 4. Requests for Interpretation (RFIs).
- B. Related Sections include the following:
 - 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
 - 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.2 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.3 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - a. The Contractor, Subcontractors, and Suppliers, particularly Mechanical, Electrical and Food Service, shall review the Construction Documents for other sections of work affecting their own work and shall coordinate necessary accommodations before beginning installation.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
 - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.
 - 9. Project closeout activities.

- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.4 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
 - 1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate required installation sequences.
 - c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Engineer for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
 - 2. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1.5 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within three days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner, and Engineer, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. Applicable LEED requirements.
 - l. Preparation of Record Documents.
 - m. Work restrictions.
 - n. Responsibility for temporary facilities and controls.
 - o. Construction waste management and recycling.
 - p. Parking availability.
 - q. Office, work, and storage areas.
 - r. Equipment deliveries and priorities.
 - s. First aid.
 - t. Security.
 - u. Progress cleaning.
 - v. Working hours.
 3. Minutes: Record and distribute meeting minutes.
- C. Progress Meetings: Conduct progress meetings at monthly intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Owner, and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.

- b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
 - 3. Minutes: Record the meeting minutes.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- D. For particular issues that arise respecting work in progress or work that has been suspended, delayed, interrupted or otherwise is not progressing in accordance with the project schedule or for work, completed or in progress, that may not be in conformance with the contract documents, the Engineer may call a special meeting requiring the attendance by the Contractor and appropriate Subcontractors, material persons and vendors. The Contractor and its Subcontractors, material persons or vendors shall attend such special meetings when required by the Engineer. Such a meeting shall be on five-days notice and may include such experts or consultants as the parties deem beneficial.
- 1.6 REQUESTS FOR INTERPRETATION (RFIs)
- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
 - 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
 - B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
 - 1. Project name.
 - 2. Date.
 - 3. Name of Contractor.
 - 4. Name of Engineer.
 - 5. RFI number, numbered sequentially.
 - 6. Specification Section number and title and related paragraphs, as appropriate.

7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Hard-Copy RFIs: CSI Form 13.2A .
1. Identify each page of attachments with the RFI number and sequential page number.
- D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- E. Engineer's Action: Engineer will review each RFI, determine action required, and return it. Allow seven working days for Engineer's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Engineer's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors.
 2. Engineer's action may include a request for additional information, in which case Engineer's time for response will start again.
 3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within 10 days of receipt of the RFI response.
- F. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within seven days if Contractor disagrees with response.
- G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Engineer.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.'

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 013100

SECTION 013200 – CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Preliminary Construction Schedule.
 - 2. Contractor's Construction Schedule.
 - 3. Submittals Schedule.
 - 4. Daily construction reports.
- B. Related Sections include the following:
 - 1. Division 01 Section "Payment Procedures" for submitting the Schedule of Values.
 - 2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
 - 3. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
 - 4. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. Cost Loading: The allocation of the Schedule of Values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by Engineer.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.
- F. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

- G. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- H. Major Area: A story of construction, a separate building, or a similar significant construction element.
- I. Milestone: A key or critical point in time for reference or measurement.
- J. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.
- K. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.3 SUBMITTALS

- A. Submittals Schedule: Submit four copies of schedule. Arrange the following information in a tabular format:
 1. Scheduled date for first submittal.
 2. Specification Section number and title.
 3. Submittal category (action or informational).
 4. Name of subcontractor.
 5. Description of the Work covered.
 6. Scheduled date for Engineer's final release or approval.
- B. Contractor's Construction Schedule: Submit two opaque copies of initial schedule, large enough to show entire schedule for entire construction period.

1.4 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
 1. Secure time commitments for performing critical elements of the Work from parties involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."

1. The Contractor may opt to use a construction schedule type other than the one specified herein provided it provides no less detail.
- B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Engineer.
 2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
 4. Startup and Testing Time: Include adequate time for startup and testing.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Engineer's administrative procedures necessary for certification of Substantial Completion.
- D. Constraints: Include constraints and work restrictions, if any, indicated in the Contract Documents in schedule, and show how the sequence of the Work is affected. Also allow for natural and cultural constraints such as local weather patterns and market factors.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- F. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.
- G. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.
- H. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

2.3 PRELIMINARY CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within seven days of date established for the Notice to Proceed.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed.

- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
 - 1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.5 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording information such as the following concerning events at Project site:
 - 1. List of subcontractors at Project site.
 - 2. Approximate count of personnel at Project site.
 - 3. Equipment at Project site.
 - 4. Material deliveries.
 - 5. High and low temperatures and general weather conditions.
 - 6. Accidents.
 - 7. Meetings and significant decisions.
 - 8. Unusual events (refer to special reports).
 - 9. Stoppages, delays, shortages, and losses.
 - 10. Meter readings and similar recordings.
 - 11. Emergency procedures.
 - 12. Orders and requests of authorities having jurisdiction.
 - 13. Change Orders received and implemented.
 - 14. Construction Change Directives received and implemented.
 - 15. Services connected and disconnected.
 - 16. Equipment or system tests and startups.
 - 17. Partial Completions and occupancies.
 - 18. Substantial Completions authorized.
- B. If requested by the Owner or the Engineer, submit copies of the reports for specific dates.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
 - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 - 2. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Engineer, Owner, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
 - 1. Post copies in Project meeting rooms and temporary field offices.
 - 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

SECTION 015713 – TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Prevention of erosion due to construction activities.
- B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
- C. Restoration of areas eroded due to insufficient preventive measures.
- D. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Seller.

