

PROJECT MANUAL

ARMSTRONG PARK ALL-INCLUSIVE PLAYGROUND

CITY OF GRAIN VALLEY, MISSOURI

Project No. 0322006.03

Bid Date: June 27, 2023 at 2:00 PM

**ARMSTRONG PARK ALL-INCLUSIVE PLAYGROUND
FOR
CITY OF GRAIN VALLEY, MO
2023**

I hereby certify that this plan, specification, or report, was prepared by me or under my direct personal supervision, and that I am a duly registered Professional Engineer under the laws of the State of Missouri and that I am competent to prepare this document.

Daniel G. Miller, P.E.
(Engineer's Name)

Date: 5/19/2023

Reg. No. E-024308



Lamp Ryneearson
9001 State Line Road, Suite 200
Kansas City, Missouri 64114
[P] 816.361.0440 • [F] 816.361.0045
lampryneearson.com

Lamp Ryneearson Project No. 0322006.03

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CITY OF GRAIN VALLEY, MO
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**CITY OF GRAIN VALLEY, MISSOURI
("Owner")**

**ARMSTRONG PARK ALL-INCLUSIVE PLAYGROUND
ADVERTISEMENT FOR BIDS**

Sealed Bids will be received by the City of Grain Valley at City Hall, 711 Main Street, Grain Valley, Missouri until **2:00 p.m. on June 27, 2023**. At said place and time, all Bids that have been duly received will be publicly opened and read aloud in the Lower Level Conference Room.

The Work is generally described as follows:

Armstrong Park All-Inclusive Playground

All Bids must be in accordance with the Bidding Documents, including, Drawings, Specifications, and Contract Documents on file at the Community Development Department, located in City Hall, 711 Main Street, Grain Valley, Missouri.

Copies of plans, specifications, bid documents, and other Contract Documents can be seen or purchased on-line at www.drexeltech.com in their eDistribution plan room, additional assistance is available at distribution@drexeltech.com. Information regarding this project can be found under the "Public Jobs" link on the website. Prospective bidders desiring the Contract Documents for use in preparing bids shall obtain a set of such documents from Drexel Technologies, 10840 West 86th Street, Lenexa, KS 66214, telephone number is 913-371-4430. Any questions regarding the project, plans, specification, or bid documents should be directed to Lamp Rynearson, (816) 361-0440.

Bids will be received on a unit price basis.

Each Bid shall be accompanied by a certified check, made payable to the City of Grain Valley, Missouri in an amount not less than 5% of the total Bid or by a Bid Bond with a Surety licensed to do business in the State of Missouri in the amount of 5% of the total Bid. This Security may be retained by the Owner until the Contract for the Project has been fully executed.

The Contractor and all subcontractors will be required to comply with all applicable Federal and State labor regulations including Equal Employment Opportunity, Nonsegregated Facilities, Minimum Wage Rates and Affirmative Action requirements. The City of Grain Valley hereby notifies all Bidders that it will affirmatively ensure that in any Contract entered into pursuant to this Advertisement, minority business enterprises will be afforded full opportunity to submit Bids without discrimination, regardless of race, color, or national origin in consideration for any award.

Wage rates paid for Work for this Project shall be at least equal to the prevailing wage rates as determined by the Division of Labor Standards of the State of Missouri.

The project contractor and each subcontractor shall require each on-site employee to complete the ten-hour safety program required under Section 292.675, RSMo, within 30 days of beginning any of the work on the project if he or she has not previously completed the program or does not have documentation of having done so.

All bids are subject to the Buy Local/American policy and any other applicable purchasing statutes of the State of Missouri.

No bidder may withdraw its Bid within 90 days after the actual date of the opening of Bids. The City of Grain Valley, Missouri reserves the right to award the Contract by sections, to reject any or all Bids, and to waive any informalities or irregularities therein.

Owner: City of Grain Valley, Missouri

Date: _____

PRE-BID CONFERENCE

A pre-Bid conference will be held at City of Grain Valley, City Hall Lower Level Conference Room, 711 Main Street, Grain Valley, Missouri, 2:00 p.m. on June 15, 2023. Representatives of Owner and Professional will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Professional will transmit to all prospective Bidders of record such Addenda as Professional considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

All contractors that desire to have alternative playground equipment approved for bidding purposes shall submit materials in accordance with Section 32 33 01 by 5 p.m. June 12, 2023 to Richard J. Tuttle, P.E. - City Engineer in accordance with the Instructions to Bidders.

City of Grain Valley, Missouri
711 Main ♦ Grain Valley, MO 64029
Phone: (816) 847-6200 ♦ Fax: (816) 847-6209

ARMSTRONG PARK ALL-INCLUSIVE PLAYGROUND

INSTRUCTIONS TO BIDDERS

ARTICLE 1 - DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions of the Contract for Construction and any Supplementary Conditions as contained in the Bidding Documents. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both singular and plural thereof:

- A. *Professional* – Lamp Ryneerson, 9001 State Line Road, Suite 200, Kansas City, MO 64114
- B. *Bid* – The offer of a Bidder submitted on the prescribed form contained in the Bidding Documents setting forth the price(s) for the Work to be performed.
- C. *Bidder* – The entity who submits a Bid for the Work described in the Contract Documents.
- D. *Bidding Documents* – The Bidding Requirements and the Contract Documents (including *without* limitation all Drawings, Specifications and Addenda issued prior to receipt of Bids).
- E. *Bidding Requirements* – The Advertisement for Bids or Invitation to Bid, these Instructions to Bidders, the Bid Form and *required* attachments as set forth in the Bidding Documents and Bid Security.
- F. *Bid Security* - The deposit of an approved Bid Bond, Cashier's Check or Certified Check furnished by the Bidder and made payable to the Owner for the amount stipulated in the Advertisement for Bids or Invitation to Bid.
- G. *Owner* – City of Grain Valley, Missouri, 711 Main, Grain Valley, Missouri 64029.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from Professional as set forth in the Advertisement for Bids. A copy of the Bidding Documents is on file with the Owner at the City of Grain Valley, Missouri, 711 Main, Grain Valley, Missouri 64029.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Professional assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 Owner and Professional in making copies of the Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 The Bidder must be qualified by experience, adequate financing, and equipment to perform the Work required by the Contract within the Contract Times.

3.02 To document Bidder's qualifications to perform the Work, within 5 days of Owner's request, Bidder shall submit written evidence such as financial data, previous experience, qualifications of personnel, present commitments, and other data regarding Bidder's qualifications.

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS AND SITE

4.01 It is the responsibility of each Bidder, before submitting a Bid, to (a) thoroughly examine the Bidding Documents, (b) visit the site to become familiar with local conditions that may affect cost, progress, performance, or furnishing of the Work, (c) consider federal, state, and local laws and regulations that may affect cost, progress, performance, or furnishing of the Work, (d) study and carefully correlate Bidder's observations with the Bidding Documents, and (e) notify Professional of all conflicts, errors, or discrepancies discovered by Bidder in the Bidding Documents.

4.02 Bidder must carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site which have been made available to Bidder, but Bidder shall not be entitled to rely upon the accuracy or completeness of such reports or tests. Such reports and drawings are not Contract Documents and may not be complete for Bidder's purposes, including without limitation, any reports or test described on Exhibit A hereto. Professional does not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to subsurface conditions, physical conditions or underground facilities at or contiguous to the site. Bidder must obtain and carefully study, and assume responsibility for all such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions, including, but not limited to, surface, subsurface, and underground facilities, at or contiguous to the site or otherwise which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder and safety precautions and programs incident thereto as Bidder deems necessary. Any discrepancies between the reports and drawings made available to the Bidder and the information revealed in the Bidder's own examinations, tests, studies, explorations or investigations of any type shall be immediately reported in writing by the Bidder to Professional.

4.03 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, underground facilities, and other physical conditions appear in the General Conditions.

4.04 Before submitting a Bid, each Bidder will be responsible to make or obtain such explorations, tests, and data concerning physical conditions, surface, subsurface, and underground facilities at or contiguous to the site or otherwise which may affect cost, progress, performance, or furnishing of the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. On reasonable notice, Owner will provide each Bidder access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up, and restore the site to its former condition upon completion of such explorations. Each Bidder wishing to inspect the site and any existing facilities shall contact:

Richard J. Tuttle, P.E. City Engineer | 816.847.6200 | dtuttle@cityofgrainvalley.org

4.05 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with the provisions of Section 4 of the Instructions to Bidders, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents, that Bidder has given Professional written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Professional are acceptable to Bidder, and that the Bidding Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 5– SITE AND OTHER AREAS

5.01 The lands upon which the Work is to be performed and access thereto, and other lands designated for use by Contractor in performing the Work are identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 6 - INTERPRETATIONS AND ADDENDA

6.01 All questions about the meaning or intent of the Bidding Documents are to be directed to Professional. Questions concerning the Bidding Documents may be directed to:

Dan Miller | 816.823.7228 | dan.miller@lamprynearson.com

6.02 Interpretations or clarifications considered necessary by Professional in response to such questions will be issued by Addenda. Questions received less than 4 days prior to the date for the receipt of Bids may not be answered. Only answers issued by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. Addenda may also be issued to modify the Bidding Documents as deemed advisable by Professional. Such Addenda must also be in writing in order to be binding.

ARTICLE 7 – BID SECURITY

7.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five percent (5%) of Bidder's maximum Bid Price and in the form of a certified or bank check or a Bid Bond on the form attached issued by a surety meeting the requirements of the General Conditions.

7.02 The Bid Security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required Contract Security and met the other conditions of the Notice of Award, whereupon the Bid Security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid Security furnished by such Bidders will be returned.

7.03 Bid Security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within 7 days after the Bid opening.

ARTICLE 8 - CONTRACT TIMES

8.01 The Contract Times shall be the dates by which: (a) Contractor shall achieve Substantial Completion of the entire Work; and (b) Contractor shall achieve Final Completion of the entire Work. The Contract Times for the Project are set forth in Article 3 of the Agreement Between Owner and Contractor.

ARTICLE 9 - LIQUIDATED DAMAGES

9.01 Provisions for liquidated damages are set forth in Article 3 of the Agreement.

ARTICLE 10 – SUBSTITUTE AND “OR –EQUAL” ITEMS

10.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or “or-equal” items. Whenever it is specified or described in the Bidding Documents that a substitute or “or-equal” item of material or equipment may be furnished or used by Contractor if acceptable to Professional, application for such acceptance will not be considered by Professional until after the Effective Date of the Agreement. The procedure for submission of any such application by Contractor and consideration by Professional is set forth in the General Conditions and may be supplemented in the General Requirements or the Supplementary Conditions.

ARTICLE 11 – SUBCONTRACTORS, SUPPLIERS AND OTHERS

11.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within 5 days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual or entity if requested by Owner. If Owner or Professional after due investigation has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, require the apparent Successful Bidder to submit a substitute, in which case, apparent Successful Bidder shall submit an acceptable substitute, and Bidder's Bid price will be adjusted in accordance with Paragraph 6.09 of the General Conditions.

11.02 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 12 – PREPARATION OF BID

12.01 The Bid Form is provided in the Bidding Documents. Bid Forms must be fully completed in ink or typewritten and include all required attachments.

12.02 Bids by corporations must be executed in the corporate name by the president or vice-president (or other corporate officer accompanied by evidence of authority to sign), and the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The state of incorporation shall be shown below the corporate name. Bids by partnerships must be executed in the partnership name and signed by a partner (accompanied by evidence of authority to sign) and the official address of the partnership must be shown below the signature. Bids by joint ventures shall be signed by each participant in the joint venture or by an authorized agent of each participant. Bids by limited liability companies shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature. All names shall be typed or printed in ink below the signatures. The address and telephone number for communications regarding the Bid shall be shown.

12.03 A Bid by a person who affixes to their signature the word "president", "secretary", "agent", or other designation without disclosing their principal may be held to be the bid of the individual signing.

12.04 All blank spaces in the Bid Form shall be filled.

12.05 The Bid shall contain an acknowledgment of receipt of all Bidding Documents.

12.06 Each Bid shall be accompanied by an executed Affidavit in the form attached hereto.

ARTICLE 13 – BASIS OF BID

13.01 The Bidder shall complete the schedule of unit prices included in the Bid Form and shall accept all fixed unit prices listed therein. The total Bid will be calculated as the sum of the products of the estimated quantity of each item and the unit price bid. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. The unit prices set forth in the Bid Form shall be considered complete and include: (1) all materials, equipment, labor, delivery, installation, overhead and profit; and (2) any other costs or expenses in connection with, or incidental to, the performance of that portion of the Work to which such unit prices apply. Any estimated quantities of Work contained in any Bidding Document or Contract Document are not guaranteed and are solely for the purpose of comparison of Bids. Estimated quantities may change because of changes ordered by Owner or because of actual site conditions or other reasons. The unit prices for the Work shall remain unchanged even if the actual quantity of Work performed by Contractor differs materially and significantly from any estimated quantity of such items. Contractor agrees that it shall make no claim for an adjustment in any unit price for any variance between the actual quantity of Work performed by Contractor and any estimated quantity of such item.

ARTICLE 14 - SUBMISSION OF BIDS

14.01 Bids shall be submitted no later than the date and time prescribed in the Advertisement or Invitation for Bids, or the modified time and place indicated by Addendum. The unbound copy of the Bid Form is to be completed and accompanied by all other required documents, including the Bid Security.

14.02 Bids shall be enclosed in an opaque sealed envelope plainly marked as a "Bid" with the Project title and marked with the name and address of the Bidder. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it.

14.03 Bids received after the time and date for receipt of Bids will be returned unopened. Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids. Oral, telephone, telegraph, or facsimile Bids are invalid and will not receive consideration.

ARTICLE 15– MODIFICATION AND WITHDRAWAL OF BIDS

15.01 Bids may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

ARTICLE 16 – OPENING OF BIDS

16.01 Bids will be opened and read aloud publicly. An abstract of the amounts of the base Bids will be made available to Bidders after the opening of Bids.

ARTICLE 17– BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for 90 days after the day of the Bid opening, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to that date. Any extension of

the commencement date for Work as specified in the Contract Documents shall be governed by the applicable provisions of the Contract Documents and shall not be grounds for withdrawal of a Bid.

ARTICLE 18– APPROVAL BY CITY COUNCIL

18.01 The Contract will not be binding and effective on the City until approved by Ordinance of the City Council of Grain Valley, Missouri.

ARTICLE 19– AWARD OF CONTRACT

19.01 Owner reserves the right to reject any and all Bids, including, without limitation, the right to reject any or all bids which in the Owner's discretion are nonconforming, nonresponsive, unbalanced, or conditional Bids and to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work.

19.02 In evaluating Bids, Owner will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such alternatives, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

19.03 Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

19.04 If the Contract is to be awarded, it will be awarded to the lowest and responsive Bidder whose evaluation by Owner indicates to Owner that Bidder is responsible and qualified to perform the Work.

19.05 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

ARTICLE 20– CONTRACT SECURITY AND INSURANCE

20.01 The General Conditions as may be modified by the Supplementary Conditions, set forth the requirements as to Performance and Payment Bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by the required Performance and Payment Bonds.

ARTICLE 21– EXECUTION OF AGREEMENT AND BONDS

21.01 When Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by unsigned counterparts of the Agreement with other written Contract Documents attached; the required number of copies will be determined by Owner. Within 15 days thereafter Contractor shall sign, leaving the dates blank, and deliver the required number of counterparts of the Agreement and attached documents to Owner with the required Bonds and power of attorney. After confirmation of the Contract by action of the City Council, if required, or within 15 days if not required, Owner shall execute all copies of the Agreement and other Contract Documents submitted by Contractor/Successful Bidder, insert the date of Contract on the Agreement, Bonds, and power of attorney, and return all copies to Professional for review and distribution. Distribution of signed copies shall be as directed by Owner.

ARTICLE 22– TAXES AND PERMITS

22.01 Responsibility for payment of taxes and permits is set forth in the General Conditions. As set forth in the General Conditions, certain equipment and materials are exempt from State and Local Sales and Use taxes. Said taxes shall not be included in the Bid.

ARTICLE 23– LAWS AND REGULATIONS

23.01 Provisions concerning Laws and Regulations are set forth in the Contract Documents.

23.02 Bids shall be based on payment by Contractor and each Subcontractor of wage rates not less than the prevailing hourly wage for each craft or classification of workmen engaged on the Work as determined by the Industrial Commission of Missouri on behalf of the Department of Labor and Industrial Relations. Higher prevailing wage rates may apply if a federal governmental agency is providing funding for this Project. Requirements regarding payment of prevailing wage rates are set forth in the General Conditions.

23.03 Information on the Missouri Domestic Product Procurement (Buy American) Act is contained in the General Conditions.

23.04 A pre-Bid conference will be held at City of Grain Valley, City Hall Lower Level Conference Room, 711 Main Street, Grain Valley, Missouri, 2:00 p.m. on June 15, 2023. Representatives of Owner and Professional will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Professional will transmit to all prospective Bidders of record such Addenda as Professional considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

EXHIBIT A
REPORTS AND DRAWINGS REFERRED TO IN PARAGRAPH 4.02

NONE

City of Grain Valley, Missouri
711 Main ♦ Grain Valley, MO 64029
Phone: (816) 847-6200 ♦ Fax: (816) 847-6209

ARMSTRONG PARK ALL-INCLUSIVE PLAYGROUND

BIDDER'S AFFIDAVIT

STATE OF _____)
)ss:
COUNTY OF _____)

I, _____ (Name), representing _____
(Name of Bidder), (hereinafter "the Bidder") upon oath depose and state that neither the Bidder nor anyone in Bidder's employment has employed any person to solicit or procure this Contract nor will any agent, representative, employee, servant, officer, director, manager or member of Bidder make any payment or agreement for payment of any compensation in connection with the procurement of this Contract.

I further depose and state that no part of the Contract Price was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the Contract, other than the payment of their normal compensation to persons regularly employed by the Bidder whose services in connection with the construction of the public building or project were in the regular course of their duties for the Bidder.

I further depose and state that the Bid is genuine and not collusive or sham; that said Bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any Bidder or person, to put in a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement, or collusion, or communication, or conference with any person to fix the bid price of Bidder or of any other Bidder, and that all statements in said Bid are true.

I further depose and state that Bidder has and will continue to comply with any Affirmative Action Plan and Disadvantaged Business Enterprise Plan of the City of Grain Valley, Missouri, as well as all Ordinances and directives of the City referring to the participation of Small, Disadvantaged, Women Owned, and Minority Businesses applicable to this Bid and the Contract to be awarded through this Bidding Process.

I further depose and state that the undersigned, the Bidder, and all officers, directors, employees, and agents of Bidder and all Subcontractors and Suppliers Bidder intends to use if awarded the Contract, are not currently debarred or suspended from bidding on contracts with any governmental entity or agency, nor are any such persons or companies proposed to be debarred or suspended from bidding on such contracts, nor have any such persons or companies been excluded from participating in the Contract to be awarded through this bid process by any federal, state or local governmental entity or agency.

I further depose and state that neither the Bidder, nor any person who is an agent, representative, employee, servant, officer, director, manager, or member of the Bidder has offered, given, or agreed to give any employee or former employee of the City any gratuity, payment, or gift in connection with any decision, approval, disapproval, or recommendation, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for filing, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefore.

I further depose and state that Bidder has not received any payment or gratuity from a Subcontractor or Supplier, as an inducement for the award of a subcontract or a purchase order.

The undersigned further warrants that he or she has the authority to execute this affidavit on behalf of the Bidder.

Signature

On this ____ day of _____, 20____, before me, a Notary Public, personally appeared

_____, to me known to be the person who executed the within Bidder's Affidavit, and acknowledged to me that he/she executed the same for the purposes therein stated.

Notary Public

My commission expires:

BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

**City of Grain Valley, Missouri
711 Main
Grain Valley, Missouri 64029**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

- A. Required Bid security;
- B. List of Proposed Subcontractors;
- C. List of Proposed Suppliers;
- D. Evidence of authority to do business in the state of the Project;
- E. Contractor's license number as evidence of Bidder's State Contractor's License;
- F. Required Bidder Qualification Statement with supporting data; and
- G. Required Certification of Compliance with the requirements of the Domestic Products Procurement Law RSMo. 34.350.RSMo 34.359.
- H. Federal Work Authorization Project (E-Verify): Pursuant to RSMo 285.530, no business entity or employer shall knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the State of Missouri. The contractor shall provide, as part of their bid, signed affidavits and documentation affirming said requirement. The Affidavit as required by Section 285.530, Revised Statutes of Missouri and the Affidavit of Work Authorization can be found at the end of this section and both must be signed, notarized and included as part of the bid submittal.

Acceptable enrollment and participation documentation consists of the following 2 pages of the E-Verify Memorandum of Understanding:

- 1. A valid, completed copy of the first page identifying the Contractor; and
- 2. A valid copy of the signature page completed and signed by the Contractor, and the Department of Homeland Security – Verification Division.
- I. Proof of lawful presence: RSMo 208.009 requires that contractors provide affirmative proof that the contractor is a citizen or permanent resident of the United States or is lawfully present in the United States. Affirmative proof can be established through a Missouri driver's

license; U.S. Birth Certificate – certified with an embossed, stamped or raised seal issued by a state or local government (hospital certificates are not acceptable); U.S. Passport (valid or expired); U.S. Certificate of Citizenship, Naturalization or Birth Abroad; U.S. Military Identification Card or Discharge Papers accompanied by a copy of U.S. Birth Certificate issued by a state or local government.

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 Unit Price Bids

A. Bidder will perform the following Work at the indicated unit prices:

Armstrong Park					
Playground Improvements					
Grain Valley, Missouri					
Item No.	Description	Unit	Est Qty	Bid Unit Price	Bid Amount
1	Mobilization	1	LS	\$	\$
2	Sidewalk (4") (Concrete) (KCMMB4K)	202	SF	\$	\$
3	Playground Curb (Concrete)(KCMMB4K)	262	LF	\$	\$
4	Poured-In-Place Playground Surfacing With PC Concrete Base (KCMMB4K)	4895	SF	\$	\$
5	Play Equipment 'Age 5-12 Play Structure'	1	EA	\$	\$
6	Play Equipment 'Age 2-5 Play Structure'	1	EA	\$	\$
7	Play Equipment 'Rotating Disc '	1	EA	\$	\$
8	Play Equipment 'Scooter Carousel'	1	EA	\$	\$
9	Play Equipment 'Spica 1'	1	EA	\$	\$
10	Play Equipment 'Cone Twister Small'	1	EA	\$	\$
11	Play Equipment 'Fairy Tale Seesaw'	1	EA	\$	\$
12	Play Equipment 'See-Saw Bouncer'	1	EA	\$	\$
13	3-Bay Swing with (2) multi-user, (1) tot, and (1) saucer	1	EA	\$	\$
14	Swing 'Type-Accessible'	1	EA	\$	\$
15	12" Storm Sewer (HDPE)	92	EA	\$	\$
16	6" Storm Sewer (HDPE)	64	EA	\$	\$
17	Inlet (18") (Area) (Nyloplast Heavy Duty w/Ped. Grate Assy)	1	EA	\$	\$
18	Inlet (12") (NDS Low Profile Catch Basin)	1	EA	\$	\$
19	Junction Box (12")(Nyloplast Heavy Duty w/Solid Cover)	1	EA	\$	\$
20	Pipe Connection to Existing Structure	1	EA	\$	\$
21	Grading	1	LS	\$	\$
22	Erosion Control	1	LS	\$	\$
23	Construction Staking	1	LS	\$	\$
24	Force Account	1	SET	\$10,000.00	\$10,000.00

Total of Bid Items (Items 1-24) = Total of All Unit Price Bid Items \$ _____

(In words)

B. Bidder acknowledges that:

1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and
2. estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 4—TIME OF COMPLETION

4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

4.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 5—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

5.01 *Bid Acceptance Period*

- A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

5.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

- A. In submitting this Bid, Bidder represents the following:
1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
 2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing

surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 6.02.A:

- a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
- b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
- c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
- d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 7—LIST OF SUBCONTRACTORS AND SUPPLIERS

<u>Name of Subcontractor or Supplier</u>	<u>Item of Work</u>

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Address for giving notices:

Bidder's Contact:

Name:

(typed or printed)

Title:

(typed or printed)

Phone:

Email:

Address:

Bidder's Contractor License No.: (if applicable)

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

City of Grain Valley, Missouri
711 Main Street
Grain Valley, MO 64029

PROJECT

Date:

Amount:

Description (Name and Location):

Armstrong Park All-Inclusive Playground in Grain Valley, MO

BOND

Date:

Amount:

Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent or representative.

BIDDER AS PRINCIPAL

Company: _____ (Corp. Seal)

Signature: _____

Name and Title: _____

SURETY

Company: _____ (Corp. Seal)

Signature: _____

Name and Title: _____

(Attach certified Power of Attorney)

NOW THEREFORE, Bidder and Surety jointly and severally agree to bind themselves, their heirs, executors, administrators, successors and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of the Bond and subject to the following terms and conditions:

1. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents the executed Agreement required by the Bidding Documents and the performance and payment bonds required by the Bidding Documents and Contract Documents.

2. This obligation shall be null and void if:

- a. Owner accepts Bidder's bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and the performance and payment bonds required by the Bidding Documents and Contract Documents, or
- b. All bids are rejected by Owner, or
- c. Owner fails to issue a notice of award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder).

3. Payment under this Bond will be due and payable upon default of Bidder and within 10 calendar days after receipt by Bidder and Surety of written notice of default from Owner.

4. Notice required hereunder shall be in writing and sent via U.S. Mail or hand delivered to both Bidder and Surety at their respective addresses shown on the face of this Bond and shall be deemed to be effective upon receipt by the party concerned.

5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue notice of award agreed to in writing by Owner and Bidder.

6. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.

7. This Bond is intended to conform to all applicable laws. Any applicable requirement of any applicable law that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of the Bond conflicts with any applicable provision of any applicable law, then the provisions of said laws shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

Address of Owner:

Address of Bidder:

Address of Surety:

City of Grain Valley, Missouri
711 Main Street
Grain Valley, MO 64029

BID GUARANTY

Attached hereto is a _____ Certified Check from _____ (the "Bidder") in the amount of _____ Dollars (\$_____), which represents no less than 5% of the total Bid and payable to the City of Grain Valley, Missouri.

The Undersigned Bidder agrees that the accompanying Bid Security shall be forfeited to and become the property of the Owner should Bidder fail or refuse within the time required by the Bidding Documents to fully execute the Agreement as required by the Bidding Documents and timely delivery of a fully executed Performance Bond and Payment Bond required by the Bidding Documents and Contract Documents.

Dated this _____ day of _____, 20____

Name of Bidder (typed)

By: _____
(Authorized Signature)

Printed Name: _____

Title: _____

Address: _____

ATTEST:

Secretary (If Corporation)

Affix Corporate Seal

Domestic Products Procurement Law – RSMo 34.350 – 34.359 Certification

Each contract for the purchase or lease of manufactured goods or commodities by any public agency, and each contract made by a public agency for construction, alteration, repair, or maintenance of any public works shall contain a provision that any manufactured goods or commodities used or supplied in the performance of that contract or any subcontract thereto shall be manufactured or produced in the United States. (34.353.1 RSMo)

Project Name: _____

Project Number: _____

Contract Name: _____

Please check one of the following and sign where indicated.

- ☐ All of the iron, steel, and manufactured goods used in the project are produced in the United States.
- ☐ A waiver is being requested from the domestic products provision due to the following exception:
- ☐ The specified products are not manufactured or produced in the United States in sufficient quantities or manufactured or produced in the United States within the necessary time frames in sufficient quantities.
- ☐ The cost for the specified products would increase the cost by more than 10 percent; or
- ☐ Only one line of a product is manufactured or produced in the United States.

Documentation of at least one of the cases above must be provided. List below the materials that cannot comply with the Domestic Product Procurement Law provisions.

- ☐ Additional sheets (attach if necessary)

Name of Contracting Firm

Signature

Date

Name and Title of Signer (Please type)

This certification must be signed, and the waiver approved prior to materials purchased.



STATE OF MISSOURI
OFFICE OF ADMINISTRATION

DOMESTIC PRODUCTS PROCUREMENT ACT (BUY AMERICAN) PREFERENCE

In accordance with sections 34.350-34.359, RSMo, the bidder is instructed to provide information regarding the point of manufacture for each of the products being bid so that the product's eligibility for the Domestic Products Procurement Act (Buy American) Preference can be determined. This information is requested for the **finished product** only, not for components of the finished product. The bidder may be required to provide supporting documentation indicating proof of compliance.

QUALIFYING FOR THE DOMESTIC PRODUCTS PREFERENCE

A product qualifies for the preference if one of the following circumstances exist:

- if manufactured or produced in the U.S.; or
- if the product is imported into the U.S. but is covered by an existing international trade treaty that affords the specific product the same status as a product manufactured or produced in the U.S.; or
- if only one line of products is manufactured or produced in the U.S.

NON-DOMESTIC PRODUCT

If the product is not manufactured or produced in the U.S. and does not otherwise qualify as domestic, then it will be considered non-domestic and not eligible for the preference.

THE BIDDER MUST COMPLETE THE FOLLOWING APPLICABLE TABLES TO CERTIFY WHETHER:

(Table 1) **ALL** products bid are manufactured or produced **in the U.S.** and qualify for the Domestic Products Procurement Act Preference; OR

(Table 2) **ALL** products bid are manufactured or produced **outside the U.S.** and do not otherwise qualify for the Domestic Products Procurement Act Preference; OR

(Tables 3-6) Not all products bid fall into the prior two categories so an **item-by-item certification** is necessary.

The bidder is responsible for certifying the information provided on the exhibit is accurate by signing where indicated at the end of the exhibit.

TABLE 1 - ALL PRODUCTS MANUFACTURED OR PRODUCED IN U.S. (eligible for preference)

Check the box to the right if ALL products bid are MANUFACTURED OR PRODUCED IN THE U.S.:

☐

TABLE 2 - ALL PRODUCTS MANUFACTURED OR PRODUCED OUTSIDE U.S. AND DON'T QUALIFY FOR PREFERENCE (ineligible for preference)

Check the box to the right if ALL products bid are MANUFACTURED OR PRODUCED OUTSIDE THE U.S. and DO NOT OTHERWISE QUALIFY for the Domestic Products Procurement Act Preference:

☐

TABLES 3 THROUGH 6 - ITEM BY ITEM CERTIFICATION (NOT ALL PRODUCTS BID FALL INTO PRIOR TWO TABLES)

- For those line items for which a U.S.-manufactured or produced product is bid, complete **Table 3**.
- For those line items which are manufactured or produced outside the U.S. that do not qualify for the Domestic Products Procurement Act Preference, complete **Table 4**.
- For those line items which are not manufactured or produced in the U.S., but for which there is a U.S. trade treaty, law, agreement, or regulation in compliance with section 34.359, RSMo, complete **Table 5**.
- For those line items which are not manufactured or produced in the U.S., but for which there is only one U.S. Manufacturer of that product or line of products, complete **Table 6**.

TABLE 3 - U.S.-MANUFACTURED OR PRODUCED PRODUCTS (Eligible for Preference)

- List item numbers of products bid that are U.S.-manufactured or produced and therefore qualify for the Domestic Products Procurement Act Preference.
- List U.S. city and state where products bid are manufactured or produced.

ITEM #	U.S. CITY/STATE WHERE MANUFACTURED/PRODUCED	ITEM #	U.S. CITY/STATE WHERE MANUFACTURED/PRODUCED

TABLE 4 - FOREIGN-MANUFACTURED OR PRODUCED PRODUCTS (Not Eligible for Preference)

- List item numbers of products bid that are foreign manufactured or produced and do not otherwise qualify for the Domestic Products Procurement Act Preference.
- List country where product bid is manufactured or produced.

ITEM #	COUNTRY WHERE MANUFACTURED/PRODUCED	ITEM #	COUNTRY WHERE MANUFACTURED/PRODUCED

TABLE 5 - FOREIGN-MANUFACTURED OR PRODUCED PRODUCTS BUT U.S. TRADE TREATY, LAW, AGREEMENT, OR REGULATION APPLIES (Eligible for Preference)

- List item numbers of products bid that are foreign manufactured or produced but qualify for the Domestic Products Procurement Act Preference because a U.S. Trade Treaty, Law, Agreement, or Regulation applies.
- Identify country where proposed foreign-made product is manufactured or produced.
- Identify name of applicable U.S. Trade Treaty, Law, Agreement, or Regulation that allows product to be brought into the U.S. duty/tariff-free.
- Identify website URL for the U.S. Trade Treaty, Law, Agreement, or Regulation.
- NOTE: As an imported product, if an import tariff is applied to the item, it does not qualify for the preference. In addition, "Most Favored Nation" status does not allow application of the preference unless the product enters the U.S. duty/tariff-free.

ITEM #	COUNTRY WHERE PROPOSED FOREIGN-MADE PRODUCT IS MANUFACTURED/PRODUCED	NAME OF APPLICABLE U.S. TRADE TREATY, LAW, AGREEMENT, OR REGULATION	OFFICIAL WEBSITE URL FOR THE U.S. TREATY, LAW, AGREEMENT, OR REGULATION

TABLE 6 - FOREIGN-MANUFACTURED OR PRODUCED PRODUCTS BUT ONLY ONE U.S. MANUFACTURER PRODUCES PRODUCT OR LINE OF PARTICULAR GOOD (Eligible for Preference)

- List item numbers of products bid that are foreign manufactured or produced but qualify for the Domestic Products Procurement Act Preference because only one U.S. Manufacturer produces the product or line of a particular good.
- Identify country where proposed foreign-made product is manufactured or produced.
- Identify sole U.S. manufacturer name.
- Identify name of sole U.S. manufactured product/line of particular good.

ITEM #	COUNTRY WHERE PROPOSED FOREIGN-MADE PRODUCT IS MANUFACTURED/PRODUCED	SOLE U.S. MANUFACTURER NAME	NAME OF SOLE U.S. MANUFACTURED PRODUCT OR LINE OF PARTICULAR GOOD

The bidder is responsible for certifying the information provided on this exhibit is accurate by signing below:

I hereby certify that the information provided herein is true and correct, and complies with all provisions of sections 34.350 to 34.359, RSMo. I understand that any misrepresentation herein constitutes the commission of a class A misdemeanor.

SIGNATURE (IF SUBMITTING BID ELECTRONICALLY, SCANNED OR TYPED SIGNATURE IS ACCEPTABLE)

COMPANY NAME

NOTICE OF AWARD

Date of Issuance:

Owner: City of Grain Valley, MO

Owner's Project No.:

Engineer: Lamp Rynearson

Engineer's Project No.: 0322006.03

Project: Armstrong Park All-Inclusive Playground

Contract Name: Armstrong Park All-Inclusive Playground

Bidder:

Bidder's Address:

You are notified that Owner has accepted your Bid dated **[date]** for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

Armstrong Park All Inclusive Playground

The Contract Price of the awarded Contract is \$**[Contract Price]**. Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.

[5] unexecuted counterparts of the Agreement accompany this Notice of Award, and 5 copies of the Contract Documents accompanies this Notice of Award or has been transmitted or made available to Bidder electronically.

☒ Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner **[5]** counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any): **None**

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within 10 days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: **City of Grain Valley, MO**

By (signature): _____

Name (printed): _____

Title: _____

Copy: Engineer

ARMSTRONG PARK ALL INCLUSIVE PLAYGROUND

AGREEMENT BETWEEN OWNER AND CONTRACTOR **(UNIT PRICE)**

THIS AGREEMENT BETWEEN OWNER AND CONTRACTOR (this "Agreement") is made and entered into and is effective on this ____ day of _____, 20__, by and between the City of Grain Valley, Missouri, a municipality, ("Owner"), and _____, a Missouri Corporation, having its principal place of business located at _____ ("Contractor").

WHEREAS, Owner has caused to be prepared specifications, plans and other Contract Documents for the Work herein described, and has approved and adopted the Contract Documents defined herein and has invited proposals for furnishing materials, labor, and equipment for, and in connection with, the construction of improvements in accordance with the terms of the Contract Documents; and

WHEREAS, the Contractor, in response to the invitation, has submitted to Owner in the manner and at the time specified, a proposal in accordance with the terms of the Contract Documents; and

WHEREAS, Owner has opened, and examined the bids submitted and as a result of such examination, has determined and declared the Contractor to be the lowest and best bidder for constructing said improvements, and has duly awarded to this Contract to Contractor.

Owner and Contractor, in consideration of the mutual covenants herein set forth, agree as follows:

ARTICLE 1 **WORK**

Contractor, at their own cost and expense, will provide all labor, tools, equipment and materials required to complete all Work specified or indicated in the Contract Documents or reasonably inferable by the Contractor therefrom as necessary to produce the results intended by the Contract Documents.

ARTICLE 2 **PROFESSIONAL**

The Project has been designed by Lamp Ryneerson, who is referred to in the Contract Documents as the Professional. Professional, and its duly authorized agents, are to act as Owner's representative, assume all duties and responsibilities, and have the rights and authorities assigned to Professional in the Contract Documents in accordance with the Contract Documents.

ARTICLE 3 **CONTRACT TIME AND COMPLETION**

3.1 The date of commencement is the date from which the Contract Time(s) of Paragraph 3.2 is measured and shall be fixed in a written notice to proceed issued by Owner.

3.2 The Contractor shall achieve Substantial and Final Completion of the entire Work, and if set forth below, the various designated stages of the Work, not later than the dates shown in Section 3.3:

3.3 Contractor agrees that the Work will be substantially complete on or before **December 6, 2023** and will be completed and ready for final payment in accordance with Paragraph 14.10 of the General Conditions on or before **December 20, 2023.**

3.4 Time is of the essence to the Contract Documents and all obligations thereunder. The Contractor acknowledges and recognizes that (1) Owner is entitled to full and beneficial occupancy and use of the completed Work following expiration of the Contract Times and (2) Owner will sustain damages if the Contract Time(s) are not met by Contractor. The Contractor further acknowledges and agrees that if the Contractor fails to achieve Substantial Completion of the entire Work or any phase of the Work within the

Contract Time(s), Owner will sustain extensive damages and serious loss as a result of such failure. The exact amount of such damages will be extremely difficult to ascertain. Therefore, Owner and the Contractor agree as follows in this Paragraph 3.4:

- .1 If the Contractor fails to achieve Substantial Completion of the Work or designated portions within the Contract Time(s) as set forth in Paragraph 3.3, Owner shall be entitled to retain or recover from the Contractor, as liquidated damages and not as a penalty, the following per diem amounts for each day that expires after the time specified in Paragraph 3.3 for Substantial Completion of the Work or designated phases of the Work and continuing until the actual Date(s) of Substantial Completion:

\$400 per Calendar Day

- .2 After Substantial Completion, if Contractor shall neglect, refuse or fail to complete remaining Work or designated portions within the Contract Time(s), as set forth in Paragraph 3.3, Owner shall be entitled to retain or recover from Contractor as liquidated damages and not as a penalty, the following per diem amounts for each day that expires after the time specified in Paragraph 3.3 for final completion of the Work or phases of the Work and until the actual date(s) of final completion:

\$400 per Calendar Day

- .3 All such liquidated damages referred to in this Paragraph 3.4 are hereby agreed to be a reasonable pre-estimate of damages Owner will incur as a result of delayed completion of the Work or phases of the Work. Owner may deduct liquidated damages described in Paragraph 3.4 from any unpaid amounts then or thereafter due the Contractor under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due the Contractor shall be payable to Owner at the demand of Owner, together with interest from the date of the demand at a rate of one and one-half percent (1.5%) per month.

ARTICLE 4 **CONTRACT SUM**

4.1 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents and Contractor's bid an amount equal to the sum of the established unit price of each separately identified item of Work set forth in the bid, times the actual quantities of that item completed by Contractor ("Contract Price"):

and 00/100 Dollars (\$)

4.2 The unit prices set forth above are considered complete and include: (1) all materials, equipment, labor, delivery, installation, overhead and profit; and (2) any other costs or expenses in connection with, or incidental to, the performance of that portion of the Work to which such unit prices apply.

4.3 Professional will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Professional will review with Contractor's representative preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Professional's written decisions thereon will be final and binding upon Contractor, unless, within ten (10) days after the date of any such decision, Contractor delivers to Owner and Professional a written objection to such determination.

4.4 Any estimated quantities of Work contained in any Contract Document are not guaranteed and are solely for the purpose of comparison of Bids. Contractor acknowledges and agrees that the estimated quantities may change because of changes ordered by Owner or because of actual site conditions or other reasons. Contractor agrees that the unit prices for the Work shall remain unchanged even if the actual quantity of Work performed by Contractor differs materially and significantly from any estimated quantity of such items. Contractor agrees that it shall make no claim for an adjustment in any unit price for any variance between the actual quantity of Work performed by Contractor and any estimated quantity of such item.

ARTICLE 5

PAYMENTS

5.1 Contractor shall submit Applications for Payment in accordance with the General Conditions of the Contract for Construction and in the form provided by Owner. Owner shall make progress payments to Contractor in accordance with the Contract Documents. The period covered by each Application for Payment shall be 1 calendar month ending on the last day of the previous month.

5.2 The Application for Payment submitted by Contractor shall include the quantities of each item of Work completed by Contractor. Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 The value of all completed Work by Contractor as determined by the sum of the unit price of each separately identified item of Work set forth in Paragraph 4.1 times the actual quantities of that item completed as determined by Owner as set forth in Paragraph 4.3;
- .2 Less retainage of 5% of the amount of Subparagraph .1;
- .3 Less the aggregate of previous payments made by Owner; and
- .4 Less amounts, if any, for which the Professional has withheld or nullified an approval of payment as set forth in the Contract Documents.

5.3 Owner shall make progress payments and final payment in accordance with the General Conditions of the Contract for Construction.

ARTICLE 6

CONTRACTOR'S REPRESENTATIONS

In order to induce Owner to enter into this Agreement, Contractor makes the following representations:

6.1 Contractor has examined and carefully studied the Contract Documents (including the Addenda listed in Article 7) and the other related data identified in the Bidding Documents including "technical data."

6.2 Contractor has visited the site and become familiar with and satisfied itself as to the general, local, and site conditions that may affect cost, progress, performance, or furnishing of the Work.

6.3 Contractor is familiar with and has satisfied itself as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

6.4 Contractor has been provided any and all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site. Contractor acknowledges that such reports and drawings are not Contract Documents. A list of such reports and drawings are attached hereto as Exhibit A. Contractor acknowledges that Owner and Professional do not assume responsibility for the accuracy or completeness of such information. Contractor also acknowledges that Owner and Professional do not assume responsibility for the accuracy or completeness of data shown or indicated in the Contract Documents with respect to underground facilities or utilities at or contiguous to the site, and Contractor shall not be entitled to rely on the accuracy or completeness of such data. Contractor has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities and utilities) at or contiguous to the site or otherwise which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto. Contractor does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the performance and furnishing of the Work at the Contract Sum, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

6.5 Contractor is aware of the general nature of work to be performed by Owner and others at the site that relates to the Work as indicated in the Contract Documents.

6.6 Contractor has correlated the information known to Contractor, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

6.7 Contractor has given Professional written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents and the written resolution thereof by Professional is acceptable to Contractor, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

6.8 Contractor has the full power and authority to make, execute, deliver and perform the Work hereunder and has authorized the undersigned to bind it to this Contract and the Contract Documents.

6.9 The representations of Contractor shall be continuing and shall survive the execution and termination of this Contract.

ARTICLE 7

CONTRACT DOCUMENTS

The Contract Documents, except for Modifications executed after the date of this Contract, which comprise the entire agreement between Owner and Contractor concerning the Work, consist of the following:

- 7.1 This Agreement.
- 7.2 Exhibits to this Agreement, if any.
- 7.3 Notice to Proceed.
- 7.4 General Conditions of the Contract for Construction.
- 7.5 Supplementary Conditions of the Contract.
- 7.6 Performance Bond.
- 7.7 Payment Bond.
- 7.8 Maintenance Bond
- 7.9 Specifications of the Contract

7.10 The Drawings, as follows:

<u>Number</u>	<u>Title</u>	<u>Last Revision Date</u>
1	Cover Sheet	
2	Existing Conditions, General Notes, and Legend Plan Sheet	
3	Grading and Removal Plan Sheet	
4	Site and Paving Plan Sheet	
5	Storm Sewer Plan/Profile sheet	
6	Detail Sheet	
7	Landscape Plan Sheet	
8	Landscape Notes and Detail Sheet	

7.11 Addenda, if any, as follows:

<u>Number</u>	<u>Date</u>	<u>Pages</u>

7.12 Other documents, if any, as follows:

There are no Contract Documents other than those listed above in this Article 7 or the General Conditions of the Contract for Construction.

ARTICLE 8

MISCELLANEOUS

8.1 Terms used in this Contract which are defined in Article 1 of the General Conditions of the Contract for Construction will have the meanings indicated in the General Conditions of the Contract for Construction.

8.2 Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

8.3 The business address of Contractor given herein is the place to which all notices, letters, and other communication to Contractor will be mailed or delivered. The address of Owner appearing herein is hereby designated as the place to which all notices, letters, and other communication to Owner shall be mailed or delivered. Either party may change their address at any time by an instrument in writing delivered to Professional and to the other party.

IN WITNESS WHEREOF, Owner and Contractor have signed this Contract by and through their duly authorized representatives. All portions of the Contract Documents have been signed or identified by Owner and Contractor or by Professional on their behalf.

THE CONTRACT DOCUMENTS CONTAIN AN ARBITRATION PROVISION WHICH MAY BE ENFORCED BY THE PARTIES

ATTEST:

CITY OF GRAIN VALLEY, MISSOURI

"Owner"

City Clerk

By: _____

Printed Name: _____

Title: _____ City Administrator

"Contractor"

By: _____

Printed Name: _____

Title: _____

I, the undersigned, _____, the duly authorized and acting legal representative of Grain Valley, Missouri, do hereby certify as follows:

I have examined the attached contract documents, including surety bonds and certificates of insurance, and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof.

Date: _____

City Attorney

EXHIBIT A
REPORTS, TESTS AND DRAWINGS
WHICH ARE NOT CONTRACT DOCUMENTS

NONE

PERFORMANCE BOND

Contractor Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: City of Grain Valley, MO Mailing address <i>(principal place of business)</i> : 711 N Main St. Grain Valley MO 64029	Contract Description <i>(name and location)</i> : Armstrong Park All-Inclusive Playground Contract Price: Effective Date of Contract:
Bond Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____	By: _____
<i>(Signature)</i>	<i>(Signature)(Attach Power of Attorney)</i>
Name: _____	Name: _____
<i>(Printed or typed)</i>	<i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____	Attest: _____
<i>(Signature)</i>	<i>(Signature)</i>
Name: _____	Name: _____
<i>(Printed or typed)</i>	<i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
 - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
 - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

- 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
- 6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
- 7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- 8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
- 9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
- 10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
- 11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
- 12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
- 13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
 - 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
 - 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: None

PAYMENT BOND

Contractor Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: City of Grain Valley, MO Mailing address <i>(principal place of business)</i> : 711 N Main St. Grain Valley MO 64029	Contract Description <i>(name and location)</i> : Armstrong Park All-Inclusive Playground Contract Price: Effective Date of Contract:
Bond Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input checked="" type="checkbox"/> None <input type="checkbox"/> See Paragraph 18	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <div style="text-align: center;"><i>(Signature)</i></div>	By: _____ <div style="text-align: center;"><i>(Signature)(Attach Power of Attorney)</i></div>
Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>	Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>
Title: _____	Title: _____
Attest: _____ <div style="text-align: center;"><i>(Signature)</i></div>	Attest: _____ <div style="text-align: center;"><i>(Signature)</i></div>
Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>	Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
 - 5.1. Claimants who do not have a direct contract with the Contractor
 - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2. Pay or arrange for payment of any undisputed amounts.
 - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
 - 16.1. *Claim*—A written statement by the Claimant including at a minimum:
 - 16.1.1. The name of the Claimant;
 - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
 - 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 - 16.1.4. A brief description of the labor, materials, or equipment furnished;

- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 - 16.1.7. The total amount of previous payments received by the Claimant; and
 - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
18. Modifications to this Bond are as follows: None

MAINTENANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: That

(Name of Contractor)

(Address of Contractor)

a _____ hereinafter called Principal, and
(Corporation, Partnership, or Individual)

(Name of Surety)

hereinafter called Surety, are held and firmly bound unto _____
City of Grain Valley, Missouri
(Name of Owner)

711 Main Street, Grain Valley, MO 64029

(Address of Owner)

hereinafter called OWNER, and unto all persons, firms, and corporations who or which may furnish labor, or who furnish materials to perform as described under the contract and to their successors and assigns in the total aggregate penal sum of _____ Dollars (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that, Whereas on the _____ day of _____, 2020, the Principal entered into a written agreement with the OWNER, for the construction and reconstruction, or repair of certain public improvements as designated and described in the said agreement; and

Whereas, it was a condition of the contract award by the Owner that these presents be executed by the Principal and Surety aforesaid, and

Whereas, the Principal agrees to guarantee the work hereinabove described, including all materials and workmanship, for the period of 2 year(s) beginning on the date the Owner so accepts said Work, said date being the formal acceptance date.

NOW, THEREFORE, if the Principal shall and will, in all particulars, well, duly, and faithfully observe, perform and abide by each and every covenant, condition and part of said written agreement and other Contract Documents and shall protect the Owner against all damages, losses and expenses which may occur to Owner, by reason of defective materials used, or by reason of defective workmanship done, and for the construction, reconstruction or repair of said public improvements, and settlement of backfill excavated areas.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be
Number

deemed an original, this the _____ day of _____, 20 ____.

ATTEST:

(Principal) Secretary

Principal

(SEAL) By _____ (s)

(Witness as to Principal)

(Address)

(Address)

Surety

ATTEST:

(Witness to Surety)

By _____ (s)
Attorney-in-Fact

(Address)

(Address)

NOTE:

1. Date of BOND must not be prior to date of contract.
2. If CONTRACTOR is partnership, all partners should execute BOND.
3. Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.
4. Accompany this bond with Attorney-in-Fact's Authority from the Surety Company certified to include the date of the bond.

ARMSTRONG PARK ALL-INCLUSIVE PLAYGROUND
FOR
CITY OF GRAIN VALLEY, MO

City of Grain Valley, MO
711 Main Street
Grain Valley, MO 64029

RE: Performance, Payment, and Maintenance Bonds

The undersigned is an authorized representative of _____, Surety for
_____, Contractor, for and during the entire period of
construction of the Armstrong Park All-Inclusive Playground Project.

Authorization is hereby given by the Surety to the City of Grain Valley, MO to insert the date of the
execution of the Contract on the Bonds and Powers of Attorney.

Surety (SEAL)

Authorized Representative

Date



MISSOURI DEPARTMENT OF

REVENUE**Project Exemption Certificate**

This form is to be completed and given to your contractor.

Exempt Entity and Project Information	Name of Exempt Entity Issuing the Certificate		Missouri Tax Exemption Number	
	Address		City	State ZIP Code
	E-mail Address			
	Project Number	Project Begin Date (MM/DD/YYYY) ____/____/____	Estimated Project End Date (MM/DD/YYYY) ____/____/____	
	Description of Project			
	Project Location		Certificate Expiration Date (MM/DD/YYYY) ____/____/____	
Provide a signed copy of this certificate, along with a copy of the exempt entity's Missouri Sales and Use Tax Exemption Letter to each contractor or subcontractor who will be purchasing tangible personal property for use in this project. It is the responsibility of the exempt entity to ensure the validity of the information on the certificate. The exempt entity must issue a new certificate if any of the information changes.				
Signature of Authorized Exempt Entity		Printed Name of Authorized Exempt Entity	Date (MM/DD/YYYY) ____/____/____	

Contractor	The Missouri exempt entity named above hereby authorizes the purchase, without sales tax, of tangible personal property to be incorporated or consumed in the construction project identified herein and no other, pursuant to Section 144.062, RSMo . Under penalties of perjury, I declare that the above information and any attached supplement is true, complete, and correct.			
	Name of Purchasing Contractor		Signature of Contractor	Date (MM/DD/YYYY) ____/____/____
	Address		City	State ZIP Code

Subcontractor	Contractors - Present this to your supplier in order to purchase the necessary materials tax exempt. Complete the Subcontractor portion if extending the certificate to your subcontractor. The contractor must sign the form in the space provided below.			
	Name of Purchasing Subcontractor			
	Address		City	State ZIP Code
	Signature of Contractor		Contractor's Printed Name	Date (MM/DD/YYYY) ____/____/____

Form 5060 (Revised 11-2019)

Taxation Division
P.O. Box 358
Jefferson City, MO 65105-0358

Phone: (573) 751-2836
Fax: (573) 522-1666
E-mail: salestaxexemptions@dor.mo.gov

Visit <http://dor.mo.gov/business/sales/sales-use-exemptions.php> for additional information.



