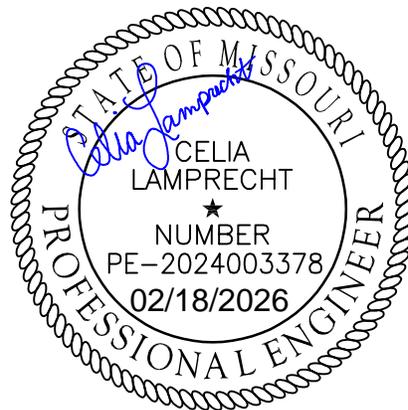


City of Grain Valley, Missouri

WATER TECHNICAL SPECIFICATIONS FOR

MINTER ROAD WATER MAIN REPLACEMENTS GV WO 25-02



Prepared by:

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

February 2026

CITY OF GRAIN VALLEY
MINTER ROAD WATER MAIN REPLACEMENT

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CITY OF GRAIN VALLEY, MISSOURI
("Owner")

COMMUNITY DEVELOPMENT DEPARTMENT

WATER TOWER UPGRADE

ADVERTISEMENT FOR BIDS

Sealed Bids will be received by the City of Grain Valley at City Hall, 711 Main Street, Grain Valley, Missouri until **1:00 p.m. on April 15, 2026**. 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 on Microsoft Teams. See Pre-Bid and Bid Opening Meetings Section for Microsoft Teams meeting ID and Passcode.

The Work is generally described as follows:

Approximately 1,235 linear feet of 12" water main replacement along Minter Road from SW Eagles Parkway and extending south along Minter Road. The project consists of connections to two existing 12" DIP mains along SW Eagles Parkway, a 8" DIP water main along SW Eagles Way and an existing 8" DIP main along Blue Branch Drive.

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 and downloaded on-line at www.cityofgrainvalley.org. Information regarding this project can be found under the "Bid Notices" link on the website. Prospective bidders desiring hard copies of the Contract Documents for use in preparing bids may obtain a set of such documents from the City of Grain Valley Community Development Department, 711 S. Main Street, Grain Valley, MO 64029. Any questions regarding the project, plans, specification, or bid documents should be directed to CMT and copy Patrick Martin, City Representative at (816) 847-6221 or pmartin@cityofgrainvalley.org.

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 five percent (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 five percent (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, Non-segregated 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 will evaluate bids based on the most responsive and responsible bid. The contract award is subject to Board of Aldermen approval and certification by the Purchasing Officer, as required by Article III, Section E and Article IX of the City's Purchasing Policy. 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

Advertisement Date: 3/14/2026

PRE-BID CONFERENCE

A mandatory pre-bid conference will be held on Microsoft Teams at 10:00AM on March 31, 2026.

See Pre-Bid and Bid Opening Meetings Section for Microsoft Teams meeting ID and Passcode. Representatives of Owner will be present to discuss the Project. Bidders are required to attend and participate in the conference. Owner will transmit to all prospective Bidders of record such Addenda as Owner 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.

END OF DOCUMENT A

CITY OF GRAIN VALLEY, MISSOURI
(“Owner”)
711 MAIN STREET, GRAIN VALLEY, MO 64029
PHONE: (816) 847-6200 FAX: (816) 847-6209

MINTER ROAD WATER MAIN REPLACEMENT

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. *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.
- B. *Bidder* - The entity who submits a Bid for the Work described in the Contract Documents.
- C. *Bidding Documents* - The Bidding Requirements and the Contract Documents (including *without* limitation all Drawings, Specifications and Addenda issued prior to receipt of Bids).
- D. *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.
- E. *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.
- F. *Engineer* – Crawford Murphy & Tilly, 1100 Main Street, Suite 1210, Kansas City, Missouri 64105.
- G. *Owner* - City of Grain Valley, Missouri, 711 Main, Grain Valley, Missouri 64029.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01 Copies of plans, specifications, bid documents, and other Contract Documents can be seen and downloaded on-line at www.cityofgrainvalley.org. Information regarding this project can be found under the “Bid Notices” link on the website. Prospective bidders desiring hard copies of the Contract Documents for use in preparing bids may obtain a set of such documents from the City of Grain Valley Community Development Department, 711 S. Main Street, Grain Valley, MO 64029. Any questions regarding the project, plans, specification, or bid documents should be directed to Celia Lamprecht, CMT at (816) 607-5921 or clamprecht@cmtengr.com and copy Patrick Martin, City Representative at (816) 847-6221 or pmartin@cityofgrainvalley.org.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; Owner assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

Owner 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, Bidder shall submit written evidence such as financial data, previous experience, qualifications of personnel, present commitments, and other data regarding Bidder's qualifications with bid.

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 the City 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 in Appendix A. Owner 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:

Patrick Martin, City Representative | 816.847.6221 | pmartin@cityofgrainvalley.org

Michael Myers | 816.847.6272 | mmyers@cityofgrainvalley.org

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 Design Professional and copied to the Owner. Questions concerning the Bidding Documents may be directed to:

Celia Lamprecht, Crawford Murphy & Tilly, 816.607.5921
clamprecht@cmtengr.com

6.02 Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by Addenda. Questions received less than four (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 fifteen (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 seven (7) days after the Effective Date of the Agreement or ninety one (91) 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 seven (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 Owner, application for such acceptance will not be considered by Owner until after the Effective Date of the Agreement. The procedure for submission of any such application by Contractor and consideration by Owner 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 *five* (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 his signature the word "president", "secretary", "agent", or other designation without disclosing his 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 No bid modification or withdrawal of bids once sealed bid has been submitted to the City.

ARTICLE 16 - OPENING OF BIDS

16.01 Bids will be opened and read aloud publicly on a Microsoft Teams meeting. See Pre-Bid and Bid Opening Meetings Section for Microsoft Teams meeting ID and Passcode. Upon request, an abstract of the amounts of the Base Bids and Bid Alternates (if any) 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 BOAD OF ALDERMAN

18.01 The Contract will not be binding and effective on the City until approved by Resolution of the Board of Alderman 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 alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award. The most responsive and responsible bid can be based the base bid only, or on any combination of the base bid and alternate bids.

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 most responsive and responsible 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 fifteen (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, if required, or within fifteen (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 Contractor for 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 on Microsoft Teams at 10:00 AM on March 31, 2026. See Pre-Bid and Bid Opening Meetings Section for Microsoft Teams meeting ID and Passcode. Representatives of Owner will be present to discuss the Project. Bidders are required to attend and participate in the conference. Owner will transmit to all prospective Bidders of record such Addenda as Owner 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.

23.05 Successful bidder must obtain a City of Grain Valley Business License prior to the start of work.

END OF DOCUMENT IB

PRE-BID MEETING:

PROJECT: Grain Valley Minter Road Water Main Replacement

DATE: Tuesday, March 31, 2026

TIME: 10:00 AM

LOCATION: **Microsoft Teams meeting**
Join:

<https://teams.microsoft.com/meet/23513308024246?p=WI79SQmKGVp4IH49rd>

Meeting ID: 235 133 080 242 46

Passcode: rW9oc3Fb

[Need help?](#) | [System reference](#)

Dial in by phone

[+1 224-419-4630,,731857215#](tel:+12244194630731857215) United States,
Waukegan

[Find a local number](#)

Phone conference ID: 731 857 215#

PURPOSE:

1. Project Overview
2. Bidder Qualifications
3. Bidding Requirements
4. Schedule
6. Questions

ATTENDANCE: Mandatory.

BID OPENING MEETING:

PROJECT: Grain Valley Minter Road Water Main Replacement

DATE: Wednesday, April 15, 2026

TIME: 1:00 PM

LOCATION: **Microsoft Teams meeting**
Join:

<https://teams.microsoft.com/meet/24327900301948?p=nQU6yhhkqsRw17HcDq0>

Meeting ID: 243 279 003 019 48

Passcode: kz938xX9

[Need help?](#) | [System reference](#)

Dial in by phone

[+1 224-419-4630,,810436051#](tel:+12244194630810436051) United States,
Waukegan

[Find a local number](#)

Phone conference ID: 810 436 051#

END OF DOCUMENT 00 25 00

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.

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

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:

BIDDING REQUIREMENTS
Document 00 45 19 - Non-Collusion Affidavit

(This Affidavit must be executed)

STATE OF _____)
) SS
COUNTY OF _____)

_____ being first duly sworn, deposes and says that he is _____

(Sole Owner, a Partner, President, Secretary, etc.) of _____

_____ the party making the foregoing proposal or bid; that such 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 that such other person shall 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 affiant or any other Bidder, or to fix any overhead, profit, or cost element of said Bid price, or of that of any other Bidder, or to secure any advantage against the Owner, or any person interested in the proposed Contract; and that all statements contained in said proposal or bid are true; and further, that such Bidder has not, directly or indirectly submitted this Bid, or the contents thereof, or divulged information or data relative thereto to any association or to any member or agent thereof.

Affiant

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

Notary Public

My Commission Expires: _____

END OF DOCUMENT 00 45 19

BID FORM

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ARTICLE 1- BID RECIPIENT

1.01 This Bid is submitted to:

City of Grain Valley, Missouri
C/O Patrick Martin, City Representative
711 Main Street
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 - BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

| Addendum No. | Addendum, Date |
|---------------------|-----------------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

- B. Bidder may request to visit the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. 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 any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. 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.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 - BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. 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;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "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;
 - 2. "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;
 - 3. "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; and

4. "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 5 - BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Minter Road Water Main Replacement

| Item No. | Description* | Units | Quantity | Unit Price | Total Price (\$) |
|-----------------|------------------------------|--------------|-----------------|-------------------|-------------------------|
| 1 | Mobilization/Demobilization | 1 | LS | | |
| 2 | 12" C900 DR18 w/ Tracer Wire | 1,180 | LF | | |
| 3 | 8" C900 DR 18 w/ Tracer Wire | 70 | LF | | |
| 4 | Fittings | 28 | EA | | |
| 5 | Fire Hydrant Assembly | 2 | EA | | |
| 6 | Valves | 9 | EA | | |
| 7 | Water Service Transfers | 4 | EA | | |
| 8 | Erosion Control | 1 | LS | | |
| 9 | Traffic Control | 1 | LS | | |
| 10 | Testing & Disinfection | 1 | LS | | |
| 11 | Construction Staking | 1,250 | LF | | |
| 12 | As-Built Drawings | 1 | LS | | |
| 13 | Seeding Restoration | 275 | SY | | |
| 14 | Asphalt Restoration | 120 | SY | | |

| | | | | | |
|---------------------------------|-----------------------------|----|----|--|--|
| 15 | Gravel Restoration | 25 | SY | | |
| 16 | Sidewalk & Curb Restoration | 95 | SY | | |
| Total Amount of Base Bid | | | | | |

Total Amount of Base Bid for Project (Typed or Written)

Firm Name

The City reserves the right to adjust quantities for budget purposes.

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 Bid items will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 6 -TIME OF COMPLETION

- 6.01 **Bidder** agrees that the Work will be substantially complete within the number of calendar days listed in the Bid Form and will be completed and ready for final payment in accordance with Paragraph 14.10 of the General Conditions within 15 days of final punch list.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 - ATTACHMENTS TO THIS BID

- 7.01 The following documents are to be submitted with and made a condition of this Bid:
 - A. Required Bid Security;
 - B. Bidders Affidavit;
 - C. E-Verify Affidavit;
 - D. List of Proposed Subcontractors;
 - E. List of Proposed Suppliers;
 - F. List of Equipment;
 - G. List of Contracts on Hand;
 - H. Evidence of authority to do business in the state of Missouri; or a written covenant to obtain such license within the time for acceptance of Bids;
 - I. Contractor's License No.: **[or]** Evidence of Bidder's ability to obtain a State Contractor's License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;
 - J. Product Substitution Form 00 43 25.

K. 00 45 19 - Non-Collusion Affidavit.

L. All manufactured goods or commodities used or supplied under this contract must meet the requirements of the Domestic Products Procurement law RSMo 34.350- RSMo 34.359. Compliance certification must be submitted if awarded project.

7.02 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 9 - BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:
[Signature] _____

[Printed name]
{If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.}

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Bidder's License No.: _____

(where 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):

Minter Road Water Main Replacement

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 ten (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:

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

Address of Bidder:

[Insert Name and Address]

Address of Surety:

[Insert Name and Address]

BIDDING REQUIREMENTS

Document 00 43 25 - Proposed Product Substitutions

1.01 The Total Base Bid Amount includes only those products specified in the Bidding Documents. Following is a list of substitute products which Bidder proposes to furnish on this project, with the difference in price being added to or deducted from the Total Bid Amount.

1.02 Bidder understands that the acceptance of any proposed substitution is at the Owner's option. Approval or rejection of any substitutions listed below will be indicated after executing the Contract.

1.03 PRODUCT SUBSTITUTION LIST

| <u>MANUFACTURER'S NAME AND PRODUCT</u> | <u>ADD</u> | <u>DEDUCT</u> |
|--|------------|---------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

1.04 Bidder's proposal shall be in accordance with the provisions of Section 01 60 00 - Product Requirements.

1.05 EVALUATION

A. Contract award will be made in accordance with Instructions to Bidders. Only the successful Bidder's Proposed Product Substitution List will be evaluated.

1.06 SIGNATURE OF BIDDER

_____ Individual or Corporate Name
By _____
Address _____

END OF DOCUMENT 00 43 25

E. Type of Work: _____

Dollar Value of Work: _____

Name: _____

Address: _____

Street

City

F. Type of Work: _____

Dollar Value of Work: _____

Name: _____

Address: _____

Street

City

G. Type of Work: _____

Dollar Value of Work: _____

Name: _____

Address: _____

Street

City

1.02 SIGNATURE OF BIDDER

Individual or Corporate Name

By

(Signature of Authorized Individual)

(Name of Authorized Individual)

Address

END OF DOCUMENT 00 43 36

BID GUARANTY

Attached hereto is a _____ Certified Check from _____ (the "Bidder") in the amount of _____ Dollars (\$_____), which represents no less than five percent (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

CITY OF GRAIN VALLEY
MINTER ROAD WATER MAIN REPLACEMENT

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NOTICE OF AWARD

20

TO: _____
AT: _____

"Contractor"

FROM:
CITY OF GRAIN VALLEY, MISSOURI
711 Main Street
Grain Valley, MO 64029
"Owner"

RE: MINTER ROAD
WATER MAIN REPLACEMENT

"Project"

You are notified that your Bid dated _____ for the referenced Contract has been evaluated. Your organization has been determined to be the lowest responsible and best Bidder, and has been awarded the Contract for the Work.

The Contract Price of your Contract is _____ Dollars (\$_____).

Five (5) copies of the Agreement Between Owner and Contractor accompany this Notice of Award.

Your organization shall comply with the following conditions precedent within the number of days after receipt of the Notice of Award specified in the Instruction to Bidders or otherwise stipulated, that is by _____, 20__ you shall:

Sign and return to the **Professional** the executed Notice of Award and all of the following required documents:

1. Five (5) fully executed counterparts of the Agreement Between Owner and Contractor
2. Fully executed Performance and Maintenance Bond and Payment Bond as specified in the General Conditions which may be modified by Supplementary Conditions.
3. Certificate of Insurance as specified the General Conditions which may be modified by Supplementary Conditions.

Failure to comply with these conditions within the time specified may entitle the Owner to consider your Bid abandoned, annul this Notice of Award and declare your Bid Security forfeited.

Issued On Behalf Of The Owner:

Contractor

By: _____

By: _____

Printed Name: _____

Printed Name: _____

Title: _____

Title: _____

Received on _____, 20__

Return to the Professional: _____

MINTER ROAD WATER MAIN REPLACEMENT

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 _____, 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, Owner held a Pre-Bid conference on _____, and

WHEREAS, the Contractor, in response to the Owners invitation to bid which closed at _____ on _____, 20____, 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 his 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 the City of Grain Valley, 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 3.3 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 following dates:

Substantial Completion shall be completed within 60 calendar days from the Notice to Proceed date.

The following items shall be complete for the project to be considered for Substantial Completion: Water main installation and connections to existing mains, water service transfers, testing and disinfection, pavement, driveway and curb restoration.

Final Completion shall be completed within 15 calendar days from the Substantial Completion date. The following item shall be complete for the project to be considered for Final Completion: Seeding and Sodding.

3.3 Bidder agrees that the Work will be substantially complete within 15 calendar days of Notice to Proceed and will be fully completed and ready for final payment in accordance with Paragraph 14.10 of the General Conditions within fifteen (15) calendar days following receipt of notice of substantial completion.

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 3.2, 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:

\$500 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 3.2 for final completion of the Work or phases of the Work and until the actual date(s) of final completion:

\$500 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 an amount equal to the sum of the below established unit price of each separately identified item of Work set forth below, times the actual quantities of that item completed by Contractor ("Contract Price"):

SEE ATTACHED BID

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 Owner will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Owner 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). Owner'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 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 one (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 five percent (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 Owner has withheld or nullified an approval of payment as set forth in the Contract Documents.

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 Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents and the written resolution thereof by Owner 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: "Map of Proposed Roads" and standard details.

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 his 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: Kenneth Murphy

Title: City Administrator

"Contractor"

By: _____

Printed Name: _____

Title: _____

NOTICE TO PROCEED

Owner: City of Grain Valley, MO Owner's Contract No.:

Contractor: Contractor's Project No.:

Project: Minter Road Water Main Replacement Contract Name:

Effective Date of Contract:

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [REDACTED], 20[REDACTED].

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the date of Substantial Completion is _____, and the date of readiness for final payment is _____.

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, Missouri

By: _____
Authorized Signature
Kenneth Murphy

Title: _____
City Administrator

Date Issued: _____

Copy: Engineer

PERFORMANCE BOND

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

CONTRACTOR (Name and Address):

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

OWNER:

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

CONTRACT

Date:
Price:
Description (Name and Location):

BOND

Date:
Amount:

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

CONTRACTOR AS PRINCIPAL
Company: _____ (Corp. Seal)

SURETY
Company: _____ (Corp. Seal)

Signature: _____
Name and Title:

Signature: _____
Name and Title:
(Attach certified Power of Attorney)

1. Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to Owner and any successor, grantee or assignee of Owner for the full performance of all of Contractor's obligations under the Contract. The Contract is incorporated herein by this reference.
2. If the Contractor fully performs all of its duties and obligations under the Contract, the Surety and the Contractor shall have no obligation under this Bond.
3. The Surety's obligations under this Bond shall arise after:
 - a. The Contractor fails to fully perform of all its duties and obligations under the Contract;
 - b. The Owner has given Surety notice of Contractor's failure to fully perform of all its duties and obligations under the Contract; and
 - c. The Owner has agreed to pay the Balance of the Contract Price, if any, to the Surety in accordance with the terms of the Contract.
4. When Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at Surety's expense take one of the following actions:
 - a. Arrange for Contractor, with the written consent of the Owner, to perform, complete or cure the default or breach of the Contract; or
 - b. Undertake to perform and complete the Contract itself through qualified contractors approved by Owner;
 - c. Waive its right to perform, complete or cure the default of breach of the Contract and pay to the Owner the total amount of this Bond.
5. If the Surety does not proceed as provided by Paragraph 4 within fifteen (15) days of the Owner's compliance with Paragraph 3 and complete its obligations with diligence and promptness, Surety shall be deemed to be in default under this Bond.
6. If Surety elects to act under Paragraph 4(a) or 4(b) above, then the responsibilities of Surety to Owner shall not be greater than those of the Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of the Owner under the Contract. Surety recognizes and acknowledges that subject to the amount of the Bond, Surety's obligations under this Bond, include but are not limited to:
 - a. The responsibilities of Contractor for correction of defective work and completion of the Contract;
 - b. Attorneys' fees and design professional fees and delay costs resulting from Contractor's breach of or default under the Contract, or resulting from the acts or omissions of the Surety;
 - c. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by the delayed performance or non-performance of the Contractor under the Contract or the Surety under this Bond.
7. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner.
8. The Surety hereby waives notice of any change, including changes of times, to the Contract or to related subcontracts, purchase orders and other obligations.
9. It is agreed by Contractor and Surety that notwithstanding any contrary provisions contained in this Bond or the Contract, that there shall be no limits on the Owner's right to sue under this Bond for defects, defaults, or breaches not discovered or known by Owner at the time such Work was paid for and accepted by Owner except those limits provided by the statute of limitations applicable to suits on contracts.
10. Surety further agrees that in event of any default by the Owner in the performance of the Owner's obligations to the Contractor under the Contract, the Contractor or Surety shall cause written notice of such default specifying said default in detail to be given to the Owner, and the Owner shall have thirty (30) days from time after receipt of such notice within which to cure such default, or such additional reasonable period of time as may be required if the nature of such default is such that it cannot be cured within thirty (30) days. Such Notice of Default shall be sent by certified or registered U.S. Mail, return receipt requested, first class postage pre-paid, to the Owner.
11. Surety further agrees this Bond shall remain in effect following the date of Final Payment during the Guarantee Period or the time required to resolve any items of incomplete Work and the payment of any disputed amounts for the period provided in the statute of limitations applicable to suits on contracts. This Bond shall be in an amount equal to the Contract Price and any adjustments thereto.
12. Surety agrees that it is obligated under the bonds to any successor, grantee or assignee of Owner.
13. Definitions
 - a. Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Contract after all proper adjustments have been made, including allowance to the Contractor of 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 Contract.
 - b. Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto and including, but not limited to, all duties to correct or repair non-conforming Work.

Address of Owner:
 City of Grain Valley, Missouri
 711 Main Street
 Grain Valley, MO 64029

Address of Contractor/Principal:
 [Insert Name and Address]

Address of Surety:
 [Insert Name and Address]

PAYMENT BOND

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

CONTRACTOR (Name and Address):

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

OWNER (Name and Address):

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

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date:

Amount:

Surety and Contractor, 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.

CONTRACTOR AS PRINCIPAL

Company: _____ (Corp. Seal)

Signature: _____
Name and Title:

SURETY

Company: _____ (Corp. Seal)

Signature: _____
Name and Title:
(Attach certified Power of Attorney)

293137v1

FORM 2-20-03

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner and any successor, grantee or assignee of Owner to pay for labor, materials and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the Owner this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due Claimants.

3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment for all sums due Claimants.

4. The Surety's total obligation shall not exceed the amount of this Bond.

5. Amounts due and payable by the Owner to the Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under the Performance Bond provided in connection with the Contract. By the Contractor furnishing this Bond, Contractor agrees that all remaining funds due and payable by the Owner to the Contractor in the performance of the Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond subject to the Owner's priority to use the funds for the completion of the Work.

6. The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Contract. The Owner shall not be liable for payment of any costs or expenses of any Claimants under this Bond, and shall have under this Bond no obligation to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

7. The Surety hereby waives notice of and consents to any changes, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

8. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location of the Project or after the expiration of one year from the date which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Contract. 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 shall be applicable.

9. Notice to the Surety or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

10. Any provision in the Bond conflicting with any applicable law shall be deemed deleted herefrom and provisions conforming to such applicable law shall be deemed incorporated herein.

11. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor or Surety shall promptly furnish a copy of this Bond or shall permit a copy to be made.

12. The Contract is hereby made a part of this bond.

13. Surety agrees that it is obligated under this Bond to any successor, grantee or assignee of the Owner.

14. DEFINITIONS

a. Claimants: Individuals or entities that furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, design services required for performance of the Work of the Contractor and the Contractor's subcontractors.

b. Contract: The agreement between the Owner and the Contractor identified in the first page of this Bond, including all Contract Documents and changes thereto.

Address of Owner:

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

Address of Contractor/Principal:

[Insert Name and Address]

Address of Surety:

[Insert Name and Address]

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 _____

(Name of Owner)

(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 _____, 20 ____, 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 two (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

(Principal) Secretary

(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.

Contractor's Application for Payment No.

| | | |
|-----------------------|---------------------------|-------------------------|
| | Application Period: | Application Date: |
| To (Owner): | From (Contractor): | Via (Engineer): |
| Project: | Contract: | |
| Owner's Contract No.: | Contractor's Project No.: | Engineer's Project No.: |

**Application For Payment
Change Order Summary**

| Approved Change Orders | Number | Additions | Deductions | | |
|------------------------|-----------------------------|-----------|------------|--|----------|
| | | | | 1. ORIGINAL CONTRACT PRICE..... | \$ _____ |
| | | | | 2. Net change by Change Orders..... | \$ _____ |
| | | | | 3. Current Contract Price (Line 1 ± 2)..... | \$ _____ |
| | | | | 4. TOTAL COMPLETED AND STORED TO DATE (Column F total on Progress Estimates)..... | \$ _____ |
| | | | | 5. RETAINAGE: | |
| | | | | a. X Work Completed..... | \$ _____ |
| | | | | b. X Stored Material..... | \$ _____ |
| | | | | c. Total Retainage (Line 5.a + Line 5.b)..... | \$ _____ |
| | | | | 6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c)..... | \$ _____ |
| | | | | 7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)..... | \$ _____ |
| | | | | 8. AMOUNT DUE THIS APPLICATION..... | \$ _____ |
| | | | | 9. BALANCE TO FINISH, PLUS RETAINAGE (Column G total on Progress Estimates + Line 5.c above)..... | \$ _____ |
| TOTALS | | | | | |
| | NET CHANGE BY CHANGE ORDERS | | | | |

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:

(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;

(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all Liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such Liens, security interest, or encumbrances); and

(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor Signature

By: _____ Date: _____

Payment of: \$ _____
(Line 8 or other - attach explanation of the other amount)

is recommended by: _____ (Engineer) _____ (Date)

Payment of: \$ _____
(Line 8 or other - attach explanation of the other amount)

is approved by: _____ (Owner) _____ (Date)

Approved by: _____ Funding or Financing Entity (if applicable) _____ (Date)

CONTRACTOR'S AFFIDAVIT AND RELEASE FOR PARTIAL PAYMENT

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, materials, 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 to 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 paid for by the Contractor and that there are no amounts unpaid in favor of any subcontractor or materialman 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 _____)SS

COUNTY OF _____

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 forgoing 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:

REQUEST FOR INTERPRETATION

RFI No. _____

Project: _____ RE: _____

Project Number: _____ Date: _____

To:

From: _____

Specification Section: _____ Paragraph: _____ Drawing Reference: _____ Detail: _____

Request:

By: _____
Contractor (Authorized Signature)

Date: _____

Response:

Response From: _____

Response To: _____

By: _____ Date: _____
Engineer (Authorized Signature)

CONTRACTING DOCUMENTS
Document 00 63 33 – Substitution Request

(Attach to Substitution Proposal as required by Section 01 25 13)

Project: _____ Substitution Request Number: _____

_____ RE: _____

To: _____ Date: _____

From: _____ Project Number: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: New product 2-5 years old 5-10 years old More than 10 years old

Differences between proposed substitution and specified product: _____

Itemized comparative data attached - REQUIRED BY ENGINEER

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Engineer: _____

Address: _____ Owner: _____

Date Installed: _____

Proposed substitution affects other parts of Work: No Yes; explain _____

Savings to Owner for accepting substitution: _____ (\$ _____)

Proposed substitution changes Contract Time: No Yes [Add] [Deduct] _____ days.

Supporting Data Attached: Drawings Product Data Samples Tests Reports _____

(Substitution Request Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to the design, including Engineer's redesign, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Telephone: _____

Attachments: _____

Engineer's REVIEW AND ACTION

- Substitution approved - Make submittals in accordance with Specification Section 01 33 00.
- Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00.
- Substitution rejected - Use specified materials.
- Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: Contractor Subcontractor Supplier Manufacturer Engineer _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

DATE OF ISSUANCE _____

PROJECT: _____ PROFESSIONAL: _____

OWNER: City of Grain Valley, MO
711 Main Street
Grain Valley, MO 64029
CONTRACTOR: _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents pursuant to that certain Agreement between Owner and Contractor dated _____. This Certificate of Substantial Completion is hereby issued by Professional to Owner and Contractor.

The Work has been inspected by authorized representatives of Owner and Professional, and the Work is hereby declared to be substantially complete in accordance with the Contract Documents on _____. (DATE OF SUBSTANTIAL COMPLETION).

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of Contractor to complete all the Work in accordance with the Contract Documents within the time required by the Contract Documents.

The responsibilities between OWNER and CONTRACTOR for security, maintenance, heat, utilities, insurance and other items shall be as follows:

OWNER _____

CONTRACTOR: _____

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 strict accordance with the Contract Documents and within the Contract Times.

Issued and Executed by Professional on _____
Date

"Professional"

By: _____
(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on _____
Date

"Contractor"

By: _____
(Authorized Signature)

OWNER accepts this Certificate of Substantial Completion on _____
Date

City of Grain Valley, Missouri
"Owner"

By: _____
(Authorized Signature)

CONSENT OF SURETY COMPANY TO FINAL PAYMENT

PROJECT: Minter Road WM Replacement
(Name)
711 Main Street
(Street Address)
Grain Valley, MO 64029
(City, State, Zip Code)

CONTRACTOR: _____
(Name)

(Street Address)

(City, State, Zip Code)

TO: CITY OF GRAIN VALLEY, MISSOURI
711 MAIN STREET
GRAIN VALLEY, MO 64029
("OWNER")

CONTRACT FOR:

CONTRACT DATE:

In accordance with the provisions of the Contract between City and Contractor as indicated above, the
(here insert name and address of Surety Company as it appears in the bond) _____
_____, SURETY COMPANY,

on bond of (here insert name and address of Contractor as it appears in the bond) _____,
_____, CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to the Owner as set forth in the said Surety Company's bond.

IN WITNESS WHEREOF,
the Surety Company has hereunto set its hand this _____ day of _____, 20__.

Surety Company

Signature of Authorized Representative

Attest:

(Seal):

Title



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. Association | 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.
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 video taping. 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 video taping 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 Two Million Dollars (\$2,000,000) combined single limit for bodily injury and property damage per accident. "The City of Grain Valley, Missouri" and "Tri-County Water Authority" 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. 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, lightening, 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 a Performance and Payment Bond 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 and 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, One hundred Dollars (\$100.00) 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 therefore 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

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 one year 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 one (1) 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 one (1) year 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 by the 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 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.

END OF DOCUMENT 00 70 00

CONTRACTING REQUIREMENTS
Document 00 81 00 - Definitions and
Format Explanation

PART 1 GENERAL

1.01 DEFINED TERMS

- A. Terms, which are defined in the General Conditions as provided in this contract, have the meanings assigned to them in the General Conditions.
- B. Terms which are defined in Instructions to Bidders have the meanings assigned to them in that Document included in this Contract Document by this reference.
- C. Certain additional terms used in Contract Documents are defined generally in this Document.
- D. A substantial amount of specification language constitutes definitions for terms found in other Contract Documents, including Drawings which must be recognized as diagrammatic in nature and not completely descriptive of requirements indicated thereon. Definitions and explanations of this Section are not necessarily either complete or exclusive, but are general for work to the extent not stated more explicitly in another provision of contract documents.

1.02 DEFINITIONS

- A. A/E and Architect/Engineer: ENGINEER as defined in Agreement.
- B. Approve: Where used in conjunction with Engineer's response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of term "approved" will be held to limitations of Engineer's responsibilities and duties as specified in General and Supplementary Conditions. In no case will "approval" by Engineer be interpreted as a release of Contractor from responsibilities to fulfill requirements of Contract Documents.
- C. Bidding Requirements: The portion of the Bidding Documents consisting of Documents numbered between 00 01 00 and 00 49 90 as listed in the Table of Contents of the Contract Documents.
- D. Contracting Requirements: The portion of the Contract Documents consisting of Documents numbered between 00 50 00 and 01 00 00 as listed in the Table of Contents of the Contract Documents.
- E. Directed, Requested, Etc.: Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted", mean "directed by Engineer", "requested by Engineer", etc. However, no such implied meaning will be interpreted to extend Engineer's responsibility into Contractor's area of construction supervision.

- F. Furnish: As defined in Document 00 70 00, General Conditions.
- G. General Requirements: Provisions or requirements of Division 1 Sections, General Requirements, apply to entire work of Contract and, where so indicated, to other elements which are included in project.
- H. Indicated: A cross-reference to details, notes or schedules on drawings, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in the contract documents. Where terms such as "shown", "noted", "scheduled", and "specified", are used in lieu of "indicated", it is for purpose of helping reader locate cross-reference, and no limitation is intended except as specifically noted.
- I. Install: As defined in Document 00 70 00, General Conditions.
- J. Installer: Entity (person or firm) engaged by Contractor or its subcontractor or sub-subcontractor for performance of a particular unit of work at project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (installers) be expert in operations they are engaged to perform.
- K. Project Site: Space available to Contractor for performance of work, either exclusively or in conjunction with others performing other work as part of project. Extent of project site is shown on drawings.
- L. Provide: As defined in Document 00 70 00, General Conditions.
- M. Testing Laboratory: An independent entity engaged to perform specific inspections or tests of the work, either at project site or elsewhere; and to report and (if required) interpret results of those inspections or tests.

1.03 FORMAT AND SPECIFICATION EXPLANATIONS

- A. Specification Production: None of these explanations will be interpreted to modify substance of requirements. Portions of these specifications have been produced by Engineer's standard methods of editing master specifications, and may contain minor deviations from traditional writing formats. Such deviations are a normal result of this production technique and no other meaning will be implied or permitted.
- B. Format Explanation: Format of principal portions of these specifications can be described as follows; although other portions may not fully comply and no particular significance will be attached to such compliance or non-compliance.
 - 1. Sections and Divisions: For convenience, basic unit of specification text is a "section", each unit of which is named and numbered. These are organized "divisions", which are recognized as the present industry-consensus on uniform organization and sequencing of specifications. The section title is not intended to limit meaning or content of section, nor to be fully descriptive of requirements specified therein, nor to be an integral part of text.
 - 2. Section Parts: Each section of specifications has been subdivided into 3 (or less) "parts" for uniformity and convenience (Part 1 - General; Part 2 - Products; and Part 3 - Execution). These do not limit the meaning of and are not an integral part of text which specifies requirements.

- C. Underscoring: Used strictly to assist reader of specification text in scanning text for key words in content (for quick recall). No emphasis on or relative importance of text is intended where underscoring is used.
- D. Imperative Language: Used generally in specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by Contractor. For clarity of reading at certain locations, contrasting subjective language is used to describe responsibilities which must be fulfilled indirectly by Contractor, or when so noted, by others.
- E. Section Numbering: Used to facilitate cross-references in contract documents. Sections are placed in Project Manual in numeric sequence; however, numbering sequence is not complete, and listing of sections at beginning of Project Manual must be consulted to determine numbers and names of specification sections in contract documents.
- F. Page Numbering: Numbered independently for each section; recorded in listing of sections (Index or Table of Contents) in Project Manual. Section number is shown with page number at bottom of each page, to facilitate location of text in Project Manual.
- G. Project Identification: Project number of contract documents is recorded at bottom of each page of the specifications to minimize possible misuse of specifications, or confusion with other project specifications.
- H. Specification Content: Because of methods by which this project specification has been produced, certain general characteristics of content, and conventions in use of language are explained as follows:
 - 1. Specifying Methods: Techniques or methods of specifying to record requirements varies throughout text, and may include "prescriptive", "open generic-descriptive", or "compliance with standards", "performance", "proprietary", or a combination of these. Method used for specifying one unit of work has no bearing on requirements for another unit of work.
 - 2. Overlapping and Conflicting Requirements: Where compliance with 2 or more industry standards or sets of requirements is specified, and overlapping of those different standards or requirements establishes different or conflicting minimums or levels of quality, most stringent requirement is intended and will be enforced, unless specifically detailed language written into Contract Documents (not by way of reference to an industry standard) clearly indicates that a less stringent requirement is to be fulfilled. Refer apparently equal but different requirements, and uncertainties as to which level of quality is more stringent, to Engineer for a decision before proceeding.
 - a. Contractor's Option: Except for overlapping or conflicting requirements, where more than one set of requirements are specified for a particular unit of work, option is intended to be Contractor's regardless of whether specifically indicated as such.
- I. Minimum Quality/Quantity: In every instance, quality level or quantity shown or specified is intended as minimum for the work to be performed or provided. Except as otherwise specifically indicated, actual work may either comply exactly with that minimum (within specified tolerances), or may exceed that minimum (within

specified tolerances), or may exceed that minimum within reasonable limits. In complying with requirements, indicated numeric values are either minimums or maximums as noted or as appropriate for context of requirements. Refer instances of uncertainty to Engineer for decision before proceeding.

- J. Specialists; Assignments: In certain instances, specification text requires (or at least implies) that specific work be assigned to specialists or expert entities, who must be engaged for performance of those units of work. These must be recognized as special requirements over which Contractor has no choice or option. These assignments must not be confused with (and are not intended to interfere with) normal application of regulations, union jurisdictions and similar conventions. One purpose of such assignments is to establish which party or entity involved in a specific unit of work is recognized as "expert" for indicated construction processes or operations. Nevertheless, final responsibility for fulfillment of entire set of requirements remains with Contractor.
- K. Trades: Except as otherwise indicated, the use of titles such as "carpentry" in specification text, implies neither that the work must be performed by an accredited or unionized tradesperson of corresponding generic name (such as "carpenter"), nor that specified requirements apply exclusively to work by tradespersons of that corresponding generic name.
- L. Abbreviations: Language of specifications and other contract documents is of the abbreviated type in certain instances, and implies words and meanings which will be appropriately interpreted. Actual word abbreviations of self-explanatory nature have been included in texts. Specific abbreviations have been established, principally for lengthy technical terminology and primarily in conjunction with coordination of specification requirements with notations on drawings and in schedules. These are frequently defined in section at first instance of use. Trade association names and titles of general standards are frequently abbreviated.
 - 1. Singular words will be interpreted as plural and plural words will be interpreted as singular where applicable and where full context of contract documents so indicates.

END OF DOCUMENT 00 81 00



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 08-2015)

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

Phone: (573) 751-2836
Fax: (573) 522-1271
E-mail: salestaxexemptions@dor.mo.gov

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



Missouri

Division of Labor Standards

WAGE AND HOUR SECTION



MIKE KEHOE, Governor

Annual Wage Order No. 32

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 _____

Logan Hobbs, Director
Division of Labor Standards

Filed With Secretary of State: _____ March 10, 2025

Last Date Objections May Be Filed: April 9, 2025

Prepared by Missouri Department of Labor and Industrial Relations

| OCCUPATIONAL TITLE | **Prevailing Hourly Rate |
|------------------------------|--------------------------|
| Asbestos Worker | \$72.10 |
| Boilermaker | \$40.77* |
| Bricklayer-Stone Mason | \$64.45 |
| Carpenter | \$67.13 |
| Lather | |
| Linoleum Layer | |
| Millwright | |
| Pile Driver | |
| Cement Mason | \$56.83 |
| Plasterer | |
| Communication Technician | \$63.26 |
| Electrician (Inside Wireman) | \$74.98 |
| Electrician Outside Lineman | \$71.73 |
| Lineman Operator | |
| Lineman - Tree Trimmer | |
| Groundman | |
| Groundman - Tree Trimmer | |
| Elevator Constructor | \$96.07 |
| Glazier | \$59.60 |
| Ironworker | \$72.22 |
| Laborer | \$52.24 |
| General Laborer | |
| First Semi-Skilled | |
| Second Semi-Skilled | |
| Mason | \$54.18 |
| Marble Mason | |
| Marble Finisher | |
| Terrazzo Worker | |
| Terrazzo Finisher | |
| Tile Setter | |
| Tile Finisher | |
| Operating Engineer | \$66.32 |
| Group I | |
| Group II | |
| Group III | |
| Group III-A | |
| Group IV | |
| Group V | |
| Painter | \$40.77* |
| Plumber | \$82.92 |
| Pipe Fitter | |
| Roofer | \$61.71 |
| Sheet Metal Worker | \$78.84 |
| Sprinkler Fitter | \$71.59 |
| Truck Driver | \$55.76 |
| 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 RSMo Section 290.210.