1.2 RELATED REQUIREMENTS

- A. Section 311000 - Site Clearing: Limits on clearing; disposition of vegetative clearing debris.
- B. Section 312200 - Grading: Temporary and permanent grade changes for erosion control.

1.3 REFERENCE STANDARDS

- A. ASTM D4355/D4355M - Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc-Type Apparatus 2014 (Reapproved 2018).
- B. ASTM D4491/D4491M - Standard Test Methods for Water Permeability of Geotextiles by Permittivity 2020.
- C. ASTM D4533/D4533M - Standard Test Method for Trapezoid Tearing Strength of Geotextiles 2015.
- D. ASTM D4632/D4632M - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles 2015a.
- E. ASTM D4751 - Standard Test Methods for Determining Apparent Opening Size of a Geotextile 2020a.
- F. ASTM D4873/D4873M - Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples 2017.
- G. EPA (NPDES) - National Pollutant Discharge Elimination System (NPDES), Construction General Permit Current Edition.

1.4 PERFORMANCE REQUIREMENTS

- A. Comply with requirements of EPA (NPDES) for erosion and sedimentation control, as specified by the NPDES, for Phases I and II, and in compliance with requirements of Construction General Permit (CGP), whether the project is required by law to comply or not.
- B. Also comply with all more stringent requirements of State of Tennessee Erosion and Sedimentation Control Manual.

- C. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained; furnish all documentation required to obtain applicable permits.
- D. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.
- E. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.
 - 1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
 - 2. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall events that might occur in 25 years.
- F. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
 - 1. Control movement of sediment and soil from temporary stockpiles of soil.
 - 2. Prevent development of ruts due to equipment and vehicular traffic.
 - 3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- G. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project.
 - 1. Prevent windblown soil from leaving the project site.
 - 2. Prevent tracking of mud onto public roads outside site.
 - 3. Prevent mud and sediment from flowing onto sidewalks and pavements.
 - 4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- H. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
 - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
 - 2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.
- I. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
 - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
- J. Open Water: Prevent standing water that could become stagnant.
- K. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

1.5 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Required Submittals-See Submittal Checklist within Section 013300 for specific project submittals.

- C. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Mulch: Use one of the following:
 - 1. Straw or hay.
 - 2. Wood waste, chips, or bark.
 - 3. Erosion control matting or netting.
- B. Grass Seed For Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons.
- C. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths:
 - 1. Average Opening Size: 30 U.S. Std. Sieve, maximum, when tested in accordance with ASTM D4751.
 - 2. Permittivity: 0.05 sec^{-1} , minimum, when tested in accordance with ASTM D4491/D4491M.
 - 3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D4355/D4355M after 500 hours exposure.
 - 4. Tensile Strength: 100 pounds-force, minimum, in cross-machine direction; 124 pounds-force, minimum, in machine direction; when tested in accordance with ASTM D4632/D4632M.
 - 5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D4632/D4632M.
 - 6. Tear Strength: 55 pounds-force, minimum, when tested in accordance with ASTM D4533.
 - 7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.
- D. Silt Fence Posts: One of the following, minimum 5 feet long:
 - 1. Steel U- or T-section, with minimum mass of 1.33 pound per linear foot.
 - 2. Hardwood, 2 by 2 inches in cross section.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.2 PREPARATION

- A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.3 SCOPE OF PREVENTIVE MEASURES

- A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.
- B. Construction Entrances: Traffic-bearing aggregate surface.

1. Width: As required; 20 feet, minimum.
2. Length: 50 feet, minimum.
3. Provide at each construction entrance from public right-of-way.
4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.

C. Linear Sediment Barriers: Made of silt fences.

1. Provide linear sediment barriers:
 - a. Along downhill perimeter edge of disturbed areas, including soil stockpiles.
2. Space sediment barriers with the following maximum slope length upslope from barrier:
 - a. Slope of Less Than 2 Percent: 100 feet..
 - b. Slope Between 2 and 5 Percent: 75 feet.
 - c. Slope Between 5 and 10 Percent: 50 feet.
 - d. Slope Between 10 and 20 Percent: 25 feet.
 - e. Slope Over 20 Percent: 15 feet.

D. Storm Drain Curb Inlet Sediment Trap: Protect each curb inlet using one of the following measures:

1. Filter fabric wrapped around hollow concrete blocks blocking entire inlet face area; use one piece of fabric wrapped at least 1-1/2 times around concrete blocks and secured to prevent dislodging; orient cores of blocks so runoff passes into inlet.
2. Straw bale row blocking entire inlet face area; anchor into pavement.