**DIVISION OF
LABOR
STANDARDS**

MISSOURI DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

AFFIDAVIT

COMPLIANCE WITH THE PREVAILING WAGE LAW

I, _____, upon being duly sworn upon my oath state that: (1) I am the
(Name)

_____ of _____; (2) all requirements of
(Title) (Name of Company)

§§ 290.210 to 290.340, RSMo, pertaining to the payment of wages to workers employed on public works projects have been fully satisfied with regard to this company's work on _____;
(Name of Project)

(3) I have reviewed and am familiar with the prevailing wage rules in 8 CSR 30-3.010 to 8 CSR 30-3.060; (4) based upon my knowledge of these rules, including the occupational titles set out in 8 CSR 30-3.060, I have completed full and accurate records clearly indicating (a) the names, occupations, and crafts of every worker employed by this company in connection with this project together with an accurate record of the number of hours worked by each worker and the actual wages paid for each class or type of work performed, (b) the payroll deductions that have been made for each worker, and (c) the amounts paid to provide fringe benefits, if any, for each worker; (5) the amounts paid to provide fringe benefits, if any, were irrevocably made to a fund, plan, or program on behalf of the workers; (6) these payroll records are kept and have been provided for inspection to the authorized representative of the contracting public body and will be available, as often as may be necessary, to such body and the Missouri Department of Labor and Industrial Relations; (7) such records shall not be destroyed or removed from the state for one year following the completion of this company's work on this project; and (8) there has been no exception to the full and complete compliance with the provisions and requirements of Annual Wage Order No. _____ Section _____ issued by the Missouri Division of Labor Standards and applicable to this project located in _____ County, Missouri, and completed on the _____ day of _____, _____.

The matters stated herein are true to the best of my information, knowledge, and belief. I acknowledge that the falsification of any information set out above may subject me to criminal prosecution pursuant to §§290.340, 570.090, 575.040, 575.050, or 575.060, RSMo.

Signature

Subscribed and sworn to me this _____ day of _____, _____.

My commission expires _____, _____.

Notary Public

Receipt by Authorized Public Representative

Missouri

Division of Labor Standards

WAGE AND HOUR SECTION



MICHAEL L. PARSON, Governor

Annual Wage Order No. 29

Section 048
JACKSON COUNTY

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by

Todd Smith, Director
Division of Labor Standards

Filed With Secretary of State: March 10, 2022

Last Date Objections May Be Filed: April 11, 2022

Prepared by Missouri Department of Labor and Industrial Relations

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Asbestos Worker	\$67.05
Boilermaker	\$37.33*
Bricklayer	\$59.20
Carpenter	\$60.21
Lather	
Linoleum Layer	
Millwright	
Pile Driver	
Cement Mason	\$54.35
Plasterer	
Communications Technician	\$58.66
Electrician (Inside Wireman)	\$66.21
Electrician Outside Lineman	\$64.01
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Elevator Constructor	\$37.33*
Glazier	\$56.84
Ironworker	\$66.35
Laborer	\$49.04
General Laborer	
First Semi-Skilled	
Second Semi-Skilled	
Mason	\$54.39
Marble Mason	
Marble Finisher	
Terrazzo Worker	
Terrazzo Finisher	
Tile Setter	
Tile Finisher	
Operating Engineer	\$60.71
Group I	
Group II	
Group III	
Group III-A	
Group IV	
Group V	
Painter	\$50.15
Plumber	\$74.12
Pipe Fitter	
Roofer	\$57.93
Sheet Metal Worker	\$71.70
Sprinkler Fitter	\$61.32
Truck Driver	\$47.50
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. The public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

**The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title as defined in Section 290.210 RSMo.

Heavy Construction Rates for
JACKSON County

Section 048

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Carpenter	\$60.95
Millwright	
Pile Driver	
Electrician (Outside Lineman)	\$84.43
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Laborer	\$49.28
General Laborer	
Skilled Laborer	
Operating Engineer	\$58.78
Group I	
Group II	
Group III	
Group IV	
Truck Driver	\$50.64
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate Sheet.

*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. The public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

**The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title as defined in Section 290.210 RSMo.

OVERTIME and HOLIDAYS

OVERTIME

For all work performed on a Sunday or a holiday, not less than twice (2x) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work.

For all overtime work performed, not less than one and one-half (1½) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work or contractual obligation. For purposes of this subdivision, **"overtime work"** shall include work that exceeds ten hours in one day and work in excess of forty hours in one calendar week; and

A thirty-minute lunch period on each calendar day shall be allowed for each worker on a public works project, provided that such time shall not be considered as time worked.

HOLIDAYS

January first;
The last Monday in May;
July fourth;
The first Monday in September;
November eleventh;
The fourth Thursday in November; and
December twenty-fifth;

If any holiday falls on a Sunday, the following Monday shall be considered a holiday.

Statement of Compliance

(To be submitted with weekly payroll if not using form WH-347)

I hereby certify the following:

- 1) The payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
- 2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
- 3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

Signature of Contractor or Subcontractor

Date

AFFIDAVIT of COMPLIANCE

(Section 285.530.2, Revised Statutes of Missouri)

State of Missouri)
) ss:
County of _____)

Now this _____ day of _____, 20____, the undersigned, being first duly sworn, deposes and says:

1. I am more than 18 years of age.
2. I make this affidavit from my personal knowledge of the facts stated herein or upon information and facts available to me as a duly authorized owner, partner, corporate, or LLC officer or Human Relations Director of _____ ("Contractor").
3. I am authorized to make this affidavit on behalf of Contractor.
4. I state and affirm that Contractor is enrolled and is currently participating in E-Verify, a federal work authorization program or another equivalent electronic verification of work authorization program operated by the United States Department of Homeland Security under the Immigration Reform and Control Act of 1986.
5. Further, Contractor does not knowingly employ any person who is an unauthorized alien.
6. Further, Contractor has performed an electronic verification check as described above on all workers hired since January 1, 2009 or obtained documents required for completion of a Federal I-9 form before it began participating in E-Verify.
7. Attached to this affidavit is a true and accurate copy of Contractor's Memorandum of Understanding with the United States concerning the use of E-Verify.

I certify under penalty of perjury that the statements above are complete, true and accurate to the best of my knowledge and belief.

Authorized Agent, Partner, Owner or Officer

Printed Name

Title

If Contractor has a Human Relations Director or equivalent that person must sign as an affiant as well.

I certify under penalty of perjury that the statements above are complete, true and accurate to the best of my knowledge and belief.

Human Relations Director

Printed Name

Title

Subscribed and sworn to before me this ___ day of _____, 20__.

Notary Public

My commission expires:

This form is promulgated pursuant to 15CSR 60-15.020. Use of this form is not required but the Attorney General has deemed this affidavit sufficient in form to satisfy the requirements of section 285.540 RSMo., Supp. 2008.

NOTICE TO PROCEED

Owner: City of Grain Valley, MO Owner's Project No.: _____
Engineer: Lamp Rynearson Engineer's Project No.: 0322006.03
Contractor: _____ Contractor's Project No.: _____
Project: Armstrong Park All-Inclusive Playground
Contract Name: Armstrong Park All-Inclusive Playground
Effective Date of Contract: _____

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on **July 24, 2023** pursuant to Paragraph 4.01 of the General Conditions.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work will be done at the Site prior to such date.

In accordance with the Agreement: **[Select one of the following two alternatives, insert dates or number of days, and delete the other alternative.]**

The date by which Substantial Completion must be achieved is **[date for Substantial Completion, from Agreement]**, and the date by which readiness for final payment must be achieved is **[date for readiness, from Agreement]**.

[or]

The number of days to achieve Substantial Completion is **[number of days, from Agreement]** from the date stated above for the commencement of the Contract Times, resulting in a date for Substantial Completion of **[date, calculated from commencement date above]**; and the number of days to achieve readiness for final payment is **[number of days, from Agreement]** from the commencement date of the Contract Times, resulting in a date for readiness for final payment of **[date, calculated from commencement date above]**.

Before starting any Work at the Site, Contractor must comply with the following:

[Note any access limitations, security procedures, or other restrictions]

Owner: City of Grain Valley, MO
By (signature): _____
Name (printed): _____
Title: _____
Date Issued: _____
Copy: Engineer

CONTRACTOR'S AFFIDAVIT AND RELEASE FOR PARTIAL PAYMENT

ARMSTRONG PARK ALL-INCLUSIVE PLAYGROUND

Application for Payment No.: _____

Application for Payment Application Date: _____

_____ ("Contractor") has entered into a Contract with the City of Grain Valley, Missouri ("Owner") to furnish labor, material, equipment and services for the construction of improvements located at _____ ("Project").

For and in consideration of the above-said progress payment under the said Contract, the sufficiency of which is hereby acknowledged, Contractor upon its oath states:

1. Contractor, in making this request for payment, hereby certifies that all work, materials, and services required to date under said Contract have been furnished and that the work has been completed in a satisfactory and workmanlike manner and in compliance with drawings, specifications, instructions and Contract Documents furnished the Contractor.
2. Contractor also certifies that all work, labor, materials, machinery, and equipment furnished by the Contractor through the date of the last previous Application for Payment have been fully paid for by the Contractor and that there are no amounts unpaid in favor of any Subcontractor or materialmen or any other person furnishing labor and materials to said Contractor for such period and utilized in the performance of the obligations of the Contractor under the Contract.
3. Contractor warrants and represents that through the date of this Application for Payment it has complied with all applicable Laws and requirements of the Contract Documents, including prevailing wage Laws.
4. It is further certified that all amounts, including taxes, required by law or by agreement, to be withheld from employees' wages have been withheld and distributed in the manner provided by law or by the Contract.
5. Except for the amount of retainage, Contractor hereby releases, relinquishes, discharges, and waives any and all rights, and claims arising out of labor, services, equipment, and/or materials and supplies ordered, furnished or provided to or in connection with the construction of the Project through the Application for Payment Date stated above, whether such rights or claims arise by virtue of contract, statute, ordinance, regulation, constitution, common law, or otherwise.

CONTRACTOR

BY: _____
(authorized signature)

TITLE: _____

DATE: _____

STATE OF _____)
COUNTY OF _____) SS

The undersigned personally appeared before me, is personally known to me to be the _____ of the above-named Contractor, and after being duly sworn, stated that: he/she was and is duly authorized by the above-named Contractor to make the statements, undertakings, warranties, releases, waivers, and discharges contained in the above and foregoing Contractor's Affidavit and Release for Partial Payment; the statements made therein are true and correct; and, he/she executed the same for the purposes and consideration therein expressed.

Subscribed and sworn before me this _____ day of _____, 20____.

Notary Public

My Commission Expires:

293141v1

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: City of Grain Valley, MO Owner's Project No.:
Engineer: Lamp Rynearson Engineer's Project No.: 0322006.03
Contractor: Contractor's Project No.:
Project: Armstrong Park All-Inclusive Playground
Contract Name: Armstrong Park All-Inclusive Playground

This ☐ Preliminary ☐ Final Certificate of Substantial Completion applies to:

☐ All Work ☐ The following specified portions of the Work:

[Describe the portion of the work for which Certificate of Substantial Completion is issued]

Date of Substantial Completion: **[Enter date, as determined by Engineer]**

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work must be as provided in the Contract, except as amended as follows:

Amendments to Owner's Responsibilities: ☐ None ☐ As follows:

[List amendments to Owner's Responsibilities]

Amendments to Contractor's Responsibilities: ☐ None ☐ As follows:

[List amendments to Contractor's Responsibilities]

The following documents are attached to and made a part of this Certificate:

[List attachments such as punch list; other documents]

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Engineer

By (signature): _____

Name (printed): _____

Title: _____



MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
FINANCIAL ASSISTANCE CENTER

Certification Regarding Debarment and Suspension Instructions

The Missouri Department of Natural Resources receives assistance from the federal government, and the funds provided to a community constitute a sub-agreement. Accordingly, each prospective recipient of a grant, loan, or cooperative agreement and any contractor or subcontractor must agree to fully comply with Executive Order 12549, 2 C.F.R. Part 180, and 2 C.F.R. Part 1532 regarding Debarment and Suspension.

“Principals,” for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within an entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

The prospective grant, loan, or cooperative agreement recipient should return the signed certification, and explanation if needed, with its application to:

Missouri Department of Natural Resources
Financial Assistance Center
PO Box 176
Jefferson City, MO 65102-0176

Or email to fac@dnr.mo.gov.

The recipient of funding should also obtain a certification from their consulting engineer and prime contractor. The funding recipient shall also check the status on the System for Award Management (SAM) located on the Internet at <https://www.sam.gov/portal/public/SAM/>.

Each prospective subcontractor should submit a completed certification or explanation to the prime contractor for the project.



Certification Regarding Debarment and Suspension

Applicant Name: _____

Project Name: _____

Project No.: _____

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

- a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any governmental (federal, state, or local) entity;
- b) Have not within a three-year period preceding this certification been convicted of or had a civil judgment rendered against them for:
 - 1) Commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction;
 - 2) Violation of federal or state antitrust statutes relating to the submission of offers; or
 - 3) Commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c) Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity (federal, state, or local) with, commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
- d) Have not, within a three-year period preceding this certification, had one or more public transactions (federal, state, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award.

☐ I am able to certify to the above statements.

☐ I am unable to certify to the above statements and attached my explanation.

Typed Name of Authorized Representative

Title of Authorized Representative

Signature of Authorized Representative

Date

**BUSINESS ENTITY CERTIFICATION, ENROLLMENT DOCUMENTATION,
AND AFFIDAVIT OF WORK AUTHORIZATION**

BUSINESS ENTITY CERTIFICATION:

The bidder/contractor must certify their current business status by completing either Box A or Box B or Box C on this Exhibit.

- BOX A:** To be completed by a non-business entity as defined below.
- BOX B:** To be completed by a business entity who has not yet completed and submitted documentation pertaining to the federal work authorization program as described at http://www.dhs.gov/xprevprot/programs/gc_1185221678150.shtm.
- BOX C:** To be completed by a business entity who has already submitted documentation with a notarized date on or after **September 1, 2009**, to a Missouri state agency including Division of Purchasing and Materials Management.

Business entity, as defined in section 285.525, RSMo pertaining to section 285.530, RSMo is any person or group of persons performing or engaging in any activity, enterprise, profession, or occupation for gain, benefit, advantage, or livelihood. The term “**business entity**” shall include but not be limited to self-employed individuals, partnerships, corporations, contractors, and subcontractors. The term “**business entity**” shall include any business entity that possesses a business permit, license, or tax certificate issued by the state, any business entity that is exempt by law from obtaining such a business permit, and any business entity that is operating unlawfully without such a business permit. The term “**business entity**” shall not include a self-employed individual with no employees or entities utilizing the services of direct sellers as defined in subdivision (17) of subsection 12 of section 288.034, RSMo.

Note: Regarding governmental entities, business entity includes Missouri schools, Missouri universities (other than stated in Box C), out of state agencies, out of state schools, out of state universities, and political subdivisions. A business entity does not include Missouri state agencies and federal government entities.

BOX A – CURRENTLY NOT A BUSINESS ENTITY

I certify that _____ (Company/Individual Name) **DOES NOT CURRENTLY MEET** the definition of a business entity, as defined in section 285.525, RSMo pertaining to section 285.530, RSMo as stated above, because: (check the applicable business status that applies below)

- ☐ I am a self-employed individual with no employees; **OR**
- ☐ The company that I represent utilizes the services of direct sellers as defined in subdivision (17) of subsection 12 of section 288.034, RSMo.

I certify that I am not an alien unlawfully present in the United States and if _____ (Company/Individual Name) is awarded a contract for the services requested herein under _____ (Bid/SFS/Contract Number) and if the business status changes during the life of the contract to become a business entity as defined in section 285.525, RSMo pertaining to section 285.530, RSMo then, prior to the performance of any services as a business entity, _____ (Company/Individual Name) agrees to complete Box B, comply with the requirements stated in Box B and provide the _____ (insert agency name) with all documentation required in Box B of this exhibit.

Authorized Representative's Name
(Please Print)

Authorized Representative's Signature

Company Name (if applicable)

Date

BOX B – CURRENT BUSINESS ENTITY STATUS

I certify that _____ (Business Entity Name) **MEETS** the definition of a business entity as defined in section 285.525, RSMo pertaining to section 285.530.

Authorized Business Entity
Representative's Name
(Please Print)

Authorized Business Entity
Representative's Signature

Business Entity Name

Date

E-Mail Address

As a business entity, the bidder/contractor must perform/provide the following. The bidder/contractor should check each to verify completion/submission:

- ☐ Enroll and participate in the E-Verify federal work authorization program (Website: http://www.dhs.gov/xprevprot/programs/gc_1185221678150.shtm; Phone: 888-464-4218; Email: e-verify@dhs.gov) with respect to the employees hired after enrollment in the program who are proposed to work in connection with the services required herein; AND
- ☐ Provide documentation affirming said company's/individual's enrollment and participation in the E-Verify federal work authorization program. Documentation shall include a page from the E-Verify Memorandum of Understanding (MOU) listing the bidder's/contractor's name and the MOU signature page completed and signed, at minimum, by the bidder/contractor and the Department of Homeland Security – Verification Division. If the signature page of the MOU lists the bidder's/contractor's name and company ID, then no additional pages of the MOU must be submitted.; AND
- ☐ Submit a completed, notarized Affidavit of Work Authorization provided on the next page of this Exhibit.

AFFIDAVIT OF WORK AUTHORIZATION:

The bidder/contractor who meets the section 285.525, RSMo definition of a business entity must complete and return the following Affidavit of Work Authorization.

Comes now _____ (Name of Business Entity Authorized Representative) as _____ (Position/Title) first being duly sworn on my oath, affirm _____ (Business Entity Name) is enrolled and will continue to participate in the E-Verify federal work authorization program with respect to employees hired after enrollment in the program who are proposed to work in connection with the services related to contract(s) with the State for the duration of the contract(s), if awarded in accordance with subsection 2 of section 285.530, RSMo. I also affirm that _____ (Business Entity Name) does not and will not knowingly employ a person who is an unauthorized alien in connection with the contracted services provided to the contract(s) for the duration of the contract(s), if awarded.

In Affirmation thereof, the facts stated above are true and correct. (The undersigned understands that false statements made in this filing are subject to the penalties provided under section 575.040, RSMo.)

Authorized Representative's Signature

Printed Name

Title

Date

E-Mail Address

Subscribed and sworn to before me this _____ of _____. I am
(DAY) (MONTH, YEAR)
commissioned as a notary public within the County of _____, State of
(NAME OF COUNTY)
_____, and my commission expires on _____.
(NAME OF STATE) (DATE)

Signature of Notary

Date

BOX C – AFFIDAVIT ON FILE - CURRENT BUSINESS ENTITY STATUS

I certify that _____ (Business Entity Name) **MEETS** the definition of a business entity as defined in section 285.525, RSMo pertaining to section 285.530, RSMo and have enrolled and currently participates in the E-Verify federal work authorization program with respect to the employees hired after enrollment in the program who are proposed to work in connection with the services related to contract(s) with the State of Missouri. We have previously provided documentation to a Missouri state agency or public university that affirms enrollment and participation in the E-Verify federal work authorization program. The documentation that was previously provided included the following.

- ✓ A page from the E-Verify Memorandum of Understanding (MOU) listing the bidder's/contractor's name and the MOU signature page completed and signed, , by the bidder/contractor and the Department of Homeland Security – Verification Division.
- ✓ A completed, notarized Affidavit of Work Authorization signed and dated on or after **September 1, 2009**.

Authorized Business Entity
Representative's Name
(Please Print)

Authorized Business Entity
Representative's Signature

E-Verify MOU Company ID
Number

E-Mail Address

Business Entity Name

Date

Missouri State Agency or Public University* Name

Date of Submission

Bid/Contract Number

(If known)

* Public University includes the following five schools:

- Harris-Stowe State University - St. Louis
- Missouri Southern State University - Joplin
- Missouri Western State University - St. Joseph
- Northwest Missouri State University – Maryville
- Southeast Missouri State University - Cape Girardeau
- Division of Purchasing & Materials Management

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

(b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).
11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

Approved by OMB

0348-0046

(See reverse for public burden disclosure.)

1. Type of Federal Action: <input type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance		2. Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award		3. Report Type: <input type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change For Material Change Only: year _____ quarter _____ date of last report _____	
4. Name and Address of Reporting Entity: <input type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier _____, if known: Congressional District, if known:			5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime: Congressional District, if known:		
6. Federal Department/Agency:			7. Federal Program Name/Description: CFDA Number, if applicable: _____		
8. Federal Action Number, if known:			9. Award Amount, if known: \$ _____		
10. a. Name and Address of Lobbying Registrant (if individual, last name, first name, MI):			b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, MI):		
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.			Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____		
Federal Use Only:				Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)	



United States
ENVIRONMENTAL PROTECTION AGENCY
Washington, DC 20460

OMB Control No. 2010-0001
Approval expires 06/30/2024

This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2030-0020). Responses to this collection of information are required to obtain an assistance agreement (40 CFR Part 30, 40 CFR Part 31, and 40 CFR Part 33 for awards made prior to December 26, 2014, and 2 CFR 200, 2 CFR 1500, and 40 CFR Part 33 for awards made after December 26, 2014). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information is estimated to be 0.25 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

ARPA Project Number

CERTIFICATION REGARDING LOBBYING

CERTIFICATION FOR CONTRACTS, GRANTS, AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-contracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Typed Name & Title of Authorized Representative

Signature and Date of Authorized Representative

CERTIFICATION OF
NON-SEGREGATED FACILITIES

The federally assisted construction contractor certifies that he/she does not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she does not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. The federally assisted construction contractor certifies further that he/she will not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she will not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this section is a violation of the Equal Opportunity Clause in this contract. As used in this caption, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national of because of habit, local custom, or otherwise. The federally assisted construction contractor agrees that (except where he/she has obtained identical certifications from proposed subcontractors for specific time periods) he/she will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause, and that he/she will retain such certifications in his/her files.

NOTE-. The penalty for making false statements in offers is prescribed in 18 U. S. C. 1001.

Contractor Signature_____

Typed Name & Title _____ Date_____

Build America, Buy America Certification

Project Number: _____

Project Title: _____

As required by Section 70914 of the Bipartisan Infrastructure Law (also known as the Infrastructure Investment and Jobs Act), P.L. 117-58, on or after May 14, 2022, none of the funds under a federal award that are part of Federal financial assistance program for infrastructure (see definition below) may be obligated for a project (see definition below) unless all of the iron, steel, manufactured products, and construction materials (see definition below) used in the project are produced in the United States, unless subject to an approved waiver. The requirements of this section must be included in all subawards, including all contracts and purchase orders for work or products under this program.

Recipients of an award of Federal financial assistance are hereby notified that none of the funds provided under this award may be used for a project for infrastructure unless:

1. all iron and steel used in the project are produced in the United States--this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;
2. all manufactured products used in the project are produced in the United States —this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation; and
3. all construction materials are manufactured in the United States—this means that all manufacturing processes for the construction material occurred in the United States.

The Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment that are used at or within the finished infrastructure project, but are not an integral part of the structure or permanently affixed to the infrastructure project.

For further information on the Buy America preference, please visit www.doi.gov/grants/BuyAmerica. Additional information can also be found at the White House Made in America Office website: www.whitehouse.gov/omb/management/made-in-america/.

Definitions

“Infrastructure” includes, at a minimum, the structures, facilities, and equipment for, in the United States, roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime

facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property. Infrastructure includes facilities that generate, transport, and distribute energy.

“Construction materials” includes an article, material, or supply that is or consists primarily of:

- non-ferrous metals;
- plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- glass (including optic glass);
- lumber; or
- drywall.

“Construction Materials” does not include cement and cementitious materials, aggregates such as stone, sand, or gravel, or aggregate binding agents or additives.

“Domestic content procurement preference” means all iron and steel used in the project are produced in the United States; the manufactured products used in the project are produced in the United States; or the construction materials used in the project are produced in the United States.

“Project” means the construction, alteration, maintenance, or repair of infrastructure in the United States

Build America, Buy America Waiver Requests:

When necessary, recipients may apply for, and the Department of the Interior (DOI) may grant, a waiver from these requirements, subject to review by the Made in America Office. The DOI may waive the application of the domestic content procurement preference (see definition above) in any case in which it is determined that one of the below circumstances applies:

1. Non-availability Waiver: the types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality;
2. Unreasonable Cost Waiver: the inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent; or
3. Public Interest Waiver: applying the domestic content procurement preference would be inconsistent with the public interest.

There may be instances where an award qualifies, in whole or in part, for an existing DOI general applicability waiver as described at: www.doi.gov/grants/BuyAmerica/GeneralApplicabilityWaivers.

If the specific financial assistance agreement, infrastructure project, or non-domestic materials meets the criteria of an existing general applicability waiver within the limitations defined within the waiver, the recipient is not required to request a separate waiver for non-domestic materials.

If a general applicability waiver does not already apply, and a recipient believes that one of the above circumstances applies to an award, a request to waive the application of the domestic content procurement preference may be submitted to the financial assistance awarding officer in writing. Waiver requests shall include the below information. The waiver shall not include any Privacy Act information, sensitive data, or proprietary information within their waiver request. Waiver requests will be posted to www.doi.gov/grants/buyamerica and are subject to public comment periods of no less than 15 days. Waiver requests will also be reviewed by the Made in America Office.

1. Type of waiver requested (non-availability, unreasonable cost, or public interest).
2. Requesting entity and Unique Entity Identifier (UEI) submitting the request.
3. Department of Interior Bureau or Office who issued the award.
4. Federal financial assistance listing name and number (reference block 2 on DOI Notice of Award)
5. Financial assistance title of project (reference block 8 on DOI Notice of Award).
6. Federal Award Identification Number (FAIN).
7. Federal funding amount (reference block 11.m. on DO Notice of Award).
8. Total cost of Infrastructure expenditures (includes federal and non-federal funds to the extent known).
9. Infrastructure project description(s) and location(s) (to the extent known).
10. List of iron or steel item(s), manufactured goods, and construction material(s) the recipient seeks to waive from Buy America requirements. Include the name, cost, countries of origin (if known), and relevant PSC or NAICS code for each.
11. A certification that the recipient made a good faith effort to solicit bids for domestic products supported by terms included in requests for proposals, contracts, and nonproprietary communications with the prime contractor.
12. A statement of waiver justification, including a description of efforts made (e.g., market research, industry outreach) by the recipient, in an attempt to avoid the need for a waiver. Such a justification may cite, if applicable, the absence of any Buy America-compliant bids received in response to a solicitation.
13. Anticipated impact if no waiver is issued. Approved waivers will be posted at www.doi.gov/grants/BuyAmerica/ApprovedWaivers; recipients requesting a waiver will be notified of their waiver request determination by an awarding officer.

The undersigned Proposer hereby certifies on behalf of itself and all contractors (at all tiers) that it will meet Build America, Buy America requirements in Section 70914 of the Bipartisan Infrastructure Law P.L. 117-58, using one of the following provisions:

_____ The infrastructure project/product contains no steel or iron products, manufactured products or construction materials manufactured outside the United States per Section 70914 of the Bipartisan Infrastructure Law, P.L. 117-58. If there is ANY foreign steel or iron, manufactured products or construction materials in your infrastructure project/product you may not check this box.

_____ The project/product has foreign steel or iron, manufactured products, or construction materials; a **Build America, Buy America** waiver is required. The Contracting Entity may, but is not obligated to, seek a waiver of Build America, Buy America requirements if grounds for the waiver exist. However, Proposer certifies that it will comply with the applicable Build America, Buy America requirements if a waiver of those requirements is not available or not pursued by the Contracting Entity. The waiver process can take time and the project may not move forward until a waiver is completed.

A false certification is a criminal act in violation of 18 USC 1001. Should this Agreement be investigated, Proposer has the burden of proof to establish that it is in compliance.

Proposer: _____

Signature of Authorized Official: _____

Name of Authorized Official: _____

Title: _____

Date: _____

CERTIFICATE OF MATERIALS ORIGIN

PROJECT NUMBER		CONTRACT ID	
ITEM DESCRIPTION		BID ITEM NUMBER	
INVOICE NUMBER		QUANTITY	
DATE RECEIVED		BILL OF LADING No.	

MATERIAL SOURCE (NAME AND ADDRESS) TO INCLUDE EACH SUPPLIER, FABRICATOR, AND MANUFACTURER INCLUDING HEAT/BATCH NUMBERS IF AVAILABLE

MATERIAL DESCRIPTION

DESCRIPTION OF MATERIALS OF UNKNOWN ORIGIN OR FOREIGN MATERIALS DELIVERED TO THE PROJECT

This certification is made for the purpose of establishing the materials acceptance under the Build America, Buy America Certification (Bipartisan Infrastructure Law P.L 117-58 Section 70914). All iron and steel, manufactured products, and construction materials, including protective coating for the domestic materials described above occurred in the United States of America. Manufacturer's certificates verify the origin above described in the domestic materials and will be kept on file for three years by the suppliers following final payment. Copies will be provided to the National Park Service upon request.

I declare under penalty of perjury under the Missouri and Federal Laws that the foregoing is true and correct.

Company Name and Address	Authorized Representative
	Name: Title: Signature: Date:

GENERAL CONDITIONS
FOR FEDERALLY FUNDED/ASSISTED CONSTRUCTION PROJECTS

1. These General Conditions for Federally Funded/Assisted Construction Projects (GCFFAC) must be physically incorporated in each construction contract funded by the Land and Water Conservation Fund in Missouri. The contractor (or subcontractor) must insert this document in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). The applicable requirements of the GCFFAC are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

GCFFAC must be included in all contracts to be paid using federal assistance, and in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies must physically incorporate the GCFFAC in bid proposal or request for proposal documents, and the GCFFAC must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and Department of Natural Resources.

1.0 Notice of Federal Funding

This project is being performed in whole or in part using federal funds. Therefore, all work or services performed by the Contractor and its subcontractors shall be subject to the terms and conditions set forth below in addition to all terms and conditions in the Construction Contract, General Conditions, and other contract documents. The concepts, rules, and guidelines set forth in 2 C.F.R. 200 describing allowable costs and administrative requirements apply.

2.0 Definitions

As used herein, "Federal Government" means the government of the United States of America. "Federal Agency" means an agency, entity, department or division of the Federal Government that is providing funding for this project. All other terms shall have the meanings established in the Construction Contract, General Conditions, and/or Project Manual, unless such definitions conflict with a definition provided in an applicable statute or regulation.

3.0 Conflicting Terms or Conditions

To the extent that any terms or conditions set forth herein conflict with the Construction Contract or its General Conditions, the more stringent of the two terms and conditions shall govern.

4.0 No Obligation by Federal Government

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, Contractor, or any other party pertaining to any matter resulting from the contract.

5.0 Compliance with Federal Laws, Regulations and Executive Orders

The Contractor and its subcontractors and suppliers are required to comply with all applicable Federal laws, regulations, and executive orders, regardless of whether set forth herein. The Contractor shall assist and enable the State of Missouri in complying with any requirements imposed by the Federal Agency as a condition of funding.

6.0 Compliance with Civil Rights Provisions

The Contractor shall comply with all Federal statutes, executive orders, and regulations relating to nondiscrimination. These include, but are not limited to the following:

Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin;

Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex;

Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps;

The Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age;

Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing;

Title VII of the Civil Rights Act of 1964 (42 U.S.C. part 2000(e), which prohibits discrimination against employees on the basis of religion;

Any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and

The requirements of any other nondiscrimination statute(s) that may apply to the application.

7.0 Equal Employment Opportunity (41 C.F.R. 60-1.4(b)).

During the performance of this contract, the Contractor agrees as follows:

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during

employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

- (2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicants or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.
- (4) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (8) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided*, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and sub contractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and sub contractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

8.0 Notice of Requirement for Affirmative Action To Ensure Equal Employment Opportunity (Executive Order 11246, 41 C.F.R. 60-4.2)

(1) The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

(2) The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Time- tables	Goals for minority participation for each trade	Goals for female participation in each trade
	12.7%	6.9%

Insert Goals Established by U.S. Department of Labor: available at <https://www.dol.gov/sites/dolgov/files/ofccp/ParticipationGoals.pdf>.

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a

geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 C.F.R. pt. 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 C.F.R. 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 C.F.R. pt. 60-4. Compliance with the goals will be measured against the total work hours performed.

(3) The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

(4) As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any).

9.0 Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246 - 41 C.F.R. 60-4.3)

(1) As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

d. "Minority" includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

(3) If the Contractor is participating (pursuant to 41 C.F.R. 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

(4) The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the FEDERAL REGISTER in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

(5) Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

(6) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(7) The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where

possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one

month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 C.F.R. pt. 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

(8) Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(9) A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

(10) The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.

(11) The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

(12) The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

(13) The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 C.F.R. 60-4.8.

(14) The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

(15) Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

10.0 Prohibition of Segregated Facilities

(1) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Employment Opportunity clause in this contract.

(2) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

- (3) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Employment Opportunity clause of this contract.

11.0 Davis-Bacon Act (40 U.S.C. §§ 3141-3144, and §§ 3146-3148, and 29 C.F.R. pt. 5)

(The requirements of the Davis-Bacon Act and this section are not applicable to projects funded by the Land and Water Conservation Fund.)

(1) Minimum wages.

- (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 C.F.R. pt. 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.
- (ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
 - (2) The classification is utilized in the area by the construction industry; and
 - (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including

the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

- (C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- (2) Withholding. The (write in name of Federal Agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the (Agency) may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
- (3) Payrolls and basic records.
- (i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social

security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis–Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 C.F.R. 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis–Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

- (ii)(A) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency). The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 C.F.R. 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency), the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a subcontractor to provide addresses and social security numbers to the prime Contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).
- (B) Each payroll submitted shall be accompanied by a “Statement of Compliance,” signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 - (1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 C.F.R. pt. 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 C.F.R. pt. 5, and that such information is correct and complete;
 - (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 C.F.R. pt. 3;

- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.
- (D) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
- (iii) The Contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the (write the name of the agency) or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal Agency may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 C.F.R. 5.12.
- (4) Apprentices and trainees—
- (i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will not

longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (ii) Trainees. Except as provided in 29 C.F.R. 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 C.F.R. pt. 30.
- (5) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 C.F.R. pt. 3, which are incorporated by reference in this contract.
- (6) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 C.F.R. 5.5(a)(1) through (10) and such other clauses as the (write in the name of the Federal Agency) may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 C.F.R. 5.5.
- (7) Contract termination: debarment. A breach of the contract clauses in 29 C.F.R. 5.5 may be grounds for termination of the contract, and for debarment as a Contractor and a subcontractor as provided in 29 C.F.R. 5.12.
- (8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 C.F.R. pts. 1, 3, and 5 are herein incorporated by reference in this contract.
- (9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 C.F.R. pt.s 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of

its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

- (i) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis–Bacon Act or 29 C.F.R. 5.12(a)(1).
- (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis–Bacon Act or 29 C.F.R. 5.12(a)(1).
- (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001.

11.0 Copeland “Anti-Kickback” Act

- (1) The Contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract. The Contractor and subcontractors are prohibited from inducing, by any means, any person employed on the project to give up any part of the compensation to which the employee is entitled.
- (2) The Contractor or subcontractor shall insert in any subcontracts the clause above, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
- (3) A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 C.F.R. 5.12.

12.0 Contract Work Hours and Safety Standards Act (40 U.S.C. 3701 to 3708, 29 C.F.R. 5.5)

- (1) Overtime requirements. No Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The Owner shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be

withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

- (4) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

13.0 Suspension and Debarment (Executive Orders 12549 and 12689, 2 C.F.R. pt. 180)

- (1) A contract award (see 2 C.F.R. 180.220) must not be made to parties listed on the government-wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. 180 that implement Executive Orders 12549 (3 C.F.R. pt. 1986 Comp., p. 189) and 12689 (3 C.F.R. pt. 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.
- (2) The contractor is required to verify that none of the contractor’s principals (defined at 2 C.F.R. 180.995) or its affiliates (defined at 2 C.F.R. 180.905) are excluded (defined at 2 C.F.R. 180.940) or disqualified (defined at 2 C.F.R. 180.935).
- (3) The contractor must comply with 2 C.F.R. pt. 180, subpart C and the regulations of the granting Federal Agency regarding suspension and debarment, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- (4) This certification is a material representation of fact relied upon by the Owner. If it is later determined that the Contractor did not comply with 2 C.F.R. pt. 180, subpart C in addition to remedies available to the Owner, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (5) By submitting a bid, the bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

14.0 Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352)

- (1) Contractors that apply or bid for an award exceeding \$100,000 agree to file the required certification (set forth below), in compliance with 31 U.S.C. § 1352 (as amended).
- (2) Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352.

- (3) Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

CERTIFICATION REGARDING LOBBYING

The Bidder or Offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form–LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

15.0 Procurement of Recovered Materials

The Contractor shall comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 U.S.C. § 6962). The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

Information about this requirement, along with the list of EPA designated items, is available at EPA’s Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

16.0 Fair Labor Standards Act

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 C.F.R. pt. 201, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part-time workers. The Contractor has full responsibility to monitor compliance to the referenced statute or regulation. The Contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

17.0 Access to Records and Reports

The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the Owner, the Federal Agency and the Comptroller General of the United States or any of their duly authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

18.0 Occupational Health and Safety Act

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 C.F.R. pt. 1910 with the same force and effect as if given in full text. The employer must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The employer retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (29 C.F.R. pt. 1910). The employer must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

19.0 Rights to Inventions

Contracts or agreements that include the performance of experimental, developmental, or research work must provide for the rights of the Federal Government and the Owner in any resulting invention as established by 37 C.F.R. pt. 401, Rights to Inventions Made by Non-profit Organizations and Small Business Firms under Government Grants, Contracts, and Cooperative Agreements. This contract incorporates by reference the patent and inventions rights as specified within 37 C.F.R. 401.14. Contractor must include this requirement in all sub-tier contracts involving experimental, developmental, or research work.

20.0 Energy Conservation

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201 et seq.).

21.0 Clean Air Act and Federal Water Pollution Control Act

- (1) If the amount of the Contract exceeds \$150,000, the Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. and the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251 et seq.
- (2) The Contractor agrees to report each violation to the Owner, and understands and agrees that the Owner will, in turn, report each violation as required to assure notification to the Federal Agency and the appropriate Environmental Protection Agency Regional Office.

- (3) The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance.

22.0 Contractor Employee Whistleblower Rights and Requirement to Inform Employees of Whistleblower Rights

- (1) This contract and employees working on this contract will be subject to the whistleblower rights and remedies in the pilot program on contractor employee whistleblower protections established at 41 U.S.C. § 4712 by section 828 of the National Defense Authorization Act for Fiscal Year 2013 (Pub. L. 112-239) and FAR 3.908.
- (2) The Contractor shall inform its employees in writing, in the predominant language of the workforce, of employee whistleblower rights and protections under 41 U.S.C. § 4712, as described in section 3.908 of the Federal Acquisition Regulation.
- (3) The Contractor shall insert the substance of this clause, including this paragraph (c), in all subcontracts over the simplified acquisition threshold.

23.0 Veteran's Preference

In the employment of labor (excluding executive, administrative, and supervisory positions), the Contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 U.S.C. § 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

24.0 Drug Free Workplace Act

The Contractor shall provide a drug free workplace in accordance with the Drug Free Workplace Act of 1988, 41 U.S.C. Chapter 81, and all applicable regulations. The Contractor shall report any conviction of the Contractor's personnel under a criminal drug statute for violations occurring on the Contractor's premises or off the Contractor's premises while conducting official business. A report of a conviction shall be made to the state agency within five (5) working days after the conviction.

25.0 Access Requirements for Persons with Disabilities

Contractor shall comply with 49 U.S.C. § 5301(d), stating Federal policy that the elderly and persons with disabilities have the same rights as other persons to use mass transportation services and facilities and that special efforts shall be made in planning and designing those services and facilities to implement that policy. Contractor shall also comply with all applicable requirements of Sec. 504 of the Rehabilitation Act (1973), as amended, 29 U.S.C. § 794, which prohibits discrimination on the basis of handicaps, and the Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. § 12101 et seq., which requires that accessible facilities and services be made available to persons with disabilities, including any subsequent amendments thereto.

26.0 Seismic Safety

The Contractor agrees to ensure that all work performed under this contract, including work performed by subcontractors, conforms to a building code standard that provides a level of seismic safety substantially equivalent to standards established by the National Earthquake Hazards Reduction Guidelines for Contract Provisions for Obligated Sponsors and Airport Improvement Program Projects Issued on June 19, 2018 Page 61 Program (NEHRP). Local building codes that model their code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety.

27.0 Domestic Preference for Procurements

As appropriate and to the extent consistent with law, the Contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this contract. For purposes of this section:

- (1) “Produced in the United States” means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
- (2) “Manufactured products” means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

28.0 Prohibition on Certain Telecommunication and Video Surveillances Services or Equipment (Pub. L. 115-232, Section 889)

Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, and 2 C.F.R. § 200.216 prohibit the head of a Federal executive agency and recipients or subrecipients of funds from such agencies from obligating or expending grant, cooperative agreement, loan, or loan guarantee funds on certain telecommunications products or from certain entities for national security reasons. Pursuant to such provisions, the Contractor understands and agrees that the Contractor and its subcontractors shall not obligate or expend loan or grant funds from the Federal Agency under this Contract to:

- (1) Procure or obtain;
 - (2) Extend or renew a contract to procure or obtain; or
 - (3) Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in [Public Law 115–232](#), section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
- (i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
 - (ii) Telecommunications or video surveillance services provided by such entities or using such equipment.

(iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

City of Grain Valley, Missouri

711 Main ♦ Grain Valley, MO 64029

Phone: (816) 847-6200 ♦ Fax: (816) 847-6209

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GENERAL CONDITIONS

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

1. Abbreviations - Wherever in these specifications and Contract Documents the following abbreviations are used, they shall be the latest year of adoption or revision, unless otherwise specified:

A.A.S.H.T.O.	American Association of State Highway and Transportation Officials
A.C.I.	American Concrete Institute
A.I.S.C.	American Institute of Steel Construction
A.P.W.A.	Kansas City Metropolitan Chapter of the American Public Works Association
A.R.E.A.	American Railway Professionaling Association
A.S.T.M.	American Society for Testing and Materials
A.W.S.	American Welding Society
A.W.W.A.	American Water Works Association
C.R.S.I.	Concrete Reinforcing Steel Institute
M.C.I.B.	Midwest Concrete Industry Board, Inc.
MoDOT	Missouri Highway and Transportation Department
M.S.S.H.C.	Missouri Standard Specifications for Highway Construction
U.S.A.S.I.	United States of America Standards Institute
U.B.C.	Uniform Building Code
B.O.R.	Board of Outdoor Recreation
I.S.S.A	International Slurry Surfacing Association

2. Addenda - Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Bidding Documents or the Contract Documents.

3. Agreement - The written agreement between Owner and Contractor covering the Work to be performed; other Contract Documents are attached to or referred to in the Agreement and are made a part thereof as provided therein.

4. Application for Payment - The form provided by Owner which is to be used by Contractor in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

5. Asbestos - Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

6. Bonds - Performance and Payment Bonds and any other instruments of security.

7. Change Order - Contractor's and Owner's and agreement with respect to an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement, as set forth in Paragraph 10.01 B.

8. Contract Documents - The Agreement, all Addenda which pertain to the Contract Documents, and identified in the Agreement, the Bonds, these General Conditions, the Supplementary Conditions, if any, the Specifications and the Drawings as the same are more specifically identified in the Agreement, any other document identified in the Agreement as part of the Contract Documents, and Modifications issued after execution of the Agreement. A Modification is: (a) a written amendment to the Contract signed by both parties; (b) a Change Order, or; (c) a Field Order. Shop Drawings, Submittals and reports and drawings of subsurface and physical conditions identified in Exhibit A to the Agreement are not Contract Documents.

9. Contract - The Contract Documents form the Contract. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior representations or agreements, either written or oral. The Contract may be amended or modified only by a written Modification defined above. The Contract Documents shall not be construed to create a contractual relationship of any kind between the Owner and a Subcontractor or any lower-tier Subcontractor of any tier or a Supplier.

10. Contract Price - The moneys payable by Owner to Contractor under the Contract Documents as stated in the Agreement.
11. Contract Times - The number of calendar days, or the completion dates stated in the Agreement: (i) to achieve Substantial Completion, and (ii) to achieve Final Completion.
12. Contractor - The person, firm, or corporation, with whom Owner has entered into the Agreement.
13. Day - a calendar day of 24 hours measured from midnight to the next midnight.
14. Defective - An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to Professional's recommendation of final payment.
15. Drawings - The drawings which show the character and scope of the Work to be performed and which have been prepared or provided by Professional and are referred to in the Contract Documents. Shop drawings are not Drawings as so defined.
16. Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
17. Field Order - A written order issued by Professional or Owner which orders minor changes in the Work in accordance with Paragraph 10.01 E. but which does not involve a change in the Contract Price or the Contract Times.
18. Final Completion - Final Completion shall mean the date upon which the Professional certifies that the Work has been completed in strict accordance with the terms and conditions of the Contract Documents, including all Punch List items, that all documents and information required by the Contract Documents have been submitted to Owner by Contractor and that the entire balance of the Contract Price is due and payable to Contractor.
19. General Requirements - Section VII of the Contract Documents. The General Requirements pertain to all sections of the Specifications.
20. Hazardous Waste - The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
21. Laws and Regulations - Any and all applicable laws, rules, regulations, ordinances and codes and interpretations thereof and any orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.
22. Liens - Liens, charges, security interests or encumbrances upon real property, Project funds or personal property.
23. Lump Sum Price Contract - A lump sum price contract is a contract for which compensation for the Work is based on one lump sum amount without regard to any units or portions of the Work accomplished.
24. Notice of Award - The written notice by Owner to the apparent successful bidder stating that upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, Owner will sign and deliver the Agreement.
25. Notice to Proceed - A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform Contractor's obligations under the Contract Documents.
26. Owner - The City of Grain Valley, Missouri with whom Contractor has entered into the Agreement and for whom the Work is to be provided.
27. Partial Utilization - Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the Work.
28. PCBs - Polychlorinated biphenyls.
29. Pavement - Rigid or flexible type riding surface placed upon a previously prepared Sub-grade or base.

30. Petroleum - Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline's, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.
31. Product Data - Illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
32. Professional - The person, firm or corporation named as such in the Agreement.
33. Project - The total construction of which the Work to be provided under the Contract Documents may be the whole or a part as indicated elsewhere in the Contract Documents.
34. Punch List - The list of items, prepared in connection with the inspection of the Project by the Professional in connection with Substantial Completion of the Work or a portion of the Work, which the Owner's Representative or Professional has designated as remaining to be performed, completed or corrected before the Work will be accepted by the Owner.
35. Radioactive Material - Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time.
36. Resident Project Representative - The authorized representative of Professional who is assigned to the Project site or any part thereof.
37. Samples - Physical examples of materials, equipment or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. Site - Lands or areas indicated in the Contract Documents as being furnished by Owner which are designated for the use of the Contractor.
39. Shop Drawings - All drawings, diagrams, illustrations, performance charts, instructions, brochures, schedules and other data which are specifically prepared by or for Contractor to illustrate some portion of the Work.
40. Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.
41. Standard Specifications - The officially adopted "Standard Specifications" as adopted by the Owner.
42. Subcontractor - Any individual or entity having a direct contract with Contractor for the performance of the Work at the Site or any person or entity having a contract with a Subcontractor or any lower tier Subcontractor for the performance of part of the Work at the Site.
43. Street, Road or Alley - The whole area within the right-of-way limits.
44. Sub-Grade - That portion of the construction area which has been prepared as specified and upon which a layer of specified material, base, sub-base course, pavement, or other improvement is to be placed.
45. Substantial Completion - The Work (or a specified part thereof) has progressed to the point where, in the opinion of Professional as evidenced by Professional's definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended and Owner has obtained any approvals, permits or certificates of occupancy from any applicable governmental entity or agency so that the Work can be utilized for its intended purposes. The terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof.
46. Supplementary Conditions - The part of the Contract Documents which amends or supplements these General Conditions, which also may listed as Special Construction Requirements.
47. Supplier - A manufacturer, fabricator, distributor, material man or vendor having a direct contract with Contractor or with any Subcontractor or with any lower tier Subcontractor to furnish materials or equipment to be incorporated in the Work.

48. Underground Facilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

49. Unit Price Work - Work to be paid for on the basis of unit prices.

50. Work - The supervision, labor, equipment, tools, material, supplies, incidentals, operations and activities required by the Contract Documents or reasonably inferable by Contractor therefrom as necessary to produce the results intended by the Contract Documents in a safe, expeditious, orderly, and workmanlike manner, and in the best manner known to each respective trade. The Work may constitute the whole or part of the Project.

51. Work Change Directive - A written directive to Contractor, issued on or after the Effective Date of Agreement and signed by Owner and approved by Professional, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in Sections 4.02 or 4.03 or to emergencies under Paragraph 6.21. A Work Change Directive will not change the Contract Price or the Contract Times, but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times as provided in Article 10.

52. Written Amendments - A written amendment of the Contract Documents, signed by Owner and Contractor on or after the Effective Date of the Agreement and normally dealing with the non-engineering or non-technical matters rather than strictly construction-related aspects of the Contract Documents.

1.02 Furnish, Install, Perform, Provide

A. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site ready for use or installation and in usable or operable condition.

B. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

C. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

D. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds

A. When Contractor delivers the executed Agreement to Owner, Contractor shall also deliver to Owner such Bonds as Contractor is required to furnish by the Contract Documents.

2.02 Copies of Documents

A. Owner shall furnish to Contractor up to five (5) copies of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.03 Before Starting Construction

A. Since the Contract Documents are complimentary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the Site affecting it. These obligations are for the purpose of facilitating construction by the Contractor; however, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to the Professional as a request for information in such form as the Professional may require. Contractor shall not be liable to Owner or Professional for failure to report any error, inconsistencies or omissions in the Contract Documents, unless Contractor had actual knowledge thereof or should reasonably have known thereof.

B. Any design error, inconsistencies or omissions noted by the Contractor during any review of the Contract Documents shall be reported promptly to the Professional.

C. If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Professional in response to the Contractor's notices or requests for information pursuant to Subparagraphs 2.03 A. or 2.03 B., the Contractor shall make Claims as provided in Articles 11 and/or 12. If the Contractor fails to perform the obligations of Subparagraphs 2.03 A. or 2.03 B., the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations.

D. Before any Work at the site is started, Contractor shall deliver to Owner, with a copy to Professional, certificates (and other evidence of insurance requested by Owner) which Contractor is required to purchase and maintain in accordance with Sections 5.01, 5.02, 5.03, 5.04, 5.05 and 5.06 and 5.07.

2.04 Preliminary Schedules

A. Within ten (10) days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements) Contractor shall submit to Professional for its timely review: (a) a preliminary construction schedule; and (b) a preliminary schedule for Submittals which will list each required submittal and the times for submitting, reviewing, and process such Submittals. The construction schedule shall be in a detailed format satisfactory to the and the Professional which shall also: (1) provide a graphic representation of all activities and events that will occur during performance of the Work; (2) identify each phase of construction and occupancy; and (3) set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as Milestones). If Professional has a reasonable objection to the construction schedule or schedule for Submittals by Contractor, the construction schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Professional and re-submitted for acceptance. Such acceptance will not impose on Professional or Owner responsibility for the construction schedule or schedule for Submittals, schedule, for sequencing, scheduling or progress of the Work nor interference with or relieve Contractor from Contractor's full responsibility thereof.

2.05 Audio/Video Tape Recordings of Surface

A. Before starting the Work, the Contractor shall record the following surface conditions in audio and video form in the presence of the Professional and Owner in the following means:

1. The following location information shall be provided on color audio/video tape recording while walking the construction route.

a. Audio: Each recording shall begin with a verbal description of the current date, project name and municipality and be followed by the general location, (i.e., name of street, viewing side and direction of progress).

b. Video: Transparent information must appear on the viewing screen. This information will consist of the date and time of recording. The date information will contain the month, day and year.

c. Digital: To preclude the possibility of tampering or editing in any manner, all video recordings must, by electronic means, display continuously and simultaneously generated transparent digital information to include the date and time of recording. The date information will contain the month, day and year.

2. The taped coverage shall include all surface features located within the zone of influences of construction supported by appropriate audio description. Audio description shall be made simultaneously with video coverage. Such coverage shall include, but not be limited to, all existing driveways, sidewalks, fences, curbs, ditches, roadways, landscaping, trees, culverts, headwalls, retaining walls, or buildings located within such zone of influence. Particular and detailed attention shall be given to any defects noted, such as cracks, disturbed areas, damaged items, or as may be required by the Professional. It is the intent of this coverage to accurately and clearly document pre-existing conditions and especially any items that could result in construction claims. **The excavation areas shall be physically marked with high visibility fluorescent paint prior to videotaping. The markings shall include the job number and stationing.**

3. The zone of influence shall be defined as an area within 30 feet of the proposed work, and an additional 20 feet of supplemental coverage shall be provided in residential areas.

4. The Contractor shall be able to televise and tape areas with paved roads, along co-owned easements through parks, lawns, and open fields. If videotaping on private property, the Contractor shall

give the Owner sufficient prior notice of such entry so that property owners may be advised of and their permission obtained for the work.

5. To produce the proper detail and perspective, adequate lighting will be required to fill in the shadow areas caused by trees, utility poles, road signs and other such objects in residential areas or as directed by the Professional.

6. Houses and buildings shall be identified visually by house number, when visible, in such a manner that structures of the proposed system, (i.e., manholes on a sewer system and hydrants on a water system), can be located by reference.

7. Panning rates and zoom-in, zoom-out rates shall be controlled sufficiently such that during playback will produce clarity of the object viewed. The playback picture shall be in focus and be of extreme clarity at all times.

8. All taping shall be done during times of good visibility. No taping shall be done during periods of visible precipitation, or when more than 10% of the ground area is covered with snow, unless otherwise authorized by the Professional.

9. Professional shall have the authority to designate what areas may be omitted or added for audio-video coverage.

10. All tapes (cassettes and cases) shall be properly identified by tape number, location and project name and municipality in a manner acceptable to the Professional.

11. A record of the contents of each tape shall be supplied by a run sheet identifying each segment in the tape by location, i.e., roll number, street or road viewing, tape counter number, viewing side, point starting from, traveling direction and ending destination point.