Heavy Construction Rates for
JACKSON County

Section 048

| OCCUPATIONAL TITLE | **Prevailing Hourly Rate |
|-------------------------------|--------------------------|
| Carpenter | \$67.20 |
| Millwright | |
| Pile Driver | |
| Electrician (Outside Lineman) | \$84.00 |
| Lineman Operator | |
| Lineman - Tree Trimmer | |
| Groundman | |
| Groundman - Tree Trimmer | |
| Laborer | \$53.06 |
| General Laborer | |
| Skilled Laborer | |
| Operating Engineer | \$61.77 |
| Group I | |
| Group II | |
| Group III | |
| Group IV | |
| Truck Driver | \$52.79 |
| 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. 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.

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



**DIVISION OF
LABOR
STANDARDS**

MISSOURI DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
DIVISION OF LABOR STANDARDS

**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 paid to a trustee or to a third party pursuant 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; (8) when in effect, the requirements of §§ 290.550 through 290.580, RSMo, pertaining to excessive unemployment were fully satisfied; and (9) 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

CONTRACTING DOCUMENTS
Document 00 94 10 – Change Order

Change Order No. _____

| | |
|------------------------------------|---------------------------|
| Date of Issuance: | Effective Date: |
| Owner: | Owner's Contract No.: |
| Contractor: | Contractor's Project No.: |
| Engineer: Crawford, Murphy & Tilly | Engineer's Project No.: |
| Project: | Contract Name: |

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments: *[List documents supporting change]*

| CHANGE IN CONTRACT PRICE | CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i> |
|--|---|
| Original Contract Price: \$ _____ | Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates |
| [Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____ | [Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days |
| Contract Price prior to this Change Order: \$ _____ | Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates |
| [Increase] [Decrease] of this Change Order: \$ _____ | [Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates |
| Contract Price incorporating this Change Order: \$ _____ | Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates |

| | | |
|-------------------------------------|---|--|
| RECOMMENDED: | ACCEPTED: | ACCEPTED: |
| By: _____ Engineer (if required) | By: _____ Owner (Authorized Signature) | By: _____ Contractor (Authorized Signature) |
| Title: _____ | Title: _____ | Title: _____ |
| Date: _____ | Date: _____ | Date: _____ |

Approved by Funding Agency (if applicable)

By: _____ Date: _____
Title: _____

CITY OF GRAIN VALLEY
MINTER ROAD WATER MAIN REPLACEMENT

DIVISION 01 – GENERAL REQUIREMENTS

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DIVISION 1 - GENERAL REQUIREMENTS
Section 01 01 10 – Site Conditions

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. The Contractor acknowledges that they have satisfied themselves as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during the prosecution of the work and all other matters which can in any way affect the work or the cost thereof under this Contract.

1.03 INFORMATION ON SITE CONDITIONS

- A. All information obtained by the Owner regarding site conditions, topography, subsurface information, groundwater elevations, existing construction of site facilities as applicable, and similar data will be available for inspection at the office of Crawford, Murphy & Tilly, Inc. upon request. Such information is offered as supplementary information only. Neither the Engineer nor the Owner assumes any responsibility for the completeness or for the Contractor's interpretation of such supplementary information.

1.04 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICE

- A. Before excavating, the Contractor shall call - Missouri One Call 811.
- B. Where the Contractor's operations could cause damage or inconvenience to telephone, television, power, oil, gas, water, sewer, the Contractor shall make all arrangements necessary for the protection of these utilities and services.
- C. The Contractor shall be solely and directly responsible to the Owner and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this Contract.
- D. Neither the Owner nor its officers or agents shall be responsible to the Contractor for damages as a result of the Contractor's failure to protect utilities encountered in the work.

- E. The Contractor shall replace, at his own expense, any and all other existing utilities to existing structures removed or damaged during construction, unless otherwise provided for in these Contract Documents.

1.05 INTERFERING STRUCTURES

- A. Take necessary precautions to prevent damage to existing structures whether on the surface, aboveground, or underground.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION 01 01 10

DIVISION 1 - GENERAL REQUIREMENTS
Section 01 11 00 - Summary of Project

PART 1 GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

A. General:

1. The project name is Minter Road Water Main Replacement as shown on the Contract Documents prepared by Crawford, Murphy & Tilly, Inc., Kansas City, Missouri.
2. Owner and Contractor each binds themselves, their partners, successors, assigns and legal representatives to the other party hereto, their partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.
3. Crawford, Murphy & Tilly, Inc., Consulting Engineers, 1100 Main Street Suite 1210, Kansas City, MO 64105, is hereinafter called Engineer and will have the right and authority assigned to Engineer in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

B. General Description of the Work:

1. The work includes, but is not limited to the following:
 - a. Installation of approximately 1,235 linear feet of 12" water main replacement along Minter Road from SW Eagles Parkway extending south along Minter Road.
 - b. Two 12" connections to existing 12" DIP water mains along SW Eagles Parkway.
 - c. One 8" connection to existing 8" DIP water main along SW Eagles Way.
 - d. One 8" connection to existing 8" DIP water main along Blue Branch Drive.
 - e. Installation of 2 fire hydrant assemblies.
 - f. Reconnection of 4 water service connections.

C. Summary by Reference:

1. The COMPLETE WORK can be summarized by reference to requirements of various contract documents, which in turn make reference to requirements of other applicable provisions which control or influence work; and these references can be summarized but are not necessarily limited to following:

- a. Executed Owner-Contractor Agreement.
- b. General and Supplementary Conditions, which are bound herewith.
- c. Drawings, which are listed in an "Index to Sheets" as of the date of these contract documents, and bound herewith as indicated on the cover sheet of the drawings.
- d. Specifications Sections, which are bound herewith and are listed in "Table of Contents" bound herewith.
- e. Addenda and Change Orders, which will be distributed by transmittal subsequent to binding hereof.
- f. Governing regulations, which have a bearing on performance of work; copies can be obtained from or reviewed at local, State or Federal Agency responsible for regulation in each case.
- g. Submittals of every kind, copies of which shall be retained by the Contractor on site.

1.02 EXTENT OF CONTRACT

- A. Extent of contract shall be defined as shown on drawings and specified herein.

1.03 ASSIGNMENT OF CONTRACT

- A. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

1.04 SPECIFICATION AND DRAWING SECTIONS

- A. Specifications and Drawings are separated into discipline sections for convenience or reference only. Each Contractor shall be responsible for Complete Work, implemented by his own forces and his various subcontractors. Each Contractor is responsible for coordination between subcontractors.
- B. Further, it is not the intent that any work called out in a titled section be allocated to any specific trade. Allocation of this work to trades is considered a function of each Contractor.
- C. Contractor shall also be responsible for work as specifically cross-referenced in other Sections of Specifications though not specifically mentioned herein and for all information shown on drawings as applicable to their portions of work.

1.05 CONTRACTOR RESPONSIBILITIES

- A. The Contractor shall be fully responsible for Complete Work of all Contract Documents including, but not limited to, providing of labor, materials and equipment necessary to furnish and install complete work as described by Specifications, Divisions 1 thru 48, and as shown on Drawings.

- B. The Contractor may fulfill certain parts of above obligation through several prime Subcontractors and other subcontractors. The Contractor shall be responsible for letting of subcontracts in such a manner as to produce Complete Work required by Contract Documents.
- C. The Contractor shall employ, establish and identify all required administrative, supervisory and operational personnel; including personnel responsible for coordination of mechanical and electrical work, necessary for adequate performance of work. Do not change or replace established key personnel, during conduct of work. Furnish to Owner's representative, in writing, the names, addresses and telephone numbers of responsible persons employed by contractors who are to be contacted in event of an out-of-hours emergency at construction site. The Contractor shall provide a coordinator, in his employ, who shall coordinate all subcontracted work.
- D. Contractor shall make the following representations as part of the contract Agreement:
 - 1. Contractor has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work.
 - 2. Contractor has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which were relied upon by Engineer in the preparation of the Drawings and Specifications and which have been identified in the Supplementary General Conditions.
 - 3. Contractor has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in paragraph 2 as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by Contractor for such purposes.
 - 4. Contractor has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.
 - 5. Contractor has given Engineer written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Contractor.

1.06 SCHEDULE

- A. Contractor shall commence work as stated in the "Notice to Proceed" issued by Owner and in accordance with the schedule set forth in these Contract Documents.
- B. Contractor shall submit, within five (5) calendar days of Notice to Proceed, a proposed schedule, sequence and description of methods of construction he proposes for work. This review shall in no way limit Contractor's means or methods of construction, nor shall it serve as an approval of Contractor's means or methods of construction. Contractor shall at all times be responsible for

means and methods of construction and all consequences resulting from those operations as required by Contract Documents. The proposed schedule and sequence shall allow for coordination among the sub-contractors.

1.07 CONTRACT TIME

- A. The Contractor shall complete all work in accordance with the contract per AUP – Agreement Between Owner and Contractor (Unit Price) Form, Article 3, Contract Time and Completion.

1.08 SPECIAL SEQUENCES

- A. Before work under this Contract is begun, Contractor shall confer with Engineer and Owner and agree on a sequence of procedure, means of access to premises; space for temporary storage of materials and equipment; cooperation with all trades and other work outside of this contract; and use of approaches.
- B. Hours of operation of Owner's facility are 8:00 AM to 5:00 PM, local time. If Contractor requires access to site outside these hours, he shall arrange access with Owner.
- C. Unless otherwise approved by the Engineer and Owner, the work shall progress according to the following general sequence of construction.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION 01 11 00

DIVISION 1 – GENERAL REQUIREMENTS
Section 01 20 00 – Payment Procedures

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes
 - 1. Procedures for preparation and submittal of schedule of values and applications for payment.

- B. Related Requirements
 - 1. Document 00 62 76 – Contractor’s Application for Payment.
 - 2. Section 01 26 00 – Contract Modification Procedures: Procedures for changes to the Work.
 - 3. Section 01 32 01 – Construction Schedules.
 - 4. Section 01 33 00 – Submittal Procedures: Procedural requirements for submittals.
 - 5. Section 01 78 00 – Closeout Procedures: Final payment.

1.02 SCHEDULE OF VALUES

- A. Contractor shall submit Schedule of Values:
 - 1. Submit to Engineer, Schedule of Values at least 14 days prior to submitting first Application for Payment.
 - 2. Upon request by Engineer, support values given with data that will substantiate their correctness.
 - 3. List separate values of designated materials and labor to install item.
 - 4. List values of each item of work by subcontractors and suppliers.
 - 5. Use Schedule of Values only as basis for Contractor’s Application for Payment.

- B. Form of Submittal:
 - 1. Submit typewritten Schedule of Values on page 2 of Document 00 62 76 – Contractor’s Application for Payment “Progress Estimate – Unit Price Work”.
 - 2. Use Bid Booklet Table of Contents as basis of format for listing costs of work for Sections under Division 2-48. Include labor separate from material cost.
 - 3. Identify each line item with a title as listed in Bid Booklet Table of Contents and with name of subcontractor or supplier.

- C. Update:
 - 1. Update Schedule of Values when:
 - a. Directed by Engineer.
 - b. Change of subcontractor or supplier occurs.
 - c. Change of product or equipment occurs.
 - 2. Send separate letter of notification to Engineer explaining reason for change to schedule of values.

1.03 PAYMENT APPLICATIONS

- A. Present required information in legible form on Document 00 62 76 – Contractors Application for Payment.
- B. Execute certification by signature of authorized officer.
- C. Use itemized breakdown data from approved Contractor’s Schedule of Values. Provide dollar value in each column for each line item for portion of Work Completed and for Material Stored.
- D. List each authorized Change Order as an extension Pay Application Continuation Sheet, listing Change Order number and dollar amount as for an original item of Work.
- E. Prepare Application for Final Payment as specified in Section 01 78 00 – Closeout Procedures.

1.04 SUBMITTAL PROCEDURES

- A. Submit four (4) copies of each Application for Payment.
- B. Submit the draft Application for review and approval by the Engineer on or before the 10th of each month.
- C. Upon review and approval of the application for payment by the Engineer by the 15th of the month, the application will be forwarded to the Owner for authorizing the payment at its monthly Board meeting .
- D. Upon approval of the application by the Board, the application will be submitted to the City for payment.
- E. Following payment of the amount approved by Owner, the Owner will make the disbursement to the Contractor.
- F. Submit an updated construction schedule with each Application for Payment.

1.05 SUBSTANTIATING DATA

- A. When Engineer requires substantiating information, submit data justifying dollar amounts in question.
- B. Provide one (1) copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.
- C. Include the following with the application:

1. Partial release of liens from major subcontractors and vendors related to work covered by previous payment and from contractor for current payment.
2. Construction progress schedules, revised and current as specified in Section 01 32 01 – Construction Schedules.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 01 20 00

DIVISION 1 - GENERAL REQUIREMENTS
Section 01 22 00 - Unit Prices

PART 1 GENERAL

1.01 SUMMARY

- A. Contractor shall provide unit prices in Bid Form (00 41 00) for specified items.

1.02 RELATED SECTIONS

- A. Specified elsewhere:
 - 1. BF - Bid Form.
 - 2. Section 00 70 00 – General Conditions.
 - 3. Section 01 20 00 - Payment Procedures.
 - 4. Section 01 26 00 - Contract Modification Procedures.

1.03 DEFINITIONS

- A. Unit Price. Unit price is a fixed price, including all overhead, profit and all other costs of any nature and character, for a specified unit of work. Unit prices in the Bid Form, when accepted by Owner and incorporated into the Contract, shall be the same for additional, deducted or omitted units of work.

1.04 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A list of unit prices is included in Part 3 of this Section. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 APPLICATION

- A. Enter unit prices for each work item in Bid Form in space provided. Omission will result in rejection of bid.
- B. Multiply the specified estimated quantity times the unit price bid and enter the product in the column provided for extensions. The total of all extensions is included in the Unit Price Bid.
- C. Actual quantities shall be determined by Engineer and Owner during the execution of the contract.
- D. Quantities greater than the estimated quantities shall be paid per the same unit price in the Bid Form as a Change Order.
- E. Quantities less than the estimated quantities shall be deducted from the contract amount per the same unit price in the Bid Form as a Change Order.
- F. Owner reserves the right to delete quantities from the contract at no change to any other unit price or lump sum contract amount.
- G. Owner may make written request for additional unit prices throughout the Contract when it is deemed appropriate to meet project requirements. The Contractor shall supply all unit prices within five business days after date of request.

3.02 UNIT PRICE ITEM SCHEDULE

- A. Unit Price No. 1 – Mobilization/Demobilization:
 - 1. Description: Includes all work and costs necessary to begin construction operations, including transportation of personnel, equipment, and materials to the project site; establishment of staging areas, and temporary facilities; project coordination; initial permit compliance; and final demobilization and cleanup upon completion of the work.
 - 2. Unit of Measurement: Lump Sum.
- B. Unit Price No. 2 – 12" C900 DR 18 w/ Tracer Wire
 - 1. Description: Includes installation of 12-inch C900 DR18 PVC water main with tracer wire in accordance with Specification Sections 33 01 10.58 and 33 14 16 and Grain Valley Water Detail Drawings. Work includes saw cutting, trench excavation, bedding, pipe laying, jointing, connections to existing mains, tracer wire installation, backfilling, compaction, labor, any equipment necessary to perform the work, permits.
 - 2. Unit of Measurement: Lineal feet.

- C. Unit Price No. 3 – 8" C900 DR 18 w/ Tracer Wire
1. Description: Includes installation of 8-inch C900 DR18 PVC water main with tracer wire in accordance with Specification Sections 33 01 10.58 and 33 14 16 and Grain Valley Water Detail Drawings. Work includes saw cutting, trench excavation, bedding, pipe laying, jointing, connections to existing mains, tracer wire installation, backfilling, compaction, labor, any equipment necessary to perform the work, permits.
 2. Unit of Measurement: Lineal feet.
- D. Unit Price No. 4 – Fittings:
1. Description: Includes furnishing and installing all bends, tees, couplings, reducers, restraints, connections to existing water mains, and other required appurtenances. Work includes excavation, installation, thrust restraint, backfilling, and any supplemental materials necessary to complete connections per the Contract Documents.
 2. Unit of Measurement: Each.
- E. Unit Price No. 5 – Fire Hydrant Assembly
1. Description: Includes installation of complete fire hydrant assemblies, including of 12" x 6" tee, 6" gate valve, 6" piping, and hydrant in accordance with Specification Sections 33 14 16 and Grain Valley Water Detail WAT-001.
 2. Unit of Measurement: Each.
- F. Unit Price No. 6 – Valves
1. Description: Includes furnishing and installation of 8" and 12" gate valves in accordance with Specification Sections 33 14 16 and Grain Valley Water Detail WAT-002.
 2. Unit of Measurement: Each.
- G. Unit Price No. 7 – Water Service Transfers
1. Description: Includes installation, reconnection, and transfer of existing water services from the existing 12" DIP water main to the new 12" C900 DR18 water main. Work includes service tapping, piping, fittings, coordination with residents or property owners, and reconnection to existing meters in accordance with Grain Valley Water Detail WAT-007.
 2. Unit of Measurement: Each.
- H. Unit Price No. 8 – Erosion Control
1. Description: Includes furnishing, installing, maintaining, and removing erosion and sediment control measures in accordance with Specification Section 31 25 00 throughout the duration of the project.
 2. Unit of Measurement: Lump Sum.
- I. Unit Price No. 9 -Traffic Control:
1. Description: Includes preparation and implementation of traffic control plans in accordance with Specification Section 01 55 26.
 2. Unit of Measurement: Lump Sum.

- J. Unit Price No. 10 – Testing & Disinfection
1. Description: Includes labor, materials, temporary piping, testing, coordination, and documentation in accordance with Specification Sections 33 01 10.58, 33 14 16, and Grain Valley Water Detail Drawings.
 2. Unit of Measurement: Lump Sum.
- K. Unit Price No. 11 – Construction Staking
1. Description: Includes all surveying and layout necessary for the installation of water mains and appurtenances, including establishing and verifying horizontal and vertical control.
 2. Unit of Measurement: Lineal Feet.
- L. Unit Price No. 12 – As-Built Drawings
1. Description: Includes preparation and submission of complete and accurate as-built drawings reflecting final constructed conditions. As-builts shall include surveyed locations of valves and fittings, surveyed main alignment at 50-foot intervals, and surveyed points at all elevation changes.
 2. Unit of Measurement: Lump Sum.
- M. Unit Price No. 13 – Seeding Restoration
1. Description: Includes restoring all grass-disturbed areas to their original or better condition, including seeding, grading, compaction, and any additional restoration measures required by the Contract Documents.
 2. Unit of Measurement: Square Yards.
- N. Unit Price No. 14 – Asphalt Restoration
1. Description: Includes restoring all asphalt-disturbed areas to their original or better condition, including saw cutting and removal of damaged pavement, preparation of subgrade, placement of approved base materials, grading, compaction, and any additional restoration measures required by the Contract Documents.
 2. Unit of Measurement: Square Yards.
- O. Unit Price No. 15 – Gravel Restoration
1. Description: Includes restoring all gravel-disturbed areas to their original or better condition, including, removal of unsuitable material, placement of approved gravel, grading, compaction, and any additional restoration measures required by the Contract Documents.
 2. Unit of Measurement: Square Yards.
- P. Unit Price No. 16 – Sidewalk & Curb Restoration
1. Description: Includes restoring all sidewalk and curb disturbed areas to their original or better condition, including, grading, compaction, form work and any additional restoration measures required by the Contract Documents.
 2. Unit of Measurement: Square Yards.

END OF SECTION 01 22 00

DIVISION 1 – GENERAL REQUIREMENTS
Section 01 25 13 – Product Substitution
Procedures

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Procedures and requirements for proposing product substitutions during bidding and construction.
 - 2. General rules and procedures for evaluation of proposed substitutions.

- B. Related Requirements:
 - 1. Section IB– Instructions to Bidders.
 - 2. Section 00 43 25 – Proposed Product Substitutions.
 - 3. Section 00 63 33 – Substitution Request.
 - 4. Section 00 70 00 – General Conditions.
 - 5. Section 01 26 00 – Contract Modification Procedures.
 - 6. Section 01 33 00 – Submittal Procedures.

- C. Unless expressly stated otherwise, proposed product substitutions must meet the specified product requirements including the requirements implied by the proprietary designation of a product that establishes the quality, performance, function, dimension, and appearance of the product specified.

1.02 SUBSTITUTIONS PROPOSED WITH BID

- A. List substitutions in Proposal according to Instructions to Bidders.

- B. Proposed substitutions will be evaluated in accordance with Instructions to Bidders.

1.03 SUBSTITUTIONS PROPOSED DURING CONSTRUCTION

- A. No substitutions shall be considered after Notice of Award except under one or more of the following conditions:
 - 1. Substitutions required for compliance with requirements of governing authority, final interpretations of code requirements, or insurance regulations.
 - 2. Specified product is unavailable or cannot be provided within Contract Time through no fault of Contractor.
 - 3. Subsequent information discloses inability of specified product to perform properly or to fit in designated space.
 - 4. Manufacturer refusal to certify or guarantee performance of specified product as specified.
 - 5. Substitution would be substantially in Owner's best interests.

1.04 SUBSTITUTION REQUIREMENTS

- A. Submit Substitution requests in the form and in accordance with procedures required for Change Order Proposals.

- B. Submit four (4) copies of each request for substitution for consideration.
- C. Request for substitution will be considered if received within sixty (60) days after commencement of work. Requests received more than sixty (60) days after commencement of work may be considered or rejected at discretion of Engineer.

1.05 CONTENTS OF SUBSTITUTION PROPOSAL

- A. Complete Substitution Request contained in Section 00 63 33 – Product Substitution Request. Include information noted below.
- B. Include related Specification Section and Drawing numbers.
- C. Include complete data substantiating the following:
 - 1. Compliance of proposed substitution with Contract Documents.
 - 2. Conformance of proposed Substitution to requirements specified for product listed in Contract Documents.
 - 3. Equivalence of proposed Substitution to the requirements implied by the proprietary designation of the product listed in the Contract Documents.
- D. Include complete product identification, including supplier's and manufacturer's name, address, telephone number, fax number and email address.
- E. Include the following manufacturer's literature:
 - 1. Product description.
 - 2. Performance and test data.
 - 3. Reference standards.
- F. Include samples when requested or appropriate.
- G. Include name and address of similar projects on which product was used and date of installation.
- H. Include itemized comparison of proposed substitution with product specified.
- I. Include detailed description of changes in construction schedule.
- J. Include description of effect of proposed substitution on overall Contract Time.
- K. Include description of changes or coordination required.
- L. Include accurate cost data on proposed substitution in comparison with product specified, including a proposal of net change, if any, in Contract Sum.
- M. Include Certification by Contractor that substitution proposed is equal to or better in every significant respect to that required by Contract Documents, and that it will perform adequately in application indicated.
- N. Include Contractor's waiver of rights to additional payment or time, which may subsequently become necessary because of failure of substitution to perform adequately.

1.06 REPRESENTATIONS IMPLIED BY SUBSTITUTION PROPOSAL

- A. In making request for Substitution, Contractor represents:
 - 1. Contractor has personally investigated proposed product and determined that it is equal or superior in all respects to the specified product.
 - 2. Contractor shall provide the same guarantee for the Substitution as for the product specified.
 - 3. Contractor shall coordinate installation of accepted substitutions in work, making all changes for work to be complete in all respects.
 - 4. Cost data furnished is complete and includes all related costs under Contract, but excludes:
 - a. Engineer redesign.
 - b. Administrative costs of Engineer.
 - 5. Contractor shall pay all additional costs and expenses for Owner and Engineer as required by General Conditions.
- B. In listing Substitutions in Proposal, Bidder makes representations equivalent to those listed for Contractor above.

1.07 SUBSTITUTION WILL NOT BE CONSIDERED WHEN:

- A. Substitution Proposal does not meet the requirements of this Section.
- B. Substitution is indicated or implied on shop drawings or product data submittals without formal request submitted in accordance with this section.
- C. Acceptance will require substantial revision of Contract Documents.
- D. Request is not directly related to an "or equal" clause or similar language in Contract Documents.

1.08 SUBSTITUTION EVALUATION

- A. Within two (2) weeks of receipt of request for substitution, Engineer will request additional information or documentation necessary for evaluation of request.
- B. Within two (2) weeks of receipt of request, or receipt of the additional information or documentation, whichever is later, Engineer will notify Contractor of acceptance or rejection of proposed substitution.
- C. If a decision on use of a proposed substitute cannot be made or obtained within time allocated, use product specified.
- D. Acceptance will be in form of a Work Directive Change or Change Order.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 01 25 13

DIVISION 1 – GENERAL REQUIREMENTS
Section 01 26 00 – Contract Modification
Procedures

PART 1 GENERAL

1.01 SUMMARY

- A. This section specifies administrative and procedural requirements for handling and processing contract modifications and includes:
 - 1. Procedural Requirements for:
 - a. Request for Interpretation.
 - b. Field Order.
 - c. Work Change Directive.
 - d. Change Order.

1.02 RELATED SECTION

- A. Document 00 94 00 – Work Change Directive.
- B. Document 00 68 70 – Request for Interpretation.
- C. Document 00 94 20 – Field Order.
- D. Document 00 70 00 – General Conditions.
- E. Document 00 80 00 – Supplementary Conditions.
- F. Section 01 20 00 – Payment Procedures.
- G. Section 01 32 01 – Construction Schedules.
- H. Section 01 78 10 – Project Record Documents.

1.03 DEFINITIONS

- A. Request for Interpretation: A formal, written request from Contractor for clarification by Engineer about an item of work insufficiently described or detailed in the Contract Documents.

1.04 SUBMITTALS

- A. Submit name of the individual authorized to receive change documents.
- B. Be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.
- C. Use the appropriate submittal forms:
 - 1. Work Directive Change: Document 00 94 00 – Work Directive Change.
 - 2. Request for Interpretation Document 00 68 70 – Request for Interpretation.
 - 3. Field Order: Document 00 94 20 – Field Order.

1.05 REQUEST FOR INTERPRETATION (RFI)

- A. Address all RFI correspondence to:
City of Grain Valley
711 Main Street
Grain Valley, MO 64029

Crawford, Murphy & Tilly, Inc.
1100 Main Street Suite 1210
Kansas City, MO 64105
- B. Submit completed form that includes sufficiently detailed descriptive information and signature of Contractor's authorized representative.
- C. Number each RFI in consecutive sequence starting with number 1.
- D. Engineer will respond to RFI with one or more of the following:
 - 1. Response written on RFI form.
 - 2. Field Order.
 - 3. Proposal Request.

1.06 DOCUMENTATION OF CHANGE IN CONTRACT PRICE AND CONTRACT TIME

- A. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work.
- B. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation.
- C. Provide additional data to support computations:
 - 1. Quantities of products, labor, and equipment.
 - 2. Taxes, insurance, and bonds.
 - 3. Overhead and profit.
 - 4. Justification for any change in Contract Time.
 - 5. Credit for deletions from Contract, similarly documented.
- D. Support each claim for additional costs, and for work done, with additional information:
 - 1. Origin and date of claim.
 - 2. Dates and times work was performed, and by whom.
 - 3. Time records and wage rates paid.
 - 4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.07 CHANGE PROCEDURES

- A. The Engineer will advise of minor changes in the Work not involving an adjustment to Contract Price or Contract Time as authorized by Paragraph 11.01

of the General Conditions by issuing supplemental instructions on Document 00 94 20 – Field Order.

- B. The Engineer may issue a Proposal Request which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within 14 days.

1.08 WORK DIRECTIVE CHANGE

- A. Engineer may issue a document, signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. The document will describe changes in the Work, and will designate method of determining any change in Contract Price or Contract Time.
 - 2. Promptly execute the change in Work.

1.09 STIPULATED PRICE CHANGE ORDER

- A. Based on Proposal Request and Contractor's fixed price quotation.

1.10 UNIT PRICE CHANGE ORDER

- A. For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis.
- B. For unit costs or quantities of units of work, which are not pre-determined, execute Work under a Work Directive Change.
- C. Changes in Contract Price or Contract Time will be computed as specified in General Conditions.

1.11 ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
 - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
 - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
 - 3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
 - 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order

amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within thirty (30) days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than thirty (30) days after such authorization.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.12 TIME AND MATERIAL CHANGE ORDER

- A. Submit itemized account and supporting data after completion of change, within time limits included in the General Conditions.
- B. Engineer will determine the change allowable in Contract Price and Contract Time as provided in the Contract Documents.
- C. Maintain detailed records of work performed.
- D. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

1.13 EXECUTION OF CHANGE ORDERS

- A. Engineer will issue Change Orders for signatures of parties as provided in the General Conditions.
- B. No work will be paid for if done prior to receiving a properly executed Change Orders.

1.14 CORRELATION OF CONTRACTOR SUBMITTALS

- A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.
- B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- C. Promptly enter changes in Project Record Documents.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 01 26 00

PART 1 GENERAL

1.01 SUMMARY

- A. Construction schedule requirements and procedures.
- B. RELATED SECTIONS
 - 1. Section 01 33 00 – Submittal Procedures.

1.02 FORM OF SCHEDULES

- A. Prepare a standard horizontal bar chart.
 - 1. Provide separate horizontal bar column for each class of work, activity or long-lead equipment item.
 - 2. Columns should follow table of contents of the specifications.
 - 3. Critical path work items shall be highlighted in some manner.

1.03 CONTENT OF SCHEDULES

- A. Indicate complete sequence of construction by activity.
 - 1. Submittals: In accordance with Section 01 33 00 - Submittal Procedures.
 - a. Submittal dates.
 - b. Dates when reviewed copies will be required.
 - 2. Product procurement date, fabrication time and delivery dates.
 - 3. Dates for beginning, and completion of, each element of construction.
- B. Indicate cumulative percentage of work completed as of first day of each month.
- C. Furnish separate schedule, showing submittals, review item, procurement schedules and delivery dates as required.
- D. Define critical portions of entire schedule.

1.04 UPDATING

- A. Update weekly. Indicate:
 - 1. Progress of each activity since previous submission.
 - 2. Projected completion dates for all activities.
 - 3. Activities modified since previous submission.

1.05 SUBMITTALS

- A. Submit initial schedule at the preconstruction meeting.
 - 1. The Engineer and Owner shall review schedules and return reviewed copy within ten (10) business days after receipt.
 - 2. When directed, resubmit within five business days after return of reviewed copy.

- B. Submit monthly updated schedules accurately depicting progress to first day of each month.

1.06 DISTRIBUTION

- A. Distribute copies of approved schedules by uploading into Bluebeam Revu software and distribute to Subcontractors and suppliers on as-needed basis.
- B. Instruct recipients to report any inability to comply with projected completion dates, and to furnish a detailed explanation together with suggested remedies.

1.07 ACCELERATION

- A. If at any time during the project Contractor fails to complete an activity by its latest scheduled completion date, which late completion will impact the end date of the work past the Contract completion date, submit within five (5) calendar days plans to reorganize the work force to return to the current schedule.
- B. The Owner may require Contractor to add to equipment, or construction forces, as well as increase working hours, if operations fall behind schedule at any time.
- C. Addition of equipment or construction forces, increasing working hours, or other method, manner, or procedure to return to the contractually required completion date will not be justification for Contract modification.
- D. Contractor shall plan, schedule, and coordinate construction operations and activities in a manner that will facilitate simultaneous progress of work.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 01 32 01

DIVISION 1 – GENERAL REQUIREMENTS
Section 01 33 00 – Submittal Procedures

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Submittal procedures and general requirements for submittals during the progress of the work.
 - 1. Administrative Submittals
 - 2. Shop Drawings
 - 3. Product Data
 - 4. Samples
 - 5. Test Specimens
 - 6. Certificates of Compliance
 - 7. As-Built Drawings
 - 8. Contractor's Construction Schedule
 - 9. Subcontract List
 - 10. Applications for Payment
 - 11. Schedule of Values
 - 12. List of items to be completed or corrected (punch list)
- B. The Owner and Engineer each reserve the right to direct and modify the procedures and requirements for submittals as necessary to accomplish the specific purpose of each submittal.
- C. Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Engineer for Contractor's use in preparing submittals.

1.02 RELATED SECTIONS

- A. Section 00 70 00 – General Conditions.
- B. Section 01 20 00 – Payment Procedures.
- C. Section 01 45 00 – Quality Requirements.
- D. Section 01 78 00 – Closeout Procedures.
- E. Section 01 78 10 – Project Record Documents.
- F. Divisions 33 Sections for specific requirements for submittals in those Sections.

1.03 DEFINITIONS

- A. Action or Technical Submittals: Written and graphic information that requires Engineer's responsive action.
- B. Administrative Submittals: Written information that does not require Engineer's responsive action. Submittals may be rejected for not complying with requirements.

1.04 ADMINISTRATIVE SUBMITTALS

- A. Administrative Submittals include the following items:
 - 1. Preconstruction submittals.

2. Schedules.
 3. Certificates and Certifications.
 4. Test and inspection reports.
 5. Meeting minutes.
 6. Material Safety Data Sheets (MSDSs).
 7. Closeout submittals.
- B. Provide all of the submittals as listed above and any others specifically required in other parts of the Contract Documents in portable document format (pdf).
- C. Failure to comply promptly with requirements for submittals, as required by law, to applicable federal, state, or local agencies may result in the withholding of progress payments and make the Contractor liable for other prescribed action and sanctions.
- D. Submit to the Owner and Engineer a copy of all letters relative to the Contract, transmitting notifications, reports, certifications, payrolls, and the like, that are submitted directly to a federal, state, or other governing agency.
- E. On a daily basis during the progress of the Work, maintain, and submit to the Engineer, full and correct information as to:
1. The number of persons employed in connection with each subdivision of the Work.
 2. The classification, rate of pay, citizenship status, and address of each of these persons.
 3. The cost, source, and amount of each class of materials delivered, equipment received, and major construction equipment used in each subdivision of the Work.
- F. When requested by the Engineer, submit to the Engineer two (2) copies of each purchase order for all materials and equipment furnished under this Contract for incorporation in the Work. Each purchase order shall show:
1. Supplier's name.
 2. Manufacturer's name.
 3. Materials, type, model number, size, quantity, accessory list of the material and equipment ordered.
 4. Requested delivery date of the material and equipment ordered.

1.05 TECHNICAL SUBMITTALS

- A. General:
1. Requirements in this section are in addition to any specific requirements for submittals specified in other Divisions and Sections of the Specifications. The Contractor shall be responsible for the accuracy and completeness of all information contained in each submittal.
 - a. Address all hard copies of submittals and correspondence to:

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

Crawford, Murphy & Tilly, Inc.
1100 Main Street, Suite 1210
Kansas City, MO 64105

2. Submit descriptive information, which will enable the Engineer to advise the Owner whether the Contractor's proposed materials, equipment, or methods of work are in general conformance to the design concept and in compliance with the Drawings and Specifications.
3. Submit Shop Drawings and Product Data for all material and equipment to be incorporated into the Work, whether or not specifically called for elsewhere in these Contract Documents. The information to be submitted shall consist of drawings, specifications, descriptive data, certificates, samples, test results, design calculations, fabrication and installation drawings, and such other information, all as required by the Engineer to evaluate the material and equipment for compliance with the requirements of these Contract Documents.
4. Equipment and materials delivered without meeting the above requirements **will not** be considered for pay requests involving the installation of said equipment and materials until the above information is received, reviewed and approved by the Engineer.
5. The Contractor shall be responsible for the accuracy and completeness of the information contained in each and every submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. The Contractor shall indicate by a signed stamp on each submittal that:
 - a. Contractor has checked and approved the submittal.
 - b. Material and equipment described in the submittal conforms to the requirements of the Specifications and Drawings.
 - c. Material and equipment described in the submittal have been checked for dimensions and coordination with other work.
6. If the information contained in a submittal shows deviations from the Specifications or Drawings, include in the submittal verification that there is no conflict with portions of the Work covered by other submittals and notify the Engineer in each and every case where the submittal may affect the work of another Contractor or the Owner.
7. Ensure coordination of submittals among the related crafts and subcontractors.
8. Should the Contractor fail to submit acceptable shop drawings on the second submittal, the cost of the Engineer's time to review subsequent submittals on the unacceptable item will be deducted from the Contract amount.
9. Review, acceptance, or approval of schedules, shop drawings, lists of materials, and procedures submitted or requested by the Contractor shall not add to the Contract amount, and all additional costs which may result therefrom shall be solely the obligation of the Contractor.
10. Shop Drawing submittals processed by the Engineer do not become Contract Documents and are not Change Orders. The purpose of the Shop Drawing review is to establish a reporting procedure and is intended for the

Contractor's convenience in organizing his work and to permit the Engineer to monitor the Contractor's progress and understanding of the design.

11. It shall not be the responsibility of the Owner to provide engineering or other services to protect the Contractor from additional costs accrued from such approvals.
12. No equipment or material for which listings, drawings, or descriptive material is required shall be fabricated, purchased, or installed until the Engineer has on hand copies of such approved lists and the appropriately stamped final Shop Drawings.
13. Submittals will be acted upon by the Engineer as promptly as possible, and returned to the Contractor not later than the time allowed for review in Shop Drawing Submittal Procedure. Delays caused by the need for resubmittals shall not constitute reason for an extension of Contract time.
14. The Contractor's authorization stamp shall appear on each copy of each submittal and likewise the Engineer's review stamp shall appear on each copy of each submittal.