E. Storm Drain Drop Inlet Sediment Traps: As detailed on drawings.

F. Soil Stockpiles: Protect using one of the following measures:

1. Cover with polyethylene film, secured by placing soil on outer edges.
2. Cover with mulch at least 4 inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches of straw or hay.

G. Mulching: Use only for areas that may be subjected to erosion for less than 6 months.

1. Wood Waste: Use only on slopes 3:1 or flatter; no anchoring required.

H. Temporary Seeding: Use where temporary vegetated cover is required.

3.4 INSTALLATION

A. Traffic-Bearing Aggregate Surface:

1. Excavate minimum of 6 inches.
2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
3. Place and compact at least 6 inches of 1 1/2 to 3 1/2 inch diameter stone.

B. Silt Fences:

1. Store and handle fabric in accordance with ASTM D4873.
2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch high barriers with minimum 36 inch long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in ground.
3. Where slope gradient is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28 inch high barriers, minimum 48 inch long posts spaced at 6 feet maximum, with fabric embedded at least 6 inches in ground.
4. Where slope gradient is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet, use nominal 32 inch high barriers with woven wire reinforcement and steel posts spaced at 4 feet maximum, with fabric embedded at least 6 inches in ground.

5. Install with top of fabric at nominal height and embedment as specified.
6. Embed bottom of fabric in a trench on the upslope side of fence, with 2 inches of fabric laid flat on bottom of trench facing upslope; backfill trench and compact.
7. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.
8. Fasten fabric to wood posts using one of the following:
 - a. Four nails per post with 3/4 inch diameter flat or button head, 1 inch long, and 14 gauge, 0.083 inch shank diameter.
 - b. Five staples per post with at least 17 gauge, 0.0453 inch wire, 3/4 inch crown width and 1/2 inch long legs.
9. Fasten fabric to steel posts using wire, nylon cord, or integral pockets.
10. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches high with post spacing not more than 4 feet.

C. Mulching Over Large Areas:

1. Dry Straw and Hay: Apply 2-1/2 tons per acre; anchor using dull disc harrow or emulsified asphalt applied using same spraying machine at 100 gallons of water per ton of mulch.
2. Wood Waste: Apply 6 to 9 tons per acre.
3. Erosion Control Matting: Comply with manufacturer's instructions.

D. Mulching Over Small and Medium Areas:

1. Dry Straw and Hay: Apply 4 to 6 inches depth.
2. Wood Waste: Apply 2 to 3 inches depth.
3. Erosion Control Matting: Comply with manufacturer's instructions.

E. Temporary Seeding:

1. When hydraulic seeder is used, seedbed preparation is not required.
2. When surface soil has been sealed by rainfall or consists of smooth undisturbed cut slopes, and conventional or manual seeding is to be used, prepare seedbed by scarifying sufficiently to allow seed to lodge and germinate.
3. If temporary mulching was used on planting area but not removed, apply nitrogen fertilizer at 1 pound per 1000 sq ft.
4. On soils of very low fertility, apply 10-10-10 fertilizer at rate of 12 to 16 pounds per 1000 sq ft.
5. Incorporate fertilizer into soil before seeding.
6. Apply seed uniformly; if using drill or cultipacker seeders place seed 1/2 to 1 inch deep.
7. Irrigate as required to thoroughly wet soil to depth that will ensure germination, without causing runoff or erosion.
8. Repeat irrigation as required until grass is established.

3.5 MAINTENANCE

- A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.
- B. Repair deficiencies immediately.
- C. Silt Fences:
 1. Promptly replace fabric that deteriorates unless need for fence has passed.
 2. Remove silt deposits that exceed one-third of the height of the fence.
 3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.

- D. Clean out temporary sediment control structures weekly and relocate soil on site.
- E. Place sediment in appropriate locations on site; do not remove from site.

3.6 CLEAN UP

- A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Architect.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces..

END OF SECTION 015713

SECTION 024116 – SITE DEMOLITION

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Removal and disposal of designated pavements, curbs, culverts, utilities and other structures.

1.2 RELATED WORK

- A. Section 311100: Clearing and Grubbing
- B. Section 312213: Site Excavation

1.3 JOB CONDITIONS

- A. Protection:
 - 1. Protect designated trees and plants from damage.
 - 2. **SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.** A demolition plan and schedule shall be submitted prior to initiation of work.
- B. Maintaining Traffic
 - 1. Ensure minimum interference with roads, street, driveways, sidewalks, and adjacent facilities.
 - 2. Do not close or obstruct streets, sidewalks, alleys or passageways without permission from authorities having jurisdiction.
 - 3. If required by governing authorities, provide alternate routes around closed or obstructed traffic ways.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare adjacent areas to prevent injury, movement or settlement of structures which are to remain.
- B. Arrange for, and verify termination of utility services to include removing meters and capping lines.
- C. Remove items scheduled to be salvaged for Owner, and place in designated storage area.