12. Any portion of the video tape recording not conforming to specifications shall be rejected.

13. Any taped coverage not acceptable to the owner shall be re-filmed at no additional charge. The Contractor shall reschedule unacceptable coverage five (5) days after being notified.

14. One original and two copies are to be provided. Original to Owner, one copy to Professional, and one copy to Contractor.

15. Payment will be at the contract lump sum price for Video Documentation which price shall include all labor, equipment, and materials necessary to complete the work.

16. The taping shall be performed while a representative of the City and Professional is present. The City shall be notified a minimum of 48 hours in advance.

2.06 Preconstruction Conference

A. Within twenty (20) days after the Effective Date of the Agreement, but before Contractor starts the Work at the site, a conference attended by Contractor, Professional and others as appropriate will be held to discuss the schedules referred to in Section 2.04, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

2.07 Commencement of Contract Times

A. The Contract Times will commence to run on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty (30) days after the Effective Date of the Agreement.

2.08 Starting the Project

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run, but no Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.09 Erosion Control

A. Contractor shall submit an erosion control plan for approval and shall implement the approved plan prior to any Work being performed.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 Intent

A. The Contract Documents comprise the entire agreement between Owner and Contractor concerning the Work. The Contract Documents are complimentary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed whether or not specifically called for at no additional cost to Owner. When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe Work, materials or equipment, such words or phrases shall be interpreted in accordance with that meaning. Clarifications and interpretations of the Contract Documents shall be issued by Professional.

3.02 Reference to Standards and Specifications of Technical Societies; Reporting and Resolving Discrepancies

A. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or Laws or Regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated in the Contract Documents.

B. No provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of Owner, Contractor or Professional, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to Professional or Owner, or any of Professional's or Owner's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of the Contract Documents.

C. Except as otherwise specifically stated in the Contract Documents or as may be provided by a modification, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and:

1. the provisions of any standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
2. the provisions of any such Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

D. Drawings are intended to show general arrangements, design, and dimensions of the Work and are partly diagrammatic. Dimensions shall not be determined by scale or rule. If figured dimensions are lacking, they shall be supplied by the Professional on the Contractor's written request to the Professional. Where, on any Drawings, a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other like portions of the Work. Where ornaments or other details are indicated by starting only, such details shall be continued throughout the courses or parts in which they occur and shall also apply to all other similar parts in the Work, unless otherwise indicated. In case of differences between small and large scale drawings, the larger scale drawings shall govern.

3.03 Contractor's Representations

A. Except as to any reported errors, inconsistencies or omissions, by executing the Contract, the Contractor represents the following:

1. The Contract Documents are sufficiently complete and detailed for the Contractor to (a) perform the Work required to produce the results intended by the Contract Documents and (b) comply with all the requirements of the Contract Documents; and
2. The Work required by the Contract Documents, including, without limitation, all construction details, construction means, methods, procedures and techniques necessary to perform the Work, use of materials, selection of equipment and requirements of product manufacturers are consistent with: (a) good and sound practices within the construction industry; (b) generally prevailing and accepted industry standards applicable to the Work; (c) requirements of any warranties applicable to the Work; and (d) all laws, ordinances, regulations, rules and orders which bear upon the Contractor's performance of the Work.

B. Execution of the Agreement by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents. Contractor represents that it has performed its own

investigation and examination of the Project site and its surroundings and satisfied itself before entering into this Contract as to:

1. conditions bearing upon transportation, disposal, handling and storage of materials;
2. the availability of labor, materials, equipment, water, electrical power, utilities and roads;
3. uncertainties of weather, river stages, flooding and similar characteristics of the site;
4. conditions bearing upon security and protection of material, equipment and Work in progress;
5. the form and nature of the Project site, including the surface and sub-surface conditions;
6. the extent and nature of Work and materials necessary for the execution of the Work and the remedying of any defects therein; and
7. the means of access to the site and the accommodations it may require and, in general, shall be deemed to have obtained all information as to risks, contingencies and other circumstances.

3.04 Amending Contract Documents

A. The Contract Documents may be amended only by a Modification.

3.05 Reuse of Documents

A. Neither Contractor nor any Subcontractor, Supplier, other person or organization performing or furnishing any of the Work under a direct or indirect contract with Owner shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof). They shall not reuse any of them on extensions of the Project or any other project without written consent of Owner and specific written verification or adaptation by the Professional who prepared the documents. This prohibition shall survive final payment, completion, acceptance of the Work, or termination or completion of the Contract. Nothing contained herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 - AVAILABILITY OF LANDS: PHYSICAL CONDITIONS: REFERENCE POINTS

4.01 Availability of Lands

A. Contract Times Owner shall obtain all lands and rights-of-way upon which the Work is located prior to the issuance of a notice to proceed, except as set forth in the Contract Documents. In the event Owner is unable to acquire all lands and rights-of-way prior to the issuance of the notice to proceed, Owner shall notify the Contractor of which lands and rights-of-way have not been obtained and will proceed with Work only upon lands and rights-of-way Owner has obtained. The Contractor recognizes this risk and this contingency has been included in the Contract Price. Owner, with reasonable promptness, shall obtain the lands and rights-of-way upon which the Work is located. In no event will the Contractor be entitled to monetary compensation for Owner's reasonable delay in obtaining the lands or rights-of-way, since this contingency has been included in the Contract Price. The Contractor's sole recovery will be in the form of an extension of time, if appropriate. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 Subsurface and Physical Conditions

A. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions, other than Underground Facilities, which differ materially from those indicated in the Contract Documents, or (2) unknown physical conditions, other than Underground Facilities, of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the Contractor shall be given to the Professional promptly before conditions are disturbed, and in no event later than three (3) days after first observance of the conditions. The Professional will promptly investigate such conditions. If such conditions differ materially, as provided for above and cause an increase or decrease in the Contractor's cost of, or time required for performance of the Work, an equitable adjustment in the Contract Price or Contract Times, or both, shall be made, subject to the provisions and restrictions set forth herein. If Professional determines that the conditions at the site are not materially different from those indicated in the Contract Documents, and that no change in the terms of the Contract is justified, Professional will so notify the Contractor in writing. If the Contractor disputes the finding of the Professional that no change in the terms of the Contract is justified, Contractor shall proceed with the Work, taking whatever steps are necessary to overcome or correct such conditions so that Contractor can proceed in a timely manner. The Contractor shall have the right to file a Claim in accordance with the Contract Documents.

B. It is expressly agreed that no adjustment in the Contract Times or Contract Price shall be permitted, however, in connection with a concealed or unknown condition which does not differ materially from those conditions

disclosed or which reasonably should have been disclosed by the Contractor's (1) prior inspections, tests, reviews and preconstruction investigations for the Project, or (2) inspections, tests, reviews and preconstruction inspections which the Contractor had the opportunity to make or should have performed in connection with the Project. The Owner assumes no responsibility for any conclusions or interpretations based upon information relating to sub-surface or other site conditions made available by the Owner, and marked "for informational purposes only." The Owner and Professional do not warrant the accuracy of any information relating to sub-surface conditions contained in reports, documents and drawings made available to Contractor marked "for informational purposes only" and such documents are not Contract Documents. Contractor may not rely upon the accuracy or completeness of such reports and drawings and should perform its own tests and investigations of the same. Contractor shall make no claim against the Owner or Professional for any inaccuracy of such information, reports, documents or drawings, including any Claim that the physical conditions are different than those indicated in such reports and drawings.

4.03 Underground Facilities

A. The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to Owner or Professional by the Owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Professional shall not be responsible for the accuracy or completeness of any such information; and
2. Contractor shall have full responsibility for reviewing and checking all such information and data, locating all Underground Facilities shown or indicated in the Contract Documents, coordination of the Work with the Owners of such Underground Facilities during construction, the safety and protection thereof as provided in Paragraph 6.21 and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

B. If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which Contractor could not reasonably have been expected to be aware of, Contractor shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency as permitted by Paragraph 6.21) identify the Owner of such Underground Facility and give written notice thereof to that Owner and to Owner and Professional.

1. Professional will promptly review the Underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility as provided in Article 6.20.
2. Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, to the extent that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract Documents and which Contractor could not reasonably have been expected to be aware of. If the parties are unable to agree as to the amount or length thereof, Contractor may make a claim therefor as provided in Articles 11 and 12.

4.04 Reserved

4.05 Hazardous Environmental Conditions at Site

A. Contractor shall not be responsible for any Asbestos, PCBs, Petroleum, Hazardous Waste or Radioactive Material uncovered or revealed at the site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work and which may present a substantial danger to persons or property exposed thereto in connection with the Work at the Site. Contractor shall be responsible for any such materials brought to the site by Contractor, Subcontractor, Suppliers or anyone else for whom Contractor is responsible.

B. Contractor shall immediately: (1) stop all Work in connection with such hazardous condition and in any area affected thereby (except in an emergency as required by Paragraph 6.21), and (2) notify Owner and Professional (and thereafter confirm such notice in writing). Owner shall promptly consult with Professional concerning the necessity for Owner to retain a qualified expert to evaluate such hazardous condition or take corrective action, if any. Contractor shall not be required to resume Work in connection with such hazardous condition or in any such affected area until after Owner has obtained any required permits related thereto and delivered to Contractor special written notice: (a) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (b) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or the amount or extent of any adjustment, if any, in

Contract Price or Contract Times as a result of such work stoppage or such special conditions under which Work is agreed by Contractor to be resumed, Contractor may make a claim therefor as provided in Articles 11 and 12.

C. If after receipt of such special written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, the Owner may order such portion of the Work that is in connection with such hazardous condition or in such affected area to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or the amount or extent of any adjustment, if any, in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a claim therefor as provided in Articles 11 and 12. Owner may have such deleted portion of the Work performed by Owners' own forces or others in accordance with Article 7.

D. It is acknowledged and agreed by Contractor that in no event shall Owner have any responsibility for any substance or material that is brought to the Project site by the Contractor, any Subcontractor of any tier, any materialman, Supplier or any person or entity for whom any of them is responsible. If Contractor brings to the Project site any hazardous material, toxic material or any material regulated by any Laws, Contractor shall notify Professional in writing and Contractor shall comply with all applicable Laws relating thereto and accept sole responsibility for compliance with all environmental quality standards, limitations and permit requirements promulgated thereunder, including without limitation federal, state and local air quality standards for fugitive dust control, prevention of surface and ground water contamination and hazardous and other waste disposal practices and procedures. Contractor shall utilize the highest degree of care in handling such materials and in taking all necessary precautions and measures to prevent any spills of such materials. The Contractor shall defend, indemnify and hold harmless the Owner from any and all claims, costs, losses, damages and expenses, including reasonable attorneys' fees and expert fees, prosecutions, payment of any and all fines or penalties, and the cost of abatement or remediation arising out of or relating to a hazardous condition created by Contractor, Subcontractor, Supplier, or anyone else for whom Contractor is responsible.

E. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers of the site in accordance with all applicable Laws.

4.06 Borrow and Waste Sites

A. Unless borrow or waste sites are designated on the Plans or specified in the Supplementary Conditions, the Contractor shall secure and operate such sites at their own expense. These borrow and waste sites shall be operated in such a manner as to meet safety and health requirements all Laws and Regulations.

ARTICLE 5 - INSURANCE AND BONDS

5.01 Contractor's Liability Insurance

A. Contractor shall secure from the date of the Agreement and maintain for such periods of time as set forth below, insurance of such types and in such amounts specified in Sections 5.02 through 5.05, inclusive. The form of such insurance together with carriers thereof, shall satisfy the requirements set forth below in Sections 5.02 through 5.06, inclusive.

5.02 Commercial General Liability

A. Contractor shall secure and maintain from the date of the Agreement and for a period of at least two (2) years from the date of Final Completion of the entire Work commercial general liability insurance ("CGL") with a combined single limit of not less than Two Million Dollars (\$2,000,000) per occurrence. If such CGL insurance contains a general aggregate limit, it shall separately apply to this Project. Such CGL insurance shall be on an occurrence basis.

B. CGL insurance shall be written on a comprehensive form and shall cover claims and liability in connection with or resulting from the Contractor's operations and activities under the Contract, for personal injuries, occupational sickness, disease, death or damage to property of others, including loss of use resulting therefrom, arising out of any operations or activities of the Contractor, its agents, or any Subcontractors of any tier or by anyone directly or indirectly employed by either of them.

C. CGL insurance shall include premises, operations, independent contractors, products-completed operations, personal injury and advertising injury and liability assumed under an insured contract (including the tort liability of another assumed in a business contract) coverages. In particular, and not by way of any limitation, the CGL insurance shall cover the Contractor's deference and indemnity obligations contained in the Contract Documents.

D. There shall be no endorsement or modification of the CGL policy limiting the scope of coverage for liability arising from blasting, explosion, collapse, or underground property damage.

E. "The City of Grain Valley, Missouri" shall be endorsed as an "additional insured" under the CGL policy. In lieu of naming the City of Grain Valley, Missouri as an additional insured, under the CGL policy, Contractor may satisfy such requirement by purchasing and maintaining an Owner's and Contractor's Protective Liability policy on behalf of Owner, as named insured with limits as provided for in Paragraph 5.02 A. The CGL policy shall also contain a "Separation of Insureds" provision. If Contractor's CGL policy does not contain a "Separation of Insureds" provision, Contractor's CGL policy shall be endorsed to provide cross-liability coverage.

F. Contractor waives all rights against Owner and its agents, officers, representatives and employees for recovery of damages to the extent those damages are covered by the CGL policy required hereunder.

5.03 Automobile Liability

A. Contractor shall secure and maintain from the date of the Contract for Construction and for a period of at least two (2) years from the date of Final Completion of the entire Work, insurance, to be on comprehensive form, which shall protect Contractor against any and all claims for all injuries and all damage to property arising from the use of automobiles, trucks and motorized vehicles, in connection with the performance of Work under this Contract, and shall cover the operation on or off the site of the Work of all motor vehicles licensed for highway use whether they are owned, non-owned or hired. Such insurance shall include contractual liability coverage and shall provide coverage on the basis of the date of any accident. The liability limits under such policy shall not be less than One Million Dollars (\$2,000,000) combined single limit for bodily injury and property damage per accident. "The City of Grain Valley, Missouri" shall be endorsed as an "additional insured" under the policy required by this Paragraph 5.03 A.

B. Contractor waives all rights against Owner and its agents, officers, directors and employees for recovery of damages to the extent such damages are covered by the automobile liability insurance required hereunder.

5.04 Workers' Compensation Insurance

A. Contractor shall purchase and maintain workers' compensation insurance and employers' liability insurance which shall protect Contractor from claims for injury, sickness, disease or death of Contractor's employees or statutory employees. The insurance policies required hereunder shall include an "all states" or "other states" endorsement. In case any Work is sublet, Contractor shall require any Subcontractor of any tier to provide the insurance coverages required under this Section 5.04.

B. Contractor's workers' compensation insurance coverage shall be in compliance with all applicable Laws, including the statutes of the State of Missouri. Contractor's employers' liability coverage limits shall not be less than \$500,000 each accident for bodily injury by accident or \$500,000 each employee for bodily injury by disease.

C. Contractor waives all rights against Owner and its agents, officers and directors and employees for recovery of damages to the extent these damages are covered by the workers' compensation and/or employers' liability insurance required hereunder.

5.05 Miscellaneous Liability Insurance

A. If required by the Supplementary Conditions, Contractor shall also secure and maintain Owner's and Contractor's Protective Liability insurance on behalf of Owner, as named insured, with a minimum limit of coverage as set forth in the Supplementary Conditions.

B. If the Work is to be performed in or adjacent to a railroad right-of-way or if required by the Supplementary Conditions, Contractor shall secure on behalf of such applicable railroad company, as named insured, railroad protective liability insurance with minimum liability limits set forth in the Supplementary Conditions. Such insurance shall protect and defend the railroad company against claims as a result of the operations of Contractor. This insurance shall be acceptable to the railroad and shall be maintained throughout the period when Contractor is working on or adjacent to property the railroad company has an interest. Contractor shall not enter upon the property the railroad company has an interest until such insurance is in effect.

C. Contractor shall also provide any type of insurance not described above which Contractor requires for its own protection or on account of any applicable Laws.

5.06 General Requirements For Liability Insurance Coverages

A. All insurance coverages required herein shall be provided by insurance companies that are duly licensed to conduct business in the State of Missouri as an admitted carrier. The form and content of all insurance coverages provided by Contractor are subject to the approval of Owner. All required coverages shall be obtained and paid for by Contractor. Any acceptance of the form, content or insurance company by Owner shall not relieve the Contractor from the obligation to provide the coverages required herein.

B. All insurance coverage procured by the Contractor shall be provided by insurance companies having policyholder ratings no lower than "A" and financial ratings not lower than "XII" in the Best's Insurance Guide, latest edition in effect as of the date of the Agreement, and subsequently in effect at the time of renewal of any policies required by the Contract Documents. Insurance coverages required hereunder shall not be subject to a deductible amount on a per-claim basis of more than \$10,000.00 and shall not be subject to a per-occurrence deductible of more than \$25,000.00. Insurance procured by Contractor covering the additional insureds shall be primary insurance and any insurance maintained by Owner shall be excess insurance.

C. All insurance required hereunder shall provide that the insurer's cost of providing the insureds a defense and appeal, including attorneys' fees, shall be supplementary and shall not be included as part of the policy limits but shall remain the insurer's separate responsibility. Contractor shall cause its insurance carriers to waive all rights of subrogation against the Owner and its officers, employees and agents.

D. The Contractor shall furnish the Owner with certificates, policies or binders which indicate the Contractor and Owner are covered by the required insurance showing the type, amount, class of operations covered, effective dates and date of expiration of policies. Such certificates, policies or binders shall be submitted to Owner within ten (10) days from the date Contractor receives notice of the award of the Contract. All certificates, policies and binders shall be executed by a duly authorized agent of each of the applicable insurance carriers and shall contain the statement that: "The insurance covered by this certificate will not be canceled or altered except after thirty (30) days' written notice has been received by Owner." All certificates, policies and binders shall be in a form acceptable to the Owner. Contractor shall provide certified copies of all insurance policies required above within ten (10) days of Owner's written request for said copies.

E. With respect to all insurance coverages required to remain in force and affect after final payment, Contractor shall provide Owner additional certificates, policies and binders evidencing continuation of such insurance coverages along with Contractor's application for final payment and shall provide certificates, policies and binders thereafter as requested by Owner.

F. The maintenance in full current force and effect of such forms and amounts of insurance and bonds required by the Contract Documents shall be a condition precedent to Contractor's exercise or enforcement of any rights under the Contract Documents.

G. Failure of Owner to demand certificates, policies and binders evidencing insurance coverages required by the Contract Documents, acceptance by Owner of such certificates, policies and binders or failure of Owner to identify a deficiency from evidence that is provided by Contractor shall not be construed as a waiver of Contractor's obligations to maintain the insurance required by the Contract Documents.

H. The Owner shall have the right to terminate the Contract if Contractor fails to maintain the insurance required by the Contract Documents.

I. If Contractor fails to maintain the insurance required by the Contract Document, Owner shall have the right, but not the obligation, to purchase said insurance at Contractor's expense. If Owner is damaged by Contractor's failure to maintain the insurance required by the Contract Documents, Contractor shall bear all reasonable costs properly attributable to such failure.

J. By requiring the insurance set forth herein and in the Contract Documents, Owner does not represent or warrant that coverage and limits will necessarily be adequate to protect Contractor, and such coverages and limits shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

K. If Contractor's liability policies do not contain a standard separation of insureds provision, such policies shall be endorsed to provide cross-liability coverage.

L. If a part of the Work hereunder is to be sublet, the Contractor shall: (1) cover any and all Subcontractors in its insurance policies; (2) require each Subcontractor to secure insurance which will protect said Subcontractor and supplier against all applicable hazards or risks of loss designated in accordance with Article 5 hereunder; and (3) require each Subcontractor or supplier to assist in every manner possible in the reporting and investigation of any accident, and upon request, to cooperate with any insurance carrier in the handling of any claim by securing and giving evidence and obtaining the attendance of witnesses as required by any claim or suit.

M. It is understood and agreed that the insurance coverages required by the provisions of this Article 5 are required in the public interest and that the Owner does not assume any liability for acts of Contractor or Subcontractors of any tier or their employees in the performance of the Contract or Work.

5.07 Property Insurance

A. If required in the Supplementary Conditions the Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the State of Missouri, as an admitted carrier, builder's risk insurance on the entire Work. Such insurance shall be written on a completed value form and in the amount of the initial Contract Price as well as subsequent modifications thereto for the entire Work. The insurance shall apply on a replacement cost basis.

B. The insurance as required in Paragraph 5.07 shall name as insureds the Owner, Contractor and all Subcontractors of any tier. The insurance policy shall contain a provision that the insurance will not be canceled, allowed to expire or materially changed until at least thirty (30) days prior written notice has been given to Owner.

C. The insurance as required in Paragraph 5.07 shall cover the entire Work, including reasonable compensation for Professional's services and expenses made necessary by an insured loss. Insured property shall include portions of the Work located away from the site but intended for use at the site, and shall also cover portions of the Work in transit, including ocean transit. The policy shall include as insured property scaffolding, falsework, and temporary buildings located at the site. The policy shall cover the cost of removing debris, including demolition as may be made legally necessary by the operation of any law, ordinance or regulation.

D. The insurance required by Paragraph 5.07 shall be on an all risk form and shall be written to cover all risks of physical loss or damage to the insured party and shall insure at least against the perils of fire and extended coverage, theft, vandalism, malicious mischief, collapse, lightning, earthquake, flood, frost, water damage, windstorm and freezing.

E. If there are any deductibles applicable to the insurance required by Paragraph 5.07, Contractor shall pay any part of any loss not covered because of the operation of such deductibles.

F. The insurance as required in Paragraph 5.07 shall be maintained in effect until the earliest of the following dates:

1. the date which all persons and organization who are insureds under the policy agree in writing that it shall be terminated;
2. the date on which final payment of this Contract has been made by Owner to Contractor; or
3. the date on which the insurable interests in the property of all insureds other than the Owner have ceased.

G. Contractor shall purchase and maintain boiler and machinery insurance required by the Supplementary Conditions, which shall specifically cover such insured objects during installation until final acceptance by the Owner. This insurance shall name as insureds Owner, Contractor and Subcontractors of any tier in such Work.

H. The Owner and Contractor waive all rights against (1) each other and any of their subcontractors of any tier, suppliers, agents and employees, each of the other, (2) the Professional and Professional's consultants, and (3) separate contractors described in Article 6, if any, and any of their subcontractors of any tier, suppliers, agents and employees, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this Section 5.07 or other insurance applicable to the Work, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require of the Professional, Professional's consultants, separate contractors described in Article 7, if any, and the Subcontractors of any tier, Suppliers, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, was at fault or was negligent in causing the loss and whether or not the person or entity had an interest in the property damaged.

I. A loss insured under Contractor's property insurance shall be adjusted by the Owner in good faith and made payable to the Owner for the insureds, subject to requirements of the Contract Documents. The Contractor shall pay Subcontractors of any tier their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors of any tier to make payments to their Sub-subcontractors in similar manner.

J. Partial occupancy or use shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

5.08 Bonds

A. The Contractor shall procure and furnish Performance, Payment, and Maintenance Bonds in the form prepared by the Owner, in an amount equal to one hundred percent (100%) of the Contract Price, as well as adjustments to the Contract Price. The Performance Bond shall secure and guarantee Contractor's faithful performance of this Contract, including but not limited to Contractor's obligation to correct defects after final payment has been made as required by the Contract Documents. The Payment Bond shall secure and guarantee payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract. These Bonds shall be in effect through the duration of the Contract plus the Guarantee Period as required by the Contract Documents.

B. The bonds required hereunder shall be executed by a responsible surety licensed in the State of Missouri, with a Best's rating of no less than A/XII. The Contractor shall require the attorney in fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of this power of attorney indicating the monetary limit of such power.

C. If the surety of any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to conduct business in the State of Missouri is terminated, or it ceases to meet the requirements of this paragraph, Contractor shall within ten (10) days substitute another bond and surety, both of which must be acceptable to Owner. If Contractor fails to make such substitution, Owner may procure such required bonds on behalf of Contractor at Contractor's expense.

D. Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds to such person or entity.

E. The Contractor shall keep the surety informed of the progress of the Work, and, where necessary, obtain the surety's consent to or waiver of: (1) notice of changes in the Work; (2) request for reduction or release of retention; (3) request for final payment; and (4) any other material required by the surety. The Owner shall be notified by the Contractor, in writing, of all communications with the surety. The Owner may, in the Owner's sole discretion, inform surety of the progress of the Work, any defects in the Work, or any defaults of Contractor under the Contract Documents and obtain consents as necessary to protect the Owner's rights, interest, privileges and benefits under and pursuant to any bond issued in connection with the Work.

F. Contractor shall indemnify and hold harmless the Owner and any agents, employees, representative or elected official of Owner from and against any claims, expenses, losses, costs, including reasonable attorneys' fees, as a result of any failure of Contractor to procure the bonds required by this Paragraph 5.08.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITY

6.01 General

A. The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. Contractor shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. Contractor shall be responsible to see that the finished Work strictly complies with the Contract Documents.

6.02 Supervision

A. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under the Contract. The Contractor shall supply sufficient and competent supervision and personnel, and sufficient material, plant, and equipment to prosecute the Work with diligence to insure completion thereof within the time specified in the Contract Documents, and shall pay when due any laborer, Subcontractor of any tier, or supplier. Contractor shall keep on the Work at all times during its progress, a competent resident superintendent, who shall not be replaced without written notice to Owner and Professional except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to the superintendent shall be as binding as if given to Contractor.

6.03 Labor and Construction Procedures

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and Contractor will not permit overtime work or the performance of the Work on Saturday, Sunday or any legal holiday without Owner's written consent given after prior written notice to Professional.

B. The Contractor shall only employ labor on the Project or in connection with the Work capable of working harmoniously with all trades, crafts and any other individuals associated with the Project. The Contractor shall take all measures to minimize the likelihood of any strike, work stoppage or other labor disturbance. If the Work is to be performed by trade unions, the Contractor shall make all necessary arrangements to reconcile, without delay, damage or cost to the Owner and without recourse to the Professional or Owner, any conflict between the Contract Documents and any agreements or regulations of any kind at any time in force among members or councils which regulate or distinguish what activities shall not be included in the Work of any particular trade. In case the progress of the Work is affected by any undue delay in furnishing or installing any items or materials or equipment required under the Contract Document because of such conflict involving any such labor agreement or regulation, the Owner may require that other material or equipment of equal kind and quality be provided pursuant to a Change Order or Work Change Directive. Notwithstanding any other provision contained herein and superseding any contrary term expressed herein or in any of the Contract Documents, Contractor agrees that in the event of any strike, picket, sympathy strike, work stoppage, or other form of labor dispute (collectively referred to as "Disruption") at the Project site, whether that Disruption is in connection with Contractor, a Subcontractor of any tier, the Owner or any other contractor, subcontractor or supplier on this Project site, Contractor will continue to perform the Work required herein without interruption or delay. In the event Contractor fails to continue the performance of the Work included herein, without interruption or delay, because of such Disruption or other form of labor dispute, the Owner may terminate the services of Contractor after giving forty-eight (48) hours written notice of an intent to do so, or the Owner may invoke any of the rights set forth in the Contract Documents. Contractor expressly waives the right to any extension of time for any delay that may occur as the result of any Disruption, strike, picket, sympathy strike, work stoppage or other form of labor dispute at the Project site. Whenever Contractor has knowledge that any actual or potential Disruption or labor dispute is delaying or threatens to delay the timely performance of the Project, Contractor shall immediately notify Owner in writing.

C. The Contractor shall establish and maintain a permanent bench-mark to which access may be had during progress of the Work, and Contractor shall establish all lines and levels, and shall be responsible for the correctness of such. Contractor shall protect the established benchmarks and horizontal and vertical control points. Benchmarks and control points destroyed or that require relocation because of necessary construction activities shall be immediately reported to Professional. Contractor shall be fully responsible for all layout work for the proper location of Work in strict accordance with the Contract Documents. The Contractor shall establish and maintain alignment and grades, including the setting of all stakes, ranges, grid lines and other appurtenance facilities. Contractor shall carefully protect and maintain such stakes and keep the same uncovered for examination during the progress of the Work. Before starting construction on the site, the Contractor shall provide written assurances certifying that the monuments or markers which delineate the site boundaries are placed in the correct position and that the proposed new construction and site development work, as staked-out by the Contractor, are wholly within the limits of the Owner's ownership, leasehold or right-of-way. Contractor shall be responsible for the accurate replacement of any boundary markers which are disturbed, removed or destroyed during the performance of the Work.

D. The Contractor shall be responsible for the layout of the Work in the proper location and for any damage which may occur to the Work or the work of separate contractors, because of errors or inaccuracies in the layout of the Work.

E. The Contractor shall be responsible for the shoring required to protect its work or adjacent property and shall pay for any damage caused by failure to shore or by improper shoring or by failure to give proper notice. Shoring shall be removed only after completion of permanent supports.

F. During the performance of the Work, the Contractor shall be responsible for providing and maintaining warning signs, lights, signal devices, barricades, guard rails, fences, and other devices appropriately located on site which shall give proper and understandable warning to all persons of danger of entry onto land, structure, or equipment.

G. The Contractor shall be responsible for care of the Work and must protect same from damage or defacement until acceptance by the Owner. All damaged or defaced Work shall be repaired or replaced to the Owner's satisfaction, without cost to the Owner.

H. When requested by the Contractor, at no extra charge, shall provide scaffolds or ladders in place as may be required by the Professional or the Owner for examination of Work in progress or completed.

I. The Contractor shall coordinate all Work so there shall be no prolonged interruption of existing utilities, systems and equipment of Owner. Any existing plumbing, heating, ventilating, air conditioning, or electrical disconnection necessary, which affect portions of construction or building of the Project or any other building, must be scheduled with the Owner and Professional to avoid any disruption of operation within the building under construction or other buildings or utilities. In no case shall utilities be left disconnected at the end of a work day or over a weekend. Any interruption of utilities, either intentionally or accidentally, shall not relieve the Contractor from repairing and restoring the utility to normal service. Repairs and restoration shall be made before the workers responsible for the repair and restoration leave the job.

J. The Contractor shall pump, bail, or otherwise keep any general excavations free of water. The Contractor shall keep all areas free of water before, during and after concrete placement.

K. The Contractor shall ensure that the Work is at all times performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work shall be performed, to the fullest extent reasonably possible, in such a manner that public areas adjacent to the site of the Work shall be free from all debris, building materials and equipment likely to cause hazardous conditions. Without limitation of any other provision of the Contract Documents, Contractor shall not interfere with the occupancy or beneficial use of (1) any areas and buildings adjacent to the site of the Work or (2) the Work in the event of partial occupancy. Contractor shall assume full responsibility for any damage to the property comprising the Project or to the owner or occupant of any adjacent land or areas resulting from the performance of the Work.

L. Contractor shall, and in accordance with any regulations or site rules presented by the Owner use only designated site entrances and roadways or use temporary entrances and roadways constructed by Contractor.

M. The Contractor shall not permit any workers to use any existing facilities at the Project site, including, without limitation, lavatories, toilets, entrances and parking areas other than those designated by Owner. The Contractor, Subcontractors of any tier, suppliers and employees shall comply with instructions or regulations of the Owner and Professional governing access to, operation of, and conduct while in or on the premises and shall perform all Work required under the Contract Documents in such a manner as not to unreasonably interrupt or interfere with the conduct of Owner's operations. Any request for Work, a suspension of Work or any other request or directive received by the Contractor from occupants of existing buildings shall be referred to the Professional for determination.

N. The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported in writing to the Professional and Owner within twenty-four (24) hours. During the progress of Work, Contractor shall verify all field measurements prior to fabrication of building components or equipment, and proceed with the fabrication to meet field conditions. Contractor shall consult all Contract Documents to determine the exact location of all Work and verify spatial relationships of all Work. Any question concerning said location or spatial relationships shall be submitted to the Professional. Specific locations for equipment, pipelines, ductwork and other such items of Work, where not dimensioned on plans, shall be determined in consultation with Professional. Contractor shall be responsible for the proper fitting of the Work in place. The exactness of grades, elevations, dimensions, or locations given on any Drawings issued by the Professional, or the work installed by separate contractors, is not guaranteed by the Professional or the Owner. The Contractor shall, therefore, satisfy itself as to the accuracy of all grades, elevations, dimensions and locations. In all cases of interconnection of its Work with existing or other work, Contractor shall verify at the site all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to so verify all such grades, elevations, locations or dimensions shall be promptly rectified by the Contractor without any additional cost to the Owner.

O. The Contractor shall be responsible for inspection of portions of the Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.

P. Before ordering any materials or doing any Work, the Contractor and each Subcontractor shall verify measurements at the Project site and shall be responsible for the correctness of such measurements. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings. Any difference which may be found shall be submitted to the Professional for resolution before proceeding with the Work. If a minor change in the Work is found to be necessary due to actual field conditions, the Contractor shall submit detailed drawings of such departure for the approval by the Professional before making the change.

6.04 Materials and Equipment

A. Contractor shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

B. Unless otherwise specifically noted, the Contractor shall provide and pay for supervision, labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated in the Work. Contractor shall arrange for and pay all fees and charges for installation of motors and other devices and connection to existing outside services and utilities necessary for the Work. Contractor shall pay for bills for utilities for the Contractor's use and consumption of utilities until the date of Substantial Completion. Contractor, unless otherwise provided for in the Special Conditions, shall provide an office and maintain the office for use by Contractor, Professional and Owner. The office shall be removed when directed by Owner. Contractor shall provide heat, air conditioning, ventilation, other environmental controls and shall take all actions necessary to protect all Work, materials and equipment against injury, damage or loss from theft, weather, vandalism, wetness, temperature and humidity conditions, dust and other adverse environmental conditions.

6.05 Quality of Materials and Equipment

A. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by Professional, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents. No provision of any such instructions will be effective to assign to Professional, Owner or any of Professional's or Owner's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work.

B. Materials and workmanship shall be subject to inspection, examination, and test by the Professional at any and all times during manufacture, installation and construction of any of them, at places where such manufacture, installation or construction is performed.

6.06 Schedule

A. Contractor shall submit to Professional for acceptance adjustments in the progress schedule to reflect the impact thereon of new developments. These will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto. The submission or acceptance of such schedules shall not change or modify the Contract Times. Adjustments in the progress schedule that will change the Contract Times or Milestones shall be submitted in accordance with Article 12. An adjustment in the Contract Times or Milestones may only be made by Change Order in accordance with Article 12 regardless of the submission of a progress schedule or acceptance of such schedule.

B. The Contractor shall monitor the progress of the Work for conformance with the requirements of the most recently approved schedule and shall promptly advise the Owner of any delays or potential delays. The accepted construction schedule shall be updated to reflect actual conditions. Contractor shall submit written progress reports and updated schedules to Professional and Owner with each Application for Payment showing actual progress of the Work compared with the scheduled and planned progress. In the event any schedule or progress report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor and equipment and/or expediting delivery of materials, if necessary. In no event shall any progress report or construction schedule constitute an adjustment in the Contract Times, any Milestone Date or the Contract Price unless any such adjustment is agreed to by the Owner and authorized pursuant to Change Order.

C. In the event the Owner or Professional determines that the performance of the Work, as of a Milestone Date, has not progressed or reached the level of completion required by the Contract Documents, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitation, (1) working additional shifts or overtime, (2) supplying additional manpower, equipment, facilities, (3) expediting delivery of materials, and (4) other similar measures (hereinafter referred to collectively as Extraordinary Measures). Such Extraordinary Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the construction schedule. The Contractor shall not be entitled to an adjustment in the Contract Price in connection with Extraordinary Measures required by the Owner under or pursuant to this Paragraph 6.06 C. The Owner may exercise the rights furnished the Owner under or pursuant to this Paragraph 6.06 C. as frequently as the Owner deems necessary to ensure that the Contractor's performance of the Work will comply with any Milestone Date or completion date set forth in the Contract Documents.

6.07 "Or-Equal" Items

A. Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by Professional if it is proven as set forth in this Section 6.07 that the material or equipment proposed is equivalent or equal to that named.

B. The standard products of manufacturers other than those specified will be accepted when, prior to the ordering or use thereof, it is proven to the satisfaction of the Professional that such products are equal in design, appearance, spare parts availability, strength, durability, usefulness, serviceability, operation cost, maintenance cost, and convenience for the purpose intended. Any general listings of approved manufacturers in any Contract Document shall be for informational purposes only and it shall be the Contractor's sole responsibility to ensure that any proposed "or equal" complies with the requirements of the Contract Documents.

C. In the event that Contractor desires to propose an "or equal" of any article, appliance, devise or material, Contractor shall submit a written list of all proposed or equals that Contractor proposes to provide to the Professional and within ten (10) days from the execution of the Agreement. Within ten (10) days from the execution of the Agreement, the Contractor shall submit to Professional a written and full description of the proposed "or equal" including all supporting data, including technical information, catalog cuts, warranties, test results, installation instructions, operating procedures, and similar information demonstrating that the proposed "or equal" strictly complies with the Contract Documents. The Professional shall take appropriate action with respect to the submission of a proposed "or equal" item. If Contractor fails to submit proposed "or equals" as set forth herein, it shall waive any right to supply such items. The Contract Price and Contract Times shall not be adjusted as a result of any failure by Contractor to submit proposed "or equals" as provided for herein. All documents submitted in connection with preparing an "or equal" shall be clearly and obviously marked as a proposed "or equal" submission.

D. No "or equal" items shall be installed or utilized until Professional's review is complete and approved in writing. No approvals or action taken by the Professional or shall relieve Contractor from its obligation to ensure that an "or equal" article, appliance, devise or material strictly complies with the requirements of the Contract Documents. Contractor shall not propose "or equal" items in connection with Shop Drawings or other Submittals, and Contractor acknowledges and agrees that no approvals or action taken by the Professional or with respect to Shop Drawings or other Submittals shall constitute approval of any "or equal" item or relieve Contractor from its sole and exclusive responsibility. Any changes required in the details and dimensions indicated in the Contract Documents for the incorporation or installation of any "or equal" item supplied by Contractor shall be properly made and approved by the Professional at the expense of the Contractor. No "or equal" items will be permitted for components of or extensions to existing systems when, in the opinion of the Professional, the named manufacturer must be provided in order to insure compatibility with the existing systems, including, but not limited to, mechanical systems, electrical systems, fire alarms, smoke detectors, etc. No action will be taken by the Professional with respect to proposed "or equal" items prior to receipt of bids, unless otherwise noted in the Supplementary Conditions.

6.08 Substitutions

A. If, after execution of the Contract or prior to submittal of applicable Shop Drawings, the Contractor desires to submit an alternate product or method in lieu of what has been specified or shown in the Contract Documents, which is not an "or equal" as set forth in Section 6.07, the Contractor may do so in writing and setting forth the following:

1. Full explanation of the proposed substitution and submittal of all supporting data including technical information, catalog cuts, warranties, test results, installation instructions, operating procedures, and other like information necessary for a complete evaluation of the substitution.
2. Reasons the substitution is advantageous and necessary, including the benefits to the Owner and the Work in the event the substitution is acceptable.
3. The adjustment, if any, in the Contract Price, in the event the substitution is acceptable.
4. The adjustment, if any, in the time of completion of the Contract and the construction schedule in the event the substitution is acceptable.
5. An affidavit stating that (a) the proposed substitution conforms to and meets all of the Contract Documents, except as specifically disclosed and set forth in the affidavit and (b) the Contractor accepts the warranty and correction obligations in connection with the proposed substitution as if originally specified by the Professional. Proposals for substitutions shall be submitted to the Professional and in sufficient time to allow the Professional and no less than ten (10) working days for review. No substitution will be considered or allowed without the Contractor's submittal of complete substantiating data and information as stated herein.

B. Substitutions and alternates may be rejected without explanation in Owner's sole discretion and will be considered only under one or more of the following conditions:

1. Required for compliance with interpretation of code requirements or insurance regulations then existing;
2. Unavailability of specified products, through no fault of the Contractor;
3. Material delivered fails to comply with the Contract Documents;
4. Subsequent information discloses inability of specified products to perform properly or to fit in designated space;
5. Manufacturer/fabricator refuses to certify or guarantee performance of specified product as required; or
6. When in the judgment of the Owner or the Professional, a substitution would be substantially to the Owner's best interests, in terms of cost, time, or other considerations.

C. Professional and Owner shall be allowed a reasonable time to evaluate each substitute proposed. No substitute will be ordered, included or utilized until Professional's review is complete and approved, which will be evidenced by a Change Order. Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other guaranty with respect to any substitution. Whether or not any proposed substitution is accepted by the Owner or the Professional, the Contractor shall reimburse the Owner for any fees charged by the Professional or other consultants for evaluating each proposed substitute.

6.09 Concerning Subcontractors, Suppliers and Others

A. Contractor shall not employ any Subcontractor, Supplier or other person or organization whether initially or as a substitute, against whom Owner or Professional may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to Owner in advance of the specified date prior to the Effective Date of the Agreement for acceptance by Owner and Professional and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's or Professional's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case Contractor shall submit an acceptable substitute. The Contract Price shall be increased by the difference between the subcontract amount proposed by the person or entity recommended by the Contractor and the subcontract amount proposed by the person or entity to whom the Owner has no objection. However, no increase in the Contract Price shall be allowed unless the Contractor has acted promptly and responsively in complying with the provisions of Paragraph 6.09 B and the person or entity to which Owner has an objection is capable of performing the Work. No acceptance by Owner or Professional of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of Owner or Professional to reject defective Work.

C. Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

1. assignment is effective only after termination of the Contract by the Owner for cause pursuant to Paragraph 15.01 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor in writing; and
2. assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

Each subcontract shall specifically provide that the Owner shall only be responsible to the Subcontractor for those obligations of the Contractor that accrue subsequent to the Owner's exercise of any rights under this conditional assignment.

D. Contractor shall be fully responsible to Owner and Professional for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with Contractor just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between Owner or Professional and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of Owner or

Professional to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

E. The divisions and sections of the Specifications and the identifications of any Drawings shall not control the Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

F. All Work performed for Contractor by a Subcontractor will be pursuant to an appropriate agreement between Contractor and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Professional and contains waiver provisions as required by Section 5.07. Contractor shall pay each Subcontractor a just share of any insurance moneys received by Contractor on account of losses under policies issued pursuant Section 5.07.

G. Contractor shall perform with its own forces and organization Work amounting to not less than thirty percent (30%) (or a greater percentage if required by the Supplementary Conditions) of the original Contract Price.

6.10 Patent Fees and Royalties

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Professional its use is subject to patent right or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents. Contractor shall defend, indemnify and hold harmless Owner and Professional and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorney's fees and court and arbitration costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

6.11 Permits and Fees

A. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement, Contractor shall pay all governmental charges and inspection fees necessary for the completion of the Work, which are applicable at the time of opening of Bids. Contractor shall pay all charges or assessments of utility owners for connections of utilities to the Work.

B. Contractor shall procure and obtain all bonds required of the Owner or the Contractor by the municipality in which the Project is located or any other public or private body with jurisdiction over the Project. In connection with such bonds, the Contractor shall prepare all applications, supply all necessary backup material, and furnish the surety with any required personal undertakings. Contractor shall also obtain and pay all charges for all approvals for street closings, parking meter removal, and other similar matters as may be necessary or appropriate from time to time for the performance of the Work.

6.12 Laws and Regulations

A. Contractor shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Professional shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor observes that the Specifications or Drawings are at variance with any Laws or Regulations, Contractor shall give Professional prompt written notice thereof. If Contractor performs any Work knowing or having reason to know that it is contrary to such Laws or Regulations, and without such notice to Professional, Contractor shall bear all costs arising therefrom; however, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

6.13 Prevailing Wage Rates

A. This Contract shall be based upon payment by the Contractor and his Subcontractors of wage rates not less than the prevailing hourly wage rate for each craft or classification of workman engaged on the Work as determined by the Labor and Industrial Relations Commission of Missouri on behalf of the Department of Labor and Industrial Relations. The Contractor shall comply with all requirements of the prevailing wage law of Missouri, RSMo. §§ 290.210 to 290.340, including the latest amendments thereto. The Contractor and each Subcontractor shall keep an accurate record showing the names, occupations, and crafts of all workmen employed, together with the number of hours worked by each workman and the actual wages paid to each workman. At all reasonable hours, such records shall be open to inspection by the representatives of the Labor and Industrial Relations Commission of

Missouri and Owner. The payroll records shall not be destroyed or removed from the state for at least two (2) years after completion of the Work. Throughout the life of this Contract, a copy of the wage determination and the rules promulgated by the Labor and Industrial Relations Commission of Missouri shall be displayed in at least four (4) conspicuous places on the Project under a heading of NOTICE, with the heading in letters at least one (1) inch high. Pursuant to RSMo. § 290.250, the Contractor shall forfeit to Owner as a penalty, Ten Dollars (\$10.00) for each workman employed, for each calendar day, or portion thereof, such workman is paid less than the stipulated rates for any work done under the Contract, by him or by any Subcontractor under him. After completion of the Work, and before final payment can be made under this Contract, the Contractor and each Subcontractor must file with Owner an affidavit of compliance stating that he has fully complied with the provisions and requirements of the prevailing wage law of Missouri. During the life of this Contract, the prevailing hourly rate of wages is subject to change by the Department of Labor and Industrial Relations or by court decision, as provided by law. Any such change shall not be the basis of any claim by the Contractor against Owner, nor will deductions be made by Owner against sums due the Contractor by reason of any such change.

B. If a federal governmental agency is providing funding for the Project and if required by Division 1 of the Specifications or the Contract Documents, the Contractor agrees to pay prevailing hourly rate of wages for regular, holiday and overtime work as determined by the Secretary of Labor in accordance with the Davis-Bacon Act as amended and supplemented. The Contractor further agrees to comply with all applicable federal laws, statutes and regulations relating to and establishing prevailing wage rates. Where Missouri and Federal prevailing wage rates are applicable, the higher of the two will be paid by the Contractor.

C. Violations of the Missouri prevailing wage statute, whether by the Contractor or its Subcontractors, result in additional costs for Owner, including, but not limited to, costs of construction delays, of additional work for City staff, of added interest expense, of legal and litigation expense, and of delays in the levying of special assessments. The Contractor shall ensure that prevailing wage rates are paid and that Work is done by the correct category of worker both on this Contract and on all subcontracts. The cost to Owner of any particular violation is difficult to establish; in the event of the failure by the Contractor or any of its Subcontractors to pay wages as provided in the Missouri prevailing wage Laws, Owner may deduct from the price specified in the Contract and may retain as liquidated damages, and not as a penalty, Thirty-Five Dollars (\$35.00) per day per individual who is paid less than the prevailing wage, to approximate the investigative costs resulting to Owner from such violations. To approximate the cost of delay, including interest expense from delay in levying special assessments and issuing special assessment tax bills, additional liquidated damages, and not as a penalty, shall be paid in the amount of One Hundred Dollars (\$100.00) per day for any delay in closing out the Contract occasioned by failure to pay the prevailing wage. Such additional sum shall be collected, whether or not the work days on the Contract could be closed out. Action under this section shall be commenced by Owner giving a written notice to the Contractor. The notice shall set out the persons who are claimed to have been underpaid, and the days they are claimed to have been underpaid. The Contractor shall have ten (10) days, or such longer time as Owner shall allow, to respond to the allegation. Based on the information in the notice, the response by the Contractor and such additional information as Owner shall determine, Owner shall render its decision, in writing, giving the amount of liquidated damages owed, including any damages for occasioning a delay in closing out the Contract. The Contractor shall not be required to pay liquidated damages for any false or malicious claims. This liquidated damage will be in addition to the liquidated damages specified in the Agreement.

6.14 Taxes

A. Contractor shall pay all sales, consumer, use and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. However, certain purchases by the Contractor of materials incorporated in or consumed in the construction of the Project are exempt from certain sales taxes pursuant to RSMo 144.062. The Contractor shall be issued a Project Tax Exemption Certificate for this Project to obtain the benefits of RSMo 144.062.

B. The Contractor shall furnish this certificate to all Subcontractors, and any person or entity purchasing materials for the Work shall present such certificate to all material suppliers as authorization to purchase, on behalf of the Owner, all tangible personal property and materials to be incorporated into or consumed in the Project and no other project on a tax-exempt basis. Such suppliers shall provide the purchasing party invoices bearing the name of the exempt entity and the Project identification number. Nothing in this section shall be deemed to exempt from any sales or similar tax the purchase of any construction machinery, equipment or tools used in construction, repairing or remodeling facilities for the Owner. All invoices for all personal property and materials purchased under a Project Tax Exemption Certificate shall be obtained and retained by the Contractor for a period of five years and shall be subject to audit by the director of revenue.

C. Any excess resalable tangible personal property or materials which were purchased for the Project under this Project Tax Exemption Certificate but which were not incorporated into or consumed in the construction of the Project shall either be returned to the supplier for credit or the appropriate sales or use tax on such excess

property or materials shall be reported on applicable tax returns and paid by such purchasing party not later than the due date of the purchasing party's Missouri sales or use tax return following the month in which it was determined that the materials were not used in the Project.

D. If it is determined that sales tax is owed by the Contractor on property and materials due to the failure of the Owner to revise the certificate expiration date to cover the applicable date of purchase, Owner shall be liable for the tax owed.

E. The Owner shall not be responsible for any tax liability due to Contractor's neglect to make timely orders, payments, etc. or Contractor's misuse of the Project Tax Exemption Certificate. Contractor represents that the Project Tax Exemption Certificate shall be used in accordance with RSMo § 144.062 and the terms of the Project Tax Exemption Certificate. Contractor shall defend and indemnify the Owner for any loss or expense, including but not limited to, reasonable attorneys' fees, arising out of Contractor's use of the Project Tax Exemption Certificate.

6.15 Use of Premises

A. Contractor shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project site, land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment.

B. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof of any land or area, or to the owner or occupant thereof of any land or areas contiguous thereto, resulting from the performance of the Work. Should any such owner or occupant because of the performance of the Work make any claim against Owner or Professional, Contractor shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or by law.

C. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold Owner and Professional harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, Professionals, attorneys and other professionals and court and arbitration's costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against Owner or Professional to the extent based on a claim arising out of Contractor's performance of the work.

6.16 Site Cleanup

A. During the progress of the Work, Contractor shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work Contractor shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by Owner. Contractor shall restore to original condition all property whether or not designated for alteration by the Contract Documents.

6.17 Loading of Structures

A. Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.18 Record Documents

A. Contractor shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Directive Changes, Field Orders and written interpretations and clarifications in good order and annotated to show all changes made during construction. These record documents together with all approved samples, Submittals and a counterpart of all approved Shop Drawings will be available to Professional for reference. Upon completion of the Work and prior to final payment, these record documents, samples, Shop Drawings and Submittals will be delivered to Professional for Owner.

6.19 Safety and Protection

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. Contractor shall take all necessary precautions for the safety of, and provide the necessary protection to prevent damage, injury or loss to:

1. all employees on the Work and other persons and organizations who may be affected thereby;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

3. other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

4. Contractor shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property.

B. All damage, injury or loss to any property referred to in Paragraph 6.19 A.2. and 6.19 A.3. caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss solely attributable to the fault of Owner or Professional or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor).

C. The Contractor shall be solely responsible for materials delivered and Work performed until completion and final acceptance of the entire construction thereof. The Contractor shall bear the risk of injury, loss or damage to any and all parts of the Work for whatever cause, whether arising from the execution or from the non-execution of Work. The Contractor shall promptly rebuild, repair or restore Work and materials which have been damaged or destroyed from any causes before Final Completion, and shall bear the expense thereof. The Contractor shall provide security and drainage and erect temporary structures as necessary to protect the Work and materials from damage, including damage from water, flooding, wetness, temperature, dust, environmental conditions and all reasonably anticipated risks. The Contractor shall be responsible for materials not delivered to the Work site for which any progress payment has been made to the same extent as if the materials were so delivered.

6.20 Safety Representative

A. Contractor shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be Contractor's superintendent unless otherwise designated in writing by Contractor to Owner.

6.21 Emergencies

A. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, Contractor, without special instruction or authorization from Professional or Owner, is obligated to act to prevent threatened damage, injury or loss. Contractor shall give Professional prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If Professional determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variations.

6.22 Submittals

A. Shop Drawings, Product Data, Samples and similar submittals (collectively referred to as "Submittals") are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which Submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.

B. After checking and verifying all field measurements and after complying with applicable procedures specified in the Contract Documents, Contractor shall submit to Professional for review and approval in accordance with the accepted schedule of Submittals, or for other appropriate action if so indicated in the Supplementary Conditions, five (5) copies (unless otherwise specified in the General Requirements) of all Shop Drawings, which will bear a stamp or specific written indication that Contractor has satisfied Contractor's responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as Professional may require for tracking. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable Professional to review the information as required.

C. Contractor shall also submit to Professional for review and approval, with such promptness as to cause no delay in Work, all Samples, Product Data and other similar Submittals required by the Contract Documents in accordance with the Schedule for Submittals. All Samples and Product Data will have been checked by and accompanied with a specific written indication that Contractor has satisfied Contractor's responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

D. When professional certification of performance criteria of materials, systems, or equipment is required by the Contract Documents, the Contractor shall provide the person or party providing the certification with full information on the relevant performance requirements and on the materials, systems, or equipment that are expected to operate at the Project site. The certification shall be based on performance under the operating conditions generally prevailing or expected at the Project site. All certificates from persons or entities other than Contractor shall be endorsed by Contractor and Contractor shall submit such certificates as its own.