B. Transmittal Procedure:

1. General - Submit through Bluebeam Revu electronically utilizing Construction/Project Management software.
2. Submittal Numbering System - The submittal numbering system shall be coordinated with the Engineer's document control system. Each submittal shall be numbered in consecutive sequence starting with number 1, then number 2, etc. Resubmittals are to be numbered with the original submittal number and the appropriate alphabetic letter. Example: If submittal number 12 is to be resubmitted, the resubmittal will be number 12A (Consecutive Alphabetical Designation) until the submittal is "NO EXCEPTIONS TAKEN" or "EXCEPTIONS TAKEN AS NOTED".
3. Deviation From the Contract – There shall be no deviations from the Contract.
4. Submittal Completeness – Submittals which do not have all the information required to be submitted, including deviations, are not acceptable and will be returned without review. The practice of submitting incomplete or unchecked shop drawings for the Engineer to correct or finish will not be acceptable, and shop drawings which, in the sole opinion of the Engineer, clearly indicate that they have not been checked by the Contractor will be considered as not complying with the intent of the Contract Documents and will be returned to the Contractor without review for resubmission in the proper form. Should the Contractor submit incomplete or unchecked shop drawings on the second submittal they will be returned to the Contractor without review for resubmission in the proper form. The cost of the Engineer's time to review subsequent resubmittals will be deducted from the Contract amount.
5. Review Procedure - When the Contract Documents require a submittal, the Contractor shall submit sufficient copies such that the Engineer will retain three (3) copies of all submittal information following Shop Drawing approval. Unless otherwise specified, within thirty (30) calendar days after receipt of the submittal, the Engineer shall review the submittal. The returned submittal shall indicate one of the following actions:

- a. NO EXCEPTIONS TAKEN: If the review indicated that the material, equipment, or work method is in general conformance with the design concept and complies with the drawings and specifications, submittal copies will be marked "NO EXCEPTIONS TAKEN". In this event the Contractor may begin to implement the work method or incorporate the material or equipment covered by the submittal.
 - b. EXCEPTIONS TAKEN AS NOTED: If the review indicates limited corrections are required, copies will be marked "EXCEPTIONS TAKEN AS NOTED". The Contractor may begin implementing the work method or incorporating the material and equipment covered by the submittal in accordance with the noted corrections. Where submittal information will be incorporated in O&M data, a corrected copy shall be provided.
 - c. RESUBMIT WITH CORRECTIONS: If the review reveals that the submittal is insufficient or contains incorrect data, or indicates that the material, equipment or work method is not in general conformance with the design concept or in compliance with the Drawings and Specifications, copies of the submittal will be marked "RESUBMIT WITH CORRECTIONS". Submittals with deviations which have not been identified clearly may be rejected. The Contractor shall not undertake work covered by such submittals until a new submittal is submitted and returned marked either "NO EXCEPTIONS TAKEN" or "EXCEPTIONS TAKEN AS NOTED".
 - d. The Engineer will not recommend payment for any work done without a submittal marked either "NO EXCEPTIONS TAKEN" or "EXCEPTIONS TAKEN AS NOTED".
6. Effect of Review of Contractor's Submittals: The review of Shop Drawings, methods of work, or information regarding materials or equipment the Contractor proposes to provide, shall not relieve the Contractor of his responsibility for errors therein and shall not be regarded as an assumption of risks or liability by the Engineer or the Owner, or by any officer or employee thereof, and the Contractor shall have no claim under the contract on account of the failure, or partial failure, of the method of work, material, or equipment so reviewed.
- a. A mark of "NO EXCEPTIONS TAKEN" or "EXCEPTIONS TAKEN AS NOTED" shall mean that the Owner has no objection to the Contractor, upon his own responsibility, using the plan or method of work proposed, or providing the materials or equipment proposed.
 - b. Submittals with deviations from the contract requirements which have not been clearly identified by the Contractor at the time the submittal is transmitted to the Engineer for review may be rejected by the Owner and/or Engineer at a later date, even though the submittal may have been marked "NO EXCEPTIONS TAKEN" or "EXCEPTIONS TAKEN AS NOTED".

C. Record Documents

1. Record documents shall be prepared and maintained in accordance with Section 01 78 10 - Project Record Documents.
2. Upon satisfactory completion of the Contract, submit record documents to the Engineer. Accompany submittal with transmittal containing submittal

date, Contract title and number, the Contractor's name and address, title and number of each record document, certification that each document as submitted is complete and accurate, and the Contractor's signature.

3. The contract closeout and final payment under this contract **will not** be finalized and approved until a complete and accurate set of record documents, as described in Section 01 78 10 - Project Record Documents, have been submitted to the Engineer, reviewed for accuracy and accepted.

D. Shop Drawings

1. The Shop Drawing submittal shall be made after the award of contract and before fabrication.
2. Shop Drawings may be detailed on 8-1/2 by 11-inch and/or 11 by 17-inch sheets.

E. Professional Seals

1. Provide seal on drawings of structural components and assemblies that are submitted for review and where required by the Specifications.
2. Each copy of a submittal requiring a Professional Seal shall bear an original seal. Reproductions of Professional Seals will not be accepted.

F. Samples and Test Specimens

1. Where required in the Specifications, and as determined necessary by the Engineer, test specimens or samples of materials, appliances, and fittings to be used or offered for use in connection with the Work shall be submitted to the Engineer at the Contractor's expense, with information as to their sources, with all cartage charges prepaid, and in such quantities and sizes as may be required for proper examination and tests to establish the quality or equality thereof, as applicable.
2. All samples and test specimens shall be submitted in ample time to enable the Engineer to make any tests or examinations necessary, without delay to the Work. The Contractor will be held responsible for any loss of time due to his neglect or failure to deliver the required samples to the Engineer, as specified.
3. The Contractor shall submit additional samples as required by the Engineer to ensure equality with the original approved sample and/or for determination of Specification compliance.
4. Laboratory tests and examinations that are not required by the Specifications and that the Owner elects to make will be made at no cost to the Contractor, except that, if a sample of any material or equipment proposed for use by the Contractor fails to meet the Specifications, the cost of testing subsequent samples shall be borne by the Contractor.
5. Submit, in duplicate, to the Engineer test results that are certified by laboratory as specified in Section 01 45 00 - Quality Requirements. The samples furnished and the cost for the laboratory services shall be at the expense of the Contractor and included in the prices bid for the associated work.

G. Certificates of Compliance:

1. Furnish a Certificate of Compliance for materials specified to a recognized standard or code prior to the use of any such materials in the work. The Engineer may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance. The certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall state that the materials involved comply in all respects with the requirements of the Specifications. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lot so certified shall be clearly identified in the certificate.
2. All materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the Work which conforms to the requirements of the Contract Documents and any such material not conforming to such requirements will be subject to rejection whether in place or not.
3. The Engineer reserves the right to refuse permission for use of material on the basis of a Certificate of Compliance.
4. The form of the Certificate of Compliance and its disposition shall be as directed by the Engineer.

PART 2 PRODUCTS – NOT USED.

PART 3 EXECUTION – NOT USED.

END OF SECTION 01 33 00

DIVISION 1 - GENERAL REQUIREMENTS
Section 01 35 26 – Safety Requirements
and Protection of Property

PART 1 GENERAL

1.01 CONTRACTOR'S RESPONSIBILITY FOR SAFETY

- A. The Contractor shall do whatever work is necessary for safety and be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees) and property during the Contract period. This requirement shall apply continuously and not be limited to normal working hours.

1.02 FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS

- A. Safety provisions shall conform to the Federal and State Departments of Labor Occupational Safety and Health Act (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, the requirements set forth herein, and any regulations that may be specified in other parts of these Contract Documents. Where any of these are in conflict, the more stringent requirement shall be followed. The Contractor's failure to thoroughly familiarize himself with the aforementioned safety provisions shall not relieve him from compliance with the obligations and penalties set forth therein.

1.03 SAFE ACCESS BY FEDERAL, STATE, AND LOCAL GOVERNMENT OFFICIALS

- A. The Contractor shall at all times provide proper facilities for safe access to the work by authorized government officials.

1.04 CONSTRUCTION SAFETY PROGRAM

- A. The Contractor shall develop and maintain for the duration of this Contract, a safety program that will effectively incorporate and implement all required safety provisions. The Contractor shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program.
- B. The duty of the Engineer to conduct construction review of the Contractor's performance is not intended to include a review or approval of the adequacy of the Contractor's safety supervisor, the safety program, or any safety measures taken in, on, or near the construction site.

1.05 SAFETY EQUIPMENT

- A. The Contractor, as part of his safety program, shall maintain at his office or other well-known place at the jobsite, safety equipment applicable to the work as prescribed by the governing safety authorities, all articles necessary for giving first-aid to the injured, and shall establish the procedure for the immediate removal to a hospital or a doctor's care of any person who may be injured on the jobsite.

- B. The performance of all work and all completed construction, particularly with respect to ladders, platforms, structure openings, scaffolding, shoring, lagging, machinery guards and the like, shall be in accordance with the applicable governing safety authorities.

1.06 INCIDENT REPORTS

- A. If death or serious injuries or serious damages are caused, the incident shall be reported immediately by telephone or messenger to the Engineer. In addition, the Contractor must promptly report in writing to the Engineer all incidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.
- B. If a claim is made by anyone against the Contractor or any subcontractor on account of any incident, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.

1.07 TRAFFIC SAFETY AND ACCESS TO PROPERTY

- A. Comply with all rules and regulations of the city, state, and county authorities regarding closing or restricting the use of public streets or highways. No public or private road shall be closed, except by express permission of the Owner. Conduct the work so as to assure the least possible obstruction to traffic and normal commercial pursuits. Protect all obstructions within traveled roadways by installing approved signs, barricades, and lights where necessary for the safety of the public. The convenience of the general public and residents adjacent to the project, and the protection of persons and property are of prime importance and shall be provided for in an adequate and satisfactory manner. The Contractor shall clean public roads in the project vicinity as required by the city, state and county authorities, and Owner.

1.08 FIRE PREVENTION AND PROTECTION

- A. The Contractor shall perform all work in a fire-safe manner. He shall supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. Contractor shall notify and coordinate all hot work with the Owner. The Contractor shall comply with applicable federal, local, and state fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Protection Association Standard for Safeguarding Construction, Alteration and Demolition Operations (NFPA No. 241) shall be followed.

1.09 USE OF EXPLOSIVES

- A. Explosives shall not be used on this project.

1.10 CONTRACTOR TO SAFEGUARD EXISTING UTILITIES

- A. The Contractor shall perform all work, in such a manner as to avoid damage to existing fire hydrants, power poles, lighting standards, and all other existing utilities, public or private. See Section 01 01 10 - SITE CONDITIONS, Division 1.

1.11 PROTECTION OF TREES

- A. Protect from damage all trees outside the limits of the work and trees within the limits of the work which are designated on the Drawings to remain undisturbed.

1.12 TREE REMOVAL

- A. No trees shall be removed without the express approval of the Engineer. Removed trees shall be disposed of in a legal manner off the worksite by the Contractor.

1.13 SURVEY TO ESTABLISH AUTHENTICITY OF POSSIBLE DAMAGE CLAIMS

- A. After the Contract is awarded and before the commencement of work, the Contractor shall make a thorough examination of all existing right-of-way, easements, buildings, structures, landscaping, pavement, patios and other improvements in the vicinity of the work, as applicable, which might be damaged by his operations.
- B. Records in triplicate of all observations shall be prepared by the Contractor and every copy of every document shall be signed by the authorized representative of the Contractor. Photographs shall be made by the Contractor and signed in the manner specified above. One signed copy of every document and photograph will be kept on file in the office of the Engineer. Photos and videos shall have the date of capture embedded in the file and visible when viewing. For video files, Contractor shall include a signed log of videos identifying the location, direction of viewing and landmarks for reference.
- C. The above records and photographs are intended for use as indisputable evidence in ascertaining the extent of any damage which may occur as a result of the Contractor's operations and are for the protection of the adjacent property owners, the Contractor, and the Owner, and will be a means of determining whether and to what extent damage, resulting from the Contractor's operations, occurred during the Contract work.
- D. Contractor shall not be allowed to start work until submission of the records described in this section are submitted to the Owner and Engineer.

1.14 PROTECTION OF PRIVATE PROPERTY

- A. When working on private property and in easements, Contractor shall take the necessary steps to protect that property from damage as a result of the work. This may include, but is not limited to, laying down plates, plywood or other barriers to protect driveways, patios, lawn, landscaping, buildings and other features from damage as a result of Contractor's work.
- B. Contractor shall notify property owners in advance of needing to access private property. Owner and Engineer shall be copied on any correspondence and made aware of any communication with the property owner.
- C. Contractor shall restore any damage to private property to a condition equal or better than it existed prior to the start of work on the property. Documentation as

obtained and provided in Section 1.13 of this specification shall be referenced in discussions regarding private property damage.

1.15 CONFINED SPACE ENTRY PROGRAM

- A. Contractor shall submit to Owner and Engineer their OSHA (29 CFR 1910.146) compliant confined space entry program prior to the start of work. Contractor shall also submit OSHA compliant confined space entry plans for all subcontractors. The purpose of submitting said confined space entry program is to substantiate to Owner and Engineer that Contractor has a plan in place to comply with OSHA requirements. Owner and Engineer will not be approving Contractor's confined space entry program.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION 01 35 26

DIVISION 1 - GENERAL REQUIREMENTS
Section 01 45 00 – Quality Requirements

PART 1 GENERAL

1.01 SUMMARY

- A. The Contractor will employ and pay for an independent testing firm to perform specified quality assurance/quality control tests and services.
- B. This Section includes administrative and procedural requirements for quality assurance and quality control.
- C. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Engineer or Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.02 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, and NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory or testing firm shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as “carpentry” does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as “carpenter.” It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- K. Experienced: When used with an entity, “experienced” means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.03 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.
- C. Reports: Prepare and submit certified written reports that include the following:
 - 1. Date of issue.
 - 2. Project title and number.

3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notice, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.04 LIMITS OF AUTHORITY OF TESTING SERVICE

- A. Laboratory is not authorized to:
1. Release, revoke, alter or enlarge on, Contract requirements.
 2. Approve or accept any portion of work.
 3. Perform any duties of the Contractor.

1.05 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with Laboratory personnel, provide access to work, to manufacturer's operations.
- B. Furnish copies of mill test reports.
- C. Furnish verification of compliance with Contract requirements for all materials and equipment.
- D. Furnish casual labor and facilities:
1. To provide access to work to be tested.
 2. To facilitate inspections and tests.
 3. For laboratory's exclusive use for storage and curing of test samples.
- E. Notify laboratory sufficiently in advance of operations to allow for its assignment of personnel and scheduling of tests.
- F. Correct work which is defective or which fails to conform to Contract Documents in accordance with General Conditions. Corrective work shall not delay project schedule or work of other contractors.

G. Patch all surfaces and areas disturbed by testing operations.

1.06 ADDITIONAL TESTING BY OWNER

A. Owner may also at his option, obtain additional inspections and tests in accordance with General Conditions.

1.07 REINSPECTION

A. In the event that accuracy or adequacy of any inspection or test is challenged by any parties, and reinspection, or retesting is required, all costs for reinspection or retesting shall be paid by party challenging the original report unless the reinspection or retesting results in taking actions differing from that based on the original report which in that case, the party paying for the original tests shall pay for the additional inspection and tests.

B. Such inspections or tests will be considered only when performed by a Testing Laboratory or Consultant approved by Owner in writing.

1.08 ANNIVERSARY INSPECTION

A. A first anniversary inspection shall be conducted by the owner, contractor, and manufacturers. The anniversary inspection shall occur 30 days before warranty period ends.

B. A detailed report shall be prepared post-inspection and submitted to the Owner.

1.09 SCHEDULE OF TESTS

A. Tests and inspections are listed in the specification section for the products or work requiring the test or inspection.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 45 00

DIVISION 01 - GENERAL REQUIREMENTS
Section 01 55 26 - Traffic Control

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Layout, installation, maintenance and removal of traffic control devices to warn traffic of speed reductions, lane restrictions, road closures, detour traffic around the construction site and prevent traffic from entering the construction zone.
- B. Layout, installation, maintenance and removal of direction and warning signs to detour pedestrians around the construction zone.

1.02 RELATED SECTIONS

- A. Division 01 – General Requirements

1.03 REFERENCE TO STANDARDS

- A. Conform to the Manual on Uniform Traffic Control Devices, latest edition.

1.04 REGULATORY REQUIREMENTS

- A. Contractor shall be responsible to repair damage to all federal, state, city and township roadways caused by their equipment or by subcontractors or suppliers performing work under the contract. It is advisable that Contractor document the condition of all the roadways prior to starting work.
- B. The traffic control and protection required to protect the work zone and public use of the street will not be paid for separately, but shall be included in the contract lump sum price for Traffic Control and Protection, and no additional compensation will be allowed. The Contractor shall provide and maintain access to public and private properties abutting the construction.

PART 2 PRODUCTS

2.01 TRAFFIC CONTROL DEVICES

- A. Materials may be new or used, suitable for purpose. Comply with specified codes.
- B. Where bypassing is necessary, Contractor shall utilize a route for the pump hose that is outside the paved limits of local and state right-of-way so as not to impede the flow of traffic.

2.02 LANE CLOSURES AND OFF-ROAD OPERATIONS (RESERVED)

- A. Lane Closures: traffic control for the work associated with construction may require a lane closure.
- B. Standards provided.

PART 3 EXECUTION

3.01 LAYOUT

- A. Obtain appropriate lane closure, street closure, street use, and street repair permits from the local highway or road authority.
- B. Verify and document existing conditions.
- C. Evaluate placement of traffic control devices in addition to the devices shown on the plans.
- D. Consider flow of traffic and maintain access to the adjacent properties.
- E. Provide Owner with five (5) working days' notice of lane reductions prior to initiating traffic control.

3.02 INSTALLATION

- A. Implement traffic control devices to promote flow of traffic.
- B. Ensure traffic control devices are visible at night.
- C. Contractor is responsible for ensuring a safe work zone for his forces and the traveling public. Should conditions arise that do not necessarily fit the standard traffic control details shown on the plans, Contractor shall make the needed adjustments to create a safe work zone at no additional cost to the Owner.

3.03 MAINTENANCE

- A. Correct traffic control devices that fail or are shifted by traffic.
- B. Adjust traffic control devices to respond to changes in traffic patterns and flow.
- C. Replace traffic control lighting that has failed.

3.04 REMOVAL

- A. Upon final completion of the project, remove all traffic control devices.
- B. Remove dirt and debris from roadway open to traffic daily

END OF SECTION 01 55 26.

DIVISION 1 – GENERAL REQUIREMENTS
Section 01 58 00 – Licenses, Easements and
Permits

PART 1 GENERAL

1.01 SUMMARY

- A. Requirements include compliance with licenses, easements and permits granted, obtained and/or initiated by the Owner.

1.02 RELATED SECTIONS

- A. General Conditions of the Contract: Article 6.11 Permits.

1.03 LICENSES

- A. Licenses granted to the Owner by other governmental entities or private property owners delineate rights of the Owner to operate and maintain their utility. A copy of the license agreement(s) will be provided upon the Contractor's request.

- B. Contractor shall maintain their operations within the license width(s) shown.

1.04 PERMITS

- A. Owner has initiated the permit process regulatory and/or governmental agencies to perform the work described in this contract. Owner believes permits will be issued to the successful Contractor upon presentation of a completed permit application and the required bonds and insurance. Contractor shall complete the permit application process as described below to obtain the respective permits. **A copy of each permit application started, where available, are provided at the end of this Section for convenience of Contractor.**
 - 1. Missouri Department of Natural Resources (MDNR) Construction Permit

- C. Contractor shall conduct his operations to comply with all provisions and conditions of the permit(s).

- D. If Contractor chooses to utilize another alignment, route or option to complete the work that falls outside the boundaries described in the permit obtained and/or initiated, Contractor does so at his own risk and is responsible for all costs associated with alternate alignment, route or option.

END OF SECTION 01 58 00

DIVISION 1 - GENERAL REQUIREMENTS
Section 01 60 00 - Product Requirements

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: General product requirements that apply to all areas of the Work.
- B. Related Sections:
 - 1. Document IB – Instructions to Bidders.
 - 2. Document 00 70 00 – General Conditions.
 - 3. Section 01 33 00 – Submittal Procedures.

1.02 BASIC PRODUCT REQUIREMENTS

- A. All products provided under this Contract shall be new and of suitable grade for the purpose intended.
- B. All products in contact with potable water during normal operation shall be tested and certified by Underwriters Laboratory or NSF International (as an ANSI accredited certifier) against NSF 61: Drinking Water System Components – Health Effects.
- C. Submit product data in accordance with Section 01 33 00 – Submittal Procedures for all products. Product data shall be sufficient to clearly demonstrate that the product, material, or equipment described conforms to the intent of the Contract Documents.
- D. No products shall contain asbestos materials or lead based paint.

1.03 PRODUCT SUBSTITUTIONS – NOT USED

1.04 PREPARATION FOR SHIPMENT

- A. When practical, equipment shall be factory assembled. The equipment parts and assemblies that are shipped unassembled shall be furnished with an assembly plan and instructions. Individual parts and components shall be tagged or otherwise piece-marked and keyed to the assembly plan and instructions. The separate parts and assemblies shall be match-marked or tagged in a manner to facilitate proper field assembly.
- B. Generally, machined and unpainted parts subject to damage by the elements shall be protected with an application of a strippable protective coating.
- C. Equipment shall be packaged or crated in a manner that will provide protection from damage during shipping, handling, and storage.
- D. The outside of the package or crate shall be adequately marked or tagged to indicate its contents by name and equipment number, if applicable; approximate weight; state any special precautions for handling; and indicate the recommended requirements for storage prior to installation.

1.05 RECEIVING

- A. The Contractor shall unload and record the receipt of all equipment and materials at the jobsite. Report daily receipts to Engineer in writing.
- B. Inspect and accept responsibility of all Owner supplied equipment and materials at the jobsite.

1.06 INSPECTION

- A. Immediately upon receipt of equipment and materials at the jobsite, the Contractor shall inspect for completeness and any evidence of damage during shipment. Should there appear to be any damage, notify the Engineer immediately and inform the manufacturers and the transportation company of the extent of damage. If, in the opinion of Engineer and Owner, the item or items require replacing, the Contractor shall take the necessary measures to expedite the replacement at no extra cost to the contract.
- B. Inspect materials and equipment for conformation to the Contract Documents and Shop Drawings and notify Engineer of deviations prior to incorporating into the Work.

1.07 HANDLING

- A. Handle equipment and materials received for installation on this project in accordance with the manufacturer's recommendations, and in a manner that will prevent damage.

1.08 STORAGE AND LAYDOWN

- A. Store equipment and materials prior to installation as recommended by the manufacturer.
- B. Store all materials off the ground and out of mud and standing water prior to installation.
- C. Store all items subject to the elements, vandalism, or theft such that they are protected and/or secure.
- D. Do not store any materials on private property without written permission of the property owner or lessee. Provide copy of written permission to Owner and Engineer.

1.09 INSURANCE

- A. Refer to the General Conditions for Contractor's insurance requirements for materials delivered but not yet incorporated into the work.

1.10 INVENTORY CONTROL

- A. Store equipment and materials in a manner that provides easy access for inspection and inventory control. The Contractor shall keep a running account of all materials in storage to facilitate inspection and to estimate progress payments for materials delivered but not installed in the Work.

1.11 EQUIPMENT MAINTENANCE PRIOR TO OWNER'S ACCEPTANCE

- A. The Contractor shall provide the required or manufacturer's recommended equipment maintenance during storage, during installation, and until such time as the Owner accepts the equipment for full-time operation.

PART 2 PRODUCTS – NOT USED.

PART 3 EXECUTION – NOT USED.

END OF SECTION 01 60 00

DIVISION 1 - GENERAL REQUIREMENT
Section 01 70 00 - Cleaning

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Requirements for site maintenance during progress of the Work and for final cleaning.

- B. Related Sections:
 - 1. Section 01 11 00 - Summary of Project.
 - 2. Divisions 2 - 48: Cleaning requirements for specific products or work.

1.02 GENERAL

- A. At all times maintain areas covered by the Contract, public properties, and adjacent properties free of waste, debris and rubbish caused by construction operations.

- B. At completion of work, or at such other times as directed by the Engineer, remove all waste, debris, rubbish, tools, equipment, machinery and surplus materials. Clean all sight-exposed surfaces; leave work clean and ready for occupancy.

- C. At completion of project, leave project clean and ready for occupancy.

1.03 QUALITY REQUIREMENTS

- A. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

- B. Do not burn or bury rubbish or waste materials on project site.

- C. Do not dispose of volatile, harmful or dangerous materials into drainage systems or sanitary drains. Do not dispose of wastes into streams or waterways.

- D. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.

- E. Provide approved on-site containers for collection and disposal of waste materials, debris, and rubbish as required.

- F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

1.04 SAFETY REQUIREMENTS

- A. Standards:
 - 1. Maintain project in accordance with following safety and insurance standards:
 - a. Applicable Federal and State requirements.

b. National Fire Protection Association 241 (NFPA).

- B. Hazards Control:
1. Store volatile wastes in covered metal containers separate from other waste and remove from premises every three (3) days.
 2. Prevent accumulation of wastes which create hazardous conditions.
 3. Provide adequate ventilation during use of volatile or noxious substances.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS

- A. Select and use all cleaning materials and equipment with care to avoid scratching, marring, defacing, staining or discoloring surfaces cleaned.
- B. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 EXECUTION

3.01 DURING CONSTRUCTION

- A. During execution of work, clean site and public properties and dispose of waste materials, debris, and rubbish to assure that site and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down materials and rubbish to lay dust and to prevent blowing dust.
- C. Vacuum interior building areas when ready to receive finish painting and continue vacuum cleaning on an as-needed basis until building is ready for Substantial Completion or Occupancy.
- D. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed and semi-exposed surfaces that are the finished surface.
- E. Repair, patch, and touch up marred surfaces to specified finish to match adjacent surfaces.
- F. Broom clean paved and smooth surfaces; rake clean other surfaces.
- G. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- H. Conduct daily cleanup of adjacent roads as required due to truck traffic and transportation of materials and workers onsite and offsite.

3.02 FINAL CLEANING

- A. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
- B. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion in accordance with Section 01 78 00 - Closeout Procedures.
 - 1. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - 2. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean.
 - 3. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - 4. Clean the site, including landscaping development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
 - 5. Remove grease, dust, dirt, stains, labels, fingerprints, protection and other foreign materials from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to specified finish.
 - 6. Repair, patch and touch up marred surfaces to specified finish to match adjacent surfaces.
 - 7. Sweep and mop clean all resilient flooring.
 - 8. Vacuum clean all carpet.
 - 9. Replace air handling (conditioning) filters if units were operated during construction.
 - 10. Vacuum clean ducts, blowers and coils, if air handling (conditioning) units were operated without filters during construction.
 - 11. Maintain finally cleaned areas until project or designated portion thereof, is accepted by Owner.
 - 12. Remove wasted drilling materials and leave the premises in a neat and presentable condition, equal to or better than that prior to the start of the drilling operation.
- C. Removal of Protection:
 - 1. Remove temporary protection and facilities installed for protection of work during construction.

D. Compliance:

1. Where extra materials of value remaining after completion of associated work have become Owner's property, arrange for disposition of these materials as directed.

END OF SECTION 01 70 00

DIVISION 1 – GENERAL REQUIREMENTS
Section 01 72 50 – Field Engineering

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Quality assurance, submittals, and project record document requirements for the Contractor's survey and field engineering as applicable for any supplemental work necessary for quality control.
- B. Related Sections:
 - 1. Section 01 45 00 – Quality Requirements
 - 2. Section 01 78 10 – Project Record Documents.

1.02 QUALITY ASSURANCE

- A. The Contractor is responsible for general construction staking; the Contractor shall be fully responsible for ensuring consistency and compliance with the Contract Documents. This may necessitate the need for the Contractor to employ a Professional Land Surveyor licensed in the State of Missouri to assist with their Quality Control Program.
- B. If the Contractor, sub-contractor, or vendor cause a field change requiring design or re-design of any facility, the Contractor shall employ a Professional Engineer of the required discipline, licensed in the State of Missouri, to complete the work.

1.03 SUBMITTALS FOR REVIEW

- A. Submit name, address, telephone number and email address of Surveyor before starting survey work.
- B. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.
- C. On request, submit documentation verifying accuracy of survey work.
- D. Submit a copy of site drawing signed by the Land Surveyor that the elevations and locations of the Work are in conformance with Contract Documents.
- E. Submit name, address, telephone number and email address of Land Surveyor / Engineer before starting field engineering work.

1.04 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and survey work as it progresses.
- B. On completion of foundation walls and major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.

- C. Submit Record Documents under provisions of Section 01 78 10 - Project Record Documents.

1.05 EXAMINATION

- A. Verify locations of survey control points with the Engineer prior to starting work.
- B. Verify the consistency of the staking points with the plan dimensions prior to construction. Notify the Engineer of any discrepancies discovered in accordance with the General Conditions.
- C. Field check benchmarks and other points for disturbance prior to using them for layout or grade control.

1.06 SURVEY REFERENCE POINTS

- A. Protect survey control, benchmarks, and reference points in accordance with the General Conditions.
- B. Control datum for survey is that indicated on Drawings.

1.07 PROJECT RECORD DOCUMENT SURVEYING

- A. The Contractor shall allow the Owner's Engineer reasonable access to the work for the collection of record document data. The Contractor shall notify the Engineer a minimum of one (1) working day prior to backfilling trenches and other excavations.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION 01 72 50

DIVISION 1 – GENERAL REQUIREMENTS
Section 01 78 00 – Closeout Procedures

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Administrative and procedural requirements for contract closeout.
- B. Related Requirements Specified Elsewhere:
 - 1. Section 01 11 00 – Summary of Project.
 - 2. Section 01 33 00 – Submittal Procedures.
 - 3. Section 01 78 10 – Project Record Documents.
 - 4. Divisions 2 – 48: Closeout submittals required in various Sections.

1.02 PRELIMINARY SUBSTANTIAL COMPLETION PROCEDURES

- A. Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in request.
 - 1. Prepare list of items to be completed or corrected (Punch List).
 - 2. In Application for Payment that coincides with, or first follows date Substantial Completion is claimed, show 100% completion for portion of work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to Contract Sum.
 - 3. If 100% completion cannot be shown, include a list of incomplete items, value of incomplete construction, and reasons work is not complete.
 - 4. Advise Owner of pending insurance change-over requirements.
 - 5. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - 6. Obtain and submit releases enabling Owner unrestricted use of work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 - 7. Deliver tools, spare parts, extra stock and similar items.
 - 8. Make final change-over of permanent locks and transmit keys to Owner. Advise Owner's personnel of change-over in security provisions.
 - 9. Complete start-up testing of systems and instruction of Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from site, along with construction tools, mock-ups and similar elements.
 - 10. Complete final clean up requirements in accordance with Section 01 70 00 – Cleaning. Touch-up and otherwise repair and restore marred exposed finishes.

1.03 SUBSTANTIAL COMPLETION - INSPECTION PROCEDURES

- A. On receipt of a request for inspection, Engineer will either proceed with inspection or advise Contractor of unfilled requirements. Engineer will prepare Certificate of Substantial Completion following inspection or advise Contractor of construction that must be completed or corrected before certificate will be issued.
- B. Engineer will repeat inspection when requested and assured that work has been substantially completed.
- C. Results of completed inspection will form basis of requirements for final acceptance.

1.04 FINAL ACCEPTANCE - PRELIMINARY PROCEDURES

- A. Before requesting final inspection for certification of final acceptance and final payment, complete following. List exceptions in request.
 1. Submit final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 2. Submit written declaration that all aspects of contract documents have been complied with.
 3. Submit an updated final statement, accounting for final additional changes to Contract Sum.
 4. Submit certified copy of Engineer's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance.
 5. Submit final meter readings for utilities, measured record of stored fuel, and similar data as of date of Substantial Completion, or when Owner took possession of and responsibility for corresponding elements of work.
 6. Submit a final liquidated damages settlement statement.
 7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 8. Submit Project Record Drawings in accordance with Section 01 78 10 – Project Record Drawings and Section 01 33 00 – Submittal Procedures.
 9. Submit Operation and Maintenance Manuals in accordance with Section 01 78 23 – Operation and Maintenance Manuals and Section 01 33 00 – Submittal Procedures.

1.05 REINSPECTION PROCEDURES

- A. Engineer will reinspect work upon receipt of notice that work, including inspection list items from earlier inspections, has been completed in accordance with contract documents, except items whose completion has been delayed because of circumstances acceptable to Engineer.
- B. Upon completion of reinspection, Engineer will prepare a certificate of final acceptance, or advise Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
- C. If necessary, reinspection will be repeated. Contractor shall pay the cost of reinspection over two (2) times.

1.06 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three (3) copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 - 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Engineer / Architect and Project Representative.
 - d. Name of Contractor.
 - e. Page number.

1.07 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Engineer / Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2 by 11-inch (215 by 280-mm) paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.08 FINAL APPLICATION FOR PAYMENT - SUBMITTAL ITEMS

- A. Application for Payment.
- B. Consent of Surety Company to Final Payment (293149V1).
- C. Contractor's Affidavit of Release of Liens (00 65 19.16).
- D. Contractor's Affidavit of Debts and Claims (00 65 19.13).
- E. Final Waivers of Lien from Subcontractors and Suppliers.
- F. Duly execute all submittals before delivery to Engineer.
- G. Engineer will process final application in accordance with General Conditions.

PART 2 PRODUCTS

2.01 MATERIALS

- A. **Cleaning Agents:** Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 EXECUTION

3.01 FINAL CLEANING

- A. **General:** Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. **Cleaning:** Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

- d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Touch and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - i. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - m. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - n. Replace parts subject to unusual operating conditions.
 - o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - q. Clean ducts, blowers, and coils if units were operated without filters during construction.
 - r. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
 - s. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess material on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 78 00

DIVISION 1 – GENERAL REQUIREMENTS
Section 01 78 10 – Project Record
Documents

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Requirements for preparation of Record Documents (also known as "As-Builts").
- B. Related Requirements Specified Elsewhere:
 - 1. Section 01 33 00 – Submittal Procedures: Procedural requirements for Submittals.
 - 2. Section 01 78 00 – Closeout Procedures: Substantial Completion requirements.

1.02 DESCRIPTION

- A. Project Record Documents are a complete set of Contract Documents and Drawings prepared by Contractor from a set of Base Documents furnished by Engineer and from Field Sets of Contract Documents.
- B. Field Sets of Contract Documents be used for field construction purposes shall be maintained and annotated by the Contractor during construction to record approved changes, additions, addenda, options and deviations and pertinent field notes to Contract Documents.

1.03 SUBMITTALS

- A. In accordance with Section 01 33 00 – Submittal Procedures.
- B. Submit, at Substantial Completion, one set of Project Record Documents.

PART 2 PRODUCTS

2.01 BASE DOCUMENTS

- A. Engineer will furnish the Contractor with one (1) set of Contract Drawings (black line prints), one set of Contract Specifications and one set of Contract Addenda to be used in preparation of Record Documents.

2.02 RECORD DOCUMENTS

- A. Record Documents shall not be used for field construction purposes.
- B. All changes, additions, addenda, options and deviations and pertinent field notes shall be clearly marked using neat ruled lines and legible notes and dimensions as follows.

1. Options and deviations to Contract Documents with red ballpoint pen.
2. All notes, explanations, and sketches with blue ballpoint pen.

2.03 FIELD SETS

- A. Field Sets of Contract Documents shall be used for field construction purposes and shall be marked with information required for Project Record Documents.

2.04 INFORMATION TO RECORD

- A. Label "PROJECT RECORD DOCUMENTS" in 2" high printed letters on each document.
 1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - d. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 - e. Mark important additional information that was either shown schematically or omitted from original Drawings.
 - f. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
 2. Record actual construction to include but not be limited to the following:
 - a. Depths of various elements of foundation in relation to floor level.
 - b. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - c. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - d. Field changes of dimension and detail.
 - e. Changes made by Change Order.
 - f. Details not on original contract drawings.

PART 3 EXECUTION

3.01 MAINTENANCE

- A. Keep record documents up-to-date during progress of the Work by marking any and all changes, additions, addenda, options and deviations and pertinent field notes at the time the work is executed.

- B. Indicate on Field Sets all alterations and deviations from original documents known to Each Contractor's and Sub-Contractor's Superintendent on job during course of completion of project.
- C. Transfer required information to Record Documents using neat ruled lines and legible notes and dimensions.

3.02 STORAGE

- A. Maintain documents in clean, dry legible condition. Protect from deterioration and loss in secure, fire-resistive location.
- B. Make documents available during normal working hours for inspection by Engineer and Owner.

3.03 COMPLETION

- A. Maintain and store record documents until satisfactory completion of the Contract and submittal of record documents to the Engineer.
- B. The contract closeout and final payment under this contract **will not** be finalized and approved until a complete and accurate set of record documents, as described above, have been submitted to the Engineer, reviewed for accuracy and accepted.

END OF SECTION 01 78 10

CITY OF GRAIN VALLEY
MINTER ROAD WATER MAIN REPLACEMENT

DIVISION 31 – EARTHWORK

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DIVISION 31 - EARTHWORK
Section 31 23 23 – Controlled Low-Strength
Material

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this Section.

1.02 SUMMARY

- A. Section includes furnishing of all labor, materials and all other incidental work to place Controlled Low Strength Material (CLSM) in pipe excavations, under structures, and at locations as shown on the drawings and in accordance with these specifications.
- B. Related Sections:
1. Section 01 33 00 – Submittal Procedures.
- C. Reference to Standards:
1. ACI 301-10 – Specifications for Structural Concrete.
 2. ASTM C31 – Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 3. ASTM C33 – Standard Specification for Concrete Aggregates.
 4. ASTM C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 5. ASTM C94 – Standard Specification for Ready Mixed Concrete.
 6. ASTM C143 – Standard Test Method for Slump of Hydraulic Cement Concrete.
 7. ASTM D5971 – Standard Practice for Sampling Freshly Mixed Controlled Low-Strength Material.
 8. ASTM D6103 – Standard Test Method for Flow Consistency of Controlled Low-Strength Material (CLSM).

1.03 DEFINITIONS

- A. (RESERVED)

1.04 SUBMITTALS

- A. Submit under the provisions of Division 1 - Section 01 33 00 – Submittal Procedures.
- B. Material Certifications: For each item listed, submit information indicated.

1. Fine Aggregate
 - a. Producer name
 - b. Quarry Location.
 - c. Contact Person and Phone Number.
 - d. Material Test Reports: From a qualified testing agency, indicating compliance with requirements.
 2. Cement
 - a. Mill Test Report.
 - b. Producer Name and Location.
 3. Water
 - a. Specify Potable Water Source.
- C. CLSM Mix Properties: Submit the following information:
1. Mix Design
 - a. Cementitious Materials (Lbs./C.Y.)
 - b. Fine Aggregate (Lbs./C.Y.)
 - c. Water (Lbs./C.Y.)
 - d. Admixtures.
 2. Slump/Flow Specified.
 3. Air Content Specified.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94 requirements for production facilities and equipment.
 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5 and Section 7, "Lightweight Concrete."
 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

PART 2 PRODUCTS

2.01 CLSM MATERIALS

- A. CLSM shall consist of a mixture of Portland cement, fly ash, fine aggregate, and water proportioned to provide a backfill material that is self-compacting and capable of being excavated with hand tools if necessary in the future.
- B. All materials shall meet the requirements of Section 03 31 00 – Structural Concrete.
- C. Proportioning of a one cubic yard mixture of CLSM shall be as follows:
1. Mix 1
 - a. Portland Cement, Type 1: 50 lbs.
 - b. Fly Ash – Type F or C: 125 lbs.
 - c. Fine Aggregate (Saturated Surface Dry): 2900 lbs.
 - d. Water: 50-65 gallons
 2. Mix 2
 - a. Portland Cement, Type 1: 470 lbs.
 - b. Fine Aggregate (Saturated Surface Dry): 2800 lbs.
 - c. Water: 30-35 gallons
 3. Locations for mix design use are indicated on the drawings.
 4. These proportions will yield approximately one cubic yard of CLSM of the consistency desired. The flexibility shall be observed by the Engineer and the water content or air content shall be adjusted within the specified limits to produce desired results.
- D. Contractor may submit an alternate mix design and may propose alternate fine aggregate materials, fine aggregate gradations, or material proportions. The mix design shall meet the following minimum criteria.
1. Minimum Mix 1 Design Criteria
 - a. Flow: ≥ 7 inch
 - b. Air Content: 0 – 25%
 - c. Dynamic Cone Penetrometer at 3 days: $\leq 1\frac{1}{2}$ "/blow
 - d. Compressive Strength at 28 days and 180 days: ≥ 30 psi to < 150 psi
 2. Minimum Mix 2 Design Criteria
 - a. Flow: 2 to 4 inches
 - b. Air Content: 10 – 15%
 - c. Dynamic Cone Penetrometer at 3 days: $\leq 1\frac{1}{2}$ "/blow
 - d. Compressive Strength at 28 days and 180 days: ≥ 150 psi to < 1500 psi
 3. The mix design shall include the following information:

- a. Source of all materials.
- b. Gradation of fine aggregate.
- c. Absolute volumes, specific gravities, unit weights, and any other values used in the mix design process.
- d. Type and proposed dosage of admixtures.
- e. Target flow and air content.
- f. Test data indicating compressive strength at 28 and 180 days.