3.2 DEMOLITION

- A. Remove pavement, driveways, etc. and dispose of as follows:
 - 1. Dispose of items which are not more than two feet below subgrade elevation.
 - 2. Break items more than two feet below subgrade elevation into sizes not to exceed twelve inches in maximum dimension and leave in place, unless it interferes with succeeding items of construction.

3. Stockpile topsoil, ballast, gravel other pavement materials when required.
- B. Coordinate removal and relocation of power poles, traffic signal poles, street lighting, telephone lines and site lighting, with the local electric utility.
- C. Remove existing water services, sanitary sewer and storm drainage pipe and structures as indicated and as necessary to facilitate new construction.
- D. Remove old foundations, cisterns, etc., which may be encountered within the building area.

PART 4 - DEBRIS REMOVAL

- A. Promptly remove demolition debris from site.
- B. Obtain permission from applicable regulatory authority for disposal of debris to waste disposal site.
- C. Do not store or burn materials on site.

END OF SECTION 024116

SECTION 311100 – CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Clearing, grubbing, removal and disposal of vegetation, rocks, roots and debris within the limits of the work except objects designated on the drawings to remain.
- B. Preserve from injury or defacement all vegetation and objects to remain.

1.2 RELATED WORK

- A. Section 024116: Site Demolition
- B. Section 312213: Site Excavation
- C. Section 312340: Backfilling and Finish Grading

1.3 LIMITS OF WORK

- A. Construction area established by drawings.
- B. Approved borrow pit areas.
- C. Designated stockpiles of construction material other than borrow material.

1.4 PROTECTION

- A. Protect living trees not marked for removal and outside the construction area. Treat cut or scarred surfaces of trees or shrubs with a paint prepared especially for tree surgery.
 - 1. Trees shall be protected by fencing to be located around the entire perimeter of the tree at the approximate dripline location.
 - 2. Shrubs and bushes shall be protected by fences or barricades.
 - 3. Shallow-rooted plants shall be protected at ground surface under and in some cases outside the spread of branches by ground cover protection consisting of 6-inch additional soil or crushed rock to be removed at completion of project.
- B. Protect benchmarks and existing structures, roads, sidewalks, paving and curbs against damage from vehicular or foot traffic.
- C. Maintain designated temporary roadways, walkways and detours, for vehicular and pedestrian traffic.
- D. At no time is equipment or materials to be stored or parked within the dripline limits.

PART 2 - PRODUCTS

- A. Fence shall be chain link, plywood or dimension lumber; suitable salvaged materials are acceptable.
- B. Wound paint shall be a standard bituminous product.
- C. Barricades shall be in accordance with local governing authority.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Maintain benchmarks, monuments and other reference points. Re-establish if disturbed or destroyed at no cost to Owner.

3.2 CLEARING AND GRUBBING

- A. Clear and grub areas required for access to site and execution of the work. Remove all stumps, roots within limits of grubbing to the depths below.
 - 1. Footings - 18 inches.
 - 2. Walks - 12 inches.
 - 3. Roads - 18 inches.
 - 4. Parking areas - 12 inches.
 - 5. Lawn areas - 8 inches.
 - 6. Fills - 12 inches.
 - 7. In the case of footings, roads, walks, or other construction on fills, the greater depth shall apply.
- B. Remove low hanging, unsound or unsightly branches on trees or shrubs designated to remain.
- C. Trim approximately ten feet.
- D. Grub borrow pit and stockpile areas of all objectionable material. Strip overburden before placing material in stockpile areas.
- E. Perform clearing and grubbing well in advance of construction or material removal activities.

3.3 PRUNING

- A. If trees, shrubs and other perennial growth are damaged in the course of Work of this Contract, prune damaged branches back to the first health (i.e., the nearest undamaged forks in branches or to the trunk) in accordance with standard practices of the industry.
 - 1. Where branches are cut back to the trunks, completely remove branches so there is no stub to become infected, and so that bark can heal itself over the cut.
 - 2. "Head-Back" cuts (cuts at right angles to the line of growth) of branches away from a fork will not be permitted.
- B. Paint wounds over 1 inch in diameter.

3.4 DEBRIS REMOVAL

- A. Promptly remove cleared debris from site.
- B. Obtain permission from applicable regulatory authority for disposal of debris to waste disposal site.
- C. Do not burn or bury materials on site.

3.5 REPAIRS

- A. Should utilities to remain, or other physical property be damaged by work of this Section, repair damage.

- B. Backfill all excavations opened as a result of the work of this Section with the type of fill specified in Section 312340 for the individual locations.

END OF SECTION 311100

SECTION 312213 – SITE EXCAVATION

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Excavating and grading for:
 - 1. Roadways & Parking areas.
 - 2. Building pads.
 - 3. Embankment areas.
 - 4. Waterways and ditches (including inlet structures and outlet ditches, channels, waterways, etc.)
- B. Excavating of unsuitable material from beneath structured areas and fill embankment areas.