E. The Contractor represents and warrants that all Shop Drawings shall be prepared by persons and entities possessing expertise and experience in the trade for which the Shop Drawing is prepared and, if required by the Contract Documents, or the Professional or applicable Laws and Regulations, by a licensed engineer or other design professional.

F. Before submission of each Submittal Contractor shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Submittal with other Submittals and with the requirements of the Work and the Contract Documents.

G. By approving and submitting to Professional any Submittals, the Contractor represents such Submittals strictly comply with the requirements of the Contract Documents and that the Contractor has determined and verified field measurements and field construction criteria related thereto, that materials are fit for their intended use and that the fabrication, shipping, handling, storage, assembly and installation of all materials, systems and equipment are in accordance with best practices in the industry and are in strict compliance with any applicable requirements of the Contract Documents. Contractor shall also coordinate each Submittal with other Submittals.

H. Contractor shall be responsible for the correctness and accuracy of the dimensions, measurements and other information contained in the Submittals.

I. Each Submittal will bear a stamp or specific indication that the Submittal complies with the Contract Documents and Contractor has satisfied its obligations under the Contract Documents with respect to Contractor's review and approval of that Submittal. Each Submittal shall bear the signature of the representative of Contractor who approved the Submittal, together with the Contractor's name and Project identification.

J. The Contractor shall perform no portion of the Work requiring submittal and review of Submittals until the respective submittal has been approved by the Professional. Such Work shall be in accordance with approved Submittals.

K. At the time of each submission, Contractor shall give Professional specific written notice of each variation that the Submittals may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to Professional for review and approval of each such variation.

L. Professional's review and approval will be for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

M. Contractor shall make corrections required by Professional, and shall return the required number of corrected copies of Shop Drawings and other Submittals and submit as required new Submittals for review and approval. Contractor shall direct specific attention in writing to revisions on the Submittals other than the revisions called for by Professional on previous Submittals.

N. The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Professional on previous Submittals.

O. Professional's review and approval of Submittals shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has in writing called Professional's attention to each such variation at the time of submission as required by Paragraph 6.23 K. and Professional has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Submittal approval; nor will any approval by Professional relieve Contractor from responsibility for errors or omissions in the Submittals or from responsibility for having complied with the provisions of Section 6.23. In the event Contractor fails to submit any Submittals within the time required in the Contract Documents or submits inadequate or incorrect Submittals, Contractor shall be liable for all additional costs and damage suffered by Owner as a result thereof.

P. Where a Submittal or sample is required by the Specifications, any related Work performed prior to Professional's review and approval of the pertinent submission will be the sole expense and responsibility of Contractor.

6.23 Contractor's Warranty

A. In addition to all other warranties implied by law or expressed in the Contract Documents or elsewhere, the Contractor warrants to Owner that:

1. the materials and equipment furnished under the Contract will be of the most suitable grade of their respective kinds for the purposes intended, fit and sufficient for the purpose intended, merchantable, free from defects in material and workmanship, new, and in strict conformance with the Contract Documents; and

2. the Work will be executed in a workmanlike manner, in the best manner known to each respective trade, free of defects in material and workmanship, of the highest quality in the industry; and in strict conformance with the Contract Documents.

B. The above warranties are not intended as a limitation, but are in addition to, and not in lieu of, all other express warranties set forth in this Contract and such other warranties as are implied by law, in equity, custom, and usage of trade. The Contractor, and its surety or sureties, if any, shall be liable for the satisfaction and full performance of the warranties set forth herein.

C. The Contractor's warranties above shall not be affected by the specification of a product or procedure unless Contractor objects in writing promptly, and in any event before performing the Work in question affected by or related to such product or procedure, and advises the and Professional in writing of possible substitute products or procedures which will not affect the warranty.

D. Contractor shall assign to Owner all manufacturer, supplier or installer's warranties upon Final Completion of the Work; provided, however, the Contractor's warranties provided in this Section 6.23 and other provisions of the Contract Documents shall not be affected, diminished or restricted by the limitations, restrictions, or conditions of a manufacturer, supplier or installer's warranty, including, but not limited to, the expiration of any Uniform Commercial Code statute of limitations. Inability or refusal of a Subcontractor, lower-tier Subcontractor, supplier or installer furnishing defective Work to correct or warrant such Work shall not relieve Contractor of its responsibility for the warranties set forth above and in other provisions of the Contract Documents.

E. Contractor's obligation to perform and complete the Work in strict accordance with the Contract Documents shall be absolute. None of the following shall constitute an acceptance of Work that is not in strict accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in strict accordance with the Contract Documents:

1. observations or inspections by the Professional;
2. approval of any progress or final payment by the Professional;
3. the issuance of a certificate of Substantial or Final Completion or any payment by the Owner to Contractor under the Contract Documents;
4. use or occupancy of the Work or any part thereof by the Owner;
5. any acceptance by the Owner or any failure to do so;
6. any review or approval of Shop Drawings or other Submittal by the Professional;
7. any inspection, test or approval by others; or
8. any correction of defective Work by Owner.

F. The Contractor shall defend, indemnify, and save harmless the Owner from any and all loss, damages, costs, and attorneys' fees suffered or incurred on account of any breach of the aforesaid warranties, obligations and covenants.

6.24 Continuing the Work

A. Contractor shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as Contractor and Owner may otherwise agree in writing.

6.25 Indemnification

A. To the fullest extent permitted by law, the Contractor shall defend, indemnify, and hold harmless the Owner, the Professional, Professional's consultants, and the agents, employees, representatives, insurers and re-insurers of any of the foregoing (hereafter collectively referred to as the "Indemnitees") from and against claims, damages (including loss of use of the Work itself), punitive damages, penalties and civil fines unless expressly prohibited by law, losses and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from performance of the Work to the extent caused in whole or in part by negligent acts or omissions or other fault of Contractor, a Subcontractor of any tier, Supplier or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by the negligent acts or omissions or other fault of a party indemnified hereunder. The Contractor's obligations hereunder are in addition to and shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that the Owner may possess. If one or more of the Indemnitees demand performance by the Contractor of obligations under this paragraph or other provisions of the Contract Documents and if Contractor refuses to assume or perform, or delays in assuming or performing Contractor's obligations, Contractor shall pay each Indemnitee who has made such demand its respective attorneys' fees, costs, and other expenses incurred in enforcing this provision. The defense and indemnity required herein shall, however, be a binding obligation upon Contractor whether or not an Indemnitee has made such demand. Even if a defense is successful to a claim or demand for which Contractor is obligated to indemnify the Indemnitees from under this Paragraph, Contractor shall remain liable for all costs of defense.

B. The indemnity obligations of Contractor under this Section 6.25 shall survive termination of this Contract or final payment thereunder. In the event of any claim or demand made against any party which is entitled to be indemnified hereunder, the Owner may in its sole discretion reserve, return or apply any monies due or to become due the Contractor under the Contract for the purpose of resolving such claims; provided, however, that the Owner may release such funds if the Contractor provides the Owner with reasonable assurance of protection of the Owner's interests. The Owner shall in its sole discretion determine if such assurances are reasonable. Owner reserves the right to control the defense and settlement of any claim, action or proceeding which Contractor has an obligation to indemnify the Indemnitees against under this Section 6.25.

C. In claims against any person or entity indemnified under this Section 6.25 by an employee of the Contractor, a Subcontractor of any tier, a Supplier, or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Section 6.25 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor a Subcontractor of any tier or Supplier under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

6.26 Survival of Obligations

A. All representation, indemnifications, warranties and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Work and termination of completion of the Agreement.

ARTICLE 7- OTHER WORK

7.01 Related Work at Site

A. Owner may perform other work related to the Project at the site by Owner's own forces, have other work performed by utility owners or let other direct contracts therefor which shall contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to Contractor prior to starting any such other work. In such events, Contractor must anticipate in its scheduling that its Work may be interfered with or delayed by such other Work. Contractor shall fully cooperate and coordinate its Work with the other work to avoid or mitigate such interferences or delays.

B. Contractor shall afford each utility owner and other contractor who is a party to such a direct contract (or Owner, if Owner is performing the additional work with Owner's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs. Contractor shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of Professional and the others whose work will be affected. The duties and responsibilities of Contractor under this paragraph are for the benefit of such utility owners and other contractors.

C. If any part of Contractor's Work depends on proper execution or results upon the work of any such other contractor or utility owner (or Owner), Contractor shall inspect and promptly report to Professional in writing any

delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results Contractor's failure to report this will constitute an acceptance of the other work as fit and proper for integration with Contractor's Work except for latent or non-apparent deficiencies in the other work.

7.02 Coordination

A. If Owner contracts with others for the performance of other work on the Project site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Supplementary Conditions, and the specific matters to be covered by such authority and responsibility will be itemized, and the extent of such authority and responsibilities will be provided in the Supplementary Conditions. Unless otherwise provided in the Supplementary Conditions, neither Owner nor Professional shall have any authority or responsibility in respect of such coordination.

7.03 Liability

A. Contractor shall not delay a separate contractor by neglecting to perform its Work at the proper time. Contractor shall be required to coordinate its Work with separate contractors so as to afford separate contractors a reasonable and safe opportunity for execution of their work. Any costs caused by delays or improperly timed activities or defective construction shall be borne by the party responsible therefor.

B. Contractor shall be responsible for damage to Owner's or separate contractors' property caused by Contractor or any person or entity for whose acts or omissions Contractor may be liable.

C. In the event Contractor is delayed or damaged by the activities, fault, negligent acts or omissions, delays or improperly timed activities, or defective construction of any separate contractor of Owner or person or entity for whose acts or omissions the separate contractor may be liable, Contractor agrees to solely look to the separate contractor for compensation as a result of such activities, fault, negligent acts or omissions, delays or improperly timed activities, or defective construction. Contractor shall be considered a third party beneficiary of any contract between Owner and any separate contractor for the Project solely for the purpose of recovering damages from such separate contractor which are caused by the activities, fault, negligent acts or omissions, delays or improperly timed activities, or defective construction of such separate contractor of Owner or any person or entity for whose acts or omissions such separate contractor may be liable.

D. Contractor shall be responsible for any damages of separate contractors of Owner caused by the activities, fault, negligent acts or omissions, delays or improperly timed activities, or defective construction of Contractor or of any person or entity for whose acts or omissions Contractor is liable. Contractor acknowledges that such separate contractors shall be considered third party beneficiaries of this Contract for the sole purpose of allowing any separate contractor the right to directly recover damages from Contractor which are caused by the activities, fault, negligent acts or omissions, delays or improperly timed activities, or defective construction of Contractor or of any person or entity for whose acts or omissions Contractor may be liable.

E. Should Contractor cause any damage to a separate contractor of the Owner, Contractor shall promptly attempt to settle with such separate contractor in good faith. Contractor shall defend, indemnify and hold harmless Owner, and its agents, representatives and employees from and against any claims of separate contractors in accordance with Section 6.25.

F. If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, they may clean up and allocate the cost among those responsible as Owner determines to be just.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 Termination of Professional

A. In case of termination of the employment of Professional, Owner shall appoint a design professional whose status under the Contract Documents shall be that of the former Professional.

8.02 Data and Information

A. When requested in writing by Contractor, Owner shall furnish the data required of Owner under the Contract Documents promptly.

8.03 Limitations on Owner's Responsibilities

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to

performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

ARTICLE 9 - PROFESSIONAL'S STATUS DURING CONSTRUCTION

9.01 General

A. Professional will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Professional as Owner's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of Owner and Professional.

9.02 Visits to Site

A. Professional will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. On the basis of such visits and on-site observations, Professional will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defects and deficiencies in the Work.

9.03 Project Representation

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in observing the performance of the Work. The duties, responsibilities and limitations of authority of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions. If Owner designates another agent to represent Owner at the site who is not Engineer's agent or employee, the duties, responsibilities and limitations of authority of such other person will be as provided in the Supplementary Conditions.

9.04 Clarifications and Interpretations

A. Professional will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as Professional may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If Contractor believes that a written clarification or interpretation justifies an increase in the Contract Price or an extension of the Contract Times and the parties are unable to agree to the amount or extent thereof, Contractor may make a claim therefor as provided in Articles 11 or Article 12.

9.05 Authorized Variations in Work

A. Professional may authorize minor variations in the Work from the requirements of the Contract Documents that do not involve an adjustment in the Contract Price or the Contract Times and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner, and also on Contractor who shall perform the Work involved promptly. The Professional shall not have the authority to order changes without the agreement of Owner which affect the Contract Price or Contract Times.

9.06 Rejecting Defective Work

A. Professional will have authority to disapprove or reject Work which Professional believes to be defective, and will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.03 B., whether or not the Work is fabricated, installed or completed.

9.07 Submittals

A. In connection with Professional's responsibility for Submittals, see Section 6.22 inclusive.

9.08 Change Orders

A. In connection with Professional's responsibilities as to Change Orders, see Articles 10, 11 and 12.

9.09 Payments

A. In connection with Professional's responsibilities in respect of Applications for Payment, see Article 14.

9.10 Determinations for Unit Prices

A. Professional will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Professional will review with Contractor's representative preliminary determinations on such matters

before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Professional's written decisions thereon will be final and binding upon Contractor, unless, within ten (10) days after the date of any such decision, Contractor delivers to Owner and Professional a written objection to such determination.

9.11 Limitations on Professional's Responsibilities

A. Neither Professional's authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by Professional in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of Professional to Contractor, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

9.12 Terminology

A. Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of Professional as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to Professional any duty or authority to supervise or direct the furnishing or performance of the Work.

ARTICLE 10 – CHANGES IN THE WORK AND CLAIMS

10.01 Authorized Changes in Work

A. Without invalidating the Agreement and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions or revisions in the Work. Such additions, deletions or revisions will be authorized by a Written Amendment, a Change Order, or a Work Change Directive or Field Order. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved, which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. A Change Order is a written instrument signed by the Owner and Contractor, stating their agreement upon all of the following:

1. a change in the Work;
2. the amount of the adjustment in the Contract Price, if any; and
3. the extent of the adjustment in the Contract Time, if any.

C. Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work which is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Price and the Contract Times and any applicable Milestone Dates. In the event a Change Order increases the Contract Price, Contractor shall include the Work covered by such Change Orders in Applications for Payment as if such Work were originally part of the Contract Documents.

D. A Work Change Directive is a written order approved by Professional and issued by Owner directing a change in the Work and stating a proposed basis for adjustment in the Contract Price and/or Contract Times. A Work Change Directive shall be used in the absence of total agreement on the terms of a Change Order. Upon receipt of a Work Change Directive, the Contractor shall proceed with the change in the Work involved and advise Owner and Professional of Contractor's agreement or disagreement with the method, if any, provided in the Work Change Directive for determining the proposed adjustment in the Contract Price or Contract Times. A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Price and Contract Times or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

E. The Professional will have authority to issue order changes in the Work not involving adjustment in the Contract Price or extension of the Contract Times and not inconsistent with the intent of the Contract Documents. Such minor changes shall be effectuated by a written Field Order and shall be binding on Owner and Contractor. The Contractor shall carry out such changes set forth in a Field Order promptly.

10.02 Unauthorized Changes in Work

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified and

supplemented by a Modification, except in the case of an emergency as provided in Article 6.21 and except in the case of uncovering Work as provided in Section 13.03 B.

10.03 Notice to Surety

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the Surety, such notice shall be provided by the Contractor.

10.04 Claims

A. A Claim is a demand or assertion by Contractor seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or any other relief with respect to the terms of the Contract. The term "Claim(s)" also includes demands and assertions of Contractor arising out of or relating to the Contract Documents, including Claims based upon breach of contract, mistake, misrepresentation, or other cause for Contract Modification or rescission. Claims must be made by written notice in strict accordance with the Contract Documents. Contractor shall have the responsibility to substantiate Claims. A Claim for an adjustment in the Contract Price shall be submitted in accordance with Paragraph 11.02 B. A Claim for each adjustment in the Contract Times shall be submitted in accordance with Paragraph 12.01 A.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

11.01 Contract Price

A. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to Contractor for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at Contractor's expense without change in the Contract Price.

11.02 Change

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that the Owner has been unjustly enriched by any alteration or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Owner, shall be the basis of any Claim to an increase in any amounts due under the Contract Documents.

B. Any claim by Contractor for an adjustment in the Contract Price shall be based on written notice as set forth herein. Any claim for an increase or decrease in the Contract Price by Contractor shall be based on written notice delivered by Contractor to Owner and to Professional promptly (but in no event later than fifteen (15) days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within forty-five (45) days after such occurrence (unless Professional allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by Contractor's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which Contractor is entitled as a result of the occurrence of said event. No claim for an adjustment in the Contract Price by Contractor will be valid if not submitted in accordance with this Paragraph 11.02 B.

C. Any work completed by Contractor not agreed to by Owner in a Change Order, Work Change Directive or a Field Order shall be at Contractor's sole cost and expense and shall be deemed a waiver of all rights the Contractor may have for any adjustment in the Contract Price or Contract Times.

11.03 Determination of Adjustment

A. The value of the Work covered by a Change Order or of any Claim for an increase or decrease in the Contract Price shall be determined by Owner in one of the following ways:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices contained in the Contract Documents to the quantities of the items involved in the change.
2. By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.06 A.2.); or
3. On the basis of the Cost of the Work (determined as provided in Paragraphs 11.04 and 11.05) plus a Contractor's Fee for overhead and profit (determined as provided in Paragraph 11.06).

11.04 Cost of the Work

A. The term Cost of the Work means the sum of all costs necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any work covered by a Change Order or when a Claim for an

adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs described in Paragraph 11.05:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to the Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from Subcontractors acceptable to Contractor and shall deliver such bids to Owner who will then determine, with the advice of Professional, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as Contractor's Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

4. Cost of special consultants (including but not limited to engineers, Professionals, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following

a. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of Contractor.

b. Rentals of all construction equipment and machinery and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Professional, and the cost of transportation, loading, unloading, installation, dismantling and removal thereof - all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

c. Sales, consumer, use or similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

6. Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by Owner in accordance with Paragraph 5.07.

11.05 Costs Excluded

A. The term Cost of the Work shall not include any of the following:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, Professionals, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by Contractor whether at the site or in Contractor's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job

classifications referred to in Paragraph 11.04 A.1. or specifically covered by Paragraph 11.04 A.4. all of which are to be considered administrative costs covered by the Contractor's Fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the site.
3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
4. Cost of premiums for all Bonds and for all insurance whether or not Contractor is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by Paragraph 11.04. A.6.).
5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.
6. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Section 11.04.

11.06 Contractor's Fee

A. The Contractor's Fee allowed to Contractor for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee;
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.04 A.1. and 11.04 A.2., the Contractor's Fee shall be ten percent;
 - b. for costs incurred under Paragraph 11.04 A.3., the Contractor's Fee shall be five percent. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of this Section is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of ten percent (10%) of the costs incurred by Subcontractor under Paragraphs 11.04 A.1. or 11.04 A.2. and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent (5%) of the amount paid to the next lower tier Subcontractor. In no event shall there be more than three mark ups of cost on extract work regardless of the number of tiers of Subcontractors;
 - c. no fee shall be payable on the basis of costs itemized under Paragraphs 11.04. A.4., 11.04 A.5. and 11.04.A6;
 - d. the amount of credit to be allowed by Contractor to Owner for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in Contractor's Fee by an amount equal to ten percent (10%) of the net decrease; and
 - e. when both additions and credits are involved in any one change, the adjustment in Contractor's Fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04 A.2.a. through 11.04 A.2.d., inclusive.

11.07 Submission of Itemized Costs

A. Whenever the cost of any Work is to be determined pursuant to Article 11.04, Contractor will submit in a form acceptable to Owner and Professional an itemized cost breakdown together with supporting data.

11.08 Allowance

A. It is understood that Contractor has included in the Contract Price all allowances (if any) so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to Professional. Contractor agrees that:

1. The allowances include the cost to Contractor (less any applicable trade discount) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

2. Contractor's cost for unloading and handling material on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

3. Prior to final payment, an appropriate Change Order will be issued as recommended by Professional to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

ARTICLE 12 - CHANGE OF CONTRACT TIMES

12.01 Claims for Additional Time

A. The Contract Times may only be changed by a Change Order or a Written Amendment. Any claim by Contractor for an adjustment in the Contract Price shall be based on written notice as set forth herein. Any claim for an extension or shortening of the Contract Times shall be based on written notice delivered by Contractor to Owner and to Professional promptly (but in no event later than fifteen (15) days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five (45) days after such occurrence (unless Professional allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. No claim for an adjustment in the Contract Times will be valid if not submitted in accordance with the requirements of this Paragraph 12.01 A.

B. If abnormal weather conditions are the basis for a Claim for additional time, such Claim shall be documented by the Contractor by data acceptable to the Professional substantiating that weather conditions were abnormal for the period of time in question, and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the scheduled construction. Requests for extension of the scheduled Completion Date(s) or Milestone Dates due to adverse weather conditions shall include reliable or official climatological reports for the months involved, plus a report indicating the average precipitation, temperature, and other climatological data for the past ten (10) years from a reporting station near the Project site. The ten-year average will be the basis for determining the number of adverse weather days and the effect resulting therefrom on construction which Contractor would normally expect to encounter.

12.02 Delays of Contract Times

A. If the Contractor is delayed in the commencement or progress of the Work by an act or neglect of the Owner or Professional, or of an employee of either, or by changes in the Work, or by fire, or by unavoidable casualties, acts of God, or abnormal weather conditions established pursuant to Paragraph 12.01 B, or by acts or neglect of utility owners or separate contractors performing other Work as provided in Article 7, the Contract Times and applicable Milestones will be extended in an amount equal to the time lost due to such delay if a Claim is made therefore by Contractor as provided herein. The Contract Times and applicable Milestones will not be extended due to delays within the reasonable control of Contractor. Where Contractor is prevented from completing any part of the Work within the Contract Times or any applicable Milestones due to delay beyond the control of both Owner and Contractor, including but not limited to fires, unavoidable casualties, acts of God, abnormal weather conditions, or acts or neglect of utility owners or separate contractors performing other work as provided for in Article 7, an extension of the Contract Times or any applicable Milestones in an amount equal to the time lost due to such delay shall be Contractor's sole and exclusive remedy for such delay.

B. The Contractor further acknowledges and agrees that adjustments in the Contract Times will be permitted for a delay only to the extent such delay (1) is not caused, or could not have been anticipated, by the Contractor, (2) could not be limited or avoided by the Contractor's timely notice to the Owner of the delay, (3) prevents Contractor from completing its Work by the Contract Time, and (4) is of a duration not less than one (1) day. Delays attributable to and within the control of a Subcontractor or supplier shall not justify an extension of the Contract Times.

12.03 Delay Damages

A. Professional Notwithstanding anything to the contrary in the Contract Documents, an extension in the Contract Times, to the extent permitted under this Article, shall be the sole remedy of the Contractor for any (1) delay in the commencement, prosecution or completion of the Work, (2) hindrance or obstruction in the performance of the Work, or (3) loss of productivity except as set forth below. In no event shall the Contractor be entitled to any compensation or recovery of any damages or any portion of damages resulting from delays caused by or within the control of Contractor or by acts or omissions of Contractor or its Subcontractors of any tier or Supplier or delays beyond the control of both Owner and Contractor. If the Contractor contends that delay, hindrance, obstruction or other adverse condition results from acts or omissions of the Owner, or the Professional, Contractor shall promptly provide written notice to the Owner. Contractor shall only be entitled to an adjustment in the Contract Price to the extent that such acts or omissions continue after the Contractor's written notice to the Owner of such acts or

omissions. The Owner's exercise of any of its rights or remedies under the Contract Documents (including, without limitation, ordering changes in the Work, or directing suspension, rescheduling or correction of the Work) regardless of the extent or frequency of the Owner's exercise of such rights or remedies, shall not be the basis of any Claim for an increase in the Contract Price or Contract Times. In the event Contractor is entitled to an adjustment in the Contract Price for any delay, hindrance, obstruction or other adverse condition caused by the acts or omissions of the Owner, or the Professional, Contractor shall only be entitled to its actual direct costs caused thereby and Contractor shall not be entitled to and waives any right to special, indirect, or consequential damages including loss of profits, loss of savings or revenues, loss of anticipated profits, labor inefficiencies, idle equipment, home office overhead, and similar type of damages.

B. If the Contractor submits a progress report or any construction schedule indicating, or otherwise expressing an intention to achieve completion of the Work prior to any completion date required by the Contract Documents or expiration of the Contract Times, no liability of the Owner to the Contractor for any failure of the Contractor to so complete the Work shall be created or implied. Further, the Contractor acknowledges and agrees that even if Contractor intends or is able to complete the Work prior to the Contract Times, it shall assert no Claim and the Owner shall not be liable to Contractor for any failure of the Contractor, regardless of the cause of the failure, to complete the Work prior to the Contract Times.

12.04 Liquidated Damages

A. If liquidated damages are prescribed in the Agreement, the Owner may deduct from the Contract Price and retain as liquidated damages, and not as penalty or forfeiture, the sum stipulated in the Contract Documents for each calendar day after the date specified for completion of the Project that the entire Work is not substantially complete and/or finally complete.

B. The Professional shall certify the date of Substantial Completion and Final Completion which shall be conclusive and binding on the Owner and Contractor for the purpose of determining whether or not liquidated damages shall be assessed under terms hereof and the total amount due.

C. Liquidated damages or any matter related thereto shall not relieve the Contractor or his surety of any responsibility or obligation under this Contract.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 Access to Work

A. Professional and Professional's representatives, other representatives of Owner, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. Contractor shall provide proper and safe conditions for such access.

13.02 Tests and Inspections

A. Contractor shall give Professional timely notice of readiness of the Work for all required inspections, tests or approvals.

B. Contractor shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests or approvals required by Laws and Regulations or the Contract Documents, except:

1. those costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.03. B. shall be paid as provided in Paragraph 13.03. B.; and
2. as otherwise specifically provided in the Contract Documents.

C. Without limiting the generality of Paragraph 13.03. B., Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for Professional's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

D. All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to Owner and Professional.

E. Neither observations, inspections, tests or approvals by Professional or others, shall relieve Contractor from Contractor's obligations to perform the Work in accordance with the Contract Documents.

F. If any Work (including the work of others) that is to be inspected, tested, or approved is covered without written concurrence of Professional, it must, if requested by Professional, be uncovered for observation. Such

uncovering shall be at Contractor's expense unless Contractor has given Professional timely notice of Contractor's intention to cover the same and Professional has not acted with reasonable promptness in response to such notice.

13.03 Uncovering Work

A. If any Work is covered contrary to the written request of Professional, it must, if requested by Professional, be uncovered for Professional's observation and replaced at Contractor's expense.

B. If Professional considers it necessary or advisable that covered Work be observed by Professional or inspected or tested by others, Contractor, at Professional's request shall uncover, expose or otherwise make available for observation, inspection or testing as Professional may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, Contractor shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, (including but not limited to fees and charges of engineers, Professionals, attorneys and other professionals), and Owner shall be entitled to an appropriate decrease in the Contract Price. If, however, such Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, Contractor may make a claim therefor as provided in Articles 11 and 12.

13.04 Owner May Stop the Work

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor or any Subcontractor, Supplier or any other entity, or any surety for, or employee or agent of any of them.

13.05 Correction or Removal of Defective Work

A. Contractor shall correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by Professional, remove it from the Site and replace with nondefective Work. Contractor shall bear all direct, indirect and consequential costs, losses and damages (including but not limited to fees and charges of engineers, attorneys and other professionals) arising out of or relating to such correction or removal (including, but not limited to, all costs of repair and replacement of work of others).

13.06 Guarantee Period

A. If within two years after the date of Substantial Completion or longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents, and/or Change Orders ("Guarantee Period"), any Work is found to be defective, Contractor shall promptly, without cost to the Owner and in accordance with Owner's written instructions, either correct such defective Work, or, if it has been rejected by Owner, remove it from the site and replace it with nondefective Work. If Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, attorneys and other professionals) will be paid by Contractor. Nothing contained in this Section 13.06 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the two (2) year Guarantee Period as described in this Paragraph 13.06 relates only to the specific obligation of the Contractor to correct, remove or replace the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations under the Contract Documents. The requirements of Article 13 are in addition to and not in limitation of any of the other requirements of the Contract for warranties or conformance of the Work to the requirements of the Contract Documents.

B. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.06, the correction period hereunder with respect to such Work will be extended for an additional period of two (2) years after such correction or removal and replacement has been satisfactorily completed.

C. Contractor's obligations under this paragraph 13.06 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.06 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.07 Acceptance of Defective Work

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and if, prior to Professional's recommendation of final payment, also Professional) prefers to accept it, Owner may do so. Contractor shall bear all direct, indirect and consequential costs attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Professional as to reasonableness and to include but not be limited to fees and charges of engineers, Professionals, attorneys and other professionals). If any such acceptance occurs prior to Professional's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.08 Owner May Correct Defective Work

A. If Contractor fails within a reasonable time after written notice of Professional to proceed to correct defective Work or to remove and replace rejected Work as required by Professional, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph, Owner shall proceed expeditiously.

B. To the extent necessary to complete corrective and remedial action, Owner may exclude Contractor from all or part of the site, take possession of all or part of the Work, and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owners, agents and employees such access to the site as may be necessary to enable Owner to exercise such rights and remedies under this paragraph.

C. All direct, indirect and consequential costs, losses and damages of Owner in exercising the rights and remedies under this Paragraph 13.08 will be charged against Contractor. Such direct, indirect and consequential costs, losses and damages will include, but not be limited to, fees and charges of consultants, Professional, attorneys and other professionals, all court and arbitration costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of Contractor's defective Work. Contractor shall not be allowed an extension of the Contract Times because of any delay in performance of the Work attributable to the exercise by Owner of Owner's rights and remedies hereunder.

D. In the event that the defective Work, equipment or material creates a hazard or an emergency situation, the requirement of seven days written notice may be reduced to notification by telephone or attempt thereof. Hazardous or emergency situations include, but are not limited to: defective traffic control devices, flood control structures and devices; or excavations.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 Contract Price

A. The Owner shall compensate Contractor for all Work described herein and in the Contract Documents the Contract Price set forth in the Agreement, subject to additions and deletions as provided hereunder.

14.02 Basis Of Progress Payments

A. The Schedule of Values, if any, established as provided in the Agreement, shall serve as the basis for progress payments for a lump sum contract and will be incorporated into a form of Application for Payment acceptable to Owner. The values set forth in such schedule shall not be used in any manner as fixing a basis for additions or deletions from the Contract Price. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.03 Applications For Payment

A. In the time set forth in Paragraph 14.06 B., the Contractor shall submit to the Owner and the Professional an itemized Application for Payment in accordance with the Contract Documents. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Professional may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage as provided for herein.

B. Such applications may not include requests for payment of amounts the Contractor does not intend to pay to a Subcontractor or material supplier because of a dispute or other reason.

C. Each Application for Payment shall be accompanied by the following, all in form and substance satisfactory to the Owner:

1. Contractor's updated schedule and a progress report setting forth in detail the actual progress to date (in terms of percent complete) and the scheduled or planned progress, a listing of the value of material on hand included in the Application and other data specified in the Specifications;

2. Weekly employee payrolls for Contractor and all Subcontractors. Each Application for Payment shall be accompanied by a certified copy of employee payrolls, submitted on Federal Form WH-347 and covering the Work performed during the time covered by the Application. No payment will be due and no Application for Payment processed by the Owner until all pertinent payroll documents have been completed and approved;

3. Beginning with the second Application for Payment, a current Contractor's Receipt and Partial Release in the form provided by Owner, and, if requested by Owner, similar Receipt and Partial Releases from Subcontractors and Suppliers; and

4. All information and materials required to comply with the requirements of the Contract Documents or reasonably requested by the Owner or the Professional.

D. In addition to the requirements set forth in Paragraph 14.03 C., Owner shall not be obligated to make any progress payments until the Contractor has provided Owner and Professional:

1. certificate(s) of insurance or policies as required herein;
2. a signed copy of this Contract;
3. evidence that performance and payment bonds have been purchased as required herein;
4. an approved Schedule of Values;
5. an approved construction schedule and schedule for Submittals; and
6. other documents and certifications required by the Contract Documents.

E. The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment, free and clear of any liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, Suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. The Contractor further expressly undertakes to defend and hold harmless the Owner, at the Contractor's sole expense, against any such claims, liens, actions, lawsuits or proceedings.

F. The Application for Payment shall constitute a representation by the Contractor to the Owner that the Work has progressed to the point indicated; the quality of the Work covered by the Application for Payment is in accordance with the Contract Documents; and the Contractor is entitled to payment in the amount requested.

14.04 Approval For Payment

A. The Professional will, within fifteen (15) days after receipt of the Contractor's Application for Payment, either approve Contractor's Application for Payment for such amount as the determines is properly due, or notify the Contractor in writing of the reasons for withholding certification in whole or in part as provided in Section 14.05.

14.05 Decisions To Withhold Approval

A. The Professional may decide not to certify payment and may withhold approval in whole or in part, to the extent reasonably necessary to protect the Owner. If the Professional is unable to approve payment in the amount of the Application, the Professional will notify the Contractor as provided in Paragraph 14.04 A. If the Contractor and Professional cannot agree on a revised amount, the Professional will promptly issue approval for payment for the amount for which the Professional is able to determine is due Contractor. The Professional may also decide not to approve payment or, because of subsequently discovered evidence or subsequent observations, may nullify the whole or a part of approval for payment previously issued, to such extent as may be necessary in the opinion to protect the Owner from loss because of:

1. defective Work not remedied or damage to completed Work;
2. failure to supply sufficient skilled workers or suitable materials;
3. third party claims filed or reasonable evidence indicating probable filing of such claims;
4. failure of the Contractor to make payments properly to Subcontractors or Suppliers for labor, materials or equipment;

5. reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;
6. damage to the Owner or another contractor;
7. reasonable evidence that the Work will not be completed within the Contract Times or an unsatisfactory rate of progress made by Contractor;
8. Contractor's failure to comply with applicable Laws and Regulations; or
9. failure to carry out the Work in strict accordance with the Contract Documents.

B. When the above reasons for withholding approval are removed, approval will be made for amounts previously withheld.

14.06 Progress Payments

A. Based upon Applications for Payment submitted to the Owner and Professional by the Contractor and approvals issued by the Professional, the Owner shall make progress payments on account of the Contract Price to the Contractor as provided below and elsewhere in the Contract Documents.

B. Applications for Payment shall be submitted to Owner not later than the tenth (10th) day of the month unless otherwise indicated in the Special Conditions. The period covered by each Application for Payment shall be one (1) calendar month ending on the last day of the previous month.

C. The Owner shall make payment to Contractor for amounts due and approved by Professional not later than thirty (30) days after the Owner receives a properly detailed Application for Payment which is in compliance with the Contract Documents. The Owner shall not have the obligation to process or pay such Application for Payment until it receives an Application for Payment satisfying such requirements. Payments by Contractor and all tiers of Subcontractors to all of their subcontractors and suppliers shall be made in accordance under similar terms as contained in this Paragraph 14.06 C. Contractor shall require that this term be incorporated in all tiers of subcontracts.

D. The Contractor shall promptly pay each Subcontractor and Supplier, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's or supplier's portion of the Work, the amount to which said Subcontractor or supplier is entitled, reflecting percentages actually retained from payments to the Contractor on account of each Subcontractor's or supplier's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor or supplier, require each Subcontractor or supplier to make payments to Sub-subcontractors in similar manner.

E. Neither the Owner nor Professional shall have an obligation to pay or to see to the payment of money to a Subcontractor of any tier or a laborer or employee of Contractor except to the extent required by Laws and Regulations. Retainage provided for by the Contract Documents are to be retained and held for the sole protection of Owner, and no other person, firm or corporation shall have any claim or right whatsoever thereto.

14.07 Failure Of Payment

A. If the Owner is entitled to reimbursement or payment from the Contractor under or pursuant to the Contract Documents, such payment by Contractor shall be made promptly upon demand by the Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if the Contractor fails to promptly make any payment due the Owner, or the Owner incurs any costs and expenses to cure any default of the Contractor or to correct defective Work, the Owner shall have an absolute right to offset such amount against the Contract Price and may, in the Owner's sole discretion, elect either to: (1) deduct an amount equal to that to which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner, or (2) issue a written notice to the Contractor reducing the Contract Price by an amount equal to that to which the Owner is entitled.

14.08 Substantial Completion

A. Substantial Completion is the stage in the progress of the Work as defined in Paragraph 1.01 A.45. as certified by the Professional.

B. When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Owner and the Professional a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Upon receipt of the Contractor's list, Professional will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Professional's inspection discloses any item, whether or not included on the Contractor's list, which is not in

accordance with the requirements of the Contract Documents, the Contractor shall complete or correct such item upon notification by Professional. The Contractor shall then submit a request for another inspection by Professional to determine Substantial Completion. When the Work or designated portion thereof is substantially complete, the Professional will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the Punch List accompanying the Certificate which shall identify all non-conforming, defective and incomplete Work. In no event shall Contractor have more than thirty (30) days to complete all items on the Punch List and achieve Final Completion. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Warranties required by the Contract Documents shall commence on the date of Final Completion and acceptance of the entire Work.

C. At the date of Substantial Completion, the Contractor may apply for, and if approved by Owner's Representative, the Owner, subject to the provisions herein, shall increase total payments to one hundred percent (100%) of the Contract Price less two hundred percent (200%) of the value of any incomplete Work and unsettled claims, as determined by Professional.

14.09 Partial Occupancy Or Use

A. The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities, if any, having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, security, maintenance, heat, utilities, damage to the Work and insurance. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a Punch List to the Professional and Owner as provided under Paragraph 14.09 B. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by Professional.

B. Immediately prior to such partial occupancy or use, the Owner, Contractor and Professional shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work. Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

14.10 Final Completion And Final Payment

A. Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, Professional will promptly make such inspection and, when Professional finds the Work acceptable under the Contract Documents and the Contract fully performed, the will promptly issue a final approval for payment; otherwise, will return Contractor's Final Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application. Submission of a Final Application for Payment shall constitute a further representation that conditions listed in Paragraph 14.10 B. as precedent to the Contractor's being entitled to final payment have been fulfilled. All warranties and guarantees required under or pursuant to the Contract Documents shall be assembled and delivered by the Contractor to the as part of the final Application for Payment. The final approval for payment will not be issued until all warranties and guarantees have been received and accepted by the Owner.

B. Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Professional and the Owner (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work have been paid and satisfied; (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least thirty (30) days' prior written notice has been given to the Owner; (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents; (4) consent of surety to final payment, (5) data establishing payment or satisfaction of obligations, such as receipts, releases and waivers, to the extent and in such form as may be designated by the Owner; (6) reproducible record and marked-up drawings; (7) a certification that all Punch List Work has been completed; (8) all applicable maintenance and operating instructions and warranties and guarantees have been received and accepted by Owner; (9) subject to final payment, a final release of the Owner relating to any and all claims related to the Project; (10) a certification that all operating systems and equipment have passed all tests required by the Contract Documents; and (11) all documents required by the Contract Documents and such data and other documents as Professional may reasonably require.

C. Final Payment constituting the entire unpaid balance due shall be paid by the Owner to the Contractor within thirty (30) days after Owner's receipt of Contractor's Final Application for Payment which satisfies all the

requirements of the Contract Documents and Owner's receipt of all information and documents set forth in Section 14.10.

D. The acceptance by Contractor of its Final Payment shall be and operate as a release of all claims of Contractor against Owner for all things done or furnished or relating to the Work and for every act or alleged neglect of Owner arising out of the Work.

E. No payment under this Contract, including but not limited to final payment, shall constitute acceptance by Owner of any Work or act not in accordance with the requirements of the Contract Documents.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 Termination by Owner for Cause

A. In addition to other rights and remedies granted to Owner under the Contract Documents and by law, the Owner may terminate the Contract if the Contractor:

1. if Contractor commences a voluntary case under any chapter of the Bankruptcy code (Title 11, United States Code), as now or hereafter in effect, or if Contractor takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to bankruptcy or insolvency;
2. if a petition is filed against Contractor under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against Contractor under any other federal or state law in effect at the time relating to bankruptcy or insolvency;
3. if Contractor makes a general assignment for the benefit of creditors;
4. if a trustee, receiver, custodian or agent of Contractor is appointed under applicable law or under contract, whose appointment or authority to take charge of property of Contractor is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of Contractor's creditors;
5. if Contractor admits in writing an inability to pay its debts generally as they become due;
6. refuses or fails to supply enough properly skilled workers, superintendents, foremen or managers;
7. refuses or fails to supply sufficient or proper materials;
8. fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
9. breaches any warranty or representations made by the Contractor under or pursuant to the Contract Documents;
10. fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with all the requirements of the Contract Documents;
11. fails after commencement of the Work to proceed continuously with the construction and completion of the Work for more than ten (10) days, except as permitted under the Contract Documents;
12. fails to maintain a satisfactory rate of progress with the Work or fails to comply with approved construction schedules or Schedule of Submittals;
13. fails to correct defective Work.
14. if Contractor fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the approved Schedule as revised from time to time);
15. if Contractor disregards Laws or Regulations of any public body having jurisdiction;
16. if Contractor disregards the authority of Professional; or
17. if Contractor otherwise violates in any substantial way any provisions of the Contract Documents;

15.02 Notice of Termination

A. Owner may, without prejudice to any other rights or remedies, after giving Contractor and the surety, seven days written notice terminate the Contract and exclude Contractor from the site and take possession of the Work and of all Contractor's tools, appliances, construction equipment and machinery at the site Contractor (without liability to Contractor for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which Owner has paid Contractor but which are stored elsewhere, and finish the Work as Owner may deem expedient. In such case, Contractor shall not be entitled to receive any further payment until the Work is finished.

B. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work and damages, costs and expenses caused thereby (including but not limited to fees and charges of engineers, Professionals, attorneys and other professionals and court and arbitration costs) such excess will be paid to Contractor. If such costs exceed such unpaid balance, Contractor shall pay the difference to Owner. Such costs incurred by Owner will be approved as reasonable by Professional and incorporated in a Change Order, but when exercising any rights or remedies under this Article Owner shall not be required to obtain the lowest price for the Work performed.

C. In exercising the Owner's right to secure completion of the Work under any of the provisions hereof, the Owner shall have the right to exercise the Owner's sole discretion as to the manner, methods, and reasonableness of costs of completing the Work.

D. The rights of the Owner to terminate pursuant to Section 15.01 will be cumulative and not exclusive and shall be in addition to any other remedy provided by law or the Contract Documents.

15.03 Suspension by the Owner for Convenience

A. The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

B. An adjustment to the Contract Price will be made for increases in the cost of performance of the Contract caused by suspension, delay or interruption. However, in the event of a suspension under this Section 15.02, Contractor hereby waives and forfeits any claims for payment of any special, indirect, incidental or consequential damages such as lost profits, loss of savings or revenue, loss of anticipated profits, idle labor or equipment, home office overhead, and similar type damages. No adjustment will be made to the extent:

1. that performance is, was, or would have been so suspended, delayed or interrupted by another cause for which the Contractor in whole or in part is responsible, or
2. that an equitable adjustment is made or denied under another provision of this Contract.

15.04 Owner's Termination For Convenience

A. The Owner may, at any time, terminate the Contract in whole or in part for the Owner's convenience and without cause. Termination by the Owner under this Section 15.04 shall be by a notice of termination delivered to the Contractor specifying the extent of termination and the effective date.

B. Upon receipt of a notice of termination for convenience, the Contractor shall immediately, in accordance with instructions from the Owner, proceed with performance of the following duties regardless of delay in determining or adjusting amounts due under this Paragraph:

1. cease operation as specified in the notice;
2. place no further orders and enter into no further subcontracts for materials, labor, services or facilities except as necessary to complete Work not terminated;
3. terminate all subcontracts and orders to the extent they relate to the Work terminated;
4. proceed to complete the performance of Work not terminated; and
5. take actions that may be necessary, or that the Owner may direct, for the protection and preservation of the terminated Work.

C. Upon such termination, the Contractor shall recover as its sole remedy payment for Work properly performed in connection with the terminated portion of the Work prior to the effective date of termination and for items properly and timely fabricated off the Project site, delivered and stored in accordance with the Owner's instructions and for all claims, costs, losses and damages incurred in settlement of terminated contracts with Subcontractors and suppliers. The Contractor hereby waives and forfeits all other claims for payment and damages, including, without limitation, anticipated profits, consequential damages and other economic losses.

D. The Owner shall be credited for (1) payments previously made to the Contractor for the terminated portion of the Work, (2) claims which the Owner has against the Contractor under the Contract and (3) the value of the materials, supplies, equipment or other items that are to be disposed of by the Contractor that are part of the Contract Price.

E. Upon determination that termination of Contractor pursuant to Paragraph 15.01 was wrongful, such termination will be deemed converted to a termination for convenience pursuant to Paragraph 15.04, and Contractor's sole and exclusive remedy for wrongful termination is limited to recovery of the payments permitted for termination for convenience as set forth in Paragraph 15.04.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 Methods and Procedures

A. All Claims, disputes, and other matters in question between the Contractor and the Owner arising out of or relating to this Agreement or breach thereof shall be subject to and decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect unless the parties mutually agree otherwise. At the Owner's sole option, and only upon the exercise of that sole option by the Owner, together or separately as the Owner sees fit, any dispute or other matter in question as described above may be submitted, prior to any arbitration, to nonbinding mediation in accordance with the then-current mediation rules of the American Arbitration Association. The mediation may include by consolidation, joinder or in any other manner, at the Owner's sole option, any other persons whom the Owner believes to be substantially involved in a common question of fact or law.

B. Any arbitration arising out of or relating to this Agreement or the breach thereof may include, by consolidation, joinder, or in any other manner, at the Owner's sole option, any other entities or persons whom the Owner believes to be substantially involved in a common question of fact or law.

C. A demand for arbitration shall be provided in writing to the other party to this Agreement and filed with the American Arbitration Association. A demand for arbitration shall be made within a reasonable time after the claim, dispute, or other matter in question has arisen. In no event shall the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such claim, dispute, or other matter in question would be barred by the applicable statutes of limitations. If the Owner shall elect to proceed with nonbinding mediation, such election shall be made, in writing, to the Contractor and the American Arbitration Association. Such election may be made before or after either party files any demand for arbitration, but the Owner's unilateral right to proceed with mediation shall be forfeited upon the final designation of an arbitrator by the American Arbitration Association. The election to proceed with nonbinding mediation shall not prejudice the right of either party to proceed with arbitration.

D. Unless the parties agree otherwise, discovery as provided by the Federal Rules of Civil Procedure shall be allowed in the arbitration, provided, that the arbitrator(s) shall have the authority to restrict unduly burdensome and onerous discovery. The parties shall exchange documents the parties intend to use at the hearing and disclose witnesses they anticipate testifying at the hearing. If a party intends to use an expert, such party shall provide the other party an expert report disclosing the expert's opinions and the reasons for the opinion.

E. The place of the arbitration shall be Grain Valley, Missouri.

F. This agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. Any award rendered by the arbitrator(s) shall be final and enforceable by any party to the arbitration, and judgment may be rendered upon it in accordance with applicable law in any court having jurisdiction thereof.

16.02 Continuing Performance

A. Unless otherwise agreed in writing, and notwithstanding any other rights or obligations of either of the parties under this Agreement, the Contractor shall carry on with the performance of its Services hereunder during the pendency of any claim, dispute, or other matter in question or arbitration or other proceeding to resolve any claim, dispute, or other matter in question, and the Owner shall continue to make payments of undisputed amounts to the Contractor in accordance with this Agreement, but the Owner shall be under no obligation to make payments to the Contractor on or against such claims, disputes, or other matters in question, during the pendency of any arbitration, nonbinding mediation, or other proceeding to resolve such claims, disputes, or other matters in question.

16.03 Exceptions

A. Regardless of any term or provision herein to the contrary, claims arising out of actions on claims filed or asserted by third parties on account of personal injury or death of any person shall not be subject to the terms and provisions of this Article 16.

ARTICLE 17 - MISCELLANEOUS

17.01 Notice

All notices required to be given under the terms of this Contract shall be made in writing and shall be deemed to have been made and given if sent by registered or certified mail, postage prepaid or hand-delivered (hand delivery to include by air courier services such as Federal Express, Airborne Express, or Purolator or other reputable delivery service guaranteeing delivery and providing a receipt) to the party to receive such notice at the addresses specified below or to such other address as any party hereto may subsequently specify by written notice to the other party:

 If to Owner: Person and address contained in the Agreement

 If to Contractor: Address contained in the Agreement or the temporary office of Contractor at the Site.

17.02 Rights and Remedies

 A. Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law. No action or failure to act by the Owner or Professional will constitute a waiver of a right or duty afforded to Owner under the Contract Documents, nor will such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing. The terms of this Contract and all representations, indemnifications, warranties and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Work and termination or completion of the Work and shall remain in effect so long as the Owner is entitled to protection of its rights under applicable law. Contractor shall carry out the Work and adhere to the current construction schedule during all disputes or disagreements with the Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements except as the Owner and Contractor may otherwise agree to in writing.

17.03 Buy American Requirements

 A. Pursuant to the Missouri Domestic Product Procurement (Buy American) Act, RSMo. §§ 34.350 to 34.359, any manufactured goods or commodities used or supplied either in the performance of this Contract or of any subcontract thereto shall be manufactured, assembled or produced in the United States unless one of the exceptions contained in that Act applies. The Contractor shall comply with such requirements and shall provide proof of compliance with this provision both at the time of bid and before any payment is made on the Contract. Pursuant to RSMo. § 71.140, preference shall be given to materials, products, supplies, provisions and all other articles produced, manufactured, compounded, made, or grown in the State of Missouri. The Contractor shall comply with such requirements and shall provide proof of compliance with this provision at the time of bid and before any payment is made on the Contract.

17.04 Successors and Assigns

 A. The Contractor hereby binds itself, its partners, successors, assigns and legal representatives to the Owner in respect to covenants, agreements and obligations contained in the Contract Documents. Contractor shall not assign the Contract or proceeds hereof without written consent of the Owner. If Contractor attempts to make such an assignment without such consent, it shall be void and confer no rights on third parties, and Contractor shall nevertheless remain legally responsible for all obligations under the Contract. The Owner's consent to any assignment is conditioned upon Contractor entering into a written assignment which contains the following language: "it is agreed that the funds to be paid to the assignee under this assignment are subject to performance by the Contractor and to claims and to liens for services rendered or materials supplied for the performance of the Work required in said Contract in favor of all persons, firms, corporations rendering such services or supplying such materials."

17.05 Records

 A. The Owner, or any parties it deems necessary, shall have access to and the right to examine any accounting or other records of the Contractor involving transactions and Work related to this Contract for five (5) years after final payment or five (5) years after the final resolution of any on going disputes at the time of final payment. All records shall be maintained in accordance with generally accepted accounting procedures, consistently applied. Subcontractors of any tier shall be required by Contractor to maintain records and to permit audits as required of Contractor herein.

17.06 General

 A. The Contract Documents are the exclusive statement of the agreement of the parties with respect to its subject matter and the Contract Documents supersedes and replaces all prior agreements, discussions and 295893v1

representations, whether written or oral, relating to the subject matter hereof. The Contract Documents may only be amended, modified or changed by a Modification.

B. All headings, titles and paragraph captions are inserted in this Contract for convenience of reference only, are descriptive only and shall not be deemed to add or detract from or otherwise modify the meaning of the paragraphs.

C. Contractor acknowledges and agrees that time and exact performance are of the essence of this Contract.

D. Contractor and Owner agree to do all acts and things and to make, execute and deliver such written instruments, as shall from time to time be reasonably required to carry out the terms and provisions of the Contract Documents.

E. Any specific requirement in this Contract that the responsibilities or obligations of the Contractor also apply to a Subcontractor is added for emphasis and are also hereby deemed to include a Subcontractor of any tier. The omission of a reference to a Subcontractor in connection with any of the Contractor's responsibilities or obligations shall not be construed to diminish, abrogate or limit any responsibilities or obligations of a Subcontractor of any tier under the Contract Documents or the applicable subcontract.

F. This Contract shall be interpreted, construed, enforced and regulated under and by the laws of the State of Missouri. Whenever possible, each provision of this Contract shall be interpreted in a manner as to be effective and valid under applicable law. If, however, any provision of this Contract, or a portion thereof, is prohibited by law or found invalid under any law, only such provision or portion thereof shall be ineffective, without invalidating or affecting the remaining provisions of this Contract or valid portions of such provision, which are hereby deemed severable. Contractor and Owner further agree that in the event any provision of this Contract, or a portion thereof, is prohibited by law or found invalid under any law, this Contract shall be reformed to replace such prohibited or invalid provision or portion thereof with a valid and enforceable provision which comes as close as possible to expressing the intention of the prohibited or invalid provision.

G. Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the written application of either party the Contract shall forthwith be physically amended to make such insertion or correction.

H. Owner's total liability to Contractor and anyone claiming by, through, or under Contractor for any Claim, cost, loss, expense or damage caused in part by the fault of Owner and in part by the fault of Contractor or any other entity or individual shall not exceed the percentage share that Owner's fault bears to the total fault of Owner, Contractor and all other entities and individuals as determined on the basis of comparative fault principles.

I. Contractor agrees that Owner shall not be liable to Contractor for any special, indirect, incidental, or consequential damage whatsoever, whether caused by Owner's negligence, fault, errors or omissions, strict liability, breach of contract, breach of warranty or other cause or causes whatsoever. Such special, indirect, incidental or consequential damages include, but are not limited to loss of profits, loss of savings or revenue, loss of anticipated profits, labor inefficiencies, idle equipment, home office overhead, and similar types of damages.