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify site conditions under provisions of Division 1 - General Requirements.

3.02 CLSM MIXING

- A. Measure, batch, mix, and deliver concrete according to ASTM C 94.
- B. Sufficient mixing capacity shall be provided to permit the placement of CLSM without interruption.
- C. The mixer drum shall be emptied prior to the initial batch being prepared to ensure that no additional cement fines are incorporated into the mix.

3.03 PLACEMENT OF CLSM

- A. CLSM shall be conveyed and placed in conformance with ACI 301.
- B. The mix shall not be placed on frozen ground, in standing water, or during wet weather conditions. Mixing and placing shall begin only if the air temperature is 35 °F (2 °C) minimum and rising. At time of placement, the material temperature shall be 40 °F (5 °C) minimum. Mixing and placing shall stop when the air temperature is 40 °F (5 °C) and falling.
- C. When backfilling against structures, the mix shall be placed in layers to prevent damage by lateral pressures. Thickness of each layer shall be submitted per Specification Section 01 33 00 by the Contractor for review by Engineer prior to placement. Side slopes shall be stepped or serrated to prevent wedging action of the backfill against the structure. Each layer shall be allowed to harden prior to placing the next layer.
- D. The mix shall be protected from cold weather in accordance with ACI 306.1
- E. The mix shall be protected from hot weather in accordance with ACI 305.1
- F. Protect the mix from wet weather conditions during the first 24 hours after placement.

3.04 FIELD QUALITY CONTROL

- A. Provide under provisions of Division 1 - General Requirements.

- B. CLSM Tests: Testing of representative samples of fresh CLSM obtained according to ASTM D 5971 shall be performed according to the following requirements:
1. Testing Frequency: Obtain one representative sample for each day's pour of each CLSM mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
 2. Flow: ASTM D 6103; one test at point of placement for each representative sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 3. Compression Test Specimens: ASTM C 31.
 - a. Cast and laboratory cure one set of three standard cylinder specimens for each representative sample.
 4. Compressive-Strength Tests: ASTM C 39; test two laboratory-cured specimens at 28 days. The third cylinder shall be held for testing as a check cylinder.
 - a. A 28-day compressive-strength test shall be the average compressive strength of two specimens obtained from the same representative sample.
 5. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain:
 - a. Project identification name and number
 - b. Name of CLSM testing and inspecting agency
 - c. Date of CLSM placement
 - d. Date of compressive strength test
 - e. Location of CLSM batch in Work
 - f. Design compressive strength at 28 days
 - g. Mix design designation
 - h. Flow of CLSM
 - i. Percent air entrained
 - j. Number of specimens tested
 - k. Compressive breaking strength

END OF SECTION 31 23 23

DIVISION 31 – EARTHWORK
Section 31 23 33 – Trenching and Backfilling

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Excavation and backfill for buried utilities and piping as required under the project.
- B. Controlled Low Strength Material
 - 1. Section includes furnishing of all labor, materials and all other incidental work to place controlled low strength material in pipe excavations, under structures, and at locations as shown on the drawings and in accordance with these specifications.
- C. Related Sections
 - 1. Section 31 25 00 – Erosion and Sedimentation Control
 - 2. Division 33 – Utilities
- D. Reference to Standards
 - 1. American Safety for Testing and Materials (ASTM).
 - 2. Grain Valley Standard Details
 - 3. Occupational Safety and Health Administration (OSHA): Current OSHA Occupational Safety and Health Standards - Excavations, 29 CFR Part 1926, including any successor regulations.
 - 4. Ductile Iron Pipe Research Associate (DIPRA) "Installation Guide for Ductile Iron Pipe," latest edition.
 - 5. ANSI/AWWA C600-93, AWWA Standard for Installation of Ductile-Iron Water Mains and their Appurtenances, as published by American Water Works Association.
 - 6. ANSI/AWWA C605-94, AWWA Standard for Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water, as published by American Water Works Association.
 - 7. ASTM D698 - Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³).
 - 8. ASTM D2321-04 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
 - 9. ASTM D5971 – Standard Practice for Sampling Freshly Mixed Controlled Low-Strength Material.
 - 10. ASTM D6103 – Standard Test Method for Flow Consistency of Controlled Low-Strength Material (CLSM).

- E. Regulatory Requirements
 - 1. Perform excavation and backfilling work in compliance with applicable requirements of governing authorities having jurisdiction.
 - 2. Prior to the commencement of construction, the Contractor shall be aware of, and become familiar with applicable local, state and federal safety regulations, including the current OSHA Occupational Safety and Health Standards - Excavations, 29 CFR Part 1926, including any successor regulations.
 - 3. Additionally, the Contractor shall be aware that slope height, slope inclination and excavation depths (including utility trench excavations) should in no case exceed those specified in local, state or federal safety regulations.

1.03 DEFINITIONS

- A. Suitable Soil: Suitable soil is a soil having less than 6% organic matter by weight as determined by Loss on Ignition Test (determine weight loss caused by heating sample to 500 degrees C for six hours after drying in accordance with ASTM D-2216, "Laboratory Determination of Moisture Content of Soil").
- B. Unsuitable Soil: Unsuitable soil is a soil that contains 6% or more organic matter as determined by the Loss on Ignition test, soils with a Proctor maximum dry density less than 100 pcf, soils with a Plasticity Index of less than 4, shale, weathered shale, coal, rubbish, vegetable matter of any kind, roots and rocks larger than two inches in dimension which might interfere with the proper bonding to adjacent surfaces, or as otherwise determined unsuitable by Engineer or the Engineer's qualified independent testing laboratory.
- C. Stable Soil: soil is considered sufficiently stable when it
 - 1. Prevents rutting and shoving during standard construction practices
 - 2. Limits the amount of rebound deflections under wheel loadings (pumping)
 - 3. Provides good support of placement and compaction of subsequent layers of fill.
- D. Dewatering is defined as lowering of ground water to ensure stable, firm working conditions and reduction to safe levels of any hydrostatic uplift pressures in any confined foundation strata and/or aquifers which is necessary to ensure stability and integrity of foundation.
- E. Dewatering system is defined as machinery, equipment and appurtenances necessary for and related to accomplishment of dewatering, and collection and disposal of all surface water within the protected area.
- F. Cohesionless Soils: Soils which do not demonstrate a well-defined moisture-density relationship in compaction testing. Also referred to as granular soils.
- G. Cohesive Soils: Soils which demonstrate a well-defined moisture-density relationship in compaction testing.
- H. Pavement or Paved Surfaces: Existing or proposed surface treatments of bituminous asphalt, Portland cement concrete, or compacted aggregate.

- I. Type A Trench: Pipe trench for all pipes below structures extending to five feet beyond outside limits of any structure.
- J. Type B Trench: Pipe trench for flexible pipes including the following materials: PVC, CPVC, GFRPM, HDPE Polyethylene, and Polypropylene up to five feet beyond the outside limits of any structure.
- K. Type C Trench: Pipe trench for semi-rigid pipes including the following materials: Cast Iron, Ductile Iron, Steel, and Copper up to five feet beyond the outside limits of any structure.
- L. Type D Trench: Pipe trench for rigid pipes including the following materials: Reinforced Concrete (RCP) up to five feet beyond the outside limits of any structure.
- M. Foundation: The natural or improved bottom of the trench which supports the pipe and its bedding.
- N. Bedding: The four (4) inch minimum layer of material on which the pipe lies.
- O. Haunching: The material placed on each side of the installed pipe, from the top of bedding to the centerline of the pipe.
- P. Initial Backfill: The backfill from the centerline of the pipe to twelve (12) inches above the top of the pipe.
- Q. Final Backfill: The backfill from twelve (12) inches over the top of the pipe to the top of the trench.

1.04 COORDINATION

- A. Do not interrupt existing utilities serving facilities occupied and used by Owner or others except when permitted in writing by the Engineer and then only after acceptable temporary utility services have been provided. Provide minimum of 48 hour notice prior to enacting an approved temporary interruption.

1.05 SUBMITTALS

- A. Submit under the provisions of Division 1, Section 01 33 00 – Submittal Procedures. All materials shall be submitted for approval. Samples shall be submitted when requested by the Engineer.
- B. Manufacturer's Certificate and Product Data: Certify that products meet or exceed specified requirements.
- C. The Contractor shall submit a list of equipment intended to be utilized on this project to the Engineer.
- D. Controlled Low Strength Material
 - 1. Design Data: Submit mix design data to the Engineer for review in accordance with Section 01 33 00 – Submittal Procedures.
 - 2. Material Certifications: For each item listed, submit information indicated.

- a. Fine Aggregate
 - i. Producer name
 - ii. Quarry Location.
 - iii. Contact Person and Phone Number.
 - iv. Material Test Reports: From a qualified testing agency, indicating compliance with requirements.
 - v. Specific Gravity.
 - vi. Moisture Content.
 - b. Cement
 - i. Mill Test Report.
 - ii. Producer Name and Location.
 - c. Water
 - i. Specify Potable Water Source
3. CLSM Mix Properties: Submit the following information:
- a. Mix Design
 - i. Cementitious Materials (Lbs./C.Y.)
 - ii. Fine Aggregate (Lbs./C.Y.)
 - iii. Water (Lbs./C.Y.)
 - iv. Admixtures.
 - b. Slump/Flow Specified
 - c. Air Content Specified
4. Mix Plant Certification: Provide certification of plant inspection (within past 12 months) and provide contact person name, address, and phone number at plant.

1.06 FIELD TESTING

- A. Provide in accordance with Division 1, Section 01 45 00 – Quality Requirements.
- B. Compaction Tests
 - 1. Standard Proctor Density Testing and Compaction Testing of fill materials and inspection of subgrades and fill layers will be performed by the Contractor's qualified independent testing laboratory. Contractor shall inform Engineer 24 hours in advance of soil compaction operations.
 - 2. If in the opinion of the Contractor's qualified independent testing firm, based on proofrolls, field density tests, or inspections, subgrades and fills which have been placed below the specified density or subgrades and fills which exhibit the characteristics of unstable soils, the Contractor shall provide additional compaction, soil stabilization per Section 31 32 00, and/or removal and replacement of the material at no additional cost to the Owner.
 - 3. When, during progress of work, tests indicate that compacted materials will not meet specifications, remove defective work, replace and retest at no additional cost to the Owner.
 - 4. Ensure that all compacted fills are tested before proceeding with placement of surface materials.

PART 2 PRODUCTS

2.01 GENERAL

- A. Native soil salvaged from the trench excavation for use as backfill shall meet the requirements of Suitable Soil as defined in Section 31 23 00 and shall not exceed the allowable moisture content per Section 31 23 00. Native soil that is deemed as Unsuitable Soil as defined in Section 31 23 00 shall be disposed of off-site at no additional cost to the Owner.
- B. Fill materials shall be placed at or near their optimum moisture content to achieve the specified compaction.
- C. Contractor shall engage a qualified independent testing laboratory to test materials from on-site and off-site sources to test materials for conformance to this specification.

2.02 PIPE FOUNDATION

- A. Granular bedding shall be crushed rock or pea gravel with not less than 95% passing 3/4" (95% passing 1" for 30" and larger pipe) and not less than 95% retained on a 3/8". To be placed in not more than 6" layers and compacted by slicing with a shovel or vibrating. Tamped granular backfill (type 5) shall be granular material conforming to the requirements of section 1007.3 of the 2019 Missouri standard specifications for highway construction. Trench backfill (type 1) shall be finely divided material free from debris and stones, compacted to 95% maximum density. Flowable fill or type 5 aggregate compacted to 95% of standard density with testing each lift is required under existing or proposed pavement. All material shall be compacted to 95% in the right of way and 90% outside of the right of way.
- B. At pipe crossing locations, the bedding, haunching, initial backfill, and final backfill of the lower pipe trench shall meet the requirements of trench backfill under paved surfaces, as specified herein, in order to provide a solid foundation for the upper pipe.

2.03 BACKFILL MATERIAL - TYPE A TRENCH

- A. Bedding, Haunching, Initial Backfill and Final Backfill Material in Type A trench areas below structures and extending to five (5) feet beyond the outside limits of the structure shall be CLSM.

2.04 BACKFILL MATERIAL - TYPE B TRENCH

- A. Areas under or within five feet of pavement or paved surfaces:
 - 1. Bedding material in a Type B trench shall conform to APWA Standards for compacted to 97% standard proctor density. Bedding shall have a minimum thickness of 4".
 - 2. Haunching material in a Type B trench shall conform to APWA Standards for compacted to 97% standard proctor density. Haunching shall be placed in compacted lifts not exceeding 6".
 - 3. Initial Backfill material in a Type B trench shall conform to APWA Standards for compacted to 97% standard proctor density. Initial Backfill shall be placed in compacted lifts not exceeding 8".

4. Final Backfill material in a Type B trench shall conform to APWA Standards for compacted to 97% standard proctor density. Final Backfill shall be placed in compacted lifts not exceeding 8".

B. Unpaved areas:

1. Bedding material in a Type B trench shall conform to APWA Standards for compacted to 97% standard proctor density. Bedding shall have a minimum thickness of 4".
2. Haunching material in a Type B trench shall conform to APWA Standards for compacted to 90% standard proctor density. Haunching shall be placed in compacted lifts not exceeding 6".
3. Initial Backfill material in a Type B trench shall conform to APWA Standards for compacted to 90% standard proctor density. Initial Backfill shall be placed in compacted lifts not exceeding 8".
4. Final Backfill material in a Type B trench shall be native soil conforming to section 2.01 of this specification compacted to 90% standard proctor density. Final Backfill shall be placed in compacted lifts not exceeding 8".

2.05 BACKFILL MATERIAL - TYPE C TRENCH

A. Areas under or within five feet of pavement or paved surfaces:

1. Bedding material in a Type C trench shall conform to APWA Standards for compacted to 97% standard proctor density. Bedding shall have a minimum thickness of 4".
2. Haunching material in a Type C trench shall conform to APWA Standards for compacted to 97% standard proctor density. Haunching shall be placed in compacted lifts not exceeding 6".
3. Initial Backfill material in a Type C trench shall conform to APWA Standards for compacted to 97% standard proctor density. Initial Backfill shall be placed in compacted lifts not exceeding 8".
4. Final Backfill material in a Type C trench shall conform to APWA Standards for compacted to 97% standard proctor density. Final Backfill shall be placed in compacted lifts not exceeding 8".

B. Unpaved areas:

1. Bedding material in a Type C trench shall conform to APWA Standards for compacted to 97% standard proctor density. Bedding shall have a minimum thickness of 4".
2. Haunching material in a Type C trench shall conform to APWA Standards for compacted to 97% standard proctor density. Haunching shall be placed in compacted lifts not exceeding 6".
3. Initial Backfill material in a Type C trench shall conform to APWA Standards for compacted to 90% standard proctor density. Initial Backfill shall be placed in compacted lifts not exceeding 8".
4. Final Backfill material in a Type C trench shall be native soil conforming to section 2.01 of this specification compacted to 90% standard proctor density. Final Backfill shall be placed in compacted lifts not exceeding 8".

2.06 BACKFILL MATERIAL - TYPE D TRENCH

- A. Areas under or within five feet of pavement or paved surfaces:
 - 1. Bedding material in a Type D trench shall conform to APWA Standards for compacted to 97% standard proctor density. Bedding shall have a minimum thickness of 4”.
 - 2. Haunching material in a Type D trench shall conform to APWA Standards for compacted to 97% standard proctor density. Haunching shall be placed in compacted lifts not exceeding 6”.
 - 3. Initial Backfill material in a Type D trench shall conform to APWA Standards for compacted to 97% standard proctor density. Initial Backfill shall be placed in compacted lifts not exceeding 8”.
 - 4. Final Backfill material in a Type D trench shall conform to APWA Standards for compacted to 97% standard proctor density. Final Backfill shall be placed in compacted lifts not exceeding 8”
- B. Unpaved areas:
 - 1. Bedding material in a Type D trench shall conform to APWA Standards for compacted to 97% standard proctor density. Bedding shall have a minimum thickness of 4”.
 - 2. Haunching material in a Type D trench shall conform to APWA Standards for compacted to 97% standard proctor density. Haunching shall be placed in compacted lifts not exceeding 6”.
 - 3. Initial Backfill material in a Type D trench shall be native soil conforming to section 2.01 of this specification compacted to 90% standard proctor density. Initial Backfill shall be placed in compacted lifts not exceeding 8”.
 - 4. Final Backfill material in a Type D trench shall be native soil conforming to section 2.01 of this specification compacted to 90% standard proctor density. Final Backfill shall be placed in compacted lifts not exceeding 8”.

2.07 TEMPORARY SURFACE OVER TRENCH

- A. Proper operation of the Owner’s existing facility until the proposed pavement or existing pavement replacement is installed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Site Information
 - 1. Data indicated on subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil borings. It is expressly understood that Owner, and Engineer will not be responsible for interpretations or conclusions drawn therefrom by Contractor. Data, if available, are made available for convenience of Contractor.

2. Contractor shall be responsible for determining the actual ground water elevation and soil conditions at the specific site prior to commencing with the excavation. It may be expedient to drill auger holes, excavate test pits or make additional soil borings at or adjacent to the construction area immediately prior to construction to determine the prevailing soil conditions and water table elevation. It is the Contractor's responsibility to make auger holes, excavate test pits or make additional soil borings as he deems appropriate to determine the ground water and soil conditions that will be encountered. Additional test borings and other exploratory operations made by the Contractor shall be at no cost to the Owner.

3.02 PREPARATION

- A. Establish extent of excavated areas.
- B. Set specified lines, levels, contours and grades.
- C. Maintain bench marks, monuments and other reference points.
- D. Before starting excavation, establish location and extent of underground utilities occurring in work area. Contact Joint Utility Locating Information For Excavators Missouri One Call or 811 for all other utility companies on the project site which are not members of this system. If the Contractor ruptures or causes damage to such objects while digging or during any construction, it is the responsibility of the party performing the construction work to pay the utility company for repairs and such costs shall not be borne by the Owner or the Engineer.
- E. Maintain, reroute or extend existing utility lines to remain which pass through work area.
- F. Backfilling and compaction shall not occur until the following conditions are satisfied:
 1. Acceptance by the Engineer of construction below finish grade.
 2. Inspection, testing, approval and recording locations of underground utilities.
 3. Removal of trash and debris, vegetation, snow or ice, water, unsatisfactory soil materials, obstructions and deleterious materials.
 4. Removal of shoring and bracing and backfilling of voids with satisfactory material.

3.03 EXCAVATION, BACKFILL, AND COMPACTION

- A. Trench excavations shall be protected in accordance with the applicable federal, state, and local regulations, laws, and rules; but shall not be less than the standards and regulations established by OSHA in 29 CFR Part 1926.
- B. The Contractor is solely responsible for designing and constructing stable excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. All excavations shall comply with applicable local, state and federal safety regulations

including the current OSHA Occupational Safety and Health Standards - Excavations, 29 CFR Part 1926, including any successor regulations.

- C. If the contractor elects to construct the trench with sloped or benched sides in lieu of shoring, no additional compensation will be allowed for the trench backfill material required outside the vertical limits of the specified trench width.
- D. Dewatering of pipe and utility trenches, shall be performed in accordance with Section 31 23 19 – Dewatering.
- E. Haunching or backfill materials disturbed by moving or removing any shoring shall be removed, replaced, and recompacted in accordance with this specification.
- F. The trench bottom shall be excavated and prepared to provide uniform, stable support of the pipe. Relief cuts shall be made at pipe bells, fittings, and couplings.
- G. The trench shall be dewatered until backfill as been placed to prevent softening of the foundation and to prevent buoyant forces from deflecting the pipe alignment and grade. Dewatering shall be implemented at no additional cost to the owner.
- H. Haunching shall be worked around the pipe by hand to eliminate voids underneath the pipe.
- I. Before compaction, moisten or aerate each layer as necessary to provide a placement with moisture content between 2% below and 3% above the optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen or contain frost or ice.
- J. Allow the Engineer or the qualified independent testing firm to inspect and test each fill layer before further construction work is performed.
- K. Contractor shall compact each layer of trench backfill to not less than the percentages of maximum density listed for each type of trench listed in Part 2, above.
- L. All excavations located in a street, highway, or parking pavement shall be backfilled by the end of the workday and shall not be left open overnight. Trenches not located in a pavement may be left open only if surrounded by construction fence and barricades.
- M. Stockpile satisfactory excavated materials until required for backfill or fill. Place, grade and shape stockpiles for proper drainage. Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees indicated to remain. Contain excavated silt/soil runoff with silt fences in accordance with the project SWPPP.

3.04 FIELD QUALITY CONTROL

- A. The Contractor shall allow bearing surfaces at the bottom of excavations to be inspected by the Contractor's qualified independent testing firm prior to placement of any backfill materials.

- B. The qualified independent testing firm, employed by and paid by the Contractor shall conduct compaction testing at intervals no less than 1 test per 200 lineal feet of trench backfill place, for every lift of backfill.
- C. Allow the Engineer or the qualified independent testing firm to inspect and test subgrades and fill layers before further construction work is performed.
- D. If in the opinion of the Engineer or the Contractor's qualified independent testing firm, based on field density tests, or inspections, subgrades and fills which have been placed below the specified density or subgrades and fills which exhibit the characteristics of unstable soils, the Contractor shall provide additional compaction, and/or removal and replacement of the material at no additional cost to the Owner.

3.05 PROTECTION

- A. Stability of Excavation
 - 1. Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible either because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.
 - 2. Comply with current OSHA Occupational Safety and Health Standards - Excavations, 29 CFR Part 1926, including any successor regulations.
 - 3. Where indicated on the drawings, sloped and vertical sides of excavations shall be stabilized with an erosion control system as specified in Section 31 25 00 – Erosion and Sedimentation Control.
- B. Protection of Persons and Property
 - 1. Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required by authorities having jurisdiction.
 - 2. Protect structures, landscaping, utilities, sidewalks, pavements or other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
 - 3. Comply with current OSHA Occupational Safety and Health Standards - Excavations, 29 CFR Part 1926, including any successor regulations.

3.06 EXCESS DIRT

- A. Excess spoils shall be hauled from the site and disposed of by the Contractor.

3.07 JETTING OF TRENCHES WITH WATER

- A. Jetting of trench backfill materials is NOT an acceptable means of consolidation and will NOT be allowed on this project.

END OF SECTION 31 23 33

DIVISION 31 - EARTHWORK
Section 31 25 00 – Erosion and
Sedimentation Control (Less Than 1 Acre)

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes
 - 1. Installation of temporary and permanent erosion and sedimentation control systems.
 - 2. Installation of temporary and permanent slope protection systems.
 - 3. Storm water Pollution Prevention Plan (SWPPP) if it becomes necessary.
- B. Reference to Standards
 - 1. Grain Valley Standard Specifications
- C. ENVIRONMENTAL REQUIREMENTS
 - 1. Protect adjacent properties, any identified endangered or threatened species and/or critical habitat, any identified cultural or historic resources, and receiving water resources from erosion and sediment damage until final stabilization is achieved. All storm water controls and systems must be installed & functioning as designed and free of accumulated sediment and debris before final project approval.

1.03 SUBMITTALS

- A. Contractor shall submit shop drawings or material certifications for all manufactured erosion and sediment control materials.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Seed, sod, and ground covers for the establishment of vegetation in accordance with Grain valley Standard Specifications Erosion Control Notes.
- B. All erosion control products, sediment control devices, or materials for non-storm water BMPs as specified herein and on the Construction Drawings.
- C. Rolled erosion control products according to Erosion Control Technology Council (ECTC) standard specifications.

1. Erosion Control Blanket for slope installations shall be North American Green ERONET S150 Short-term Photodegradable Double-Net Straw Blanket or approved equal.
 2. Erosion Control Blanket for channel installations shall be North American Green ERONET C125 Long-Term Photodegradable Double-Net Coconut Blanket or approved equal.
- D. Temporary mulches such as loose straw, wood cellulose, or hydraulically applied materials.
- E. Temporary and permanent outfall structures as specified on the drawings.

PART 3 EXECUTION

3.01 AREA OF DISTURBANCE AND PERMITTING REQUIREMENTS

- A. It is anticipated that a majority of the scope of improvements for this project will result in an area of disturbance less than one (1) acre. The Contractor shall be responsible for planning his activities and notifying the Owner's Representative ahead of time if the construction activities will disturb one acre of area or greater.

3.02 EROSION AND SEDIMENTATION CONTROL AND SLOPE PROTECTION IMPLEMENTATION

- A. Place erosion and sediment control systems to prevent sediment run off to ditches or movement in shallow concentrated flow around work areas.
- B. The Contractor shall modify installed Best Management Practices to conform to changing conditions throughout construction. Contractor shall also be required to maintain all installed Best Management Practices.
- C. The Owner has authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and embankment operations and to direct Contractor to provide immediate permanent or temporary pollution control measures.
- D. Maintain erosion and sedimentation control systems as dictated by site conditions, indicated in the construction documents, or as directed by governing authorities or Owner to prevent erosion and control sediment until final stabilization. Contractor shall respond to maintenance or additional work ordered by Owner at no additional cost to the Owner.
- E. Contractor shall incorporate permanent erosion control features, permanent slope stabilization, and vegetation into project at earliest practical time to minimize need for temporary controls.
- F. Permanently seed and mulch cut and fill slopes as construction proceeds to extent considered desirable and practical.

END OF SECTION 31 25 00

CITY OF GRAIN VALLEY
MINTER ROAD WATER MAIN REPLACEMENT
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DIVISION 33 – Utilities
Section 33 01 10.58 - Disinfection of Water
Utility Piping Systems

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for disinfection of water utility piping systems.

1.02 REFERENCES

- A. ANSI/AWWA C600 AWWA Standard for Installation of Ductile Iron Mains & Their Appurtenances, current revision.
- B. ANSI/AWWA C651 AWWA Standard for Disinfecting Water Mains, current revision.
- C. ANSI/AWWA C652 AWWA Standard for Disinfection of Water-Storage Facilities, current revision.
- D. ANSI/AWWA C653 AWWA Standard for Disinfection of Water Treatment Plants, current revision.
- E. Recommended Standards for Water Works, published by the Great Lakes-Upper Mississippi River Board of State Public Health and Environmental Managers, current edition.
- F. Grain Valley Standard Detail Drawings, current revision.
- G. MDNR Minimum Design Standards for Missouri Community Water Systems, current revision.

1.03 PERFORMANCE REQUIREMENTS

- A. Disinfection shall not be considered complete until samples of water have been taken and tested to demonstrate and record the good sanitary condition of the water and a copy of all laboratory test results have been submitted to Engineer.
 - 1. Sampling procedures and testing results shall meet the requirements of the AWWA C600 and C651.
 - 2. Disinfection shall be repeated until satisfactory samples have been obtained.
 - 3. Owner will provide laboratory testing free of charge for up to three (3) samples at each location requiring disinfection sampling. If more than three samples are required at a given location, Owner can perform the testing, but will charge the Contractor standard testing fees for each additional sample.
- B. Samples shall be considered satisfactory when two consecutive samples, obtained 24-hours apart are determined by bacteriological examination to contain zero bacteria colonies. The first of the consecutive samples shall be taken a minimum

of 24-hours after flushing heavily chlorinated water from the facilities and filling with potable water.

1.04 SUBMITTALS

- A. Coordinate with the City of Grain Valley for submittal procedures of the following:
 - 1. Complete laboratory test results for bacteriological analysis of water samples taken during disinfection.
 - 2. Schedule and sequence for flushing and disinfection procedures. Submit at least two (2) weeks prior to commencing this work and include:
 - a. Form of chlorine proposed.
 - b. Form of dechlorination proposed.
 - c. Description and location of appurtenances required.
 - d. Name, location, and verification of certification for testing laboratory.
 - e. Specific methods for disinfection.

1.05 QUALITY ASSURANCE

- A. Bacteriological analysis of water samples taken to demonstrate successful disinfection shall be performed by a laboratory certified by the Missouri Department of Public Health for the examination of samples from the Public Water Supplies and their sources by the Total Coliform and Fecal Coliform Methods.
- B. Dechlorinate all water used during flushing and disinfection prior to discharge to storm or sanitary sewer, trench lagoon, temporary basin, or any surface discharge point. Dechlorination shall meet requirements of AWWA C651, AWWA C652, AWWA C653, and MODNR requirements.
- C. Perform all work included in this Section in accordance with:
 - 1. AWWA C600, C651, C652, and C653 as applicable.
 - 2. Grain Valley Standard Detail Drawings.
 - 3. Recommended Standards for Water Works.

1.06 SEQUENCING

- A. Sequence the cleaning of facilities to prevent contamination of previously cleaned or disinfected facilities by water, debris, or residual material from subsequent cleaning operations.

PART 2 PRODUCTS

2.01 CHLORINE

- A. Form of chlorine shall conform to ANSI/AWWA C653. Do not use calcium hypochlorite intended for swimming pool disinfection or other sequestered type of calcium hypochlorite.

PART 3 EXECUTION

3.01 GENERAL

- A. Clean and disinfect the water treatment equipment, water storage facilities, pumps, valves, and piping installed under this Contract.

3.02 PREPARATION

- A. Prior to installation, the interior surfaces of flowmeters, pumps, valves, piping, and miscellaneous appurtenances that will contact potable water during normal operation shall be cleaned and pre-disinfected with a one percent solution of sodium hypochlorite by spraying, swabbing, or flooding. After cleaning and pre-disinfection, all surfaces exposed to sodium hypochlorite solution shall be thoroughly rinsed with potable water, to remove any trace of potentially corrosive residuals from the cleaning and pre-disinfection.
- B. If so needed, pumps and valves shall be disassembled sufficiently to achieve satisfactory cleaning and pre-disinfection prior to installation.
- C. After installation, erection, and painting:
 - 1. Flush piping in accordance with AWWA C651 and Grain Valley Standard Detail Drawings.
 - 2. Remove all materials not part of the structural or operational components and all debris from treatment vessels and storage vessels prior to cleaning.
 - 3. Clean the surfaces that will be exposed to potable water or its vapor during normal plant operation on all process vessels, equipment, pumps, piping, valves, and storage vessels by high-pressure washing, sweeping, scrubbing, or other equally effective means.
 - 4. After cleaning, vacuum, discharge, or otherwise remove all water, debris, and residual material remaining in all process vessels, equipment, pumps, piping, valves, and storage vessels.
- D. Clean all piping, valves, flowmeters, treatment vessels, and equipment provided under this Contract sufficiently for disinfection of each item provided whether or not item is scheduled for disinfection.
- E. Install necessary flushing taps, sampling taps and temporary plugs, valves and piping to achieve the required flushing, disinfection, and sampling for each set of isolated piping, equipment, and process vessels.

3.03 DISINFECTION

- A. Major items to be disinfected include:
 - 1. Potable water piping and valves
- B. Disinfection shall not be conducted until all work is complete and cleaned.
- C. Withdraw water samples from piping and/or equipment isolated for disinfection and submit samples to an MODNR certified bacteriological testing laboratory.

- D. Continue to obtain and submit samples for testing until satisfactory samples are obtained.
- E. Protect the Owner's water distribution system from contamination by:
 1. Water from piping that is not disinfected.
 2. Heavily chlorinated water.
- F. The Owner shall furnish water to the Contractor at no cost for the initial disinfection. In the event the initial disinfection work does not produce satisfactory results, the Owner shall provide water at a rate of \$3.00 per thousand gallons for subsequent disinfection work.
- G. Owner has an MODNR certified testing laboratory and will provide laboratory testing free of charge for up to three (3) samples at each location requiring disinfection sampling. If more than three (3) samples are required at a given location, Owner can perform the testing, but will charge the Contractor standard testing fees for each additional sample.

3.04 BACTERIOLOGICAL SAMPLING

- A. Bacteriological sampling shall be handled in accordance with MODNR and Missouri Department of Public Health requirements.
- B. Water shall be sampled from cold water taps that are free from aerators, strainers, hose attachments and water purification devices.
- C. Sample bottles shall be of at least 120 mL capacity, sterile plastic or hard glass, wide mouthed with glass stopper or screw cap. Prior to sterilization of the sample bottles, sodium thiosulfate shall be added to the sample bottles in an amount sufficient to provide an approximate concentration of 100 mg per liter of sample.
- D. Prior to Collecting the Sample
 1. Adjust the flow of water to a stream approximately the size of a pencil.
 2. Allow the water to run from the tap for 2 to 3 minutes.
 3. Test for free and total residual chlorine by DPD colorimetric or other USEPA approved method.
- E. Do not collect sample if free and/or total chlorine residuals exceed the levels found in the source of potable water used to flush the heavily chlorinated water from the facilities being disinfected and sampled.
- F. Collecting the Sample
 1. A sample shall be taken immediately following the removal of the cap from the sample bottle. Do not rinse the bottle or touch the rim of the bottle or the inside of the cap with fingers or with the spout of the sampling point.
 2. A minimum sample volume of 100 mL shall be collected.
 3. The sample bottle shall be filled allowing at least ¼-inch of air space from the top to provide space for mixing.
 4. Schedule sample collection such that the time of initiation of analysis shall not exceed 8 hours from time of collection.

- G. Record the time and location of the sampling point for each sample of water drawn for bacteriological analysis. Maintain records necessary to establish chain-of-custody of the samples.
- H. The sample report form shall be completed in indelible ink immediately after collecting the sample and shall contain the name of the system (public water site identification, if available), sample identification (if any), date and time of collection, sample site location, sample collector's name and organization (if not the water system), persons transporting the samples from the system to the laboratory (if not the sampler), transportation conditions (e.g. less than 10°C, protection from sunlight), sample type (e.g. routine, repeat), and total chlorine residual (if applicable).
- I. When the sample is delivered to the laboratory, the following information shall be added to the sample report form:
 - 1. Date and time of sample arrival;
 - 2. Name of carrier;
 - 3. Name of the person receiving the sample for the laboratory; and
 - 4. Assigned laboratory number. (In the event of a repeat or replace sample, the number assigned to the original sample shall also be recorded).

END OF SECTION 33 01 10.58

DIVISION 33 – UTILITIES
Section 33 14 16 – Public Water Utility
Distribution Piping

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Pipe and fittings, gate valves and boxes, butterfly valves and boxes, and fire hydrants for water main installation.

1.02 GENERAL

- A. Like items of material provided hereunder shall be the end products of one manufacturer in order to achieve standardization for appearance.

1.03 SUBMITTALS

- A. Coordinate with the City of Grain Valley for submittal procedures. In addition, the following specific information shall be provided by the Contractor:
 - 1. Submit shop drawings and complete product data that shall include description of materials, construction, function, and operation for each product and material component and assembly specified or implied herein (including the manufacturer's installation instructions) for each of the following:
 - a. Each size, class, material, and joint-type of pipe being provided.
 - b. Each valve size and end-type being provided.
 - c. Valve boxes.
 - d. Each size, pattern, and joint-type of fittings being provided.
 - e. Each type and size of fire hydrant being provided.
- B. Submit with the product data, copies of current Certified Product Listing published by Underwriters Laboratory or NSF International for Drinking Water System Components (ANSI/NSF Standard 61) for all products provided for service in contact with potable water.
- C. Contractor shall submit a plan for abandoning existing watermains, valves, hydrants, and services. Plan shall be submitted at least 4 weeks prior to any abandonment and shall be coordinated with the sequence of construction schedule.

1.04 REFERENCE TO STANDARDS

- A. The portions of the work specified in this section shall conform to the following standards, rules, and regulations with modifications and additional requirements as stated in or reasonably inferred from the Contract Documents.
 - 1. Grain Valley Standard Detail Drawings, July 2021.

2. MDNR Minimum Design Standards for Missouri Community Water Systems, current revision.
3. AWWA C104: ANSI/AWWA C104/A21.4-95, American National Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water, as published by American Water Works Association.
4. AWWA C105: ANSI/AWWA C105/21.5--93, American National Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems, as published by American Water Works Association.
5. AWWA C110: ANSI/AWWA C110/A21.10-93, American National Standard for Ductile-Iron and Gray-Iron Fittings, 3 in. through 48 in. for Water and Other Liquids, as published by American Water Works Association.
6. AWWA C111: ANSI/AWWA C111/A21.11-95, AWWA Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings, as published by American Water Works Association.
7. AWWA C115: ANSI/AWWA C115/A21.15-94, American National Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges, as published by American Water Works Association.
8. AWWA C151: ANSI/AWWA C151/A21.51-96, American National Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water, as published by American Water Works Association.
9. AWWA C153: ANSI/AWWA C153/A21.53-94, American National Standard for Ductile-Iron Compact Fittings, 3 in. through 24 in. and 54 in. through 64 in. for Water Service, as published by American Water Works Association.
10. AWWA C502: ANSI/AWWA C502-94, AWWA Standard for Dry-Barrel Fire Hydrants, as published by American Water Works Association.
11. AWWA C509: ANSI/AWWA C509-94, AWWA Standard for Resilient-Seated Gate Valves for Water Supply Service, as published by American Water Works Association.
12. AWWA C600: ANSI/AWWA C600-93, AWWA Standard for Installation of Ductile-Iron Water Mains and their Appurtenances, as published by American Water Works Association.
13. AWWA C651: ANSI/AWWA C651-92, AWWA Standard for Disinfecting Water Mains, published by American Water Works Association.
14. AWWA C909: Standard for Molicularly Oriented Poly Vinyl Chloride (PVCO) Pressure Pipe, 4 in. through 12 in., for Water Distribution.
15. ASTM D1784: Specification for Rigid PolyVinyl chloride compounds and Chlorinated PolyVinyl chloride compounds.
16. ASTM D2241 Performance Requirements: Specification for PVC Pressure-Rated Pipe (SDR Series).
17. ASTM D2672: Joints for IPS PVC Pipe Using Solvent Cement.
18. ASTM D3139: Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.

1.05 REGULATORY REQUIREMENTS

- A. All products provided under this section for service in contact with potable water shall be tested and certified by Underwriters Laboratory or NSF International (as an ANSI accredited certifier) against NSF 61: Drinking Water System Components – Health Effects.

- B. All materials that come in contact with potable water shall comply with the 2014 no lead standards as defined in the Reduction of Lead in Drinking Water Act (January 2011) and shall be tested and certified against NSF 372: Drinking Water System Components – Lead Content.