1.2 RELATED WORK

- A. Division One: Testing Laboratory Services
- B. Section 311100: Clearing and Grubbing
- C. Section 312340: Backfilling and Finish Grading

1.3 QUALITY ASSURANCE

- A. Testing Laboratory and Soils Engineer:
 - 1. The Soils Engineer and Testing Laboratory's fees will be paid by the Owner except when the Soils Engineer or Testing Laboratory personnel are notified by the Contractor that work will be in progress, and they (Soils Engineer or Laboratory personnel) come to job site and work is not in progress. In that case, the Contractor shall pay for Soils Engineer's or laboratory personnel's time and mileage. Contractor shall pay for retesting as required.
 - 2. Have earth borrow fill and structural fill tested and approved by designated testing laboratory before moving it to the job site.
 - 3. Areas where building and paved areas will be located shall be proof-rolled to determine adequacy of soils compaction. Other areas will be inspected by Soils Engineer to determine adequacy in other areas.
 - 4. Soils compaction testing of in-place soil, and filling compacted areas will be performed by Testing Laboratory in accordance with their requirements.
 - 5. Verify quantities of materials where unit prices are involved.

1.4 EXISTING CONDITIONS

- A. Known underground, surface and aerial utility lines, and buried objects are indicated on the Drawings. The contractor is responsible for notifying the appropriate utility one-call service and all other site utility owners prior to commencement of earth moving activities.
- B. Do not interrupt existing utilities service to facilities occupied and used by the Owner or others, except when permitted in writing, by Owner's Representative and then only after temporary utility services have been provided.

1.5 PROTECTION

- A. Protect trees, shrubs and lawns, rock outcroppings and other features remaining as part of final landscaping.

- B. Protect benchmarks, existing structures, fences, roads, sidewalks, paving and curbs against damage from equipment and vehicular traffic.
- C. Protect aerial, surface, or underground utility lines and appurtenances which are to remain.
- D. Repair damage.
- E. Erosion control must be maintained. Refer to notes on General Notes sheet and Erosion and Sediment Control Details plan.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Provide for surface drainage during the period of construction in a manner to avoid creating a nuisance to adjacent areas. Keep excavations free of water during the entire progress of the work, regardless of the case, source, or nature of the water.
- B. Trees shall be left undisturbed, insofar as possible, as shown on drawings.

1.7 SEDIMENT AND EROSION CONTROL

- A. Install all erosion control measures prior to beginning site grading operations.
- B. Protect newly graded areas from erosion. Where necessary, temporarily seed disturbed areas with an appropriate seed mix applied at the coverage rates as shown below. Seed Mix shall be TDOT Type C blend or as shown below:
 - 1. Bermuda Grass @ 5 lbs/ac
 - 2. Green Sprangletop @ 1 lbs/ac
 - 3. Buffalo Grass @ 10 lbs/ac
 - 4. Sideoats Grama @ 4 lbs/ac
 - 5. Barley, oats, **or** winter rye @ 10 lbs/ac (added for summer planting, May1 - Aug 31, or temporary seeding applications)
- C. Repair settlement and erosion which occurs prior to acceptance of work.
- D. Temporary Ditch Checks: Place rock check dams in a "V" formation, with open end upstream in ditches as directed by Owner' Representative. Place ditch check at 50 foot intervals for ditches, with slopes between 1.0 percent and 3.0 percent. For ditches steeper than 3.0 percent, place at 25 foot intervals or other means as directed by the Owner's Representative.
- E. Leave rock check dams in place throughout construction except when ditches are fine graded, and seeded or sodded.
- F. Perform periodic maintenance on ditch checks to remove sediment and remove sediment as necessary and supplemented with additional rock so as not to inhibit flow or runoff.

1.8 REFERENCE STANDARDS

- A. Determine soil's maximum dry density and optimum moisture in accordance with ASTM D698.
- B. Soil and rock borings or soundings, if provided, are:
 - 1. For information purposes only.
 - 2. No guarantee of existing conditions.
 - 3. No substitute for investigations deemed necessary by Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Topsoil: Excavated material, graded free of roots, subsoil, debris, large weeds, toxic substances, and rocks greater than 1 inch.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Establish and identify required lines, levels, contours and datum.
- B. Maintain benchmarks, monuments, and other reference points. Reestablish if disturbed or destroyed, at no cost to Owner.
- C. Before start of grading, establish the location and extent of utilities in the work areas. Notify utilities to remove and relocate lines which are in the way of construction.
- D. Maintain, protect, reroute or extend as required existing utilities to remain which pass through the work area.
- E. Upon discovery of unknown utility or concealed conditions, discontinue affected work and notify the Owner's Representative.

3.2 REMOVAL OF TOPSOIL

- A. Remove topsoil of horticultural value from areas to be excavated and regraded, and stockpile in designated area.
- B. Do not permit topsoil to be mixed with subsoil.
- C. Do not strip topsoil when wet.