J. Nothing contained in this Contract or the Contract Documents shall create any contractual relationship with or cause of action in favor of a third party against the Owner.

K. Any provision or provisions of this Contract to the contrary notwithstanding, Contractor and Owner intend that the relationship between Owner and Contractor shall be that of a project owner and an independent contractor.

L. Payments and amounts due and unpaid by Contractor to Owner under the Contract Documents shall bear interest from the date payment is due at the rate of one and one-half percent (1.5%) per month.

M. The terms "hereof," "herein," and "hereunder" and words of similar import shall be construed to refer to this Contract as a whole, and not to any particular paragraph, section or provision unless expressly so stated.

N. Should Owner be required to institute any action, including, any arbitration proceeding, to enforce any of its rights set forth in the Contract Documents, then Owner shall be entitled to reimbursement from Contractor for all reasonable attorneys' fees and costs incurred. In the event Contractor institutes any action, including any arbitration proceeding, against Owner and in the further event Owner prevails in such action, Contractor shall pay Owner the amount of its reasonable attorneys' fees incurred in such action.

DETAILED SPECIFICATIONS

CITY OF GRAIN VALLEY, MO

TECHNICAL SPECIFICATIONS

ARMSTRONG PARK ALL-INCLUSIVE PLAYGROUND

LAMP RYNEARSON PROJECT NO. 0322006.03

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SECTION 01 10 00 - SUMMARY OF WORK - GENERAL

PART 1 - GENERAL

1.01 PROJECT

- A. Project Name: 0322006.03 Grain Valley, MO Armstrong Park All-Inclusive Playground
- B. Owner's Name: City of Grain Valley, Missouri
- C. The Project consists of

1.02 RELATED SECTIONS

- A. Section 01 50 00 - Temporary Facilities and Controls

1.03 SECTION INCLUDES

- A. Contractor's duties:
 - 1. Except as specifically noted, provide and pay for:
 - a. Labor, materials, and equipment.
 - b. Tools, construction equipment, and machinery.
 - c. Water, heat, and utilities required for construction.
 - d. Other facilities and services necessary for proper execution and completion of work.
 - 2. Pay legally required sales, consumer, and use taxes.
 - a. Owner will furnish Contractor a state sales tax number for use by the Contractor.
 - b. Other use taxes shall be paid by the Contractor.
 - 3. Secure and pay for, as necessary for proper execution and completion of work, and as applicable at time of receipt of bids:
 - a. Permits.
 - b. Government fees.
 - c. Licenses.
 - 4. Give required notices.
 - 5. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of work.
 - 6. Promptly submit written notice to Engineer of observed variance of Contract Documents from legal requirements.
It is Contractor's responsibility to make certain that drawings and specifications comply with codes and regulations.
 - a. Appropriate modifications to Contract Documents will adjust necessary changes.
 - b. Assume responsibility for work known to be contrary to such requirements, without notice.
 - 7. Enforce strict discipline and good order among employees. Do not employ on work:
 - a. Unfit persons.
 - b. Persons not skilled in assigned task.
 - 8. Pay minimum wages and comply with prevailing wage law requirements.
 - 9. Comply with nondiscrimination requirements.
 - 10. Perform all supervision and work necessary to provide safe working conditions for completion of all required excavation and construction work.

11. Verify dimensions indicated on drawings with field dimensions before fabrication or ordering of materials. Do not scale drawings.
12. Notify Owner of existing conditions differing from those indicated on the Drawings. Do not remove or alter structural components without prior written approval.

1.04 CONTRACTOR USE OF PREMISES

- A. Confine Operations at site to areas permitted by:
 1. Law.
 2. Ordinances.
 3. Permits.
 4. Contract Documents.
 5. Owner.
- B. Do not unreasonably encumber site with materials or equipment.
- C. Do not load structure with weight that will endanger structure.
- D. Assume full responsibility for protection and safekeeping of products stored on premises.
- E. Move any stored products which interfere with operations of Owner.
- F. Obtain and pay for use of additional storage or work areas needed for operations.
- G. Use of site.

Exclusive and complete for execution of work, except:

 1. Contractor shall maintain access to existing facilities.
 2. Owner shall have access to existing facilities.
- H. Operation of the existing facilities:
 1. It is essential that the existing facilities be kept in operation during the construction period. Short periods of shutdown will be possible to permit modifications or connections to or tie in with existing facilities. The time period will vary with Owner usage at different times of the day.
 2. In some instances, it will be necessary to complete and put new facilities into operation prior to commencing work on existing facilities which would require their removal from service.
 3. Where interruption of existing facilities is necessary, the Contractor is to plan their work in cooperation with facility operating personnel for the least possible disruption of service. Night or weekend work may be necessary. When facility operation must be suspended because of the Contractor's work, they shall have all necessary materials and equipment on hand and have ample workforce available prior to beginning the work.

1.05 POSITION, GRADIENT, AND ALIGNMENT

- A. All construction work shall be done to the lines and grades shown on the Plans. The Engineer will establish on the site the required benchmarks and baselines. Detailed survey and staking for location and grade of individual structures or other construction, as well as measurements and elevations within structures, shall be performed by the Contractor.
- B. Any work done without being properly located and established by baselines, offset stakes, benchmarks, or other basic reference points, may be ordered removed and replaced at the Contractor's expense.

1.06 PROTECTION AND MAINTENANCE OF PUBLIC AND PRIVATE PROPERTY

- A. Protect, shore, brace, support, and maintain all underground pipes, conduit, drains, and other underground construction uncovered or otherwise affected by the construction work performed. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, and other surface structures affected by construction operations in connection with the performance of the Contract shall be restored to the original condition thereof as determined and approved by the Engineer. All replacements of such underground construction and surface structures or parts thereof shall be made with new materials conforming to the requirements of these Specifications or, if not specified, as approved by the Engineer.
- B. The Contractor shall be responsible for all damage to streets, roads, highways, railroads, shoulders, ditches, embankments, culverts, bridges, power transmission lines, oil lines, gas lines, or other public or private property or facility, regardless of location or character, which may be caused by moving, hauling, or otherwise transporting equipment, materials, or workers to or from the work or any part or site thereof, whether by them or their subcontractor or subcontractors. The Contractor shall make satisfactory and acceptable arrangements with the owner of, or the agency or authority having jurisdiction over, the damaged property or facility concerning its repair or replacement or payment of costs incurred in connection with said damage.

1.07 INSPECTION BY PUBLIC AGENCIES

- A. Authorized representatives of the Engineers and Owner shall have access to the work wherever it is in preparation or progress. The Contractor shall provide proper facilities for such access and inspection.

1.08 CONTRACTOR'S RESPONSIBILITY FOR MATERIALS

- A. The Contractor shall be responsible for the condition of all materials furnished by them, and they shall replace at their own cost and expense any and all such material found to be defective in design or manufacture, or which has been damaged after delivery. This includes the furnishing of all materials and labor required for replacement of any installed material which is found to be defective at any time prior to the expiration of 1 year from the date of final payment.

1.09 EXPLANATION OF PROPOSAL

- A. The Owner reserves the right to select any or all alternates. The best and lowest bid will be determined by bidder's qualifications and the low total price for the base bid and the alternate bid items selected by the Owner.
- B. Base bid:
The base bid includes complete construction of the project, ready for use, except for items specifically listed as alternate bid items.

1.10 "OR EQUAL" STATEMENT

- A. When a manufacturer's name is used in these Specifications it is used to establish a standard and the words "or equal," if not stated, is implied.

1.11 CONTRACTOR USE OF SITE AND PREMISES

- A. Provide access to and from site as required by law and by Owner:

1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
2. Do not obstruct roadways, sidewalks, or other public ways without permit.

PART 2 - PRODUCTS

Not applicable to this section.

PART 3 - EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 01 20 00 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Method of measurement.
- B. Basis of payment.

1.02 RELATED SECTIONS

- A. Agreement Exhibit E Bid Form
- B. Section 01 10 00 - Summary of Work - General
- C. Section 01 78 00 - Project Closeout

1.03 UNIT PRICES

- A. Various items of work are bid on a unit price basis to provide flexibility for change in quantities during construction. Unless a change in the indicated limits is made during construction, final payment will be based on the item total listed in the Proposal, as if it was a Lump Sum amount.
- B. If changes are made in the indicated limits during construction, payment for the item will be adjusted upward or downward, in accordance with the actual change in plan quantity, using the unit price for the item listed in the Proposal.
- C. The Contract unit prices bid in the Proposal shall be full compensation for furnishing, preparing, transporting, delivering, and placing all materials, and for all labor, equipment, tools, and incidentals, as well as all subsidiary items, necessary to complete the Work.
- D. All items shown on the Plans or covered by these Specifications but for which there are no unit or Lump Sum prices, will not be paid for directly but will be considered subsidiary items in connection with items for payment. The Contractor shall include allowance for all such items in their unit prices bid.
- E. Quantities of unit price items can be adjusted upward or downward by the Owner to the extent that the final Contract amount for that section is between 80 and 120% of the original estimated Contract price. Amounts of individual items may be varied to any extent and individual items may be omitted entirely as long as the above limits are met. In the event that the total quantity of work is adjusted upward or downward beyond the above limits, that portion of the work may be performed at the original bid unit prices if agreed by the Owner and Contractor, or in accordance with provisions for additional, omitted, or changed work.
- F. At the Contractor's option and expense, cross-sections of fill areas before and after construction may be made for consideration in arriving at final quantities of earthwork. Otherwise, the quantities contained in the Proposal shall be considered final.

PART 2 - PRODUCTS

Not applicable to this section.

PART 3 - EXECUTION

3.01 GENERAL

- A. The method of measurement and basis of payment for each item as listed in the Bid Form shall be as stipulated in each of the following items.
1. Mobilization
 - a. This item will be paid for as a lump sum item. This item shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; for the establishment of all offices, buildings, and other facilities necessary for work on the project, and for all other work and operations which must be performed or costs incurred prior to beginning work on the various items on the project site.
 - b. Payment shall be based on the contract lump sum bid price for Mobilization, when payments become due partial payments will be made as follows:
 - 1) When less than 100% of the original contract amount is completed, the amount paid for Mobilization will be based on the percentage of the original contract completed.
 - 2) When the project is complete and accepted, 100% of the original amount bid for Mobilization may be paid.
 - c. No adjustment will be made in the Lump Sum Bid Price because of overruns in original contract items developed in the process of construction.
 2. Contractor Construction Staking
 - a. This item will be paid for as a lump sum item. This item shall consist of establishing or re-establishing the project centerline; referencing or re-referencing all necessary control points; running a level circuit to check or reestablish plan benchmarks; setting other benchmarks as needed; taking any original cross sections needed that are not incorporated in the plans; stake right-of-way's or re-stake right-of-way's where needed if it has not been previously staked and perform all construction layout and reference staking necessary for the proper control, record any section corners on the project and satisfactory completion of all structures, grading, paving, drainage and all other appurtenances required for the completion of the construction work and acceptance of the project.
 - b. Payment shall be based on the contract lump sum bid price for Construction Staking, when payments become due partial payments will be made as follows:
 - 1) When less than 100% of the original contract amount is completed, the amount paid for Construction Staking will be based on the percentage of the original contract completed.
 - 2) When the project is complete and accepted, 100% of the original amount bid for Construction Staking may be paid.
 - c. No adjustment will be made in the Lump Sum Bid Price because of overruns in original contract items developed in the process of construction.
 3. Removal of Existing Structures
 - a. This work shall consist of the removal and disposal of existing structures as shown on the plans and/or as directed by the Engineer.
 - b. Payment for "Removal of Existing Structures" will be considered subsidiary to other bid items.

4. Pipe (X") (RCP Class III) (RCPA Class III) (HDPE) (DIP) (CSP) (CSPA)
 - a. Pipe will be measured for payment on a horizontal plane, per linear foot, along the longitudinal centerline of the pipe as installed. Measurement will be made between all manholes and the inside edge of the manholes on each end of the pipe.
 - b. Payment for Pipe, of each designated type and size, shall be paid for at the contract unit price, per linear foot and shall cover all costs of furnishing and installation, including all excavation and trenching, pipe, jointing materials, pipe embedment, backfill, concrete encasement, pipe collars, connection to newly installed structures or pipes, and testing of the completed lines unless otherwise stated herein. All flowable fill backfill under street and sidewalk shall be considered subsidiary to pipe placement.
5. Pipe Connection (RCB) (Inlet)
 - a. The engineer shall measure each connection made to an existing manhole structure or inlet. Existing structures may have multiple pipe connections. Pipe connections for new structures are subsidiary to installing the new structure.
 - b. Payment will be made at the contract unit price per pipe connection.
6. Inlet (Grate) (Area) (Catch Basin) (X' x X')
 - a. The Engineer will measure each Inlet of the specified size and type.
 - b. Payment for installing new Inlets, as detailed on the Drawings, including furnishing all materials, labor, and equipment shall be paid for at the contract unit price per each and shall include the pipe connections, inlet foundation, invert construction, walls, top section, steps, grate, inlet frame, concrete fill and supports, removal of existing structure and all other costs in connection therewith to make a complete construction.
7. Clearing, Grubbing, and Demolition
 - a. This item will not be paid for directly but shall be considered subsidiary to other bid items. This item shall include all costs for labor, equipment, disposal of all resulting refuse and debris, and all incidental and appurtenant work required to complete this item, which includes, but is not limited to, grading berms, clearing scrub trees/bushes, tree removal, stump grinding, grading swales, and all other appurtenances required for the completion of the construction work and acceptance of the project.
 - b. No direct payment shall be made of this item.
8. Sediment Fence
 - a. The Engineer will not measure the Sediment Fence as it shall be considered subsidiary to the bid item Erosion Control. The contractor will install new fence if existing fence is damaged during construction. This item shall include the periodic maintenance and cleanout of sediment as needed during the construction of the project.
 - b. Payment shall include all labor, material, and equipment necessary to install the Sediment Fence as detailed in the construction drawings. The price shall include the removal of the sediment fence upon completion of construction
9. Grading
 - a. The Engineer will not measure Fine Grading. The unit price named in the bid shall include all labor, material, and equipment necessary to complete Grading operations.
 - b. Grading will be paid for at the Contract Lump Sum price and shall include all topsoil, labor, tools, equipment, hauling, placing, spreading, and incidentals

necessary to establish a surface for other construction, including grading after other elements are in place.

10. Erosion Control

- a. This item will be paid for as a lump sum item. This item shall include all costs in connection with furnishing and properly maintaining all erosion and sedimentation control devices to adequately protect existing downstream features in accordance with City, State, and Federal requirements, and other precautionary measures as required by the project drawings, specifications, and specific job conditions, including such costs as securing proper permits and approvals. This item shall include the periodic maintenance and cleanout of the erosion control devices as needed during the construction of the project. The contractor will install new erosion control devices if existing erosion control devices are damaged during construction. This item shall include temporary seeding of areas where no work will occur for more than 14 days unless permanent seeding or other vegetation can be installed.
- b. Payment shall be based on the contract lump sum bid price for Erosion Control, when payments become due partial payments will be made as follows:
 - 1) When less than 100% of the original contract amount is completed, the amount paid for Erosion Control will be based on the percentage of the original contract completed.
 - 2) When the project is complete and accepted, 100% of the original amount bid for Erosion Control may be paid.
- c. No adjustment will be made in the Lump Sum Bid Price because of overruns in original contract items developed in the process of construction.

11. Concrete Pavement (X") (KCMMB4K)

- a. The Engineer will not directly measure portland cement concrete pavement as it shall be considered subsidiary to the bid item for Poured in Place Playground surfacing.
- b. Payment for portland cement "Concrete Pavement" of the specified thickness and type is full compensation for the specified work.

12. Sidewalk (4") (KCMMB4K)

- a. The Engineer will measure the sidewalk construction by the square foot of exposed surface of specified thickness.
- b. Payment for Sidewalk shall be at the contract unit price per square foot installed. Sidewalks will have a minimum concrete thickness of 4 inches and transverse contraction joints shall be installed at a minimum interval of 4 feet, or matching sidewalk width. Expansion joints will be placed at all locations where sidewalk construction abuts existing sidewalks, concrete driveways, or any structure and at a maximum interval of 125 feet. This item shall include all costs for labor and material, unclassified excavation, over-excavation of soft spots, backfill, grading, subgrade compaction, furnishing and placing Portland cement concrete materials, patterning, integral color or staining, reinforcing, joint materials, curing compounds, structure transitions, all testing, and any resulting repairs, and all incidental and appurtenant work required to complete the item.

13. Playground Curb (KCMMB4K)
 - a. The Engineer will measure the Playground Curb by the linear foot.
 - b. Payment for concrete Playground Curb shall be at the contract unit price per linear foot installed. This item shall include all costs for labor and material, unclassified excavation, over-excavation of soft spots, backfill, grading, subgrade compaction, furnishing and placing Portland cement concrete materials, patterning, integral color or staining, reinforcing, joint materials, curing compounds, structure transitions, all testing and any resulting repairs, construction Playground Curb and all incidental and appurtenant work required to complete the item.
14. Junction Box (X' x X')
 - a. The Engineer will measure each Junction Box of the specified size and type.
 - b. Payment for installing new Junction Boxes, as detailed on the Drawings, including furnishing all materials, labor, and equipment shall be paid for at the contract unit price, per each and shall include the pipe connections, inlet foundation, invert construction, walls, top section, steps, grate, concrete fill, and supports, and all other costs in connection therewith to make a complete construction.
15. Force Account (Set)
 - a. The Engineer will measure each Force Account item as defined in the proposed price approved in accordance with Section 01 29 00 - Force Account.
 - b. Payment for each Force Account item will be in accordance with the pre-approved proposed price. Payment for Force Account (SET) shall be paid for on an extra work basis not to exceed the contract set price.

END OF SECTION

SECTION 01 25 00 - SUBSTITUTIONS AND PRODUCT OPTIONS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Substitutions and product options.

1.02 RELATED SECTIONS

- A. Section 01 33 23 - Shop Drawings, Product Data, and Samples

PART 2 - PRODUCTS

2.01 PRODUCTS LIST

- A. Within 30 days after date of Contract, submit to Engineer five copies of complete list of all products which are proposed for installation.
- B. Tabulate list by each Specification section.
- C. For products specified under reference standards, include with listing of each product:
 - 1. Name and address of manufacturer.
 - 2. Trade name.
 - 3. Model or catalog designation.
 - 4. Manufacturer's data:
 - a. Performance and test data.
 - b. Reference standards.

PART 3 - EXECUTION

3.01 CONTRACTOR'S OPTIONS

- A. For products specified only by reference standards, manufacturer shall submit data for approval 10 days prior to bid date or by date indicated on the Notice to Bidders.
- B. For products specified by naming several products or manufacturers, select any product and manufacturer named.
- C. For products specified by naming one product, Contractor must submit a request, as required for substitution, for any product not specifically named.

3.02 SUBSTITUTIONS

- A. Submit five copies of request for substitution. Include in request:
 - 1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 - 2. For products:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature.
 - 1) Product description.
 - 2) Performance and test data.
 - 3) Reference standards.
 - c. Samples.
 - d. Name and address of similar projects on which product was used, and date of installation.
 - 3. For construction methods:

- a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
4. Itemized comparison of proposed substitution with product or method specified.
5. Data relating to changes in construction schedule.
6. Relation to separate contracts.
- B. In making request for substitution, Bidder represents:
 1. They have personally investigated proposed product or method and determined that it is equal or superior in all respects to that specified.
 2. They shall provide the same guarantee for substitution as for product or method specified.
 3. They shall coordinate installation of accepted substitution into work, making such changes as may be required for work to be complete in all respects.
 4. They waive all claims for additional costs related to substitution which consequently becomes apparent.
 5. Cost data is complete and includes all related costs under their contract, but excludes:
 - a. Costs under separate contracts.
 - b. Engineer's redesign.
- C. Substitutions will not be considered if:
 1. They are indicated or implied on Shop Drawings or Project Data submittals without formal requests submitted in accord with Paragraph 1.04.
 2. Acceptance will require substantial revision of Contract Documents.
- D. Engineer will notify Bidders of all approved substitutions by Addendum listing manufacturers of each item.

END OF SECTION

SECTION 01 29 00 - FORCE ACCOUNT

PART 1 - GENERAL

1.01 GENERAL

- A. This work shall cover miscellaneous extra work required during the course of construction.
- B. Before the extra work is performed, the Contractor shall submit a proposed price in accordance with the Contract requirements for approval by the Engineer and shall have received the written approval of the Engineer, prior to commencing the proposed extra work.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

Not applicable to this Section.

END OF SECTION

SECTION 01 29 76 - APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Progress payment and final payment.

1.02 RELATED SECTIONS

- A. Section 01 29 00 - Force Account

1.03 SUBMITTALS

- A. Progress payment submittal:

1. Make formal submittal by filling in the agreed data, by word processor or neat lettering in ink, on Application for Payment, plus continuation sheet or sheets.
2. Included with certificate for payment shall be properly executed bills of sale for materials and equipment upon which payment is being requested.
3. Sign and notarize the application and certificate for payment.
4. Submit the original and three copies to the Engineer for payment approval.
5. Payments shall be submitted to the Engineer on the 20th of each month for approval. Owner will process payment submittal within 30 days after Engineer approval.

- B. Final payment:

Final payment shall be processed as described in Section 01 77 00 of these Specifications.

1.04 QUALITY ASSURANCE

- A. Prior to start of construction, secure the Engineer's approval of the schedule of values to be submitted under the Regulations of the Contract and further described in these Specifications.
- B. During progress of the Work, modify the schedule of values for approval by the Engineer to reflect changes in the contract sum due to change orders or other modifications of the Contract or Work schedule.
- C. Base requests for payment on the approved Work completed, not to exceed the schedule of values.

PART 2 - PRODUCTS

Not applicable to this section.

PART 3 - EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 01 31 19 - PROJECT MEETINGS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Project meeting.
- B. Delays in meeting schedules shall not constitute an allowable extension of time when determining liquidated damages.

1.02 RELATED SECTIONS

- A. Section 01 33 23 - Shop Drawings, Product Data, and Samples
- B. Section 01 78 39 - Project Record Documents

1.03 PRE-CONSTRUCTION MEETING

- A. Schedule after date of notice to proceed.
- B. Attendance:
 - 1. Owner.
 - 2. Engineer.
 - 3. General Contractor.
 - 4. Subcontractors.
 - 5. Representatives of governmental or other regulatory agencies.
- C. Minimum agenda:
 - 1. Distribute and discuss:
 - a. List of major subcontractors.
 - b. Tentative construction schedule.
 - 2. Critical work sequencing.
 - 3. Relation and coordination of prime contractors.
 - 4. Designation of responsible personnel.
 - 5. Processing of field decisions and Change Orders.
 - 6. Adequacy of distribution of Contract Documents.
 - 7. Submittal of Shop Drawings, Project Data, and Samples.
 - 8. Procedures for maintaining record documents.
 - 9. Use of premises:
 - a. Office and storage areas.
 - b. Owner's requirements.
 - 10. Major equipment deliveries and priorities.
 - 11. Safety and first-aid procedures.
 - 12. Security procedures.
 - 13. Housekeeping procedures.

1.04 PROJECT MEETINGS

- A. Hold called meetings as progress of work dictates.
- B. Location of meetings:

Job Site, or as indicated in notice.
- C. Attendance:
 - 1. Engineer or Engineer's representative.
 - 2. General Contractors.
 - 3. Subcontractors as pertinent to agenda.

D. Minimum agenda:

1. Review work progress since last meeting.
2. Note field observations, problems, and decisions.
3. Identify problems that impede planned progress.
4. Revise construction schedule as indicated.
5. Plan progress during next work period.
6. Coordinate projected progress with other prime contractors.
7. Review submittal schedules, expedite as required to maintain schedule.
8. Maintaining of quality and work standards.
9. Review changes proposed by Owner for:
 - a. Effect on construction schedule.
 - b. Effect on completion date.
10. Complete other current business.

PART 2 - PRODUCTS

Not applicable to this section.

PART 3 - EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 01 32 00 - PROJECT VIDEO

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The Work shall include creating high quality project video recordings for the following:
 - 1. Surface Video: Record surface conditions prior to the beginning of construction. For all Sites that require open-cut construction, Contractor shall record all surface conditions along the access routes and the Work sites. Contractor shall include the total cost for all surface and structure video in their lump sum price Bid for "Mobilization."
 - 2. Internal Video: Contractor shall be responsible for internal CCTV inspection of newly constructed point repairs, total line replacements, and Cured-In-Place Pipe Linings. Contractor shall include the total cost for CCTV inspection in their total price as indicated on the Bid Form. No separate payment for CCTV inspection shall be allowed.
- B. Quality Assurance:
 - 1. A qualified individual or commercial company who is familiar with the equipment and techniques necessary to complete the video recording shall perform the project video.

1.02 VIDEO RECORDINGS

- A. General:
 - 1. The following requirements shall apply to both surface and internal video recordings for Section 02 01 00 - Restoration; 33 31 00 - Sewer Pipe; 33 05 61 - Manholes and Special Structures.
 - a. Audio: Each recording shall begin with a verbal description of the current date, project name, and municipality and be followed by the general location, e.g. street address, general direction of progress, and segment number.
 - b. Video: Transparent information must appear on the viewing screen. This information will consist of the date and time of recording. The date information will contain the month, day, and year.
 - c. Digital: To preclude the possibility of tampering or editing in any manner, all video recordings must, by electronic means, display continuously and simultaneously generated transparent digital information including the date and time of recording. The date information will contain the month, day, and year.
 - d. Audio-Video recording shall be delivered on a DVD or portable storage device.
 - e. Video output from camera(s) used must be capable of producing NTSC-525 lines/60 fields, color format. Resolution shall have a minimum 600 lines of resolution for optimum color imagery and minimum lag through 10 foot candles, with Geometric Distortion not to exceed 1.5% of picture height at any point in picture area.
 - f. Any portion of the video recording not conforming to specifications shall be rejected.
 - g. Any recorded coverage not acceptable to the Engineer shall be re-filmed at no additional charge. The Contractor shall reschedule unacceptable coverage 5 days after being notified.

- h. All DVDs (discs and cases) shall be properly identified by DVD number, location, project name, and municipality in a manner acceptable to the Engineer.
- i. One original and one copy are to be provided. The original shall be submitted to the Engineer and the copy to the Contractor.
- j. Surface and internal video records required for Work as described in Division II – “Site Work,” shall be considered incidental to other Contract Items and no separate payment will be approved for record videos.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

3.01 SURFACE VIDEO

- A. Quality. A high-quality project video record of existing surface conditions shall be created and updated by the Contractor prior to beginning construction, after construction, and at critical times during the construction process. The following location information shall be provided on color audio-video recordings.
- B. Recording. All recording shall be performed by the Contractor, accompanied by the Resident Project Representative, and reviewed prior to construction.
- C. Coverage. The recorded coverage shall include all surface features located within the zone of influence of construction supported by appropriate audio description. Audio description shall be made simultaneously with video coverage. Such coverage shall include, but not be limited to, all existing driveways, sidewalks, fences, curbs, ditches, roadways, landscaping, trees, culverts, headwalls, retaining walls, or buildings located within such zones of influence. Particular and detailed attention shall be given to any defects noted, such as cracks, disturbed areas, damaged items, or as may be required by the Engineer. It is the intent of this coverage to accurately and clearly document pre-existing, post-construction, or construction conditions and especially any items that could result in construction claims. The excavation areas shall be physically marked with high visibility fluorescent paint prior to recording. The markings shall include the stationing.
- D. Zone of Influence. The zone of influence shall be defined as an area within the temporary construction limits as indicated on the plans or within 35 feet of the proposed work, and an additional 20 feet of supplemental coverage shall be provided in residential areas.
- E. Permission. The Contractor shall obtain permission from the owners prior to entering private property for the purpose of recording.
- F. Lighting. To produce the proper detail and perspective, adequate lighting will be required to fill in the shadow area caused by trees, utility poles, road signs, and other such objects in residential areas or as directed by the Engineer.
- G. Houses and Buildings. Houses and buildings shall be identified visually by house number, when visible, in such a manner that structures of the proposed system, i.e. manholes on a sewer system, can be located by reference.
- H. Rate of Speed. The rate of speed in the general direction of travel of the conveyance used during recording shall not exceed 48 feet per minute in residential areas, nor exceed 100 feet per minute in non-residential areas. Panning rates and zoom-in and

zoom-out rates shall be controlled sufficiently such that during playback picture shall be in focus and shall maintain clarity at all times.

- I. Visibility. All recording shall be done during times of good visibility. No recording shall be done during periods of visible precipitation, or when more than 10% of the ground area is covered with snow unless otherwise authorized by the Engineer.
- J. Areas to be Omitted or Added. The Engineer shall have the authority to designate what areas may be omitted or added for audio-video coverage.
- K. Records. A record of the contents of each recording shall be supplied by a run sheet identifying each segment in the recording by location, i.e. identification number, street or road viewing, viewing side, point starting from, traveling direction, and ending destination point.
- L. Wheeled Vehicles. Conventional wheeled vehicles shall not be used.

3.02 INTERNAL TELEVISION INSPECTION VIDEO.

A. Television Inspection Equipment.

- 1. Inspection of sewer line segments shall be performed using color camera units specifically designed and constructed for the method of inspection performed. Skids or tracks attached to the camera unit shall be designed for the size of pipe being televised. Units shall have either automatic or remote focus and iris controls, and the complete systems shall be operable in conditions of 100% humidity.
- 2. A Pan and Tilt viewing camera with the ability to view into the service laterals shall be used. Each service lateral or tap shall be inspected to determine operational status and condition of the piping at the mainline connection. The Pan and Tilt viewing camera shall have a 360 degree vertical rotation and a 270 degree horizontal rotation.
- 3. Lighting shall be suitable to allow a clear picture of the entire periphery of the main sewer pipe. Lighting shall operate in a manner that allows the viewed object to be illuminated no matter what angle of the camera lens. The lighting shall be built into the unit so that the lamps remain aligned with the lens. A minimum illumination of 3 lux with a light color in the 2200 - 3200°K range shall be provided.
- 4. The Contractor shall have the necessary camera skids, floats, and rafts available to allow inspection of lines in a manner acceptable to the Engineer under live flow conditions. The complete video system (camera, lens, lighting, cables, monitors, and recorders) shall be capable of producing a picture quality acceptable to the Engineer, and if unsatisfactory, the equipment shall be removed, and no payment shall be made for unsatisfactory inspections.
- 5. Blowers shall be used to clear suspended moisture or fog in pipes prior to inspection. Filming may commence only when ambient temperature above ground is 40°F or more.

B. Television Inspection Methods. The Contractor shall use one of the following methods individually or in combination:

- 1. Conventional color inspection cameras specifically designed for use in sewer inspection work, mounted on conventional camera skids or tracks;
- 2. Conventional color inspection cameras specifically designed for use in sewer inspection work, mounted on floating skids or rafts;
- 3. Special industrial-grade color inspection cameras, contained in waterproof housings, mounted on floating skids or rafts.

- C. Allowable Flow Depth. When depth of flow in the upstream manhole of the line segment being inspected is above the maximum allowable level for television inspection, the flow shall be reduced. The depth of flow shall not exceed the levels shown below for the respective pipe sizes, as measured in the manhole at the time of inspection:

Pipe Diameter (inches)	Maximum Flow Depth (percent of diameter)
10 and smaller	20
12 – 24	25
27 and larger	30

Approval of the Engineer is required to televise sewer lines with flow that is above the allowable depth.

D. Remote Inspection.

1. Television inspection shall be done one line segment at a time. The inspection shall proceed from one manhole to another starting either upstream or downstream and completing in that order for the entire line. When an obstruction prevents the camera from passing through the entire segment, the inspection shall be continued from the opposite manhole before proceeding to the next segment.
2. The camera shall be moved through the line at a moderate rate, stopping when necessary to permit proper documentation of the sewer's condition. In no case will the camera be pulled at a rate greater than 30 feet per minute. The camera will be moved through the line by conventional means of manual winches, power winches, or transporter units with tracks, which do not obstruct camera view or interfere with proper documentation of the sewer conditions. In instances where manual or remote power winches are used to pull the camera through the sewer, constant two-way communication shall be set up between the two manholes of the line being inspected.
3. Accurate and continuous footage readings shall be superimposed on the video recording for each line inspected with remote inspection methods. Also shown shall be the date of the inspection and a manhole number designation, which corresponds to the field logs for each manhole on the line segment inspected.

E. Inspection Documentation.

1. Inspection Logs. Printed location records shall be kept by the Contractor and will clearly show the location in relation to an adjacent manhole of each infiltration point observed during inspection. In addition, other points of significance such as locations of building sewers, unusual conditions, roots, storm sewer connections, broken pipe, presence of scale and corrosion, and other discernible features will be recorded, and a copy of such records shall be supplied to the Engineer. The video recording and written report of the condition of each lateral, if inspected, shall be included along with the identification number corresponding to main sewer log and approximate locations of any pipe defects. The Contractor may record written information during inspection onto any report, but a completed Inspection Log is required for each manhole-to-manhole sewer line segment.
2. Video Recordings. A forward introduction sequence stating the time and date, upstream and downstream manhole numbers, depth, diameter, and pipe material for each length between manholes shall precede the recording of each line segment. The camera shall progress through the pipe indicating the beginning manhole and destination manhole as it marks the footage continuously. Should

- there be a need to access the line from the other direction, a new introduction track shall precede the setup, and the footage shall begin at zero.
3. The camera shall pause as it approaches a service so that the connection between the pipe and the service can be evaluated. The lens shall then rotate to display the interior of the service. The service inspection should reveal any roots, cracks, or capped risers.
 4. Audio description shall accompany the visual. Operator's comments shall contain verbal verification of footage and condition of each service, and any defects or unusual conditions noted in the main.
 5. All video recordings shall be saved as a video file on a DVD or portable storage device. Each DVD shall be professionally labeled showing Owner, project number, project location, the date(s), etc., lines recorded on the disc, and name of the Contractor.

END OF SECTION

SECTION 01 32 16 - CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.01 GENERAL

Scheduling shall provide the least practical inconvenience to the traveling public and to residents along the project.

1.02 SUBMISSION AND CONCURRENCE

- A. Before work is started, the Contractor shall prepare a detailed schedule of all construction operations that shall not only indicate the sequence of the work but also the time of starting and completion of each part. The schedule shall be submitted to the Engineer for their concurrence.
- B. The Engineer may require the Contractor to add to their plant, equipment, or construction forces, as well as increase working hours, if operations fall behind schedule at any time during the construction period.

1.03 PROGRESS REPORTS

- A. A progress report shall be furnished to Engineer with each application for progress payment. If the work falls behind schedule, contractor shall submit additional progress reports at such intervals as Engineer may request.
- B. Each progress report shall include sufficient narrative to describe current and anticipated delaying factors, their effects on the construction schedule, and proposed corrective actions. Any work reported complete, but which is not readily apparent to Engineer, must be substantiated with satisfactory evidence.
- C. Each progress report shall also include three copies of the accepted graphic schedule marked to indicate actual progress.

1.04 WINTER SHUT-DOWN

If the project is shut down over the winter, the area shall be left in a safe condition for the winter. The Contractor shall maintain the project over the winter shutdown period in a manner that there will be no undue hardship or inconveniences to the neighborhood residents or traveling public and in a manner approved by the Owner. Manholes and valve boxes projecting above the base shall be ramped with temporary bituminous cold-mix or asphaltic concrete in order to facilitate the Owner's snow plowing. The temporary surfacing for through traffic shall have a bituminous cold-mix surface as part of the temporary surfacing. Access shall be provided to all properties. Any temporary surfacing required during winter shut-down shall be furnished, placed, and maintained at the Contractor's expense.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

Not applicable to this Section.

END OF SECTION

SECTION 01 33 23 - SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Shop Drawings, Product Data, and Samples required by specification sections.

1.02 RELATED SECTIONS

- A. Section 01 45 29 - Testing Laboratory Services
- B. Section 01 77 00 - Project Closeout
- C. Section 01 78 39 - Project Record Documents

1.03 SHOP DRAWINGS

- A. Original drawings, prepared by Contractor, subcontractor, supplier, or distributor, which illustrate some portion of the Work; showing fabrication, layout, setting, or erection details.
- B. Prepared by a qualified detailer.
- C. Identify details by reference to sheet and detail numbers shown on Contract Drawings.

1.04 PRODUCT DATA

- A. Manufacturer's standard schematic drawings:
 - 1. Modify drawings to delete information that is not applicable to project.
 - 2. Supplement standard information to provide additional information applicable to project.
- B. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data.
 - 1. Clearly mark each copy to identify pertinent materials, products, or models.
 - 2. Show dimensions and clearances required.
 - 3. Show performance characteristics and capacities.
 - 4. Show wiring diagrams and controls.

1.05 SAMPLES

- A. Physical examples to illustrate materials, equipment, or workmanship, and to establish standards by which completed work is judged.
- B. Office samples: of sufficient size and quantity to clearly illustrate:
 - 1. Functional characteristics of product or material with integrally related parts and attachments devices.
 - 2. Full range of color samples.
 - 3. After review, samples may be used in construction of Project.
- C. Field samples and mock-ups:
 - 1. Erect at Project site at location acceptable to Engineer.
 - 2. Construct each sample or mock-up complete, including work of all trades required in finished work.

1.06 CONTRACTOR RESPONSIBILITIES

- A. Review Shop Drawings, Product Data, and Samples prior to submission.
- B. Verify:
 - 1. Field measurements.

2. Field construction criteria.
3. Catalog numbers and similar data.
- C. Coordinate each submittal with requirements of Work and of Contract Documents.
- D. Contractor's responsibility for errors and omissions in submittals is not relieved by Engineer's review of submittals.
- E. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Engineer's review of submittals, unless the Engineer gives written acceptance of specific deviations.
- F. Notify Engineer, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.
- G. Begin no work which requires submittals until submittal approval.
- H. After Engineer's review, distribute copies.

1.07 SUBMISSION REQUIREMENTS

- A. Schedule submissions at least 10 days before dates approved submittals will be needed.
- B. Submit number of copies of Shop Drawings, Product Data, and Samples that Contractor requires for distribution plus three copies which will be retained by the Engineer.
- C. Submit number of Samples specified in each of Specification sections.
- D. Accompany submittals with transmittal letter, in duplicate, containing:
 1. Date.
 2. Project title and number.
 3. Contractor's name and address.
 4. The number of each Shop Drawing, Product Data, and Sample submitted.
 5. Notification of deviations from Contract Documents.
 6. Other pertinent data.
- E. Submittals shall include:
 1. Date and revision dates.
 2. Project title and number.
 3. The names of:
 - a. Engineer.
 - b. Contractor.
 - c. Subcontractor.
 - d. Supplier.
 - e. Manufacturer.
 - f. Separate detailer when pertinent.
 4. Identification of product or material.
 5. Relation to adjacent structure or materials.
 6. Field dimensions, clearly identified.
 7. Specification section number.
 8. Applicable standards, such as ASTM number or Federal Specification.
 9. A blank space, 3x5 inches, for the Engineer's stamp.
 10. Identification of deviations from Contract Documents.
 11. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements, and compliance with Contract Documents.

1.08 RESUBMISSION REQUIREMENTS

A. Shop Drawings:

1. Revise initial drawings as required and resubmit as specified for initial submittal.
2. Indicate on drawings any changes which have been made other than those requested by Engineer.
3. Product Data and Samples:
Submit new data and samples as required for initial submittal.

1.09 DISTRIBUTION OF SUBMITTALS AFTER REVIEW

A. Distribute copies of Shop Drawings and Product Data which carry Engineer's stamp, to:

1. Contractor's file.
2. Job-site file.
3. Record Documents file.
4. Subcontractors.
5. Supplier.
6. Fabricator.

B. Distribute samples as directed.

1.10 ENGINEER'S DUTIES

A. Review submittals with reasonable promptness.

B. Review for:

1. Design concept of project.
2. Information given in Contract Documents.

C. Review of separate item does not constitute review of an assembly in which item functions.

D. Affix stamp and initials or signature indicating review of submittal.

E. Return submittals to Contractor for distribution.

PART 2 - PRODUCTS

Not applicable to this section.

PART 3 - EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 01 45 29 - TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Testing:

From time to time during progress of the work, the Owner may require that testing be performed to determine that materials provided for the work meet the specified requirements.

1.02 RELATED SECTIONS

- A. Requirements for testing may be described in various Sections of these Specifications. Where no testing requirements are described, but the Owner decides that testing is required, the Owner may require testing to be performed under current pertinent standards for testing.

1.03 QUALITY ASSURANCE

A. Qualifications of testing laboratory:

The testing laboratory will be qualified for the Owner's approval.

B. Codes and standards:

Testing will be in accordance with all pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.

1.04 TEST REPORT DISTRIBUTION

- A. Promptly process and distribute all required copies of test reports and related instructions to ensure all necessary retesting and/or replacement of materials with the least possible delay in progress of the work. The testing laboratory shall distribute copies of the test results as follows:

Owner	1 copy
Engineer Office	1 copy
Contractor Office	1 copy
Project Representative	1 copy
Job Superintendent	1 copy

1.05 PAYMENT FOR TESTING SERVICES

A. Initial services:

1. The Owner shall pay for all initial testing services for concrete testing during construction. All cost required for mix design shall be paid by Contractor.
2. The Owner will pay for all initial testing services for soil and compaction testing.
3. Testing not called for but required by Owner will be paid by the Owner.
4. The Owner shall pay all delivery cost on concrete cylinders.
5. The Contractor shall pay all cost for concrete and asphalt mix design requirements. This cost is not part of testing allowance.

B. Re-testing:

When initial tests indicate non-compliance with the Contract Documents, all subsequent retesting occasioned by the non-compliance shall be performed by the same testing laboratory and the costs thereof will be paid by the Contractor.

1.06 CODE COMPLIANCE TESTING

- A. Inspections and tests required by codes or ordinances, or by a plan approval authority, and made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

1.07 CONTRACTOR'S CONVENIENCE TESTING

- A. Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

PART 2 - MATERIALS

Not applicable to this section.

PART 3 - EXECUTION

3.01 COOPERATION WITH TESTING LABORATORY

- A. Representatives of the testing laboratory shall have access to the Work at all times. Provide facilities for such access in order that the laboratory may properly perform its functions.

3.02 SCHEDULES FOR TESTING

- A. Establishing schedule:
 - 1. By advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.
 - 2. Provide all required time within the construction schedule.
- B. Revising schedule:

When changes of construction schedule are necessary during construction, coordinate all such changes of schedule with the testing laboratory as required.
- C. Adherence to schedule:

When the testing laboratory is ready to test according to the determined schedule but is prevented from testing or taking specimens due to incompleteness of the Work, all extra costs for testing attributable to the delay may be back charged to the Contractor and shall not be borne by the Owner.

3.03 TAKING SPECIMENS

- A. All specimens and samples for testing, unless otherwise provided in these Contract Documents, will be taken by the testing laboratory; all sampling equipment and personnel will be provided by the testing laboratory, and all deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.
- B. Concrete specimens for test cylinders shall be taken by the Owner.

ITEM	CONSTRUCTION OR MATERIAL TYPE	TESTS REQUIRED	TEST METHOD	ACCEPTANCE SAMPLES AND TESTS
1. COMPACTION OF EARTHWORK				
		Field Density Tests	KT-13, KT-51	a 600 sy ² of prepared subgrade. Not less than 4 per day per equipment spread.
	Structure Backfill	Field Density Tests Moisture Tests	KT-13, KT-51 KT-11, KT-51, or g	a 1 per structure minimum (each side) a 600 sy ² of prepared subgrade. Not less than 4 per day per equipment spread.
	Structure Backfill	Moisture Tests	KT-11, KT-51, or g	a 1 per structure minimum (each side)
2. SUBGRADE MODIFICATION				
	Aggregates	Plasticity Tests Sieve Analysis of Aggregate Material Passing the No.200 Sieve by the Wash Method Sticks in Aggregate Clay Lumps in Aggregate Shale or Shale-like Materials in Aggregate Field Density Tests Moisture Tests	KT-10 KT-2 KT-3 KT-35 KT-7 KT-8 KT-13 or KT-41 KT-11 or g	b,c 500 TONS or yd ³ a 500 TONS or yd ³ a 500 TONS or yd ³ e e e a,b 1 000 ft e
3. AGGREGATE BASE COURSE				
	Combined Aggregate	Sieve Analysis of Aggregate Plasticity Tests	KT-2 KT-10	a 1 000 ft each lift or if total aggregate each 500 TONS a,c 1 000 ft each lift or if total aggregate each 500 TONS
	Completed Base	Moisture Tests Field Density Tests Moisture Tests	KT-11 or g KT-13 or KT-41 KT-11, KT-41 or g	e a 200 ft e

ITEM	CONSTRUCTION OR MATERIAL TYPE	TESTS REQUIRED	TEST METHOD	ACCEPTANCE SAMPLES AND TESTS
3A. AGGREGATE BASE COURSE				
	Combined Aggregate	Sieve Analysis of Aggregate Soundness, Wear, Absorption and Specific Gravity Liquid Limit and Plasticity Index Sieve Analysis of Aggregate Liquid Limit and Plasticity Index Field Density Tests	ASTM C 117-04 ASTM C 136-06 Methods stated in the Standard Specifications, Subsection 1117 ASTM C 117-04 ASTM C 136-06 Test strip roller pattern	a Preconstruction and when source of material changes h 1000 TONS with a minimum of one for each days placement h Verification of roller pattern
4. STABILIZED SHOULDERS (Aggregate, Non-Bituminous)				
	Combined Aggregate	Sieve Analysis of Aggregate Plasticity Tests Moisture Tests Moisture Tests	KT-2 KT-10 KT-11 or g KT-13 or KT-41 KT-11, KT-41 or g	a 500 TONS a,c 500 TONS e b 200 ft or 150 TONS b 200 ft or 150 TONS
5. GRANULAR SUBBASE				
	Combined Aggregate	Sieve Analysis of Aggregate Plasticity Tests Moisture Tests Field Density Tests Moisture Tests	KT-2 KT-10 KT-11 or g KT-13 or KT-41 KT-11, KT-41 or g	a 1 000 ft, 500 TONS, or 500 yd ³ a 1 000 ft, 500 TONS, or 500 yd ³ e a 200 ft a 200 ft
6. SURFACE OR RESURFACING AGGREGATE				
		Sieve Analysis of Aggregate Material Passing the No. 200 Sieve by Wash Method Sticks in Aggregate Soft or Friable Particles in Aggregate Moisture Tests	KT-2 KT-3 KT-35 KT-7 KT-11 or g	a 500 TONS a 500 TONS e e e

ITEM	CONSTRUCTION OR MATERIAL TYPE	TESTS REQUIRED	TEST METHOD	ACCEPTANCE SAMPLES AND TESTS
7.	PORTLAND CEMENT CONCRETE STRUCTURES AND MISCELLANEOUS CONSTRUCTION			
		Slump Unit Weight Air Content Temperature Cylinders	KT-21 KT-20 KT-18, KT-19, or KT-20 ASTM C 1064-05 KT-22	h As needed to control product, minimum 1 set of tests every 50 yd ³ . Select initial sample from first 2 or 3 loads and then on a random basis or as conditions indicate. Perform tests with every set of test cylinders. <u>Bridge Decks</u> Minimum 1 set of seven 6"x12" cylinders and one 4"x8" cylinder per 100 yd ³ or major mix design change <u>Structures</u> Minimum 1 set of 7 per 100 yd ³ <u>Sidewalk and Flatwork</u> Minimum 1 set of 7 per 500 yd ² <u>Curb and Gutter</u> Minimum 1 set of 7 per 500 lf All cylinders shall be tested for compressive strength in accordance with ASTM C 39-05 at the following intervals: Two cylinders each at 7 days, 14 days, and 28 days. One cylinder shall be reserved for additional testing, if required. <u>Bridge Decks</u> One 4"x8" cylinder shall be tested at 28 days using standard moist curing (2 tests per cylinder). 150 yd ³ for Bridge Decks, Thin Overlays, and Bridge Deck Surfacing a,b As needed to control product, beginning of every project and every 150 cubic yards.
		Permeability of Concrete	ASTM C 1202-97	
		Density of Fresh Concrete	KT-36	a,b
		KCMMB Test #1	As specified in "Procedure for Analysis of Non-Specified Aggregate within Freshly Mixed Concrete" available from Engineer.	a

ITEM	CONSTRUCTION OR MATERIAL TYPE	TESTS REQUIRED	TEST METHOD	ACCEPTANCE SAMPLES AND TESTS
8.	CONCRETE PAVEMENT			
		Slump Unit Weight Air Content Temperature Beams Profilograph Thickness Cores Density of Fresh Concrete KCMMB Test #1	KT-21 KT-20 KT-18, KT-19, or KT-20 ASTM C 1064-05 KT-22 & KT-23 KT-46 KT-38 As specified in "Procedure for Analysis of Non-Specified Aggregate within Freshly Mixed Concrete" available from the Engineer.	h As needed to control product, minimum 1 set of tests per each half day and/or per 4 000 yd ² . Perform tests with every set of test beams. a 1 set of 3 on initial pour, 1 set per week and/or major mix design change. b Testing by Contractor, results reviewed by City See Std. Spec. Sec. 502.03(k). a,b Initially, 1 complete transverse profile, thereafter 5 tests per day. a As needed to control product, beginning of every project and every 150 cubic yards.
9.	ASPHALTIC CONCRETE QUALITY ASSURANCE TESTING			
	Bituminous Mixtures	Test showing the information required in KC Metro APWA Specifications Mix Cured 4 hours before testing. Engineer shall receive test results in approximately 7 hours. Resistance to moisture damage <u>Field Density Tests</u> Cores	Per APWA Specifications AASHTO T283-03 KT-15 Procedure 3 or AASHTO T166	a One prior to construction for mix design approval, one volumetric test per 500 tons placed. a 1 per year and every 10,000 tons as directed by the Engineer. a <u>Surface & Base Courses</u> 1 set of 3-4" cores per 1000 tons placed as directed by the Engineer.
	Completed Road Work			

ITEM	CONSTRUCTION OR MATERIAL TYPE	TESTS REQUIRED	TEST METHOD	ACCEPTANCE SAMPLES AND TESTS
10.	SLURRY SEAL			
		Sieve Analysis of Aggregate	KT-2	a 250 TONS
11.	AGGREGATE FOR CONCRETE			
		Sieve Analysis of Aggregate	KT-2	a 250 TONS
		Material Passing the No. 200 Sieve by the Wash Method	KT-3	a 250 TONS
		Sticks in Aggregate	KT-35	e
		Clay Lumps in Aggregate	KT-7	e
		Shale or Shale-like Materials in Aggregate	KT-8	e
		Unit Weight (light weight aggregate only)	Section 1102(d)(3)	e
12.	PORTLAND CEMENT TREATED BASE			
		Sieve Analysis of Aggregate	KT-2	a 1 in A.M. and 1 in P.M. or each 500 TONS
		Plasticity Tests	KT-10	a,b 1 in A.M. and 1 in P.M. or each 500 TONS
		Moisture Tests	KT-11 or g	c Minimum of 1 per day
		Density Standard	KT-12	e Minimum of 1 per day
		Field Density Tests	KT-13 or KT-41	a 1 000 ft/width laid or 2 000 ft/lane
		Field Moisture Tests	KT-11 or KT-41	a 1 000 ft/width laid or 2 000 ft/lane
13.	UNDERDRAIN AGGREGATE			
		Sieve Analysis of Aggregate	KT-2	a 250 TONS
		Sticks in Aggregate	KT-35	e
		Clay Lumps in Aggregate	KT-7	e
14.	CRUSHED STONE FOR BACKFILL			
		Sieve Analysis of Aggregate	KT-2	a 500 TONS
		Clay Lumps in Aggregate	KT-7	e
15.	STONE FOR RIPRAP, WASH CHECKS & OTHER MISC. USES			
		Sieve Analysis of Aggregate	KT-2	a 500 TONS or yd ³ Note: Tests to be conducted at production site.

ITEM	CONSTRUCTION OR MATERIAL TYPE	TESTS REQUIRED	TEST METHOD	ACCEPTANCE SAMPLES AND TESTS
16.	FLY ASH			
		Moisture/Density and Compressive Strength Tests	D4609	e 4 series of Standard Proctors Moisture/Density relationships for each earth fill material. Two series incorporating 16% fly ash by dry weight, at delays of 0 and 2 hours. Two series incorporating 13% fly ash by dry weight at compaction delays of 0 hours. Find compressive strength for both series after 7 days at 100.4 degrees Fahrenheit. Min. 5 test specimens per series.
		In Place Moisture	AASHTO 217	Perform in place moisture tests using the gas pressure ("Speedy") method, at a rate of 1 per 500 sq. yard as during initial subgrade preparation and thereafter as directed by the engineer.

Code Instruction

- Normal operation. Minimum frequency for exceptional conditions may be reduced by the Engineer on a project basis, written justification shall be made to the City and placed in the project documents.
- Applicable only when specifications contain those requirements.
- If for a given project, no Plastic Index results of 10 consecutive tests are closer than 1 Plastic Index to the specifications limit, the specified testing frequency may be reduced by 50%. When operating at a reduced testing frequency, should any two consecutive Plastic Index results exceed the test limit results required for reduced testing frequency, testing shall be resumed at the original specified frequency. The original specified testing frequency shall be resumed should any one test result exceed the specification limits. Following a return to the original specified testing frequency, the reduced frequency may be resumed providing the original criteria for reduced frequency are met.
- Engineer's discretion. Frequency of tests shall be agreed upon by the Field Engineer and the Project Engineer. Frequency will be governed by field conditions. Written documentation of the agreed upon testing frequency shall be included in the project records.
- For determining moisture content of a material, KT-43, Moisture Content of Asphalt Mixtures or Mineral Aggregates - Microwave Oven Method, can be used in conjunction with KT-2, KT-3, KT-4, KT-8, KT-12, KT-13, and KT-34.