PART 2 PRODUCTS

2.01 MATERIAL SELECTION

- A. Watermain shall be the type specified herein
- B. Valves and Boxes shall be the type specified herein
- C. Fire Hydrants shall be the type specified herein

2.02 DUCTILE IRON PIPE

- A. Pipe Materials:
 - 1. Ductile iron pipe (D.I.P.) shall be:
 - a. In accordance with AWWA C151.
 - b. All pipe shall have a Brinell Hardness of less than 230 BHN.
 - c. Minimum wall thickness for pipe having push-on or mechanical joints, restrained joints, plain ends, or cast flange ends shall be Thickness Class 52. The minimum wall thickness for threaded flanges shall be Thickness Class 53.
 - d. Lined with standard-thickness cement-mortar lining with seal coat in accordance with AWWA C104.
 - e. Coated on all exterior surfaces with an asphaltic coating.
- B. Pipe Joints:
 - 1. Mechanical and push-on joints for pipe and fittings shall conform to AWWA C111. Flanged joints shall conform to AWWA C115 with ANSI B16.1, Class 125, flat-faced flanges. Bolts and nuts shall conform to ASTM A307, Grade B. Restrained retainer gland joints shall be Mega-Lug 1100 series as manufactured by EBAA Iron Works. As an alternate to restrained retainer gland joints, restrained joints using a boltless design, American Ductile Iron Pipe “Flex-Ring” or U.S. Pipe “TR-FLEX”, or Griffin Pipe Products “SNAP-LOK” may be used. Restrained retainer gland joints are required when connecting to fittings. Restrained joints using a boltless design shall be used for full length joints where called out on the Drawings for restrained joints. No substitutions other than those listed in this paragraph will be acceptable for use in thrust restraint locations.

C. GASKETS

- 1. Flanged joint gaskets shall be ring type and conform to ANSI B16.21.

2.03 POLYVINYL CHLORIDE PIPE

- A. Pipe Material
 - 1. Polyvinyl chloride pipe (PVC) shall be:
 - a. In accordance with AWWA C900.

- b. When used for potable water systems, the pipe shall meet ANSI/NSF Standard 61.
- c. In accordance with ASTM Standard D2241 with Thickness Class DR 18 and 150 PSI.

B. Pipe Joints:

- 1. Unless indicated otherwise on the Drawings, PVC water main on this project shall have push-on type joints with rubber gaskets or mechanical joints according to the following:
 - a. Push-on joint pipe with restraining gaskets, Field-Lok by US Pipe or Fastgrip by American Cast Iron Pipe Company.
 - b. Mechanical joint glands shall be ductile iron and manufactured by one of the manufacturers for ductile iron pipe, listed herein.
 - c. Gasket and joint lubricant furnished by the pipe manufacturer.
- 2. Water main for hydrant leads and where indicated on the Drawings, Water main on this project shall be restrained joint pipe. Restrained joint pipe shall be:
 - a. Push-on joint pipe with restraining gaskets, Field-Lok by US Pipe or Fastgrip by American Cast Iron Pipe Company.
 - b. Gasket and joint lubricant furnished by the pipe manufacturer.
 - c. One of the following:
 - i. Push-on joint pipe with restraining gaskets.
 - ii. Mechanical joint pipe with mechanical joint restraint gland as specified in this section.

2.04 CASING PIPE, CASING SPACERS AND PIPE END SEALS FOR ROAD CROSSINGS

A. Casing Material

- 1. Steel Casing Pipe

B. Steel Casing Pipe shall be in accordance with:

- 1. API RP1102 - Recommended Practice for Liquid Petroleum Pipelines Crossing Railroads and Highways
- 2. API 1104 - Standard for Welding Pipelines and Related Facilities
- 3. ASTM A36 - Structural Steel
- 4. ASTM A570 - Hot-Rolled Carbon Steel Sheet and Strip, Structural Quality
- 5. ASTM C33 - Standard Specifications for Concrete Aggregates
- 6. ASTM C76 - Standard Specifications for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
- 7. ASTM C361 - Standard Specifications for Reinforced Concrete Low-Head Pressure Pipe
- 8. AWWA C200 - Steel Water Pipe 6 Inches and Larger
- 9. AWWA C206 - Field Welding of Steel Water Pipe
- 10. SSPC SP3 - Power Tool Cleaning

C. Steel Casing Pipe Material shall be:

- 1. New, smooth wall, welded steel pipe fabricated from ASTM A36 plate or ASTM A570 sheet with a minimum yield point of 248 MPa (36,000 psi), conforming to AWWA C200.
- 2. Casing Thickness: The steel casing shall have a minimum diameter of 24-

inches and a wall thickness of 0.281 inches. The contractor may obtain approval from Grain Valley to install a different size casing pipe.

- a. Minimum casing inside diameter shall exceed outside diameter of carrier pipe joints or couplings by 4 inches.
- b. Joints: All joints in steel pipe casings shall be field welded to conform to API 1104 or AWWA C206. Clean to SSPC-SP3 and apply iron oxide field coating to all exterior joints after field welding.
- c. Factory Coatings and Linings: Coat exterior and line interior of all casing pipe with iron oxide primer applied at 33 microns (1.5 mils) minimum thickness. Hold coatings and linings back from end joints to be welded at least 2 inches each side of joint.

D. Casing Spacers

1. Shall be used to install the carrier pipe inside the encasement pipe. Casing spacers shall fasten tightly onto the carrier pipe so that when the carrier pipe is being installed the spacers will not move along the pipeline. Casing spacers shall be doubled on each end of the encasement.
2. Each casing spacer shall be capable of providing support for the carrier pipe in service at a maximum spacing of 10'. Calculations shall be provided to the ENGINEER by the casing spacer manufacturer showing that the casing spacer will support the service load at the recommended spacing, including a factor of safety of two (2). Casing spacers used under this specification shall meet or exceed the specifications described herein as projection-type that has a minimum of projections around the circumference totaling the number of diameter inches.
3. Projection-type casing spacers shall be constructed of pre-formed sections of high-density polyethylene. Projection-type casing spacers shall be Power Seal or approved equal.

E. Pipe Ends Seals: Power seal Model 4810ES or approved equal.

F. Installation

1. All work shall meet the minimum requirements of API RP1102, and the highway, railroad, or utility having jurisdiction. Installation shall be subject to their inspection and approval.
2. Install Casing Pipes:
 - a. Boring: Continuous flight auger, pneumatic or hydraulic jacking, or method approved by Grain Valley. Reinforce leading end of casing with jacking band.
 - b. Install to line and grade indicated on the Drawings.
 - c. Excavate working pits of adequate size to provide safe working conditions and in such a manner as not to disrupt traffic or damage the roadway grade or surface. Once work is complete, the contractor shall backfill working pits and restore to previous or better condition.
 - d. Casings rejected due to misalignment or other failures shall be abandoned in place and filled with grout. Casing pipe shall not be recovered for reuse.

3. Casing Spacers
 - a. Furnish casing spacers for pipe alignment guides for all carrier pipe to be installed in casing.
 - b. Outside diameter of spacer to be sized slightly smaller than casing pipe inside diameter to limit carrier pipe movement.
 - c. Install in accordance with spacer manufacturer's recommendations.
4. End Seals
 - a. Install end seals as follows:
 - b. After inside of casing has been thoroughly cleaned.
 - c. After carrier pipe has been permanently placed inside casing.

2.05 SERVICE LINES

- A. Service lines two inches or less in internal diameter shall be Type K copper tubing, soft temper, for underground service, conforming to ASTM B-88 and B-251. The pipe shall be marked with the manufacturer's name or trademark and a mark indicative of the pipe. Outside diameter and weight per foot shall not be less than that listed in ASTM B-251, Table II.
- B. Flared end copper fittings are not allowed; use compression style copper fittings.

2.05 GATE VALVE AND BOX, (ALL DIAMETERS)

- A. Gate valves shall conform to the following:
 1. Resilient seat/wedge, NRS type rated for 250 psig cold water working pressure.
 2. In full accordance with ANSI/AWWA C509 or ANSI/AWWA C515 for 4-inch through 16-inch sizes and in accordance with all applicable provisions of ANSI/AWWA C509 for 18-inch through 24-inch sizes.
 3. Fitted with ductile-iron valve body, bonnet, and gate.
 4. Marked with the words "D.I." or "Ductile Iron" cast on the valve or stamped on a permanently attached corrosion resistant metal tag.
 5. Provided with wedge gate that is encapsulated with rubber, symmetrical, and seals equally well with flow in either direction.
 6. Provided with O-ring stem seals.
 7. Certified in accordance with ANSI/NSF Standard 61 by either Underwriters Laboratory or NSF International.
 8. Operated by standard 2-inch, square, wrench-nut.
 9. Manufactured to open left (counterclockwise stem rotation).
 10. Provided with a fusion bonded epoxy coating complying with ANSI/AWWA C550 on all internal and external surfaces of the valve body and bonnet.
 11. Furnished with mechanical-joint ends and be installed with mechanical joint restraint glands as specified for ductile iron fittings. Valves installed in restrained joint pipe may be furnished with ends compatible with and restrained by the type of restrained joint pipe" installed. Valves shown on the Drawings to be attached to a flanged hydrant shoe, tapping valve, tapping saddle, or flanged branch of a tee or cross shall have one flanged end compatible with the mating flange.

13. Gate valves shall be Resilient Seat Valve as manufactured by Pratt or equal.
14. Tapping valves shall be utilized and shall be installed where shown on the plans. Tapping valves shall be:
 - a. Resilient seat/wedge, NRS type rated for 250 psig cold water working pressure.
 - b. In full accordance with ANSI/AWWA C515 or ANSI/AWWA C509.
 - c. Compatible with full-size shell cutter.
 - d. Provided with wedge gate that is encapsulated with rubber, symmetrical, and seals equally well with flow in either direction.
 - e. Provided with O-ring stem seals.
 - f. Fitted with stainless steel or low-alloy, corrosion-resistant fasteners.
 - g. Certified in accordance with ANSI/NSF Standard 61 by either Underwriters Laboratory or NSF International.
 - h. Operated by standard 2-inch, square, wrench-nut.
 - i. Fitted with enclosed bevel gear operator to accommodate installation of valve in horizontal position for 16-inch and larger valves in buried installation.
 - j. Provided with a fusion bonded epoxy coating complying with ANSI/AWWA C550 on all internal and external surfaces of the valve body and bonnet.
 - k. Furnished with one tapping-flange end conforming to ANSI/AWWA C111/A21/11 and provided with raised alignment lip conforming to MSS SP-60 and one mechanical-joint end conforming to ANSI/AWWA C111/A21.11. Mechanical joint end shall include restraint glands as specified for ductile iron fittings. Flange end shall include tapping-flange gasket as supplied or specified by valve manufacturer.
 - l. Gate valves for tapping sleeves shall be the Smith-Blair Tapping Sleeves 662 & 663 or equal.

- B. Valve boxes shall conform to the following:
 1. Two-piece, cast iron, screw-type adjustable boxes with cover marked "WATER".
 2. 5-1/4" inside diameter.
 3. Be one of the following:
 - a. Clay and Bailey #2194.
 - c. Or equal.

2.06 BUTTERFLY VALVES (ALL DIAMETERS)

- A. Type: Rubber sealed butterfly valve, manual actuators shall be of traveling nut, self-locking type. Valve shall be suitable for a differential pressure of 250 psig and be certified to NSF Standard #61.
- B. Butterfly valve material shall be as specified in the table below:

| | |
|--------------|---------------------------------------|
| 1. Body | ASTM A536 Ductile Iron |
| 2. Shaft | ASTM A564, type 630, condition H-1150 |
| 3. Bearing | 316 Stainless Steel |
| 4. Disc | ASTM A536 Ductile Iron |
| 5. Disc Edge | 316 Stainless Steel |

- 6. Pin ASTM A564, type 630, condition H-1150
- 7. Seat EPDM
- C. Connections
 - 1. Buried: Mechanical Joint
- D. Standards: AWWA C504, Rubber Sealed Butterfly Valves, Class 250B Standard
- E. Installation: Unless necessary due to installation conditions and approved by Engineer, the valve shall be installed with the higher pressure on the seat side
- F. Manufacturers:
 - 1. Pratt (HP250II D.I. MJ Butterfly Valve)

2.07 DUCTILE IRON FITTINGS

- A. Fittings shall include bends, tees, crosses, sleeves, reducers, wyes, and any other fittings shown on the drawings.
- B. Provide ductile-iron fittings in accordance with the full requirements and intent of the Contract Documents from one of the following manufacturers.
 - 1. McWane Company of Birmingham Alabama.
 - 2. Sigma Corporation.
 - 3. Star Pipe Company.
 - 4. Or equal.
- C. Fittings shall be ductile iron, standard thickness cement-mortar lined with seal coat in accordance with AWWA C104. Where taps are shown on fittings, tapping bosses shall be provided. Fittings for buried installation shall have an asphaltic coating applied to the exterior in accordance with AWWA C151.
- D. Flanged and Mechanical Joint fittings shall conform to AWWA C110 or C-153.
- E. Unless indicated otherwise on the Drawings, Ductile Iron Fittings on this project shall have restrained joints with rubber gaskets in accordance with ANSI/AWWA C111/A21.11 and shall be mechanical joints with restraint glands. Restraint of mechanical joints between pipes and fittings shall be incorporated into the follower gland and shall include a mechanism to impart multiple wedging action that increases with increasing pipe pressure. Follower glands with restraining mechanisms shall be manufactured of ductile iron conforming to ASTM A536, shall conform to and shall be compatible with dimensions of mechanical joints conforming to AWWA C111 and AWWA C153, shall have a working pressure of 250 psig, and shall have a minimum design safety factor of 2:1. The mechanical joint follower gland with restraint mechanism shall be Series 1100 MegaLug as manufactured by EBAA Iron, Inc., Uni-Flange Series 1400 as manufactured by Ford Meter Box Company or equal.
- F. Fittings shall have mechanical joint ends unless shown otherwise.

2.08 FIRE HYDRANT, 3-WAY

- A. The following requirements modify or are in addition to the Standard Specifications.
1. Hydrants shall be designed, manufactured, and tested in accordance with AWWA C502.
 2. Hydrants shall be "Traffic" type with a replaceable "breakable" unit immediately above the ground line for minimizing repairs due to traffic damage.
 3. Hydrants shall be of the compression type, constructed such that the main valve closes with the water pressure to assure no loss of water in the event of damage to the upper portion of the hydrant.
 4. Hydrants shall be of the dry top design with O-ring seals to insure that the operating threads will be protected from water entry. The dry top design shall include a factory lubricated operating mechanism which allows a supplemental lubricant to be added in the field without the removal of the top section.
 5. Hydrants shall have a "Weather Shield" or "Weather Cap" to protect the clearance area between the top casting and the operating nut from moisture and possible frost damage.
 6. The operating nut and nozzle cap nuts are to be pentagon in shape and measure 12 inches from point to opposite flat at the base of the nut. Caps shall be provided with rubber gaskets and chains.
 7. Hydrants shall have 4.5" pumper nozzle and 2-2.5" hose nozzle NST. Hydrants shall utilize standard nozzle caps.
 8. Hydrant nozzle section shall be capable of rotation through 360 degrees with respect to the standpipe.
 9. The allowable distance between the centerline of the lowest nozzle and the ground line shall be not less than 16 inches and not greater than 22 inches.
 10. Hydrants shall have permanent markings cast into the upper barrel assembly, identifying the manufacturer, name and size of main valve opening, and year of manufacture.
 11. Hydrants shall have an identification mark indicating direction of opening and shall be "open left".
 12. Hydrants shall have an automatic drain that is opened by the main valve rod. Drain valve shall open as the main valve is closed and close as the main valve is opened. The port and seat of the main valve is to be bronze. The hydrant shall have two drain valves and outlets.
 13. Exterior of hydrant top section shall be painted a minimum of one coat of primer and one finish coat of enamel that is red in color.
 14. The shoe of the hydrant shall be provided with a standard flange connection 6 inches in size. The internal surface of the shoe and lower valve assembly shall be coated with a factory applied epoxy coating with a minimum dry film thickness of 4 mils.
 15. The bronze valve seat shall be threaded into a bronze drain ring or shoe bushing to prevent electrolysis between these components. The drain channel shall be all bronze or be lined with naval brass.
 16. Hydrants shall be designed to permit the use of extension sections and allow all parts to be removable from ground level without requiring excavation of the hydrant.

17. Installation shall be in accordance with Grain Valley Standard Detail Drawing Fire Hydrant Detail WAT-001. Drain field shall be a minimum 0.5 cubic yard of 1" clean, washed rock. Hydrant testing shall be in accordance with AWWA C600 and AWWA Manual M-17.
 18. Hydrants furnished under this section shall be accompanied by a certification, signed by an officer of the manufacturing company, that the hydrants meet all aspects and standards contained within this specification.
 19. Hydrants shall have a standard test pressure of 150 psig working water pressure and 300 psig test pressure, and be certified as such by the manufacturer.
 20. Drain valve shall not utilize springs, toggles, levers, or other small working parts. Drain valve facing shall be made of Buna N or Nylon. Leather will not be acceptable.
- C. Where new fire hydrant leads are to cross existing utilities (such as water mains to be abandoned), the Contractor shall pothole the existing utility and shall adjust the depth of the new water main accordingly to avoid the utility. The depth shall be determined prior to ordering the correct depth of bury for the fire hydrant.
- D. Hydrants shall be Waterous Pacer WB67 or Mueller A243 with nonrising stem.

2.09 TRACER WIRE

- A. Location wire for PVC piping shall be #12 CCS Copperhead tracer wire, 600V polyethylene insulated for underground service. Location wire shall be provided on all non-metallic piping. Wire shall be continuous with no fabrication or field-constructed connections interrupting the wire continuity from valve box to valve box. Wire insulation shall be highly resistant to alkalis, acid, and other destructive agents found in the soil. Wire in valve boxes shall not interfere with operation of the valve.
- B. Sections of wire shall be spliced together using Copperhead Snakebite approved splice caps and waterproof seals. Twisting the wire together is not acceptable.

PART 3 EXECUTION

3.01 DUCTILE IRON WATER MAIN, ALL DIAMETERS

- A. Under these items, install water main as shown on the Drawings and in accordance with AWWA C600, the following portion of the Grain Valley Standard Detail Drawings and the following requirements that may modify the Standard Specifications and AWWA C600:
- B. The following requirements modify or are in addition to the Grain Valley Standard Detail Drawings.
 1. Assembly of buried pipe and fittings shall be in accordance with the manufacturer's written instructions and recommendations.
 2. Field cut pipe shall be cut square, beveled, field-gauged, and rounded in accordance with manufacturers written instructions and recommendations.
 3. Solid sleeves shall be installed with buried piping where shown on plans. Provide a make-up pipe spacer to fill the gap between pipe ends covered

by the sleeve. The pipe spacer shall be cut from the same pipe material as adjacent pipe and shall be cut to length such that all adjacent joints remain fully seated.

4. All buried piping shall be uniformly sloped and installed to the line and grade indicated on the drawings. Minimum depth of cover shall be 4'-0", unless noted otherwise on the drawings.
5. If a grade conflict is determined, the Contractor shall notify the Engineer, who shall then determine what adjustments are required.

3.02 PVC WATER MAIN

- A. Under these items, install water main as shown on the Drawings and in accordance with AWWA C600, and the MDNR Design Standards for Missouri Community Water Systems
- B. The following requirements modify or are in addition to the MDNR Design Standards.
 1. Assembly of buried pipe and fittings shall be in accordance with the manufacturer's written instructions and recommendations.
 2. Field cut pipe shall be cut square, beveled, field-gauged, and rounded in accordance with manufacturers written instructions and recommendations.
 3. Solid sleeves shall be installed with buried piping where shown on plans. Provide a make-up pipe spacer to fill the gap between pipe ends covered by the sleeve. The pipe spacer shall be cut from the same pipe material as adjacent pipe and shall be cut to length such that all adjacent joints remain fully seated.
 4. All buried piping shall be uniformly sloped and installed to the line and grade indicated on the drawings. Minimum depth of cover shall be 5'-0", unless noted otherwise on the drawings.
- B. Excavation
 1. The trench should be wide enough to provide adequate room for snaking the pipe from side to side to compensate for expansion and contraction.
 2. The trench bottom should be smooth, free of rocks and debris, continuous, and provide uniform support. If ledge rock, hardpan or large boulders are encountered, the trench bottom should be padded with bedding of compacted granular materials to a thickness of at least 4-inches.
 3. A smooth trench bottom is necessary to support the pipe over its entire length on firm stable material. Blocking should not be used to change pipe grade or to intermittently support pipe over low sections in the trench.
- C. Bedding and Backfilling
 1. The pipe should be surrounded with a granular material which is easily worked around the sides of the pipe. Backfilling should be performed in layers of 6-inch with each layer being sufficiently compacted to 85% to 95% compaction.
- D. Thrust Blocks

1. Thrust block all crosses, tees, bends, plugs, fire hydrants and valves against undisturbed earth as detailed in the drawings. Backfill thrust blocks a minimum of 24-hours after placement.
2. Thrust blocks or misplaced concrete shall not contact the bell face or fasteners of any pipe, fitting, or valve.

3.03 GATE VALVE AND BOX, (ALL DIAMETERS)

- A. Under these items, install gate valves and boxes as shown on the Drawings and in accordance with the MDNR Design Standards for Missouri Community Water Systems.

3.04 BUTTERFLY VALVE AND BOX, (ALL DIAMETERS)

- A. Under these items, install butterfly valves and boxes as shown on the Drawings and in accordance with the MDNR Design Standards for Missouri Community Water Systems.

3.05 DUCTILE IRON FITTINGS

- A. Under this item, install ductile iron fittings as shown on the Drawings and in accordance with the MDNR Design Standards for Missouri Community Water Systems.

3.06 FIRE HYDRANT, 3-WAY

- A. Under this item, install fire hydrants as shown on the Drawings and in accordance with the MDNR Design Standards for Missouri Community Water Systems.

3.07 CONNECTION OF PROPOSED WATER MAIN TO EXISTING WATER MAIN

- A. Under this item, connect the proposed water main to the existing water main as shown on the Drawings
- B. Each segment of water main being installed shall be initially connected to the existing main as indicated on the Drawings. Connection points shall be valved and shall be the source of water for flushing, disinfection and testing.
- C. The Contractor shall be responsible for determining the type and outside diameter of existing water main pipe in order to obtain the proper fittings.
- D. Connections to existing mains shall have no visible leakage. Contractor shall leave excavation open at connection to existing main and under pressure for Engineer to inspect for leakage.
- E. Where short lengths of main must be returned to service immediately after installation, all pipe and fittings shall be swabbed with chlorine solution prior to installation.

3.08 WATER SERVICE LINE, CONNECTION TO NEW MAIN, OPEN CUT INSTALLATION

- A. Once the new water main has been tested and disinfected, the Contractor shall transfer existing water service lines to the new main. The connection to the new main shall be completed by a Licensed Master Plumber.
- B. Contractor shall install Type K copper water service lines from the new water main to the property line. All services lines shall conform to the latest Federal Specifications for Type K flexible copper tubing and shall meet the requirements of ASTM B88. Fittings and couplings shall be cast bronze and shall meet the requirements of ASTM B16.18. Construct and manufacture fittings and couplings for a pressure rating of 150 psi.
- C. Unions shall be cast bronze and shall meet the requirements of ASTM B16.19. Design and manufacture unions for a pressure rating of 150 psi.
- D. Flanges for connection of screwed joint pipe to flange joint valves or fittings shall be 125-16 cast iron, screwed companion flanges complying with both ASTM A126 and ANSI B16.1.
- E. Tape for screwed joints shall be Teflon®.
- F. Gaskets for flange joints shall be 1/16-inch thick, full face and conform to ANSI/AWWA C111/A21.11. Gaskets shall be rubber or as approved by the Engineer.
- G. Bolts and nuts for flange joints shall be 304 grade stainless steel. All bolts shall be of sufficient length that the bolt will protrude entirely through the nut when tightened.
- H. The service line shall run perpendicular to the main, from the main to curb box and shall have a cover of not less than four (4) feet or more than five (5) feet unless approved by the City of Grain Valley. The curb box or roadway valve and the water meter shall be located in front of the building to be served. The curb box shall be located one foot back of curb and the service line shall run in a straight line to the curb box or roadway valve from the curb box to the water meter.
- I. This work shall include the installation of a new ¾" Type K copper water service line from the new water main up to and including the curb stop cock, curb stop and water meter by open-cut installation method. The Contractor shall be responsible for providing suitable connection to the existing water service plumbing at the property or easement line or to a point five (5) feet beyond the property or easement line. If the curb-stop box or stop cock does not exist, it shall be installed at the property or easement line with this item. If the curb-stop box is located within pavement, the top half of a valve box & lid shall also be installed over the stop box to provide additional protection from traffic loadings.

3.09 INSTALLATION REQUIREMENTS

- A. All valves, boxes, tees and crosses shall be installed level.
- B. Contractor shall excavate for the individual services as the new main is installed. Any excavations associated with potholing of services prior to installation of the new main shall be backfilled by the end of the day.
- C. Plugs
 1. Installed piping systems shall be temporarily plugged at the end of each day's work, or other interruption to progress on a given line. Plugging shall be adequate to prevent entry of small animals or persons into the pipe or the entrance or insertion of deleterious materials.
 2. Standard plugs shall be inserted into all dead-end pipes, tees, or crosses; spigot ends shall be capped; flanged and mechanical joint ends shall have blind flanges of metal.
 3. Plugs installed for pressure testing shall be blind flanges fully secured and blocked to withstand the test pressure.
 4. Where plugging is required because of contract division or phasing for later connection, the ends of such lines shall be equipped with a permanent type plug or blind flange. Installation or removal of such plugging shall be considered incidental to the work.
- D. Concrete Cradles, Encasement, Reaction Blocks and Restraining
 1. Concrete cradles, encasement and reaction blocks shall be as indicated on the Drawings. Concrete thrust blocks shall be provided on pressure piping at all changes in direction. Thrust blocks are required in addition to the flanged, restrained retainer glands, or restrained joint fittings. All concrete cradles, anchors, and reaction blocks shall be of Class B concrete.
 2. Reaction or thrust blocks shall be constructed at all tees, plugs, caps, and at bends deflecting 11-1/4 degrees or more. Thrust blocks shall be installed on any slopes exceeding 10 degrees from horizontal; using one block at least 3 cubic feet in volume for each successive three lengths of pipe on such slope.
 3. Blocks shall be poured between undisturbed soil and fittings. Concrete shall be so placed that pipe joints and fitting joints will be accessible for repair. The dimensions of concrete thrust blocks shall be as indicated on the Drawings, but in no case less than 2 cubic feet in volume.
 4. Class B Concrete shall be a 6 bag mix with a minimum 28 day compressive strength of 3000 psi.
 5. Granular bedding shall be FA-6 conforming with ASTM C-33.
- E. All fire hydrants shall be installed prior to the hydrostatic testing of the water main so that all items (water main, fire hydrants, valves, etc) are tested as one complete system. This shall occur prior to abandonment of the existing water main.
- F. Owner will inspect fire hydrants, valves, and other miscellaneous materials immediately upon removal and if it is determined the materials can be reused, the Owner will salvage and remove the materials off-site. If the materials cannot be reused, the Contractor will legally dispose of the materials off-site.

- G. After the new water main has been installed satisfactorily, disinfected and approval given by the Owner, the existing watermains shall be abandoned as noted on the Drawings and described herein. The limits of the pipelines to be abandoned are shown on the Drawings. All fire hydrants and valve boxes within the limits shown shall be removed to a minimum one foot below grade. All pipelines shall be drained and the pipe ends plugged with a mechanical joint cap. All curb boxes shall be removed.
- H. Water Main Near Sewer
1. Water mains shall be laid at least 10 feet horizontally from any sewer. When local conditions prevent a horizontal separation of 10 feet, the water line shall be constructed of mechanical or manufactured restrained joint pipe, fusion welded pipe, or cased in a continuous casing. Casing pipe must be a material that is approved for use as water main.
 2. Whenever a water main must cross above a sewer, a vertical separation of 18 inches between the bottom of the water main and the top of the sewer shall be maintained. Whenever a water main must cross under a sewer, a vertical separation of 18 inches between the bottom of the sewer and the top of the water main shall be maintained. A full length of water main pipe shall be centered on the sewer to be crossed so that the joints will be equally distant from the sewer and as far away as possible. The 18-inch vertical separation shall be maintained for that portion of the water main located within 10 feet, horizontally, of any sewer it crosses.

END OF SECTION 33 14 16

CITY OF GRAIN VALLEY
MINTER ROAD WATER MAIN REPLACEMENT

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STREET NOTES

1. All street construction on this project to be performed in accordance with City of Grain Valley and APWA Standard Specifications.
2. Wheelchair (Handicap) ramps shall be required at all intersections.
3. City may require testing of concrete or asphalt material, aggregate sub-base and subgrade; cost of testing to be incurred by the contractor.
4. Testing of subgrade will be required to determine need for subgrade stabilization per APWA Standards.
5. City to be notified 24 hours prior to sampling for proctor testing and/ or compaction testing. The City retains the right to halt construction for failing to be made aware of testing.
6. All construction shall meet APWA and City of Grain Valley Standard Details and Specifications.
7. All fill to be placed in maximum 12" lifts. All fill to be tested for compaction every 12", in accordance with APWA 2106.2.
8. Concrete used for sidewalks, curbs, pavement (including driveways within City ROW) and storm inlets shall meet standards of KCMMB 4K.
9. All proposed and existing street crossings shall be tamped granular backfill (Type 3) from the bottom of the trench to a point that is 15" below the finished grade of the street. All existing street crossings shall be filled with flowable fill per detail STR-011.
10. Asphaltic concrete mixes shall be in conformance with Section 2205.3 of the latest version of APWA Standard Specifications as modified herein. Base and surface course shall be Type 5-01 except as noted below. Performance Graded Asphalt binder grade PG64-22 shall be used in all mixes.
 - a) Fractionated Reclaimed Asphalt Pavement (FRAP) may be used as an aggregate source. Maximum combined FRAP is 30% of the total



LIFE OUTSIDE THE LINES

STANDARD

DETAIL

DRAWINGS

Revised September 2022

APPROVED

Richard J. Tuttle

September 16, 2022

City of Grain Valley

Date

*Enclosed are Grain Valley's Standard Details for infrastructure. Contractors doing work on Grain Valley infrastructure are required to have a copy of this document with them in the field at all times.



GENERAL NOTES

1. The contractor shall have one (1) signed copy of the plans (approved by the City of Grain Valley) and one (1) copy of the approved Construction Standards and Specifications at the job site at all times.
2. Construction of the improvements shown or implied by this set of drawings shall not be initiated or any part thereof undertaken until the City is notified of such intent, and all required and properly executed bonds, permit fees and other agency permits are received and approved by the City.
3. The City of Grain Valley plan review is only for general conformance with City of Grain Valley Criteria and the City Code. The City is not responsible for the accuracy and adequacy of the design, or dimensions and elevations, which shall be confirmed and correlated at the job site. The City of Grain Valley through approval of this document assumes no responsibility other than that as stated above for the completeness and/or accuracy of this document.
4. Development plans are approved initially for one (1) year after which they automatically become void and must be updated and re-approved by the City Engineer before any construction will be permitted.
5. All construction materials and methods used shall comply with the current City of Grain Valley standards and construction specifications.
6. All materials and workmanship associated with this project shall be subject to inspection by the City of Grain Valley. The City of Grain Valley reserves the right to accept or reject any such materials and workmanship that does not conform to the City Standards and Technical Specifications.
7. The Contractor shall satisfy himself as to the accuracy of all measurements prior to construction of any permanent structure.
8. The contractor shall notify the City of Grain Valley Engineering Services Department forty-eight (48) hours prior to beginning construction.

9. All existing utilities indicated on the drawings are according to the best information available to the Engineer; however, all utilities actually existing may not be shown. Utilities damaged through the negligence of the contractor to obtain the location of same shall be repaired or replaced by the contractor at his expense and with immediate notice to the City prior to repair or replacement.
10. Contractor shall not be allowed to work on Saturdays, Sundays or Holidays without prior approval by the City.
11. By use of these plans the Contractor agrees that he shall be solely responsible for the safety of the construction workers and the public.
12. The Contractor shall notify the engineer immediately of any discrepancies in the plans.
13. All fill areas indicated shall be compacted to 95% Standard Proctor Density at +/-2% optimum moisture content. Documentation shall be provided and approved by the City.
14. All ditch lines within the Street right of way shall be compacted to 95% Standard Proctor Density at +/- 2% optimum moisture content. Documentation shall be provided and approved by the City.
15. Excavation and the removal of existing paving and curbs may not be wasted on site and is to be hauled off by the contractor. Contractor to be responsible for the disposal of excess materials.
16. It shall be the responsibility of the Contractor to control erosion and siltation during all phases of construction. All areas disturbed by the contractor shall be sodded or seeded if approved by City unless otherwise noted on the plans.
17. Relocation of any water line, sewer line or service line thereof required for the construction of this project shall be the responsibility of the contractor at his expense and with prior notice to the City.
18. The Contractor shall be responsible for the removal and/or temporary mounting and replacement of all existing street marker signs, stop signs, speed limit and other traffic control signs affected by construction with prior notice to the City.
19. Storm sewer pipe under streets shall be reinforced concrete pipe with HDPE as a potential alternative at the discretion of the City.

20. All proposed and existing street crossings shall be tamped granular backfill (Type 3) from the bottom of the trench to a point that is 15" below the finished grade of the street. All existing street crossings shall be filled with flowable fill per detail STR-011.
21. Pipes that are to be encased and or anchored with concrete, the trench line is to remain open until the concrete has reached 2000 PSI or 7 days, whichever comes first.
22. The location of existing utilities as shown are approximate. It shall be the responsibility of the Contractor to verify the locations of all exiting utilities.
23. Contractor shall submit all Asphaltic Concrete and PCC mix designs to the City of Grain Valley for approval prior to the start of construction.



STREET

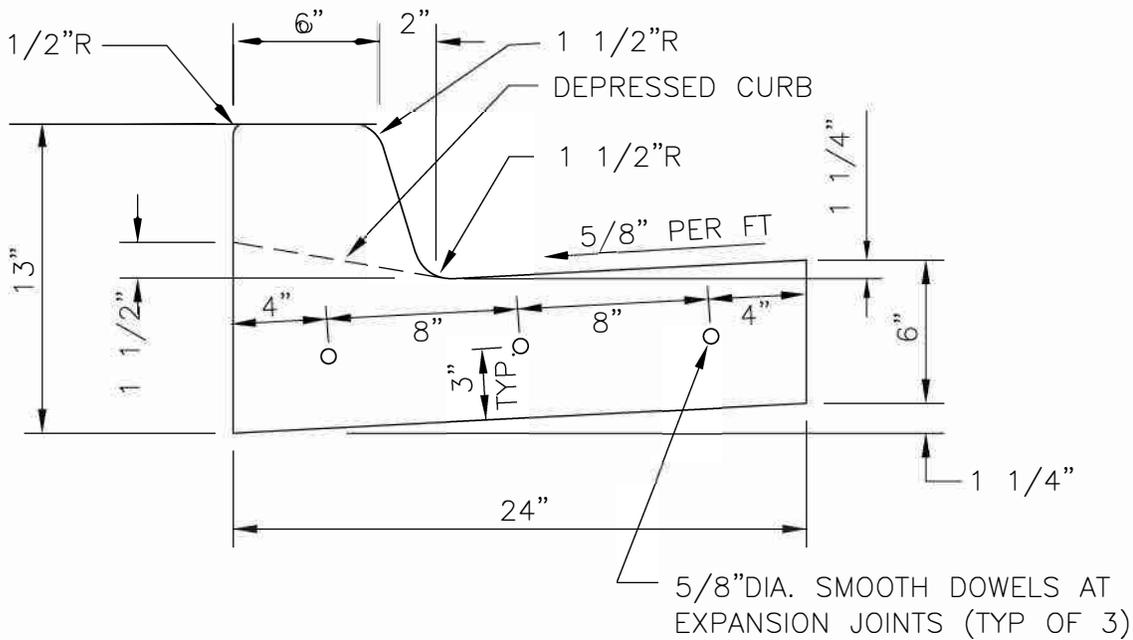
DETAIL

DRAWINGS

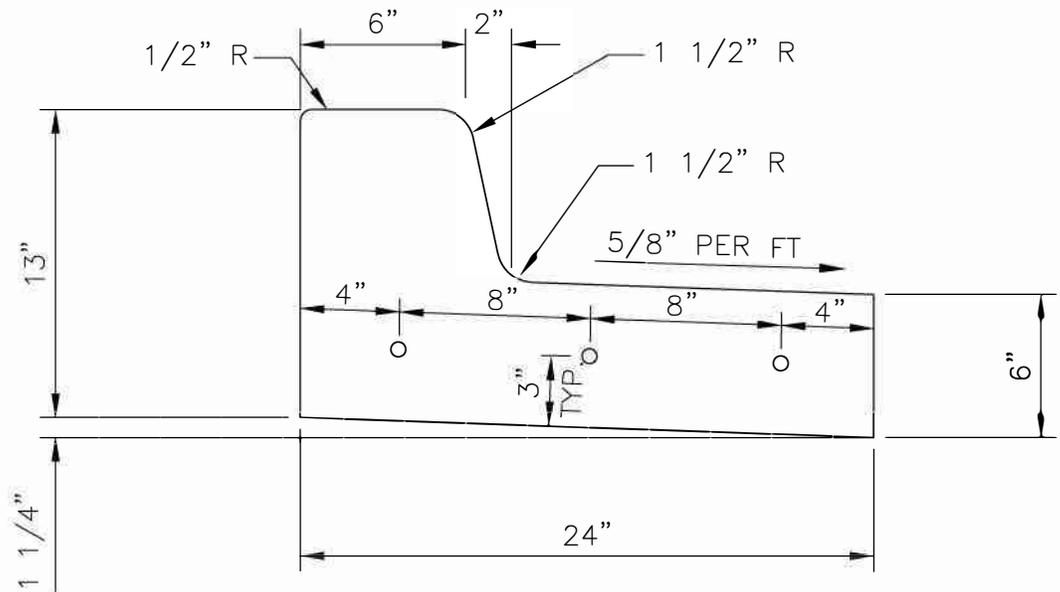
mix by weight. **Recycled Asphalt Shingles (RAS) are not allowed.**

- b) All bituminous mixtures shall contain an anti-stripping agent at a rate of 0.75% by weight of the total asphalt cement.
 - c) The resistance of compacted bituminous mixture to moisture induced damage must be greater than 80% as determined AASHTOT 283-03 using a 4 inch mold. Specimens shall be conditioned by freezing and thawing.
 - d) Tack coat (CSS-1h) shall be in accordance with Section 2204 of the latest version of the APWA Standard Specifications and must be applied between each layer of new asphaltic surface and other surfaces specified including curbs.
11. For all new subdivisions, utilities (Evergy, Spire, Comcast, ATT etc.) shall be required to submit their proposed design along with a permit application prior to beginning construction. All utilities shall be designed and installed as close as possible to the design shown in STR-015.

| STREET CLASSIFICATION | PAVEMENT TYPES AND REQUIRED BASE/SUB-BASE STRUCTURE | |
|---|---|---|
| | OPTION 1 | OPTION 2 |
| RESIDENTIAL | 6" MIN. PORTLAND CEMENT CONCRETE PAVEMENT 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% OF STANDARD MAX. DENSITY | 2" TYPE 5 MODIFIED ASPHALTIC CONCRETE SURFACE 4" MIN. TYPE 5 MODIFIED ASPHALTIC CONCRETE BASE COURSE 6" MIN. MODOT TYPE 5 AGGREGATE SUB BASE COMPACTED 95% OF STANDARD DENSITY 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% STANDARD MAX. DENSITY |
| COLLECTORS | | |
| RESIDENTIAL | 6" MIN. PORTLAND CEMENT CONCRETE PAVEMENT 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% OF STANDARD MAX. DENSITY | 2" TYPE 5 MODIFIED ASPHALTIC CONCRETE SURFACE 5" MIN. TYPE 5 MODIFIED ASPHALTIC CONCRETE BASE COURSE 6" MIN. MODOT TYPE 5 AGGREGATE SUB BASE COMPACTED 95% OF STANDARD DENSITY 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% STANDARD MAX. DENSITY |
| COMMERCIAL | 6" MIN. PORTLAND CEMENT CONCRETE PAVEMENT 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% OF STANDARD MAX. DENSITY | 2" TYPE 5 MODIFIED ASPHALTIC CONCRETE SURFACE 5" MIN. TYPE 5 MODIFIED ASPHALTIC CONCRETE BASE COURSE 6" MIN. MODOT TYPE 5 AGGREGATE SUB BASE COMPACTED 95% OF STANDARD DENSITY 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% STANDARD MAX. DENSITY |
| INDUSTRIAL | 8" MIN. PORTLAND CEMENT CONCRETE PAVEMENT 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% OF STANDARD MAX. DENSITY | 2" TYPE 5 MODIFIED ASPHALTIC CONCRETE SURFACE 8" MIN. TYPE 5 MODIFIED ASPHALTIC CONCRETE BASE COURSE 6" MIN. MODOT TYPE 5 AGGREGATE SUB BASE COMPACTED 95% OF STANDARD DENSITY 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% STANDARD MAX. DENSITY |
| ARTERIAL | | |
| MINOR | 8" MIN. PORTLAND CEMENT CONCRETE PAVEMENT 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% STANDARD MAX. DENSITY | 2" TYPE 5 MODIFIED ASPHALTIC CONCRETE SURFACE 8" MIN. TYPE 5 MODIFIED ASPHALTIC CONCRETE BASE COURSE 6" MIN. MODOT TYPE 5 AGGREGATE SUB BASE COMPACTED 95% OF STANDARD DENSITY 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% STANDARD MAX. DENSITY |
| MAJOR | 9" MIN. PORTLAND CEMENT CONCRETE PAVEMENT 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% STANDARD MAX. DENSITY | 2" TYPE 5 MODIFIED ASPHALTIC CONCRETE SURFACE 9" MIN. TYPE 5 MODIFIED ASPHALTIC CONCRETE BASE COURSE 6" MIN. MODOT TYPE 5 AGGREGATE SUB BASE COMPACTED 95% OF STANDARD DENSITY 6" MIN. COMPACTED/STABILIZED SUBGRADE 95% STANDARD MAX. DENSITY |
| SUBGRADE | | |
| SUBGRADE "REQUIREMENTS FOR ALL PAVEMENTS" | CONSTRUCTION OF PAVEMENTS ON HIGH PLASTICITY SOILS SHALL BE MODIFIED WITH HYDRATED LIME, CEMENT, OR CLASS "C" FLY ASH OR REPLACED WITH LOWER PLASTICITY SOILS. HIGH PLASTICITY SOILS SHALL BE DEFINED AS SOILS WITH A LIQUID LIMIT GREATER THAN 50 AND A PLASTICITY INDEX GREATER THAN 30. DETERMINATION OF THE SOIL PLASTICITY SHALL BE PROVIDED BY THE CONTRACTOR AT THE DIRECTION OF THE CITY ENGINEER | |



CROSS SECTION



CROSS SECTION

NOTES:

(DRY CURB)

1. 3/4" EXPANSION JOINTS WITH 3-#5 X 2' DOWELS TO BE PLACED AT THE RADIUS POINTS AND NOT MORE THAN 100 FEET APART ON STRAIGHT RUNS. THESE DOWELS SHALL BE GREASED AND WRAPPED ON END WITH EXPANSION TUBES.
2. 1 1/2" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 15' INTERVALS. THESE JOINTS SHALL PASS THROUGH THE ENTIRE CURB SECTION SURFACE.
3. ALL CONCRETE CONSTRUCTION TO BE KCMMB4K.