3.3 GENERAL SITE EXCAVATION

- A. Do not excavate wet subsoil materials.
- B. Excavate subsoil required to allow placement of compacted backfill under paving and site structures, and to accommodate construction operations.
- C. Machine slope banks to angle of repose or less until shored.
- D. Removed lumped subsoil, boulders and rock.
- E. Completely remove stumps, roots over 1 inch in diameter, and similar on-grade and below-grade obstructions within the area to be covered by new construction and for a distance of 10 feet beyond area in all directions. In other areas disturbed by grading, remove such obstructions to a depth of 2 feet below subgrade.
- F. Correct unauthorized excavation, including areas over-excavated by error, at no extra cost to the Owner.
- G. Stockpile excavated material in designated areas on site to a depth not exceeding 8 feet and protect from erosion. Remove excess material not being reused from site. Stockpile areas are to be identified during a pre-construction meeting of the jobsite.
- H. If existing basements, cellars, cisterns, wells, septic tanks, drain fields, cesspools, catch basins, sink holes, manholes and similar items are encountered, remove to solid subgrade and break up masonry and/or concrete bottoms so that no pieces remain over 12 inches in their longest dimension.

3.4 PREPARATION OF NATURAL GROUND

- A. Proof-Roll in accordance with section 317115. Owner's Representative is to identify any unstable areas.
- B. Unsuitable subgrades identified by the Owner's testing agency shall be undercut and replaced with properly compacted fill as noted in remedial work.
- C. Subgrade soils shall be scarified and compacted to at least 98% of the standard proctor maximum dry density (ASTM D698) for a depth of at least 6" below the surface.

3.5 REMEDIAL WORK

- A. Any exposed subgrades determined by the Owner's testing agency as being unsuitable shall be undercut to a depth identified by the testing agency and backfilled under the appropriate provisions of Sections 312335 & 312340 for the location.
 - 1. Notify the Owner's Representative to obtain approval prior to beginning undercutting operations.
 - 2. Keep records of material quantities removed and replaced as specified in Division 1 and have materials verified by the Owner's testing agency.
 - 3. The Contractor shall also provide a unit price per c.y. of material undercut and replaced to be used as an add or deduct to the base bid for the actual amount encountered.
- B. Excavate shallow temporary drainage ditches to facilitate removal of excess moisture from subgrade areas.
- C. Backfill and compaction of areas excavated under this Section is specified in Sections 312335 & 312340.

3.6 CLEAN-UP AND DISPOSAL OF DEBRIS

- A. Remove surplus materials and debris from site.

END OF SECTION 312213

SECTION 312340 – BACKFILLING AND FINISH GRADING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Finish grade sub-soil.
- B. Place, finish grade and compact topsoil.

1.2 RELATED WORK

- A. Division One: Testing Laboratory Services
- B. Section 311100: Clearing and Grubbing
- C. Section 312213: Site Excavation
- D. Section 317115: Proofrolling

1.3 PROTECTION

- A. Prevent damage to existing trees to remain, bench marks, pavement, and utility lines. Correct damage at no cost to the Owner.

1.4 QUALITY ASSURANCE

- A. Owner will employ a qualified testing laboratory to observe this work and make tests required. Testing Lab will:
 - 1. Have borrow fill, aggregate, sand and topsoil tested and approved before it is moved to the project site.
 - 2. Observe proof-rolling of site to determine adequacy of in-place soils. If soils are not adequate to bear weights which will be imposed, Testing Lab will direct corrective action to be taken.
 - 3. Test in-place soil and filled and compacted areas. If these are not adequate to bear weights imposed, Testing Lab will advise the Structural Engineer of his recommendations. He will direct any corrective measures that are necessary.
 - 4. Verify quantities of material removed and quantities of material placed, where Unit Prices are involved.

PART 2 - PRODUCTS

2.1 FILL MATERIALS

- A. Refer to the specifications for fill materials.

PART 3 - EXECUTION

3.1 BACKFILLING

- A. Examination: Verify fill materials to be reused are acceptable under requirements of the Contract Documents.
- B. Preparation:

1. Proofroll subgrade prior to fill placement as specified in Section 317115, and repair unstable subgrades prior to placement.

C. Backfilling:

1. Backfill areas are to required elevations with unfrozen specified materials and compact to density equal to or greater than requirements specified below.
2. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
3. Place and compact materials in continuous layers not exceeding the following thickness in compacted depth:
 - a. Granular fill: 8 inches.
 - b. Cohesive fill: 8 inches.
4. Maintain soil at optimum moisture content of backfill materials for structurally loaded areas within a range of +/- 3 percentage points of the optimum moisture content value to attain required compaction density.

D. Slopes:

1. Minimum slope grade away from building minimum 0.2 feet in 10 feet unless indicated otherwise. Achieve a slope of 0.5 feet in 10 feet, wherever possible.
2. Make grade changes gradual. Blend slope into level areas.

E. Stockpile areas:

1. Remove surplus backfill materials from the site or dispose of on-site in a designated area.
2. Leave areas completely free of excess materials.