- f. Initial frequency. Frequency may be reduced on a project basis, by authority of the Engineer, upon continued satisfactory and uniform production.
- g. Authorization for reductions in testing frequency shall be documented in the project records.

GENERAL NOTES

Note 1: All sampling and testing frequencies listed are minimum. Additional or other tests will be conducted, as required, to control the work.

Note 2: Frequencies are based on two lane roadways. For four or more lane roadway construction, double the frequencies shown per unit length.

Note 3: All aggregate acceptance tests are to be conducted at the point of usage except for Item 15, Stone for Riprap, Wash Checks, and Other Miscellaneous Uses.

END OF SECTION

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Temporary facilities and controls that are required for this Work but not necessarily limited to:
 - 1. Temporary utilities such as gas, water, electricity, and telephone.
 - 2. Sanitary facilities.
 - 3. Enclosures such as tarpaulins, barricades, and canopies.
- B. Temporary Controls: Barriers, enclosures, and fencing.
- C. Security requirements.
- D. Waste removal facilities and services.

1.02 RELATED SECTIONS

- A. Section 01 77 00 - Project Closeout
- B. Utility hook-up: Installation and hook-up of the various utility lines are described in other pertinent sections of these Specifications.

1.03 PRODUCT HANDLING

- A. Protection:

Use all means necessary to maintain temporary facilities and controls in proper and safe condition throughout progress of the work.
- B. Replacements:

In the event of loss or damage, immediately make all repairs and replacements necessary at no additional cost to the Owner.

1.04 FENCING

- A. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

PART 2 - PRODUCTS

2.01 UTILITIES

- A. Temporary utilities:
 - 1. General:

Provide and pay all costs for all gas, water, and electricity required for the performance of the Work.
 - 2. Temporary piping:

Furnish and install all necessary temporary piping and, upon completion of the Work, remove all such temporary piping.

2.02 SANITARY FACILITIES

- A. Furnish and install all required temporary toilet buildings with sanitary toilets for use by all personnel. Comply with all minimum requirements of all public agencies having jurisdiction. Maintain in a sanitary condition at all times.

2.03 ENCLOSURES

- A. Furnish, install, and maintain for the duration of construction all required scaffolds, tarpaulins, barricades, canopies, warning signs, steps, bridges, platforms, and other temporary construction necessary for proper completion of the Work in compliance with all pertinent safety and other regulations.

2.04 CONSTRUCTION FENCE

- A. Fence shall be a minimum of 4 feet high and constructed from snow fence, chain link, or plastic safety fence. Fence shall be constructed completely around project.

2.05 TREE PROTECTION

- A. Trees inside project limits shall be protected with barricades. Barricades shall be same material as construction fence and located at tree drip line.

PART 3 - EXECUTION

3.01 REMOVAL

- A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the Work. Remove all such temporary facilities and controls as rapidly as progress of the Work will permit or as directed by the Engineer.

3.02 SAFETY

- A. Erection and maintenance of all safety barricades, shoring, fences, and other devices necessary for safe conditions to protect the Work, equipment, workers, public, and others, shall be the responsibility of the Contractor. The Contractor shall erect or construct such devices as conditions may require and shall maintain them to provide safe conditions throughout the construction period.

END OF SECTION

SECTION 01 58 00 - MOBILIZATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This work shall be constructed in accordance with Section 618 of the Missouri Standard Specifications for Highway Construction as amended herein.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

Not applicable to this Section.

END OF SECTION

SECTION 01 74 00 - CLEANUP

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Project cleanup.

1.02 RELATED SECTIONS

- A. Section 01 50 00 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

1.03 SAFETY REQUIREMENTS

- A. Hazards Control:
 - 1. Store volatile wastes in covered metal containers and remove from premises daily.
 - 2. Prevent accumulation of wastes that create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on project site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 GENERAL

- A. Maintain premises and public properties free from accumulations of waste, debris, and rubbish caused by operations.
- B. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy.

3.02 DURING CONSTRUCTION

- A. Execute cleaning to ensure that building, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- C. At reasonable intervals during progress of Work, clean site and public properties, and dispose of waste materials, debris, and rubbish.
- D. Provide on-site dump containers for collection of waste materials, debris, and rubbish.
- E. Remove waste materials, debris, and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.

- F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- G. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- H. Remove from the Owner's property and from all public and private property, at Contractor's expense, all temporary structures, rubbish, excess excavation, and waste material resulting from their operations.
- I. Clean all dirt from paved surfaces, not allowing same to pack on the roadway or to create a traffic nuisance. Insofar as practicable, clean all dirt from gravel and oil aggregate surfaces.
- J. All existing sod areas shall be hand raked to remove earth deposited on or in them during construction.
- K. All ditches shall be graded and properly sloped.
- L. Shoulders, where sodding, seeding, or surfacing is not required, shall be bladed and shaped.

3.03 FINAL CLEANING

- A. Employ experienced workers, or professional cleaners, for final cleaning.
- B. In preparation for substantial completion or occupancy, conduct final review of sight-exposed interior and exterior surfaces, and concealed spaces.
- C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish.
- D. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.
- E. Broom clean paved surfaces; rake clean other surfaces of grounds.
- F. Maintain cleaning until project, or portion thereof, is occupied by Owner.

END OF SECTION

SECTION 01 78 00 - PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Administrative procedures, closeout submittals, and forms are to be used at substantial completion and at final completion of the Work. Project record documents.
- B. Warranties and bonds.

1.02 RELATED SECTIONS

- A. Section 01 74 00 - Cleanup
- B. Section 01 78 39 - Project Record Documents

1.03 SUBSTANTIAL COMPLETION

- A. Contractor:
 - 1. Submit written certification to the Engineer, that project, or designated portion of project, is substantially complete.
 - 2. Submit list of major items to be completed or corrected.
- B. Engineer will make an inspection within 7 days after receipt of certification, together with Owner's representative.
- C. Should the Engineer consider that work is substantially complete:
 - 1. Contractor shall prepare and submit a list of items to be completed or corrected, as determined by the inspection.
 - 2. Engineer will prepare and issue a Letter of Substantial Completion, containing:
 - a. Date of substantial completion.
 - b. Contractor's list of items to be completed or corrected, verified, and amended.
 - c. The time within which Contractor shall complete or correct work of listed items.
 - d. Time and date Owner will assume possession of Work or designated portion thereof.
 - e. Responsibilities of Owner and Contractor for:
 - 1) Utilities.
 - 2) Operation of mechanical, electrical, and other systems.
 - 3) Maintenance and cleaning.
 - 4) Security.
 - f. Signatures of:
 - 1) Contractor.
 - 2) Owner.
 - 3) Engineer.
 - 3. Owner occupancy of Project or designated portion of Project.
 - a. Contractor shall:
 - 1) Obtain certificate of occupancy.
 - 2) Perform final cleaning in accordance with Section 01 74 00.
 - b. Owner will occupy Project, under provisions stated in Certificate of Substantial Completion.
 - 4. Contractor:
 - Complete work listed for completion or correction within designated time.
- D. Should the Engineer consider that work is not substantially complete:

1. They shall immediately notify Contractor, in writing, stating reasons.
2. Contractor:
Complete work and send second written notice to the Engineer, certifying that Project or designated portion of Project, is substantially complete.
3. Engineer will review work.

1.04 FINAL PROJECT REVIEW

- A. Contractor shall submit written certification that:
 1. Contract Documents have been reviewed.
 2. Project has been reviewed for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in presence of Owner's representative and are operational.
 5. Project is completed, and ready for final review.
- B. Engineer will make final project review within 7 days after receipt of certification.
- C. Should the Engineer consider that work is finally complete in accordance with requirements of Contract Documents, the Project will be closed out.
- D. Should the Engineer consider that the work is not complete:
 1. They will notify Contractor, in writing, stating reasons.
 2. Contractor shall take immediate steps to remedy the stated deficiencies and send second written notice to the Engineer certifying that work is complete.
 3. Engineer will review work.

1.05 CLOSEOUT SUBMITTALS

- A. Project record documents:
To requirements of Section 01 78 39.
- B. Deliver evidence of compliance with requirements of governing authorities.
- C. Deliver Certificate of Insurance for products and completed operations.

1.06 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

- A. Contractor's affidavit of payment of debts and claims.
- B. Contractor's affidavit of release of liens, with:
 1. Consent of surety of final payment.
 2. Contractor's release of waiver of liens.
 3. Separate releases of waivers of liens for subcontractors, suppliers, and others with lien rights against property of Owner, together with list of those parties.
- C. All submittals shall be duly executed before delivery.

1.07 INSTRUCTION

- A. Instruct Owner's personnel in operation of all systems, mechanical, electrical, and other equipment.

1.08 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of accounting to Engineer.
- B. Statement shall reflect all adjustments.
 1. Original Contract Sum.
 2. Additions and deductions resulting from:
 - a. Previous Change Orders.

- b. Cash Allowances.
 - c. Other Adjustments.
 - d. Deductions for uncorrected Work.
 - e. Deductions for liquidated damages.
 - f. Deductions for Re-inspection Payments.
- 3. Total Contract Sum, as adjusted.
- 4. Previous payments.
- 5. Sum remaining due.
- C. Engineer will prepare final Change Order, reflecting approved adjustments to Contract Sum not previously made by Change Orders.

1.09 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit final application in accordance with requirements of the General Conditions.

1.10 FINAL CERTIFICATE FOR PAYMENT

- A. Engineer will issue final certificate in accordance with provisions of the General Conditions.
- B. Should final completion be materially delayed through no fault of Contractor, Engineer may issue, for Owner's approval, a Semi-Final Certificate for Payment, in accordance with provisions of the General Conditions.

1.11 POST-CONSTRUCTION PROJECT REVIEW

- A. Prior to expiration of 1 year from Date of Substantial Completion, the Owner may request a visual review of Project in company with Engineer and Contractor to determine whether correction of Work is required, in accordance with provisions of the General Conditions. The Contractor shall be present for the review and be ready to promptly correct any noted deficiencies. The Contractor will also provide equipment as necessary to facilitate this review.
- B. The Engineer will promptly notify Contractor, in writing, of any observed deficiencies.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

Not applicable to this Section.

END OF SECTION

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Record documents.

1.02 RELATED REQUIREMENTS

- A. Section 01 33 23 - Shop Drawings, Product Data, and Samples

1.03 MAINTENANCE OF DOCUMENTS

- A. Maintain at job site, one copy of:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Reviewed Shop Drawings.
 - 5. Change Orders.
 - 6. Other Modifications to Contract.
 - 7. Field Test Records.
- B. Maintain documents in clean, dry, legible condition.
- C. Do not use record documents for construction purposes.
- D. Make documents available at all times for inspection by Engineer, appropriate State and Federal Regulatory Agencies, and Owner.
- E. Store documents in temporary field office apart from documents used for construction.
- F. Provide files and racks for storage of documents.
- G. File documents in accordance with Project Filing Format of Uniform Construction Index.
- H. For a period of time, from the inception of the contract to 3 years from the date of final payment under the contract, the Contractor and subcontractors shall maintain books, accounts, ledgers, invoices, drafts, pages, and other records pertaining to the performance of this contract. At all reasonable times during this period, these records shall be available within the State of Missouri at a field or permanent business office for inspection by authorized representatives of the Owner or of any other agency which has contributed funds in connection with the contract or to which the Owner is obligated to make such inspections available. In addition, this requirement shall be included in all subcontracts entered into in connection with this contract.

1.04 RECORDING

- A. Label each document "PROJECT RECORD" in 2 inch high printed letters.
- B. Keep record documents current.
- C. Do not permanently conceal any work until required information has been recorded.
- D. Contract Drawings: Legibly mark to record actual construction:
 - 1. Depths of various elements of sewer pipe and manholes in relation to survey datum.
 - 2. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - 3. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.

4. Field changes of dimension and detail.
5. Changes made by Change Order or Field Order.
6. Details not on original contract drawings.
- E. Specifications and Addenda: Legibly mark up each section to record:
 1. Manufacturer, trade name, catalog number, and Supplier of each product and item of equipment actually installed.
 2. Changes made by Change Order or Field Order.
 3. Other matters not originally specified.
- F. Shop Drawings: Maintain as record documents; legibly annotate following drawings to record changes made after review.
 1. Electrical controls.
 2. Equipment.
 3. Structural.
 4. Mechanical.

1.05 SUBMITTAL

- A. At completion of project, deliver record documents to the Engineer.
- B. Accompany submittal with transmittal letter, in duplicate, containing:
 1. Date.
 2. Project title and number.
 3. Contractor's name and address.
 4. Title and number of each record document.
 5. Certification that each document as submitted is complete and accurate.
 6. Signature of Contractor, or their authorized representative.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

Not applicable to this Section.

END OF SECTION

SECTION 02 30 00 - SUBSURFACE CONDITIONS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. No subsurface investigations have been made at the project site.

1.02 ADDITIONAL INFORMATION

- A. Each prospective bidder shall make their own interpretation of the subsurface information issued to them and shall make any additional surveys or investigations, at their own expense, which they deem necessary to evaluate conditions that may affect their bid or performance of the work.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

Not applicable to this Section.

END OF SECTION

SECTION 02 41 00 - DEMOLITION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Demolish above-grade structures and improvements.
- B. Demolish grade-level site improvements.
- C. Demolish below-grade foundations, improvements, and obstructions to depth to avoid conflict with new construction or sitework. Remove hollow items which could collapse.
- D. Remove and legally dispose of demolished materials off-site.
- E. Protect sitework and adjacent structures.
- F. Coordinate disconnection, capping, and removal of utilities.

1.02 RELATED SECTIONS

- A. Section 01 10 00 - Summary of Work - General: Limitations on Contractor's use of site and premises.
- B. Section 01 50 00 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- C. Section 01 70 00 - Execution and Closeout Requirements: Project conditions; protection of benchmarks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.
- D. Section 31 10 00 - Clearing and Grubbing - General
- E. Section 31 23 16 - Excavation, Backfill, and Site Grading

1.03 SUBMITTALS

- A. Permits and notices authorizing demolition.
- B. Certificates of severance of utility services.
- C. Permit for transport and disposal of debris.
- D. Demolition procedures and operational sequence for review and acceptance.

1.04 QUALITY ASSURANCE

- A. Contractor shall have experience in demolition of comparable structures.
- B. Comply with governing codes and regulations.

1.05 JOB CONDITIONS

- A. Protection:
 - 1. Erect barriers, fences, guard rails, enclosures, chutes, and shoring to protect personnel, structures, and utilities remaining intact.
 - 2. Protect designated trees and plants from damage.
- B. Maintaining Traffic:
 - 1. Ensure minimum interference with roads, streets, 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 applicable to this Section.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify that structures to be demolished are unoccupied and discontinued in use.
- B. Do not commence work until conditions are acceptable to the Owner.

3.02 PREPARATION

- A. Arrange for and verify termination of utility services to include removing meters and capping lines.
- B. Exterminate vermin and rodent in structures to be demolished.
- C. Remove items scheduled to be salvaged for Owner, and place in designated storage area.

3.03 DEMOLITION

- A. Sprinkle debris and use temporary enclosures as necessary to limit dust to lowest practical level.
- B. Do not use water to extent causing flooding, contaminated runoff, or icing.
- C. Place fill in lifts not exceeding 12 inches and compact to density not less than adjacent soil.
- D. Grade surface to adjacent contours and slope to drain.
- E. Repair damage to adjacent structures.

3.04 DISPOSAL

- A. Remove demolition debris daily.
- B. Do not store or burn materials on site.
- C. Transport demolition debris to off-site disposal area.

END OF SECTION

SECTION 02 43 00 - REMOVAL OF EXISTING STRUCTURES

PART 1 - GENERAL

1.01 DESCRIPTION

This work shall include the removal of subsurface structures such as all existing drainage structures, head walls, pipe, inlets, manholes, retaining walls, conduits, foundations, cables, and other obstructions which are encountered during construction. This includes any items which may not be specifically listed in the Plans but are in conflict with the new construction and which would normally be encountered upon a careful examination of the site of the work. This includes repair, plugging, or removal of existing pipe after removal of structures.

The work shall also include removal and wasting of surface structures such as concrete curb, pavement of all types, sidewalk, signs and markers, fencing, and abandoned utilities as directed by the Engineer. Excluded are utilities currently in service and structures for which other provisions are made for removal.

PART 2 - PRODUCTS

2.01 BACKFILL MATERIAL

Backfill cavities created by removing existing structures, using granular material or loose friable soil from the project. Use material that is free of excess moisture, frozen lumps, roots, sod, rocks greater than 4 inches in diameter, or other deleterious material. The Engineer will accept the backfill material based on visual inspection.

2.02 MATERIALS TO RECONSTRUCT EXISTING STRUCTURES

- A. Provide the specified materials that comply with Part 2 - Materials divisions (Divisions 3, 32, and 33).
- B. If the existing structure is damaged during the removal operations, replace any damaged materials with new materials matching the originals.

PART 3 - EXECUTION

3.01 EROSION CONTROL MEASURES

Erosion control measures shall be in place prior to the commencing of any work on the site in accordance with the "Temporary Erosion and Pollution Control" section. If the erosion control measures are not effective or are not approved by the City Engineer, all removal of existing structures shall be halted until such time as the erosion control measures are approved.

3.02 FENCES

Fences that have portions of the fence removed and not replaced shall be left in a useable condition. The remaining fencing shall be terminated at an existing post, or a new corner post shall be set as shown on the plans or at the direction of the City Engineer.

3.03 EXISTING PAVEMENT

Existing pavement shall be removed to provide match points as directed by the City Engineer.

3.04 PIPE

Unless otherwise provided, all pipe designated for removal shall be removed and every precaution taken to avoid breaking or damaging those pipes which are to remain. The Contractor shall be held responsible for the repair of any damaged pipe and any such pipe will be replaced at the Contractor's expense. All damaged drainage pipe shall be replaced with the same type, grade, and class as exists prior to the damage.

END OF SECTION

SECTION 03 11 00 - CONCRETE FORM WORK

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Forming all cast-in-place concrete, as required by the work and form removal.
- B. Forming accessories.

1.02 RELATED SECTIONS

- A. Section 03 20 00 - Concrete Reinforcement.
- B. Section 03 30 00 - Concrete.
- C. Section 31 23 16 - Excavation, Backfill, and Site Grading

1.03 SUPERVISION

- A. Provide qualified supervision on the job at all time form erection or removal is in progress.
- B. All persons erecting forms shall be journeyman carpenters.

1.04 PRODUCT HANDLING

- A. Protection:
Form material to be used on the project shall be stored in a neat manner, off the ground, and protected from weather when not in use.
- B. Design:
Form structure shall be designed according to American Plywood Association published data for plywood forms.
- C. Replacement and repair:
Forms damaged during use shall be repaired before storing. Damaged material shall be removed from the site.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Form lumber:
All lumber to be used in forming structural concrete shall be new except as allowed for reuse as described in Part 3.
 - 1. Class 1B-B exterior type plyform. Medium density overlaid with sealed edges required for concrete exposed to view on project completion.
 - 2. "Steel Ply" as manufactured by Symons Corporation with plastic overlaid plywood panels.
 - 3. Equal system approved for this project.

2.02 TIES AND SPREADERS

- A. Form ties for non-exposed concrete walls shall be Richmond standard SBR "Snap-Ty" with 1 inch break back as manufactured by Richmond Screw Anchor Co., Inc.
- B. Form ties for concrete walls exposed to view or walls exposed to water shall be SPC Snap-Ty with 1½ inch plastic cone.

- C. Spreaders shall be ST FC or ST FC-N steel spreaders as manufactured by Richmond Screw Anchor Company, Inc.
- D. Miscellaneous forming accessories required for the work shall be similar and equal to those manufactured by Richmond.
- E. Products of other manufacturers but equal to the above will be considered and are subject to the Engineer's approval.

PART 3 - EXECUTION

3.01 GENERAL

All concrete work shall be formed using fabricated forms as specified in this Section. Earth forming will be permitted only where fence post or thrust block requires direct bearing against undisturbed earth.

3.02 COORDINATION

A. Other trades:

The Contractor shall coordinate the work of all other trades and subcontractors before undertaking concrete formwork.

B. Conflicts:

The Contractor shall notify the Engineer in the event there is conflict between plan requirements for forming and other construction requirements.

3.03 ERECTION OF FORMS

A. General:

Forms shall be erected true and rigid with adequate bracing to ensure permanent alignment.

B. Cleaning:

Provide cleanout openings at bottom of all wall forms to permit cleaning after erection.

C. Alignment:

- 1. Joints between form panels shall be adjusted and accurately anchored to prevent offsets in concrete surfaces and leakage of concrete during placement.
- 2. Bowed forms will not be accepted.

D. Embedded items:

Set all anchor bolts, shear keys, pipe hanger supports, blockouts, sleeves, and other items required for subsequent construction and equipment or material of other trades.

E. Keyways:

Keyways shall be formed from 2 by lumber, cut to size and shape called for. Keyway forms shall be secured in place before placement of concrete. Forming keyway after concrete is placed will not be allowed.

F. Tolerance:

Dimensional tolerances shall not exceed the following:

- 1. Floors and slabs:
Plus or minus 1/4 inch. Floor shall not pond water.
- 2. Building alignment:
Not to exceed 1/2 inch.

3. Structural member alignment. Not to exceed $1/480$ span.
Width of structural member or wall:
4. Not to exceed $1/5$ inch.
5. Basin:
Plus $1/2$ inch minus 0 for all horizontal dimensions.
6. Walls:
Elevation differential of top of walls and overflows shall be plus or minus $1/8$ inch not to exceed $1/4$ inch in 20 feet horizontally.
7. Wall depth:
Plus 1 inch minus 0.

3.04 FORM RE-USE

A. General:

Forms may be reused so long as they are in good condition, will form a continuous plane surface, have square corners, and will form mortar tight joints.

B. Metal forms:

Metal forms with plywood panels must meet the above criteria and must lock to a rigid position to prevent movement between adjacent forms.

3.05 FORM REMOVAL

A. General:

1. Forms shall be removed in a careful and skillful manner. Precautions shall be taken to prevent danger or hazard to workers or other persons.
2. Form removal shall be performed in a manner to protect the formed concrete and other construction from damage.

B. Clean-up:

1. Forms shall be cleaned immediately and neatly stored if re-use is intended. Cleaning shall include repair and oiling.
2. Damaged form material shall be promptly removed from the site.

C. Concrete Repair:

Any repair of newly formed concrete that is required by Section 03 30 00 - Concrete shall be made immediately after forms are removed.

END OF SECTION

SECTION 03 20 00 - CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Reinforcing steel and related items required for cast-in-place concrete.

1.02 RELATED REQUIREMENTS

- A. Section 03 11 00 - Concrete Form Work.
- B. Section 03 30 00 - Concrete.

1.03 SUPERVISION

- A. Workmanship:
Provide qualified supervision at all times reinforcing work is in progress. Workers shall be experienced ironworkers.
- B. Codes:
Reinforcement placement and detailing shall comply with practice specified in the "Manual of Standard Practice for Detailing Reinforced Concrete Structures" publication ACI 315 of the American Concrete Institute or its latest revision, unless otherwise specified herein.

1.04 SUBMITTALS

- A. Shop Drawings:
Shop drawings shall be prepared for all reinforcement required by the project. Shop drawings shall be logically and legibly prepared to permit reasonable ease of sorting, selecting, placing reinforcement as well as checking drawings. Preparer and fabricator shall be identified on the drawings.
- B. Fabrication:
Reinforcement shall not be fabricated until shop drawings have been processed, approved, and returned.

1.05 PRODUCT HANDLING

- A. Protection:
 - 1. Use all means necessary to protect reinforcement from dirt and other foreign substances before and after placing.
 - 2. Store in a neat manner in logical order, bundled, tagged, off the ground, and in an area adequately isolated.
 - 3. Re-bundle to maintain identification when placing is interrupted.
- B. Replacement:
All damaged or improperly fabricated bars shall be replaced at the Contractor's expense.

PART 2 - MATERIALS

2.01 CONCRETE REINFORCEMENT

- A. General:
All reinforcement shall be free from rust, loose mill scale, and other contaminants.

- B. All bars shall be billet steel bars for concrete reinforcement ASTM A615/A615M Grade 60. All reinforcements shall be epoxy coated.
- C. Welded steel wire:
Welded steel wire shall meet ASTM A185.
- D. Accessories:
 - 1. General:
Accessories shall be subject to Engineer's approval.
 - 2. Tie wire – 18-gauge steel wire.
 - 3. Support above form or subgrade with fabricated steel chairs. Number of chairs shall be adequate to prevent sag during steel and concrete placement.
 - 4. Wall layer spacers shall be ¼-inch round "Z" bar.
 - 5. Horizontal layer spacers shall be Standee.
- E. Dowel bar splicer:
 - 1. Dowel bar splicer shall be Richmond or approved equal, manufactured from standard specified rebar material, with NC threads and shop fabricated to specified dowel configurations.

PART 3 - EXECUTION

3.01 GENERAL

- A. Other trades:
Coordinate all work of other trades to avoid conflict with reinforcement.
- B. Shop drawings:
Check all shop drawings to verify dimensions required.

3.02 FABRICATING

- A. General:
Reinforcement shall be shop fabricated except where straight bars No. 5 or smaller are required.
- B. Bending:
All bending shall be by using bending jigs and mandrels. All bars shall be bent cold.
- C. Cutting:
Bars shall be cut by cold shearing. Torch cutting in the field may be permitted in special situations.

3.03 PLACING

- A. General:
 - 1. Accurately place all bars and tie in place before placing concrete, include dowels. Tie at all intersections with 18 gauge steel wire.
 - 2. Corner bars required for horizontal reinforcing. Unless otherwise noted on plans corner bars shall be same size as horizontal bar.
- B. Clearance:
 - 1. Preserve clearance between bars of 1 inch minimum, not less than one bar diameter or 1 1/3 times large aggregate, whichever is larger.

2. Provide following concrete coverage over reinforcing steel unless other-wise indicated on plans:
 - a. Three inches above subgrade - in excavation.
 - b. Two inches above subgrade - slab on fill.
 - c. Two inches from form - walls exposed to water or earth.
 - d. One and one-half inches from form - normal cover interior walls, beams, columns, etc.
 - e. One and one-half inch on top steel - interior slabs.
 - f. One and one-half inches on top and bottom - exterior slab or slab over or under water.
- C. Splicing:
 1. Lap all reinforcing bars as required by ACI 318 Class B lap with a minimum of 36 diameters except where otherwise shown or required by ACI.
 2. Stagger splices except where otherwise shown.
 3. Lap welded wire two spaces.
- D. Dowels:

All dowels shall be placed and securely anchored before placing concrete.
- E. Supports:
 1. Secure all reinforcement in place using steel chairs, supports, Z bars, and other products fabricated for the purpose. Supports shall be spaced adequately to support the steel firmly in place. Use sand plates or other approved products when reinforcement is placed on sand or earth subgrade.
 2. Chairs will not be accepted to hold reinforcing clearance on walls.
- F. Openings and obstructions:
 1. Place one extra No. 5 bar, 4 feet long, diagonally in each face at corners of openings. Place No. 4 hoop around all round openings.
 2. Bend reinforcing around obstructions. Place extra reinforcing where cutting is authorized. Engineer's approval required before cutting steel.
 3. Consult Engineer on special situations.
- G. Certification:

Certify material and type of deformation.
- H. Condition:

All reinforcement shall be free from loose rust, dirt coating, oil, paint, or any foreign substance.

END OF SECTION

SECTION 03 30 00 - CONCRETE

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This specification covers all cast-in-place plain and reinforced concrete construction required by the plans and specifications in the performance of this Contract, including all materials, labor, equipment, and appliances.

1.02 GENERAL CONCRETE CONTROL AND QUALITY

- A. All producing and placing of concrete shall conform to Section 500 of the Missouri Standard Specifications for State Road & Bridge Construction.

PART 2 - MATERIALS

2.01 MATERIALS

Materials shall conform to the requirements of the Kansas City Metropolitan Materials Board (KCMMB).

- A. Cement. Cementitious materials shall meet the requirements of the KCMMB.
- B. Fine Aggregate. Aggregate for concrete shall meet the requirements of the KCMMB.
- C. Coarse Aggregate. Aggregate for concrete shall meet the requirements of the KCMMB.
- D. Mixing water. Mixing water for concrete shall be potable and shall meet the requirements of the KCMMB.
- E. Air-Entraining Agent. Air-entraining agents used to produce specified amounts of air entrainment shall meet the requirements of the KCMMB.
- F. Admixtures. Admixtures listed in the KCMMB mix design as "optional" will be used only with prior approval of the engineer.
- G. Reinforcing Steel.
 - 1. General: All reinforcing steel shall be deformed bars and shall comply with ASTM A615/A615M, Grade 40 or 60.
 - 2. Bar Supports: All bolsters and chairs shall be in accordance with ACI Standard 513, and those used in the underside of the top slabs shall be pre-galvanized. On sub-grade, support on continuous chairs.
 - 3. Fabrication:
Fabrication of reinforcing steel shall be in accordance with ACI Standard 315. Requirements for laps, spacing, edge distance, length, and bending of bars are given on the Plans. Reinforcing steel shall be protected from damage at all times. The bars shall be firmly tied at the alternate crossings, or closer. The steel shall be tied in correct position, positively secured against displacement, and inspected before any concrete is placed. Care shall be exercised to maintain proper clearance between the forms and the reinforcement. Bars at the top of lifts shall be held securely in correct position by means of approved metal bar supports. Before any concrete is placed, any dried mortar, loose rust, or mud shall be cleaned from the reinforcing steel.
- H. Welded Wire Fabric: ASTM A185.
- I. Expansion Joint Filler: AASHTO M 213.

2.02 READY-MIXED CONCRETE

- A. Ready-mixed concrete, in accordance with ASTM C94/C94M, shall be used unless otherwise authorized by the Engineer. Any concrete which is not plastic and workable when placed on the subgrade or in the forms shall be rejected.
- B. Concrete shall be completely placed and consolidated in the forms in accordance with 3.02 B of this Section.

2.03 CONCRETE MIX

- A. KCMMB 4K Concrete Construction: All concrete used in construction of curb and gutters, retaining walls, culvert aprons, inlets, junction boxes, yard inlets, manholes, ditch liners, sidewalks, and integral sidewalk retaining walls shall be classified as Class KCMMB 4K unless otherwise stated in the plans.

PART 3 - EXECUTION

3.01 CONCRETE EQUIPMENT AND PLACING

- A. The Contractor's attention is called to the size of concrete pours required. They shall have sufficient crews, vibrators, and other equipment to properly handle same so that no cold joints will be created and that concrete surfaces will be kept "alive." The Engineer shall be advised in advance of the equipment to be used.
- B. Before delivery of concrete, the Contractor shall have made all necessary preparations and shall have all necessary items on hand not only for proper placing but for covering, curing, heating, finishing, rubbing, and/or as required to perform in accordance with the Plans and Specifications. Failure to be properly prepared may result in an inability to perform properly and consequent rejection of the work.
- C. Any concrete damaged by the Contractor's equipment, or by other means during construction shall be replaced at the Contractor's expense.

3.02 JOINTS

- A. Joints shall be constructed as shown on the Plans. Unless shown on the plans, joints shall not be constructed unless approved by the Engineer.
- B. All construction joints shall be made with canted 2x4 at least 2 inches from wall face. All construction joint contact surfaces shall be finished with wood float finish.
- C. Normal Grout
Furnish and install normal cement grout where called for on the plans. Mix to be one part sand to two parts cement by volume. Use minimum water required for workability.
- D. Expanding Grout
Proportion by weight one part normal Portland cement, one part sand, and one part Ironite compound similar and equal to Embeco (Master Builders Co.). Thoroughly dry mix and add a minimum of water to a stiff consistency as limited by placing conditions. Firmly pack mortar into the hole or joint and moist cure for 3 days.

3.03 FORMS - WALL

- A. Forms shall be constructed from surface finished plywood and 2x4 studs or approved manufactured forming system. All form material shall be in first class condition and with mortar tight joints. Provide cleanouts at bottom and remove debris.

- B. Forms shall be erected true and rigid with adequate bracing to insure alignment. Provide chamfer for all exposed corners.

3.04 CONCRETE FINISH

- A. All concrete shall be finished monolithically. No "topping" or "plastering." Walls exposed to view shall be rubbed to produce uniform sandy texture without air voids, fins, form marks, or offsets. Tops of all walls shall be hard trowel finish with chamfered corners.
- B. Pavement slab, slope paving, inlet tops, sidewalk, and exposed slabs of structures shall receive a light broom finish.

3.05 CURING CONCRETE

Maintain continuously for 5 days after placing:

- A. Concrete temperature at least 50°F. and not over 100°F.
- B. Concrete Moisture:
 - 1. Walls & Structures: Cover with 6 mil polyethylene film and leave forms on 5 days, except as required for rubbing.
 - 2. Slabs: Polyethylene membrane 4 mil thick; lap joints 6 inches. Hold down with 1x4 at laps and at 6 foot centers. Membrane to be translucent or white in hot weather; black in cold weather.
 - 3. Pavement, Walks, Channels, and other Approved Structures: Spray approved membrane - One gallon to 200 square feet.

3.06 SPECIAL WEATHER CONDITIONS

- A. Cold Weather. The Contractor shall comply fully with the provisions of ACI 306.1-90 as modified below:
 - 1. Average daily temperatures as defined in ACI 306.1-90 will be determined and recorded by the City.
 - 2. Concrete temperatures will be determined through the use of high-low thermometers placed and operated by the contractor below insulated blankets, or where the concrete is uncovered, by checking air temperatures. Uncovered concrete, which has been subjected to freezing temperatures of any duration during the first 24 hours will be considered "frozen," and shall be rejected.
 - 3. The months of December, January and February will be considered "Cold Weather" and will require concrete protection, regardless of temperature.
 - 4. Concrete shall reach 75% of its design strength prior to backfilling. This strength can be determined through the use of field-cured cylinders, made and tested at Contractor's expense. Concrete must have 5 days where the average daily temperature is above 50°F prior to backfilling unless field cured cylinders are taken. These days do not need to be consecutive.
 - 5. All coverings and heating equipment shall be on hand prior to beginning placement of the concrete.

- B. Hot Weather. Concrete operations in hot weather shall conform to the following requirements:

1. Place concrete within the time and temperature conditions shown in Table below.

Ambient Air Temperature and Agitated Concrete Placement Time		
T = Ambient Air Temperature at Time of Batching (F)	Specimen Age Time limited agitated concrete must be placed within, after addition of cement to water (hours)	Admixtures
T<75	1 ½	None
75≤	1	None
75≤T<90	1 ½	Set Retarder

2. In all cases, if the concrete temperature at time of placement is 90°F or above, or under conditions contributing to quick stiffening of the concrete, place the concrete within 45 minutes of adding the cement to the water. Do not use concrete that has developed its initial set. Regardless of the speed of delivery and placement, the Engineer will suspend the concreting operations until corrective measures are taken if there is evidence that the concrete cannot be adequately consolidated.

END OF SECTION

SECTION 03 30 01 - CONCRETE CURING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Initial and final curing of horizontal and vertical concrete surfaces.

1.02 RELATED SECTIONS

- A. Section 03 30 00 - Concrete

1.03 REFERENCES

- A. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International; latest version.
- B. ACI 302.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International; latest version.
- C. ACI 308R - Standard Practice for Curing Concrete; American Concrete Institute International; latest version.
- D. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; latest version.
- E. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; latest version.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on curing compounds and moisture-retaining sheet, including compatibility of different products and limitations.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301 and ACI 302.1R.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver curing materials in manufacturer's sealed packaging, including application instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Moisture-Retaining Sheet: ASTM C171.
 - 1. Polyethylene film, clear, minimum nominal thickness of .006 in.
 - 2. White-burlap-polyethylene sheet, weighing not less than 10 oz/per linear yd, 40 inches wide.
 - 3. Water: Potable, not detrimental to concrete.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to be cured.

3.02 EXECUTION OF HORIZONTAL SURFACES

- A. Ponding: Maintain 100% coverage of water over floor slab areas, continuously for 4 days.
- B. Spraying: Spray water over floor slab areas and maintain wet for 7 days.
- C. Moisture-Retaining Sheet: Lap strips not less than 3 inches and seal with waterproof tape or adhesive; secure at edges; maintain in place for not less than 7 days.
- D. Absorptive Moisture-Retaining Sheet: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place for 7 days.

3.03 EXECUTION OF VERTICAL SURFACES

- A. Formed surfaces:
 - 1. Forms are adequate if left in place for 5 days.
 - 2. Cover top with 6 mil polyethylene sheet. Seal top and hold in place with 2x4's or similar method. Air shall not be allowed to circulate under sheets.
 - 3. If forms are removed to "stone" finish or repair concrete, moisten surface and completely cover with 6 mil polyethylene sheets. Anchor in place.

3.04 PROTECTION OF FINISHED WORK

- A. Do not permit traffic over unprotected floor surface.

END OF SECTION

SECTION 03 30 02 - CONCRETE SAWING

PART 1 - GENERAL

1.01 GENERAL

- A. All required sawing including curb and gutter, removal and replacement, and any other sawing shall be subsidiary to other bid items.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

Not applicable to this Section.

END OF SECTION

SECTION 31 10 00 - CLEARING AND GRUBBING - GENERAL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Removal of trees, stumps, vegetation, and unusable material
- B. Clearing and grubbing.

1.02 RELATED SECTIONS

- A. Section 31 23 16 - Excavation, Backfill, and Site Grading
- B. Section 31 23 17 - Trenching, Backfilling, and Compaction

1.03 DESCRIPTION

- A. This item shall consist of clearing and grubbing, including the disposal of materials, for all areas within the limits designated on the plans or as required by the ENGINEER.
- B. Clearing and grubbing shall consist of clearing the surface of the ground of the designated areas of all trees, stumps, down timber, logs, snags, brush, undergrowth, hedges, heavy growth of grass or weeds, fences, structures, culverts, flumes, debris, rubbish of any nature, natural obstructions or such material which in the opinion of the ENGINEER is unsuitable for the foundation of pavement or other required structures, including the grubbing of stumps, roots, matted roots, foundations, and the disposal from the project of all spoil materials resulting from clearing and grubbing by burning or otherwise.

1.04 GENERAL CONSTRUCTION METHODS

- A. The areas denoted on the PLANS to be cleared and grubbed under this item shall be staked on the ground by the ENGINEER. The clearing and grubbing shall be done at a satisfactory distance in advance of the grading operations.
- B. All debris and spoil materials removed by clearing and grubbing shall be disposed of by burning or by removal to approved off-site disposal areas. Piles for burning shall be placed in open spaces where no damage to trees, other vegetation, or other property will occur. The CONTRACTOR will be responsible for controlling fires in compliance with all Federal and State laws and regulations relative to building fires at the site. Ashes resulting from burning shall be removed and disposed of when directed by the ENGINEER.
- C. When approved by the ENGINEER, waste concrete and masonry may be placed as erosion protection. Any broken concrete or masonry, which cannot be used in construction, and all other materials, not considered suitable for use elsewhere, shall be disposed of by the CONTRACTOR off the project site.
- D. The removal of existing utilities required to permit orderly progress of work shall be accomplished by local agencies, unless otherwise shown on the PLANS. Whenever a telephone or telegraph pole, pipeline, conduit, sewer, roadway, or other utility is encountered and must be removed or relocated, the CONTRACTOR shall notify the proper local authority or owner and attempt to secure prompt action.

1.05 CONSTRUCTION REQUIREMENTS

- A. In areas designated to be cleared and grubbed, all trees, stumps, roots, buried logs, brush, grass, and other unsatisfactory materials shall be removed. Taproots and other

projections over 1-1/2 inches in diameter shall be grubbed out to a depth of at least 18 inches below the finished subgrade or slope elevation.

- B. Any buildings and miscellaneous structures in the area designated for clearing and grubbing shall be demolished or removed, and all materials therefrom shall be disposed of either by burning or otherwise removed from the site. The remaining or existing foundations, wells, cesspools, and all like structures shall be destroyed by breaking out or breaking down the materials of which the foundations, wells, cesspools, etc., are built to a depth at least 2 feet below the existing surrounding ground. Any broken concrete, blocks, or other objectionable material, which cannot be used in backfill, shall be removed and disposed of. The holes or openings shall be backfilled with acceptable material and properly compacted.
- C. The CONTRACTOR shall obtain all necessary permits.
- D. All holes remaining after the grubbing operation in embankment areas shall have the sides broken down to flatten out the slopes, and shall be filled with acceptable material, moistened, and properly compacted to the requirements specified on the PLANS. The same construction procedure shall be applied to all holes remaining after grubbing in excavation areas where the depth of holes exceeds the depth of the proposed excavation.
- E. Trees, hedges, or bushes to remain will be designated in the field by the ENGINEER will not be removed and shall be protected from damage.

1.06 MEASUREMENTS AND PAYMENT

- A. The contract lump sum price for "Clearing and Grubbing - General" shall be full compensation for mowing and furnishing all labor, materials, equipment, tools, and incidentals necessary to complete this work.

1.07 SUPERVISION AND QUALITY

- A. This work shall comply with all codes governing all insurance requirements. Work shall be undertaken only when the construction superintendent is present and supervising the work.

PART 2 - PRODUCTS

Not applicable to this Section.

PART 3 - EXECUTION

3.01 GENERAL

- A. Clear and grub trees, stumps, vegetation, debris, rubbish, and designated improvements from site.
- B. Protect trees, landscaping, site improvements, and other items not scheduled for clearing, or that might be damaged by construction activities.
- C. Strip topsoil and stockpile at approved location on-site.
- D. Provide temporary erosion and dust control.
- E. Do not disturb benchmarks or monuments.

3.02 PREPARATION

A. Notification:

Notify the Owner and secure approval at least 3 days prior to beginning work.

B. Investigation:

1. Investigate the site and locate all objects to be removed or protected.
2. Locate all existing utility and pipe lines and determine the status of each.
3. Relocate all existing piping that must remain in service but conflicts with new construction.

C. Plans:

Plans may not show all existing or exact location of utilities or pipelines.

D. Removal of debris:

Remove all debris and dispose of away from the site.

E. The Engineer will designate all trees, shrubs, and plants within the construction limits that are to remain. All other vegetation within the construction limits shall be removed and disposed of properly.

3.03 CLEARING

A. Prevent damage to existing improvements indicated to remain, including improvements on and off site. Protect existing trees and vegetation indicated to remain. Do not stockpile materials within drip line of trees. Provide and maintain temporary guards to encircle trees or groups of trees; obtain approval before beginning work.

B. Water vegetation required to maintain health. Cover temporarily exposed roots with wet burlap and backfill as soon as possible. Coat cut plant surface with approved emulsified asphalt plant coating.

C. Repair or replace vegetation that has been damaged. Remove heavy growths of grass before stripping. Stockpile satisfactory topsoil without stones, foreign matter, and weeds in location directed.

D. Completely remove all improvements including stumps and debris except for those indicated to remain. Remove below grade improvements at least 12 inches below finish grade and to the extent necessary to not interfere with new construction. Remove abandoned mechanical and electrical work as required.

E. Prevent erosion and siltation of streets, catch basins, and piping. Control windblown dust. Remove waste materials and unsatisfactory topsoil from site and dispose of in a legal manner.

F. The contractor shall scalp all areas where excavation or embankment is to be made. Scalping shall include the removal of material such as sod, grass residue of agricultural crops, sawdust, and decayed vegetable matter from the surface of the ground without removing more earth than is necessary. The products of scalping shall be disposed of away from the project site. All such disposal shall be at the Contractor's sole expense.

3.04 BLASTING:

A. Blasting will not be allowed.

3.05 GRUBBING

- A. Grubbing shall consist of the removal of all stumps, roots, buried logs, foundations, drainage structures, abandoned water wells, and other objectionable materials below the ground surface.
 - 1. Limits of grubbing:
The area to be grubbed shall include all area within the construction site limits.
 - 2. Materials:
All tap roots, lateral roots, or other projections over 2 inches in diameter shall be removed to a depth of 2 feet below the natural ground surface. Grubbing of Osage Orange or Locust hedge shall include removal of roots.
 - 3. Filling of holes:
All holes caused by grubbing operations shall be backfilled and compacted in accordance with the applicable provision of Section 31 23 16 and to the level of the surrounding ground surface.
 - 4. Disposal:
Products of grubbing shall be disposed of away from the site.

3.06 BURNING

- A. When burning is permissible under controlling air pollution regulations, all burning of products of clearing and grubbing shall be done under the care of a competent watchman at such times and in such manner that neither vegetation on adjacent property nor that designated to remain will be jeopardized. The burial of stumps and debris will not be permitted.

3.07 MOWING

- A. Mow vegetation with a height of eighteen (18) inches or greater as close to the ground as possible with all applicable local, State, and Federal regulations or as directed by the ENGINEER. The ENGINEER shall approve of the equipment and methods used for mowing.

3.08 REMOVAL

- A. Pavements, abandoned sewers, pipe lines, or other obstructions to the project construction within the construction limits or street right-of-way not designated or permitted to remain, shall be removed and disposed of by the Contractor away from the site of the work.
- B. In removing pavement, curb, curb and gutter, gutters, sidewalk, and other similar improvements, and where a portion of such improvements are to be left in place, they shall be removed to an existing joint or to a joint sawed to a minimum depth of 1 inch with a true line and vertical face. Sufficient removal shall be made to provide for proper grade and connections in the new work regardless of any limits which may be indicated on the plans.
- C. All sewers, drainage pipes, and floor drains which have been or are to be abandoned shall be permanently sealed at the ends with bulkheads constructed of concrete or brick masonry, having a minimum thickness of 8 inches. The use of salvaged brick will be permitted for construction bulkheads provided the brick are clean and sound.

END OF SECTION

SECTION 31 10 13 - UTILITY LINE ADJUSTMENTS

PART 1 - GENERAL

1.01 GENERAL

- A. The work of this section shall consist of:
 - 1. Adjustments or relocations of publicly-owned utilities within the right-of-way;
 - 2. By relaying or connecting miscellaneous small drain lines or sanitary sewer service lines, which may be encountered during roadway construction.
- B. Where the locations or grades of items described are shown on the Plans, the information is considered approximate only, and no guarantee is made as to the accuracy or completeness thereof. It is anticipated that unknown items not shown on the plans will also be uncovered during excavation and shall require adjustment as specified herein.
- C. Relocations or adjustments to facilities owned by private utilities located within the City right-of-way will be accomplished by the utility company at no cost to the Contractor.
- D. The Contractor will endeavor to have all necessary adjustments or relocations of public or private utility facilities in direct conflict with the street improvements, as soon as practicable. Such adjustments or relocations will be made at no cost to the Contractor. Some adjustments or relocations may be completed before the Contractor progresses to the point affected. Under some circumstances, however, such adjustments or relocations may have to be performed during the Contractor's construction. The Contractor shall be responsible for coordinating their work with that of the utility owners or their contractors so as to cause the least possible delay in work.
- E. It is anticipated that sanitary sewer house service pipes and miscellaneous small drainpipes will be encountered in excavation for roadway, storm sewers, and structures. Locations are generally unknown and, generally, no attempt has been made to show them on the plans. These pipes, whether shown on the plans or not, shall be relaid as directed, furnishing all necessary materials, to provide satisfactory cover and grade. Any sanitary sewer service line which crosses within 30" of the proposed storm sewer shall be encased in concrete or placed in ductile iron pipe. Sanitary sewage shall not be allowed to run uncontrolled over the ground or into any watercourse. The sanitary sewage shall be directed back into the sanitary sewer system.
- F. The Contractor is responsible for the maintenance of service of all sewer lines encountered or damaged by the Contractor's operations.
- G. The Engineer will furnish plans to the Utility Companies for their records.

PART 2 - PRODUCTS

2.01 PUBLICLY-OWNED UTILITIES WITHIN THE RIGHT-OF-WAY

- A. Relocation of publicly owned utilities in the right-of-way is the responsibility of the utility company, except as shown on the plans and incorporated into the Work.

2.02 SMALL DRAIN LINES

All work and materials required to install, relay, and connect small miscellaneous drain pipes shall conform to the details on the Plans and to the applicable portions of Section 33 41 00 of these specifications.

1. Miscellaneous small drainpipes shall be intercepted and brought to a point of underground or surface discharge, as shown on the Plans and as directed.
2. Underground discharge may be to a new or existing storm sewer pipe or may be to a new or existing drainage structure. In either case, the pipe shall be tightly grouted into the structure and supported to the first joint with concrete.
3. Surface discharge may be to a ditch or through curbing as shown on the Plans.

PART 3 - EXECUTION

3.01 MEASUREMENT AND PAYMENT

- A. No measurement or payment shall be made for installing, relaying, and connecting small existing drainpipes. All costs shall be included in the contract unit prices for other items.

END OF SECTION

SECTION 31 23 16 - EXCAVATION, BACKFILL, AND SITE GRADING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Excavation, backfilling and site grading required to construct the project, includes, but are not necessarily limited to the following:
 - 1. Excavation for footings, foundations, and structures.
 - 2. Structure backfill.
 - 3. Subgrade preparation for structures, slabs & pavements.
 - 4. Controlled fill.
 - 5. Embankments and site grading.
 - 6. Roadway.
- B. Temporary excavation support and protection systems.

1.02 RELATED SECTIONS

- A. Section 01 45 29 - Testing Laboratory Services
- B. Section 31 10 00 - Clearing and Grubbing - General
- C. Section 31 23 17 - Trenching, Backfilling, and Compaction
- D. Section 32 92 19 - Seeding
- E. Section 32 92 23 - Sodding

1.03 QUALITY ASSURANCE

- A. Testing laboratory:
 - 1. Soil compaction testing and other required testing will be performed by a testing laboratory approved by the Owner.
 - 2. Frequency of testing and location of tests shall be determined by the Owner's representative and testing laboratory personnel to assure compliance with specification requirements.
- B. Standards: (Tests shall comply with the latest revisions)
 - 1. ASTM C136, Sieve or Screen Analysis of Fine and Coarse Aggregates.
 - 2. ASTM D2922, Density of Soil in Place and Soil Aggregate in Place by Nuclear Methods.
 - 3. ASTM D2167, Density of Soil in Place by the Rubber Balloon Method.
 - 4. ASTM D698, Moisture Density Relations of Soils and Soil-Aggregate Mixtures Using a 5.5 lb. Rammer and 12 in. Drop.
 - 5. ASTM D2487, Classification of Soils for Engineering Purposes.
- C. Compliance:

Contractor shall correct all deficiencies disclosed by test results promptly.

1.04 PROTECTION OF WORK

- A. Protect materials and preserve specification requirements in previously accepted materials.
- B. Remove and replace all materials that have been damaged or do not meet specification requirements.
- C. Control dust or mud that may interfere with operations or become a nuisance to the surrounding area.

1.05 LINES AND GRADES

- A. Excavations and embankments shall be constructed to the lines and grades indicated unless otherwise directed.
- B. Final grades shall be within ½ inch of indicated elevations. Horizontal alignments shall be within 3 inches of theoretical location.
- C. Finished surfaces shall be bladed and aligned to present a neat and uniform appearance.

PART 2 - MATERIALS

2.01 GENERAL

- A. Fill materials shall be obtained from approved borrow sources.
- B. Fill material shall be free of trash, debris, cinders, organic matter, or other deleterious materials.
- C. All fill materials shall be subject to the Engineer's approval.

2.02 MATERIALS

- A. Controlled structural fill material:

- 1. Soil:

- Soil fill material shall be clay soils of medium to low plasticity (CL) non-frost susceptible, with a liquid limit of less than 45%, a plasticity index of less than 20, and containing less than 10% shale, or rock particles larger than 3 inches in greatest dimension.

- 2. Crushed stone:

- Crushed stone shall be washed clean, free-draining, durable crushed rock with the following gradation limits:

Sieve Size	Percent Passing
1 inch	100%
¾ inch	90%
½ inch	60-70%
3/8 inch	15-25%
#4	0-5%

- B. Non-structural fill material:

- 1. Soil: Non-structural fill material may be clay soils of medium to low plasticity (CL or ML) non-frost susceptible excavated from site or borrow area.

2.03 TOPSOIL

- A. Topsoil shall consist of fertile, friable loamy soil of uniform quality, free from subsoil, hard clods, stiff clay, hard pan, stones, crushed rock, and other similar impurities. Topsoil shall be free from grass, roots, weeds, and other materials harmful to plant life or which will prevent formation of suitable seed bed. Topsoil depth shall be minimum of 6 inches.

2.04 OTHER MATERIALS

- A. Materials not specifically described above, but required for construction, or proposed substitutions for materials described above, shall be submitted to the Engineer for approval prior to incorporation into the work.

PART 3 - EXECUTION

3.01 GENERAL

- A. Excavation is unclassified and includes excavation to subgrade regardless of materials encountered. Repair excavations beyond elevations and dimensions indicated.
- B. Do not perform work without written authorization from the Owner if subgrade material is unsuitable for intended use.
- C. Maintain stability of excavations; coordinate shoring and bracing as required by authorities having jurisdiction. Prevent surface and subsurface water from accumulating in excavations. Stockpile satisfactory materials for reuse, allow for proper drainage, and do not stockpile materials within drip line of remaining trees.
- D. Compact materials at the optimum moisture content as determined by ASTM D698 by aeration or wetting.
- E. Place acceptable materials in layers not more than 8 inches loose depth for materials compacted by heavy equipment and not more than 4 inches loose depth for materials compacted by hand equipment.
- F. Grade to within ½ inch above or below required subgrade and within a tolerance of ½ inch in 10 feet.
- G. Protect newly graded areas from traffic and erosion. Re-compact and re-grade settled, disturbed, and damaged areas as necessary to restore quality, appearance, and condition of work.
- H. Control erosion and wind-blown dust. Dispose of waste and unsuitable materials off site in a legal manner.
- I. The soils at the site will be susceptible to disturbance due to construction activity and water seepage. Care shall be taken during excavation and construction of the structures to minimize disturbance to the bearing soils. The base of all excavations shall be free of water and loose soil prior to placing concrete. Concrete shall be placed as soon as possible after excavation.