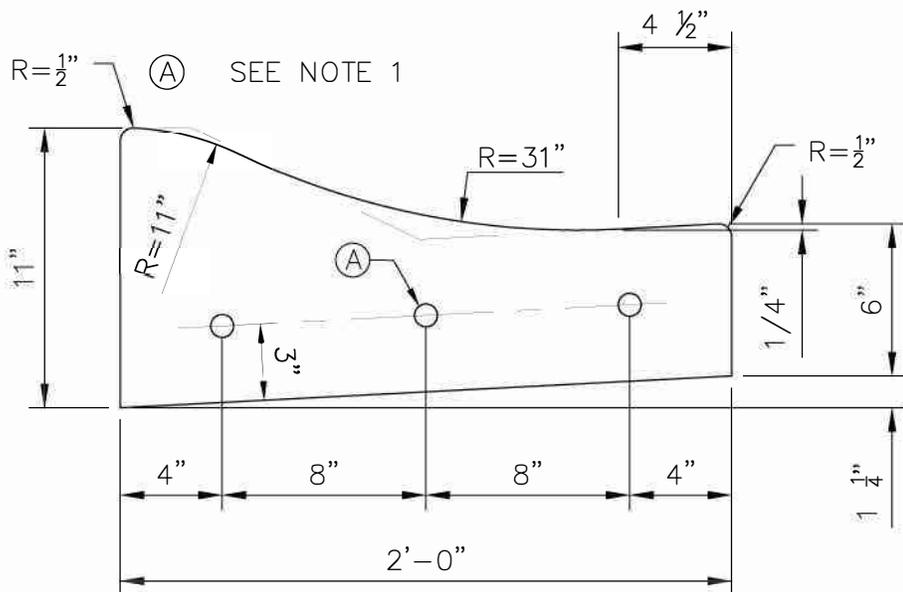
TYPICAL BARRIER CURB AND GUTTER

APWA TYPE CG-1

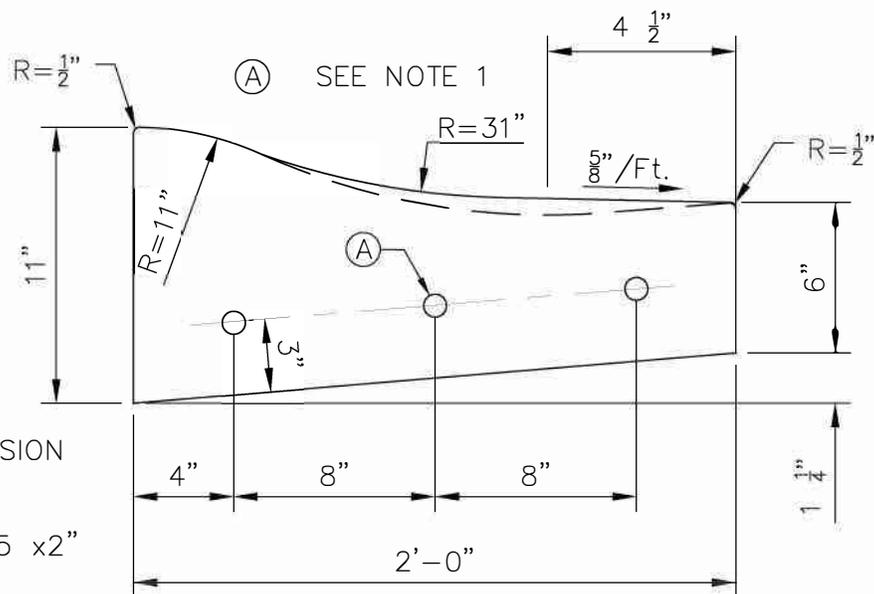


| | |
|--------|----------|
| DATE: | 04/28/20 |
| SCALE: | NO SCALE |

STR-005



CROSS SECTION



CROSS SECTION
(DRY CURB)

NOTES:

1. 5/8" DIA. SMOOTH DOWELS AT EXPANSION JOINTS (TYP. OF 3)
2. 3/4" EXPANSION JOINTS WITH 3 - #5 x2" DOWELS TO BE PLACED AT RADIUS POINTS AND NOT MORE THAN 100' APART. THESE DOWELS SHALL BE GREASED AND WRAPPED ON END WITH EXPANSION TUBES.
3. 1 1/2" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 15' INTERVALS THESE JOINTS SHALL PASS THROUGH THE ENTIRE CURB SECTION SURFACE.
4. ALL CONCRETE CONSTRUCTION SHALL BE KCMMB4K

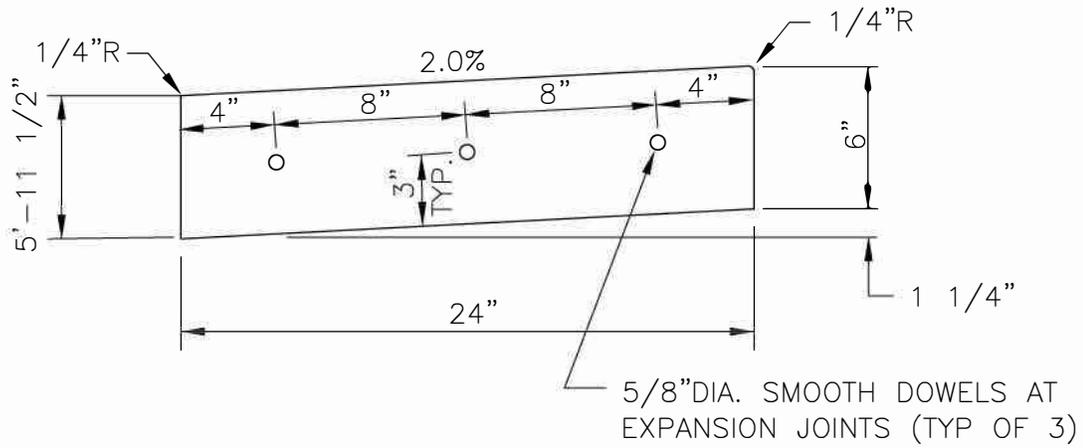
TYPICAL ROLL BACK CURB AND GUTTER

APWA TYPE CG-2

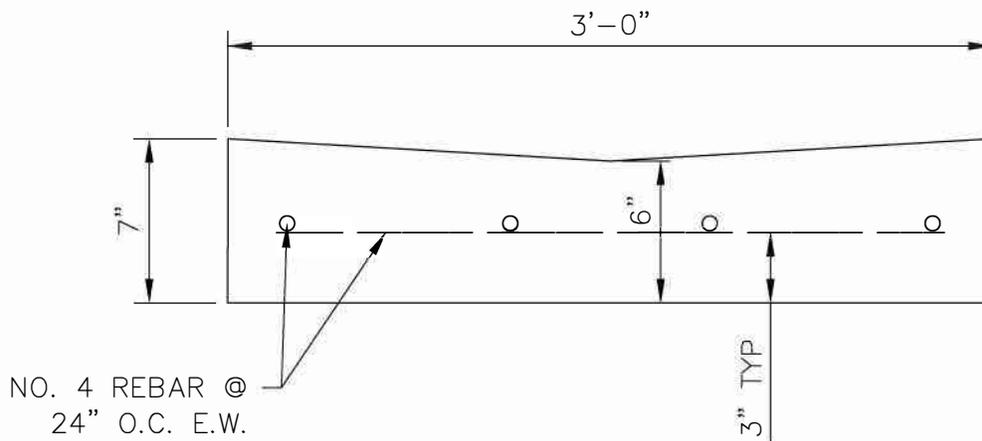


DATE: 04/28/20
SCALE: NO SCALE

STR-006



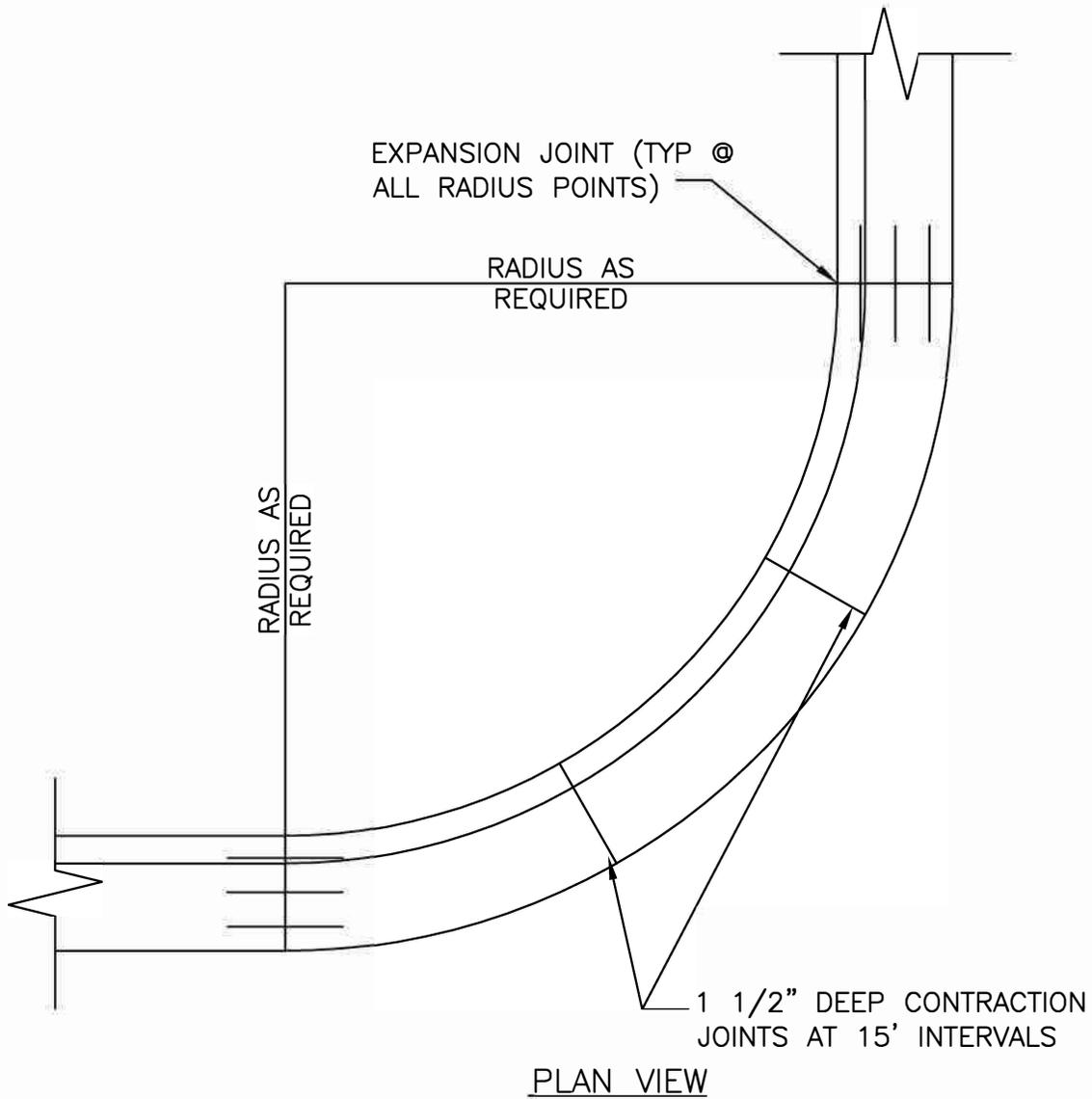
CROSS SECTION
TYPICAL RIBBON CURB



CROSS SECTION
TYPICAL VALLEY GUTTER

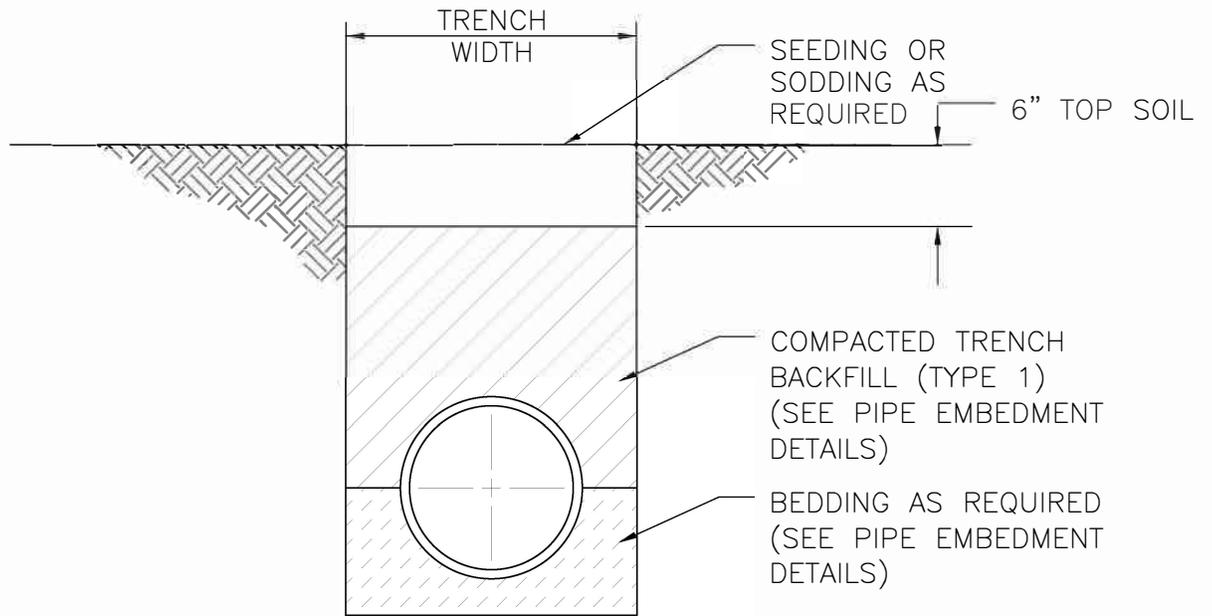
RIBBON CURB AND VALLEY GUTTER NOTES:

1. 3/4" EXPANSION JOINTS WITH 3-#5 X 2" DOWELS TO BE PLACED AT RADIUS POINTS AND NOT MORE THAN 100' APART. THESE DOWELS SHALL BE GREASED AND WRAPPED ON END WITH EXPANSION TUBES.
2. 1 1/2" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 15' INTERVALS. THESE JOINTS SHALL PASS THROUGH THE ENTIRE CURB SECTION SURFACE.
3. ALL CONCRETE CONSTRUCTION TO BE KCMMB4K.

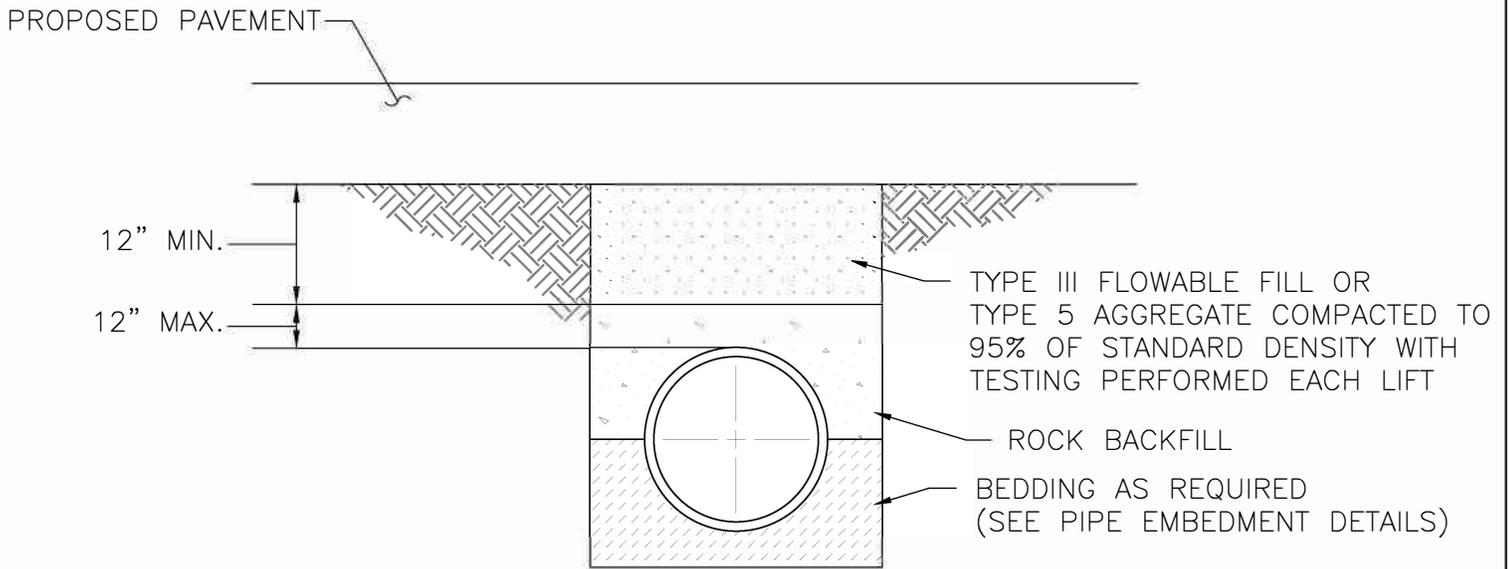


| | |
|-----------------------|-----------|
| RADIUS | = FT |
| RESIDENTIAL | = 25' |
| RESIDENTIAL COLLECTOR | = 35' |
| INDUSTRIAL COLLECTOR | = 50' |
| COMMERCIAL COLLECTOR | = 30' |
| MINOR ARTERIAL | = 35' |
| MAJOR ARTERIAL | = 35'-50' |

CURB EXPANSION JOINTS



OUTSIDE PAVED AREAS



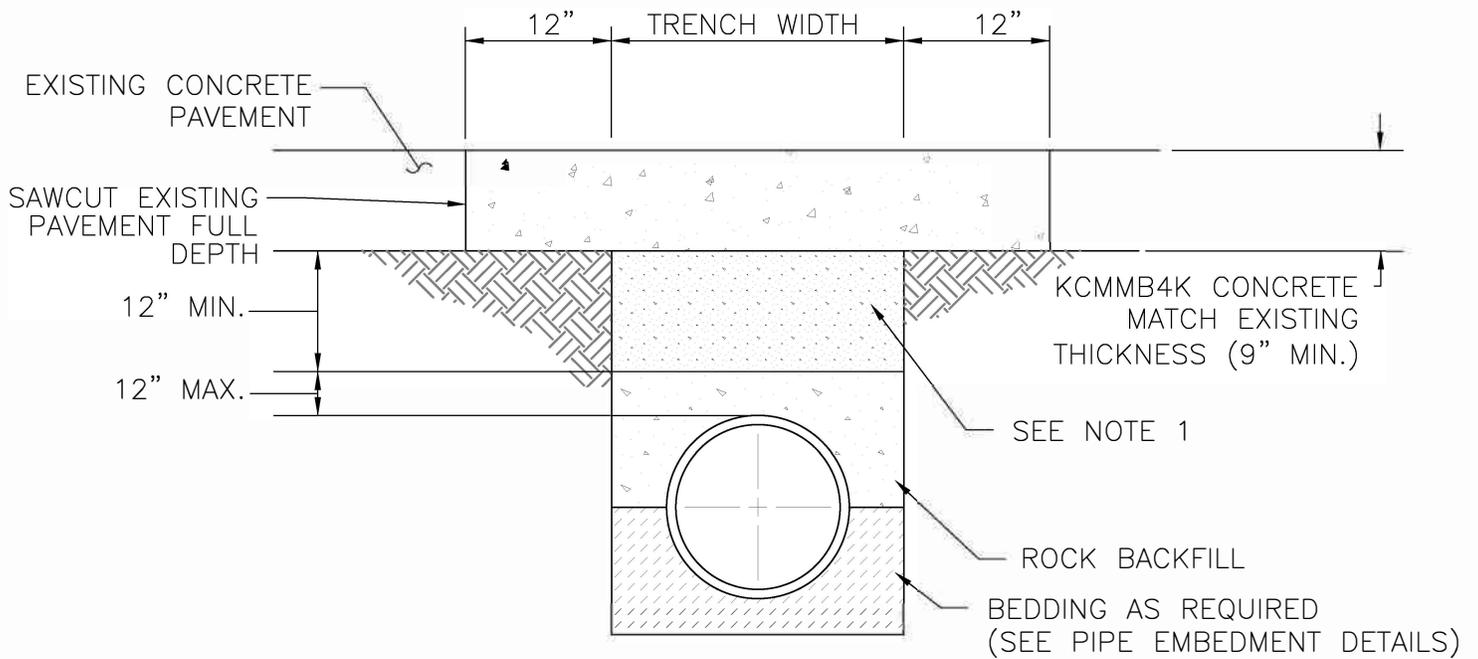
INSIDE PROPOSED PAVED AREAS

(TO ONE FOOT BEHIND CURB)
FOR ANY TESTED ROAD BASE

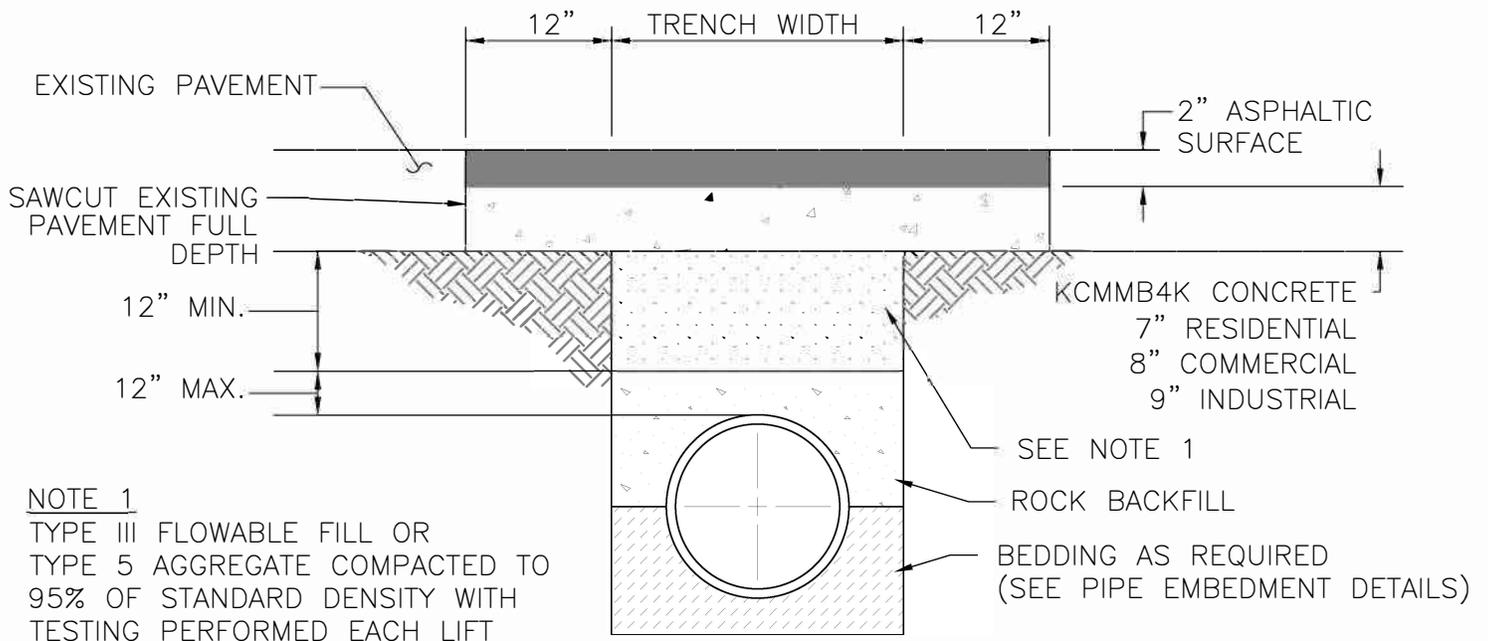
TYPICAL TRENCH BACKFILL DETAIL



| | |
|--------|----------|
| DATE: | 04/28/20 |
| SCALE: | NO SCALE |



INSIDE EXISTING CONCRETE PAVED AREAS
 (TO ONE FOOT BEHIND CURB)
 FOR ANY TESTED ROAD BASE
 OR ANY EXISTING ROAD



INSIDE EXISTING ASPHALT PAVED AREAS
 (TO ONE FOOT BEHIND CURB)
 FOR ANY TESTED ROAD BASE
 OR ANY EXISTING ROAD

TYPICAL STREET REPAIR DETAIL



WATER

DETAIL

DRAWINGS

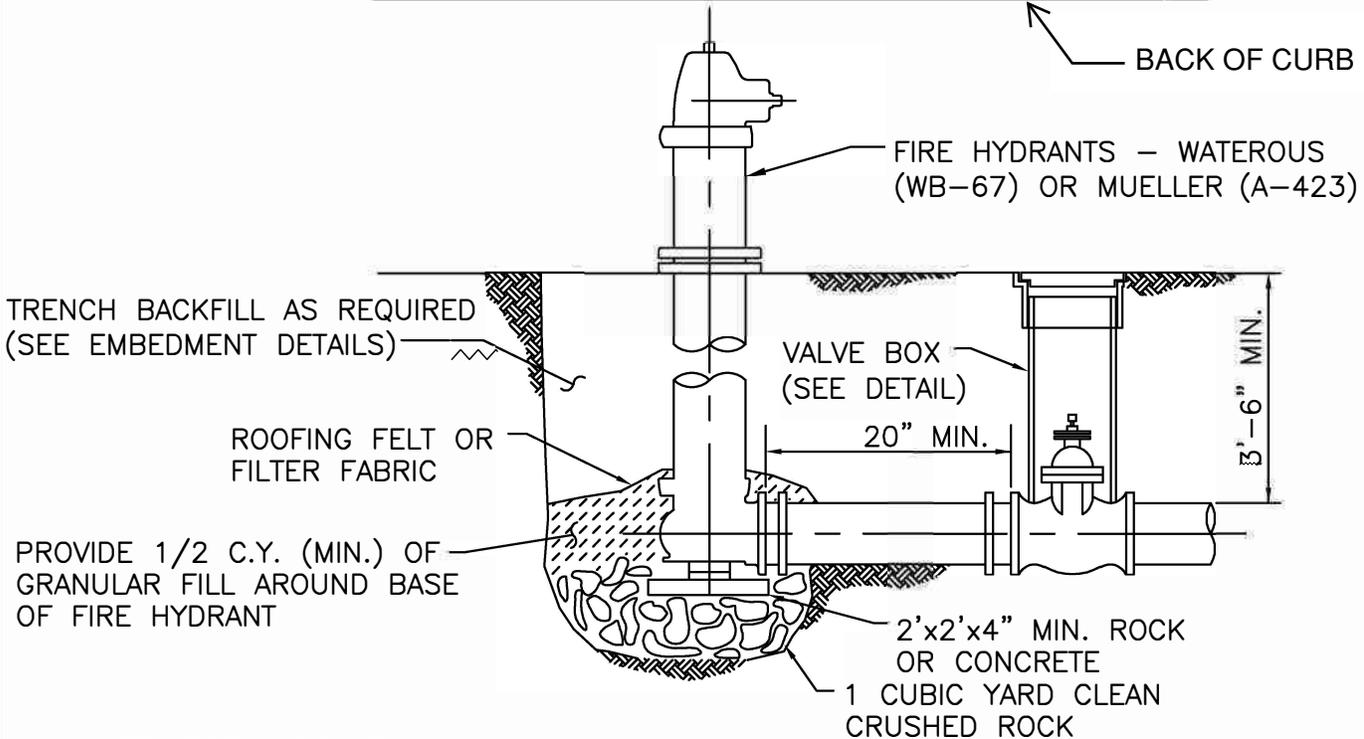
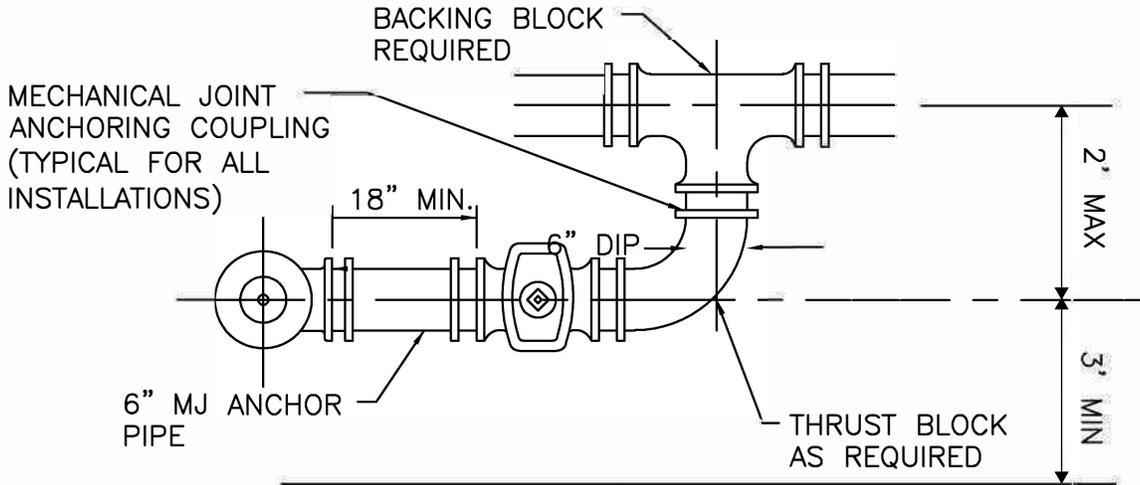
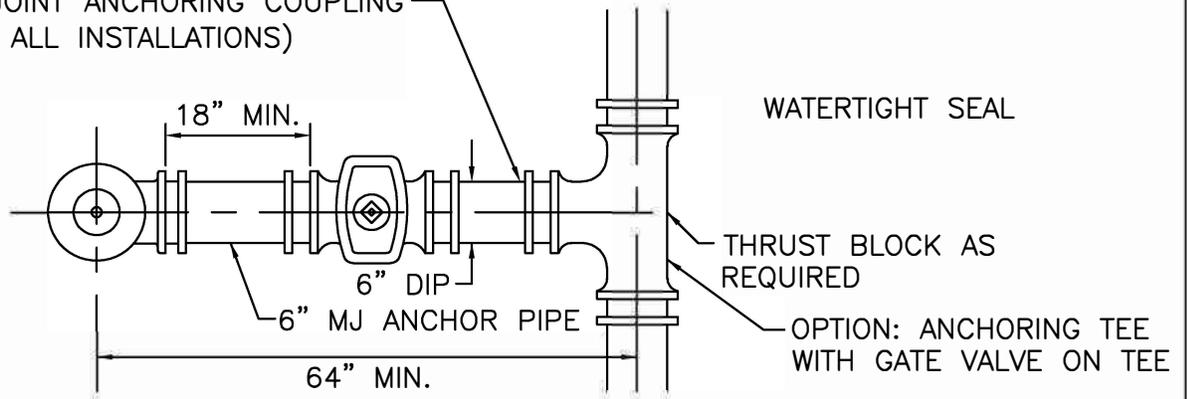


Water Notes

1. All ductile iron pipe shall be class 50 ductile iron pipe complete with all accessories conforming to ASA specifications A21.8. The joints shall be the bolted, gasketed joint type "U.S. Pipe & Foundry Tyton" or "American Cast Iron Pipe Company Fastite" or approved equal.
2. All PVC pipe shall comply with AWWA C-900 class DR 18 only, for 150 PSI service.
3. All water lines shall have a minimum of 42 inches of cover.
4. Fire hydrants shall be Waterous Pacer WB67 or Mueller A423 with nonrising stem. Hydrants shall have a 5 ¼" valve with a 4 ½" pumper nozzle, and 2, 2 ½" hose nozzles, left hand opening, or approved equal by the City of Grain Valley.
5. Gate valves shall be resilient type conforming to AWWA C-509 with mechanical joint end connections.
6. Valve boxes shall be approved by the City of Grain Valley, Missouri. All boxes to be installed out of the roadway.
7. Water line to be installed five feet back of curb unless noted.
8. All construction of water lines on this project shall be in accordance with Specifications and Procedural Requirements of the City of Grain Valley, Missouri and with the requirements of the Missouri Department of Health and Missouri Department of Natural Resources.
9. All bends in water lines shall have thrust blocking or field loc gaskets as required.
10. Restrained type joints utilized in place of backing and thrust blocks shall require manufacturing computations for number of restrained joints required for 150 PSI testing.