F. Field quality control:

1. Field inspection and testing will be performed as defined in Division 1 of the specifications.
2. Test and analysis of fill materials will be in accordance with ASTM D698.
3. Compaction testing will be performed in accordance with ASTM D1556 or other method recommended by the Owner's testing agency and acceptable to the Owner's Representative.
4. If test indicates the work of this Section does not meet specified requirements, remove, replace and retest materials at no cost to the Owner.
5. Proofroll compacted fill surfaces under slabs-on-grade and paving for a distance of 10 feet beyond slabs and paving in all directions under provisions of Section 317115.

3.2 PROTECTION OF FINISHED WORK

- A. Recompact fills subjected to vehicular traffic.

3.3 FILL SCHEDULE

- A. The paragraphs below identify location, fill material to be used (identified from lower to upper fill material), compacted thickness of each fill, and compaction expressed as a percentage of maximum density and optimum moisture in comparison with soil proctor specified above.
- B. Site Fill: Engineered or earth fill to 4 inches below finish grade, compacted to 98%.

3.4 PLACING TOPSOIL

- A. Place 4 inch minimum topsoil in areas where seeding, sodding, and planting is to be performed.
- B. Use topsoil in relatively dry state. Place during dry weather.

- C. Fine grade topsoil eliminating rough and low areas to ensure positive drainage. Maintain levels, profiles and contours of sub-grades.
- D. Remove stone, roots, grass, weeds, debris and other foreign material while spreading.
- E. Manually spread topsoil around trees and plants to prevent damage which may be caused by grading equipment.
- F. Lightly compact placed topsoil.

3.5 CLEAN-UP

- A. Upon completion of work of this Section, clean up and leave area free of debris, excess material, and equipment.
- B. Any excess earth shall be disposed of on-site by the contractor in an area to be designated by the owner's representative.

END OF SECTION 312340

SECTION 317115 – PROOFROLLING

PART 1 - GENERAL

1.1 RELATED WORK

- A. Section 312213: Site Excavation
- B. Section 312340: Backfilling and Finish Grading

1.2 QUALITY ASSURANCE

- A. The Owner will employ a testing agency, through a contractor allowance to observe proof rolling operations and make required test.
- B. Do not perform proof rolling operations unless testing agency personnel are present.
- C. Neither proof-rolling operations or subsequent fill operations will be acceptable for payment unless testing agency personnel views proof-rolling.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Vehicle: Loaded rubber tired dump truck having a single axle weight of approximately 20-30 tons 10-12 ton vibratory roller with vibratory compaction off, or similar equipment in size and weight.

PART 3 - EXECUTION

3.1 PROOF-ROLLING

- A. Areas to proof roll:
 - 1. Areas to be covered by construction.
 - 2. Areas to be covered with fill.
 - 3. Lawn areas attained by excavation.
 - 4. Areas 10 feet beyond the above areas in all directions.
- B. Observation: Run Vehicle at normal walking speed so that the testing agency personnel may observe the ground at all times. Testing personnel will conduct additional test they deem necessary to determine existing conditions. Testing personnel will direct remedial actions they deem necessary.

3.2 REMEDIAL WORK

- A. Remedial work required by testing agency after viewing proof-rolling operations are specified in individual sections requiring proof rolling.

END OF SECTION 317115

SECTION 334000 – STORM DRAINAGE SYSTEMS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. A. Installation of storm drainage systems.

1.2 RELATED WORK

- A. Section 312335: Excavating and Backfilling for Service Utilities
- B. Section 320523: Site Concrete Work

1.3 REGULATORY REQUIREMENTS

- A. Comply with requirements of authorities having jurisdiction for materials and installation of work of this Section.

1.4 PROJECT RECORD DOCUMENTS

- A. A. Submit documents under provisions of Division 1 of the specifications.
- B. B. Accurately record locations of pipe runs, connections, catch basins, manholes, cleanouts and invert elevations.
- C. Identify and describe discovery of uncharted utilities.

PART 2 - PRODUCTS

2.1 PIPE MATERIALS

- A. Reinforced concrete pipe: ASTM C76 Class III, with Wall Type B mesh reinforcement, with bell and spigot end joints, size as indicated. Provide mortar joints.
- B. PVC pipe: Schedule 40 PVC or equal, bell and spigot type, solvent sealed end joints, size as indicated.
- C. Fittings/Joints: Same material as pipe, molded or formed to suit pipe size and end design, in configurations required.
 - 1. ADS N-12 ST IB Pipe shall be joined using a bell & spigot joint meeting ASTM F2648. The joint shall be soil-tight and gaskets, when applicable, shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. A joint lubricant supplied by the manufacturer shall be used on the gasket and bell during assembly.

2.2 CATCH BASINS

- A. Lid and frame: Cast iron construction, hinged lid linear grill lid design with lock down fasteners (as noted on the plans), size as indicated on plans.
- B. Shaft and cone section:

1. Precast type: Reinforced precast concrete pipe sections of shape and size indicated, lipped male/female dry joints.
 2. Cast-in-place type: 3000 psi concrete as specified in Section 02516, detailed as indicated.
 3. Masonry type: ASTM C32 Grade MS manhole brick, and ASTM C270 Type S mortar made with ASTM C150. Type II portland cement, ASTM C33 sand and potable water.
- C. Base pad: 3000 psi concrete of type specified in Section 320523, leveled top surface to receive concrete shaft sections, and sleeved to receive pipe sections.
- D. Advanced Drainage Systems (ADS) or National Diversified Sales, Inc. (NDS) plastic catch basins and fittings.