3.02 SITE PREPARATION

- A. Site stripping in the building and fill embankment areas and paved areas shall include the removal of vegetation, topsoil, and any other soft, loose, or unsuitable materials. Stripping depths of 6 to 12 inches minimum should be expected over the site. Stripped topsoil shall be stockpiled for later use as surface dressing in landscaped areas.
- B. Major root systems of trees shall be thoroughly removed from the building areas and to a minimum of 2 feet below pavement subgrades.

3.03 EXCAVATION FOR STRUCTURES

- A. Perform all excavation to the dimensions and elevations indicated. All excavation shall be unclassified and includes the removal and subsequent handling and disposal of all materials excavated regardless of the composition or condition thereof.
- B. Do not excavate below elevations or depth indicated unless directed by the Engineer. Where excavations are made below indicated depths or elevations without authorization, the excavation shall be restored to the proper grade with lean concrete at no additional cost to the Owner.

- C. Excavations shall extend a sufficient distance from walls and footings to provide room for forms, installation of services, and inspection. Footings or walls shall not be poured directly against excavated surfaces unless authorized by the Engineer.
- D. All existing structures, foundations, and related items or other subsurface structures along with any poorly compacted fill shall be removed within the building construction limits to a distance of 5 foot minimum outside the building limits.
- E. The over-excavation shall extend down to the underlying natural lean clay soils. Any low density, soft or unsuitable material shall be removed.
- F. The side slopes of excavations will need to be braced or sloped back as required for stability and in accordance with applicable safety regulations. Excavation equipment and excavated materials shall be kept away from the excavation side slopes. Areas around excavation shall be graded to keep surface water from entering the excavation.
- G. Backfilling shall not be performed until the work is inspected and all testing completed, and the Engineer's approval obtained.

3.04 SUBGRADE PREPARATION AND STABILIZATION

- A. Subgrades for concrete structures, floor slabs, and pavements, shall be firm, dense, and properly compacted in accordance with applicable specification requirements. All subgrades shall be sufficiently stable to remain firm and intact under construction traffic.
- B. Excessively dry subgrades shall be scarified and moistened to within specification limits and re-compacted prior to placement of footings, slabs, or pavements.
- C. Subgrade soils that have become excessively wet and mucky shall be removed. Free draining crushed stone or gravel shall be used to bring grade up to the bottom of slabs. This material shall be compacted as it is placed.
- D. Prior to placement of fill material, the subgrade shall be scarified to a depth of 8 inches and re-compacted to at least 95% of maximum density as determined by ASTM D698. Areas that cannot be re-compacted to this degree shall be undercut and replaced with stable material. Care shall be taken to maintain the prepared condition of the subgrades prior to construction. If the subgrades become saturated, frozen, or disturbed, they shall be reworked prior to construction.

3.05 BACKFILL FOR STRUCTURES

- A. Backfill structures only after concrete has attained sufficient strength based on laboratory results from concrete cylinder breaks.
- B. Remove all forms, trash, debris, and other unsuitable materials before backfilling.
- C. Soil backfill shall be placed in loose layers not exceeding 8 inches in depth and compacted by mechanical tampers or rollers.
- D. Compaction moisture content shall be suitable for good compaction, but not less than 3 percent below or more than 3% above optimum moisture as determined by ASTM D698.
- E. Pervious backfill shall be placed in level layers with a loose depth not exceeding 8 inches. Compact with vibratory rollers or vibrating plate compacting equipment adequate to reach specified density with a reasonable number of passes. Flooding or jetting to compact pervious backfill is prohibited. Protect structures from damage due to excessive vibration.

- F. Compact backfill under structures, floors, concrete slabs on grade, and pavements to a minimum of 95% of maximum density as determined by ASTM D698. All other backfill shall be compacted to 90% of maximum density.
- G. Backfilling and construction of fills and embankments during freezing weather shall not be permitted except by permission of the Engineer. No backfill, fill, or embankment materials shall be installed on frozen surfaces nor shall frozen materials, snow, or ice be placed in any backfill, fill, or embankments.

3.06 EMBANKMENTS AND AREA FILL

- A. Strip all areas to receive compacted fill, of topsoil, organic or excessively wet soil, or other unsuitable soils prior to placing fill. Stockpile topsoil and other usable materials for reuse in final site grading.
- B. Place approved fill materials in uniform layers not exceeding 8 inches in loose thickness. Compact with suitable equipment to a minimum of 90% of maximum density as determined by ASTM D698. Moisture content shall be suitable for good compaction but not less than 3% below or more than 3% above optimum moisture as determined by ASTM D698.
- C. After final finish rolling and blading, the surface shall be smooth and even and will conform to the indicated lines and grades within specified tolerances.

3.07 FILL UNDER STRUCTURES, FLOORS, AND SLABS

- A. Strip all areas to receive compacted fill, of topsoil, organic or excessively wet soil, or other unsuitable soils prior to placing fill.
- B. Soil material shall be placed in layers not exceeding 8 inches in depth and compacted by mechanical tampers or rollers.
- C. Pervious material shall be placed in level layers with a loose depth not exceeding 8 inches. Compact with vibratory rollers or vibrating plate compacting equipment adequate to reach specified density. Flooding or jetting to compact pervious fill is prohibited. Protect structures from damage due to excessive vibration.
- D. Compact filled areas under footings, base slab, floor slabs, and pavement to a minimum density of 95% of maximum density as determined by ASTM D698. Moisture content at time of compaction shall not be less than 3% below or 3% above optimum moisture as determined by ASTM D698.

3.08 BORROW MATERIAL

- A. If borrow material is required, the Contractor shall supply this material from a borrow area off the site. The borrow area shall be obtained by the Contractor at their sole expense. Borrow materials shall be approved by the Engineer before they are transported to the site of the Project. One borrow site will be inspected for approval at no cost to the Contractor. If they wish or need to use additional sites, testing of such sites shall be at their sole cost.
- B. Materials shall be similar to soils found on the Project. Soils showing high swell potentials will not be approved.

3.09 DRAINAGE

- A. Control grading in vicinity of excavations to prevent excess surface drainage from running into excavations. Remove water promptly to avoid softening of subgrade soils.

- B. Provide for removal of seepage or ground water from excavations by pumping from sumps or other appropriate means.
- C. Excavations shall be kept dry during subgrade preparation and continually thereafter until construction is complete, to the extent that no damage from hydrostatic pressure, flotation, or other causes will result.

3.10 SHORING AND BRACING

- A. Adequate shoring and bracing shall be provided to protect and maintain the stability of existing structures and facilities and prevent sliding of the sides of excavations until they are backfilled.
- B. Sheet piling, bracing and shoring shall be designed and constructed to withstand all earth and equipment loads and shall remain rigid and maintain shape and position under all circumstances.
- C. Avoid hazardous and dangerous conditions. Maintain safety of personnel and existing work at all times.

3.11 BLASTING

- A. Blasting will not be permitted.

3.12 EARTHWORK FOR ROADWAY

- A. The term, "Roadway," as used in this Section, is defined as including roadways, roadway intersections, sidewalks, shoulders, cut and fill slopes, driveways, and parking areas.
- B. State Highway Specifications shall govern all earthwork for roadway except that the provisions for measurement and payment therein shall not apply and except as modified in the form of additions, deletions, and substitutions in this Article. Where any part of said Section of the State Highway Specifications is so modified, the unaltered provisions shall remain in effect.
- C. Compaction shall be as indicated on the plans. Moisture content shall be determined based on the Maximum Density testing for the materials to be compacted so as to obtain the densities specified.
- D. Disposal:
Unsuitable excavated material shall not be used in the embankments and shall not be disposed of on right-of-way. Disposal shall be the sole responsibility and at the sole expense of the Contractor. Unsuitable and excess excavated material may be disposed of on private property adjacent to the right-of-way, provided written permission of the property owner is obtained, and provided the surface is properly finished and drained. In such cases, seeding, sodding and other pay quantities shall not be increased thereby.
- E. Ditch cleanout:
Special care shall be taken to clean out all debris and organic matter from existing roadway ditches to be filled. The ditches shall be carefully backfilled in accordance with the requirements herein, using trench rollers or hand-operated power compactors as may be needed to assure proper compaction throughout.
- F. Under-grading in rock cut:
In rock cut areas excavation shall be carried to 12 inches below subgrade to a minimum distance of 2 feet behind back of curb. Backfilling of under-graded cut areas shall be with a drainable material with top surface choked with fines for proper subgrade preparation.

Wherever possible, this material will be from project excavation. Where authorized, an open-graded drainable crushed limestone shall be brought in. Un-drained pockets shall not be left on the surface of the rock.

G. Subgrade stabilization:

Pockets of unsuitable earth may be encountered in cut areas where it will be impracticable to replace with suitable materials from excavation on the work site. In such cases, where authorized by the Engineer, the Contractor shall furnish and place crushed stone base material as required to provide a stable subgrade. Crushed stone shall be in accordance with the requirements of State Highway Specification. Where necessary, a portion of the stone base shall be mixed with existing earth to provide subgrade stability, and that portion of the stone base material shall be delivered to the project in as dry as possible condition.

H. Additional base thickness:

Where, in the opinion of the Engineer, conditions are such that it is impracticable to obtain subgrade satisfactory for the design pavement thickness, the Contractor may be directed to finish the subgrade at lower than specified elevation and increase the thickness of asphaltic concrete base.

I. The provisions of paragraphs G and H shall not be construed to relieve the Contractor of their responsibility for any necessary aeration and compaction of suitable earth at subgrade level.

J. Protection of subgrade:

The Contractor shall protect the subgrade by not allowing delivery vehicles of excess weight thereon and by varying the path of delivery vehicles so as to not cause excessive rutting. Heaving or rutting damage to subgrade caused by delivery vehicles during asphalt paving operations shall be immediately repaired and brought back to specified elevation prior to placing asphaltic concrete base.

K. Topsoil:

The top 6 inches of backfill behind curbs shall be topsoil, free from rocks, gravel, and any undesirable materials, and shall be material suitable to establish a seed bed. This material may be either topsoil available within the limits of the project or it may be topsoil furnished by the contractor. No direct payment will be made for such topsoil. All earth areas within and adjacent to the grading limits as shown on the plans shall be graded to drain as directed by the Engineer, at a 2% minimum slope wherever possible. Special care shall be taken to avoid leaving low areas or water pockets. No direct payment will be made for such grading except that measurement for payment of Proposal items will be made.

L. Subgrade tolerance:

Except as otherwise specified in paragraph G the subgrade for all paving and surfacing shall be within the tolerance range of minus 1/4 inch to plus 1/4 inch with respect to specified elevation.

3.13 WASTE FILL

A. Any extra fill material produced by the earthwork for this project and not required for the construction of the project shall be disposed of off the site of the work by and at the expense of the Contractor. Arrangements for waste fill sites shall be the sole responsibility of the Contractor.

3.14 GRADING

A. Rough grade:

Grade entire area as indicated by finish contours. Grading shall be performed to provide uniform appearing surface that will drain all surface water. Obtain approval by Engineer.

B. Topsoil:

Subsoil shall be scarified to a 2 inch depth for bonding of topsoil with subsoil. Spread topsoil over all graded area to a depth of 6 inches. Existing topsoil may have to be supplemented by hauled-in material as required.

C. Fine grade:

Fine grade site using light roller and drag to leave surface in condition for seeding. Finish grade shall be 1 inch below all pavement unless otherwise specified. Repair eroded areas at time of project acceptance by the Owner.

3.15 ROCK EXCAVATION

A. General:

Should rock be encountered in 2 or more ledges, each ledge being more than 6 inches thick and with interlying strata of earth clay, shale, or gravel not more than 12 inches thick in each stratum, the entire volume between the top ledge and bottom of the bottom ledge will be classified as rock.

B. Definition:

Rock is defined as being sandstone, limestone, chert, granite, sill stone, quartzite, slate, or shale, occurring in its natural undisturbed state, hard and un-weathered or similar material in masses more than 1½ cubic yards in volume, in ledges 6 inches more in thickness.

3.16 EARTH BASINS

A. The embankments shall be constructed to the lines and grades shown on the plans. Before placing any fill-in areas of embankments, the area immediately below the embankments shall be stripped to a depth of a minimum of 6 inches. The next 6 inches of the depth shall then be plowed and disk harrowed until well pulverized. The moisture content of the soil shall be adjusted as necessary and compacted as specified later in the specification.

B. Materials for the embankment shall be obtained from the site excavations. All materials placed in the embankments within the dike slopes extended shall be free from rock, brush, stumps, logs, roots, or other deleterious material, except for the stripping authorized to be deposited in the outside 1/2 of the embankments.

C. Maximum compaction of the natural ground and of each layer or lift, of the fill, shall be obtained. Tamping shall be carried out to the edge of the fill.

D. The entire body of the fill in the embankment shall be placed and carried up at the same time. Where it is impractical to carry up the entire fill at the same time, the slope of any existing fill, or the slope of the natural ground, shall be cut or plowed into benches having level beds and vertical sides, and each layer of new fill shall terminate in such a bench in no case shall the horizontal width of the bench be less than the depth of the layer of fill to be bedded therein nor shall the vertical side of the bench be greater in height than 2 feet.

- E. Prior to and during the compacting operations, the material in each layer of the embankment shall have the best practicable moisture content, and the moisture content shall be uniform throughout the layer. Supplementary water, as required, shall be added to the material by sprinkling on the earth fill. If the fill material in excavations contains an excess of moisture prior to excavation; the Contractor will be required to excavate drainage channels or perform such work as may be necessary to reduce the moisture content of the material. Harrowing or other working of the material on the embankment may be required to produce the proper moisture content and the required uniformity.
- F. Compaction shall commence immediately after the layer has been brought to the uniform moisture content required, and shall continue, with or without additional sprinkling, until each layer has been uniformly compacted to not less than 90% of the maximum density at optimum moisture. No embankment material shall be deposited on frozen surfaces nor shall frozen embankment materials, snow, or ice be placed in the embankment.
- G. All testing of materials as required to determine the characteristics and suitability of material that may be encountered in required excavations for inclusion in the embankments, together with all tests to determine moisture, and the compaction and density of the materials used will be made by an independent soils testing laboratory or soils engineer selected by the Engineer.
- H. After stripping the foundation area of the basin dike, any sand pockets, lenses, or surfacing deposits within the dike foundation shall be cut off by excavating a trench parallel to the axis of the dike and approximately in the center of the water side half of the dike foundation. This trench shall extend throughout the sand layer and approximately 12 inches into the impervious blanket material below (silt or clay). The trench shall have approximately a 6 foot bottom width. The trench shall be backfilled with impervious material conforming in all respects as to material and placement to that for the levee.
- I. All selected material shall be placed in the embankment parallel to the axis of the embankment in approximately horizontal layers, not to exceed 6 inches in uncompacted thickness over the prepared foundation or rolled fill. Blade graders and bulldozers shall be used on each lift to remove mounds and ridges caused by dumping operations and to obtain uniform thickness prior to compacting as well as to assure a reasonably smooth riding surface for equipment. After each layer has been properly spread, it shall be sprinkled, wetted, or aerated as necessary to provide the required amount of water for proper compaction, following which the layer shall be compacted to the required density before the next layer is placed thereon. Combined excavation, hauling, and placing operations shall be such that the materials, when compacted in the embankment, will be blended sufficiently to secure the best practicable degree of compaction, impermeability, and stability.
- J. The side slopes of the embankments shall be no steeper than a 3-to-1 slope.
- K. The basin bottom in areas of undisturbed soil shall be removed to a depth of not less than 12 inches below plan grade and thoroughly disk harrowed until the soil is well pulverized and compacted. Two 6 inch lifts of soil compacted to 95% of maximum density (determined by AASHTO test with moisture added or the soil aerated) shall be placed on the basin bottom. The finished elevation shall not vary by more than 0.20 foot above, or below, the plan elevation. Percolation test shall not exceed 1/16 inch per day in any area of the lagoon bottom.

- L. A minimum of two density tests per acre must be performed, at the Contractor's expense, for the base and each lift.

M. Percolation tests:

After completion of construction activities and testing the Contractor shall pre-fill the basin cells to the 3 foot operating level. A percolation test will begin 7 days after the lagoon has been filled. The percolation test shall last for at least 7 days. The water loss calculations will consider the influences of precipitation and evaporation during the test period. If the water loss through the pond embankments and bottoms exceeds 1/16 inch per day, the ponds shall be drained, reworked, and retested. Lagoon percolation shall not exceed 1/16 inch per day in any area of the lagoon bottom.

3.17 CLEANUP

- A. Remove all rubbish, trash, debris, stones, concrete waste, crushed rock, and sand pockets from site.

END OF SECTION

SECTION 31 23 17 - TRENCHING, BACKFILLING, AND COMPACTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Trenching and Trench Backfilling.
- B. Pipe embedment.

1.02 RELATED SECTIONS

- A. Section 31 10 00 - Clearing and Grubbing - General
- B. Section 31 23 16 - Excavation, Backfill, and Site Grading

1.03 QUALITY ASSURANCE

- A. Testing laboratory:
 - 1. Soil compaction testing and other required testing will be performed by a testing laboratory selected by the Owner.
 - 2. Frequency of testing and location of tests shall be determined by the Owner's representative and testing laboratory personnel to assure compliance with Specification requirements.
- B. Compliance:
 - 1. Contractor shall correct all deficiencies disclosed by test results promptly upon being notified of deficiencies.

1.04 REFERENCE STANDARDS

- A. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
- C. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- D. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
- E. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- F. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
- G. AWWA C150/A21.50 - Thickness Design of Ductile-Iron Pipe.

PART 2 - PRODUCTS

2.01 FILL AND PIPE EMBEDMENT MATERIAL

- A. Embedment material:
 - 1. Material shall be clean river gravel or sound crushed limestone, free of cementitious, shell, or flat and flaky particles in an amount which would cause the material to cake or pack or otherwise form an unyielding support for the pipe. Gradation shall be:
 - $\frac{3}{4}$ " square mesh sieve - 100% passing

- ½ " square mesh sieve - 90-100% passing
- No. 4 square mesh sieve - 0-15% passing
- No. 8 square mesh sieve - 0-5% passing

2. Where bedding rock is not required, bedding material shall be same as fill material.

B. Fill material:

Backfill material shall be selected earth or granular fill material, free from sod, sticks, and roots over 1/2 inch in diameter, and free from hard lumps, clods, or rock in such quantity or concentration as to interfere with the specified compaction. Material shall be of proper moisture content for specified compaction.

PART 3 - EXECUTION

3.01 GENERAL

- A. Trenching work shall be performed in a safe and proper manner, with suitable precautions being taken against hazards of every kind. Trenching shall provide adequate working space and clearances for the work to be performed therein.
- B. Trenching and backfilling during freezing weather shall not be done except by permission of the Engineer. No backfill materials shall be installed on frozen surfaces nor shall frozen materials, snow, or ice be placed in any backfill.
- C. When operating on pavements or walks all equipment shall be rubber tired, except for excavation equipment. Excavating equipment, in such cases, shall not have grousers, cleats, or lugs on the tracks. The Contractor shall take all precautions necessary to protect the existing pavements and walks.
- D. No classification of excavated materials will be made. Trenching and trenching work shall include the removal and subsequent handling of all materials excavated or otherwise removed in performance of the contract work, regardless of the type, character, composition, or condition thereof.
- E. Pipe lines and other existing underground installations and structures in the vicinity of the work to be done hereunder are indicated on the Plans according to the best information available to the Owner. The Owner does not guarantee the accuracy of such information. The Contractor shall make every effort to locate all underground pipe lines, conduits, and structures by contacting Owners of underground utilities and by prospecting in advance of trench excavation. Damage to any existing underground installation caused by the Contractor's operation shall be repaired at the Contractor's expense.
- F. Any delays or extra cost to the Contractor caused by pipe lines or other underground structures or obstructions not shown by the Plans, or found in locations different than those indicated, shall not constitute a claim for extra work, additional payment, or damages.
- G. Erosion control of disturbed areas will be required during the construction period through the use of check dams, siltation pools, mulching, etc.
- H. Operation:
 - 1. Use all means necessary to control dust or mud that may interfere with operation.
 - 2. Maintain all streets and driveways free of dirt and materials from Contractor's operation.

I. Protection:

1. Use all means necessary to protect material and preserve Specification requirements.
2. Replace all damaged material or material that has lost Specification requirements.

3.02 TRENCH EXCAVATION

A. General:

1. The Contractor shall not open more trench in advance of pipe laying than is necessary to expedite the work. One block or 400 feet (whichever is shorter) shall be the maximum length of open trench permitted on any line under construction.
2. Except where tunneling is permitted by the Engineer or called for on the Plans, all trench excavation shall be open cut from the surface.
3. Trench walls shall be vertical, and braced where necessary, in streets or improved area unless otherwise authorized by Engineer.

B. Alignment and grade:

1. Sewer and storm sewer lines:
The alignment and grade or elevation of each pipe line shall be fixed and determined by means of offset stakes. Vertical and horizontal alignment of pipes and the maximum joint deflection used in connection therewith shall be in conformity with the requirements of the Specification covering the installation of the pipe being laid in each case.
2. Water lines:
Trenches shall be carefully excavated so that the minimum cover over top of pipe will be 42 inches to existing street or ground surface, or to future surface when indicated. Greater cover at some locations along the line may be required due to street or ground profile and clearance of culverts, structures, utility lines, etc.

C. Minimum trench widths and pipe clearances:

1. Trenches shall be excavated to a width that will provide adequate working space and pipe clearances for proper pipe installation, jointing, and embedment.
2. Below an elevation of 12 inches from ground level to the top of the installed pipe, the trench width shall be maintained as narrow as possible.
3. Where necessary to reduce the earth load on trench banks to prevent sliding and caving, the banks may be cut back on slopes which shall not extend lower than 1 foot above the top of the pipe.

D. Mechanical excavation:

1. The use of mechanical equipment will not be permitted in locations where its operation would cause damage to buildings, culverts, or other existing property, utilities, or structures above or below ground; in all such locations, hand excavating tools and methods shall be used.
2. Mechanical equipment used for trench excavation shall be of a type, design, and construction and shall be so operated, that the rough trench excavation bottom elevation can be controlled, that uniform trench widths and vertical side walls are obtained at least from an elevation 1 foot above the top of the installed pipe to the bottom of the trench, and that the trench alignment is such that the pipe when accurately laid to specified alignment will be centered in the trench with adequate clearance between the pipe and side walls of the trench. Undercutting of the trench sidewall to obtain clearance will not be permitted.

E. Excavation below pipe subgrade:

Except where otherwise required, pipe trenches shall be excavated below pipe subgrade elevations to provide for the installation of granular fill pipe foundation material.

F. Unauthorized trench widths:

Where the width of the lower portion of the trench as excavated at any point exceeds the maximum permitted, either pipe of adequate strength, classification or gauge, special pipe embedment, or Class A concrete arch encasement (for concrete pipe only), as required by loading conditions and as determined by the Engineer, shall be furnished and installed by and at the expense of the Contractor.

G. Grubbing:

Grub out live roots for a distance of at least 6 inches below and 8 inches on sides of outside surface of pipe.

H. Bell holes:

Bell holes shall provide adequate clearance for the tools and methods used in installing the pipe. No part of any bell or coupling shall be in contact with the trench bottom, trench walls, or the granular fill when the pipe is jointed.

I. Cutting concrete pavement and walks:

1. Cuts in concrete and asphalt pavements shall be no larger than necessary to provide adequate working space for proper installation of pipe and pipe line appurtenances. Cutting shall be started with a concrete saw (or by other cutting method approved by the Engineer) and in a manner that will provide a clean groove at least 1 1/2 inches deep along each side of the trench and along the perimeter of cuts for structures.
2. Pavement and base pavement over trenches excavated for pipe lines shall be removed so that a shoulder not less than 6 inches in width at any point is left between the cut edge of the pavement and the top edge of the trench. The trench width at the bottom shall not be greater than at the top and no undercutting will be permitted. Pavement cuts shall be made to and between straight or accurately marked curved lines which, unless otherwise required, shall be parallel to the center line of the trench.

3.03 SHEETING AND SHORING

- A. Except where banks may be cut back on a stable slope, excavation for trenches shall be properly and substantially sheeted, braced, and shored, as necessary, to prevent caving or sliding, to provide protection for the workmen and the work, and to provide protection for existing structures and facilities. Sheet piling, bracing, and shoring shall be designed and built to withstand all loads that might be caused by earth movement or pressure, and shall be rigid, maintaining its shape and position under all circumstances.

3.04 STABILIZATION

A. General:

1. Trench bottoms shall be firm, dense, and thoroughly compacted and consolidated; shall be free from mud and muck; and shall be sufficiently stable to remain firm and intact under the feet of the workers.
2. Trench bottoms that are otherwise solid, but which become mucky on top due to construction operations, shall be reinforced with one or more layers of granular fill material or other crushed stone or gravel embedded therein. Not more than 1/2

inch depth of mud or muck shall be allowed to remain on stabilized trench bottoms when the pipe bedding material is placed thereon. The finished elevation of stabilized subgrades for concrete structures shall not be above the subgrade elevations.

3. All stabilization work hereunder shall be performed by and at the expense of the Contractor.
4. If the subgrade for pipe can be stabilized with a thickness of granular fill of 12 inches or less below bottom of pipe, or subgrade of structure, such stabilization will be at the Contractor's expense.

3.05 BLASTING

- A. Blasting will not be allowed.

3.06 REMOVAL OF WATER

- A. The Contractor shall provide and maintain adequate dewatering equipment to remove and dispose of all surface and groundwater entering excavations, trenches, or other part of the work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until the structure to be built, or the pipe line to be installed, therein is completed to the extent that no damage from hydrostatic pressure, flotation, or other causes will result.

3.07 STANDARD COMPACTION AND FIELD DENSITY TESTS

- A. General:

Wherever the terms, "____% of Maximum Density" or "Optimum Moisture," are used, Maximum Density and Optimum Moisture shall be determined by the standard compaction test described below.

- B. Standard compaction test:

1. The standard compaction test shall be in accordance with AASHTO T 99, except as modified below.
2. For samples containing no material retained on the No. 4 sieve, use Method A or B. When the plasticity index of the soil is greater than 25 (heavy clays), the soil shall be placed in the mold in four layers, each compacted as outlined in the test method used.
3. For samples containing material retained on the No. 4 sieve, use Method D, preferably, or Method C. The amount retained on the 3/4 inch sieve shall be weighed and discarded. To prepare the sample for the compaction test, the same amount of 3/4 inch to No. 4 sieve material shall be substituted for the portion discarded.

- C. Field density test:

Field density shall be obtained using the sand cone method (AASHTO T 147), by the balloon method, or by use of any satisfactory materials or equipment suitable to the conditions prevailing in the material being tested. The calculated density obtained in this test is divided by the Maximum Density as determined by the Standard Compaction Test to determine the percent compaction obtained.

- D. Rock correction:

When the amount of material retained on the No. 4 sieve is different in the field density tests than that in the sample used in the Standard Compaction Test, the actual degree of compaction shall be determined by applying a correction factor to the apparent

percent compaction. This correction factor may be arrived at by any well-established engineering procedure or by the recommendations of the State Highway Commission, "Geology and Soils Manuals," said recommendations being made a part of this Contract by reference.

E. Comparison with surrounding soil density:

It will be assumed that undisturbed surrounding soil in its natural state will have a field density of 87% of maximum density. On this basis, where 90% of maximum density is specified, the required density will be 103.5% percent of density of the surrounding soil. Where 95% of maximum density is specified, the required density will be 109% of the density of the surrounding soil.

3.08 PIPE EMBEDMENT

A. General:

1. Place pipe embedment material on a suitably prepared subgrade in lifts not exceeding 6 inches and bring up evenly on both sides of pipe. Do not dump over side of trench in any manner that will bring earth into the embedment material or displace the pipe. Compact, vibrate, or slice with a shovel, in such manner that material fill will take its final compaction and provide uniform and solid bearing under the pipe and its haunches.

B. Water line pipe bedding

1. Where rock has been excavated, selected earth or granular material shall be placed under the sides and around the pipe to a point 6 inches above the top of the pipe. Embedment material shall be deposited simultaneously on each side of the pipe to prevent lateral displacement of the pipe.
2. When not in rock excavation, all buried pipe shall be installed under Laying Condition Type 2 as described in AWWA C150/A21.50, latest edition. This condition calls for flat-bottom trench with backfill lightly consolidated to the centerline of the pipe.

3.09 TRENCH BACKFILL COMPACTION

A. General:

All trench backfill above pipe embedment shall conform to one of the following Specifications:

1. All County and City gravel surface roads shall be backfilled entirely with approved crushed rock or river gravel. The disposal of unsuitable material excavated will be the responsibility of the Contractor.
2. Ninety percent compacted backfill. Under streets, drives, or state or county highways surfaced with gravel, crushed stone, "blacktop" or other low or intermediate type surfacing. In street, road, highway, railway, or alley rights-of-way. In traveled ways. In established lawns. Any line within 5 feet of back of curb or 5 feet of street surfacing if no curb, either perpendicular to or parallel to the street shall be considered as under the street surfacing, and 90% compaction shall apply.
3. Ninety-five percent compacted backfill. Under concrete, asphaltic concrete, brick, concrete structures, or other high type pavements. Under concrete walks, curbs, gutters, and culverts. Under all types of street surfacing where trench cut is approximately at right angle to roadway. Backfill material shall be as designated on the plans or elsewhere in these specifications.

4. In areas not listed above, backfill shall be compacted to a density equal to the surrounding ground.
5. Six inches of topsoil shall be placed on the top of trenches that are to be covered with sod or to be seeded.
6. If specified density cannot be obtained with available earth, the Contractor shall furnish and haul granular fill material or suitable earth at their expense. Unsuitable earth shall be disposed of at the Contractor's expense.
7. The Engineer will call for density tests to be made whenever deemed necessary. The specified density will be the minimum allowed and the obtainment thereof will be entirely the Contractor's responsibility.
8. Thickness of backfill layers will be determined by the coordination of test results with field performance and equipment used. The Contractor will be expected to maintain established procedures except where unusual conditions arise. If greater than 12 inch thick compacted layers are used, the Contractor shall hand excavate to the test level as directed by the Engineer and then refill the test excavation with compacted backfill to the specified density.
9. All completed lines shall be returned, in the opinion of the Engineer, as nearly as possible to original condition, including reseeding, re-sodding, or repaving.

B. Equipment:

Equipment used for compacting soil or granular fill shall conform to the following specifications.

1. The bucket on an Excavator or Backhoe is not a piece of compaction equipment and shall NOT be used as the method for compacting soil or base rock under a future or current: street, parking lot, sidewalk, curb and gutter, or driveway.
2. Permitted compaction equipment is as follows: sheepsfoot roller, vibratory roller, tamper, vibratory plate compactor, pneumatic tyred rollers, grid rollers, and pad foot tamping rollers.

3.10 DRAINAGE MAINTENANCE

- A. Trenches across roadways, driveways, walks, or other traffic ways adjacent to drainage ditches or water courses shall not be backfilled prior to completion of backfilling the trench on the upstream side of the traffic-way, to prevent impounding water after the pipe has been laid. Bridges and other temporary structures required to maintain traffic across such unfilled trenches shall be constructed and maintained by the Contractor. Backfilling shall be done so that water will not accumulate in unfilled or partially filled trenches. All material deposited in roadway ditches or other water courses crossed by the line of trench shall be removed immediately after backfilling is completed and the section, grades, and contours of ditches or water courses shall be restored to their original condition. Surface drainage shall not be obstructed longer than necessary.

3.11 FINAL GRADING AND DISPOSAL OF EXCESS EXCAVATED MATERIALS

A. General:

1. Except as otherwise indicated, all excess excavated materials shall be disposed of by the Contractor away from the site of the work.
2. Pavement and pavement base material, excavated rock in excess of the amount permitted to be and actually installed in trench backfill, junk and debris encountered in excavation work, and other similar waste materials shall be disposed of away from the site of the work.

3. The disposal of waste and excess excavated materials, including hauling, handling, leveling and surfacing, shall be at the Contractor's expense.

B. Un-compacted backfill:

Where un-compacted backfill is specified, excess earth from excavations, over and above that displaced by the pipe, shall be mounded directly over the pipe trench, in such a manner that the earth will settle into the trench as natural consolidation occurs. Openings for natural drainage shall be provided. The mounded earth shall be graded to a smooth, uniform surface. That portion of the earth displaced by the pipe shall be uniformly and smoothly graded adjacent to the trench.

C. Other types of backfill:

For all types of backfill other than un-compacted, the Contractor shall dispose of excess excavated material above the surface of the ground or subgrade of pavement walks, etc., unless otherwise directed. Where directed, the Contractor shall leave all or a portion of the excess earth and grade smoothly along and adjacent to the trench in the manner prescribed by the Engineer. If directed, they shall grade excess earth into adjacent low areas, fine grading, and sloping to drain.

D. Final grading:

1. Just prior to completion and acceptance of the project, the Contractor shall final grade over all pipe trenches and around structures, filling in any places that may have settled during the period between construction of each line and the completion of the entire Contract. Finished surface shall be bladed and aligned to a neat and uniform appearance.
2. Improved yards and lawns:
Fine grade, suitable for seeding or sodding. Hand rake earth off grass in established lawn areas, unless directed to leave excess earth as outlined above.

E. Deficiency of backfill:

Wherever there is a deficiency of material required to backfill to the specified surface or subgrade, the Contractor shall furnish the necessary amount of suitable earth at their expense.

F. Restoration of disturbed earth:

The Contractor shall restore all earth areas disturbed from the original condition by their operations. Restoration will be by seeding, fertilizing, and mulching or by appropriate pavement and street repair.

3.12 RESPONSIBILITY OF CONTRACTOR FOR BACKFILL SETTLEMENT

A. The Contractor shall be responsible financially and otherwise, for:

1. All settlement of trench and other backfill which may occur from time of original backfilling until the expiration of 1 year after the date of final payment for the entire contract under which the backfilling work was performed.
2. The refilling and repair of all backfill settlement and the repair or replacement to the original or a better condition of all pavement, top surfacing's, driveways, walks, surface structures, utilities, drainage facilities, and sod which may have been damaged as a result of backfill settlement or which have been removed or destroyed in connection with backfill replacement operations.
3. All damage claims or court actions against the Owner for any damage directly or indirectly caused by backfill settlement.

- B. The Contractor shall make all necessary backfill replacements and repairs, or replacements appurtenant thereto, within 30 days after notification by the Owner or Engineer. Upon the Contractor's failure to do so, the Owner may do, or have done, the necessary work and charge the cost to the Contractor.

3.13 BARRICADES AND LIGHTS

- A. All streets, roads, highways, and other public thoroughfares which are closed to traffic shall be protected by means of effective barricades on which shall be placed acceptable warning signs. Barricades shall be located at the nearest intersecting public highway or street on each side of the blocked section.
- B. All open trenches and other excavations shall be provided with suitable barriers, signs, and lights to the extent that adequate protection is provided to the public. Obstructions such as material piles and equipment, shall be provided with similar warning signs and lights.
- C. All barricades and obstructions shall be illuminated by means of warning lights at night. All lights used for this purpose shall be kept on from sunset to sunrise. Materials stored shall be so placed, and the work at all times shall be so conducted, as to cause the minimum obstruction and inconvenience to the public.
- D. All barricades, signs, lights, and other protective devices shall be installed and maintained in conformity with applicable statutory requirements, and where within highway rights-of-way, as required by the authority having jurisdiction.

3.14 MAINTENANCE OF TRAFFIC

- A. The Contractor shall conduct their work so as to interfere as little as possible with public travel, whether vehicular or pedestrian; whenever it is necessary to cross, obstruct, or close roads, driveways, and walks, whether public or private, the Contractor shall at their own expense provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of public and private travel, and shall give reasonable notice to Owners of private drives before interfering with them; provided however, that such maintenance of traffic will not be required at any point where the Contractor has obtained permission from the Owner and tenant of private property, or from the authority having jurisdiction over the public property involved, to obstruct traffic at any designated point thereon and for the duration of whatever period of time as may be agreed upon.

END OF SECTION

SECTION 31 25 00 - EROSION CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Temporary sediment barrier
- B. Temporary ditch checks

1.02 RELATED SECTIONS

- A. Section 31 10 00 - Clearing and Grubbing - General
- B. Section 31 23 16 - Excavation, Backfill, and Site Grading

1.03 QUALITY ASSURANCE

- A. Regulatory Requirements:
Erosion controls shall meet all requirements of the EPA.

1.04 SYSTEM DESCRIPTION

- A. Definitions
 - 1. Sediment Fence
A temporary sediment barrier consisting of filter fabric buried at the bottom, stretched, and supported by posts.
 - 2. Ditch Checks
A barrier installed across, or at the toe of, a slope to intercept and detain sediment.
- B. Purpose
 - 1. Sediment Fence
To retain sediment from small disturbed areas by reducing the velocity of sheet flows to allow sediment deposition.
 - 2. Ditch Checks
To intercept and detain small amounts of sediment from unprotected areas of less than 1/2 acre.
- C. Location
 - 1. Sediment Fence
 - a. Below small disturbed areas.
 - b. Where runoff can be stored behind the sediment fence without damaging the fence or the submerged area behind the fence.
 - c. Do not install sediment fences across streams, ditches, or waterways.
 - 2. Ditch Checks
 - a. Where contributing area is approximately 1/2 acre or less.
 - b. Where there is no concentration of water in a channel above the barrier.
 - c. Where erosion would normally occur in form of sheet erosion.
 - d. Where length of slope above the barrier is less than 100 feet.
 - e. Straw bales shall not be used on high sediment producing areas, above "high risk" areas, where water concentrates, or where there would be a possibility of a washout.
- D. Planning
 - 1. A sediment fence is a permeable barrier that shall be planned as a system to retain sediment on the construction site. The fence retains sediment primarily by retarding flow and promoting deposition. In operation, generally, the fence

becomes clogged with fine particles, which reduce flow rate. This causes a pond to develop more quickly behind the fence. Anticipate ponding and provide sufficient storage areas and overflow outlets to prevent flows from overtopping the fence. Since sediment fences are not designed to withstand high heads, locate them so that only shallow pools can form. Tie the ends of a sediment fence into the landscape to prevent flow around the end of the fence before the pool reaches design level. Provide stabilized outlets to protect the fence system and release storm flows that exceed the design storm.

2. Deposition occurs as the storage pool forms behind the fence. Plan deposition areas at accessible points to promote routine cleanout.

E. Design Criteria

1. Sediment Fence
 - a. Ensure that the drainage area is no greater than 1/4 acre per 100 feet of fence.
 - b. Make the fence stable for the 10 year peak storm runoff.
 - c. Ensure that the depth of impounded water does not exceed 1.5 feet at any point along the fence.
 - d. Provide a riprap splash pad or other outlet protection device for any point where flow may overtop the sediment fence, such as natural depressions or swales. Ensure that the maximum height of the fence at a protected, reinforced outlet does not exceed 1 foot and that support post spacing does not exceed 4 feet.
 - e. The design life of a synthetic sediment fence should be 6 months.

PART 2 - MATERIALS

2.01 MATERIALS

A. Sediment Fence

1. Use a synthetic filter fabric or a pervious sheet of polypropylene, nylon, polyester, or polyethylene yard, which is certified by the manufacturer or supplier as conforming to the requirements shown in Table below.
2. Synthetic filter fabric should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 to 120°F.
3. Posts for sediment fences shall be either 4 inch diameter pine, 2 inch diameter oak, or 1.33 lb/linear foot steel with a minimum length of 4 feet. Make sure that steel posts have projections to facilitate fastening the fabric.
4. For reinforcement of standard strength filter fabric, use wire fence with a minimum 14 gauge and a maximum mesh spacing of 6 inches.
5. Sediment Fence Fabric Specifications

<u>Physical Property</u>	<u>Minimum Requirements</u>
Filtering Efficiency	85%
Tensile Strength at 20%	Standard Strength @ (max.) Elongation 30 psi Extra Strength @ 50 psi
Slurry Flow Rate	0.3 gal/sq ft/min

B. Straw Bales

1. Straw shall be locally baled material.
2. Anchors shall be #5 reinforcing bars or 2"x2" oak stakes.

PART 3 - EXECUTION

3.01 CONSTRUCTION

A. Sediment Fence

1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 18 inches above the ground surface. (Higher fences may impound volumes of water sufficient to cause failure of the structure.)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts using heavy-duty wire staples at least 1 inch long, or tie wires. Extend the wire mesh support to the bottom of the trench.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Support posts should be driven securely into the ground to a minimum of 18 inches.
6. Extra strength filter fabric with 6 foot post spacing does not require wire mesh support fence. Staple or wire the filter fabric directly to the posts.
7. Excavate a trench approximately 4 inches wide and 8 inches deep along the proposed line of posts and upslope from the barrier.
8. Backfill the trench with compacted soil or gravel placed over the filter fabric.
9. Do not attach filter fabric to existing trees.

B. Ditch Checks

1. Bales will be placed in a single row, lengthwise, on the contour and embedded in the soil to a depth of 3 inches.
2. Bales must be securely anchored in place by stakes or re-bars driven through the bales or by other acceptable means to prevent displacement.
3. Inspection must be frequent, and repair or replacement must be made promptly as needed.

3.02 MAINTENANCE

A. Sediment Fence

1. Inspect sediment fences at least once a week and after each rainfall. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining the fence during cleanout.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

B. Ditch Checks

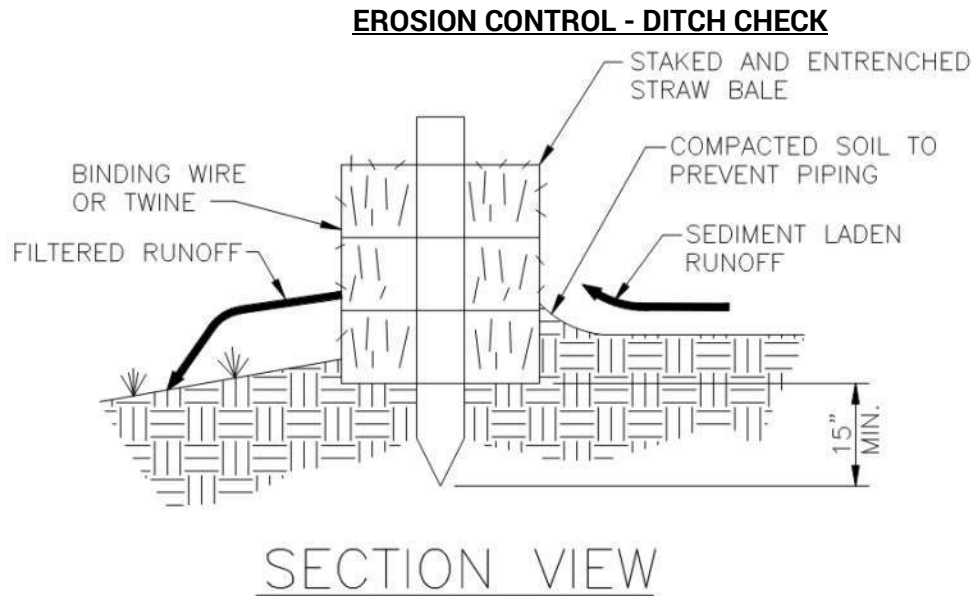
1. Inspect straw bale barriers at least once a week and after each rainfall. Make any required repairs immediately.
2. Should the barrier collapse, decompose or become ineffective, replace it promptly.

3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the barrier.
4. Remove the barrier and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

3.03 CLEANUP

A. General

1. Remove all sediment and other debris from project site.
2. Remove all sediment fence and ditch check materials from project site.
3. Grade area for uniform slope to blend with existing or finish contours.



Notes

Straw bales shall not be used longer than a time period of 3 months. If construction continues beyond this time period, replace bales with new.

Excavate a trench along the areas that the straw bales will be used as erosion control to a depth of 4 inches and to the width of one straw bale. The straw bales then shall be placed in the trench. Place excavated material on upstream side of the trench.

Straw bales shall be anchored with a min. of two stakes or rebar driven into the underlying soil; making sure that the binding wire or twine is facing the sides and not touching the soil. The first stake into each bale shall be driven toward the previously laid bale to force them together.

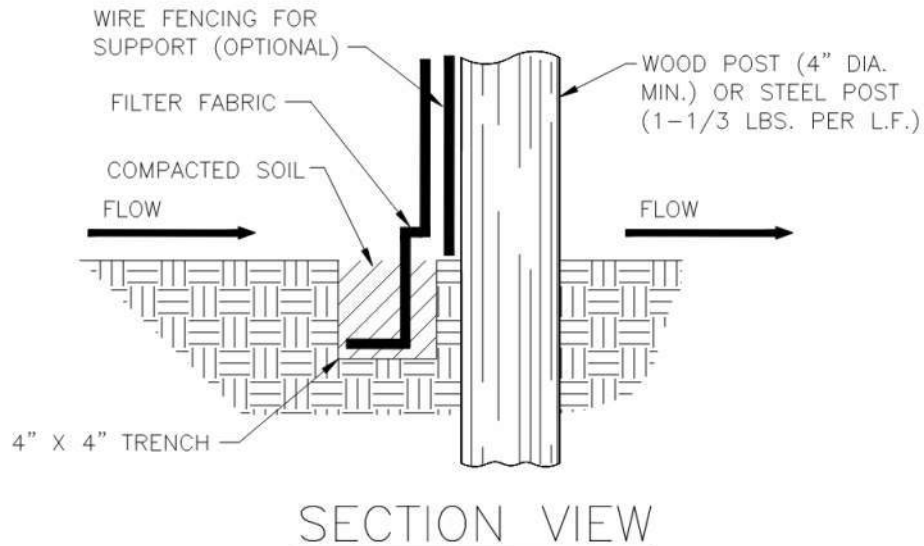
Spacing between the bales shall be tightly chinked with loose straw.

After straw bales are in place the excavated soil shall be backfilled against the upslope side of the straw bales to a height of 4 inches after compacting.

Straw bales shall be inspected after each rainfall to determine if any repairs or replacements to the straw bales are needed. If it is determined that the straw bales need to be repaired or replaced, the work will occur immediately. Sediment accumulations must be removed when they reach 1/2 the barrier height.

EROSION CONTROL - SEDIMENT FENCE

EROSION CONTROL — STRAW BALES



Notes

The filter fabric shall have a minimum filtering efficiency of 75%, a minimum tensile strength of 30 pounds per linear inch, and a flow rate of 0.3 gallons per square foot per minute. The filter fabric shall also have ultraviolet ray inhibitors to assure a life use expectancy of 6 months at 0 to 100°F.

The filter fabric shall be 36 inches or less in height. Joints shall occur only at posts with 6 inch minimum overlap. Posts shall be spaced 10 feet on center when wire mesh support is included or 6 feet on center without wire mesh support. A minimum of 8 inches of fabric will be buried in the 4"x4" trench.

The sediment fence shall be inspected after every rainfall to determine if any part of the fence needs to be repaired or replaced. If it is determined that the fence needs any repair or replacement, this work will occur immediately.

Sediment deposits shall be removed after each rainfall or before they accumulate to 1/3 of the fence height.

END OF SECTION

SECTION 32 00 00 - CONTRACTOR CONSTRUCTION STAKING

PART 1 - GENERAL

1.01 DESCRIPTION

This work shall be performed in accordance with Section 627 of the Missouri Standard Specifications for State Road & Bridge Construction as amended herein. The Contractor shall set construction stakes establishing all lines, slopes, continuous profile-grades, centerlines, and benchmarks necessary to control and perform the work.

PART 2 – MATERIALS

Not applicable to this section.

PART 3 - EXECUTION

3.01 CONSTRUCTION REQUIREMENTS

A. Vertical Control

Prior to construction, County benchmarks that will be damaged or removed by construction shall be replaced by a benchmark outside of construction area. New benchmarks shall be an aluminum cap set in a rigid concrete structure. A hole shall be drilled into concrete and the cap grouted into place. The preferred locations are traffic signal bases, culvert headwalls, and bridge handrails. A standard monument record sheet shall be completed for each permanent benchmark. Elevations shall be determined with a double rod level run using digital level and bar code rods and shall tie into County vertical control network at each end of the level run. Level runs shall close within 0.1 feet per four miles. Level run data shall be furnished in digital and paper format.

Mapping grade state plane coordinates shall also be provided. This effort shall be coordinated with the County Surveyor.

B. Horizontal Control

Prior to construction Section Corner and quarter section corners shall be referenced to points outside construction and a Land Corner Endangerment Report submitted to the County Engineer within 30 days of the survey as required by state law. During construction the surveyor will coordinate with the Contractor on the placement of the monument box. After construction the surveyor shall use their previous reference ties and preliminarily mark the aluminum cap. This location shall be checked with coordinates from the design survey to ensure that the ties match the previous coordinates. If within tolerance the aluminum cap shall be punched at the proper location. New Land Corner Reference Reports with updated references shall be submitted to the County Engineer within 30 days of the survey as required by state law.

C. Property Corners

The Contractor shall locate all existing property corners within the project limits prior to commencing construction. All existing property corners shall be marked and protected. Property corners anticipated to be disturbed during construction shall be located by ties and shall be reset by the Contractor at the termination of construction activities. All property surveying shall be performed by a qualified land surveyor registered in the State of work.

D. Every Conduits

A stamped, sealed survey shall be provided by the Contactor for all conduit installed as part of the contract.

E. Swale Staking

The Contractor shall set cut stakes for all rough swale grading and shall maintain or reset such stakes for checking of the grade as required by the Engineer. Final grade for the swales and berms shall be established by "blue top" surveying or other approved method, and grade devices shall be maintained for inspection by the Engineer prior to sodding.

END OF SECTION

SECTION 32 01 27 - ASPHALTIC CONCRETE PAVING

PART 1 - GENERAL

1.01 GENERAL

All work of producing and placing asphaltic concrete surface and base for street pavement shall conform to Sections 2204 and 2205 of the APWA Standard Specifications.

PART 2 - MATERIALS

2.01 ASPHALTIC CONCRETE PAVEMENT

- A. Asphaltic concrete mixes shall be in conformance Section 2205.3 of the APWA Standard Specifications as modified herein. Base course and surface course shall be Type 5-01 except as noted below. Performance Graded Asphalt binder grade PG 64-22 shall be used in all mixes.
- B. The contractor may use Fractionated Reclaimed Asphalt Pavement (FRAP) as an aggregate source. FRAP is defined as having two or more stockpiles, where Reclaimed Asphalt Pavement (RAP) is processed into coarse and fine fractions. The fine FRAP stockpile will contain only material passing the ¼-inch screen. The coarse FRAP stockpile will contain milled material retained on the ¼-inch screen and passing the ¾-inch screen. The maximum combined FRAP is 30% of the total mix by weight. FRAP may be comprised of coarse or fine FRAP or a combination thereof. Utilize a separate cold feed bin for each stockpile of FRAP used. Do not blend coarse and fine FRAP either in the stockpile or in a cold feed bin. Add FRAP to the mix through the RAP collar. **Recycled Asphalt Shingles (RAS) are not allowed.**
- C. Anti-Stripping Agent - All bituminous mixtures shall contain an anti-stripping agent. AD-here® LOF 65-00 LS as manufactured by ARR-MAZ Products, L.P. shall be added to the asphalt cement at the rate of 0.75% by weight of the total added asphalt cement. Other asphalt anti-stripping additives and their application rate may be used when proven equal after testing as specified in paragraph "Resistance of Compacted Bituminous Mixture to Moisture Induced Damage" and approved by the Engineer. Copies of the bill of lading shall be submitted to the Engineer.
- D. Resistance of Compacted Bituminous Mixture to Moisture Induced Damage - The index of retained strength must be greater than 80% as determined by AASHTO T 283-03 (using a 4 inch nominal size mold). Specimens shall be conditioned by freezing and thawing. When the index of retained strength is less than 80 the amount of anti-strip may have to be adjusted. No additional payment will be made to the Contractor for addition of anti-stripping agent required. The mix shall contain the anti-stripping agent specified in paragraph "Anti-Stripping Agent" and tested by AASHTO T 283.
 - 1. Method of determining the retained strength of plant-produced mixtures. Sample the plant produced mixture at the plant site in accordance with ASTM D 979 or behind the paver using the procedure specified herein. Transport the mixture to the laboratory and determine the theoretical specific gravity as specified in paragraph "Asphaltic Concrete Mix Design Method." Prepare the specimens for the AASHTO T 283 test using the same 4 hour cured material and compact to 7 ± 0.5 percent air voids. Allow the samples to cool and cure overnight at room temperature and proceed with testing by determining the thickness and bulk

specific gravity, then separating the specimens into subsets and preconditioning as specified herein. Then proceed with the testing as specified in AASHTO T 283.

2.02 TACK COAT

- A. Tack coat (CSS-1h) shall be in accordance with the plans and Section 2204 of the APWA Standard Specifications.
- B. Tack coat shall be applied between each layer of new asphaltic concrete, as well as those surfaces specified in the plans, including curb faces.
- C. Tack coat application temperature shall be between 150°F and 225°F.
- D. The rate of application shall be 0.05 gal/sy to 0.12 gal/sy or as otherwise directed by the Engineer.