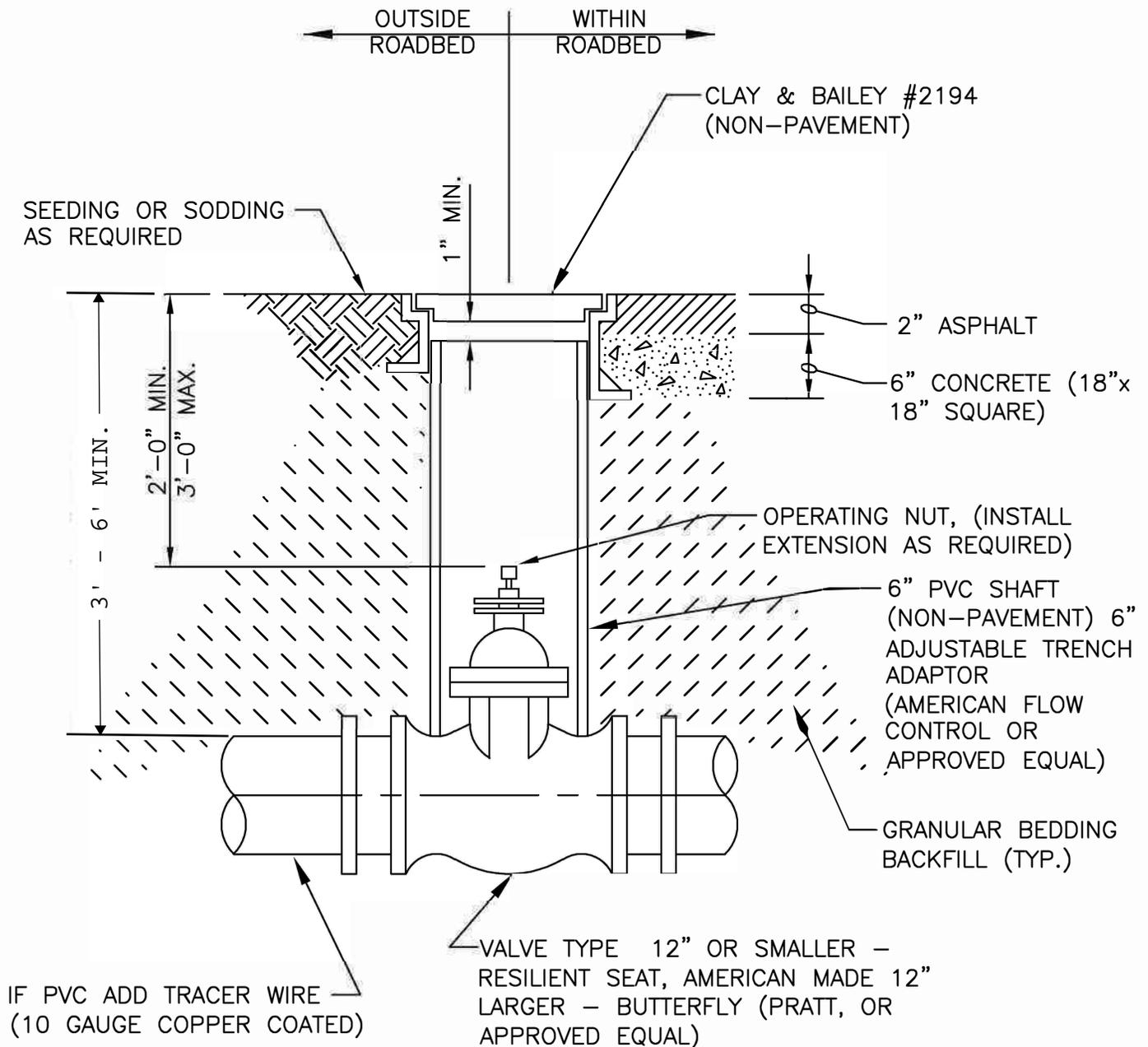
11. Water lines shall be hydrostatically tested for backing and leakage at 150 PSI per AWWA C-600. Disinfection (Chlorination) shall be done in accordance with AWWA C-651. City shall witness the above and shall receive acceptable results of bacteriologic tests before the line is placed in service. Hydrostatic testing requires 150 PSI for 2 hours.
12. The Contractor shall furnish and install all fittings required to provide proper horizontal and vertical alignment for new water mains, connections to existing water mains and installation of fire hydrants at the proper location and elevation.
13. The Contractor shall furnish and install all temporary blow-off assemblies, fittings, thrust blocking, and restraining devices required for temporary connections for flushing, pressure testing, chlorination, and de-chlorination of the new water mains. Prior to placing new mains into service the Contractor shall remove any corporation cocks used for testing or chlorination and replace them with tapered brass plugs.
14. Scheduling of water main shut offs and connection to existing mains shall be at the discretion of the City Public Works Department.
15. All fire hydrant branches shall be restrained using approved restraining devices. Hydrants shall be installed so that the centerline of the outlet nozzle is between eighteen and twenty-one inches (18"-21") above finished grade, or curb were applicable.
16. Sections of water main requiring multiple bends, such as cul-de-sacs, shall be restrained with approved joint restraining devices and straddle blocks.
17. Covers, lids, and standpipes on all abandoned valves shall be removed to at least two feet (2') below grade and the area shall be properly backfilled. In paved areas removal of valve lid and filling of valve box with concrete may be allowed at Public Works Department discretion.
18. The Contractor shall verify the outside diameter (O.D.) of the existing water main prior to scheduling connection. Provide transition couplings as required.
19. All existing water services being disconnected shall be disconnected at the corporation stop.
20. All proposed and existing street crossings shall be tamped granular backfill (Type 3) from the bottom of the trench to a point that is 15" below the finished grade of the street. All existing street crossings shall be filled with flowable fill per detail STR-011.

MECHANICAL JOINT ANCHORING COUPLING
(TYPICAL FOR ALL INSTALLATIONS)



NOTE: FIRE HYDRANT AND VALVE ASSEMBLY SHALL BE CLEAR OF SIDEWALK PLACEMENT.

FIRE HYDRANT DETAIL

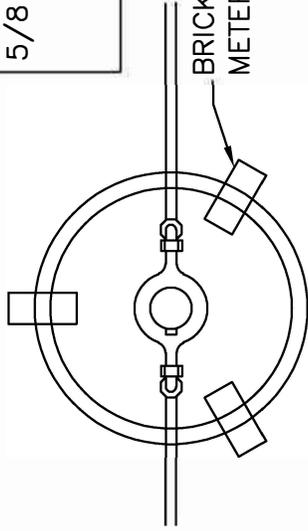


VALVE BOX DETAIL

NOTES:

1. METER WELL TO BE SET PLUMB.
2. NOT FOR DRIVEWAY INSTALLATION.
3. METER WELL TO BE SET ON 4" GRAVEL BEDDING.
4. SERVICE TO BE TYPE "K" COPPER.
5. FOR 1" SERVICE USE 24" DIA. WELL WITH CLAY & BAILEY 2424 ADAPTER & 2210 COVER.
6. FOR 3/4" SERVICE USE 18" DIA. WELL WITH CLAY & BAILEY 2210 COVER. DOUBLE METER SET REQUIRES 36" DIA WELL.
7. THE METER PIT WILL BE LOCATED AS CLOSE TO THE UTILITY LINE AS POSSIBLE
8. METER YOKE= MUELLER V72-W18 OR APPROVED EQUAL.
9. FLARES ONLY, NO PACK JOINTS OR APPROVED EQUAL.
10. IF JOINT IS REQUIRED, SILVER SODDER OR FLARE TO FLARE COUPLING W/24 HOUR AIR TEST REQUIRED.

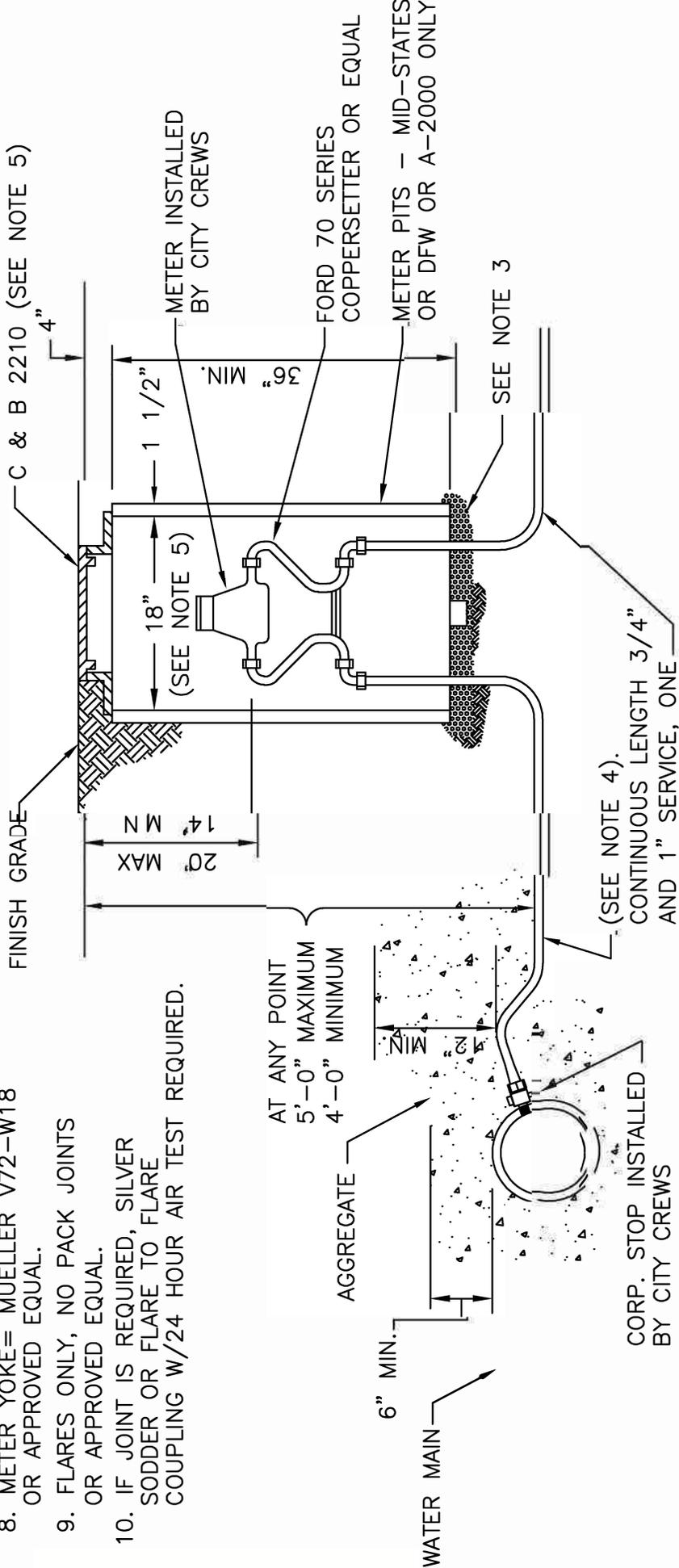
| LINE SIZE | METER WELL |
|-----------|------------|
| 5/8 x 3/4 | 18" |
| 1" | 24" |
| 2" | 36" |



BRICKS TO BE SPACED BELOW METER PIT EQUALLY (TYP. OF 3)

PLAN

FINISH GRADE
 14" MAX
 20" MIN
 C & B 2210 (SEE NOTE 5)
 4"



METER INSTALLED BY CITY CREWS

FORD 70 SERIES COPPERSETTER OR EQUAL

METER PITS - MID-STATES OR DFW OR A-2000 ONLY

SEE NOTE 3

(SEE NOTE 4).
 CONTINUOUS LENGTH 3/4" AND 1" SERVICE, ONE

AT ANY POINT
 5'-0" MAXIMUM
 4'-0" MINIMUM

AGGREGATE

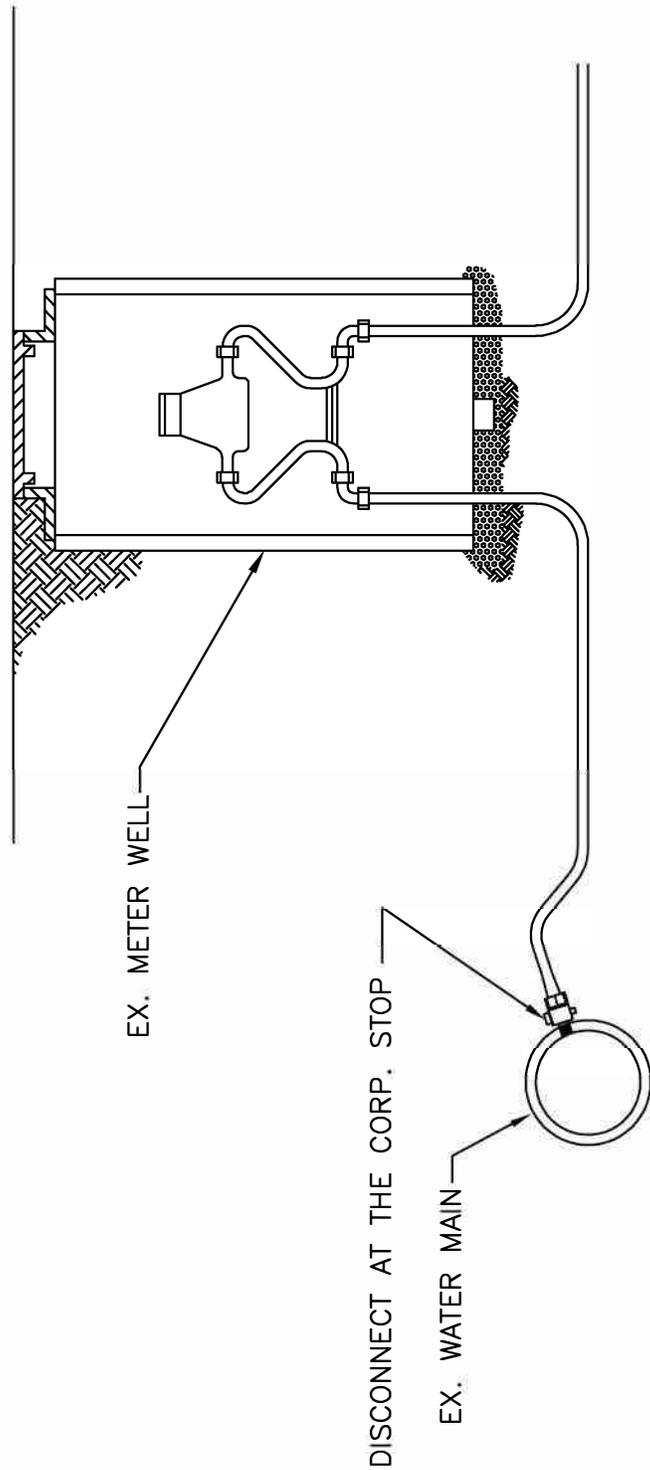
6" MIN.

WATER MAIN

CORP. STOP INSTALLED BY CITY CREWS

SECTION

3/4" & 1" SERVICE METER WELL



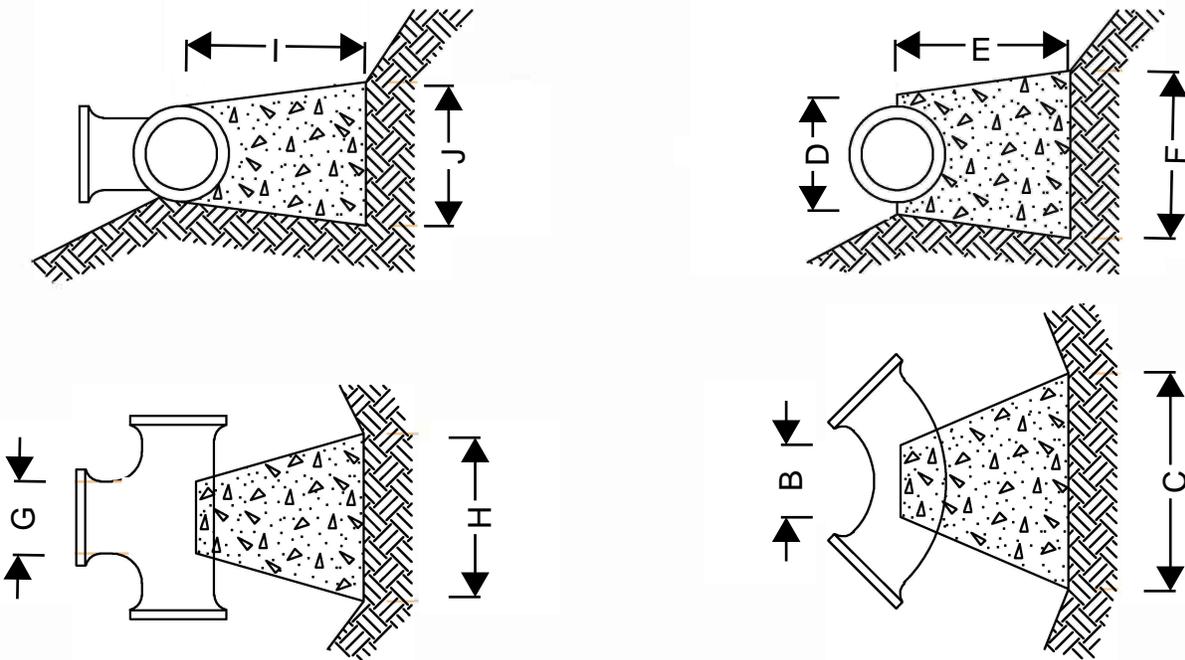
SERVICE METER WELL DISCONNECTION DETAIL



| | |
|--------|----------|
| DATE: | 6/2/20 |
| SCALE: | NO SCALE |

| BENDS LESS THAN 45° | | | | | | BENDS 45° THRU 90° | | | | | |
|------------------------|-----|-----|-----|-----|-----|-----------------------|-----|-----|-----|-----|-----|
| B | C | D | E | F | | B | C | D | E | F | |
| 6" | 8" | 18" | 12" | 24" | 12" | 6" | 8" | 30" | 12" | 24" | 30" |
| 8" | 8" | 24" | 12" | 24" | 18" | 8" | 8" | 36" | 12" | 24" | 36" |
| 10" | 8" | 24" | 12" | 24" | 18" | 10" | 8" | 42" | 12" | 24" | 42" |
| 12" | 8" | 36" | 18" | 24" | 24" | 12" | 12" | 54" | 18" | 30" | 48" |
| 16" | 12" | 36" | 18" | 24" | 30" | 16" | 18" | 60" | 18" | 30" | 48" |
| 24" | 18 | 42 | 30 | 30 | 36 | 24" | 24" | 72" | 30" | 36" | 54" |

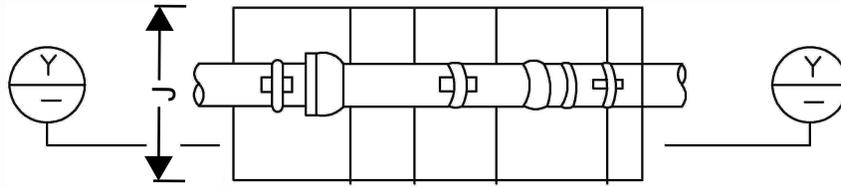
| TEES | | | | | TEES | | | | |
|---------------|-----|-----|-----|-----|---------------|-----|-----|-----|-----|
| G | H | I | J | | G | H | I | J | |
| 6"x 6"x 6" | 12" | 24" | 24" | 18" | 16"x 16"x 6" | 12" | 24" | 24" | 18" |
| 8"x 8"x 6" | 12" | 24" | 24" | 18" | 16"x 16"x 8" | 12" | 24" | 24" | 24" |
| 8"x 8"x 8" | 12" | 24" | 24" | 24" | 16"x 16"x 12" | 12" | 36" | 24" | 36" |
| 10"x 10"x 6" | 12" | 24" | 24" | 18" | 16"x 16"x 16" | 18" | 48" | 30" | 48" |
| 10"x 10"x 8" | 12" | 24" | 24" | 24" | 24"x 24"x 8" | 12" | 24" | 24" | 24" |
| 10"x 10"x 10" | 12" | 24" | 24" | 30" | 24"x 24"x 10" | 12" | 30" | 24" | 30" |
| 12"x 12"x 6" | 12" | 24" | 24" | 18" | 24"x 24"x 12" | 18" | 36" | 24" | 36" |
| 12"x 12"x 8" | 12" | 24" | 24" | 24" | 24"x 24"x 16" | 18" | 48" | 30" | 48" |
| 12"x 12"x 12" | 12" | 36" | 24" | 36" | 24"x 24"x 24" | 24" | 60" | 36" | 60" |



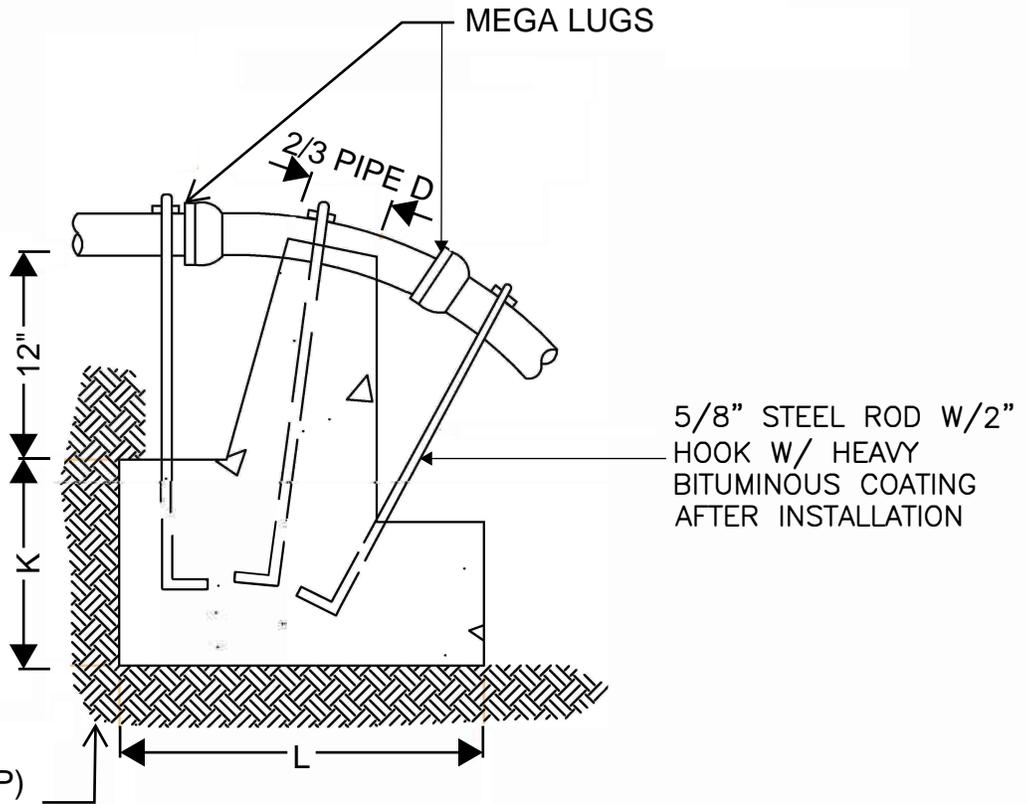
NOTE: ALL MECHANICAL FITTINGS SHALL BE ANCHORED TO PIPE.

THRUST BLOCK DETAIL





PLAN

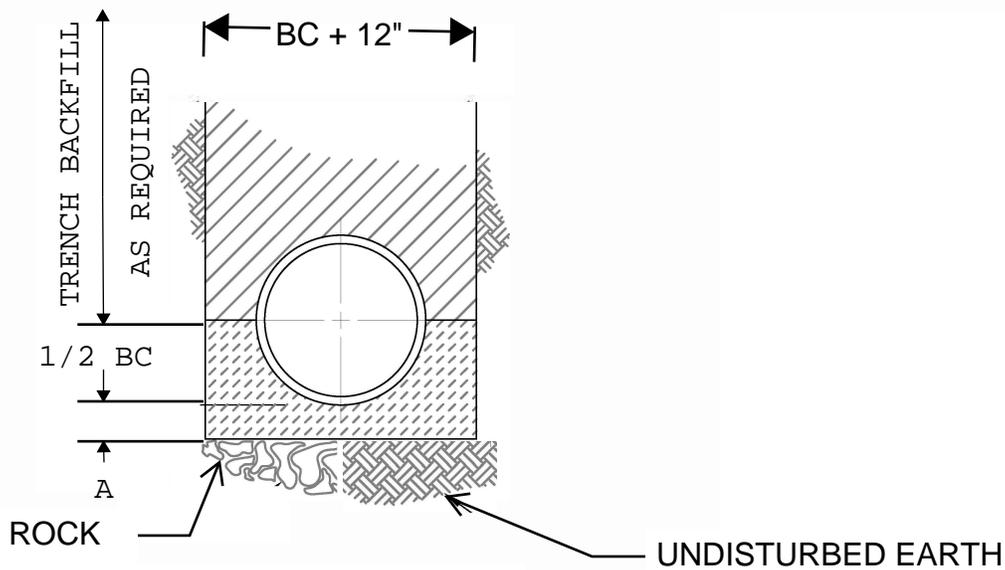


UNDISTURBED EARTH (TYP.)

SECTION Y-Y 

| PIPE SIZE | J | K | L |
|--------------|-------|-------|-------|
| 6" & SMALLER | 2'-6" | 2'-6" | 3'-0" |
| 8" | 3'-0" | 2'-9" | 4'-0" |

VERTICAL BEND THRUST BLOCK DETAIL



WATER MAIN EMBEDMENT

| LEGEND | |
|--------|-----------------------------------|
| BC | OUTSIDE DIA. OF PIPE |
| D | NOMINAL PIPE SIZE |
| A | EMBEDMENT BELOW PIPE |
| | TRENCH BACKFILL |
| | TAMPED GRANULAR BACKFILL (TYPE 3) |
| | GRANULAR BEDDING |
| | CONCRETE |
| | CLEAN CRUSHED STONE |

| TABLE OF EMBEDMENT DEPTHS BELOW PIPE | | |
|--------------------------------------|---------------|---------------|
| D | A MIN SOIL | A MIN ROCK |
| 0"–27" | 0" | 6" |
| 30"–60" | 0" | 9" |
| 66"–UP | 0" | 12" |

TRENCH EMBEDMENT NOTES:

1. GRANULAR BEDDING SHALL BE CRUSHED ROCK OR PEA GRAVEL WITH NOT LESS THAN 95% PASSING 3/4" (95% PASSING 1" FOR 30" AND LARGER PIPE) AND NOT LESS THAN 95% RETAINED ON A 3/8"; TO BE PLACED IN NOT MORE THAN 6" LAYERS AND COMPACTED BY SLICING WITH A SHOVEL OR VIBRATING.
2. TAMPED GRANULAR BACKFILL (TYPE 5) SHALL BE GRANULAR MATERIAL CONFORMING TO THE REQUIREMENTS OF SECTION 1007.3 OF THE 2019 MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
3. TRENCH BACKFILL (TYPE 1) SHALL BE FINELY DIVIDED MATERIAL FREE FROM DEBRIS AND STONES, COMPACTED TO 95% MAXIMUM DENSITY.
4. FLOWABLE FILL OR TYPE 5 AGGREGATE COMPACTED TO 95% OF STANDARD DENSITY WITH TESTING EACH LIFT IS REQUIRED UNDER EXISTING OR PROPOSED PAVEMENT. ALL MATERIAL SHALL BE COMPACTED TO 95% IN THE RIGHT OF WAY AND 90% OUTSIDE OF THE RIGHT OF WAY.

WATERLINE PIPE EMBEDMENT DETAILS



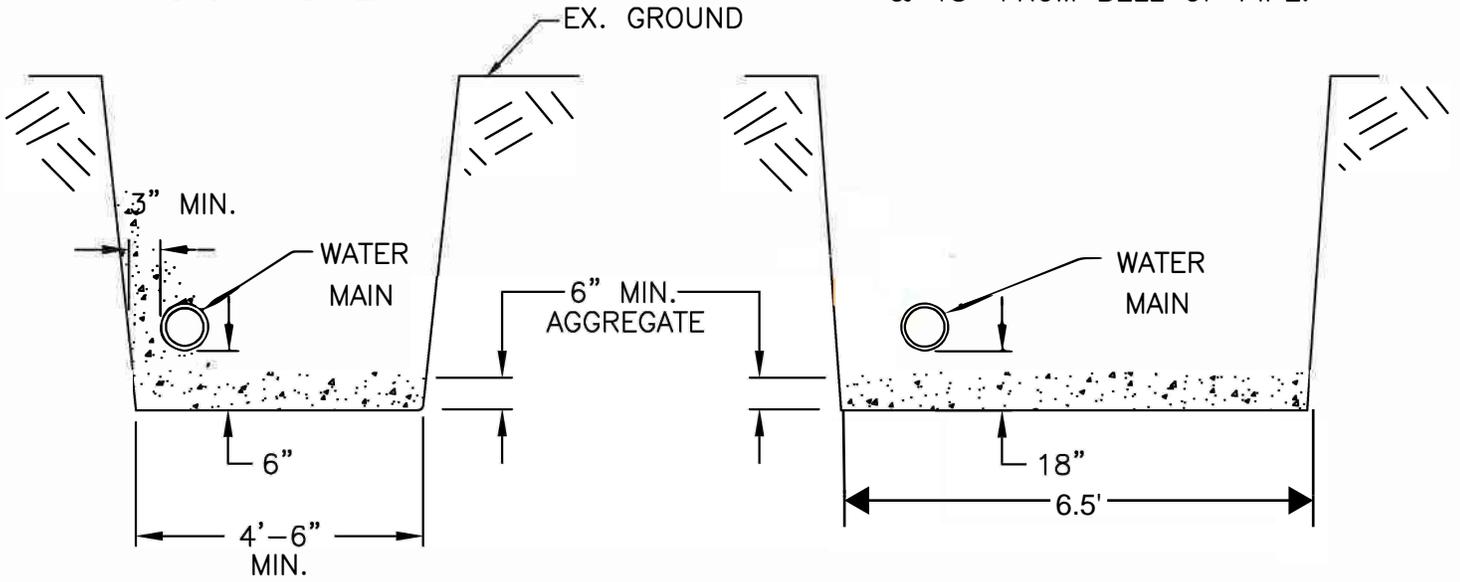
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| DATE: | 04/28/20 |
| SCALE: | NO SCALE |

CORPORATION TAPS

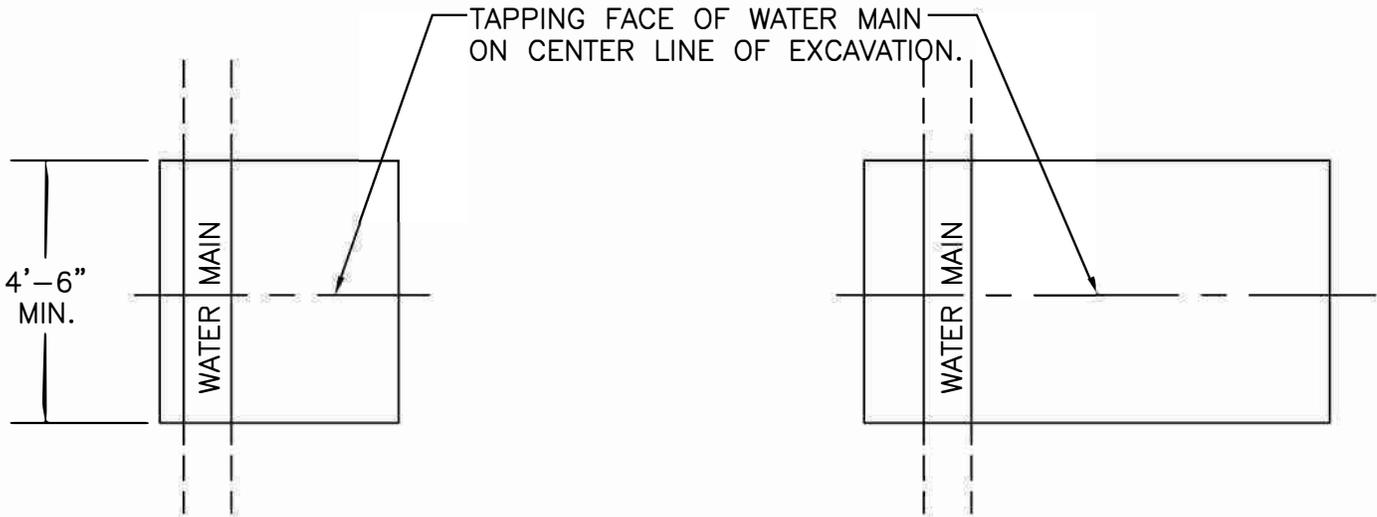
NOTE: A CORPORATION TAP SHALL NOT BE CLOSER THAN 18" TO A BELL FITTING OR ANOTHER TAP.

TAPPING VALVES

NOTE: TAPS SHALL NOT BE LESS THAN 3' FROM SPIGOT END & 18" FROM BELL OF PIPE.



SECTION VIEWS



NOTES:

1. EXCAVATIONS EXCEEDING 5' IN DEPTH MUST BE SHORED, BY CONTRACTOR.
2. ALL MATERIAL FOR SERVICE MUST BE INSTALLED PRIOR TO TAP BEING MADE.

PLAN VIEWS

EXCAVATION DETAILS



| | |
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| DATE: | 6/2/20 |
| SCALE: | NO SCALE |

ALLOWABLE LEAKAGE PER 1,000 FEET OF PIPELINE* – gph

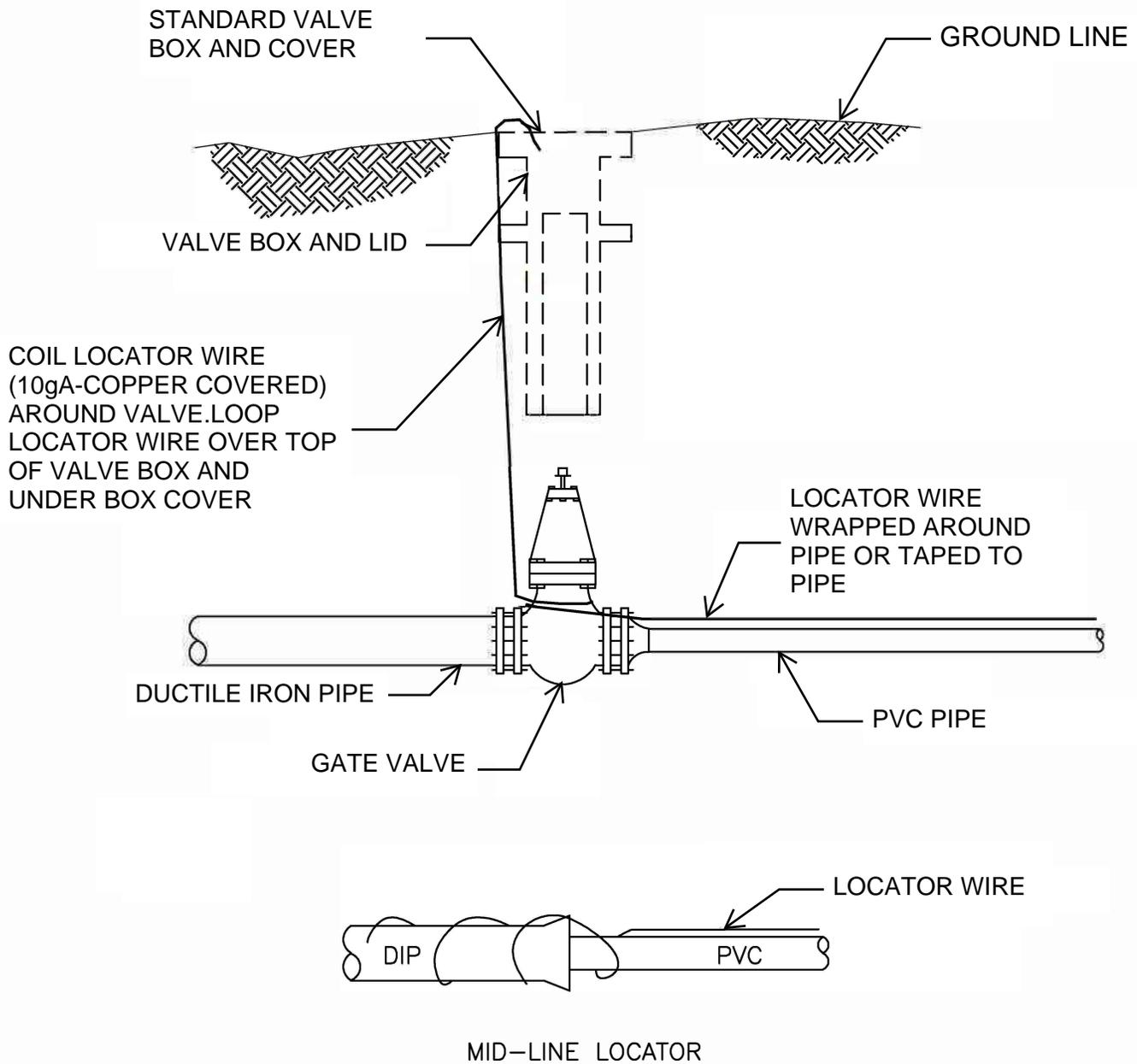
NOMINAL PIPE DIAMETER (INCHES)

| AVERAGE TEST PRESSURE (psi) | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|
| 300 | 0.52 | 0.78 | 1.04 | 1.30 | 1.56 | 1.82 | 2.08 | 2.34 | 2.60 | 3.12 |
| 275 | 0.50 | 0.75 | 1.00 | 1.24 | 1.49 | 1.74 | 1.99 | 2.24 | 2.49 | 2.99 |
| 250 | 0.47 | 0.71 | .095 | 1.19 | 1.42 | 1.66 | 1.90 | 2.14 | 2.37 | 2.85 |
| 225 | 0.45 | 0.68 | 0.90 | 1.13 | 1.35 | 1.58 | 1.80 | 2.03 | 2.25 | 2.70 |
| 200 | 0.43 | 0.64 | 0.85 | 1.06 | 1.28 | 1.48 | 1.70 | 1.91 | 2.12 | 2.55 |
| 175 | 0.40 | 0.59 | 0.80 | 0.99 | 1.19 | 1.39 | 1.59 | 1.79 | 1.98 | 2.38 |
| 150 | 0.37 | 0.55 | 0.74 | 0.92 | 1.10 | 1.29 | 1.47 | 1.66 | 1.84 | 2.21 |
| 125 | 0.34 | 0.50 | 0.67 | 0.84 | 1.01 | 1.18 | 1.34 | 1.51 | 1.68 | 2.01 |
| 100 | 0.30 | 0.45 | 0.60 | 0.75 | 0.90 | 1.05 | 1.20 | 1.35 | 1.50 | 1.80 |

* FOR PIPE WITH 18-FOOT NOMINAL LENGTHS. TO OBTAIN THE RECOMMENDED ALLOWABLE LEAKAGE FOR PIPE WITH 20-FOOT LENGTHS, MULTIPLY THE LEAKAGE CALCULATED FROM THE TABLE BY 0.9. IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.