2.3 MANHOLES AND CLEANOUTS

- A. Lid and frame: Cast iron construction, with removable lockable closed lid, size as indicated on plans and as approved by local jurisdiction.
- B. Shaft and cone section:
1. Reinforced precast concrete pipe sections of shape and size indicated, with lipped male/female dry joints.
 2. Cast-in-place type: 3000 psi concrete as specified in Section 320523, detailed as indicated.
 3. Masonry type: ASTM C32 Grade MS manhole brick, and ASTM C270 Type S mortar made with ASTM C150. Type II portland cement, ASTM C33 sand and potable water.
 4. Ladder rungs: 3/4 inch diameter wrought iron cast into shaft sections at 12 inches oc.
- C. Base pad: 3500 psi concrete of type specified in Section 320523, leveled top surface to receive concrete shaft sections, and sleeved to receive pipe sections.

2.4 HEADWALLS

- A. Materials: 3000 psi concrete as specified in Section 320523, reinforced as indicated.

2.5 AGGREGATE BACKFILL

- A. Materials: ASTM C33 No. 57 or 67 aggregate.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that excavation is ready to receive work of this Section, and that excavations, dimensions, and elevations are as indicated on the Drawings.
- B. Do not install drainage structure until mass grading has resulted in rough subgrade elevations throughout the work area.

3.2 PREPARATION

- A. Prior to laying pipe, prepare a suitable bedding according to Section 312335.
- B. Before placing pipe in the trench, field inspect for cracks or other defects; remove defective pipe from the construction site.
- C. Swab the interior of the pipe to remove all undesirable material.
- D. Prepare the bell end and remove undesirable material from the gasket and gasket recess.

3.3 INSTALLING STORM SEWER PIPE

- A. Lay pipe in a straight line on a uniform grade from structure to structure with the bell or groove end upgrade.
- B. Firmly support each section throughout its length and form a close concentric joint with the adjoining pipe.
- C. Make junctions and turns with standard or special fittings.
- D. Do not open up more trench at any time than pumping facilities are able to dewater.
- E. Whenever the work ceases, close the end of the pipe with a tight fitting plug or cover.
- F. Close all openings provided for future use and abandoned pipe with a tight fitting plug sealed to avoid leakage.
- G. When the pipe connects with structures, the exposed ends shall be placed or cut off flush with the interior face of the structure and satisfactory connections made.
- H. Any pipe which is not in good alignment, or which shows any undue settlement or damage shall be taken up and relaid without additional compensation.
- I. Laying pipe and sealing joints shall be a continuous operation.
 - 1. Seal all joints during the same day in which the pipe is laid.
 - 2. Construct the joints in such a manner that a watertight joint will result.
- J. Joints for rigid pipe:
 - 1. Rubber gaskets; or
 - 2. Other types of joints recommended by the pipe manufacturer and approved.
- K. Install rubber ring gaskets to form a flexible watertight seal.
- L. When other type joints are permitted, install or construct in accordance with the recommendations of the manufacturer.
- M. Firmly join flexible pipe by approved coupling bands.
- N. Inspect the pipe before any backfill is placed.
- O. When strutting or vertical elongation is required, it shall be performed in accordance with the details shown on the Plans.
- P. Leave ties and struts in place until the embankment is completed, unless otherwise specified.
- Q. As the work progresses, clean the interior of all pipe in place.
- R. Make connections by constructing catch basins, other structures, or by installing wyes or tees as shown on the Plans. Wyes and tees for future connections shall be installed as indicated.

3.4 INSTALLING CATCH BASINS, MANHOLES AND CLEANOUTS

- A. Form bottom of excavation clean and smooth to correct elevation.
- B. Form and place cast-in-place concrete base pad, with provision for pipe end sections.
- C. Establish elevations and pipe inverts for inlets and outlets as indicated. The shape of the inverts shall conform uniformly to inlet and outlet pipe with a smooth finish.

- D. Mount lid and frame level in grout, secured to top cone section to elevations indicated. Set true to line and grade and such that the entire surface of the casting is in contact with the bearing surface of the structure.
- E. All castings shall be set firm and snug and shall not rattle.

3.5 INSTALLING HEADWALLS

- A. Form and reinforce as indicated.
- B. Place and cure as specified in Section 320523.
- C. Backfill with aggregate to level of adjacent subgrade.

3.6 FIELD QUALITY CONTROL

- A. Prior to placing aggregate cover, allow the Owner's Representative to observe installed pipe.
- B. Comply with requirements of authorities having jurisdiction for their requirements for inspection.

3.7 PROTECTION

- A. Protect finished installation under provisions of Division 1 of the Specifications.
- B. Protect pipe and aggregate cover from damage or displacement until backfilling operation begins.

END OF SECTION 334000