PART 3 - EXECUTION

3.01 ASPHALTIC CONCRETE PLACEMENT

- A. Asphalt mixing plants shall conform to Section 2205.5 of the APWA Standard Specifications.
- B. Transportation of the asphaltic concrete mix shall conform to Section 2205.6 of the APWA Standard Specifications.
- C. Asphalt paving equipment shall conform to Section 2205.8 of the APWA Standard Specifications.
- D. The Contractor shall make any adjustments necessary to assure neat joints where multiple asphalt lay downs join. This effort may require cutting previous lay down passes edges to provide a neat butt joint.
- E. The Contractor shall deliver tickets to the Owner's Construction Representative as each truckload is delivered to the job. The delivery tickets shall be numbered consecutively, state the project number, origin of the load, time loaded, temperature and weight of the load, truck number, type of mix, and approved job mix formula report number.

3.02 CONSTRUCTION REQUIREMENTS

Section 2205.8 of the APWA Standard Specifications shall be amended to require that the lift of base course immediately preceding the surface course be laid in a continuous operation and that this lift provide a finished surface that deviates no more than 3/8 inch from the grades shown on the Plans. Such deviations will be allowed only if they are roughly compensating in extent and direction.

A. Weather Limitations

When the moisture of the aggregate in the stockpile or from the dryer interferes with the quality of mix production, or with normal plan operations, the mixing and placing of hot-mix asphalt will not be permitted without permission of the Engineer. No mixture shall be placed on wet or frozen surface.

Hot Mix asphalt paving shall not be mixed or placed when the ambient air or base temperature is below temperatures shown in the following table, when there is frost in the subgrade, or any other time with when weather conditions are unsuitable for the type of material being placed without expressed approval of the Engineer.

Asphalt Placement Temperature Limitations			
Paving Course	Compacted Thickness (inches)	Air Temperature (Degrees F)	Road Surface Temperature (Degrees F)
Surface	All	50	55
Base	Less than 3	40	45
Base	3 or more	30	35

3.03 SURFACE REQUIREMENTS

Tolerances for street pavement construction shall be as follows:

- A. Finished grade of centerline of street pavements shall be within the tolerance range of minus 0.0 to plus 1/2 inch with respect to concrete gutter lip.
- B. Finished grade of asphaltic concrete surface shall match concrete gutter lip within the tolerances of 1/4 inch to 3/8 inch above gutter lip.
- C. Total compacted thickness of base and asphaltic concrete surface at any point shall be not less than the thickness shown on the plans by more than 3/8 inch and the average of points checked for total thickness shall not be less than shown on the Plans.
- D. Thickness of asphaltic concrete surface shall be within the tolerance range of minus 1/4 inch to plus 1/2 inch with respect to the thickness shown on the plans.
- E. Straight-Edge Requirements: Maximum variation from a 10 foot straight-edge shall be not more than 1/4-inch, with the provision that allowance shall be made for short vertical curves in the application of these requirements.
- F. If the Engineer finds the pavement is not in the tolerances, they will then make a determination if the pavement will be accepted and remain in place. The Engineer will document the basis of acceptance which may provide for an appropriate adjustment in the contract unit price for the asphaltic concrete items as they deem necessary, based on their engineering judgement.

If the Engineer finds the work to be unacceptable, the asphaltic concrete shall be replaced or otherwise corrected by and at the expense of the Contractor.

END OF SECTION

SECTION 32 11 23 - AGGREGATE FOR BASE

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Aggregate for base.

1.02 RELATED SECTIONS

- A. Section 31 23 16 - Excavation, Backfill, and Site Grading
- B. Section 31 23 17 - Trenching, Backfilling, and Compaction

1.03 SUBMITTALS

The Contractor shall submit, prior to delivery of the material to the project, a certificate indicating the gradation, plasticity index, and the moisture-density relationships of the material, using ASTM D698, complies with the above material specification.

PART 2 - MATERIALS

2.01 DESCRIPTION

Aggregate for Base shall be supplied in accordance with Section 304 of the Missouri Standard Specifications for Highway Construction, except as otherwise modified herein.

2.02 MATERIALS

Material shall meet Section 1100 AB3 Aggregate except that the composition shall be modified so that the material shall consist of 100% limestone or dolomite produced by mechanical crushing.

PART 3 - EXECUTION

3.01 MOISTURE CONTROL

The material shall be mixed with water in a stationary plant, before delivery to the project site, to obtain the moisture content as directed by the Engineer.

END OF SECTION

SECTION 32 18 16.13 - POURED-IN-PLACE PLAYGROUND SAFETY SURFACING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK

- A. Work under this section shall consist of the preparation, installation, and placement of poured-in-place resilient surfacing and its concrete pavement base where located and as detailed on the plans.
- B. Subbase: A layer under the resilient layer of the protective surfacing but over the subgrade; may be rigid, as in concrete or bituminous, or aggregate.

1.03 RELATED WORK:

- A. Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
 - 1. Division 32, Section 32 01 27, "Concrete Pavement."

1.04 SUBMITTALS

- A. The Contractor shall submit the following samples, certifications, or test results prior to use on the project.
 - 1. Product data on rubber surface.
 - 2. Concrete mix design.
 - 3. Product data on Expansion Joint Material.
 - 4. Product data on Smooth Steel Dowels.
 - 5. Product data on welded wire fabric (W.W.F.).
 - 6. Installer's Certification.
 - 7. Manufacturer's Warranty.

1.05 QUALITY ASSURANCE

- A. Approved products must meet the following laboratory Test Results:
 - 1. Impact Attenuation, ASTM F1292:
 - a. Impact attenuation test results shall be certified and submitted to the Owner on the letterhead of an independent testing laboratory. Test results shall meet or exceed Consumer Product Safety Commission Guidelines for impact attenuation. Both G-max and Head Injury Criteria tests shall be administered and evaluation under the same test and the results must be shown for three drops at each required temperature: 32°F, 72°F, and 120°F; yield less than 200 G's and less than 1,000 H.I.C. The impact site must be performed on the "worst case scenario" area of the sample tested. Testing laboratory must be certified to meet calibration program requirements of MIL-STD-45662A. Test report must state the base tested for this project.
 - 2. Coefficient of Friction, ASTM D2047-82:
 - a. Products must meet a minimum standard on coefficient of friction of 0.9 wet, 1.0 dry.
 - 3. Permeability:
 - a. Product shall meet or exceed a coefficient of permeability of 5 feet per minute. The product shall handle a minimum of 8 inches of rainfall per hour.

4. Flammability of Finished Floor Cover, ASTM D2859:
 - a. Product shall pass flammability.
 5. UPITT Test for Combustion Product Toxicity:
 - a. Product shall pass the Pittsburgh Protocol Test for toxicity.
 6. Tensile Strength, ASTM D412 and Tear Resistance, ASTM D624:
 - a. Test results must be a minimum of tensile strength equaling 60 PSI and percent of elongation at break equaling 40 (140% of original size).
- B. Poured-In-Place Playground Safety Surfacing shall be installed by an experienced installer certified by the manufacturer of the surfacing.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Primer:
1. A single component moisture cured polyurethane primer.
- B. Binder:
1. An elastic polyurethane pre-polymer with minimal odor, excellent weathering, and binding characteristics. Binder shall be 100% MDI based and contain 0% TDI monomers. NOTE: TDI is listed as a carcinogen with OSHA and the IARC. Special handling is required with more than 0.1% TDI.
- C. Black SBR:
1. Shall be recycled SBR rubber. It shall be ground at ambient temperature. It shall be ground into 3/8" shredded strands and contain less than 4% dust. It also shall be transported in suitable bags to protect from moisture.
- D. EPDM Rubber:
1. Shall be UV stable. Typical size: 1-3 mm or 1-4 mm.
- E. Color shall be selected from standard range of colors with a maximum of three colors selected. All colors selected will be of a pigment darkness compatible with aromatic primer.

2.02 WARRANTY

- A. Product and installation shall be warranted for 5 years from the date of "Substantial Completion" of the project.
- B. Poured Concrete: Refer to Specification Section 32 01 27, Concrete Pavement for additional information.

2.03 ACCEPTABLE MANUFACTURERS

- A. Acceptable manufacturers and products for the Poured-In-Place Playground Safety Surfacing include:
1. "Playbound Poured-In-Place" playground surfacing, as manufactured by Surface America, Inc., P.O. Box 157, Williamsville, New York 14231; voice: (716) 632-8413 or (800) 999-0555; fax: (716) 632-8324; website: www.surfam.com.
 2. "Playground Safety Surfacing" poured-in-place safety surface as manufactured by No Fault Sport Group, 3112 Valley Creek Drive, Suite C, Baton Rouge, LA 70808; voice: (225) 215-7760 or (866) 637-7678; website: www.nofault.com.
 3. "SpectraPour" safety surfacing as manufactured by Spectra Turf, Inc., 310 Reed Circle, Corona, California 92879; voice: (800) 875-5788 or (909) 734-5617; fax: 909-734-3630; website: www.spectraturf.com; e-mail: info@spectraturf.com.

4. GTIMPAX playground surfacing as manufactured by Gametime (A Playcore Company), P.O. Box 680121 Ft. Payne, Alabama 35968-0121, voice: (800) 235-2440 or (256) 845-5610; fax: (256) 845-9361; website: www.gametime.com.
5. Or Approved Equivalent.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Verify compacted subgrade is acceptable and ready to support the concrete pavement and poured-in-place safety surfacing and imposed loads. Subgrades shall be parallel to finish grade, to depth specified on the plans.
- B. Verify that the gradients and elevations of base are correct. Subgrade shall be a minimum of 2% sloping toward PPT (perforated plastic tubing) or as shown on the drawings.
- C. Stake layout for concrete base for the Poured-In-Place resilient surface. This should occur after the installation of the play structure. If adjustments in the layout are required as a result of the play structure location, notify the Owner's Representative prior to installation.

3.02 CONSTRUCTION METHODS

- A. Concrete pavement shall be of width and extent shown on the plans.
- B. Concrete shall cure for a minimum of 28 days prior to beginning the installation of the poured-in-place surfacing.
- C. Install Poured-In-Place resilient surface as per manufacturer's instructions and to the patterns shown on the drawings.

3.03 LOOSE FILL SURFACING

- A. Protect finished Work during remainder of construction. Clean surfaces as necessary before Contract Close-Out to remove foreign materials from surfacing. Damaged Poured-In-Place resilient surface shall be repaired or replaced at the expense of the Contractor.

END OF SECTION

SECTION 32 33 01 - PLAY EQUIPMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK

- A. The work shall consist of providing and installing play equipment as shown on the drawings and as specified herein.

1.03 RELATED WORK

- A. Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
 - 1. Division 32, Section 32 01 27, "Concrete Pavement."
 - 2. Division 32, Section 32 18 16.13, "Poured In Place Playground Safety Surfacing."

1.04 SUBMITTALS

- A. The Contractor shall submit the name of the play equipment piece and manufacturer they intend to use on the project if more than one piece of play equipment is listed as an approved item in the project's contract documents.
- B. Contractor shall submit a copy of the manufacturer's installation manual for all play equipment prior to beginning the installation of any play equipment.

1.05 QUALITY ASSURANCE

- A. Manufacturers of playground equipment meet the following requirements:
 - 1. Must be certified by the International Play Equipment Manufacturer's Association (IPEMA).
 - 2. Must be certified as an ISO 9001 company.
- B. Prior to final payment to the Contractor, the Contractor shall have the manufacturer or the manufacturer's representative inspect all of the play equipment that was installed as part of the project for compliance with the manufacturer's installation instructions and shall provide to the Owner a written letter stating such. Manufacturers that refuse to provide and/or perform this service will not have their equipment approved for purchase and installation on the project. If no letter is provided the Owner will not pay the Contractor for the purchase and installation of the play equipment.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The items chosen for the design of the playground structure have been specifically referred to by the manufacturer so as to enable the Owner to establish the level of quality and performance required by the system designed. Equipment by other manufacturers not listed as "Acceptable Manufacturers" in these Specifications may be considered only after written application has been received by the Owner's Representative prior to the bid opening.
- B. No modifications to the play area shape and/or size will be allowed.

- C. Any "approved equivalents" for play equipment and/or play structures must be by complete systems only, not components of a system.
- D. The Contractor shall submit the following samples, certifications, and/or test results for review by the Owner for a product(s) to be considered as "Approved Equivalent" for the specified product(s).
 - 1. Provide product literature for all products and components.
 - 2. Submit documentation as requested by the Owner's Representative illustrating functional and aesthetic characteristics of the product.
 - 3. Submit color samples of each material and color specified for final color approval (when requested by the Owner's Representative).
 - 4. Test Reports: Indicate compliance with the U.S. Consumer Products Safety Commission's "Handbook For Public Playground Safety."
 - a. Indicate compliance with the U.S. Consumer Products Safety Commission's "Handbook For Public Playground Safety."
 - 5. Manufacturer's Certificate:
 - a. Certify that the equipment meets or exceeds the U.S. Consumer Products Safety Commission guidelines and ASTM 1487-95.
 - 6. A drawing at a scale of 1"=20' (or larger) that shows the entire play structure with all play components labeled. all deck heights labeled and the safety zone for the entire structure delineated.
 - 7. A drawing at a scale of 1"=20' (or larger) that shows the entire play area (including edge of the containment area) with safety zones clearly delineated for all play equipment and structures.
 - 8. A drawing at a scale of 1"=20' (or larger) showing the layout of all play structure posts and footings within the containment area. This information may be combined with the drawing requested in Item #6 above.
 - 9. A 3-D, color perspective of the play structure design submitted.
 - 10. List of all components along with their respective model or part numbers.
 - 11. The retail cost of all play equipment specified/provided.

2.02 MATERIALS

- A. All materials shall be structurally sound and suitable for safe play. Durability shall be ensured on all steel parts by the use of time tested coatings such as zinc plating, zinc/nickel plating, powdercoating, plastisol coating, etc. Colors shall be as specified by the Owner's Representative.
- B. Hardware (Fasteners):
 - 1. Primary fasteners shall be socketed and pinned tamperproof in design, either carbon steel plated with zinc/nickel and iridescent chromate finish or stainless steel (SST). All hardware is to include a locking patch type material. The material, when allowed the 72 hour cure time, shall require a minimum of 4 times the installation torque to remove the fastener. The manufacturer shall provide special tools for pinned hex fasteners.
- C. Bolt Links and Double Clevis:
 - 1. Bolt links shall be steel forgings with a zinc alloy finish and supplied with a 3/8 inch x 1-1/4 inch hex-pin limited-thread bolt. Fasteners are a 7/16 inch x 2-7/16 inch hex-head limited-thread bolt and a 3/8 inch x 1-1/4 inch hex-pin limited-thread bolt.

D. Polyvinyl Coating:

1. All metal components to be polyvinyl chloride coating shall be thoroughly cleaned in a hot phosphatizing pressure washer, then primed with a clear acrylic thermosetting solution. Primed parts shall be preheated prior to dipping in U. V. stabilized, liquid polyvinyl chloride, the salt cured at approximately 400°F. The finish coating shall be approximately 0.080 inches (plus 0.020 inches) thick at an 85 durometer hardness and have a matte finish. Color to be as specified by the Owner's Representative.

E. Polyester Powdercoating:

All metal components to be powdercoated shall be free of weld and spatter. Parts shall be thoroughly cleaned in a six stage pretreatment system with a hot phosphatizing bath and a non-chrome seal for corrosion resistance, then thoroughly dried. Powdercoating shall be electrostatically applied and oven cured at 400°F. Average thickness of the powdercoating shall be 4 mils.

1. Polyester powder shall meet or exceed ASTM Standards for:

<u>ITEM</u>	<u>STANDARD</u>
Adhesion	D-3359B
Hardness	D-3363
Impact	D-2794
Salt Spray Resistance	B-117

2. Paint Line shall employ a "checkered" adhesion test daily.
3. Color(s) to be as specified by the Owner's Representative.

- F. Decks: All polyvinyl chloride coated decks shall be of modular design and have 1/4 inch diameter holes on the standing surface. They shall be manufactured from a single piece of low carbon 12 gauge sheet conforming to ASTM specification A569. The sheet shall be perforated then flanged formed and reinforced as necessary to ensure structural integrity. The unit shall then be polyvinyl chloride coated.

- G. Rotationally Molded Poly Parts: These parts shall be molded of a linear low-density polyethylene that is U.V. and color stabilized. Wall thickness varies by product from 0.187 (3/16) inches to 0.132 (5/16) inches. Rotationally molded products shall meet or exceed tensile strength of 2700 psi per ASTM D638. Color to be as specified by the Owner's Representative.

- H. Permalene Parts: These parts shall be manufactured from material that is compression molded, 3/4 inch thick, high-density polyethylene that has been specially formulated for optimum U.V. stability and color retention. Compression molded products shall meet or exceed density of 0.933 G/cc per ASTM D1505, tensile strength of 2400 psi per ASTM D638. Color to be as specified by the Owner's Representative.

- I. Footings: Unless otherwise specified, footings shall be as shown on the drawings. If no details are shown on the drawings, then footings shall be as per the manufacturer's instructions.

- J. Posts: Post length shall vary depending upon the intended use and shall extend a minimum of 42 inches above the deck height. All posts shall be powdercoated to the specified color. All posts shall have a "finished grade marker" positioned on the post identifying the 34" bury line required for correct installation and the top of the loose fill protective surfacing.

1. All caps for posts shall be aluminum die cast from 369.1 aluminum alloy and powdercoated to match the post color. All caps shall be factory installed and secured in place with three, self-sealing rivets.
2. All posts shall be manufactured from 5 inch outside diameter tubing and shall be either recycled aluminum or galvanized steel.
 - a. Galvanized steel posts shall have a minimum wall thickness of 0.120 inches. They shall be galvanized after rolling and shall have both the inside diameter and the cut ends sprayed with a corrosion resistant coating.
 - b. All galvanized steel posts shall meet or exceed the following standards:

ITEM	STANDARD
Yield Strength:	50,000 psi (minimum)
Tensile Strength:	55,000 psi (minimum)
% Elongation in 2 inches:	25
Modulus of Elasticity:	29.5 x 10(6) psi

- c. Recycled Aluminum Posts shall be used for play components that are 6 feet in height or less. For components that are taller than 6 feet only galvanized steel posts shall be used.

2.03 WARRANTY REQUIREMENTS

- A. 100 Year Limited Warranty for all aluminum; posts, clamps, beams, and caps against structural failure due to corrosion, deterioration, or workmanship. This warranty does not cover any "cosmetic" issues.
- B. 10 Year Limited Warranty for all plastic and steel components against structural failure due to corrosion, deterioration, or workmanship. This warranty does not cover any "cosmetic" issues.
- C. 10 Year Limited Warranty for all polyvinyl chloride coatings against structural failure due to corrosion, deterioration, or workmanship. This warranty does not cover any "cosmetic" issues.
- D. 1 Year Limited Warranty for all moving parts spring assemblies for all rocking equipment and any other equipment not included above against failure due to corrosion, deterioration, or workmanship. This warranty does not cover any "cosmetic" issues.

2.04 APPROVED MANUFACTURERS

- A. Approved manufacturers for the 'Age 2-5 Play Structure,' 'Age 5-12 Play Structure,' and '5-Seat Frame Swing' and all singular play equipment amenities shown and listed on the plans and as itemized in Appendix A of these specifications are as follows:
 1. KOMPAN, Inc. 605 W Howard Ln #101, Austin, TX 78753; website: www.kompan.com.
 2. Or Approved Equivalent.

2.05 CONCRETE

- A. Refer to Division 32, Section 32 01 27, "Concrete Pavement" for information.

PART 3 - EXECUTION

3.01 SPECIAL REQUIREMENTS

- A. Before ordering any play equipment the Contractor shall submit to the Owner's Representative for review and approval the submittals listed in Specification 01 33 23, Section 1.04, "PRODUCT DATA." Failure to do so will result in the rejection of any items already ordered and the Contractor absorbing all costs related to their failure to comply with this requirement.
- B. Before beginning work, the Contractor shall check, in the field, existing grades, new grades, and layout as shown on the drawings and report any discrepancies which will affect the work of this contract to the Owner's Representative. Commencement of work will be implied to mean acceptance. No adjustment will be made for discrepancies discovered after work has begun.

3.02 CONSTRUCTION METHODS

- A. Erect and install play equipment where shown on the drawings and as per the manufacturer's instructions.
- B. Footings shall be as per detailed on the drawing(s). If no detail exists on the drawing(s), footings shall be constructed as per the manufacturer's instructions.
 - 1. If the Contractor needs to support play equipment posts in the footing holes prior to and during the placement of concrete, only non-porous and non-biodegradable materials shall be used. The use of wood or any other "organic" type of material to support the bottom of metal or aluminum posts in their footing holes prior to and during the pouring of concrete is prohibited.
- C. The Contractor is solely responsible for the correct layout and installation of the play structure. Layout and/or installation that does not comply with the appropriate safety guidelines and/or manufacturer's instructions shall be removed and reinstalled at the Contractor's expense and at no additional cost to the Owner.

3.03 BASIS OF DESIGN

- A. The following equipment product numbers and names are to be provided to form a complete structure as designed. Contractor shall coordinate with KOMPAN, Inc. as noted as approved provider in specification Section 32 33 01 – Play Equipment to obtain graphic documents, footing, and assembly instructions in order to prepare a complete bid. Provide submittals by play equipment manufacturer in accordance with specification section 01 33 23, for final approval prior to ordering materials.

Age 2-5 Play Structure		
1	PCE205531-0903	Trendsetter®, Sky, In-Ground, by KOPMAN, Inc.
Age 5-12 Play Structure		
1	PCM111831-0901	Mega-Deck®, Upper Deck Classic, PE Slide, In-Ground
Swing		
1	KSW935-CUSTOM	KSW935 Custom Variant 20215630
1	SW990024	Baby and Toddler Seat
1	SW990205	Inclusive Seat
2	SW990201	Duo Swing Set
1	SW990111	Shell Nest, 47" Wide

Freestanding Play		
1	M17601-12P	Fairy Tale Seesaw, In-Ground
1	COR20310-1112	Cone Twister, Small, In-Ground
1	PCM160-0902	Scooter Carousel, In-Ground
1	GXY801421-3417	Spica 1, In-Ground
1	GXY959010-3713	Rotating Disc, In-Ground

END OF SECTION

SECTION 33 41 00 - DRAINAGE STRUCTURES

PART 1 - GENERAL

1.01 GENERAL

- A. This section covers structures appurtenant to the storm sewer system. These structures include inlets, manholes, and junction boxes.

1.02 RELATED SECTIONS

- A. Section 03 20 00 - Concrete Reinforcement
- B. Section 03 30 00 - Concrete
- C. Section 31 23 16 - Excavation, Backfill, and Site Grading

PART 2 - PRODUCTS

2.01 EARTHWORK

- A. All earthwork shall conform to the requirements stipulated in Section 31 23 17.
- B. Excavations for structures in improved areas shall be held to the smallest practical dimensions. No increase in payment for street or lawn repair will be made to allow for areas disturbed by such excavations.

PART 3 - EXECUTION

3.01 CONCRETE CONSTRUCTION

- A. All new inlets and junction boxes shall be constructed of concrete in accordance with Sections 03 20 00 and 03 30 00.
- B. Inlet tops shall have light broom finish.
- C. Curb transitions shall have broom finish. Contraction joints shall be cut where shown. Cut each a minimum of $\frac{1}{4}$ of the concrete depth and finish with joint tool.
- D. Concrete structures may be cast in place, or precast, in accordance with the requirements of this section.
- E. Connections to existing pipes shall be made with a concrete collar with KCMMB4K concrete and any existing pipe that requires replacing shall be done so subsidiary to the pipe inlet connection bid item.

3.02 PRECAST INLETS AND JUNCTION BOXES

- A. Precast concrete inlets and junction boxes shall be constructed in all respects, in accordance with the Plans and Specifications, except as provided in the following items of this subparagraph. The use of precast structures will not relieve the Contractor of the responsibility to make any adjustments to the structures found to be necessary because of field utility conflicts or other field conditions. Modification of precast structures, if allowed by the Engineer, or substitution of an approved structure to meet field conditions shall be entirely at the Contractor's expense.
- B. All applicable requirements of ASTM C478/C478M shall apply to the manufacture of precast concrete manholes.
- C. The manufacturer of precast concrete inlets and junction boxes shall submit detailed drawings and specifications, for the construction of the basic precast units and

appurtenances to the Engineer, for prior approval. A shop drawing for each structure showing dimensions, elevations, and openings, shall be submitted to the Engineer for approval prior to manufacturing of the units. The Contractor shall verify all top of inlet and manhole elevations prior to construction of the structures.

- D. Multiple precast units may only be used as specified on the plans, or with approval of the Engineer. Where dividing walls are used or where multiple precast units are used, the total net length of opening shall equal the length of inlet specified on the project plans. Intermediate wall openings shall be large enough so as to not cause hydraulic head loss. Location and number of manhole openings, as well as openings in walls between multiple units or in dividing walls, shall be as required to promote easy access to all parts of the inlet, subject to the Engineer's approval.
- E. Unless otherwise noted on the plans, concrete base slabs for precast structures shall be constructed monolithically with the walls. The base slab shall be reinforced in accordance with the project plans, and the bottom of the base slab shall be located to provide at least 4 inches of clearance between the bottom of the lowest pipe and the top of the base slab.
- F. Mastic pipe joint compound, or approved preformed mastic, shall be used in horizontal joints and where walls of multiple sections join, in order to form a reasonably watertight structure.
- G. All curb inlet, area inlet, and shallow manhole top slabs shall be cast in place. Wall steel shall be extended a minimum of 4.5 inches into the top slab for 6 inches thick curb inlet tops, and 6.5 inches for 8 inch thick manhole top slabs.

3.03 MASONRY CONSTRUCTION

Where necessary to adjust existing structures, as directed by the engineer, masonry construction shall meet the following requirements:

- A. Brick shall be clay or shale, ASTM C62, Grade SW, or ASTM C32, Grade MS.
- B. Materials for Mortar:
 - 1. Portland Cement Type I
 - 2. Hydrated Lime ASTM C207, Type N.
 - 3. Masonry Cement AASHTO M 150, Type II.
 - 4. Sand. Per KCMMB Specifications.
 - 5. Water. Potable, per KCMMB Specifications.
 - 6. Iron Oxide for Expanding Grout. Embeco by Master Builders Co., or equal.

3.04 MORTAR OR PLASTER

- A. Materials shall be in accordance with Section 31 25 01.
- B. The ingredients shall be proportioned as follows:

	<u>Weights</u>	<u>Parts by Volume</u>
Portland Cement	94#	1
Hydrated Lime	10#	0.15
Sand	200#	3

- C. Masonry cement may be substituted for Portland cement and hydrated lime, providing satisfactory results are obtained. Proportion by volume shall be one part masonry cement to three Parts sand.

- D. All the materials except water shall be mixed, either in a tight box or in an approved mortar mixer, until the mixture assumes a uniform color, after which the water shall be added, and the mixing continued. Sufficient water shall be added to produce a mortar of such consistency that it can be handled easily and spread with a trowel. Mortar shall be mixed only in those quantities required for immediate use. Mortar that is not used within 45 minutes after water has been added shall be discarded. Retempering of mortar will not be permitted.
- E. Work involving mortar or plaster shall not be done in freezing weather and shall be protected from freezing for 3 days after construction.

3.05 EXPANDING MORTAR OR GROUT

- A. Materials shall be in accordance with Part 4.01 of Section 31 25 01. Proportion, mix and use in accordance with manufacturer's instructions.

3.06 WATER TIGHTNESS

- A. All structures shall be constructed substantially watertight. All obvious leaks shall be repaired.
- B. Curing seal, moist cure, or shade shall be used, when required, to accomplish these results and to provide a watertight structure.
- C. Masonry and mortar around pipe shall be carefully constructed to provide water-tight connections.

3.07 SETTING TOP CASTINGS

- A. Top castings for all structures with a concrete top slab shall be cast in the slab at the time of pouring.
- B. Top castings for manholes shall be set in full mortar bed and to required elevation and slope.
- C. Except when otherwise indicated or directed, set manhole tops as stated in the following paragraphs.
- D. Top shall be set flush, and on same slope, with finished pavements or walks. In newly developed areas, set top to designed street surface.
- E. In streets with stone or oiled surfacing, set tops so that they will remain exposed, but flush, when construction is completed.
- F. In established lawns, set tops approximately 1 inch above normal grade and slope away from manhole at 1 on 10 slope.

3.08 MISCELLANEOUS

- A. Steel Items. ASTM A7 or ASTM A36/A36M. Painting or galvanizing, as required by the plans.
- B. Cast Iron Items. ASTM A48/A48M, Class 35, gray iron. Except for the buried portion of manhole steps, coat with coal tar pitch, two coats, at foundry. Castings shall fit together properly, mating surfaces shall be machined, and be non-rocking under moving loads.

END OF SECTION

SECTION 33 44 13 - STORM SEWER CONSTRUCTION

PART 1 - GENERAL

1.01 DESCRIPTION

All storm sewers, structures, and appurtenances shall be located as shown on the plans and as determined by the Engineer.

PART 2 - MATERIALS

2.01 CONCRETE PIPE

A. Pipe

Except as modified or otherwise provided in this chapter, the manufacture of concrete pipe shall be governed by ASTM C76, ASTM C506, and ASTM C507. Except for fittings and closure pieces, each piece of the pipe shall not be less than 8 feet long for pipe diameters 48 inches or less and shall not be less than 6 feet long for pipe diameters larger than 48 inches.

The wall thickness of concrete pipe shall be not less than Wall B.

The pipe class in each case shall be as designated on the plans and shall not be less than Class III.

B. Reinforcement

Circumferential reinforcement shall be full-circle type. Elliptical or part-circle reinforcement will not be approved. All reinforcing shall be located and spaced as recommended by the pipe manufacturers.

C. Joints

Rubber gasket joints shall be required for all round pipe. Mastic joints shall be required for all other pipe shapes.

The City Engineer reserves the right to require joint testing on pipe sections, either at the plant or in place, as designated by the City Engineer to demonstrate compliance.

D. Rubber Gasket Joints

Rubber gasket joints shall conform to ASTM C1628 with the following additions and exceptions:

1. Replace ASTM C1628 5.1.1 with: Circular Cross-Section or "O-Ring" Gaskets for standard use shall meet Class A requirements. Non-Circular Cross-Section or "Profile" Gaskets for standard use shall meet Class E requirements.
2. Replace ASTM C1628 9.4 with: The manufacturer shall conduct concurrently the hydrostatic test described in 9.2 and the structural test described in 9.3. If proven watertight under these combined conditions, hairline cracks that do not leak shall not be cause for rejection. A vacuum test, run in accordance with the current written plant certification procedures of the American Concrete Pipe Association, may be used in lieu of the hydrostatic test referenced above.
3. Joint design details shall be submitted for approval together with design data and test results verifying the adequacy of the joint design.
4. Fine aggregate shall consist of clean natural sand conforming to ASTM C33/C33M. Artificial or manufactured sand will not be approved.

E. Lift Holes

Lift holes are prohibited for all concrete storm sewer pipes.

1. No concrete pipe shall be delivered to the site of the work until concrete control cylinders representing such pipe shall have attained a compressive strength of at least 80% of the specified minimum 28 day strength.

2.02 CORRUGATED METAL PIPE

- A. All corrugated metal pipe shall be fabricated from galvanized iron corrugated metal sheets. The U.S. Gauge number shall, in each case, be as designated on the plans, and as recommended by the manufacturer of the pipe for the depth of installation and classification of soil.
- B. All work shall conform to AASHTO M 36 for base metal and galvanizing. All joints in corrugated metal pipe shall be made using watertight coupling bands, not less than 12 inches wide, fabricated from the same material as the pipe and coated in the same manner. Each coupling band shall be lubricated sufficiently, to insure the corrugation of the band seats into the corrugations of the two pipes being joined, when the bolts are tightened.
- C. Corrugated Metal Pipe manufacturer's certification shall be submitted to the Engineer.

2.03 CONCRETE LINED DITCH

Concrete shall be as specified in "Concrete Construction." Wire fabric shall conform to ASTM A185. Wire fabric shall be supplied in flat sheet form.

2.04 EMBEDMENT

Embedment materials both below and above the bottom of the pipe, the classes of embedment to be used, and the placement and compaction of embedment materials shall conform to the requirements shown in the current Standard Details and to the supplementary requirements in this section.

2.05 TAMPED BACKFILL

All backfill materials shall be in conformance with the City's Manual of Infrastructure Standards for Right of Way Restoration as promulgated by the City Engineer.

2.06 SPECIAL PIPE

All special pipe sections necessary to complete the storm sewer system as shown on the plans shall be furnished by the Contractor. These sections shall include, but not be limited to, drop joint or radius pipe, bends, tees, and Type III end sections. The pipe manufacturer shall provide shop drawings indicating the exact methods to be used to achieve the lines and grades indicated on the plans, including a pipe laying schedule, and the configuration and number of any special pipe sections. All special pipe sections used shall be subsidiary to other bid items.

PART 3 - EXECUTION

3.01 LOCATION AND GRADE OF SEWERS

The grade and alignment of the pipe shall be determined and maintained from tacked offset stakes located alongside the trench upon which cuts and elevations have been established by the Contractor. Pipe alignment during construction shall be maintained by the use of laser alignment equipment. A minimum of 18 inches of cover shall be maintained over the storm sewer pipe.

3.02 POST CONSTRUCTION VIDEO

Once installation and backfill of the proposed storm sewer have been completed and all grading over and around the storm sewer is completed, the Contractor shall be responsible for videotaping each run of storm sewer pipe, less than 60 inches in diameter, to verify that the segment of pipe is in sound, stable condition and that no failures have occurred during construction. This video shall be delivered to the City Engineer for approval prior to any permanent pavement being placed over any said storm sewer. The development and delivery of this video shall be considered subsidiary to other bid items.

3.03 UNAUTHORIZED EXCAVATION

Except where otherwise authorized, shown, or specified, all material excavated below the bottom of concrete walls, footings, slabs on grade, and foundations shall be replaced by and at the expense of the Contractor, with concrete placed at the same time and monolithic with the concrete above.

3.04 REMOVAL OF WATER

The Contractor shall provide and maintain adequate dewatering equipment to remove and dispose of all surface and groundwater entering excavations, trenches, or other parts of the work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until the structure to be built, or the pipe to be installed, therein is completed to the extent that no damage from hydrostatic pressure, flotation, or other causes will result.

All excavations for concrete structures or trenches which extend down to or below the static groundwater elevations shall be dewatered by lowering and maintaining the groundwater surface beneath such excavations a distance of not less than 12 inches below the bottom of the excavation.

Surface water shall be diverted or otherwise prevented from entering excavated areas or trenches to the greatest extent practicable without causing damage to adjacent property.

The Contractor will be held responsible for the condition of any pipe or conduit which they may use for drainage purposes, and all such pipes or conduits shall be left clean and free from sediment.

3.05 SHEETING AND SHORING

Except where banks are cut back on a stable slope, excavation for structures and trenches shall be properly and substantially sheeted, braced, and shored, as necessary, to prevent caving or sliding, to provide protection for the workmen and the work, and to provide protection for existing structures and facilities. Sheeting, bracing, and shoring shall be designed and built to withstand all loads that might be caused by earth movement or pressure and shall be rigid, maintaining shape and position under all circumstances. The Contractor shall brace and shore all trenches in full accordance with Occupational Safety and Health Standards - Excavations; Final Rule 29 CFR Part 1926.

3.06 STABILIZATION

Trench bottoms and subgrades for concrete structures shall be firm, dense, and thoroughly compacted and consolidated; shall be free from mud and muck; and shall be sufficiently stable to remain firm and intact under the feet of the workers.

3.07 CRUSHED ROCK OR GRAVEL FILLS

Crushed rock or gravel fills shall be placed on a suitably prepared subgrade and tamped to the extent necessary for consolidation. Crushed rock or gravel shall be free from dust, clay, or trash and shall be graded 1 1/2 inches to No. 4 as defined in ASTM C33/C33M.

3.08 TRENCH EXCAVATION

The Contractor shall not open more trenches in advance of pipe laying than is necessary to expedite the work. One block or 400 feet (whichever is shorter) shall be the maximum length of open trench permitted on any line under construction. Except where tunneling is shown on the plans or is permitted by the City Engineer, all trench excavation shall be open cut from the surface.

3.09 ALIGNMENT, GRADE, AND MINIMUM COVER

The alignment and grade or elevation of each pipeline shall be fixed and determined by means of offset stakes. An approved laser beam may be used in addition to offset stakes. Vertical and horizontal alignment of pipes, and the maximum joint deflection used in connection therewith, shall be in conformity with the requirements of the specification covering the installation of the pipe being laid in each case.

Where pipe grades or elevations are not definitely fixed by the contract drawings, trenches shall be excavated to a depth sufficient to provide a minimum depth of backfill cover over the top of the pipe of 18 inches.

3.10 LIMITING TRENCH WIDTHS AND PIPE CLEARANCES

Trenches shall be excavated to a width that will provide adequate working space and pipe clearances for proper pipe installation, jointing, and embedment. However, the limiting trench widths below an elevation 6 inches above the top of the installed pipe, and minimum permissible clearances between the installed pipe and either trench wall, shall be as shown in the current Standard Details.

The stipulated minimum clearances shown in the table are not minimum average clearances but are minimum clear distances that will be permitted between any part of the pipe as laid and any part, projection, or point of rock, shale, stone, or boulder.

Where necessary to reduce the earth load on trench banks to prevent sliding and caving, the banks may be cut back on slopes that shall not extend lower than 1 foot above the top of the pipe.

3.11 UNAUTHORIZED TRENCH WIDTHS

Where for any reason, the width of the lower portion of the trench as excavated at any point exceeds the maximum permitted either pipe of adequate strength, special pipe embedment, or arch concrete encasement, as required by loading conditions and as determined by the City Engineer, shall be furnished and installed.

3.12 MECHANICAL EXCAVATION

The use of mechanical equipment will not be permitted in locations where its operations would cause damage to trees, buildings, or other existing property, utilities, or structures above or below ground; in all such locations, hand-excavating tools and methods shall be used.

Mechanical equipment used for trench excavation shall be of a type, design, and construction, and shall be so operated that the rough trench excavation bottom elevation can be controlled, and that uniform trench widths and vertical side walls are

obtained at least from an elevation 1 foot above the top of the installed pipe to the bottom of the trench and that the trench alignment is such that the pipe when accurately laid to the specified alignment, will be centered in the trench with adequate clearance between the pipe and side walls of the trench. Undercutting of the trench sidewall to obtain clearance will not be permitted.

All mechanical trenching equipment, its operating condition, and the manner of its operation shall be subject at all times to the approval of the City Engineer.

3.13 EXCAVATION BELOW PIPE SUBGRADE

Except where otherwise required, pipe trenches shall be excavated below pipe subgrade elevations, as shown in the current Standard Details on file in the office of the City Engineer, to provide for the installation of granular foundation material.

3.14 ARTIFICIAL FOUNDATIONS IN TRENCHES

- A. Whenever so ordered by the City Engineer, the Contractor shall excavate to such depth below grade as the City Engineer may direct, and the trench bottom shall be brought to grade with such materials as the City Engineer may order installed. All timber, concrete foundations, wooden inverts, pipes, posts, stringers, and/or saddles, made necessary by quicksand or other treacherous soil, shall be installed as directed by the City Engineer.

3.15 BELL HOLES

Bell holes shall provide adequate clearance for the tools and methods used in installing the pipe. No part of any bell or coupling shall be in contact with the trench bottom, trench walls, or the granular fill when the pipe is jointed.

3.16 PLACEMENT AND COMPACTION

- A. All granular fill material beneath the pipe shall be spread and the surface graded to provide a uniform and continuous support beneath the pipe at all points between bell holes or pipe joints. It will be permissible to slightly disturb the finished subgrade surface by the withdrawal of pipe slings or other lifting tackle.
- B. After each pipe has been graded, aligned, placed in final position on the bedding material, and shoved home, sufficient pipe embedment material shall be deposited and compacted under and around each side of the pipe and back of the bell or end thereof to firmly hold and maintain the pipe in proper position and alignment during subsequent pipe jointing, embedment, and backfilling operations.
- C. Embedment material shall be deposited and compacted uniformly and simultaneously on each side of the pipe to prevent lateral displacement of the pipe. Tamped backfill materials shall be placed in uniform layers and shall have a moisture content ensuring that the maximum density will be obtained with the compaction method used.

3.17 TRENCH BACKFILL

All trench backfill above pipe embedment shall conform to the following requirements.

- A. Tamped Backfill

Tamped Backfill is only allowable within unpaved areas of the ROW. It may also be used outside of the ROW and when backfilling Sanitary Sewer installations.

Materials for tamped backfill and the method of placement and compaction thereof shall be as specified for tamped backfill for pipe embedment, Subsection Tamped Backfill.

B. Flowable Fill

Flowable Fill is required within all paved portions of the ROW including future paving, if they are known, per the Manual for Infrastructure Standards for Right-of-Way Restoration and City of Overland Park Standard Details.

C. Structure Backfill

Backfill around structures shall be compacted, to the extent necessary to prevent future settlement, by tamping, placement of flowable fill, or other means approved by the City Engineer. Flowable fill is required around all structures within paved portions of the ROW including future paving if they are known.

Material for backfill shall be as specified in this Chapter, Section Materials. and shall contain no wood, grass, roots, broken concrete, stones, trash, or debris of any kind. No tamped or otherwise mechanically compacted backfill shall be deposited or compacted in water.

3.18 DRAINAGE MAINTENANCE

Trenches across roadways, driveways, walks, or other trafficways adjacent to drainage ditches or water courses shall not be backfilled prior to the completion of backfilling of the trench on the upstream side of the trafficway to prevent the impounding of water after the pipe has been laid. Bridges and other temporary structures required to maintain traffic across such unfilled trenches shall be constructed and maintained by the Contractor. Backfilling shall be done so that water will not accumulate in unfilled or partially filled trenches. All material deposited in roadway ditches or other water courses crossed by the line of trench shall be removed immediately after backfilling is completed and the section grades and contours of ditches or water courses shall be restored to their original condition. Surface drainage shall not be obstructed longer than necessary.

3.19 PROTECTION OF TRENCH – BACKFILL IN DRAINAGE COURSES

Where trenches are constructed in or across roadway ditches or other watercourses, the backfill shall be protected from surface erosion by adequate means. Where the grade of the ditch exceeds 1%, suitable ditch checks as approved by the City Engineer shall be installed as directed. Ditch checks may be creosote lumber, stone, or concrete as authorized. In any case, the ditch check shall extend not less than 2 feet below the original ditch or watercourse bottom for the full bottom width and not less than 18 inches into the side slopes thereof.

3.20 DISPOSAL OF EXCESS EXCAVATED MATERIALS

Except as otherwise permitted, all excess excavated materials shall be disposed of away from the site of the work.

Excess earth from excavations located in unimproved property shall be distributed directly over the pipe trench and within the pipe line right-of-way to a maximum depth of 6 inches above the original ground surface elevation at and across the trench and sloping uniformly each way therefrom. Material thus wasted shall be carefully finished with a drag, blade machine, or other suitable tool to a smooth uniform surface without obstructing drainage at any point. Wasting of excess excavated material in the above manner will not be permitted where the line of trench crosses or is within a railroad, public road, or highway right-of-way.

3.21 MAXIMUM TRENCH WIDTHS

Plans or specifications submitted to the City Engineer for approval shall show the maximum trench width for the sizes and classes of pipe at the various cover depths for the particular project.

3.22 SETTLEMENT

Whenever trenches or other excavations made by the Contractor in the performance of the work have not been properly filled, or where settlement has occurred at any time prior to final acceptance of the entire public improvement project, to the extent that the top of the backfill is below the original ground surface, such trenches shall be refilled and the surface compacted and smoothed to conform to the elevations of the adjacent ground surface. All sod in lawns and parks removed or damaged by reason of such settlement, and the repair thereof shall be restored to their original conditions.

3.23 CONCRETE PIPE

A. Rubber Gasket Joints

Non-Circular Cross-Section or "Profile" Gaskets shall be installed in strict accordance with the pipe and gasket manufacturer's recommendations.

For Circular Cross-Section or "O-Ring" Gaskets, immediately before joining the pipe, the outside of the spigot and gasket and the inside of the receiving bell shall be thoroughly cleaned and coated with a suitable lubricant. The position and conditions of the rubber gasket shall be checked with a feeler gauge after the piping unit is installed.

B. Mastic Joints

Mastic joints will be required for all non-round pipe shapes. Mastic joints shall be constructed to attain a watertight joint. Sufficient mastic will be applied so as to completely fill any space between the spigot end of one pipe and the bell end of the adjoining pipe.

C. Marking

Each pipe, fitting, or special section shall have plainly and permanently marked thereon:

1. Pipe class;
2. Date of manufacture;
3. Manufacturer's name or trademark;
4. On mitered pipe, amount of miter and point of maximum miter.

Markings shall be indented in the pipe or painted thereon with waterproof paint.

Each end of each mitered pipe, fitting or special section shall be marked with a stripe of paint approximately 1 1/2-inches wide and 2 feet long, applied along the top center line.

D. Joint Openings

Round pipe shall have rubber gasketed joints in accordance with ASTM C1628 with noted exceptions above in this Chapter, Subsection Rubber Gasket Joints. Other shapes shall use mastic joints as follows. In laying pipe, the maximum mastic joint opening shall not exceed the manufacturers' recommendations, or the following table, whichever is less.

Pipe Size (Round Equivalent)	Maximum Joint Opening
12"-24"	1/4"
27"-84"	1/8"/ft. of equivalent internal diameter, max 5/8"
90" and larger	3/4"

The above maximum openings are for the purpose of compensating for minor irregularities in the manufacture of the pipe joints. The pipe is to be laid to line and grade so that the sections are pushed completely home at least one point around the circumference of the joint, without spalling the concrete. Permissible openings may exist at other points around the circumference of the pipe.

In laying pipe, the maximum rubber gasket joint pull and deflection shall not exceed the manufacturer's recommendations.

E. Bends

When special engineering conditions exist, the City Engineer may allow bends. Bends for concrete pipe shall be fabricated from segments of a steel cylinder with concrete or mortar lining and reinforced concrete exterior covering or from segments of concrete pipe miter cut while the pipe is still green. The deflection angle between adjacent segments shall not exceed 30°.

Steel cylinders shall be at least U.S. 10 gauge and shall be lined with concrete or mortar at least 3/4-inches thick. Bends fabricated from steel cylinders shall be designed for the same three edge bearing loads as the adjacent pipe.

In bends fabricated from miter cut segments of concrete pipe, the reinforcing steel shall be welded, and the entire bend shall be encased in concrete after installation. Concrete encasement shall be at least 8 inches thick all around and shall extend the full length of the bend.

F. Handling

Pipe, fittings, and accessories shall be handled in a manner that will insure installation in sound, undamaged condition.

Concrete pipe and fittings shall be handled carefully and shall not be bumped or dropped. No hooks shall be permitted to come in contact with joint surfaces. Pipe units shall be kept from contact with adjacent units during handling and storage.

Lift holes are prohibited for all concrete storm sewer pipe.

G. Cleaning

The interior of all pipe and fittings shall be thoroughly cleaned of foreign matter before being installed and shall be kept clean until the work has been approved. All joint contact surfaces shall be kept clean until the jointing is completed.

Every precaution shall be taken to prevent foreign material from entering the pipe during installation. No debris, tools, clothing, or other materials shall be placed in the pipe. Whenever pipe laying is stopped, the open end of the line shall be suitably closed. Culverts, sewers, and drains shall have the upper end closed with an end board closely fitting the end of the pipe and having a number of small holes drilled near the center to prevent the trench from filling with water. All water that may have entered the trench shall be pumped out before the closure is removed. It is essential that no mud, sand, or other material shall be placed in the pipe.

H. Alignment

Piping shall be laid to the lines and grades shown on the drawings. Storm sewers shall be designed with straight pipe runs between structures. Where warranted by special engineering conditions, the City Engineer may approve the design of curved sections. Pipe lines or runs intended to be straight shall be laid straight. Curves may be formed by using fittings or mitered joints or by opening the joints for pipe 36 inches in diameter

and larger. Complete curve data shall be shown on the plans. The Contractor shall erect hub stakes to determine and check pipe subgrades. Not less than three hub stakes shall be maintained in proper position at all times when trench grading is in progress. If a laser beam is not used, batter boards shall be used at intervals of not more than 25 feet.

I. Laying Pipe

Pipe shall be protected from lateral displacement by pipe embedment material. Under no circumstances shall pipe be laid in water and no pipe shall be laid under unsuitable weather or trench conditions.

Pipe shall be laid with the bell ends facing upstream unless an exception is granted by the City Engineer. Prior to assembling each joint, the new pipe section being added to the already installed pipe(s), shall be on line and grade to help insure uniform gasket contact around the entire perimeter of the bell end.

3.24 CORRUGATED METAL PIPE

All pipe, pipe couplings, and accessories therefore shall be unloaded, stockpiled, hauled, distributed, and otherwise handled in a manner which will prevent damage thereto. Care shall be taken to ensure that no damage will occur to coating of pipe and pipe couplings. All hooks or other tools inserted in the ends of the pipe, and slings if used in contact with the outside of the pipe, shall be well padded.

All pipe coating which has been damaged prior to laying the pipe or placing the backfill shall be repaired in strict conformity with the pipe manufacturer's instructions and recommendations, using materials of a type and quality equal to that used in originally coating the pipe.

Special care shall be taken to lay all pipe to exact grade and line. All pipe, when jointed, shall form a true line of sewer. Any pipe that has a grade or joint disturbed after laying shall be taken up and re-laid. All pipes shall be laid with the separate sections joined firmly together, with outside laps of circumferential joints pointing upstream, and the center line of the invert coinciding with the specified alignment of the pipe.

The interior surfaces of all pipe shall be thoroughly cleaned of all foreign matter before being lowered in the trenches and shall be kept clean during laying operations. In addition, the exterior surfaces of the ends of corrugated metal pipe over which the coupling bands are to be installed, and all interior and exterior surfaces of the bands shall be both clean and dry when the pipe is laid, and the joints coupled as required.

Coupled joints shall be made in strict conformity with the corrugated metal pipe manufacturer's recommendations and instructions, using watertight coupling bands and accessories as specified above.

3.25 CONCRETE LINED DITCH

A. Reinforcing

The reinforcing for the concrete shall be designed to withstand all earth and water pressures imposed upon the sides. The minimum amount of reinforcing placed in any section of the concrete paving shall be 6"x6" spacing welded wire fabric, W3 thickness. Wire fabric shall be supplied in flat sheet form. Wire fabric shall be supported on fabricated steel bar supports at 3 foot maximum spacing.

B. Joints

Transverse expansion joints shall be placed at maximum intervals of 250 feet, and where new construction adjoins existing liners or other structures. Smooth dowel bars,

2 feet long by 5/8-inch diameter, sleeved, at 18 inch centers, shall be carried through the expansion joints. Expansion joints shall consist of 1/2-inch pre-molded, non-extruding expansion joint material. Cut-off walls shall be placed at the downstream side of all expansion joints.

Contraction joints shall be sawed or tooled to a minimum depth of 1 1/2-inches, at 10 foot maximum centers. No longitudinal joints shall be placed at the flow line. Joints shall be filled with an approved joint sealer material.

C. Weep Holes

Two inch diameter plastic weep holes shall be placed at 15 foot centers and backfilled with 3/4-inch clean rock, 15 inches in all directions above the flow line. Weep holes shall be flush with the face of the concrete and the back screened.

3.26 CONCRETE BOX CULVERTS

A. Lifting Inserts

Embedded lifting inserts shall provide a water-tight lift point, which does not require patching or grouting. Insert type, size, and location shall be on the shop drawing.

B. Rigging

Rigging and installation guidelines shall follow the manufacturer's recommendations.

C. Pre-cast Box Joint Openings

In laying pre-cast box culverts, the maximum mastic joint opening shall not exceed the manufacturers' recommendations, or the following table, whichever is less.

<u>Box Size (Internal Span)</u>	<u>Maximum Joint Opening</u>
≤ 7'	1/2"
> 7'	3/4"

D. Handrails

Fabricated steel handrail and guard fence shall be hot dip zinc coated in accordance with the latest edition of ASTM A123/A123M. Hardware for handrail and guard fence shall be hot dip zinc coated in accordance with the latest edition of ASTM A123/A123M.

3.27 STORM SEWER ABANDONMENT

A. Plug

Construct sewer plug by completely filling the end of the pipe with concrete. Force concrete into the end of the pipe for a distance of 16 inches, or 1/2 the pipe diameter, whichever is greater.

B. Fill

Wherever existing pipe is to be abandoned in place, the Contractor shall empty the line of all water, fill the pipe full of a material approved by the Engineer such as flowable fill or a sand slurry, and plug the ends. The Contractor shall demonstrate the entire pipe to be abandoned has been filled prior to the installation of end caps. Validation shall include placement of a predetermined volume of fill into the pipe to be abandoned.

In the event the pipeline to be abandoned is cracked or crushed, the Contractor shall excavate to the next joint of pipe and install the plug. Crushed pipe sections or portions thereof shall be removed and disposed of by the Contractor. All excavation, shoring, dewatering, disposal of unsuitable material, backfilling, compaction, and filling required for completion of this Work shall conform to the requirements of:

0322006.03 Grain Valley, MO Armstrong Park
All-Inclusive Playground

33 44 13 Storm Sewer Construction

Section 31 23 16.13 - Trenching, Backfilling, and Compaction
Section 31 23 23.13 - Flowable Fill

END OF SECTION