ALLOWABLE LEAKAGE FOR WATERLINES





LOCATOR WIRE DETAIL



EROSION CONTROL

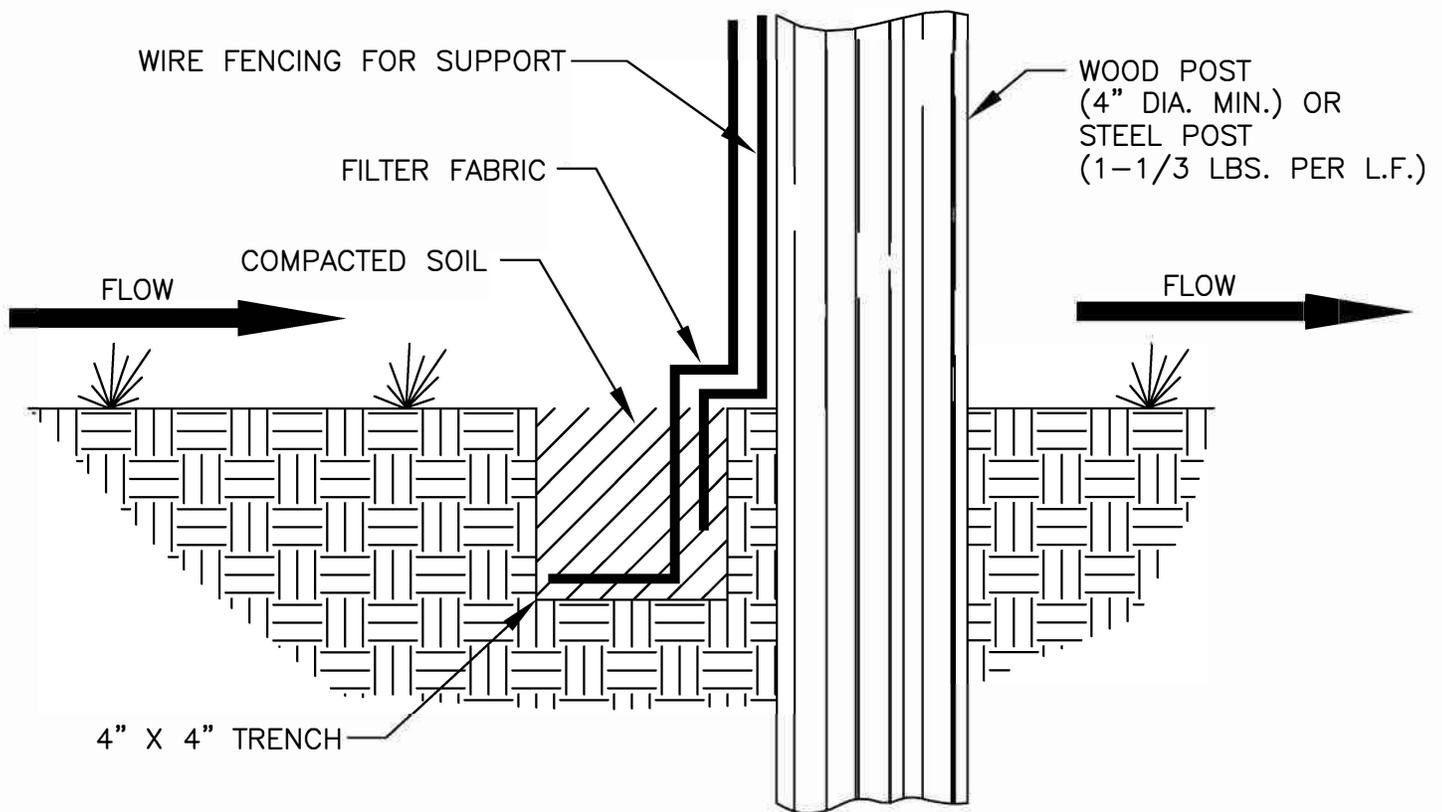
DETAIL

DRAWINGS



EROSION CONTROL NOTES

1. Provide temporary silt fencing at all pipe entrances until all site seeding and sodding has been established. Maintain as necessary.
2. Immediately remove sediments or other materials tracked onto public roadways.
3. Provide and maintain stabilized roadway construction entrance (or entrances as may be required).
4. Coordinate site grading with existing and proposed utilities.
5. Stockpile waste excavation materials away from existing channels, adjacent properties and grade to drain.
6. Remove silt build up in basin and verify grade prior to final seeding, lining or rip-rap installation and clean up.
7. All disturbed areas shall be seeded, fertilized and mulched, or sodded, in accordance with the Standards and Specifications adopted by the City of Grain Valley, MoDOT, MoDNR or other governing agency and good engineering practices.
8. Silt fences, whether straw bales or filter fabric, require maintenance to preserve their effectiveness. All silt fences shall be inspected immediately after each heavy rainstorm and at least daily during prolonged rainfall. Any required repairs shall be made immediately. When sediment deposits reach approximately one-half the height of the silt fence, the sediment shall be removed or a second silt fence shall be installed. All costs associated with this work, including related incidentals, shall be the contractor's responsibility and shall be included in the bid for the proposed work.
9. Failure to maintain erosion control on projects as stated above may be cause of project shutdown until corrections are completed.



SECTION VIEW

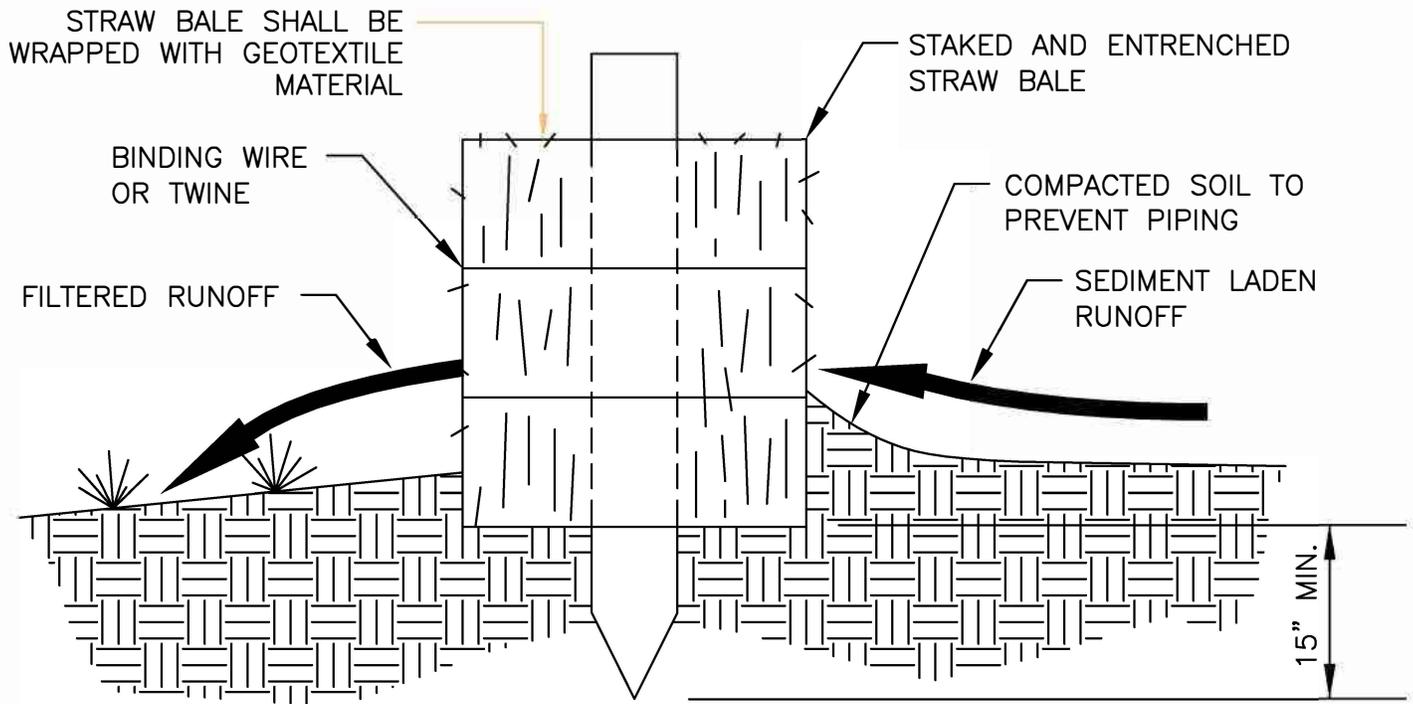
NOTES:

1. THE SIZE OF THE DRAINAGE AREA SHOULD BE NO MORE THAN 1/4 ACRE PER 100 LINEAR FEET OF FENCE LENGTH.
2. THE MAXIMUM SLOPE LENGTH ABOVE THE FENCE SHOULD BE LESS THAN 100 FEET.
3. NO DITCH OR DRAINAGEWAY WITH AN AREA GREATER THAN 2 ACRES SHALL BE ENCLOSED ABOVE A SILT FENCE.
4. NO SILT FENCE SHALL BE CONSTRUCTED IN A LIVE STREAM OR DRAINAGEWAY WITH EXPECTED FLOWS GREATER THAN 1 CFS.
5. THE FILTER FABRIC SHALL HAVE A MINIMUM FILTERING EFFICIENCY OF 75%, A MINIMUM TENSILE STRENGTH OF 30 LBS. 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 DEGREES FAHRENHEIT.
6. THE FILTER FABRIC SHALL BE 36 INCHES OR LESS IN HEIGHT, WITH JOINTS AT EVERY POST AVOIDING OVERLAP IF POSSIBLE (6" MIN. OVERLAP IF NECESSARY) AND POSTS SPACED EVERY 10 FEET WITH WIRE MESH SUPPORT OR 6 FEET WITHOUT WITHOUT SUPPORT, MAKING SURE THAT A MIN. OF 8" OF FABRIC IS BURIED IN THE 4" X 4" TRENCH.
7. THE SILT 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 SHALL BE DONE IMMEDIATELY.
8. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH RAINFALL OR BEFORE THEY ACCUMULATE TO 1/2 OF THE FENCE HEIGHT.

SILT FENCE DETAIL



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| DATE: | 6/2/20 |
| SCALE: | NO SCALE |



SECTION VIEW

NOTES:

1. STRAW BALES SHOULD ONLY BE USED FOR DRAINAGE AREAS NO LARGER THAN 1/4 ACRE PER 100 FEET OF BALES OR FOR DITCHES DRAINING NO MORE THAN 2 ACRES.
2. STRAW BALES SHOULD ONLY BE USED AS A TEMPORARY MEASURE AND FOR NO LONGER THAN A TIME PERIOD OF THREE MONTHS.
3. 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. SAVE EXCAVATED MATERIAL ON THE UPSTREAM SIDE OF THE TRENCH.
4. STRAW BALES SHOULD BE ANCHORED WITH A MIN. OF 2 STAKES OR REBARS 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 SHOULD BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THEM TOGETHER.
5. SPACING BETWEEN THE BALES SHOULD BE TIGHTLY CHINKED WITH LOOSE STRAW.
6. AFTER STRAW BALES ARE IN PLACE THE EXCAVATED SOIL SHOULD BE BACKFILLED AGAINST THE UPSLOPE SIDE OF THE STRAW BALES TO A HEIGHT OF 4 INCHES AFTER COMPACTING.
7. STRAW BALES SHOULD 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, THIS SHOULD BE DONE IMMEDIATELY. SEDIMENT ACCUMULATIONS MUST BE REMOVED WHEN THEY REACH 1/2 THE BARRIER HEIGHT.

STRAW BALE DETAIL



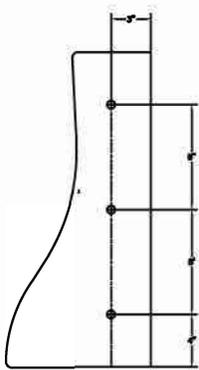
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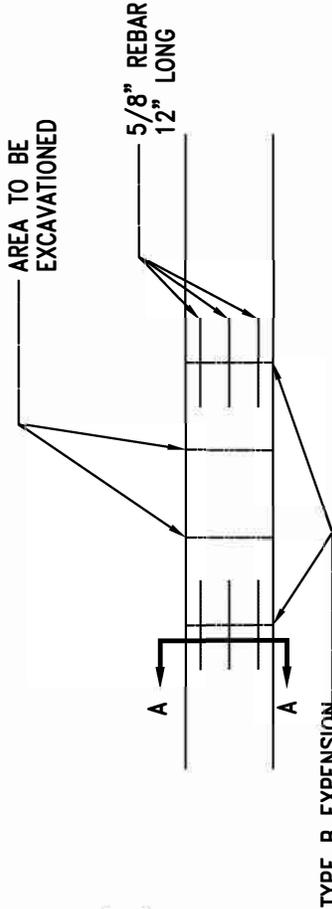
MISCELLANEOUS

DETAIL

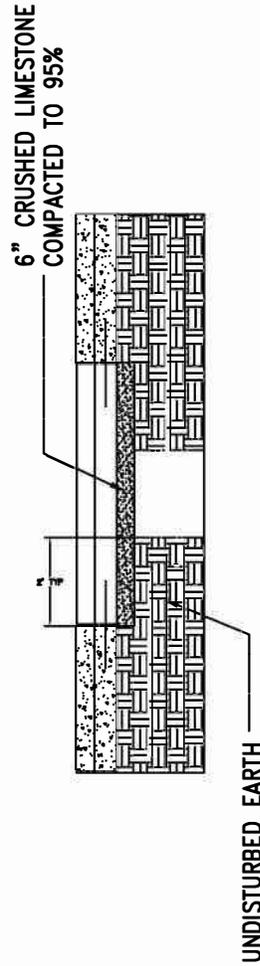
DRAWINGS



SECTION AA
CUT SECTION CURB CUT AND REPAIR
NTS



TYPE B EXPANSION
JOINTS

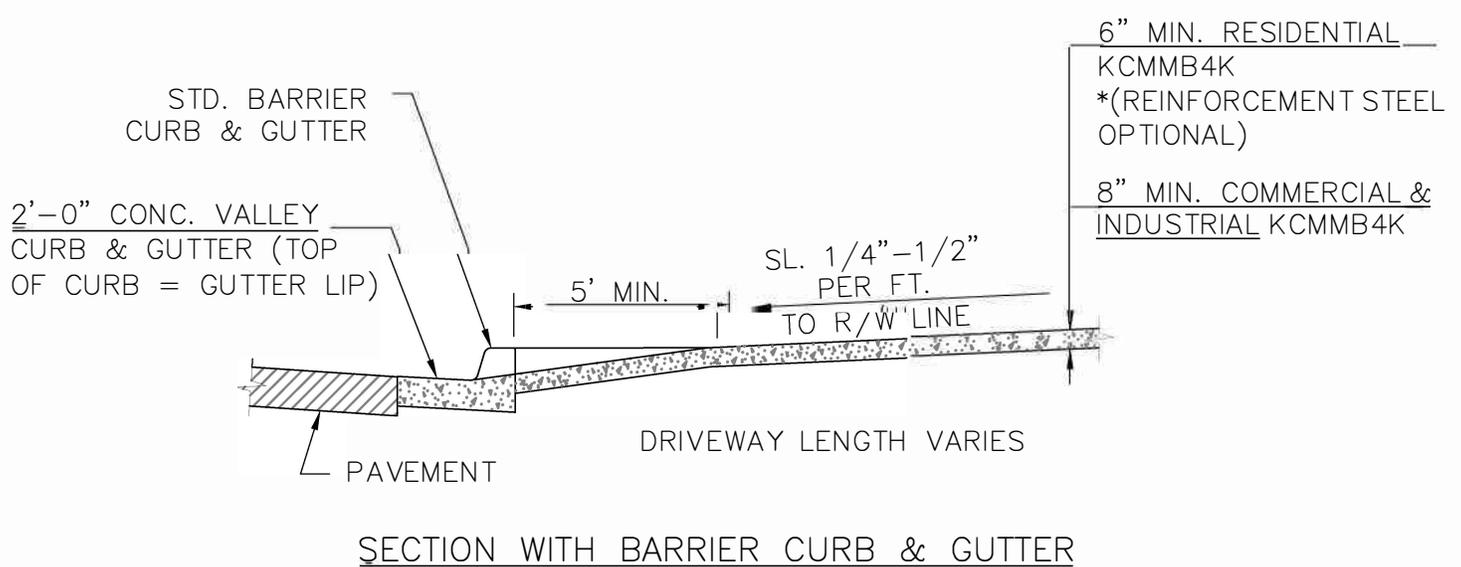
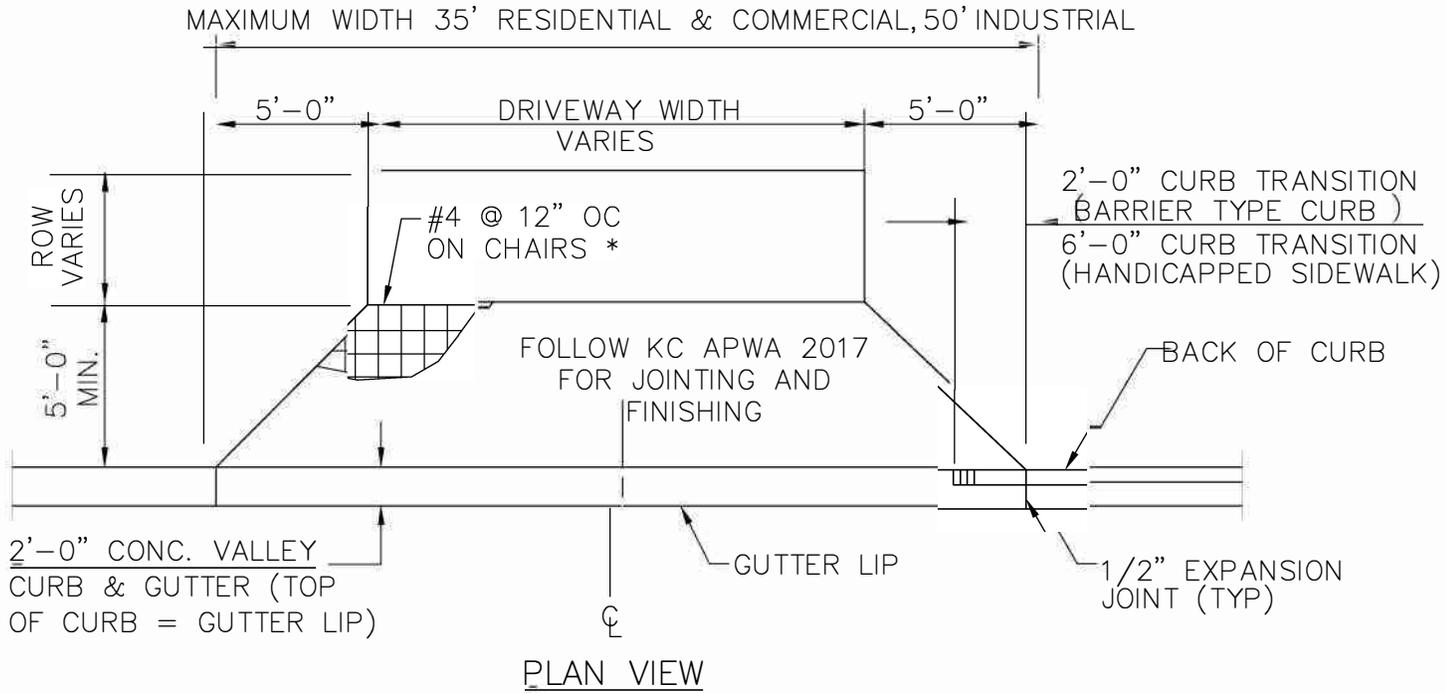


UNDISTURBED EARTH

NOTES

1. BACKFILLING OF EXCAVATED AREA TO BE IN ACCORDANCE WITH GRAIN VALLEY STANDARD STREET CUT DETAIL
2. DOWELS SHALL GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES
3. LIMESTONE SHALL BE LAYED IN 4" LIFTS AND COMPACTED TO 95% DENSITY
4. CONTRACTION JOINTS SHALL BE INSTALLED EVERY 10' AS PER APWA STANDARD DETAIL NUMBER C-1 (APWA 1997)
5. CONCRETE SHALL MEET STANDARDS SET MCIB FOR TYPE A
6. WHEN WITHIN 4' OF EXPANSION OR CONTROL JOINT EXTEND REPAIR TO JOINT.

CURB & GUTTER EXCAVATION REPAIR DETAIL

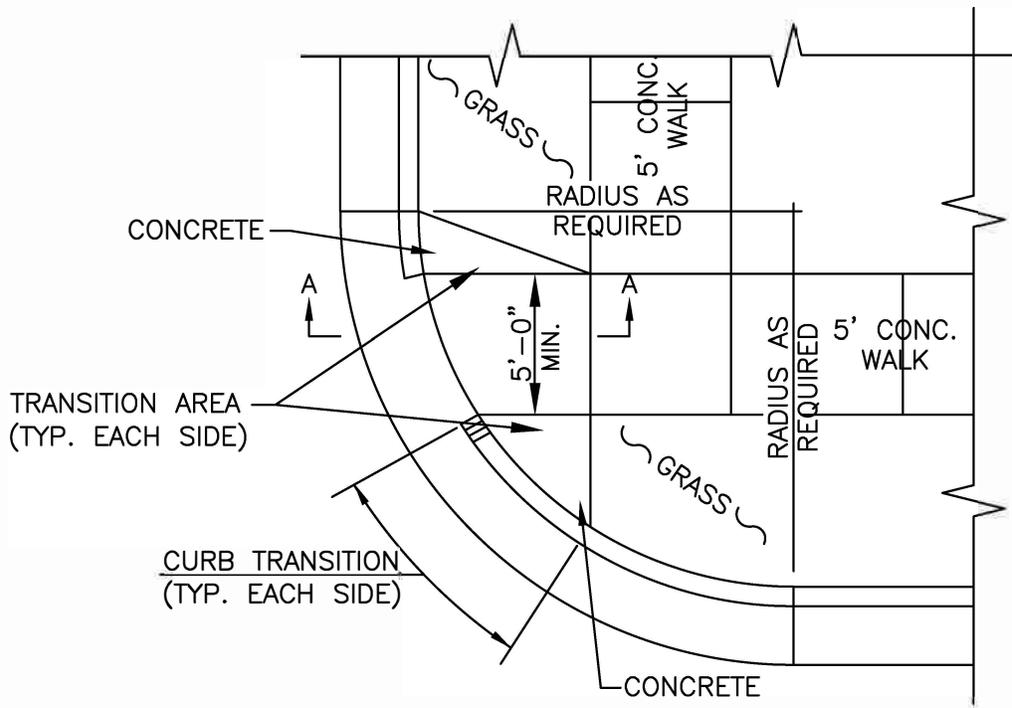


DRIVEWAY DETAIL WITH CURB TRANSITION (TYPICAL)



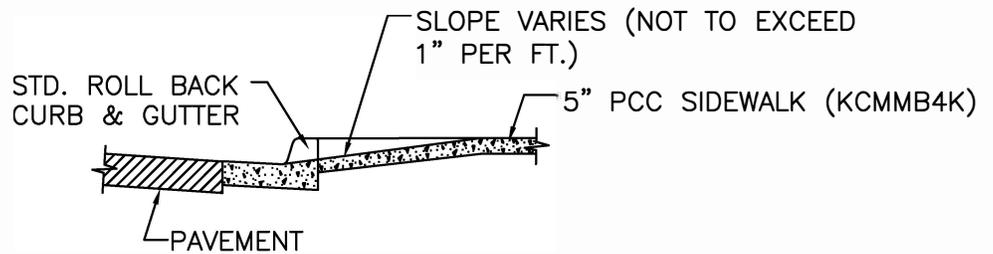
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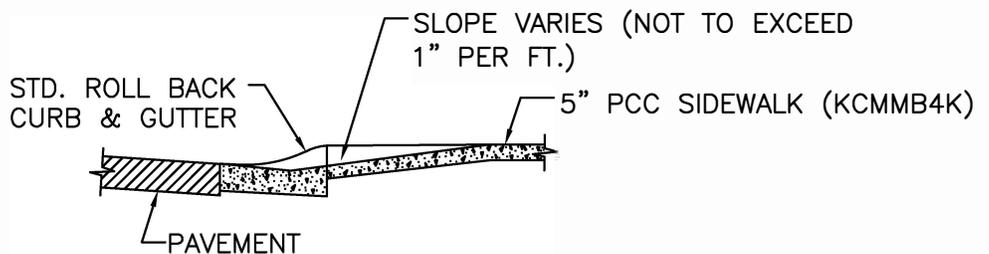


PLAN VIEW

NOTE: RAMP & TRANSITION AREA SHALL HAVE A BROOM SURFACE FINISH



SECTION A-A WITH BARRIER CURB & GUTTER

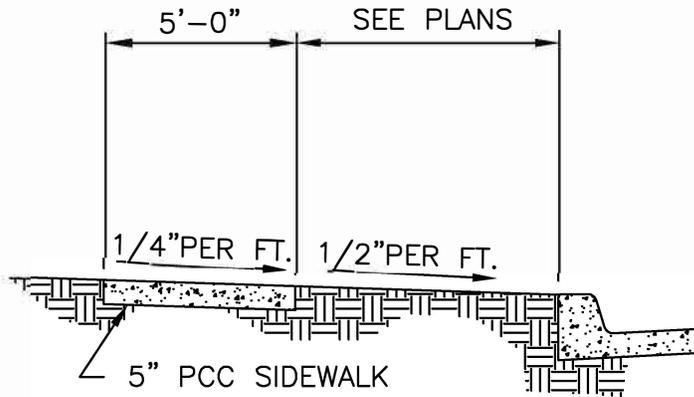


SECTION A-A WITH ROLL BACK CURB & GUTTER

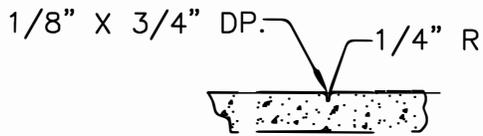
WHEEL CHAIR RAMP "B" DETAIL



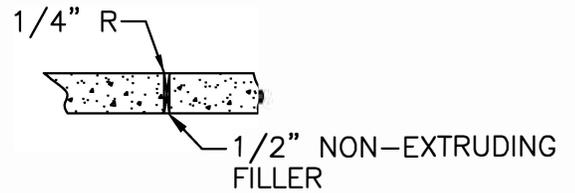
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TYPICAL SIDEWALK SECTION



CONTRACTION JOINT

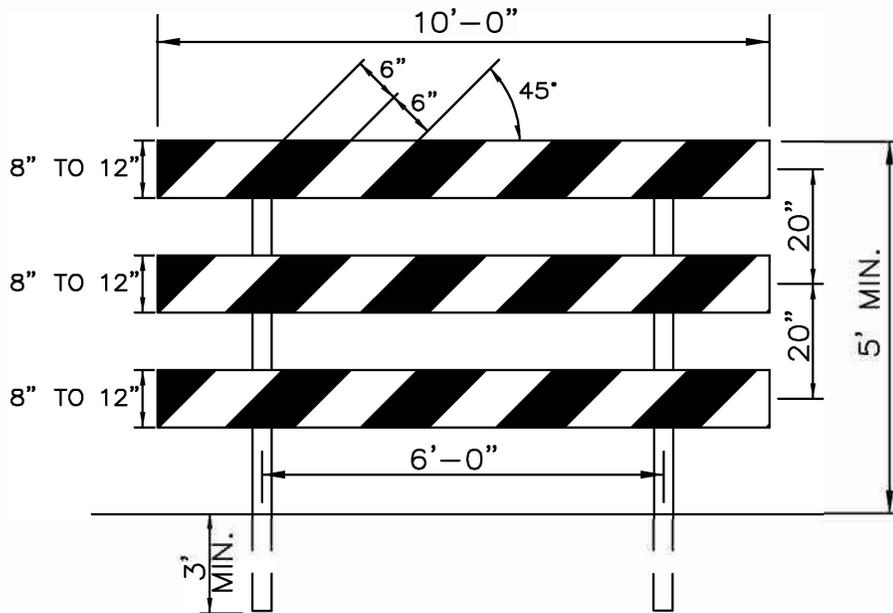
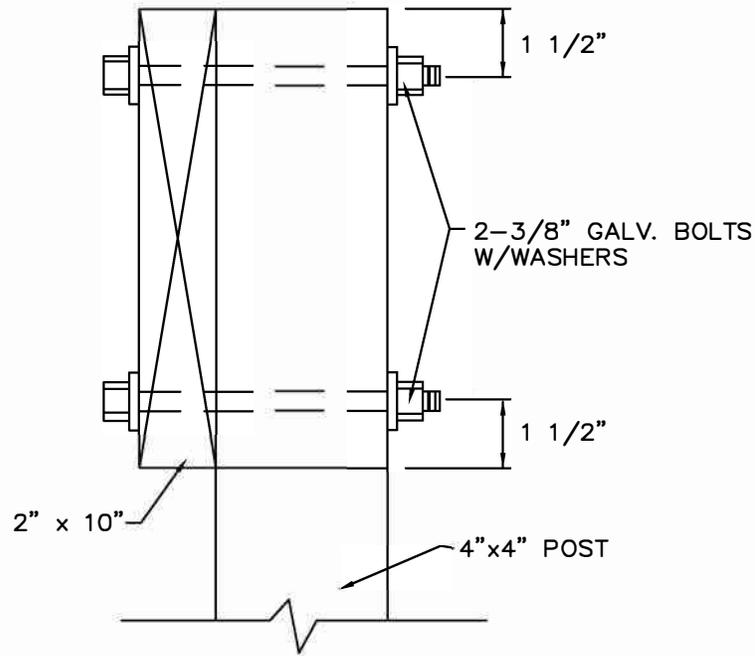


EXPANSION JOINT

NOTES:

1. CONTRACTION JOINTS 5' O.C. OR WIDTH OF SIDEWALK.
2. EXPANSION JOINTS SHALL ABUT EX. WALKS, CURBS, DRIVEWAYS, SIMILAR STRUCTURES AND 250' CTRS. MAXIMUM.
3. KEY ALL CONSTRUCTION JOINTS.

SIDEWALK DETAIL



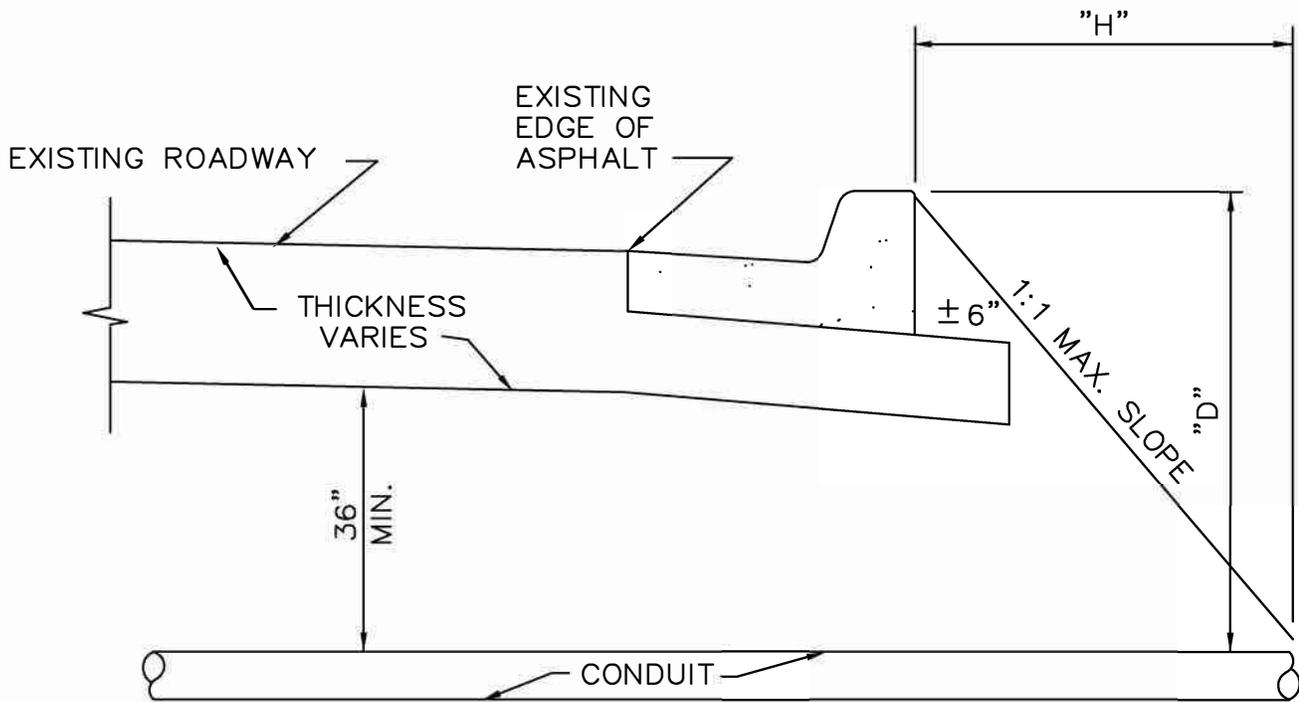
TYPE III BARRICADE

NOTE:

1. STRIPES SHALL BE MADE WITH ALTERNATING WHITE AND RED REFLECTORIZED SHEETING OR PAINT.
2. POSTS SHALL BE 4"x4" WOLMANIZED PRESSURE TREATED CEDAR PAINTED WHITE.

END OF PAVEMENT TYPE III BARRICADE

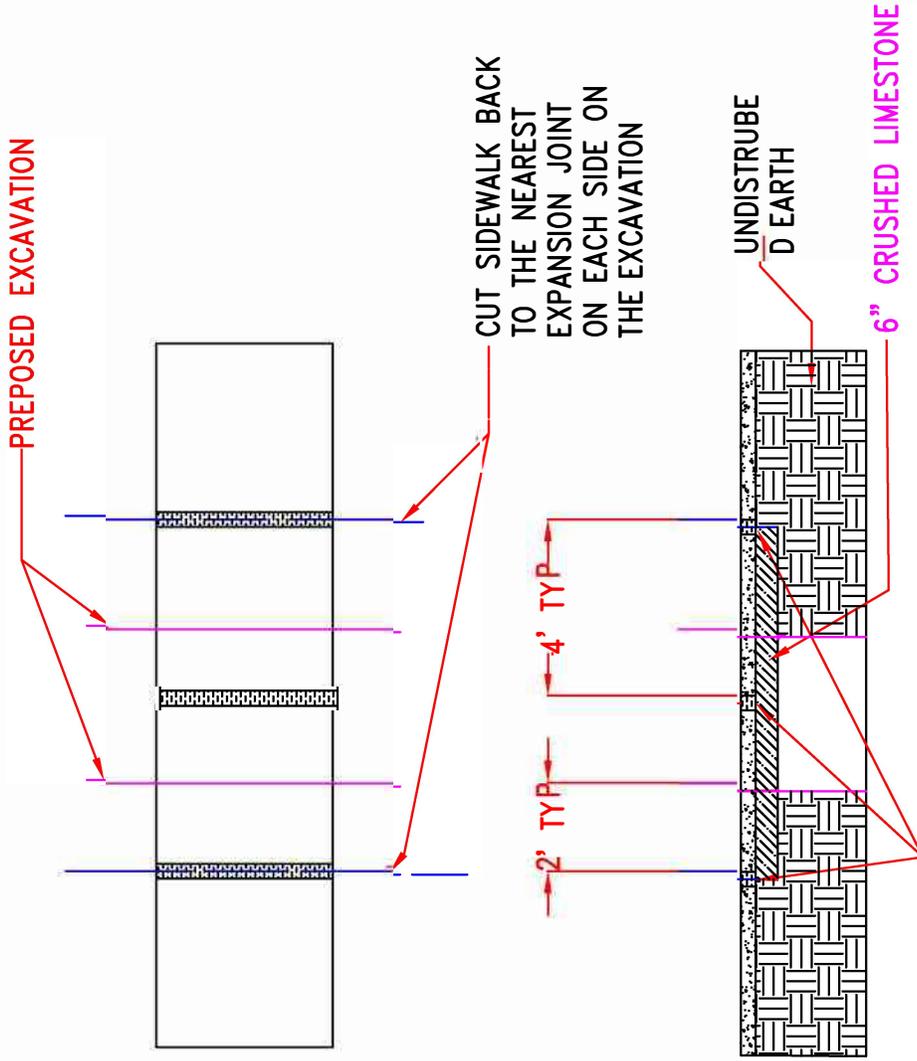
"H" MIN. DISTANCE BEHIND CURB
TO START PUNCH OR BORE
"D"=TOTAL DEPTH FROM TOP OF
CURB TO TOP OF CONDUIT.
"H"="D"



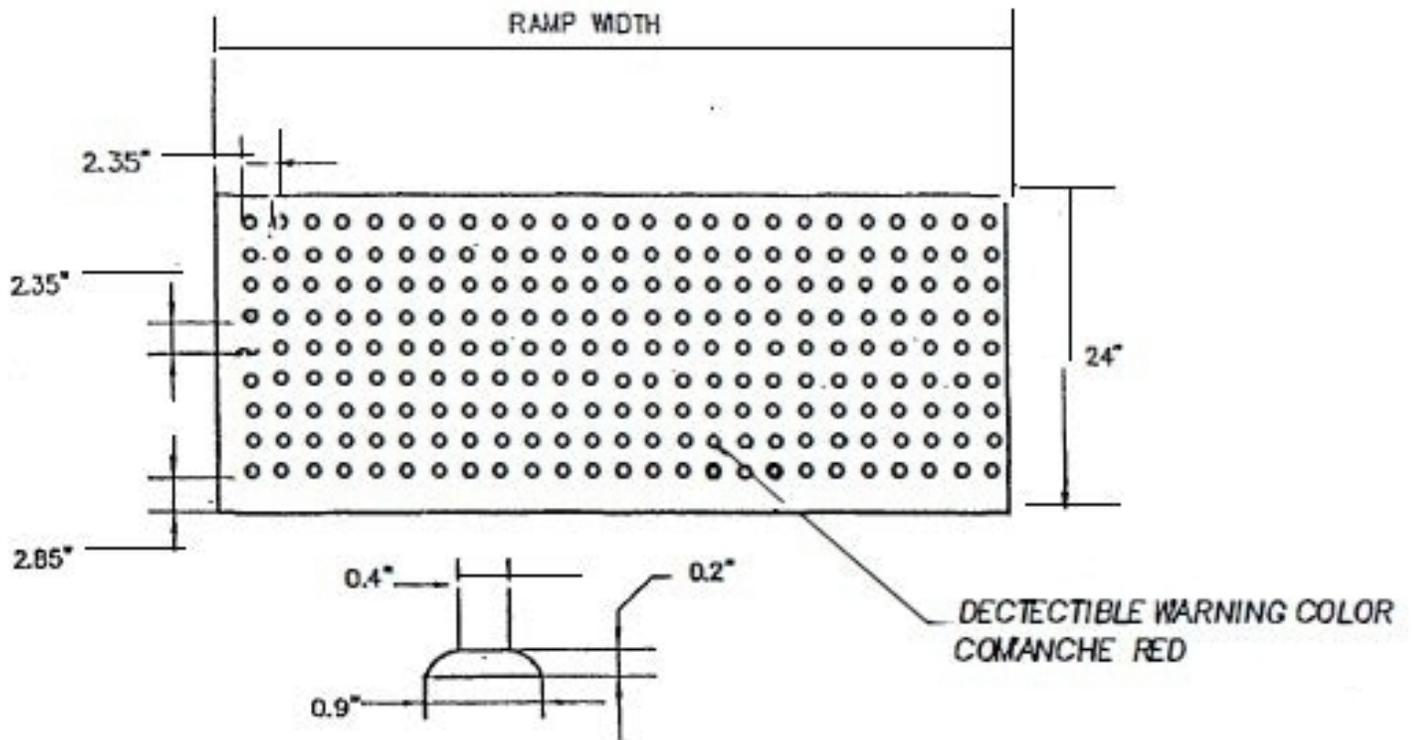
**ROADWAY CONDUIT CROSSING DETAIL
(BY PUNCH METHOD)**

NOTES

1. CUT THE SIDEWALK AT THE NEAREST EXPANSION JOINT ON EACH SIDE ON THE EXCAVATION
2. IF THE SIDEWALK HAS NO EXPANSION JOINTS MEASURE BACK FROM THE CENTER OF THE EXCAVATION IN 4' OC UNTIL THE CUT IN THE SIDEWALK IS 2' PASS THE EDGES OF THE EXCAVATION AND ON UNDISTRUBED EARTH
3. INSTALL EXPANSION JOINTS AT 4' OC AS PER APWA SECTION 2301.4
4. SUBGRADE SHALL BE CRUSHED LIMESTONE AND LAID IN 4" LIFTS WITH A MINIMUM OF 6" SUBGRADE SHALL BE COMPACTED 95% DENSITY CONCRETE SHALL MEET MCIB FOR TYPE A CONCRETE BACKFILL IN THE ARE OF THE EXCAVATION SHALL IN ACCORDANCE WITH THE GRAIN VALLEY STANDARD DETAIL FOR STREET CUTS



SIDEWALK EXCAVATION REPAIR DETAIL



1108.1.1 Dome Size. Truncated domes in a detectable warning surface shall have a base diameter of 0.9 inches (23 mm) minimum to 1.4 inches (36 mm) maximum, a top diameter of 50% of the base diameter minimum to 65% of the base diameter maximum, and a height of 0.2 inches (5 mm).

ALL CURB RAMPS SHALL BE CONSTRUCTED WITH RAISED TRUNCATED DOME DETECTABLE WARNINGS.

SIDEWALK DETECTIBLE WARNING DETAIL